e-chain

igus.com ... e-chains® and e-chain systems® ... plastics for longer life® ... 36 month guarantee



Same day shipping
from Rhode Island

systems®

motion? plastics!

Increase service life and reduce costs ...

... the goal of all igus® products is to always offer at least one of these. Other benefits are the fast delivery time, shipped in as little as 24 hours, plus the service life calculation for nearly all product lines. We will be happy to send you free sample parts for your testing and prototypes. Tested and proven service life. Calculate and order online.



Over 600,000 feet of e-chain ...
Over 4,000,000 feet of cable ...
available from stock
from our Corporate Headquarters
located in East Providence, RI

*On average 90% of orders ship same day.

36 month Guarantee
e-chain® and chainflex guarantee according to service life calculator**
www.igus.com/info/e-chain-guarantee

online chat! - igus® product experts available for chat on our website, weekdays 8:00 am to 8:00 pm

Installation & inspection services
igus® has a team of dedicated engineers ready to assist you during every phase of installation & inspection.

Schedule a visit! - Contact your local salesperson to schedule a Lunch-n-Learn, in-house Traveling Tradeshow or have the igus® Roadshow Trailer visit your facility. www.igusontour.com

Calculate and configure online
Download 3D CAD models free of charge. Quickly find the product you are looking for with our product finders and configurators. www.igus-cad.com

Contact an igus expert
www.igus.com/info/contact-igus

e-chain Test Drive Program
Qualified customers can receive a working system to test drive.
Call for details 800-521-2747

Online shop - Discover 100,000 products in our online shop and order around-the-clock! www.igus.com

No minimum order!
No surcharges!
You can find our prices online at
www.igus.com

Virtual visits! Digital consultation made easy. Assembly tips, on-site machine visits, interactive presentations.
www.igus.com/info/virtual-visit

For questions or more information
contact us
Weekdays 8 am to 8 pm
Phone 800-521-2747
Fax 401-438-7270

Free samples
www.igus.com/samples

** The e-chain® service life guarantee is valid for the indicated number of double strokes calculated according to the igus® online service life calculator or for a maximum of 36 months after the delivery date, whichever comes first.



Designing with igus® e-chains® - calculation tools, diagrams, applications

readychain® and readycable®,
igus® installation service with guarantee

From page 1.1



igus® solutions for simple applications

e-rib, E1, snapchain, office e-chain®

From page 2.1



Cost-effective, easy to fill e-chains® with "easy" design

E-Z chain®

From page 2.41



Zip-open, easy to fill e-chains®

zipper e-chains® and e-tubes

From page 3.1



All-rounder e-chains® and e-tubes micro ... mini ... medium

E2 micro, mini, E2.1 micro, E2.1, E2/000

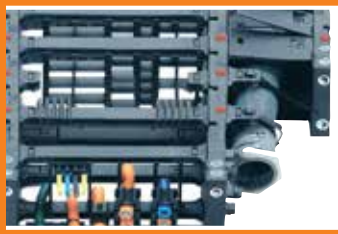
From page 4.1



Protection against dirt and chips openable igus® e-tubes

E2 e-tubes - series E2 R100, E2 R, R2.1, RX

From page 5.1



E4 - universal modular kit - e-chains® and e-tubes for any application

E4.1L, E4.1, E4/light

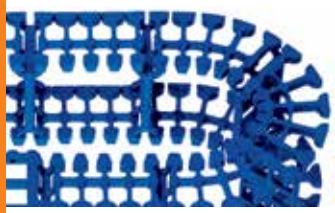
From page 6.1



Cleanroom e-chains® and e-tubes low noise, low vibration and high dynamics

T3, E3, E6-1, E6, e-skin®

From page 7.1



e-chain® designed according to hygienic principles - FDA and EU-compliant materials

System TH3

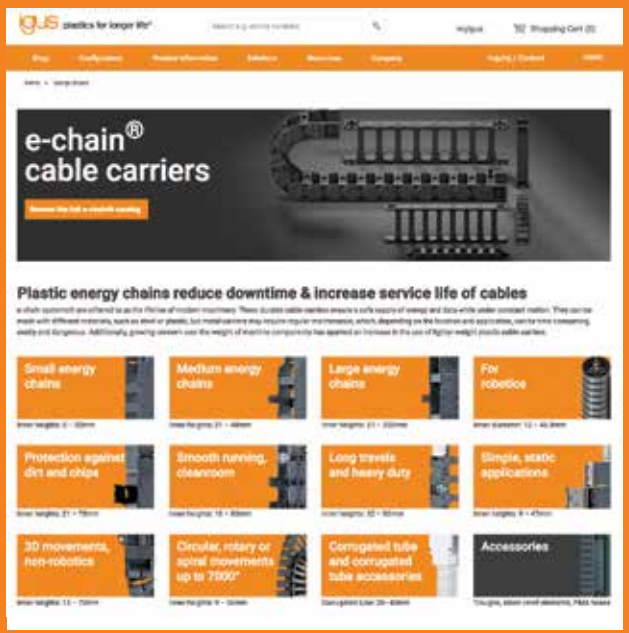
From page 7.149

Register now for the igus® newsletter ...



- Information on our latest products
- Free samples and services
- Invitations to trade fairs and free entry tickets
- Webinars on current topics around plastics technology
- Exclusive insights into our test laboratories and test results
- Real-world application examples

Register here:
► www.igus.com/newsletter



Quickly find, configure, calculate and order the best e-chain®
► online igus.com



e-chains® for robotic and 3D, circular and spiral movements

triflex® R, retraction systems, easy triflex®, triflex®, twisterchain, twisterband

From page 8.1



Solutions for multi-axis motion

e-spool - the alternative to cable reeling drums

From page 9.6



Solutions for vertical motion

liftband, guidelok slimline P

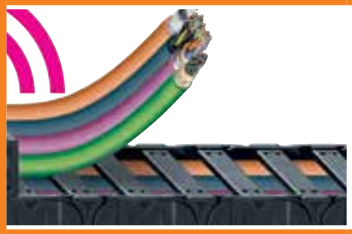
From page 9.26



Solutions for horizontal motion

guidelok horizontal, basic flizz®, micro flizz®

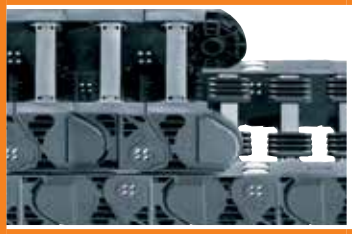
From page 9.38



Predictive maintenance, condition monitoring and engineered projects

isense smart plastics , PPDS, modular projects and systems

From page 9.57



e-chains® for long travel applications

E4/4HD, system P4, rol e-chains®, autoglide

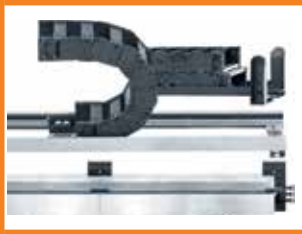
From page 9.80



Guide troughs for long travels for standard and heavy-duty applications

Aluminum SuperTrough and steel guide trough

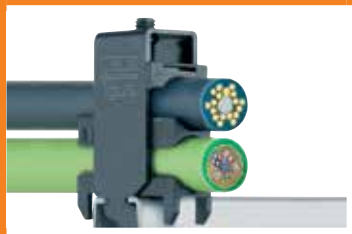
From page 9.180



Other guide trough systems

Steel and aluminum support tray, guidefast, guidelite, tubular trough, snap-in trough

From page 9.244



chainfix strain relief for maximum holding force

Clamps, tiewrap plates, honeycomb strain relief, etc.

From page 10.1

the-chain - moving energy made easy

Lightweight, strong and long service life: igus® e-chain systems® for every type of movement

Millions of igus® e-chains® are working in customer applications worldwide - from beverage dispensers to steelworks. They have a modular design and are therefore easy to assemble. They are resistant to different media and are ideal for very small bend radii as well as for large, heavy cables and hoses.

e-chains® are the umbilical cord of modern machines. They are constantly moving and supply power, data and energy. igus® has been developing, producing and testing polymer e-chains® since 1971. Our expert knowledge is continuously refined with the help of our customers to constantly improve our product range.

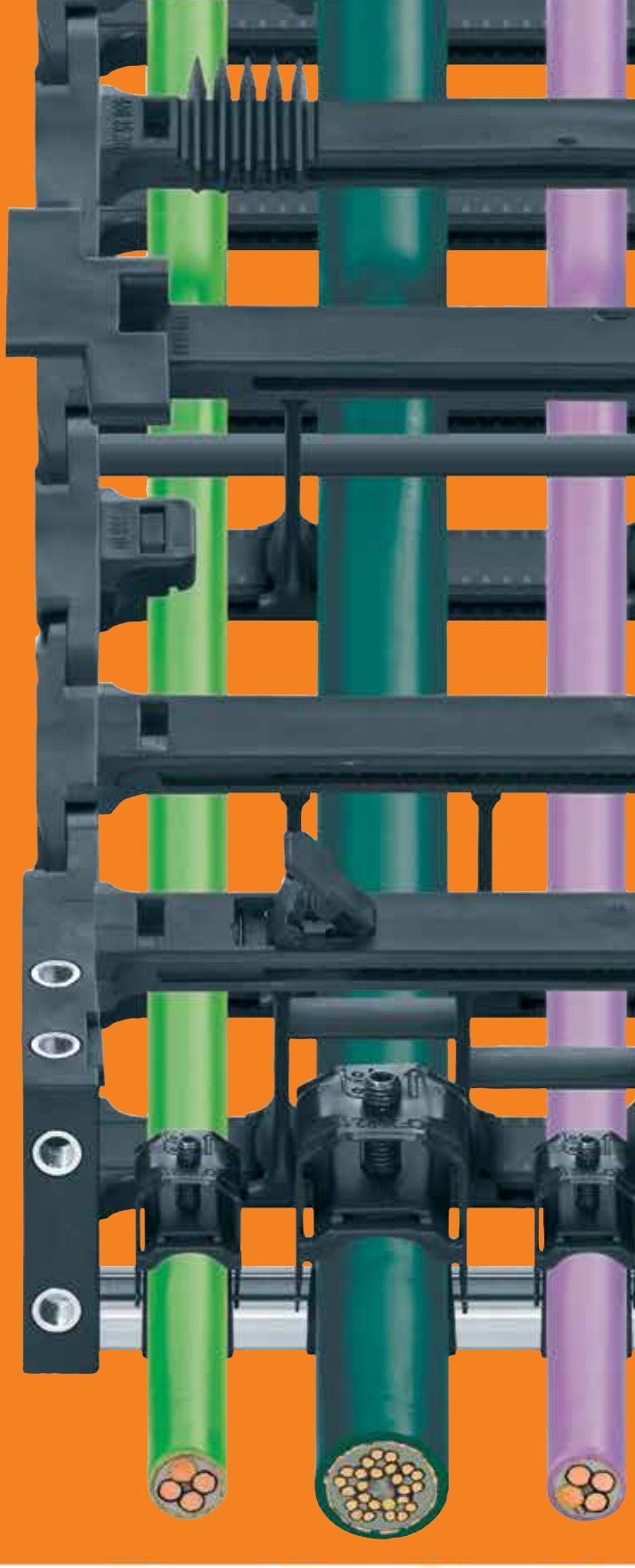
Tested and proven service life.
Calculate and order online.

Universal installation

- Various movement and length options
- For high dynamic loads and tough service life requirements
- For different environments and climates
- Innovative products that can be assembled quickly
- Large range of products - find the right solution quickly
- System quotes, including made-to-measure harnessing and "turnkey" assembly

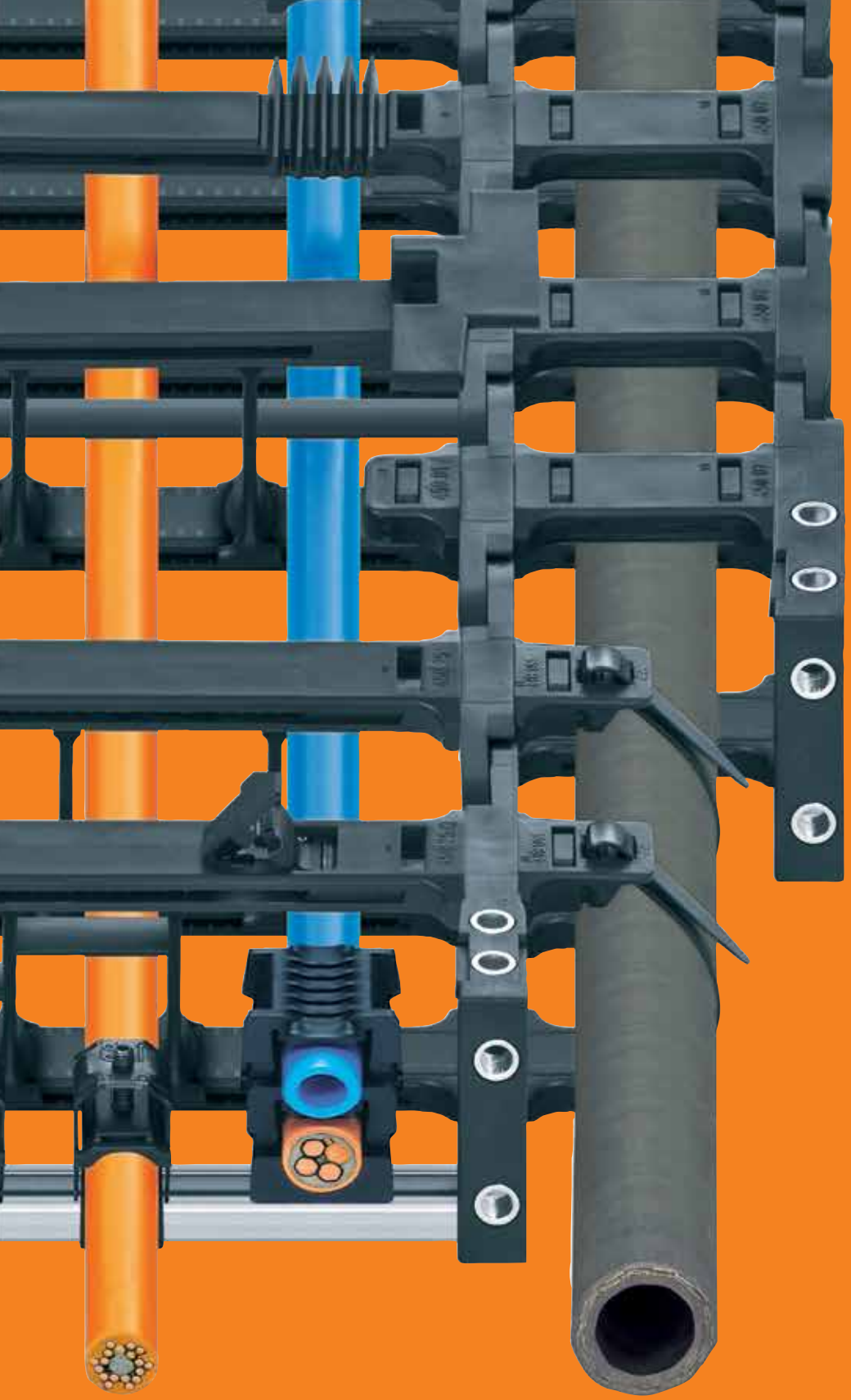
More information
▶ www.igus.com/e-chain

The award-winning igus® e-chain systems® are certified and tested





From batch size 1 to ...



Assembled to your exact requirements - shipped in 1-3 days!



... "turnkey" systems for your sector - igus® the-chain

readychain® - pre-assembled e-chain systems®



Ready-to-install energy supply systems - reduce assembly and harnessing time by 95%

Ready-made energy supply systems are developed, fitted with connectors and delivered tailor-made. The customers can forego maintaining their own storage space for e-chains®, cables and connectors, saving time and space for internal logistics and for assembly and installation of their energy supply system. The ready-made modules reduce processing costs for our customers by up to 80% and accelerate cycle times radically. Machine downtimes are also minimized. To achieve this, we supply the systems worldwide from 12 assembly and logistics centers.

- Eliminate storage costs for cables, e-chains® and connectors
- Cut turnaround times in half
- Reduce the number of suppliers and orders by 75%
- Minimize your machine downtime

▶ **www.igus.com/readychain**



basic
e-chain® with fitted cables - strain relief in the system



standard
e-chain® with cables and connectors



standard+
Pre-assembled e-chain system® with sheet-metal parts

... other igus® services



Engineering - customer-specific developments with many solutions from the modular kit

▶ **www.igus.com/info/engineering-services**

premium
Ready-to-install
complete system
with transport rack

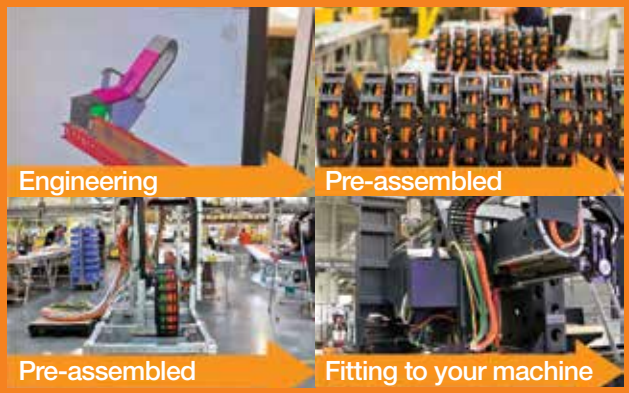


product design award 2014



Installation - predictable installation time for your system at your premises: helps you plan and contributes to high plant availability

▶ **www.igus.com/info/field-services-offered**



Open-Space - save valuable time for engineering while reducing processing costs

▶ **www.igus.com/info/engineering-services**

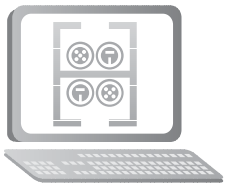
Reduce processing costs: configure igus® e-chains® online

Simplifying processes for customers is our primary goal. For almost every igus® product you will find further details, data and facts online. These include:

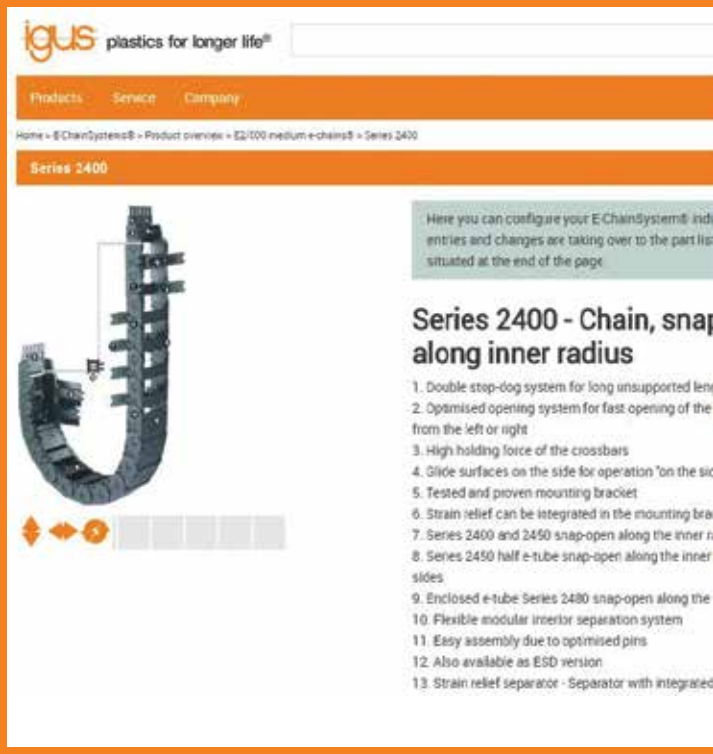
- Online tools for calculating service life
- Online configuration tools
- Comparisons and selection tools
- 3D and 2D CAD files
- PDF-files, data sheets and more
- Application pictures and videos
- Assembly instructions
- Personal support
- Catalog and sample ordering
- Online price list and online shop

Over 30 helpful online tools to quickly find, configure and calculate your product. No registration necessary. 3D CAD models available online to download. Easy to use.

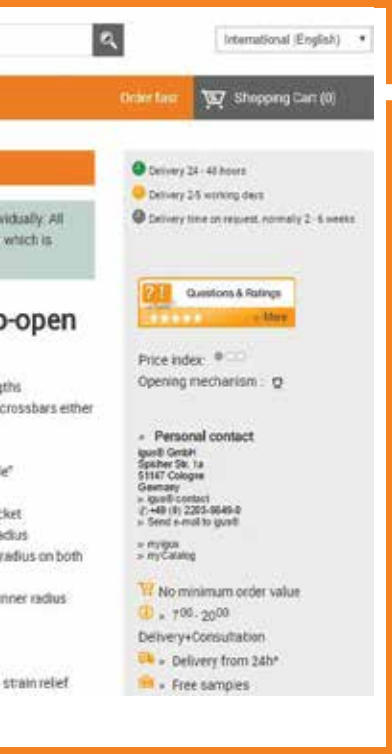
Visit our website and make use of all the advantages.
▶ **www.igus.com/online**

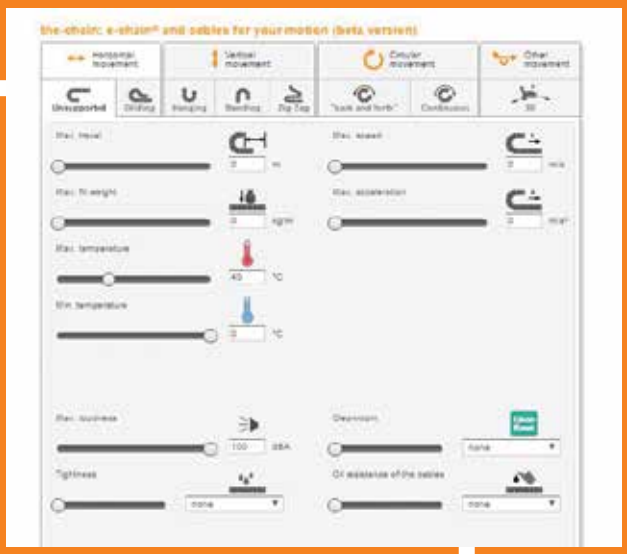


Create your complete e-chain system® in just a few clicks
▶ **www.igus.com/quickchain100**



Example:
▶ www.igus.com/2400





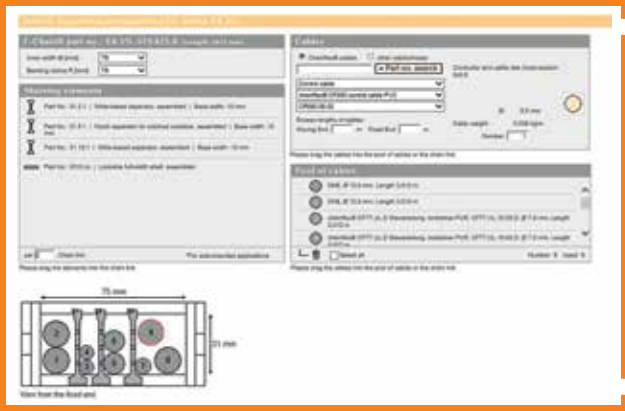
"Search" - the-chain product finder and configurator

- Find the right e-chain® quickly and easily by entering your application data and parameters.



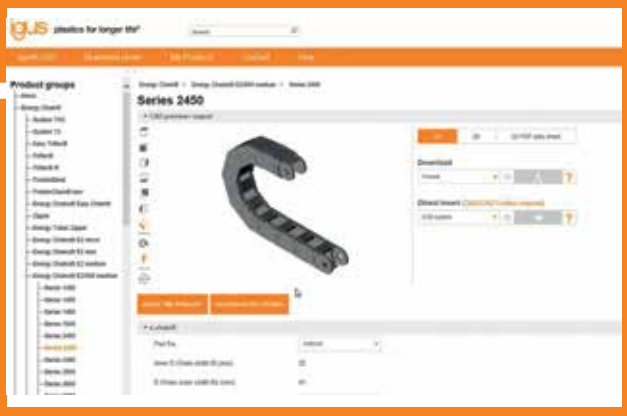
"Calculate e-chain® length"

- Calculate the e-chain® length and see all installation dimensions.



"Configure" e-chains® with the interior separator configurator

- Quickly and easily determine interior separation for the selected e-chain®; just drag and drop
- The configuration can be transferred automatically to your part list



"Generate 3D file"

- e-chain® CAD library
- Download and save CAD data free of charge without having to register
- Nearly 30 different 3D and 2D formats available
- Data on all products are updated and extended on a regular basis.

▶ www.igus-CAD.com

Quality from the igus® laboratory

Tested and proven every day.

Applications involving high duty cycles, speeds and accelerations, or demanding environmental conditions require proven systems especially for e-chains®, cables, plain bearings, and linear bearings and slides. igus® constantly conducts tests under real-world conditions inside our 41,000 ft² laboratory in Cologne, Germany. Every year, we run more than 4,100 tests on e-chains® and cables and over 12,000 tests on plain bearings. These tests focus on push/pull forces, friction values and wear rates. Other factors like speed, load, dirt, weathering, cold and impact are also tested. Our laboratory is also at your disposal. If we don't have data for your type of application, we can conduct a test representative of your requirements.

▶ www.igus.com/testlab



Electronic checking and archiving for every e-chain® production batch



Long-term wear and service life test



igus® system warranty - every application is different. igus® warranty certificates can be issued for your individual application. Ask for the igus® warranty: "chain, cable, guarantee"

All products are tested and available from a single source. Examples of test certificates and quality seals for igus® products ... more upon request





Noise level test inside an igus® acoustic cell



igus® dynamic bending test



Speeds up to 10m/s, acceleration up to 200m/s² are tested



Long travel test facility - 125m travel length, speed 300m/min



41,000 ft² igus® lab. The largest test lab in the energy chain industry with 65 e-chain® test machines and about 7,515 test results per year. 253 simultaneous tests for e-chain® and chainflex® cables with more than 10 billion e-chain® cycles (in the e-chains® and chainflex® lab per year) ensure reliable energy supply systems for all industries and installation types.

Worldwide, quick and reliable. The igus® service

Delivery and consultation
Mon-Fri from 7am-8pm

Innovation and service are the focus of our corporate philosophy. Therefore we put together an extensive package of services for you: no minimum order quantity, speedy delivery from 24hrs, and more than 100,000 products from stock. Order an iglide® bearing or a harnessed standard portal from stock in 24 hours at no extra cost. Rapid delivery worldwide guaranteed. Spare parts are delivered from stock in the shortest amount of time.

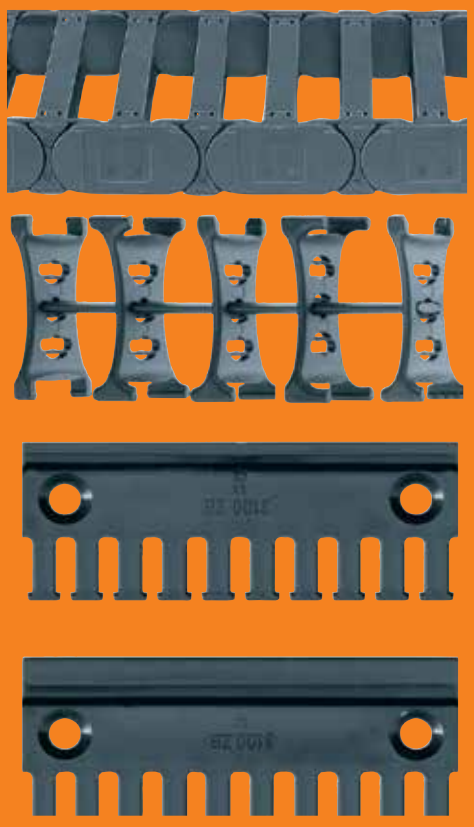
Take advantage of more services at igus®:

- **Free samples:** we will be happy to send you free samples for testing in your application. Order here ▶ **www.igus.com/samples**
- The **monthly newsletter** keeps you regularly informed about new igus® solutions. Register here ▶ **www.igus.com/newsletter**

Order at igus®:
no minimum order quantities, no surcharges.

24hrs

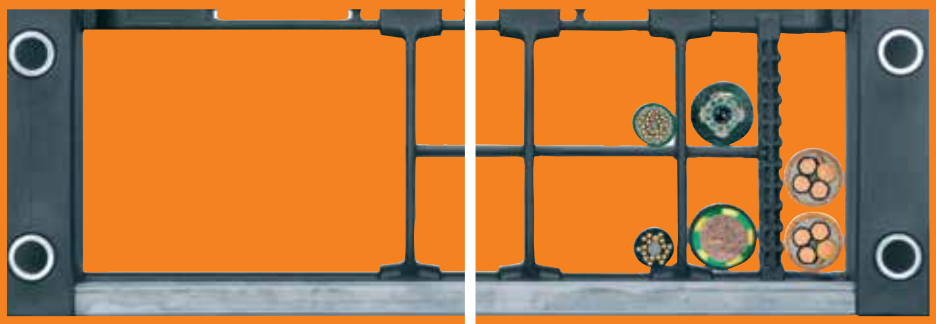
Single components
For example: One e-chain® link, 13.12 ft (6m) of e-chain®, 3 strain relief elements, etc.



24-48 hrs

Customized e-chain systems®

For example: 37.6 ft (11.46m) of e-chains® with interior separators, mounting brackets and strain relief elements according to your specifications. Also with loose accessories: chainflex® cables, guide troughs, mounting brackets and strain reliefs.





3-5 business days

Pre-assembled systems

For example: readychain® "basic"
Simple, harnessed e-chain systems® including installed cables without connectors, labeled and tail lengths to your specifications.

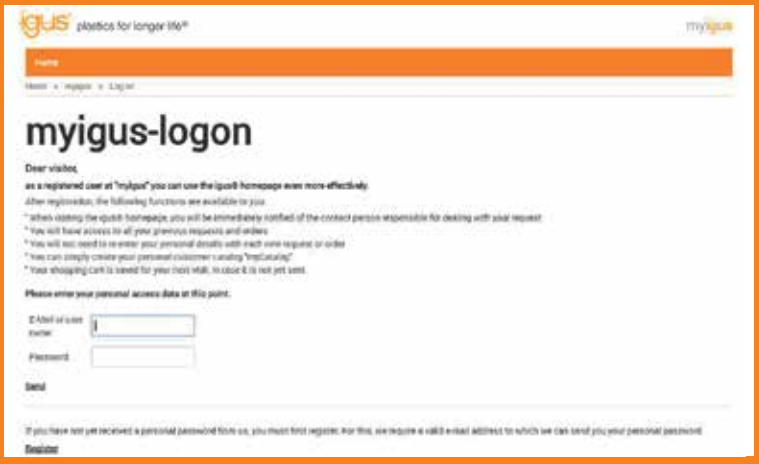


10 business days

Complex pre-assembled systems

For example: readychain® "Premium" Customized pre-assembled e-chain system® including cables, connectors, mounting brackets and other components to your specifications.





myigus space online

The igus® factory

Investments in better technology and faster delivery times

Nearly 200,000 customers worldwide trust "plastics for longer life®" - manufacturing products at low-cost, while also ensuring quality. We have been developing, making and selling our products according to this principle for years. Plastics are becoming increasingly affordable and technical benefits continue to grow. In view of the potential of plastic technology, we offer a wide range of tribo components. Wear resistant parts as catalog items are on stock to allow us to complete customer requests within hours.

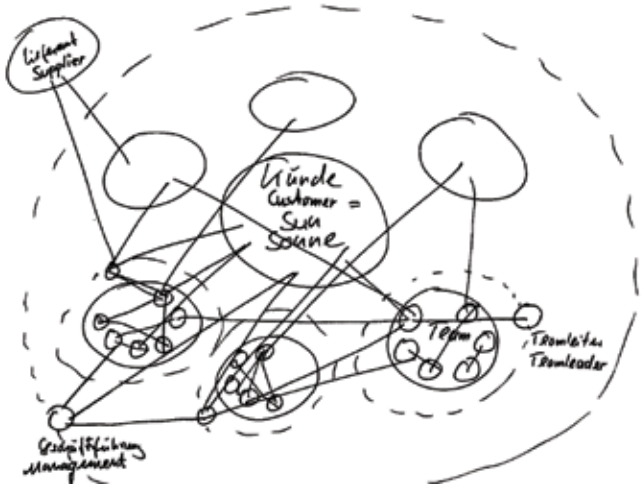
igus® is continuing to grow and is focusing more than ever on sophisticated yet simpler solutions for all applications and budgets.



Material preparation



Assembly factory



"For us, customers have the same significance as the sun to life on earth. The sun gives light, warmth and energy; our customers give us ideas, work and money."





Injection molding



Warehouse



Toolmaking



Open offices



Global standards - igus® is close to you

Worldwide individual consultation: by phone or at your premises. 35 subsidiaries worldwide.

A large network of sales engineers are at your disposal in Germany and worldwide. We will gladly provide consultation, supply assembly instructions and tools, measure installation spaces, and check environmental conditions at your premises. There are 4,150 employees between Germany and our 35 international subsidiaries. Plus distributors in another 55 countries guarantee rapid delivery.

- Customer-specific projects and special solutions: for every challenge, we will work with you to find a solution and provide a sample for your application free of charge
- We are wherever you need us: numerous e-chain® and polymer bearing consultants are at your disposal at any time
- Hands-on with our products at 200 trade shows worldwide
- Individually at your premises with our mobile exhibition



In a face-to-face meeting



igus® at trade shows





Technical consultation at your premises



Worldwide open offices - for example in China



igus® mobile exhibition



Worldwide modular factories - for example in the USA



igus® Offices igus® Distributors

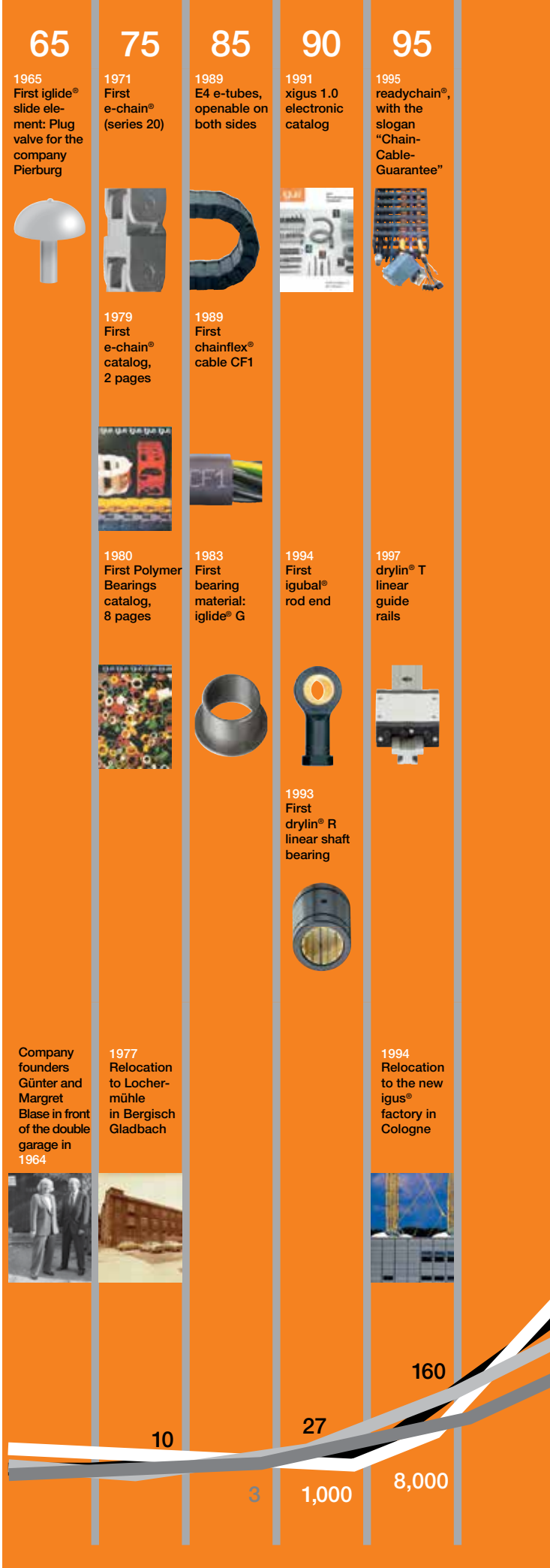
All addresses on last page.

igus® - close to the customer since 1964

From a garage to the global market with tribopolymers

What began in 1964 with a single injection molding machine in a garage in Cologne has become a global enterprise within half a century. It all started more than 50 years ago when Günter Blase, who established the company, had an idea about the potential of polymer materials. A mere one year after the company was established, an injection molding machine about the size of a sewing machine was used to make the very first products. In 1971, igus® delivered the first e-chain®. The company's own design engineering team has been developing the range of plastic chains since 1983. In accordance with the igus® slogan, "Moving energy made easy", the company configures, produces and assembles the appropriate energy chain system - the "umbilical cord" of all modern machines - in line with the wishes of the customer. Throughout its history, igus® gradually grew to become a systems supplier. In 1989, the company developed the CF1, which was its first chainflex® cable specially designed for use in energy chains®.

Today, the 4,150 employees come up with new ideas daily, make high-quality products, ensure streamlined processes and delivery times and, above all, stay close to the customer. On average, igus® dispatches around 5,500 consignments per day. In order to ensure speedy and individual delivery, the customers receive exactly the product they need for their application from 14 storage and assembly/installation centers worldwide – as a single component or as a complete system, also installed or assembled on site upon request.



2000

2001
Low-vibration e-chains®: system E6



2003
triflex® R 3D e-chains®



2001
drylin® N low profile linear slides



2003
drylin® W modular linear guide systems



05

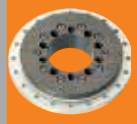
2006
rol e-chain®: System P4



2007
"One for all": system E4.1 e-chains®



2005
iglide® PRT slewing ring bearings



2007
drylin® ZLW Toothed belt axes



08

2009
Chip-proof: RX e-tube



2008
E4.350: largest polymer e-chain®



2008
xiros® polymer ball bearings



2009
robolink® joints



2009
60 % factory extension in Cologne



2010

2010
twisterband: turn 7000°



2010
For Pick & Place: pikchain®



2010
iglide® bar stocks for custom design: Ø 10-100 mm



2011
drylin® E – linear axes with stepper motor



12

2012
The alternative to the cable reeling drum: the modular e-spool system



2012
Flip open chain links on triflex® TRLF



2012
Individual design: igubal® coupling bars



2013
High efficiency: dryspin® high helix lead screws

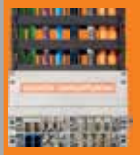


2012
2nd factory extension in Cologne



14

2014
The first plug-in energy chain: readychain® speed 2.0



2014
Cost-effective chainflex® M cables



2014
Versatile: iglide® Tribo-Tape



2014
iglide® Tribo-Filament for 3D printing



2014



2015



16

2016
100 % stable, filled in seconds: easy chain® HD



2016
Predictive maintenance with smart plastics



2016
3D printing service for wear resistant components



2016
drylin® carriage for curved rail



2017

2017
Plastic energy chain according to "Hygienic Design Guidelines"



2017
Angle adapter ibow for priceless flexibility



2017
"Eco series" linear modules – with 3D printed parts



2017
robolink® low-cost robot: modular ... build or buy



2017



Change your bearing now:
www.igus.com/iglide

45,000
80,000
100,000
1,200
1,800
3,180
2,950
95,000
552 million
303 million
690 million
16
30
36

Moving energy made easy - for any industry

Solutions with igus® e-chain systems®

The task of igus® e-chain systems® is to reliably supply energy and data to moving equipment. Such equipment is constantly in motion and has to function reliably in difficult ambient conditions as well as under high loads and at high speeds. e-chain systems® can be used universally in these kind of applications.

More exciting application examples
▶ **www.igus.com/applications**

More information
▶ **www.igus.com/info/energy-chain-applications**



Harnessed “readychain®” energy chains reduce costs sustainably



Tunneling machine - reliable E4.1 energy supply despite dirt and vibration



For example: machine tools, woodworking equipment, cranes, material handling systems and robots ...



The world's longest e-chain® travels 2017.8 ft. (615 m) with igus® rol e-chains® and chainflex® cables in a power plant



igus® e-chain systems® replace conventional energy supply solutions for cranes



Long travel, side-mounted installation using the vibration-free and low-noise series E6.29 in a camera application



igus® triflex® R e-chains® for robots that machine molded plastic parts



The world's largest plastic e-chain® (as of 05/2015), the igus® E4.1 series E4.350. Equipped with rollers, it travels reliably and is energy efficient. In this case on a slurry vacuum application. 492 ft. (150 m) travel, 67 lbs/ft. (100 kg/m) filling weight

Find references online ... take a look at over 60 industry branches

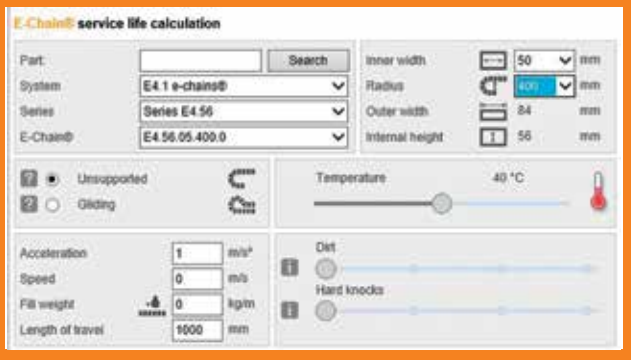
Different industries need different solutions. Whether in mechanical engineering, automobile manufacturing or in the robot industry - igus® offers customized support for special applications. igus® already has many years of experience and specialized resources for many industries.
▶ **www.igus.com/industry**

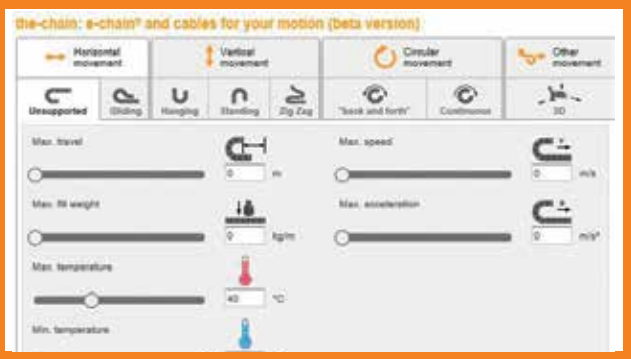
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All products that are marked "New" in the catalog have been added since the last version of the catalog published in 2017.

The terms "igus", "Apiro", "chainflex", "CFRIP", "conprotect", "CTD", "drylin", "dry-tech", "dryspin", "easy chain", "e-chain", "e-chain systems", "e-ketten", "e-kettensysteme", "e-skin", "flizz", "ibow", "iglide", "iglidur", "igubal", "manus", "motion plastics", "plastics for longer life", "pikchain", "readychain", "readycable", "ReBeL", "robolink", "speedigus", "triflex", and "xiros" are protected by trademark laws in the Federal Republic of Germany and internationally, where applicable.



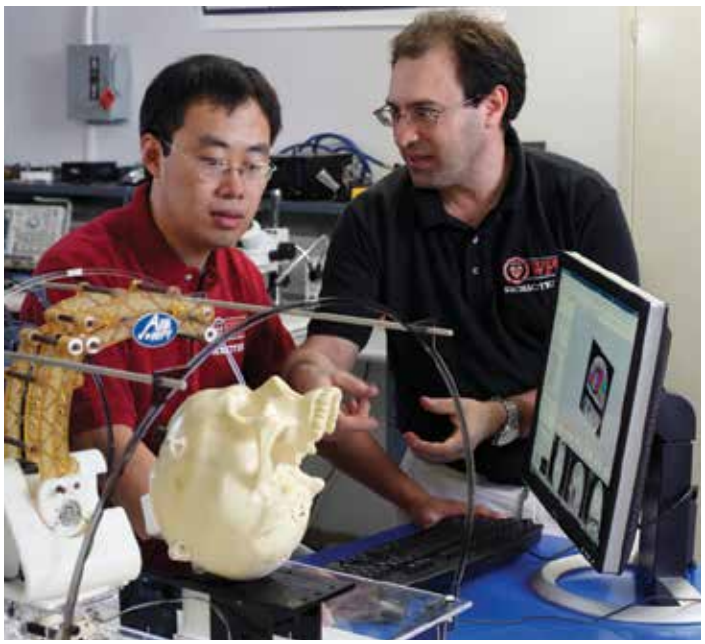
In 2005, igus® unveiled the Young Engineers Support Program, designed to foster the mechanical design ideas and inventions of students who have a passion for engineering. The Y.E.S. Program aims to not only support students and engineers, but also educate them on the merits and benefits of plastic components. Free donations are available to students and engineering competitions across the U.S., Canada and Mexico.

Through the yes Program, igus®:

- offers free product donations to students, engineers and professors for use in various design competitions, school projects and engineering curriculum;
- supports the visions of various robotics competitions by donating products, technical support and other resources;
- revitalizes students' interest in engineering; and
- helps make the design ideas of students and engineers a reality.

yes Facts

- The yes Program is open to students of all ages and grade levels
- The yes Program sponsors competitions such as *FIRST*® Robotics, BEST™ Robotics, Botball and Rube Goldberg.
- The yes Program offers lecture engagements presented by bearings and cable carrier experts at schools and universities.



Hao Su, PhD candidate, and Professor Gregory Fischer from the Worcester Polytechnic Institute used iglide® plastic bushings and a drylin® linear guide system for their MRI-guided needle placement robot, which will improve the way prostate cancer is detected and treated.



The Giant Diencephalic BrainSTEM Robotics Team scored the most points on record during in the 2018 *FIRST*® Tech Challenge: Relic Recovery. Each team's robot was required to collect foam cubes in various patterns, retrieve and transfer various items, park on balancing stones, and navigate to specific parts of the playing field.

Interested in becoming part of the yes Program?

Contact yes@igus.com or visit www.igus.com/company-yes-ca

System e-rib, E-1, SnapChain, office Chain

Legend
- ● Standard
- ○ Suitable to only a limited extent
- ▲ Optional
- ■ Especially suitable
- * In preparation / on request

	Series	Inner height *hi* in. (mm) ø cable max. in.	Inner width *Bi* in. (mm) from - to	Outer height *ha* in. (mm)	Outer width *Ba* in. (mm) from - to	Bending radii *R* in. (mm) from - to	Pitch in. (mm)		Unsupported fill weight max lbs/ft (kg/m)	Unsupported length max ft. (m)	Long travel max ft. (m)	Opening design	Interior separation possibilities... Separators	Full-width shelves	Shelves	ESD/ATEX	Cleanroom	UL-V2	Low noise	Price index	Page
e-rib - reinforcement for existing corrugated tube systems																					
Reinforcement for corrugated tubes - simply clip onto a corrugated hose																					
	EL.00.23.0	nominal width NW23	1.10 (28)	1.18 (30)	1.61 (41)	–	–		–	–	–		–	–	–	–	–	○	–	●●●	2.11
	EL.01.29.0	nominal width NW29	1.06 (27)	1.38 (35)	1.75 (44.5)	–	–		–	–	–		–	–	–	–	–	○	–	●●●	2.12
	EL.00.36.0	nominal width NW36	1.65 (42)	1.69 (43)	2.20 (56)	–	–		–	–	–		–	–	–	–	–	○	–	●●●	2.13
	EL.00.48.0	nominal width NW48	2.13 (54)	2.13 (54)	2.68 (68)	–	–		–	–	–		–	–	–	–	–	○	–	●●●	2.14
E1 - cost-effective, one piece strip design for simple applications																					
e-chains®, openable along the outer radius																					
	E1-10	.39 (10) ø .35	.51 (13)	.61 (15.5)	.72-2.29 (16.5)	.71 (018)	.79 (20)		upon request	–	–		–	–	–	○	●	▲	●	●●●	2.23
	E1-17	.67 (17) ø .59	.83-1.73 (21-44)	.98 (25)	1.02-1.93 (26-49)	1.10 (028)	1.00 (25.5)		upon request	–	–		–	–	–	○	●	▲	●	●●●	2.24
	E1-18	.71 (18) ø .63	.59 (15)	1.02 (26)	.79 (20)	1.10 (028)	.99 (25.25)		upon request	–	–		–	–	–	○	●	▲	●	●●●	2.25
	E1-20	.79 (20) ø .71	.59 (15)	1.06 (27)	.87 (22)	1.10 (028)	.98 (25)		upon request	–	–		–	–	–	○	●	▲	●	●●●	2.26
SnapChain - Guide cable bundles quickly and easily																					
e-chains®, Loops to be opened along the outer radius																					
	TE14-50	**Loop Length:** 50 mm	–	–	–	1.10-4.92 (028-125)	1.20 (30.5)		–	–	–		–	–	–	–	–	▲	●	●●●	2.30
	TE26-120	**Loop Length:** 120 mm	–	–	–	2.48-7.87 (063-200)	2.20 (56)		–	–	–		–	–	–	–	–	▲	●	●●●	2.32
e-tubes, Loops to be opened along the inner radius																					
	TZ14-50	**Loop Length:** 50 mm	–	–	–	1.10-4.92 (028-125)	1.20 (30.5)		–	–	–		–	–	–	–	–	▲	●	●●●	2.30
	TZ26-120	**Loop Length:** 120 mm	–	–	–	2.48-7.87 (063-200)	2.20 (56)		–	–	–		–	–	–	–	–	▲	●	●●●	2.32
office e-chain® energy supply for offices and furniture																					
e-chains®, E-Z design, split crossbar along the inner radius																					
	ZF14	.83 (21) ø .55	1.50 (38)	.98 (25)	1.83 (46.6)	1.10 (028)	1.20 (30.5)		–	–	–		–	–	–	▲	▲	●	▲	●●●	2.37

System E-Z Chain

Legend
- ● Standard
- ○ Suitable to only a limited extent
- ▲ Optional
- ■ Especially suitable
- * In preparation / on request

E-Z Chain - easy to fill and cost-effective

E-Z Chain, E-version, split crossbar along the **outer** radius





Series	Inner height *hi* in. (mm) ø cable max. in.	Inner width *Bi* in. (mm) from - to	Outer height *ha* in. (mm)	Outer width *Ba* in. (mm) from - to	Bending radii *R* in. (mm) from - to	Pitch in. (mm)	Unsupported fill weight max lbs/ft (kg/m)	Unsupported length max ft. (m)	Long travel max ft. (m)	Opening design	Interior separation possibilities... Separators	Full-width shelves	Shelves	ESD/ATEX	Cleanroom	UL-V2	Low noise	Price index	Page
1-chamber																			
E03	**.20 (5)**	ø .12	.20-.39 (5-10)	.31 (8)	.34-.54 (8.7-13.7)	.39-1.10 (010-028)	.39 (10)	.161 (0.24)	1.31 (0.40)	–	–	–	–	○	■	●	■	●●●	2.47
E04	**.28 (7)**	ø .18	.28 (7)	.39 (10)	.51 (13)	.59-1.89 (015-048)	.66 (16.7)	.235 (0.35)	1.80 (0.55)	–	–	–	–	▲	■	●	●	●●●	2.51
E045	**.37 (9.4)**	ø .22	.63 (16)	.49 (12.5)	.63-.91 (16-23)	.71-1.50 (018-038)	.51 (13)	.168 (0.25)	1.31 (0.40)	–	–	–	–	▲	■	●	■	●●●	2.55
E06	**.42 (10.7)**	ø .26	.39-.79 (10-20)	.59 (15)	.65-1.04 (16.5-26.5)	.71-1.50 (018-038)	.79 (20)	.302 (0.45)	1.80 (0.55)	–	–	–	–	▲	■	●	■	●●●	2.61
E065	**.44 (11.3)**	ø .28	.63 (16)	.59 (15)	.98 (24.8)	.71-1.50 (018-038)	.59 (15)	.302 (0.45)	1.97 (0.60)	–	–	–	–	▲	■	●	■	●●●	2.65
E08	**.57 (14.6)**	ø .39	.39-1.97 (10-50)	.76 (19.3)	.72-2.29 (18.2-58.2)	1.10-1.89 (028-048)	.79 (20)	.504 (0.75)	3.28 (1.00)	–	–	–	–	▲	■	●	●	●●●	2.71
E14	**.75 (19)**	ø .51	.59-1.57 (15-50)	.98 (25)	1.06-2.44 (27-62)	1.10-4.92 (028-125)	1.20 (30.5)	.336 (0.5)	2.13 (0.65)	–	–	–	–	▲	■	●	●	●●●	2.75
E200	**.96 (24.3)**	ø .79	2.24 (57)	1.38 (35)	2.93 (74.4)	2.17-7.87 (055-200)	1.81 (46)	1.34 (2.0)	5.74 (1.75)	–	–	–	–	▲	■	●	●	●●●	2.79
E16	**1.26 (32)**	ø .98	.91-3.94 (23-100)	1.54 (39)	1.48-4.54 (37.5-115.3)	1.57-3.94 (040-100)	1.20 (30.5)	.504 (0.75)	3.28 (1.00)	–	–	–	–	▲	■	●	●	●●●	2.85
E26	**1.44 (36.5)**	ø 1.10	2.95 (75)	1.97 (50)	3.62 (92)	2.48-9.84 (063-250)	2.20 (56)	2.69 (4.0)	7.87 (2.00)	–	–	–	–	▲	■	●	●	●●●	2.89
E300	**1.91 (48.5)**	ø 1.38	2.95 (75)	2.52 (64)	3.74 (95)	2.95-11.81 (075-300)	2.64 (67)	5.38 (8.0)	7.38 (2.25)	–	–	–	–	▲	■	●	●	●●●	2.95
2-chamber																			
E045-2	**.37 (9.4)**	ø .22	.28-.35 (7-9)	.49 (12.5)	.91-1.06 (23-27)	.71-1.50 (018-038)	.51 (13)	.168 (0.25)	1.31 (0.40)	–	●	–	–	▲	■	●	●	●●●	2.55
E065-2	**.44 (11.3)**	ø .28	.35 (9)	.59 (15)	1.15 (29.3)	.71-1.50 (018-038)	.59 (15)	.302 (0.45)	1.97 (0.60)	–	●	–	–	▲	■	●	●	●●●	2.65
E200-2	**.96 (24.3)**	ø .79	1.46-1.97 (37-50)	1.38 (35)	3.72-4.74 (94.4-120.4)	2.17-7.87 (055-200)	1.81 (46)	1.34 (2.0)	5.74 (1.75)	–	●	–	–	▲	■	●	●	●●●	2.79
E26-2	**1.46 (37.1)**	ø 1.10	1.89 (48)	1.97 (50)	4.6 (117)	2.48-9.84 (063-250)	2.20 (56)	2.69 (4.0)	7.87 (2.00)	–	●	–	–	▲	■	●	●	●●●	2.89
E300-2	**1.91 (48.5)**	ø 1.38	1.89 (48)	2.52 (64)	4.72 (120)	2.95-11.81 (075-300)	2.64 (67)	5.38 (8.0)	7.38 (2.25)	–	●	–	–	▲	■	●	●	●●●	2.95
3-chamber																			
E045-3	**.37 (9.4)**	ø .22	.35 (9)	.49 (12.5)	1.46 (37)	.71-1.50 (018-038)	.51 (13)	.168 (0.25)	1.31 (0.40)	–	●	–	–	▲	■	●	●	●●●	2.55
E065-3	**.44 (11.3)**	ø .28	.35 (9)	.59 (15)	1.55 (39.3)	.71-1.50 (018-038)	.59 (15)	.302 (0.45)	1.97 (0.60)	–	●	–	–	▲	■	●	●	●●●	2.65
E26-3	**1.46 (37.1)**	ø .79	1.85 (47)	1.97 (50)	6.57 (167)	2.48-9.84 (063-250)	2.20 (56)	2.69 (4.0)	7.87 (2.00)	–	●	–	–	▲	■	●	●	●●●	2.89
E300-3	**1.91 (48.5)**	ø 1.38	1.81 (46)	2.52 (64)	6.69 (170)	2.95-11.81 (075-300)	2.64 (67)	5.38 (8.0)	7.38 (2.25)	–	●	–	–	▲	■	●	●	●●●	2.95
4-chamber																			
E065-4	**.44 (11.3)**	ø .28	.35 (9)	.59 (15)	1.94 (49.3)	.71-1.50 (018-038)	.59 (15)	.302 (0.45)	1.97 (0.60)	–	●	–	●	▲	■	●	●	●●●	2.65

E-Z Chain, Z-version, split crossbar along the **inner** radius



Series	Inner height *hi* in. (mm) ø cable max. in.	Inner width *Bi* in. (mm) from - to	Outer height *ha* in. (mm)	Outer width *Ba* in. (mm) from - to	Bending radii *R* in. (mm) from - to	Pitch in. (mm)	Unsupported fill weight max lbs/ft (kg/m)	Unsupported length max ft. (m)	Long travel max ft. (m)	Opening design	Interior separation possibilities... Separators	Full-width shelves	Shelves	ESD/ATEX	Cleanroom	UL-V2	Low noise	Price index	Page
1-chamber																			
Z045	**.37 (9.4)**	ø .22	.63 (16)	.49 (12.5)	.63-.91 (16-23)	.71-1.50 (018-038)	.51 (13)	.168 (0.25)	1.31 (0.40)	–	–	–	–	▲	■	●	■	●●●	2.55
Z06	**.42 (10.7)**	ø .26	.39-.79 (10-20)	.59 (15)	.65-1.04 (16.5-26.5)	.71-1.50 (018-038)	.79 (20)	.302 (0.45)	1.80 (0.55)	–	–	–	–	▲	■	●	■	●●●	2.61
Z08	**.57 (14.6)**	ø .39	.39-1.97 (10-50)	.76 (19.3)	.72-2.29 (18.2-58.2)	1.10-1.89 (028-048)	.79 (20)	.504 (0.75)	3.28 (1.00)	–	–	–	–	▲	■	●	●	●●●	2.71
Z14	**.75 (19)**	ø .51	.59-1.57 (15-50)	.98 (25)	1.06-2.44 (27-62)	1.10-4.92 (028-125)	1.20 (30.5)	.336 (0.5)	2.13 (0.65)	–	–	–	–	▲	■	●	●	●●●	2.75
Z200	**.96 (24.3)**	ø .79	2.24 (57)	1.38 (35)	2.93 (74.4)	2.17-7.87 (055-200)	1.81 (46)	1.34 (2.0)	5.74 (1.75)	–	–	–	–	▲	■	●	●	●●●	2.79
Z16	**1.26 (32)**	ø .98	.91-3.94 (23-100)	1.54 (39)	1.48-4.54 (37.5-115.3)	1.57-3.94 (040-100)	1.20 (30.5)	.504 (0.75)	3.28 (1.00)	–	–	–	–	▲	■	●	●	●●●	2.85
Z26	**1.44 (36.5)**	ø 1.10	2.95 (75)	1.97 (50)	3.62 (92)	2.48-9.84 (063-250)	2.20 (56)	2.69 (4.0)	7.87 (2.00)	–	–	–	–	▲	■	●	●	●●●	2.89
Z300	**1.91 (48.5)**	ø 1.38	2.95 (75)	2.52 (64)	3.74 (95)	2.95-11.81 (075-300)	2.64 (67)	5.38 (8.0)	7.38 (2.25)	–	–	–	–	▲	■	●	●	●●●	2.95
2-chamber																			
Z045-2	**.37 (9.4)**	ø .22	.28-.35 (7-9)	.49 (12.5)	.91-1.06 (23-27)	.71-1.50 (018-038)	.51 (13)	.168 (0.25)	1.31 (0.40)	–	●	–	–	▲	■	●	●	●●●	2.55
Z200-2	**.96 (24.3)**	ø .79	1.46-1.97 (37-50)	1.38 (35)	3.72-4.74 (94.4-120.4)	2.17-7.87 (055-200)	1.81 (46)	1.34 (2.0)	5.74 (1.75)	–	●	–	–	▲	■	●	●	●●●	2.79
Z26-2	**1.46 (37.1)**	ø 1.10	1.89 (48)	1.97 (50)	4.6 (117)	2.48-9.84 (063-250)	2.20 (56)	2.69 (4.0)	7.87 (2.00)	–	●	–	–	▲	■	●	●	●●●	2.89
Z300-2	**1.91 (48.5)**	ø 1.38	1.89 (48)	2.52 (64)	4.72 (120)	2.95-11.81 (075-300)	2.64 (67)	5.38 (8.0)	7.38 (2.25)	–	●	–	–	▲	■	●	●	●●●	2.95
3-chamber																			
Z045-3	**.37 (9.4)**	ø .22	.35 (9)	.49 (12.5)	1.46 (37)	.71-1.50 (018-038)	.51 (13)	.168 (0.25)	1.31 (0.40)	–	●	–	–	▲	■	●	●	●●●	2.55
Z065-3	**.44 (11.3)**	ø .28	.35 (9)	.59 (15)	1.55 (39.3)	.71-1.50 (018-038)	.59 (15)	.302 (0.45)	1.97 (0.60)	–	●	–	–	▲	■	●	●	●●●	2.65
Z26-3	**1.46 (37.1)**	ø .79	1.85 (47)	1.97 (50)	6.57 (167)	2.48-9.84 (063-250)	2.20 (56)	2.69 (4.0)	7.87 (2.00)	–	●	–	–	▲	■	●	●	●●●	2.89
Z300-3	**1.91 (48.5)**	ø 1.38	1.81 (46)	2.52 (64)	6.69 (170)	2.95-11.81 (075-300)	2.64 (67)	5.38 (8.0)	7.38 (2.25)	–	●	–	●	▲	■	●	●	●●●	2.95

System Zipper Chain, E2 micro

Legend
- ● Standard
- ○ Suitable to only a limited extent
- ▲ Optional
- ■ Especially suitable
- * In preparation / on request

Series	Inner height *hi* in. (mm) ø cable max. in.		Inner width *Bi* in. (mm) from - to	Outer height *ha* in. (mm)	Outer width *Ba* in. (mm) from - to	Bending radii *R* in. (mm) from - to	Pitch in. (mm)		Unsupported fill weight max lbs/ft (kg/m)	Unsupported length max ft. (m)	Long travel max ft. (m)	Opening design	Interior separation possibilities... Separators	Full-width shelves	Shelves	ESD/ATEX	Cleanroom	UL-V2	Low noise	Price index	Page
Zipper Chain - Zipper fastening e-chains® and e-tubes!																					
e-chains®, zip-open along the outer radius																					
	**047**	**.35 (9)**	ø .28	.39-.63 (10-16)	.49 (12.5)	.63-.87 (16-22)	.71-1.50 (18-38)	.51 (13)		.168 (0.25)	1.31 (0.40)	–		–	–	–	▲	●	▲	■	●●○	3.7
	07	**.41 (10.3)**	ø .31	.24-2.52 (6-64)	.59 (15)	.49-2.80 (12.5-71)	.71-1.50 (18-38)	.79 (20)		.27 (0.4)	1.80 (0.55)	–		–	–	–	▲[2] ■	●	▲	■	●●○	3.11
	09	**.59 (15)**	ø .51	.39-1.97 (10-50)	.76 (19.3)	.72-2.29 (18.2-58.2)	1.10-1.89 (28-48)	.79 (20)		.504 (0.75)	3.28 (1.00)	–		●	●	–	▲[2] ■	●	▲	■	●●○	3.19
	15	**.67 (17)**	ø .59	.59-3.94 (15-100)	.94 (24)	1.02-4.45 (26-113)	1.50-7.09 (38-180)	1.20 (30.5)		1.01 (1.5)	3.94 (1.20)	–		●	●	–	▲	●	▲	■	●●○	3.27
	17	**1.26 (32)**	ø 1.10	.59-3.94 (15-100)	1.54 (39)	1.02-4.45 (26-113)	2.48-4.92 (63-125)	1.20 (30.5)		.67 (1.0)	3.28 (1.00)	–		●	●	–	▲	●	▲	■	●●○	3.39
e-tubes, zip-open along the inner radius																					
	R07	**.41 (10.3)**	ø .31	.39-1.97 (10-50)	.59 (15)	.65-2.24 (16.5-57)	1.50-1.89 (38-48)	.79 (20)		.27 (0.4)	1.80 (0.55)	–		–	–	–	▲	●	▲	■	●●○	3.15
	R09	**.59 (15)**	ø .49	.39-1.97 (10-50)	.76 (19.3)	.72-2.29 (18.2-58.2)	1.89-3.94 (48-100)	.79 (20)		.504 (0.75)	3.28 (1.00)	–		–	–	–	▲	●	▲	■	●●○	3.23
	R15	**.67 (17)**	ø .59	.98-3.15 (25-80)	.94 (24)	1.42-3.70 (36-94)	2.48-7.09 (63-180)	1.20 (30.5)		1.10 (1.5)	.81 (1.2)	–		●	●	–	▲	●	▲	■	●●○	3.33
	R17	**1.26 (32)**	ø 1.10	.59-2.48 (15-63)	1.54 (39)	1.02-2.99 (26-76)	2.48-4.92 (63-125)	1.20 (30.5)		1.01 (1.5)	.81 (1.2)	–		●	●	–	▲	●	▲	■	●●○	3.45
E2 Micro - smallest inner heights and bending radii																					
e-chains®, non snap-open																					
	**03**	**.20 (5)**	ø .14	.20-.39 (5-10)	.31 (8)	.34-.54 (8.7-13.7)	.39-1.10 (10-28)	.39 (10)		.16 (0.24)	1.31 (0.40)	–		–	–	–	○	○	●	■	●●○	4.7
	04	**.28 (7)**	ø .20	.28-1.18 (7-30)	.39 (10)	.47-1.38 (12-35)	.59-1.89 (15-48)	.66 (16.7)		.25 (0.375)	1.64 (0.50)	–		–	–	–	▲	○	▲	●	●●○	4.11
	05	**.39 (10)**	ø .31	.24-2.52 (6-64)	.47 (12)	.39-2.68 (10-68)	.71-1.50 (18-38)	.51 (13)		.25 (0.375)	1.64 (0.50)	–		–	–	–	▲	○	▲	●	●●○	4.15
	045	**.41 (10.3)**	ø .31	.24-2.52 (6-64)	.49 (12.5)	.47-2.76 (12-70)	.71-1.50 (18-38)	.79 (20)		.17 (0.25)	1.64 (0.50)	–		–	–	–	▲	○	▲	■	●●○	4.19
	06	**.41 (10.5)**	ø .31	.24-2.52 (6-64)	.59 (15)	.49-2.80 (12.5-71)	.71-1.50 (18-38)	.79 (20)		.32 (0.48)	1.97 (0.60)	–		–	–	–	▲	○	▲	●	●●○	4.23
	E2C-10	**.41 (10.6)**	ø .31	.24-1.97(6-50)	.59(15)	.53-2.26 (13.4-57.4)	.71-1.50 (18-38)	.79 (20)		.47 (0.70)	2.46 (0.75)	–		▲	–	–	▲	○	▲[2] ■	●	●●○	4.27
	E2C-15	**.59 (14.9)**	ø .49	.39-1.97(10-50)	.76 (19.3)	.70-2.28 (17.8-57.8)	1.10-2.95 (28-75)	.79 (20)		.84 (1.25)	4.27 (1.30)	–		–	–	–	▲	○	▲[2] ■	●	●●○	4.41
	08	**.59 (15)**	ø .47	.39-1.97 (10-50)	.76 (19.3)	.72-2.29 (18.2-58.2)	1.10-1.89 (28-48)	.79 (20)		.50 (0.74)	3.28 (1.00)	–		–	–	–	▲	○	▲	●	●●○	4.47
e-chains®, snap-open along the inner radius																					
	**E2i-10**	**.41 (10.6)**	ø .31	.24-1.97(6-50)	.59(15)	.53-2.26 (13.4-57.4)	.71-1.50 (18-38)	.79 (20)		.47 (0.70)	2.46 (0.75)	–		▲	–	–	▲	○	▲	●	●●○	4.27
	E2i-15	**.59 (14.9)**	ø .49	.39-1.97(10-50)	.76 (19.3)	.70-2.28 (17.8-57.8)	1.10-2.95 (28-75)	.79 (20)		.84 (1.25)	4.27 (1.30)	–		–	–	–	▲	○	▲	●	●●○	4.41
e-chains®, snap-open along the outer radius																					
	**E2-10**	**.41 (10.6)**	ø .31	.24-1.97(6-50)	.59(15)	.53-2.26 (13.4-57.4)	.71-1.50 (18-38)	.79 (20)		.47 (0.70)	2.46 (0.75)	–		▲	–	–	▲	○	▲	●	●●○	4.27
	B07	**.41 (10.3)**	ø .31	.63-1.57 (16-40)	.59 (15)	.89-1.85 (22.5-47)	.71-1.50 (18-38)	.79 (20)		.27 (0.40)	1.80 (0.55)	–		–	–	–	○	●	▲	■	●●○	4.33
	B09	**.56 (14.3)**	ø .49	.63-1.57 (16-40)	.76 (19.3)	.95-1.90 (24.2-48.2)	1.10-1.89 (28-48)	.79 (20)		.47 (0.70)	3.28 (1.00)	–		●	●	–	○	●	▲	■	●●○	4.37
	E2-15	**.59 (14.9)**	ø .49	.39-1.97(10-50)	.76 (19.3)	.70-2.28 (17.8-57.8)	1.10-2.95 (28-75)	.79 (20)		.84 (1.25)	4.27 (1.30)	–		–	–	–	▲	○	▲	●	●●○	4.41

System E2 Mini, E2/000

Legend
- ● Standard
- ○ Suitable to only a limited extent
- ▲ Optional
- ■ Especially suitable
- * In preparation / on request

E2 Mini - small and medium sizes

e-chains®, non snap-open



Series	Inner height *hi* in. (mm) ø cable max. in.		Inner width *Bi* in. (mm) from - to	Outer height *ha* in. (mm)	Outer width *Ba* in. (mm) from - to	Bending radii *R* in. (mm) from - to	Pitch in. (mm)		Unsupported fill weight max lbs/ft (kg/m)	Unsupported length max ft. (m)	Long travel max ft. (m)	Opening design	Interior separation possibilities... Separators	Full-width shelves	Shelves	ESD/ATEX	Cleanroom	UL-V2	Low noise	Price index	Page
10	**.71 (18)**	ø .63	.59-3.94 (15-100)	.91 (23)	1.02-4.45 (26-113)	1.10-7.09 (028-180)	1.20 (30.5)		1.01 (1.50)	3.94 (1.20)	–		●	–	–	▲	○	▲	●	●●○	4.57
11.031	**.91 (23)**	ø 83	1.22 (31)	1.10 (28)	1.62 (41.2)	1.77-2.76 (045-070)	1.20 (30.5)		1.01 (1.50)	4.43 (1.35)	–		–	–	–	▲	○	▲	●	●●○	4.63
11.080	**1.10 (28)**	ø .98	3.15 (80)	1.31 (33.4)	3.66 (93)	1.50-2.56 (038-065)	1.20 (30.5)		1.01 (1.50)	4.92 (1.50)	–		–	–	–	▲	○	▲	●	●●○	4.67
11.1/11.2	**1.61 (41)**	ø .89	.59-.98 (15-25)	1.81 (46)	1.00-1.40 (25.5-35.5)	1.57-3.94 (040-100)	1.20 (30.5)		1.01 (1.50)	4.43 (1.35)	–		–	–	–	▲	○	▲	●	●●○	4.71

e-chains®, snap-open along the inner radius



14**	**.79 (20)**	ø .63	.59-1.97 (15-50)	.98 (25)	1.02-2.40 (26-61)	1.10-4.92 (028-125)	1.20 (30.5)		.34 (0.50)	2.13 (0.65)	–		–	–	–	▲	■	●	●	●●○	4.75
B15i	**.67 (17)**	ø .55	.59-3.94 (15-100)	.91 (23)	1.02-4.45 (26-113)	1.50-7.09 (038-180)	1.20 (30.5)		1.01 (1.50)	3.94 (1.20)	–		●	●	–	▲	●	▲	●	●●○	4.79
B17i	**1.26 (32)**	ø 1.10	1.50 (38)	1.54 (39)	1.40-1.91 (35.5-48.5)	1.89-4.92 (048-125)	1.20 (30.5)		.67 (1.00)	3.28 (1.00)	–		●	●	–	▲	○	▲	●	●●○	4.85
F17**	**1.26 (32)**	ø .55	.59 (15)	1.54 (39)	1.02 (26)	1.89 (048)	1.20 (30.5)		1.01 (1.50)	3.94 (1.20)	–		●	●	–	▲	○	●	●	●●○	4.91

e-chains®, snap-open along the outer radius



B15	**.67 (17)**	ø .55	.59-3.94 (15-100)	.91 (23)	1.02-4.45 (26-113)	1.50-7.09 (038-180)	1.20 (30.5)		1.01 (1.50)	3.94 (1.20)	–		●	●	–	▲	●	▲	●	●●○	4.79
B17	**1.26 (32)**	ø 1.10	.59-3.94 (15-100)	1.54 (39)	1.00-1.40 (25.5-113)	1.89-4.92 (048-125)	1.20 (30.5)		.67 (1.00)	3.28 (1.00)	–		●	●	–	▲	○	▲	●	●●○	4.85

E2/000 - general purpose e-chain® for a wide range of applications

e-chains®, snap-open along the inner radius



1400	**.83 (21)**	ø .71	.59-4.92 (15-125)	1.10 (28)	1.12-5.45 (28.5-138.5)	1.38-7.09 (035-180)	1.31 (33.3)		1.34 (2)	5.74 (1.75)	246 (75) [1)]		●	●	–	▲	■	▲	●	●●○	4.103
2400	**.98 (25)**	ø .91	.98-4.92 (25-125)	1.38 (35)	1.61-5.55 (41-141)	2.16-9.84 (055-250)	1.81 (46)		3.36 (5)	7.38 (2.25)	328 (100) [1]		●	●	●	▲	■	▲	●	●●○	4.121
2600	**1.38 (35)**	ø 1.26	1.97-7.87 (50-200)	1.97 (50)	2.60-7.63 (66-194)	2.48-.984 (063-250)	2.20 (56)		5.37 (8)	9.02 (2.75)	3.94 (120) [1]		●	●	●	▲	●	▲	●	●●○	4.141
3400	**1.77 (45)**	ø 1.65	1.97-9.84 (50-250)	2.52 (64)	2.76-10.63 (70-270)	2.95-11.81 (075-300)	2.64 (67)		8.74(13)	9.84 (3.00)	492 (150) [1]		●	●	●	▲	●	▲	●	●●○	4.161

e-chains®, snap-open along the outer radius



1500	**.83 (21)**	ø .71	.59-4.92 (15-125)	1.10 (28)	1.12-5.45 (28.5-138.5)	1.38-7.09 (035-180)	1.31 (33.3)		1.34 (2)	5.74 (1.75)	246 (75)		●	●	–	▲[2)]■	■	▲	●	●●○	4.103
2500	**.98 (25)**	ø .91	.98-4.92 (25-125)	1.38 (35)	1.61-5.55 (41-141)	2.16-9.84 (055-250)	1.81 (46)		3.36 (5)	7.38 (2.25)	328 (100)		●	●	●	▲[2)]■	■	▲	●	●●○	4.121
2700	**1.38 (35)**	ø 1.26	1.97-7.87 (50-200)	1.97 (50)	2.60-8.62 (66-219)	2.48-.984 (063-250)	2.20 (56)		5.37 (8)	9.02 (2.75)	3.94 (120)		●	●	●	▲[2)]■	●	▲	●	●●○	4.141
3500	**1.77 (45)**	ø 1.65	1.97-9.84 (50-250)	2.52 (64)	2.76-10.63 (70-270)	2.95-11.81 (075-300)	2.64 (67)		8.74(13)	9.84 (3.00)	492 (150)		●	●	●	▲	●	▲	●	●●○	4.161
255	**.94 (24)**	ø .87	1.50-4.06 (38-103)	1.38 (35)	2.13-4.69 (54-119)	2.16-9.84 (055-250)	1.09 (27.8)		1.34 (2)	5.91 (1.80)	328 (100)		●	●	●	▲	●	▲	■	●●○	4.181

Half e-tubes, snap-open along the inner radius



1450	**.83 (21)**	ø .71	.59-4.92 (15-125)	1.10 (28)	1.12-5.45 (28.5-138.5)	2.95-7.09 (075-180)	1.31 (33.3)		1.34 (2)	5.74 (1.75)	246 (75) [1]		●	●	–	●	■	▲	●	●●○	4.113
2450	**.98 (25)**	ø .91	.98-4.92 (25-125)	1.38 (35)	1.61-5.55 (41-141)	2.95-9.84 (075-250)	1.81 (46)		3.36 (5)	7.38 (2.25)	328 (100) [1]		●	●	▲	●	■	▲	●	●●○	4.131
2650	**1.38 (35)**	ø 1.26	1.97-7.87 (50-200)	1.97 (50)	2.60-8.62 (66-219)	3.94-.984 (100-250)	2.20 (56)		5.37 (8)	9.02 (2.75)	3.94 (120) [1]		●	●	●	●	●	▲	●	●●○	4.151
3450	**1.77 (45)**	ø 1.65	1.97-9.84 (50-250)	2.52 (64)	2.76-10.63 (70-270)	4.92-11.81 (125-300)	2.64 (67)		8.74(13)	9.84 (3.00)	492 (150) [1]		●	●	●	▲	●	▲	●	●●○	4.171

e-tubes, snap-open along the inner radius



1480	**.83 (21)**	ø .71	.59-4.92 (15-125)	1.10 (28)	1.12-5.45 (28.5-138.5)	1.38-7.09 (035-180)	1.31 (33.3)		1.34 (2)	5.74 (1.75)	246 (75) [1]		●	●	–	▲	■	▲	○	●●○	4.113
2480	**.98 (25)**	ø .91	.98-4.92 (25-125)	1.38 (35)	1.61-5.55 (41-141)	2.16-9.84 (055-250)	1.81 (46)		3.36 (5)	7.38 (2.25)	328 (100) [1]		●	●	▲	▲	■	▲	○	●●○	4.131
2680	**1.38 (35)**	ø 1.26	1.97-7.87 (50-200)	1.97 (50)	2.60-8.62 (66-219)	2.48-.984 (063-250)	2.20 (56)		5.37 (8)	9.02 (2.75)	3.94 (120) [1]		●	●	●	▲	●	▲	○	●●○	4.151
3480	**1.77 (45)**	ø 1.65	1.97-9.84 (50-250)	2.52 (64)	2.76-10.63 (70-270)	4.92-11.81 (125-300)	2.64 (67)		8.74(13)	9.84 (3.00)	492 (150) [1]		●	●	●	▲	●	▲	○	●●○	4.171

** One piece openable along the inner radius with film-hinge

1) Conditionally suitable in inner radii

System E2 tubes

Quick Selection

Legend
- ● Standard
- ○ Suitable to only a limited extent
- ▲ Optional
- ■ Especially suitable
- * In preparation / on request

	Series	Inner height *hi* in. (mm) ø cable max. in.		Inner width *Bi* in. (mm) from - to	Outer height *ha* in. (mm)	Outer width *Ba* in. (mm) from - to	Bending radii *R* in. (mm) from - to	Pitch in. (mm)		Unsupported fill weight max lbs/ft (kg/m)	Unsupported length max ft. (m)	Long travel max ft. (m)	Opening design	Interior separation possibilities... Separators	Full-width shelves	Shelves	ESD/ATEX	Clearroom	UL-V2	Low noise	Price index	Page
E2 R100 - Protection against dirt and debris, cost-effective																						
E2 R100, Hinged, snap-open on both sides of the inner radius																						
	**R117**	**.83 (21)**	ø .67	.79-3.94 (20-100)	1.10 (28)	1.26-4.41 (32-112)	2.48-7.09 (63-180)	1.20 (30.5)		.154 (0.23)	1.31 (0.40)	–		●	–	–	–	○	▲	○	●●○	5.9
	R157	**1.57 (40)**	ø 1.46	1.57-7.87 (40-200)	1.97 (50)	2.20-8.50 (56-216)	3.94-9.84 (100-250)	1.81 (46)		.188 (0.28)	1.80 (0.55)	–		●	●	●	▲	○	▲	○	●●○	5.15
	R167	**1.97 (50)**	ø 1.81	1.97-9.84 (50-250)	2.52 (64)	2.67-10.55 (68-268)	3.94-11.81 (100-300)	2.31 (58.8)		.168 (0.25)	1.31 (0.40)	–		●	●	●	▲	○	▲	○	●●○	5.23
E2 R100, Hinged, snap-open on both sides of the inner radius																						
	**R118**	**.83 (21)**	ø .67	.79-3.94 (20-100)	1.10 (28)	1.26-4.41 (32-112)	2.48-7.09 (63-180)	1.20 (30.5)		1.01 (1.5)	3.93 (1.20)	–		●	–	–	–	○	▲	○	●●○	5.9
	R158	**1.57 (40)**	ø 1.46	1.57-7.87 (40-200)	1.97 (50)	2.20-8.50 (56-216)	3.94-9.84 (100-250)	1.81 (46)		5.38 (8.0)	7.38 (2.25)	–		●	●	●	▲	○	▲	○	●●○	5.15
	R168	**1.97 (50)**	ø 1.81	1.97-9.84 (50-250)	2.52 (64)	2.67-10.55 (68-268)	3.94-11.81 (100-300)	2.31 (58.8)		6.72 (10.0)	8.20 (2.50)	–		●	●	●	▲	○	▲	○	●●○	5.23
E2 R - Chip protection at higher speeds and smooth running																						
E2 R, Removable lids along the outer radius																						
	**R48**	**.98 (25)**	ø .87	.98-5.12 (25-130)	1.42 (36)	1.42-5.55 (36-141)	2.36-9.84 (60-250)	1.19 (30.3)		.67 (1.0)	4.92 (1.50)	–		●	▲	–	▲	○	▲	●	●●○	5.33
	R58	**1.38 (35)**	ø 1.26	1.97-7.87 (50-200)	1.97 (50)	2.60-8.50 (66-216)	2.95-9.84 (75-250)	1.31 (33.3)		5.38 (8.0)	7.55 (2.30)	–		●	●	●	▲	○	▲	●	●●○	5.41
	R68	**1.77 (45)**	ø 1.65	1.97-9.84 (50-250)	2.52 (64)	2.68-10.55 (68-268)	3.94-11.81 (100-300)	1.42 (36)		6.72 (10.0)	8.20 (2.50)	–		●	●	●	▲	○	▲	●	●●○	5.49
R2.1 - Cost effective chip protection																						
R2.1, lids openable along the outer radius from both sides																						
	**R2.75**	**2.95 (75)**	ø 2.36	4.37-7.87 (111-200)	3.54 (90)	5.31-8.82 (135-224)	5.12-9.84 (130-250)	2.36 (60)		8.06 (12)	9.84 (3)	–		●	▲	●	▲	○	▲	●	●●○	5.61
RX - Extremely chip repellent e-tubes																						
System RX, Openable along the outer radius																						
	**RX32**	**1.65 (42)**	ø 1.46	3.15 (80)	2.20 (56)	3.87 (98.4)	3.15-5.91 (80-150)	1.26 (32)		2.69 (4)	5.58 (1.7)	–		–	–	–	▲	○	▲	●	●●○	5.73
	RX40	**2.05 (52)**	ø 1.89	3.94 (100)	2.76 (70)	4.84 (123)	3.94-11.81 (100-300)	1.57 (40)		4.03 (6)	5.91 (1.8)	–		–	–	–	▲	○	▲	●	●●○	5.77
	RX48	**2.44 (62)**	ø 2.20	4.72 (120)	3.31 (84)	5.81 (147.5)	4.72-5.91 (120-150)	1.89 (48)		6.05 (9)	7.25 (2.1)	–		●	●	–	▲	○	▲	●	●●○	5.81
	RX56	**2.87 (73)**	ø 2.56	5.51 (140)	3.86 (98)	6.78 (172.2)	5.51 (140)	2.20 (56)		7.39 (11)	7.54 (2.3)	–		●	●	–	▲	○	▲	●	●●○	5.85

System E4-1

Legend
- ● Standard
- ○ Suitable to only a limited extent
- ▲ Optional
- ■ Especially suitable
- * In preparation / on request

E4-1 - one e-chain® series for almost any applications

E4-1 e-chains®, crossbars every link - robust version



Series	Inner height *hi* in. (mm)	ø cable max. in.	Inner width *Bi* in. (mm) from - to	Outer height *ha* in. (mm)	Outer width *Ba* in. (mm) from - to	Bending radii *R* in. (mm) from - to	Pitch in. (mm)	Unsupported fill weight max lbs/ft (kg/m)	Unsupported length max ft. (m)	Long travel max ft. (m)	Opening design	Interior separation possibilities... Separators	Full-width shelves	Shelves	ESD/ATEX	Cleanroom	UL-V2	Low noise	Price index	Page
E4-21	**.83 (21)**	ø .71	1.18-4.72 (30-120)	1.10 (28)	1.73-5.27 (44-134)	1.50-7.87 (38-200)	1.20 (30.5)	2.69 (4)	8.20 (2.5)	394 (120)		●	●	–	▲²⁾■	▲■	▲	▲■	●●○	6.9
E4-28	**1.10 (28)**	ø .98	1.57-11.81 (40-300)	1.65 (42)	2.36-12.60 (60-320)	2.16-9.84 (55-250)	1.81 (46)	6.72 (10)	8.20 (2.5)	656 (200)		●	●	●	▲²⁾■	▲	▲	▲■	●●○	6.15
E4-32	**1.26 (32)**	ø 1.10	1.97-15.75 (50-400)	2.13 (54)	2.87-16.65 (73-423)	2.48-11.81 (63-300)	2.20 (56)	10.08 (15.0)	10.83 (3.3)	656 (200)		●	–	●	▲²⁾■	▲■	▲	▲■	●●○	6.27
E4-42	**1.65 (42)**	ø 1.50	1.97-15.75 (50-400)	2.52 (64)	2.99-16.77 (76-426)	2.95-13.78 (75-350)	2.64 (67)	24.86 (37.0)	13.12 (4.0)	984 (300)		●	–	●	▲²⁾■	▲	▲	▲■	●●○	6.41
E4-56	**2.20 (56)**	ø 1.97	1.97-23.62 (50-600)	3.31 (84)	3.31-24.96 (84-634)	5.31-19.69 (135-500)	3.58 (91)	42.00 (62.5)	16.41 (5.0)	1312 (400)		●	–	●	▲²⁾■	▲	▲	▲■	●●○	6.57
E4-80	**3.15 (80)**	ø 2.91	1.97-23.62 (50-600)	4.25 (108)	3.94-25.59 (100-650)	5.91-39.37 (150-1000)	4.37 (111)	53.76 (80.0)	20.34 (6.2)	1312 (400)		●	–	●	▲²⁾■	▲	▲	▲■	●●○	6.73
E4-112	**4.41 (112)**	ø 3.94	1.97-23.62 (50-600)	5.51 (140)	3.31-24.96 (84-634)	7.87-23.62 (200-600)	5.63 (143)	33.60 (50.0)	14.76 (4.5)	1312 (400)		●	–	●	▲■	▲	▲	▲■	●●○	6.89
E4-162	**6.38 (162)**	ø 5.71	7.87-23.62 (200-600)	7.68 (195)	10.08-25.83 (256-656)	9.84-39.37 (250-1000)	7.87 (200)	60.48 (90)	22.31 (6.8)	1476 (450)		●	–	●	▲	○	▲	■	●●○	6.103
600	**4.25 (108)**	ø 3.92	7.87-23.62 (200-600)	5.51 (140)	9.92-25.67 (252-652)	7.87-39.37 (200-1000)	5.63 (143)	43.68 (65.0)	22.97 (7.0)	1476 (450)		●	–	●	▲	○	–	■	●●○	6.109
800	**7.87 (200)**	ø 7.44	7.87-23.62 (200-600)	9.29 (236)	10.23-25.98 (260-660)	12.80-39.37 (325-1000)	9.84 (250)	60.48 (90.0)	26.25 (8.0)	1,476 (450)		●	–	●	▲	○	▲	■	●●○	6.117
840	**8.03 (204)**	ø 7.24	3.94-22.17 (100-563)	9.29 (236)	6.30-24.53 (160-623)	12.79-39.37 (325-1000)	9.84 (250)	60.48 (90.0)	26.25 (8.0)	1,476 (450)		●	–	–	▲	○	▲	■	●●○	6.123
E4-350	**13.78 (350)**	ø 12.40	15.75-31.50 (400-800)	17.72 (450)	21.26 37.01 (540-940)	19.69-39.37 (500-1000)	18.50 (470)	403.18 (600)	20.34 (6.2)	–		●	–	●	▲	–	▲	–	●●●	6.131

H4-1 e-chains®, crossbars every 2nd link - standard version



Series	Inner height *hi* in. (mm)	ø cable max. in.	Inner width *Bi* in. (mm) from - to	Outer height *ha* in. (mm)	Outer width *Ba* in. (mm) from - to	Bending radii *R* in. (mm) from - to	Pitch in. (mm)	Unsupported fill weight max lbs/ft (kg/m)	Unsupported length max ft. (m)	Long travel max ft. (m)	Opening design	Interior separation possibilities... Separators	Full-width shelves	Shelves	ESD/ATEX	Cleanroom	UL-V2	Low noise	Price index	Page
H4-32	**1.26 (32)**	ø 1.10	1.97-15.75 (50-400)	2.13 (54)	2.87-16.65 (73-423)	2.48-11.81 (63-300)	2.20 (56)	10.08 (15.0)	10.83 (3.3)	656 (200)		●	–	●	▲■	■	▲■	▲■	●◐○	6.27
H4-42	**1.65 (42)**	ø 1.50	1.97-15.75 (50-400)	2.52 (64)	2.99-16.77 (76-426)	2.95-13.78 (75-350)	2.64 (67)	24.86 (37.0)	13.12 (4.0)	984 (300)		●	–	●	▲■	▲	▲	▲■	●◐○	6.41
H4-56	**2.20 (56)**	ø 1.97	1.97-23.62 (50-600)	3.31 (84)	3.31-24.96 (84-634)	5.31-19.69 (135-500)	3.58 (91)	42.00 (62.5)	16.41 (5.0)	1,312 (400)		●	–	●	▲■	▲	▲	▲■	●◐○	6.57
H4-80	**3.15 (80)**	ø 2.91	1.97-23.62 (50-600)	4.25 (108)	3.94-25.59 (100-650)	5.91-39.37 (150-1000)	4.37 (111)	53.76 (80.0)	20.34 (6.2)	1,312 (400)		●	–	●	▲■	▲	▲	▲■	●◐○	6.73
601	**4.25 (108)**	ø 3.82	7.87-23.62 (200-600)	5.51 (140)	9.92-25.67 (252-652)	7.87-39.37 (200-1000)	5.63 (143)	43.68 (65.0)	22.97 (7.00)	1476 (450)		●	–	●	▲	○	–	■	●◐○	6.109

R4-1 e-tubes, Fully enclosed - protection against chips, dust and dirt



Series	Inner height *hi* in. (mm)	ø cable max. in.	Inner width *Bi* in. (mm) from - to	Outer height *ha* in. (mm)	Outer width *Ba* in. (mm) from - to	Bending radii *R* in. (mm) from - to	Pitch in. (mm)	Unsupported fill weight max lbs/ft (kg/m)	Unsupported length max ft. (m)	Long travel max ft. (m)	Opening design	Interior separation possibilities... Separators	Full-width shelves	Shelves	ESD/ATEX	Cleanroom	UL-V2	Low noise	Price index	Page
R4-28	**1.10 (28)**	ø .98	1.97-11.81 (50-300)	1.65 (42)	2.76-12.60 (70-320)	2.95-9.84 (75-250)	1.81 (46)	6.72 (10.0)	8.20 (2.5)	656 (200)		●	●	●	▲■	▲	▲	▲■	●●◐	6.15
R4-32	**1.26 (32)**	ø 1.10	1.97-11.81 (50-300)	2.13 (54)	2.87-16.65 (73-323)	4.92-11.81 (125-300)	2.20 (56)	10.08 (15.0)	10.83 (3.3)	656 (200)		●	–	●	▲■	▲■	▲	▲■	●●◐	6.27
R4-42	**1.65 (42)**	ø 1.50	1.97-11.81 (50-300)	2.52 (64)	2.99-16.77 (76-326)	4.92-13.78 (125-350)	2.64 (67)	24.86 (37.0)	13.12 (4.0)	984 (300)		●	–	●	▲■	▲	▲	▲■	●●◐	6.41
R4-56	**2.20 (56)**	ø 1.97	2.95-18.19 (75-462)	3.31 (84)	4.29-19.57 (109-497)	5.91-19.69 (150-500)	3.58 (91)	42.00 (62.5)	16.41 (5.0)	1,312 (400)		●	–	●	▲■	▲	▲	▲■	●●◐	6.57
R4-80	**3.15 (80)**	ø 2.91	7.87-15.75 (200-400)	4.25 (108)	9.84-15.75 (250-450)	7.87-39.37 (200-1000)	4.37 (111)	53.76 (80.0)	20.34 (6.2)	1,312 (400)		●	–	●	▲■	▲	▲	▲■	●●◐	6.73
R4-112	**4.25 (108)**	ø 3.94	7.87-19.69 (200-500)	5.51 (140)	9.92-21.73 (252-552)	9.84-39.37 (250-1000)	5.63 (143)	57.12 (85.0)	21.33 (6.5)	1,476 (450)		●	–	●	▲■	▲	▲	▲■	●●◐	6.89
R608	**4.25 (108)**	ø 3.92	7.87-15.75 (200-400)	5.51 (140)	9.92-17.80 (252-452)	9.84-39.37 (250-1000)	5.63 (143)	43.68 (65.0)	22.97 (7.00)	1476 (450)		●	–	●	▲	○	–	■	●●◐	6.109

System E4.1L, E4/light

Legend
- ● Standard
- ○ Suitable to only a limited extent
- ▲ Optional
- ■ Especially suitable
- * In preparation / on request

Series	Inner height *hi* in. (mm) ø cable max. in.	Inner width *Bi* in. (mm) from - to	Outer height *ha* in. (mm)	Outer width *Ba* in. (mm) from - to	Bending radii *R* in. (mm) from - to	Pitch in. (mm)	Unsupported fill weight max lbs/ft (kg/m)	Unsupported length max ft. (m)	Long travel max ft. (m)	Opening design	Interior separation possibilities... Separators	Full-width shelves	Shelves	ESD/ATEX	Cleanroom	UL-V2	Low noise	Price index	Page

E4.1L - low weight, easy assembly and cable friendly design

e-chains®, crossbars openable along the inner and outer radius, from both sides



E4-31L	1.22 (31)	ø 1.10	1.57-6.89 (40-175)	1.65 (42)	2.13-7.44 (54-189)	2.17-9.84 (055-250)	1.81 (46)	4.70 (7)	6.56 (2)	262 (80)	●	–	●	▲	▲	▲	▲■	●●○	6.143
E4-38L	1.50 (38)	ø 1.34	1.97-11.81 (50-300)	2.13 (54)	2.60-10.63 (66-270)	2.48-11.81 (063-300)	2.20 (56)	8.73 (13)	9.02 (2.75)	262 (80)	●	–	●	▲	▲	▲	▲■	●●○	6.153
E4-48L	1.89 (48)	ø 1.69	1.97-11.81 (50-300)	2.52 (64)	2.76-10.63 (70-270)	2.95-13.78 (075-350)	2.64 (67)	17.47 (26)	12.30 (3.75)	328 (100)	●	–	●	▲	▲	▲	▲■	●●○	6.165
E4-64L	2.52 (64)	ø 2.24	3.43-7.87 (87-200)	3.31 (84)	4.45-7.91 (113-201)	3.94-15.75 (100-400)	3.58 (91)	1.57 (40)	13.45 (4.10)	394 (120)	●	–	●	▲	▲	▲	▲■	●●○	6.179

e-tubes, fully enclosed, lids openable along the inner and outer radius, from both sides



R4-31L	1.22 (31)	ø 1.10	1.97-3.94 (50-100)	1.65 (42)	2.52-4.49 (64-114)	2.95-9.84 (075-250)	1.81 (46)	4.70 (7)	6.56 (2)	262 (80)	●	–	●	▲	–	▲	▲■	●●○	6.143
R4-38L	1.50 (38)	ø 1.34	1.97-9.84 (50-250)	2.13 (54)	2.60-10.47 (66-266)	4.92-11.81 (125-300)	2.20 (56)	8.73 (13)	9.02 (2.75)	262 (80)	●	–	●	▲	–	▲	▲■	●●○	6.153
R4-48L	1.89 (48)	ø 1.69	2.95-6.89 (75-175)	2.52 (64)	3.74-7.68 (95-195)	4.92-13.78 (125-350)	2.64 (67)	17.47 (26)	12.30 (3.75)	328 (100)	●	–	●	▲	–	▲	▲■	●●○	6.165

E4/light - light, strong and cost-effective

e-chains®, crossbars every 2nd link - standard version



14040	2.20 (56)	ø 1.97	1.97-23.62 (50-600)	3.31 (84)	2.99-24.65 (76-626)	5.31-19.69 (135-500)	3.58 (91)	26.88 (40.0)	13.12 (4.0)	492 (150)	●	–	●	▲■	○	▲	●	●●○	6.193
14240	2.44 (62)	ø 2.20	1.97-15.75 (50-400)	3.31 (84)	2.99-16.77 (76-426)	5.31-19.69 (135-500)	3.58 (91)	26.88 (40.0)	13.12 (4.0)	492 (150)	●	–	●	▲[2]■	○	▲	●	●○○	6.205
14550	2.76 (70)	ø 2.44	1.97-23.62 (50-600)	3.86 (98)	3.03-24.68 (77-627)	5.91-23.62 (150-600)	3.58 (91)	36.96 (55.0)	13.78 (4.2)	820 (250)	●	–	●	▲■	○	▲	●	●●○	6.217
15050	3.15 (80)	ø 2.91	1.97-23.62 (50-600)	4.25 (108)	3.15-24.80 (80-630)	5.91-23.62 (150-600)	3.58 (91)	36.96 (55.0)	15.09 (4.6)	820 (250)	●	–	●	▲[2]■	○	▲	●	●●○	6.227
15250	3.39 (86)	ø 2.95	1.97-15.75 (50-400)	4.25 (108)	3.15-16.93 (80-430)	5.91-23.62 (150-600)	3.58 (91)	36.96 (55.0)	15.09 (4.6)	820 (250)	●	–	●	▲■	○	▲	●	●●○	6.241
1640	4.41 (112)	ø 3.94	1.97-23.62 (50-600)	5.51 (140)	3.31-24.96 (84-634)	7.87-23.62 (200-600)	5.63 (143)	33.60 (50.0)	14.76 (4.5)	1,312 (400)	●	–	●	▲■	○	▲	●	●●○	6.251

e-chains®, crossbars every link - robust version



14140	2.20 (56)	ø 1.97	1.97-23.62 (50-600)	3.31 (84)	2.99-24.65 (76-626)	5.31-19.69 (135-500)	3.58 (91)	26.88 (40.0)	13.12 (4.0)	492 (150)	●	–	●	▲■	○	▲	●	●○○	6.193
14340	2.44 (62)	ø 2.20	1.97-15.75 (50-400)	3.31 (84)	2.99-16.77 (76-426)	5.31-19.69 (135-500)	3.58 (91)	26.88 (40.0)	13.12 (4.0)	492 (150)	●	–	●	▲■	○	▲	●	◐○○	6.205
14650	2.76 (70)	ø 2.44	1.97-23.62 (50-600)	3.86 (98)	3.03-24.68 (77-627)	5.91-23.62 (150-600)	3.58 (91)	36.96 (55.0)	13.78 (4.2)	820 (250)	●	–	●	▲■	○	▲	●	●●○	6.217
15150	3.15 (80)	ø 2.91	1.97-23.62 (50-600)	4.25 (108)	3.15-24.80 (80-630)	5.91-23.62 (150-600)	3.58 (91)	36.96 (55.0)	15.09 (4.6)	820 (250)	●	–	●	▲■	○	▲	●	●○○	6.227
15350	3.39 (86)	ø 2.95	1.97-15.75 (50-400)	4.25 (108)	3.15-16.93 (80-430)	5.91-23.62 (150-600)	3.58 (91)	36.96 (55.0)	15.09 (4.6)	820 (250)	●	–	●	▲■	○	▲	●	●●○	6.241

e-tubes, Fully enclosed - protection against chips, dust and dirt



R18840	2.20 (56)	ø 1.97	2.95-18.19 (75-462)	3.31 (84)	3.98-19.25 (101-489)	5.91-19.69 (150-500)	3.58 (91)	26.88 (40.0)	13.12 (4.0)	492 (150)	●	–	●	▲■	○	▲	●	●●○	6.193
R19050	2.76 (70)	ø 2.44	2.95-18.19 (75-462)	3.86 (98)	4.02-19.25 (102-489)	7.87-23.62 (200-600)	3.58 (91)	36.96 (55.0)	13.78 (4.2)	820 (250)	●	–	●	▲■	○	▲	●	●●○	6.217
R19850	3.15 (80)	ø 2.91	2.95-18.19 (75-462)	4.25 (108)	4.13-19.41 (105-493)	7.87-23.62 (200-600)	3.58 (91)	36.96 (55.0)	15.09 (4.6)	820 (250)	●	–	●	▲■	○	▲	●	●●○	6.227
R1608	4.41 (112)	ø 3.94	7.87-15.75 (200-400)	5.51 (140)	9.21-17.09 (234-434)	9.84-24.96 (250-600)	5.63 (143)	33.60 (50.0)	14.76 (4.5)	1,312 (400)	●	–	●	▲■	○	▲	●	●●◐	6.251

System T3, E3, E6-1, E6

Quick Selection

Legend
- ● Standard
- ○ Suitable to only a limited extent
- ▲ Optional
- ■ Especially suitable
- * In preparation / on request

Series	Inner height *hi* in. (mm) ø cable max. in.	Inner width *Bi* in. (mm) from - to	Outer height *ha* in. (mm)	Outer width *Ba* in. (mm) from - to	Bending radii *R* in. (mm) from - to	Pitch in. (mm)		Unsupported fill weight max lbs/ft (kg/m)	Unsupported length max ft. (m)	Long travel max ft. (m)	Opening design	Interior separation possibilities... Separators	Full-width shelves	Shelves	EDS/ATEX	Cleanroom	UL-V2	Low noise	Price index	Page

T3 - Smooth running “T-band”, quiet, cost effective

e-chains®, Crossbars removable along the inner and outer radius



T3-29	1.14 (29)	ø .98	1.18-5.51 (30-140)	1.38 (35)	2.17-5.71 (55-145)	1.50 (038)	.59 (15)		.67 (1.00)	4.75 (1.45)	–		●	●	●	▲	■■	▲	■■	●●○	7.11

E3 - Highly dynamic and cleanroom compatible

e-chains®, crossbars on a strip, zip-open along the outer radius



E3-10	.39 (10)	ø .31	.79-2.36 (20-60)	.59 (15)	1.26-2.83 (32-72)	.59-1.89 (015-48)	.66 (16.7)		0.20 (0.30)	2.46 (0.75)	–		●	–	–	–	■■	▲	■■	●●◐	7.23
E3-15	.59 (15)	ø .51	.79-2.36 (20-60)	.79 (20)	1.26-2.83 (32-72)	1.26-2.95 (032-75)	.66 (16.7)		0.47 (0.70)	2.95 (0.90)	–		●	▲	–	–	■■	▲	■■	●●◐	7.27
E3-22	.87 (22)	ø .79	.79-2.36 (20-60)	1.06 (27)	1.26-2.83 (32-72)	1.73-2.95 (044-75)	.66 (16.7)		0.57 (0.85)	3.94 (1.20)	–		●	▲	–	–	■■	▲	■■	●●◐	7.31

E6-1 - low noise 32dB(A), dynamic, light and cleanroom suitable

e-chains®, crossbars openable along the inner and outer radius, from both sides



E61-29	1.14 (29)	ø .98	1.18-5.51 (30-140)	1.38 (35)	1.73-5.67 (44-144)	2.17-5.91 (055-150)	.87 (22)		2.35 (3.5)	4.92 (1.50)	-		●	●	●	▲	■■	▲	■■	●●●	7.41

e-chains®, crossbars removable along the inner and outer radius



EF61-29	1.14 (29)	ø .98	1.18-5.51 (30-140)	1.38 (35)	1.73-6.06 (44-154)	2.17-5.91 (055-150)	.87 (22)		2.02 (3.0)	5.74 (1.75)	-		●	●	●	▲	■■	▲	■■	●●●	7.41
E61-35	1.38 (35)	ø 1.22	1.18-5.51 (30-140)	1.65 (42)	1.81-6.14 (46-156)	2.17-3.94 (055-150)	.98 (25)		4.03 (6.0)	6.23 (1.90)	-		●	●	●	▲	■■	▲	■■	●●●	7.47
E61-40	1.57 (40)	ø 1.42	1.57-11.81 (40-300)	2.13 (54)	2.20-12.44 (56-316)	2.48-7.87 (063-200)	1.09 (27.8)		6.72 (10.0)	9.02 (2.75)	197 (60)*		●	●	●	▲	■■	▲	■■	●●●	7.53
E61-52	2.05 (52)	ø 1.81	1.57-11.81 (40-300)	2.56 (65)	2.52-12.76 (64-324)	2.95-5.91 (075-150)	1.18 (30)		10.08 (15.0)	9.84 (3.00)	262 (80)*		●	●	●	▲	■■	▲	■■	●●●	7.61

E6 - Extremely low noise 37dB(A), low vibration and abrasion, cleanroom suitable

e-chains®, crossbars every 2nd link - crossbars removable along the inner and outer radius



E6-29	1.14 (29)	ø .98	1.18-5.51 (30-140)	1.38 (35)	1.81-6.14 (46-156)	2.17-5.91 (055-150)	.87 (22)		2.02 (3.0)	5.74 (1.75)	-		●	●	●	▲	■■	▲	■■	●●●	7.71
E6-35	1.38 (35)	ø 1.22	1.18-5.51 (30-140)	1.65 (42)	1.97-6.30 (50-160)	2.17-3.94 (055-150)	.98 (25)		4.03 (6.0)	6.23 (1.90)	-		●	●	●	▲	■■	▲	■■	●●●	7.81
E6-40	1.57 (40)	ø 1.42	1.57-11.81 (40-300)	2.13 (54)	2.36-12.60 (60-320)	2.48-7.87 (063-200)	1.09 (27.8)		6.72 (10.0)	9.02 (2.75)	197 (60)*		●	●	●	▲	■■	▲	■■	●●●	7.87
E6-52	2.05 (52)	ø 1.81	1.57-11.81 (40-300)	2.56 (65)	2.52-12.76 (64-324)	2.95-9.84 (075-250)	1.18 (30)		10.08 (15.0)	9.84 (3.00)	262 (80)*		●	●	●	▲	■■	▲	■■	●●●	7.97
E6-62	2.44 (62)	ø 2.13	1.97-15.75 (50-400)	3.31 (84)	3.39-17.17 (86-436)	4.53-13.78 (115-350)	1.97 (50)		28.90 (43.0)	13.12 (4.00)	328 (100)		●	●	●	▲	■■	▲	■■	●●●	7.107
E6-80	3.15 (80)	ø 2.83	1.97-23.62 (50-600)	4.25 (108)	3.94-25.59 (100-650)	5.91-17.72 (150-450)	2.56 (65)		37.63 (56.0)	17.23 (5.25)	394 (120)		●	–	●	▲	■■	▲	■■	●●●	7.115
E6-80L	3.15 (80)	ø 2.83	3.43-21.65 (87-550)	4.25 (108)	4.53-22.76 (115-578)	5.91-17.72 (150-450)	2.56 (65)		16.80 (25.0)	8.20 (2.50)	-		●	–	●	▲	■■	▲	■■	●●●	7.125

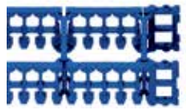
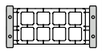
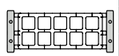
e-tubes, Fully enclosed



R6-29	1.10 (28)	ø .98	1.18-4.72 (30-120)	1.38 (35)	1.81-5.35 (46-136)	2.17-5.91 (055-150)	.87 (22)		2.02 (3.0)	4.92 (1.50)	-		●	–	–	▲	■■	▲	■■	●●●	7.77
R6-40	1.57 (40)	ø 1.42	1.97-4.92 (50-125))	2.13 (54)	2.76-5.71 (70-145)	2.48-7.87 (063-200)	1.09 (27.8)		6.72 (10.0)	9.02 (2.75)	197 (60)*		●	–	–	▲	■■	▲	■■	●●●	7.93
R6-52	2.05 (52)	ø 1.81	1.97-6.89 (50-175)	2.56 (65)	2.91-7.83 (74-199)	2.95-9.84 (075-250)	1.18 (30)		10.08 (15.0)	9.84 (3.00)	262 (80)*		●	–	–	▲	■■	▲	■■	●●●	7.103

System e-skin, TH3

Legend
- ● Standard
- ○ Suitable to only a limited extent
- ▲ Optional
- ■ Especially suitable
- * In preparation / on request

Series	Inner height *hi* in. (mm) ø cable max. in.	Inner width *Bi* in. (mm) from - to	Outer height *ha* in. (mm)	Outer width *Ba* in. (mm) from - to	Bending radii *R* in. (mm) from - to	Pitch in. (mm)		Unsupported fill weight max lbs/ft (kg/m)	Unsupported length max ft. (m)	Long travel max ft. (m)	Opening design	Interior separation possibilities... Separators	Full-width shelves	Shelves	EDS/ATEX	Clearroom	UL-V2	Low noise	Price index	Page
e-skin - novel corrugated hose energy supply system for cleanrooms																				
Oval design - Can be opened and closed like a zipper																				
																				
SK28	**1.10 (28)** ø .98	2.68 (68)	1.57 (40)	3.74 (95)	-	-		.67 (1.0)	2.41 (.75)	-		●	●	–	–	■■	–	■■	●●●	7.141
SK40	**1.50 (38)** ø 1.18	3.35 (85)	2.24 (57)	4.65 (118)	-	-		1.01 (1.5)	4.10 (1.25)	-		●	●	–	–	■■	–	■■	●●●	7.145
TH3 - e-chain® designed according to hygienic principles																				
Open design - easy to clean																				
																				
2-Segment																				
																				
TH3.25.2/26	**1.00 (25.5)** ø .92/.72	2.76 (70)	1.38 (35)	3.38 (86)	2.76 (070)	2.20 (56)		1.21 (1.8)	3.94 (1.2)	-		●	–	–	▲	■	●	■	●●○	7.153
TH3.45.2/20	**2 x 20 (.79)** ø .71	2.76 (70)	2.24 (57)	3.54 (90)	3.54 (090)	3.80 (96.5)		1.34 (2.0)	4.59 (1.4)	-		●	–	–	▲	■	●	●	●●○	7.159
3-Segment																				
																				
TH3.25.3/26	**1.00 (25.5)** ø .92/.72	3.74 (95)	1.38 (35)	4.37 (111)	2.76 (070)	2.20 (56)		1.21 (1.8)	3.94 (1.2)	-		●	–	–	▲	■	●	■	●●○	7.153
TH3.45.3/20	**2 x 20 (.79)** ø .71	3.74 (95)	2.24 (57)	4.53 (115)	3.54 (090)	3.80 (96.5)		1.34 (2.0)	4.59 (1.4)	-		●	–	–	▲	■	●	●	●●○	7.159
4-Segment																				
																				
TH3.25.4/26*	**1.00 (25.5)** ø .92/.72	2.76 (70)	1.38 (35)	5.35 (136)	2.76 (070)	2.20 (56)		1.21 (1.8)	3.94 (1.2)	-		●	–	–	▲	■	●	■	●●○	7.153
TH3.45.4/20*	**2 x 20 (.79)** ø .71	2.76 (70)	2.24 (57)	5.51 (140)	3.54 (090)	3.80 (96.5)		1.34 (2.0)	4.59 (1.4)	-		●	–	–	▲	■	●	●	●●○	7.159
5-Segment																				
																				
TH3.25.5/26*	**1.00 (25.5)** ø .92/.72	2.76 (70)	1.38 (35)	6.34 (161)	2.76 (070)	2.20 (56)		1.21 (1.8)	3.94 (1.2)	-		●	–	–	▲	■	●	■	●●○	7.153
TH3.45.5/20	**2 x 20 (.79)** ø .71	2.76 (70)	2.24 (57)	6.50 (165)	3.54 (090)	3.80 (96.5)		1.34 (2.0)	4.59 (1.4)	-		●	–	–	▲	■	●	●	●●○	7.159

triflex® R

Quick Selection

Legend
- ● Standard
- ○ Suitable to only a limited extent
- ▲ Optional
- ■ Especially suitable
- * In preparation / on request

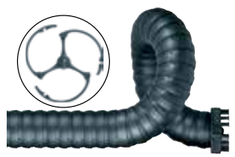
triflex® R - for multi-axis movement and robots

TRC, closed design



Series	Inner height *hi* in. (mm) ø cable max. in.		Inner width *Bi* in. (mm) from - to	Outer height *ha* in. (mm)	Outer width *Ba* in. (mm) from - to	Bending radii *R* in. (mm) from - to	Pitch in. (mm)		Unsupported fill weight max lbs/ft (kg/m)	Unsupported length max ft. (m)	Long travel max ft. (m)	Opening design	Interior separation possibilities... Separators	Full-width shelves	Shelves	EDS/ATEX	Cleanroom	UL-V2	Low noise	Price index	Page
TRC-30	.47/.39 (12/10)	ø .39	.47/.39 (12/10)	1.36 (34.5)	1.36 (34.5)	1.97 (050)	.44 (11.3)		–	–	–		●	–	–	1)	○	●	●		8.13
TRC-40	.59/.51 (15/13)	ø .51	.59/.51 (15/13)	1.69 (43)	1.69 (43)	2.28 (058)	.55 (13.9)		–	–	–		●	–	–	▲2)	○	●	●		8.13
TRC-50	.74/.64 (18.8/16.2)	ø .55	.74/.64(18.8/16.2)	2.13 (54)	2.13 (54)	3.15 (080)	.69 (17.4)		–	–	–		●	–	–	▲2)	○	●	●		8.13
TRC-60	.89/.77 (22.5/19.5)	ø .81	.89/.77 (22.5/19.5)	2.56 (65)	2.56 (65)	3.43 (087)	.80 (20.4)		–	–	–		●	–	–	▲2)	○	●	●		8.13
TRC-70	1.10/.94 (28/24)	ø 1.02	1.10/.94 (28/24)	3.19 (81)	3.19 (81)	4.33 (110)	1.01 (25.6)		–	–	–		●	–	–	▲2)	○	●	●		8.13
TRC-85	1.30/1.10 (33/28)	ø 1.22	1.30/1.10 (33/28)	3.72 (94.5)	3.72 (94.5)	5.31 (135)	1.20 (30.6)		–	–	–		●	–	–	▲	○	●	●		8.13
TRC-100	1.48/1.28 (37.5/32.5)	ø 1.40	1.48/1.28 (37.5/32.5)	4.25 (108)	4.25 (108)	5.71 (145)	1.41 (35.7)		–	–	–		●	–	–	▲	○	●	●		8.13
TRC-125	1.70/1.70 (43.3/43.3)	ø 1.40	1.70/1.70 (43.3/43.3)	5.31 (135)	5.31 (135)	7.17 (182)	1.76 (44.6)		–	–	–		●	–	–	○	○	●	●		8.13

TRCF, closed design with snap-lock mechanism



Series	Inner height *hi* in. (mm) ø cable max. in.		Inner width *Bi* in. (mm) from - to	Outer height *ha* in. (mm)	Outer width *Ba* in. (mm) from - to	Bending radii *R* in. (mm) from - to	Pitch in. (mm)		Unsupported fill weight max lbs/ft (kg/m)	Unsupported length max ft. (m)	Long travel max ft. (m)	Opening design	Interior separation possibilities... Separators	Full-width shelves	Shelves	EDS/ATEX	Cleanroom	UL-V2	Low noise	Price index	Page
TRCF-65	.88 (22.3)	ø .79	.88 (22.3)	2.76 (70.2)	2.76 (70.2)	3.94 (100)	.91 (23.1)		–	–	–		●	–	–	1)	○	●	●		8.17
TRCF-85	1.18 (30)	ø 1.10	1.18 (30)	3.72 (94.5)	3.72 (94.5)	5.31 (135)	1.20 (30.6)		–	–	–		●	–	–	1)	○	●	●		8.17
TRCF-85*	1.18 (30)	ø 1.10	1.18 (30)	3.72 (94.5)	3.72 (94.5)	9.45 (240)	1.20 (30.6)		–	–	–		●	–	–	1)	○	●	●		8.17
TRCF-100	1.35 (34.3)	ø 1.26	1.35 (34.3)	4.25 (108)	4.25 (108)	5.71 (145)	1.36 (34.5)		–	–	–		●	–	–	1)	○	●	●		8.17

TRE, “E-Z” design for fast installation of cables and hoses



Series	Inner height *hi* in. (mm) ø cable max. in.		Inner width *Bi* in. (mm) from - to	Outer height *ha* in. (mm)	Outer width *Ba* in. (mm) from - to	Bending radii *R* in. (mm) from - to	Pitch in. (mm)		Unsupported fill weight max lbs/ft (kg/m)	Unsupported length max ft. (m)	Long travel max ft. (m)	Opening design	Interior separation possibilities... Separators	Full-width shelves	Shelves	EDS/ATEX	Cleanroom	UL-V2	Low noise	Price index	Page
TRE-30	.47/.39 (12/10)	ø .39	.47/.39 (12/10)	1.36 (34.5)	1.36 (34.5)	1.97 (050)	.44 (11.3)		–	–	–		●	–	–	–	○	●	●		8.15
TRE-40	.59/.51 (15/13)	ø .51	.59/.51 (15/13)	1.69 (43)	1.69 (43)	2.28 (058)	.55 (13.9)		–	–	–		●	–	–	–	○	●	●		8.15
TRE-50	.74/.64 (18.8/16.2)	ø .55	.74/.64(18.8/16.2)	2.13 (54)	2.13 (54)	3.15 (080)	.69 (17.4)		–	–	–		●	–	–	–	○	●	●		8.15
TRE-60	.89/.77 (22.5/19.5)	ø .81	.89/.77 (22.5/19.5)	2.56 (65)	2.56 (65)	3.43 (087)	.80 (20.4)		–	–	–		●	–	–	–	○	●	●		8.15
TRE-70	1.10/.94 (28/24)	ø 1.02	1.10/.94 (28/24)	3.19 (81)	3.19 (81)	4.33 (110)	1.01 (25.6)		–	–	–		●	–	–	–	○	●	●		8.15
TRE-85	1.30/1.10 (33/28)	ø 1.22	1.30/1.10 (33/28)	3.72 (94.5)	3.72 (94.5)	5.31 (135)	1.20 (30.6)		–	–	–		●	–	–	–	○	●	●		8.15
TRE-100	1.48/1.28 (37.5/32.5)	ø 1.40	1.48/1.28 (37.5/32.5)	4.25 (108)	4.25 (108)	5.71 (145)	1.41 (35.7)		–	–	–		●	–	–	–	○	●	●		8.15
TRE-125	1.70/1.70 (43.3/43.3)	ø 1.40	1.70/1.70 (43.3/43.3)	5.31 (135)	5.31 (135)	7.17 (182)	1.76 (44.6)		–	–	–		●	–	–	–	○	●	●		8.15

TRL, light version with “E-Z” design



Series	Inner height *hi* in. (mm) ø cable max. in.		Inner width *Bi* in. (mm) from - to	Outer height *ha* in. (mm)	Outer width *Ba* in. (mm) from - to	Bending radii *R* in. (mm) from - to	Pitch in. (mm)		Unsupported fill weight max lbs/ft (kg/m)	Unsupported length max ft. (m)	Long travel max ft. (m)	Opening design	Interior separation possibilities... Separators	Full-width shelves	Shelves	EDS/ATEX	Cleanroom	UL-V2	Low noise	Price index	Page
TRL-30	.47/.39 (12/10)	ø .39	.47/.39 (12/10)	1.36 (34.5)	1.36 (34.5)	1.97 (050)	.44 (11.3)		–	–	–		●	–	–	1)	○	●	●		8.19
TRL-40	.59/.51 (15/13)	ø .51	.59/.51 (15/13)	1.77 (45)	1.77 (45)	2.28 (058)	.55 (13.9)		–	–	–		●	–	–	1)	○	●	●		8.19
TRL-60	.89/.77 (22.5/19.5)	ø .83	.89/.77 (22.5/19.5)	2.56 (65)	2.56 (65)	3.43 (087)	.80 (20.4)		–	–	–		●	–	–	1)	○	●	●		8.19
TRL-70	1.10/.94 (28/24)	ø 1.02	1.10/.94 (28/24)	3.19 (81)	3.19 (81)	4.33 (110)	1.01 (25.6)		–	–	–		●	–	–	1)	○	●	●		8.19
TRL-100	1.48/1.28 (37.5/32.5)	ø 1.40	1.48/1.28 (37.5/32.5)	4.25 (108)	4.25 (108)	5.71 (145)	1.41 (35.7)		–	–	–		●	–	–	1)	○	●	●		8.19

TRLF, light version with snap-lock mechanism



Series	Inner height *hi* in. (mm) ø cable max. in.		Inner width *Bi* in. (mm) from - to	Outer height *ha* in. (mm)	Outer width *Ba* in. (mm) from - to	Bending radii *R* in. (mm) from - to	Pitch in. (mm)		Unsupported fill weight max lbs/ft (kg/m)	Unsupported length max ft. (m)	Long travel max ft. (m)	Opening design	Interior separation possibilities... Separators	Full-width shelves	Shelves	EDS/ATEX	Cleanroom	UL-V2	Low noise	Price index	Page
TRLF-65	.96 (24.4)	ø .87	.96 (24.4)	2.76 (70.2)	2.76 (70.2)	3.94 (100)	.91 (23.1)		–	–	–		●	–	–	–	○	●	●		8.21
TRLF-85	1.29 (32.8)	ø 1.18	1.29 (32.8)	3.72 (94.5)	3.72 (94.5)	5.31 (135)	1.22 (31)		–	–	–		●	–	–	–	○	●	●		8.21
TRLF-100	1.48 (37.5)	ø 1.40	1.48 (37.5)	4.25 (108)	4.25 (108)	5.71 (145)	1.36 (34.5)		–	–	–		●	–	–	–	○	●	●		8.21
TRLF-125	1.84 (46.8)	ø 1.75	1.84 (46.8)	5.31 (135)	5.31 (135)	7.17 (182)	1.74 (44.1)		–	–	–		●	–	–	–	○	●	●		8.21

E-Z triflex®, triflex®

Legend
- ● Standard
- ○ Suitable to only a limited extent
- ▲ Optional
- ■ Especially suitable
- * In preparation / on request

Series	Inner height *hi* in. (mm) ø cable max. in.		Inner width *Bi* in. (mm) from - to	Outer height *ha* in. (mm)	Outer width *Ba* in. (mm) from - to	Bending radii *R* in. (mm) from - to	Pitch in. (mm)		Unsupported fill weight max lbs/ft (kg/m)	Unsupported length max ft. (m)	Long travel max ft. (m)	Opening design	Interior separation possibilities... Separators	Full-width shelves	Shelves	ESD/ATEX	Cleanroom	UL-V2	Low noise	Price index	Page
E-Z triflex® - For simple, closed 3D applications																					
"E-Z" design for fast installation of cables and hoses																					
																					
E331-25	**.98 (25)**	ø .35	.98 (25)	1.34 (34)	1.34 (34)	1.89-7.87 (48-200)	.57 (14.5)		–	–	–		●	–	–	▲	○	●	●	●◐○	8.90
E331-32	**1.26 (32)**	ø .47	1.26 (32)	1.97 (50)	1.97 (50)	2.95-9.84 (75-250)	.98 (25)		–	–	–		●	–	–	▲	○	●	●	●◐○	8.90
E331-50	**1.97 (50)**	ø .83	1.97 (50)	2.68 (68)	2.68 (68)	3.94-9.84 (100-250)	1.18 (30)		–	–	–		●	–	–	▲	○	●	●	●◐○	8.90
E331-75	**2.95 (75)**	ø 1.30	2.95 (75)	3.78 (96)	3.78 (96)	5.51-11.81 (140-300)	1.42 (36)		–	–	–		●	–	–	▲	○	●	●	●◐○	8.90
E332-25	**.98 (25)**	ø .35	.98 (25)	1.34 (34)	1.34 (34)	1.89-7.87 (48-200)	.57 (14.5)		–	–	–		●	–	–	▲	○	●	●	●◐○	8.91
E332-32	**1.26 (32)**	ø .47	1.26 (32)	1.97 (50)	1.97 (50)	2.95-9.84 (75-250)	.98 (25)		–	–	–		●	–	–	▲	○	●	●	●◐○	8.91
E332-50	**1.97 (50)**	ø .83	1.97 (50)	2.68 (68)	2.68 (68)	3.94-9.84 (100-250)	1.18 (30)		–	–	–		●	–	–	▲	○	●	●	●◐○	8.91
E332-75	**2.95 (75)**	ø 1.30	2.95 (75)	3.78 (96)	3.78 (96)	5.51-11.81 (140-300)	1.42 (36)		–	–	–		●	–	–	▲	○	●	●	●◐○	8.91
E333-25	**.98 (25)**	ø .35	.98 (25)	1.34 (34)	1.34 (34)	1.89-7.87 (48-200)	.57 (14.5)		–	–	–		●	–	–	▲	○	●	●	●◐○	8.93
E333-32	**1.26 (32)**	ø .47	1.26 (32)	1.97 (50)	1.97 (50)	2.95-9.84 (75-250)	.98 (25)		–	–	–		●	–	–	▲	○	●	●	●◐○	8.93
E333-50	**1.97 (50)**	ø .83	1.97 (50)	2.68 (68)	2.68 (68)	3.94-9.84 (100-250)	1.18 (30)		–	–	–		●	–	–	▲	○	●	●	●◐○	8.93
E333-75	**2.95 (75)**	ø 1.30	2.95 (75)	3.78 (96)	3.78 (96)	5.51-11.81 (140-300)	1.42 (36)		–	–	–		●	–	–	▲	○	●	●	●◐○	8.93
triflex® - For simple, closed 3D applications																					
Closed design																					
																					
331-16	**.63 (16)**	ø .55	.63 (16)	1.02 (26)	1.02 (26)	1.50-3.94 (38-100)	.52 (13.3)		–	–	–		–	–	–	▲	○	▲	○	●◐○	8.103
331-32	**1.26 (32)**	ø 1.10	1.26 (32)	1.97 (50)	1.97 (50)	2.95-9.84 (75-250)	.98 (25)		–	–	–		●	–	–	▲	○	▲	○	●◐○	8.103
331-50	**1.97 (50)**	ø 1.77	1.97 (50)	2.68 (68)	2.68 (68)	3.94-9.84 (100-250)	1.18 (30)		–	–	–		●	–	–	▲	○	▲	○	●◐○	8.103
331-75	**2.95 (75)**	ø 2.64	2.95 (75)	3.78 (96)	3.78 (96)	5.51-11.81 (140-300)	1.42 (36)		–	–	–		●	–	–	▲	○	▲	○	●◐○	8.103
332-16	**.63 (16)**	ø .55	.63 (16)	1.02 (26)	1.02 (26)	1.50-3.94 (38-100)	.52 (13.3)		–	–	–		–	–	–	▲	○	▲	○	●◐○	8.104
332-32	**1.26 (32)**	ø 1.10	1.26 (32)	1.97 (50)	1.97 (50)	2.95-9.84 (75-250)	.98 (25)		–	–	–		●	–	–	▲	○	▲	○	●◐○	8.104
332-50	**1.97 (50)**	ø 1.77	1.97 (50)	2.68 (68)	2.68 (68)	3.94-9.84 (100-250)	1.18 (30)		–	–	–		●	–	–	▲	○	▲	○	●◐○	8.104
332-75	**2.95 (75)**	ø 2.64	2.95 (75)	3.78 (96)	3.78 (96)	5.51-11.81 (140-300)	1.42 (36)		–	–	–		●	–	–	▲	○	▲	○	●◐○	8.104
333-16	**.63 (16)**	ø .55	.63 (16)	1.02 (26)	1.02 (26)	1.50-3.94 (38-100)	.52 (13.3)		–	–	–		–	–	–	▲	○	▲	○	●◐○	8.105
333-32	**1.26 (32)**	ø 1.10	1.26 (32)	1.97 (50)	1.97 (50)	2.95-9.84 (75-250)	.98 (25)		–	–	–		●	–	–	▲	○	▲	○	●◐○	8.105
333-50	**1.97 (50)**	ø 1.77	1.97 (50)	2.68 (68)	2.68 (68)	3.94-9.84 (100-250)	1.18 (30)		–	–	–		●	–	–	▲	○	▲	○	●◐○	8.105
333-75	**2.95 (75)**	ø 2.64	2.95 (75)	3.78 (96)	3.78 (96)	5.51-11.81 (140-300)	1.42 (36)		–	–	–		●	–	–	▲	○	▲	○	●◐○	8.105
Snap-open																					
																					
351-50	**1.97 (50)**	ø 1.77	1.97 (50)	2.68 (68)	2.68 (68)	3.94-9.84 (100-250)	1.18 (30)		–	–	–		●	–	–	▲	○	▲	○	●●●	8.103
352-50	**1.97 (50)**	ø 1.77	1.97 (50)	2.68 (68)	2.68 (68)	3.94-9.84 (100-250)	1.18 (30)		–	–	–		●	–	–	▲	○	▲	○	●●●	8.104
353-50	**1.97 (50)**	ø 1.77	1.97 (50)	2.68 (68)	2.68 (68)	3.94-9.84 (100-250)	1.18 (30)		–	–	–		●	–	–	▲	○	▲	○	●●●	8.105

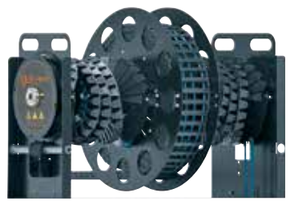
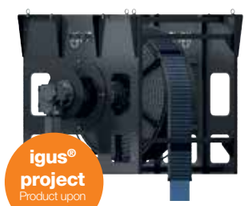
twisterchain, twisterband

Legend
- ● Standard
- ○ Suitable to only a limited extent
- ▲ Optional
- ■ Especially suitable
- * In preparation / on request

Series	Inner height *hi* in. (mm) ø cable max. in.		Inner width *Bi* in. (mm) from - to	Outer height *ha* in. (mm)	Outer width *Ba* in. (mm) from - to	Bending radii *R* in. (mm) from - to	Pitch in. (mm)		Fill weight up to 360° max lbs/ft (kg/m)		Unsupported length max ft. (m)	Long travel max ft. (m)	Opening design	Interior separation possibilities... Separators	Full-width shelves	Shelves	ESD/ATEX	Cleanroom	UL-V2	Low noise	Price index	Page
twisterchain - Circular and spiral movements up to 360° from stock (up to 540° upon request)									180°	360°												
e-chains® - Crossbars removable along the inner and outer radius																						
2208	**1.10 (28)**	ø .98	2.07-4.43 (52.5-112.5)	1.65 (42)	3.15-5.51 (80-140)	2.17-5.91 (055-150)	1.73 (44)		.67 (1)	1.01 (1.5)	–	–		●	●	●	▲	○	▲	●	●●◐	8.115
TC32	**1.26 (32)**	ø 1.10	3.44-5.91 (87.5-150)	2.13 (54)	4.27-6.73 (108.5-171)	3.94-9.84 (100-250)	2.20 (56)		2.69 (4)	1.34 (2)	–	–		●	●	●	▲	○	▲	●	●●◐	8.117
TC42	**1.65 (42)**	ø 1.50	3.44-5.91 (87.5-150)	2.52 (64)	4.35-8.78 (110.5-223)	3.94-9.84 (100-250)	2.64 (67)		2.42 (3.6)	2.42 (3.6)	–	–		●	●	●	▲	○	▲	●	●●◐	8.119
TC56	**2.20 (56)**	ø 1.97	4.92-7.87 (125-200)	3.31 (84)	6.10-9.06 (155-230)	5.91-15.75 (150-400)	3.58 (91)		3.36 (5)	3.36 (5)	–	–		●	●	●	▲	○	▲	●	●●◐	8.121
twisterband up to 7000°* rotary movements in the smallest spaces																						
e-chains® - Openable with film-hinge or can be opened with “E-Z” design																						
TB12-23-09	.36 (9)	ø .28	.91 (23)	–	–	.94-1.38 (024- 035)	–		–		–	–		–	–	–	○	○	●	●	●●◐	8.137
TB20-44-12	.47 (12)	ø .36	1.73 (44)	–	–	1.34- 2.24 (034-057)	–		–		–	–		–	–	–	○	○	●	●	●●◐	8.137
TB20-44-18	.71 (18)	ø .55	1.73 (44)	–	–	1.34-2.24 (034-057)	–		–		–	–		●	–	–	○	○	●	●	●●◐	8.137
TB29-27-22	.87 (22)	ø .67	1.06 (27)	–	–	2.72-3.23 (069-082)	–		–		–	–		●	–	–	○	○	●	●	●●◐	8.137
TB30-75-22	.87 (22)	ø .67	2.95 (75)	–	–	1.73-3.03 (044-077)	–		–		–	–		●	–	–	○	○	●	●	●●◐	8.137
e-chains® - links with strong pin and hook connection - openable with film-hinge																						
TBHD30.75.22	.87 (22)	ø .67	2.95 (75)	–	–	1.73-3.03 (044-077)	–		–		–	–		●	–	–	○	○	●	●	●●◐	8.141
TBHD42.135.30	1.18 (30)	ø .79	5.31 (135)	–	–	2.20-4.69 (056-119)	–		–		–	–		●	–	–	○	○	●	●	●●◐	8.141

Special solutions for multi-axis movements

Quick Selection

	Description	Suitable industries and applications	travel max ft. (m)	Travel speed max ft. (m)	Price index	Page
E-Spool - The cable drum without a slip ring						
e-spool standard and HD - flexible use						
	● Flexible energy supply - guidance of different media in one system ● Flexible use - energy supply in any direction is possible ● Cost-effective - twisterband enables rotary movement ● Space-saving - e-chain® retracts into a compact unit ● No tensile load on the cables ● Cables can be retrospectively added or changed	● Telescopic /retractable applications ● Theater, stage and lighting technology ● Space-saving alternative to zig-zag solutions	≤ 45.93 (14)	≈ 4.92 (1.5)	●●○	9.7
e-spool compact - Space-saving, spring-driven						
	● Compact, space-saving cable reel without slip ring ● Different media (power, air data and fluids) can be routed together in one system ● Energy supply in all directions ● Space-saving ● Very lightweight design (SP1.240 series made from aluminum) ● Extension lengths up to 6.56 and 13.12 ft. (2 and 4m) ● Cables can be retrospectively added or changed	● Small Circular movements ● Retractable applications - linear or rotary	≤ 13.12 (4)	≈ 4.92 (1.5)	●○○	9.15
e-spool for manual operation - Reliable and space-saving						
	● For applications where only one cable or hose is pulled out manually ● Compact, space-saving cable reel without slip ring ● Integrated ratchet to lock/release the retraction ● Also suitable for media or air hoses ● Handle with mounting option and strain relief	● Robot teach pendants ● Workstations ● Assembly lines	≤ 16.41 (5)	≈ 4.92 (1.5)	●○○	9.19
e-spool power - Motor driven for long extension lengths						
	● Travel distances up to 114.8 ft. (35m) ● Solid tubular steel construction ● Flexible filling with electrical and fiber optic cables, and pneumatic hoses ● Future-proof, additions and upgrades possible ● No tensile load on the cables	● Theater, stage and lighting technology ● Indoor cranes ● Cranes	≤ 114.84 (35)	≈ 4.92 (1.5)	●●●	9.23

Special solutions for vertical motion

	Description		Suitable industries and applications	travel max ft. (m) ≤m	Travel speed max ft. (m)	Price index	Page
liftband - Cable guidance up to 42.6 ft. (13 m) height with limited installation space							
Vertical guidance							
	● For high vertical applications that need a compact solution ● Modular, silent, space-saving; vertical guidance for energy, data and media ● Maximum extension length 42.65 ft. (13m) ● Available in 2 sizes ● Alternative to zig-zag solution, but lighter and requires less installation space ● Vertical applications implemented with ease		● Theater and stage technology ● Indoor cranes ● Mobile telescoping antennas	**42.65 (13)**	**3.28 (1)**	●○○	9.26
guidelok slimline P/P.S - Safe vertical guidance							
Vertical guidance							
	● Up to 22.9 ft/s (7 m/s) and 32.8 ft/s (10 m/s²) ● Up to 80% less trough required, saving costs and weight ● For hanging systems up to 164 ft. (50 m) ● No swinging of the e-chain®, high reliability due to the lock mechanism and guiding rails ● Faster and easier installation ● Reduced noise ● Easy access for servicing ● Low weight due to plastic construction ● Energy and data and all kinds of media are safely		● Storage and retrieval units for high-bay warehouses ● Lifts ● Elevators ● Construction and crane lifts ● Hoists ● Automatic miniload warehouses	**164 (50)**	**13.12 (4)**	●○○	9.32

Special solutions for horizontal motion

Quick Selection

guidelok horizontal - upper run guide, unsupported in chip areas

Upper run guide



- Unsupported travels up to 164 ft. (50 m) are possible
- Chips cannot get stuck between the upper and lower run
- Modular system with few parts (also possible without lateral trough)
- Enormous increase of unsupported lengths for e-chains®
- Lower push/pull forces (smaller e-chains®, unsupported and rollers = energy efficient)
- Lower cost than most steel chains or gliding systems
- Open guide trough design, chips can fall through

- Machine tools
- Heavy chip environments
- Wherever a gliding application is not recommended

travel max ft. (m) ≤m	Travel speed max ft. (m)	Price index	Page
42.65 (13)	3.28 (1)	●●○	9.38

basic flizz® - cost-effective, enclosed solution for long travels

Enclosed trough



- Low maintenance system for travels up to 328 ft. (100m)
- Protection against weather and dirt exposure
- Cost-effective and fully enclosed complete system
- Standardized and modular design
- Easy installation using a bracket with different mounting options
- Cable lengths up to 50% shorter than festoons, low profile installation
- Cables are guided with a defined bend radius so tensile forces are absorbed by the e-chain®
- Cables cannot tangle or get damaged, no slip ring contact, cables or hoses can be easily retrofitted
- Reduce power costs - directly driven by the scraper, no additional drives needed
- Optionally available moving end arm (e.g. as mechanical connection for scraper trolley)
- Available in 2 sizes, each also available in HD version for even higher push/pull forces

- Wastewater and sewage treatment plants
- Longitudinal scrapers
- Sand traps
- Grease traps
- Electroplating facilities
- Cranes
- Plant construction
- River locks

travel max ft. (m) ≤m	Travel speed max ft. (m)	Price index	Page
164 (50)	32.81 (10)	●○○	9.42

micro flizz® - unsupported, small e-chains® in aluminum profiles

e-chains® in aluminum profiles



- e-chain® is guided in special slots, no gliding
- Control option via stationary switch cabinet
- Accelerations up to (50m/s²), speeds up to (6 m/s) and data rates up to 10Gbit/s
- Fast assembly due to preconfigured modular system
- Less space required
- Also available as pre-assembled system
- Smooth running due to ball bearings in the guide carriages
- Also available with an ESD chain material version (upon request)
- 3 sizes available

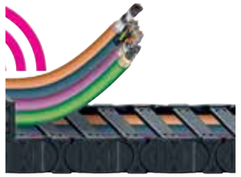
- Storage and retrieval units for high-bay warehouses
- Indoor cranes
- Industrial gates
- Workplace equipment
- Wastewater and sewage treatment plants
- Camera systems
- Sliding doors
- Operator panels
- Measuring systems
- Studio equipment
- Material handling

travel max ft. (m) ≤m	Travel speed max ft. (m)	Price index	Page
246 (75)	19.69 (6)	●◐○	9.46

Condition monitoring, smart plastics and engineered projects

isense - smart plastics for predictive maintenance

Predictive maintenance



- Make maintenance and repair of your machines more efficient and cost-effective with smart plastics
- Eliminate unplanned downtime
- Increase service life
- Increase equipment efficiency
- Save time - faster detection of faults
- Reduce energy consumption
- Intelligent products predict the maintenance date in good time and can be integrated into you processes and systems

- Wherever predictive maintenance is required
- Harbour installations
- Cranes
- Car plants
- Gantries

travel max ft. (m) ≤m	Travel speed max ft. (m)	Price index	Page
Project related	Project related	upon request	9.56

Push/Pull detection system

Condition monitoring



- 3 PPDS system options are available
- Easy installation by means of non-interchangeable connectors
- Easy programming using the keypad directly at the device
- Compact housing, corrosion-resistant and with EMC protection
- The force limit is programmed in tensile and compression directions
- The plant shuts down when the force is exceeded
- Custom programmable and event logging in the data memory

- When push/pull force monitoring is needed
- Downtime sensitive plants, such as conveyor systems in power plants
- Waste incineration systems
- Chemical plants
- Cranes
- With long travel distances that have high fail-safe requirements

travel max ft. (m) ≤m	Travel speed max ft. (m)	Price index	Page
2,625 (800)	32.81 (10)	upon request	9.72

Modular projects

Engineering services



- Faster quotations, faster project planning
- Detailed service manuals and documentation
- Time and cost savings
- Absolute functional reliability
- System guarantee available upon request and depending on the application
- PPDS moving end - electronic Push/Pull Detection System
- Fixed end modules for easy attachment of the e-chain® inside the guide trough, with no drilling required
- Extreme gliding - gliding elements for even longer service life of e-chains® where long travels are involved
- HD trough systems with different installation set designs, matching the respective application and duty levels

- Engineering service
- Lifts
- Elevators
- Construction and crane lifts
- Hoists
- Automatic miniload warehouses

travel max ft. (m) ≤m	Travel speed max ft. (m)	Price index	Page
Project related	Project related	upon request	9.76

e-chains® for long travels - E4/4HD, P4, RoI e-chain®

Quick Selection ▶▶

Legend
- ● Standard
- ○ Suitable to only a limited extent
- ▲ Optional
- ■ Especially suitable
- * In preparation / on request

Series	Inner height *hi* in. (mm) ø cable max. in.		Inner width *Bi* in. (mm) from - to	Outer height *ha* in. (mm)	Outer width *Ba* in. (mm) from - to	Bending radii *R* in. (mm) from - to	Pitch in. (mm)		Unsupported fill weight max lbs/ft (kg/m)	Unsupported length max ft. (m)	Long travel max ft. (m)	Opening design	Interior separation possibilities... Separators	Full-width shelves	Shelves	ESD/ATEX	Cleanroom	UL-V2	Low noise	Price index	Page
E4/4HD - Heavy Duty - For extremely high additional fill weights on long travels																					
e-chains®, Heavy-Duty, crossbars every link - extra robust version																					
																					
4040HD	**2.20 (56)**	ø 1.97	1.97-23.62 (50-600)	3.31 (84)	4.09-25.75 (104-654)	5.31-11.81 (135-300)	3.58 (91)		10.75 (16)	–	> 1,148 (350)		●	●	●	○	○	▲	–	●◐○	9.87
5050HD	**3.15 (80)**	ø 2.91	1.97-23.62 (50-600)	4.25 (108)	4.33-25.98 (110-660)	7.87-19.69 (200-500)	3.58 (91)		40.32 (60)	–	> 1,641 (500)		●	●	●	○	○	▲	–	●◐○	9.99
e-chains®, Heavy-Duty, fully enclosed-protection against chips, dust and dirt - extra robust version																					
																					
8840HD	**2.20 (56)**	ø 1.97	2.95-18.19 (75-462)	3.31 (84)	5.08-20.31 (129-516)	5.91-11.81 (150-300)	3.58 (91)		10.75 (16)	–	> 1,148 (350)		●	●	●	○	○	▲	–	●●○	9.87
9850HD	**3.15 (80)**	ø 2.91	2.95-18.19 (75-462)	4.25 (108)	5.31-20.55 (135-522)	7.87-19.69 (200-500)	3.58 (91)		40.32 (60)	–	> 1,641 (500)		●	●	●	○	○	▲	–	●●○	9.99
P4 profile RoI e-chain® - 57% less energy consumption																					
P4 profile RoI e-chain®, crossbars every link																					
																					
P4-32	**1.26 (32)**	ø 1.10	3.94-7.87 (100-200)	2.13 (54)	5.20-9.13 (132-232)	5.91-9.84 (150-250)	2.20 (56)		4.03 (6)	–	> 1,641 (500)		●	●	●	○	▲	▲	–	●●◐	9.117
P4-42	**1.65 (42)**	ø 1.50	3.94-7.87 (100-200)	2.52 (64)	6.06-10.00 (154-254)	3.94-13.78 (100-350)	2.64 (67)		4.70 (7)	–	> 1,969 (600)		●	●	●	○	▲	▲	–	●●◐	9.121
P4-56	**2.20 (56)**	ø 1.97	7.36-15.75 (187-400)	3.31 (84)	10.12-18.50 (257-470)	9.84-13.78 (250-350)	3.58 (91)		8.74 (13)	–	> 2,625 (800)		●	●	●	○	▲	▲	–	●●◐	9.125
P4-80	**3.15 (80)**	ø 2.83	7.36-15.75 (187-400)	4.25 (108)	10.35-18.74 (263-476)	9.84-13.78 (250-350)	3.94 (100)		20.16 (30)	–	> 2,625 (800)		●	●	●	○	▲	▲	–	●●◐	9.129
RoI e-chain® - Long travels up to 2,624 ft. (800 m), rolling instead of gliding																					
e-chains®, crossbars every link																					
																					
2828R	**1.26 (32)**	ø 1.10	1.97-15.75 (50-400)	2.13 (54)	2.91-16.69 (74-424)	4.92-11.81 (125-300**)	2.20 (56)		4.03 (6)	–	> 820 (250)		●	●	●	○	○	▲	–	●●○	9.139
3838R	**1.65 (42)**	ø 1.50	1.97-15.75 (50-400)	2.52 (64)	3.03-16.81 (77-427)	5.91-13.78 (150-350**)	2.64 (67)		4.70 (7)	–	> 1,082 (330)		●	●	●	○	○	▲	–	●●○	9.141
4040R	**2.20 (56)**	ø 1.97	1.97-23.62 (50-600)	3.31 (84)	3.39-25.04 (86-636)	7.87-15.75 (200-400**)	3.58 (91)		8.74 (13)	–	> 1,641 (500)		●	●	●	○	○	▲	–	●●○	9.143
5050R	**3.15 (80)**	ø 2.83	1.97-23.62 (50-600)	4.25 (108)	3.94-25.59 (100-650)	9.84-19.69 (250-500**)	3.94 (100)		10.75 (16)	–	> 1,969 (600)		●	●	●	○	○	▲	–	●●○	9.147
e-tubes, fully enclosed - protection against chips, dust and dirt																					
																					
7728R	**1.26 (32)**	ø 1.10	1.97-11.81 (50-300)	2.13 (54)	2.91-12.76 (74-324)	5.91-11.81 (150-300)	2.20 (56)		4.03 (6)	–	> 820 (250)		●	●	●	○	○	▲	–	●●◐	9.139
7838R	**1.65 (42)**	ø 1.50	1.97-11.81 (50-300)	2.52 (64)	3.03-16.81 (77-427)	7.87-13.78 (200-350)	2.64 (67)		4.70 (7)	–	> 1,082 (330)		●	●	●	○	○	▲	–	●●◐	9.141
8840R	**2.20 (56)**	ø 1.97	2.95-18.19 (75-462)	3.31 (84)	4.37-19.65 (111-499)	11.81-15.75 (300-400)	3.58 (91)		8.74 (13)	–	> 1,641 (500)		●	●	●	○	○	▲	–	●●◐	9.143
9850R	**3.15 (80)**	ø 2.83	2.95-18.19 (75-462)	4.25 (108)	4.92-20.20 (125-513)	11.81-19.69 (300-500)	3.94 (100)		10.75 (16)	–	> 1,969 (600)		●	●	●	○	○	▲	–	●●◐	9.147
RoI e-chain® RHD Heavy-Duty - Particularly high additional loads																					
e-chains®, crossbars every link																					
																					
4040RHD	**2.20 (56)**	ø 1.97	1.97-23.62 (50-600)	3.31 (84)	4.09-25.75 (104-654)	11.81-15.75 (300-400)	3.58 (91)		10.75 (16)	–	> 1,969 (600)		●	●	●	○	○	▲	–	●●○	9.145
5050RHD	**3.15 (80)**	ø 2.83	1.97-23.62 (50-600)	4.25 (108)	4.33-25.98 (110-660)	9.84-19.69 (250-500)	3.94 (100)		20.16 (30)	–	> 2,625 (800)		●	●	●	○	○	▲	–	●●○	9.149

e-chains® for long travels - autoglide

Legend
- ● Standard
- ○ Suitable to only a limited extent
- ▲ Optional
- ■ Especially suitable
- * In preparation / on request

Series	Inner height *hi* in. (mm) ø cable max. in.		Inner width *Bi* in. (mm) from - to	Outer height *ha* in. (mm)	Outer width *Ba* in. (mm) from - to	Bending radii *R* in. (mm) from - to	Pitch in. (mm)		Unsupported fill weight max lbs/ft (kg/m)	Unsupported length max ft. (m)	Long travel max ft. (m)	Opening design	Interior separation possibilities... Separators	Full-width shelves	Shelves	ESD/ATEX	Cleanroom	UL-V2	Low noise	Price index	Page
autoglide - save on long travels with self-guiding e-chains®																					
Version 01 - for E4-1, self-guiding e-chains®																					
																					
E4-32AG	**1.26 (32)**	ø 1.10	4.41-10.31 (112-262)	2.12 (54)	5.35-11.26 (136-286)	3.94-11.81 (100-300)	2.20 (56)		3.36-4.70 (5.0-7.0**)	–	196.9 (60)		●	●	●	○	○	▲	–	●●◐	9.155
E4-42AG	**1.65 (42)**	ø 1.50	4.41-10.31 (112-262)	2.52 (64)	5.47-11.38 (139-289)	4.92-13.78 (125-350)	2.64 (67)		2.69-6.45 (4.0-9.6**)	–	229.7 (70)		●	●	●	○	○	▲	–	●●◐	9.157
E4-56AG	**2.20 (56)**	ø 1.97	5.91-9.84 (150-250)	3.31 (84)	7.24-11.18 (184-284)	5.91-19.69 (150-500)	3.58 (91)		4.30-8.06 (6.4-12**)	–	262.5 (80)		●	●	●	○	○	▲	–	●●◐	9.159
Version 02 - for E2/000, self-guiding e-chains®																					
																					
2400AG	**.98 (25)**	ø .91	2.24-3.03 (57-77)	1.38 (35)	2.87-3.66 (73-93)	2.95-9.84 (075-250)	1.81 (46)		1.34 (2.0)	–	131.2 (40)		●	●	●	○	○	▲	–	●○○	9.163
2600AG	**1.38 (35)**	ø 1.26	1.97-2.95 (50-75)	1.97 (50)	2.60-3.58 (66-91)	2.95-9.84 (075-250)	2.20 (56)		1.68 (2.5)	–	196.9 (60)		●	●	●	○	○	▲	–	●○○	9.165
3400AG	**1.77 (45)**	ø 1.65	2.95-3.94 (75-100)	2.52 (64)	3.74-4.72 (95-120)	3.94-11.81 (100-300)	2.64 (67)		3.36-5.38 (5.0-8.0**)	–	229.7 (70)		●	●	●	○	○	▲	–	●○○	9.167
Version 03 - for E-Z Chain, self-guiding e-chains®																					
																					
EA16	**1.26 (32)**	ø 1.12	1.89 (48)	1.54 (39)	2.36 (60)	2.56-3.94 (065-100)	1.20 (30.5)		2.69 (4.0)	–	65.6 (20)		●	●	●	○	○	▲	–	●○○	9.171
EA25	**.98 (25)**	ø .89	1.97 (50)	.99 (25.2)	2.36 (60)	2.95-3.94 (075-100)	.98 (25)		2.69 (4.0)	–	65.6 (20)		●	●	●	○	○	▲	–	●○○	9.172
Version 04 - with special glide elements, self-guiding e-chains®																					
																					
2400/2500.AG	**.98 (25)**	ø .91	2.24-4.92 (57-125)	1.38 (35)	2.87-5.55 (73-141)	2.17-9.84 (055-250)	1.81 (46)		1.08 (1.6)	–	65.6 (20)		●	●	●	○	○	▲	–	●○○	9.175
2600/2700.AG	**1.38 (35)**	ø 1.26	1.97-9.84 (50-250)	1.97 (50)	2.59-7.64 (66-194)	2.95-9.84 (075-250)	2.20 (56)		1.34 (2.0)	–	98.4 (30)		●	●	●	○	○	▲	–	●○○	9.177

Guide Troughs - For long travels

Legend
- ● Aluminum, seawater resistant
- ○ Galvanized steel
- ▲ Galvanized steel/plastic
- ■ Stainless steel upon request

Super Aluminum Trough - Basic version, for general use

Openable from both sides along the inner radius



Series/ Product	Outer height Trough side part in. (mm)	Zipper Chains	Series E2 mini	Series E2/000 *Conditionally suitable in inner radii	System E2 Tubes	System E4-1		System E4/Light	System E4-1 Light	System E4/4	System E4/00	System E6 please consult igus® for long travels	Side part material See legend	Price index	Page
970-30-SL / 970-31-SL	3.03 (77)	15	10/B15	–	–	–		–	–	–		–	●	●●●	9.197
970-30-SL / 970-32-SL	3.03 (77)	–	–	1400*/1450*/1480*/1500	–	–		–	–	–		–	●	●●●	9.199
971-30-SL / 971-31-SL	3.43 (87)	–	–	2400*/2450*/2480*/2500/255	–	–		–	–	–		E6-29/R6-29	●	●●●	9.201
972-02-30-SL / 972-02-31-SL	4.61 (117)	–	–	–	–	E4-28/R4-28		–	–	2828/2928/R7728	220/R760	E6-35	●	●●●	9.203
972-30-SL / 972-31-SL	4.61 (117)	–	–	–	–	E4-32/H4-32/R4-32		–	E4-38L/R4-38L	2828/2928/R7728	280/290/R770	E6-40/R6-40	●	●●●	9.205
972-30-SL / 972-32-SL	4.61 (117)	–	–	2600*/2650*/2680*/2700	R58	–		–	–	–	–	–	●	●●●	9.207
973-30-SL / 973-31-SL	5.67 (144)	–	–	3400*/3450*/3480*/3500	R68	E4-42/H4-42/R4-42		–	E4-38L/R4-38L	3838/3938/R7838	380/390/R780	E6-52/R6-52	●	●●●	9.209
974-30-SL / 974-31-SL	7.24 (184)	–	–	–	–	E4-56/H4-56/R4-56		14040/14140/R18840/14240/14340	–	4040/4140/R8840	400/410/R880	E6-62	●	●●●	9.211
975-30-SL / 975-31-SL	9.29 (236)	–	–	–	–	–		15050/15150/R19850/15250/15350	–	5050/5150/R9850		E6-80	●	●●●	9.213

Super Aluminum Trough - Heavy-duty version, for heavy-duty use

Snap-open with film-hinge or can be opened with “E-Z” design



Series/ Product	Outer height Trough side part in. (mm)	Zipper Chains	Series E2 mini	Series E2/000 *Conditionally suitable in inner radii	System E2 Tubes	System E4-1		System E4/Light	System E4-1 Light	System E4/4	System E4/00	System E6 please consult igus® for long travels	Side part material See legend	Price index	Page
971-30-SL / 971-31-SL	3.43 (87)	–	–	2400*/2450*/2480*/2500/255	R48	–		–	–	–		E6-29/R6-29	●	●●●	9.202
972-02-30-SL / 972-02-31-SL	4.61 (117)	–	–	–	–	E4-28/R4-28		–	–		220/R760	E6-35	●	●●●	9.204
972-30-SL / 972-31-SL	4.61 (117)	–	–	–	–	E4-32/H4-32/R4-32		–	E4-38L/R4-38L	2828/2928/R7728	280/290/R770	E6-40/R6-40	●	●●●	9.206
972-30-SL / 972-32-SL	4.61 (117)	–	–	2600*/2650*/2680*/2700	R58	–		–	–	–	–	–	●	●●●	9.208
973-30-SL / 973-31-SL	5.67 (144)	–	–	3400*/3450*/3480*/3500	R68	E4-42/H4-42/R4-42		–	E4-38L/R4-38L	3838/3938/R7838	380/390/R780	E6-52/R6-52	●	●●●	9.210
974-30-SL / 974-31-SL	7.24 (184)	–	–	–	–	E4-56/H4-56/R4-56		14040/14140/R18840/14240/14340	–	4040/4140/R8840	400/410/R880	E6-62	●	●●●	9.212
975-30-SL / 975-31-SL	9.29 (236)	–	–	–	–	–		15050/15150/R19850/15250/15350	–	5050/5150/R9850	–	E6-80	●	●●●	9.214

Steel Trough - For harsh environments

Snap-open with film-hinge or can be opened with “E-Z” design



Series/ Product	Outer height Trough side part in. (mm)	Zipper Chains	Series E2 mini	Series E2/000 *Conditionally suitable in inner radii	System E2 Tubes	System E4-1		System E4/Light	System E4-1 Light	System E4/4	System E4/00	System E6 please consult igus® for long travels	Side part material See legend	Price index	Page
92-30 / 92-01	2.76 (70)	–	–	2480	–	–			–	–	–	E6-29/R6-29	○ ■	●●●	9.223
95-30 / 92-01	3.94 (100)	–	–	2680	R58	–			–	–	–	–	○ ■	●●●	9.225
96-30 / 92-01	3.94 (100)	–	–	–	–	E4-28/R4-28			–	–	220/R760	E6-35	○ ■	●●●	9.227
98-30 / 92-01	5.12 (130)	–	–	–	–	E4-32/H4-32/R4-32			–	2828/2928/R7728	280/290/R770	E6-40/R6-40	○ ■	●●●	9.229
93-30 / 93-01	5.12 (130)	–	–	3480	R68	E4-42/H4-42/R4-42			–	3838/3938/R7838	380/390/R780	E6-52/R6-52	○ ■	●●●	9.231
94-30 / 93-01	6.69 (170)	–	–	–	–	E4-56/H4-56/R4-56		14040/14140/R18840/14240/14340	–	4040/4140/R8840	400/410/R880	E6-62	○ ■	●●●	9.233
94-14450-30/94-14450-31	6.69 (170)	–	–	–	–	–		14550/14650/R19050	–	–	–	–	○ ■	●●●	9.235
99-30 / 93-01	6.69 (170)	–	–	–	–	E4-80		15050/15150/R19850	–	5050/5150/R9850	–	E6-80	○ ■	●●●	9.237
97-30 / 93-01	11.81 (300)	–	–	–	–	E4-112/H4-112/R4-112		1640/R1608	–	–	600/601/R608/640	–	○ ■	●●●	9.239
90-30 / 90-20	18.90 (480)	–	–	–	–	–		–	–	–	800/840	–	○ ■	●●●	9.241

Steel guide trough - One-piece, U-shaped, special solution for Series 10, B15, 15



Series/ Product	Outer height Trough side part in. (mm)	Zipper Chains	Series E2 mini	Series E2/000 *Conditionally suitable in inner radii	System E2 Tubes	System E4-1		System E4/Light	System E4-1 Light	System E4/4	System E4/00	System E6 please consult igus® for long travels	Side part material See legend	Price index	Page
91-10 to 91-71	1.89 (48)	–	–	–	–	–		–	–	–	–	–	○ ■	●●●	9.222

Guide Troughs - For long travels

Quick Selection ▶▶

Legend
- ❑ Steel, powder coated
- ○ Galvanized steel
- ▲ Galvanized steel/plastic
- ■ Stainless steel upon request

Series/ Product	Outer height Trough side part in. (mm)	Zipper Chains	Series E2 mini	System E2/000 *Conditionally suitable in inner radii	System E2 tubes	System E4.1L		System E4-1	System E4/Light	System E6.1	System E6	Side part material See legend	Price index	Page
Support tray tool kit - For support of the lower run														
Support tray - Type 01														
														
S9-010/011-05-	**1.69 (43)**	–	–	2500.../2700...	–	E4.38L/R4.38L		E4.21/E4.28/E4.32	14040/14240/14550/15050/15250	E61.29/E61.35/E61.40	E6.29/E6.35/E6.40	❑	●○○	9.247
S9-010/011-07-	**1.69 (43)**	–	–	2500.../2700...	–	E4.38L/R4.38L		E4.21/E4.28/E4.32	14040/14240/14550/15050/15250	E61.29/E61.35/E61.40	E6.29/E6.35/E6.40	❑	●○○	9.247
S9-010/011-10-	**1.69 (43)**	–	–	2500.../2700...	–	E4.38L/R4.38L		E4.21/E4.28/E4.32	14040/14240/14550/15050/15250	E61.29/E61.35/E61.40	E6.29/E6.35/E6.40	❑	●○○	9.247
S9-010/011-15-	**1.69 (43)**	–	–	2700...	–	E4.38L/R4.38L		E4.28/E4.32	14040/14240/14550/15050/15250	E61.40	E6.40	❑	●○○	9.247
Support tray - Type 02														
														
S9-020/021-10-	**2.09 (53)**	–	–	3400...	–	E4.38L/R4.38L		E4.42/E4.56/E4.80	E4.38L/R4.38L	E61.52/E61.62/E61.80	E6.52/E6.62/E6.80	❑	●○○	9.249
S9-020/021-15-	**2.09 (53)**	–	–	3400...	–	E4.38L/R4.38L		E4.42/E4.56/E4.80	E4.38L/R4.38L	E61.52/E61.62/E61.80	E6.52/E6.62/E6.80	❑	●○○	9.249
S9-020/021-20-	**2.09 (53)**	–	–	3400...	–	E4.38L/R4.38L		E4.42/E4.56/E4.80	E4.38L/R4.38L	E61.52/E61.62/E61.80	E6.52/E6.62/E6.80	❑	●○○	9.249
S9-020/021-25-	**2.09 (53)**	–	–	3400...	–	E4.38L/R4.38L		E4.42/E4.56/E4.80	E4.38L/R4.38L	E61.52/E61.62/E61.80	E6.52/E6.62/E6.80	❑	●○○	9.249
Aluminum support tray - Flexible support of the lower run														
Modular system														
														
9AT.35.SL / 9AT.35.SLA	**1.38 (35)**	–	–	2500.../2700...	–	E4.38L/R4.38L		E4.42/E4.56/E4.80	E4.38L/R4.38L	E61.29/E61.35/E61.40	E6.29/E6.35/E6.40	●	●○○	9.251
Guidefast - Energy supply for crane girders														
Economical energy supply for crane girders and indoor cranes														
														
GF91-30/31-025-	**2.40 (61)**	–	–	1500	–	–		–	–	–	–	○	●○○	9.257
GF91-30/31-050-	**2.40 (61)**	–	–	1500	–	–		–	–	–	–	○	●○○	9.257
GF92-30/31-03-	**2.95 (75)**	–	–	2500/255	R48	–		–	–	–	–	○	●○○	9.257
GF92-30/31-05-	**2.95 (75)**	–	–	2500/255	–	–		–	–	–	–	○	●○○	9.257
GF92-30/31-07-	**2.95 (75)**	–	–	2500/255	–	–		–	–	–	–	○	●○○	9.257
GF92-30/31-09-	**2.95 (75)**	–	–	2500/255	R58	–		–	–	–	–	○	●○○	9.257
GF92-30/31-10-	**2.95 (75)**	–	–	2500/255	R68	–		–	–	–	–	○	●○○	9.257
GF95-30/31-05-	**4.13 (105)**	–	–	2700	–	–		–	–	–	–	○	●○○	9.257
GF95-30/31-07-	**4.13 (105)**	–	–	2700	–	–		–	–	–	–	○	●○○	9.257
GF95-30/31-10-	**4.13 (105)**	–	–	2700	–	–		–	–	–	–	○	●○○	9.257
Guidelite - Realize long travels up to (150 m), quick and cost-effective														
Efficient long travel set														
														
9GL-64-50-450-XX	**145**	–	–	2500 / 2700 / 3500	–	–		E4.21/E4.28/E4.32	–	–	–	▲	◐○○	9.261
9GL-64-50-LLL	**145**	–	–	1500/ 2500 / 2700 / 3500	–	–		E4.21/E4.28/E4.32	–	–	–	▲	◐○○	9.261

Chainfix strain relief

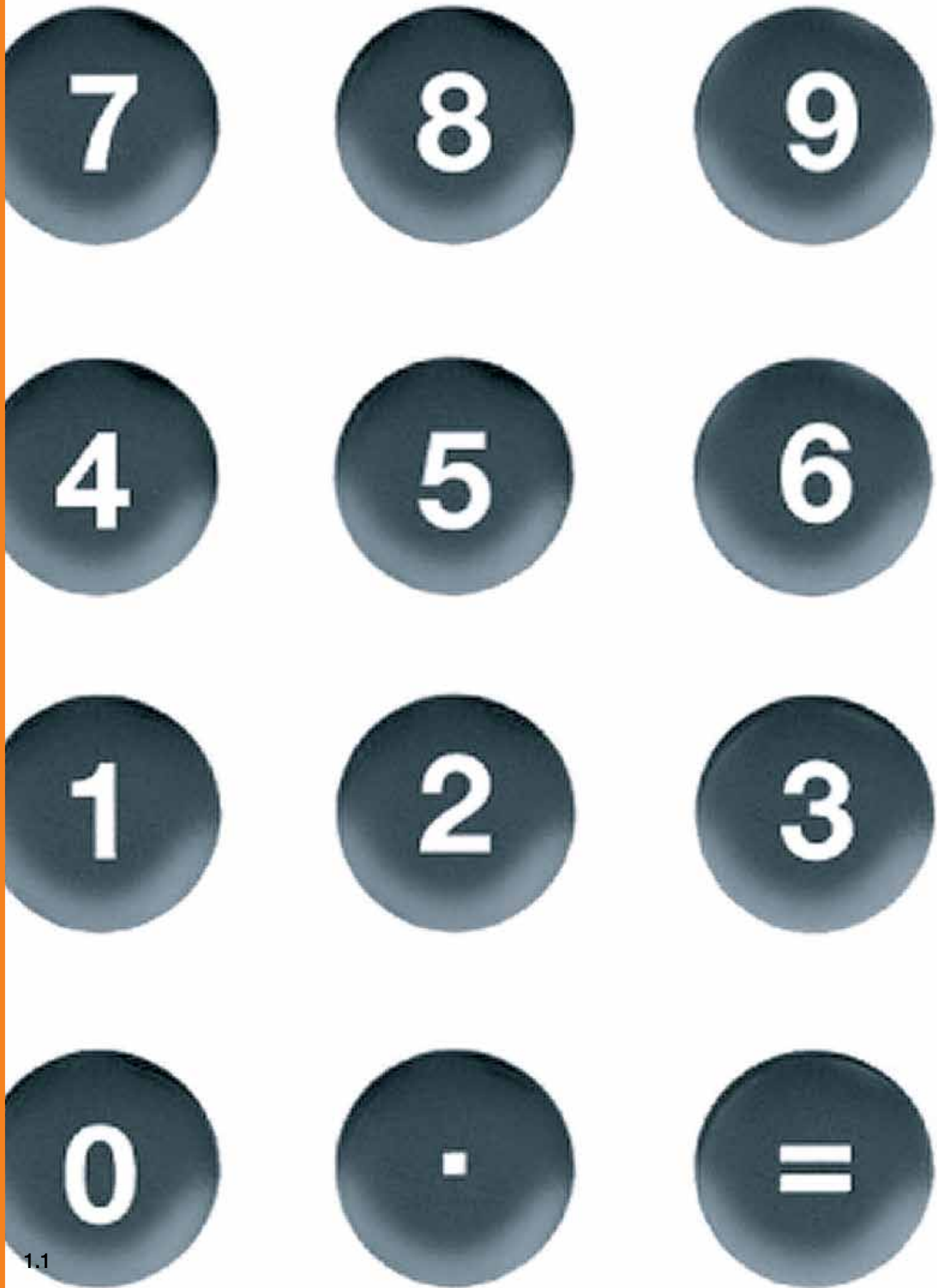
Quick Selection

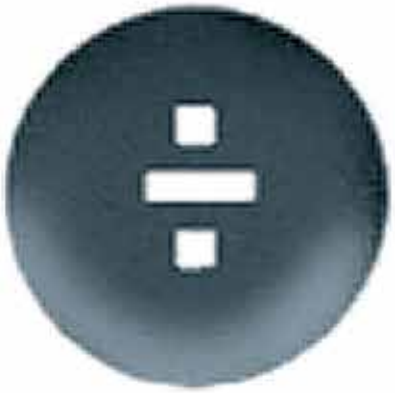
igus® strain relief	Series		Pitch in. (mm)	For Series E-Z Chain	For Series E2/000	For Series E2 e-tubes	For Series E4-1/E4-1 Light	For Series E4/Light	For Series E6/E6-1	Page
Clamps and stainless steel clamps - for maximum pull forces										
	**CFX** [1] Single, double, triple standard clamps		.24-1.65 (6-42)	–	X	–	X	X	X	10.17
	CFXL[1] Single, double, triple clamps with wide base for maximum pull forces		.24-1.65 (6-42)	–	X	–	X	X	X	10.18
	Saddle elements - bottom and stacker saddles		.24-1.65 (6-42)	–	X	–	X	X	X	10.19
	Chainfix Multi-clamps [1]		.24-.47 (6-12)	–	X	–	X	X	X	10.20
Tiewrap plates - for universal tiewrap, bolted or clip-on										
	**Option 1A:** Tiewrap plates as single part - Series 2000 + cable tiewraps		max. 1.42 (36)	–	X	–	X	X	X	10.21
	Option 1B: Tiewrap plates as single part - Series 3000 + cable tiewraps		max. 1.42 (36)	–	X	–	X	X	X	10.22
Tiewrap plates - with clip-on connection for the profile rail										
	**Option 1:** Tiewrap plates with clip-on connection for the profile rail			X	X	X	X	X	X	10.23
	Option 2: Integrated strain relief for E2 e-tubes - Series R			X	X	X	X	X	X	10.23
	Option 3: Tiewrap plates for fixed crossbars									10.24
	Option 4: Tiewrap plates for opening crossbars									10.25
CFU honeycomb strain relief - assembled in seconds										
	Simply insert cables and hoses into honeycomb and close -			–	X	X	X	X	X	10.26
	strain relief for different cables in one slot									
Strain relief separators - with integrated teeth										
	Separator with integrated strain relief - Easy strain relief with tiewrap		.79-1.18 (20-30)	–	X	–	X	X	X	10.27
Strain relief element - outside of the e-chain® cross section										
	Easy strain relief for cables, even in enclosed tubes.			–	X	–	X	–	–	10.31
	With stepped, integrated teeth									
Strain relief Nuggets - for profile rail										
	Simple and universal cable attachment, for cable diameters of .79” (20 mm) and 1.18” (30 mm)		≤ 1.18 (30)	–	X	–	X	X	X	10.32
	Clips onto standard profile rail		≤ 1.18 (30)	–	X	–	X	X	X	10.32
Strain relief connector system - modular and customizable										
	**CFB** plastic strain relief connector system, many cables in a very confined space		.17-.55 (4.3-14)							10.33
				Please consult igus® for individual designing						

[1] Standard material zinc-coated steel. Stainless-steel (1.4301) version also available.

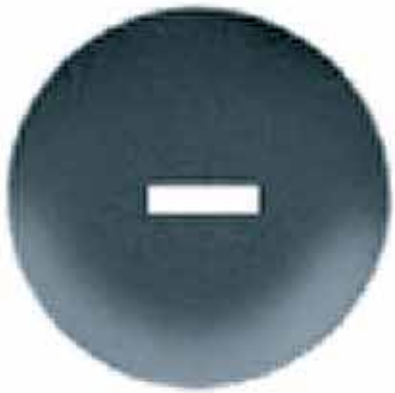
PMA cable protection

	Product	Description	Page
PMAFLEX Conduits - cable protection			
	**PACOF**	Flexible, medium, split	11.5
	PPCOF	Very Flexible, medium, split	11.6
	LN	Two-part lock nuts	11.7
	LNO	One-piece split connectors	11.7
	VCS	Flexible, heavy	11.8
	PIS/PIH	Highly flexible, medium	11.9
	CYL	Very flexible, medium	11.10
PMAFIX Connectors - safety and sealing systems			
	**IP66 - stat., IP54 dyn.**	Universal safety clip	11.11
	IP68 - stat., IP67 dyn.	Oval clip	11.11
	PMAFIX / PMAFLEX	Connectors	11.12
	PMAFIX connectors VW	90° elbow, metric & PG	11.13
	PMAFIX connectors VA	45° elbow, metric & PG	11.14
	PMAFIX connectors VN	Straight, metric	11.15
	PMAFIX connectors VN	Straight, PG	11.16
	PMAFIX connectors VB	90° curved elbow, metric & PG	11.17
	PMAFIX connectors VO	Flange 90°	11.18
PMA - Acessories			
	**PMAFIX FH-O**	One-piece system support	11.19
	PMA VH	System supports	11.19
	PMA GPS	One-piece system supports	11.20
	PMA MN	Hexagonal lock nuts, metric & PG	11.20
	PMA SGB	Tube clamps	11.21
	PMA 514	Plug screws, metric & PG	11.22


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Designing with igus®

Calculation tools, diagrams, and application examples

e-chain system® Design
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igus® readychain®

readychain® - Ready-to-install pre-assembled e-chain Systems® ..... page 1.50
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igus® Assembly Service

Assembly service - save time and money ..... page 1.61

e-chain system® Design
Designing with igus®
Introduction

An all-in-one energy supply system - the e-chain

There are many options to supply your equipment and systems with energy and data. But there is hardly a solution as universal and durable as the e-chain system®. Whether you have a circular motion, a suspended or upright application, a long travel distance, high loads or large cables and hoses - igus® plastic e-chains® will help you solve nearly any type of energy supply problem, quickly, safely and with ease. Whether you wish to reliably guide many large hoses for any type of media, sensitive fiber optic signals over long distances, disruption-free data in torsional movements, or only air at high accelerations, igus® can supply you with the matching energy supply system in addition to the optimally matched chainflex® cables. By tapping into the extensive igus® construction kit, you will find the solution to match your needs and application: from the individual components to the completed installation at your facility. We have developed a online tool to help you find these resources with greater ease ➤ **www.igus.com/the-chain**. Should you have trouble finding exactly the product you need, our engineers are always at your disposal to help you design **the-chain.**



On the following pages, we offer important guidelines which are to be taken into consideration when designing safe e-chain systems®. All specifications are based on test results from the igus® laboratory and our field experience since 1971.

In addition, we strongly encourage you to take advantage of our free design service. Simply fill in the “igus® system design” fax sheet on page 1.5 of this catalog, log onto the igus web site at http://www.igus.com and e-mail us your technical specifications, or call us at 1-800-521-2747.

We will provide a comprehensive quote by the end of the next business day.

Laboratory tests and practical experience

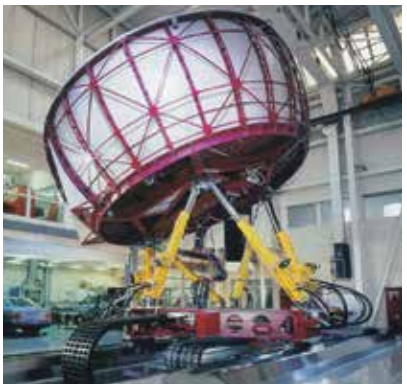
Our calculations and analyses are based on the result of ongoing practical tests in our Technical Center and our experience with gliding applications. The focal points of our tests are push-pull forces, friction values and abrasion under widely varying conditions and speeds, as well as factors such as dirt, weathering or impact and bumps. We test all system components such as cables, hoses, strain relief and other accessories, in addition to the e-chains® or e-tubes and Guide Troughs.



E-Chain System® Design
Application Examples



Long travels 1,447 ft. (441 m) with igus® rol e-chain ® long travel applications



High fill weights 40.3 lbs/ft (60 kg/m) with System E4. fill weights/load diagrams



Multi-axis E-Chains® E-Z triflex® on a production line, combined movements



readychain® under water. System E4 and chainflex® CF9, readycChain®



readycChain® with combined motions on tooling machines



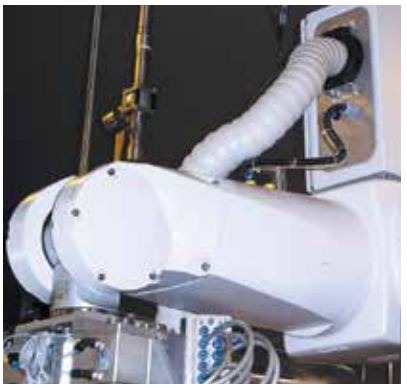
Series E6-52 high speed 49.2 ft/s (15 m/s) low noise operation, optimized noise level



Crash test unit: 72.2 ft/s (22 m/s) speed and 2,572 ft/s² (784 m/s²) acceleration, travel speed



Complex movements with igus® triflex® R, combined movements



Cleanroom and triflex® R technical environment



Extension links for E2 and E4 for large conduits, cable and hoses



Zig-zag movements, 118 ft. (36 m) height with E4/4

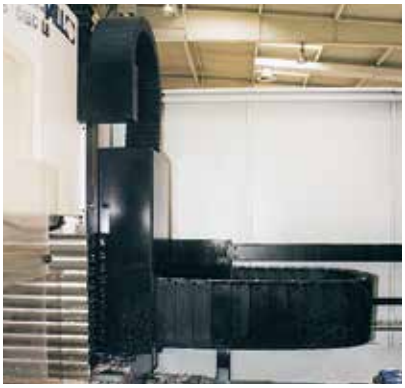


igus® System E6 - High acceleration and ESD safety, ESD & ATEX

E-Chain System® Design
Application Examples



Unsupported application System E4, up to 164 ft/s (50 m/s) speed



Unsupported, side-mounted
E4 Series R188



Unsupported nested application
System E4



Gliding application System E4,
up to 1641 ft (500 m) realized



Gliding, side-mounted
Series E4/4



Gliding application
System E4



Vertical, standing Series E4/light,
up to 19.69 ft (6 m) possible



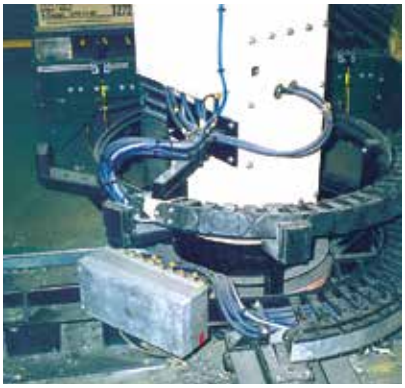
Rotary movement
System E4



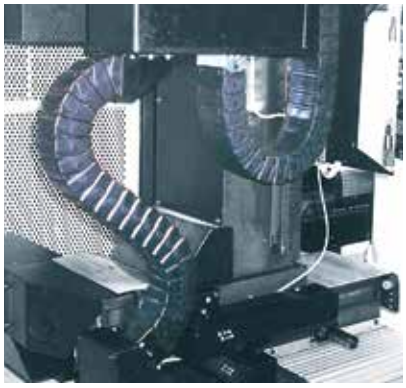
e-chains® side by side as individual or
“multiband” j21
Series Zipper



Vertical, hanging Series E4 up
to 131 ft (40 m) possible



Spiral and rotary movement
twisterchain®

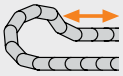


Combined movement
Series triflex®

e-chain system® Design
igus Terminology and Formulas

Application-Icons


Unsupported - short travels


Gliding - long travels

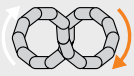

Vertical hanging


Vertical standing


Zig-zag


Side-mounted


Rotary motion


Continuously revolving


Horizontal and vertical


Nested


Side by side


Combined motions

Throughout this catalog you will find the following terms and formulas:

Short cut		Description	
α	=	The rotation angle of the rotating machine element	(°)
ΔM	=	Deviation of the center point	(in.)
a	=	Acceleration	(ft/s²)
AR	=	Outer radius, e-chain®	(in.)
Ba	=	Outer e-chain® width	(in.)
Bi	=	Inner e-chain® width	(in.)
B_{Ra}	=	Guide trough outer width	(in.)
B_{Ri}	=	Guide trough inner width	(in.)
D	=	Over length e-chain® radius in final position	(in.)
D_2	=	Over length for long travels gliding	(in.)
FL_B	=	Unsupported length with sag	(ft)
FL_G	=	Unsupported straight length	(ft)
FL_U	=	Unsupported lower run	(ft)
FZ_{max}	=	Maximum additional load	(lbs/ft)
H	=	Nominal clearance height	(in.)
ha	=	Outer e-chain® height	(in.)
H_F	=	Required clearance height	(in.)
hi	=	Inner e-chain® height	(in.)
H_{Ra}	=	Outer trough height	(in.)
H_{Ri}	=	Inner trough height	(in.)
IR	=	Inner radius, e-chain®	(in.)
K	=	Add-on for bending radius (K is taken from the data tables of the individual igus® Series)	(in.)
K_2	=	Further add-on if the mounting bracket location is set lower (for long travels)	(in.)
L_K	=	e-chain® length	(in.)
n	=	Number of links	(1)
n_{Mon}	=	Number of installation sets (left/right)	(1)
n_{Ri}	=	Number of trough-sets (left/right)	(1)
R	=	Bending radius	(in.)
RBR	=	“Reverse bending radius“	(in.)
S	=	Length of travel	(in.)
$S/2$	=	Half length of travel	(in.)
T	=	Pitch	(in.)
v	=	Speed (travel)	(ft/s)
X_1	=	Inner machine-construction space (twisterchain®)	(in.)
X_2	=	Outer radius chain, including clearance (twisterchain®)	(in.)

Formula		Description
$2 \times FL_B$	=	Calculation of maximum travel length, unsupported with sag
$2 \times FL_G$	=	Calculation of maximum travel length, unsupported straight
$B_{RI} \geq Ba + .20\ (5mm)$	=	Calculation of the minimum guide trough width
$H_{RI} \geq 2 \times ha$	=	Calculation of the minimum guide trough height
$K = \pi \times R$	=	Add-on for bending radius
$L_K = S/2 + \Delta M + K$	=	Calculation of chain lengths for all types of applications, fixed end is outside the center of travel, except rotary movements and most long travels
$L_K = S/2 + K$	=	Calculation of chain lengths for all types of applications, fixed end in the center of travel, except rotary movements and most long travels
$L_K = S/2 + K_2$	=	Calculation of chain lengths for long travel gliding applications fixed end in the center of travel

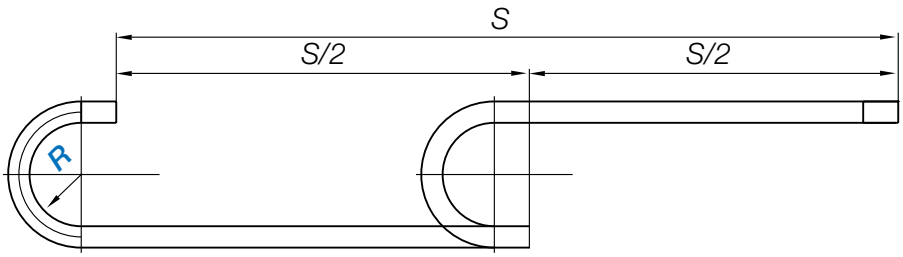
e-chain system® Design
Calculation of e-chain® Lengths
Camber

Calculation of e-chain® lengths

If the fixed end of the e-chain® is located in the center of the travel, the chain length "L_K" is calculated by using half the length of travel and adding the value "K" for the curve length. (You can obtain the value "K" from the tables in the catalog.) Placing the fixed end in the **center** of the travel is the most **cost-effective solution** because it requires the shortest e-chain®, cables and hoses.

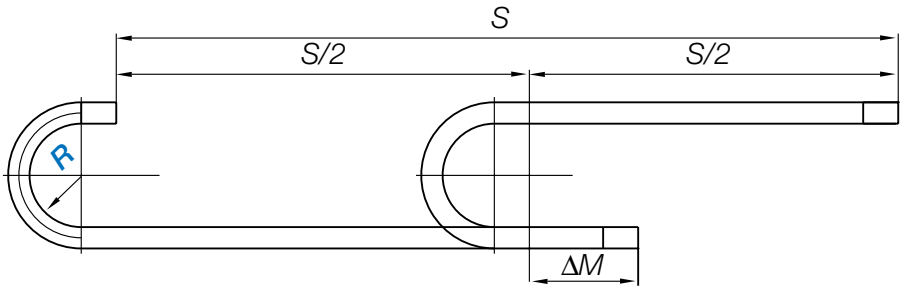
$$L_K = S/2 + K$$

This formula is generally valid for **all types of applications** if the fixed end is in the center of the travel. Exceptions: rotary movements and most long travels.



$$L_K = S/2 + \Delta M + K$$

This formula is valid if the fixed end is outside the center of the travel.



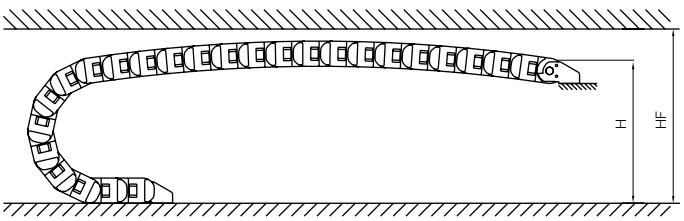
The fixed end in the center of the travel is the most favorable solution

L_K	= e-chain® length
S	= Length of travel
R	= Bending radius
ΔM	= Deviation from the center point
K	= $\pi \bullet R$ + "safety buffer"

Add-on for bending radius (*K* is taken from the data tables of the individual igus® series

Camber

"Camber" is the curve of the upper run along its unsupported length. **All igus® e-chains are manufactured with camber, special "no camber" (NC) e-chains® are available upon request.** The camber allows for longer unsupported lengths and increases service life and operating safety. In the **Installation Dimensions** section of each respective e-chain® description, you will find the measurement H_F, which specifies the **necessary clearance height**, taking the camber into account. The camber allows for longer unsupported lengths and increases service life and operating safety. Upon request, we can deliver e-chains® without camber for restricted space applications; however, these "no camber" chains do not have the same load-bearing capacity. Please consult igus®.



Principle of camber for igus® e-chains® H_F = required installation height

"No camber" - Special "NC" e-chains® with no camber are also available. Please consult igus®

H	= Nominal clearance height
H_F	= Required clearance height

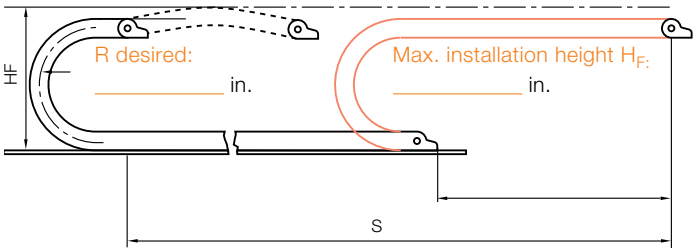
Necessary clearance height- depends on the camber of the e-chain®. Find values for necessary clearance height *"H_F"* on each product page.

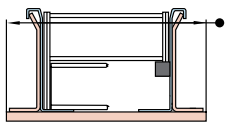
e-chain system® Design
System Analysis Worksheet

Please supply us with as much application data as possible. Items highlighted in red must be filled out for analysis. You will receive a complete analysis with cable/hose layout proposal and quote by the end of the next business day. Please contact us if you have any questions.

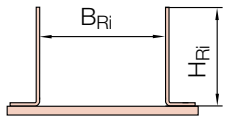
Installation space

Travel: _____ in. Fixed end: center of the travel ☐ yes
or_____ inches from the center





Max. width permitted (if applicable):
_____ in.



Guide trough?
☐ yes; if yes, which:
Dimensions:
B_{Ri} _____ in.
Dimensions:
H_{Ri} _____ in.

Assembly point (floor, wall, console, etc.): _____

Span (Standard = 6.5 ft.):_____in.

Dynamics

Speed:_____ (f/s) Acceleration: _____ (f/s^2)

Cycles/Day: _____ Days/Year: _____ Outer diameter: _____

Environment

Temperature (°F): _____ Humidity (%): _____ Dust, dirt, chips: _____

Special parameters: _____

Cables/Hoses

Number	Manufacturer/Type, No.	Conductor/AWG	Outer Dia.	Weight lbs/ft.	Bending radius

Further individual components desired:

e-chains® / e-tubes ☐
chainflex® cables/special conduits ☐
Guide troughs ☐
Strain relief ☐
Harnessing ☐
On-site assembly ☐
Other: _____

e-chain® ☐
e-tube ☐
To be opened:
On both sides ☐
Along the outer radius ☐
Along the inner radius ☐
Special requests: _____
igus® System guarantee? ☐

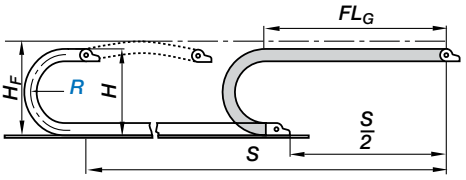
Please copy, fill in and fax. Thank you.

Use this page for your drawings

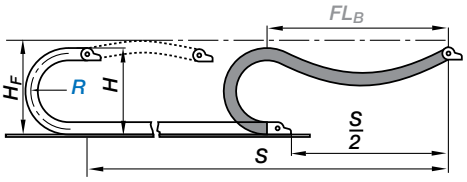
e-chain system® Design
Unsupported, Short Travel Applications

The FL_G type of installation always generates the longest service life and can be operated with the maximum values for speed and acceleration.

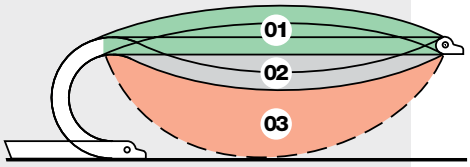




FL_G unsupported straight length



FL_B unsupported length with sag



● 01) Unsupported with straight upper run FL_G

Unsupported applications

If the upper run of the e-chain® operates without touching the lower run over the entire travel, it is called and "unsupported" application. The distance between the moving end and the beginning of the radius curve of the e-chain® is called the "unsupported length". The unsupported application is the most common. igus® e-chains® are very well suited for high dynamics and long service life. The maximum unsupported length is dependent upon the fill weight and the type of e-chain® or e-tube. As a result, we differentiate among three types of unsupported length:

01) Unsupported with "straight" upper run FL_G

The FL_G e-chain® applies when the upper run either has camber, is straight, or has a maximum of .39"-1.97" (10-50 mm) sag, depending on the size of the chain. The FL_G type of installation is always preferred. The e-chain® runs quietly and is not exposed to any additional vibration.

02) Unsupported with permitted sag FL_B

The FL_B e-chain® applies when the sag amounts to more than .39"-1.97" (10-50 mm), depending on the chain size, and less than a defined maximum sag. This maximum sag is dependent on the type of chain. The FL_B application is technically permissible in many cases. It becomes problematic if the acceleration and the travel frequency are high.

03) "Critical Sag"

If the sag is greater than permissible for FL_B, then we refer to it as "critical sag." An installation with critical sag must be avoided or reserved for extreme circumstances. An e-chain® should never be installed with critical sag. There are applications which, after a very long period of use, reach the stage of critical sag. The e-chain®/tube should be replaced at that time.

e-chain system® Design
Unsupported, Short Travel Applications

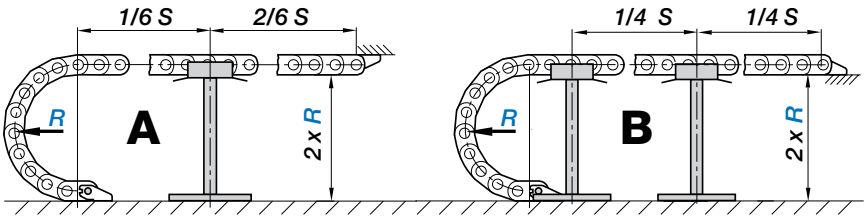


Example of unsupported with FL_B sag

What to do if the unsupported length is insufficient:

If your application, fill weight and travel fall outside the "unsupported length" parameters of the desired e-chain®, you have the following options:

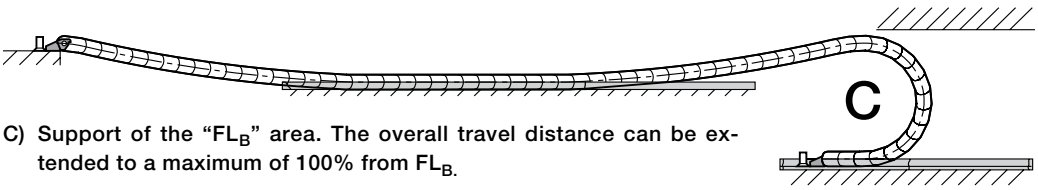
- Select a more stable igus® e-chain®
- Support the chain in the unsupported area (this possibility has restrictions for acceleration, speed and noise as a consequence; three fundamental examples are detailed below; please consult igus® if you are considering this possibility we will gladly provide you with a detailed proposal)
- Use a "multiband" chain or "nest" two e-chains® inside one another (please consult igus® regarding these options)
- Design the travel distance as a "gliding application" (see page 1.x).



Support of the "FL_G" area.

A) The overall "straight, unsupported travel can be increased along the upper run by a maximum of 50% of the FL_G and

B) along the lower run by a maximum of 100%.



C) Support of the "FL_B" area. The overall travel distance can be extended to a maximum of 100% from FL_B.

For every igus e-chain®/tube, you will find the values for "FL_G" and "FL_B" in two locations: On the following pages in this chapter as an overview and within every individual series' chapter. These values are essential for:

- Finding a suitable e-chain® for your fill weight and travel distance
- Identifying the maximum load for the selected e-chain®

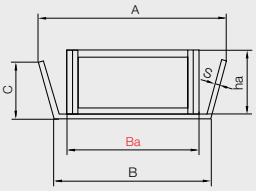
e-chain system® Design
Unsupported, Short Travel Applications

Standard

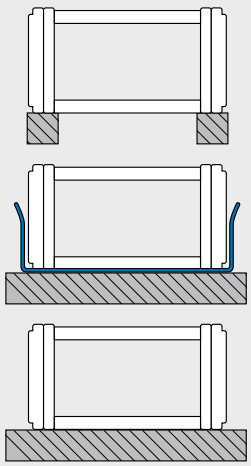
We recommend pivoting mounting brackets as standard. We also recommend locking mounting brackets as standard if high speeds > 65.6 ft/s (20 m/s) or accelerations > 65.6 ft/s² (20 m/s²)

Standard values of maximum speed and acceleration

Unsupported	FL_G	FL_B
v max ft/s (m/s)	65.6 (20)	9.84 (3)
v peak ft/s (m/s)	164 (50)	–
a max ft/s² (m/s²)	656 (200)	19.69 (6)
a peak ft/s² (m/s²)	2572 (784)	–



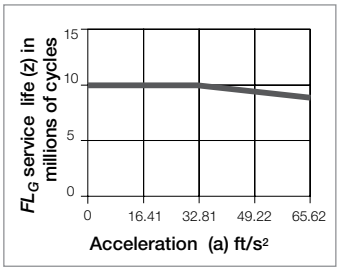
Ba = chain outer width
A = B + .39" (10)
B = ba + .20" (5)
C = ha/.08" (2)
S = .06" - .12" (1.5 - 3)



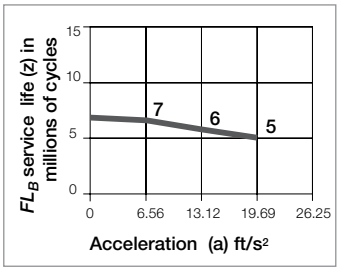
Different surfaces and guide troughs are possible

Speed and acceleration, service life

For unsupported applications, the acceleration (a), is the critical parameter. High acceleration can cause the e-chain® to vibrate and reduce its service life. This is a particular danger if the e-chain® already has a sag greater than the FL_G value. Maximum values for acceleration speed and service life are achieved only with e-chains® incorporating the FL_G (unsupported, straight) design. FL_G designed igus e-chain systems® can sustain very high loads. To date, a peak acceleration of 2,572 ft/s² (784 m/s²) has been achieved during continuous use. Through ongoing testing in the igus® laboratory and from practical experience, standard values for service life have been formulated (see graphs). Our tests confirm that these standard values apply to all igus e-chains® and e-tubes. It is crucial to determine whether the application will be designed as unsupported, straight FL_G or unsupported, with sag FL_B.



Standard values on service life for "FL_G" dependent on acceleration



Standard values of service life for "FL_B" dependent on acceleration

Load-bearing surfaces

Unsupported e-chains® normally require some type of surface on which the lower portion of the chain runs. As the drawings on the left demonstrate, a wide range of configurations are available. Many material options are feasible: Metals, polymers, stone, wood, concrete, glass, etc. **We also have solutions to minimize the noise generated by the carrier's lower portion. Please consult igus®.** When selecting the running surface, be sure dirt and debris cannot collect in the e-chain® path.

Mounting Brackets

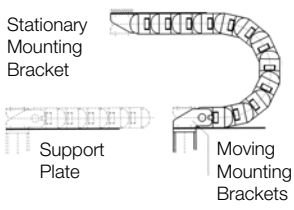
We recommend pivoting mounting brackets as standard for unsupported applications. Pivoting mounting brackets compensate for the camber, can be installed more easily and decrease the load on the first e-chain® link in operation. **Exception:** If the acceleration is greater than 65.6 ft/s² (20 m/s²) or if the height is limited to the H_F measurement, locking mounting brackets keep the e-chain under the H_F measurement.

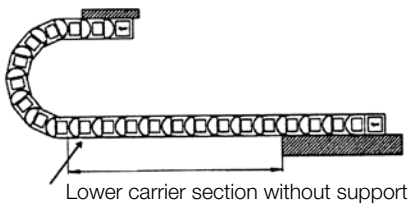
Horizontal Inverted

e-chains® without support along the lower run have restricted use. An e-chain® is said to be "horizontal inverted" when the stationary end is positioned on the top and the moving end is positioned on the bottom. Care must be taken to assure the maximum unsupported inverted span (FLu) is not exceeded. A support plate behind the moving end bracket may be necessary to prevent cantilevered loading and potential wear or breakage. If the lower run of the e-chain® cannot be supported over the whole length of travel, please contact igus® with your application information and we will be happy to specify a chain for you.



System E4 partially unsupported - please consult igus regarding this type of configuration.





Unsupported, noise optimized

The igus® program offers you optimal noise-reduction e-chains®. The table below briefly illustrates the differences in noise levels among various e-chains®. In addition to the e-chain®, the running surface, the dynamics and the cable and hose package all play a role in overall noise generation. Have our specialists design the quietest e-chain system® for your application.

System T3 ≤ 33 dB(A)

Optimal smoothness of motion was the prime development goal, as well as making it an economic solution. The igus® T3 e-chain® is very flexible and runs -due to the special geometry- very smooth. A measurement indicates a value of ≤ 33 dB(A) at 1 m/s and with an unsupported length with series **T3.29.050.038.0**, and all this with a sound pressure level generated by external noise.

System E3 ≤ 38 dB(A)

Long-term tests in the igus® acoustic laboratory showed reductions of 19-20 db(A) compared with standard e-chains®, measured at a speed of 1.8 m/s and an acceleration of 3 m/s². Figure determined in the igus® laboratory in accordance with DIN 45635, taking into consideration background noises, for the series **E3.22.060.044.0**.

System E6 ≤ 46 dB(A)

A measurement conducted by the Rhineland Technical Inspection Authority (TÜV Rheinland) in May 2002 indicates a value of ≤ 46 dB(A) at 6.56 ft/s (2 m/s) and with an unsupported length of 4.92 ft (1.5 m) with **Series E6-52-10-100-0**, and all this with at least 10 dB(A) sound pressure level generated by external noise. The System E6 runs very smooth due to the short link pitch.

System E4 ≤ 46 dB(A)

A measurement by the Rhineland Technical Inspection Authority (TÜV Rheinland) for **System E4/101, Series 220-100-200-0** indicates a value of 46 dB(A) at 4.92 ft/s (1.5 m/s) with an unsupported length.

igus® Series	System	Average of the corrected sound pressure levels	Test method (unsupported)
E61-29	E6-1	= 32 dB(A)	3.28 ft/sec (1.0 m/s)
T3-29	T3	= 33 dB(A)	3.28 ft/sec (1.0 m/s)
E3-22	E3	= 38 dB(A)	5.91 ft/sec (1.8 m/s)
E6-52	E6	= 46 dB(A)	6.56 ft/sec (2.0 m/s)
ES4-42	E4-1	= 46 dB(A)	3.28 ft/sec (1.0 m/s)
E4-42	E4-1	= 50 dB(A)	3.28 ft/sec (1.0 m/s)
255	E2 Medium	= 53 dB(A)	4.92 ft/sec (1.5 m/s)
Competitors Product		**Average sound levels**	**Test method (unsupported)**
Chain 1 Third party product		= 77 dB(A)	6.56 ft/sec (2.0 m/s)
Chain 2 Third party product		= 68 dB(A)	6.56 ft/sec (2.0 m/s)
Chain 3 Third party product		= 73 dB(A)	6.56 ft/sec (2.0 m/s)

Source: TÜV Rheinland, except series E3-22 - source: igus® laboratory

A reduction of 3 dB(A) sounds like a 50% reduction in the noise level to the human ear





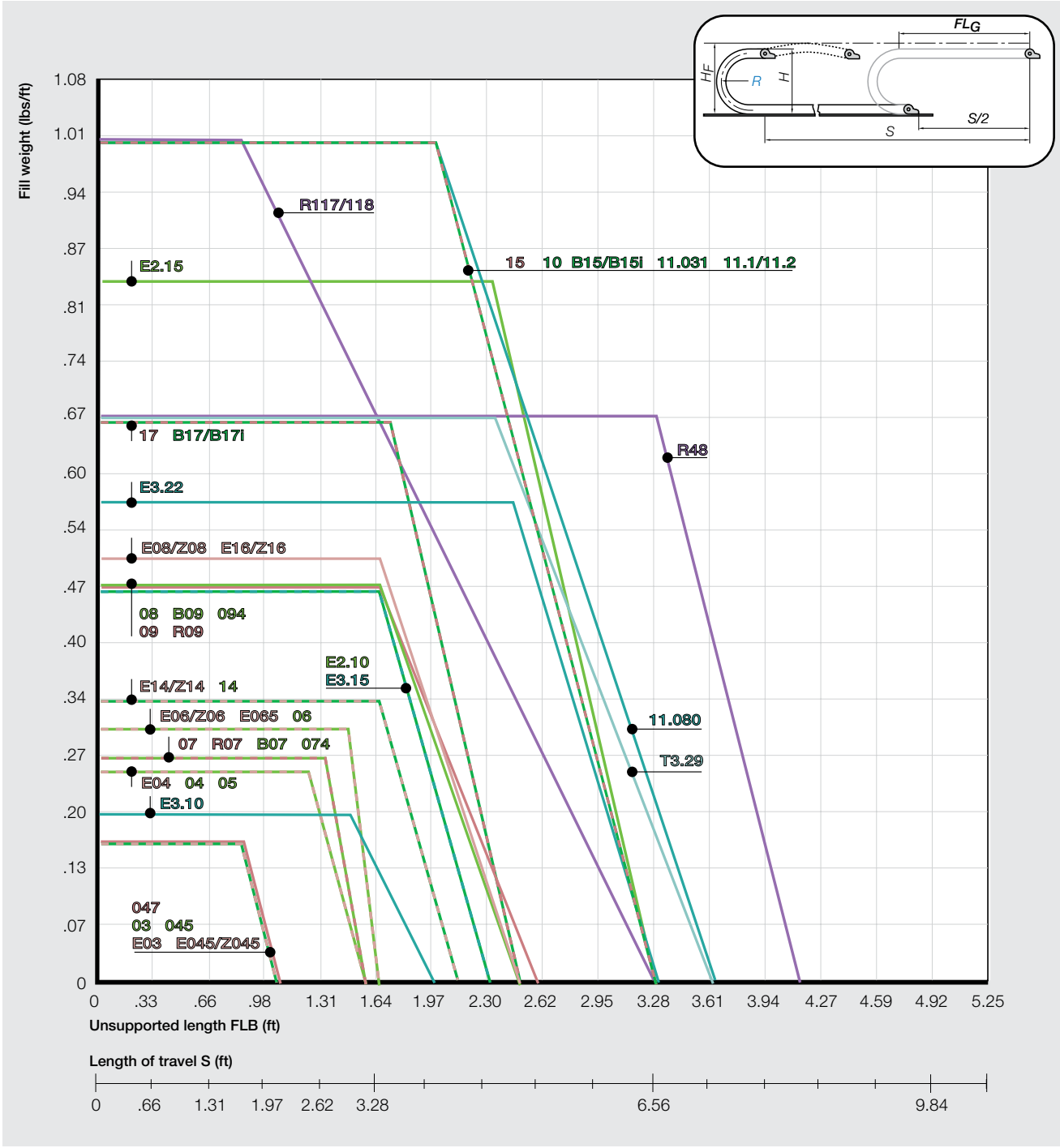






We have received an official certificate from the Rhineland Technical Inspection Authority (TÜV Rhineland Berlin Brandenburg). A copy is available upon request.

e-chain system® Design
Unsupported, Straight FL_G
Fill weights up to 1.01 lbs/ft (1.5 kg/m)



Important information

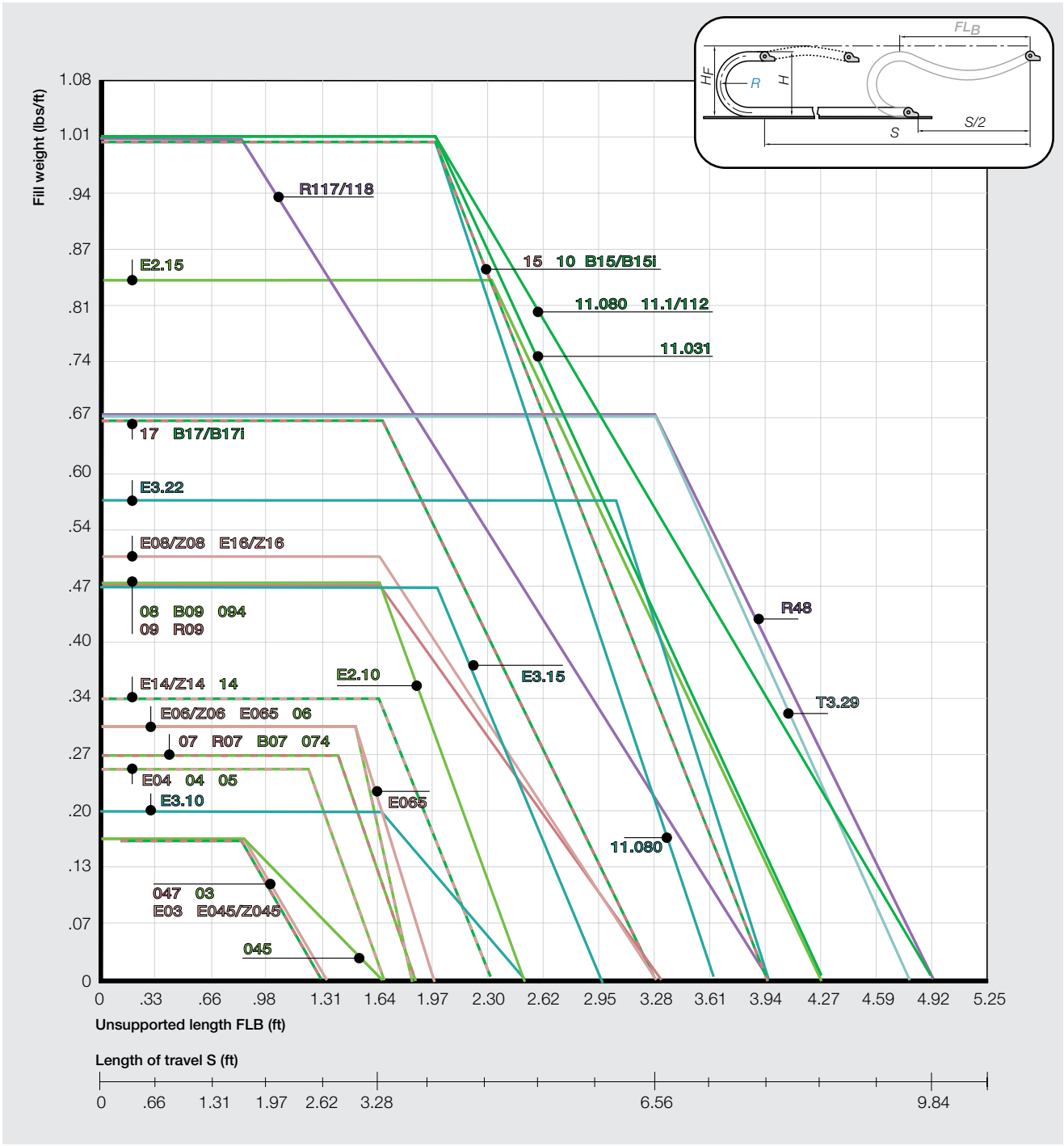
- Fill weight - Weight of all cables and hoses, including contents (for media hoses) within the e-chain®, typically given (lbs/ft)
- FL_G - unsupported e-chain® with straight upper run
- FL_B - unsupported e-chain® with permitted sag
- To the right of the FL_B graph of the diagram, the application is shown in “critical sag”, **which must be avoided!**

These values are essential for:

- Finding a suitable e-chain® for your fill weight and travel distance
- Identifying the max. load for the selected e-chain®.

If you cannot meet your application demands using these parameters, keep in mind these specifications are conservative maximum values. In individual cases, they can be exceeded by up to 30%. Special solutions are also possible. Please consult igus®, we will be happy to assist you with your application.

e-chain system® Design
Unsupported, Sag FL_B
Fill weights up to 1.01 lbs/ft (1.5 kg/m)



The maximum travel -always amounts to **2 x 2 x** FL_G **or** FL_B if the fixed end is in the center of the travel. In this case, the following applies:

e-chain® length: $L_K = S/2 + K$

S = Length of travel

R = Bending radius

H = Nominal clearance height

H_F = Required clearance height

K = $\pi \bullet R$ + "safety buffer" Add-on for bending radius

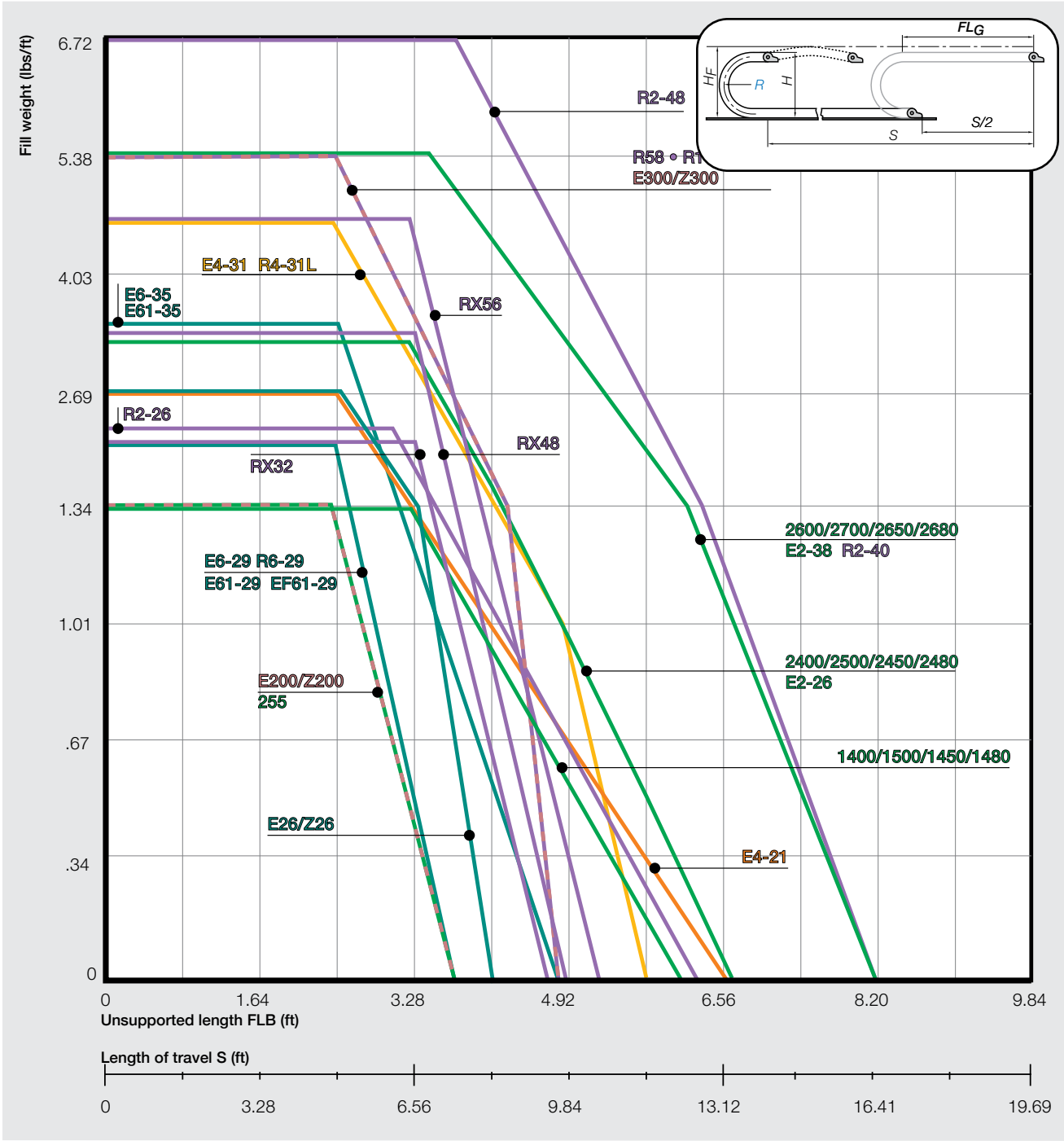
(*K* is taken from the data tables of the individual igus® series

Diagram Series

E1	chapter	E2 R100	chapter	E3	chapter
E-Z chain®	chapter	E2 R	chapter	E6-1	chapter
zipper	chapter	R2-1	chapter	E6	chapter
E2 micro	chapter	RX	chapter	e-skin®	chapter
E2 mini	chapter	E4-1L	chapter	TH3	chapter
E2-1 micro	chapter	E4-1	chapter		
E2-1	chapter	E4/light	chapter		
E2/000	chapter	T3	chapter		

You will find the diagrams for each series listed individually in the catalog

e-chain system® Design
Unsupported, Straight FL_G
Fill weights up to 6.05 lbs/ft (9.0 kg/m)



Important information

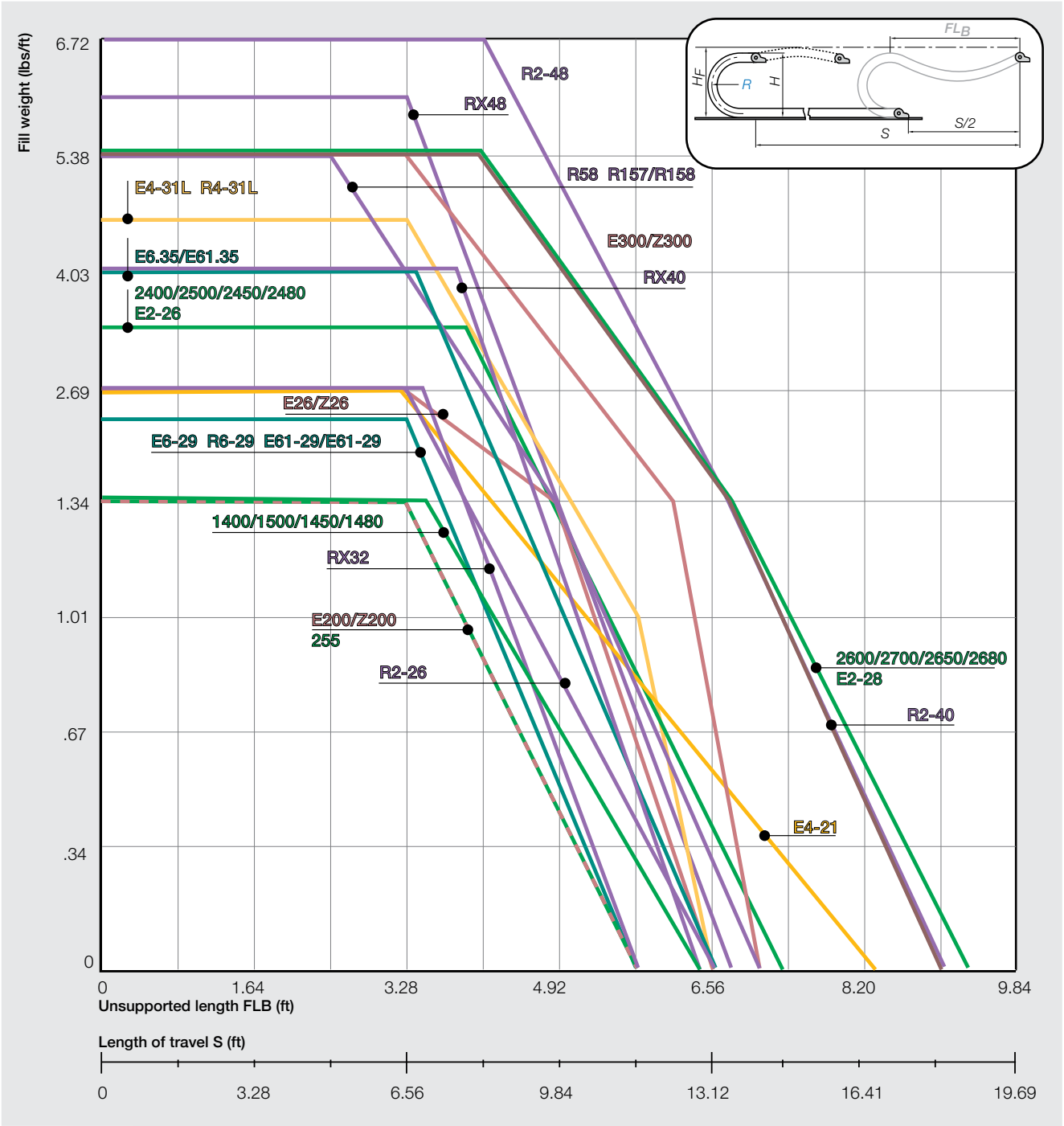
- Fill weight - Weight of all cables and hoses, including contents (for media hoses) within the e-chain®, typically given (lbs/ft)
- FL_G - unsupported e-chain® with straight upper run
- FL_B - unsupported e-chain® with permitted sag
- To the right of the FL_B graph of the diagram, the application is shown in “critical sag”, **which must be avoided!**

These values are essential for:

- Finding a suitable e-chain® for your fill weight and travel distance
- Identifying the max. load for the selected e-chain®.

If you cannot meet your application demands using these parameters, keep in mind these specifications are conservative maximum values. In individual cases, they can be exceeded by up to 30%. Special solutions are also possible. Please consult igus®, we will be happy to assist you with your application.

e-chain system® Design
Unsupported, Sag FL_B
Fill weights up to 6.05 lbs/ft (9.0 kg/m)



The maximum travel -always amounts to **2 x 2 x** FL_G **or** FL_B if the fixed end is in the center of the travel. In this case, the following applies:

e-chain® length: $L_K = S/2 + K$

S = Length of travel

R = Bending radius

H = Nominal clearance height

H_F = Required clearance height

K = $\pi \bullet R$ + "safety buffer" Add-on for bending radius

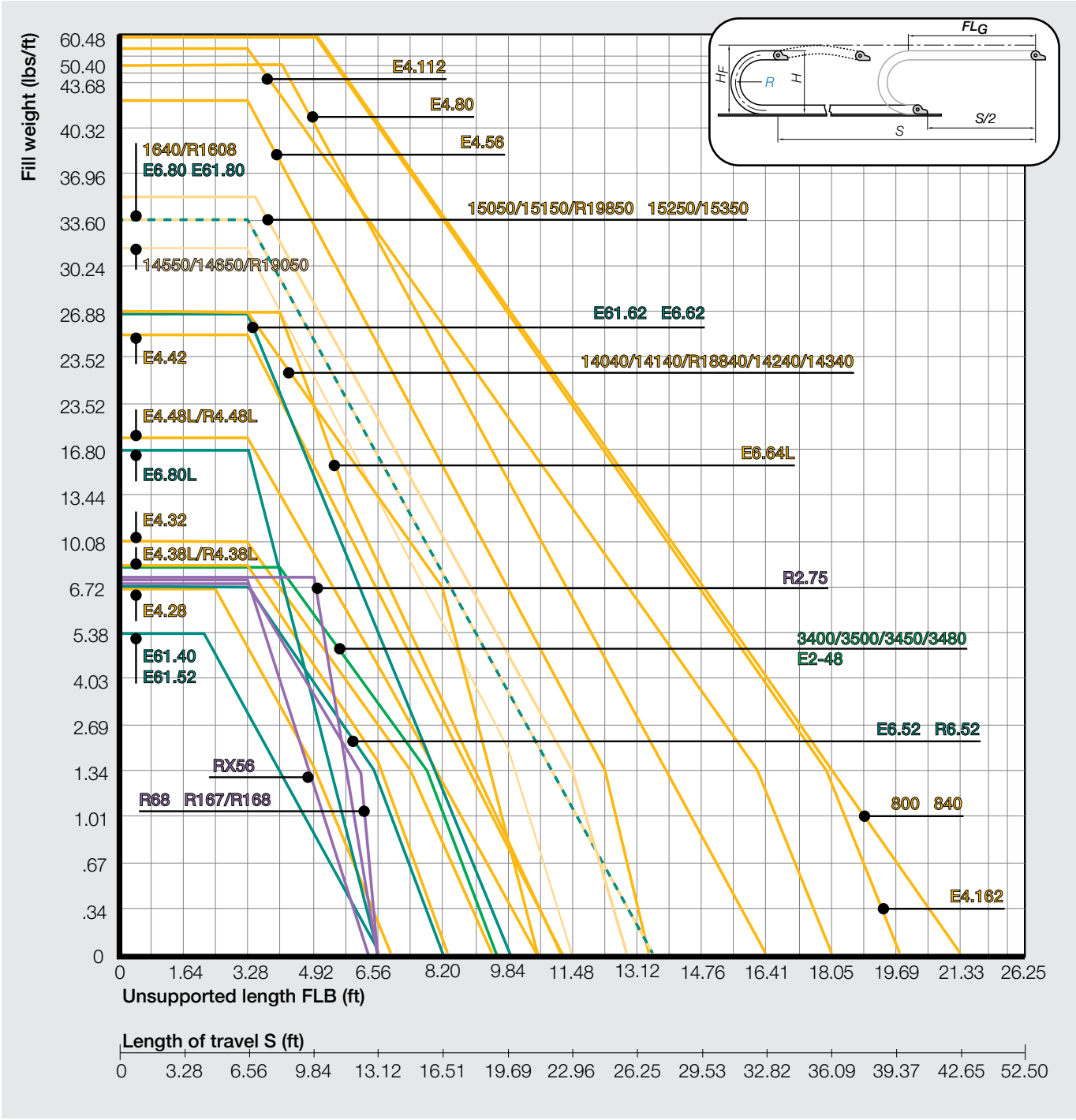
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E1	chapter	E2 R100	chapter	E3	chapter
E-Z chain®	chapter	E2 R	chapter	E6-1	chapter
zipper	chapter	R2-1	chapter	E6	chapter
E2 micro	chapter	RX	chapter	e-skin®	chapter
E2 mini	chapter	E4-1L	chapter	TH3	chapter
E2-1 micro	chapter	E4-1	chapter		
E2-1	chapter	E4/light	chapter		
E2/000	chapter	T3	chapter		

You will find the diagrams for each series listed individually in the catalog

e-chain system® Design
Unsupported, Straight FL_G
Fill weights up to 60.48 lbs/ft (90.0 kg/m)



Important information

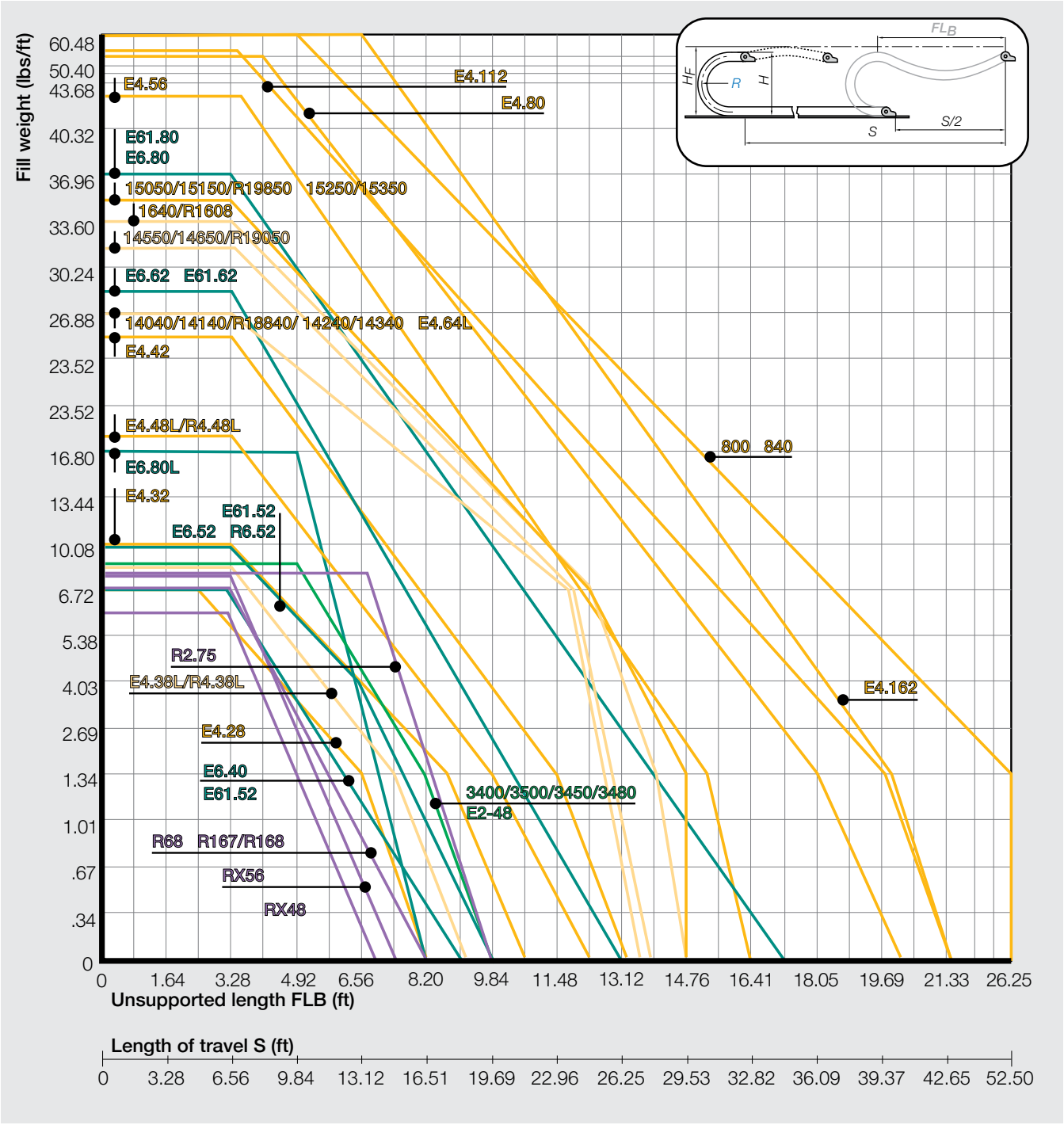
- Fill weight - Weight of all cables and hoses, including contents (for media hoses) within the e-chain®, typically given (lbs/ft)
- FL_G - unsupported e-chain® with straight upper run
- FL_B - unsupported e-chain® with permitted sag
- To the right of the FL_B graph of the diagram, the application is shown in “critical sag”, **which must be avoided!**

These values are essential for:

- Finding a suitable e-chain® for your fill weight and travel distance
- Identifying the max. load for the selected e-chain®.

If you cannot meet your application demands using these parameters, keep in mind these specifications are conservative maximum values. In individual cases, they can be exceeded by up to 30%. Special solutions are also possible. Please consult igus®, we will be happy to assist you with your application.

e-chain system® Design
Unsupported, Sag FL_B
Fill weights up to 60.48 lbs/ft (90.0 kg/m)



The maximum travel -always amounts to **2 x 2 x** FL_G **or** FL_B if the fixed end is in the center of the travel. In this case, the following applies:

e-chain® length: $L_K = S/2 + K$

S = Length of travel

R = Bending radius

H = Nominal clearance height

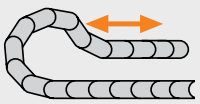
H_F = Required clearance height

K = $\pi \bullet R$ + "safety buffer" Add-on for bending radius

(*K* is taken from the data tables of the individual igus® series

Diagram Series

E1	chapter	E2 R100	chapter	E3	chapter
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E2-1 micro	chapter	E4-1	chapter		
E2-1	chapter	E4/light	chapter		
E2/000	chapter	T3	chapter		



e-chain system® Design
Gliding, Long Travel Applications

Recommended ratio of e-chain® inner width *Bi* and bending radii *R* (on long travels)

The minimum inner widths of an e-chain® on long travels depends on the bending radii of the e-chain®.

igus® specifies: $Bi_{min.} = {}^{R}/_{4}$

Please contact igus® if you have large bending radii on long travel lengths.



Example of lowered mounting height

Gliding applications principle

For long travels, the upper run of the igus® e-chains® rests on the lower run. The upper run glides partially on the lower run and partially at the same height on a glide bar. The illustrations shown below depict the gliding application principle. For lateral guidance, a guide trough is necessary. If the stationary mounting bracket and the fixed end of the cables and hoses can be placed in the center, the e-chain® length is calculated as follows: $L_K = {}^{S}/_{2} + K_2$. Depending on the technical data and the selected e-chain®, the mounting point of the moving end of the e-chain® must be lowered on some units.

Lowered mounting height: In our system analysis for long travels, we give exact details for your specific application.

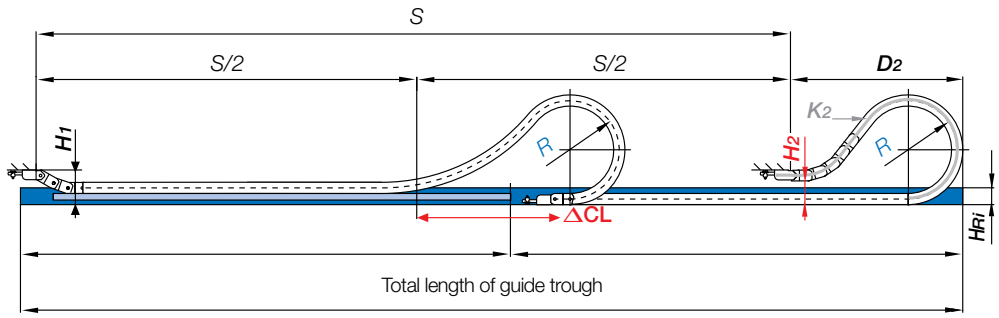


Long travel with E4 rol e-chain®, guided in a igus® steel guide trough

For center mounted applications, e-chain® length:

$$L_K = {}^{S}/_{2} + K$$

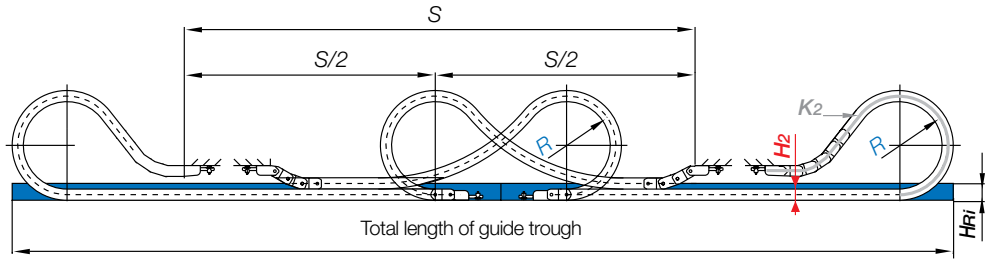
S	=	Length of travel
${}^{S}/_{2}$	=	half Length of travell
R	=	Bending radius
H_{Ri}	=	Trough inner height
H_F	=	Required clearance height
K_2	=	Add-on if the mounting bracket location is set lower (specified by igus®)
D_2	=	Over length for long travels gliding
H_2	=	Installation height with lowered mounting



The function of an e-chain system® for gliding applications (schematically)
The fixed end of the e-chain® is located in the center of the travel distance

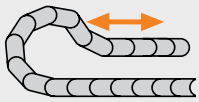
Advantages lowered moving end:

- Space saving
- Longer travels possible
- Higher service life due to less wear



For a configuration involving two opposed e-chains®, the travel is measured as shown and selected when these factors apply: ● Restricted space ● High loads

e-chain system® Design
Gliding, Long Travel Applications



Advantages for long travel applications with igus® e-chains®

- Travels over 1312 ft (400 m)
- Gliding speeds up to 16.4 ft/s (5 m/s) (more in individual cases)
- Service life of 10 years and more with igus® e-chain systems®

Further advantages of the design are:

- Many different types of cables and hoses can operate side by side in the same system (i.e. electrical, data, fiber optic cables with hydraulic and pneumatic hoses)
- Space-saving installation
- Quiet operation
- High accelerations
- Durable in wind, weather, dirt, and chemicals
- Simple assembly of the modular system on the spot
- Rapid assembly and replacement of cables and hoses



E4 e-chain® with extension links for many cables and large hoses on a long travel application

Standard

Gliding applications = pivoting mounting brackets

Design assistance, free of charge

We recommend that igus® calculate every gliding application for you. We will always offer the most cost-effective solution, taking the technical requirements and operating safety into consideration. The system solution designed by us is also automatically given an igus® system guarantee.

To be able to advise you accurately, we require the following specifications:

- Travel in (ft) or (m)
- Travel speed (ft/min) or (ft/s)
- Acceleration (ft/s²)
- Fill weight (lbs/ft)
- Maximum cable/hose outer diameter (in.) or (mm)
- Type and number of cables and hoses
- Required bending radius (in.) or (mm)
- Cycle frequency (n/day or n/hour)
- Technical environment.

Please call us and within hours you will receive a detailed system proposal!

Please call us and within hours you will receive a detailed system proposal

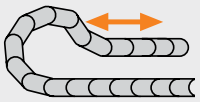
Trends in long travel applications

New developments are currently being tested:

- Travels up to 2,625 ft (800 m). We break through the 1,312 ft (400 m) barrier by means of special components. Please ask us for more specific information.
- Long travel systems “off the reel.” Complete made-to-spec e-chain systems® - with cables, connectors, strain relief - are delivered on the reel and “rolled off” into the pre-assembled guide troughs. Travel distances up to 328 ft (100 m) are delivered this way today, with longer travels possible.
- Long travel **without** guide troughs. Our AUTO-GLIDE system consists of self-guiding e-chains®. We have recently extended this technology to large e-chains® and currently offer travels up to 328 ft (100 m).
- Long travels with very small e-chains, for example, the igus “flizz” offers the guidance of a single bus cable inside a small e-chain with high acceleration on long travel applications.



Longest igus® travel of 2,018 ft (615 m) with roll-e-chain and chainflex® cables



e-chain system® Design
Gliding, Long Travel Applications

If the fixed point is in the center of the travel, use half of the guide trough with glide bars and the other half of the guide trough without glide bars
$H_{Ri} \geq 2 \times h_a$
$B_{Ri} \geq Ba + .20$" (5 mm)

Ba = e-chain® outer width
Bi = e-chain® inner width
ha = e-chain® outer height
H_{Ri} = inner trough height
B_{Ri} = inner trough width
(depending on *Ba*)

$H_{Ri} \geq 2 \times ha$
$B_{Ri} = Ba + 4$
(Aluminum SuperTrough)
$B_{Ri} = Ba + 5$
(Steel guide trough)



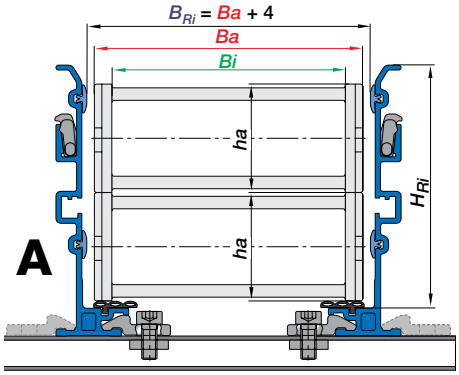
Guide troughs

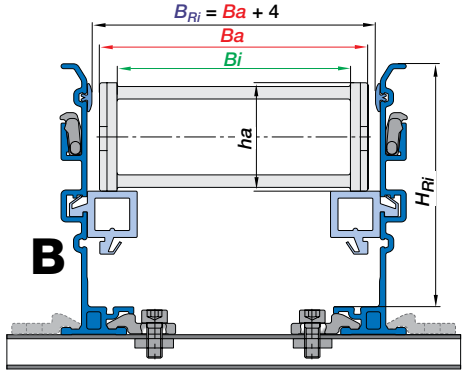
Guide troughs are used for long travels. They allow igus® e-chains® and e-tubes to continue smooth low-friction operation in these long travel situations. Diagrams are shown below. The height of the trough must be at least twice the total chain link height. The sides must provide a chamfered opening. The trough inner width is the same as the chain outer width, plus .16 (4 mm) for Aluminum SuperTrough and plus .20" (5 mm) for Steel Guide Trough. When the upper run cannot glide on the lower run, glide bars must be installed along the sides of the trough. igus® recommends the use of polymer glide bars. They are optimally matched to the chain material and achieve the lowest values for friction, noise and wear. Guide troughs with and without glide bars can be obtained for almost all igus e-chains®.

Important: When assembling the trough parts, the following points must be given particular attention:

- Properly align all trough parts upon installation
- All screw heads should be flush with the trough
- Smooth leveled transition between the end of the chain and the glide bars
- Solid connection with the glide surface

These points must be observed when using assembly-friendly igus® guide troughs





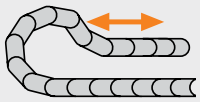
A) Aluminium SuperTrough without glide bars - upper run glides on the lower run
B) Aluminium SuperTrough with glide bars.
We recommend the use of igus® polymer glide bars. They are optimally matched to the e-chain® material and achieve the lowest values for friction, noise and wear.

Glide friction values for igus e-chains® made of igumid G and various glide bars:

igumid G	igus® Polymer Glide Bar	Galvanized Sheet Steel	Anodized Aluminum	Stainless Steel
Friction value (dynamic)	0.19	0.45	0.54	0.48

Source: igus® Laboratory

e-chain system® Design
Gliding, Long Travel Applications



Travel speeds and accelerations

Travel speeds up to 19.7 ft/s (6 m/s) in continuous operation are possible and in use on current applications. In special cases, up to (10 m/s) are possible after consultation with igus®. For example, E4 Series e-chains® achieve **speeds of 72 ft/s (22 m/s) and accelerations of 2,572 ft/s² (784 m/s²)** in crash test units. (Only a few thousand cycles per year are required in this situation.) Acceleration plays a large role in the calculation. Differentiations must be made between normal operational acceleration and a sudden jolt of acceleration such as unexpected stops or so-called "E-stops." Even in these situations, igus® e-chains® prove to be very durable.



Automated storage/retrieval system with System E2 and chainflex® cables - travels up to 262 ft (80 m) and speed of 14.8 ft/s (4.5 m/s)

Corrosion-free guide troughs are available in the material:

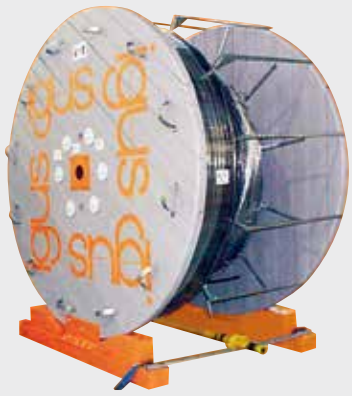
- Normally galvanized
- Stainless steel
- Seawater resistant
- Aluminum

Service Life

We offer service life calculations for your application based on our extensive gliding application experience. As developers of plastic bearings, we possess vast material behavior knowledge which we apply to the development of e-chains® as well. Units with 656 ft (200 m) travels have been in operation for 8 years with minimum maintenance. Units up to 197 ft (60 m) travels have been in operation for 15 years with almost no maintenance. (Please consult igus® for references and calculations for your project.) The maintenance-free aspects of igus® e-chain systems® over long periods and under harsh operating conditions is often the deciding factor in choosing igus. Our system guarantee (depends on the application) provides additional peace of mind.

Technical environment

Long travel applications using igus e-chains® run in water, in dirt, in the tropics, in explosion risk areas (with special design features) and many other conditions. Guide troughs can be supplied in corrosion-free materials. You will find more details in the **Technical Environment** section of this chapter.



Long travel "off the reel." Up to 328 ft (100 m) travel pre-assembled and ready to install

Calculation

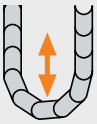
Comprehensive tests place us in the position of knowing our products precisely. Important factors in these tests are:

- Push-pull forces under both ambient and extreme temperatures
- Humidity and dirt
- Friction values of the polymers, alone and against various glide surfaces
- Behavior of electrical cables under push-pull conditions
- Behavior of hydraulic and media hoses under push-pull conditions
- Service life, and noise generation.

If we cannot calculate your application based on these factors, we will perform a practical test for you in our laboratory. Please consult igus®.

Technical data - gliding applications

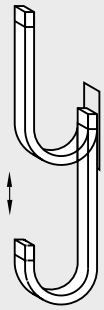
Travel max	1,969 - 2,625 ft (600-800m)	
Travel speed max	32.8 ft/s (10 m/s)	
Travel acceleration max	164 ft/s² (50 m/s²)	depending on application, please consult igus®
Fill weight max	47.04 lbs/ft (70 kg/m)	depending on application, please consult igus®



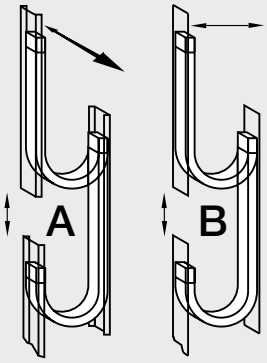
e-chain system® Design
Vertical, Hanging Applications

Standard

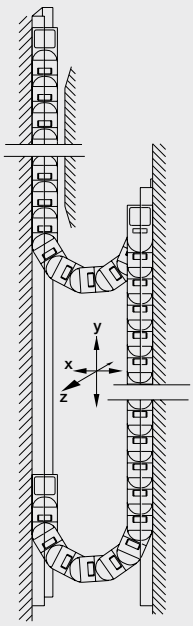
We recommend **locking mounting brackets** for hanging applications. In restricted spaces, other solutions are possible with consultation.



In most cases, vertical motion applications do not require lateral guidance



If lateral acceleration will occur in two directions, guidance is necessary



Principle of a hanging igus® e-chain® with lateral guidance, lateral accelerations in both directions are contained





Hanging assembly with one-sided U profile

Vertical, hanging applications

In accordance with the principle of hanging applications, heights of over 328 ft (100 m) are possible with igus® e-chains®. e-chains® with interior separation allow many different types of cables/hoses to operate together in the same system without becoming entangled.

Cables and hoses

Two important factors in vertical hanging applications are how the cables and/or hoses lay in the e-chain® and how they are secured at the end points: all cables and hoses must bear their own weight when hung. The e-chain® should house and protect the cables and should not absorb any further tensile forces. igus® interior separation elements should be used for distinct division of all cables and hoses. The cables and hoses must be secured carefully to both end points of the e-chain®.The strain relief must be designed so that the opposite run cannot catch. Safe strain relief and clear separation of the cables/ hoses are the basic prerequisites for hanging installations. **Cables and hoses must be able to move freely and bear their own weight.**

Vertical motion without lateral acceleration

If the application involves vertical motion without lateral acceleration, the e-chain® can be installed without lateral support. If the space restrictions are severe, an igus e-chain® with no camber must be specified.

Vertical motion with lateral acceleration

In most cases where lateral acceleration occurs, lateral guidance of the e-chain® must be provided. The diagram shows an example of such guidance. Partial guidance is also an option, however, it must at least cover the area in which the e-chain® may sway. Lateral acceleration can occur in two directions. Lateral guidance must be installed accordingly. If you have a choice, the layout in **Figure A** is preferred. Additional guidance along the side of the e-chain® helps to stabilize the chain further.

e-chain system® Design
Vertical, Hanging Applications
guidelok Slimline P

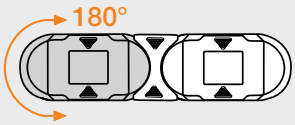
No camber version with igus® special NC e-chains®

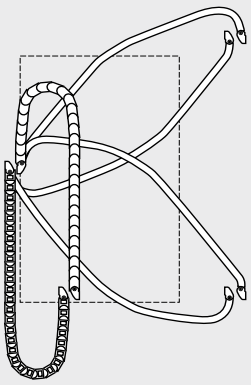
A normal igus® e-chain® with camber is suitable for hanging use if enough space is available. Camber contributes to the quiet operation of the e-chain®, required by the slightly bulbous appearance a little more space. If there is not enough room, a “no camber” e-chain® must be installed. This is frequently the case with storage and retrieval systems in narrow aisles. igus® offers numerous NC versions without camber. With igus® E4-1 it is easy to create a NC-version. Simply rotate the e-chain® outer link 180°. (NCST - No Camber Standard)
Order example: **E4-32-10-175-0-NCST** (No Camber)



The E4-1 system is one of igus® best solutions for hanging applications

With E4-1 it’s easy to create a NC-version. Simply rotate the e-chain® outer link





Hanging and standing igus® e-chain systems® can reach different points

Technical data - vertical, hanging

Travel height max.	328 ft (100 m)	
v max.	65.6 ft/s (20 m/s)	dependent on height and strength of the e-chain®
a max.	164 ft/s² (50 m/s²)	dependent on height and strength of the e-chain®

Special solution
guidelok slimline P - safe and fast vertical guidance

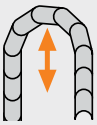
- Up to 23 ft/s (7 m/s) and 32.8 ft/s² (10 m/s²)
- Up to 80% less trough required, saving costs and weight
- For hanging systems up to 164 ft. (50 m)
- No swinging of the e-chain®, high reliability due to the locking mechanism and guiding rails
- Faster and easier installation
- Reduced noise
- Easy access for servicing
- Energy and data and all kinds of media are safely guided

More information ➤ Chapter 9



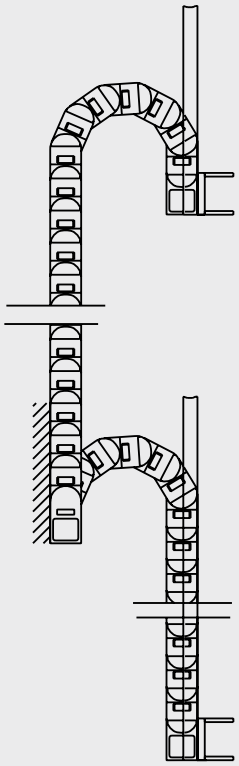
igus® guidelok slimline P vertical guidance in a high-bay warehouse



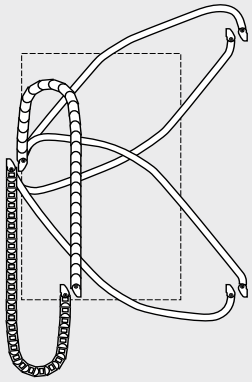


Standard

We recommend locking mounting brackets for standing applications



Options for a standing application with support of the first chain links: on the left, with U-shaped guidance; on the right, with the support of the first chain links.



Hanging and standing igus® e-chain systems® can reach different points

e-chain system® Design
Vertical Standing Applications



Locking KMA mounting brackets can be directly attached flush to the machine



Standing application with support of the first chain links; R68 e-tube

Vertical standing applications

Standing applications are standard on many machines and plants. Cables will be guided safely in vertical strokes.

Mounting brackets

The mounting brackets must be attached so that the e-chain® cannot bow out.
The igus® program offers locking or one-sided locking mounting brackets for almost all types of e-chains®. Locking KMA mounting brackets are highly recommended because they can be attached flush to the machine.

Cables and hoses

Cables and hoses must be laid in the chain so that they can bend freely. For precise guidance of the cables and hoses, we strongly recommend igus® interior separation elements. Cables must be strain relieved at both ends

Lateral acceleration

If lateral acceleration occurs, the e-chain® should be supported along the outer radius. For higher chain heights, it is generally recommended that at least the first three links on the outer radius be supported. For maximum heights and weights, the entire distance must often be supported. Due to the wide variety of combinations involving weights, stroke heights, e-chain® types and bending radii, we strongly recommend you consult igus® for design assistance.

Combined movements

Combined vertical and horizontal movements are possible with igus e-chains® for a cost-saving solution.

For higher e-chain® stroke heights, it is generally recommended that at least the first three links along the outer radius be supported.
For maximum heights and strokes, the whole chain must often be supported.

With lateral acceleration, the e-chain® must be supported and, depending on the direction of this acceleration, be guided along the side.

Technical data - vertical, standing

Max. stroke height		
- without support	≈ 13 ft (4 m)	
- with support of the first e-chain® links	≈ 19.7 ft (6 m)	
- with full support	≈ 65.6 ft (20 m)	
v max	65.6 ft/s (20 m/s)	dependent on stroke height and weight
a max	164 ft/s² (50 m/s²)	dependent on stroke height and weight

e-chain system® Design
Zig-Zag - liftband



Decommissioning of a nuclear power station. Zig-zag application with igus® e-chains®

Zig-zag design

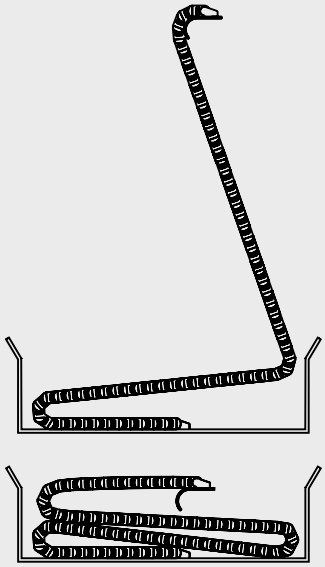
The modular design of igus® e-chains® facilitates this space-saving and unconventional solution. For modern platform technology, such as performance stages, a variety of cables/hoses which adjust the stage height must be accommodated. Lack of space almost invariably presents difficulties. The photo above shows an e-chain® in a zig-zag configuration produced by incorporating reverse bend radii or ***RBR***. The unextended e-chain® is stored in a basket. When the platform is raised, the e-chain® unfolds, generating little to no noise. This construction is possible with E4-1 System as well as many other e-chain® systems. Please consult igus® for these kinds of applications.

Technical data - zig-zag

Travel max.	131 ft (40 m)	
v max.	1.31 ft/s (0.4 m/s)	depending on application, please consult igus®
a max.	3.28 ft/s² (1.0 m/s²)	depending on application, please consult igus®

Standard

We recommend pivoting mounting brackets for zig-zag applications



Space-saving solution - stroke heights of over 65.6 ft. (20 m) are possible

Special solution
liftband -
vertical guidance with limited space

Modular, silent, space saving - vertical guidance for energy, data and media. High vertical applications that have plenty of space horizontally but allow only for little system height can be implemented with the liftband.

- Available in 2 sizes
- Alternative to Zig-Zag solution
- Lighter and smaller installation space
- Vertical applications implemented with ease
- Maximum expansion length: 42.7 ft. (13m)

More information ➤ Chapter 9





e-chain system® Design
Side Mounted Applications

Standard

We recommend locking mounting brackets for side-mounted applications

Side-mounted e-chains® - are strongly recommended if the installation height is restricted.



E4 e-chains® assembled in an unsupported manner on the traveling column machine. The Y and Z axes have a travel of 314.9" (8,000 mm) and 68.9" (1,750 mm) at a speed of 82 ft/min (25 m/min).



e-chain®, side-mounted, supported System E4

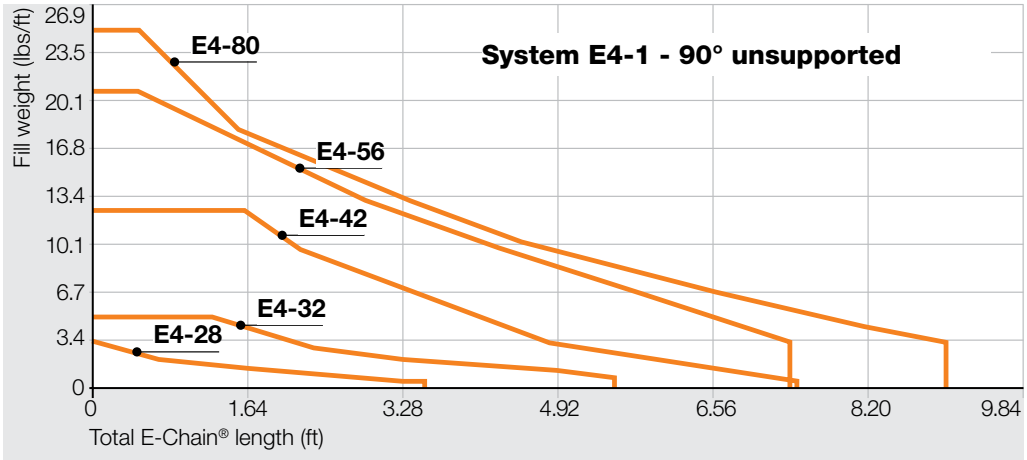
Short travels with or without support

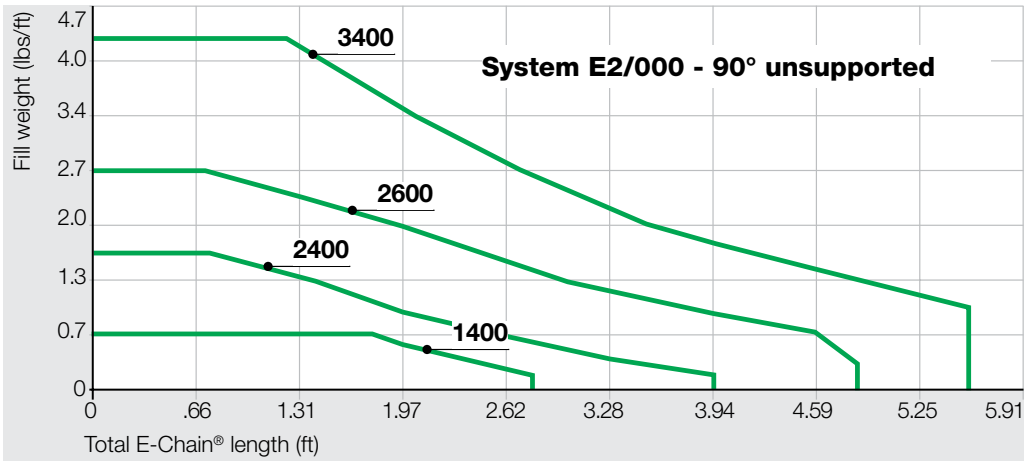
igus® e-chains® placed on their side can be used unsupported to a limited extent. The turned "unsupported length" in this case is dependent on the following factors:

- Fill weight
- Width of the e-chain®
- Bending radius
- Parallel placement

The greater the fill weight of the e-chain®, the shorter the available unsupported length. When placed on its side, the chain width, in effect, becomes the height. As this "height" increases, the e-chain system® becomes proportionally more stable. Small bending radii provide greater stability. If further movement in a second axis is added to the parallel motion of two chains, the unsupported length is impaired. For applications with low fill weight, the standard mounting brackets are adequate. If, however, the fill weight is high and the travels are long, the e-chain® must then be supported either in whole or in part. Due to the variety of application possibilities, we strongly recommend you make use of our consulting services.

Example load diagrams for e-chains® side-mounted at 90°





The unsupported lengths can be extended by supporting the links next to the mounting brackets. Please consult igus® for more series and details

e-chain system® Design
Side Mounted Applications



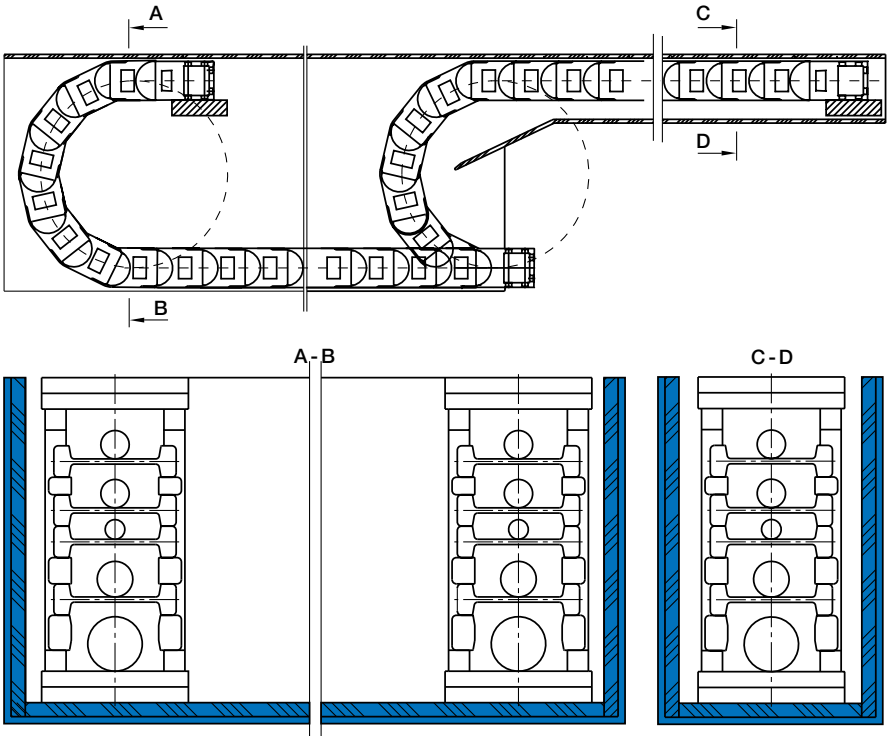
System E4 e-tube in direct chip area E4/light

Long travel, gliding

Side-mounted e-chains® can travel over 328 ft (100 m) with adequate guidance. All chain types are designed to operate gliding on their side. The corresponding glide surface is usually an igus® polymer, stainless steel or galvanized steel, depending on how high the demands on the travel speed and service life are. Roller and ball bearings or additional gliding elements are not necessary for igus® e-chains®.

Cables and hoses

Cables and hoses must be guided so that the e-chain system® can move freely at all times. The igus® modular separation options offers numerous possibilities, such as separators and spacers, to keep these cables/hoses separated and bending freely for maximum service life. igus® will gladly provide an application analysis, free of charge.



Principle of a guide trough for long travel, side-mounted



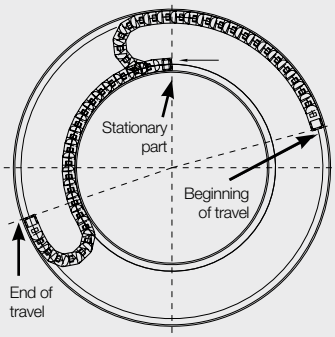
igus® - Series E4 with partial support

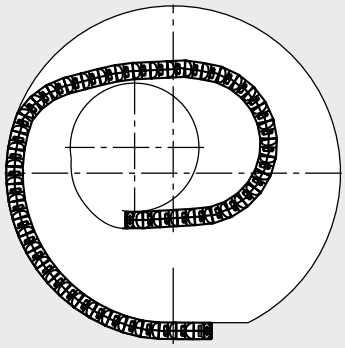


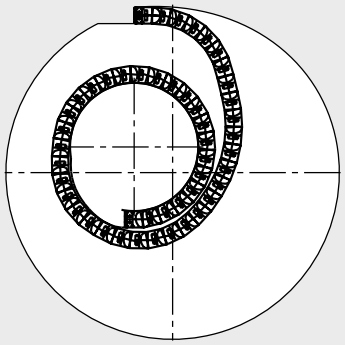
Unsupported - System E4

e-chain system® Design
Rotary Motion - RBR - Applications

We recommend pivoting mounting brackets for most applications with rotary motions







Standard E2/000 e-chain® angle of rotation 225°



RBR-rotary movement with igus® System E4, installed on a crane



Rotary motion with a standard igus® e-chain®



Circular motion of 180° with standard e-chain® on a crane turret drive

Rotary motion with an “RBR”

RBR is “reverse bending radius” and means that the e-chain® can bend in two directions. Each igus® e-chain® can incorporate ***RBR*** designs, with the exception of several radii, for the e-tubes R117 to R9850 and for the Series 07, 09, 14, 15, and 17. The ***RBR*** does not necessarily need to be identical to the normal bending radius of an e-chain®. For example: Part No. E4-32-15-100/425-0, describes a Series E4-32 e-chain® with an inner width of 5.91 (150 mm), standard bending radius of 3.94 (100 mm) and ***RBR*** of 16.73 (425 mm).

Most rotary motions can be achieved with the ***RBR*** option. **Angles of rotation up to 540°** have been achieved. Below is an example of rotary motion using an ***RBR*** e-chain®. Please consult igus for your particular application.

Rotary movements require less installation height. The e-chains® glide mostly on surfaces made of polymer, stainless steel or steel and are guided through channels into a rotary movement. (See “side-mounted” for further design tips.) Bending radius, circular radii and e-chain® widths are variable with this product line.

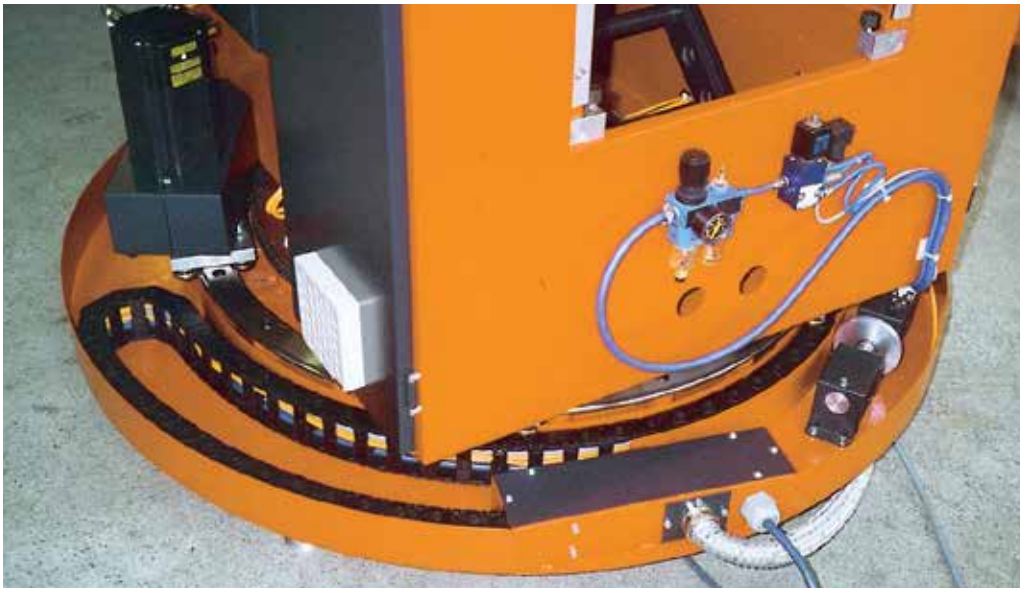
Rotary motion with standard e-chains®

The photo to the left shows an application which was achieved using “standard” e-chains® (standard, in this case, means that the e-chain® only bends in one direction). Such solutions are possible if a **great deal of space** is available and if the angles of rotation are limited to a maximum of 450°. All igus® e-chains®, e-tubes and chainflex® cables are appropriate for this situation.

Technical data - rotary motion RBR

Max. angle of rotation	540°	more upon request
v max	6.56 ft/s (2.0 m/s)	more upon request, depending on the application
a max	65.6 ft/s² (20 m/s²)	more upon request, depending on the application

e-chain system® Design
Rotary Motion - RBR - Applications



System E2 medium with 360° *RBR* rotary motion on a robot

Product range for rotary motions with RBR

e-chains® with ***RBR*** are available as standard from stock for the complete Triflex® range. In addition, we supply a number of e-chains® which are molded with ***RBR***. For all other types, ***RBR*** requires modification We will be more than willing to offer you this option.

The e-chain® Series appearing in the table are ***RBR*** versions available from stock. Almost all igus® e-chains® can be delivered as a ***RBR*** version. Please contact us for an special inquiry.

- chainflex® cables with TPE outer jacket are specially suited for e-chains® with ***RBR*** option
- Please use for e-chains® with ***RBR*** option a strain relief only for the moving end

Table of RBR e-chains® available from stock

Part Number	Series
03-05-10/70	E2 micro
03-10-010/070-0	E2 micro
05-16-018/018	E2 micro
06-20-018/018	E2 micro
06-20-038/350	E2 micro
06-30-018/018	E2 micro
06-64-018/018	E2 micro
10-1-028/028	E2 mini
10-1-038/600	E2 mini
10-1-048/048	E2 mini
10-1-075/220	E2 mini
10-2-028/028	E2 mini
10-2-038/600	E2 mini
10-2-048/048	E2 mini
10-2-075/220	E2 mini
10-3-028/028	E2 mini
10-3-038/600	E2 mini
10-3-048/048	E2 mini
10-3-075/220	E2 mini
10-4-028/028	E2 mini

Part Number	Series
10-4-038/600	E2 mini
10-4-048/048	E2 mini
10-4-048/400	E2 mini
10-4-075/220	E2 mini
B15i-050-100/460	E2 mini
1400-050-075/075-0	E2/000
1400-068-038/038-0	E2/000
1500-038-075/450-0	E2/000
2400-09-055/250	E2/000
2700-15-150/090	E2/000
250-05-060/060	E2 medium
250-07-060/060	E2 medium
E/Z14-1-038/038	E-Z Chain®
E/Z14-2-038/038	E-Z Chain®
E/Z14-3-038/038	E-Z Chain®
E/Z14-3-075/075	E-Z Chain®
E/Z14-4-038/038	E-Z Chain®
TE14-50-028/028	SnapChain
TE26-120-063/063	SnapChain

Many igus® e-chains® are available with ***RBR*** -reverse bending radius. Please see the 'Product Range' for relevant series.



Vertical rotary motion of an E2 e-chain®

The e-chain® series appearing in the table at the left are ***RBR*** versions available from stock. Almost all other igus® e-chains® can be special ordered as ***RBR***. Please contact us for any special inquiry.

e-chain system® Design
Rotary Motion - RBR - Guide Troughs



Rotary motion with ***RBR***, diameter 236.2" (6,000 mm), with ***RBR*** the inner ring rotates



Guide troughs for rotary applications

igus® guide troughs - standard modular system RM

For rotary motions up to 540° igus® offers a modular system of guiding trough systems. Those systems are divided into an inner and an outer ring. Since one ring is moving together with the e-chain® there is no relative movement between e-chain® and trough, so the wear is reduced to an absolute minimum. Depending on the application they are made from galvanized steel or stainless steel.

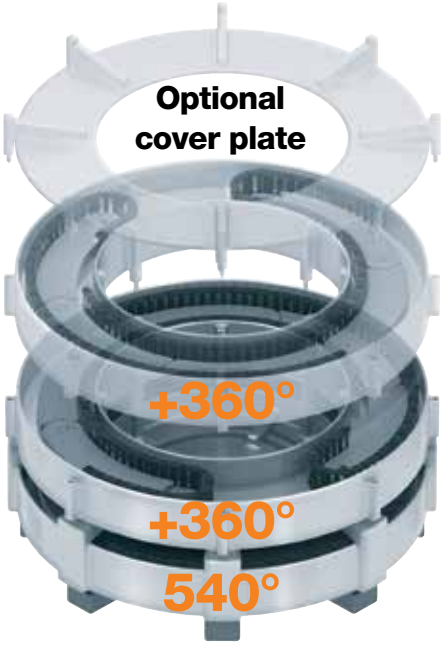
Realize 900° and more with igus® Multi Rotation Modules (MRM)

igus® Multi Rotation Modules help to realize rotating movements up to 900° and more. Thanks to stackable add-on modules the angle of rotation can be extended "virtually" indefinitely. The Multi Rotation Modules are also ideally suited for rotary motions with high fill weights and limited space.

- Several individual systems are stacked on each other and form a complete system
- The maximum rotation of the individual levels can easily be added, thereby enabling rotary motions up to 900 degrees and more
- Compact design enables the operation even in tight spaces, and can be extended as needed
- High fill weights possible
- e-chains® can be assembled easily
- Peripheral speeds up to 3.28 ft/s (1 m/s)
- One layer for rotation movements up to 540°, two layers for up to 900°, higher rotation angle possible with more layers



Typical application areas:
offshore, stacker/reclaimer, bucket-wheel excavators, rotary cranes, other rotating applications



Functional principle

- As the defined rotation angle of the lower layer is reached, the next upper module is carried along automatically due to an integrated connection system
- The construction minimizes potential interference. The Multi-Rotation Module-System is ideal for rotary applications, heavy loads and for harsh environments
- Unlike other systems using sliding contacts, the e-chain® can also guide hoses for air, gas or fluids, as well as bus and fiber optic cables

e-chain system® Design
twisterchain® - twisterband - e-spool

Circular and spiral movements up to 540° - twisterchain®

- Higher loads and smoother running
- igus® 2nd generation of twisterchain® circular e-chains® significantly improved smoothness, stability and strength
- The twisterchain® has a modular construction for width, height and radius
- Stronger with intermediate link - more fill weight possible
- 25% less weight than existing twisterchain®
- Rotary speeds up to 3.28 ft/s (1 m/s) and more, rotary/spiral movements up to 540°
- Highly dynamic and smoother running (with the guide trough Type 01)

More information ➤ see Chapter 8



Rotary movements in small spaces - twisterband

- Compact
- Cost effective
- Low wear and low maintenance in a confined space
- Energy (in the process), data and media are kept secure
- Rotary movements up to 7000° (Installation position, vertical: up to 3000°, horizontal: 7000° and more possible)
- Rotary speeds up to 360°/s possible
- Minimum installation space, fits closely around the rotary axis
- Can be reliably used in various installation positions (horizontal or vertical)
- Compact, modular and lightweight

More information ➤ see Chapter 8



Special solutions for multi-axis motion

The cable reeling drum without a slip ring - igus® e-spool

- Route many different cables in very narrow spaces
- Different media and diameters possible in one drum
- No tensile load of the cables
- Energy supply in all possible directions (horizontal, vertical, diagonal)
- Space-saving, no "e-chain® junction" - e-chain® rolled into the home position, access paths remain free
- Cable diameters up to .67" (17 mm)
- Cables can be retrospectively added or changed
- Alternative to zig-zag solutions
- Maximum deployment and retract speed: 3.28 ft/s (1 m/s)

More information ➤ see Chapter 8



igus® e-spool and zig-zag solutions in a theatre. Space-saving and maintenance-free: guide all kind of energy, data and media safely, in all directions



e-spool standard and HD - flexible use



e-spool compact - space saving, spring-driven



e-spool for manual operation - cost-effective

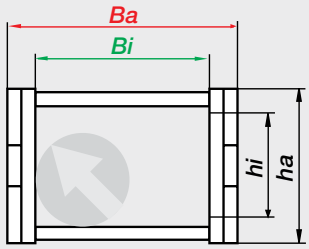


e-spool power - motor-driven for long extension lengths

e-chain system® Design
Cable and Hose Packages
General Rules

Rules for:
- Maximum conduit diameters
- Shelving
- Bend radius

Electrical cables need at least 10% reserve space all around, hydraulic hoses require 20%



The maximum conduit diameter is specified for each series in its respective chapter



Hydraulics and electric cables are separated from one another in this example

General rules for cables and hoses in e-chains®

The key advantage of an igus® e-chain system® is the safe accommodation of various forms of data cables and energy suppliers in one system. We recommend the optimal separation layout of the cables/hoses in the carrier, but you, the customer, are still afforded the final choice. It is possible, for instance, to maintain minimum distances between bus and motor cables and mix pneumatics, electric and hydraulics in the same compartments. In addition to the quality of the cables used, the arrangement of each cable/hose within the chain and the space allowed, are important for the service life of the system. Various separation options enable the adaptation of the e-chains® to the specific requirements of each respective application. In this chapter, we give you detailed recommendations. Due to the variety of the application parameters, we strongly recommend you take advantage of our free consultation services. Simply give us a list of your cable requirements (or merely the required electrical or other services) and you will receive our recommendation by the end of the next business day.

Maximum cable and hose diameters

The maximum cable and/or hose diameter corresponds to the inner height of the selected e-chain®/e-tube, with additional minimum clearance. This minimum clearance would be, for example, 10% for electrical round cables, 20% for hydraulic hoses. An e-chain® is ideal if a minimum lateral gap to the next cable or hose has been factored in. Depending on the nature of the cables, the dynamics, and the expected service life, more clearance must be allowed. In specific cases, clearances may be altered further. Please consult igus®.



Neatly laid cables with igus® interior separation

e-chain® Interior separation

Cables and hoses with very different diameters should be laid separately. The separation is achieved using modular separators. Cables and hoses must **under no circumstances** have the opportunity to tangle. Therefore, the clearance height of a compartment with several similar cables or hoses next to one another **must not amount to more than one and a half times the cable/hose diameter.**



The igus® modular e-chain system® solves all known requirements for interior separation

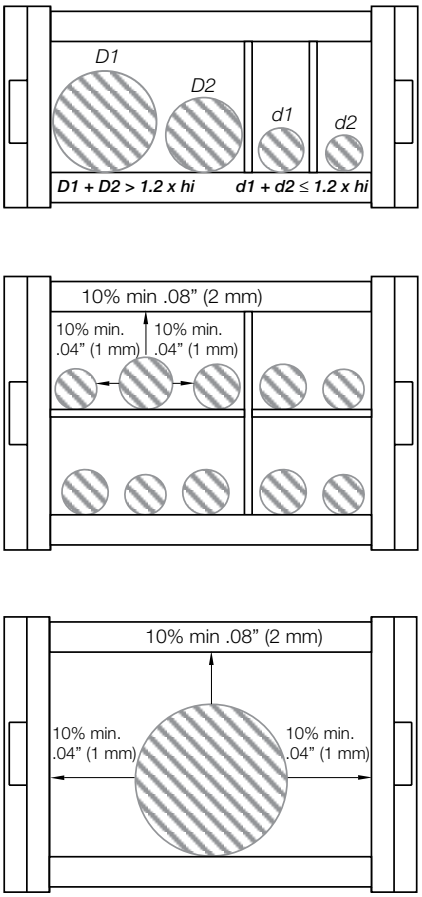
e-chain system® Design
Cable and Hose Packages
Distribution Rules

Reasons for distribution rules

The cables and hoses must be laid so that they can move freely at all times and so that no tensile force is exerted at the radius of the e-chains®. For high-speed applications and high cycles, **cables or hoses must not be laid on top of each other without horizontal separation.** The standard values for this are: Travel speed over **1.64 ft/s (0.5 m/s)** and cycles over **10,000 per year.** igus® interior separation offers a safe solution for this situation.

Further guidelines for distribution

The cable or hose weight should be symmetrically distributed along the width of the e-chain®. Cables and hoses with different outer jacket materials must not be allowed to "stick" together. If necessary, they must be laid separately. All igus® chainflex® cables can be combined with each other and all other brands of cable or hose. The cables and hoses should always be fixed at the moving end. The fixed end should always involve strain relief. Exceptions are made only for certain hydraulic hoses with length compensation issues or other high pressure hoses **Generally, the faster and more frequently the e-chain® operates, the more important the exact positioning of the cables and hoses inside the chain. Due to the wide variety of the possibilities, we strongly recommend you take advantage of our free consultation services for your specific applications.**



Clearance space "all-around" for round electrical cables

Distribution Rules

D1 + D2 > 1.2 x hi

Rule 1: If D1 + D2 > 1.2 x chain inner height, no separation between the two cables/hoses is necessary. Two cables or hoses should never be left unguided on top of one another or be allowed to become tangled.

D1 + D2 ≤ 1.2 x hi

Rule 2: If d1 + d2 ≤ 1.2 x chain inner height, a vertical separator or a horizontal shelf must be used to reduce the inner height, thereby preventing the entanglement of d1 and d2.

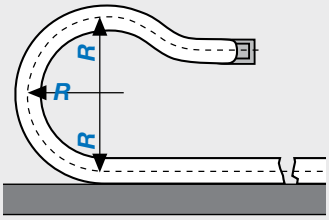
Clearance space in %	
Electrical round cables	10
Electrical flat cables	10
Pneumatics	5-10
Hydraulics	20
Media hoses	15-20

Bend radius *R*

The bend radius of our e-chain® depends on the thickest or stiffest cable or hose in your application. The bend radii of the e-chains® should be adjusted to the recommendations of the cable or hose manufacturer. The selection of a larger radius than the minimum will positively affect service life. The specification of minimum bend radii for cables and hoses refers to use at normal temperatures; other bend radii may be recommended. Please ask your cable or hose supplier for details. We recommend complete e-chain systems® - where bend radii for all cables and hoses, interior separation and service life are optimally matched. igus® chainflex® cables permit a small bend radius of 4 x d for one million strokes



e-chain® with extension links supports a smaller e-chain® with electric cables



Pinciple sketch - bending radius *R*

e-chain system® Design
Cable and Hose Packages
Distribution Rules



Corkscrewing: an effect of improper cable and hose placement in an e-chain®



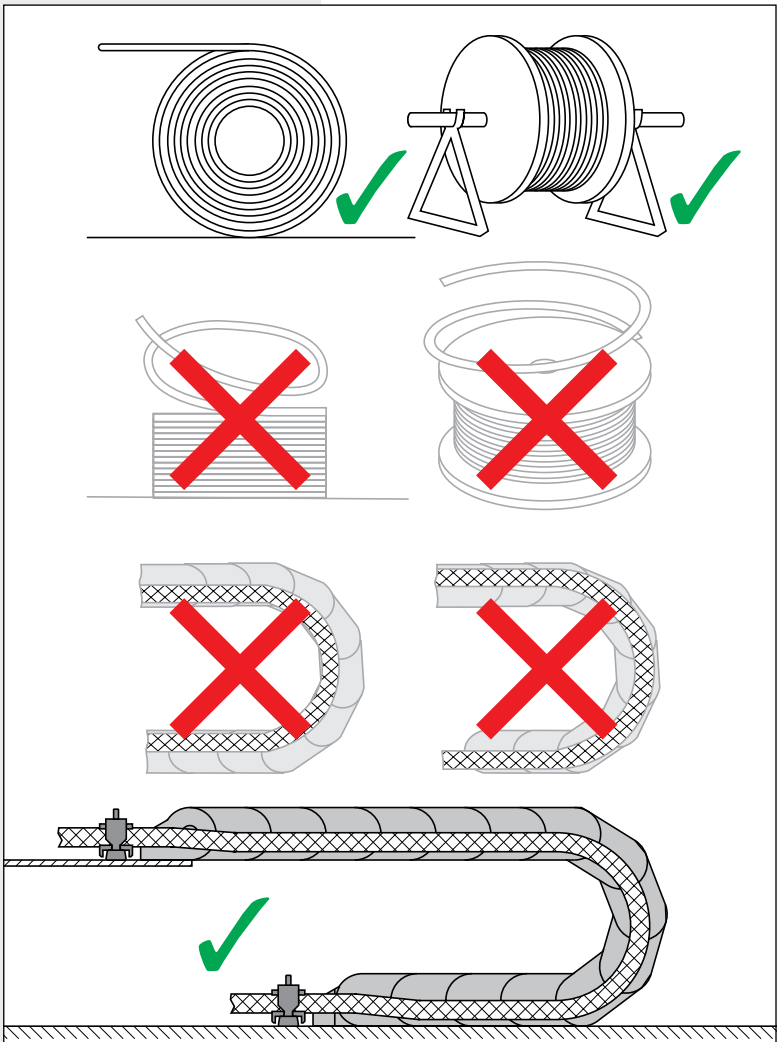
Example from igus® test laboratory: continuous development and testing of chainflex® round electrical cables

Round Electrical Cables

For electrical cables, the round cable is a safe, modular and cost-effective solution for e-chain systems®. We recommend the following criteria for selecting the proper round electrical cables:

- Small minimum bending radii and mounting heights
- Strain relief integrated directly into the mounting bracket
- Uncomplicated installation process - no hanging, laying out, etc, of cables
- Long service life at minimum bending radius
- Service life expectations for your application (short or long travel, hanging, etc.)
- Test data on service life from realistic tests
- Flexible shields for shielded cables
- Abrasion-resistant and non-adhesive outer jackets
- Large selection to avoid expensive custom designs

For bus cables and fiber optic cable, special attention must be paid to how effective transmission rates and shielding remain after millions of cycles at the minimum bending radius.



Cables must be able to bend freely. chainflex® cables can be strain-relieved directly at the mounting bracket

Installation and strain relief of round electrical cables

1. The cables must be laid straight, without twisting. Cables must not be uncoiled from the top of the spool. igus® chainflex® cables are immediately ready for placement directly into the e-chain®. They need not be disconnected or laid out before installation.
2. The cables must be laid so that each individual cable can move freely from side to side.
3. The cables must be able to move freely along the radius. This must be double-checked if the upper run operates at the cable's maximum bending radius.
4. The division of the carrier's interior using shelves or igus® interior separators is necessary if several cables and/or hoses with varying diameters are laid out. It is important to prevent cables and hoses from tangling.
5. For cables and hoses with different jacket materials, it is important to prevent them from "sticking" to one another. If necessary, they should be separated. igus® chainflex® cables can be combined with all others.
6. Round electrical cables must be secured with strain relief at both ends. In exceptional cases, the cables may be fixed with strain relief at the moving end of the e-chain® only. A gap of 10-30 x cable diameter between the end of the bending segment and the fixed point is recommended for most cables. chainflex® cables can, on the other hand, be secured directly to the mounting bracket with strain relief (this has been confirmed with testing).

We will be pleased to provide you with recommendations for complete e-chain systems® - where bending radii for all cables and hoses, interior separation and service life are optimally matched

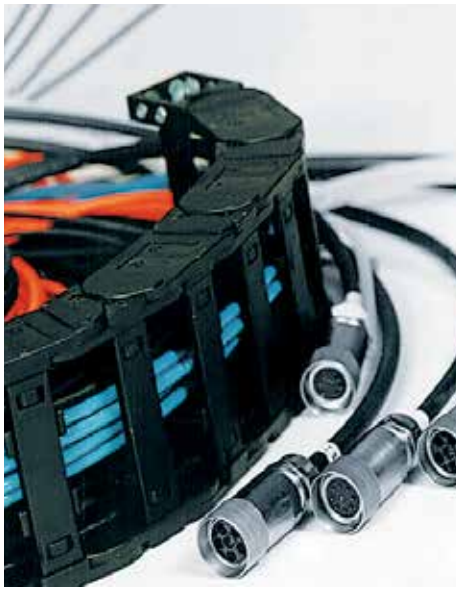
e-chain system® Design
Cable and Hose Packages
Distribution Rules

Pneumatic hoses

In principle, the same rules apply for pneumatic hoses as for round cables. In practice, it has been demonstrated that pneumatic hoses are less susceptible to wear. After consultation, they can be laid together more closely than the “10% clearance all-around” rule. A double-sided strain relief is required under these conditions. For pneumatic hoses made of rubber, we recommend strictly following the “10% clearance” rule because they tend to adhere to each other and to other cables/hoses.

Flat cables

Flat cables must be able to move freely along the bending radius. Two flat cables next to one another should be kept apart with separators. If two flat cables are laid on top of one another, we strongly recommend the use of horizontal igus® shelving. Flat and round cables should be laid separately in the e-chain®. Strain relief should be attached at both ends. Flat cables are only conditionally recommended for use in e-chains®.



Fully pre-assembled e-chain system® with several pneumatic and hydraulic hoses

Hydraulic hoses

When designing hydraulic hoses in e-chains®, special attention should be paid to the expansion of the hoses when pressurized. Sufficient room must be left in the e-chain® for this as well as the possible larger external diameter of the hoses under pressure. It is important for selected hoses to be sufficiently flexible (i.e. meet bending radius specified by the e-chain®). The gliding ability and abrasion-resistant surface of the hoses are also important. All crossbars and shelves in the igus e-chain® minimize abrasion of hoses through wide, rounded and smooth surfaces. Normally, hoses with textile braiding are more flexible than hoses made of steel wire, while maintaining smaller outer diameters and better fatigue strength under stress.
As lateral movements of the hydraulic hoses within the chain can lead to increased abrasion of the hose material, they should be secured in position with vertical separators, but not forced. Special “locking” separators, which grip the opening crossbars of the chain, as well as the use of “spacers,” prevent lateral shifting of the separators; they also ensure the hoses stay put in cases of strong vibration and impact on the chain. Details about these accessories can be found in the description of various chain types.

Strain Relief

Hydraulic hoses are most often stretched lengthwise during operation. This must be taken into account when applying strain relief. More hose length is factored in to allow the hose to “breathe,” or “floating” strain relief must be implemented. In some cases, strain relief on the moving end only can be tolerated.

Rollclip

In almost all cases, the broad, smooth and rounded surfaces of all igus® e-chains® and tubes are sufficient to protect hydraulic hoses from abrasion. In extreme cases, the igus Rollclip can be installed. The hoses come in contact with a series of polymer cylinders which rotate. “Extreme” cases include particularly soft materials, particularly narrow bending radii or highly dynamic loads. Over 95% of all applications can be solved without Rollclips.

● Pneumatic hoses

The igus® program also offers polymer pneumatic hoses called chainflex® Air

● Flat cables

Outer jackets made of rubber must be specified particularly carefully, because of potentially high friction

● Hydraulic hoses

Hydraulic hoses need more space: 20% all-around clearance



The new roller crossbars for the E4.1 system significantly reduce jacket abrasion of very stiff cables and hoses with rolling contact surfaces equipped with tribo-optimized bearings. Available upon request

e-chain system® Design
Strain Relief Elements
Chainfix

Ideally, the cables/hoses should have strain relief at both ends of the e-chain®. At the very least, they must have strain relief at the moving end of the e-chain®.

For more information on all igus® strain relief elements, ➤ Chapter 10



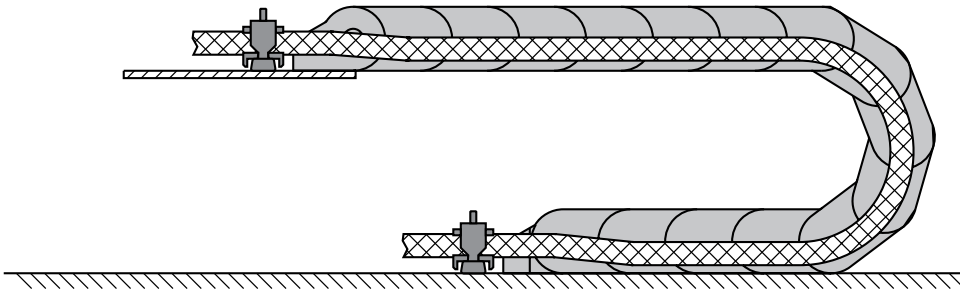
Strain relief in KMA mounting bracket with profile rail.

Strain relief for electrical cables

Strain relief can consist of standard elements or can be custom-made. For most applications, our standard program of profile rails in mounting brackets and space-saving Chainfix® clamps can be used. We also offer simple strain relief solutions using cable tiewraps and tiewrap plates. In ideal cases, the cables should be secured at both ends of the e-chain® with strain relief (in a few instances, strain relief at the moving end of the e-chain® is sufficient - please consult igus® for these cases).

Minimum gap of the strain relief and the beginning of the bend radius

Tests on our premises and in field applications have shown strain relief located at the last bending point of the e-chain® has no influence over the durability of igus® chainflex® cables. It is possible, therefore, to integrate the strain relief with the mounting bracket. This space-saving option for strain relief is offered by igus® for almost all e-chains® (More details on this in the individual chapters).



Ideal installation of cables in e-chains®. chainflex® cables can be directly strain-relieved in the mounting bracket (minimum gap to the last curved chain link is not necessary)



Chainfix strain relief with KMA brackets; used here for cables and hoses

e-chain system® Design
Strain Relief Elements
Chainfix

Features of Chainfix clamp

- Optimal igus® Chainfix housing with reduced height
- Long service life for dynamic applications thanks to improved clamping elements
- Integration with KMA mounting brackets - saves both time and space during installation and available for complete systems with cables and strain relief
- Improved housing foot clamp for easy fit into the profile rail
- Black housing and setscrews for attractive appearance
- Setscrews, tightened with Allen wrench, for easy installation
- Mark of the installation direction
- Now with better fixation due to optimized design



Tiewrap plates as individual parts

- Strain relief accessory for igus® e-chain systems®
- Attachment to mounting brackets
- Integration into the profile rail of KMA (polymer/metal mounting brackets)



Tiewrap plates with clip-on connection for the profile rail

The plates **3050.ZC** and **3075.ZC** can be clipped directly into the profile rail without bolts or any extra hardware. Clip-on tiewrap plates can be released and repositioned with just a screwdriver used as a lever.
4 options available:

- Tiewrap plates with clip-on connection for the profile rail
- Integrated strain relief for E2 tubes - series R
- Tiewrap plates for fixed crossbars
- Tiewrap plates for opening crossbars





CFU Honeycomb strain relief

- Up to 80% faster strain relief for different cabes in one slot
- Simply insert cables and hoses into the honeycomb and close
- Easy to make changes - add or remove cables/hoses
- Simplified parts
- Can be used in gliding applications



Strain relief separator

- Can be integrated in mounting bracket
- Can be positioned as required
- Easy installation
- Cost-effective
- For most series from stock



Strain relief element outside of the e-chain® cross section

- Easy strain relief for cables, even in enclosed tubes
- Stepped strain relief - good access when retrofitting several cables with strain reliefs
- Matching for e-chains® and e-tubes
- Easy retrofit assembly possible
- Simple installation into top-hat rails and profile rail on KMA mounting brackets



Chainfix nugget - for profile rail

Option 1: universal cable fixation, for diameter with Ø .79” (20 mm) and Ø 1.18” (30 mm)

- The smart helper for electricians in the machine building industry
- Accessory for all KMA with integrated profile rail
- Easy to assemble, without any screws and tools
- Adjustable to every e-chain® filling
- Very small space requirement
- Easy strain relief with pre-attached cable strap



e-chain system® Design
Technical Data
Material Data

igus® materials

- igumid G
- igumid NB
- igumid ESD
- igumid TE
- igumid GE
- igumid DT

Find technical data about igus® materials, temperatures and chemical resistance
➤**see page 1.47**



igus® factory; automatic compounding and conveyor belt for igumid G

Plastics for longer life® - igus® know-how in polymer materials

Each year, igus® engineers develop more than one hundred new plastic compounds and test igus® products in more than 15,000 experiments per year. That's how in recent years they have built an extensive database of the tribological properties of polymers. This database makes it possible for us to better assess most of the applications in advance and provide our customer with confidence during use. Our calculations and analyses are based on the result of ongoing practical tests in our technical center and our experience with gliding applications. The focal points of our tests are push/pull forces, friction values and abrasion under widely varying conditions and speeds, as well as factors such as dirt, weathering or impact and bumps. We test all system components such as cables, hoses, strain relief and other accessories, in addition to the e-chains® or e-tubes and guide troughs.

Technical environment:

- **Fire resistance**
- **Radiation**
- **Weathering**
- **Cold, heat**
- **Explosion areas**
- **Vacuum**
- **Hot chips**
- **Dirt, dust**
- **Cleanroom**
- **Chemicals**

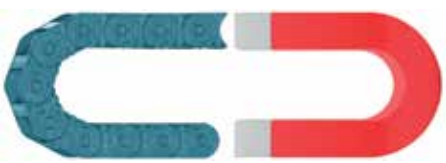
Technical environment

The igumid G material, from which igus® e-chains® are made, possesses the following wide-ranging features to cope with a variety of environments: the ability to handle pressure and strenuous loads, abrasion resistance, sturdiness, stable behavior at high and low temperatures, and suitability for outdoor use. Numerous application examples, from refrigerator blocks to steel mills, prove this. In extreme cases, we also offer modifications and other igus® compounds as a solution. Please consult igus®.

Magnetically detectable plastic e-chains® - For the food and tobacco industry

- The material igumid DT is detected to the tiniest fragment all common metal detection systems and can therefore be selected automatically
- Particles as small as .04" (1.0 mm) can be recognized for fragments passing at speeds of 65.6 ft/min (20 m/min)

More information ➤ www.igus.com



Flammability of igumid G

The flame-retardant characteristics of igumid G can be described using various classifications:

- Test procedure VDE 0304 parts 3-5.70 - classification IIc.
- Tested according to UL 94 “Standard Tests for Flammability of Plastic Materials for Parts in Devices and Appliances” classification 94 HB for .13 and .06 in. (3.2 and 1.6 mm) thickness of the body.
- Tested according to DIN 4102 “Fire Behavior of Building Materials and Parts” classification materials class B-2.

For further requirements, please consult igus® for special solutions, such as materials with self-extinguishing properties (UL94-V2 or UL94-V0).

All e-chains® (except for the E-Z Chains and Series 14 Chains) are made from igumid G.

Flammability of igumid NB

All E-Z Chains and Series 14 Chains are made from the flame-retardant igumid NB material. These chains have the following flame-retardant classifications:

- UL 94 classification - V2
- VDE 0304 Parts 3-5.70 classification - IIb
- DIN 4102 flammability of materials - B2

Please consult igus regarding material availability “V0.”

Temperature resistance

igumid G is very suitable for outdoor applications. In our experience, the mechanical properties of the chain are not impaired. igumid G is also UV-resistant. igus® e-chains® are used in applications as cold as -40°F (-40°C). Installation may be eventually compromised at temperatures below -13°F (-25°C). In such cases, we offer special solutions made from cold-elastic materials. +248°F (+120°C) continuous temperatures are possible, however, the mechanical values are reduced and the service life is impaired. Please consult igus® if you have specific temperature requirements.

Resistance to radiation

igus® offers several solutions for high radiation areas. igumid G is very resistant to high-energy radiation. Under gamma radiation, in the range of 8 x 10^4 rd, the mechanical properties of igumid G change very little. Please consult igus®



Reflecting telescope at 2,200m. Robust under high wind speeds, snow, ice and increased UV radiation



Series 4040R rol e-chain® on a coal unloading system - travel 623 ft. (190 m), speed 1.64 ft/s (0.5 m/s,) fill weight 5.41 lbs/ft. (8.05 kg/m)



Live broadcast from the Winter Olympics in Lillehammer; 246 ft (75 m) travel at -13°F (-25°C)

°F

igumid G:
UL 94 HB (Standard)

igumid NB:
UL 94 V2 (Standard)
UL 94 V0 (upon reqwuest)

igumid G:

- UV-resistant
- Temperature range from:
  -40°F (-40°C) to
  +248°F (+120°C)

e-chain system® Design
Technical Data
ESD & ATEX

- **ESD** - avoidance of static charges in the field of manufacturing processes of electronic components or assemblies
- **ATEX** - prevention of explosive static charge in hazardous environment



100% of the produced ESD e-chains® are checked for their continuous conductivity from one end to the other

Measurements of the electrical surface leakage resistance for igus® e-chains® with the special material igumid GC were made already in 1992 by the igus® GmbH together with the PTB (Physikalisch-Technische-Bundesanstalt) in Braunschweig, supplemented by additional certifications in 1998 and 1999 according to DIN 53482 and the guidelines for static electricity "ZH1/200" of the Federation of Trade Associations. In the course of further innovation, the material igumid ESD was certified by the PTB (Physikalisch-Technische-Bundesanstalt) in May 2002. The material igumid ESD combines in its properties the requirements of the ESD as well as ATEX criteria. In some mechanical requirements, the igumid ESD surpasses even the standard material igumid and has been tested with over 10 million cycles in the igus® technology center.

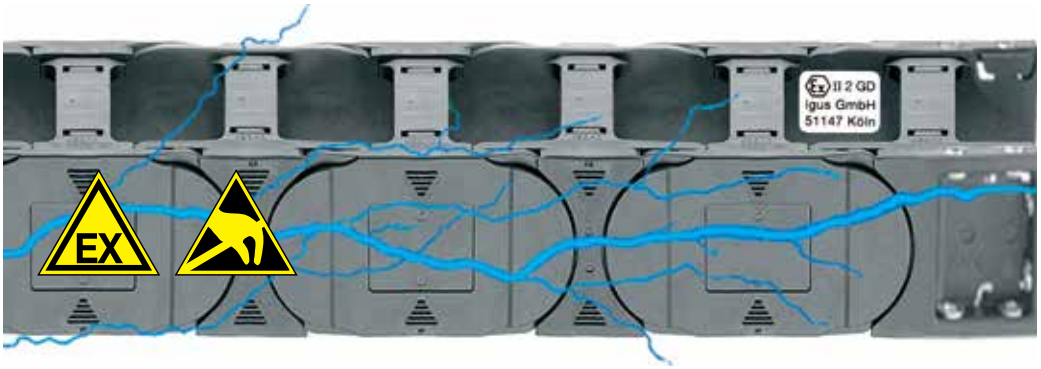
Your benefits with ESD products

- ESD material tested with over 10 million cycles for the highest requirements
- Snap-open e-chains® with mounting brackets and interior separation in ESD and ATEX design available from stock
- Standardized product - igumid ESD with PTB certificate
- Proven over years of use in explosion-proof areas

Conductivity of igus® products from igumid ESD

In contrast to applied conductive surface coatings or potentially volatile incorporated anti-static agents, the additives used in the igumid ESD products from igus® grant long-term, maintenance-free conductivity to e-chains®. However, a conductive e-chains® alone is not enough to ensure sufficient conductivity. Instead, all individual components, as well as the entire e-chain®, must exhibit continuous conductivity. igumid ESD e-chains® are slate grey in color* to distinguish as conductive materials. All products in this catalog are optimized in this regard, and their continuous conductivity is tested, measured and documented prior to delivery. Only igus® e-chains® that have passed these tested are marked with the tested seal, and delivered to igus® customers.

*Exception: igus® Zipper e-chains® Series 07/09



Product range of ESD e-chains® from stock

	Bi	
Zipper	**in.**	**(mm)**
07	.39 - 1.97	(10 - 50)
09	.63 - 1.97	(16 - 50)
E2/000		
1500	.59 - 3.15	(15 - 80)
2500	.98 - 4.92	(25 - 125)
2700	1.97 - 4.92	(50 - 125)
E4-1		
E4.21	1.18 - 2.76	(30 - 70)
E4.28	1.57 - 4.92	(40 - 125)
E4.32	1.97 - 7.87	(50 - 200)
E4.42	1.97 - 7.87	(50 - 200)
E4.56	2.95 - 11.81	(75 - 300)
E4.80	2.95 - 11.81	(75 - 300)

	Ba	
Triflex® R TRC	**in.**	**(mm)**
TRC.40	1.69	(43)
TRC.60	2.56	(65)
TRC.70	3.19	(81)

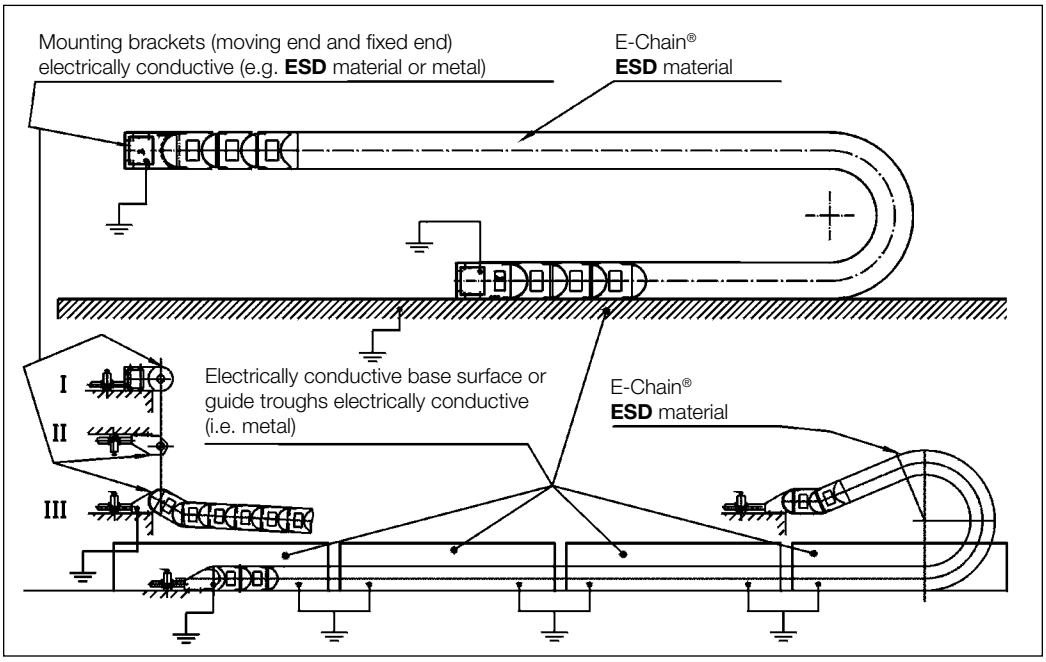
More information on igus® ESD e-chains® - classification Ex II 2 GD

● **General safety information:** these additional operating Instructions apply to the explosion-protected versions of our e-chains® of Type ESD in color grey (similar to RAL 7015). They supplement the Installation Instructions for the standard e-chains® and the catalog information. The information in these instructions relates only to data impacting on explosion protection. The technical information in the Installation Instructions for the standard e-chains® and the category information still apply unchanged unless these Instructions explicitly exclude or replace the relevant information. Required documentation and other documents are filed with the following institute pursuant to the ATEX Directive:
Physikalisch-Technische Bundesanstalt (PTB) Braunschweig and Berlin
Bundesallee 100 • 38116 Braunschweig/Germany

● **Assembly, removal and installation:** please follow the information in the installation instructions for the standard e-chains® and the catalog information on assembly , removal and installation for trouble-free operation. igus® ESD e-chains® must be grounded with appropriate measures in accordance with drawing number 18392.2 in order to discharge any electrostatic charges occurring.
Assembly, installation, commissioning and maintenance may be performed only by personnel trained in explosion protection!
Please also note the corresponding national safety regulations and the relevant national regulations in respect of explosion protection during installation and operation.

● **Commissioning:** before commissioning the system, check that the system has been installed correctly in accordance with the Installation Instructions for the standard e-chains® and the catalog information. Correct grounding must be checked in particular in the case of ESD e-chains®.

● **Maintenance:** igus® e-chains® are maintenance-free. Correct grounding of the e-chains® must be inspected at regular intervals. (*in case of large projects a customized maintenance plans can become an issue and will be created if necessary)



Connection of an e-chain® in accordance with ATEX Directive 94/9/EC

igumid G - Ex II 3 GD
igus® e-chains® made of standard material igumid G correspond to the German federal office of Physics and Technology (PTB) to classification Ex II 3 GD according to ATEX-RL 94/9/EG.

igumid ESD - Ex II 2 GD
igus® e-chains® made of igumid ESD correspond according to the German federal office of Physics and Technology (PTB) to classification Ex II 2 GD according ATEX-RL 94/9/EG

igus® igumid ESD with PTB certificate
We have received an official certificate from the German National Standards Laboratory (PTB) on material igumid ESD and we are able to provide you with a copy on request.

Cleanroom qualification of igus® e-chains®

In many applications where cumbersome special solutions are used, a simple standard e-chain® can be used instead. A comprehensive test program was devised and performed for both gliding use and unsupported use. For many applications, the e-chains® in special materials are practically abrasion-free. Detailed test results are available upon request. IPA tests confirm that standard igus® e-chains® meet cleanroom requirements. "Tested and certified as very good!" e-chains® for cleanroom applications in the test stand cleanroom environment demand very high wear-resistance of moving parts. e-chain®, for example, must be very wear resistant, in order the meet the normal requirements for such a sensitive environment.

Fraunhofer IPA TESTED® DEVICE
igus GmbH
Energy chain E61.29.50.075.0.CR
Report No. IG 1303-640

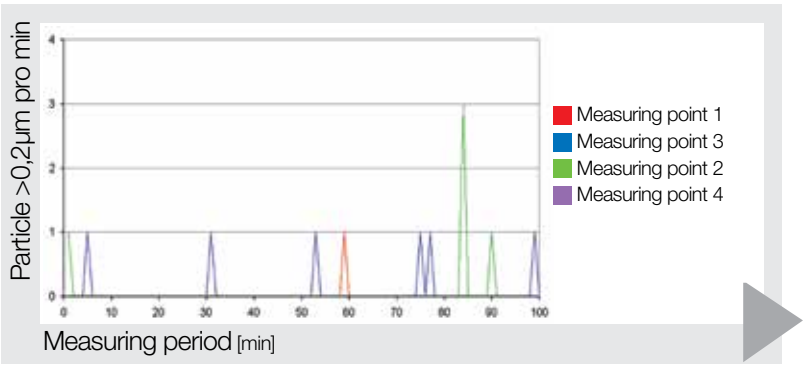
IPA Fraunhofer Institute has tested the following igus® series according to DIN EN ISO 14644-1

Result according to DIN EN ISO 14644-1	Equivalent to US Federal Standard 209E	Classification Series	Report No.	Speed ft/s (m/s)
ISO Class 1	No comparable classification	**E3-15-040-075-0**	IG0704-400	1.64 / 3.28 / 6.56 (0.5 / 1.0 / 2.0)
ISO Class 1	No comparable classification	**E61-29-050-075-0**	IG1303-640-1	1.64 / 3.28 / 6.56 (0.5 / 1.0 / 2.0)
ISO Class 2	No comparable classification	**E14-3-038-0**	IG0308-295	3.28 (1.0)
ISO Class 2	No comparable classification	**1500-050-038-0**	IG1303-640-1	1.64 / 3.28 / 6.56 (0.5 / 1.0 / 2.0)
ISO Class 2	No comparable classification	**T3-29-050-038-0**	IG1303-640-1	1.64 / 3.28 / 6.56 (0.5 / 1.0 / 2.0)
ISO Class 3	ISO Class 1	**E6-29-060-150-0**	IG0704-400	1.64 / 6.56 (0.5 / 2.0)
ISO Class 3	ISO Class 1	**2500-05-055-0**	IG0308-295	6.56 (2.0)
ISO Class 5	ISO Class 3	**E4-32-10-063-0**	IG1303-640-1	1.64 / 3.28 / 6.56 (0.5 / 1.0 / 2.0)

Particle generation measurement



Result: particle generation
E14-3-038-0



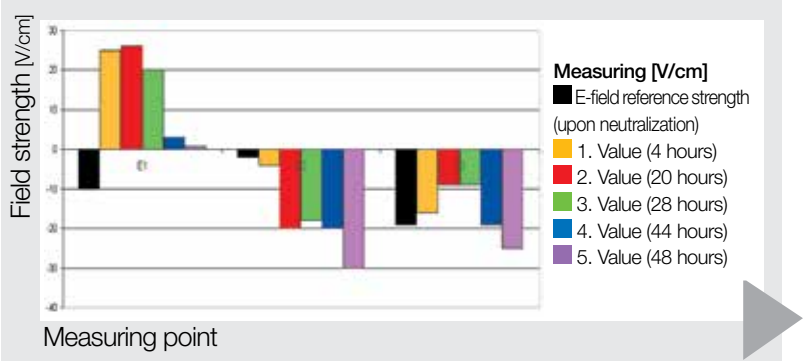
ISO Class 2
according to
DIN EN ISO 14644-1
for E14-3-038-0

Absorption LEVEL 1 confirmed by IPA-Fraunhofer-Institut according to SEMI E78-0998 for the E6 standard material. Continuously constant conductance value as there are no pin-bore connection (no air gaps).

Field strength measurement



Result: field strength
E6-29-050-055-0



Level 1
ESD-compatibility
according to SEMI
E78-0998 for
E14-3-038-0 and
E6-29-050-055-0

e-chain system® Design
Technical Data
Dirty Environments

Spatter, hot chips

Laboratory tests and numerous field applications over the past 20 years have proven that igus®' e-chains® and fully enclosed e-tubes protect cables used in welding robots and machine tools. e-tubes made from the igus® igumid HT material are resistant against hot chips and flying debris up to 1,562°F (850°C), no chips stick. This opens up new possibilities for replacing more complex and expensive steel tubes. All standard E2 and E4 e-tubes are available made from igumid HT, upon request. Please note: igumid G in direct contact with large amounts of melted aluminum is not recommended.



igus® e-tubes in the chip area of machine tools

Dirt, dust, chips

Materials and design make igus® e-chains® excellent problem-solvers in harsh environments. Experience and application references are available upon request. Please consult igus with your application.



Also hot asphalt is no problem for igus® e-tubes

Vacuum

igus® e-chains® made of igumid G can be used in vacuum applications. Very little outgassing occurs.

Chemical resistance

igumid G is resistant to fuel, lubricants, oils, fats, alcohol, ester, ketone, and aliphatic and aromatic hydrocarbons. Oxidants and acids are damaging. The table on ➤ **Page 1.48** shows an excerpt of the precise details concerning resistance to chemicals. Acid-resistant e-chains® are available upon request.



System E4 in an incinerating plant - safe also in abrasive dirt and dust

Coolant resistance

e-chains® and e-tubes have proven resistant to cooling agents. However, we are always willing to perform individual tests if you have particular problems or advanced developments.



Compost sludge - numerous related references available upon request

Chemical Resistance Table
➤ **Page 1.48**

igus® - experience with:
dust, dirt, mud, compost, wood, textile fibers, paper dust, abrasive paste, cooling agents, glass dust, glass splinters, coal dust, sand, corundum and much more.



e-tubes that repel hot chips, up to 1,562°F (850 °C) with the igus® "igumid HT" material.



igus® tests: e-chains® and chainflex® cables are tested for resistance against chemicals and oils in long-term tests

e-chain system® Design
Technical Data
Material Data igumid - Colors

Material data igumid

Material data table Mechanical properties	Units of measure	igumid G	igumid NB	igumid ESD	igumid TE	igumid GE
Yield stress (dry/wet)	MPa	190/130	78/40	*	*	*
Elongation at break (dry/wet)	%	004/006	20/210	*	*	*
Elasticity module (tensile test)	MPa	9000/7000	2900/1200	*	*	*
Limit of elasticity (bending)	MPa	7.800	3.000	9.500	1.290	7200
Bending strength	MPa	240	120	230	55	200
Hardness Shore D	–	79	79	83	72	80
General properties						
Density	g/m3	1,37	1,14	1,2	1,02	1,46
Absorption of humidity 23/50 RF	% by weight	1,4	3,4	1,9	0,8	0,7
Maximum water absorption	% by weight	5,6	7,6	7,3	1,6	4
Electical properties						
Specific transitional resistance	Ω*cm	>1011	>1011	<109	>1011	>1011
Surface resistance ROA	Ω	>1011	>1011	<109	>1011	>1011
Thermal properties						
Lower application temperature	°C / °F	-40°C / -40°F	-40°C / -40°F	-40°C / -40°F	-40°C / -40°F	-40°C / -40°F
Upper long-term application temp.	°C / °F	120°C / 248°F	80°C / 176°F	80°C / 176°F	70°C / 158°F	120°C / 248°F
Upper short-term application temp.	°C / °F	180°C / 356°F	170°C / 338°F	150°C / 302°F	140°C / 284°F	200°C / 392°F
Material certificates						
Fire resistance as per UL94	–	HB	V2	HB	HB	HB
Silicone-free	–	++	++	++	++	++
Halogen-free	–	++	++	++	++	x
2002/95/EG (RoHS)	–	++	++	++	++	++
2002/96/EG (WEEE)	–	++	++	++	++	–
Color						
according to RAL, approx.	–	■ ≈RAL9004	■ ≈RAL9004	■ ≈RAL7015	■ ≈RAL9004	■ ≈RAL9004

++ = yes x = no *Values upon request

Colors and special solutions

Product prices are always based on the color black. e-chains® in any color shown in the color selection chart are subject to a percentage based color surcharge. Any other colors that are not shown in the chart are individually calculated depending on the article and quantity, insofar as this is technically possible. As a rule, colored e-chains® are not available from stock. Delivery lead-time and surcharges for colored e-chains® are available upon request. As a rule, all specifications related to stability (for instance unsupported lengths) and material characteristics apply only to black e-chains®. The characteristics of colored e-chains® may differ. This also applies to all e-chains® from special materials, such as conducting e-chains® made from igumid ESD material or other special materials. For technical reasons HT and ESD materials cannot be supplied in other colors.

e-chain® color variations with RAL-numbers

Color	Availability	RAL #	Part No. Suffix
Black	Standard, from stock	≈ RAL 9004	**-0**
Dusty grey	special color, e-tubes only	≈ RAL 7037	**-31**
White	special color	≈ RAL 9003	**-1**
Grey white	special color	≈ RAL 9002	**-1S**

Color	Availability	RAL #	Part No. Suffix
Orange	special color	≈ RAL 2003	**-2**
Yellow	special color	≈ RAL 1018	**-4**
Light grey	special color	≈ RAL 7035	**-14**

Black e-chains® available from stock! Delivery time for special colors: Please consult igus®.

e-chain system® Design
Technical Data
Chemical Resistance

Medium	Concentration weight %	igumid G / NB	igumid TE
Acetic acid	2	++	+
Acetone	100	++	++
Ammonia (aqueous)	10	++	++
Benzole	100	++	++
Bitumen	100	+	–
Boric acid (aqueous)	10	++	+
Butyric acid	100	+	–
Calcium chloride (aqueous)	Sat. aq. sol.	++	++
Caustic potash	10	++	++
Chlorinated hydrocarbons		++	+
Chlorine water	Sat. aq. sol.	–	–
Chromic acid (aqueous)	1	+	–
Color		++	++
Diesel oil	100	++	++
Fats, cooking		++	++
Fluorinated hydrocarbons		++	++
Formaldehyde (aqueous)	30	+	+
Formic acid (aqueous)	2	+	++
Gasoline	100	++	++
Hydraulic oils		++	+
Hydrochloric acid	pH_2	+	–
Hydrochloric acid	2	–	–
Hydrochloric acid	10	–	–
Ink, printing ink		++	++
Mercury		++	++
Methyl acetate	100	++	++
Milk		++	++
Mineral oil		++	++
Oil, cooking		++	++
Oil, lubricating oil		++	++
Oleic acid	100	++	++
Paraffin oil		++	++
Perchlorethylene	100	++	–
Polyester resins (with styrene)		++	++
Potassium carbonate (aqueous)	60	++	++
Potassium sulphate (aqueous)	100	++	++
Propane gas		++	++
Sodium carbonate (aqueous)	50	++	++
Tartaric acid		+	++
Vaseline		++	++
Zinc sulfate (aqueous)	10	++	–

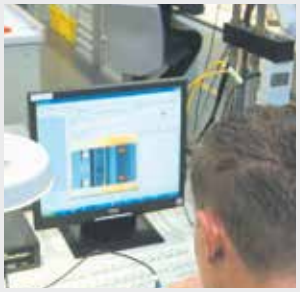
The values specified are values determined by laboratory tests and are material-specific. All specifications apply to black e-chains®

Resistance classes

++ = resistant
+ = conditionally resistant
– = non-resistant
Sat. aq. sol. = saturated aqueous solution

e-chain system® Design Standards and Certificates

Examples for test certificates and approvals of igus® products



Quality inspection of every e-chain® production



Test location for ESD-e-chains®



chainflex® cables with many certificates for e.g. DESINA



Noise level tests in igus® own acoustic laboratory

ISO 9001:2015

igus® Inc. has been certified since May 2002

TÜV construction test

igus® e-chains® and e-tubes are construction-tested by TÜV Rheinland. igus® e-chains® were tested and passed by TÜV Rheinland in accordance with the valid machine guidelines. As a result, the user of igus® e-chains® need not worry about meeting CE requirements through testing for this portion of the machinery. The construction test 2PFG 1036 / 10/97 for protective equipment includes the following:

- Application/safety
- Assembly
- Fatigue strength
- Resistance to external influences
- Sharp corners and edges

ESD/ATEX

igus® e-chains® made of standard material igumid G correspond to the German federal office of Physics and Technology (PTB) to classification Ex II 3 GD according to ATEX-RL 94/9/EG. igus® e-chains® made of igumid ESD correspond according to the German federal office of Physics and Technology (PTB) to classification Ex II 2 GD according ATEX-RL 94/9/EC.

IPA Cleanroom

Many e-chains® are suitable for the use in cleanrooms according to DIN EN ISO 14644-1. Confirmed by the IPA Fraunhofer Institute.

UL, CSA, CEI, CE, VDE

All igumid-materials for e-chains® and e-tubes have got the UL-material approval. The material igumid NB has the fire protection class approval IIb according to the test VDE 0304 Part 3/5.70, the approval V2 according UL94 and the construction material class B2 according DIN 4102.

Interbus, CC-Link and DESINA

chainflex®- cables are produced according to a variety of international standards. **Interbus certification:** for Interbus certification of certain CF11 bus cables. **CC-Link**: CC Link is a Fieldbus established by Mitsubishi Electric Automation. igus® chainflex® CFBUS.035 is

Clearly quieter

igus® e-chain systems® are clearly quieter. In the acoustic laboratory of the TÜV and the igus® GmbH different e-chains® were compared. The igus® System E3, E6 and E4/00 (Series E4/101) are measurably (and clearly) quieter than other products

igumid

The material igumid is free from toxins, according 2011/65/EU (RoHS2).

iF Design Award

32 iF Design Awards since 1987

Certified ISO 9001:2015

TÜV Rheinland Product Safety BAUART GEPRÜFT TYPE APPROVED

EX PTB

Fraunhofer IPA TESTED DEVICE

NFPA 79

INTERBUS Certified! No. 141

CC-Link

DESINA

www.tuv.com TÜV Berlin ID: 3111005400

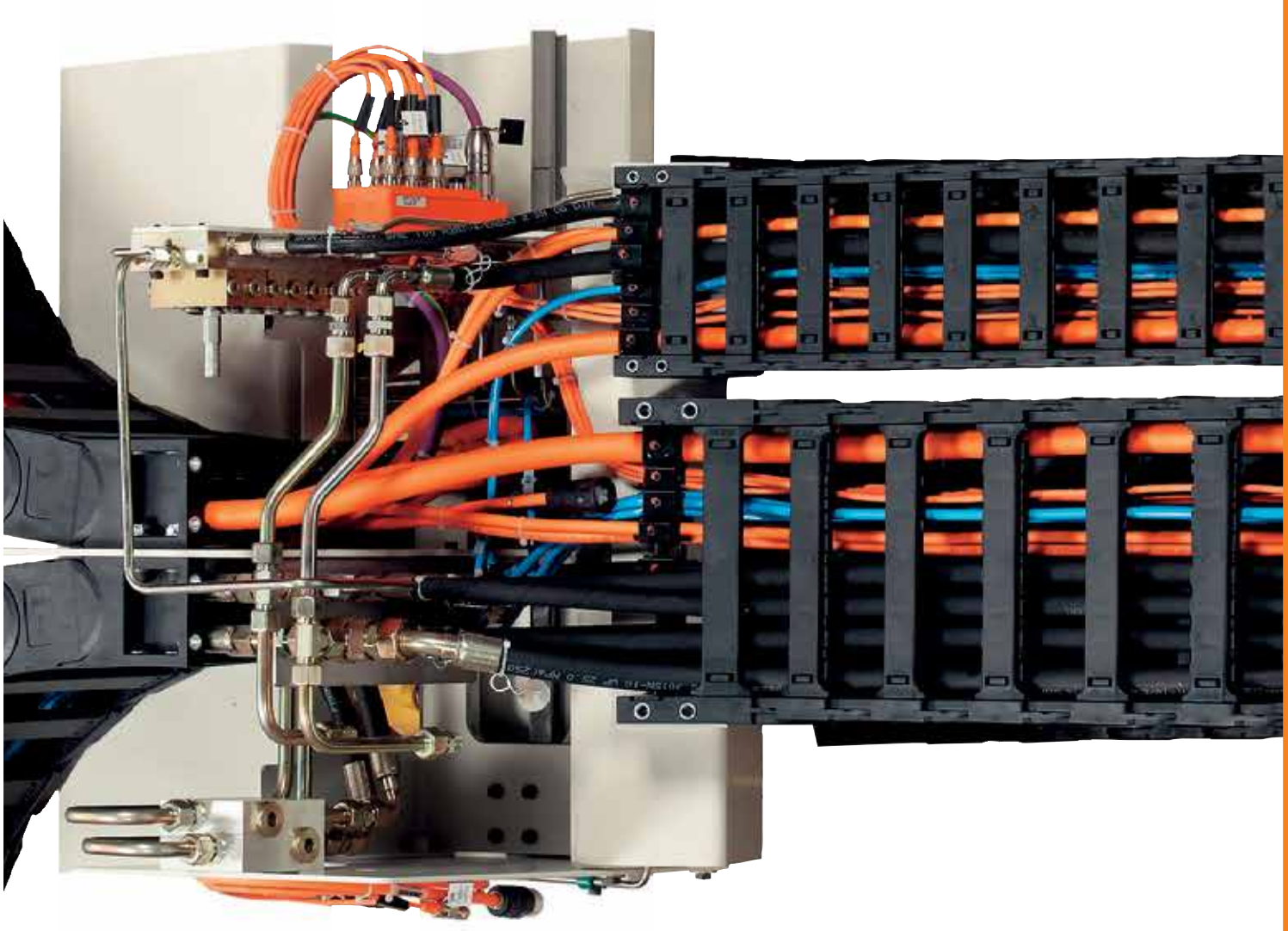
RoHS

iF product design award

igus®

readychain® & readycable

Ready-to-install energy supply systems.
Cables with connectors.
Minimize process costs.
Everything from a single source.



readychain®
Ready to install assembled e-chain systems®

Assembled energy supply systems, connectors and cables from igus®. Everything from one source, directly from the manufacturer, delivered quickly to your machine



Ready to install systems, from connectors through assembled cables up to complex energy supply modules, delivered in 1-10 days



Customer specific production

readychains® - increase your capacities and cash flow quickly with igus

- Lower the overhead costs
- Cut your throughput times from days to hours
- Respond flexibly to order variations
- Utilize igus® manufacturing capacities and our know-how in cable assembly



From one off to mass production

Reduce the number of suppliers and orders by 75% with igus®

- One order, one invoice, one delivery
- A partner for minimal machine downtimes
- All readychain® components are subject to an extensive quality control and function testing

Professionally assembled energy chain® modules direct from the manufacturer ...
You decide the quantity, the travel and the degree of assembly ...

3 Benefits: readychain® basic





1. ONE supplier - combine suppliers
2. Reduce assembly time
3. Reduce failures

Reduction of assembly time
Reduction of logistics cost
Procurement optimisation

Further information, videos, configurators and product finders
▶ www.igus.com/RCbasic

6 Benefits: readychain® standard





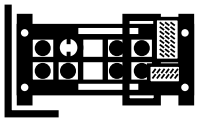
4. No electrical termination needed
5. 100% digitally tested
6. No cable surplus

Reduction of assembly time
Reduction of logistics cost
Procurement optimisation

Further information, videos, configurators and product finders
▶ www.igus.com/RCstandard

9 Benefits: readychain® standard+





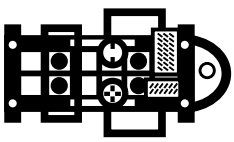
7. Reduce interfaces
8. Optimize points of connection / interfaces
9. Ready-to-install multi-axis system

Reduction of assembly time
Reduction of logistics cost
Procurement optimisation

Further information, videos, configurators and product finders
▶ www.igus.com/RCstandard+

13 Benefits: readychain® premium





10. Optimize your transport / assembly
11. One single assembly
12. One Part No. / Product group
13. Plug & Play

Reduction of assembly time
Reduction of logistics cost
Procurement optimisation

Further information, videos, configurators and product finders
▶ www.igus.eu/RCpremium

The igus® readychain® Factory

**Up to 1,000 orders/week, over 9,843 ft² floor space, “chain-cable-guarantee” since 1989.
More than 13 project engineers and over 127 dedicated readychain® assembly employees.**



In igus® readychain® factories, we assemble customized e-chain systems®.



Up-to-date production processes, custom-build or serial production



Full service from system acceptance to installation



11 readychain® factories worldwide



Customized cable assembling at igus® Inc.

readychain®
Modular, quick and ready-to-install

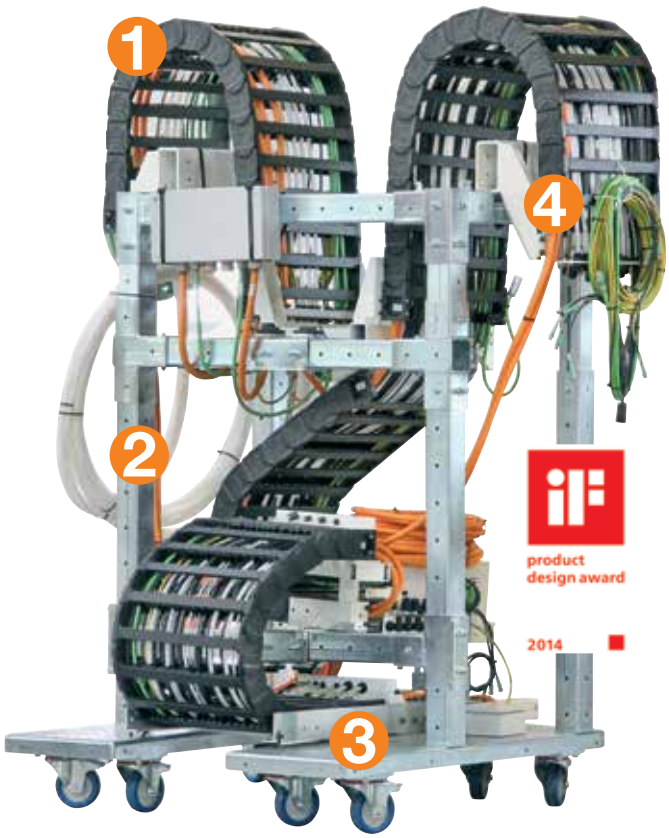
1 Everything from one source

The readychain® system includes pre-assembled, customized e-chain systems®. The "plug-and-play" solutions are configured, manufactured and delivered according to individual customer specifications. The use of the mounting rack can yield benefits even at low volumes.



2 Flexible components

The telescoping supports and braces of the readychain® rack allow flexible adaptation to the installation needs on site. Changes in mass production can be easily undertaken. By using modular parts, additional components can also be easily attached to the rack.



Save 80% at prototyping. Assembly transport rack for ready-to-install energy supply systems.

3 Sustainable use

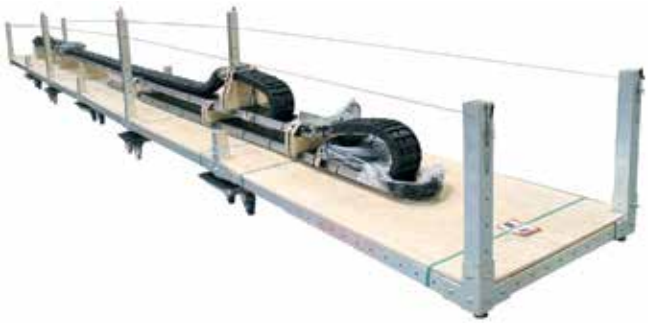
The components of the readychain® rack are galvanized and thus designed for a long life. Each rack is constructed within a few hours. The individual elements can be reused at any time removing the need to dispose of custom made parts, such as conventional welded transport racks.



4 Precise fitting "Plug & Play"

All interfaces and attachments are designed in such a way that the installation of the e-chain® can be managed quickly and easily. The complete package includes the matching plugs and connectors, plates, sensor actuator boxes, linear bearings, links to the central lubrication, etc., all reducing the installation time considerably.







readychain®
Connectors, cables and accessories

igus® connectors



Round plug connector kit

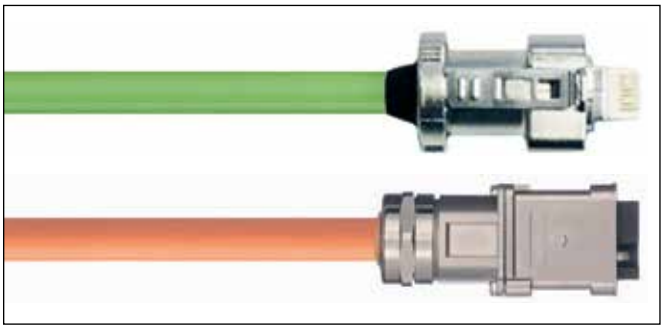


Square plug connector kit



Tools and accessories

igus® readycable



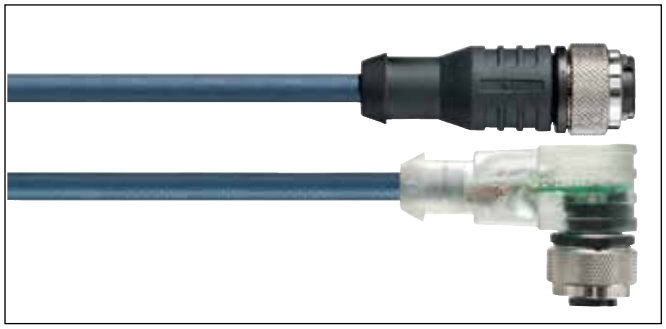
Drive systems: 3,200 cables



Catalog standards: video/vision/bus technology



Catalog standards: network/ethernet/FOC/Field bus



Catalog standards: CF-INI initiator cables up to 4 x d

igus® hoses and attachments



Configured online with hose cable configurator...



...to meet your needs

readychain®
Configured, fitted, with System Guarantee

1 System acceptance
2 Project phase
3 Initial acceptance of prototype
4 igus® installation



readychain® Service

- We visit you
- Define interfaces
- Logistics planning
- Cycle integration
- Time schedule



System acceptance on your machine



readychain® service

- Component selection
- Interface optimizations
- Documentation
- Integrated project management
- Cost optimization



Project planning



readychain® Skype service*

- Initial acceptance from your work place
- Build your prototype with an igus® project engineer, live in your meeting
- Your requests for changes explained with a model or visit us for acceptance in production



Prototype including transport rack



readychain® installation

- System installation by igus® specialists
- igus® supervision service for own installation
- Transparent, fixed price



Installation on site

*only available in Germany

readychain®
Cable assembly

Capacity for 600,000 assembled cables a year, more than 18,000 test programs, 1,800 test adapters



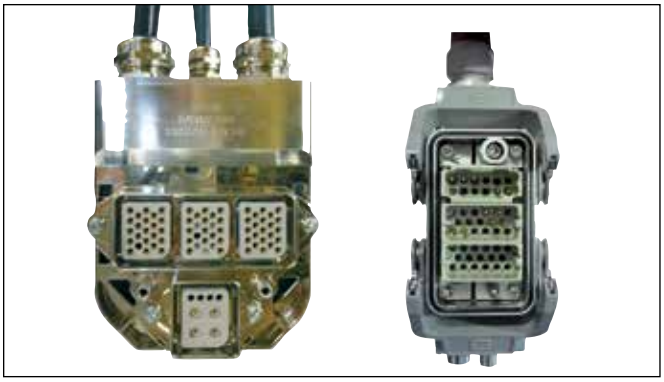
Lean, automated manufacturing processes ensure a reliable system with short lead times



Computer-based high-voltage testing and inspection of all assembled cables



Modern machinery - automatic stripper-crimper



Special cable assemblies



System guarantee



Cable guarantee

e-chains® ...



More than 90,000 e-chain® components

... chainflex® cables...



Over 9 million feet of cable in stock

... readychain®



3,500 connector components



Hundreds of feet of guide trough



18,840 ft² test lab - more than 15,000 tests every year



Quickly within reach



Numerous strain relief solutions



More than 8,000 cable assemblies per week



Just in time supply

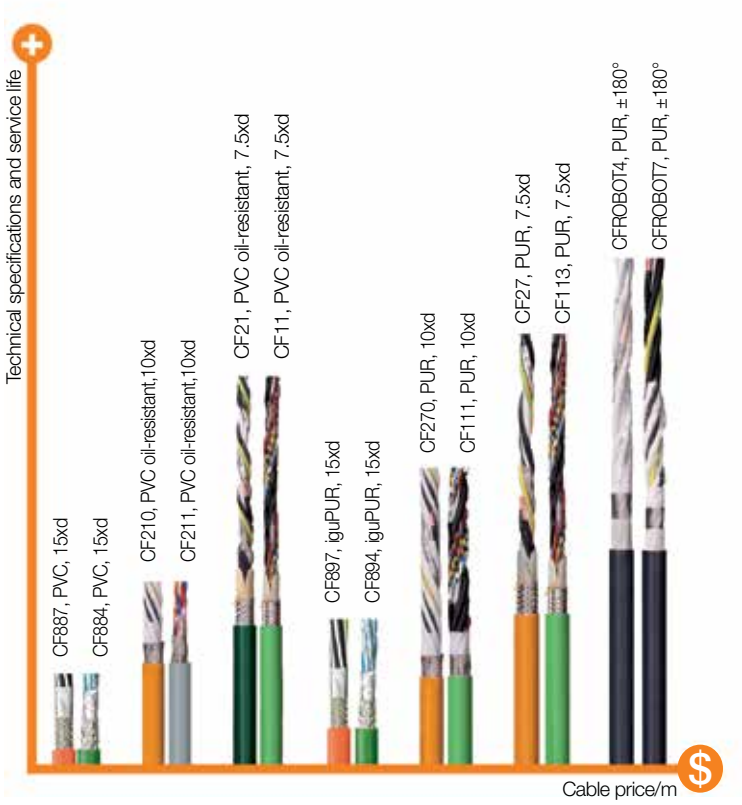
No. 1 in flexible cable assemblies for e-chains®

The most cost-effective cable for your drive

igus® offers 7 price levels with the same electrical properties for readycable® drive cable assemblies to your requirements:

- From ± 180° torsion to small movements
- From the smallest to the largest bend radius
- For outdoor or indoor applications
- Seven different outer jacket materials
- chainflex® measuring system and servo cables

Find the right drive cable and calculate the savings potential
► www.igus.com/readycable-finder





Drive cable assemblies built similar to 24 manufacturer standards:

... Allen Bradley ... B&R ... Baumüller ... Beckhoff ... Berger Lahr ... Control Techniques ... Danaher Motion ... ELAU ... Fagor ... Fanuc Festo ... Heidenhain ... Jetter ... Lenze ... LinMot ... LTi DRiVES ... Mitsubishi Electric ... NUM ... Omron ... Parker ... Rexroth ... SEW ... Siemens ... Stöber ...

Example:


B&R

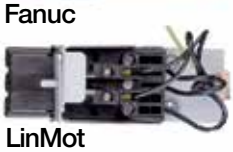

CF887, PVC, 15xd


ELAU


CF210, PVC oil-resistant, 10xd


Fanuc


CF21, PVC oil-resistant, 7.5xd


LinMot


CF897, iguPUR, 15xd


NUM


CF270, PUR, 10xd


Rexroth


CF27, PUR, 7.5xd


SEW


CFROBOT7, PUR, ±180°

- Always find the most cost-effective solution for your application
- Seven price levels with the same electrical properties
- 4,200 cable assemblies built similar to 24 manufacturer standards
- 36-month guarantee for all chainflex® cables
- To your required length
- No cutting charges
- Each cable electrically tested
- Configure drive cables online
- Fast delivery - up to 25 cables from the current catalogue range in 24hrs

60,000 test programs
- High-voltage tests
- Digital continuity test
- 1,800 test adapters
- Custom tests

More information ▶ www.igus.com/test

"QuickPin" - connector-cable configurator integrated directly in EPLAN P8

▶ www.igus.com/quickpin

Predictable reliability ... tested!
- 36-month igus® guarantee on every cable**
- More than 2.0 billion test strokes per year
- 1.4 million electric measurements per year
- Security for machine builders
- Clear statements on durability and service life
- Unique in the market (as of 04/2016)

More information
▶ www.igus.com/chainflex-guarantee



**Predictable reliability for full 36 months, or up to 10 million double strokes (5 million double strokes for the very cost-effective chainflex® M cables), whichever comes first. For the guarantee to be valid, the cables must be operated within the parameters for each cable series shown in the selection tables.

More Information ➤ www.igus.com

igus
Assembly service with warranty

Improve technology and reduce costs with complete igus® systems



Assembly Service
Save time and money











Installation

- Installation of your Energy Chain Systems® solution
- On-site supervision and as-built documentation
- Design and delivery of custom brackets and other accessories
- Installation inspections to ensure proper operation
- Full system performance warranty

Modernization / Retrofit

- Complete modernization solutions for your existing energy supply system
- Upgrade performance in speed and length of travel
- Increase system service life
- Minimize downtime and increase machine safety
- Reduce operation costs with an energy saving solution

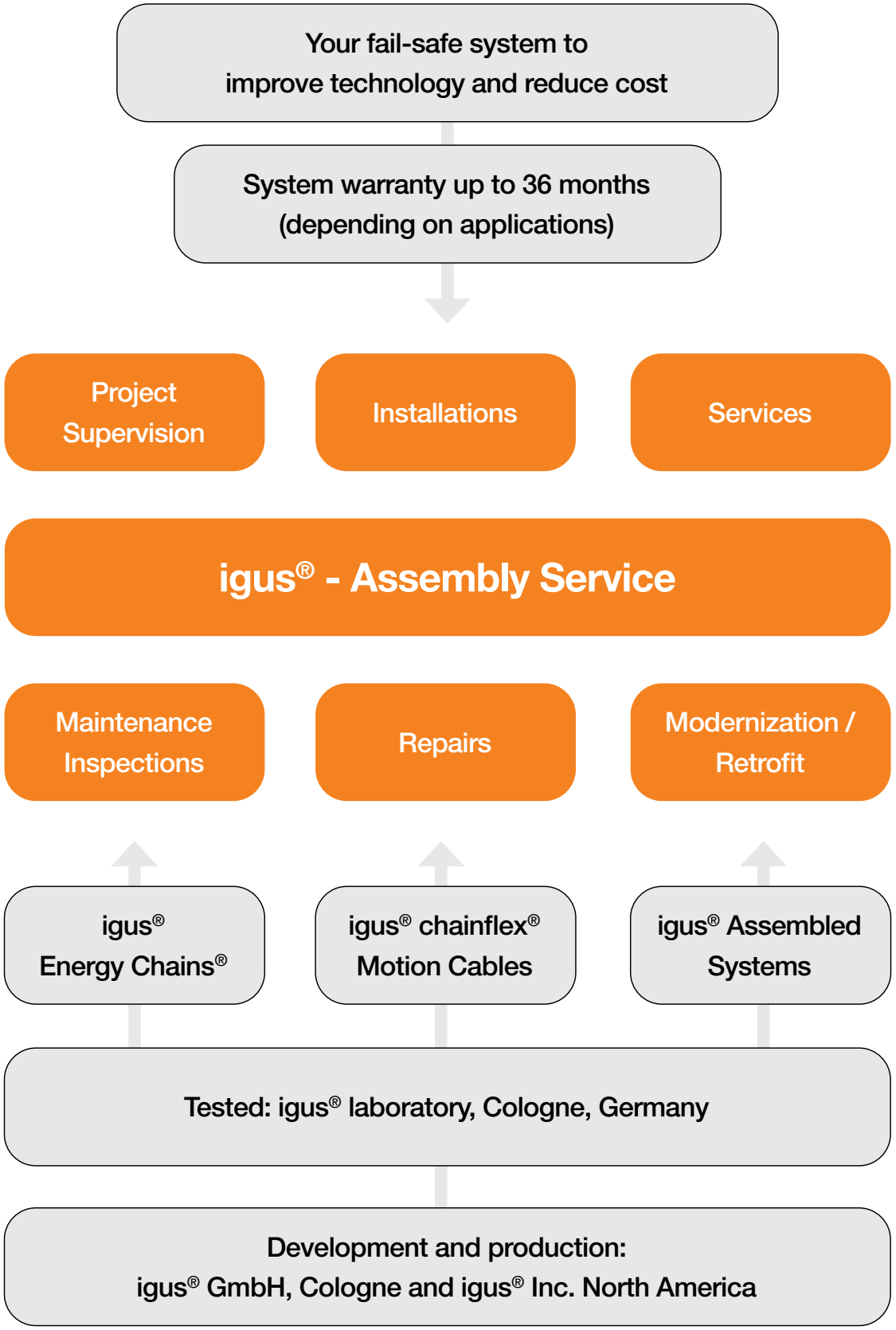
Failure Inspection Services

- Services to survey and report on the conditions of your current system
- Report of serviceable items and adjustments to prolong life
- Proposals for upgrades and optimizations

Maintenance Inspections

- Full system inspections to comply with warranty documentation
- Identification of problem areas and anticipated life expectancy of parts
- Adjustment of cables, chain, and trough components
- Repair or replacement of system components that are damaged or worn

From a single source - components, service and reliability



Assembly Service
Save time and money



igus® certified installation personnel
Reduces installation time and costs, ensures long system life and prevents failures caused by installation error.



Fixed costs for assembly and maintenance
Offers savings in administrative costs with purchasing and planning.



Accurate estimates for resource planning
Systems are installed correctly, and on schedule



Our network of installers minimizes costs by providing local, reliable support for your projects
Keeps travel and reaction times short and saves installation costs.



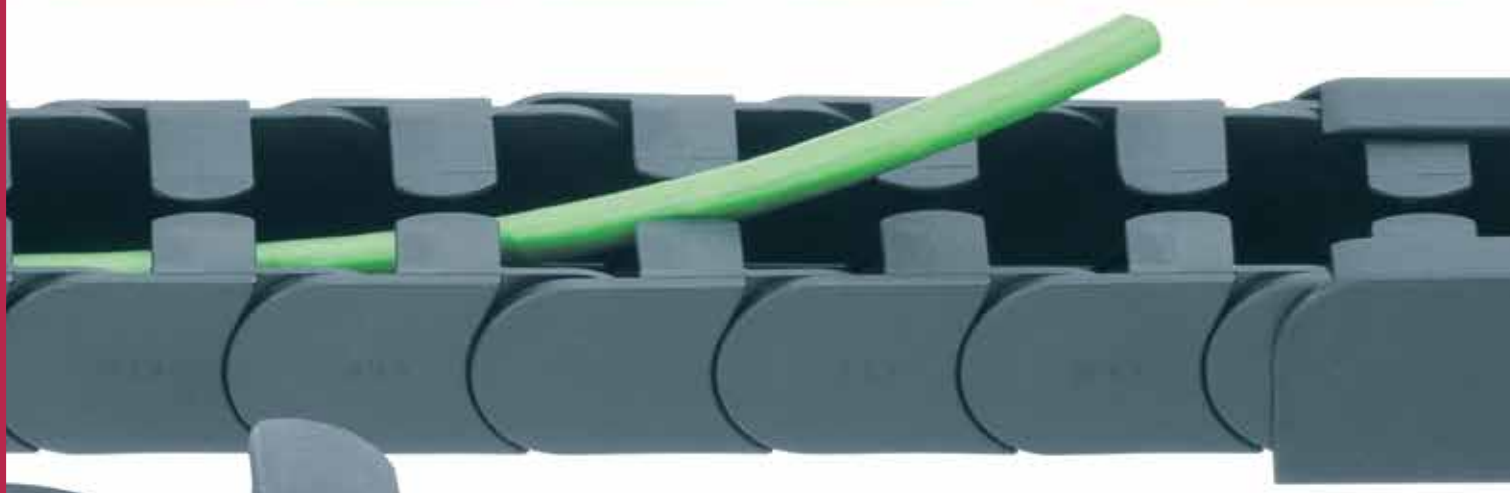
Flexible availability when you need us
Support available, even during nights and weekends.



Everything from a single source - including warranty!
From the design stage through delivery and installation, we will support you from start to finish.















igus® solutions for simple applications

e-rib, E1, snapchain, office e-chain®





igus®
e-rib
Reinforcement for existing corrugated tube systems

Reinforcement for existing corrugated tube systems - e-rib

Corrugated tubes are used in many applications where the mechanical demands on the energy supply are low. The key advantages are easy, versatile and exceptionally cost-effective guidance of energy, data and media. However, fast movements can lead to damaging sideways movement. The igus® e-rib is easy to clip onto a corrugated hose and can help prevent this. The e-rib fills the joints of the corrugated hose to stabilize it in such a way that it can only move in one direction. The corrugated hose has an unsupported length due to the lateral guide elements. When retrofitted, the e-rib enables an upgrade of existing applications with just a few simple steps. The e-rib is independent of the hose manufacturer (depending on size) and available in four sizes.

- Stability prevents unintentional sideways movement
- Less installation space required
- Easy to retrofit
- No change in the impermeability of the corrugated hose

Typical industries and applications

● Fast, short and unsupported applications ● Standing or hanging applications ● Automotive industry ● Machine and plant construction ● Pick & Place applications ● Plotter ● Handling systems ● Medical technology ● SCARA robots





The igus® e-rib corrugated tube reinforcement can be easily retrofitted onto existing systems





Tests from the igus® laboratory: The igus® e-rib (pictured on the right) stabilizes the corrugated hose significantly in sideways movement during acceleration or deceleration

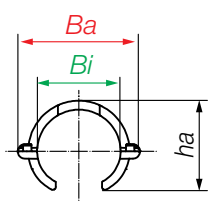
e-chain system® e-rib
Product Range



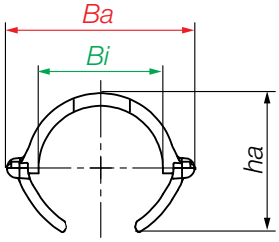
e-rib -
reinforcement for existing corrugated tube systems

Series	Nominal width NW (mm)	Inner width *Bi* (mm)	Outer width *Ba* (mm)	Outer height *ha* (mm)	Mounting bracket
EL.00.23.0	.91 (23)	1.10 (28)	1.61 (41)	1.18 (30)	**EL.00.12**
EL.01.29.0[1)]	1.14 (29)	1.06 (27)	1.75 (44.5)	1.38 (35)	**EL.01.12**
EL.00.36.0	1.42 (36)	1.65 (42)	2.20 (56)	1.69 (43)	**EL.00.12**
EL.00.48.0	1.89 (48)	2.13 (54)	2.66 (68)	2.13 (54)	**EL.00.12**

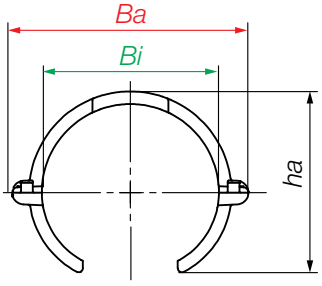
1) EL-01-29-0 only for PMA corrugated tube I-PISG-29B/S
Other sizes available upon request. Please consult igus® for delivery time.



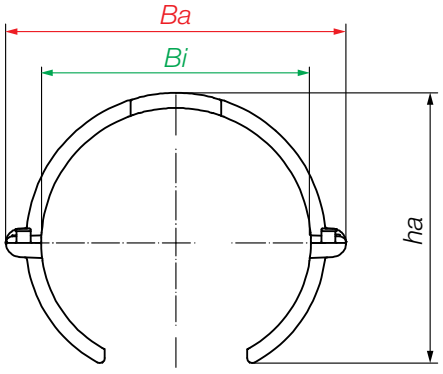
EL.00.23.0
Nominal width
NW 23mm



EL.01.29.0[1)]
Nominal width
NW 29mm
1) Only for PMA corrugated tube I-PISG-29B/S



EL.00.36.0
Nominal width
NW 36mm



EL.00.48.0
Nominal width
NW 48mm

Available from stock. Orders ship as early as today.*
*On average 90% of orders ship the same day..

e-chain system® e-rib
Assembly instructions

1



igus® delivers the required length. Any excess length can easily be cut off.

2



To attach the e-rib to the hose fitting, there must be no connection point on the last 7 ribs of the e-rib, otherwise the mounting bracket will not lock securely.

3



If necessary, cut off thicker end section and any excess length and place the two mounting brackets on the side plates.

4



Finally, the mounting brackets are fixed with two cable tiewraps.

Find a video online
▶ www.igus.com/e-rib

e-chain system® e-rib
Series EL-00-23, EL-01-29, EL-00-36, EL-00-48

Price Index

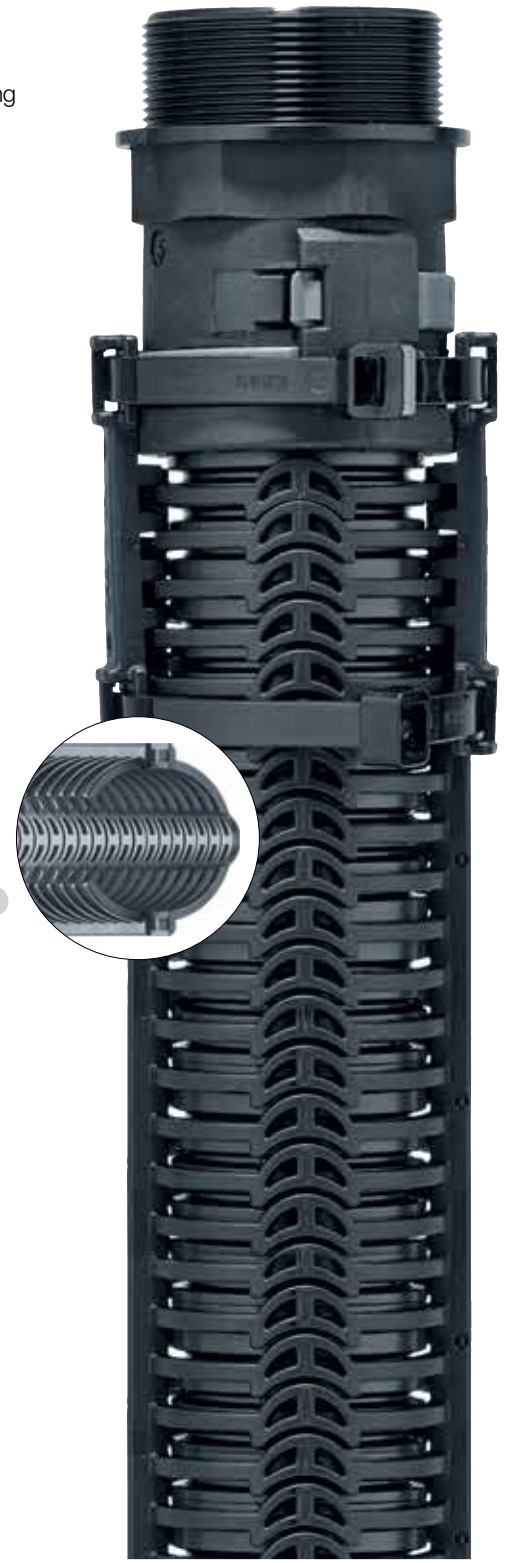
Series e-rib

Special Features / Options

Flammability Class
VDE 0304 IIC UL94 V2

Features & Benefits

1. Mounting bracket: connector elements for secure fixing
2. Additional security: retention clips for greater dynamic responsiveness
3. Independent of hose manufacturer:
   4 sizes for nominal hose widths
   NW23, NW29*, NW36 and NW48 available
   *NW29 only for PMA corrugated tubes
4. Space-saving: less installation space required
5. Strong: prevents unintentional sideways movement
6. Easy to retrofit: simply clip onto a corrugated hose



Usage Guidelines

- When low-cost corrugated tubes are used to protect and carry cables but stability must be increased
- To stabilize corrugated tubes used in highly dynamic applications
- Longer service life for cables in corrugated tubes
- 4 sizes for nominal hose widths NW23, NW29*, NW36 and NW48 available
  *NW29 for PMA corrugated tubes

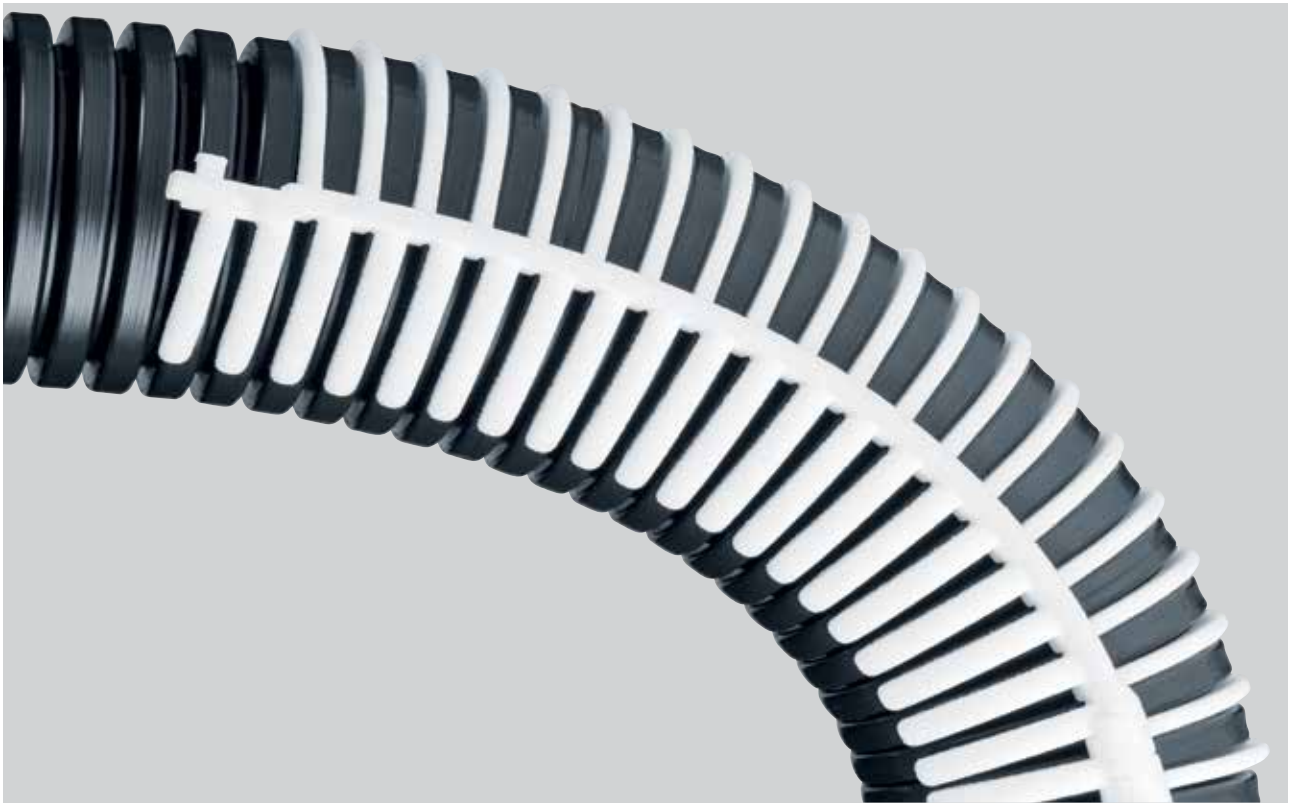
- When a fully enclosed, yet still openable corrugated tube is needed
  ➤ **e-skin®, Chapter 6**

Order Example: Complete E-Chain®

Please indicate chain length or number of links. Example:

3.28 ft (1 m) **EL.00.36.0**	**e-rib**
1 Set **EL.00.12**	**Mounting Bracket**
EL.00.S (**Option:** with 2 securing clips)	**Securing Clips**
MAT0170899 (**Option:** 1 cable tiewrap for securing clips)	**Cable tiewrap**

e-chain system® e-rib
Reinforcement for existing corrugated tube systems



The e-rib is clipped onto the corrugated tube and stabilizes it in such a way that it can only move in one direction

More information ▶ www.igus.com/e-rib

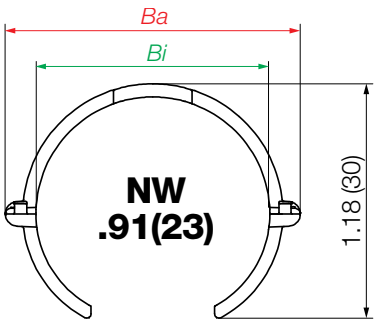
Material (E-Chain®) - permitted temperature	igumid NB / 41°F (+5°C) up to +176°F (+80° C)
Material (mounting brackets)* - permitted temperature	igumid NB / 41°F (+5°C) up to +176°F (+80° C)
Flammability Class (E-Chain®), igumid NB	VDE 0304 IIC UL94 V2

Technical Data

Details of material properties
➤ Chapter 1

PDF: www.igus.com/E-Chain-pdfs
Specs/CAD/RFQ: www.igus.com/E-Chains
RoHS info: www.igus.com/RoHS

e-chain system® e-rib
Series EL.00.23
Installation Dimensions





Series EL.00.23 | e-rib for corrugated tubes from different manufacturers

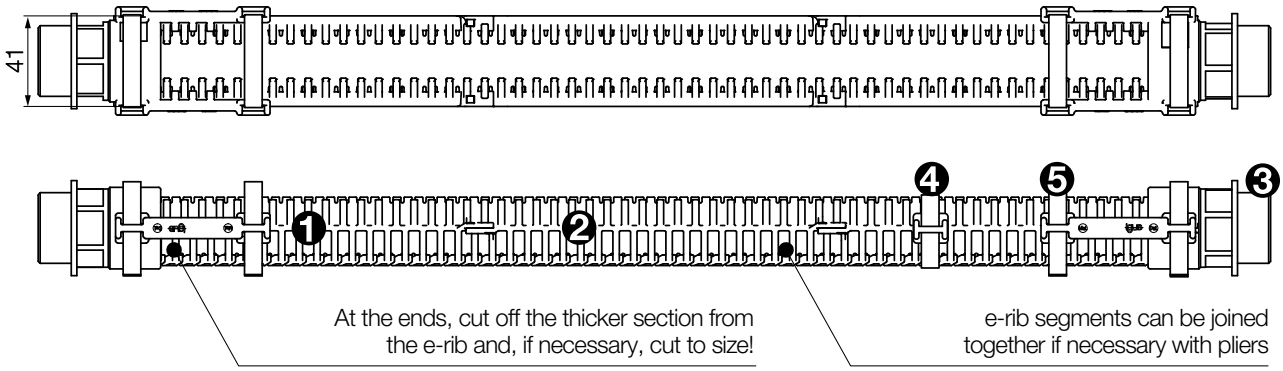
Part No.	NW	Bi	Ba	ha	Segments	Segment length	Weight	Mounting
e-rib	in. (mm)	in. (mm)	in. (mm)	in. (mm)	per ft. (meter)	in. (mm)	lbs/ft. (kg/m)	bracket
EL.00.23.0	.91 (23)	1.10 (28)	1.61 (41)	1.18 (30)	23 (7)	5.79 (147)	≈ (0.16)	EL.00.12

Part Number Structure

EL.	00.	23.	0

- 0 – Color - Black
- 23. – Nominal Width (NW)
- 00. – **00** for all manufacturers, **01** only for PMA
- EL. – Series e-rib

Installation dimensions and product description

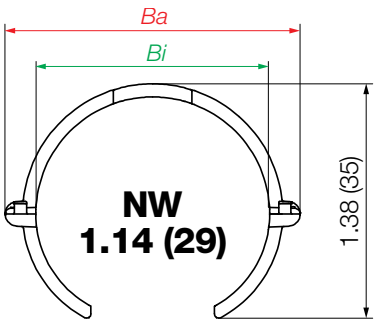


Position	Description	Part No.
❶	PMA corrugated tube	I-PISG-23B
❷	e-rib	EL.00.23
❸	PMA connection fitting	I-BVND-M323GT
❹	Securing clip, optional*	EL.00.S
❺	Mounting bracket connection set	EL.00.12

Note: For each locking device, 2 clips EL.00.S and a cable tiewrap MAT0170899 are needed!

*Securing clips for additional attachment. They can be placed anywhere on the e-rib and fixed to the corrugated tube with a cable tiewrap.

e-chain system® e-rib
Series EL.01.29
Installation Dimensions





Series EL.01.29 | e-rib only for PMA corrugated tube I-PISG-29B/S

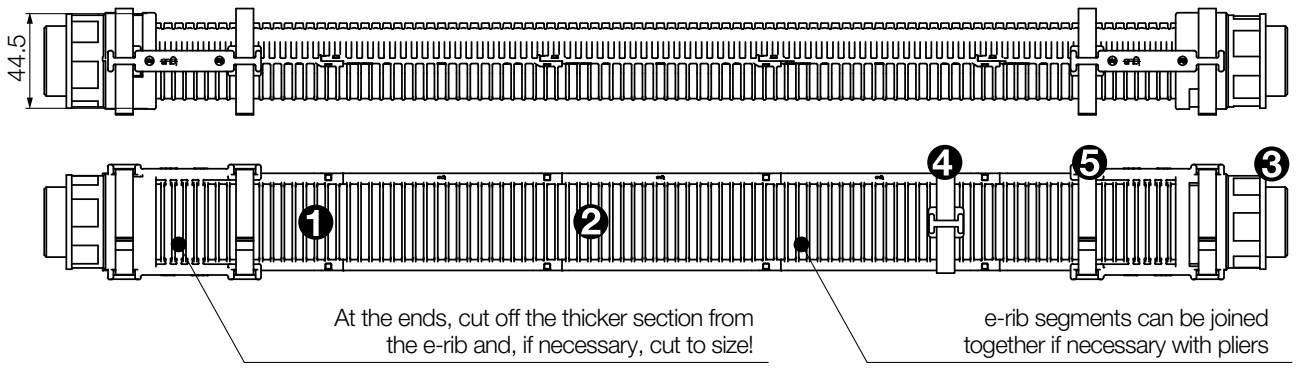
Part No.	NW	*Bi*	*Ba*	*ha*	Segments	Segment length	Weight	Mounting
e-rib	in. (mm)	in. (mm)	in. (mm)	in. (mm)	per ft. (meter)	in. (mm)	lbs/ft. (kg/m)	bracket
EL.01.29.0	1.14 (29)	1.06 (27)	1.75 (44.5)	1.38 (35)	32.8 (10)	3.94 (100)	≈ (0.12)	**EL.01.12**

Part Number Structure

EL.	01.	29.	0

- 0 – Color - Black
- 29. – Nominal Width (NW)
- 01. – **00** for all manufacturers, **01** only for PMA
- EL. – Series e-rib

Installation dimensions and product description



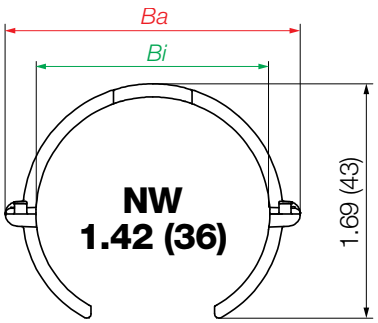
Position	Description	Part No.
❶	PMA corrugated tube	**I-PISG-29B**
❷	e-rib	**EL.01.29**
❸	PMA connection fitting	**I-BVND-M299GT**
❹	Securing clip, optional*	**EL.01.S**
❺	Mounting bracket connection set	**EL.01.12**

Note: For each locking device, 2 clips EL-01-S and one cable tiewrap MAT0170899 are needed!

*Securing clips for additional attachment. They can be placed anywhere on the e-rib and fixed to the corrugated tube with a cable tiewrap.

PDF: igus.com/e-chain-pdfs
Product information: igus.com/e-chains

e-chain system® E-Z chain
Series EL.00.36
Installation Dimensions





Series EL.00.36 | e-rib for corrugated tubes from different manufacturers

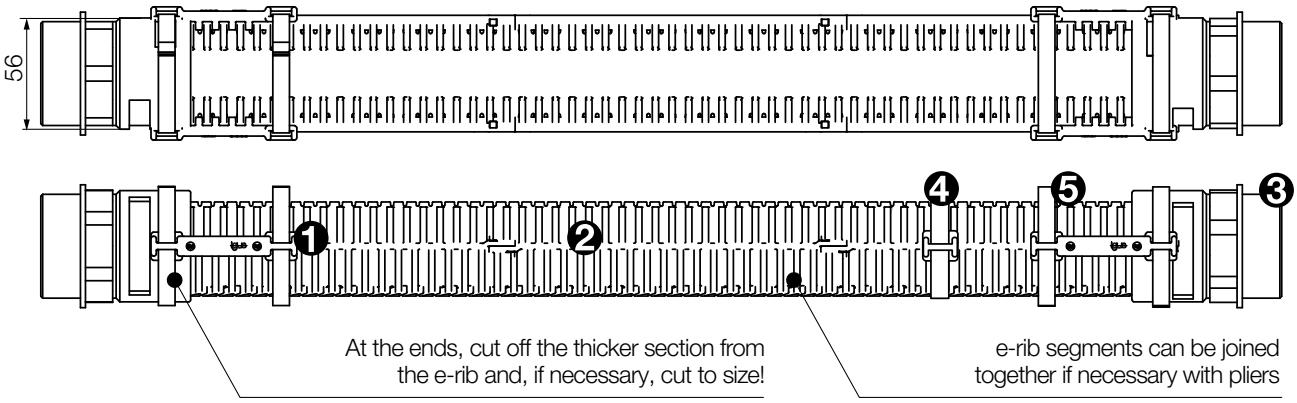
Part No.	NW	Bi	Ba	ha	Segments	Segment length	Weight	Mounting
e-rib	in. (mm)	in. (mm)	in. (mm)	in. (mm)	per ft. (meter)	in. (mm)	lbs/ft. (kg/m)	bracket
EL-00.36.0	1.42 (36)	1.65 (42)	2.20 (56)	1.69 (43)	23 (7)	5.79 (147)	≈ (0.22)	EL.00.12

Part Number Structure

EL.	00.	36.	0

- 0 – Color - Black
- 36. – Nominal Width (NW)
- 00. – **00** for all manufacturers, **01** only for PMA
- EL. – Series e-rib

Installation dimensions and product description

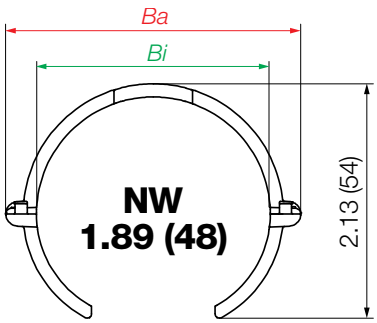


Position	Description	Part No.
❶	PMA corrugated tube	I-PISG-36B
❷	e-rib	EL.00.36
❸	PMA connection fitting	I-BVND-M506GT
❹	Securing clip, optional*	EL.00.S
❺	Mounting bracket connection set	EL.00.12

Note: For each locking device, 2 clips EL-00-S and a cable tiewrap MAT0170899 are needed!

*Securing clips for additional attachment. They can be placed anywhere on the e-rib and fixed to the corrugated tube with a cable tiewrap.

e-chain system® E-Z chain
Series EL.00.48
Installation Dimensions





Series EL.00.48 | e-rib for corrugated tubes from different manufacturers

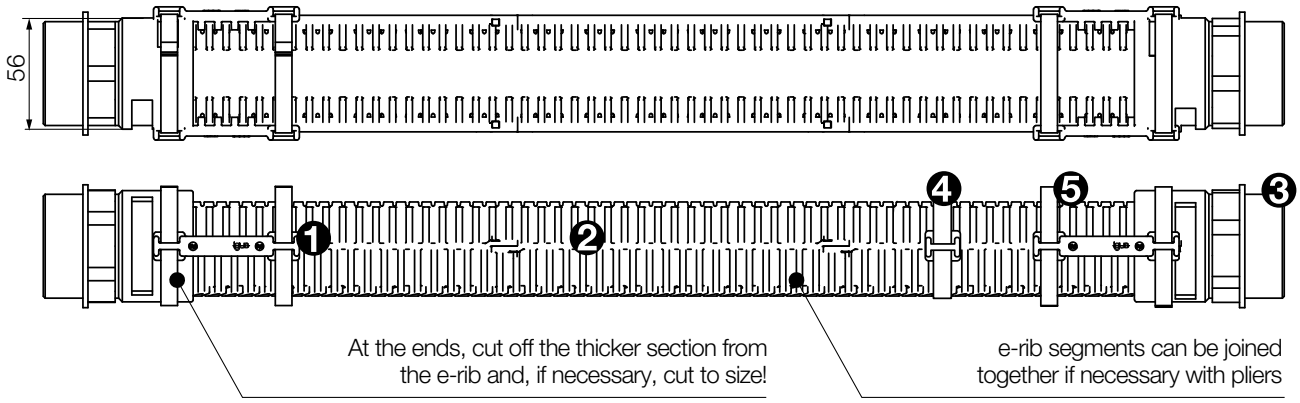
Part No.	NW	Bi	Ba	ha	Segments	Segment length	Weight	Mounting
e-rib	in. (mm)	in. (mm)	in. (mm)	in. (mm)	per ft. (meter)	in. (mm)	lbs/ft. (kg/m)	bracket
EL.00.48.0	1.89 (48)	2.13 (54)	2.68 (68)	2.13 (54)	23 (7)	5.79 (147)	≈ (0.27)	EL.00.12

Part Number Structure

EL.	00.	48.	0

- 0 – Color - Black
- 48. – Nominal Width (NW)
- 00 – **00** for all manufacturers, **01** only for PMA
- EL. – Series e-rib

Installation dimensions and product description

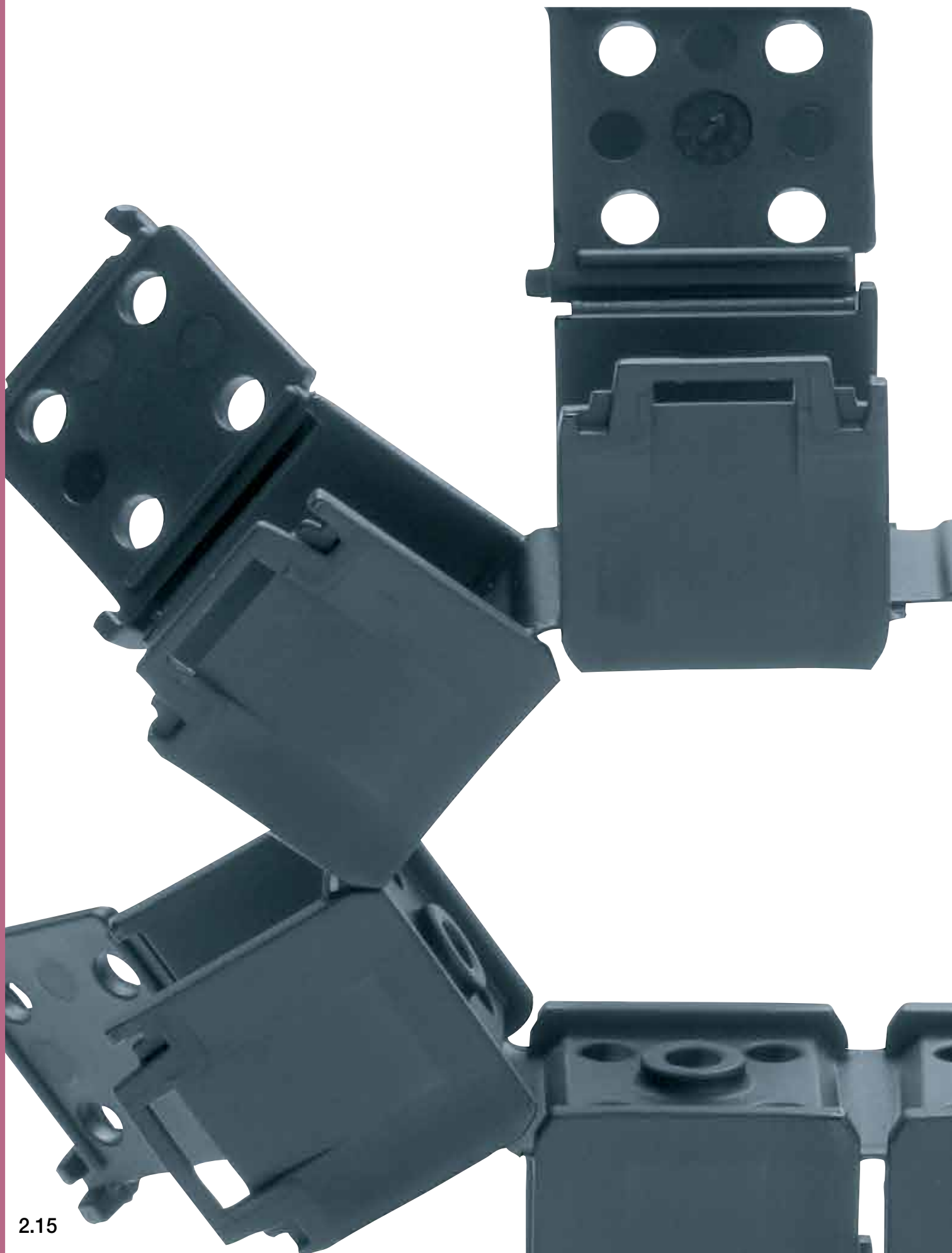


Position	Description	Part No.
❶	PMA corrugated tube	I-PISG-48B
❷	e-rib	EL.00.48
❸	PMA connection fitting	I-BVND-M508GT
❹	Securing clip, optional*	EL.00.S
❺	Mounting bracket connection set	EL.00.12

Note: For each locking device, 2 clips EL-00-S and a cable tiewrap MAT0170899 are needed!

*Securing clips for additional attachment. They can be placed anywhere on the e-rib and fixed to the corrugated tube with a cable tiewrap.

PDF: igus.com/e-chain-pdfs
Product information: igus.com/e-chains



igus®

System E-1

e-chain® Band, Modular





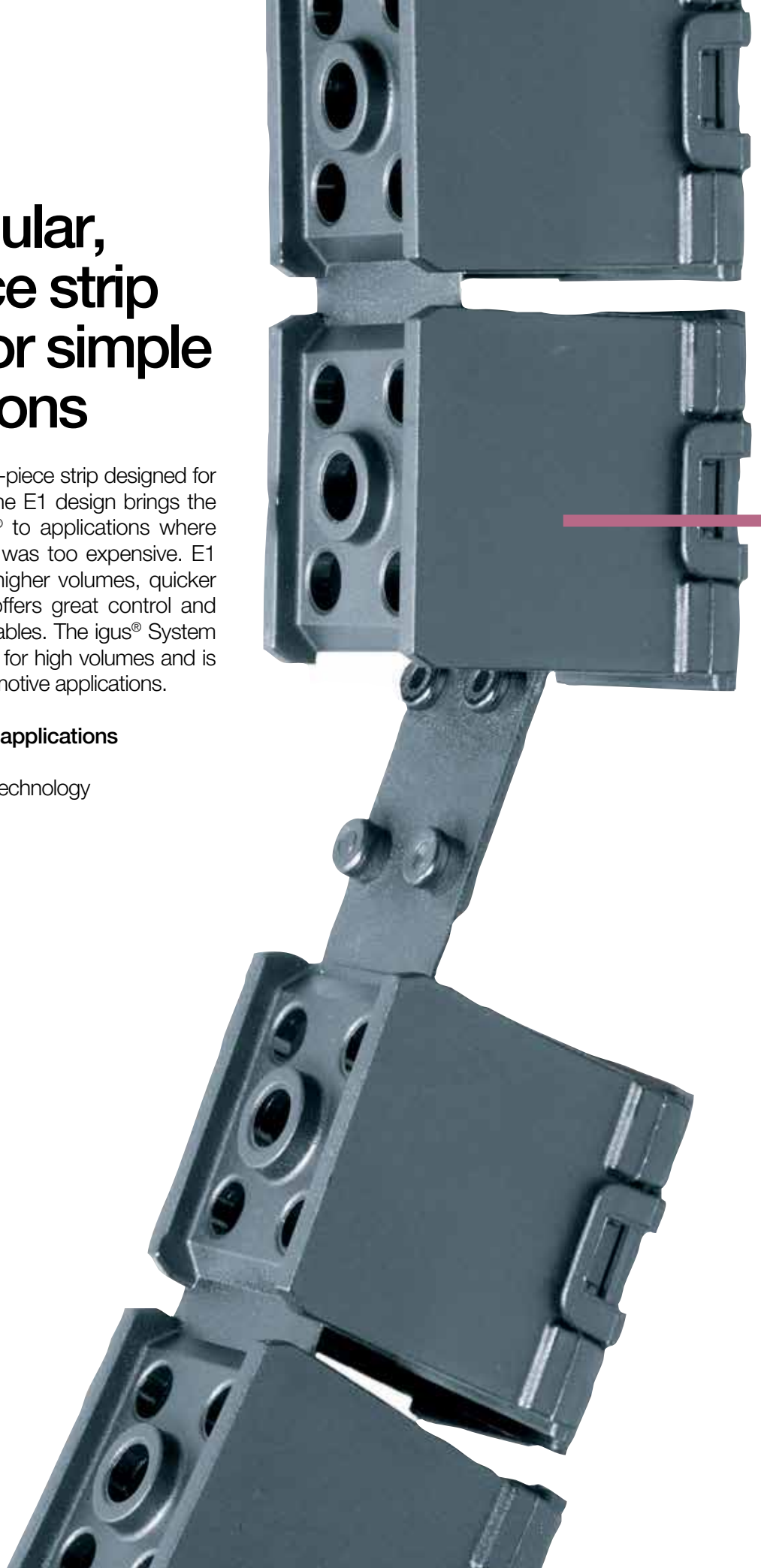
E1- Modular, one-piece strip design for simple applications

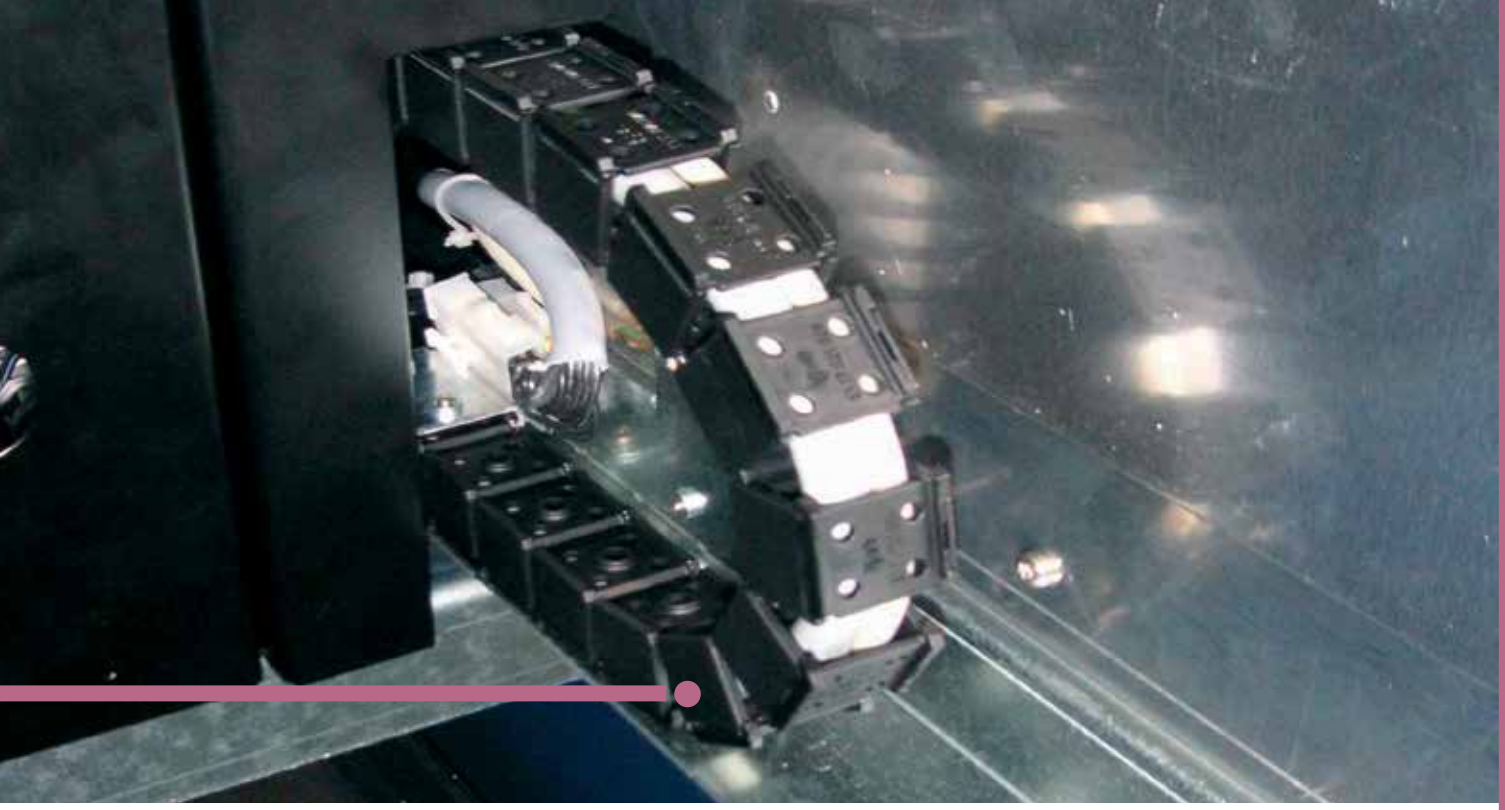
E1: e-chain® modular, 1-piece strip designed for simple applications - The E1 design brings the benefits of an e-chain® to applications where this solution previously was too expensive. E1 is more economic for higher volumes, quicker to assemble and still offers great control and protection for moving cables. The igus® System E1 is very cost effective for high volumes and is especially ideal for automotive applications.

Typical industries and applications

- Automotive
- Office Solutions and technology
- Automation
- Electric equipment
- Machine-building

UL94-V2 classifications





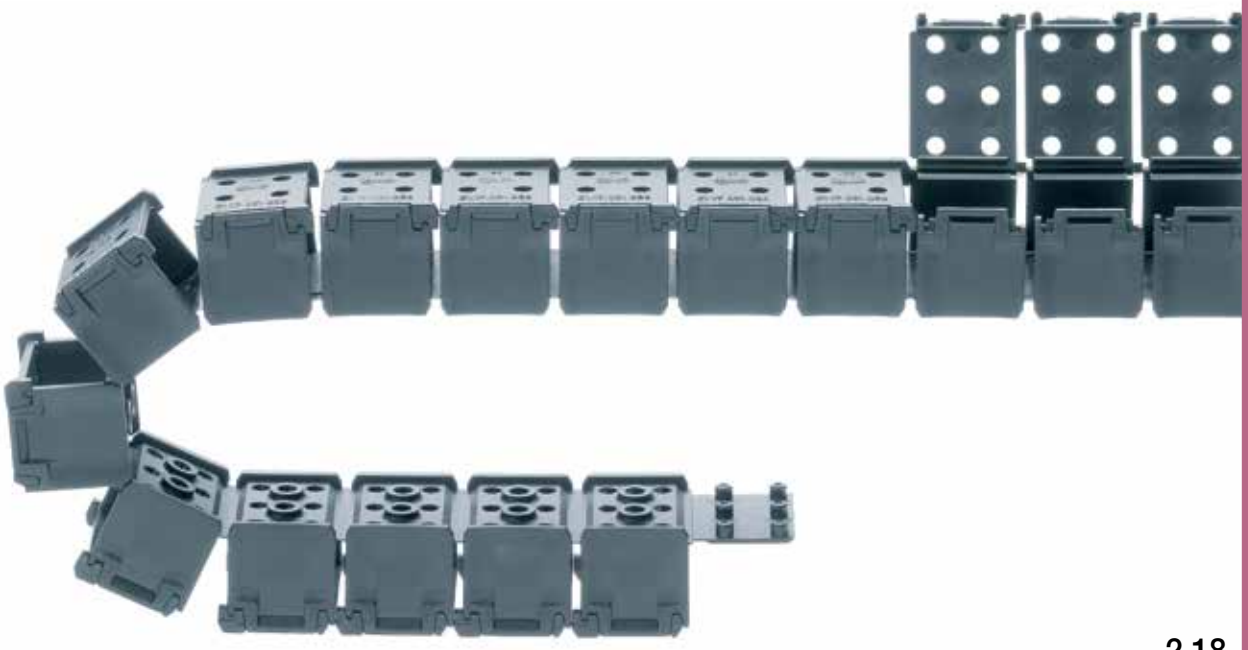
Harnessed igus® System E1 in a bottle deposit machine



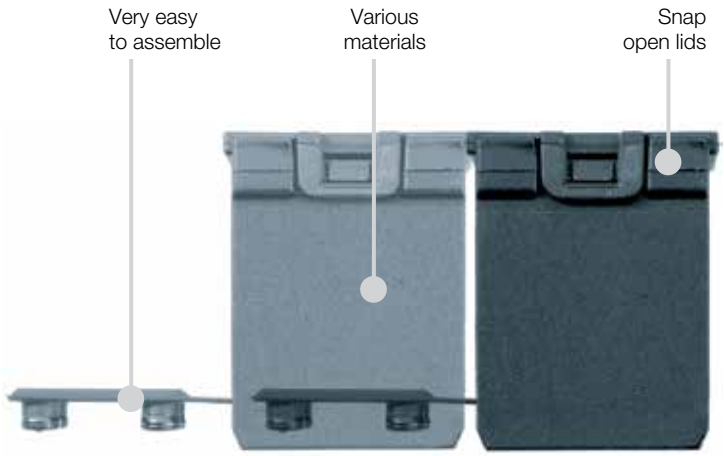
Series E1-17-021-028 in an electric wheelchair - cable supply on the scissor lifting system



The igus®-System E1 is very cost-effective at high quantities and ideal for automotive applications



e-chain system®
System E1

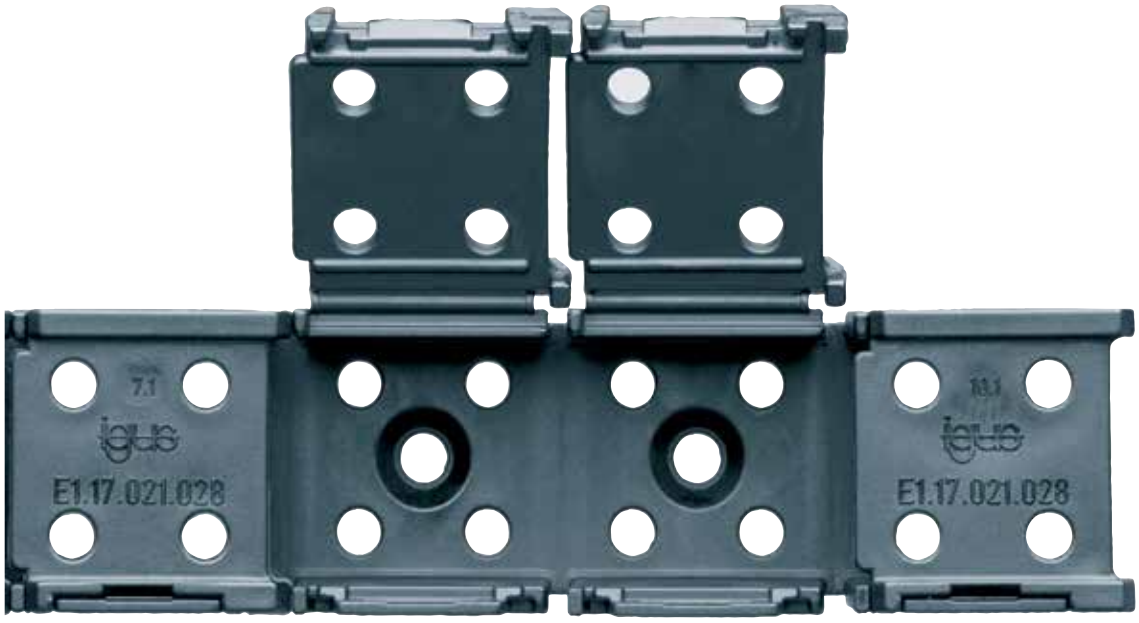


Modular, 1-piece strip
design for simple applications

- Economic solution for high volumes
- A universal and easily adaptable e-chain® concept
- E1: e-chain® on one strip
- Easy shortening/lengthening through modular strip design
- Easy to snap open
- Strip connectors
- Easy attachment at each end
- Various materials available
- You can find more technical data about the material, chemical resistance, temperatures

➤ **Design, Chapter 1**

Series	Inner height *hi*		Inner width *Bi*		Outer width *Ba*		Outer height *ha*		Bending radius *R*		Segment length
	in.	(mm)	in.	(mm)	in.	(mm)	in.	(mm)	*in.*	(mm)	mm
E1-10-013-	.39	10	.51	13	.65	16.5	.61	15.5	.71	18	200
E1-17-021-	.67	17	.83	21	1.02	26	.98	25	1.10	28	255
E1-17-031-	.67	17	1.22	31	1.42	36	.98	25	1.10	28	204
E1-17-044-	.67	17	1.73	44	1.93	49	.98	25	1.10	28	255
E1-18-015-	.71	18	.59	15	.79	20	1.02	26	1.10	28	127.5
E1-20-015-	.79	20	.59	15	.87	22	1.06	27	1.10	28	250



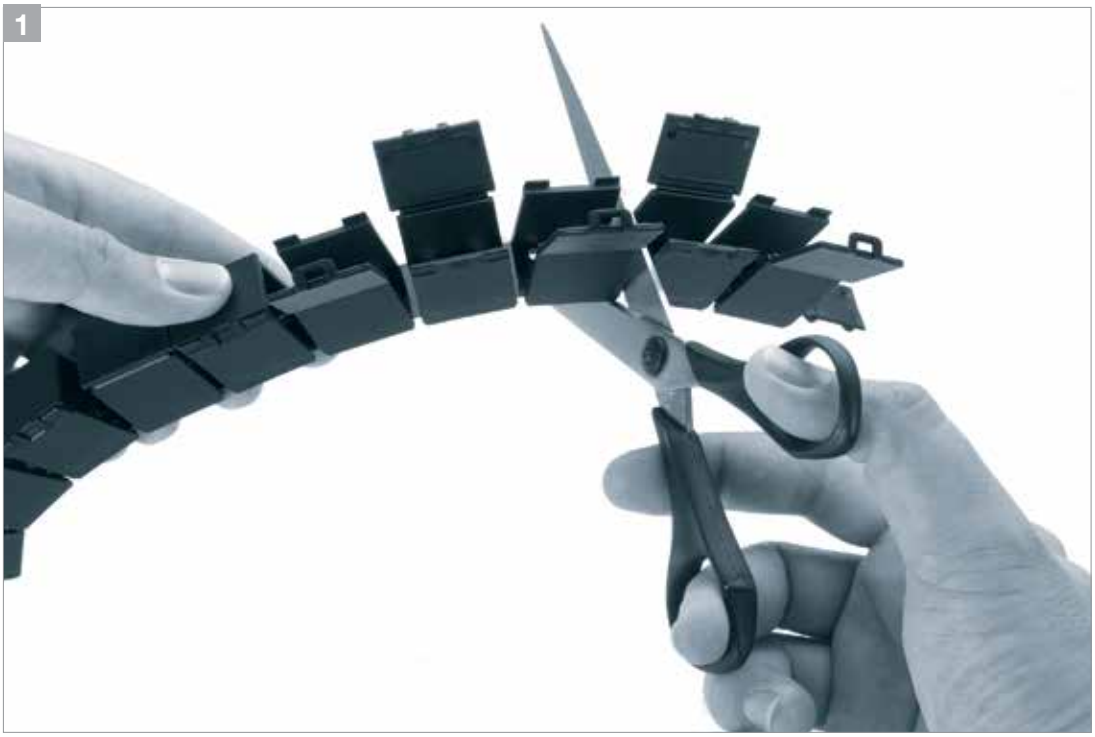
System E1 - e-chain® - snap-open along outer radius

Available from stock. Orders ship as early as today.*

*On average 90% of orders ship the same day..

Shortening

1



System E1 - e-chain on a strip - easy to shorten ...

Lengthening

2



... and to lengthen

e-chain system® E1
Series E1-10, E1-17, E1-18, E1-20

.39 .67 .71 .79

Price Index

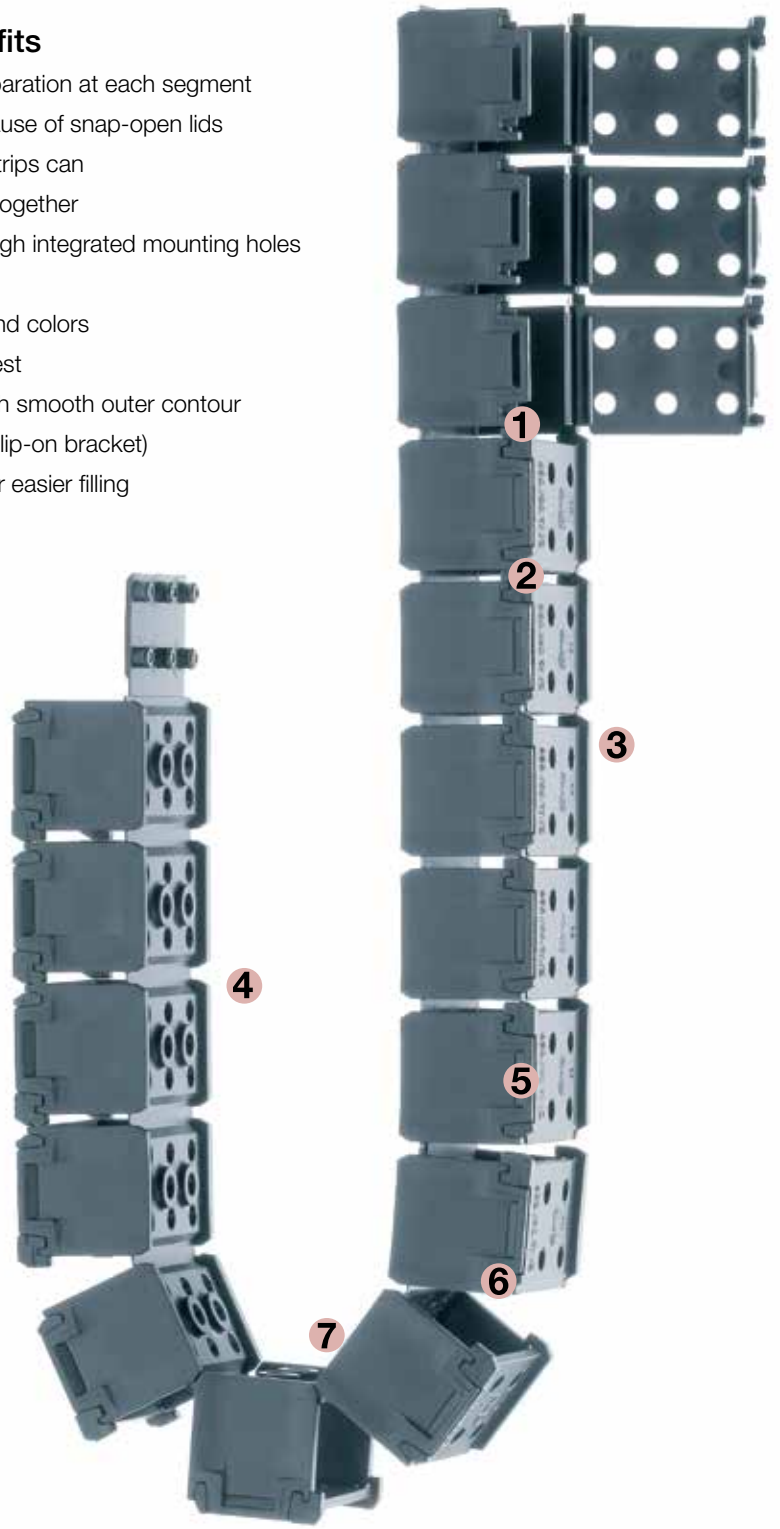
Series E1

Special Features / Options

Flammability Class
VDE 0304 IIC UL94 V2

Features & Benefits

1. Easy to shorten - separation at each segment
2. Very easy to fill because of snap-open lids
3. Easy to lengthen - strips can simply be snapped together
4. Easy fastening through integrated mounting holes
5. Low-price e-chain®
6. Different materials and colors available upon request
7. Compact design with smooth outer contour
8. Strain relief option (clip-on bracket)
9. All lids snap open for easier filling



Usage Guidelines

- If simple filling is required
- If an economical e-chain® is required
- If low assembly cost is required
- For lower duty or cycle life

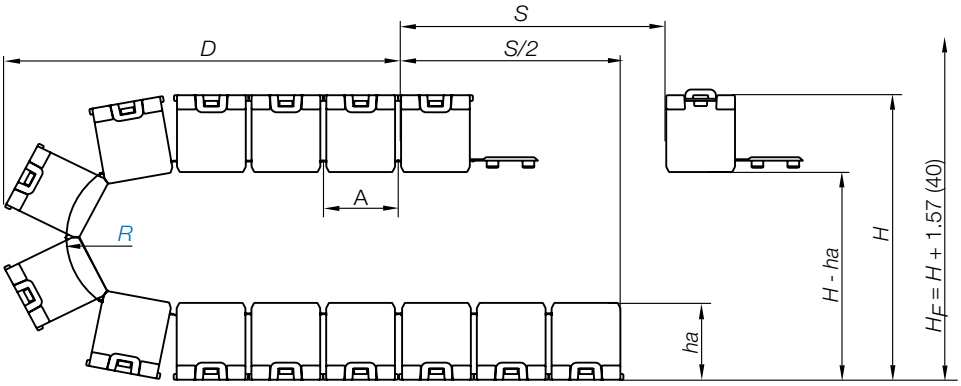
- High load or high cycle applications
  - ➤ **Series E-Z chain**
  - ➤ **Series Zipper**

Order Example: Complete e-chain®

Please indicate chain length or number of links. Example:

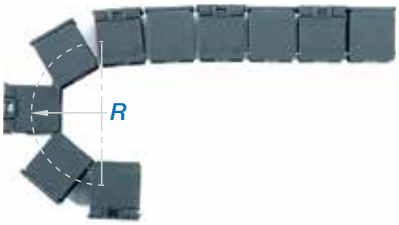
3.28 ft (1 m) **E1-17-021-028-0** = 4 x 10.04” (255 mm) band **e-chain®**

e-chain system® E1
Series E1-10, E1-17, E1-18, E1-20
Installation Dimensions



The required clearance height: H_F = *H* + 1.57 in. (40 mm)

Bending Radius for Series	E1-10	E1-17	E1-18	E1-20
R	.71 (018)	1.10 (028)	1.10 (028)	1.10 (028)
H	2.44 (62)	3.62 (92)	3.62 (92)	3.62 (92)
D	2.60 (66)	2.99 (76)	2.99 (76)	2.99 (76)
K	3.94 (100)	4.72 (120)	4.72 (120)	4.72 (120)



Part No. structure

E1-17- 021- 028- 0

- Color black
- Bending radius
- Width
- *hi*
- Series



Short Travels - Unsupported

Unsupported E-Chains® feature positive camber over short travels. This must be accounted for when specifying the clearance height. Please refer to **Installation dimensions** for further details.

Legend

S = Length of travel
R = Bending radius
H = Nominal clearance height
D = Overlength e-chain® radius in final position
K = π • *R* + *safety buffer*
H_F = Required clearance height

Material (e-chain®) - permitted temperature °F	application oriented, upon request
Flammability Class (e-chain®), igumid NB	VDE 0304 IIC UL94 V2

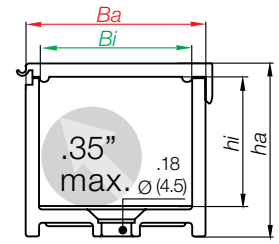
Technical Data

Details of material properties
➤ Chapter 1

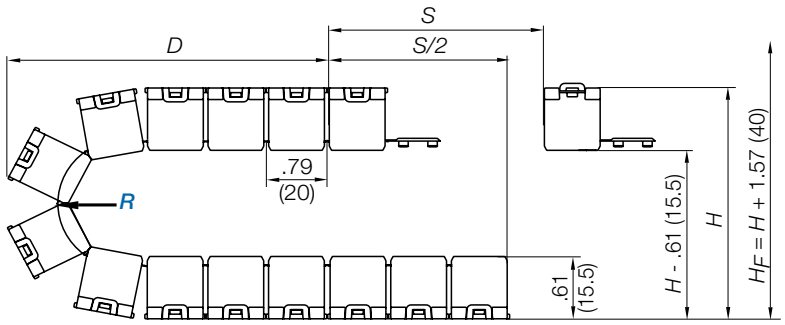
PDF: igus.com/e-chain-pdfs
Product information: igus.com/e-chains

e-chain system® E1
Series E1-10
Product Range

Series E1-10 - Snap-open along the outer radius







Pitch per link: = .79" (20 mm)
Chain length = $_{-}^{s}/_{2}$ + K

Supplement part number with required radius. Example: E1-10-013-018-0
Pitch: .79 in. (20 mm) per link)

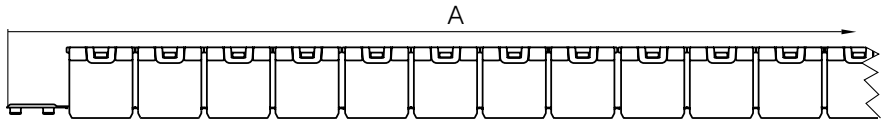
Part Number	*Bi* in. (mm)	*Ba* in. (mm)	Weight lbs/segment (kg/segment)
E1-10-013-[ ]-0	.20 (13)	.34 (16.5)	≈ 0.0362 (0.0164)
	Choose from the radii below for the above size		
	Radius (mm) Example: E1-10-013-018-0		

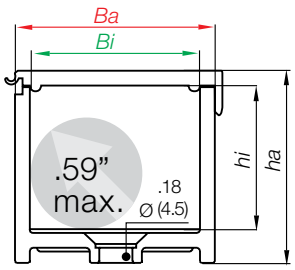
018

R	.71 (018)
H	2.44 (62)
D	2.60 (66)
K	3.94 (100)

0=Standard color black. For other colors see Chapter 1

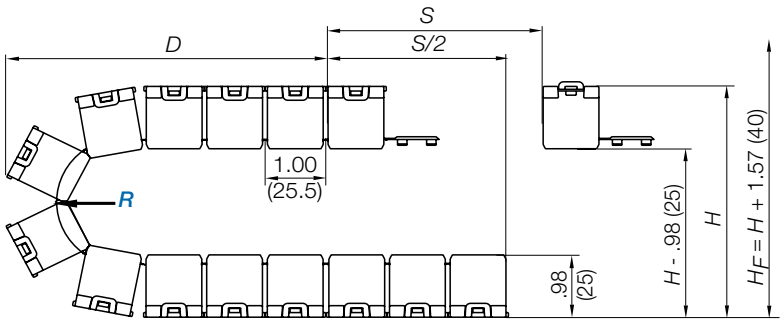
Part Number	Segment Length Dimension A mm	No. of links/segment	No. of segments/m
E1-10-013-018-0	200	10	5 (1000 mm)





Series E1-17 - Snap-open along the outer radius





Pitch per link: = 1.00" (25.5 mm)
Chain length = $_{-}^{s}/_{2}$ + K

Supplement part number with required radius. Example: E1-17-021-028-0
Pitch: 1.00 in. (25.5 mm) per link

Part Number	*Bi* in. (mm)	*Ba* in. (mm)	Weight lbs/segment (kg/segment)
E1-17-021-☐-0	.83 (21)	1.02 (26)	≈ 0.1054 (0.0478)
E1-17-031-☐-0	1.22 (31)	1.42 (36)	≈ 0.1014 (0.0460)
E1-17-044-☐-0	1.73 (44)	1.93 (49)	≈ 0.1532 (0.0695)

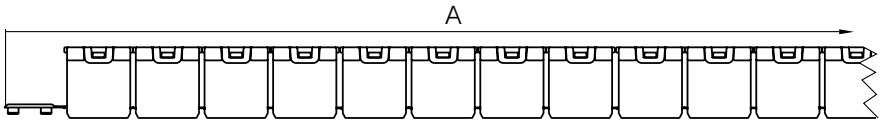
Choose from the radii below for the above size
Radius (mm) Example: E1-17-021-028-0

028

R	1.10 (028)
H	3.62 (92)
D	2.99 (76)
K	4.72 (120)

0=Standard color black. For other colors see Chapter 1

Part Number	Segment Length Dimension A mm	No. of links/segment	No. of segments/m
E1-10-021-028-0	255	10	4 (1020 mm)
E1-17-031-028-0	204	8	5 (1020 mm)
E1-17-044-028-0	255	10	4 (1020 mm)



Mounting brackets for the Series E1-17-021

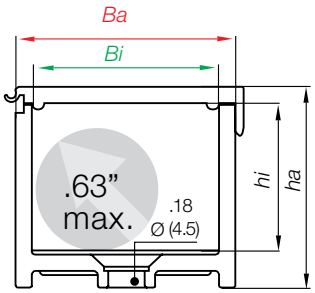


Compact, universal mounting bracket for E1-17-021: **Part No. E1-170-021-TS** - easy attachment

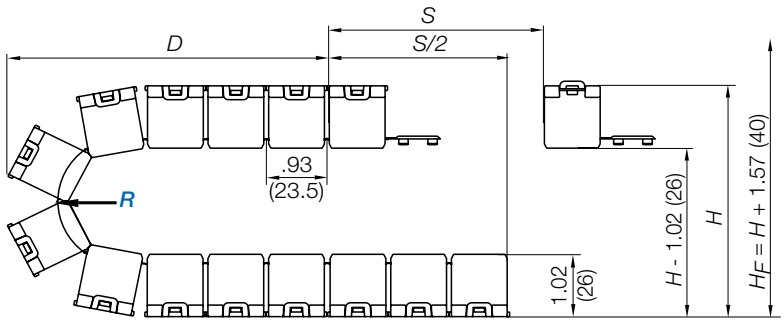
PDF: igus.com/e-chain-pdfs
Product information: igus.com/e-chains

e-chain system® E1
Series E1-18
Product Range

Series E1-10 - Snap-open along the outer radius







Pitch per link: = .99" (25.25 mm)
Chain length = $_{-}^{s}/_{2}$ + K

Supplement part number with required radius. Example: E1-18-015-028-0
Pitch: .93 in. (23.5 mm) per link)

Part Number	Bi in. (mm)	Ba in. (mm)	Weight lbs/segment (kg/segment)
E1-18-015-[ ]-0	.59 (15)	.79 (20)	≈ 0.0373 (0.0169)

Choose from the radii below for the above size

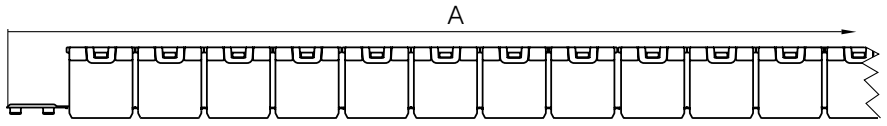
Radius (mm) Example: E1-18-015-028-0

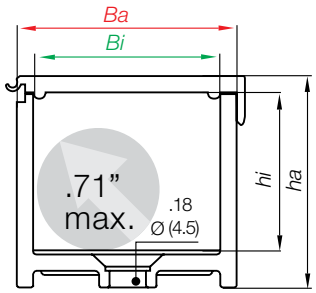
028

R	1.10 (028)
H	3.62 (92)
D	2.99 (76)
K	4.72 (120)

0=Standard color black. For other colors see Chapter 1

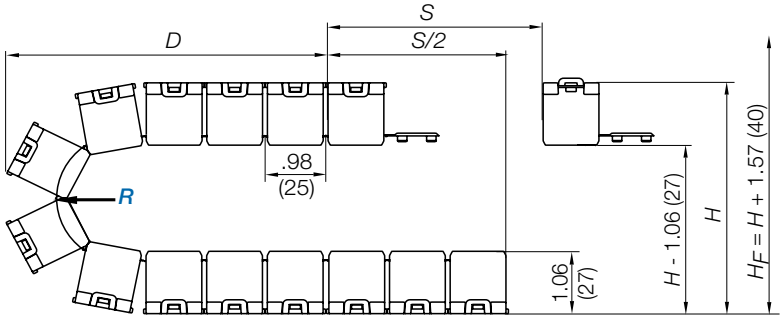
Part Number	Segment Length Dimension A mm	No. of links/segment	No. of segments/m
E1-18-015-028-0	101	4	10 (1010 mm)





Series E1-20 - Snap-open along the outer radius
Lids open in alternate directions





Pitch per link: = .98" (25 mm)
Chain length = $_{-}^{s}/_{2}$ + K

Supplement part number with required radius. Example: E1-20-015-028-0
Pitch: .98 in. (25 mm) per link

Part Number	Bi in. (mm)	Ba in. (mm)	Weight lbs/segment (kg/segment)
E1-20-015-□-0	.59 (15)	.87 (22)	≈ 0.0977 (0.0443)

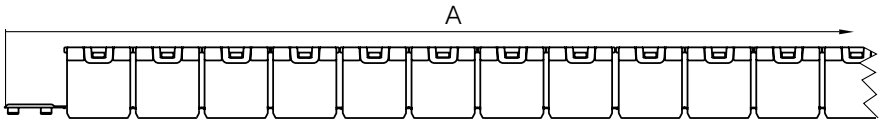
Choose from the radii below for the above size
Radius (mm) Example: E1-20-015-028-0

028

R	1.10 (028)
H	3.62 (92)
D	2.99 (76)
K	4.72 (120)

0=Standard color black. For other colors see Chapter 1

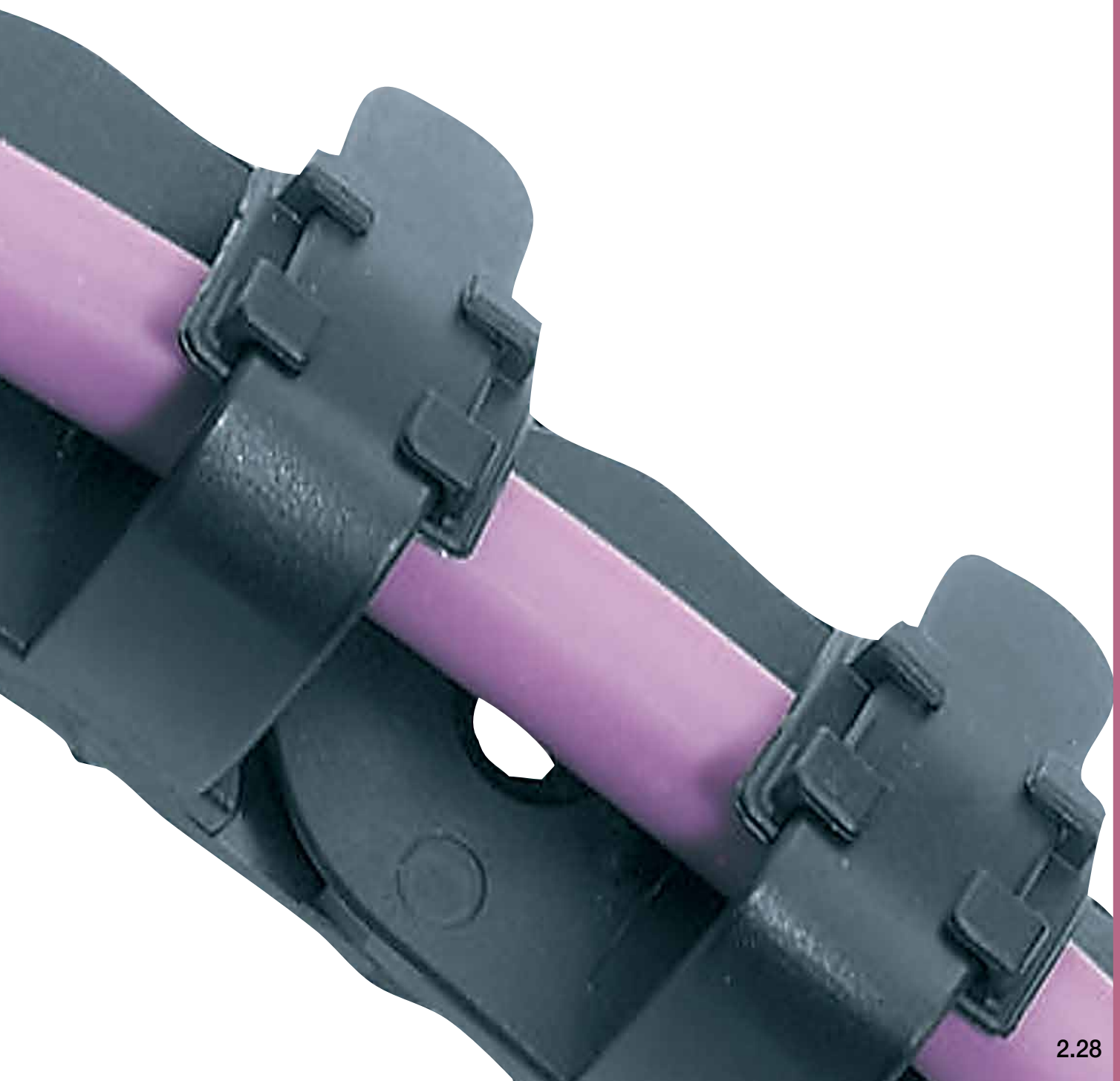
Part Number	Segment Length Dimension A mm	No. of links/segment	No. of segments/m
E1-20-015-028-0	250	10	4 (1000 mm)

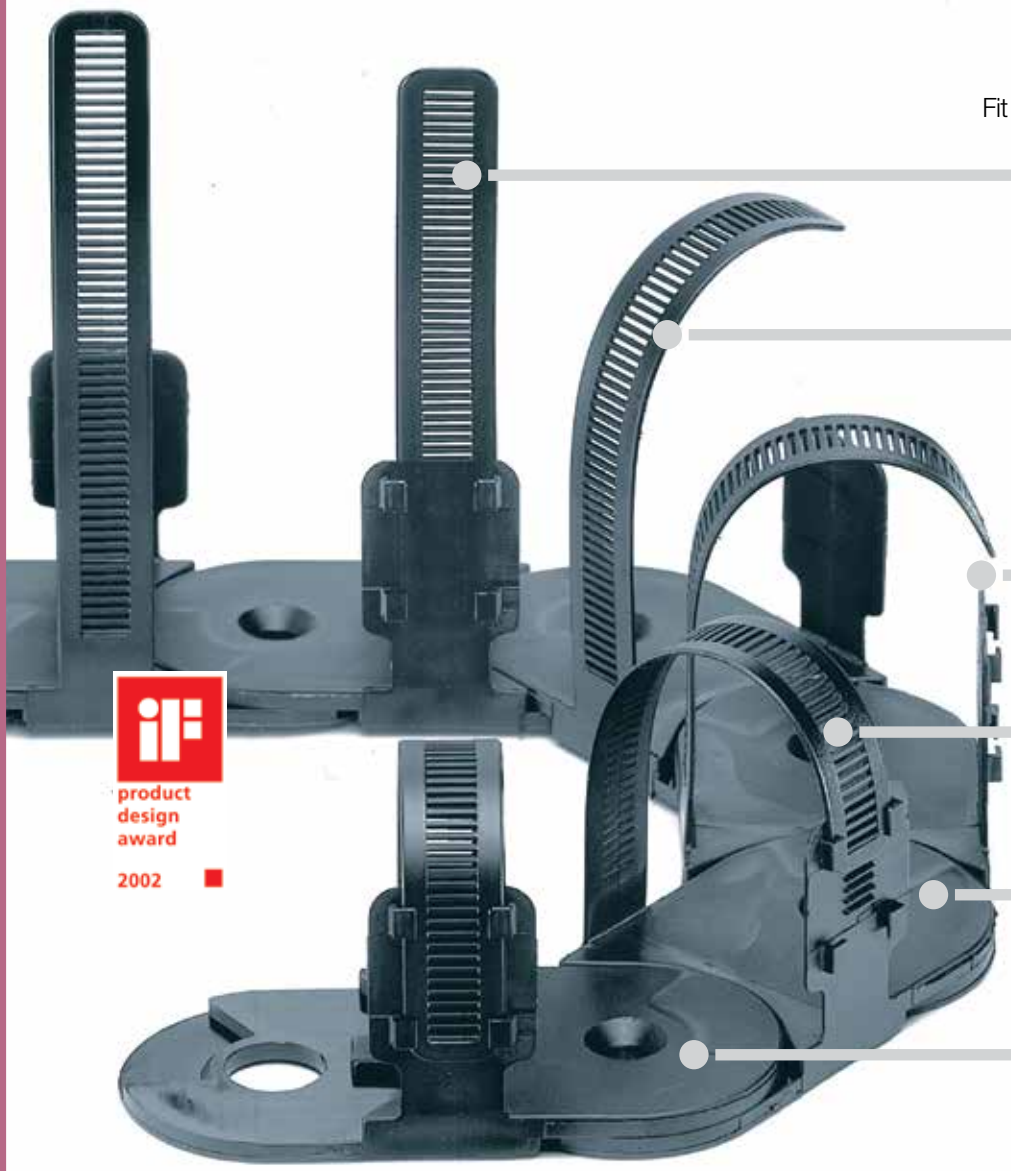


PDF: igus.com/e-chain-pdfs
Product information: igus.com/e-chains



igus®
snapchain





Save time:
Fit cable assemblies quickly in bunches, available in 2 sizes

Flexible:
Adjust and change cables at any time

Opening principle:
Version TE14/TE26 can be opened along the outer and TZ14/TZ26 can be opened along the inner radius

Simple:
Favorable alternative to complex hinged cable trays

Short lengths:
Well-suited to short lengths, ideally 5 - 10 links

Flexible:
Can be bent in 1 or 2 directions

Fit cable assemblies quickly in bunches - snapchain

igus® snapchain is an economical e-chain® for low-duty applications. Tubes are easy to assemble and cost-effective. An ideal solution for less demanding applications.

Typical industries and applications

- Control cabinets
- Electrical equipment
- Computer cubicles
- Office furniture
- Wherever cables are moved infrequently



e-chain system® - snapchain
Series TE-14/TZ-14, TE-26/TZ-26
Product Range



Version TE -
Loops to be opened along the outer radius

Version TZ -
Loops to be opened along the inner radius

Series	Loop length		Pitch		Bending radius *R*	
	in.	(mm)	in.	(mm)	in.	(mm)
TE14-50	1.97	(50)	1.20	(30.5)	1.10 - 4.92	(028-125)
TE26-120	4.72	(120)	2.20	(56)	2.48 - 7.87	(063-200)
TZ14-50	1.97	(50)	1.20	(30.5)	1.10 - 4.92	(028-125)
TZ26-120	4.72	(120)	2.20	(56)	2.48 - 7.87	(063-200)

Material (e-chain®) - permitted temperature °F	-40°F up to +176°F (-40°C up to +80°C)
Flammability Class (e-chain®), igumid NB	VDE 0304 IIC UL94 V2

Technical Data

Details of material properties
➤ **Chapter 1**

Order example | Order key and color options based on Series TE26.

Order example for complete e-chain® 3.28 ft. (1.0 m), color black:

e-chain® 3.28 ft. (1.0 m) Please indicate chain-lengths or number of links

Order text: 1.0 m TE26-120-100-0

Part No. Structure

TE26-120-100-0
TZ26-120-100-0

Version TE to be opened along the outer radius
Version TZ to be opened along the inner radius

Color index (standard black)
Bending radius *R*
Length of loops
Series / Type
Version "TE" or "TZ"

Available from stock. Orders ship as early as today.*

*On average 90% of orders ship the same day..

e-chain system® - snapchain
Series TE-14, TZ-14
Product Range



Opens along the outer radius

Part Number	Weight lbs/ft (kg/m)
TE14-50-□-0	≈ 0.1008 (0.15)

Choose from the radii below for the above size

Radius (mm) Example: TE14-50-028-0

	028	038	048	075	100	125
R	1.10 (028)	1.50 (038)	1.89 (048)	2.95 (075)	3.94 (100)	4.92 (125)

0 = Standard color black.
For other colors see Chapter 1

Opens along the inner radius

Part Number	Weight lbs/ft (kg/m)
TZ14-50-□-0	≈ 0.1008 (0.15)

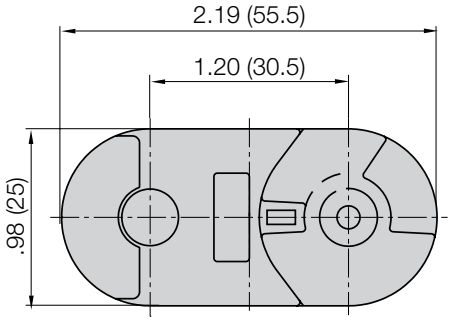
Choose from the radii below for the above size

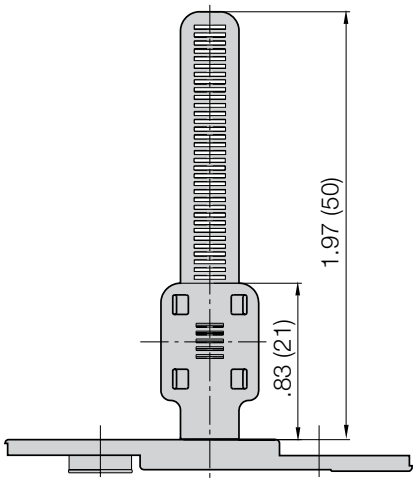
Radius (mm) Example: TE14-50-028-0

	075	100	125	150	200	250
R	1.10 (028)	1.50 (038)	1.89 (048)	2.95 (075)	3.94 (100)	4.92 (125)

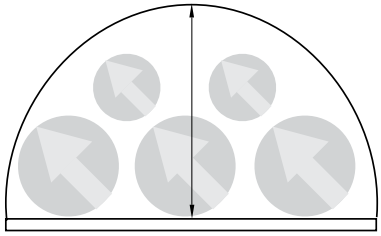
0 = Standard color black.
For other colors see Chapter 1

Dimensions





Pitch per link: = 1.20" (30.5 mm)
Links per ft (m): = 10 (33)
Chain length = $\frac{s}{2}$ + K



Cable package max.: 18 mm



Opens along the outer radius

Part Number	Weight lbs/ft (kg/m)
TE26-120-☐-0	≈ 0.2889 (0.43)

Choose from the radii below for the above size

Radius (mm) Example: TE14-50-028-0

063	075	100	125	150	200
2.48 (063)	2.95 (075)	3.94 (100)	4.92 (125)	5.91 (150)	7.87 (200)

0 = Standard color black.
For other colors see Chapter 1

Opens along the inner radius

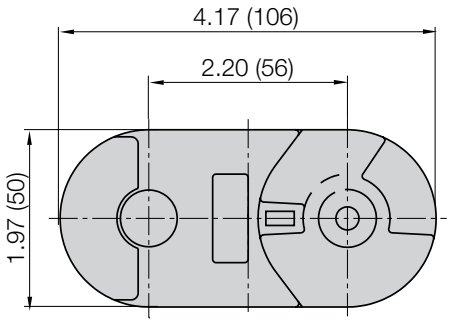
Part Number	Weight lbs/ft (kg/m)
TZ26-120-☐-0	≈ 0.2889 (0.15)

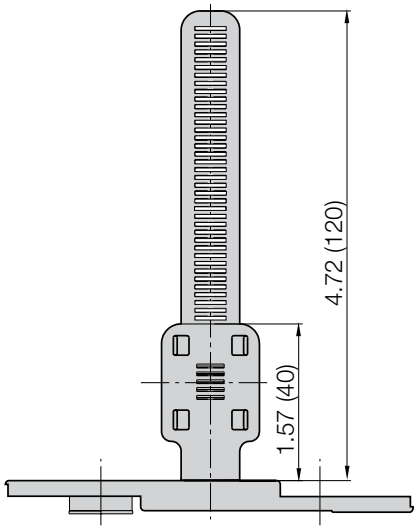
Choose from the radii below for the above size

Radius (mm) Example: TE14-50-028-0

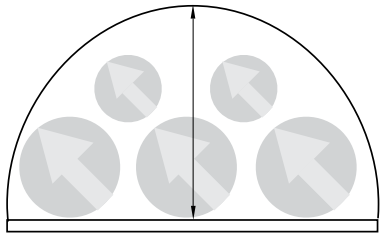
063	075	100	125	150	200
2.48 (063)	2.95 (075)	3.94 (100)	4.92 (125)	5.91 (150)	7.87 (200)

0 = Standard color black.
For other colors see Chapter 1



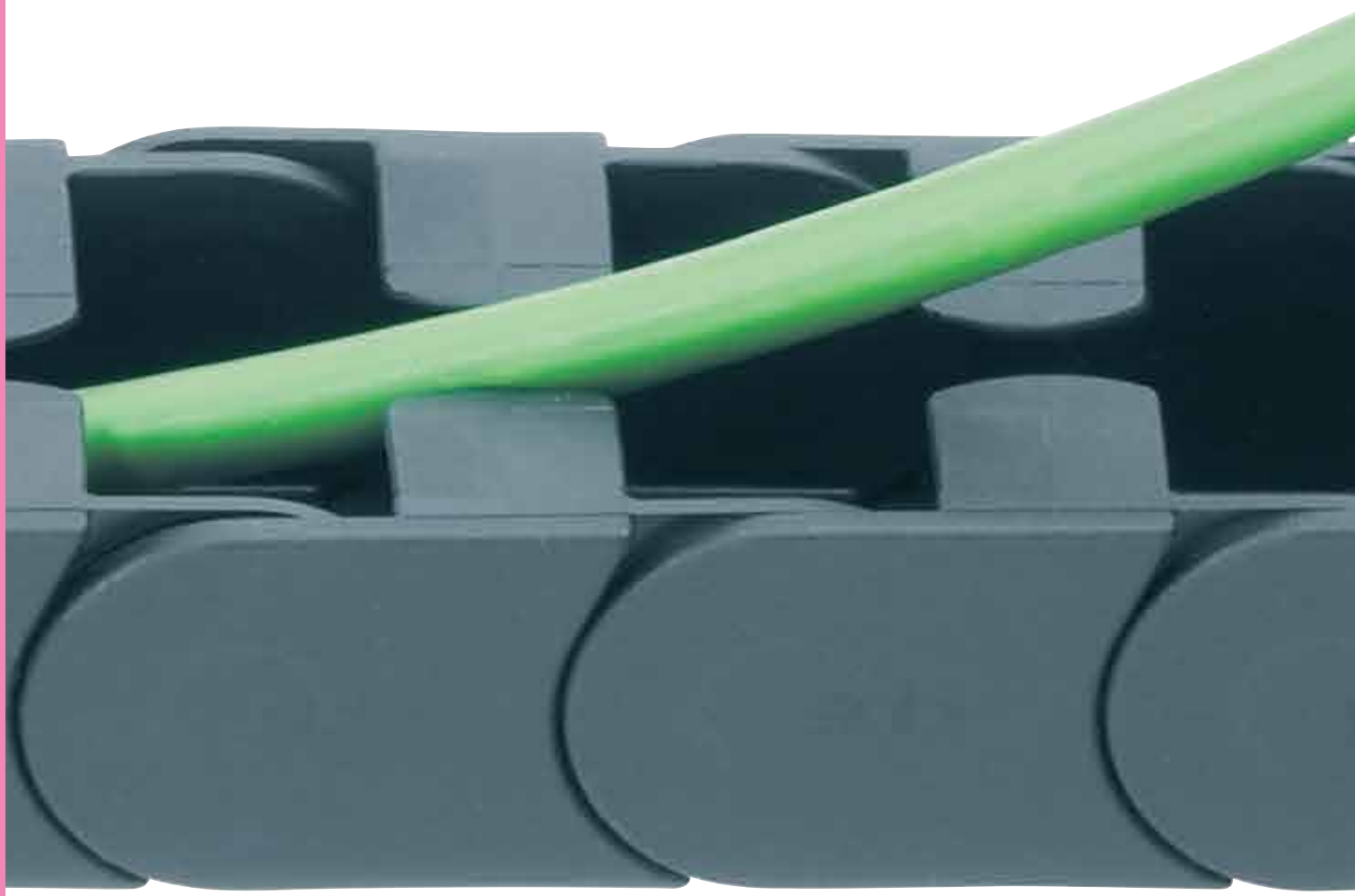


Pitch per link: = 2.20" (56 mm)
Links per ft (m): = 5.45 (18)
Chain length = $_{S}/_{2}$ + K



Cable package max.: 47 mm

PDF: igus.com/e-chain-pdfs
Product information: igus.com/e-chains



igus®

office e-chain®



Energy supply for offices and furniture - office e-chain®

Cables fitted quickly, e-chain® attached quickly, attractive design, nice and tidy. This e-chain® was designed and developed especially for the furniture industry.

- Aesthetic design
- Closed outer contours (half-tube)
- Mounting brackets easy to clip on
- Easy to fill, even when installed with “easy” design
- Cable-friendly due to smooth interior
- UL94-V2 certified
- Mounting brackets can be either screwed or bonded thanks to the large flat surface on the bottom

Typical industries and applications

- Electrically adjustable furniture
- Miscellaneous applications without highly dynamic movements





Insert cables quickly and easily with the office e-chain®, the energy supply for offices and furniture

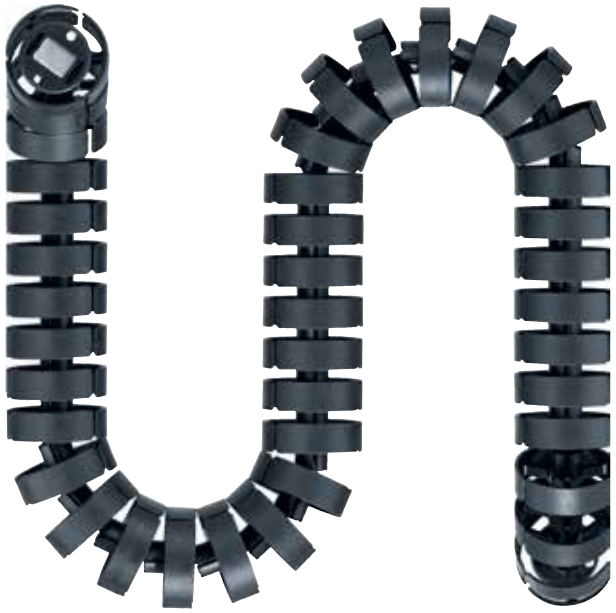
New: OCR office e-chain® - tidy loose cables quickly and easily

- Movable in all axes, round and square versions
- Simply press in or pull out cables with "easy" design
- Mounting brackets with magnets for easy attachment in seconds
- Flexible fitting

Upon request, more information

▶ www.igus.com/OCR





reddot design award
winner **2018**

Available from stock. Orders ship as early as today.*

*On average 90% of orders ship the same day..

e-chain system® office e-chain®
Series ZF14

21

Price Index

Series ZF14

Special Features / Options

Flammability Class
VDE 0304 IIC UL94 V2

Features & Benefits

1. Mounting brackets: the e-chain® is easily clipped on
2. Stylishly simple: designed and developed especially for the furniture industry
3. Save time: simply press cables in, with “easy” design
4. Abrasion-optimized: cable-friendly due to smooth interior
5. Strong: prevents unintentional sideways movement
5. Protected: closed on the outside for cable protection and concealment
5. Colors: different colors available upon request



Usage Guidelines

- Aesthetic design
- Closed outer contours (half tube)
- Easy to fill, even when installed
- Cable-friendly due to smooth interior
- Mounting brackets can either be screwed or bonded due to the large flat bottom surface

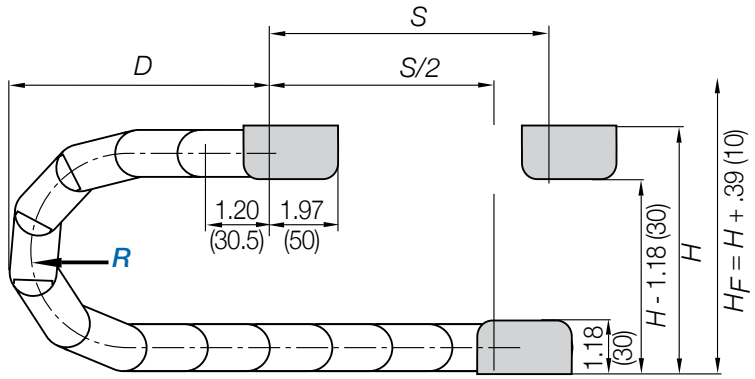
- When an unsupported application is required
  ➤ **E-Z chain, Chapter 2**
- Where small semi-static applications are required
  ➤ **E1, Chapter 2**
- When a multi-axis solution is desired
  ➤ **OCR office e-chain®,**
  ➤ **www.igus.com/OCR**

Order Example: Complete E-Chain®

Please indicate chain length or number of links. Example:

3.28 ft (1 m) **ZF14-038-028-0**	**e-chain®**
1 Set **ZF114-038-12**	**Mounting Bracket**

e-chain system® office e-chain®
Series ZF14
Installation Dimensions



Pitch per link: = 1.20" (30.5 mm)
Links per ft (m): = 10 (33)
For center mount applications:
Chain length = $_{S}/_{2}$ + K

The required clearance height: H_F **= H + .39 in. (10 mm)** (with .13 lbs/ft (0.2 kg/m) fill weight.
Please consult igus® if space is particularly restricted.

R	1.10 (028)
H*	3.39 (86)
D	4.59 (116.5)
K	8.31 (211)



Version ZF14 | "easy" design, split crossbar along the inner radius

Part Number Structure

ZF14- 038- 028- 0

- Color - Black
- Bending radius
- Width (depends on **Bi**)
- Series

Part No.	Bi	Ba	R Available bending radius	Weight
e-chains®	in. (mm)	in. (mm)	in. (mm)	lbs/ft. [kg/m]
ZF14-038-028-0	1.50 (38)	1.83 (46.6)	1.10 (028)	≈ 0.200 (0.297)

Complete Part No. with required radius (*R*). Example: **ZF14-038-028-0**

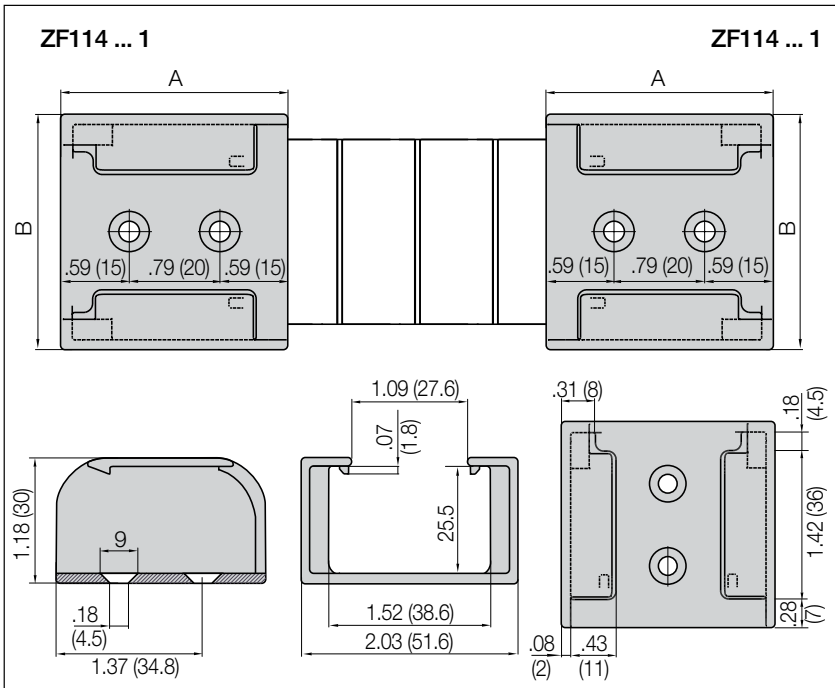
Material (E-Chain®) - permitted temperature	igumid NB / -40°F (-40°C) up to +176°F (+80° C)
Material (mounting brackets)* - permitted temperature	igumid G / -40°F (-40°C) up to +248°F (+120° C)
Flammability Class (E-Chain®), igumid NB	VDE 0304 IIC UL94-HB
Flammability Class (Mounting brackets), igumid G	VDE 0304 IIC UL94 V2

Technical Data

Details of material properties
➤ **Chapter 1**

PDF: www.igus.com/E-Chain-pdfs
Specs/CAD/RFQ: www.igus.com/E-Chains
RoHS info: www.igus.com/RoHS

e-chain system® office e-chain®
Series ZF14
Mounting Brackets







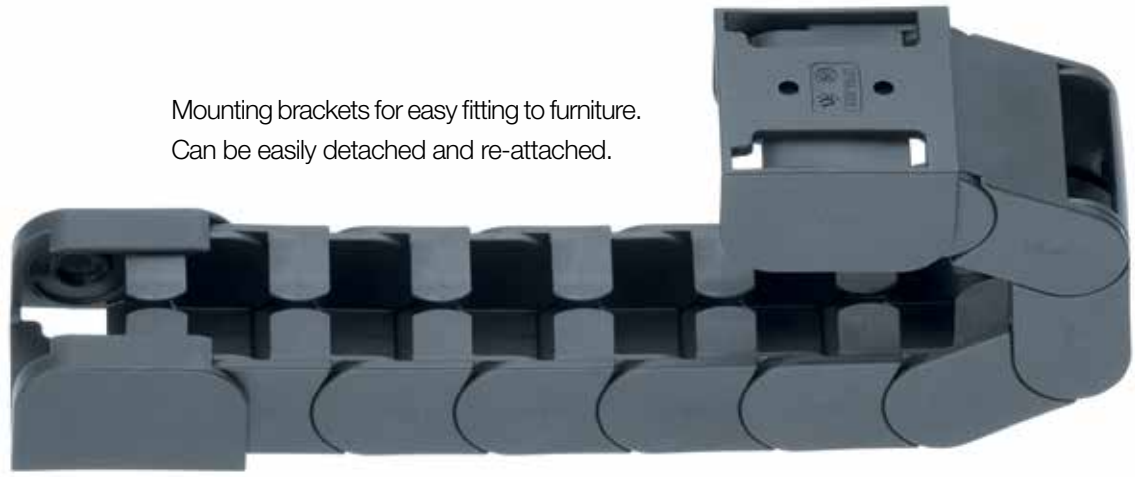
Part No. ZF114-038-12 -

consisting of 2 x ZF114-038-1

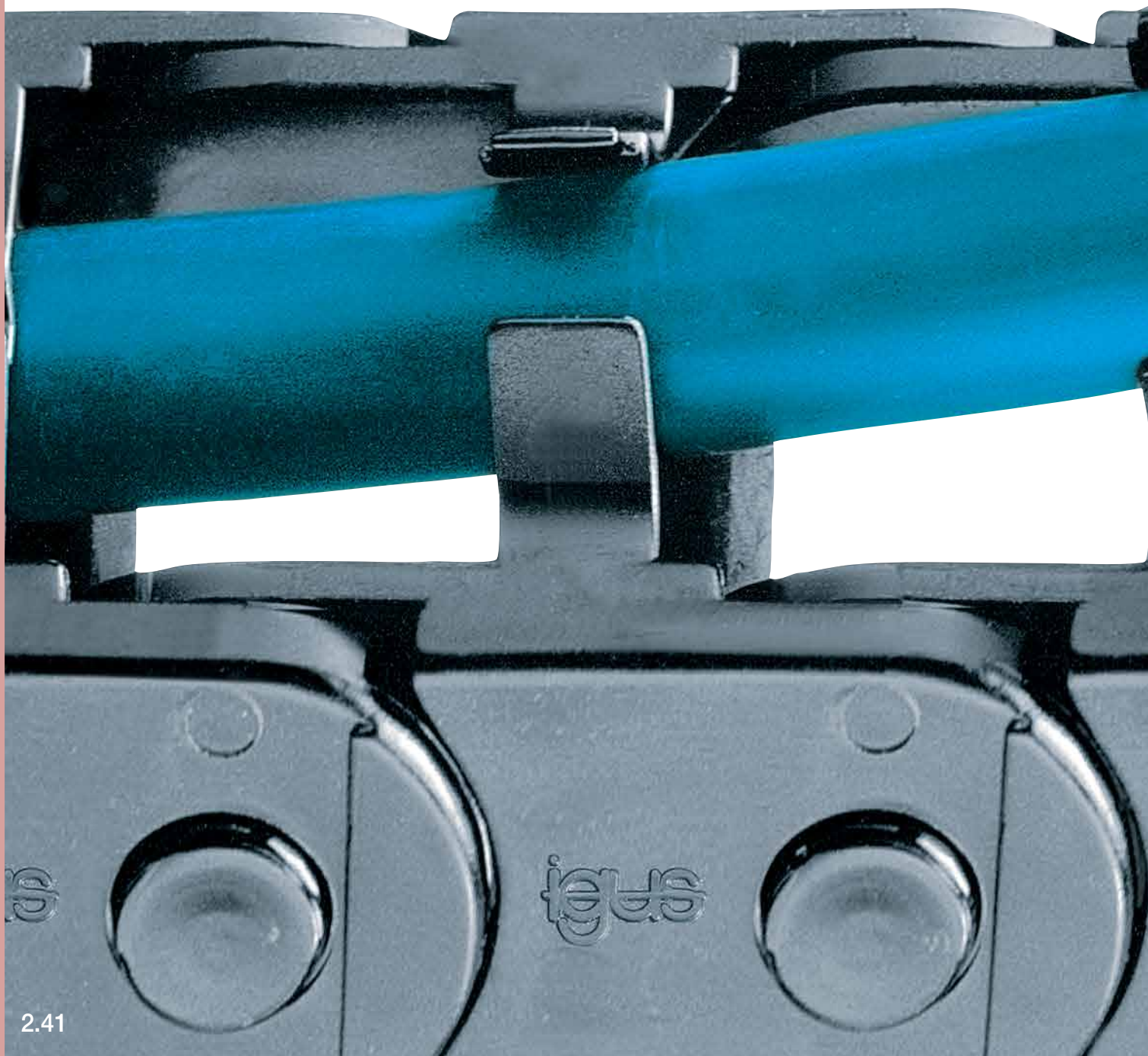
Width index	Part No. full set	A in. (mm)	B in. (mm)
-038	**ZF114-038-12**	2.03 (51.6)	1.97 (50)

Suitable mounting bracket for moving and fixed ends

Mounting brackets for easy fitting to furniture.
Can be easily detached and re-attached.



PDF: www.igus.com/E-Chain-pdfs
Specs/CAD/RFQ: www.igus.com/E-Chains
RoHS info: www.igus.com/RoHS



igus®

E-Z chain

Easy to fill



E-Z chain - easy to fill and very cost-effective

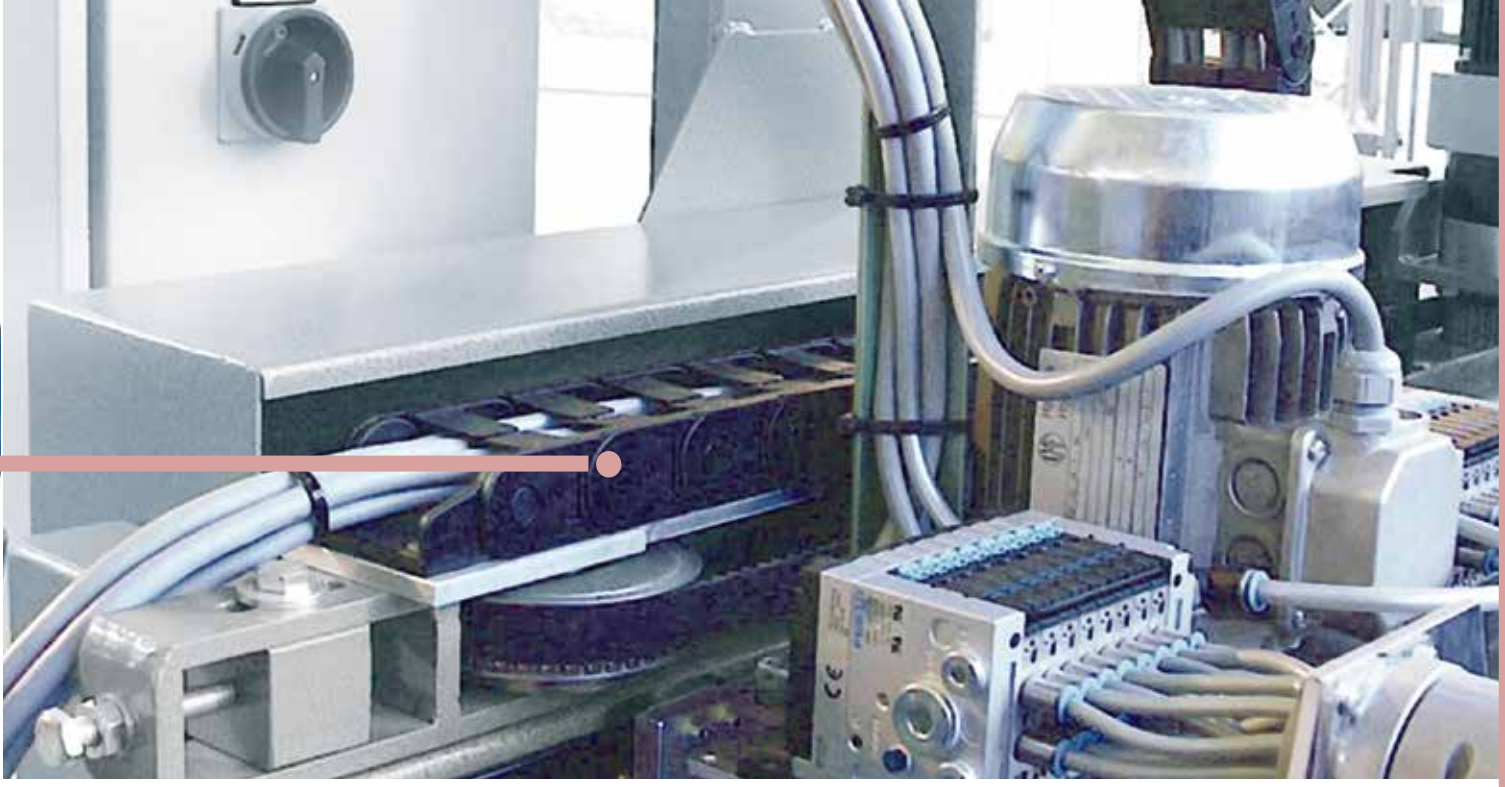
E-Z chain – cost effective cable carrier offers easy access to cables and hoses. E-Z chain cable carriers are designed with a split crossbar along the outer or inner radius for fast installation or removal of cables and hoses—without any tools. The split crossbars are flexible, but retain their shape and strength to provide secure protection and easy cable accessibility.

Typical industries and applications

- General machinery
- Cleanroom applications
- Electronic apparatus
- Office equipment
- Vending machines
- Packaging machines







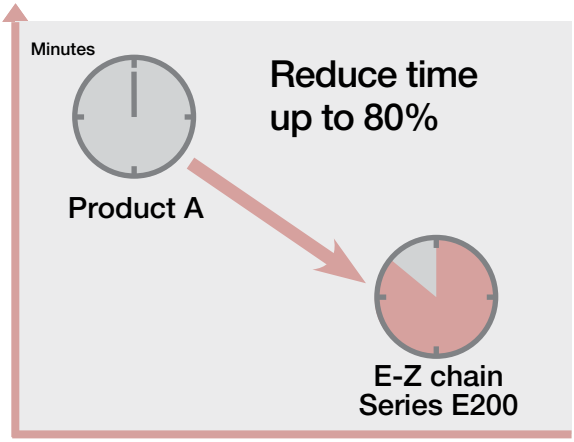
Machinery of all kinds feature igus® E-Z chains - reduces assembly times

Clean room test acc. to Fraunhofer Institute IPA
Standard material - ISO Class 2 acc. to ISO 14644-1
Speed: v = 3.28 ft/s (1.0 m/s) and a = 6.56 ft/s (2.0 m/s) - Series E14-3-038

Special equipment: Electrically conductive ESD/ATEX version upon request.

Flammability Class
VDE 0304 IIC UL94 V2

With E-Z chain rotary and torsional motions are possible



Assembly time: Insertion of 2 cables Ø .24" and .39" (6 and 10 mm).
We can provide you with more details about this and other tests.

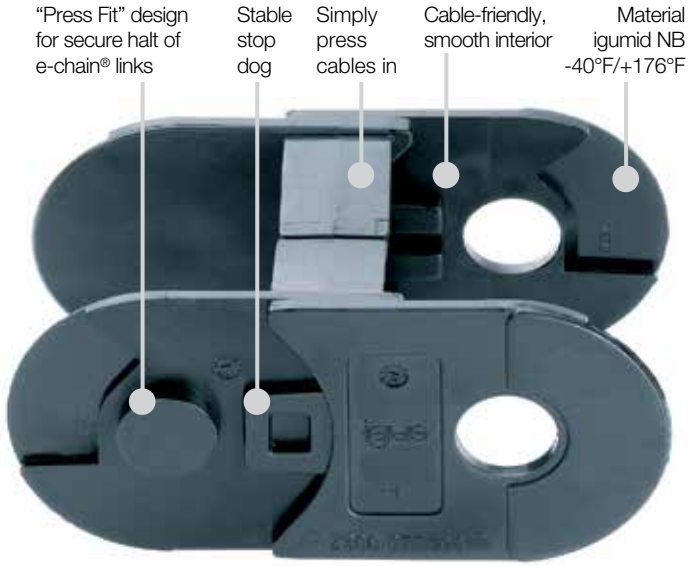


E-Z chain Series E14 on server unit, removable for maintenance purposes Cleanroom Class 2 ISO is standard



E-Z chain on adjustable office furniture with UL94 - V2 Classification

e-chain system®
E-Z chain Series



E-Z chain: "E" and "Z" makes "Easy"

- Easy to fill from the outer (exterior) radius (Version "E") or inner radius (Version "Z")
- Fast cable accessibility without opening and closing lids
- Easy to lengthen and shorten at any point
- Low price with one-piece design
- Dirt-repellent, contoured exterior
- Mounting brackets available with integrated strain relief
- Limited torsion tolerance
- Available with interior separation (some types)
- Flammability rating UL94-V2
- Suitable for clean-room applications
- You can find more technical data about the material, chemical resistance, temperatures ➤ **Chapter 1, Design**

Selection table

Series	Inner height *hi*		Inner width *Bi*		Outer width *Ba*		Outer height *ha*		Bending radius *R*	
	in.	(mm)	in.	(mm)	in.	(mm)	in.	(mm)	*in.*	(mm)
E03	.20	(5)	.20 -.39	(5-10)	.34 -.54	(8.7-13.7)	.31	(8)	.39 - 1.10	(10 - 28)
E04	.28	(7)	.28	(7)	.51	(13)	.39	(10)	.59 - 1.89	(15 - 48)
E045/Z045	.37	(9.4)	.39 - 1.06	(10-27)	.63 -1.46	(16 - 37)	.49	(12.5)	.71 - 1.50	(18 - 38)
E06/Z06	.41/.42	(10.5 / 10.7)	.39 - .79	(10-20)	.65 -1.04	(16.5-26.5)	.59	(15)	.71 - 1.50	(18 - 38)
E065	.44	(11.3)	.63 - 1.42	(16-36)	.98 -1.94	(24.8-49.3)	.59	(15)	.71 - 1.50	(18 - 38)
E08/Z08	.57/.58	(14.6 / 14.7)	.39 - 1.97	(10-50)	.72 -2.29	(18.2-58.2)	.76	(19.3)	1.10 - 1.89	(28 - 48)
E14/Z14	.75	(19)	.59 - 1.97	(15-50)	1.06 -2.44	(27-62)	.98	(25)	1.10 - 4.92	(28 - 125)
E200/Z200	.96	(24.3)	1.46 - 2.24	(37-57)	2.93 -4.74	(74.4-120.4)	1.38	(35)	2.17 - 7.87	(55 - 200)
E16/Z16	1.26	(32)	.91 - 3.94	(23-100)	1.48 -4.54	(37.5-115.3)	1.54	(39)	1.57 - 3.94	(40 - 100)
E26/Z26	1.44/1.46	(36.5 / 37.1)	1.85 - 2.95	(47-75)	3.62 -6.57	(92-167)	1.97	(50)	2.48 - 9.84	(63 - 250)
E300/Z300	1.91	(48.5)	1.81 - 2.95	(46 - 75)	3.74 -6.69	(95-170)	2.52	(64)	2.95 - 11.81	(75 - 300)

Quick assembly with ESD!



E-Z chain now available as ESD version

- Easy to fill on the outer/inner radius
- Accessible to the cables without opening and closing of lids
- Cost-effective one-piece design e-chain®
- Mounting brackets available

More information ➤ www.igus.com

Available from stock. Orders ship as early as today.*

*On average 90% of orders ship the same day..

Assembling | **Separating** | **Filling** | Series E03 · E04 · E/Z045



Twist and click or twist and divide



Press in cable

Assembling | Series E/Z06 · E065 · E/Z08 · E/Z14 · E/Z200 · E/Z16 · E/Z26 · E/Z300

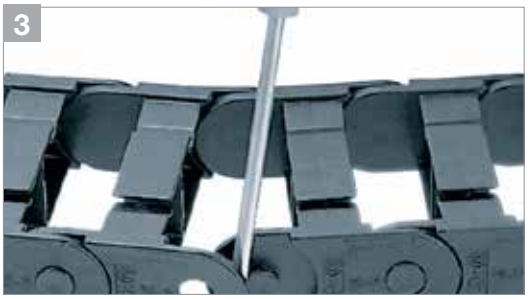


Push and click...



Snap in pin

Separating | Series E/Z06 · E065 · E/Z08 · E/Z14 · E/Z200 · E/Z16 · E/Z26 · E/Z300



Release side link



Twist and pull apart

Filling | Series E/Z06 · E065 · E/Z08 · E/Z14 · E/Z200 · E/Z16 · E/Z26 · E/Z300



Press in cable



Pull out cable

e-chain system® E-Z chain
Series E03

.20

Price Index

Series E03

Special Features / Options

IPA Qualification Certificate
Air Cleanliness Class ISO Class 2
(at v = 3.28 ft/s) upon request

Flammability Class
VDE 0304 IIC UL94 V2

Smallest inner heights .20" (5 mm)
Series E03 E-Z chain

Assembly Tips



Just push the cables into the e-chain using your thumb

Usage Guidelines

- If filling is required without opening and closing
- If price is an issue
- If quiet operation is required

- If a non-opening Energy is needed
  ➤ **Series 03 E2 Micro**

Features & Benefits

1. Smallest e-chain® - interior dimensions .20" x .20" (5 x 5 mm)
2. Small pitch for low-noise and smooth operation
3. Very easy to fill, without opening and closing lids
4. Mounting bracket with integrated strain relief
5. Very lightweight - ideal for low fill weight
6. Patented push button design holds the links together
7. For smallest bending radii chainflex® CF98/CF99 - 4 x d



Order Example: Complete e-chain®

Please indicate chain length or number of links. Example:

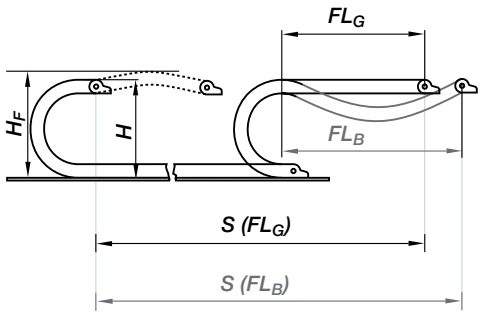
3.28 ft (1 m) **E03-05-010-0**	**e-chain®**
1 Set **E03-05-12Z**	**Mounting Bracket**

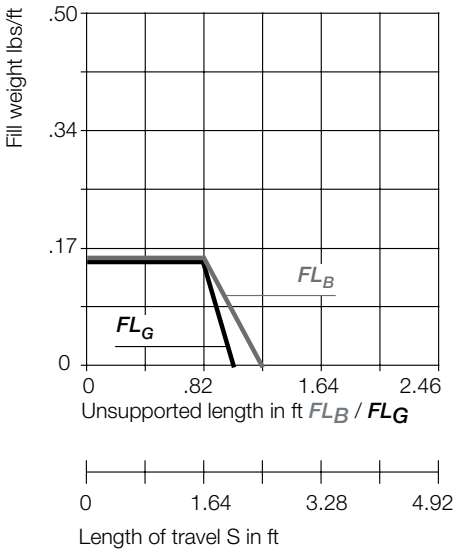
e-chain system® E-Z chain
Series E03
Installation Dimensions

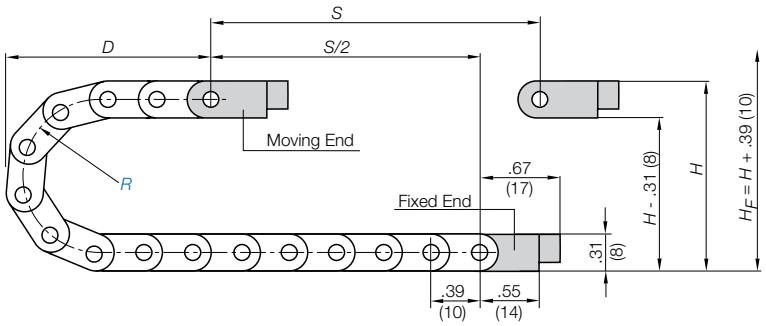
Short travel, unsupported length

- FL_B = unsupported with permitted sag
- FL_G = unsupported with straight upper run

Further information ➤ Design, Chapter 1







Pitch per link: = .39" (10 mm)
Links per ft (m): = 30.47 (100)
For center mount applications:
Chain length = $\frac{S}{2} + K$

The required clearance height: $H_F = H + .39$ **in. (10 mm)** (with .067 lbs/ft (0.1 kg/m) fill weight. Please consult igus® if space is particularly restricted.

R	.39 (010)	.47 (012)	.59 (015)	.71 (018)	1.10 (028)
H	1.10 (28)	1.26 (32)	1.50 (38)	1.73 (44)	2.52 (64)
D	1.14 (29)	1.22 (31)	1.34 (34)	1.46 (37)	1.85 (47)
K	2.17 (55)	2.36 (60)	2.76 (70)	3.15 (80)	4.33 (110)

Short Travels - Unsupported

Unsupported E-Chains® feature positive camber over short travels. This must be accounted for when specifying the clearance height. Please refer to **Installation dimensions** for further details.

Legend

S = Length of travel
R = Bending radius
H = Nominal clearance height
D = Overlength e-chain® radius in final position
K = π • *R* + *safety buffer*
H_F = Required clearance height

Speed / acceleration FL_G	max. 65.6 ft/s (20 m/s) / max. 656 ft/s² (200 m/s²)
Speed / acceleration FL_B	max. 9.84 ft/s (3 m/s) / max. 19.69 ft/s² (6 m/s²)
Gliding speed / acceleration (maximum)	max. 9.84 ft/s (3 m/s) / max. 32.8 ft/s² (10 m/s²)
Material (e-chain®) - permitted temperature	igumid NB / -40°F (-40°C) up to +176°F (+80° C)
Material (mounting brackets)* - permitted temperature	igumid G / -40°F (-40°C) up to +248°F (+120° C)
Flammability Class (e-chain®), igumid NB	VDE 0304 IIC UL94 V2
Flammability Class (mounting brackets), igumid G*	VDE 0304 IIC UL94 HB

*Available in igumid NB upon request, please consult igus® for delivery time

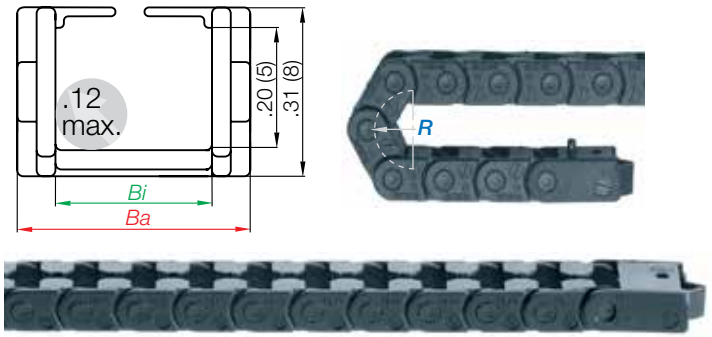
Technical Data

Details of material properties
➤ Chapter 1

PDF: igus.com/e-chain-pdfs
Product information: igus.com/e-chains

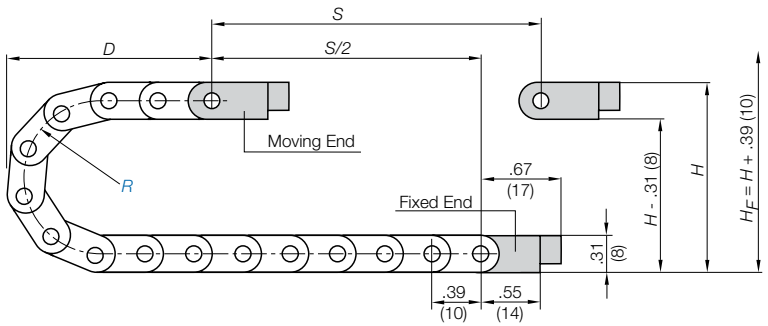
e-chain system® E-Z chain
Series E03

Series E03 - Split crossbar along the outer radius



Part Number Structure

E03-	05-	010-	0
			Color - Black
		Bending radius	
	Width		
Series			



Supplement part number with required radius. Example: E03-05-[028]-0
Pitch: .39 in. (10 mm) per link links/ft (m) = 30.47 (100)

Part Number			Bi in. (mm)	Ba in. (mm)	Weight lbs/ft (kg/m)	Crossbar gap in. (mm)
E03-05-	[ ]	-0*	.20 (5)	.34 (8.7)	≈ 0.020 (0.03)	.04 (1)
E03-07-	[ ]	-0*	.28 (7)	.42 (10.7)	≈ 0.026 (0.04)	.08 (2)
E03-10-	[ ]	-0*	.39 (10)	.54 (13.7)	≈ 0.033 (0.05)	.08 (2)

Choose from the radii below for all of the above sizes
Radius (mm) Example: 03-05-[028]-0

	010	012	015	018	028
R	.39 (010)	.47 (012)	.59 (015)	.71 (018)	1.10 (028)
H	1.10 (28)	1.26 (32)	1.50 (38)	1.73 (44)	2.52 (64)
D	1.14 (29)	1.22 (31)	1.34 (34)	1.46 (37)	1.85 (47)
K	2.17 (55)	2.36 (60)	2.76 (70)	3.15 (80)	4.33 (110)

0=Standard color black. For other colors see Chapter 1
*Please note: For this series the crossbars do not overlap. Please see table for gap amount.

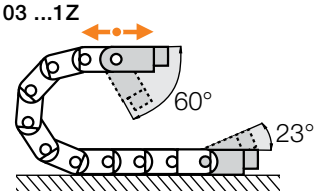
igus® e-chain system®
Telephone 1-800-521-2747
Internet: igus.com
email: sales@igus.com
QuickSpec: igus.com/quickspec

e-chain system® E-Z chain
Series E03
Mounting Brackets

Polymer, one-piece

- One-piece mounting bracket
- Corrosion resistant
- Available preassembled
- Inner and outer attachment possible
- Adaptor plate for rapid installation

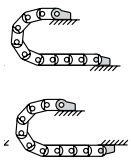
Moving end with bore
03 ...1Z



Fixed end with pin
03...2Z

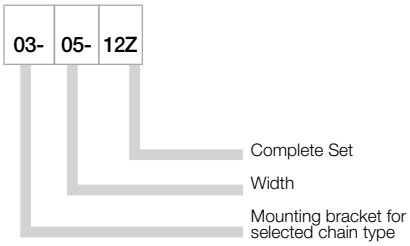


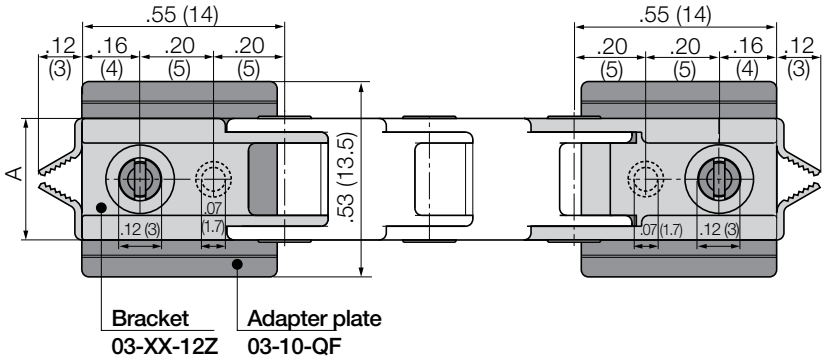




Possible installation configurations -

Part Number Structure





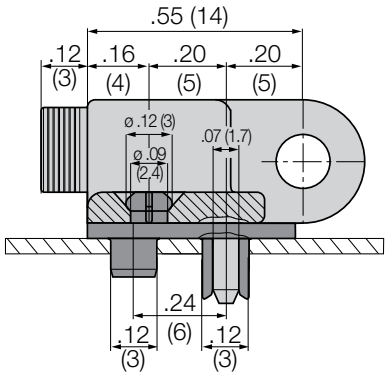
Full set, for both ends:
03- 05- 12Z Full set, **each part with pin/bore**
Single-part order:
03- 05- 1Z Mounting bracket **with bore**
03- 05- 2Z Mounting bracket **with pin**

Width Index	Part No. Full Set	Dimension A in.	(mm)
-05	**03-05-12PZ**	.34	(8.7)
-07	**03-07-12PZ**	.42	(10.7)
-10	**03-10-12PZ**	.54	(13.7)

Additional Accessories



03-10-QF = Adapter plate for all sizes
The adapter has broken edges, so that it can be adapted to the respective chain width. It is not absolutely necessary for attaching the mounting brackets. The mounting brackets can also be screwed on without the adapter plate.



PDF: igus.com/e-chain-pdfs
Product information: igus.com/e-chains

e-chain system® E-Z chain
Series E04

.28

Price Index

Series E04

Special Features / Options

IPA Qualification Certificate
Air Cleanliness Class ISO Class 2
(at v = 3.28 ft/s) upon request

Flammability Class
VDE 0304 IIC UL94 V2

Special equipment: Electrically conductive ESD/ATEX version upon request

Assembly Tips



Just push the cables into the e-chain using your thumb

Features & Benefits

1. Small pitch for low-noise and smooth operation
2. Very easy to fill, without opening and closing lids
3. For high acceleration
4. Mounting brackets available
5. Limited torsion tolerance
6. Cable friendly smooth interior
7. Patented push button design holds the links together



Special solution:
opening gap (0.8 mm)
Part No. E04-07-015-S



Usage Guidelines

- If filling is required without opening and closing
- If price is an issue
- If quiet operation is required

- If a non-opening Energy is needed
  ➤ **Series 04 E2 Micro**

Order Example: Complete e-chain®

Please indicate chain length or number of links. Example:

3.28 ft (1 m) **E04-07-038-0**	**e-chain®**
1 Set **040-07-12**	**Mounting Bracket**

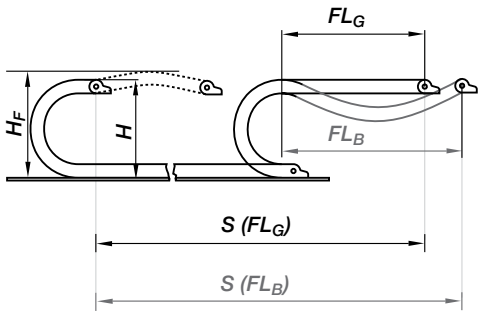
e-chain system® E-Z chain
Series E04
Installation Dimensions

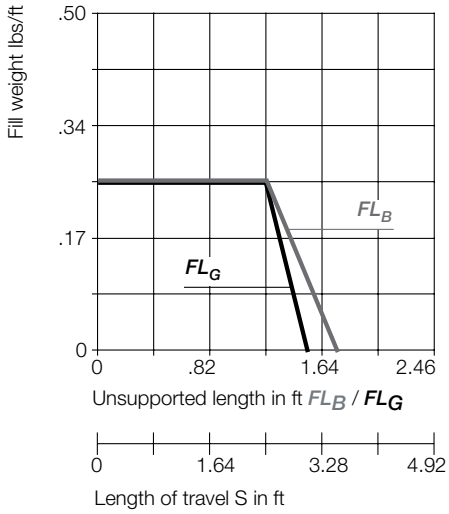
Short travel, unsupported length

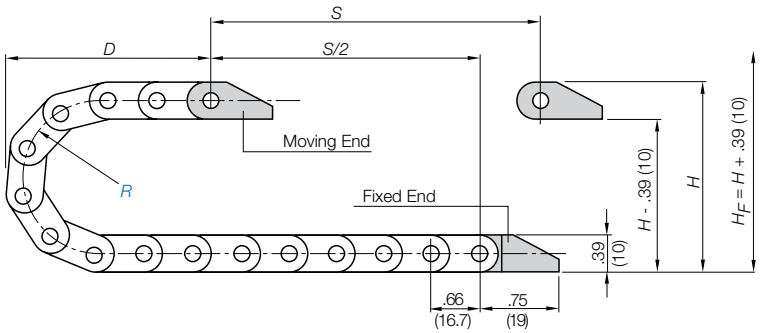
● FL_B = unsupported with permitted sag

● FL_G = unsupported with straight upper run

Further information ➤ Design, Chapter 1







Pitch per link: = .66" (16.7 mm)
Links per ft (m): = 18.28 (60)
For center mount applications:
Chain length = $\frac{S}{2} + K$

The required clearance height: ***HF = H* + .39 in. (10 mm)** (with .067 lbs/ft (0.1 kg/m) fill weight.
Please consult igus® if space is particularly restricted.

R	.59 (015)	.71 (018)	1.10 (028)	1.50 (038)	1.89 (048)
H	1.57 (40)	1.81 (46)	2.60 (66)	3.39 (86)	4.17 (106)
D	1.77 (45)	1.89 (48)	2.28 (58)	2.68 (68)	3.07 (78)
K	3.35 (85)	3.54 (90)	4.92 (125)	6.10 (155)	7.28 (185)

Short Travels - Unsupported

Unsupported E-Chains® feature positive camber over short travels. This must be accounted for when specifying the clearance height. Please refer to **Installation dimensions** for further details.

Legend

S = Length of travel
R = Bending radius
H = Nominal clearance height
D = Overlength e-chain® radius in final position
K = π • *R* + *safety buffer*
H_F = Required clearance height

Speed / acceleration FL_G	max. 65.6 ft/s (20 m/s) / max. 656 ft/s² (200 m/s²)
Speed / acceleration FL_B	max. 9.84 ft/s (3 m/s) / max. 19.69 ft/s² (6 m/s²)
Material (e-chain®) - permitted temperature	igumid NB / -40°F (-40°C) up to +176°F (+80° C)
Material (mounting brackets)* - permitted temperature	igumid G / -40°F (-40°C) up to +248°F (+120° C)
Flammability Class (e-chain®), igumid NB	VDE 0304 IIC UL94 V2
Flammability Class (mounting brackets), igumid G	VDE 0304 IIC UL94 HB

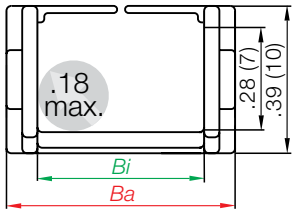
Technical Data

Details of material properties
➤ Chapter 1

PDF: igus.com/e-chain-pdfs
Product information: igus.com/e-chains

e-chain system® E-Z chain
Series E04

Series E04 - Split crossbar along the outer radius

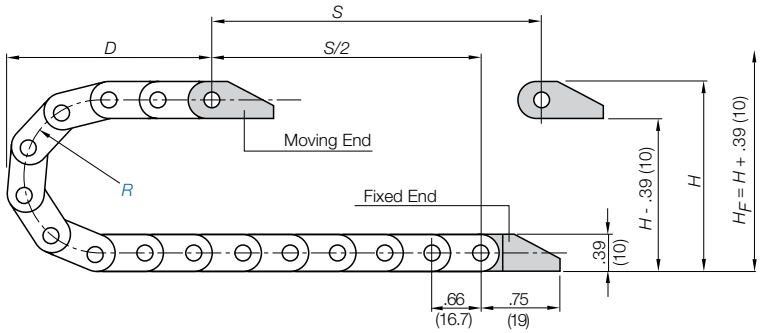






Part Number Structure

E04-	07-	038-	0
			Color - Black
		Bending radius	
	Width		
Series			



Supplement part number with required radius. Example: E04-07-038 -0
Pitch: .66 in. (16.7 mm) per link links/ft (m) = 18.28 (60)

Part Number			Bi in. (mm)	Ba in. (mm)	Weight lbs/ft (kg/m)	Crossbar Gap in. (mm)
E04-07-	☐	-0*	.28 (7)	.51 (13)	≈ 0.053 (0.08)	.10 (2.5)

Choose from the radii below for all of the above sizes
Radius (mm) Example: E04-07-038 -0

	015	018	028	038	048
R	.59 (015)	.71 (018)	1.10 (028)	1.50 (038)	1.89 (048)
H	1.57 (40)	1.81 (46)	2.60 (66)	3.39 (86)	4.17 (106)
D	1.77 (45)	1.89 (48)	2.28 (58)	2.68 (68)	3.07 (78)
K	3.35 (85)	3.54 (90)	4.92 (125)	6.10 (155)	7.28 (185)

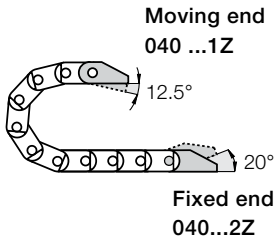
0=Standard color black. For other colors see Chapter 1
*Please note: For this series the crossbars do not overlap. Please see table for gap amount.

igus® e-chain system®
Telephone 1-800-521-2747
Internet: igus.com
email: sales@igus.com
QuickSpec: igus.com/quickspec

e-chain system® E-Z chain
Series E04
Mounting Brackets

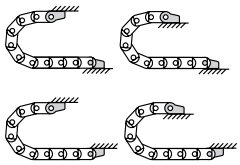
Polymer, one-piece

- One-piece mounting bracket
- Corrosion resistant
- Available preassembled



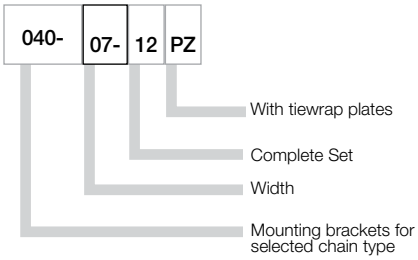


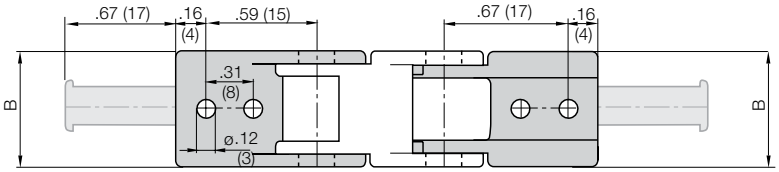




Possible installation configurations -

Part Number Structure





Full set, for both ends:

040-07-12 Full set, **each part with pin/bore**

Single-part order:

040-07-1 Mounting bracket **with bore**

040-07-2 Mounting bracket **with pin**

Chain Type	Part No. Full set without Tiewrap Plate	Part No. Full set with Tiewrap Plate	Dimension B in.	(mm)	Number of Teeth
E04-07	**040-07-12**	**040-07-12PZ**	.47	(12)	1

Additional accessories



Quicksnap - the complete, detachable mounting unit, upon request
Only available for the 040-07 e-chain - **Part No. 040-07-QS**

PDF: igus.com/e-chain-pdfs
Product information: igus.com/e-chains

e-chain system® E-Z chain
Series E045/Z045

.37 .37

Price Index

Series E045

Special Features / Options

IPA Qualification Certificate
Air Cleanliness Class ISO Class 2
(at v = 3.28 ft/s) upon request

Flammability Class
VDE 0304 IIC UL94 V2

Special equipment: Electrically conductive ESD/ATEX version upon request

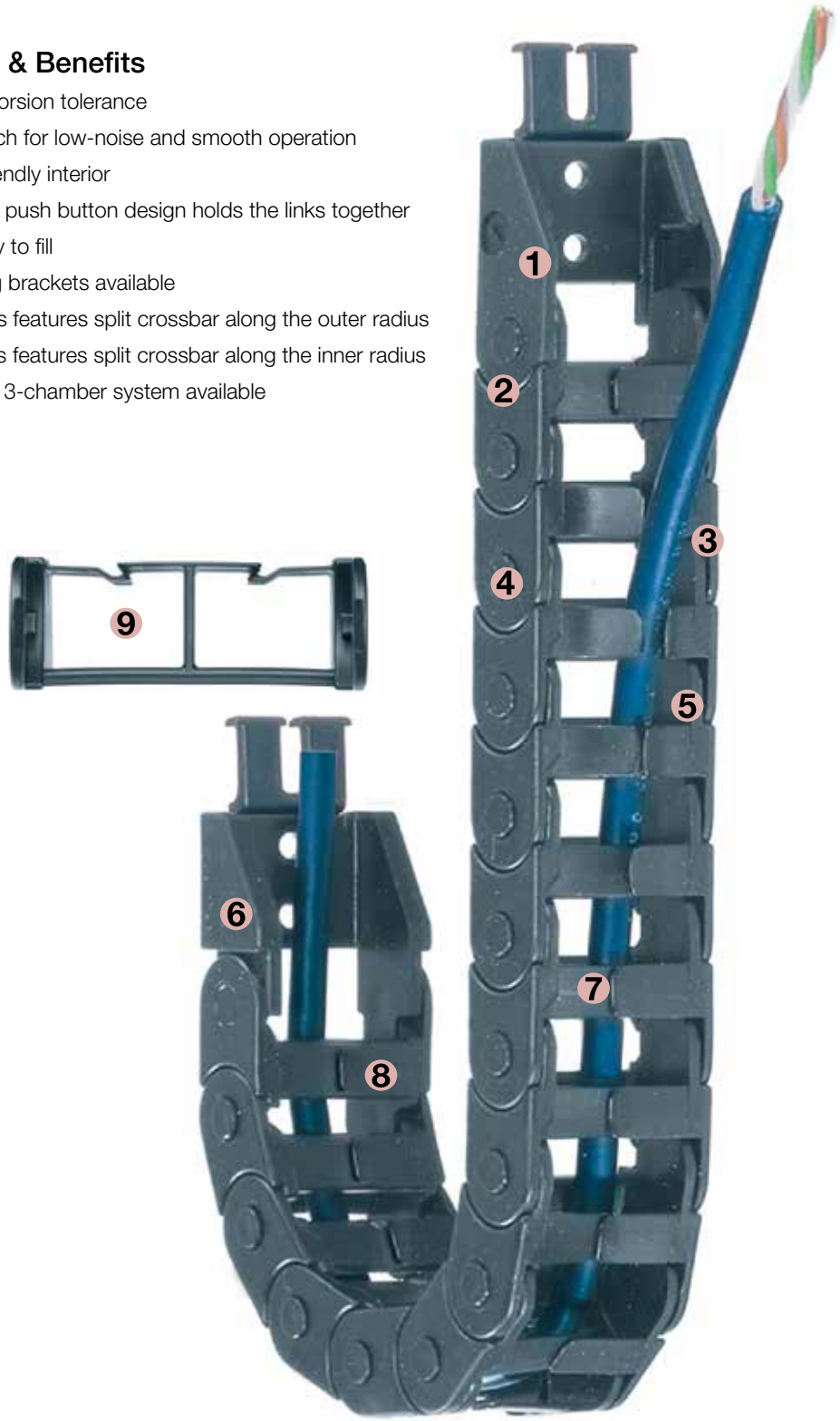
Assembly Tips



Just push the cables into the e-chain using your thumb

Features & Benefits

1. Limited torsion tolerance
2. Small pitch for low-noise and smooth operation
3. Cable friendly interior
4. Patented push button design holds the links together
5. Very easy to fill
6. Mounting brackets available
7. "E" Series features split crossbar along the outer radius
8. "Z" Series features split crossbar along the inner radius
9. 1-, 2-, or 3-chamber system available



Usage Guidelines

- If filling is required without opening and closing
- If a very small pitch is required

- If smooth operation is required
  ➤ **Series 045 E2 Micro**
- If high stability is required
  ➤ **Series 06 E2 Micro**
- If non-opening is required
  ➤ **Series 045 E2 Micro**

Order Example: Complete e-chain®

Please indicate chain length or number of links. Example:

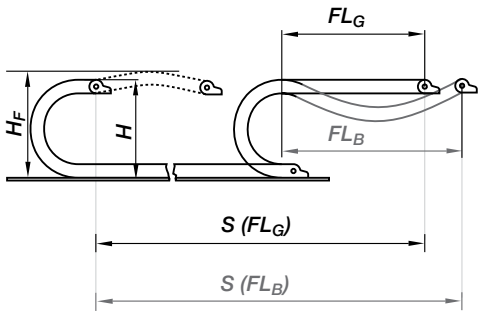
3.28 ft (1 m) **E045-16-038-0**	**e-chain®**
1 Set **0450-16-12**	**Mounting Bracket**

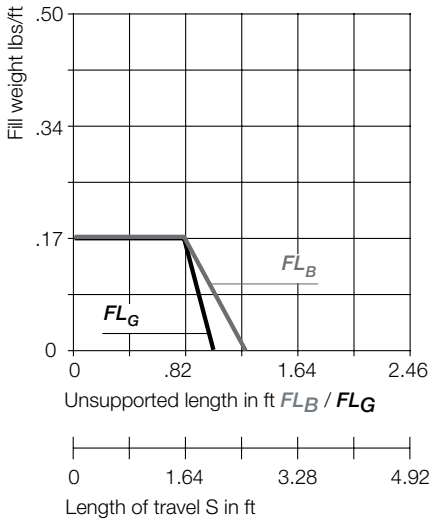
e-chain system® E-Z chain
Series E045/Z045
Installation Dimensions

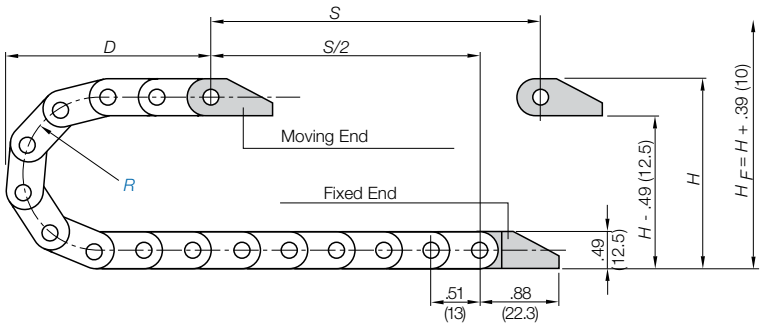
Short travel, unsupported length

- FL_B = unsupported with permitted sag
- FL_G = unsupported with straight upper run

Further information ➤ Design, Chapter 1







Pitch per link: = .51" (13 mm)
Links per ft (m): = 23.47 (77)
For center mount applications:
Chain length = $^{S}/_{2}$ + K

The required clearance height: ***HF = H* + .39 in. (10 mm)** (with .067 lbs/ft (0.1 kg/m) fill weight.
Please consult igus® if space is particularly restricted.

R	.71 (018)	1.10 (028)	1.50 (038)
H	1.91 (48.5)	2.70 (68.5)	3.48 (88.5)
D	1.73 (44)	2.13 (54)	2.52 (64)
K	3.35 (85)	4.53 (115)	5.91 (150)

Short Travels - Unsupported

Unsupported E-Chains® feature positive camber over short travels. This must be accounted for when specifying the clearance height. Please refer to **Installation dimensions** for further details.

Legend

S = Length of travel
R = Bending radius
H = Nominal clearance height
D = Overlength e-chain® radius in final position
K = π • *R* + *safety buffer*
H_F = Required clearance height

Speed / acceleration FL_G	max. 65.6 ft/s (20 m/s) / max. 656 ft/s² (200 m/s²)
Speed / acceleration FL_B	max. 9.84 ft/s (3 m/s) / max. 19.69 ft/s² (6 m/s²)
Material (e-chain®) - permitted temperature	igumid NB / -40°F (-40°C) up to +176°F (+80° C)
Material (mounting brackets)* - permitted temperature	igumid G / -40°F (-40°C) up to +248°F (+120° C)
Flammability Class (e-chain®), igumid NB	VDE 0304 IIC UL94 V2
Flammability Class (mounting brackets), igumid G	VDE 0304 IIC UL94 HB

Technical Data

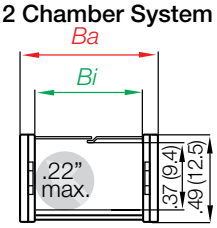
Details of material properties
➤ **Chapter 1**

PDF: igus.com/e-chain-pdfs
Product information: igus.com/e-chains

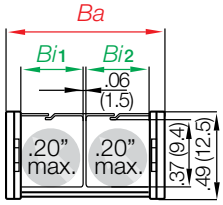
e-chain system® E-Z chain
Series E045/Z045

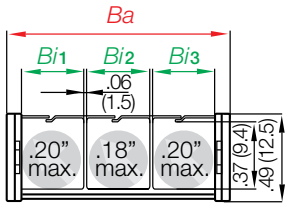
Series E045 - Split crossbar along the outer radius

Single Chamber System
2 Chamber System



3 Chamber System

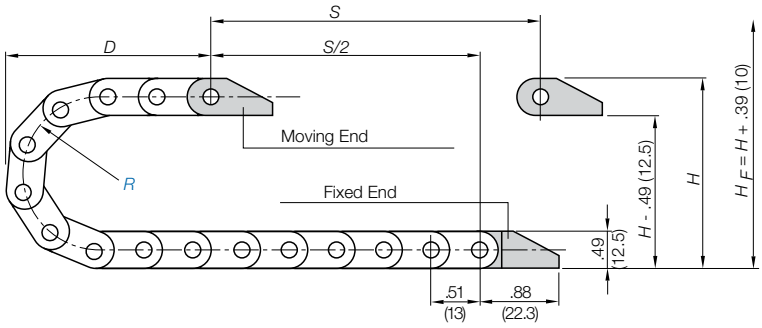




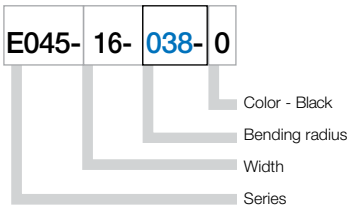




Supplement part number with required radius. Example: E045-16-038-0
Pitch: .51 in. (13 mm) per link links/ft (m) = 23..47 (77)



Part Number Structure



Part Number	Bi in. (mm)	Ba in. (mm)	Weight lbs/ft (kg/m)	Crossbar Gap in. (mm)
Single Chamber System				
E045-10-☐-0*	.39 (10)	.63 (16)	≈ 0.06 (0.09)	.08 (2)
E045-16-☐-0	.63 (16)	.91 (23)	≈ 0.07 (0.11)	-
2 Chamber System				
E045-2/7-☐-0*	.28/.28 (7/7)	.91 (23)	≈ 0.09 (0.13)	.09 (2.25)
E045-2/9-☐-0*	.35/.35 (9/9)	1.06 (27)	≈ 0.09 (0.14)	.09 (2.25)
3 Chamber System				
E045-3/9-☐-0*	.35/.35/.35 (9/9/9)	1.46 (37)	≈ 0.11 (0.17)	.09 (2.25)

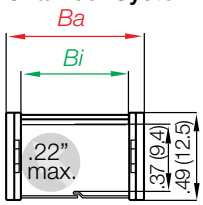
Choose from the radii below for all of the above sizes
Radius (mm) Example: E045-16-038-0

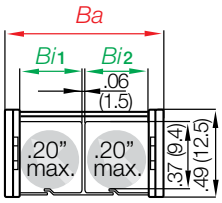
	018	028	038
R	.71 (018)	1.10 (028)	1.50 (038)
H	1.91 (48.5)	2.70 (68.5)	3.48 (88.5)
D	1.73 (44)	2.13 (54)	2.52 (64)
K	3.35 (85)	4.53 (115)	5.91 (150)

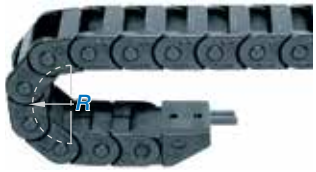
0=Standard color black. For other colors see Chapter 1
*Please note: For this series the crossbars do not overlap. Please see table for gap amount.

Series Z045 - Split crossbar along the inner radius

Single Chamber System
2 Chamber System

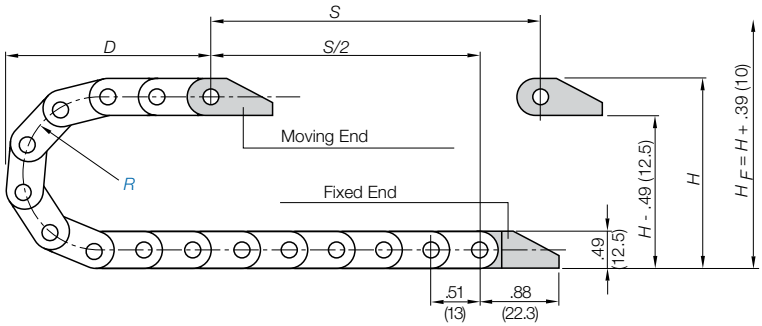




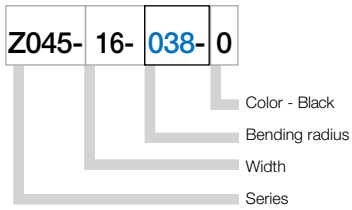




Supplement part number with required radius. Example: Z045-16-038-0
Pitch: .51 in. (13 mm) per link links/ft (m) = 23..47 (77)



Part Number Structure



Part Number Single Chamber System	*Bi* in. (mm)	*Ba* in. (mm)	Weight lbs/ft (kg/m)	Crossbar Gap in. (mm)
Z045-16-☐ -0*	.63 (16)	.91 (23)	≈ 0.07 (0.11)	.08 (2)
2 Chamber System				
Z045-2/7-☐ -0*	.28/.28 (7/7)	.91 (23)	≈ 0.09 (0.13)	.09 (2.25)

Choose from the radii below for all of the above sizes
Radius (mm) Example: Z045-16-038 -0

	018	028	038
R	.71 (018)	1.10 (028)	1.50 (038)
H	1.91 (48.5)	2.70 (68.5)	3.48 (88.5)
D	1.73 (44)	2.13 (54)	2.52 (64)
K	3.35 (85)	4.53 (115)	5.91 (150)

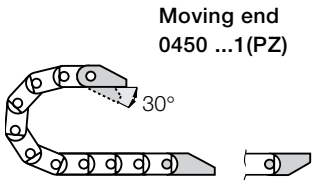
0=Standard color black. For other colors see Chapter 1
*Please note: For this series the crossbars do not overlap. Please see table for gap amount.

PDF: igus.com/e-chain-pdfs
Product information: igus.com/e-chains

e-chain system® E-Z chain
Series E045/Z045
Mounting Brackets

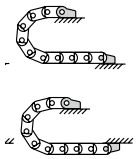
Polymer, one-piece

- One-piece mounting bracket
- Corrosion resistant
- Available preassembled



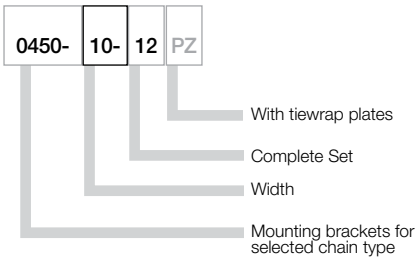


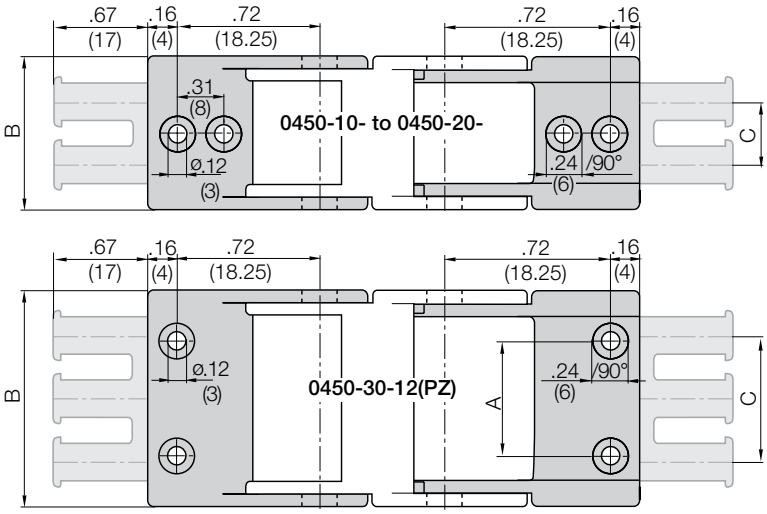




Possible installation configurations -

Part Number Structure





Full set, for both ends:
0450-10-12PZ
Full set, **each part with pin/bore + tiewrap plate**
Single-part order:
0450-10-1PZ
Mounting bracket **with bore + tiewrap plate**
0450-10-2PZ
Mounting bracket **with pin + tiewrap plate**

Chain Type	Part No. Full set with Tiewrap Plate	Part No. Full Set without Tiewrap Plate	Dimension A in.	(mm)	Dimensions B in.	(mm)	Dimension C in.	(mm)	Number of Teeth
E045/Z045-10	**0450-10-12PZ**	**0450-10-12**	—	—	.63	(16)	—	—	1
E045/Z045-16	**0450-16-12PZ**	**0450-16-12**	—	—	.87	(22)	.39	(10)	2
E045/Z045-2/7	**0450-16-12PZ**	**0450-16-12**	—	—	.87	(22)	.39	(10)	2
E045/Z045-2/9	**0450-20-12PZ**	**0450-20-12**	—	—	1.02	(26)	.39	(10)	2
E045/Z045-3/9	**0450-30-12PZ**	**0450-30-12**	.87	(22)	1.42	(36)	.79	(20)	3

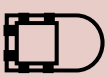
Additional Accessories



Quickfix - mounting bracket with dowel, upon request
Part No.
0450-16-12Q









e-chain system® E-Z chain
Series E06/Z06

.42 .41

Price Index

Series E06/Z06

Special Features / Options

IPA Qualification Certificate
Air Cleanliness Class ISO Class 2
(at v = 3.28 ft/s) upon request

Flammability Class
VDE 0304 IIC UL94 V2

Special equipment: Electrically conductive ESD/ATEX version upon request

Assembly Tips



Just push the cables into the e-chain using your thumb

Features & Benefits

1. Small pitch for low-noise and smooth operation
2. Cable friendly - smooth interior
3. Very lightweight
4. Patented push button design holds the links together
5. Very easy to fill
6. Integrated strain relief option
7. “E” Series features split crossbar along the outer radius
8. “Z” Series features split crossbar along the inner radius
9. Limited torsion tolerance



Special solution -
opening gap 0.14 (3.5 mm)
Part No. E06-10-018S3



Usage Guidelines

- If filling is required without opening and closing
- If price is an issue
- If quiet operation is required

- “Z” Series is unsuitable for gliding applications
  ➤ **Series 07 Zipper**
- If non-opening is required
  ➤ **Series 06 E2 Micro**

Order Example: Complete e-chain®

Please indicate chain length or number of links. Example:

3.28 ft (1 m) **E06-10-038-0**	**e-chain®**
1 Set **060-10-12**	**Mounting Bracket**

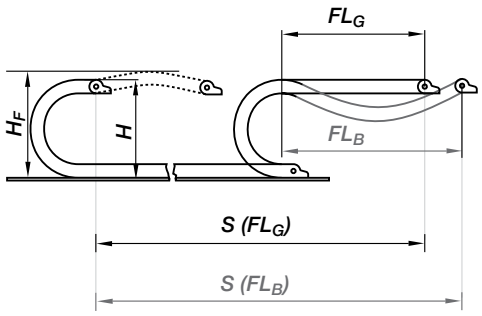
e-chain system® E-Z chain
Series E06/Z06
Installation Dimensions

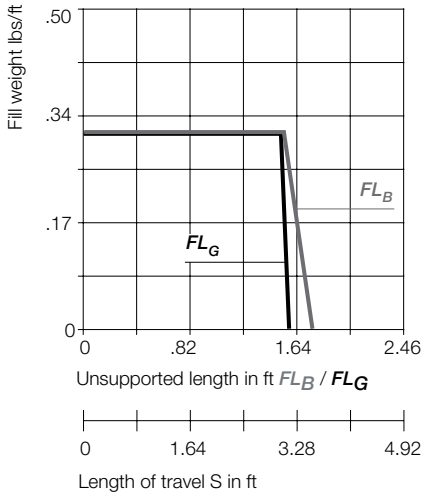
Short travel, unsupported length

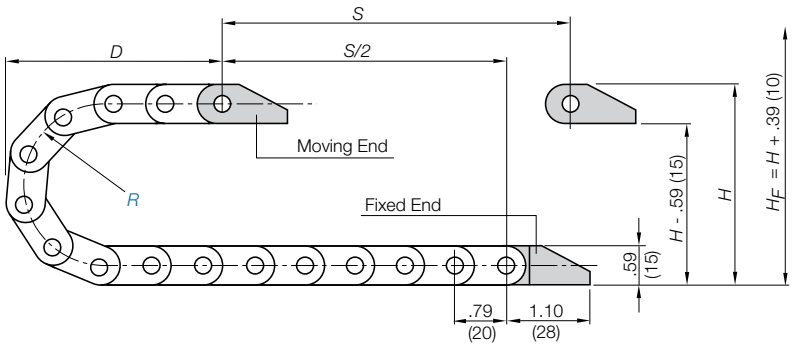
● FL_B = unsupported with permitted sag

● FL_G = unsupported with straight upper run

Further information ➤ Design, Chapter 1







Pitch per link: = .79" (20 mm)
Links per ft (m): = 15.24 (50)
For center mount applications:
Chain length = $\frac{S}{2} + K$

The required clearance height: ***HF = H* + .39 in. (10 mm)** (with .13 lbs/ft (0.2 kg/m) fill weight.
Please consult igus® if space is particularly restricted.

R	.71 (018)	1.10 (028)	1.50 (038)
H*	2.01 (51)	2.80 (71)	3.58 (91)
D	2.20 (56)	2.60 (66)	2.99 (76)
K	3.94 (100)	5.12 (130)	6.30 (160)

Short Travels - Unsupported

Unsupported E-Chains® feature positive camber over short travels. This must be accounted for when specifying the clearance height. Please refer to **Installation dimensions** for further details.

Legend

S = Length of travel
R = Bending radius
H = Nominal clearance height
D = Overlength e-chain® radius in final position
K = π • *R* + *safety buffer*
HF = Required clearance height

Speed / acceleration FL_G	max. 65.6 ft/s (20 m/s) / max. 656 ft/s² (200 m/s²)
Speed / acceleration FL_B	max. 9.84 ft/s (3 m/s) / max. 19.69 ft/s² (6 m/s²)
Material (e-chain®) - permitted temperature	igumid NB / -40°F (-40°C) up to +176°F (+80° C)
Material (mounting brackets)* - permitted temperature	igumid G / -40°F (-40°C) up to +248°F (+120° C)
Flammability Class (e-chain®), igumid NB	VDE 0304 IIC UL94 V2
Flammability Class (mounting brackets), igumid G	VDE 0304 IIC UL94 HB

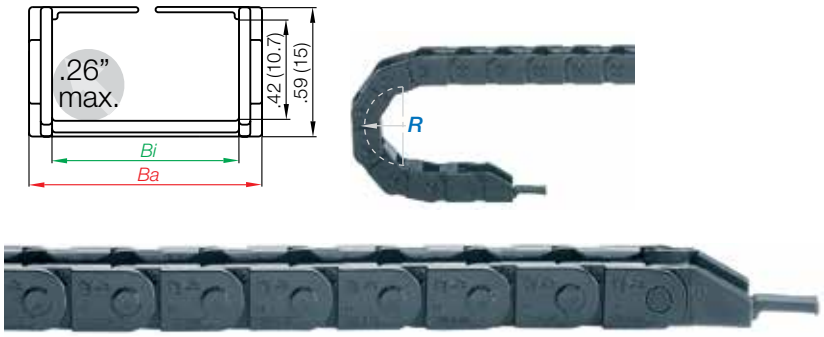
Technical Data

Details of material properties
➤ Chapter 1

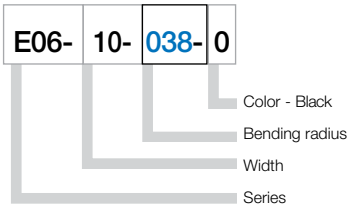
PDF: igus.com/e-chain-pdfs
Product information: igus.com/e-chains

e-chain system® E-Z chain
Series E06/Z06

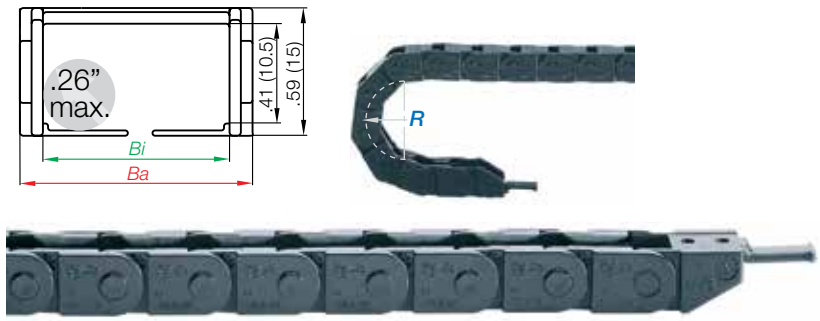
Series E06 - Split crossbar along the outer radius



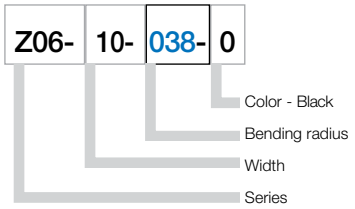
Part Number Structure

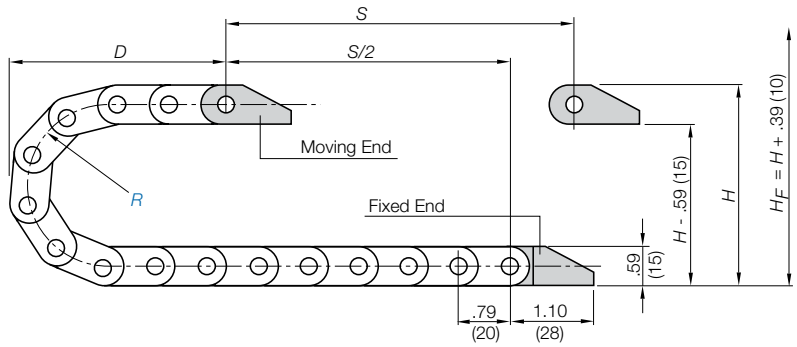


Series Z06 - Split crossbar along the inner radius



Part Number Structure





Supplement part number with required radius. Example: E06-10-[038]-0
Pitch: .79 in. (20 mm) per link links/ft (m) = 15.24 (50)

Part Number Split Crossbar Outer Radius	Split Crossbar Inner Radius			Bi in. (mm)	Ba in. (mm)	Weight lbs/ft (kg/m)	Crossbar Gap in. (mm)
E06-10	Z06-10*	[ ]	-0	.39 (10)	.65 (16.5)	≈ 0.09 (0.14)	.22 (5.5)
E06-16-	Z06-16*	[ ]	-0	.63 (16)	.86 (22.5)	≈ 0.11 (0.16)	.22 (5.5)
E06-20-	Z06-20	[ ]	-0	.79 (20)	1.04 (26.5)	≈ 0.12 (0.18)	-

Choose from the radii below for all of the above sizes
Radius (mm) Example: E06-10-[038]-0

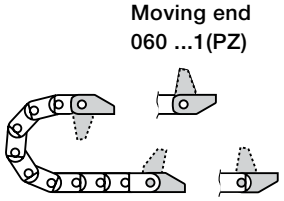
	018	028	038
R	.71 (018)	1.10 (028)	1.50 (038)
H*	2.01 (51)	2.80 (71)	3.58 (91)
D	2.20 (56)	2.60 (66)	2.99 (76)
K	3.94 (100)	5.12 (130)	6.30 (160)

0=Standard color black. For other colors see Chapter 1
*Please note: For this series the crossbars do not overlap. Please see table for gap amount.

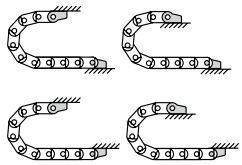
e-chain system® E-Z chain
Series E06/Z06
Mounting Brackets

Polymer, one-piece

- One-piece mounting bracket
- Corrosion resistant
- Available preassembled
- Inner and outer attachment possible
- Available with or without integrated strain relief tiewrap plates





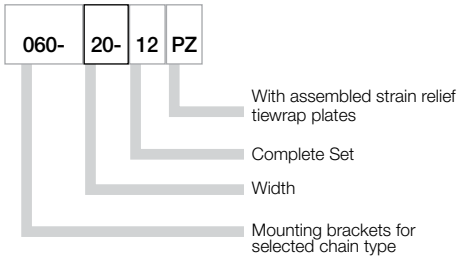


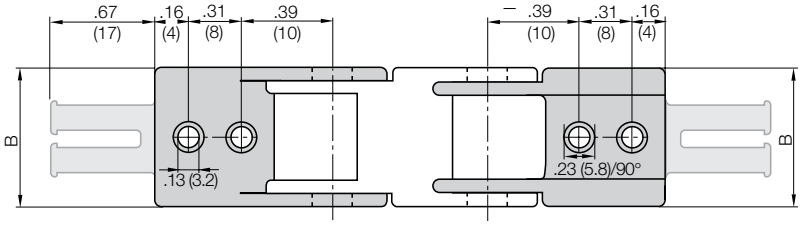
Possible installation configurations -

Dimensions and order configurations

Strain relief is possible on the moving end and/or the fixed end.

Part Number Structure





Full set, for both ends:

060- 20- 12 PZ Full set, **each part with pin/bore**

Single-part order:

060- 20- 1 PZ Mounting bracket **with bore**

060- 20- 2 PZ Mounting bracket **with pin**

Chain Type	Part No. Full set with Tiewrap Plate	Part No. Full Set without Tiewrap Plate	Dimensions B in.	(mm)	Number of Teeth
E06/Z06-10	**060-10-12PZ**	**060-10-12**	.65	(16.5)	1
E06/Z06-16	**060-16-12PZ**	**060-16-12**	.89	(22.5)	2
E06/Z06-20	**060-20-12PZ**	**060-20-12**	1.06	(27.0)	2

Additional Accessories



Quicksnap - the complete, detachable mounting unit, upon request
Part No.
060-10-QS
060-16-QS
060-20-QS



Quickfix - mounting bracket with dowel, upon request
Part No. 060-20-34QZ

PDF: igus.com/e-chain-pdfs
Product information: igus.com/e-chains

e-chain system® E-Z chain
Series E065/Z065

.45

Price Index

Series E065/Z065

Special Features / Options

IPA Qualification Certificate
Air Cleanliness Class ISO Class 2
(at v = 3.28 ft/s) upon request

Flammability Class
VDE 0304 IIC UL94 V2

Torsional motion possible

Special equipment: Electrically conductive ESD/ATEX version upon request

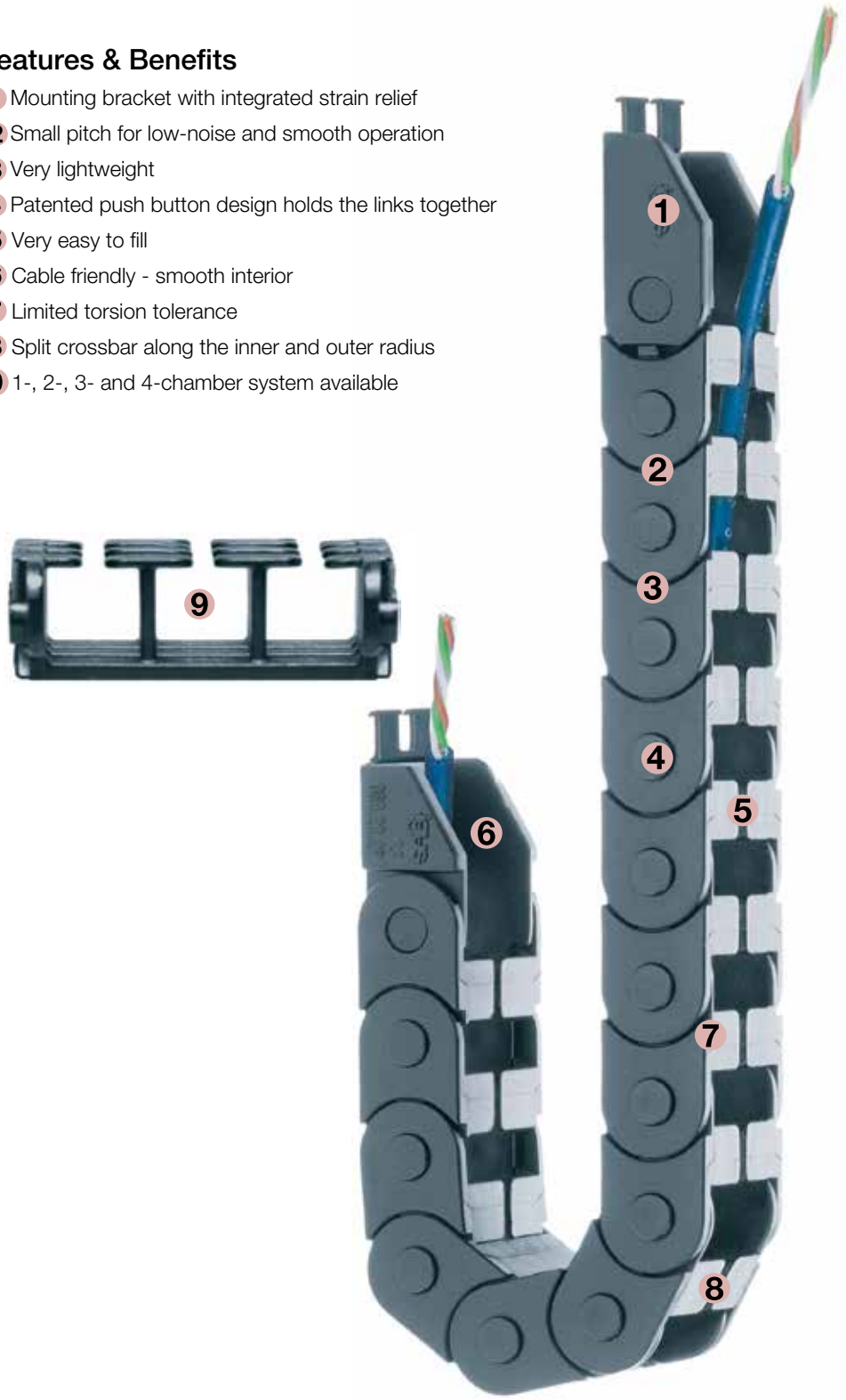
Assembly Tips



Just push the cables into the e-chain using your thumb

Features & Benefits

1. Mounting bracket with integrated strain relief
2. Small pitch for low-noise and smooth operation
3. Very lightweight
4. Patented push button design holds the links together
5. Very easy to fill
6. Cable friendly - smooth interior
7. Limited torsion tolerance
8. Split crossbar along the inner and outer radius
9. 1-, 2-, 3- and 4-chamber system available



Usage Guidelines

- If filling is required without opening and closing
- If price is an issue
- If quiet operation is required

- If high loads and long unsupported lengths are present
  ➤ **Series 06 E2 Micro**

Order Example: Complete e-chain®

Please indicate chain length or number of links. Example:

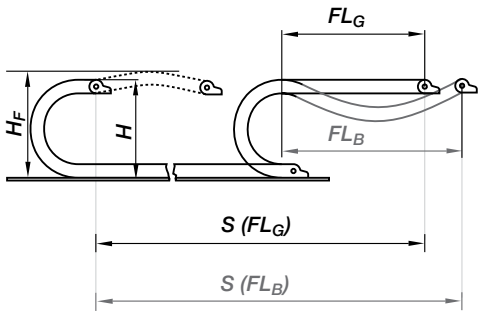
3.28 ft (1 m) **E065-16-038-0**	**e-chain®**
1 Set **0650-16-12PZ**	**Mounting Bracket**

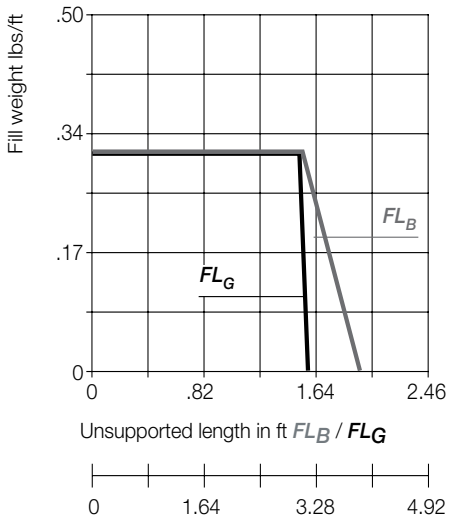
e-chain system® E-Z chain
Series E065/Z065
Installation Dimensions

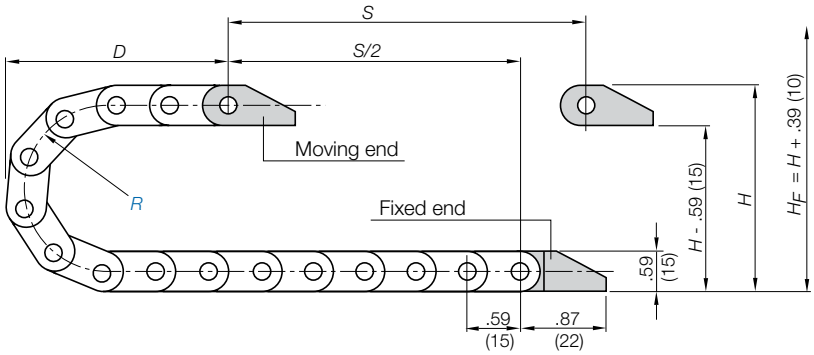
Short travel, unsupported length

- FL_B = unsupported with permitted sag
- FL_G = unsupported with straight upper run

Further information ➤ Design, Chapter 1







The required clearance height: ***HF = H + .39 in. (10 mm)*** (with .13 lbs/ft (0.2 kg/m) fill weight.
Please consult igus® if space is particularly restricted.

R	.71 (018)	1.10 (028)	1.50 (038)
H*	2.01 (51)	2.80 (71)	3.58 (91)
D	1.89 (48)	2.28 (58)	3.68 (68)
K	3.54 (90)	4.72 (120)	5.91 (150)

Pitch per link: = .59" (15 mm)
Links per ft (m): = 20.34 (67)
For center mount applications:
Chain length = $\frac{S}{2} + K$

Short Travels - Unsupported

Unsupported E-Chains® feature positive camber over short travels. This must be accounted for when specifying the clearance height. Please refer to **Installation dimensions** for further details.

Legend

S = Length of travel
R = Bending radius
H = Nominal clearance height
D = Overlength e-chain® radius in final position
K = π • R + safety buffer
H_F = Required clearance height

Speed / acceleration FL_G	max. 65.6 ft/s (20 m/s) / max. 656 ft/s² (200 m/s²)
Speed / acceleration FL_B	max. 9.84 ft/s (3 m/s) / max. 19.69 ft/s² (6 m/s²)
Gliding speed / acceleration (maximum)	max. 9.84 ft/s (3 m/s) / max. 32.8 ft/s² (10 m/s²)
Material (e-chain®) - permitted temperature	igumid NB / -40°F (-40°C) up to +176°F (+80° C)
Material (mounting brackets)* - permitted temperature	igumid G / -40°F (-40°C) up to +248°F (+120° C)
Flammability Class (e-chain®), igumid NB	VDE 0304 IIC UL94 V2
Flammability Class (mounting brackets), igumid G*	VDE 0304 IIC UL94 HB

*Available in igumid NB upon request, please consult igus® for delivery time

Technical Data

Details of material properties
➤ Chapter 1

PDF: igus.com/e-chain-pdfs
Product information: igus.com/e-chains

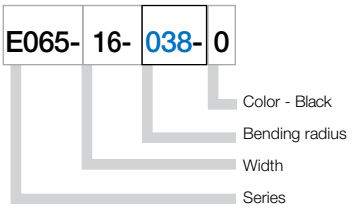
e-chain system® E-Z chain
Series E065/Z065

Series E065
Split crossbar along the outer radius

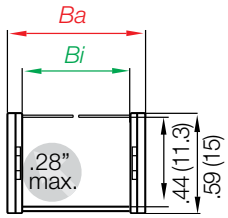




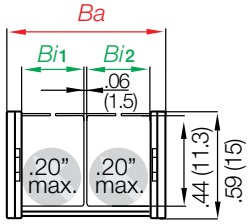
Part Number Structure



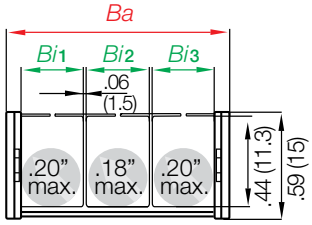
1 Chamber System



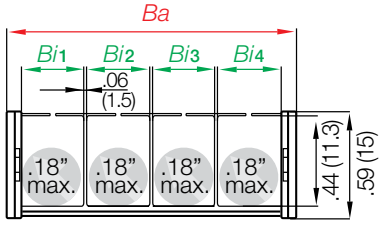
2 Chamber System



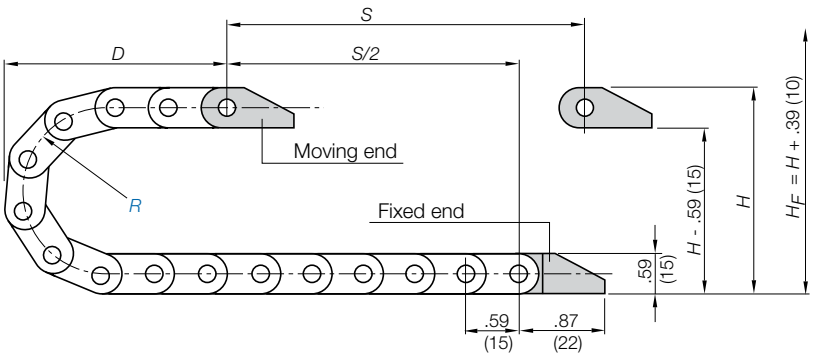
3 Chamber System



4 Chamber System



Supplement part number with required radius. Example: E065-16-038-0
Pitch: .59 in. (15 mm) per link links/ft (m) = 20.34 (67)



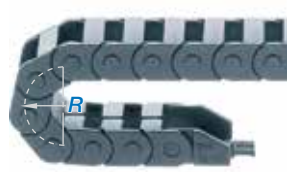
Part Number 1 Chamber System	*Bi* in. (mm)	*Ba* in. (mm)	Weight lbs/ft (kg/m)
E065-16-[ ]-0*	.63 (16)	.98 (24.8)	≈ 0.11 (0.17)
2 Chamber System			
E065-2/9-[ ]-0*	.35/.35 (9/9)	1.15 (29.3)	≈ 0.13 (0.19)
3 Chamber System			
E065-3/9-[ ]-0*	.35/.35/.35 (9/9/9)	1.55 (39.3)	≈ 0.15 (0.22)
4 Chamber System			
E065-4/9-[ ]-0*	.35/.35/.35/.35 (9/9/9/9)	1.94 (49.3)	≈ 0.17 (0.25)

Choose from the radii below for all of the above sizes
Radius (mm) Example: E065-16-038-0

	018	028	038
R	.71 (018)	1.10 (028)	1.50 (038)
H*	2.01 (51)	2.80 (71)	3.58 (91)
D	1.89 (48)	2.28 (58)	3.68 (68)
K	3.54 (90)	4.72 (120)	5.91 (150)

* Crossbars do not overlap. There is a gap of .10" (2.5mm)

Series Z065
Split crossbar along the inner radius

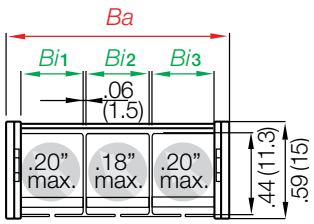




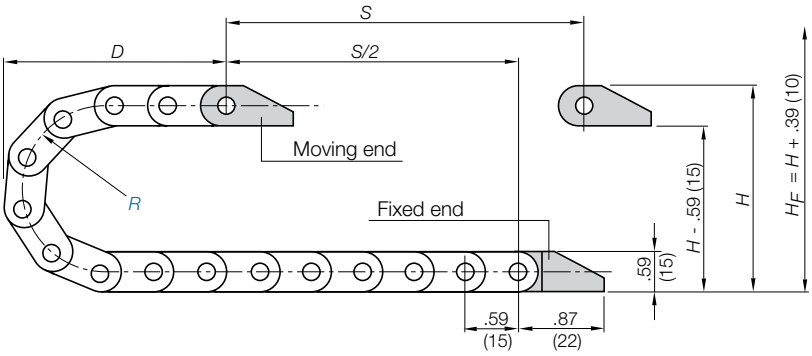
Part Number Structure

Z065-	3/9-	038-	0
			Color - Black
		Bending radius	
	Width		
Series			

3 Chamber System



Supplement part number with required radius. Example: Z065-3/9-038-0
Pitch: 2.20 in. (56 mm) per link links/ft (m) = 5.49 (18)



Part Number 3 Chamber System	Bi in. (mm)	Ba in. (mm)	Weight lbs/ft (kg/m)
Z065-3/9-[ ]-0	.35/.35/.35 (9/9/9)	1.55 (39.3)	≈ 0.15 (0.22)

Choose from the radii below for all of the above sizes
Radius (mm) Example: Z065-3/9-038-0

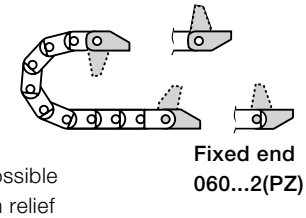
	018	028	038
R	.71 (018)	1.10 (028)	1.50 (038)
H*	2.01 (51)	2.80 (71)	3.58 (91)
D	1.89 (48)	2.28 (58)	3.68 (68)
K	3.54 (90)	4.72 (120)	5.91 (150)

PDF: igus.com/e-chain-pdfs
Product information: igus.com/e-chains

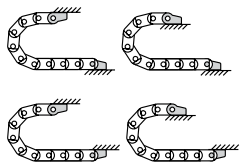
e-chain system® E-Z chain
Series E065/Z065
Mounting Brackets

Polymer, one-piece

- One-piece mounting bracket
- Corrosion resistant
- Available preassembled
- Inner and outer attachment possible
- Available with integrated strain relief tiewrap plates







Possible installation configurations -

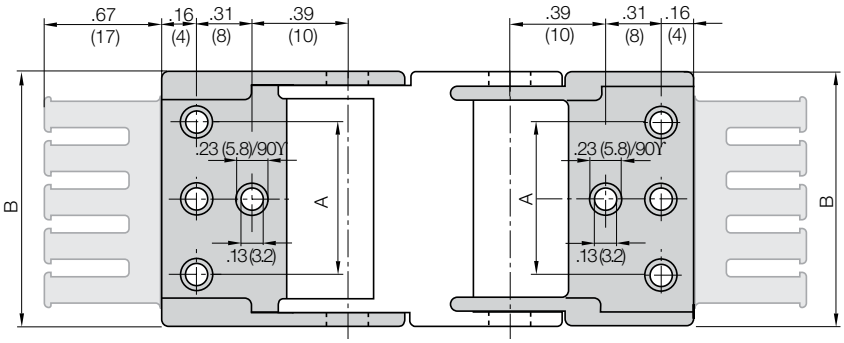
Dimensions and order configurations

Strain relief is possible on the moving end and/or the fixed end.

Part Number Structure

0650-	3/99-	12	PZ

- PZ: With assembled strain relief tiewrap plates
- 12: Complete Set
- 3/99-: Width
- 0650-: Mounting brackets for selected chain type



Full set, for both ends:

0650- 3/9- 12 PZ Full set, **each part with pin/bore**

Single-part order:

0650- 3/9- 1 PZ Mounting bracket **with bore**

0650- 3/9- 2 PZ Mounting bracket **with pin**

Chain Type	Part No. Full set with Tiewrap Plate	Part No. Full Set without Tiewrap Plate	Dimensions A in.	(mm)	Dimensions B in.	(mm)	Number of Teeth
E065-16-	**0650-16-12PZ**	**0650-16-12**		—	.89	(22.5)	2
E065-2/9	**0650-2/9-12PZ**	**0650-2/9-12**		—	1.06	(27)	2
E065/Z065-3/9	**0650-3/9-12PZ**	**0650-3/9-12**	.87	(22)	1.46	(37)	3
E065-4/9	**0650-4/9-12PZ**	**0650-4/9-12**	1.26	(32)	1.85	(47)	4

Additional Accessories



Quicksnap - the complete, detachable mounting unit, upon request



Quickfix - mounting bracket with dowel, upon request

Telephone 1-800-521-2747

Internet: igus.com
email: sales@igus.com
QuickSpec: igus.com/quickspec

e-chain system® E-Z chain
Series E08/Z08

.57 .58

Price Index

Series E08/Z08

Special Features / Options

IPA Qualification Certificate
Air Cleanliness Class ISO Class 2
(at v = 3.28 ft/s) upon request

Flammability Class
VDE 0304 IIC UL94 V2

Special equipment: Electrically conductive ESD/ATEX version upon request

Assembly Tips



Just push the cables into the e-chain using your thumb

Features & Benefits

1. Cable-friendly interior
2. Small pitch for low-noise and smooth operation
3. Lightweight
4. Patented push button design holds the links together
5. Integrated strain relief option
6. Very easy to fill
7. “E” Series features split crossbar along the outer radius
8. “Z” Series features split crossbar along the inner radius
9. Limited torsion tolerance



Usage Guidelines

- If filling is required without opening and closing
- If price is an issue
- If quiet operation is required

- “Z” Series is unsuitable for gliding applications
  ➤ **Series 09 Zipper**

Order Example: Complete e-chain®

Please indicate chain length or number of links. Example:

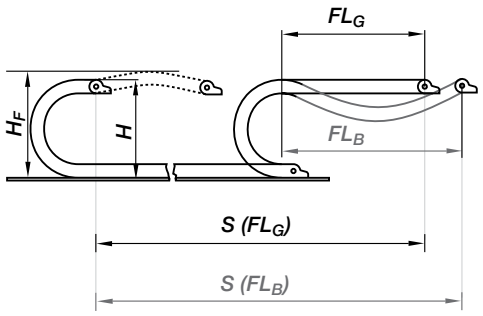
3.28 ft (1 m) **E08-30-038-0**	**e-chain®**
1 Set **080-30-12PZ**	**Mounting Bracket**

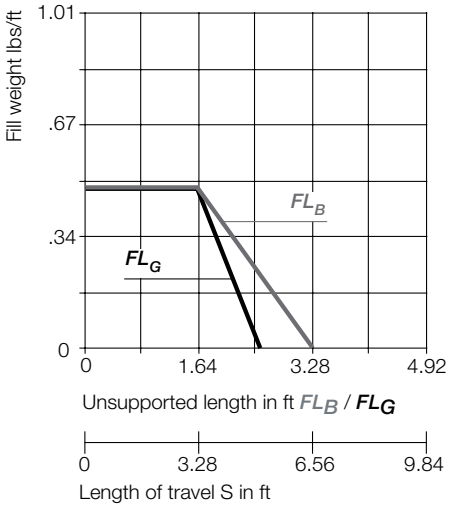
e-chain system® E-Z chain
Series E08/Z08
Installation Dimensions

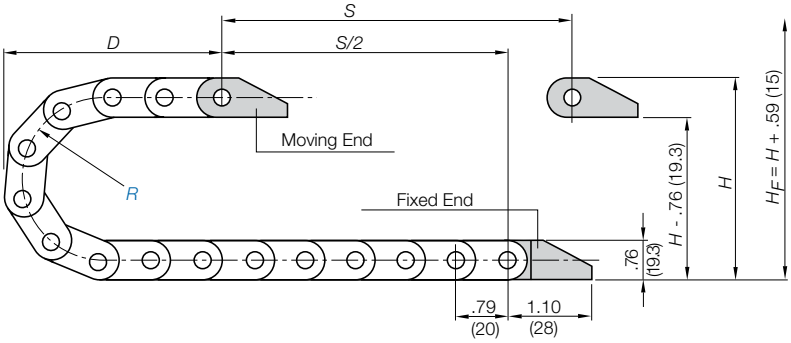
Short travel, unsupported length

- ● FL_B = unsupported with permitted sag
- ● FL_G = unsupported with straight upper run

Further information ➤ Design, Chapter 1







The required clearance height: ***HF = H + .59 in. (15 mm)*** (with .20 lbs/ft (0.3 kg/m) fill weight.
Please consult igus® if space is particularly restricted.

Pitch per link: = .79" (20 mm)
Links per ft (m): = 15.24 (50)
For center mount applications:
Chain length = $\frac{S}{2} + K$

R	1.10 (028)	1.50 (038)	1.89 (048)
H	2.95 (75)	3.74 (95)	4.53 (115)
D	2.68 (68)	3.07 (78)	3.46 (88)
K	5.12 (130)	6.30 (160)	7.68 (195)

Short Travels - Unsupported

Unsupported E-Chains® feature positive camber over short travels. This must be accounted for when specifying the clearance height. Please refer to **Installation dimensions** for further details.

Legend

S = Length of travel
R = Bending radius
H = Nominal clearance height
D = Overlength e-chain® radius in final position
K = π • R + safety buffer
H_F = Required clearance height

Speed / acceleration FL_G	max. 65.6 ft/s (20 m/s) / max. 656 ft/s² (200 m/s²)
Speed / acceleration FL_B	max. 9.84 ft/s (3 m/s) / max. 19.69 ft/s² (6 m/s²)
Gliding speed / acceleration (maximum)	max. 9.84 ft/s (3 m/s) / max. 32.8 ft/s² (10 m/s²)
Material (e-chain®) - permitted temperature	igumid NB / -40°F (-40°C) up to +176°F (+80° C)
Material (mounting brackets)* - permitted temperature	igumid G / -40°F (-40°C) up to +248°F (+120° C)
Flammability Class (e-chain®), igumid NB	VDE 0304 IIC UL94 V2
Flammability Class (mounting brackets), igumid G*	VDE 0304 IIC UL94 HB

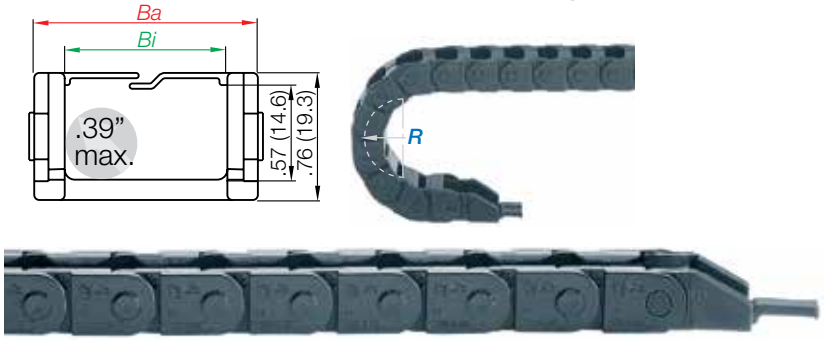
Technical Data

Details of material properties
➤ Chapter 1

PDF: igus.com/e-chain-pdfs
Product information: igus.com/e-chains

e-chain system® E-Z chain
Series E08/Z08

Series E08 - Split crossbar along the outer radius

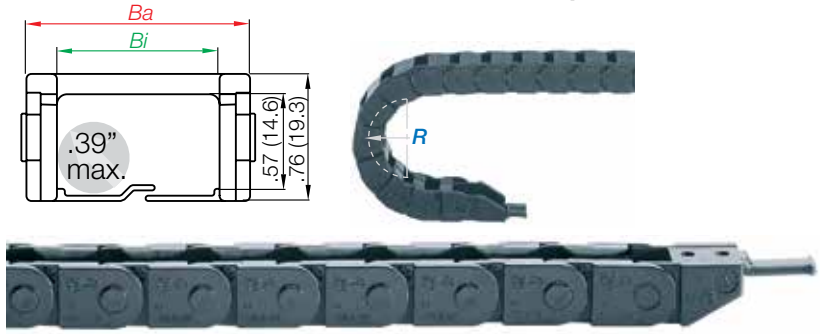


Part Number Structure

E08- 30- 038- 0

- Color - Black
- Bending radius
- Width
- Series

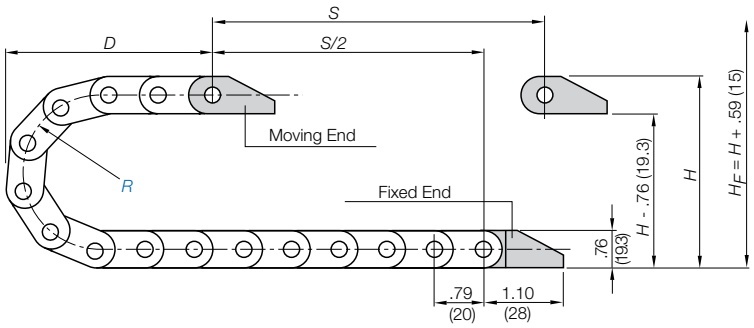
Series Z08 - Split crossbar along the inner radius



Part Number Structure

Z08- 30- 038- 0

- Color - Black
- Bending radius
- Width
- Series



Supplement part number with required radius. Example: E08-10-[038]-0
Pitch: .79 in. (20 mm) per link links/ft (m) = 15.24 (50)

Part Number Split Crossbar Outer Radius	Split Crossbar Inner Radius		Bi in. (mm)	Ba in. (mm)	Weight lbs/ft (kg/m)
E08-10-	Z08-10-	[ ] -0	.39 (10)	.72 (18.2)	≈ 0.14 (0.21)
E08-16-	Z08-16-	[ ] -0	.63 (16)	.95 (24.2)	≈ 0.16 (0.24)
E08-20-	Z08-20-	[ ] -0	.79 (20)	1.11 (28.2)	≈ 0.17 (0.25)
E08-30-	Z08-30-	[ ] -0	1.18 (30)	1.50 (38.2)	≈ 0.19 (0.28)
E08-40-	Z08-40-	[ ] -0	1.57 (40)	1.90 (48.2)	≈ 0.21 (0.31)
E08-50-	Z08-50-	[ ] -0	1.97 (50)	2.29 (58.2)	≈ 0.25 (0.37)

Choose from the radii below for all of the above sizes
Radius (mm) Example: E08-10-[038]-0

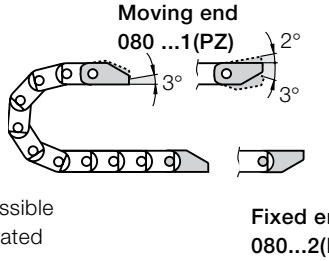
	028	038	048
R	1.10 (028)	1.50 (038)	1.89 (048)
H	2.95 (75)	3.74 (95)	4.53 (115)
D	2.68 (68)	3.07 (78)	3.46 (88)
K	5.12 (130)	6.30 (160)	7.68 (195)

0=Standard color black. For other colors see Chapter 1

e-chain system® E-Z chain
Series E08/Z08
Mounting Brackets

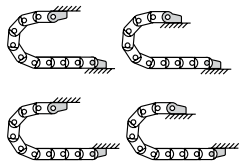
Plastic, one-piece

- One-piece mounting bracket
- Corrosion resistant
- Available preassembled
- Inner and outer attachment possible
- Available with or without integrated strain relief tiewrap plates







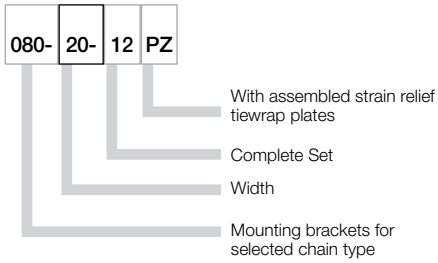


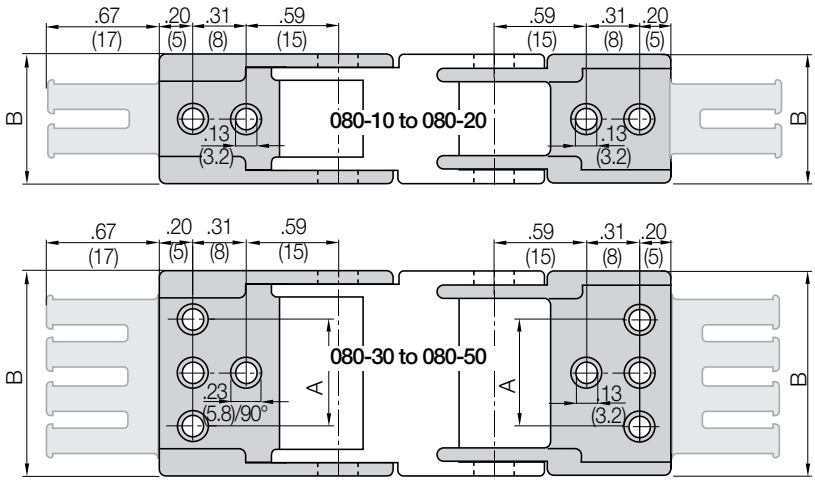
Possible installation configurations -

Dimensions and order configurations

Strain relief is possible on the moving end and/or the fixed end.

Part Number Structure





Full set, for both ends:

080- 20- 12 PZ Full set, **each part with pin/bore**

Single-part order:

080- 20- 1 PZ Mounting bracket **with bore**

080- 20- 2 PZ Mounting bracket **with pin**

080-10-12 - 080-20-12: Center bores only

080-30-12 – 080-50-12: Outer bores only

Chain Type	Part No. Full set with Tiewrap Plate	Part No. Full Set without Tiewrap Plate	Dimension A in.	(mm)	Dimensions B in.	(mm)	Number of Teeth
E08/Z08-10	**080-10-12PZ**	**080-10-12**	—	—	.72	(18.2)	1
E08/Z08-16	**080-16-12PZ**	**080-16-12**	—	—	.95	(24.2)	2
E08/Z08-20	**080-20-12PZ**	**080-20-12**	—	—	1.11	(28.2)	2
E08/Z08-30	**080-30-12PZ**	**080-30-12**	.87	(22)	1.50	(38.2)	3
E08/Z08-40	**080-40-12PZ**	**080-40-12**	1.26	(32)	1.90	(48.2)	4
E08/Z08-50	**080-50-12PZ**	**080-50-12**	1.65	(42)	2.29	(58.2)	5

Additional Accessories



Quicksnap - the complete, detachable mounting unit, upon request

Part No.

080-20-QS

080-30-QS

PDF: igus.com/e-chain-pdfs
Product information: igus.com/e-chains

e-chain system® E-Z chain
Series E14/Z14

.75 .75

Price Index

Series E14/Z14

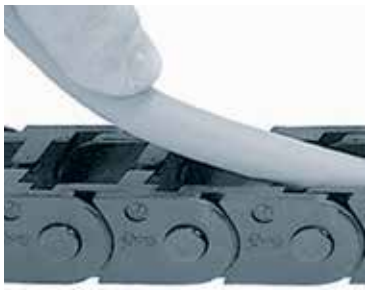
Special Features / Options

IPA Qualification Certificate
Air Cleanliness Class ISO Class 2
(at v = 3.28 ft/s) upon request

Flammability Class
VDE 0304 IIC UL94 V2

IPA Qualification Certificate: ESD Classification Level 1 (for Series E14-3-038). Special equipment: Electrically conductive ESD/ATEX version upon request

Assembly Tips



Just push the cables into the e-chain using your thumb

Features & Benefits

1. Small pitch for low-noise and smooth operation
2. Cable-friendly interior
3. Limited torsion tolerance
4. Very easy to fill
5. Integrated strain relief option
6. Patented push button design holds the links together
7. “E” Series features split crossbar along the outer radius
8. “Z” Series features split crossbar along the inner radius



Usage Guidelines

- If filling is required without opening and closing
- If price is an issue
- If quiet operation is required

- “Z” Series is unsuitable for gliding applications
  ➤ **Series B15 E2 Mini**
- If a long unsupported length is required
  ➤ **Series B15 E2 Mini**

Order Example: Complete e-chain®

Please indicate chain length or number of links. Example:

3.28 ft (1 m) **E14-3-038-0**	**e-chain®**
1 Set **114-3-12PZ**	**Mounting Bracket**

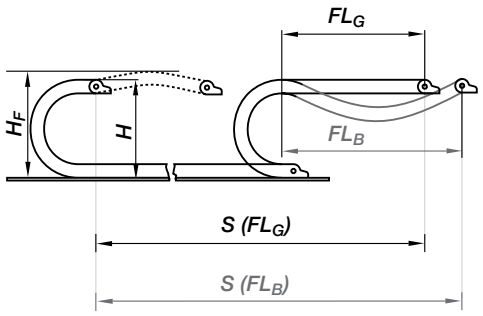
e-chain system® E-Z chain
Series E14/Z14
Installation Dimensions

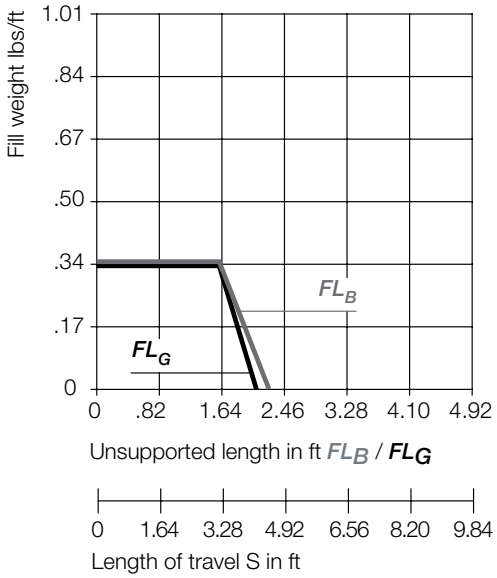
Short travel, unsupported length

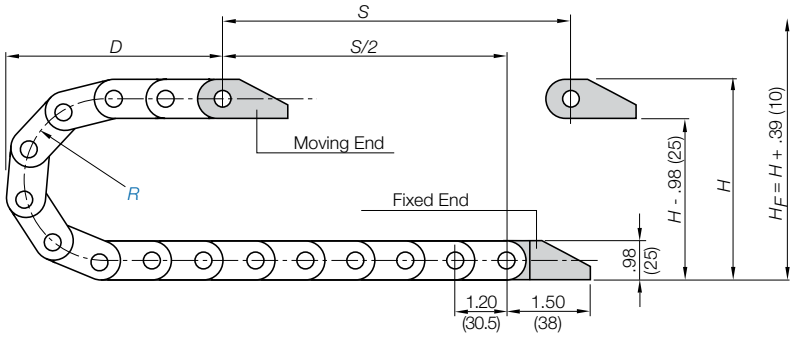
● FL_B = unsupported with permitted sag

● FL_G = unsupported with straight upper run

Further information ➤ Design, Chapter 1







The required clearance height: ***HF = H + .39 in. (10 mm)*** (with .13 lbs/ft (0.2 kg/m) fill weight. Please consult igus® if space is particularly restricted.

R	1.10 (028)	1.50 (038)	1.89 (048)	2.95 (075)	3.94 (100)	4.92 (125)
H	3.19 (81)	3.98 (101)	4.76 (121)	6.89 (175)	8.86 (225)	10.83 (275)
D	3.35 (86)	3.78 (96)	4.17 (106)	5.24 (133)	6.22 (158)	7.20 (183)
K	5.91 (150)	7.28 (185)	8.46 (215)	11.81 (300)	14.96 (380)	17.91 (455)

Pitch per link: = 1.20" (30.5 mm)
Links per ft (m): = 10.06 (33)
For center mount applications:
Chain length = $\frac{S}{2} + K$

Short Travels - Unsupported

Unsupported E-Chains® feature positive camber over short travels. This must be accounted for when specifying the clearance height. Please refer to **Installation dimensions** for further details.

Legend

S = Length of travel
R = Bending radius
H = Nominal clearance height
D = Overlength e-chain® radius in final position
K = π • *R* + *safety buffer*
H_F = Required clearance height

Speed / acceleration FL_G	max. 65.6 ft/s (20 m/s) / max. 656 ft/s² (200 m/s²)
Speed / acceleration FL_B	max. 9.84 ft/s (3 m/s) / max. 19.69 ft/s² (6 m/s²)
Gliding speed / acceleration (maximum)	max. 9.84 ft/s (3 m/s) / max. 32.8 ft/s² (10 m/s²)
Material (e-chain®) - permitted temperature	igumid NB / -40°F (-40°C) up to +176°F (+80° C)
Material (mounting brackets)* - permitted temperature	igumid G / -40°F (-40°C) up to +248°F (+120° C)
Flammability Class (e-chain®), igumid NB	VDE 0304 IIC UL94 V2
Flammability Class (mounting brackets), igumid G*	VDE 0304 IIC UL94 HB

*Available in igumid NB upon request, please consult igus® for delivery time

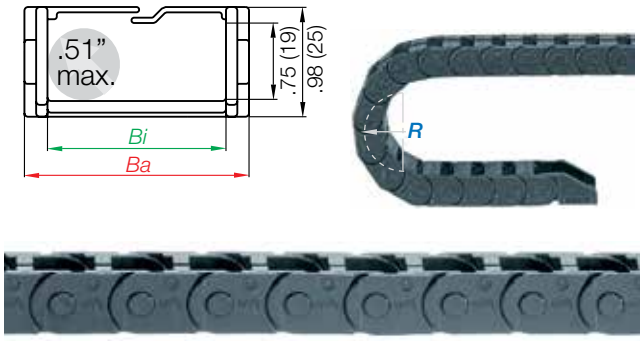
Technical Data

Details of material properties
➤ **Chapter 1**

PDF: igus.com/e-chain-pdfs
Product information: igus.com/e-chains

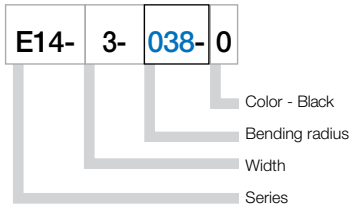
e-chain system® E-Z chain
Series E14/Z14

Series E14 - Split crossbar along the outer radius

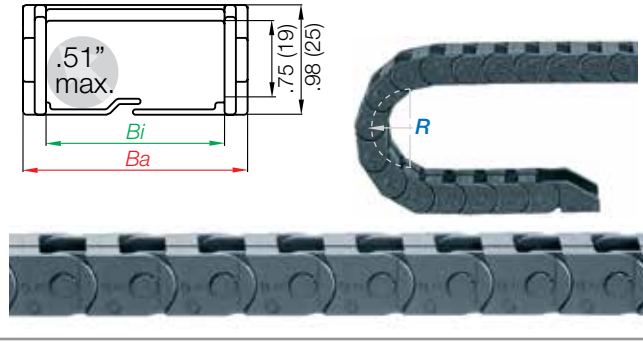




Part Number Structure

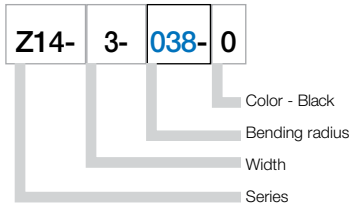


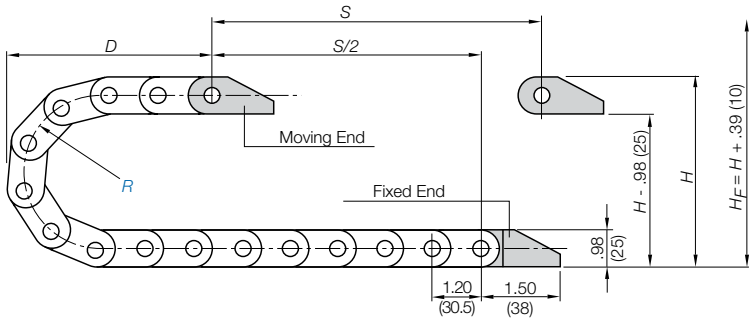
Series Z14 - Split crossbar along the inner radius





Part Number Structure





Supplement part number with required radius. Example: E14-3-[038]-0
Pitch: 1.20 in. (30.5 mm) per link links/ft (m) = 10.06 (33)

Part Number Split Crossbar Outer Radius	Split Crossbar Inner Radius		*Bi* in. (mm)	*Ba* in. (mm)	Weight lbs/ft (kg/m)
E14-1-	Z14-1-	[ ] -0	.59 (15)	1.06 (27)	≈ 0.21 (0.31)
E14-2-	Z14-2-	[ ] -0	.98 (25)	1.46 (37)	≈ 0.22 (0.32)
E14-3-	Z14-3-	[ ] -0	1.50 (38)	1.97 (50)	≈ 0.27 (0.40)
E14-4-	Z14-4-	[ ] -0	1.97 (50)	2.44 (62)	≈ 0.30 (0.44)

Choose from the radii below for all of the above sizes
Radius (mm) Example: E14-3-[038]-0

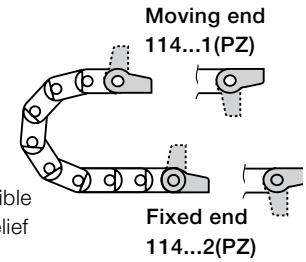
	028	038	048	075	100	125
R	1.10 (028)	1.50 (038)	1.89 (048)	2.95 (075)	3.94 (100)	4.92 (125)
H	3.19 (81)	3.98 (101)	4.76 (121)	6.89 (175)	8.86 (225)	10.83 (275)
D	3.35 (86)	3.78 (96)	4.17 (106)	5.24 (133)	6.22 (158)	7.20 (183)
K	5.91 (150)	7.28 (185)	8.46 (215)	11.81 (300)	14.96 (380)	17.91 (455)

0=Standard color black. For other colors see Chapter 1

e-chain system® E-Z chain
Series E14/Z14
Mounting Brackets

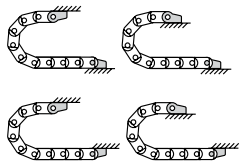
Plastic, one-piece

- One-piece mounting bracket
- Corrosion resistant
- Available preassembled
- Inner and outer attachment possible
- Available with or without strain relief tiewrap plates







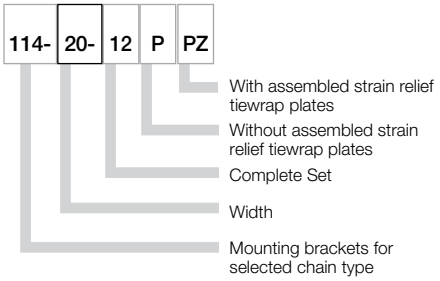


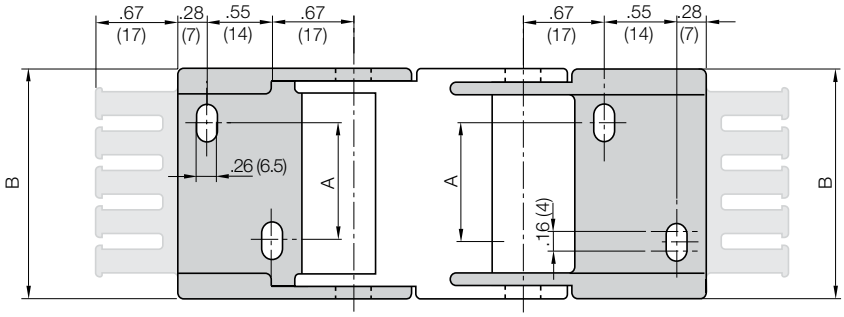
Possible installation configurations -

Dimensions and order configurations

Strain relief is possible on the moving end and/or the fixed end.

Part Number Structure





Full set, for both ends:
114- 20- 12 PZ
Full set, **each part with pin/bore + tiewrap plate**
Single-part order:
114- 20- 1 PZ
Mounting bracket **with bore + tiewrap plate**
114- 20- 2 PZ
Mounting bracket **with pin + tiewrap plate**

Chain Type	Part No. Full set with Tiewrap Plate	Part No. Full Set without Tiewrap Plate	Dimension A in.	(mm)	Dimensions B in.	(mm)	Number of Teeth
E14/Z14-1	**114-1-12PZ**	**114-1-12P**	—	—	1.04	(26.3)	2
E14/Z14-2	**114-2-12PZ**	**114-2-12P**	.39	(10)	1.43	(36.3)	3
E14/Z14-3	**114-3-12PZ**	**114-3-12P**	.91	(23)	1.94	(49.3)	4
E14/Z14-4	**114-4-12PZ**	**114-4-12P**	1.38	(35)	2.41	(61.3)	5

Additional Accessories



Quickfix - mounting bracket with dowel, upon request
Part No.
114-3-12QZ

PDF: igus.com/e-chain-pdfs
Product information: igus.com/e-chains

e-chain system® E-Z chain
Series E200/Z200

.96 .96

Price Index

Series E200/Z200

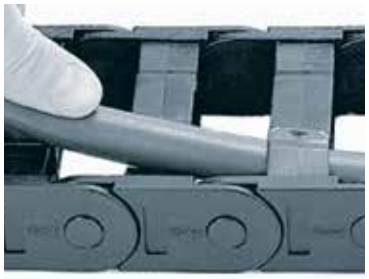
Special Features / Options

IPA Qualification Certificate
Air Cleanliness Class ISO Class 2
(at v = 3.28 ft/s) upon request

Flammability Class
VDE 0304 IIC UL94 V2

Special equipment: Electrically conductive ESD/ATEX version upon request

Assembly Tips



Just push the cables into the e-chain using your thumb

Other Installation Methods

Vertical, hanging ≤ 32.8 ft (10 m)
Vertical, standing ≤ 4.92 ft (1.5 m)
Side-mounted, unsupp. ≤ 1.64 ft (0.5 m)
Rotary requires further calculation

Usage Guidelines

- If filling is required without opening and closing
- If price is an issue
- If quiet operation is required

- If a long unsupported length is required
  ➤ **Series 2400/2500 E2/000**
- If single extrusion crossbars are required
  ➤ **Series 2400/2500 E2/000**

Features & Benefits

1. Mounting bracket with integrated strain relief
2. Large pins for long service life
3. Patented push button design holds the links together
4. Limited torsion tolerance
5. “E” Series features split crossbar along the outer radius
6. Dirt-repellant exterior
7. Cable-friendly interior
8. “Z” Series features split crossbar along the inner radius
9. Very easy to fill - cables only have to be pushed in
10. 1- or 2-chamber system available



Order Example: Complete e-chain®

Please indicate chain length or number of links. Example:

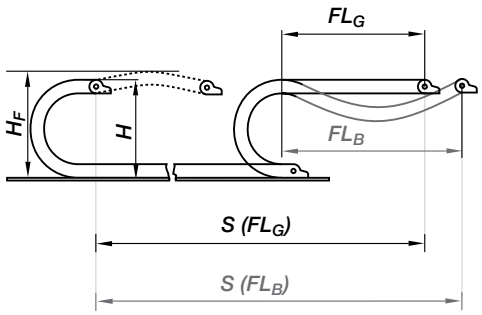
3.28 ft (1 m) **E200-05-100-0**	**e-chain®**
1 Set **2050-34PZB**	**Mounting Bracket**

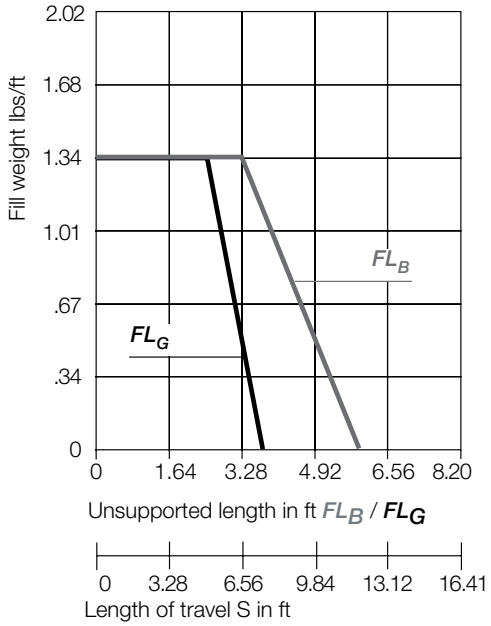
e-chain system® E-Z chain Series E200/Z200 Installation Dimensions

Short travel, unsupported length

- FL_B = unsupported with permitted sag
- FL_G = unsupported with straight upper run

Further information ➤ Design, Chapter 1



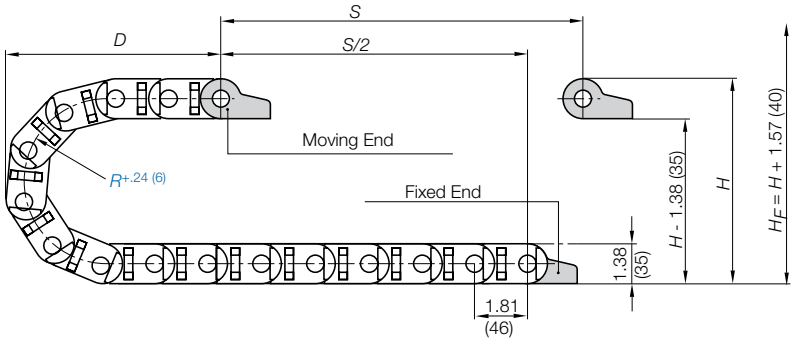


Short Travels - Unsupported

Unsupported E-Chains® feature positive camber over short travels. This must be accounted for when specifying the clearance height. Please refer to **Installation dimensions** for further details.

Legend

S = Length of travel
R = Bending radius
H = Nominal clearance height
D = Overlength e-chain® radius in final position
K = π • *R* + *safety buffer*
H_F = Required clearance height



Pitch per link: = 1.81" (46 mm)
Links per ft (m): = 6.71 (22)
For center mount applications:
Chain length = $\frac{S}{2}$ + K

The required clearance height: ***HF* = *H* + 1.57 in. (40 mm)** (with 1.68 lbs/ft (2.5 kg/m) fill weight.
Please consult igus® if space is particularly restricted.

R	2.16 (055)	2.95 (075)	3.94 (100)	5.91 (150)	7.87 (200)
H +4	5.71 (145)	7.28 (185)	9.25 (235)	13.19 (335)	17.12 (435)
D	5.59 (142)	6.38 (162)	7.36 (187)	9.33 (237)	11.30 (287)
K	10.43 (265)	12.99 (330)	16.14 (410)	22.24 (565)	28.54 (725)

Speed / acceleration FL_G	max. 65.6 ft/s (20 m/s) / max. 656 ft/s² (200 m/s²)
Speed / acceleration FL_B	max. 9.84 ft/s (3 m/s) / max. 19.69 ft/s² (6 m/s²)
Gliding speed / acceleration (maximum)	max. 9.84 ft/s (3 m/s) / max. 32.8 ft/s² (10 m/s²)
Material (e-chain®) - permitted temperature	igumid NB / -40°F (-40°C) up to +176°F (+80° C)
Material (mounting brackets)* - permitted temperature	igumid G / -40°F (-40°C) up to +248°F (+120° C)
Flammability Class (e-chain®), igumid NB	VDE 0304 IIC UL94 V2
Flammability Class (mounting brackets), igumid G*	VDE 0304 IIC UL94 HB

*Available in igumid NB upon request, please consult igus® for delivery time

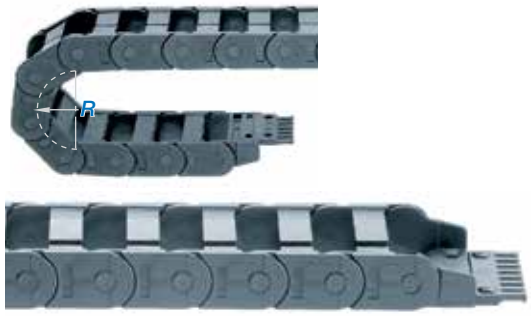
Technical Data

Details of material properties
➤ Chapter 1

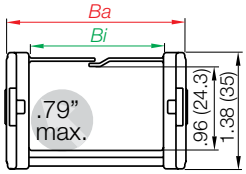
PDF: igus.com/e-chain-pdfs
Product information: igus.com/e-chains

e-chain system® E-Z chain
Series E200/Z200

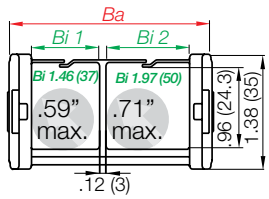
Series E200
Split crossbar along the outer radius



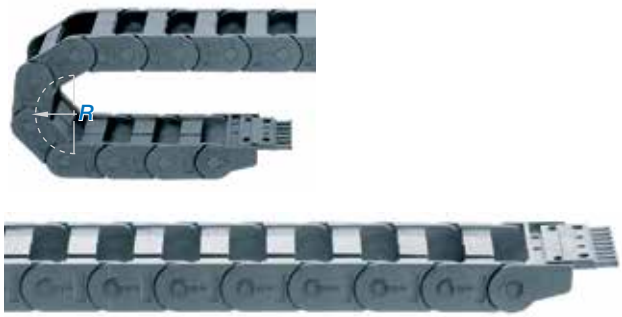
Single Chamber System



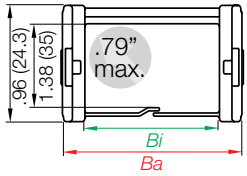
2 Chamber System
1 chamber from each width is shown
Actual carrier will have 2 chambers of the same size.



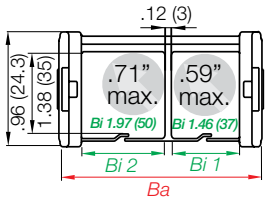
Series Z200
Split crossbar along the inner radius



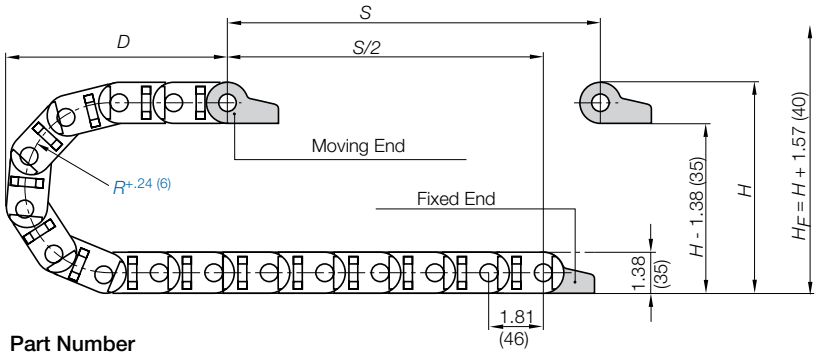
Single Chamber System



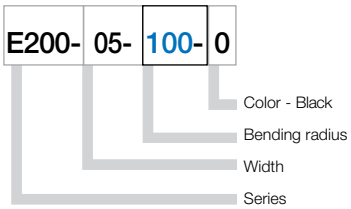
2 Chamber System
1 chamber from each width is shown
Actual carrier will have 2 chambers of the same size.



Supplement part number with required radius. Example: E200-05-100-0
Pitch: 1.81 in. (46 mm) per link links/ft (m) = 6.71 (22)



Part Number Structure



Part Number
Single Chamber System

Split Crossbar Outer radius	Split Crossbar Inner Radius		Bi in. (mm)	Ba in. (mm)	Weight lbs/ft (kg/m)
E200-05-	Z200-05-	[ ] -0	2.24 (57)	2.93 (74.4)	≈ 0.47 (0.70)

Part Number
2 Chamber System

Split Crossbar Outer radius	Split Crossbar Inner Radius		Bi 1 in. (mm)	Bi 2 in. (mm)	Ba in. (mm)	Weight lbs/ft (kg/m)
E200-2/35-	Z200-2/35-	[ ] -0	1.46 (37)	1.46 (37)	3.72 (94.4)	≈ 0.53 (0.79)
E200-2/50-	Z200-2/50-	[ ] -0	1.97 (50)	1.97 (50)	4.74 (120.4)	≈ 0.55 (0.82)

Choose from the radii below for all of the above sizes
Radius (mm) Example: E200-05-100-0

	055	075	100	150	200
R	2.16 (055)	2.95 (075)	3.94 (100)	5.91 (150)	7.87 (200)
H +4	5.71 (145)	7.28 (185)	9.25 (235)	13.19 (335)	17.12 (435)
D	5.59 (142)	6.38 (162)	7.36 (187)	9.33 (237)	11.30 (287)
K	10.43 (265)	12.99 (330)	16.14 (410)	22.24 (565)	28.54 (725)

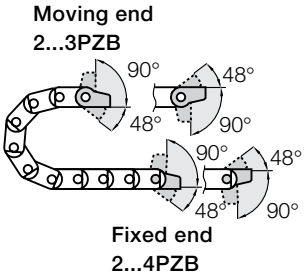
0=Standard color black. For other colors see Chapter 1

e-chain system® E-Z chain
Series E200/Z200
Mounting Brackets

Standard

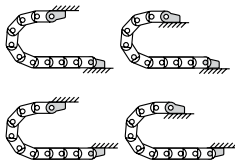
Option 1: pivoting

Short and long travels
Space-restricted conditions
Corrosion resistant





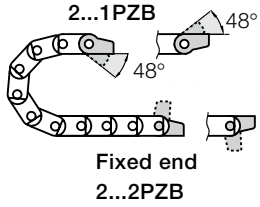




Possible installation configurations -

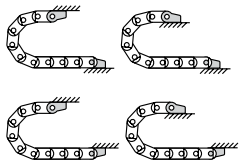
Option 2: locking

- Vertical hanging/standing travels
- High accelerations
- Corrosion resistant









Possible installation configurations -

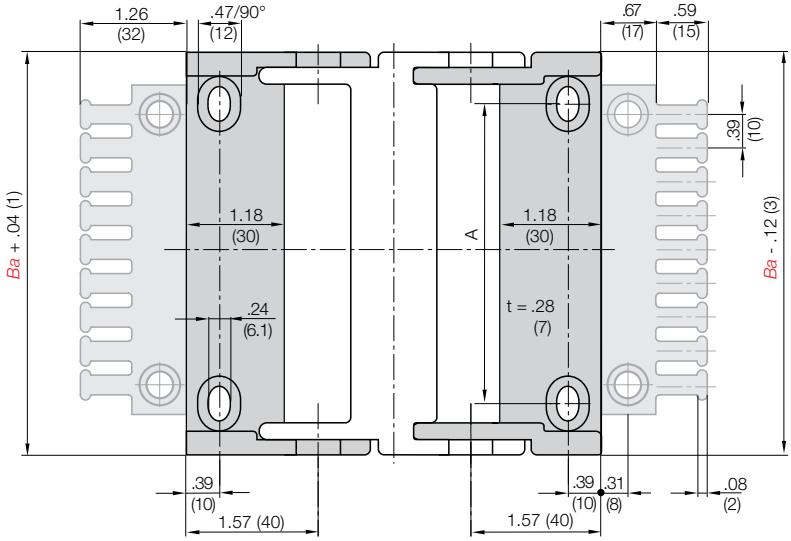
Dimensions and order configurations

Strain relief is possible on the moving end and/or the fixed end.

Part Number Structure

2050-	34	PZ	B	K1

- With 10 cable tiewraps
- With tiewrap plates
- Without tiewrap plates
- Complete Set
  34 = Pivoting
  12 = Locking
- Mounting brackets for selected chain type



Full set, for both ends:

2050- 34 PZB Full set, **each part with pin/bore + tiewrap plate**

Single-part order:

2050- 3 PZB Mounting bracket **with bore + tiewrap plate**

2050- 4 PZB Mounting bracket **with pin + tiewrap plate**

For Chain Type	Part No. Full Set with Tiewrap Plate	Part No. Full Set with Tiewrap Plate + 10 cable ties	Part No. Full Set without Tiewrap Plate	Dimension A in.	(mm)	Number of teeth
E200/Z200-05	2050- ☐ PZB	2050- ☐ PZBK1	2050- ☐ PZ	1.73	(44)	6
E200/Z200-2/35	2070- ☐ PZB	2070- ☐ PZBK1	2070- ☐ PZ	2.52	(64)	8
E200/Z200-2/50	2100- ☐ PZB	2100- ☐ PZBK1	2100- ☐ PZ	3.54	(90)	10

34 or 12

For pivoting brackets choose 34
For locking brackets choose 12
Example: 2050- 34 PZB

PDF: igus.com/e-chain-pdfs
Product information: igus.com/e-chains

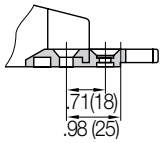
e-chain system® E-Z chain
Series E200/Z200
Strain Relief

Strain relief for polymer mounting brackets (pivoting or locking)

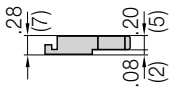
The strain relief tiewrap plates can be snapped directly onto the mounting bracket. After bolting the mounting brackets to the machine, the strain relief tiewrap plates are firmly connected to the base. There is no need to bolt them on separately. Cable tiewraps secured to the cable and the tiewrap plate (teeth) provide proper strain relief and save time.

Tiewrap Plates





Shown assembled

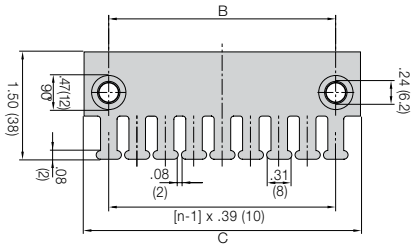


Single tiewrap plate

Option 1:
Tiewrap plates as an individual part

Available as an individual component, can be fixed onto a mounting bracket.

Tiewrap Plates	n Number of Teeth	Dimension C	Dimension B
2050-ZB	6	2.36 (60)	1.57 (40)
2070-ZB	8	3.15 (80)	2.36 (60)
2100-ZB	10	3.94 (100)	3.15 (80)



For more information please refer to strain relief section of Chapter 10



Strain relief for steel mounting brackets

Clip-on connection is not possible with steel mounting brackets. In this case, the tiewrap plates must be bolted directly into separate bore holes in front of the mounting bracket. Alternatively the tiewrap plates **20XX-ZB** can be also used here. **Details chapter 10**



Cable tiewraps as individual parts

Cable tiewraps 100 pieces/bag	Width x Length in.	(mm)	Maximum Ø in.	(mm)	Tensile Strength lbs	(N)
CFB-001	.19 x 5.91	(4.8 x 150)	1.42	(36)	50	(222)



Option 2:
Clip-on Tiewrap plates for opening crossbars

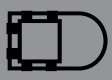
Clip-on tiewrap plates are also available as an attachment to opening crossbars. They can be positioned at any point along the e-chain®.

Part No.	Number of Teeth	Width of Strain Relief in.	(mm)
2050-Z	6	2.44	(62)

For more information please refer to strain relief section of Chapter 10









e-chain system® E-Z chain
Series E16/Z16

1.26 1.26

Price Index

Series E16/Z16

Special Features / Options

IPA Qualification Certificate
Air Cleanliness Class ISO Class 2
(at v = 3.28 ft/s) upon request

Flammability Class
VDE 0304 IIC UL94 V2

Special equipment: Electrically conductive ESD/ATEX version upon request

Assembly Tips



Just push the cables into the e-chain using your thumb

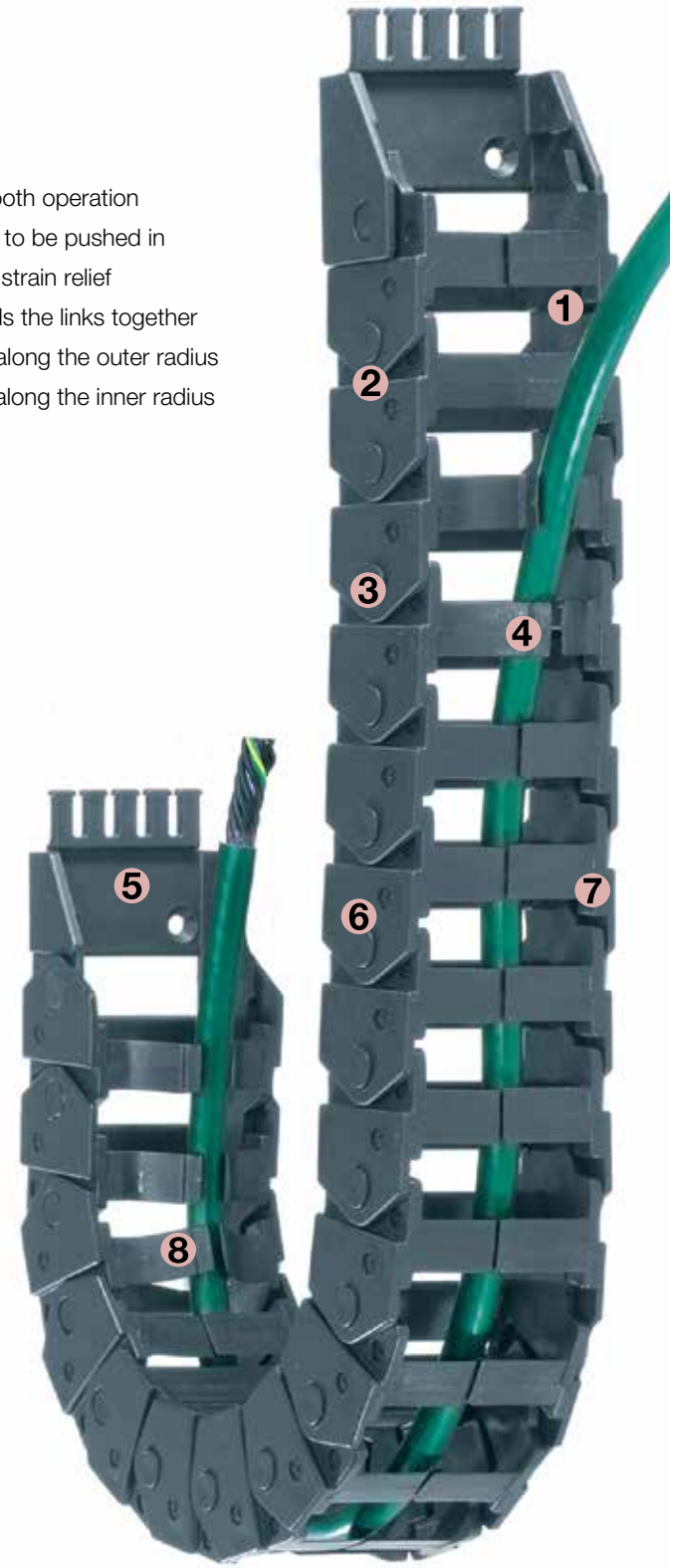
Usage Guidelines

- If filling is required without opening and closing
- If price is an issue
- If quiet operation is required

- If a long unsupported length is required
  ➤ **Series 2600/2700 E2 Medium**
- If an e-chain with a high locking crossbar is needed
  ➤ **Series 2600/2700 E2 Medium**

Features & Benefits

1. Cable-friendly interior
2. Limited torsion tolerance
3. Small pitch for low-noise and smooth operation
4. Very easy to fill - cables only have to be pushed in
5. Mounting bracket with integrated strain relief
6. Patented push button design holds the links together
7. “E” Series features split crossbar along the outer radius
8. “Z” Series features split crossbar along the inner radius



Order Example: Complete e-chain®

Please indicate chain length or number of links. Example:

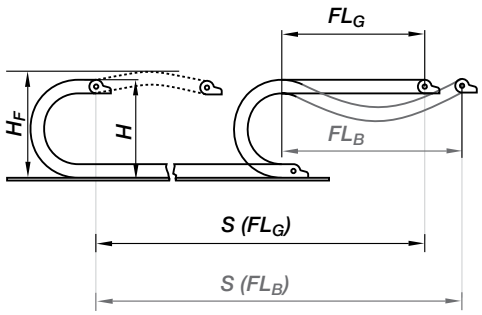
3.28 ft (1 m) **E16-3-060-0**	**e-chain®**
1 Set **117-3-12PZ**	**Mounting Bracket**

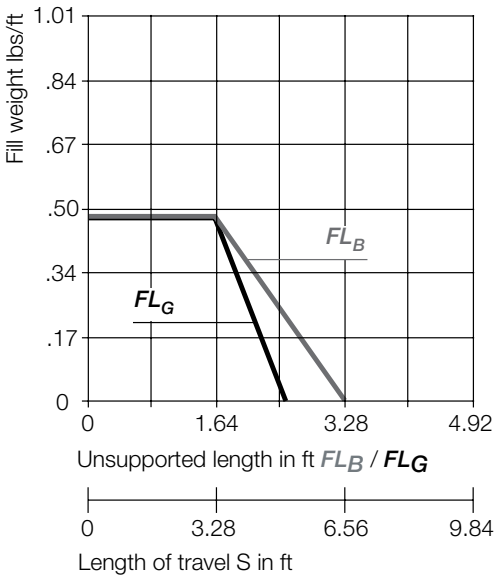
e-chain system® E-Z chain Series E16/Z16 Installation Dimensions

Short travel, unsupported length

- ● FL_B = unsupported with permitted sag
- ● FL_G = unsupported with straight upper run

Further information ➤ Design, Chapter 1



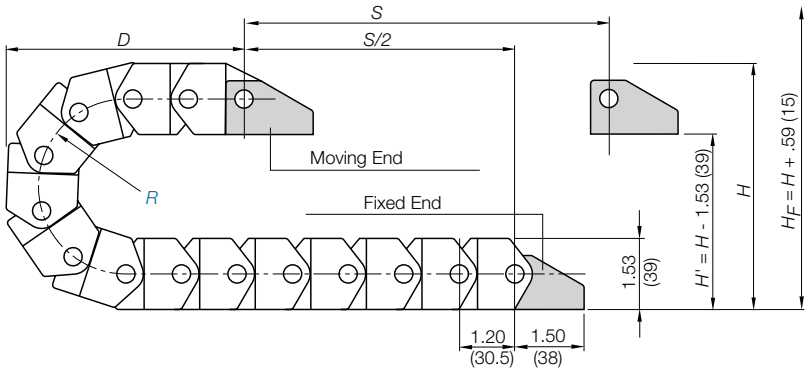


Short Travels - Unsupported

Unsupported E-Chains® feature positive camber over short travels. This must be accounted for when specifying the clearance height. Please refer to **Installation dimensions** for further details.

Legend

S = Length of travel
R = Bending radius
H = Nominal clearance height
D = Overlength e-chain® radius in final position
K = π • *R* + *safety buffer*
H_F = Required clearance height



Pitch per link: = 1.20" (30.5 mm)
Links per ft (m): = 10.06 (33)
For center mount applications:
Chain length = $\frac{S}{2} + K$

The required clearance height: ***HF = H* + .59 in. (15 mm)** (with .20 lbs/ft (0.3 kg/m) fill weight. Please consult igus® if space is particularly restricted.

R	1.57 (040)*	2.36 (060)	2.95 (075)	3.94 (100)	4.92 (125**)
H	4.69 (119)	6.26 (159)	7.44 (189)	9.41 (239)	11.38 (289)
D	4.13 (105)	4.92 (125)	5.51 (140)	6.50 (165)	7.48 (190)
K	7.48 (190)	9.84 (250)	11.81 (300)	14.96 (380)	17.91 (455)

*This radius is only available for the E16-2, Z16-3, Z16-4 Series
** This radius is only available for the E16-3, E16-5, E16-6, E16-7, Z16-2 and Z16-4

Speed / acceleration FL_G	max. 65.6 ft/s (20 m/s) / max. 656 ft/s² (200 m/s²)
Speed / acceleration FL_B	max. 9.84 ft/s (3 m/s) / max. 19.69 ft/s² (6 m/s²)
Gliding speed / acceleration (maximum)	max. 9.84 ft/s (3 m/s) / max. 32.8 ft/s² (10 m/s²)
Material (e-chain®) - permitted temperature	igumid NB / -40°F (-40°C) up to +176°F (+80° C)
Material (mounting brackets)* - permitted temperature	igumid G / -40°F (-40°C) up to +248°F (+120° C)
Flammability Class (e-chain®), igumid NB	VDE 0304 IIC UL94 V2
Flammability Class (mounting brackets), igumid G*	VDE 0304 IIC UL94 HB

*Available in igumid NB upon request, please consult igus® for delivery time

Technical Data

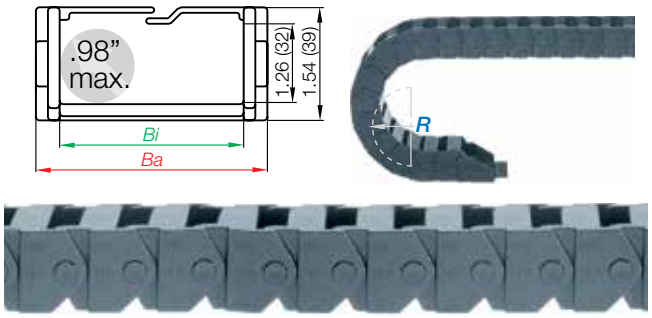
Details of material properties
➤ Chapter 1

PDF: igus.com/e-chain-pdfs
Product information: igus.com/e-chains

e-chain system® E-Z chain
Series E16/Z16

STANDARD

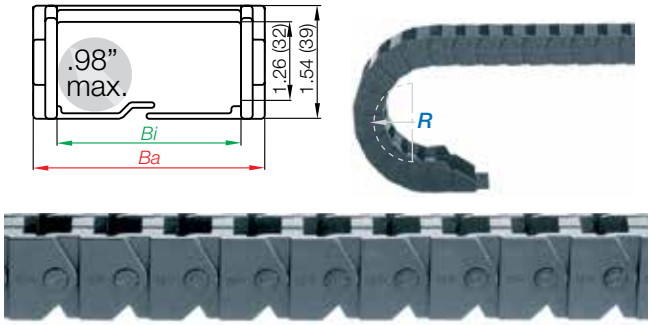
Series E16 - Split crossbar along the outer radius



Part Number Structure

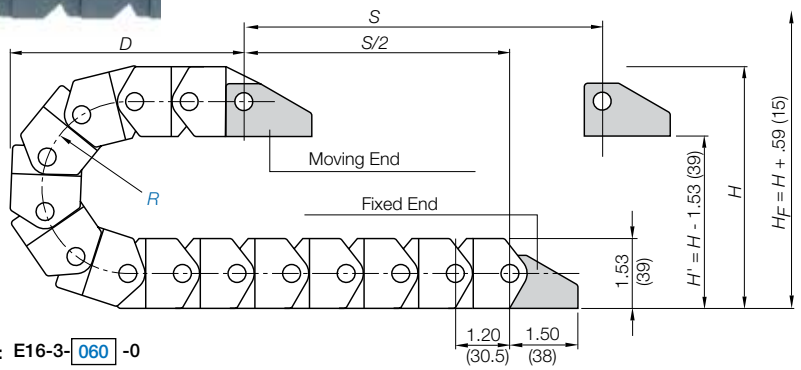
E16-	3-	060-	0
			Color - Black
		Bending radius	
	Width		
Series			

Series Z16 - Split crossbar along the inner radius



Part Number Structure

Z16-	3-	060-	0
			Color - Black
		Bending radius	
	Width		
Series			



Supplement part number with required radius. Example: E16-3-060 -0
Pitch: 1.20 in. (30.5 mm) per link links/ft (m) = 10.06 (33)

Part Number Split Crossbar Outer radius	Part Number Split Crossbar Inner radius		*Bi* in. (mm)	*Ba* in. (mm)	Weight lbs/ft (kg/m)
E16-2-	Z16-2-	-0	.91 (23)	1.48 (37.5)	≈ 0.34 (0.51)
E16-3-	Z16-3-	-0	1.42 (36)	1.99 (50.5)	≈ 0.38 (0.57)
E16-4-	Z16-4-	-0	1.89 (48)	2.46 (62.5)	≈ 0.42 (0.62)
E16-5-	Z16-5-	-0	2.48 (63)	3.09 (78.5)	≈ 0.50 (0.75)
E16-6-	Z16-6-	-0	3.15 (80)	3.76 (95.5)	≈ 0.56 (0.83)
E16-7-	Z16-7-	-0	3.94 (100)	4.54 (115.3)	≈ 0.61 (0.91)

Choose from the radii below for all of the above sizes
Radius (mm) Example: E16-3-060 -0

	040*	060	075	100	125**
R	1.57 (040)*	2.36 (060)	2.95 (075)	3.94 (100)	4.92 (125**)
H	4.69 (119)	6.26 (159)	7.44 (189)	9.41 (239)	11.38 (289)
D	4.13 (105)	4.92 (125)	5.51 (140)	6.50 (165)	7.48 (190)
K	7.48 (190)	9.84 (250)	11.81 (300)	14.96 (380)	17.91 (455)

0=Standard color black. For other colors see Chapter 1
*This radius is only available for the E16-2, Z16-3, Z16-4 Series
** This radius is only available for the E16-3, E16-5, E16-6, E16-7, Z16-2 and Z16-4

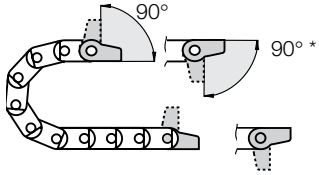
e-chain system® E-Z chain
Series E16/Z16
Mounting Brackets

Standard

Option 1: pivoting

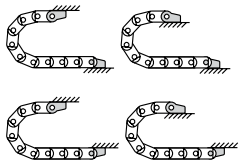
- One-piece mounting bracket
- Corrosion resistant
- Available pre-assembled
- Inner and outer attachment possible
- With our without strain relief tiewrap plates

Moving end
117...1P(Z)



Fixed end
117...2P(Z)

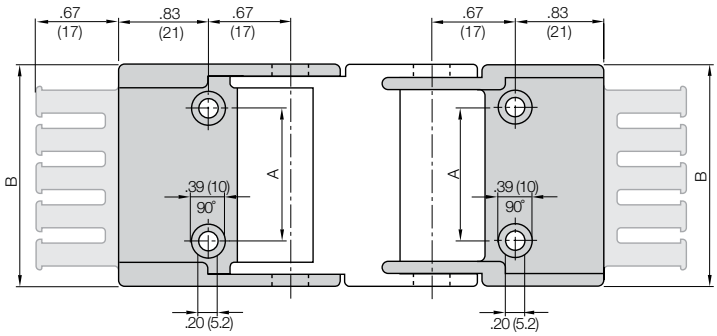




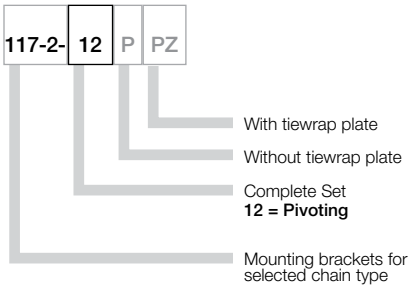
Possible installation configurations -

Dimensions and order configurations

Strain relief is possible on the moving end and/or the fixed end.



Part Number Structure



Full set, for both ends:

117-2-12-PZ Full set, **each part with pin/bore + tiewrap plate**

Single-part order:

117-2-1-PZ Mounting bracket **with bore + tiewrap plate**

117-2-2-PZ Mounting bracket **with pin + tiewrap plate**

For Chain Type	Part No. Full set with Tiewrap Plate	Part No. Full Set without Tiewrap Plate	Number of Teeth	Dimension A in.	(mm)	Dimensions B in.	(mm)
E16/Z16-2	**117-2-12PZ**	**117-2-12P**	3	.47	(12)	1.40	(35.5)
E16/Z16-3	**117-3-12PZ**	**117-3-12P**	4	.98	(25)	1.91	(48.5)
E16/Z16-4	**117-4-12PZ**	**117-4-12P**	5	1.46	(37)	2.38	(60.5)
E16/Z16-5	**117-5-12PZ**	**117-5-12P**	6	1.89	(48)	2.99	(76.0)
E16/Z16-6	**117-6-12PZ**	**117-6-12P**	8	2.56	(65)	3.66	(93.0)
E16/Z16-7	**117-7-12PZ**	**117-7-12P**	10	3.35	(85)	4.45	(113.0)

Additional Accessories



Quicksnap - the complete, detachable mounting unit, upon request



Quickfix - mounting bracket with dowel, upon request

PDF: igus.com/e-chain-pdfs
Product information: igus.com/e-chains

e-chain system® E-Z chain
Series E26/Z26

1.44 1.44

Price Index

Series E26/Z26

Special Features / Options

IPA Qualification Certificate
Air Cleanliness Class ISO Class 2
(at v = 3.28 ft/s) upon request

Flammability Class
VDE 0304 IIC UL94 V2

Special equipment: Electrically conductive ESD/ATEX version upon request

Features & Benefits

1. Integrated strain relief option
2. Very easy to fill - cables only have to be pushed in
3. Cable-friendly interior
4. Limited torsion tolerance
5. Large pins for long service life
6. "E" Series features split crossbar along the outer radius
7. Dirt-repellent exterior
8. Patented push button design holds the links together
9. "Z" Series features split crossbar along the inner radius
10. 1-, 2- or 3-chamber system available



Assembly Tips



Just push the cables into the e-chain using your thumb

Other Installation Methods

Vertical, hanging ≤ 32.8 ft (10 m)
Vertical, standing ≤ 4.92 ft (1.5 m)
Side-mounted, unsupp. ≤ 1.64 ft (0.5 m)
Rotary requires further calculation

Usage Guidelines

- If filling is required without opening and closing
- If price is an issue
- If quiet operation is required

- If a long unsupported length is required
  ➤ **Series 2600/2700 E2/000**
- If an e-chain with a high locking crossbar is needed
  ➤ **Series 2600/2700 E2/000**

Order Example: Complete e-chain®

Please indicate chain length or number of links. Example:

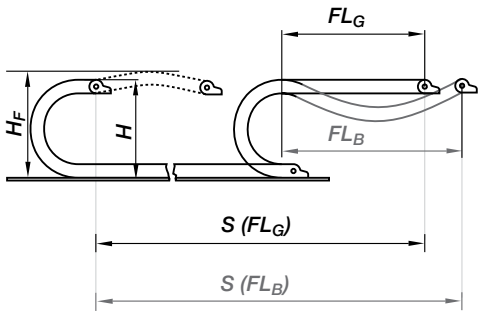
3.28 ft (1 m) **E26-07-150-0**	**e-chain®**
1 Set **2607-34PZB**	**Mounting Bracket**

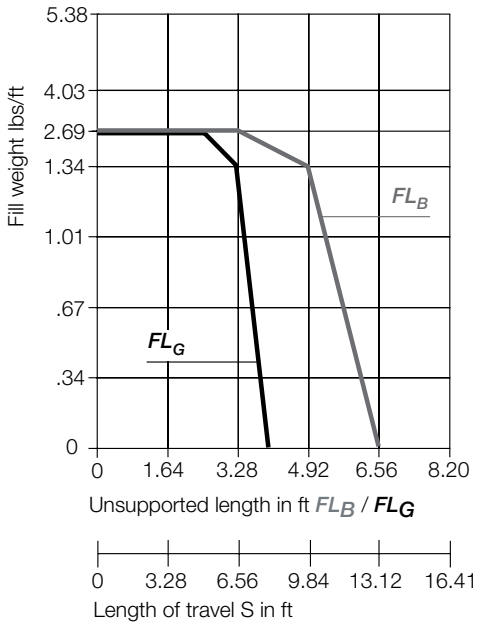
e-chain system® E-Z chain Series E26/Z26 Installation Dimensions

Short travel, unsupported length

- FL_B = unsupported with permitted sag
- FL_G = unsupported with straight upper run

Further information ➤ Design, Chapter 1



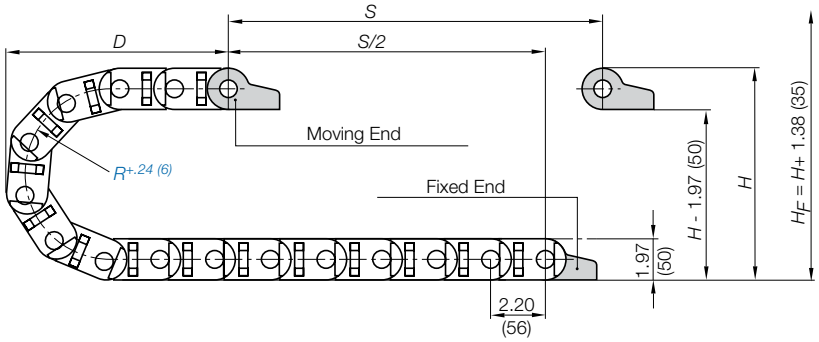


Short Travels - Unsupported

Unsupported E-Chains® feature positive camber over short travels. This must be accounted for when specifying the clearance height. Please refer to **Installation dimensions** for further details.

Legend

S = Length of travel
R = Bending radius
H = Nominal clearance height
D = Overlength e-chain® radius in final position
K = π • *R* + *safety buffer*
H_F = Required clearance height



Pitch per link: = 2.20" (56 mm)
Links per ft (m): = 5.49 (18)
For center mount applications:
Chain length = $\frac{S}{2}$ + K

The required clearance height: ***H_F = H* + 1.38 in. (35 mm)** (with 1.34 lbs/ft (2.0 kg/m) fill weight.
Please consult igus® if space is particularly restricted.

R	2.48 (063)	2.95 (075)	3.94 (100)	4.92 (125)	5.91 (150)	6.89 (175)	7.87 (200)	9.84 (250)
H +5	6.93 (176)	7.87 (200)	9.84 (250)	11.81 (300)	13.78 (350)	15.75 (400)	17.72 (450)	21.65 (550)
D	6.77 (172)	7.24 (184)	8.23 (209)	9.21 (234)	10.20 (259)	11.18 (284)	12.17 (309)	14.13 (359)
K	12.20 (310)	13.78 (350)	16.93 (430)	19.90 (505)	23.03 (585)	26.18 (665)	29.33 (745)	35.43 (900)

Speed / acceleration FL_G	max. 65.6 ft/s (20 m/s) / max. 656 ft/s² (200 m/s²)
Speed / acceleration FL_B	max. 9.84 ft/s (3 m/s) / max. 19.69 ft/s² (6 m/s²)
Gliding speed / acceleration (maximum)	max. 9.84 ft/s (3 m/s) / max. 32.8 ft/s² (10 m/s²)
Material (e-chain®) - permitted temperature	igumid NB / -40°F (-40°C) up to +176°F (+80° C)
Material (mounting brackets)* - permitted temperature	igumid G / -40°F (-40°C) up to +248°F (+120° C)
Flammability Class (e-chain®), igumid NB	VDE 0304 IIC UL94 V2
Flammability Class (mounting brackets), igumid G*	VDE 0304 IIC UL94 HB

*Available in igumid NB upon request, please consult igus® for delivery time

Technical Data

Details of material properties
➤ **Chapter 1**

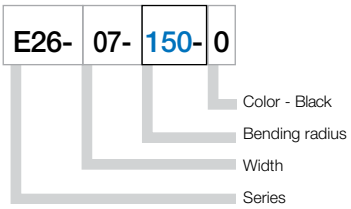
PDF: igus.com/e-chain-pdfs
Product information: igus.com/e-chains

e-chain system® E-Z chain
Series E26/Z26

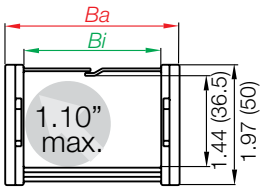
Series E26
Split crossbar along the outer radius



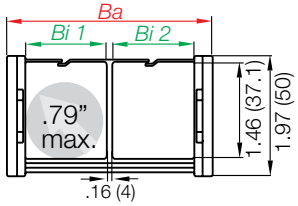
Part Number Structure



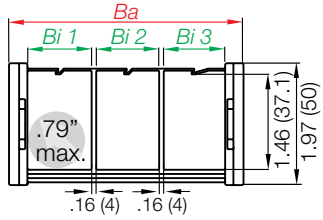
1 Chamber System



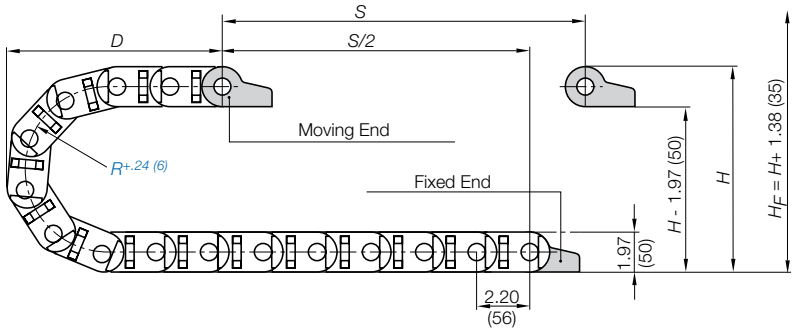
2 Chamber System



3 Chamber System



Supplement part number with required radius. Example: E26-07-150-0
Pitch: 2.20 in. (56 mm) per link links/ft (m) = 5.49 (18)



Part Number 1 Chamber System	Bi in. (mm)	Ba in. (mm)	Weight lbs/ft (kg/m)
E26-07-☐-0	2.95 (75)	3.62 (92)	≈ 0.65 (0.96)
Part Number 2 Chamber System			
E26-2/45-☐-0	1.89/1.89 (48/48)	4.61 (117)	≈ 0.77 (1.14)
Part Number 3 Chamber System			
E26-3/45-☐-0	1.85/1.89/1.85 (47/48/47)	6.57 (167)	≈ 0.87 (1.30)

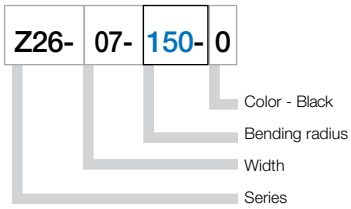
Choose from the radii below for all of the above sizes
Radius (mm) Example: E26-07-100-0

	063	075	100	125	150	175	200	250
R	2.48 (063)	2.95 (075)	3.94 (100)	4.92 (125)	5.91 (150)	6.89 (175)	7.87 (200)	9.84 (250)
H +5	6.93 (176)	7.87 (200)	9.84 (250)	11.81 (300)	13.78 (350)	15.75 (400)	17.72 (450)	21.65 (550)
D	6.77 (172)	7.24 (184)	8.23 (209)	9.21 (234)	10.20 (259)	11.18 (284)	12.17 (309)	14.13 (359)
K	12.20 (310)	13.78 (350)	16.93 (430)	19.88 (505)	23.03 (585)	26.18 (665)	29.33 (745)	35.43 (900)

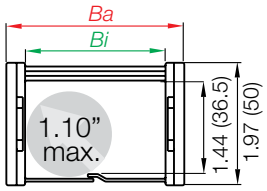
Series Z26
Split crossbar along the inner radius



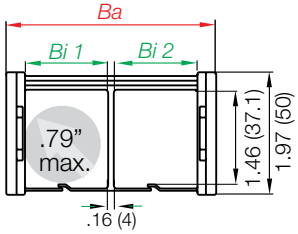
Part Number Structure



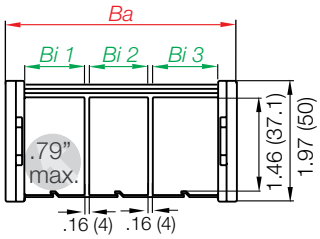
1 Chamber System



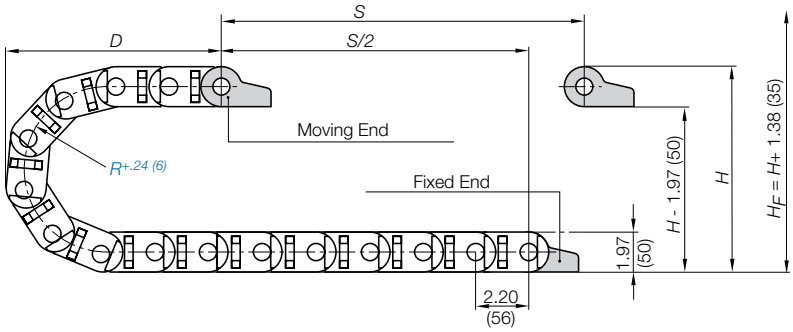
2 Chamber System



3 Chamber System



Supplement part number with required radius. Example: Z26-07-150-0
Pitch: 2.20 in. (56 mm) per link links/ft (m) = 5.49 (18)



Part Number 1 Chamber System	Bi in. (mm)	Ba in. (mm)	Weight lbs/ft (kg/m)
Z26-07-☐-0	2.95 (75)	3.62 (92)	≈ 0.65 (0.96)
Part Number 2 Chamber System			
Z26-2/45-☐-0	1.89/1.89 (48/48)	4.61 (117)	≈ 0.77 (1.14)
Part Number 3 Chamber System			
Z26-3/45-☐-0	1.85/1.89/1.85 (47/48/47)	6.57 (167)	≈ 0.87 (1.30)

Choose from the radii below for all of the above sizes
Radius (mm) Example: Z26-07-100-0

	063	075	100	125	150	175	200	250
R	2.48 (063)	2.95 (075)	3.94 (100)	4.92 (125)	5.91 (150)	6.89 (175)	7.87 (200)	9.84 (250)
H +5	6.93 (176)	7.87 (200)	9.84 (250)	11.81 (300)	13.78 (350)	15.75 (400)	17.72 (450)	21.65 (550)
D	6.77 (172)	7.24 (184)	8.23 (209)	9.21 (234)	10.20 (259)	11.18 (284)	12.17 (309)	14.13 (359)
K	12.20 (310)	13.78 (350)	16.93 (430)	19.88 (505)	23.03 (585)	26.18 (665)	29.33 (745)	35.43 (900)

PDF: igus.com/e-chain-pdfs
Product information: igus.com/e-chains

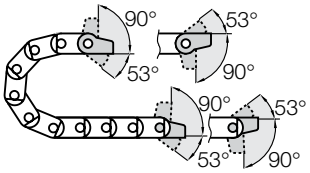
e-chain system® E-Z chain
Series E26/Z26
Mounting Brackets

Standard

Option 1: pivoting

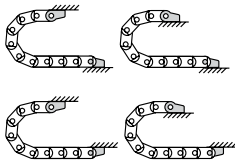
- Recommended for unsupported and gliding applications
- Space-restricted conditions
- Available with or without strain relief tiewrap plates
- Corrosion resistant

Moving end
26...3PZB



Fixed end
26...4PZB



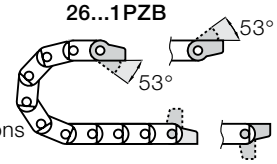


Possible installation configurations -

Option 2: locking

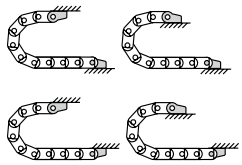
- Recommended for unsupported and gliding applications
- For high speed and/or accelerations
- Corrosion resistant

Moving end
26...1PZB



Fixed end
26...2PZB





Possible installation configurations -

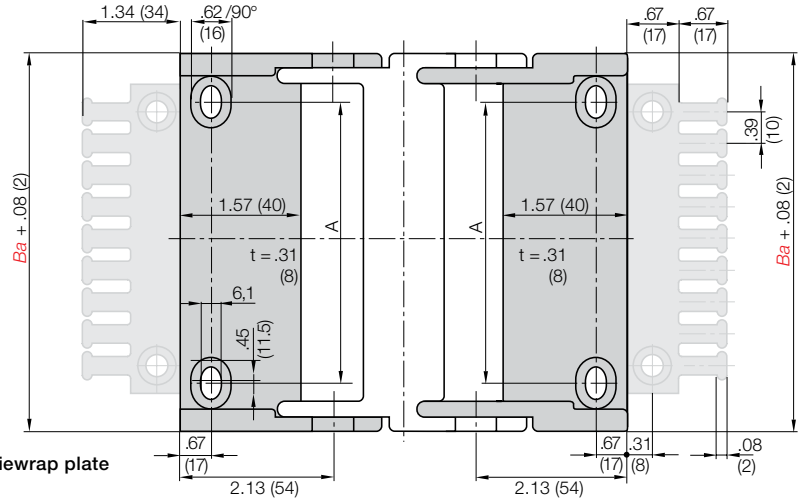
Dimensions and order configurations

Strain relief is possible on the moving end and/or the fixed end.

Part Number Structure

2607-	34	PZB	K1

- K1 = With 10 cable tiewraps
- PZB = With tiewrap plates
- 34 = Complete Set (34 = Pivoting, 12 = Locking)
- 2607- = Mounting brackets for selected chain type



Full set, for both ends:
2607- 34 PZB Full set, **each part with pin/bore + tiewrap plate**

Single-part order:
2607- 3 PZB Mounting bracket **with bore + tiewrap plate**
2607- 4 PZB Mounting bracket **with pin + tiewrap plate**

Part No. Full Set (pivoting)
With Tiewrap Plates
Series E26/Z26:
2607-34PZB

Part No. Full Set (pivoting)
With Tiewrap Plates + 10 cable ties
Series E26/Z26:
2607-34PZBK1

Part No. Full Set (pivoting)
Without Tiewrap Plates
Series E26/Z26:
2607-34PZ

For Chain Type	Part No. Full Set with Tiewrap Plate	Part No. Full Set with Tiewrap Plate + 10 cable ties	Part No. Full Set without Tiewrap Plate	Dimension A in.	(mm)	Number of Teeth
E26/Z26-07	2607- ☐ PZB	2607- ☐ PZBK1	2607- ☐ PZ	2.17	(55)	7
E26/Z26-2/45	2610- ☐ PZB	2610- ☐ PZBK1	2610- ☐ PZ	3.15	(80)	10
E26/Z26-3/45	2615- ☐ PZB	2615- ☐ PZBK1	2615- ☐ PZ	5.12	(130)	15

34 or 12

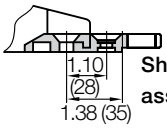
For pivoting brackets choose 34
For locking brackets choose 12
Example: 2607- 34 PZB

Strain relief for polymer mounting brackets (pivoting or locking)

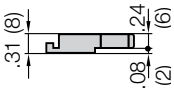
The strain relief tiewrap plates can be snapped directly onto the mounting bracket. After bolting the mounting brackets to the machine, the strain relief tiewrap plates are firmly connected to the base. There is no need to bolt them on separately. Cable tiewraps secured to the cable and the tiewrap plate (teeth) provide proper strain relief and save time.

Tiewrap Plates





Shown assembled

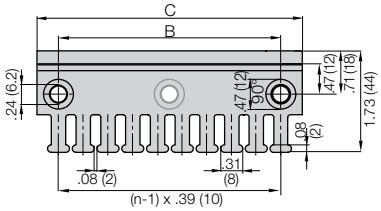


Single tiewrap plate

Option 1:
Tiewrap plates as an individual part

Available as an individual component, can be fixed onto a mounting bracket.

Tiewrap Plate	n Number of Teeth	C Overall Width in. (mm)	B Bore Width in. (mm)	Center Bore
3050-ZB	5	1.97 (50)	1.18 (30)	no
3075-ZB	7	2.95 (75)	2.16 (55)	no
3100-ZB	10	3.94 (100)	3.15 (80)	no
3115-ZB	11	4.53 (115)	3.74 (95)	no
3125-ZB	12	4.92 (125)	4.13 (105)	no
3150-ZB	15	5.91 (150)	5.12 (130)	no
3175-ZB	17	6.89 (175)	6.10 (155)	no
3200-ZB	20	7.87 (200)	7.09 (180)	yes
3225-ZB	22	8.86 (225)	8.07 (205)	yes
3250-ZB	25	9.84 (250)	9.06 (230)	yes



For more information please refer to strain relief section of Chapter 10



Cable tiewraps as individual parts

Cable tiewraps	Width x Length		Maximum Ø		Tensile Strength	
100 pieces/bag	in.	(mm)	in.	(mm)	lbs	(N)
CFB-001	.19 x 5.91	(4.8 x 150)	1.42	(36)	50	(222)

PDF: igus.com/e-chain-pdfs
Product information: igus.com/e-chains

e-chain system® E-Z chain
Series E300/Z300

1.91 1.91

Price Index

Series E300/Z300

Special Features / Options

IPA Qualification Certificate
Air Cleanliness Class ISO Class 2
(at v = 3.28 ft/s) upon request

Flammability Class
VDE 0304 IIC UL94 V2

Special equipment: Electrically conductive ESD/ATEX version upon request

Assembly Tips



Just push the cables into the e-chain using your thumb

Other Installation Methods

Vertical, hanging ≤ 32.8 ft (10 m)
Vertical, standing ≤ 4.92 ft (1.5 m)
Side-mounted, unsupp. ≤ 1.64 ft (0.5 m)
Rotary requires further calculation

Usage Guidelines

- If filling is required without opening and closing
- If price is an issue
- If quiet operation is required

- If high loads and long unsupported lengths are present
  ➤ **Series 3400/3500 E2/000**

Features & Benefits

1. Limited torsion tolerance
2. Cable-friendly interior
3. Large pins for long service life
4. Very easy to fill - cables only have to be pushed in
5. Dirt-repellent exterior
6. “E” Series features split crossbar along the outer radius
7. Integrated strain relief option
8. Patented push button design holds the links together
9. “Z” Series features split crossbar along the inner radius
10. Interior separation possible
11. 1-, 2- or 3-chamber system available



Order Example: Complete e-chain®

Please indicate chain length or number of links. Example:

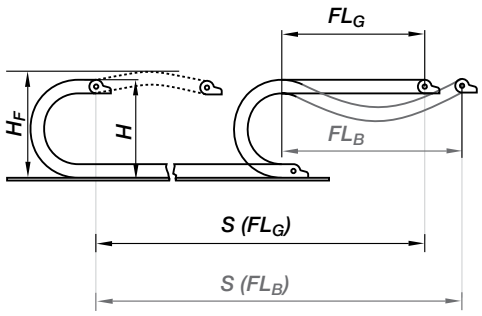
3.28 ft (1 m) **E300-075-100-0**	**e-chain®**
1 Set **3075-34PZB**	**Mounting Bracket**

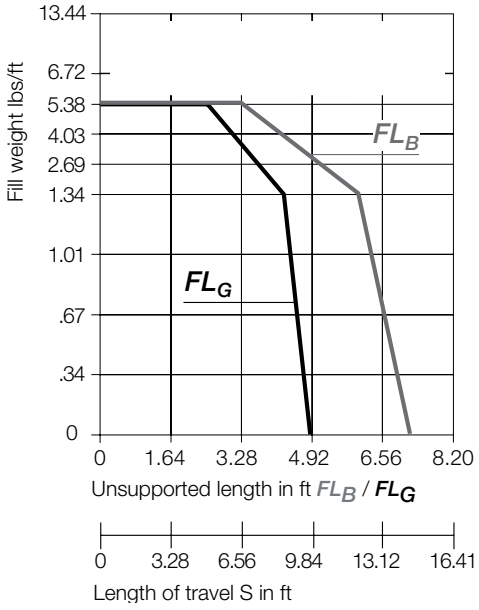
e-chain system® E-Z chain Series E300/Z300 Installation Dimensions

Short travel, unsupported length

- ● FL_B = unsupported with permitted sag
- ● FL_G = unsupported with straight upper run

Further information ➤ Design, Chapter 1



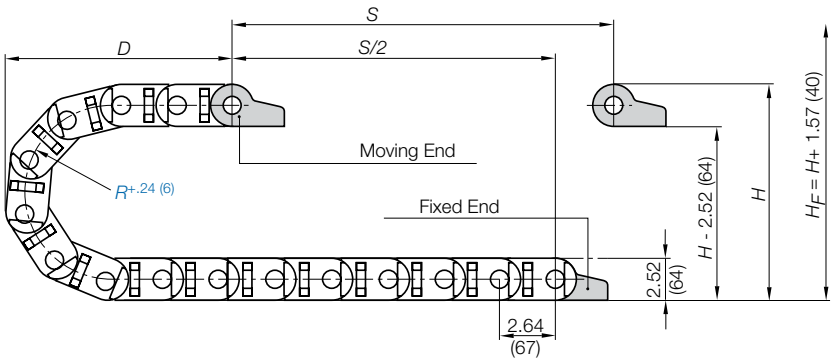


Short Travels - Unsupported

Unsupported E-Chains® feature positive camber over short travels. This must be accounted for when specifying the clearance height. Please refer to **Installation dimensions** for further details.

Legend

S = Length of travel
R = Bending radius
H = Nominal clearance height
D = Overlength e-chain® radius in final position
K = π • *R* + *safety buffer*
H_F = Required clearance height



Pitch per link: = 2.64" (67 mm)
Links per ft (m): = 4.57 (15)
For center mount applications:
Chain length = $^{S}/_{2}$ + K

The required clearance height: ***HF* = *H* + 1.57 in. (40 mm)** (with 1.68 lbs/ft (2.5 kg/m) fill weight. Please consult igus® if space is particularly restricted.

R	2.95 (075)	3.94 (100)	4.92 (125)	5.91 (150)	7.87 (200)	9.84 (250)	11.81 (300)
H +4	8.43 (214)	10.39 (264)	12.36 (314)	14.33 (364)	18.27 (464)	22.20 (564)	26.14 (664)
D	8.19 (208)	9.17 (233)	10.16 (258)	11.14 (283)	13.11 (333)	15.08 (383)	17.05 (433)
K	14.57 (370)	17.72 (450)	20.87 (530)	24.02 (610)	30.12 (765)	36.22 (920)	42.52 (1080)

Speed / acceleration FL_G	max. 65.6 ft/s (20 m/s) / max. 656 ft/s² (200 m/s²)
Speed / acceleration FL_B	max. 9.84 ft/s (3 m/s) / max. 19.69 ft/s² (6 m/s²)
Gliding speed / acceleration (maximum)	max. 9.84 ft/s (3 m/s) / max. 32.8 ft/s² (10 m/s²)
Material (e-chain®) - permitted temperature	igumid NB / -40°F (-40°C) up to +176°F (+80° C)
Material (mounting brackets)* - permitted temperature	igumid G / -40°F (-40°C) up to +248°F (+120° C)
Flammability Class (e-chain®), igumid NB	VDE 0304 IIC UL94 V2
Flammability Class (mounting brackets), igumid G*	VDE 0304 IIC UL94 HB

*Available in igumid NB upon request, please consult igus® for delivery time

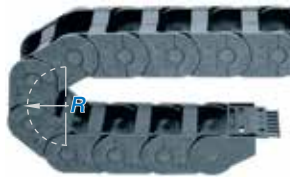
Technical Data

Details of material properties
➤ Chapter 1

PDF: igus.com/e-chain-pdfs
Product information: igus.com/e-chains

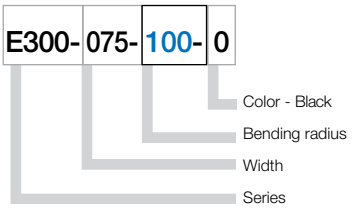
e-chain system® E-Z chain
Series E300/Z300

Series E300
Split crossbar along the outer radius

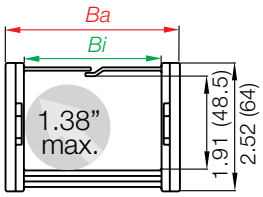




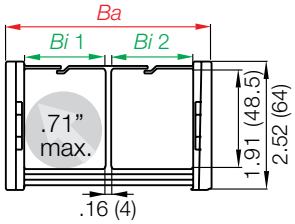
Part Number Structure



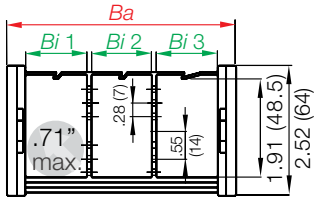
Single Chamber System



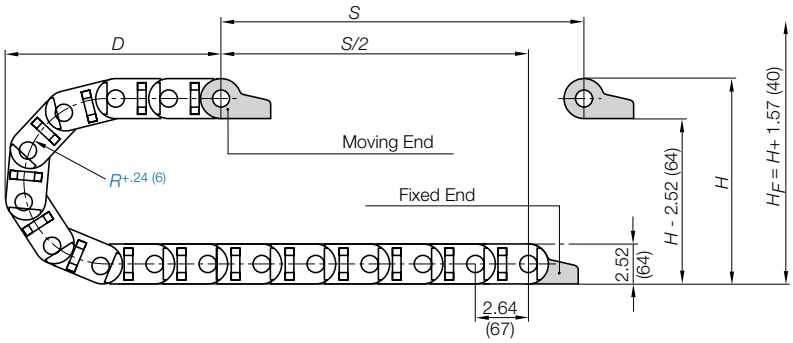
2 Chamber System



3 Chamber System with optional shelving

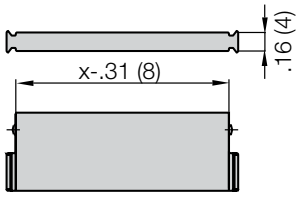


Supplement part number with required radius. Example: E300-075-100-0
Pitch: 2.64 in. (67 mm) per link links/ft (m) = 4.57 (15)



Shelving

Unassembled	
Part number	**386-54**
Assembled	
Part number	**387-54**



Part Number 1 Chamber System	Bi in. (mm)	Ba in. (mm)	Weight lbs/ft (kg/m)
E300-075-☐-0	2.95 (75)	3.74 (95)	≈ 1.08 (1.60)
Part Number 2 Chamber System			
E300-2/45-☐-0	1.89/1.89 (48/48)	4.72 (120)	≈ 1.20 (1.78)
Part Number 3 Chamber System			
E300-3/45-☐-0	1.85/1.81/1.85 (47/46/47)	6.69 (170)	≈ 1.29 (1.92)

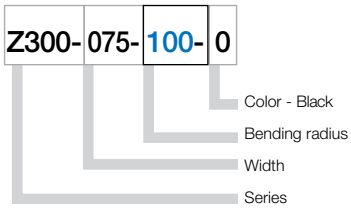
Choose from the radii below for all of the above sizes
Radius (mm) Example: E300-075-100-0

	075	100	125	150	200	250	300
R	2.95 (075)	3.94 (100)	4.92 (125)	5.91 (150)	7.87 (200)	9.84 (250)	11.81 (300)
H +5	8.43 (214)	10.39 (264)	12.36 (314)	14.33 (364)	18.27 (464)	22.20 (564)	26.14 (664)
D	8.19 (208)	9.17 (233)	10.16 (258)	11.14 (283)	13.11 (333)	15.08 (383)	17.05 (433)
K	14.57 (370)	17.72 (450)	20.87 (530)	24.02 (610)	30.12 (765)	36.22 (920)	42.52 (1080)

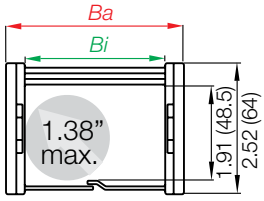
Series Z300
Split crossbar along the inner radius



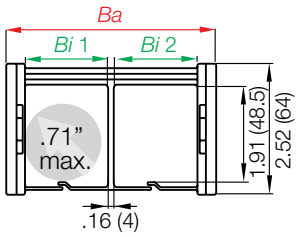
Part Number Structure



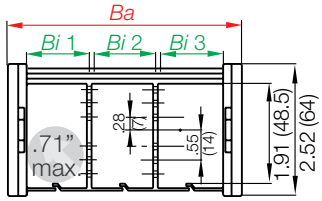
Single Chamber System



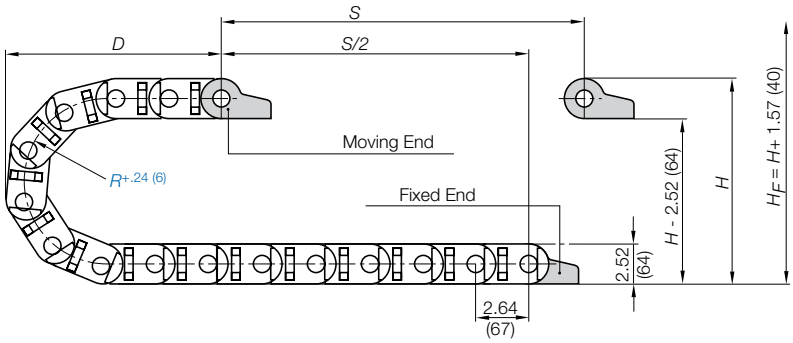
2 Chamber System



3 Chamber System



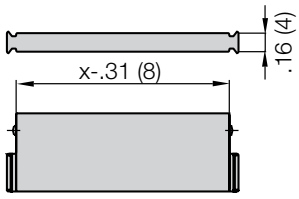
Supplement part number with required radius. Example: Z300-075-100-0
Pitch: 2.64 in. (67 mm) per link links/ft (m) = 4.57 (15)



Shelving

Unassembled
Part number 386-54

Assembled
Part number 387-54



Part Number 1 Chamber System	Bi in. (mm)	Ba in. (mm)	Weight lbs/ft (kg/m)
Z300-075-[ ]-0	2.95 (75)	3.74 (95)	≈ 1.08 (1.60)
Part Number 2 Chamber System			
Z300-2/45-[ ]-0	1.89/1.89 (48/48)	4.72 (120)	≈ 1.20 (1.78)
Part Number 3 Chamber System			
Z300-3/45-[ ]-0	1.85/1.81/1.85 (47/46/47)	6.69 (170)	≈ 1.29 (1.92)

Choose from the radii below for all of the above sizes
Radius (mm) Example: Z300-075-100-0

	075	100	125	150	200	250	300
R	2.95 (075)	3.94 (100)	4.92 (125)	5.91 (150)	7.87 (200)	9.84 (250)	11.81 (300)
H +5	8.43 (214)	10.39 (264)	12.36 (314)	14.33 (364)	18.27 (464)	22.20 (564)	26.14 (664)
D	8.19 (208)	9.17 (233)	10.16 (258)	11.14 (283)	13.11 (333)	15.08 (383)	17.05 (433)
K	14.57 (370)	17.72 (450)	20.87 (530)	24.02 (610)	30.12 (765)	36.22 (920)	42.52 (1080)

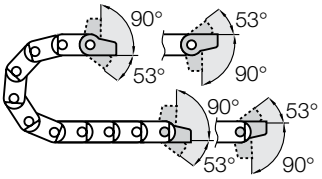
PDF: igus.com/e-chain-pdfs
Product information: igus.com/e-chains

e-chain system® E-Z chain
Series E300/Z300
Mounting Brackets

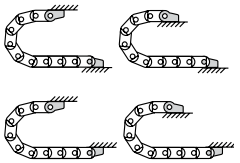
Standard

Option 1: pivoting

- Recommended for unsupported and gliding applications
- Space-restricted conditions
- Available with or without strain relief tiewrap plates
- Corrosion resistant



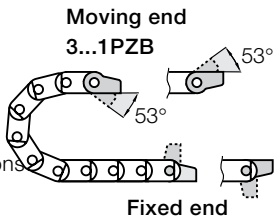




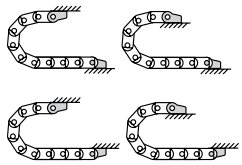
Possible installation configurations -

Option 2: locking

- Recommended for unsupported and gliding applications
- For high speed and/or accelerations
- Corrosion resistant





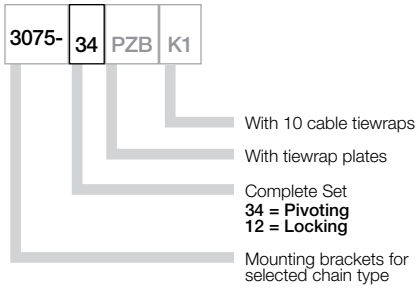


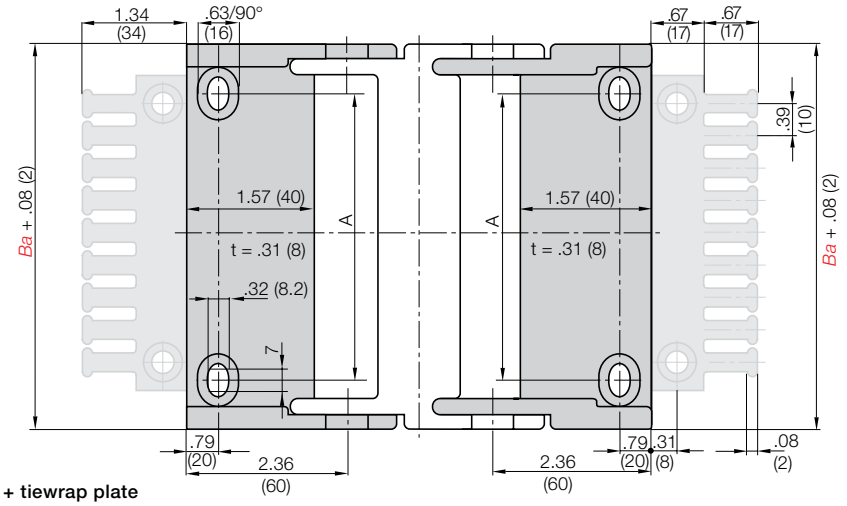
Possible installation configurations -

Dimensions and order configurations

Strain relief is possible on the moving end and/or the fixed end.

Part Number Structure





Full set, for both ends:

3075- 34 PZB Full set, **each part with pin/bore + tiewrap plate**

Single-part order:

3075- 3 PZB Mounting bracket **with bore + tiewrap plate**

3075- 4 PZB Mounting bracket **with pin + tiewrap plate**

Part No. Full Set (pivoting)
With Tiewrap Plates
Series E300, Z300:
3075-34PZB

Part No. Full Set (pivoting)
With Tiewrap Plates + 10 cable ties
Series E300, Z300:
3075-34PZBK1

Part No. Full Set (pivoting)
Without Tiewrap Plates
Series E300, Z300:
3075-34PZ

For Chain Type	Part No. Full Set with Tiewrap Plate	Part No. Full Set with Tiewrap Plate + 10 cable ties	Part No. Full Set without Tiewrap Plate	Dimension A in.	(mm)	Number of Teeth
E300/Z300-075	3075- ☐ PZB	3075- ☐ PZBK1	3075- ☐ PZ	2.09	(53)	7
E300/Z300-2/45	3100- ☐ PZB	3100- ☐ PZBK1	3100- ☐ PZ	3.07	(78)	10
E300/Z300-3/45	3150- ☐ PZB	3150- ☐ PZBK1	3150- ☐ PZ	5.04	(128)	15

34 or 12

For pivoting brackets choose 34
For locking brackets choose 12
Example: 3075- 34 PZB

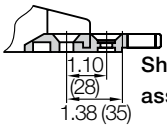
e-chain system® E-Z chain
Series E300/Z300
Strain Relief

Strain relief for polymer mounting brackets (pivoting or locking)

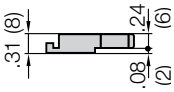
The strain relief tiewrap plates can be snapped directly onto the mounting bracket. After bolting the mounting brackets to the machine, the strain relief tiewrap plates are firmly connected to the base. There is no need to bolt them on separately. Cable tiewraps secured to the cable and the tiewrap plate (teeth) provide proper strain relief and save time.

Tiewrap Plates





Shown assembled

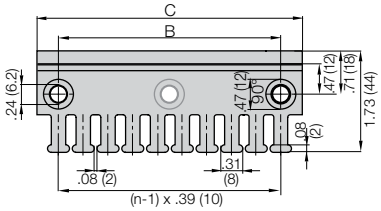


Single tiewrap plate

Option 1:
Tiewrap plates as an individual part

Available as an individual component, can be fixed onto a mounting bracket.

Tiewrap Plate	n Number of Teeth	C Overall Width in. (mm)	B Bore Width in. (mm)	Center Bore
3050-ZB	5	1.97 (50)	1.18 (30)	no
3075-ZB	7	2.95 (75)	2.16 (55)	no
3100-ZB	10	3.94 (100)	3.15 (80)	no
3115-ZB	11	4.53 (115)	3.74 (95)	no
3125-ZB	12	4.92 (125)	4.13 (105)	no
3150-ZB	15	5.91 (150)	5.12 (130)	no
3175-ZB	17	6.89 (175)	6.10 (155)	no
3200-ZB	20	7.87 (200)	7.09 (180)	yes
3225-ZB	22	8.86 (225)	8.07 (205)	yes
3250-ZB	25	9.84 (250)	9.06 (230)	yes



For more information please refer to strain relief section of Chapter 10



Cable tiewraps as individual parts

Cable tiewraps	Width x Length		Maximum Ø		Tensile Strength	
100 pieces/bag	in.	(mm)	in.	(mm)	lbs	(N)
CFB-001	.19 x 5.91	(4.8 x 150)	1.42	(36)	50	(222)

PDF: igus.com/e-chain-pdfs
Product information: igus.com/e-chains


CHAINFLEX
igus

igus®

Zipper Chain



Zipper - Fast and easy access to cables and hoses

iF-Design Award

Zipper e-chains® enable lightning-fast opening and closing of lids. Different from the typical e-chain® design, which features side links and crossbars, Zipper chains are built with interconnected lids. These lids pull back like a zipper, removing the top section of the e-chain® in one uniform piece at any point along the length of the carrier. Cable installation and removal—especially for cables equipped with preassembled connectors—is both fast and simple because the unique design eliminates the need to snake cables through the carrier.

Typical industries and applications

- Pick & place robots
- Semi-conductor machines
- Linear motors, actuators
- Measuring equipment
- Machine tools (Zipper e-tube)

Clean-Room — Cleanroom Class 1 (ISO class 3) for Zipper Series 15, tested by the Dryden Engineering Company, CA

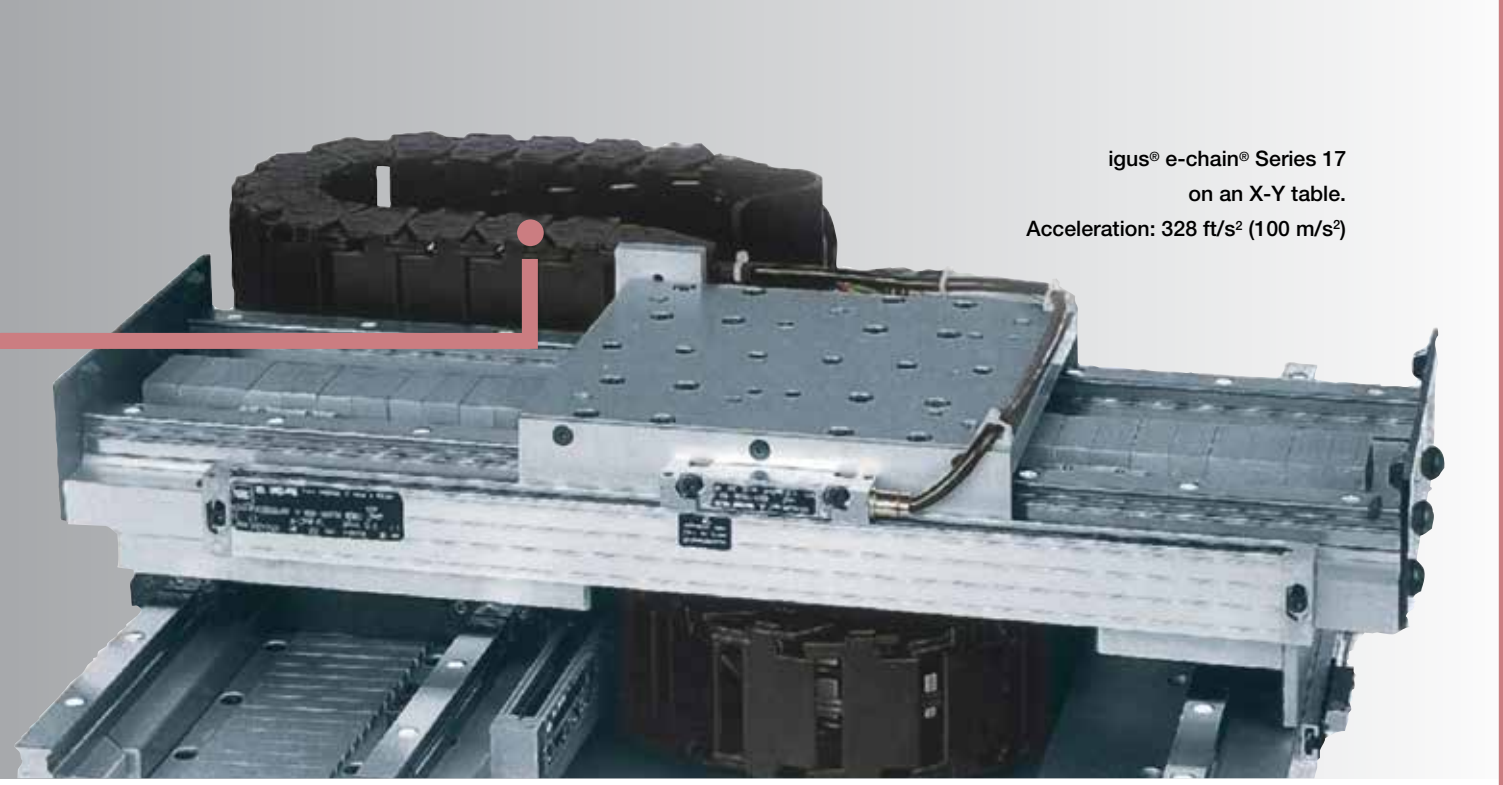
Flammability Class VDE 0304 IIC UL94 HB

iF-Design Award Winner

Low-noise

Zipper — Fast Opening and Closing with “Zipper”





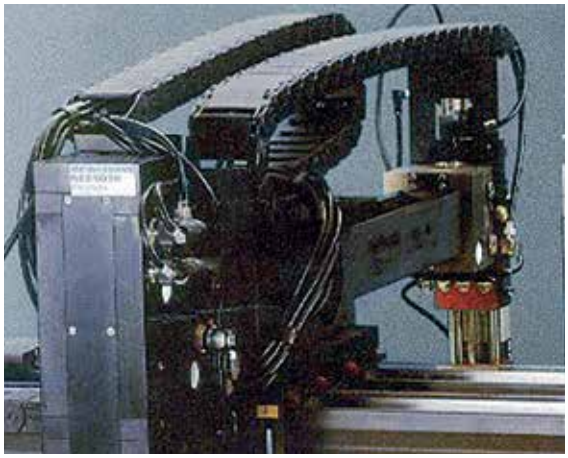
igus® e-chain® Series 17
on an X-Y table.
Acceleration: 328 ft/s² (100 m/s²)

Lightning fast opening and closing with “Zipper”

- Reduced assembly-time
- Zipper-like design for quick opening and closing of lids
- Zipper lids can be separated and joined at each chain link
- Small pitch for low noise and smooth operation
- High accelerations: 328 ft/s² (100 m/s²) and more are possible
- Interior separation possible for larger versions (Series 15 and 17)

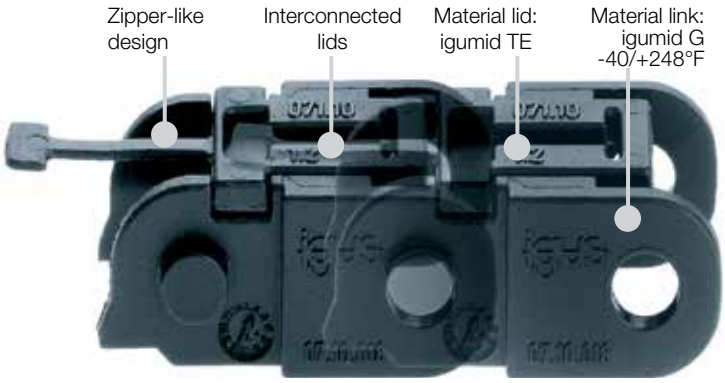


igus® e-chain® Series 15 Zipper in
automatic equipment - reduce assembly time



Series 15 with acceleration of 328 ft/s² (100 m/s²)
on pick-and-place robots, low noise

e-chain system® Zipper Selection Guide



Zipper e-chains®

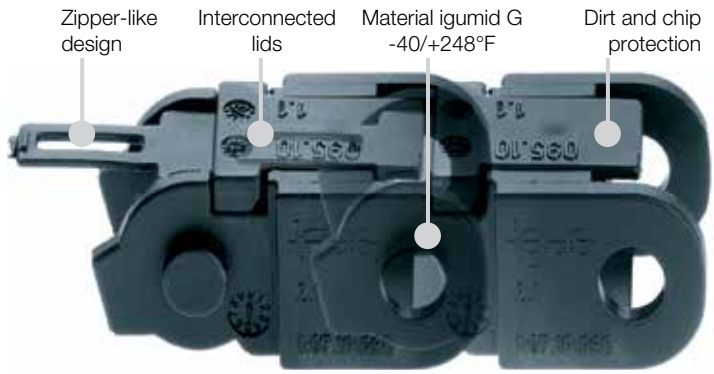
- Reduced assembly-time:
  Zipper-like design for quick opening and closing of lids
- Zipper lids can be separated and joined at each chain link
- Small pitch for low noise, smooth operation
- High acceleration: 328 ft/s² (100 m/s²) and more
- Interior separation possible for larger versions
- You can find more technical data about the material, chemical resistance, temperatures ➤ **Design, Chapter 1**

Series	Inner height *hi*		Inner width *Bi*		Outer width *Ba*		Outer height *ha*		Bending radius *R*	
	in.	(mm)	in.	(mm)	in.	(mm)	in.	(mm)	*in.*	(mm)
047	.35	(9.0)	.39- .63	(10 - 16)	.63- .87	(16.0 - 22.0)	.49	(12.5)	.71- 1.50	(018 - 038)
07	.41	(10.3)	.24- 2.52	(6 - 64)	.49- 2.80	(12.5 - 71.0)	.59	(15.0)	.71- 1.89	(018 -048*)
09	.59	(15.0)	.39- 1.97	(10 - 50)	.72- 2.29	(18.2 - 58.2)	.76	(19.3)	1.10- 1.89	(028 - 048)
15	.67	(17.0)	.59- 3.94	(15 - 100)	1.02- 4.45	(26.0 - 113.0)	.94	(24.0)	1.50- 7.09	(038 - 180)
17	1.26	(32.0)	.59- 3.94	(15 - 100)	1.02- 4.45	(26.0 - 113.0)	1.54	(39.0)	2.48- 4.92	(063 - 125)

*For the 07 series, the 1.89” (048mm) bend radius is only available for the 2.52” (64mm) inner width

For protection against dirt and debris

For information about this zipper series please refer to the tubes section of the catalog ➤ **tubes, Chapter 5**



Zipper e-tubes against chips and dirt

- Fully enclosed e-tube with zipper opening mechanism
- Protection against dirt and chips
- Superfast opening of interconnected lids
- Modular design - tool-free lengthening and shortening
- Small pitch for low noise, smooth operation, high acceleration
- You can find more technical data about the material, chemical resistance, temperatures ➤ **Design, Chapter 1**

Series	Inner height *hi*		Inner width *Bi*		Outer width *Ba*		Outer height *ha*		Bending radius *R*	
	in.	(mm)	in.	(mm)	in.	(mm)	in.	(mm)	*in.*	(mm)
R07	.41	(10.3)	.39 - 1.97	(10 - 50)	.65 - 2.24	(16.5 - 57.0)	.59	(15.0)	1.50 - 1.89	(038 - 048)
R09	.59	(15.0)	.39 - 1.97	(10 - 50)	.72 - 2.29	(18.2 - 58.2)	.76	(19.3)	1.89 - 3.94	(048 - 100)
R15	.67	(17.0)	.98 - 3.15	(25 - 80)	1.42 - 3.70	(36.0 - 94.0)	.94	(24.0)	2.48 - 7.09	(063 - 180)
R17	1.26	(32.0)	.59 - 2.48	(15 - 63)	1.02 - 2.91	(26.0 - 74.0)	1.54	(39.0)	2.48 - 4.92	(063 - 125)

Available from stock. Orders ship as early as today.*

*On average 90% of orders ship the same day..

e-chain system® Zipper
Assembly Instructions

Assembling | Zipper



Push and click



Snap lids together



Position and...



...push and snap

Separating | Zipper



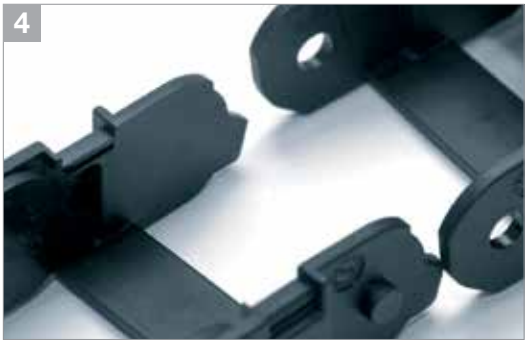
Zip - upward . All lids fit like a “Zipper”



Separate lids



Release side-link



Twist and pull apart

e-chain system® Zipper
Series 047

.35

Price Index

Series 047

Special Features / Options

Clean-Room — Upon request: Cleanroom Class 1 (ISO class 3) tested by the Dryden Engineering Company, CA

Flammability Class
VDE 0304 IIC UL94 HB

Low-noise

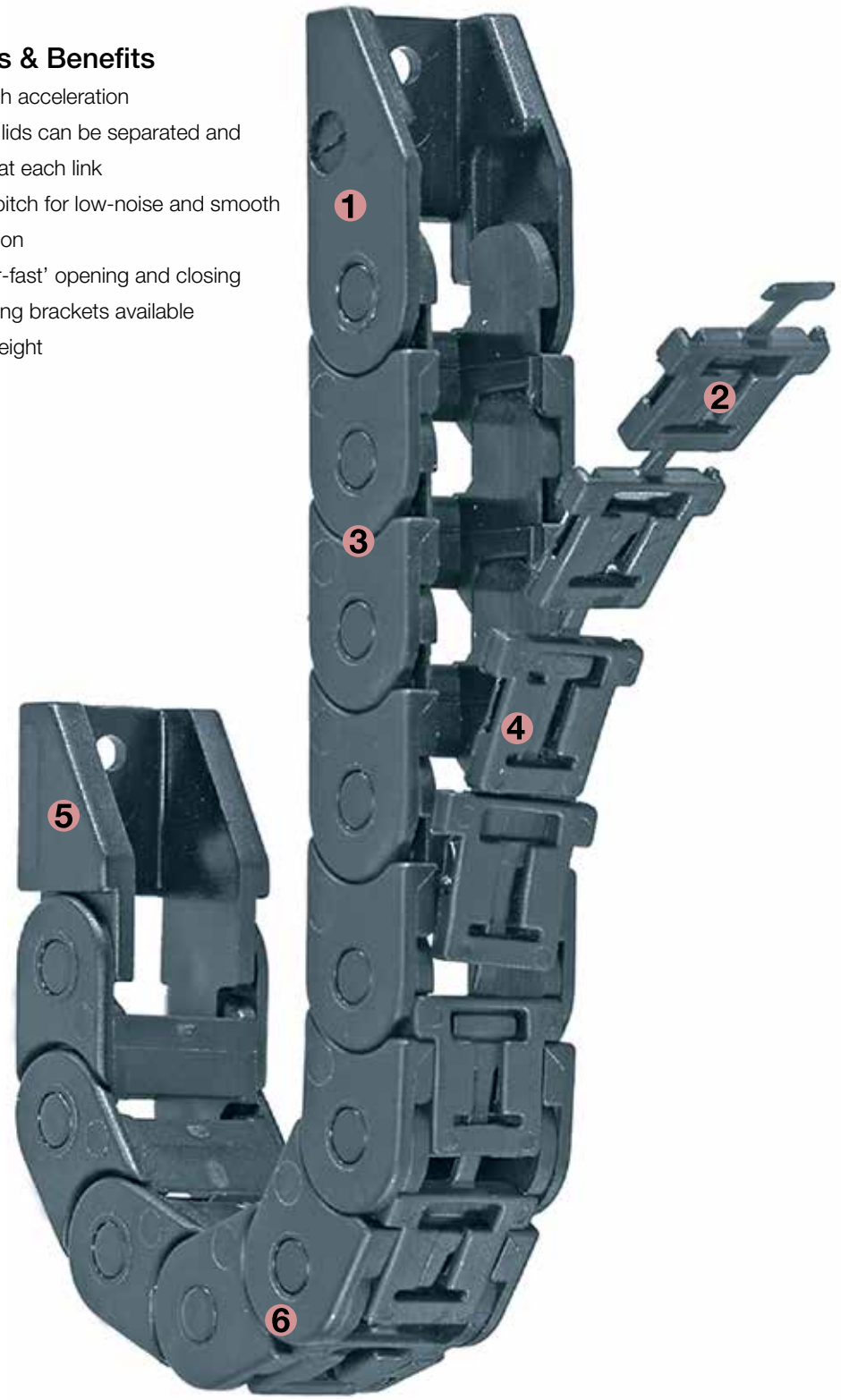
Assembly Tips



"Zipper-fast" opening and closing

Features & Benefits

1. For high acceleration
2. Zipper lids can be separated and joined at each link
3. Small pitch for low-noise and smooth operation
4. 'Zipper-fast' opening and closing
5. Mounting brackets available
6. Lightweight



Usage Guidelines

- If fast, zipper-like accessibility to cables is required
- If quiet operation is required
- If aesthetic design is required
- If excellent service life is required
- If cost is a factor

- If easy filling without opening and closing is required
  ➤ **Series E04 E-Z Chain**

Order Example: Complete e-chain®

Please indicate chain length or number of links. Example:

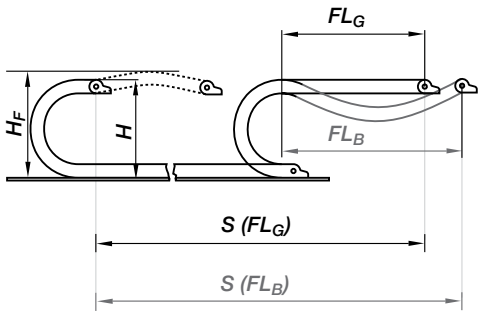
3.28 ft (1 m) **047-10-038-0**	e-chain®
1 Set **0450-10-12**	Mounting Bracket

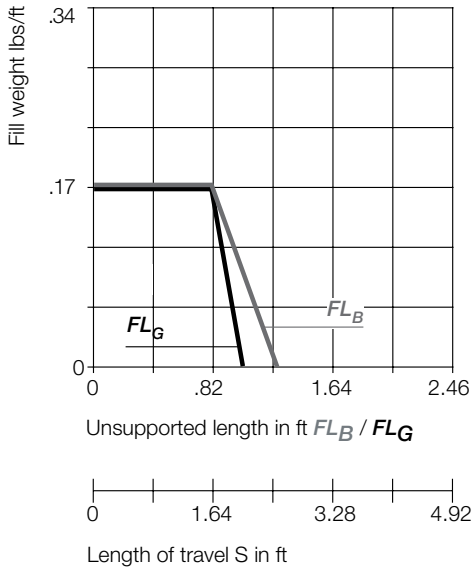
e-chain system® Zipper
Series 047
Installation Dimensions

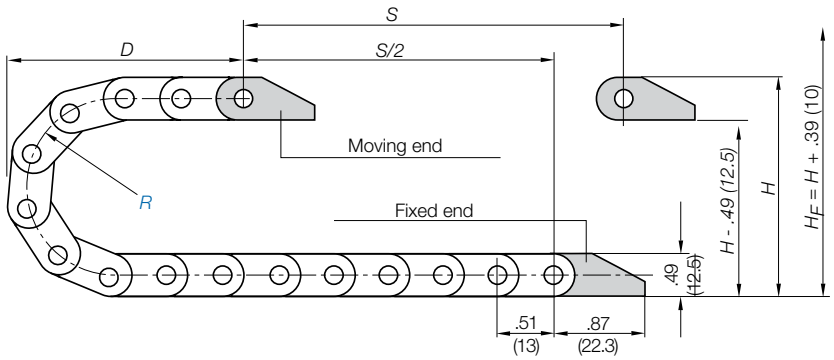
Short travel, unsupported length

- ● FL_B = unsupported with permitted sag
- ● FL_G = unsupported with straight upper run

Further information ➤ Design, Chapter 1







The required clearance height: $H_F = H$ + **.39 in. (10 mm)** (with .13 lbs/ft (0.2 kg/m) fill weight.
Please consult igus® if space is particularly restricted.

R	.71 (018)	1.10 (028)	1.50 (038)
H*	1.91 (48.5)	2.70 (68.5)	3.48 (88.5)
D	1.73 (44)	2.13 (54)	2.52 (64)
K	3.35 (85)	4.53 (115)	5.91 (150)

Pitch per link: = .51" (13 mm)
Links per ft (m): = 23.46 (77)
For center mount applications:
Chain length = $\frac{S}{2} + K$

Short Travels - Unsupported

Unsupported e-chains® feature positive camber over short travels. This must be accounted for when specifying the clearance height. Please refer to **Installation dimensions** for further details.

Legend

S = Length of travel
R = Bending radius
H = Nominal clearance height
D = Overlength e-chain® radius in final position
K = π • *R* + *safety buffer*
H_F = Required clearance height

Speed / acceleration FL_G	max. 65.6 ft/s (20 m/s) / max. 656 ft/s² (200 m/s²)
Speed / acceleration FL_B	max. 9.84 ft/s (3 m/s) / max. 19.69 ft/s² (6 m/s²)
Gliding speed / acceleration (maximum)	max. 32.8 ft/s (10 m/s) / max. 164 ft/s² (50 m/s²)
Material - permitted temperature	igumid G / -40°F (-40°C) up to +248°F (+120° C)
Flammability Class, igumid G	VDE 0304 IIC UL94 HB

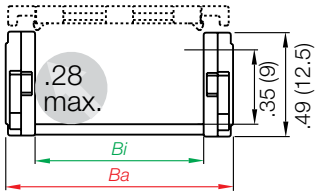
Technical Data

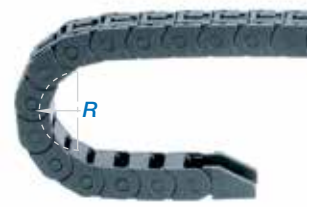
Details of material properties
➤ Chapter 1

PDF: igus.com/e-chain-pdfs
Product information: igus.com/e-chains

e-chain system® Zipper
Series 047

Series 047 - zip open along the outer radius

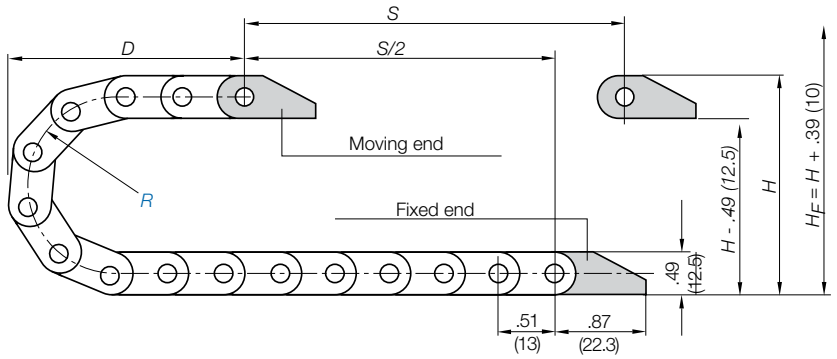




Part Number Structure

047-	10-	038-	0
Series	Width	Bending radius	Color - Black





Supplement part number with required radius. Example: 047-10-[038]-0
Pitch: .51 in. (13 mm) per link links/ft (m) = 23.46 (77)

Part Number			Bi in. (mm)	Ba in. (mm)	Weight lbs/ft (kg/m)
047-10-	☐	-0	.39 (10)	.63 (16)	≈ 0.067 (0.10)
047-16-	☐	-0	.63 (16)	.87 (22)	≈ 0.074 (0.11)

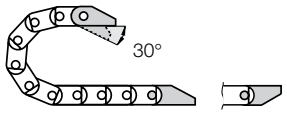
Choose from the radii below for all of the above sizes
Radius (mm) Example: 047-10-[038]-0

	018	028	038
R	.71 (018)	1.10 (028)	1.50 (038)
H*	1.91 (48.5)	2.70 (68.5)	3.48 (88.5)
D	1.73 (44)	2.13 (54)	2.52 (64)
K	3.35 (85)	4.53 (115)	5.91 (150)

e-chain system® Zipper
Series 047
Mounting Brackets

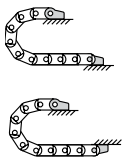
Plastic, one-piece

- One-piece mounting bracket
- Corrosion resistant
- Available preassembled





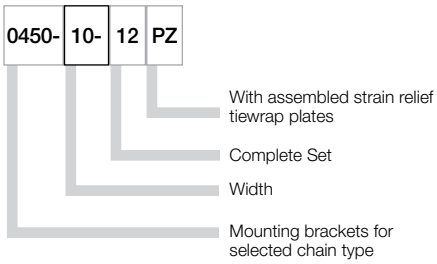


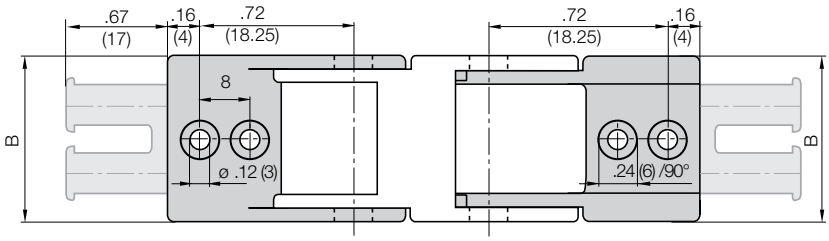


Fixed end
0450-2(PZ)

Possible installation configurations -

Part Number Structure





Full set, for both ends:
0450-10-12 Full set, **each part with pin/bore**
Single-part order:
0450-10-1 Mounting bracket **with bore**
0450-10-2 Mounting bracket **with pin**

Chain Type	Part No. Full set with Tiewrap Plate	Part No. Full Set without Tiewrap Plate	Dimensions B in.	(mm)	Number of Teeth
047-10	**0450-10-12PZ**	**0450-10-12**	.63	(16)	1
047-16	**0450-16-12PZ**	**0450-16-12**	.87	(22)	2

Additional Accessories



Quickfix - mounting bracket with dowel, upon request
Part No.
0450-16-12Q

PDF: igus.com/e-chain-pdfs
Product information: igus.com/e-chains

e-chain system® Zipper Series 07

.41

Price Index

Series 07

Special Features / Options

Clean-Room — Upon request: Cleanroom Class 1 (ISO class 3) tested by the Dryden Engineering Company, CA

Flammability Class VDE 0304 IIC UL94 HB

Low-noise

Assembly Tips



"Zipper-fast" opening and closing

Features & Benefits

1. Mounting bracket with integrated strain relief
2. Zipper lids can be separated and joined at each link
3. Small pitch for low-noise and smooth operation
4. 'Zipper-fast' opening and closing
5. For high acceleration
6. Lightweight



Usage Guidelines

- If fast, zipper-like accessibility to cables is required
- If quiet operation is required
- If aesthetic design is required
- If excellent service life is required

- If a more cost-effective, openable e-chain is required
  ➤ **Series B07 E2 Micro**
- If cable installation without opening lids is possible
  ➤ **Series E06 E-Z Chain**
- If a closed tube system is required
  ➤ **Series R07 E2 Zipper Tube**

Order Example: Complete e-chain®

Please indicate chain length or number of links. Example:

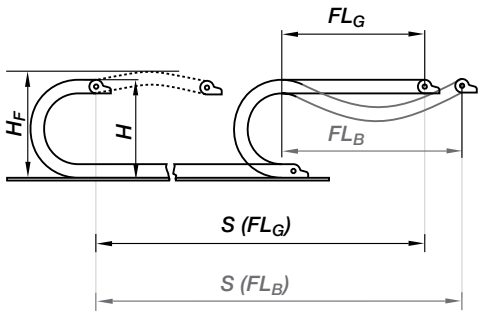
3.28 ft (1 m) **07-20-038-0**	e-chain®
1 Set **060-20-12PZ**	Mounting Bracket

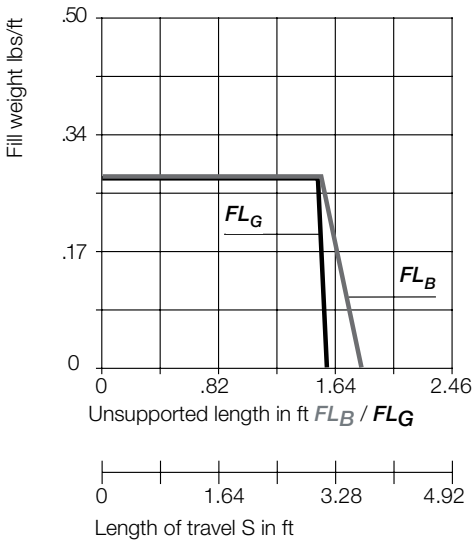
e-chain system® Zipper
Series 07
Installation Dimensions

Short travel, unsupported length

- FL_B = unsupported with permitted sag
- FL_G = unsupported with straight upper run

Further information ➤ Design, Chapter 1



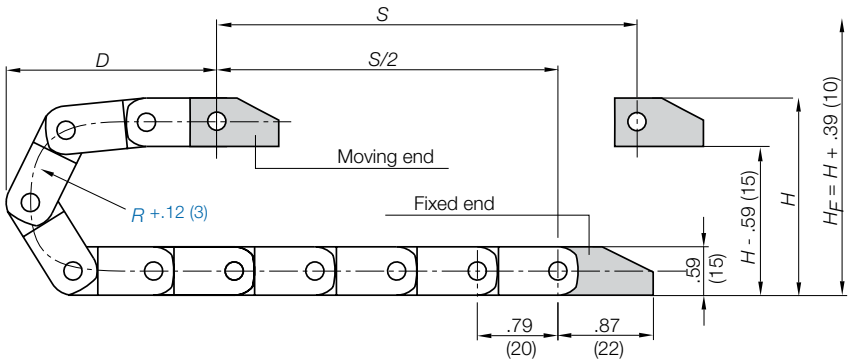


Short Travels - Unsupported

Unsupported e-chains® feature positive camber over short travels. This must be accounted for when specifying the clearance height. Please refer to **Installation dimensions** for further details.

Legend

S = Length of travel
R = Bending radius
H = Nominal clearance height
D = Overlength e-chain® radius in final position
K = π • *R* + *safety buffer*
H_F = Required clearance height



Pitch per link: = .79" (20 mm)
Links per ft (m): = 15.24 (50)
For center mount applications:
Chain length = $^{S}/_{2}$ + K

The required clearance height: ***HF = H + .39 in. (10 mm)*** (with .13 lbs/ft (0.2 kg/m) fill weight.
Please consult igus® if space is particularly restricted.

R	.71 (018)	1.10 (028)	1.50 (038)	1.89 (048*)
H*	2.01 (51)	2.80 (71)	3.58 (91)	4.37 (111)
D	2.20 (56)	2.60 (66)	2.99 (76)	3.39 (86)
K	3.94 (100)	5.12 (130)	6.30 (160)	7.68 (195)

*This bend radius is only available for the 2.52" (64mm) inner width

Speed / acceleration FL_G	max. 65.6 ft/s (20 m/s) / max. 656 ft/s² (200 m/s²)
Speed / acceleration FL_B	max. 9.84 ft/s (3 m/s) / max. 19.69 ft/s² (6 m/s²)
Gliding speed / acceleration (maximum)	max. 32.8 ft/s (10 m/s) / max. 164 ft/s² (50 m/s²)
Material - permitted temperature	igumid G / -40°F (-40°C) up to +248°F (+120° C)
Flammability Class, igumid G	VDE 0304 IIC UL94 HB

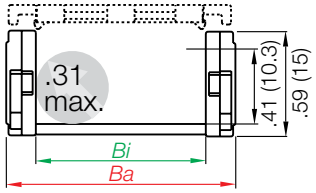
Technical Data

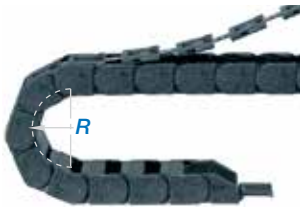
Details of material properties
➤ Chapter 1

PDF: igus.com/e-chain-pdfs
Product information: igus.com/e-chains

e-chain system® Zipper Series 07

Series 07 - zip open along the outer radius

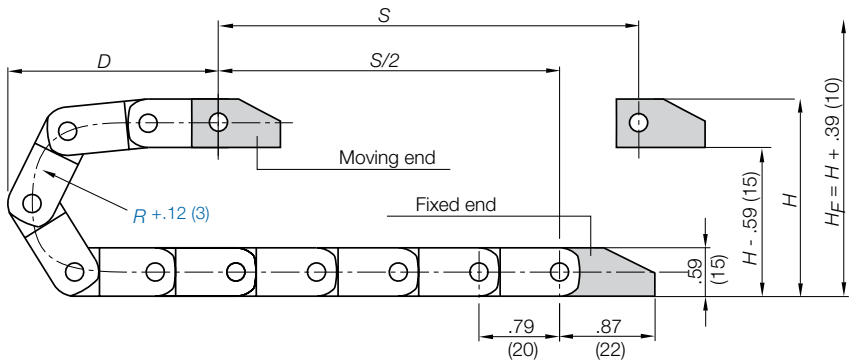




Part Number Structure

07-	20-	038-	0
Series	Width	Bending radius	Color - Black





Supplement part number with required radius. Example: 07-20-038-0
Pitch: .79 in. (20 mm) per link links/ft (m) = 15.24 (50)

Part Number			Bi in. (mm)	Ba in. (mm)	Weight lbs/ft (kg/m)
07-06-		-0	.24 (6)	.49 (12.5)	≈ 0.087 (0.13)
07-10-		-0	.39 (10)	.65 (16.5)	≈ 0.094 (0.14)
07-16-		-0	.63 (16)	.89 (22.5)	≈ 0.108 (0.16)
07-20-		-0	.79 (20)	1.06 (27.0)	≈ 0.114 (0.17)
07-30-		-0	1.18 (30)	1.46 (37.0)	≈ 0.134 (0.20)
07-40-		-0	1.57 (40)	1.85 (47.0)	≈ 0.155 (0.23)
07-50-		-0	1.97 (50)	2.24 (57.0)	≈ 0.175 (0.26)
07-64-		-0	2.52 (64)	2.80 (71.0)	≈ 0.202 (0.30)

Choose from the radii below for all of the above sizes
Radius (mm) Example: 07-20-038-0

	018	028	038	048*
R	.71 (018)	1.10 (028)	1.50 (038)	1.89 (048*)
H*	2.01 (51)	2.80 (71)	3.58 (91)	4.37 (111)
D	2.20 (56)	2.60 (66)	2.99 (76)	3.39 (86)
K	3.94 (100)	5.12 (130)	6.30 (160)	7.68 (195)

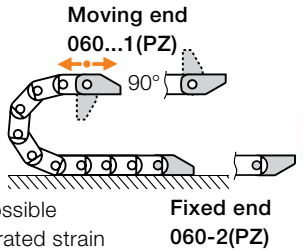
*This bend radius is only available for the 2.52" (64mm) inner width

igus® e-chain system®
Telephone 1-800-521-2747
Internet: igus.com
email: sales@igus.com
QuickSpec: igus.com/quickspec

e-chain system® Zipper
Series 07
Mounting Brackets

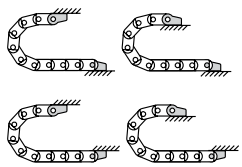
Plastic, one-piece

- One-piece mounting bracket
- Corrosion resistant
- Available preassembled
- Inner and outer attachment possible
- Available with or without integrated strain relief tiewrap plates



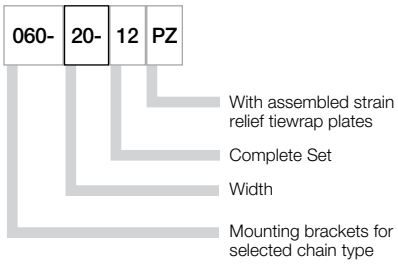


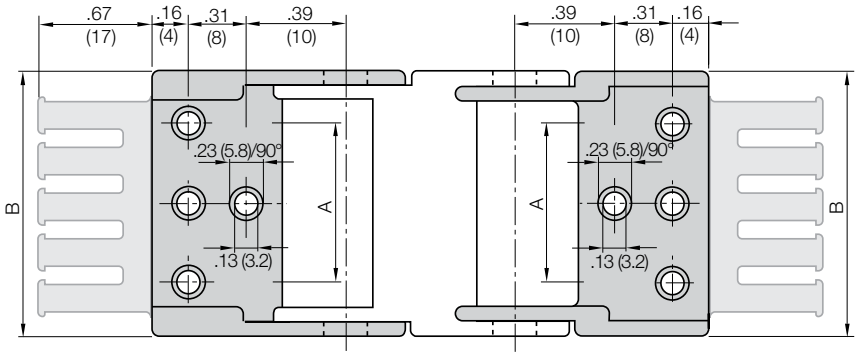




Possible installation configurations -

Part Number Structure





Full set, for both ends:
060- 20- 12 Full set, **each part with pin/bore**
Single-part order:
060- 20- 1 Mounting bracket **with bore**
060- 20- 2 Mounting bracket **with pin**

060-06-12 - 060-20-12:
Center bores only
060-30-12 – 060-64-12:
Outer bores only

Chain Type	Part No. Full set with Tiewrap Plate	Part No. Full Set without Tiewrap Plate	Dimension A in.	(mm)	Dimensions B in.	(mm)	Number of Teeth
07-06	**060-06-12PZ**	**060-06-12**	—	—	.49	(12.5)	1
07-10	**060-10-12PZ**	**060-10-12**	—	—	.65	(16.5)	1
07-16	**060-16-12PZ**	**060-16-12**	—	—	.89	(22.5)	2
07-20	**060-20-12PZ**	**060-20-12**	—	—	1.06	(27.0)	2
07-30	**060-30-12PZ**	**060-30-12**	.87	(22)	1.46	(37.0)	3
07-40	**060-40-12PZ**	**060-40-12**	1.26	(32)	1.85	(47.0)	4
07-50	**060-50-12PZ**	**060-50-12**	1.65	(42)	2.24	(57.0)	5
07-64	**060-64-12PZ**	**060-64-12**	2.20	(56)	2.80	(71.0)	6

Additional Accessories



Quicksnap - the complete, detachable mounting unit, upon request
Part No.
060-10-QS
060-16-QS
060-20-QS
060-40-QS



Quickfix - mounting bracket with dowel, upon request
Part No.
060-10-34QZ
060-20-34QZ

PDF: igus.com/e-chain-pdfs
Product information: igus.com/e-chains

e-chain system® E2 tubes
Series R07

.41

Price Index

Series R07

Special Features / Options

Upon request: Cleanroom Class 1 (ISO class 3) tested by the Dryden Engineering Company, CA

ESD classification: Electrically conductive ESD/ ATEX version upon request

Flammability Class VDE 0304 IIC UL94 HB

Low-noise

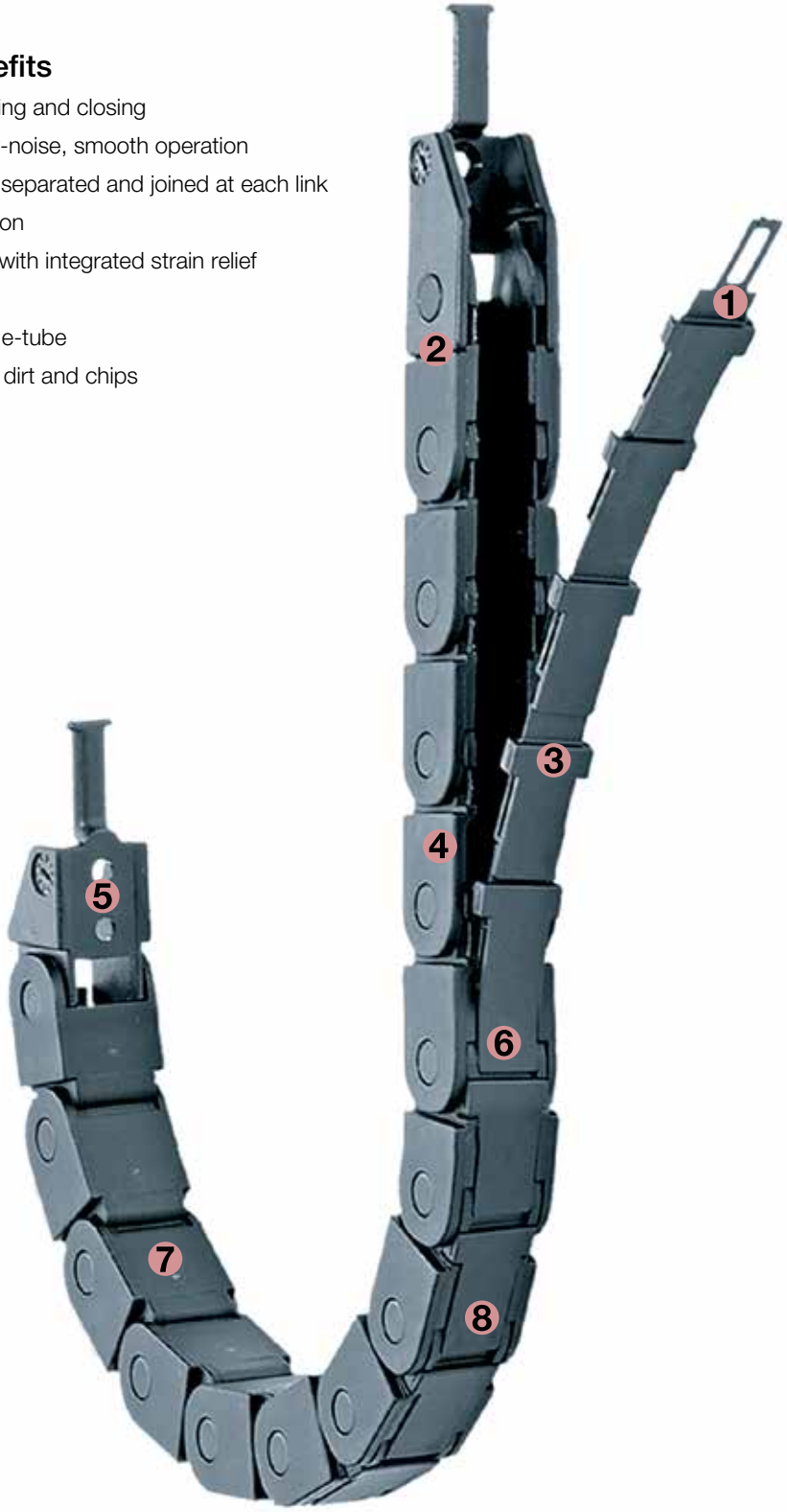
Assembly Tips



"Zipper" fast opening and closing

Features & Benefits

1. "Zipper" fast opening and closing
2. Small pitch for low-noise, smooth operation
3. Zipper lids can be separated and joined at each link
4. For high acceleration
5. Mounting bracket with integrated strain relief
6. Lightweight
7. Smallest zip-open e-tube
8. Protection against dirt and chips



Usage Guidelines

- If fast installation using zipper lids is required
- If protection against dust and dirt is required
- If quick insertion o f cables with preassembled connectors is required

- If opening of the link is not necessary
  ➤ **Series 06 E2 Micro**
- If cable installation without opening lids is possible
  ➤ **Series E06 E-Z Chain**

Order Example: Complete e-chain®

Please indicate chain length or number of links. Example:

3.28 ft (1 m) **R07-20-038-0**	**e-chain®**
1 Set **060-20-12PZ**	**Mounting Bracket**

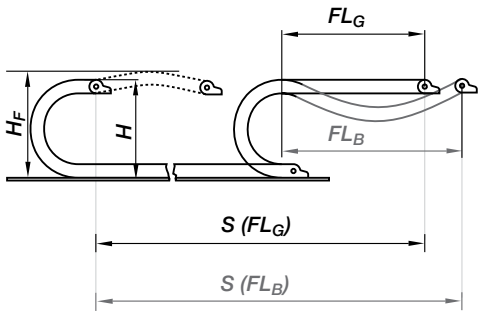
e-chain system® E2 tubes
Series R07
Installation Dimensions

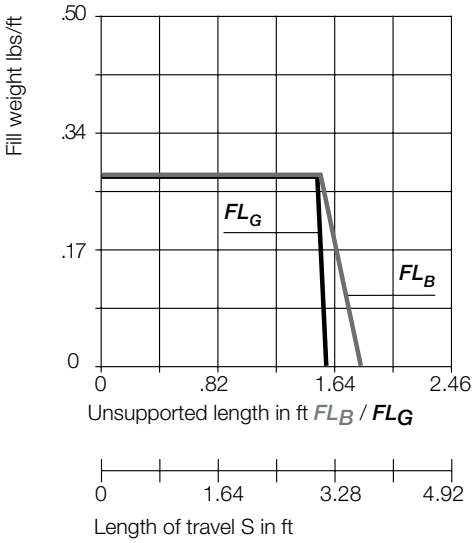
Short travel, unsupported length

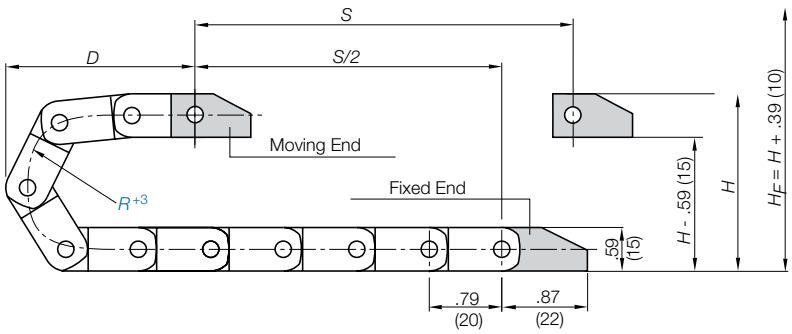
● FL_B = unsupported with permitted sag

● FL_G = unsupported with straight upper run

Further information ➤ Design, Chapter 1







The required clearance height: ***HF = H + .39 in. (10 mm)*** (with .13 lbs/ft (0.2 kg/m) fill weight. Please consult igus® if space is particularly restricted.

R	1.50 (038)	1.89 (048)
H	3.58 (91)	4.37 (111)
D	2.99 (76)	3.39 (86)
K	6.30 (160)	7.68 (195)

Short Travels - Unsupported

Unsupported e-chains® feature positive camber over short travels. This must be accounted for when specifying the clearance height. Please refer to **Installation dimensions** for further details.

Legend

S = Length of travel
R = Bending radius
H = Nominal clearance height
D = Overlength e-chain® radius in final position
K = π • *R* + *Safety buffer*
HF = Required clearance height

Pitch per link: = .79" (20 mm)
Links per ft (m): = 15.24 (50)
For center mount applications:
Chain length = $\pm S/2 + K$

Speed / acceleration FL_G	max. 65.6 ft/s (20 m/s) / max. 656 ft/s² (200 m/s²)
Speed / acceleration FL_B	max. 9.84 ft/s (3 m/s) / max. 19.69 ft/s² (6 m/s²)
Gliding speed / acceleration (maximum)	max. 9.84 ft/s (3 m/s) / max. 32.8 ft/s² (10 m/s²)
Material - permitted temperature	igumid G / -40°F (-40°C) up to +248°F (+120° C)
Flammability Class, igumid G	VDE 0304 IIC UL94 HB

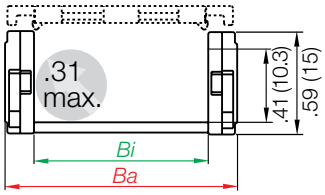
Technical Data

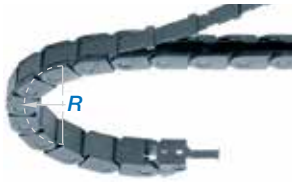
Details of material properties
➤ Chapter 1

PDF: igus.com/e-chain-pdfs
Product information: igus.com/e-chains

e-chain system® E2 tubes
Series R07

Series R07 - e-tube zip open along the outer radius



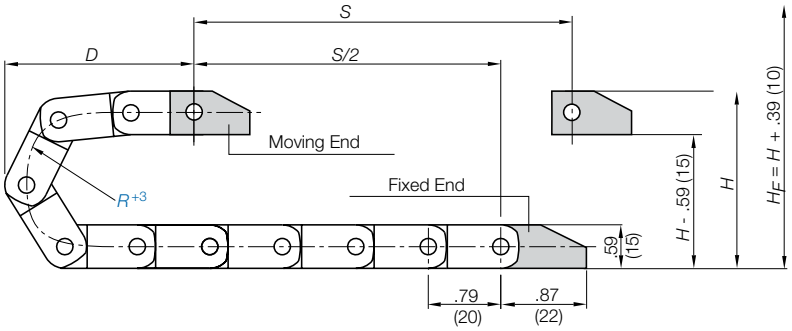


Part Number Structure

R07-	20-	038-	0

- 0 — Color - Black
- 038 — Bending radius
- 20 — Width
- R07 — Series





Supplement part number with required radius. Example: R07-20-[038]-0
Pitch: .79 in. (20 mm) per link links/ft (m) = 15.24 (50)

Part Number			Bi in. (mm)	Ba in. (mm)	Weight lbs/ft (kg/m)
R07-10-	☐	-0	.39 (10)	.65 (16.5)	≈ 0.094 (0.14)
R07-16-	☐	-0	.63 (16)	.89 (22.5)	≈ 0.108 (0.16)
R07-20-	☐	-0	.79 (20)	1.06 (27.0)	≈ 0.114 (0.17)
R07-30-	☐	-0	1.18 (30)	1.46 (37.0)	≈ 0.134 (0.20)
R07-40-	☐	-0	1.57 (40)	1.85 (47.0)	≈ 0.155 (0.23)
R07-50-	☐	-0	1.97 (50)	2.24 (57.0)	≈ 0.175 (0.26)

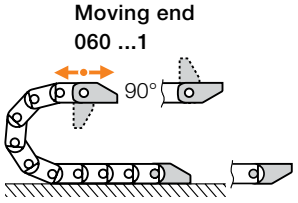
Choose from the radii below for all of the above sizes
Radius (mm) Example: R07-20-[038]-0

	038	048
R	1.50 (038)	1.89 (048)
H	3.58 (91)	4.37 (111)
D	2.99 (76)	3.39 (86)
K	6.30 (160)	7.68 (195)

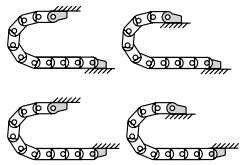
e-chain system® E2 tubes
Series R07
Mounting Brackets - Plastic

Plastic, one-piece

- One-piece mounting bracket
- Corrosion resistant
- Available preassembled
- Inner and outer attachment possible
- Available with or without strain relief tiewrap plates





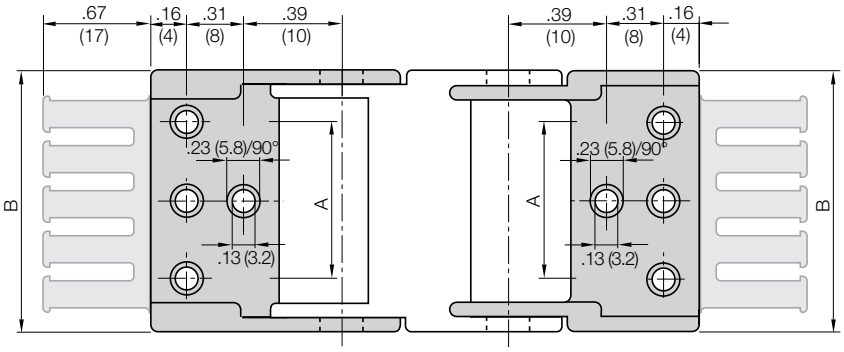


Possible installation configurations -

Part Number Structure

060- | 10- | 12 | PZ

- PZ: Mounting brackets for selected chain type
- 10-: Width
- 12: Complete Set
- PZ: With assembled strain relief tiewrap plates



Full set, for both ends:
060- 10- 12 Full set, **each part with pin/bore**
Single-part order:
060- 10- 1 Mounting bracket **with bore**
060- 10- 2 Mounting bracket **with pin**

060-10-12 - 060-20-12:
Center bores only
060-30-12 – 060-50-12:
Outer bores only

Chain Type	Part No. Full set with Tiewrap Plate	Part No. Full Set without Tiewrap Plate	Dimension A in.	(mm)	Dimensions B in.	(mm)	Number of Teeth
R07-10	**060-10-12PZ**	**060-10-12**	—	—	.65	(16.5)	1
R07-16	**060-16-12PZ**	**060-16-12**	—	—	.89	(22.5)	2
R07-20	**060-20-12PZ**	**060-20-12**	—	—	1.06	(27.0)	2
R07-30	**060-30-12PZ**	**060-30-12**	.87	(22)	1.46	(37.0)	3
R07-40	**060-40-12PZ**	**060-40-12**	1.26	(32)	1.85	(47.0)	4
R07-50	**060-50-12PZ**	**060-50-12**	1.65	(42)	2.24	(57.0)	5

Additional Accessories



Quicksnap - the complete, detachable mounting unit, upon request
Part No.
060-10-QS
060-16-QS
060-20-QS
060-40-QS



Quickfix - mounting bracket with dowel, upon request
Part No.
060-10-34QZ
060-20-34QZ

PDF: igus.com/e-chain-pdfs
Product information: igus.com/e-chains

e-chain system® Zipper Series 09

.59

Price Index

Series 09

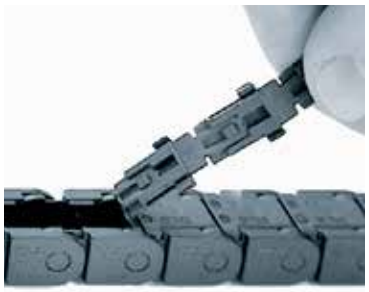
Special Features / Options

Clean-Room — Upon request: Cleanroom Class 1 (ISO class 3) tested by the Dryden Engineering Company, CA

Flammability Class VDE 0304 IIC UL94 HB

Low-noise

Assembly Tips



"Zipper-fast" opening and closing

Features & Benefits

1. Zipper lids can be separated and joined at each link
2. Small pitch for low-noise and smooth operation
3. 'Zipper-fast' opening and closing
4. For high acceleration
5. Mounting bracket with integrated strain relief
6. Lightweight



Usage Guidelines

- If fast, zipper-like accessibility to cables is required
- If quick, easy insertion of cables with preassembled connectors is required
- If quiet operation is required
- If aesthetic design is required
- If high acceleration and travel speed is present

- If a more cost-effective, openable e-chain is required
  ➤ **Series B09 E2 Micro**
- If cable installation without opening lids is possible
  ➤ **Series E08 E-Z Chain**
- If a closed tube system is required
  ➤ **Series R09 E2 Zipper Tube**

Order Example: Complete e-chain®

Please indicate chain length or number of links. Example:

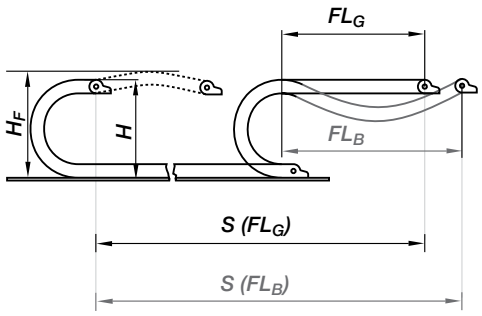
3.28 ft (1 m) **09-20-038-0**	**e-chain®**
1 Set **080-20-12PZ**	**Mounting Bracket**

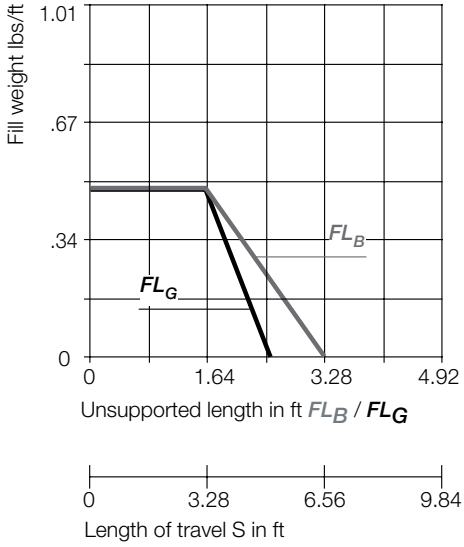
e-chain system® Zipper
Series 09
Installation Dimensions

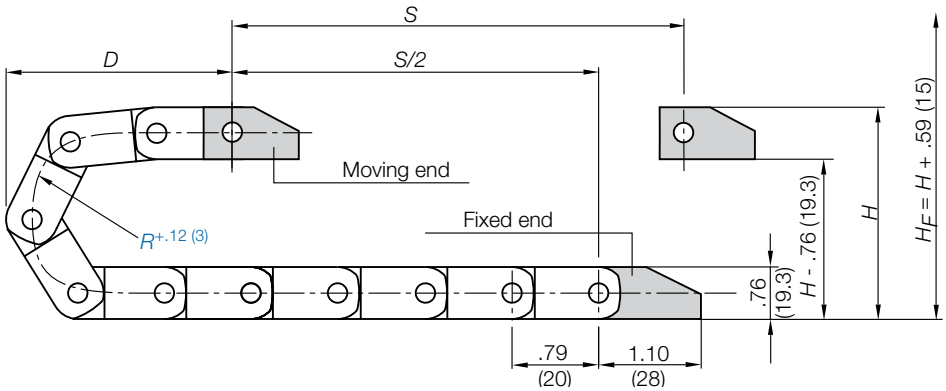
Short travel, unsupported length

- FL_B = unsupported with permitted sag
- FL_G = unsupported with straight upper run

Further information ➤ Design, Chapter 1







The required clearance height: $H_F = H + .59$ **in. (15 mm)** (with .20 lbs/ft (0.3 kg/m) fill weight.
Please consult igus® if space is particularly restricted.

R	1.10 (028)	1.50 (038)	1.89 (048)
H*	2.95 (75)	3.74 (95)	4.53 (115)
D	2.68 (68)	3.07 (78)	3.46 (88)
K	5.12 (130)	6.30 (160)	7.68 (195)

Short Travels - Unsupported

Unsupported e-chains® feature positive camber over short travels. This must be accounted for when specifying the clearance height. Please refer to **Installation dimensions** for further details.

Legend

S = Length of travel
R = Bending radius
H = Nominal clearance height
D = Overlength e-chain® radius in final position
$K = \pi \bullet R +$ *safety buffer*
H_F = Required clearance height

Pitch per link: = .79" (20 mm)
Links per ft (m): = 15.24 (50)
For center mount applications:
Chain length = $S/2 + K$

Speed / acceleration FL_G	max. 65.6 ft/s (20 m/s) / max. 656 ft/s² (200 m/s²)
Speed / acceleration FL_B	max. 9.84 ft/s (3 m/s) / max. 19.69 ft/s² (6 m/s²)
Gliding speed / acceleration (maximum)	max. 32.8 ft/s (10 m/s) / max. 164 ft/s² (50 m/s²)
Material - permitted temperature	igumid G / -40°F (-40°C) up to +248°F (+120° C)
Flammability Class, igumid G	VDE 0304 IIC UL94 HB

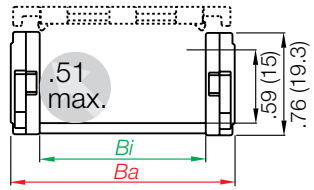
Technical Data

Details of material properties
➤ Chapter 1

PDF: igus.com/e-chain-pdfs
Product information: igus.com/e-chains

e-chain system® Zipper Series 09

Series 09 - zip open along the outer radius



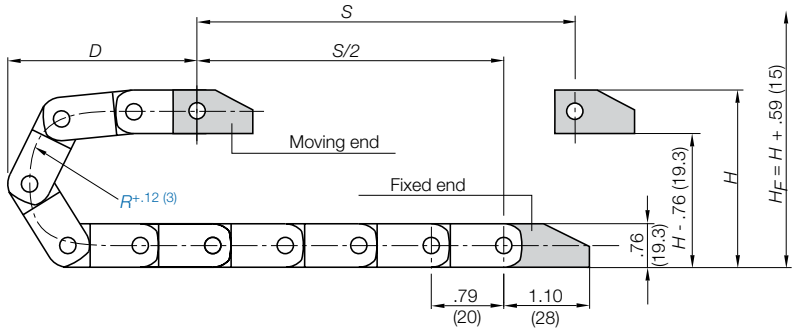




Part Number Structure

09-	20-	038-	0

Color - Black
Bending radius
Width
Series



Supplement part number with required radius. Example: 09-20-038-0
Pitch: .79 in. (20 mm) per link links/ft (m) = 15.24 (50)

Part Number		Bi in. (mm)	Ba in. (mm)	Weight lbs/ft (kg/m)
09-10-	□ -0	.39 (10)	.72 (18.2)	≈ 0.141 (0.21)
09-16-	□ -0	.63 (16)	.95 (24.2)	≈ 0.161 (0.24)
09-20-	□ -0	.79 (20)	1.11 (28.2)	≈ 0.168 (0.25)
09-30-	□ -0	1.18 (30)	1.50 (38.2)	≈ 0.188 (0.28)
09-40-	□ -0	1.57 (40)	1.90 (48.2)	≈ 0.208 (0.31)
09-50-	□ -0	1.97 (50)	2.29 (58.2)	≈ 0.228 (0.34)

Choose from the radii below for all of the above sizes
Radius (mm) Example: 09-20-038-0

	028	038	048
R	1.10 (028)	1.50 (038)	1.89 (048)
H*	2.95 (75)	3.74 (95)	4.53 (115)
D	2.68 (68)	3.07 (78)	3.46 (88)
K	5.12 (130)	6.30 (160)	7.68 (195)

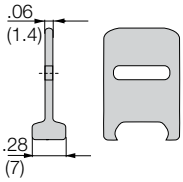
Additional Accessories



Quicksnap - the complete, detachable mounting unit, upon request
Part No.
080-20-QS
080-30-QS

Interior Separation



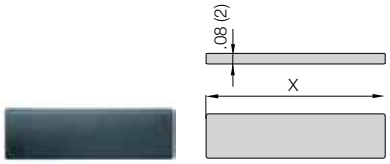


Slotted separator

Unassembled	**Part No. B09-2**
Assembled	**Part No. B09-2-1**

- **Separator B09-2**
  is used when vertical separation is required. Due to its slot, it allows basic vertical/horizontal shelving arrangements.

Full-width shelves - for the standard interior separation



Full width shelf

Unassembled	**Part No. 110-X**
Assembled	**Part No. 111-X**

- **Full width shelf**
  is used in applications with many thin cables with similar diameters.

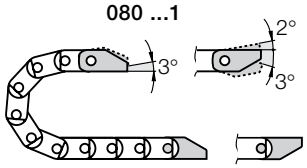
Width X in.	(mm)	Part No. Unassembled	Part No. Assembled	Width X in.	(mm)	Part No. Unassembled	Part No. Assembled	Width X in.	(mm)	Part No. Unassembled	Part No. Assembled
0.63	(16)	**110-16**	**111-16**	1.18	(30)	**110-30**	**111-30**	1.97	(50)	**110-50**	**111-50**
0.79	(20)	**110-20**	**111-20**	1.57	(40)	**110-40**	**111-40**				

Mounting Brackets - Plastic

Plastic, pivoting

- One-piece mounting bracket
- Corrosion resistant
- Available preassembled
- Inner and outer attachment possible
- Available with or without strain relief tiewrap plates

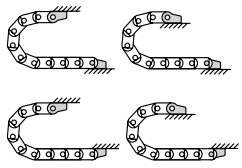
Moving end
080 ...1



Fixed end
080...2

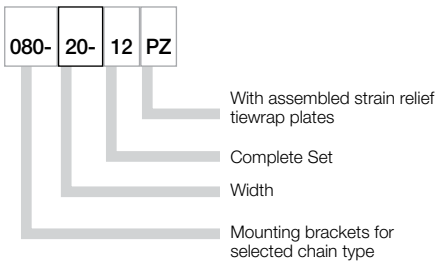


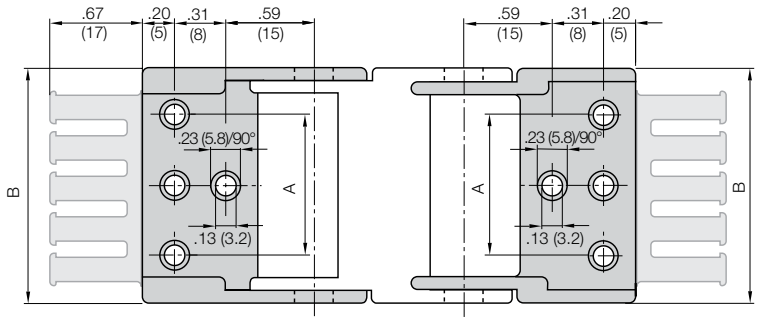




Possible installation configurations -

Part Number Structure





Full set, for both ends:
080- 20- 12 Full set, **each part with pin/bore**
Single-part order:
080- 20- 1 Mounting bracket **with bore**
080- 20- 2 Mounting bracket **with pin**

080-10-12 - 080-20-12:
Center bores only
080-30-12 – 080-50-12:
Outer bores only

Chain Type	Part No. Full set with Tiewrap Plate	Part No. Full Set without Tiewrap Plate	Dimension A in.	(mm)	Dimensions B in.	(mm)	Number of Teeth
09-10	**080-10-12PZ**	**080-10-12**	—	—	.72	(18.2)	1
09-16	**080-16-12PZ**	**080-16-12**	—	—	.95	(24.2)	2
09-20	**080-20-12PZ**	**080-20-12**	—	—	1.11	(28.2)	2
09-30	**080-30-12PZ**	**080-30-12**	.87	(22)	1.50	(38.2)	3
09-40	**080-40-12PZ**	**080-40-12**	1.26	(32)	1.90	(48.2)	4
09-50	**080-50-12PZ**	**080-50-12**	1.65	(42)	2.29	(58.2)	5

PDF: igus.com/e-chain-pdfs
Product information: igus.com/e-chains

e-chain system® E2 tubes
Series R09

.59

Price Index

Series R09

Special Features / Options

Upon request: Cleanroom Class 1 (ISO class 3) tested by the Dryden Engineering Company, CA

iF-Design Award Winner

Flammability Class
VDE 0304 IIC UL94 HB

Low-noise

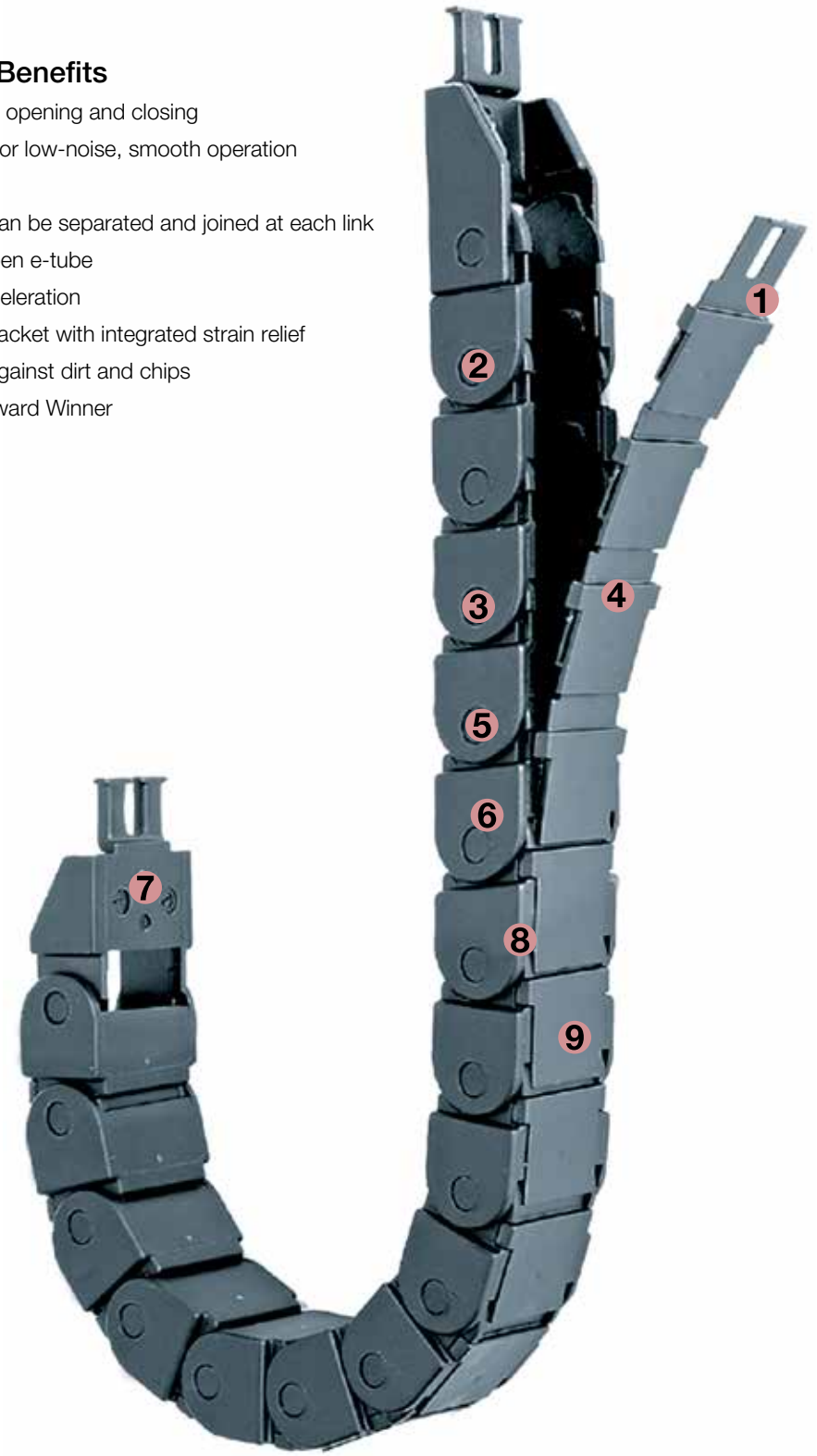
Assembly Tips



"Zipper" fast opening and closing

Features & Benefits

1. "Zipper" fast opening and closing
2. Small pitch for low-noise, smooth operation
3. Lightweight
4. Zipper lids can be separated and joined at each link
5. Small zip-open e-tube
6. For high acceleration
7. Mounting bracket with integrated strain relief
8. Protection against dirt and chips
9. iF-Design Award Winner



Usage Guidelines

- If fast installation using zipper lids is required
- If protection against dust and dirt is required
- If quick insertion of cables with preassembled connectors is required

- If opening of the link is not necessary
  ➤ **Series 08 E2 Micro**
- If cable installation without opening lids is necessary
  ➤ **Series E08 E-Z Chain**

Order Example: Complete e-chain®

Please indicate chain length or number of links. Example:

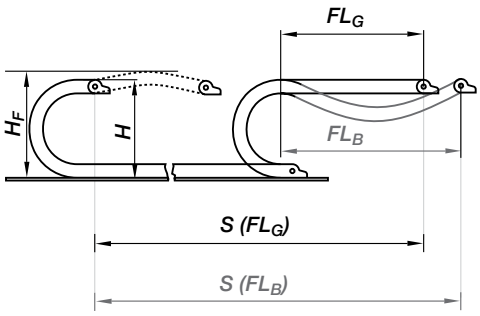
3.28 ft (1 m) **R09-20-048-0**	**e-chain®**
1 Set **080-20-12PZ**	**Mounting Bracket**

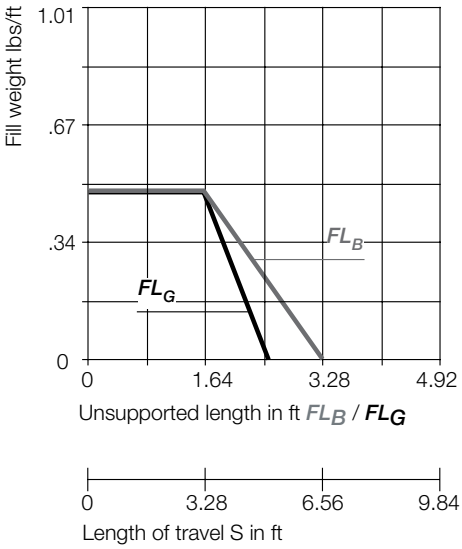
e-chain system® E2 tubes
Series R09
Installation Dimensions

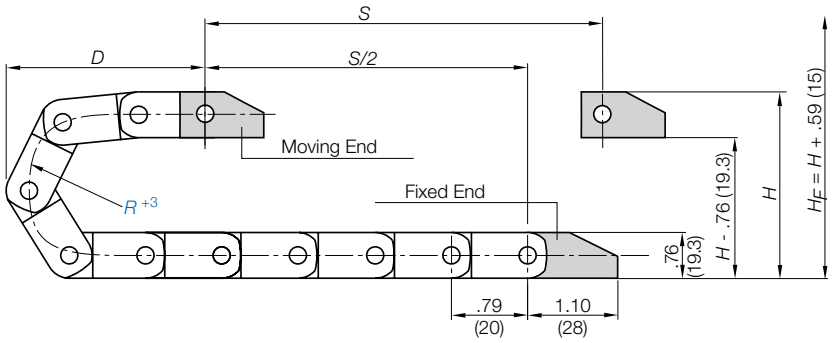
Short travel, unsupported length

- FL_B = unsupported with permitted sag
- FL_G = unsupported with straight upper run

Further information ➤ Design, Chapter 1







The required clearance height: ***HF = H + .59 in. (15 mm)*** (with .20 lbs/ft (0.3 kg/m) fill weight.
Please consult igus® if space is particularly restricted.

R	1.89 (048)	2.95 (075)	3.94 (100)
H	4.53 (115)	6.65 (169)	8.62 (219)
D	3.46 (88)	4.53 (115)	5.51 (140)
K	7.68 (195)	11.02 (280)	13.98 (355)

Short Travels - Unsupported

Unsupported e-chains® feature positive camber over short travels. This must be accounted for when specifying the clearance height. Please refer to **Installation dimensions** for further details.

Legend

S = Length of travel
R = Bending radius
H = Nominal clearance height
D = Overlength e-chain® radius in final position
K = π • *R* + *Safety buffer*
H_F = Required clearance height

Pitch per link: = .79" (20 mm)
Links per ft (m): = 15.24 (50)
For center mount applications:
Chain length = $^{S}/_{2}$ + K

Speed / acceleration FL_G	max. 65.6 ft/s (20 m/s) / max. 656 ft/s² (200 m/s²)
Speed / acceleration FL_B	max. 9.84 ft/s (3 m/s) / max. 19.69 ft/s² (6 m/s²)
Gliding speed / acceleration (maximum)	max. 32.8 ft/s (10 m/s) / max. 164 ft/s² (50 m/s²)
Material - permitted temperature	igumid G / -40°F (-40°C) up to +248°F (+120° C)
Flammability Class, igumid G	VDE 0304 IIC UL94 HB

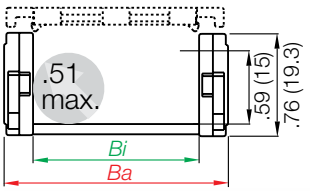
Technical Data

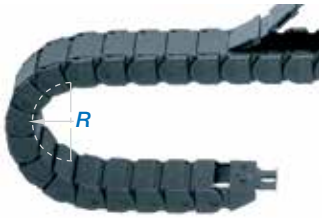
Details of material properties
➤ Chapter 1

PDF: igus.com/e-chain-pdfs
Product information: igus.com/e-chains

e-chain system® E2 tubes
Series R09

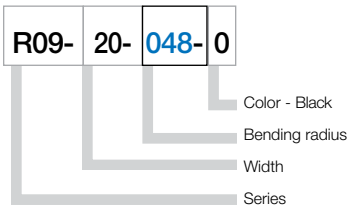
Series R09 - e-tube zip open along the outer radius

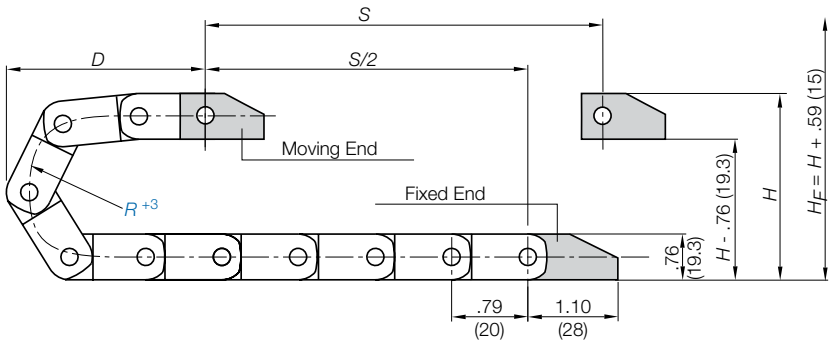






Part Number Structure





Supplement part number with required radius. Example: R09-20-[048]-0
Pitch: .79 in. (20 mm) per link links/ft (m) = 15.24 (50)

Part Number			Bi in. (mm)	Ba in. (mm)	Weight lbs/ft (kg/m)
R09-10-	☐	-0	.39 (10)	.72 (18.2)	≈0.155 (0.23)
R09-16-	☐	-0	.63 (16)	.95 (24.2)	≈0.175 (0.26)
R09-20-	☐	-0	.79 (20)	1.11 (28.2)	≈0.181 (0.27)
R09-30-	☐	-0	1.18 (30)	1.50 (38.2)	≈0.202 (0.30)
R09-40-	☐	-0	1.57 (40)	1.90 (48.2)	≈0.222 (0.33)
R09-50-	☐	-0	1.97 (50)	2.29 (58.2)	≈0.242 (0.36)

Choose from the radii below for all of the above sizes
Radius (mm) Example: R09-20-[038]-0

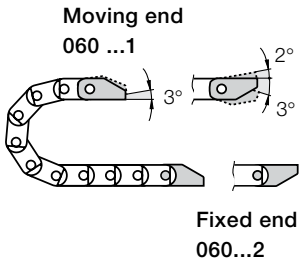
	048	075	100
R	1.89 (048)	2.95 (075)	3.94 (100)
H	4.53 (115)	6.65 (169)	8.62 (219)
D	3.46 (88)	4.53 (115)	5.51 (140)
K	7.68 (195)	11.02 (280)	13.98 (355)

e-chain system® E2 tubes
Series R09
Interior Separation / Mounting Brackets - Plastic

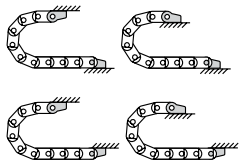
Mounting Brackets - Plastic

Plastic, one-piece

- One-piece mounting bracket
- Corrosion resistant
- Available preassembled
- Inner and outer attachment possible
- Available with or without strain relief tiewrap plates

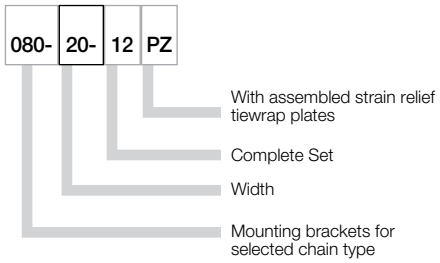


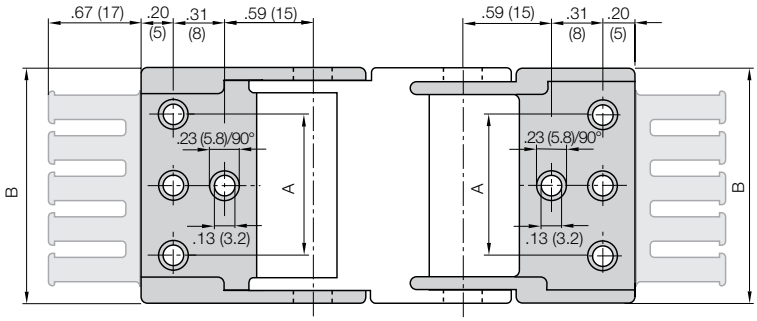




Possible installation configurations -

Part Number Structure





Full set, for both ends:
080- 20- 12 Full set, **each part with pin/bore**
Single-part order:
080- 20- 1 Mounting bracket **with bore**
080- 20- 2 Mounting bracket **with pin**

080-10-12 - 080-20-12:
Center bores only
080-30-12 – 080-50-12:
Outer bores only

Chain Type	Part No. Full set with Tiewrap Plate	Part No. Full Set without Tiewrap Plate	Dimension A in.	(mm)	Dimensions B in.	(mm)	Number of Teeth
R09-10	**080-10-12PZ**	**080-10-12**	—	—	.72	(18.2)	1
R09-16	**080-16-12PZ**	**080-16-12**	—	—	.95	(24.2)	2
R09-20	**080-20-12PZ**	**080-20-12**	—	—	1.11	(28.2)	2
R09-30	**080-30-12PZ**	**080-30-12**	.87	(22)	1.50	(38.2)	3
R09-40	**080-40-12PZ**	**080-40-12**	1.26	(32)	1.90	(48.2)	4
R09-50	**080-50-12PZ**	**080-50-12**	1.65	(42)	2.29	(58.2)	5

Additional Accessories



Quicksnap - the complete, detachable mounting unit, upon request
Part No.
080-20-QS
080-30-QS

PDF: igus.com/e-chain-pdfs
Product information: igus.com/e-chains

e-chain system® Zipper Series 15

.66

Price Index

Series 15

Special Features / Options

Clean-Room — Upon request: Cleanroom Class 1 (ISO class 3) tested by the Dryden Engineering Company, CA

Flammability Class VDE 0304 IIC UL94 HB

Low-noise

Assembly Tips



"Zipper-fast" opening and closing

Features & Benefits

1. Large pins and double stop dog for superior life and long unsupported length
2. 'Zipper-fast' opening and closing
3. Small pitch for low-noise, smooth
4. operation
   Zipper lids can be separated and joined at
5. each link
   Mounting bracket with integrated strain
6. relief
   For high acceleration



Usage Guidelines

- If fast, zipper-like accessibility to cables is required
- If interior separation is required
- If high stability and long service life are required

- If opening of the link is not necessary
  ➤ **Series 10 E2 Mini**
- If torsion occurs
  ➤ **Series E14 E-Z Chain**
- If the chain must snap-open along the inner radius
  ➤ **Series B15i E2 Mini**

Order Example: Complete e-chain®

Please indicate chain length or number of links. Example:

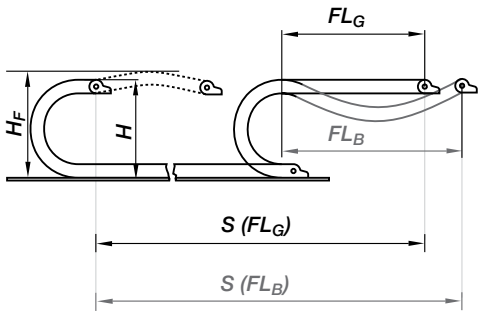
3.28 ft (1 m) **15-025-038-0**	**e-chain®**
With 2 separators **154** assembled every 2nd link	**Interior Separation**
1 Set **1025-12PZ**	**Mounting Bracket**

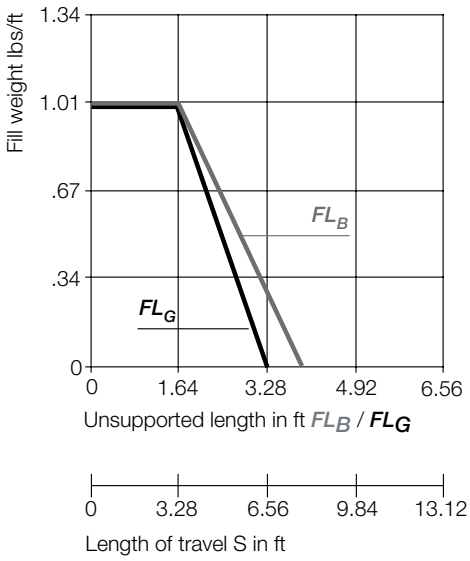
e-chain system® Zipper Series 15
Installation Dimensions

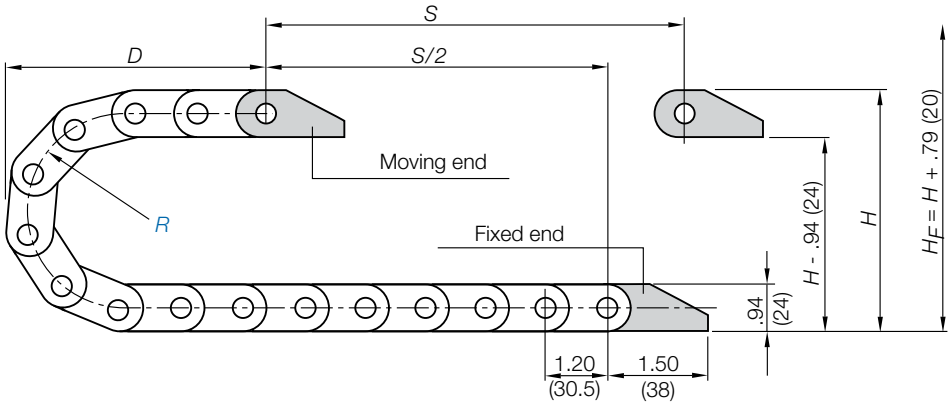
Short travel, unsupported length

- FL_B = unsupported with permitted sag
- FL_G = unsupported with straight upper run

Further information ➤ Design, Chapter 1







The required clearance height: H_F = **H + .79 in. (20 mm)** (with .67 lbs/ft (1.0 kg/m) fill weight.
Please consult igus® if space is particularly restricted.

R	1.50 (038)	1.89 (048)	2.95 (075)	3.94 (100)	4.33 (110)	4.92 (125)	5.71 (145)	7.09 (180)
H	3.90 (99)	4.69 (119)	6.81 (173)	8.78 (223)	9.57 (243)	10.75 (273)	12.32 (313)	15.08 (383)
D	3.74 (95)	4.13 (105)	5.20 (132)	6.18 (157)	6.57 (167)	7.17 (182)	7.95 (202)	9.33 (237)
K	7.28 (185)	8.46 (215)	11.81 (300)	14.96 (380)	16.14 (410)	17.91 (455)	20.47 (520)	24.80 (630)

Short Travels - Unsupported

Unsupported e-chains® feature positive camber over short travels. This must be accounted for when specifying the clearance height. Please refer to **Installation dimensions** for further details.

Legend

S = Length of travel
R = Bending radius
H = Nominal clearance height
D = Overlength e-chain® radius in final position
$K = \pi \bullet R +$ *safety buffer*
H_F = Required clearance height

Pitch per link: = 1.20" (30.5 mm)
Links per ft (m): = 10.06 (33)
For center mount applications:
Chain length = $S/2 + K$

Speed / acceleration FL_G	max. 65.6 ft/s (20 m/s) / max. 656 ft/s² (200 m/s²)
Speed / acceleration FL_B	max. 9.84 ft/s (3 m/s) / max. 19.69 ft/s² (6 m/s²)
Gliding speed / acceleration (maximum)	max. 32.8 ft/s (10 m/s) / max. 164 ft/s² (50 m/s²)
Material - permitted temperature	igumid G / -40°F (-40°C) up to +248°F (+120° C)
Flammability Class, igumid G	VDE 0304 IIC UL94 HB

Technical Data

Details of material properties
➤ Chapter 1

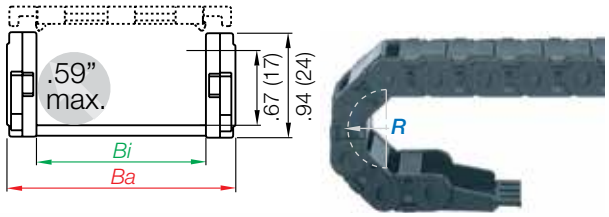
PDF: igus.com/e-chain-pdfs
Product information: igus.com/e-chains

igus® e-chain system®

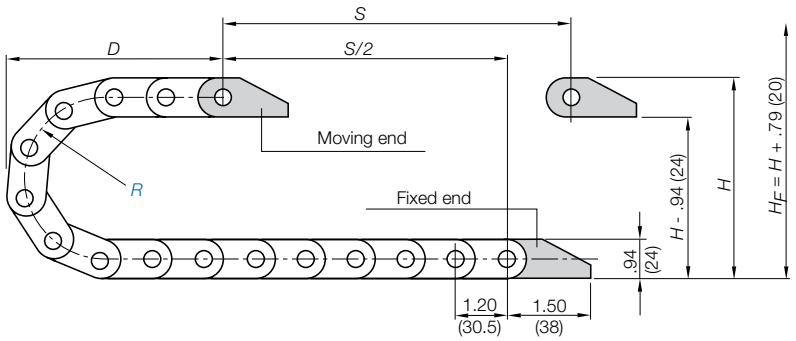
Telephone 1-800-521-2747

Internet: igus.com
email: sales@igus.com
QuickSpec: igus.com/quickspec

Series 15 - Zip-open along the outer radius







Part Number Structure

15-	025-	038-	0

- 0 — Color - Black
- 038 — Bending radius
- 025 — Width
- 15 — Series

Supplement part number with required radius. Example: 15-025-[038]-0
Pitch: 1.20 in. (30.5 mm) per link links/ft (m) = 10.06 (33)

Part Number Snap-open outer radius			*Bi* in. (mm)	*Ba* in. (mm)	Weight lbs/ft (kg/m)
15-015-	☐	-0	.59 (15)	1.02 (26)	≈ 0.235 (0.35)
15-025-	☐	-0	.98 (25)	1.42 (36)	≈ 0.269 (0.40)
15-038-	☐	-0	1.50 (38)	1.93 (49)	≈ 0.309 (0.46)
15-050-	☐	-0	1.97 (50)	2.40 (61)	≈ 0.349 (0.52)
15-5-	☐	-0	2.48 (63)	2.99 (76)	≈ 0.423 (0.63)
15-6	☐	-0	3.15 (80)	3.70 (94)	≈ 0.470 (0.70)
15-7	☐	-0	3.94 (100)	4.45 (113)	≈ 0.511 (0.76)

Choose from the radii below for all of the above sizes
Radius (mm) Example: 15-025-[038]-0

	038	048	075	100	110	125	145	180
R	1.50 (038)	1.89 (048)	2.95 (075)	3.94 (100)	4.33 (110)	4.92 (125)	5.71 (145)	7.09 (180)
H	3.90 (99)	4.69 (119)	6.81 (173)	8.78 (223)	9.57 (243)	10.75 (273)	12.32 (313)	15.08 (383)
D	3.74 (95)	4.13 (105)	5.20 (132)	6.18 (157)	6.57 (167)	7.17 (182)	7.95 (202)	9.33 (237)
K	7.28 (185)	8.46 (215)	11.81 (300)	14.96 (380)	16.14 (410)	17.91 (455)	20.47 (520)	24.80 (630)

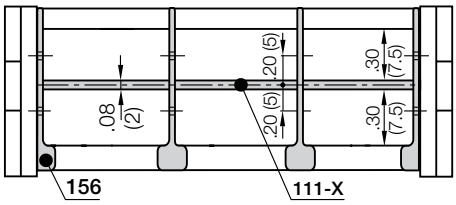
0=Standard color black. For other colors see Chapter 1

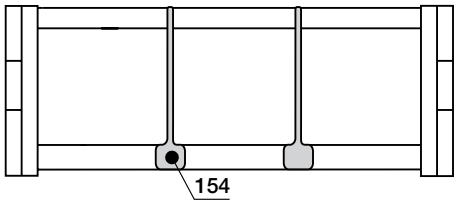
Interior Separation

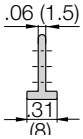


Option 1: Vertical separators

Vertical separators are used if only a vertical subdivision of the e-chain® interior is required. A slotted separator is used for this subdivision. This separator can also be used with full-width shelves for a continuous horizontal subdivision. By standard, vertical separators are assembled every other e-chain® link.

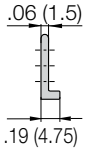






Vertical separator, slotted

Unassembled	**Part No. 153**
Assembled	**Part No. 154**



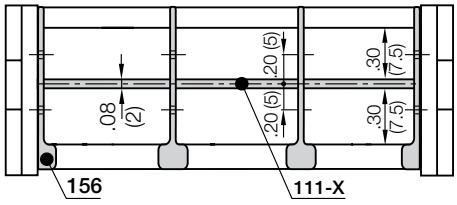
Side plate

Unassembled	**Part No. 155**
Assembled	**Part No. 156**

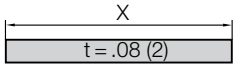


Option 2: Full-width shelf

Interior separation with continuous horizontal subdivision is practical is using a large number of thin cables with similar or identical diameters.



Width X in. (mm)	Part No. Unassembled	Part No. Assembled
.59 (015)	**110-15**	**111-15**
.98 (025)	**110-25**	**111-25**
1.50 (038)	**110-38**	**111-38**
1.97 (050)	**110-50**	**111-50**
2.48 (063)	**110-63**	**111-63**
3.15 (080)	**110-80**	**111-80**
3.94 (100)	**110-100**	**111-100**



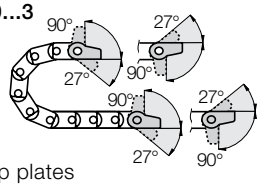
PDF: igus.com/e-chain-pdfs
Product information: igus.com/e-chains

e-chain system® Zipper Series 15 Mounting Brackets

Option 1: pivoting

- Well suited for space-restricted conditions
- Strain relief with detachable tiewrap plates
- Can be mounted on either the fixed or moving end of the chain
- Variable traverse angle for flexible assembly

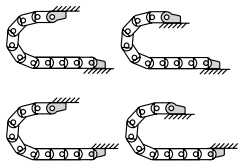
Moving end
10...3



Fixed end
10...4





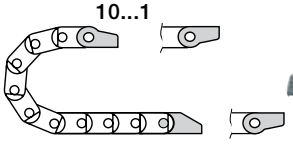


Possible installation configurations -

Option 2: locking

- Extreme accelerations
- If space is limited for height
- Can be mounted on either the fixed or moving end of the chain

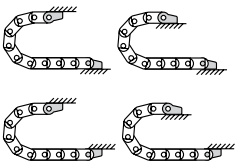
Moving end
10...1



Fixed end
10...2

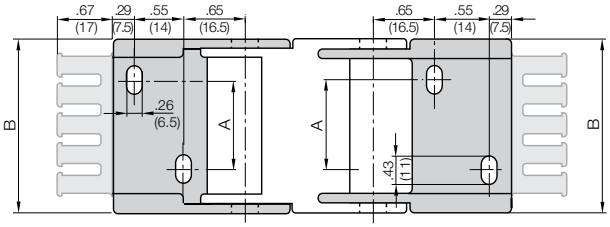




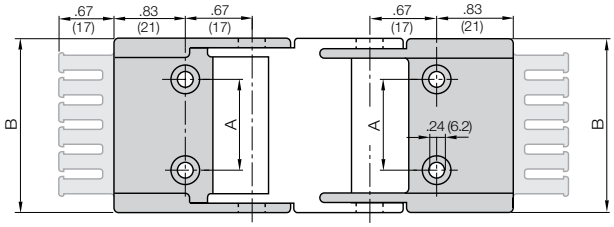


Possible installation configurations -

For e-chain
15-015 to 15-050



For e-chain
15-5 to 15-7



Part Number Structure

1025- | 34- | P | PZ

- With tiewrap plate
- Without tiewrap plate
- Complete Set
  12 = Locking
  34 = Pivoting
- Mounting brackets for selected chain type

Part number examples are shown for pivoting brackets. For locking brackets fill in the blank with 12

Part No. Full Set (pivoting)
with Tiewrap Plate
Series 15 with 25mm inner width
1025-34PZ

Part No. Full Set (pivoting)
without Tiewrap Plate
Series 15 with 25 mm inner width
1025-34P

Full set, for both ends:
1025- 34- PZ Full set, **each part with pin/bore + tiewrap plate**
Single-part order:
1025- 3- PZ Mounting bracket **with bore + tiewrap plate**
1025- 4- PZ Mounting bracket **with pin + tiewrap plate**

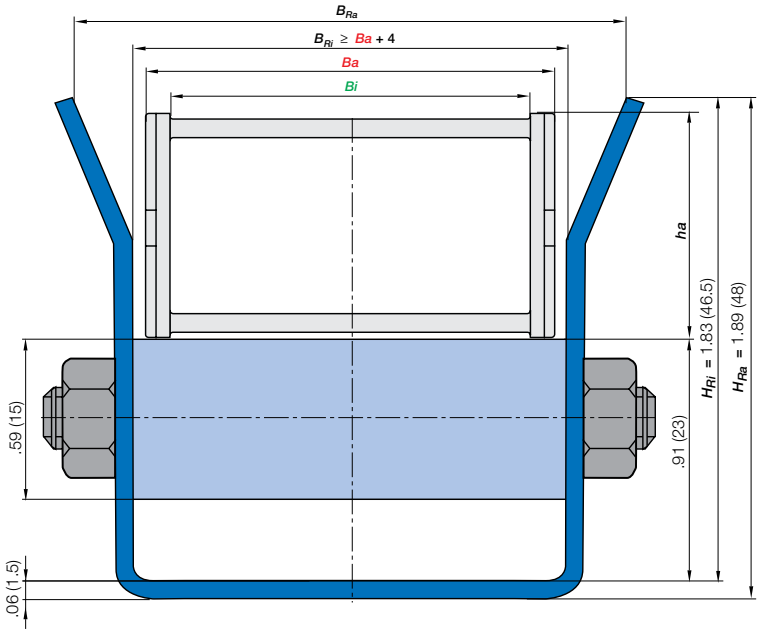
For Chain Type	Part No. Full set with Tiewrap Plate	Part No. Full Set without Tiewrap Plate	Dimension A in.	Dimension A (mm)	Dimensions B in.	Dimensions B (mm)	Number of Teeth
15-015	1015- ☐ PZ	1015- ☐ P	—	—	1.00	(25.5)	2
15-025	1025- ☐ PZ	1025- ☐ P	.39	(10)	1.40	(35.5)	3
15-038	1038- ☐ PZ	1038- ☐ P	.91	(23)	1.91	(48.5)	4
15-050	1050- ☐ PZ	1050- ☐ P	1.38	(35)	2.38	(60.5)	5
15-5	105- ☐ PZ	105- ☐ P	1.89	(48)	2.95	(75.0)	6
15-6	106- ☐ PZ	106- ☐ P	2.56	(65)	3.62	(92.0)	8
15-7	107- ☐ PZ	107- ☐ P	3.35	(85)	4.41	(112.0)	10

34 or 12

For pivoting brackets choose 34
For locking brackets choose 12
Example: 1025- 34 PZ

e-chain system® Zipper
Series 15
Guide Trough

One-piece guide troughs made of steel are available for the Series 15 Zipper e-chains®. These guide troughs are available from stock for outer chain widths up to 4.45 in. (113 mm). For wider e-chains® and tubes, special solutions are possible with short lead times. No installation sets are required for these trough sizes since the guide troughs consist of a one-piece U-profile. The joint connection with this type of guide trough is specified individually for every application.



Dimensions Guide troughs 91-10 — 91-71

For Series	Part No.	B_{Ra} in.	B_{Ra} (mm)	B_{Ri} in.	B_{Ri} (mm)	Weight lbs/ft	Weight (kg/m)
15-015							
Trough **without** glide bar 6.56 ft. (2m section)	**91-10**	1.59	(40.5)	1.18	(30)	1.01	(1.50)
Glide bar 6.56 ft. (2m section)	**91-11**	1.59	(40.5)	1.18	(30)	.30	(.45)
15-025							
Trough **without** glide bar 6.56 ft. (2m section)	**91-20**	1.99	(50.5)	1.57	(40)	1.11	(1.65)
Glide bar 6.56 ft. (2m section)	**91-21**	1.99	(50.5)	1.57	(40)	.38	(.57)
15-038							
Trough **without** glide bar 6.56 ft. (2m section)	**91-30**	2.46	(62.5)	2.05	(52)	1.21	(1.80)
Glide bar 6.56 ft. (2m section)	**91-31**	2.46	(62.5)	2.05	(52)	.46	(.68)
15-050							
Trough **without** glide bar 6.56 ft. (2m section)	**91-40**	2.85	(72.5)	2.44	(62)	1.28	(1.90)
Glide bar 6.56 ft. (2m section)	**91-41**	2.85	(72.5)	2.44	(62)	.61	(.91)
15-5							
Trough **without** glide bar 6.56 ft. (2m section)	**91-50**	3.60	(91.5)	3.19	(81)	1.52	(2.26)
Glide bar 6.56 ft. (2m section)	**91-51**	3.60	(91.5)	3.19	(81)	.84	(1.25)
15-6							
Trough **without** glide bar 6.56 ft. (2m section)	**91-60**	4.27	(108.5)	3.86	(98)	1.83	(2.72)
Glide bar 6.56 ft. (2m section)	**91-61**	4.27	(108.5)	3.86	(98)	.91	(1.35)
15-7							
Trough **without** glide bar 6.56 ft. (2m section)	**91-70**	5.06	(128.5)	4.65	(118)	2.13	(3.17)
Glide bar 6.56 ft. (2m section)	**91-71**	5.06	(128.5)	4.65	(118)	1.14	(1.70)

Trough material in general: St 1203 galvanized

PDF: igus.com/e-chain-pdfs
Product information: igus.com/e-chains

e-chain system® E2 tubes
Series R15

.67

Price Index

Series R15

Special Features / Options

Upon request: Cleanroom Class 1 (ISO class 3) tested by the Dryden Engineering Company, CA

ESD classification: Electrically conductive ESD/ ATEX version upon request

UL94-V2 classifications upon request

Low-noise

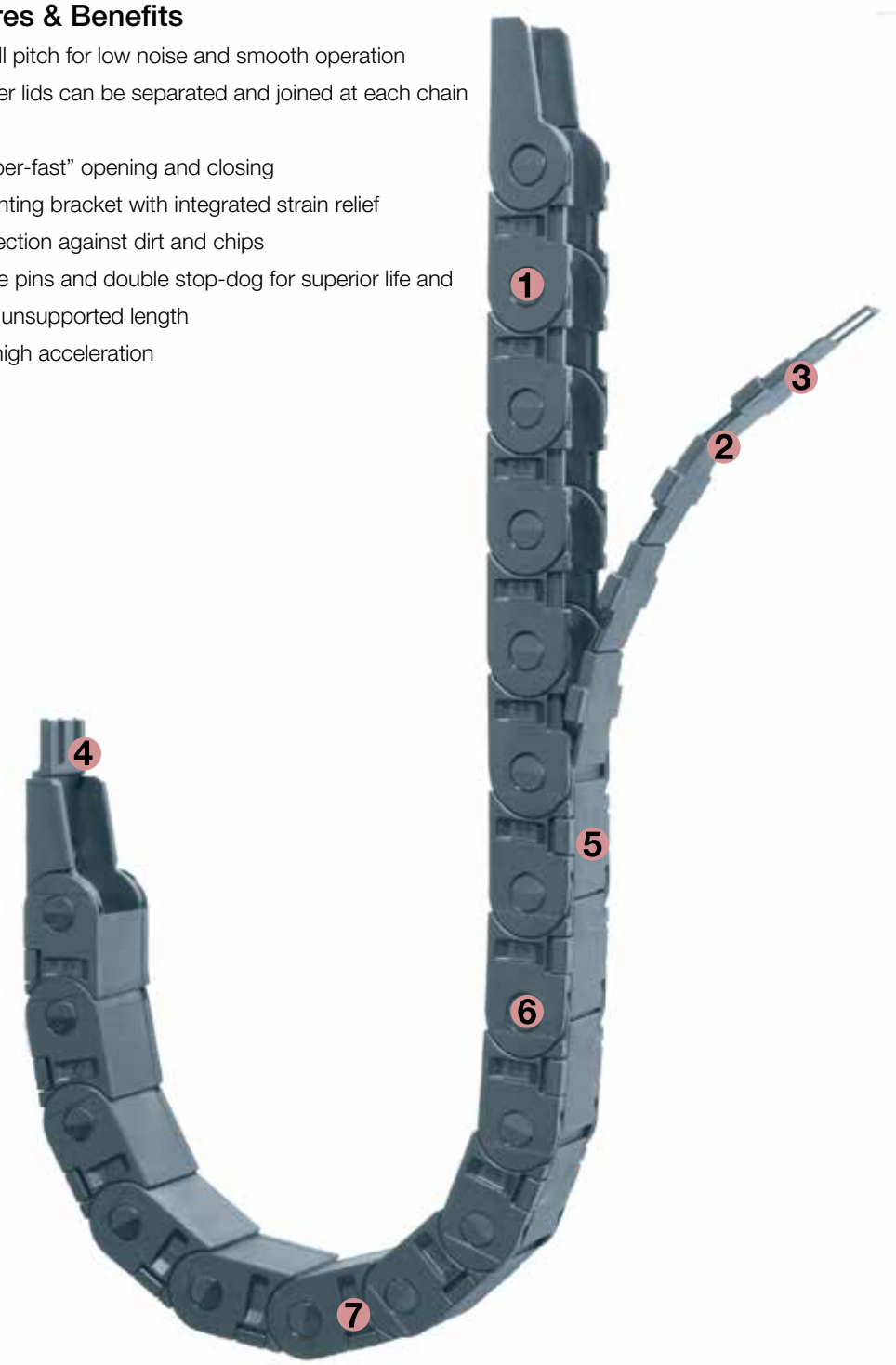
Assembly Tips



"Zipper-fast" opening and closing

Features & Benefits

1. Small pitch for low noise and smooth operation
2. Zipper lids can be separated and joined at each chain link
3. "Zipper-fast" opening and closing
4. Mounting bracket with integrated strain relief
5. Protection against dirt and chips
6. Large pins and double stop-dog for superior life and long unsupported length
7. For high acceleration



Usage Guidelines

- If extremely quick, zipper-like access to cables is required
- If chip protection is required
- If quick, easy insertion of cables with preassembled connectors is required
- If aesthetic design is required

- If opening of the link is not necessary
  ➤ **Series 10 E2 mini**
- If the chain must snap-open along the inner radius
  ➤ **Series B15i E2 mini**

Order Example: Complete e-chain®

Please indicate chain length or number of links. Example:

3.28 ft (1 m) **R15-025-063-0**	**e-chain®**
With 2 separators **R154** assembled every 2nd link	**Interior Separation**
1 Set **1025-12PZ**	**Mounting Bracket**

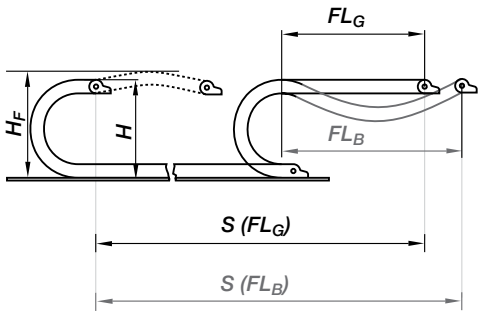
e-chain system® E2 tubes
Series R15
Installation Dimensions

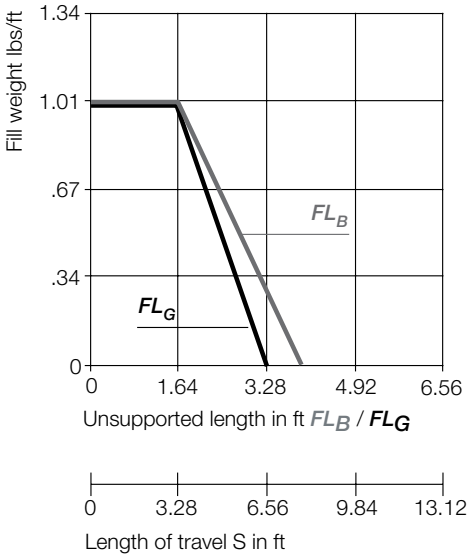
Short travel, unsupported length

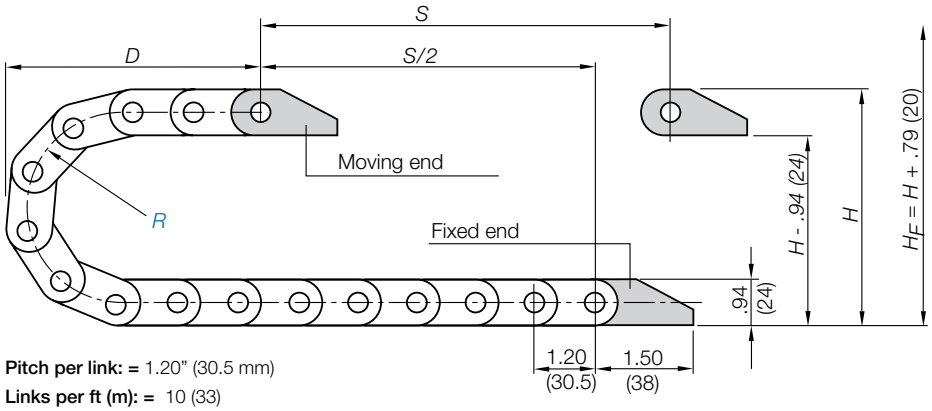
● FL_B = unsupported with permitted sag

● FL_G = unsupported with straight upper run

Further information ➤ Design, Chapter 1







Pitch per link: = 1.20" (30.5 mm)

Links per ft (m): = 10 (33)

For center mount applications:

Chain length = $\frac{S}{2} + K$

The required clearance height: $H_F = H + .79$ **in. (20 mm)** (with .67 lbs/ft (1.0 kg/m) fill weight.
Please consult igus® if space is particularly restricted.

R	2.48 (063)	2.95 (075)	3.94 (100)	4.33 (110)	4.92 (125)	5.71 (145)	7.09 (180)
H	5.91 (150)	6.89 (175)	8.86 (225)	9.65 (245)	10.83 (275)	12.40 (315)	15.16 (385)
D	4.72 (120)	5.71 (145)	6.10 (155)	6.69 (170)	7.48 (190)	8.86 (225)	10.98 (279)
K	10.24 (260)	11.81 (300)	14.96 (380)	16.14 (410)	17.91 (455)	20.47 (520)	24.80 (630)

Short Travels - Unsupported

Unsupported e-chains® feature positive camber over short travels. This must be accounted for when specifying the clearance height. Please refer to **Installation dimensions** for further details.

Legend

S = Length of travel
R = Bending radius
H = Nominal clearance height
D = Overlength e-chain® radius in final position
K = π • R + safety buffer
H_F = Required clearance height

Speed / acceleration FL_G	max. 6.56 ft/s (20 m/s) / max. 656 ft/s² (200 m/s²)
Speed / acceleration FL_B	max. 9.84 ft/s (3 m/s) / max. 19.69 ft/s² (6 m/s²)
Gliding speed / acceleration (maximum)	max. 32.8 ft/s (10 m/s) / max. 32.8 ft/s² (10 m/s²)
Material - permitted temperature	igumid G / -40°F (-40°C) up to +248°F (+120° C)
Flammability Class, igumid G	VDE 0304 IIC UL94 HB

Technical Data

Details of material properties
➤ Chapter 1

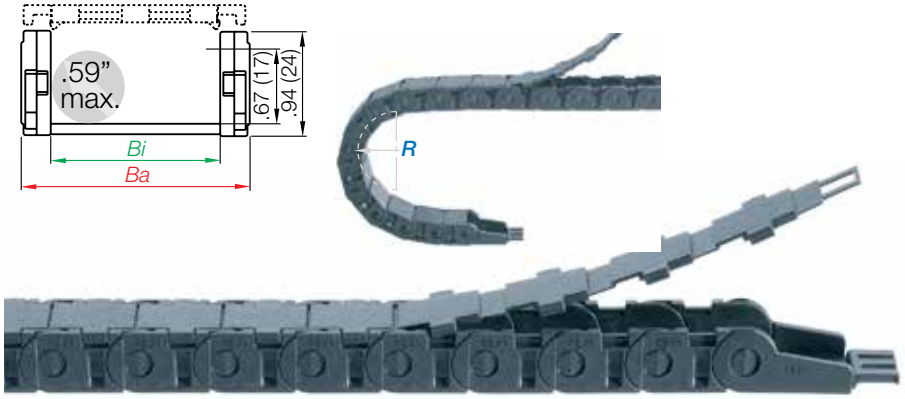
PDF: igus.com/e-chain-pdfs
Product information: igus.com/e-chains

e-chain system® E2 tubes
Series R15

Telephone 1-800-521-2747

Internet: igus.com
email: sales@igus.com
QuickSpec: igus.com/quickspec

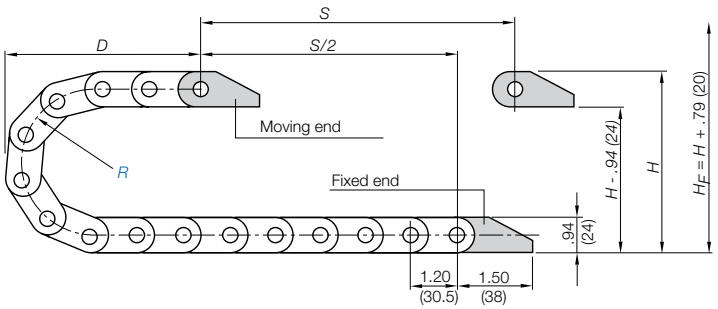
Series R15 - e-tube snap-open along the outer radius



Part Number Structure

R15-025-063-0

- Color - Black
- Bending radius
- Width
- Series



Pitch per link: = 1.20" (30.5 mm)
Links per ft (m): = 10 (33)
For center mount applications:
Chain length = $\frac{S}{2} + K$

Supplement part number with required radius. Example: R15-025-063-0
Pitch: 1.20 in. (30.5 mm) per link links/ft (m) = 10 (33)

Part Number			*Bi* in. (mm)	*Ba* in. (mm)	Weight lbs/ft (kg/m)
R15-025-	☐	-0	.98 (25)	1.42 (36)	≈ 0.269 (0.40)
R15-038-	☐	-0	1.50 (38)	1.93 (49)	≈ 0.309 (0.46)
R15-063-	☐	-0	2.48 (63)	2.99 (76)	≈ 0.423 (0.63)
R15-080-	☐	-0	3.15 (80)	3.70 (94)	≈ 0.470 (0.70)

Choose from the radii below for all of the above sizes
***Radius* (mm) Example: R15-025-063-0**

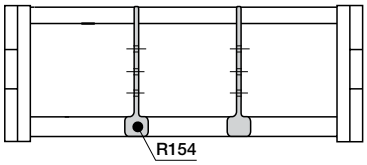
	063	075	100	110	125	145	180
R	2.48 (063)	2.95 (075)	3.94 (100)	4.33 (110)	4.92 (125)	5.71 (145)	7.09 (180)
H	5.91 (150)	6.89 (175)	8.86 (225)	9.65 (245)	10.83 (275)	12.40 (315)	15.16 (385)
D	4.72 (120)	5.71 (145)	6.10 (155)	6.69 (170)	7.48 (190)	8.86 (225)	10.98 (279)
K	10.24 (260)	11.81 (300)	14.96 (380)	16.14 (410)	17.91 (455)	20.47 (520)	24.80 (630)

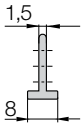
e-chain system® E2 tubes
Series R15
Interior Separation

Option 1: Vertical separators and spacers

Vertical separators are used if a vertical subdivision of the e-chain® interior is required. By standard, vertical separators are assembled every other e-chain® link. .







Vertical separator R153

Vertical Separator

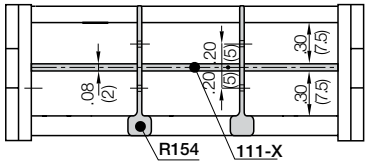
Unassembled	**Part No. R153**
Assembled	**Part No. R154**

- **Standard separator R153 for e-chains®**
  This separator is used for general subdivision of e-chain®.

Option 2: Full-width shelf

It is ideal for use in applications involving many thin cables with similar or identical diameters. This shelf slides into place and spans the entire width of the chain.





Shelves 110-XX
Shelves can be inserted at 3 different heights in .20” (5mm) increments

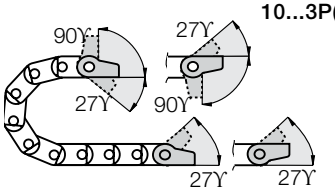
Width X in.	(mm)	Part No. Unassembled	Part No. Assembled
0.98	(25)	**110-25**	**111-25**
1.50	(38)	**110-38**	**111-38**
2.68	(63)	**110-63**	**111-63**
3.15	(80)	**110-80**	**111-80**

PDF: igus.com/e-chain-pdfs
Product information: igus.com/e-chains

e-chain system® E2 tubes
Series R15
Mounting Bracket - Plastic

Option 1: pivoting

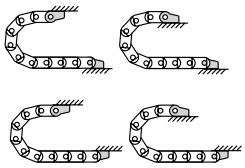
- Recommended for unsupported and gliding applications
- Well suited for tight installation conditions
- Available with or without strain relief tiewrap plates
- Variable traverse angle for flexible assembly



Moving end
10...3P(Z)



Fixed end
10...4

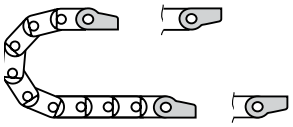


Possible installation configurations -

Option 2: locking

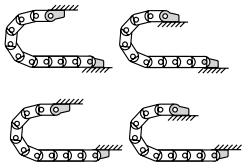
- Recommended for unsupported and gliding applications
- Extreme speed and/or accelerations
- For height restricted applications

Moving end
10...1



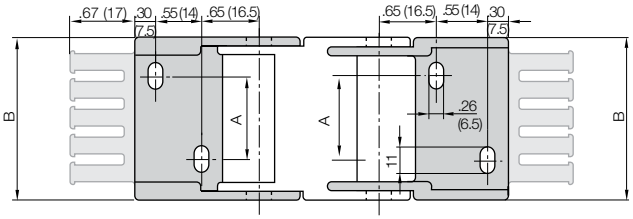


Fixed end
10...2

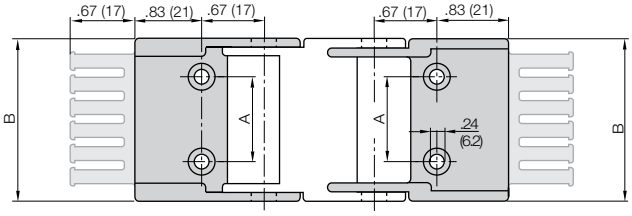


Possible installation configurations -

For e-chain
R15-015 to R15-050



For e-chain
R15-063 to R15-100



Part Number Structure

1025-	34-	P	PZ

- With tiewrap plate
- Without tiewrap plate
- Complete Set
  12 = Pivoting
  34 = Locking
- Mounting brackets for selected chain type

Part number examples are shown for pivoting brackets. For locking brackets fill in the blank with 12

Part No. Full Set (pivoting)
with Tiewrap Plate
Series R15 with 25mm inner width
1025-34PZ

Part No. Full Set (pivoting)
without Tiewrap Plate
Series R15 with 25 mm inner width
1025-34P

Full set, for both ends:
1025- 34- PZ Full set, **each part with pin/bore + tiewrap plate**
Single-part order:
1025- 3- PZ Mounting bracket **with bore + tiewrap plate**
1025- 4- PZ Mounting bracket **with pin + tiewrap plate**

For Chain Type	Part No. Full set with Tiewrap Plate	Part No. Full Set without Tiewrap Plate	Dimension A in.	Dimension A (mm)	Dimensions B in.	Dimensions B (mm)	Number of Teeth
R15-025	1025- ☐ PZ	1025- ☐ P	.39	(10)	1.40	(35.5)	3
R15-038	1038- ☐ PZ	1038- ☐ P	.91	(23)	1.91	(48.5)	4
R15-063	105- ☐ PZ	105- ☐ P	1.89	(48)	2.95	(75.0)	6
R15-080	106- ☐ PZ	106- ☐ P	2.56	(65)	3.62	(92.0)	8

34 or 12

For pivoting brackets choose 34
For locking brackets choose 12
Example: 1025- 34 PZ

Telephone 1-800-521-2747

Internet: igus.com
email: sales@igus.com
QuickSpec: igus.com/quickspec

e-chain system® Zipper Series 17

1.26

Price Index

Series 17

Special Features / Options

Clean-Room — Upon request: Cleanroom Class 1 (ISO class 3) tested by the Dryden Engineering Company, CA

Flammability Class VDE 0304 IIC UL94 HB

Low-noise

Assembly Tips



"Zipper-fast" opening and closing

Features & Benefits

1. Interior separation possible
2. Small pitch for low-noise, smooth operation
3. 'Zipper-fast' opening and closing
4. For high acceleration
5. Zipper lids can be separated and joined at each link
6. Mounting bracket with integrated strain relief



Usage Guidelines

- If fast, zipper-like accessibility to cables is required
- If interior separation is required
- If quiet operation is required

- If individual links must open as opposed to 'zipping' open
  ➤ **Series B17 E2 Mini**

Order Example: Complete e-chain®

Please indicate chain length or number of links. Example:

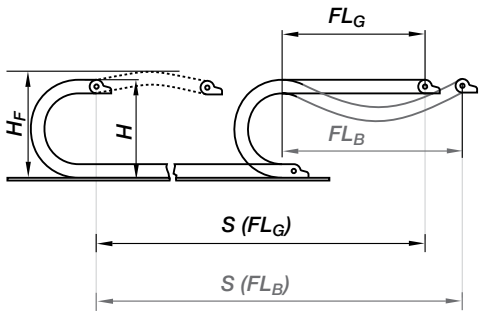
3.28 ft (1 m) **17-2-063-0**	e-chain®
With 2 separators **172** assembled every 2nd link	Interior Separation
1 Set **117-2-12PZ**	Mounting Bracket

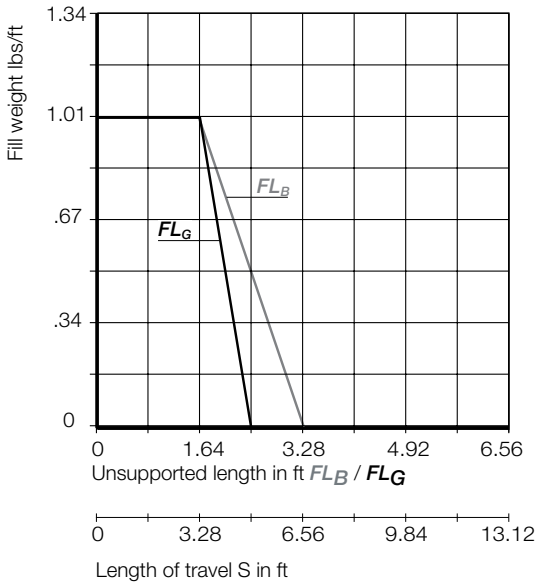
e-chain system® Zipper Series 17
Installation Dimensions

Short travel, unsupported length

- FL_B = unsupported with permitted sag
- FL_G = unsupported with straight upper run

Further information ➤ Design, Chapter 1



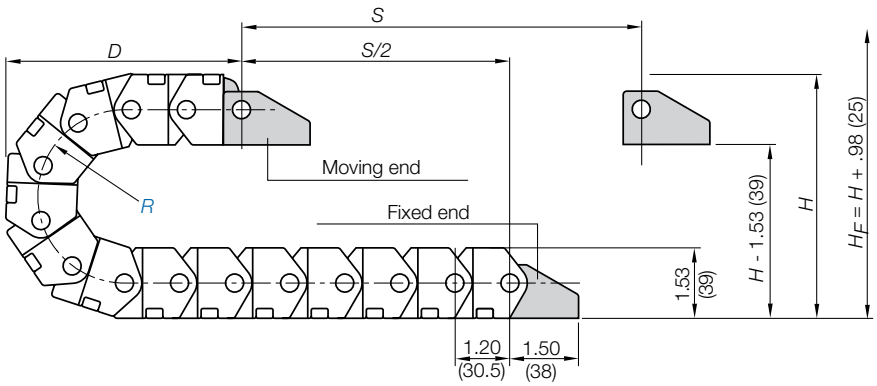


Short Travels - Unsupported

Unsupported e-chains® feature positive camber over short travels. This must be accounted for when specifying the clearance height. Please refer to **Installation dimensions** for further details.

Legend

S = Length of travel
R = Bending radius
H = Nominal clearance height
D = Overlength e-chain® radius in final position
K = π • *R* + *safety buffer*
H_F = Required clearance height



Pitch per link: = 1.20" (30.5 mm)
Links per ft (m): = 10.06 (33)
For center mount applications:
Chain length = $^{S}/_{2}$ + K

The required clearance height: H_F = ***H* + .98 in. (25 mm)** (with 1.01 lbs/ft (1.5 kg/m) fill weight.
Please consult igus® if space is particularly restricted.

R	2.48 (063)	2.95 (075)	3.94 (100)	4.92 (125)
H	6.50 (165)	7.44 (189)	9.41 (239)	11.38 (289)
D	5.04 (128)	5.51 (140)	6.50 (165)	7.48 (190)
K	10.24 (260)	11.81 (300)	14.96 (380)	17.91 (455)

Speed / acceleration FL_G	max. 6.56 ft/s (20 m/s) / max. 656 ft/s² (200 m/s²)
Speed / acceleration FL_B	max. 9.84 ft/s (3 m/s) / max. 19.69 ft/s² (6 m/s²)
Gliding speed / acceleration (maximum)	max. 32.8 ft/s (10 m/s) / max. 164 ft/s² (50 m/s²)
Material - permitted temperature	igumid G / -40°F (-40°C) up to +248°F (+120° C)
Flammability Class, igumid G	VDE 0304 IIC UL94 HB

Technical Data

Details of material properties
➤ Chapter 1

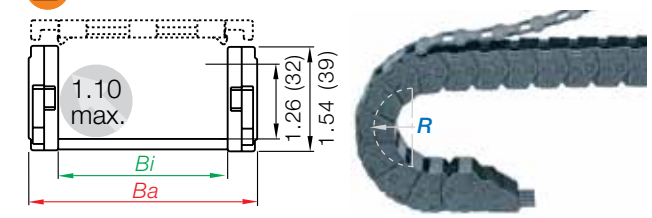
PDF: igus.com/e-chain-pdfs
Product information: igus.com/e-chains

igus® e-chain system®

Telephone 1-800-521-2747

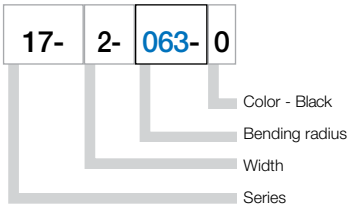
Internet: igus.com
email: sales@igus.com
QuickSpec: igus.com/quickspec

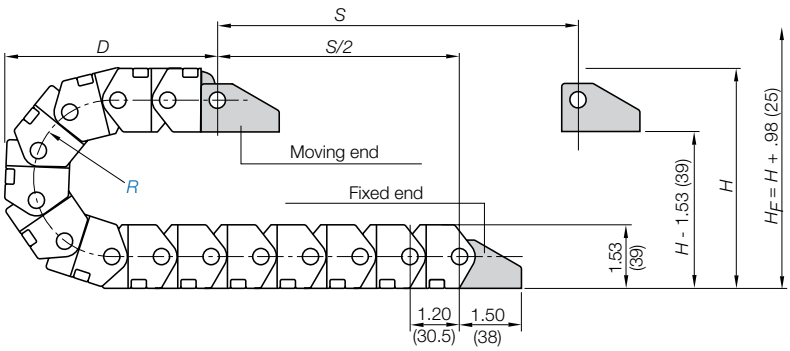
Series 17 - Zip-open along the outer radius - Standard





Part Number Structure





Supplement part number with required radius. Example: 17-1-063 -0
Pitch: 1.20 in. (30.5 mm) per link links/ft (m) = 10.06 (33)

Part Number			Bi in. (mm)	Ba in. (mm)	Weight lbs/ft (kg/m)
17-1-		-0	.59 (15)	1.02 (26)	≈ 0.349 (0.52)
17-2-		-0	.98 (25)	1.42 (36)	≈ 0.396 (0.59)
17-3-		-0	1.50 (38)	1.93 (49)	≈ 0.437 (0.65)
17-4-		-0	1.97 (50)	2.40 (61)	≈ 0.470 (0.70)
17-5-		-0	2.48 (63)	2.99 (76)	≈ 0.558 (0.83)
17-6		-0	3.15 (80)	3.66 (93)	≈ 0.618 (0.92)
17-7		-0	3.94 (100)	4.45 (113)	≈ 0.712 (1.06)

Choose from the radii below for all of the above sizes
Radius (mm) Example: 17-1-063 -0

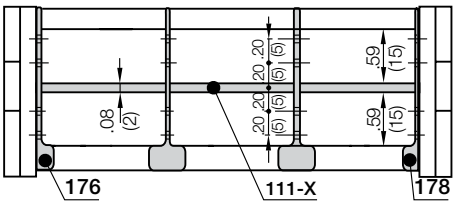
	063	075	100	125
R	2.48 (063)	2.95 (075)	3.94 (100)	4.92 (125)
H	6.50 (165)	7.44 (189)	9.41 (239)	11.38 (289)
D	5.04 (128)	5.51 (140)	6.50 (165)	7.48 (190)
K	10.24 (260)	11.81 (300)	14.96 (380)	17.91 (455)

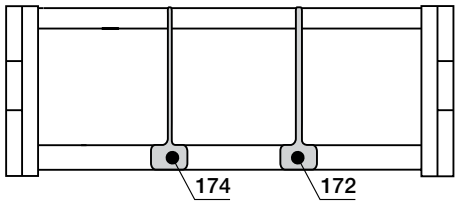
0=Standard color black. For other colors see Chapter 1

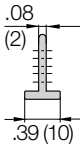


Option 1: Vertical separators

Vertical separators are used if only a vertical subdivision of the e-chain® interior is required. A slotted separator is used for this subdivision. This separator can also be used with full-width shelves for a continuous horizontal subdivision. By standard, vertical separators are assembled every other e-chain® link.

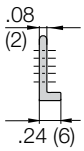






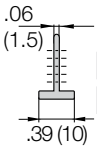
Vertical Separator for 17-1 to 17-4

Unassembled	**Part No. 171**
Assembled	**Part No. 172**



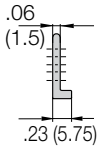
Side Plate for 17-1 to 17-4

Unassembled	**Part No. 175**
Assembled	**Part No. 176**



Vertical Separator for 17-5 to 17-7

Unassembled	**Part No. 173**
Assembled	**Part No. 174**



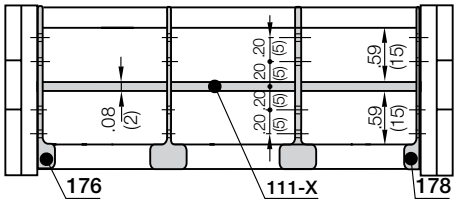
Side plate for 17-5 to 17-7

Unassembled	**Part No. 177**
Assembled	**Part No. 178**

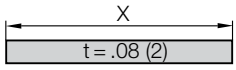


Option 2: Full-width shelf

Interior separation with continuous horizontal subdivision is practical is using a large number of thin cables with similar or identical diameters.



Width X in. (mm)	Part No. Unassembled	Part No. Assembled
.59 (015)	**110-15**	**111-15**
.98 (025)	**110-25**	**111-25**
1.50 (038)	**110-38**	**111-38**
1.97 (050)	**110-50**	**111-50**
2.48 (063)	**110-63**	**111-63**
3.15 (080)	**110-80**	**111-80**
3.94 (100)	**110-100**	**111-100**

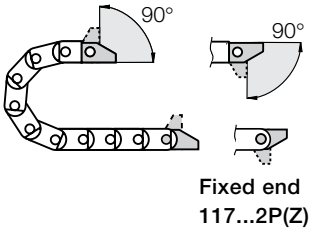


PDF: igus.com/e-chain-pdfs
Product information: igus.com/e-chains

e-chain system® Zipper
Series 17
Mounting Brackets

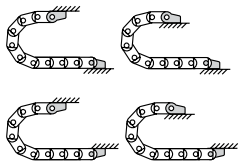
Option 1: pivoting

- One-piece mounting bracket
- Corrosion resistant
- Available pre-assembled
- Inner and outer attachment possible
- With our without strain relief tiewrap plates

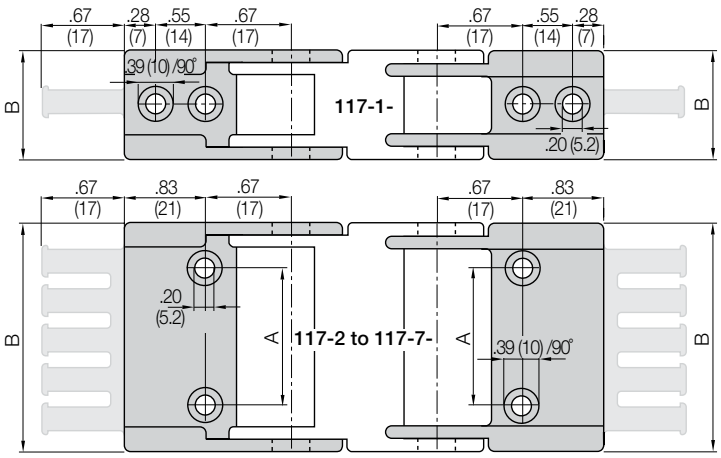








Possible installation configurations -



Part Number Structure

117-1- 12 P PZ

- With tiewrap plate
- Without tiewrap plate
- Complete Set
  12 = Pivoting
- Mounting brackets for selected chain type

Full set, for both ends:

117-1-12-PZ Full set, **each part with pin/bore + tiewrap plate**

Single-part order:

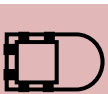
117-1-1-PZ Mounting bracket **with bore + tiewrap plate**

117-1-2-PZ Mounting bracket **with pin + tiewrap plate**

For Chain Type	Part No. Full set with Tiewrap Plate	Part No. Full Set without Tiewrap Plate	Number of Teeth	Dimension A in.	(mm)	Dimensions B in.	(mm)
17-1	**117-1-12PZ**	**117-1-12P**	2	—	—	1.00	(25.5)
17-2	**117-2-12PZ**	**117-2-12P**	3	.47	(12)	1.40	(35.5)
17-3	**117-3-12PZ**	**117-3-12P**	4	.98	(25)	1.91	(48.5)
17-4	**117-4-12PZ**	**117-4-12P**	5	1.46	(37)	2.38	(60.5)
17-5	**117-5-12PZ**	**117-5-12P**	6	1.89	(48)	2.99	(76.0)
17-6	**117-6-12PZ**	**117-6-12P**	8	2.56	(65)	3.66	(93.0)
17-7	**117-7-12PZ**	**117-7-12P**	10	3.35	(85)	4.45	(113.0)











e-chain system® E2 tubes
Series R17

Price Index

Series R17

Special Features / Options

Upon request: Cleanroom Class 1 (ISO class 3) tested by the Dryden Engineering Company, CA

ESD classification: Electrically conductive ESD/ ATEX version upon request

UL94-V2 classifications upon request

Low-noise

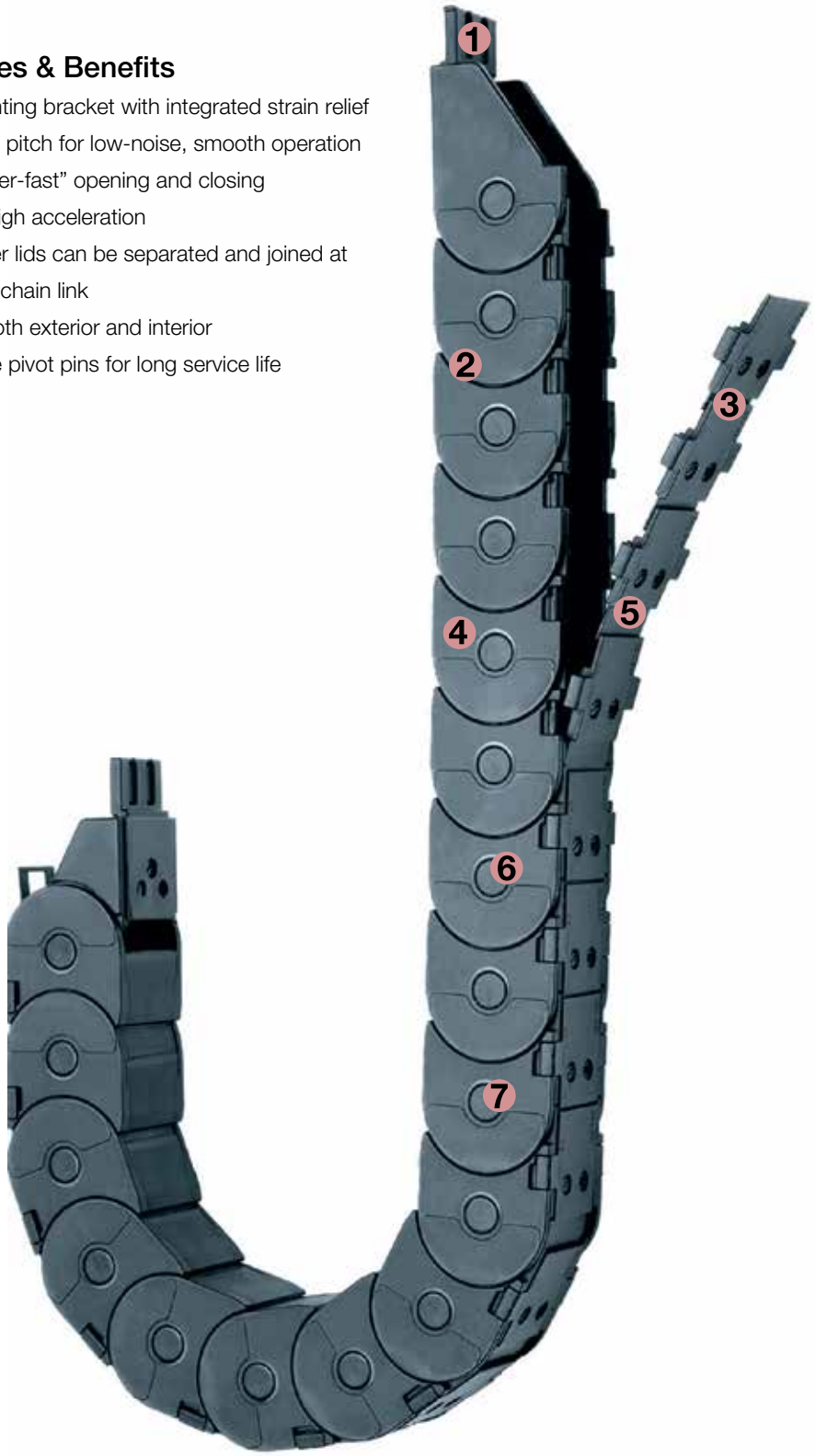
Assembly Tips



"Zipper-fast" opening and closing

Features & Benefits

1. Mounting bracket with integrated strain relief
2. Small pitch for low-noise, smooth operation
3. "Zipper-fast" opening and closing
4. For high acceleration
5. Zipper lids can be separated and joined at each chain link
6. Smooth exterior and interior
7. Large pivot pins for long service life



Usage Guidelines

- If extremely quick, zipper-like access to cables is required
- If chip protection is required
- If quick, easy insertion of cables with preassembled connectors is required
- If aesthetic design is required

- If cable installation without opening lids is possible
  ➤ **Series E16 E-Z Chain**

Order Example: Complete e-chain®

Please indicate chain length or number of links. Example:

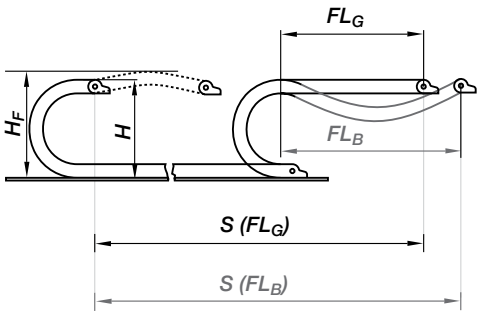
3.28 ft (1 m) **R17-025-063-0**	**e-chain®**
With 2 separators **R172** assembled every 2nd link	**Interior Separation**
1 Set **117-025-12PZ**	**Mounting Bracket**

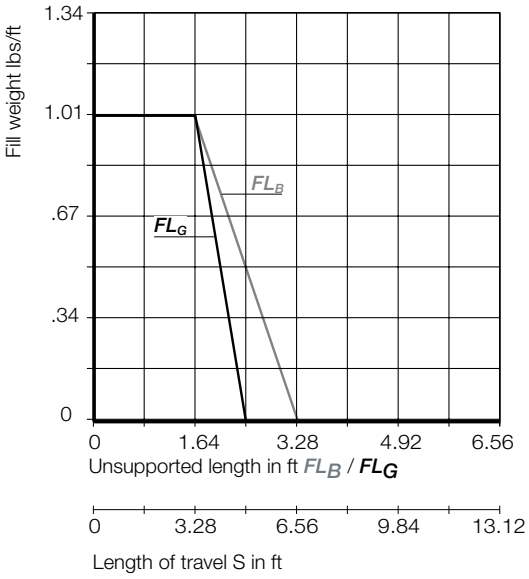
e-chain system® E2 tubes
Series R17
Installation Dimensions

Short travel, unsupported length

● FL_B = unsupported with permitted sag
● FL_G = unsupported with straight upper run

Further information ➤ Design, Chapter 1



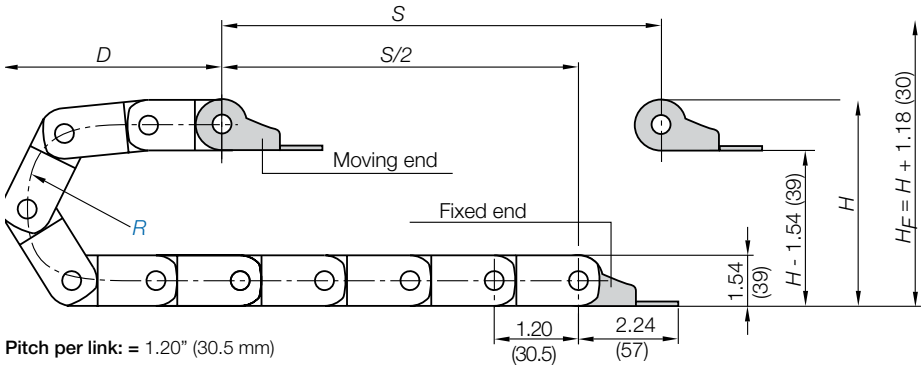


Short Travels - Unsupported

Unsupported e-chains® feature positive camber over short travels. This must be accounted for when specifying the clearance height. Please refer to **Installation dimensions** for further details.

Legend

S = Length of travel
R = Bending radius
H = Nominal clearance height
D = Overlength e-chain® radius in final position
K = π • R + safety buffer
H_F = Required clearance height



Pitch per link: = 1.20" (30.5 mm)
Links per ft (m): = 10 (33)
For center mount applications:
Chain length = $\frac{S}{2}$ + K

The required clearance height: $H_F = H + 1.18$ **in. (30 mm)** (with .67 lbs/ft (1.0 kg/m) fill weight.
Please consult igus® if space is particularly restricted.

R	2.48 (063)	2.95 (075)	3.94 (100)	4.92 (125)
H	6.50 (165)	7.44 (189)	9.41 (239)	11.38 (289)
D	4.53 (115)	5.12 (130)	6.10 (155)	7.09 (180)
K	10.83 (275)	12.01 (305)	15.55 (395)	18.70 (475)

Technical Data

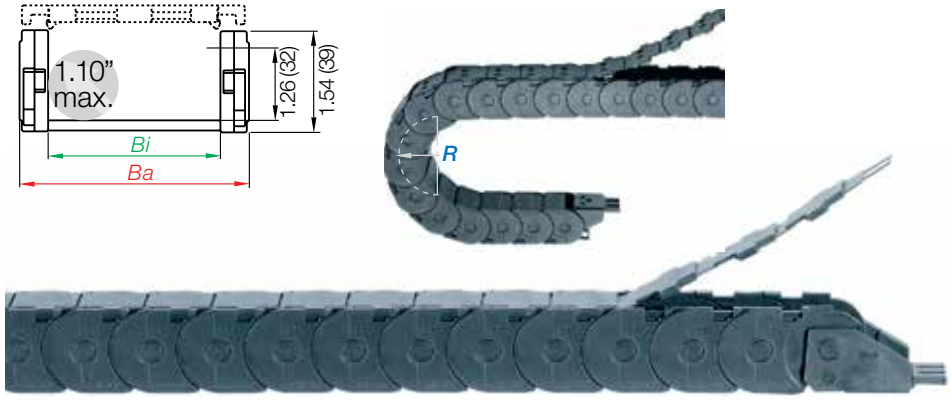
Speed / acceleration FL_G	max. 6.56 ft/s (20 m/s) / max. 656 ft/s² (200 m/s²)
Speed / acceleration FL_B	max. 9.84 ft/s (3 m/s) / max. 19.69 ft/s² (6 m/s²)
Gliding speed / acceleration (maximum)	max. 32.81 ft/s (10 m/s) / max. 164 ft/s² (50 m/s²)
Material - permitted temperature	igumid G / -40°F (-40°C) up to +248°F (+120° C)
Flammability Class, igumid G	VDE 0304 IIC UL94 HB

Details of material properties
➤ Chapter 1

PDF: igus.com/e-chain-pdfs
Product information: igus.com/e-chains

e-chain system® E2 tubes
Series R17

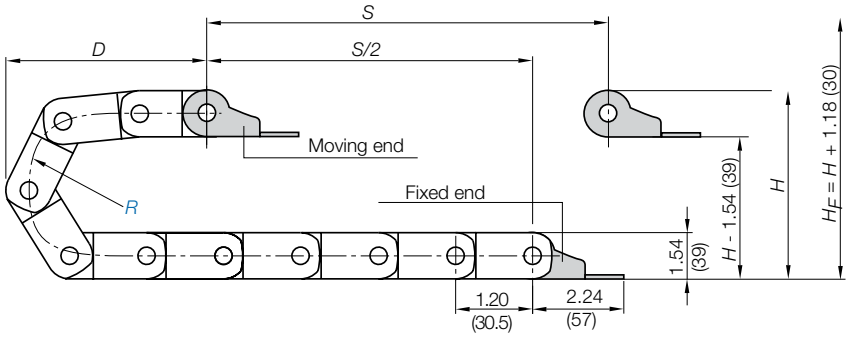
Series R17 - e-tube snap-open along the outer radius



Part Number Structure

R17- 025- 063- 0

- Color - Black
- Bending radius
- Width
- Series



Pitch per link: = 1.20" (30.5 mm)
Links per ft (m): = 10 (33)
For center mount applications:
Chain length = $_{-}^{S}/_{2} + K$

Supplement part number with required radius. Example: R17-025-063-0
Pitch: 1.20 in. (30.5 mm) per link links/ft (m) = 10 (33)

Part Number			*Bi* in. (mm)	*Ba* in. (mm)	Weight lbs/ft (kg/m)
R17-015-		-0	.59 (15)	1.02 (26)	≈ 0.349 (0.52)
R17-025-		-0	.98 (25)	1.93 (49)	≈ 0.396 (0.59)
R17-063-		-0	2.48 (63)	2.99 (76)	≈ 0.558 (0.83)

Choose from the radii below for all of the above sizes
***Radius* (mm) Example: R17-025-063-0**

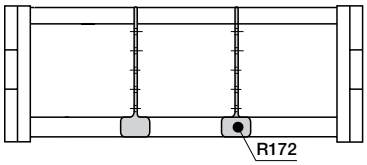
	063	075	100	125
R	2.48 (063)	2.95 (075)	3.94 (100)	4.92 (125)
H	6.50 (165)	7.44 (189)	9.41 (239)	11.38 (289)
D	4.53 (115)	5.12 (130)	6.10 (155)	7.09 (180)
K	10.83 (275)	12.01 (305)	15.55 (395)	18.70 (475)

e-chain system® E2 tubes
Series R17
Interior Separation

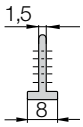
Option 1: Vertical separators and spacers

Vertical separators are used if a vertical subdivision of the e-chain® interior is required. By standard, vertical separators are assembled every other e-chain® link. .





Vertical separator R171



Vertical Separator

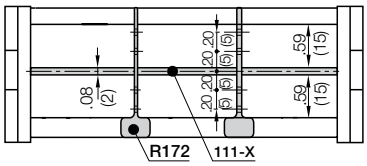
Unassembled	**Part No. R171**
Assembled	**Part No. R172**

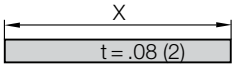
- **Standard separator R171 for e-chains®**
  This separator is used for general subdivision of e-chain®.

Option 2: Full-width shelf

It is ideal for use in applications involving many thin cables with similar or identical diameters. This shelf slides into place and spans the entire width of the chain.







Shelves 110-XX

Shelves can be inserted at 5 different heights in .20” (5mm) increments

Width X in.	(mm)	Part No. Unassembled	Part No. Assembled
0.59	(15)	**110-15**	**111-15**
0.98	(25)	**110-25**	**111-25**
1.50	(38)	**110-38**	**111-38**
2.68	(63)	**110-63**	**111-63**
3.15	(80)	**110-80**	**111-80**

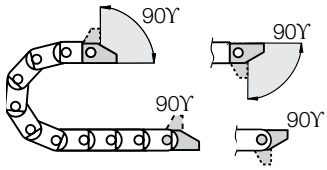
PDF: igus.com/e-chain-pdfs
Product information: igus.com/e-chains

e-chain system® E2 tubes
Series R17
Mounting Brackets

Option: locking

- One piece mounting bracket
- Corrosion resistant
- Available preassembled
- Inner and outer attachment possible
- Available with or without integrated strain relief tiewrap plates

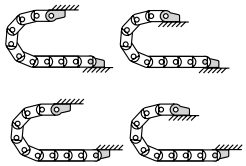
Moving end
117...1P(Z)



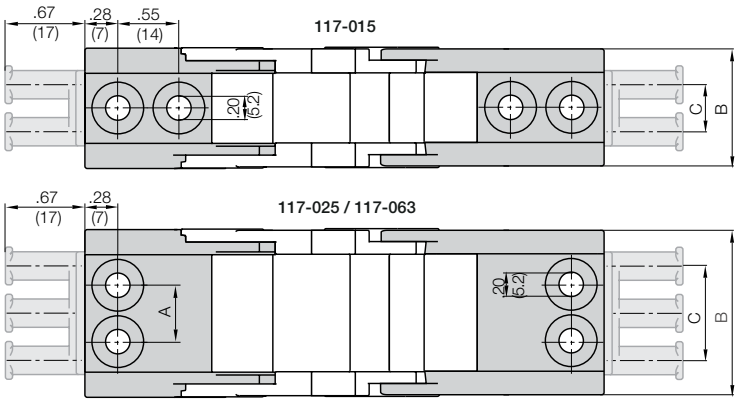
Fixed end
117...2P(Z)



Possible installation configurations -



117...1P(Z)
Moving end



117...2P(Z)
Fixed end

Part Number Structure

117-	015-	12	PZ

- PZ - With tiewrap plate
  P - Without tiewrap plate
- Full set
- Width index
- Mounting brackets for selected chain type

Part number examples are shown for pivoting brackets. For locking brackets fill in the blank with 12

Part No. Full Set (pivoting)
with Tiewrap Plate
Series R17 with 25mm inner width
117-025-12PZ

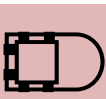
Part No. Full Set (pivoting)
without Tiewrap Plate
Series R17 with 25 mm inner width
117-025-12P

Full set, for both ends:
117- 025- 12 PZ Full set, **each part with pin/bore + tiewrap plate**
Single-part order:
117- 025- 12 PZ Mounting bracket **with bore + tiewrap plate**
117- 025- 12 PZ Mounting bracket **with pin + tiewrap plate**

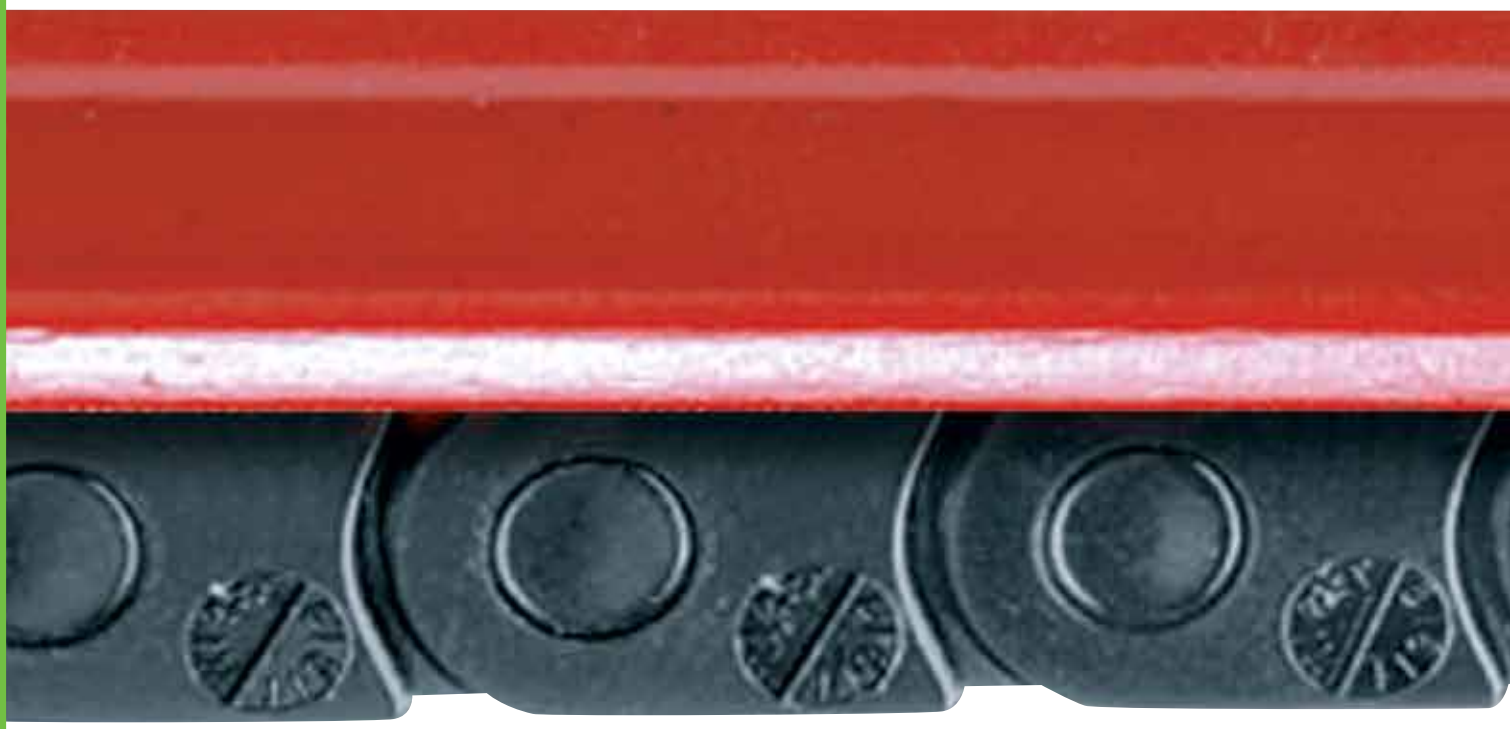
For Chain Type	Part No. Full set with Tiewrap Plate	Part No. Full Set without Tiewrap Plate	Dimension A in.	(mm)	Dimension B in.	(mm)	Dimension C in.	(mm)	Number of Teeth
R17-015	**117-015-12PZ**	**117-015-12P**	–	–	1.01	(25.7)	.39	(10)	2
R17-025	**117-025-12PZ**	**117-025-12P**	.47	(12)	1.41	(35.7)	.79	(20)	3
R17-063	**117-063-12PZ**	**117-063-12P**	1.89	(48)	2.91	(73.7)	1.18	(30)	6

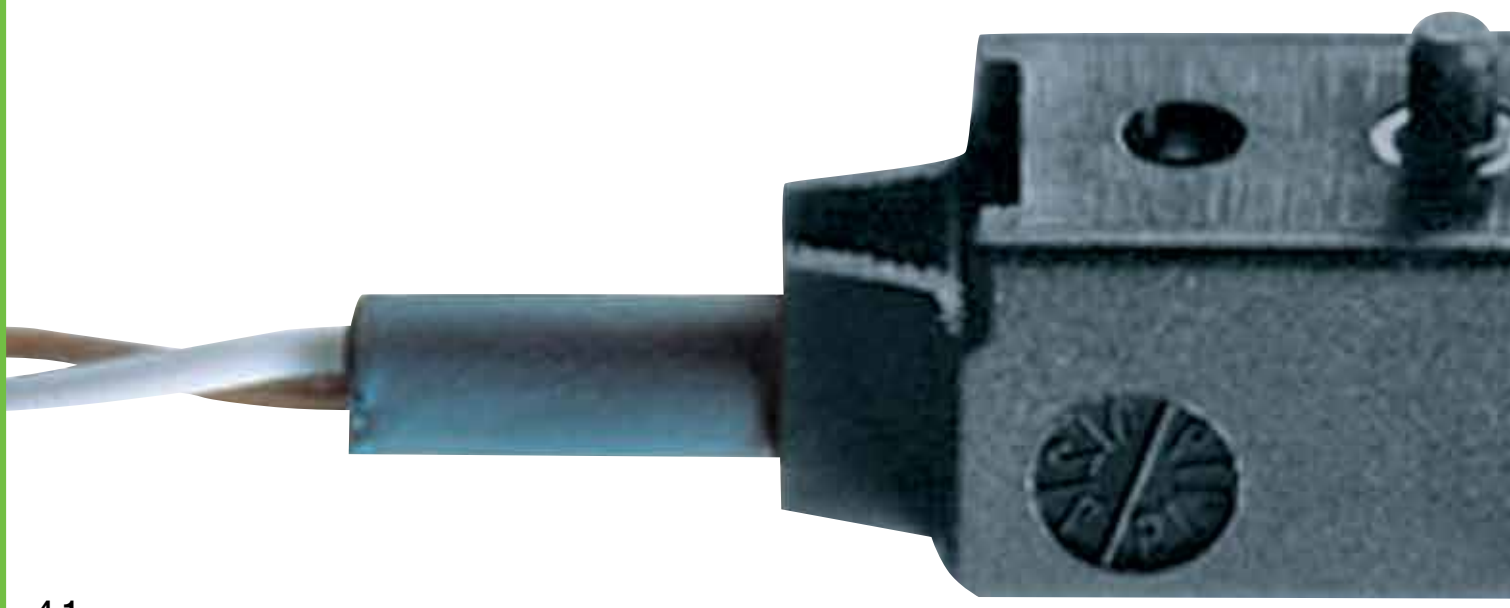












igus®

E2 Micro

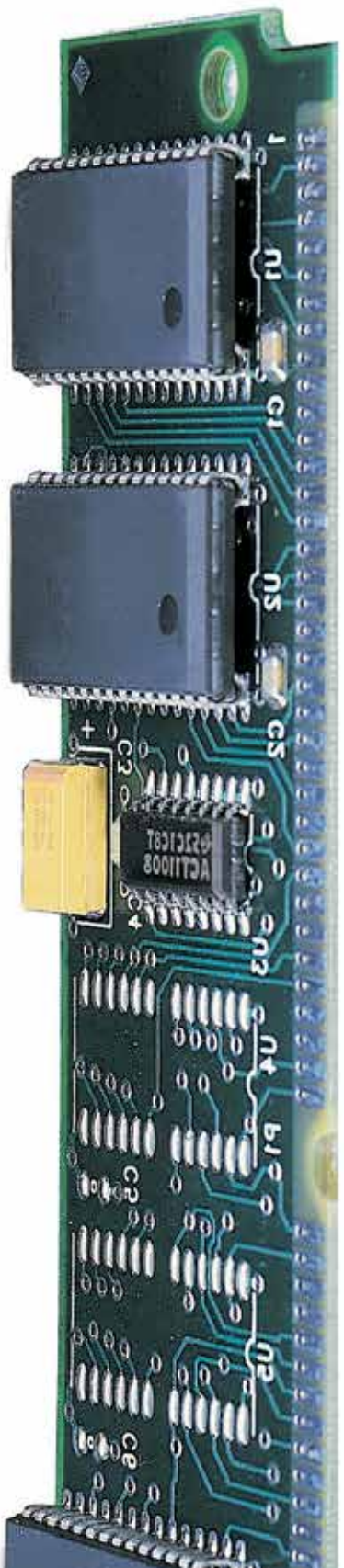


E2 Micro igus®' smallest e-chain® cable carrier

System E2 Micro—considered one of the world's smallest cable carriers—can fit into almost any application, including those with tight space restrictions and small bending radii. System E2 Micro is cost-effective and available in many styles and sizes with various accessory options.

Typical industries and applications

- Models (Micro e-chains®)
- Automatic doors
- Vehicles
- Measuring machines
- Electric equipment
- Pick and place robots
- General machinery



iF-Design Award -
for E2 Micro - Series 05

Special equipment: Electrically conductive
ESD/ATEX version upon request

IPA Qualification Certificate:
Cleanroom test upon request

UL94 - V2 class for Series 03 and
UL94 - HB class for all other Micro Series

Smallest inner heights 5 mm:
Series 03 E2 Micro



igus® E2 micro e-chains® are robust for standing applications

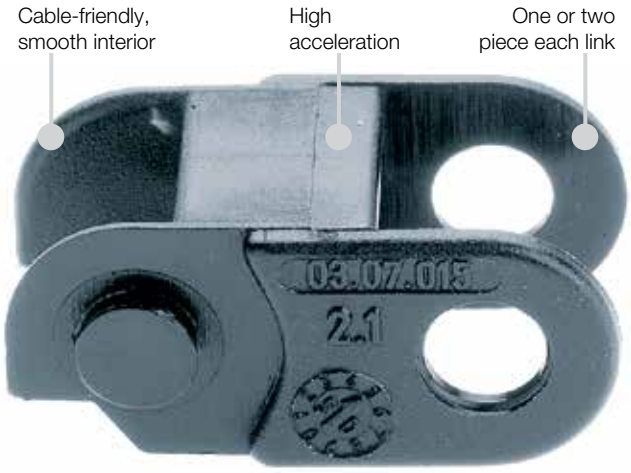


Sliding door in train - UL 94-V2 version



Sliding door in subway with igus®
Chainflex® CF9 cable for smallest spaces

e-chain system® E2 Micro Selection Guide



- One-piece e-chains®, from inner height of .20 (5 mm)
- High torsional rigidity
- Smallest inner heights and bending radii
- Mounting brackets with optional strain relief
- Small pitch for smooth running
- Cable-friendly, smooth interior
- Low weight
- Large pins for longer life
- Space-saving ratio of inner-to-outer dimensions
- To find more technical data about the material, chemical resistance and temperatures ➤ **Design, Chapter 1**

E2 Micro - one-piece e-chains®

One-piece, non snap-open



Series	Inner height *hi*		Inner width *Bi*		Outer width *Ba*		Outer height *ha*		Bending radius *R*	
	in.	(mm)	in.	(mm)	in.	(mm)	in.	(mm)	in.	(mm)
03	.20	(5)	.20-.39	(5-10)	.34-.54	(8.7-13.7)	.31	(8)	.39-1.10	(10-28)
04	.28	(7)	.28-1.18	(7-30)	.47-1.38	(12-35)	.39	(10)	.59-1.89	(15-48)
05	.39	(10)	.24-2.52	(6-64)	.39-2.68	(10-68)	.47	(12)	.71-1.50	(18-38)
045	.41	(10.3)	.24-2.52	(6-64)	.47-2.76	(12-70)	.49	(12.5)	.71-1.50	(18-38)
06[1)]	.41	(10.5)	.24-2.52	(6-64)	.49-2.80	(12.5-71)	.59	(15)	.71-1.50	(18-38)
E2C-10	.42	(10.6)	.24-1.97	(6-50)	.53-2.26	(13.4-57.4)	.59	(15)	.71-1.50	(18-38)
E2C-15	.59	(14.9)	.39-1.97	(10-50)	.70-2.28	(17.8-57.8)	.76	(19.3)	1.10-2.95	(28-75)
08[2)]	.59	(15)	.39-1.97	(10-50)	.72-2.29	(18.2-58.2)	.76	(19.3)	.98-1.89	(25-48)

E2 Micro - two-piece e-chains®

Snap-open along the inner radius



Series	Inner height *hi*		Inner width *Bi*		Outer width *Ba*		Outer height *ha*		Bending radius *R*	
	in.	(mm)	in.	(mm)	in.	(mm)	in.	(mm)	in.	(mm)
E2i-10	.41	(10.3)	.63-1.57	(16-40)	.89-1.85	(22.5-47.0)	.59	(15)	.71-1.50	(18-38)
E2i-15	.56	(14.3)	.63-1.57	(16-40)	.95-1.90	(24.2-48.2)	.76	(19.3)	1.10-1.89	(28-48)

E2 Micro - two-piece e-chains®

Snap-open along the outer radius



Series	Inner height *hi*		Inner width *Bi*		Outer width *Ba*		Outer height *ha*		Bending radius *R*	
	in.	(mm)	in.	(mm)	in.	(mm)	in.	(mm)	in.	(mm)
E2-10	.40	(10.1)	.24-1.97	(6-50)	.53-2.26	(13.4-57.4)	.59	(15)	.71-1.50	(18-38)
B07[3)]	.41	(10.3)	.63-1.57	(16-40)	.89-1.85	(22.5-47.0)	.59	(15)	.71-1.50	(18-38)
B09[4)]	.56	(14.3)	.63-1.57	(16-40)	.95-1.90	(24.2-48.2)	.76	(19.3)	1.10-1.89	(28-48)
E2-15	.57	(14.4)	.39-1.97	(10-50)	.70-2.28	(17.8-57.8)	.76	(19.3)	1.10-2.95	(28-75)

For new designs we recommend E2 micro new generation series **1)** E2C-10, **2)** E2C-15, **3)** E2-10, **4)** E2-15

Available from stock. Orders ship as early as today.*

*On average 90% of orders ship the same day..

e-chain system® E2 Micro
Assembly Instructions

Assembling | E2 micro



Twist and click

Separating | E2 micro



Twist and separate

Specialty | E2 micro



igus® Micro e-chains® - for smallest bending radii with Chainflex® CF98 and CF99 - 4 x d!

Specialty | B07 and B09



B07 and B09: two-piece - Snap-open along outer radius with film-hinge

e-chain system® E2 Micro
Series 03

.20

Price Index

Series 03

Special Features / Options

IPA Qualification Certificate:
Cleanroom test upon request

ESD Classification:
Electrically conductive ESD/
ATEX version upon request

Smallest inner height
.20" (5 mm)

Flammability Class
VDE 0304 IIC UL94 V2

Assembly Tips



Easy to assemble and disassemble

Features & Benefits

1. Mounting bracket with integrated strain relief
2. One-piece, non snap-open e-chain®
3. Very lightweight - low price
4. igus® smallest e-chain® - interior dimensions .20" x .20" (5 x 5 mm)
5. Dirt-repellant exterior
6. Available as E-Z style e-chain, See Chapter 2
7. Patented push-button design for better stability



Usage Guidelines

- If quieter operation is required
- If cost is a factor
- If snap-open links are not necessary

- If snap-open links are required
  ➤ **Series 047 "Zipper"**
- If quick insertion of cables with preassembled connector is required
  ➤ **Series E03 E-Z Chain**

Order Example: Complete e-chain®

Please indicate chain length or number of links. Example:

3.28 ft (1 m) **03-05-028-0**	**e-chain®**
1 Set **03-05-12Z**	**Mounting Bracket**

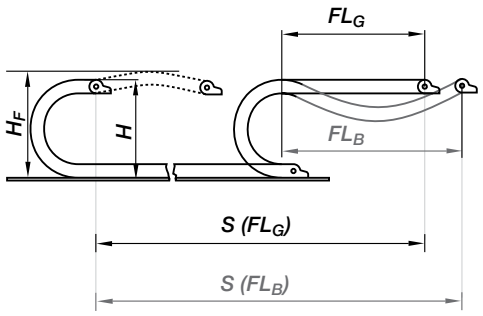
e-chain system® E2 Micro
Series 03
Installation Dimensions

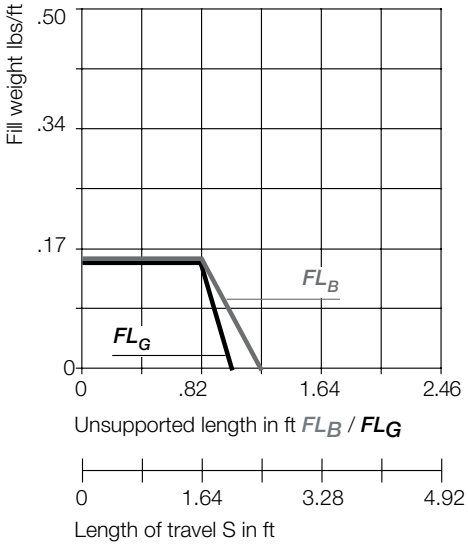
Short travel, unsupported length

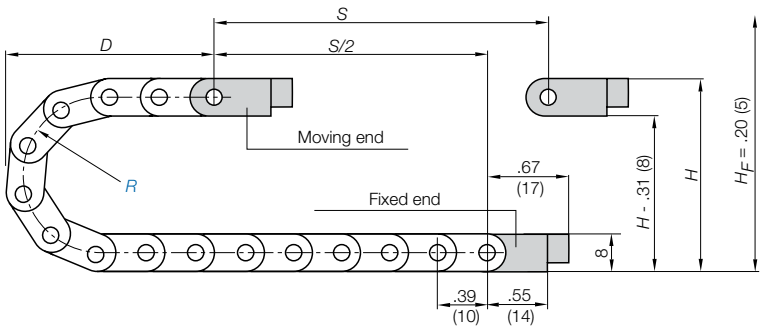
● FL_B = unsupported with permitted sag

● FL_G = unsupported with straight upper run

Further information ➤ Design, Chapter 1







Pitch per link: = .39" (10 mm)
Links per ft (m): = 30.47 (100)
For center mount applications:
Chain length = $\frac{S}{2} + K$

The required clearance height: $H_F = H + .20$ in. **(5 mm)** (with .067 lbs/ft (0.1 kg/m) fill weight.
Please consult igus® if space is particularly restricted.

R	.39 (010)	.47 (012)	.59 (015)	.71 (018)	1.10 (028)
H	1.10 (28)	1.26 (32)	1.50 (38)	1.73 (44)	2.52 (64)
D	1.14 (29)	1.22 (31)	1.34 (34)	1.46 (37)	1.85 (47)
K	2.17 (55)	2.36 (60)	2.76 (70)	3.15 (80)	4.33 (110)

Short Travels - Unsupported

Unsupported e-chains® feature positive camber over short travels. This must be accounted for when specifying the clearance height. Please refer to **Installation dimensions** for further details.

Legend

S = Length of travel
R = Bending radius
H = Nominal clearance height
D = Overlength e-chain® radius in final position
K = π • R + *safety buffer*
H_F = Required clearance height

*If the mounting bracket location is set lower

Speed / acceleration FL_G	max. 65.6 ft/s (20 m/s) / max. 656 ft/s² (200 m/s²)
Speed / acceleration FL_B	max. 9.84 ft/s (3 m/s) / max. 19.69 ft/s² (6 m/s²)
Gliding speed / acceleration (maximum)	max. 9.84 ft/s (3 m/s) / max. 32.8 ft/s² (10 m/s²)
Material - permitted temperature	igumid NB / -40°F (-40°C) up to +176°F (+80° C)
Flammability Class, igumid NB	VDE 0304 IIC UL94 V2

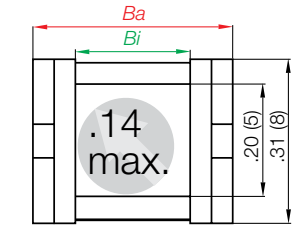
Technical Data

Details of material properties
➤ Chapter 1

PDF: igus.com/e-chain-pdfs
Product information: igus.com/e-chains

e-chain system® E2 Micro
Series 03

Series 03 - e-chain® non snap-open



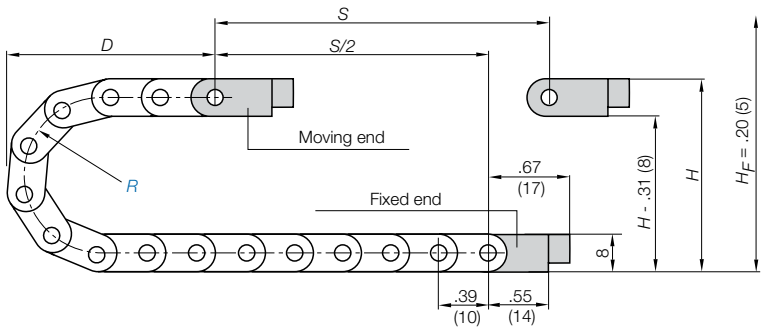




Part Number Structure

03-	05-	028-	0

- 0 — Color - Black
- 028 — Bending radius
- 05 — Width
- 03 — Series



Supplement part number with required radius. Example: 03-05-028-0
Pitch: .39 in. (10 mm) per link links/ft (m) = 30.47 (100)

Part Number			Bi in. (mm)	Ba in. (mm)	Weight lbs/ft (kg/m)
03-05-		-0	.20 (5)	.34 (8.7)	≈ 0.027 (0.04)
03-07-		-0	.28 (7)	.42 (10.7)	≈ 0.034 (0.05)
03-10-		-0	.39 (10)	.54 (13.7)	≈ 0.040 (0.06)

Choose from the radii below for all of the above sizes
Radius (mm) Example: 03-05-028-0

	010	012	015	018	028
R	.39 (010)	.47 (012)	.59 (015)	.71 (018)	1.10 (028)
H	1.10 (28)	1.26 (32)	1.50 (38)	1.73 (44)	2.52 (64)
D	1.14 (29)	1.22 (31)	1.34 (34)	1.46 (37)	1.85 (47)
K	2.17 (55)	2.36 (60)	2.76 (70)	3.15 (80)	4.33 (110)

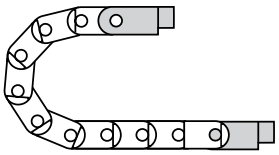
0=Standard color black. For other colors see Chapter 1

e-chain system® E2 Micro
Series 03
Mounting Brackets

Polymer, one-piece

- One-piece mounting bracket
- Corrosion resistant
- Available preassembled
- Rapid installation through adaptor plate

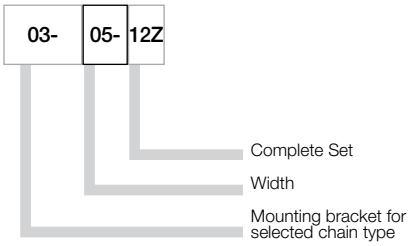
Moving end
03 ...1Z

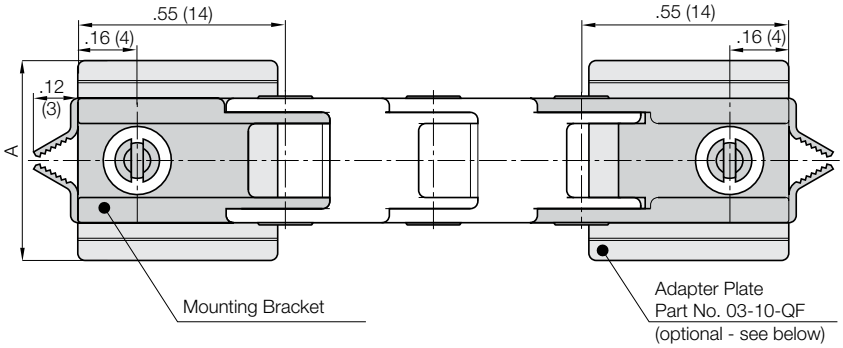


Fixed end
03...2Z



Part Number Structure





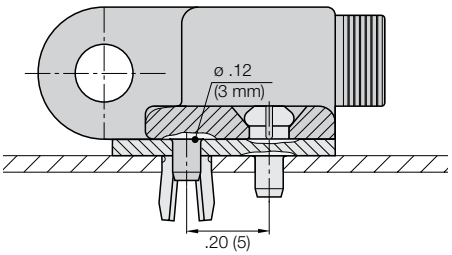
Full set, for both ends:
03- 05- 12Z Full set, **each part with pin/bore**
Single-part order:
03- 05- 1Z Mounting bracket **with bore**
03- 05- 2Z Mounting bracket **with pin**

Chain Width	Part No. Full Set	Dimension A in.	(mm)
-05	03-05-12Z	.34	(8.7)
-07	03-07-12Z	.42	(10.7)
-10	03-10-12Z	.54	(13.7)

Additional Accessories



03-10-QF = Adapter plate for all sizes
The adapter has broken edges, so that it can be adapted to the respective chain width. It is not absolutely necessary for attaching the mounting brackets. The mounting brackets can also be screwed on without the adapter plate.



PDF: igus.com/e-chain-pdfs
Product information: igus.com/e-chains

e-chain system® E2 Micro
Series 04

.28

Price Index

Series 04

Special Features / Options

IPA Qualification Certificate:
Cleanroom test upon request

ESD Classification:
Electrically conductive ESD/
ATEX version upon request

Flammability Class
VDE 0304 IIC UL94 HB

Assembly Tips



Easy to assemble and disassemble

Features & Benefits

1. Very lightweight - low price
2. One-piece, non snap-open e-chain®
3. Small e-chain® -
   interior dimensions .28” x .28” (7 x 7 mm)
4. Dirt-repellant exterior



Usage Guidelines

- If quieter operation is required
- If cost is a factor
- If snap-open links are not necessary

- If snap-open links are required
  ➤ **Series 047 “Zipper”**
- If quick insertion of cables with preassembled connector is required
  ➤ **Series E04 E-Z Chain**

Order Example: Complete e-chain®

Please indicate chain length or number of links. Example:

3.28 ft (1 m) **04-07-038-0**	**e-chain®**
1 Set **040-07-12**	**Mounting Bracket**

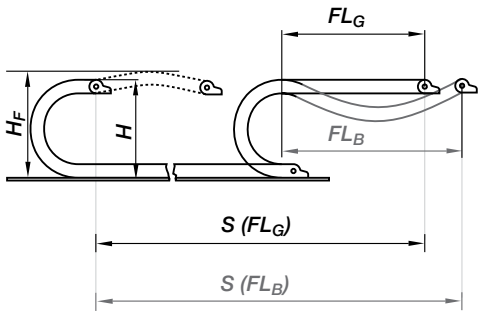
e-chain system® E2 Micro Series 04 Installation Dimensions

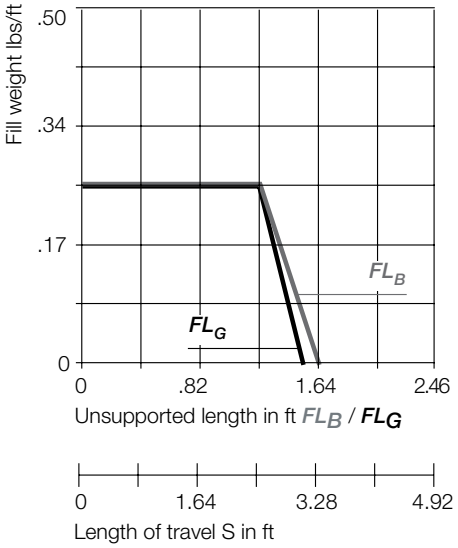
Short travel, unsupported length

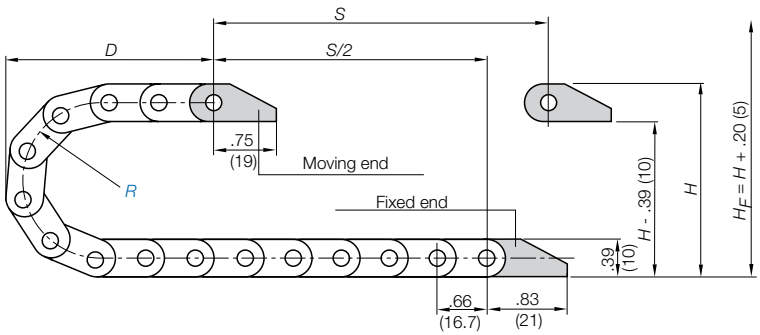
● FL_B = unsupported with permitted sag

● FL_G = unsupported with straight upper run

Further information ➤ Design, Chapter 1







Pitch per link: = .66" (16.7 mm)
Links per ft (m): = 18.28 (60)
For center mount applications:
Chain length = $\frac{S}{2} + K$

The required clearance height: $H_F = H + .20$ **in. (5 mm)** (with .067 lbs/ft (0.1 kg/m) fill weight.
Please consult igus® if space is particularly restricted.

R	.59 (015)	.71 (018)	1.10 (028)	1.50 (038)	1.89 (048)
H	1.57 (40)	1.81 (46)	2.60 (66)	3.39 (86)	4.17 (106)
D	1.77 (45)	1.89 (48)	2.28 (58)	2.68 (68)	3.07 (78)
K	3.35 (85)	3.54 (90)	4.92 (125)	6.10 (155)	7.28 (185)

Short Travels - Unsupported

Unsupported e-chains® feature positive camber over short travels. This must be accounted for when specifying the clearance height. Please refer to **Installation dimensions** for further details.

Legend

S = Length of travel
R = Bending radius
H = Nominal clearance height
D = Overlength e-chain® radius in final position
K = π • R + *safety buffer*
H_F = Required clearance height

Speed / acceleration FL_G	max. 65.6 ft/s (20 m/s) / max. 656 ft/s² (200 m/s²)
Speed / acceleration FL_B	max. 9.84 ft/s (3 m/s) / max. 19.69 ft/s² (6 m/s²)
Gliding speed / acceleration (maximum)	max. 9.84 ft/s (3 m/s) / max. 32.8 ft/s² (10 m/s²)
Material - permitted temperature	igumid G / -40°F (-40°C) up to +248°F (+120° C)
Flammability Class, igumid G	VDE 0304 IIC UL94 HB

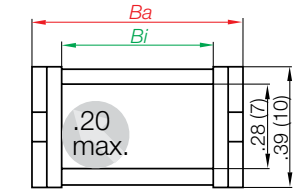
Technical Data

Details of material properties
➤ Chapter 1

PDF: igus.com/e-chain-pdfs
Product information: igus.com/e-chains

e-chain system® E2 Micro
Series 04

Series 04 - e-chain® non snap-open

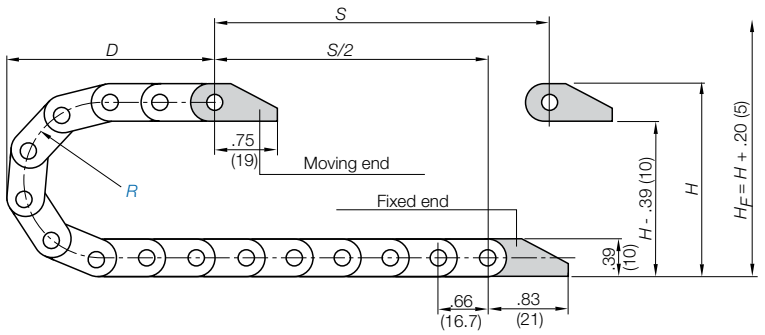






Part Number Structure

04-	07-	038-	0
			Color - Black
		Bending radius	
	Width		
Series			



Supplement part number with required radius. Example: 04-07-[038]-0
Pitch: .66 in. (16.7 mm) per link links/ft (m) = 18.28 (60)

Part Number			Bi in. (mm)	Ba in. (mm)	Weight lbs/ft (kg/m)
04-07-	☐	-0	.28 (7)	.47 (12)	≈ 0.047 (0.07)
04-10-	☐	-0	.39 (10)	.59 (15)	≈ 0.053 (0.08)
04-16-	☐	-0	.63 (16)	.83 (21)	≈ 0.060 (0.09)
04-20-	☐	-0	.79 (20)	.98 (25)	≈ 0.067 (0.10)
04-30-	☐	-0	1.18 (30)	1.38 (35)	≈ 0.073 (0.11)

Choose from the radii below for all of the above sizes
Radius (mm) Example: 04-07-[038]-0

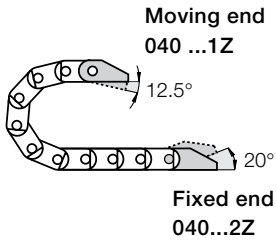
	015	018	028	038	048
R	.59 (015)	.71 (018)	1.10 (028)	1.50 (038)	1.89 (048)
H	1.57 (40)	1.81 (46)	2.60 (66)	3.39 (86)	4.17 (106)
D	1.77 (45)	1.89 (48)	2.28 (58)	2.68 (68)	3.07 (78)
K	3.35 (85)	3.54 (90)	4.92 (125)	6.10 (155)	7.28 (185)

0=Standard color black. For other colors see Chapter 1

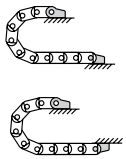
e-chain system® E2 Micro
Series 04
Mounting Brackets

Polymer, one-piece

- One-piece mounting bracket
- Corrosion resistant
- Available preassembled
- Inner and outer attachment possible





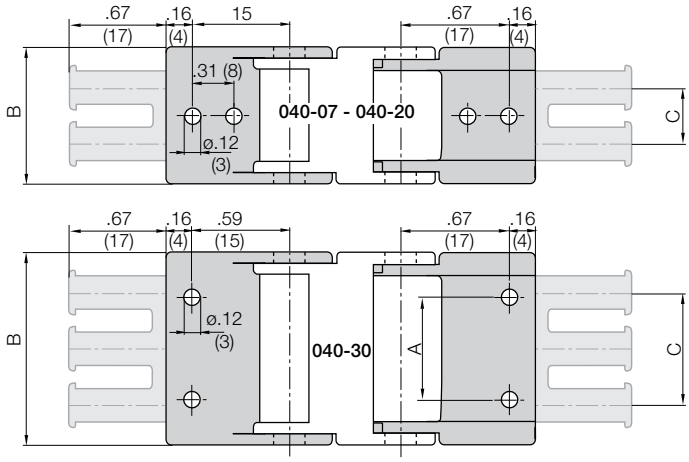


Possible installation configurations -

Part Number Structure

040-	07-	12	PZ

- 040- : Mounting brackets for selected chain type
- 07- : Width
- 12 : Complete Set
- PZ : With tiewrap plate



Full set, for both ends:

040-07-12PZ Full set, **each part with pin/bore**

Single-part order:

040-07-1PZ Mounting bracket **with bore**

040-07-2PZ Mounting bracket **with pin**

Chain Type	Part No. Full set without Tiewrap Plate	Part No. Full set with Tiewrap plate	Dimension A in.	(mm)	Dimensions B in.	(mm)	Dimension C in.	(mm)	Number of Teeth
04-07	**040-07-12**	**040-07-12PZ**	—	—	.47	(12)	—	—	1
04-10	**040-10-12**	**040-07-12PZ**	—	—	.59	(15)	—	—	1
04-16	**040-16-12**	**040-07-12PZ**	—	—	.83	(21)	.39	(10)	2
04-20	**040-20-12**	**040-07-12PZ**	—	—	.98	(25)	.39	(10)	2
04-30	**040-30-12**	**040-07-12PZ**	.87	(22)	1.38	(35)	.79	(20)	3

Additional accessories



Quicksnap - the complete, detachable mounting unit, upon request
Only available for the 040-07 e-chain - **Part No. 040-07-QS**

PDF: igus.com/e-chain-pdfs
Product information: igus.com/e-chains

e-chain system® E2 Micro
Series 05

.39

Price Index

Series 05

Special Features / Options

IPA Qualification Certificate: Cleanroom test upon request

ESD Classification: Electrically conductive ESD/ ATEX version upon request

Flammability Class VDE 0304 IIC UL94 V2

iF-Design Award - for E2 micro - Series 05

Assembly Tips





East to assemble and disassemble

Features & Benefits

1. Very lightweight - ideal for low inertia applications
2. iF-Design Award
3. One-piece, non snap-open e-chain®



Usage Guidelines

- If lightweight construction is required
- If minimal height and width dimensions are required
- If cost is a factor

- If snap-open links are necessary
  ➤ **Series 07 “Zipper”**
- If quick insertion of cables with preassembled connectors is required
  ➤ **Series E06 E-Z Chain**
- If extra rigidity is required
  ➤ **Series 06 E2 Micro**

Order Example: Complete e-chain®

Please indicate chain length or number of links. Example:

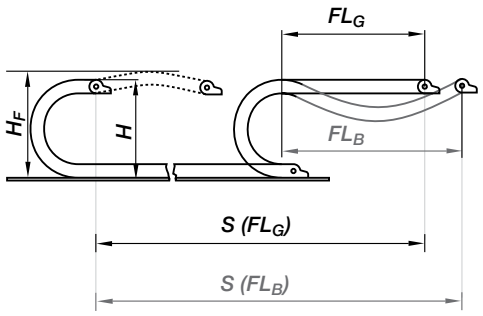
3.28 ft (1 m) **05-20-038-0**	**e-chain®**
1 Set **050-20-12**	**Mounting Bracket**

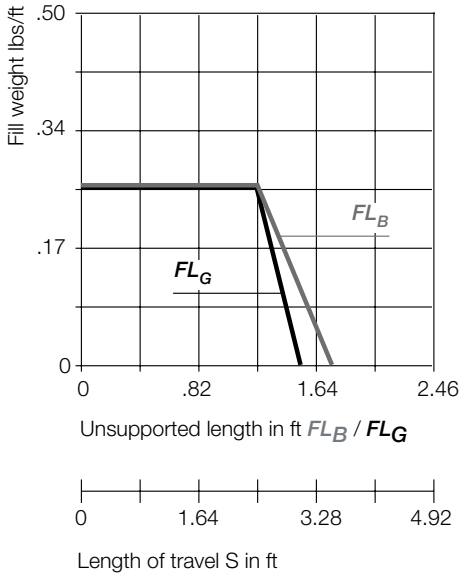
e-chain system® E2 Micro Series 05 Installation Dimensions

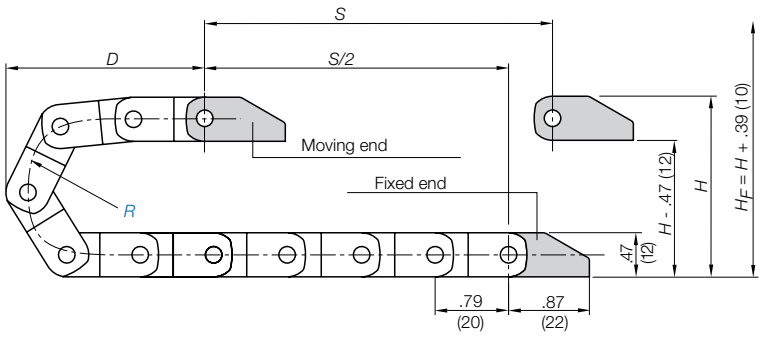
Short travel, unsupported length

- FL_B = unsupported with permitted sag
- FL_G = unsupported with straight upper run

Further information ➤ Design, Chapter 1







Pitch per link: = .79" (20 mm)
Links per ft (m): = 15.24 (50)
For center mount applications:
Chain length = $\frac{S}{2} + K$

The required clearance height: $H_F = H$ **+ .39 in. (10 mm)** (with .13 lbs/ft (0.2 kg/m) fill weight. Please consult igus® if space is particularly restricted.

R	.71 (018)	1.10 (028)	1.50 (038)
H	1.89 (48)	2.68 (68)	3.46 (88)
D	2.13 (54)	2.52 (64)	2.91 (74)
K	3.94 (100)	5.12 (130)	6.30 (160)

Short Travels - Unsupported

Unsupported e-chains® feature positive camber over short travels. This must be accounted for when specifying the clearance height. Please refer to **Installation dimensions** for further details.

Legend

S = Length of travel
R = Bending radius
H = Nominal clearance height
D = Overlength e-chain® radius in final position
K = π • R + *safety buffer*
H_F = Required clearance height

*If the mounting bracket location is set lower

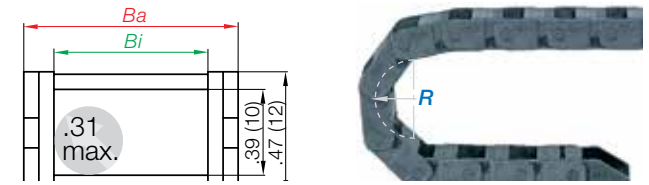
Speed / acceleration FL_G	max. 65.6 ft/s (20 m/s) / max. 656 ft/s² (200 m/s²)
Speed / acceleration FL_B	max. 9.84 ft/s (3 m/s) / max. 19.69 ft/s² (6 m/s²)
Gliding speed / acceleration (maximum)	max. 9.84 ft/s (3 m/s) / max. 32.8 ft/s² (10 m/s²)
Material - permitted temperature	igumid G / -40°F (-40°C) up to +248°F (+120° C)
Flammability Class, igumid G	VDE 0304 IIC UL94 HB

Technical Data

Details of material properties
➤ Chapter 1

PDF: igus.com/e-chain-pdfs
Product information: igus.com/e-chains

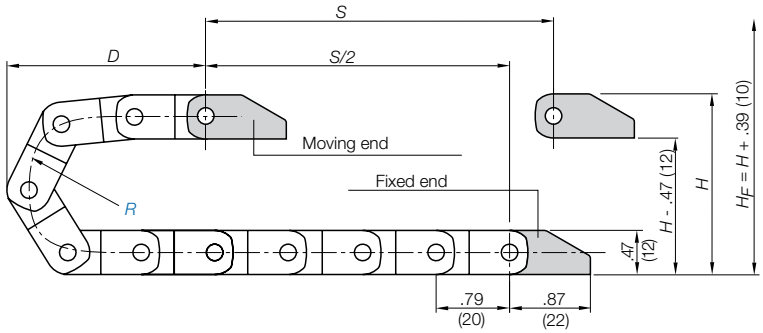
Series 05 - e-chain® non snap-open





Part Number Structure

05-	20-	038-	0
			Color - Black
		Bending radius	
	Width		
Series			



Supplement part number with required radius. Example: 05-20-038-0
Pitch: .79 in. (20 mm) per link links/ft (m) = 15.24 (50)

Part Number			Bi in. (mm)	Ba in. (mm)	Weight lbs/ft (kg/m)
05-06- (05-1)		-0	.28 (6)	.39 (10)	≈ 0.040 (0.06)
05-10- (05-2)		-0	.39 (10)	.55 (14)	≈ 0.047 (0.07)
05-16- (05-3)		-0	.63 (16)	.79 (20)	≈ 0.047 (0.07)
05-20- (05-4)		-0	.79 (20)	94 (24)	≈ 0.054 (0.08)
05-30- (05-5)		-0	1.18 (30)	1.34 (34)	≈ 0.060 (0.09)
05-64-		-0	2.52 (64)	2.68 (68)	≈ 0.128 (0.19)

Choose from the radii below for all of the above sizes
Radius (mm) Example: 05-20-038-0

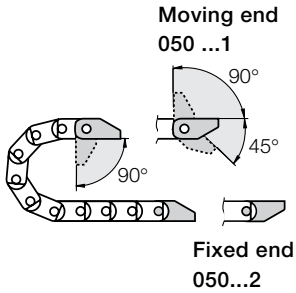
	018	028	038
R	.71 (018)	1.10 (028)	1.50 (038)
H	1.89 (48)	2.68 (68)	3.46 (88)
D	2.13 (54)	2.52 (64)	2.91 (74)
K	3.94 (100)	5.12 (130)	6.30 (160)

0=Standard color black. For other colors see Chapter 1

e-chain system® E2 Micro
Series 05
Mounting Brackets

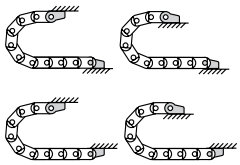
Polymer, one-piece

- One-piece mounting bracket
- Corrosion resistant
- Available preassembled
- Inner and outer attachment possible



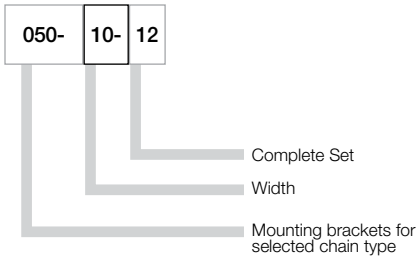


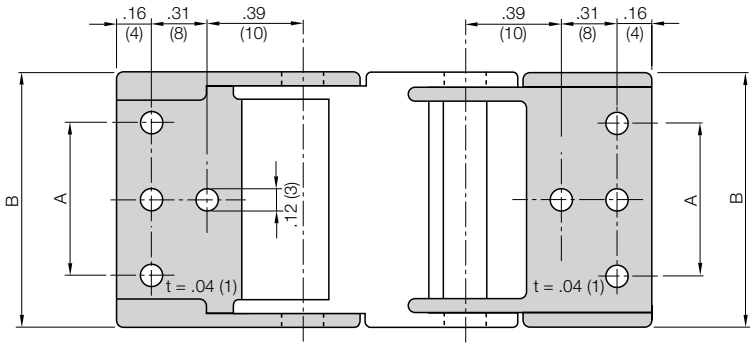




Possible installation configurations -

Part Number Structure





Full set, for both ends:

050- 10- 12 Full set, **each part with pin/bore**

Single-part order:

050- 10- 1 Mounting bracket **with bore**

050- 10- 2 Mounting bracket **with pin**

Chain Type	Part No. Full set	Dimension A in.	(mm)	Dimensions B in.	(mm)
05-06 (05-1)	**050-06-12**	—	—	.42	(10.7)
05-10 (05-2)	**050-10-12**	—	—	.58	(14.7)
05-16 (05-3)	**050-16-12**	—	—	.81	(20.7)
05-20 (05-4)	**050-20-12**	—	—	.97	(24.7)
05-30 (05-5)	**050-30-12**	.87	(22)	1.57	(34.7)
05-64	**050-64-12**	2.20	(56)	2.70	(68.7)

PDF: igus.com/e-chain-pdfs
Product information: igus.com/e-chains

e-chain system® E2 Micro
Series 045

.41

Price Index

Series 045

Special Features / Options

IPA Qualification Certificate:
Cleanroom test upon request

ESD Classification:
Electrically conductive ESD/
ATEX version upon request

Flammability Class
VDE 0304 IIC UL94 HB

Assembly Tips



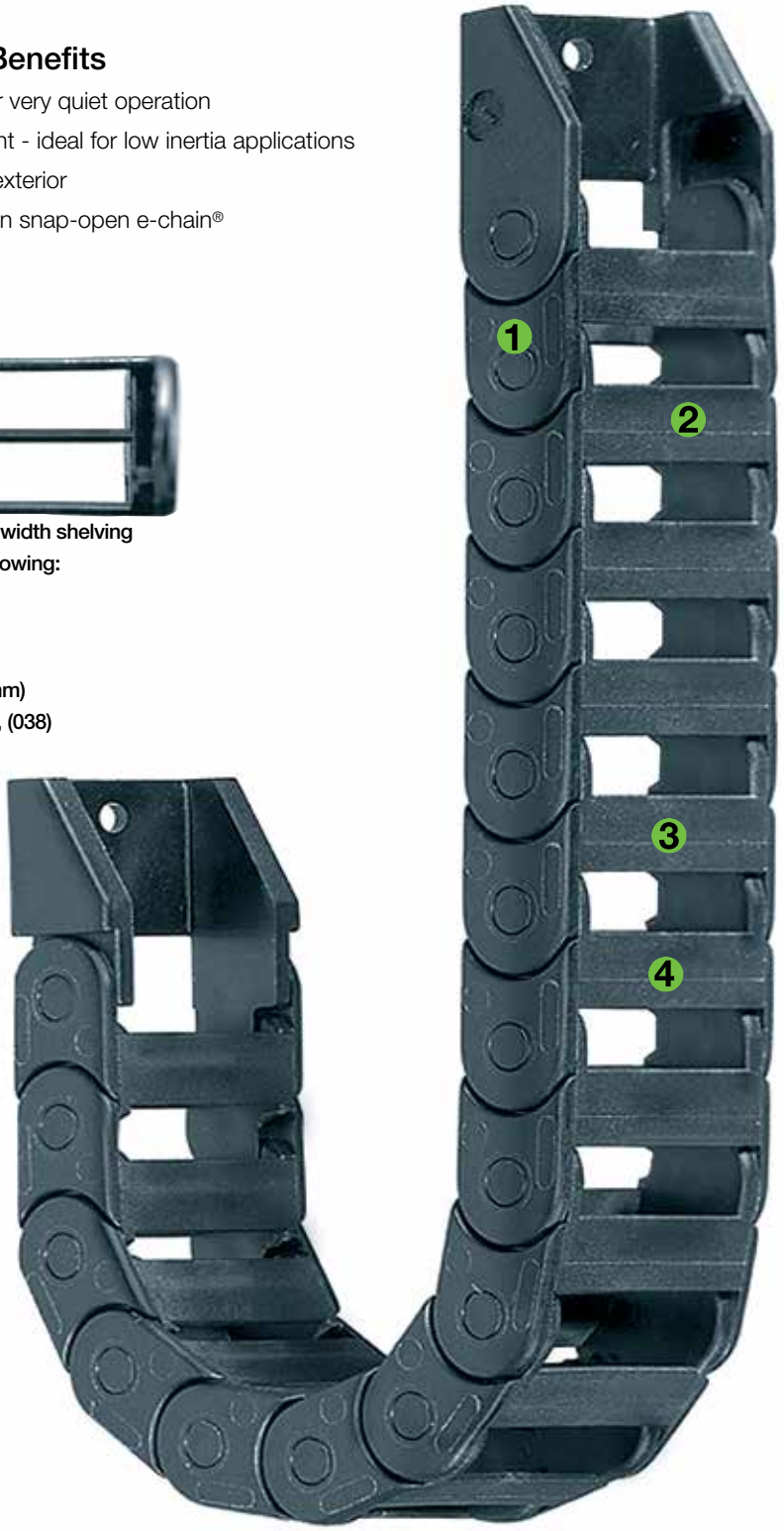
Easy to assemble and disassemble

Features & Benefits

1. Small pitch for very quiet operation
2. Very lightweight - ideal for low inertia applications
3. Dirt-repellant exterior
4. One-piece, non snap-open e-chain®



Series 046 with full-width shelving
available for the following:
046-16-018
046-16-028
046-16-038
Width Bi: .63" (16 mm)
Radii R: (018), (028), (038)



Usage Guidelines

- If very quiet operation is required
- Aesthetic design
- If excellent service life is required
- If cost is a factor
- If small bending radii are required

- If snap-open links are required
  ➤ **Series 047 "Zipper"**
- If quick insertion of cables with preassembled connector is required
  ➤ **Series E06 E-Z Chain**
- If extra rigidity is required
  ➤ **Series 06 E2 Micro**

Order Example: Complete e-chain®

Please indicate chain length or number of links. Example:

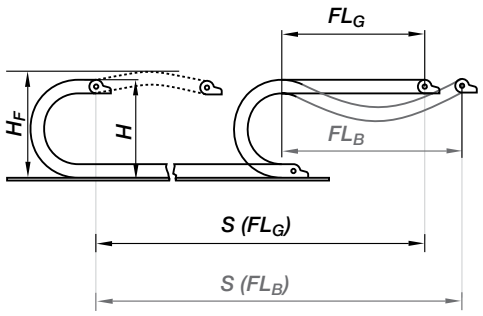
3.28 ft (1 m) **045-20-038-0**	**e-chain®**
1 Set **0450-20-12**	**Mounting Bracket**

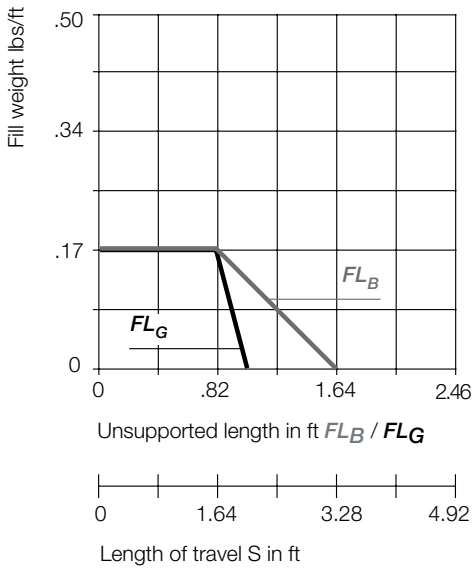
e-chain system® E2 Micro
Series 045
Installation Dimensions

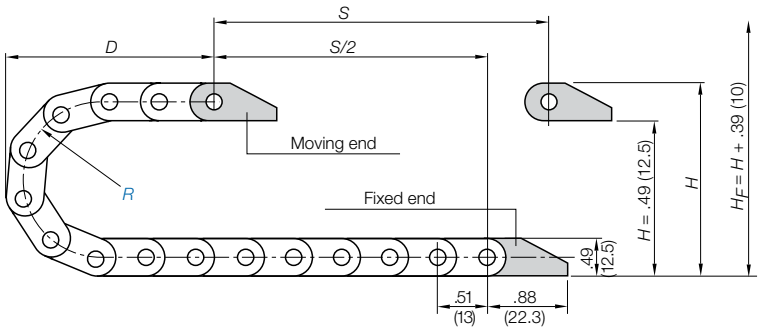
Short travel, unsupported length

- FL_B = unsupported with permitted sag
- FL_G = unsupported with straight upper run

Further information ➤ Design, Chapter 1







Pitch per link: = .51" (13 mm)
Links per ft (m): = 23.47 (77)
For center mount applications:
Chain length = $_{S}/_{2}$ + K

The required clearance height: ***HF = H + .39 in. (10 mm)*** (with .13 lbs/ft (0.2 kg/m) fill weight.
Please consult igus® if space is particularly restricted.

R	.71 (018)	1.10 (028)	1.50 (038)
H	1.91 (48.5)	2.70 (68.5)	3.48 (88.5)
D	1.73 (44)	2.13 (54)	2.52 (64)
K	3.35 (85)	4.53 (115)	5.91 (150)

Short Travels - Unsupported

Unsupported e-chains® feature positive camber over short travels. This must be accounted for when specifying the clearance height. Please refer to **Installation dimensions** for further details.

Legend

S = Length of travel
R = Bending radius
H = Nominal clearance height
D = Overlength e-chain® radius in final position
K = π • R + *safety buffer*
H_F = Required clearance height

*If the mounting bracket location is set lower

Speed / acceleration FL_G	max. 65.6 ft/s (20 m/s) / max. 656 ft/s² (200 m/s²)
Speed / acceleration FL_B	max. 9.84 ft/s (3 m/s) / max. 19.69 ft/s² (6 m/s²)
Gliding speed / acceleration (maximum)	max. 9.84 ft/s (3 m/s) / max. 32.8 ft/s² (10 m/s²)
Material - permitted temperature	igumid G / -40°F (-40°C) up to +248°F (+120° C)
Flammability Class, igumid G	VDE 0304 IIC UL94 HB

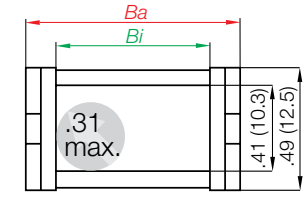
Technical Data

Details of material properties
➤ Chapter 1

PDF: igus.com/e-chain-pdfs
Product information: igus.com/e-chains

e-chain system® E2 Micro
Series 045

Series 045 - e-chain® non snap-open

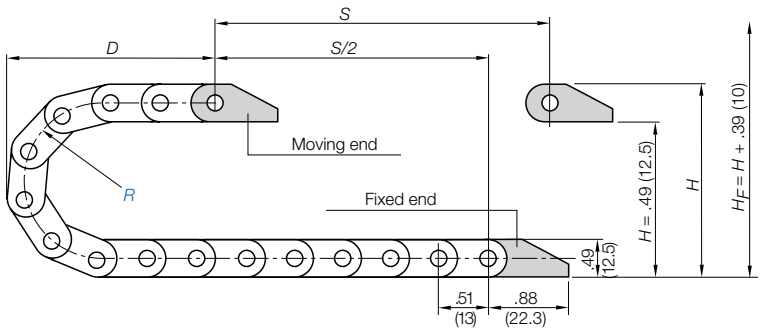






Part Number Structure

045-	20-	038-	0
Series	Width	Bending radius	Color - Black



Supplement part number with required radius. Example: 045-20-038-0
Pitch: .51 in. (13 mm) per link links/ft (m) = 23.47 (77)

Part Number			*Bi* in. (mm)	*Ba* in. (mm)	Weight lbs/ft (kg/m)
045-06-	☐	-0	.24 (6)	.47 (12)	≈ 0.060 (0.09)
045-10-	☐	-0	.39 (10)	.63 (16)	≈ 0.067 (0.10)
045-16-	☐	-0	.63 (16)	.87 (22)	≈ 0.074 (0.11)
045-20-	☐	-0	.79 (20)	1.02 (26)	≈ 0.087 (0.13)
045-30-	☐	-0	1.18 (30)	1.42 (36)	≈ 0.108 (0.16)
045-64-	☐	-0	2.52 (64)	2.76 (70)	≈ 0.128 (0.19)

Choose from the radii below for all of the above sizes
Radius (mm) Example: 045-20-038-0

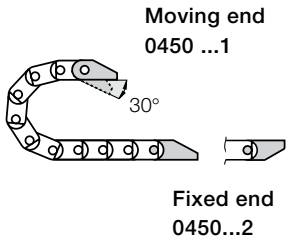
	018	028	038
R	.71 (018)	1.10 (028)	1.50 (038)
H	1.91 (48.5)	2.70 (68.5)	3.48 (88.5)
D	1.73 (44)	2.13 (54)	2.52 (64)
K	3.35 (85)	4.53 (115)	5.91 (150)

0=Standard color black. For other colors see Chapter 1

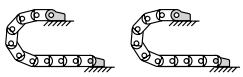
e-chain system® E2 Micro
Series 045
Mounting Brackets

Polymer, one-piece

- One-piece mounting bracket
- Corrosion resistant
- Available preassembled
- Inner and outer attachment possible

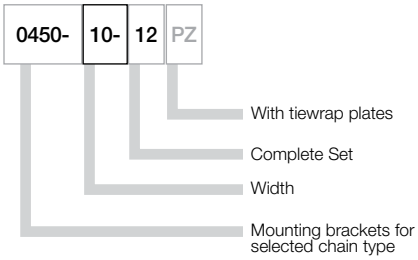


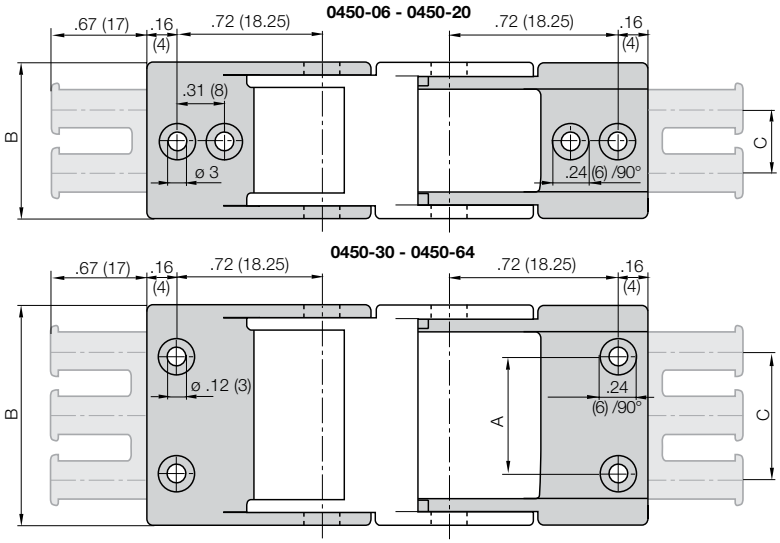




Possible installation configurations -

Part Number Structure





Full set, for both ends:
0450-10-12-PZ
Full set, **each part with pin/bore + tiewrap plate**
Single-part order:
0450-10-1-PZ
Mounting bracket **with bore + tiewrap plate**
0450-10-2-PZ
Mounting bracket **with pin + tiewrap plate**

Chain Type	Part No. Full set without Tiewrap Plate	Part No. Full Set with Tiewrap Plate	Dimension A in.	(mm)	Dimensions B in.	(mm)	Dimensions C in.	(mm)	Number of Teeth
045-06	**0450-06-12**	**0450-06-12PZ**	—	—	.47	(12)	—	—	1
045-10	**0450-10-12**	**0450-10-12PZ**	—	—	.63	(16)	—	—	1
045-16	**0450-16-12**	**0450-16-12PZ**	—	—	.87	(22)	.39	(10)	2
045-20	**0450-20-12**	**0450-20-12PZ**	—	—	1.02	(26)	.39	(10)	2
045-30	**0450-30-12**	**0450-30-12PZ**	.87	(22)	1.42	(36)	.79	(20)	3
045-64	**0450-64-12**	**0450-64-12PZ**	2.20	(56)	2.76	(70)	1.97	(50)	6

Additional Accessories



Quickfix - mounting bracket with dowel, upon request
Part No.
0450-16-12Q

PDF: igus.com/e-chain-pdfs
Product information: igus.com/e-chains

e-chain system® E2 Micro
Series 06

.41

For new designs we recommend E2 Micro “New Generation: E2C-10

Price Index

Series 06

Special Features / Options

IPA Qualification Certificate: Cleanroom test upon request

ESD Classification: Electrically conductive ESD/ ATEX version upon request

Flammability Class VDE 0304 IIC UL94 HB

Assembly Tips





East to assemble and disassemble

Features & Benefits

1. High torsional rigidity
2. Very lightweight - low price
3. Dirt repellant exterior
4. Mounting bracket with integrated strain relief
5. Molded in separator available





Usage Guidelines

- If high torsional rigidity is required
- If cost is a factor
- If connection options are required - (Quicksnap & Quickfix)

- If snap-open links are required
  ➤ **Series 07 “Zipper”**
- If quick insertion of cables with preassembled connectors is required
  ➤ **Series E06/Z06 E-Z Chain**
- If very quiet operation is required
  ➤ **Series 045 E2 Micro**

Order Example: Complete e-chain®

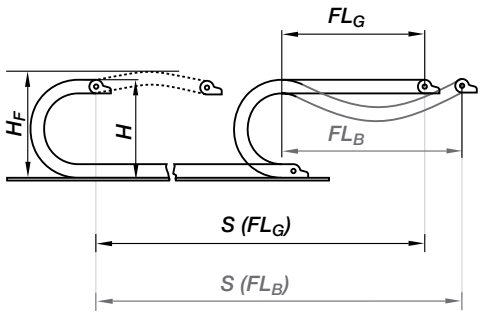
Please indicate chain length or number of links. Example:

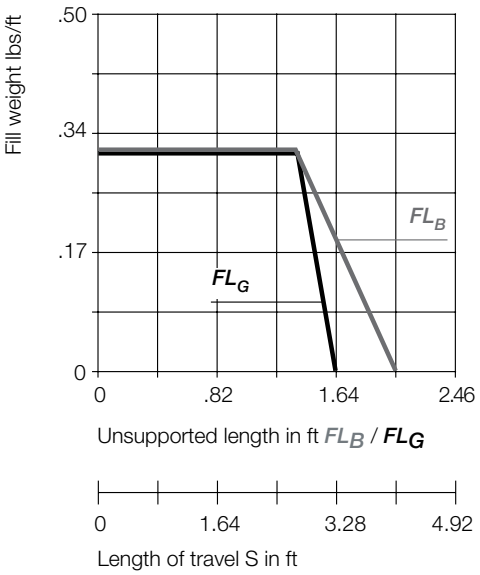
3.28 ft (1 m) **06-20-038-0**	**e-chain®**
1 Set **060-20-12PZ**	**Mounting Bracket**

e-chain system® E2 Micro Series 06 Installation Dimensions

Short travel, unsupported length

● FL_B = unsupported with permitted sag
● FL_G = unsupported with straight upper run
Further information ➤ Design, Chapter 1





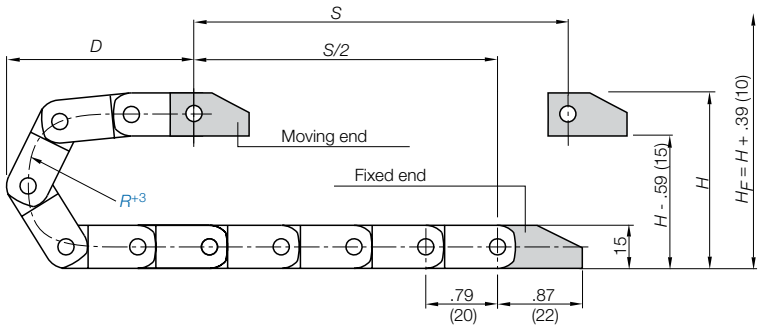
Short Travels - Unsupported

Unsupported e-chains® feature positive camber over short travels. This must be accounted for when specifying the clearance height. Please refer to **Installation dimensions** for further details.

Legend

S = Length of travel
R = Bending radius
H = Nominal clearance height
D = Overlength e-chain® radius in final position
K = π • R + *safety buffer*
H_F = Required clearance height

*If the mounting bracket location is set lower



Pitch per link: = .79" (20 mm)
Links per ft (m): = 15.24 (50)
For center mount applications:
Chain length = $\frac{S}{2} + K$

The required clearance height: ***H_F = H* + .39 in. (10 mm)** (with .13 lbs/ft (0.2 kg/m) fill weight.
Please consult igus® if space is particularly restricted.

R	.71 (018)	1.10 (028)	1.50 (038)
H*	2.01 (51)	2.80 (71)	3.58 (91)
D	2.20 (56)	2.60 (66)	2.99 (76)
K	3.94 (100)	5.12 (130)	6.30 (160)

Speed / acceleration FL_G	max. 65.6 ft/s (20 m/s) / max. 656 ft/s² (200 m/s²)
Speed / acceleration FL_B	max. 9.84 ft/s (3 m/s) / max. 19.69 ft/s² (6 m/s²)
Material - permitted temperature	igumid G / -40°F (-40°C) up to +248°F (+120° C)
Flammability Class, igumid G	VDE 0304 IIC UL94 HB

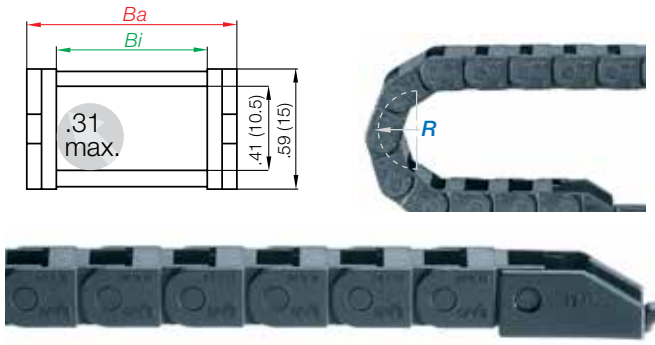
Technical Data

Details of material properties
➤ Chapter 1

PDF: igus.com/e-chain-pdfs
Product information: igus.com/e-chains

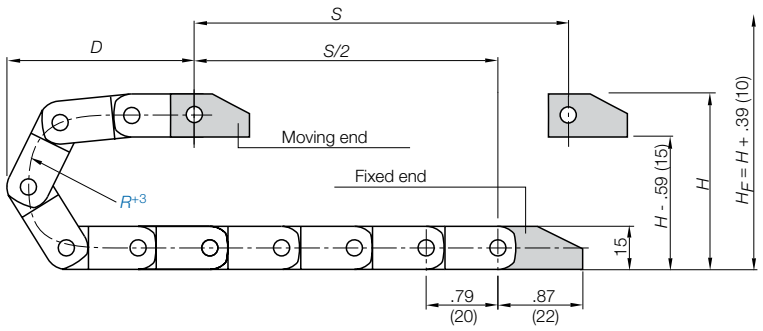
e-chain system® E2 Micro
Series 06

Series 06 - e-chain® non snap-open



Part Number Structure

06-	20-	038-	0
			Color - Black
		Bending radius	
	Width		
Series			



Supplement part number with required radius. Example: 06-20-038-0
Pitch: .79 in. (20 mm) per link links/ft (m) = 15.24 (50)

Part Number			Bi in. (mm)	Ba in. (mm)	Weight lbs/ft (kg/m)
06-06-	☐	-0	.28 (6)	.49 (12.5)	≈ 0.087 (0.13)
06-10-	☐	-0	.39 (10)	.65 (16.5)	≈ 0.094 (0.14)
06-16-	☐	-0	.63 (16)	.89 (22.5)	≈ 0.107 (0.16)
06-20-	☐	-0	.79 (20)	1.06 (27.0)	≈ 0.114 (0.17)
06-30-	☐	-0	1.18 (30)	1.46 (37.0)	≈ 0.134 (0.20)
06-40-	☐	-0	1.57 (40)	1.85 (47.0)	≈ 0.155 (0.23)
06-50-	☐	-0	1.97 (50)	2.24 (57.0)	≈ 0.175 (0.26)
06-64-	☐	-0	2.52 (64)	2.80 (71.0)	≈ 0.202 (0.30)

Choose from the radii below for all of the above sizes
Radius (mm) Example: 06-20-038-0

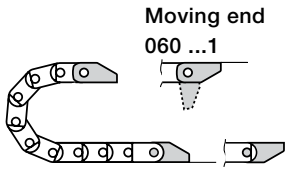
	018	028	038
R	.71 (018)	1.10 (028)	1.50 (038)
H*	2.01 (51)	2.80 (71)	3.58 (91)
D	2.20 (56)	2.60 (66)	2.99 (76)
K	3.94 (100)	5.12 (130)	6.30 (160)

0=Standard color black. For other colors see Chapter 1

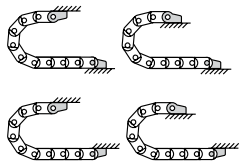
e-chain system® E2 Micro
Series 06
Mounting Brackets

Polymer, one-piece

- One-piece mounting bracket
- Corrosion resistant
- Available preassembled
- Inner and outer attachment possible
- Available with or without strain relief tiewrap plates







Possible installation configurations -

Part Number Structure

060- | 20- | 12 | PZ

- PZ: With assembled strain relief tiewrap plates
- 12: Complete Set
- 20-: Width
- 060-: Mounting brackets for selected chain type

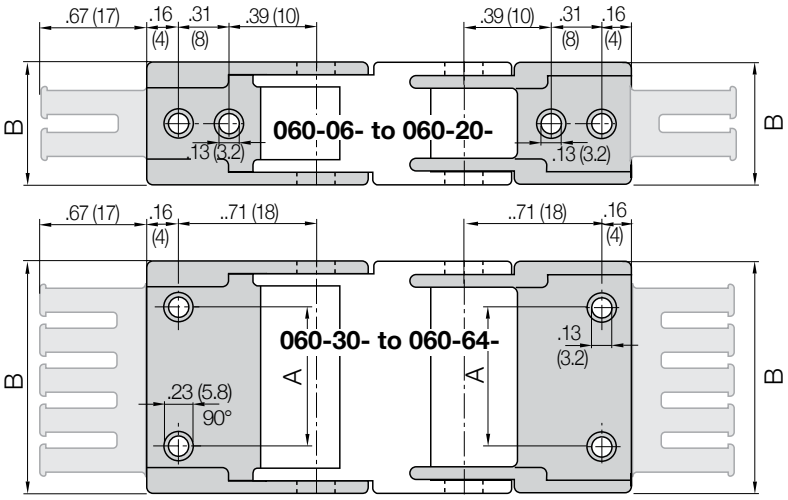
Full set, for both ends:

060- 20- 12 Full set, **each part with pin/bore**

Single-part order:

060- 20- 1 Mounting bracket **with bore**

060- 20- 2 Mounting bracket **with pin**



060-06-12 - 060-20-12: Center bores only
060-30-12 – 060-64-12: Outer bores only

Chain Type	Part No. Full set with Tiewrap Plate	Part No. Full Set without Tiewrap Plate	Dimension A in.	(mm)	Dimensions B in.	(mm)	Number of Teeth
06-06	**060-06-12PZ**	**060-06-12**	—	—	.42	(12.5)	1
06-10	**060-10-12PZ**	**060-10-12**	—	—	.65	(16.5)	1
06-16	**060-16-12PZ**	**060-16-12**	—	—	.89	(22.5)	2
06-20	**060-20-12PZ**	**060-20-12**	—	—	1.06	(27.0)	2
06-30	**060-30-12PZ**	**060-30-12**	.87	(22)	1.46	(37.0)	3
06-40	**060-40-12PZ**	**060-40-12**	1.26	(32)	1.85	(47.0)	4
06-50	**060-50-12PZ**	**060-50-12**	1.65	(42)	2.24	(57.0)	5
06-64	**060-64-12PZ**	**060-64-12**	2.20	(56)	2.70	(71.0)	6

Additional Accessories



Quicksnap - the complete, detachable mounting unit, upon request
Part No.
060-10-QS
060-16-QS
060-20-QS
060-40-QS



Quickfix - mounting bracket with dowel, upon request
Part No.
060-10-34QZ
060-20-34QZ

PDF: igus.com/e-chain-pdfs
Product information: igus.com/e-chains

e-chain system® E2 Micro
Series E2-10/E2i-10/E2C-10

.40 .40 .41

Price Index

Series E2-10

Special Features / Options

IPA Qualification Certificate:
Cleanroom test upon request

ESD Classification:
Electrically conductive ESD/
ATEX version upon request

Flammability Class
VDE 0304 IIC UL94 HB

Assembly Tips





Easy to assemble and disassemble

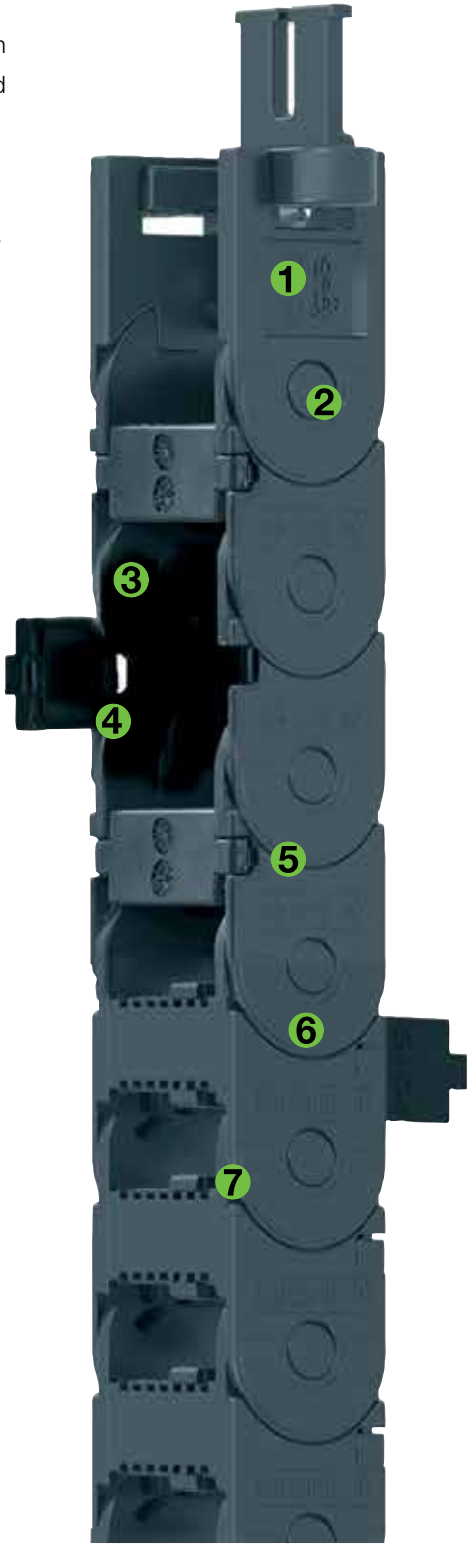
Usage Guidelines

- When long unsupported lengths and high additional loads are required with a small e-chain®
- For smooth, quiet operation due to small pitch
- If a large modular system in various designs is desired

- If a closed Energy Tube is required
  ➤ **Series R07 "Zipper"**
- If torsional rigidity is very important
  ➤ **Series E2C-10 E2 Micro**

Features & Benefits

1. Universal mounting bracket with strain relief option
2. Large, assembly friendly pins for long unsupported lengths
3. Very smooth contours ensure the best possible cable life
4. Non snap-open or snap-open in the inner or outer radius
5. Lightweight, low price
6. Square stop-dog system for large additional loads
7. Brake feature reduces noise



Order Example: Complete e-chain®

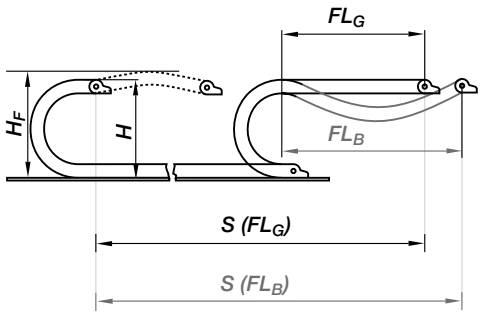
Please indicate chain length or number of links. Example:

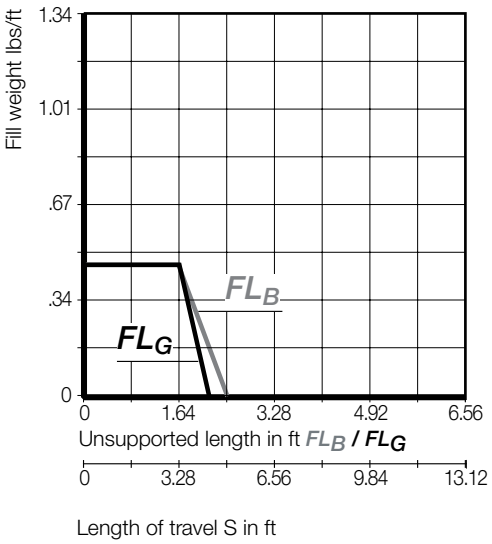
3.28 ft (1 m) **E2-10-20-038-0**	**e-chain®**
1 Set **E2-100-20-34PZ**	**Mounting Bracket**

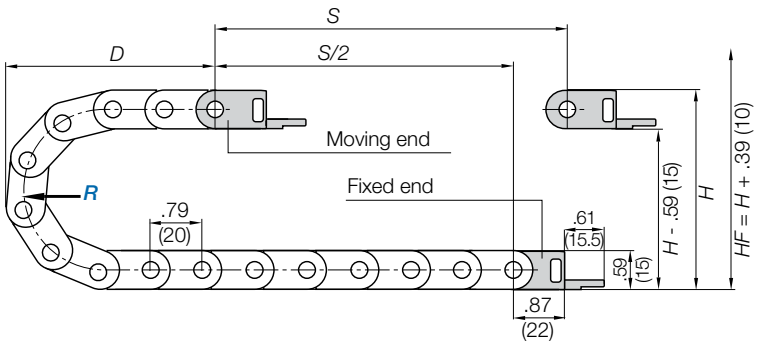
e-chain system® E2 Micro Series E2-10/E2i-10/E2C-10 Installation Dimensions

Short travel, unsupported length

● FL_B = unsupported with permitted sag
● FL_G = unsupported with straight upper run
Further information ➤ Design, Chapter 1







Pitch per link: = .79" (20 mm)
Links per ft (m): = 15.24 (50)
For center mount applications:
Chain length = $\frac{S}{2} + K$

The required clearance height: ***HF = H + .39 in. (10 mm)*** (with .13 lbs/ft (0.2 kg/m) fill weight.
Please consult igus® if space is particularly restricted.

R	.71 (018)	1.10 (028)	1.50 (038)
H	2.01 (51)	2.80 (71)	3.58 (91)
D	2.20 (56)	2.60 (66)	2.99 (76)
K	3.94 (100)	5.12 (130)	6.30 (160)

Short Travels - Unsupported

Unsupported e-chains® feature positive camber over short travels. This must be accounted for when specifying the clearance height. Please refer to **Installation dimensions** for further details.

Legend

S = Length of travel
R = Bending radius
H = Nominal clearance height
D = Overlength e-chain® radius in final position
K = π • R + *safety buffer*
H_F = Required clearance height

*If the mounting bracket location is set lower

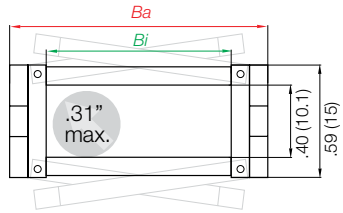
Speed / acceleration FL_G	max. 65.6 ft/s (20 m/s) / max. 656 ft/s² (200 m/s²)
Speed / acceleration FL_B	max. 9.84 ft/s (3 m/s) / max. 19.69 ft/s² (6 m/s²)
Gliding speed / acceleration (maximum)	max. 9.84 ft/s (3 m/s) / max. 32.8 ft/s² (10 m/s²)
Material - permitted temperature	igumid G / -40°F (-40°C) up to +248°F (+120° C)
Flammability Class, igumid G	VDE 0304 IIC UL94 HB

Technical Data

Details of material properties
➤ Chapter 1

PDF: igus.com/e-chain-pdfs
Product information: igus.com/e-chains

e-chain system® E2 Micro
Series E2-10/E2i-10/E2C-10

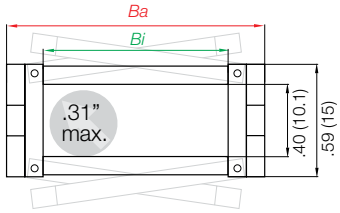


Series E2-10 - Snap-open along the outer radius from both sides



Part Number Structure

E2-10- 20- 038- 0
- Color - Black
- Bending radius
- Width
- Series

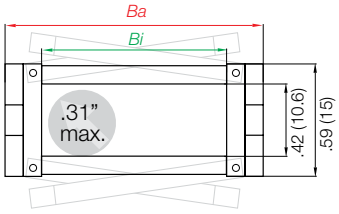


Series E2i-10 - Snap-open along the inner radius from both sides



Part Number Structure

E2i-10- 20- 038- 0
- Color - Black
- Bending radius
- Width
- Series

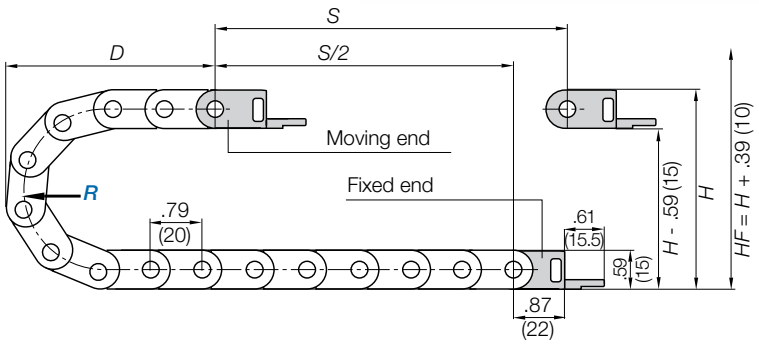


Series E2C-10 - One-piece, non snap-open



Part Number Structure

E2C-10- 20- 038- 0
- Color - Black
- Bending radius
- Width
- Series



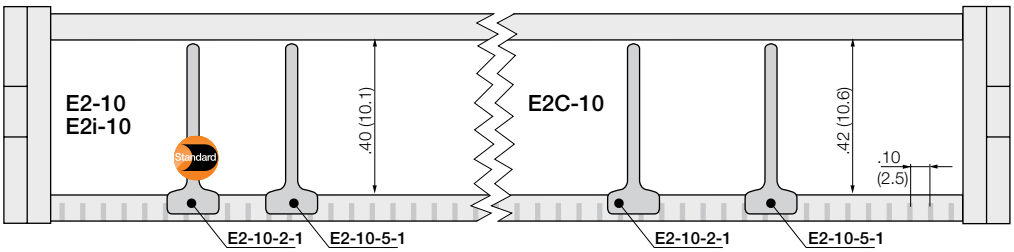
Supplement part number with required radius. Example: E2-10-20-[038]-0
Pitch: .79 in. (20 mm) per link links/ft (m) = 15.24 (50)

Snap-open along outer radius	Snap-open along inner radius	One-piece non snap-open		*Bi* in. (mm)	*Ba* in. (mm)	Weight E2-10 lbs/ft (kg/m)	Weight E2i-10 lbs/ft (kg/m)	Weight E2C-10 lbs/ft (kg/m)
E2-10-06-	E2i-10-06-	E2C-10-06-	-0	.28 (6)	.53 (13.4)	≈ 0.087 (0.13)	≈ 0.087 (0.13)	≈ 0.094 (0.14)
E2-10-10-	E2i-10-10-	E2C-10-10-	-0	.39 (10)	.69 (17.4)	≈ 0.094 (0.14)	≈ 0.094 (0.14)	≈ 0.094 (0.14)
E2-10-16-	E2i-10-16-	E2C-10-16-	-0	.63 (16)	.92 (23.4)	≈ 0.107 (0.16)	≈ 0.107 (0.16)	≈ 0.107 (0.16)
E2-10-20-	E2i-10-20-	E2C-10-20-	-0	.79 (20)	1.08 (27.4)	≈ 0.114 (0.17)	≈ 0.114 (0.17)	≈ 0.114 (0.17)
E2-10-30-	E2i-10-30-	E2C-10-30-	-0	1.18 (30)	1.47 (37.4)	≈ 0.128 (0.19)	≈ 0.128 (0.19)	≈ 0.134 (0.20)
E2-10-40-	E2i-10-40-	E2C-10-40-	-0	1.57 (40)	1.87 (47.4)	≈ 0.148 (0.22)	≈ 0.148 (0.22)	≈ 0.154 (0.23)
E2-10-50-	E2i-10-50-	E2C-10-50-	-0	1.97 (50)	2.26 (57.4)	≈ 0.168 (0.25)	≈ 0.168 (0.25)	≈ 0.168 (0.25)

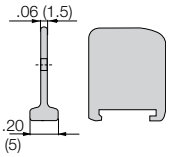
Choose from the radii below for all of the above sizes
Radius (mm) Example: E2-10-20-[038]-0

0=Standard color black.
For other colors see Chapter 1

	018	028	038
R	.71 (018)	1.10 (028)	1.50 (038)
H	2.01 (51)	2.80 (71)	3.58 (91)
D	2.20 (56)	2.60 (66)	2.99 (76)
K	3.94 (100)	5.12 (130)	6.30 (160)





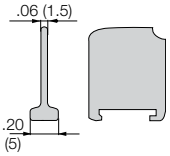


Separator

Unassembled	**Part No. E2-10-2**
Assembled	**Part No. E2-10-2-1**

- **Separator E2-10-2**
  Standard - for all applications
  For a simple vertical subdivision on e-chains®. Separators can be arranged anywhere in the Energy cross section.





Notch separator
For notch crossbar

Unassembled	**Part No. E2-10-5**
Assembled	**Part No. E2-10-5-1**

- **Notch separator E2-10-5**
  Locks safely in .10" (2.5 mm) increments
  For exact positioning in e-chains®. Recommended for side-mounted applications.

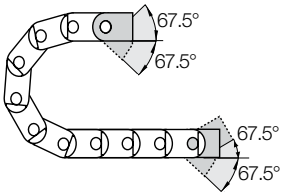
PDF: igus.com/e-chain-pdfs
Product information: igus.com/e-chains

e-chain system® E2 Micro Series E2-10/E2i-10/E2C-10 Mounting Brackets

Polymer, one-piece

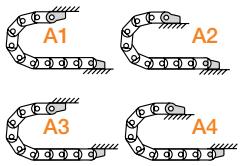
- One-piece mounting bracket
- Corrosion resistant
- Available preassembled
- Inner and outer attachment possible
- Available with or without strain relief tiewrap plates

Moving end
E2-100-...-3PZ two side pivoting
E2-100-...-5PZ one side• pivoting
E2-100-...-1PZ locking



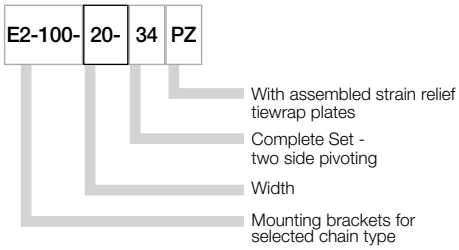


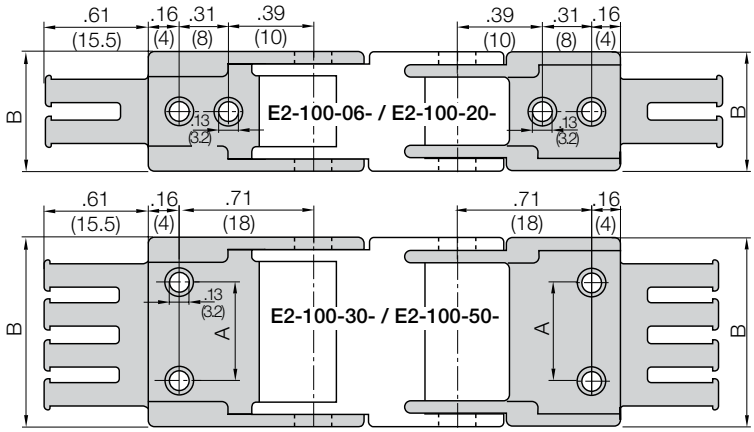
Fixed end
E2-100-...-4PZ two side pivoting
E2-100-...-6PZ one side• pivoting
E2-100-...-2PZ locking



Possible installation configurations -

Part Number Structure





Full set, for both ends:
E2-100- 20- 34 Full set, **each part with pin/bore**
Single-part order:
E2-100- 20- 3 Mounting bracket **with bore**
E2-100- 20- 4 Mounting bracket **with pin**

E2-100-06-12 - E2-100-20-12: Center bores only
E2-100-30-12 – E2-100-64-12: Outer bores only

Chain Width	Part No. full set with tiewrap plate two side pivoting	Part No. full set with tiewrap plate one side* pivoting	Part No. full set with tiewrap plate locking	Dimension A in.	(mm)	Dimension B in.	(mm)	Number of Teeth
-06	**E2-100-06-34PZ**	**E2-100-06-56PZ**	**E2-100-06-12PZ**	—	—	.53	(13.4)	1
-10	**E2-100-10-34PZ**	**E2-100-10-56PZ**	**E2-100-10-12PZ**	—	—	.69	(17.4)	1
-16	**E2-100-16-34PZ**	**E2-100-16-56PZ**	**E2-100-16-12PZ**	—	—	.92	(23.4)	2
-20	**E2-100-20-34PZ**	**E2-100-20-56PZ**	**E2-100-20-12PZ**	—	—	1.08	(27.4)	2
-30	**E2-100-30-34PZ**	**E2-100-30-56PZ**	**E2-100-30-12PZ**	.87	(22)	1.47	(37.4)	3
-40	**E2-100-40-34PZ**	**E2-100-40-56PZ**	**E2-100-40-12PZ**	1.26	(32)	1.87	(47.4)	4
-50	**E2-100-50-34PZ**	**E2-100-50-56PZ**	**E2-100-50-12PZ**	1.65	(42)	2.26	(57.4)	5

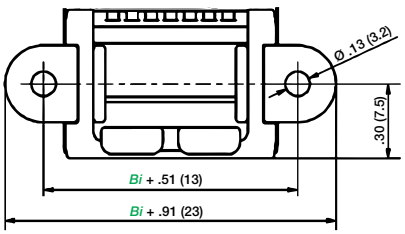
*One-side pivoting: Pivot angle = Bending radius.

One side pivoting only to the inner radius - whether mounted to A1 or A4

Additional Accessories



Quick flange- the quick flange can be clipped-in laterally in all mounting brackets. Housing for haxagonal nut or M3 socket head screws M3.
Single:
Part no. E2-150-QF
Includes mounting bracket:
Part No. E2-100-20-34PZQF









e-chain system® E2 Micro
Series B07

.41

For new designs we recommend E2 Micro “New Generation: E2-10

Price Index

Series B07

Special Features / Options

ESD Classification: Electrically conductive ESD/ ATEX version upon request

UL94 -V2 classifications upon request

Features & Benefits

1. Lightweight
2. Small pitch for low-noise, smooth operation
3. Mounting bracket with integrated strain relief
4. For high acceleration
5. Snap-open along outer radius with film-hinge
6. Modular 2-piece link design - saves assembly time
7. Easy to shorten and lengthen at any given point



Assembly Tips



Easy to assemble and disassemble

Usage Guidelines

- If a small lightweight e-chain® is required
- If a small, openable, reasonably priced e-chain® is required
- Perfect for handling machines and pick-and-place tools

- If opening of the link is not necessary
  ➤ **Series 06 E2 micro**
- If cable installation without opening lids is possible

➤ **Series E06 E-Z Chain**

- If a fast openable Energy Tube system is required

➤ **Series R07 E2 Tubes**

Order Example: Complete e-chain®

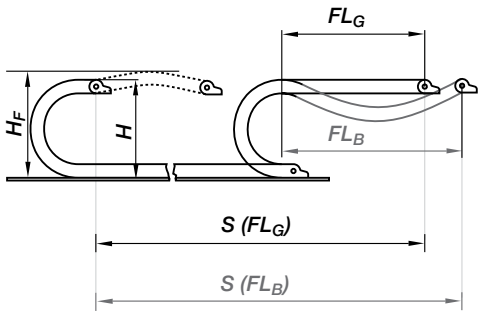
Please indicate chain length or number of links. Example:

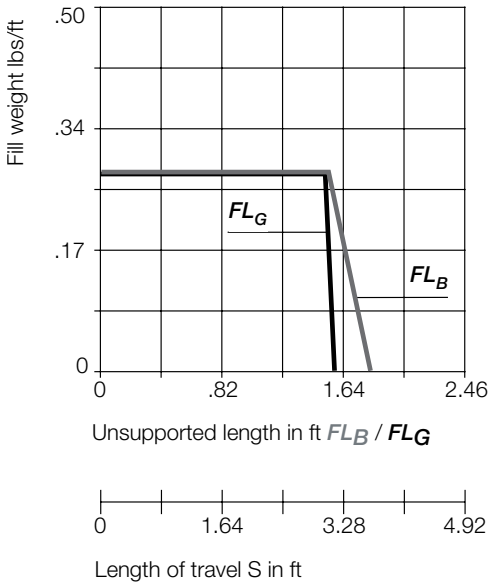
3.28 ft (1 m) **B07-20-038-0**	**e-chain®**
1 Set **060-20-12PZ**	**Mounting Bracket**

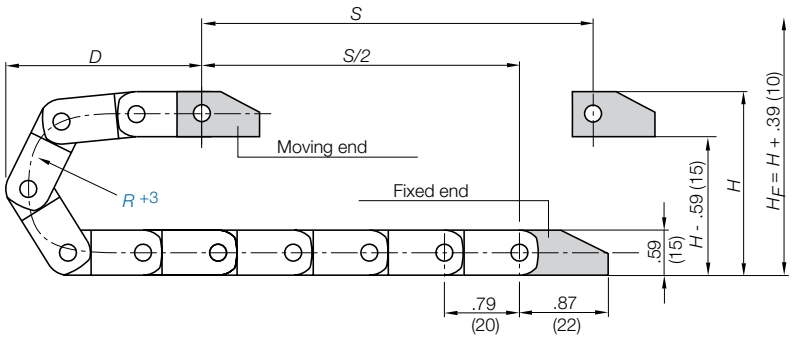
e-chain system® E2 Micro Series B07

Short travel, unsupported length

● FL_B = unsupported with permitted sag
● FL_G = unsupported with straight upper run
Further information ➤ Design, Chapter 1







Pitch per link: = .79" (20 mm)
Links per ft (m): = 15.24 (50)
For center mount applications:
Chain length = $\frac{S}{2}$ + K

The required clearance height: $H_F = H$ **+ .39 in. (10 mm)** (with .13 lbs/ft (0.2 kg/m) fill weight. Please consult igus® if space is particularly restricted.

R	.71 (018)	1.10 (028)	1.50 (038)
H*	2.01 (51)	2.80 (71)	3.58 (91)
D	2.20 (56)	2.60 (66)	2.99 (76)
K	3.94 (100)	5.12 (130)	6.30 (160)

Short Travels - Unsupported

Unsupported e-chains® feature positive camber over short travels. This must be accounted for when specifying the clearance height. Please refer to **Installation dimensions** for further details.

Legend

S = Length of travel
R = Bending radius
H = Nominal clearance height
D = Overlength e-chain® radius in final position
K = π • R + *safety buffer*
H_F = Required clearance height

*If the mounting bracket location is set lower

Speed / acceleration FL_G	max. 6.56 ft/s (20 m/s) / max. 656 ft/s² (200 m/s²)
Speed / acceleration FL_B	max. 9.84 ft/s (3 m/s) / max. 19.69 ft/s² (6 m/s²)
Gliding speed / acceleration (maximum)	max. 32.81 ft/s (10 m/s) / max. 164 ft/s² (50 m/s²)
Material - permitted temperature	igumid G / -40°F (-40°C) up to +248°F (+120° C)
Flammability Class, igumid G	VDE 0304 IIC UL94 HB

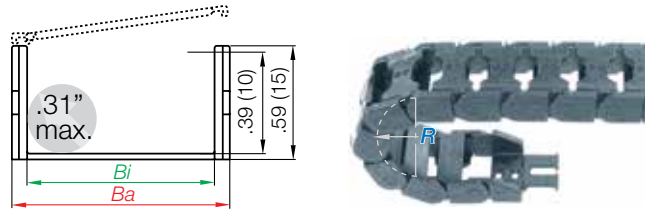
Technical Data

Details of material properties
➤ Chapter 1

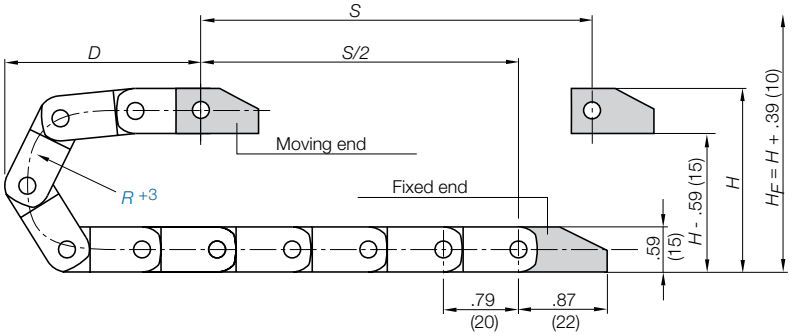
PDF: igus.com/e-chain-pdfs
Product information: igus.com/e-chains

e-chain system® E2 Micro
Series B07

Series B07 - e-chain® snap-open along the outer radius







Part Number Structure

B07-	20-	038-	0
			Color - Black
		Bending radius	
	Width		
Series			

Supplement part number with required radius. Example: B07-20-[038]-0
Pitch: .79 in. (20 mm) per link links/ft (m) = 15.24 (50)

Part Number			*Bi* in. (mm)	*Ba* in. (mm)	Weight lbs/ft (kg/m)
B07-16-	☐	-0	.63 (16)	.89 (22.5)	≈ 0.107 (0.16)
B07-20-	☐	-0	.79 (20)	1.06 (27.0)	≈ 0.114 (0.17)
B07-30-	☐	-0	1.18 (30)	1.46 (37.0)	≈ 0.134 (0.20)
B07-40-	☐	-0	1.57 (40)	1.85 (47.0)	≈ 0.155 (0.23)

Choose from the radii below for all of the above sizes
Radius (mm) Example: B07-20-[038]-0

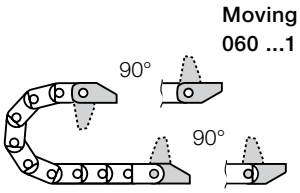
	018	028	038
R	.71 (018)	1.10 (028)	1.50 (038)
H*	2.01 (51)	2.80 (71)	3.58 (91)
D	2.20 (56)	2.60 (66)	2.99 (76)
K	3.94 (100)	5.12 (130)	6.30 (160)

0=Standard color black. For other colors see Chapter 1

igus® e-chain system®
Telephone 1-800-521-2747
Internet: igus.com
email: sales@igus.com
QuickSpec: igus.com/quickspec

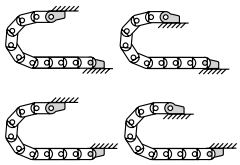
Polymer, one-piece

- One-piece mounting bracket
- Corrosion resistant
- Available preassembled
- Inner and outer attachment possible
- Available with or without strain relief tiewrap plates



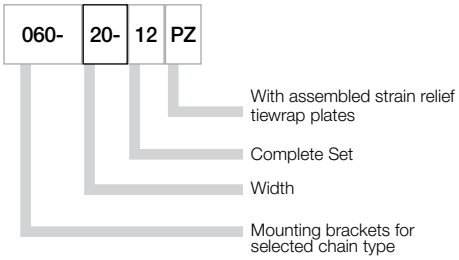




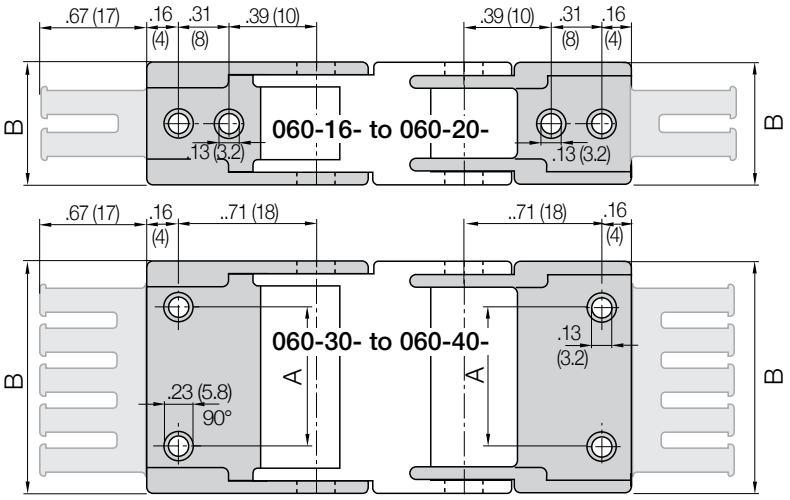


Possible installation configurations -

Part Number Structure



Full set, for both ends:
060- 20- 12 Full set, **each part with pin/bore**
Single-part order:
060- 20- 1 Mounting bracket **with bore**
060- 20- 2 Mounting bracket **with pin**



060-16-12 - 060-20-12: Center bores only
060-30-12 – 060-40-12: Outer bores only

Chain Type	Part No. Full set with Tiewrap Plate	Part No. Full Set without Tiewrap Plate	Dimension A in.	(mm)	Dimensions B in.	(mm)	Number of Teeth
B07-16	**060-16-12PZ**	**060-16-12**	—	—	.89	(22.5)	2
B07-20	**060-20-12PZ**	**060-20-12**	—	—	1.06	(27.0)	2
B07-30	**060-30-12PZ**	**060-30-12**	.87	(22)	1.46	(37.0)	3
B07-40	**060-40-12PZ**	**060-40-12**	1.26	(32)	1.85	(47.0)	4

Additional Accessories



Quicksnap - the complete, detachable mounting unit, upon request
Part No.
060-16-QS
060-20-QS
060-40-QS



Quickfix - mounting bracket with dowel, upon request
Part No.
060-20-34QZ

PDF: igus.com/e-chain-pdfs
Product information: igus.com/e-chains

e-chain system® E2 Micro
Series B09

.49

For new designs we recommend E2 Micro “New Generation: E2-15

Price Index

Series B09

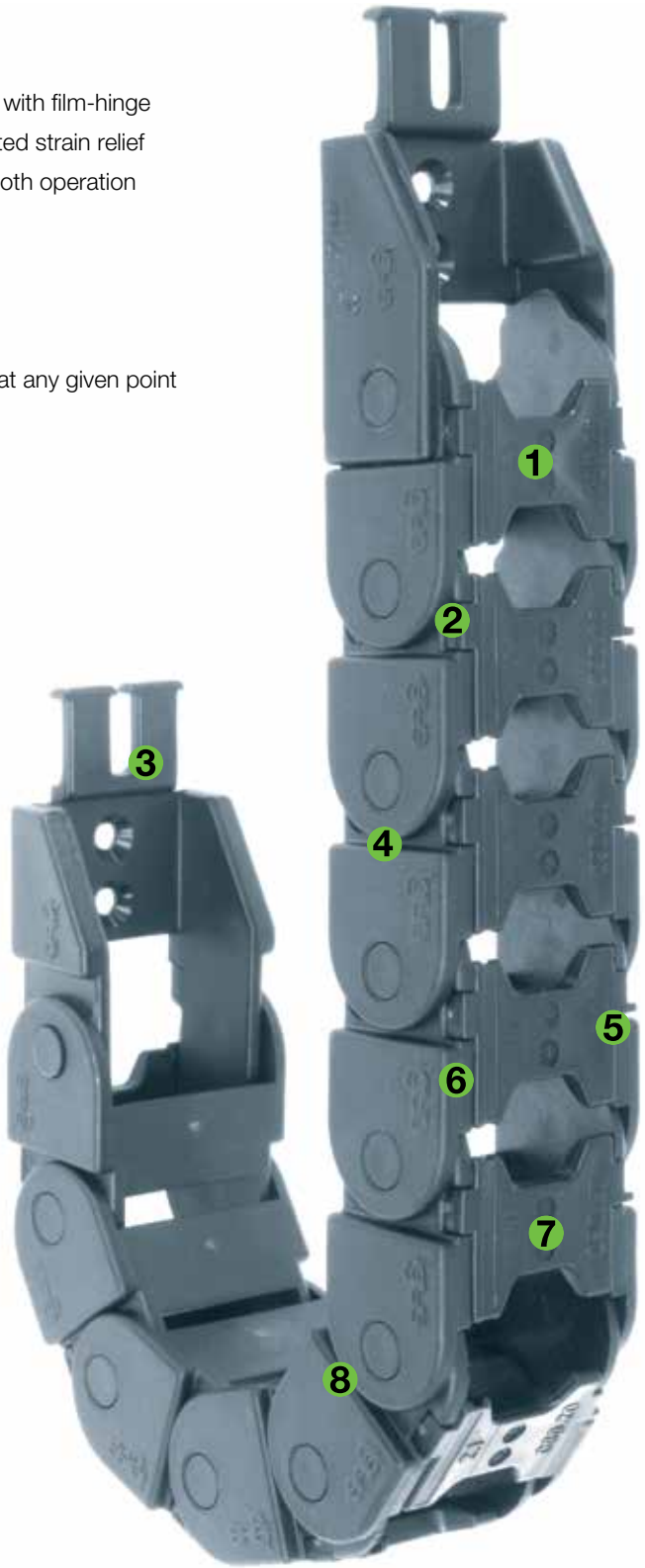
Special Features / Options

ESD Classification: Electrically conductive ESD/ ATEX version upon request

UL94 -V2 classification version upon request

Features & Benefits

1. Lightweight
2. Snap-open along outer radius with film-hinge
3. Mounting bracket with integrated strain relief
4. Small pitch for low-noise, smooth operation
5. Closed, easy to open version
6. Modular 2-piece link design - saves assembly time
7. For high acceleration
8. Easy to shorten and lengthen at any given point



Assembly Tips



Easy to assemble and disassemble

Usage Guidelines

- If a small and lightweight e-chain® is required
- If a small, openable, reasonably priced e-chain® is required
- Perfect for handling machines and pick-and-place robots

- If opening of the link is not necessary
  ➤ **Series 08 E2 Micro**
- If cable installation without opening lids is possible
  ➤ **Series E08 E-Z Chain**
- If a fast, openable Energy Tube system is required
  ➤ **Series R09 Energy Tube**

Order Example: Complete e-chain®

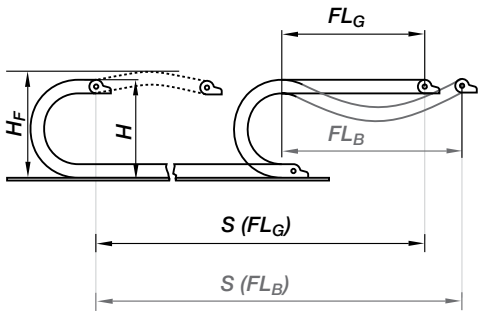
Please indicate chain length or number of links. Example:

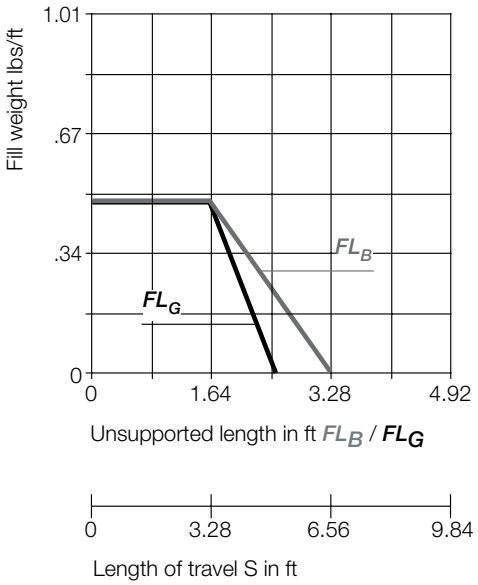
3.28 ft (1 m) **B09-20-038-0**	**e-chain®**
1 Set **080-20-12PZ**	**Mounting Bracket**

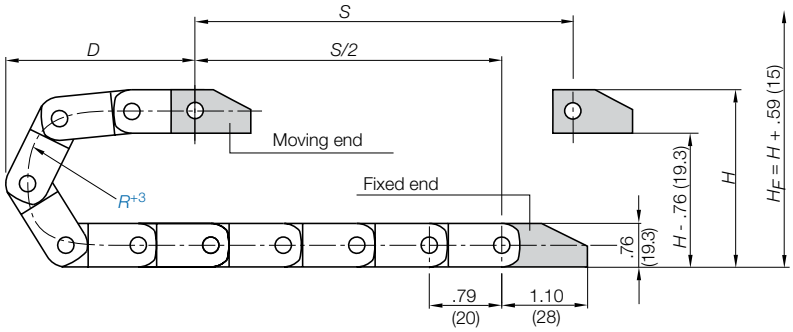
e-chain system® E2 Micro
Series B09

Short travel, unsupported length

● FL_B = unsupported with permitted sag
● FL_G = unsupported with straight upper run
Further information ➤ Design, Chapter 1







Pitch per link: = .79" (20 mm)
Links per ft (m): = 15.24 (50)
For center mount applications:
Chain length = $\frac{S}{2}$ + K

The required clearance height: H_F = **H + .59 in. (15 mm)** (with .20 lbs/ft (0.3 kg/m) fill weight. Please consult igus® if space is particularly restricted.

R	1.10 (028)	1.50 (038)	1.89 (048)
H*	2.95 (75)	3.74 (95)	4.53 (115)
D	2.68 (68)	3.07 (78)	3.46 (88)
K	5.21 (130)	6.41 (160)	7.68 (195)

Short Travels - Unsupported

Unsupported e-chains® feature positive camber over short travels. This must be accounted for when specifying the clearance height. Please refer to **Installation dimensions** for further details.

Legend

S = Length of travel
R = Bending radius
H = Nominal clearance height
D = Overlength e-chain® radius in final position
K = π • R + *safety buffer*
H_F = Required clearance height

*If the mounting bracket location is set lower

Speed / acceleration FL_G	max. 6.56 ft/s (20 m/s) / max. 656 ft/s² (200 m/s²)
Speed / acceleration FL_B	max. 9.84 ft/s (3 m/s) / max. 19.69 ft/s² (6 m/s²)
Gliding speed / acceleration (maximum)	max. 32.81 ft/s (10 m/s) / max. 164 ft/s² (50 m/s²)
Material - permitted temperature	igumid G / -40°F (-40°C) up to +248°F (+120° C)
Flammability Class, igumid G	VDE 0304 IIC UL94 HB

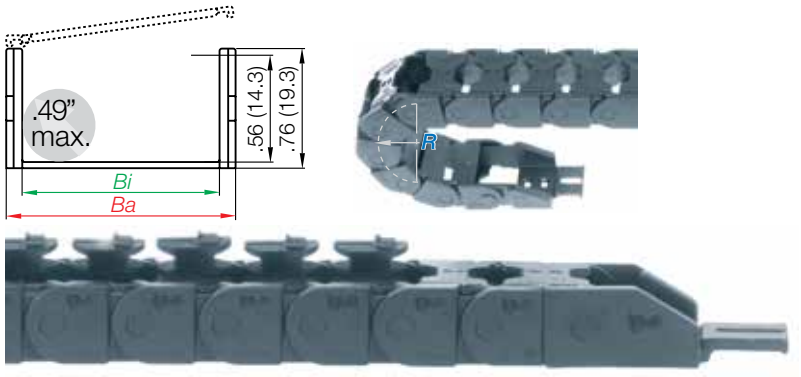
Technical Data

Details of material properties
➤ Chapter 1

PDF: igus.com/e-chain-pdfs
Product information: igus.com/e-chains

e-chain system® E2 Micro
Series B09

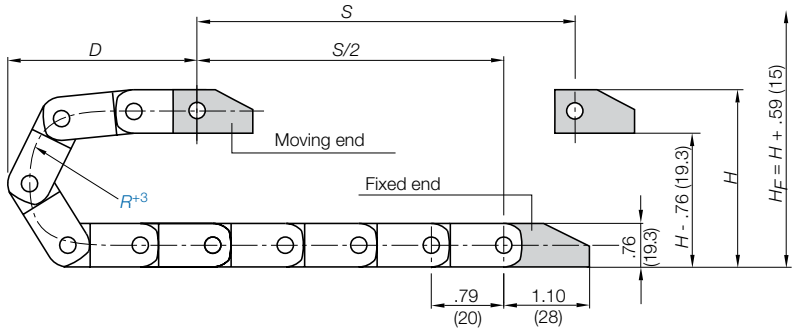
Series B09 - e-chain® snap-open along the outer radius



Part Number Structure

B09- 20- 038- 0

- Color - Black
- Bending radius
- Width
- Series



Supplement part number with required radius. Example: B09-20-038-0
Pitch: .79 in. (20 mm) per link links/ft (m) = 15.24 (50)

Part Number		Bi in. (mm)	Ba in. (mm)	Weight lbs/ft (kg/m)
B09-16-	-0	.63 (16)	.95 (24.2)	≈ 0.16 (0.24)
B09-20-	-0	.79 (20)	1.11 (28.2)	≈ 0.17 (0.25)
B09-30-	-0	1.18 (30)	1.50 (38.2)	≈ 0.19 (0.28)
B09-40-	-0	1.57 (40)	1.90 (48.2)	≈ 0.21 (0.31)

Choose from the radii below for all of the above sizes
Radius (mm) Example: B09-20-038-0

	028	038	048
R	1.10 (028)	1.50 (038)	1.89 (048)
H*	2.95 (75)	3.74 (95)	4.53 (115)
D	2.68 (68)	3.07 (78)	3.46 (88)
K	5.21 (130)	6.41 (160)	7.68 (195)

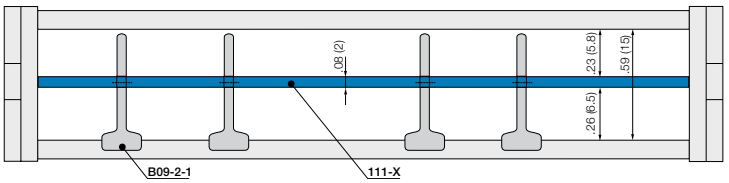
0=Standard color black. For other colors see Chapter 1

Additional Accessories



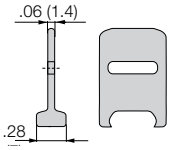
Quicksnap - the complete, detachable mounting unit, upon request
Part No.
080-20-QS
080-30-QS

e-chain system® E2 Micro
Series B09
Interior Separation - Mounting Brackets



Separators, full-width shelves -
In the standard configuration separators are assembled every other Energy-Chain® link!



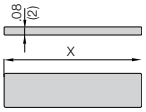


Vertical Separator, slotted

Unassembled	**Part No. B09-2**
Assembled	**Part No. B09-2-1**

- **Slotted separator B09-2**
  This component is used when vertical separation is required. Due to its slot, it allows basic vertical/ horizontal shelving arrangements





Full width shelf

Unassembled	**Part No. 110-X**
Assembled	**Part No. 111-X**

- **Full width shelf 110-X**
  This component is used in applications with many thin cables with similar diameters.

Width X in.	(mm)	Part No. Unassembled	Part No. Assembled
.39	(010)	**110-10**	**111-10**
.51	(013)	**110-13**	**111-13**
.63	(016)	**110-16**	**111-16**
.79	(020)	**110-20**	**111-20**

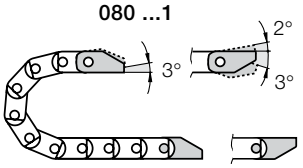
Width X in.	(mm)	Part No. Unassembled	Part No. Assembled
1.18	(030)	**110-30**	**111-30**
1.57	(040)	**110-40**	**111-40**
1.97	(050)	**110-50**	**111-50**

Mounting Brackets

Plastic, one-piece

- One-piece mounting bracket
- Corrosion resistant
- Available preassembled
- Inner and outer attachment possible
- Available with or without strain relief tiewrap plates

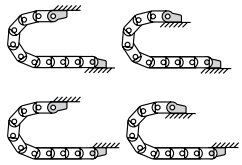
Moving end
080 ...1



Fixed end
080...2

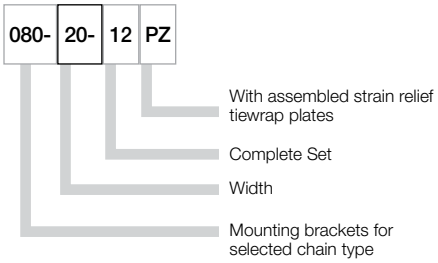


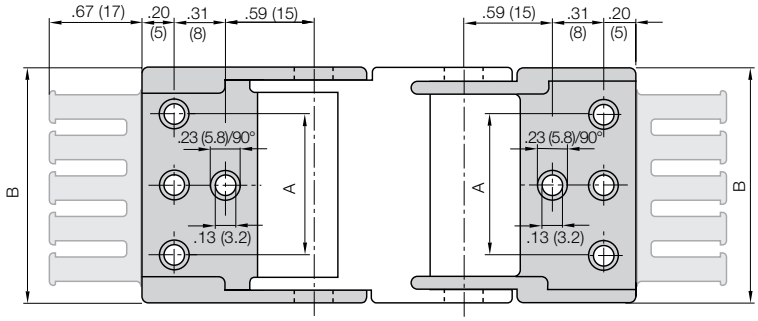




Possible installation configurations -

Part Number Structure





Full set, for both ends:
080- 20- 12 Full set, **each part with pin/bore**
Single-part order:
080- 20- 1 Mounting bracket **with bore**
080- 20- 2 Mounting bracket **with pin**

080-16-12 - 080-20-12:
Center bores only
080-30-12 – 080-40-12:
Outer bores only

Chain Type	Part No. Full set with Tiewrap Plate	Part No. Full Set without Tiewrap Plate	Dimension A in.	(mm)	Dimensions B in.	(mm)	Number of Teeth
B09-16	**080-16-12PZ**	**080-16-12**	—	—	.95	(24.2)	2
B09-20	**080-20-12PZ**	**080-20-12**	—	—	1.11	(28.2)	2
B09-30	**080-30-12PZ**	**080-30-12**	.87	(22)	1.50	(38.2)	3
B09-40	**080-40-12PZ**	**080-40-12**	1.26	(32)	1.90	(48.2)	4

PDF: igus.com/e-chain-pdfs
Product information: igus.com/e-chains

e-chain system® E2 Micro
Series E2-15/E2i-15/E2C-15

.57 .57 .59

Price Index

Series E2-15

Special Features / Options

IPA Qualification Certificate:
Cleanroom test upon request

ESD Classification:
Electrically conductive ESD/
ATEX version upon request

Flammability Class
VDE 0304 IIC UL94 HB

Assembly Tips





Easy to assemble and disassemble
Series 06 shown for demonstration purposes only

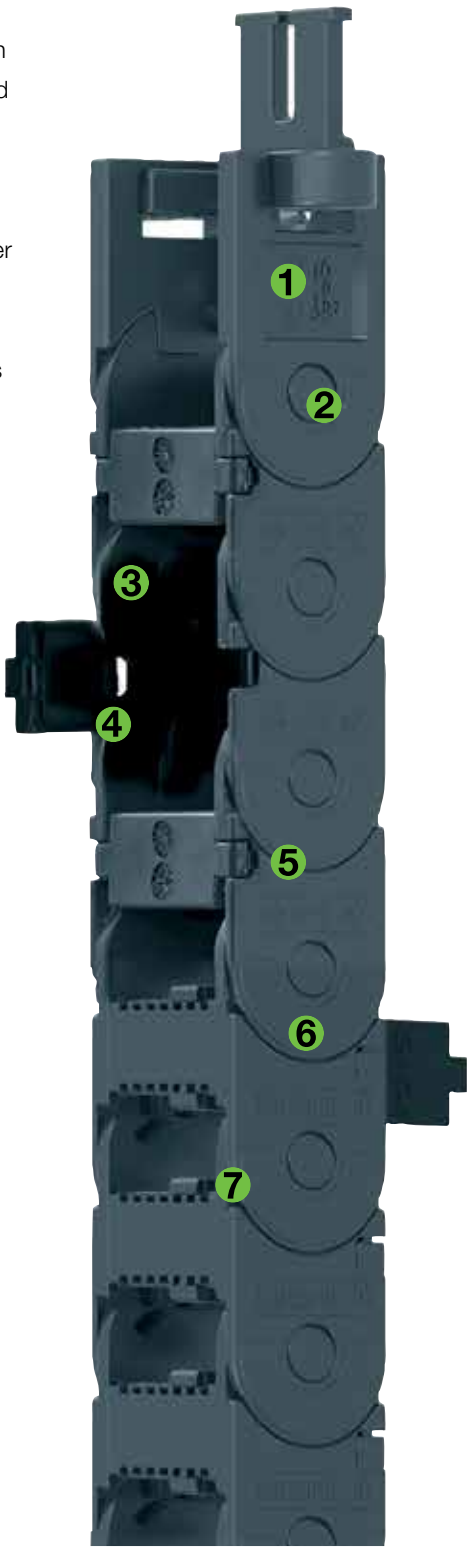
Usage Guidelines

- When large unsupported lengths and high additional loads are required with a small e-chain®
- For smooth, quiet operation due to small pitch
- If a large modular system in various designs is desired

- If a closed Energy Tube is required
  ➤ **Series R09 "Zipper"**
- If filling without opening lids is required
  ➤ **Series 08 E-Z Chain**

Features & Benefits

1. Universal mounting bracket with strain relief option
2. Large, assembly friendly pins for long unsupported lengths
3. Very smooth contours ensure the best possible cable life
4. Non snap-open or snap-open on the inner or outer radius
5. Lightweight, low price
6. Square stop-dog system for large additional loads
7. Brake feature reduces noise



Order Example: Complete e-chain®

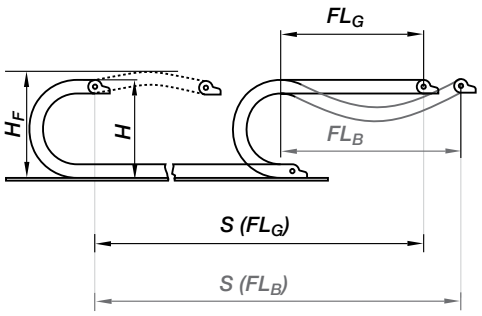
Please indicate chain length or number of links. Example:

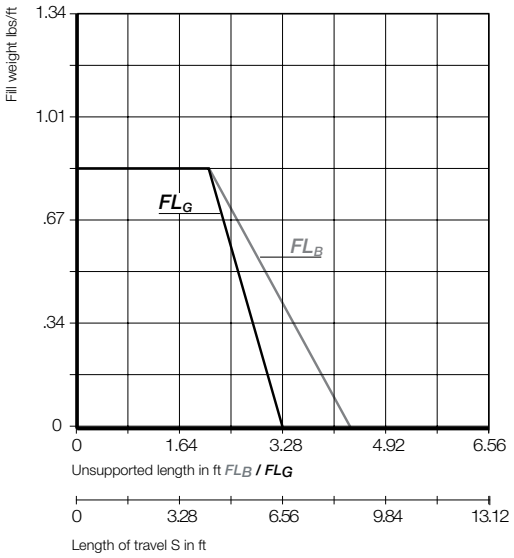
3.28 ft (1 m) **E2-15-20-038-0**	**e-chain®**
1 Set **E2-150-20-34PZ**	**Mounting Bracket**

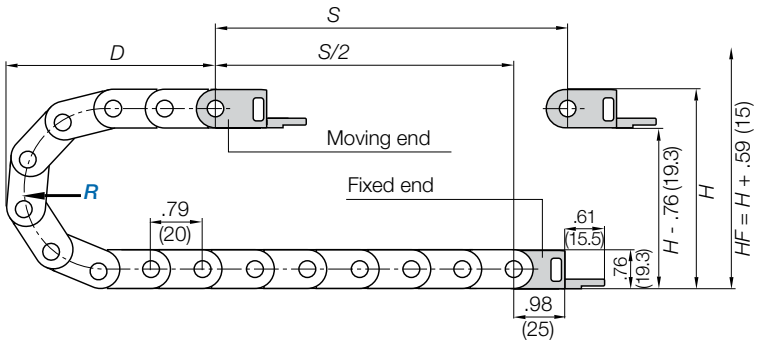
e-chain system® E2 Micro Series E2-15/E2i-15/E2C-15 Installation Dimensions

Short travel, unsupported length

● FL_B = unsupported with permitted sag
● FL_G = unsupported with straight upper run
Further information ➤ Design, Chapter 1







Pitch per link: = .79" (20 mm)
Links per ft (m): = 15.24 (50)
For center mount applications:
Chain length = $\frac{S}{2} + K$

The required clearance height: ***HF = H* + .59 in. (15 mm)** (with .20 lbs/ft (0.3 kg/m) fill weight.
Please consult igus® if space is particularly restricted.

R	1.10 (028)	1.50 (038)	1.89 (048)	2.95 (075*)
H	2.95 (75)	3.74 (95)	4.53 (115)	6.65 (169)
D	2.68 (68)	3.07 (78)	3.46 (88)	4.53 (115)
K	5.12 (130)	6.30 (160)	7.68 (195)	11.02 (280)

Short Travels - Unsupported

Unsupported e-chains® feature positive camber over short travels. This must be accounted for when specifying the clearance height. Please refer to **Installation dimensions** for further details.

Legend

S = Length of travel
R = Bending radius
H = Nominal clearance height
D = Overlength e-chain® radius in final position
K = π • R + *safety buffer*
H_F = Required clearance height

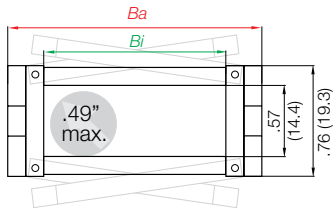
Speed / acceleration FL_G	max. 65.6 ft/s (20 m/s) / max. 656 ft/s² (200 m/s²)
Speed / acceleration FL_B	max. 9.84 ft/s (3 m/s) / max. 19.69 ft/s² (6 m/s²)
Gliding speed / acceleration (maximum)	max. 9.84 ft/s (3 m/s) / max. 32.8 ft/s² (10 m/s²)
Material - permitted temperature	igumid G / -40°F (-40°C) up to +248°F (+120° C)
Flammability Class, igumid G	VDE 0304 IIC UL94 HB

Technical Data

Details of material properties
➤ Chapter 1

PDF: igus.com/e-chain-pdfs
Product information: igus.com/e-chains

e-chain system® E2 Micro
Series E2-15/E2i-15/E2C-15

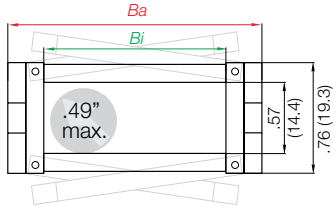


Series E2-15 - Snap-open along the outer radius from both sides



Part Number Structure

E2-15- 20- 038- 0
- Color - Black
- Bending radius
- Width
- Series

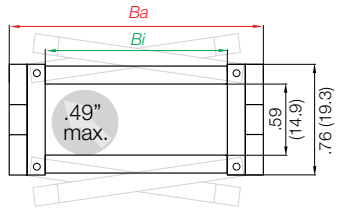


Series E2i-15 - Snap-open along the inner radius from both sides



Part Number Structure

E2i-15- 20- 038- 0
- Color - Black
- Bending radius
- Width
- Series

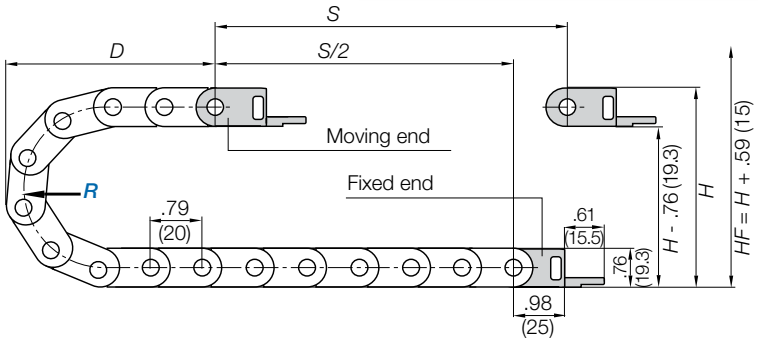


Series E2C-15 - One-piece, non snap-open



Part Number Structure

E2C-15- 20- 038- 0
- Color - Black
- Bending radius
- Width
- Series



Supplement part number with required radius. Example: E2-15-20-038-0
Pitch: .79 in. (20 mm) per link links/ft (m) = 15.24 (50)

Snap-open along outer radius	Snap-open along inner radius	One-piece non snap-open		Bi in. (mm)	Ba in. (mm)	Weight E2-15 lbs/ft (kg/m)	Weight E2i-15 lbs/ft (kg/m)	Weight E2C-15 lbs/ft (kg/m)
E2-15-10-	E2i-15-10-	E2C-15-10-	-0	.39 (10)	.69 (17.4)	≈ 0.120 (0.18)	≈ 0.120 (0.18)	≈ 0.128 (0.19)
E2-15-13-	E2i-15-13-	E2C-15-13-	-0	.51 (13)	.82 (20.8)	≈ 0.128 (0.19)	≈ 0.128 (0.19)	≈ 0.134 (0.20)
E2-15-16-	E2i-15-16-	E2C-15-16-	-0	.63 (16)	.92 (23.4)	≈ 0.134 (0.20)	≈ 0.134 (0.20)	≈ 0.134 (0.20)
E2-15-20-	E2i-15-20-	E2C-15-20-	-0	.79 (20)	1.08 (27.4)	≈ 0.141 (0.21)	≈ 0.141 (0.21)	≈ 0.141 (0.21)
E2-15-30-	E2i-15-30-	E2C-15-30-	-0	1.18 (30)	1.47 (37.4)	≈ 0.161 (0.24)	≈ 0.161 (0.24)	≈ 0.161 (0.24)
E2-15-40-	E2i-15-40-	E2C-15-40-	-0	1.57 (40)	1.87 (47.4)	≈ 0.175 (0.26)	≈ 0.175 (0.26)	≈ 0.175 (0.26)
E2-15-50-	E2i-15-50-	E2C-15-50-	-0	1.97 (50)	2.26 (57.4)	≈ 0.195 (0.29)	≈ 0.195 (0.29)	≈ 0.195 (0.29)

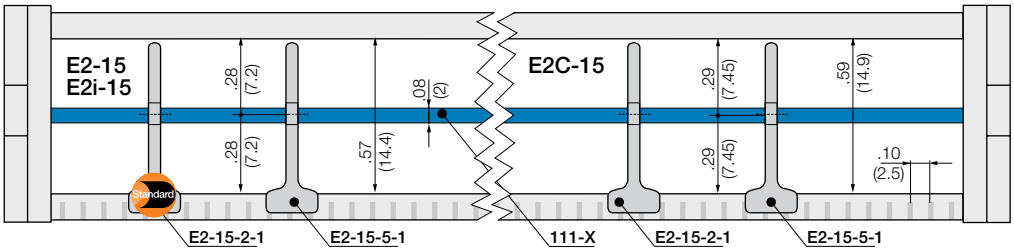
Choose from the radii below for all of the above sizes
Radius (mm) Example: E2-15-20-038-0

0=Standard color black.
For other colors see Chapter 1

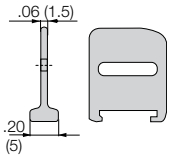
	028	038	048	075*
R	1.10 (028)	1.50 (038)	1.89 (048)	2.95 (075*)
H	2.95 (75)	3.74 (95)	4.53 (115)	6.65 (169)
D	2.68 (68)	3.07 (78)	3.46 (88)	4.53 (115)
K	5.12 (130)	6.30 (160)	7.68 (195)	11.02 (280)

*Radius 075 is only available for the E2C-15-40

e-chain system® E2 Micro
Series E2-15/E2i-15/E2C-15
Interior Separation





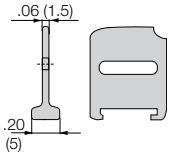


Separator

Unassembled	**Part No. E2-15-2**
Assembled	**Part No. E2-15-2-1**

- **Separator E2-15-2**
  Standard - for all applications
  For a simple vertical subdivision on e-chains®. Separators can be arranged anywhere in the Energy cross section.



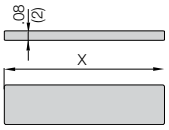


Notch separator
for notch crossbar

Unassembled	**Part No. E2-15-5**
Assembled	**Part No. E2-15-5-1**

- **Notch separator E2-15-5**
  Locks safely in .10" (2.5 mm) increments
  For exact positioning in e-chains®. Recommended for side-mounted applications.





Full width shelf

Unassembled	**Part No. 110-X**
Assembled	**Part No. 111-X**

- **Full width shelf 110-X**
  This component is used in applications with many thin cables with similar diameters.

Width X in.	(mm)	Part No. Unassembled	Part No. Assembled
.39	(010)	**110-10**	**111-10**
.51	(013)	**110-13**	**111-13**
.63	(016)	**110-16**	**111-16**
.79	(020)	**110-20**	**111-20**

Width X in.	(mm)	Part No. Unassembled	Part No. Assembled
1.18	(030)	**110-30**	**111-30**
1.57	(040)	**110-40**	**111-40**
1.97	(050)	**110-50**	**111-50**

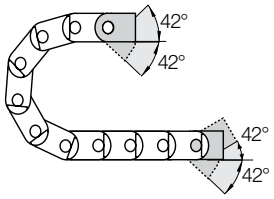
PDF: igus.com/e-chain-pdfs
Product information: igus.com/e-chains

e-chain system® E2 Micro
Series E2-15/E2i-15/E2C-15
Mounting Brackets

Polymer, one-piece

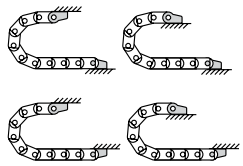
- One-piece mounting bracket
- Corrosion resistant
- Available preassembled
- Inner and outer attachment possible
- Available with or without strain relief tiewrap plates

Moving end
E2-150-...-3PZ two side pivoting
E2-150-...-5PZ one side• pivoting
E2-150-...-1PZ locking



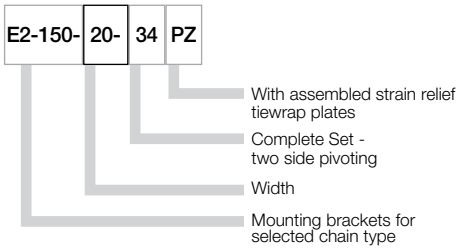


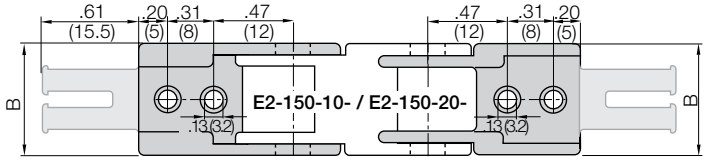
Fixed end
E2-150-...-4PZ two side pivoting
E2-150-...-6PZ one side• pivoting
E2-150-...-2PZ locking

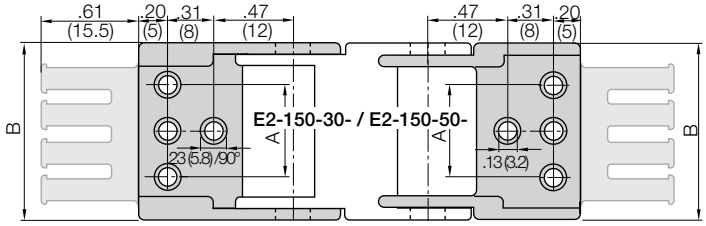


Possible installation configurations -

Part Number Structure







Full set, for both ends:
E2-150- 20- 34 Full set, **each part with pin/bore**
Single-part order:
E2-150- 20- 3 Mounting bracket **with bore**
E2-150- 20- 4 Mounting bracket **with pin**

E2-150-10-12 - E2-150-20-12: Center bores only
E2-150-30-12 – E2-150-50-12: Outer bores only

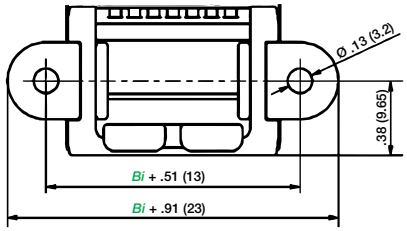
Chain Width	Part No. full set with tiewrap plate two side pivoting	Part No. full set with tiewrap plate one side* pivoting	Part No. full set with tiewrap plate locking	Dimension A in.	(mm)	Dimension B in.	(mm)	Number of Teeth
-10	**E2-150-10-34PZ**	**E2-150-10-56PZ**	**E2-150-10-12PZ**	—	—	.70	(17.8)	1
-13	**E2-150-13-34PZ**	**E2-150-13-56PZ**	**E2-150-13-12PZ**	—	—	.82	(20.8)	1
-16	**E2-150-16-34PZ**	**E2-150-16-56PZ**	**E2-150-16-12PZ**	—	—	.94	(23.8)	2
-20	**E2-150-20-34PZ**	**E2-150-20-56PZ**	**E2-150-20-12PZ**	—	—	1.09	(27.8)	2
-30	**E2-150-30-34PZ**	**E2-150-30-56PZ**	**E2-150-30-12PZ**	.87	(22)	1.49	(37.8)	3
-40	**E2-150-40-34PZ**	**E2-150-40-56PZ**	**E2-150-40-12PZ**	1.26	(32)	1.88	(47.8)	4
-50	**E2-150-50-34PZ**	**E2-150-50-56PZ**	**E2-150-50-12PZ**	1.65	(42)	2.27	(57.8)	5

*One-side pivoting: Pivot angle = Bending radius.
One side pivoting only to the inner radius

Additional Accessories



Quick flange- the quick flange can be clipped-in laterally in all mounting brackets. Housing for hexagonal nut or cylinder head screws M3.
Single:
Part no. E2-150-QF
Includes mounting bracket:
Part No. E2-150-20-34PZQF









e-chain system® E2 Micro
Series 08

.59

Price Index

Series 08

Special Features / Options

IPA Qualification Certificate:
Cleanroom test upon request

ESD Classification:
Electrically conductive ESD/
ATEX version upon request

Flammability Class
VDE 0304 IIC UL94 HB

Assembly Tips





East to assemble and disassemble

Features & Benefits

1. Small pitch for very quiet operation
2. High torsional rigidity
3. Mounting brackets with strain relief options
4. One-piece, non snap-open e-chain®
5. Very lightweight - low price
6. Dirt repellant exterior



Usage Guidelines

- If quiet operation is required
- If cost is a factor
- If connection options are required (Quicksnap, Quickfix, etc.)
- If high torsional rigidity is required

- If snap-open links are required
  ➤ **Series 09 “Zipper”**
- If quick insertion of cables with preassembled connectors is required
  ➤ **Series E08/Z08 E-Z Chain**

Order Example: Complete e-chain®

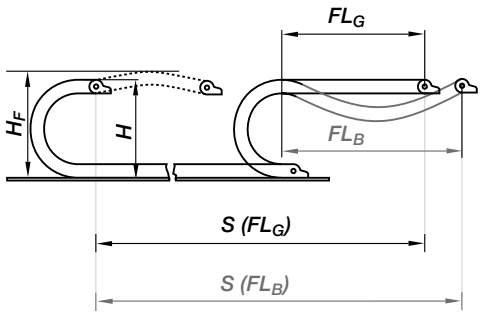
Please indicate chain length or number of links. Example:

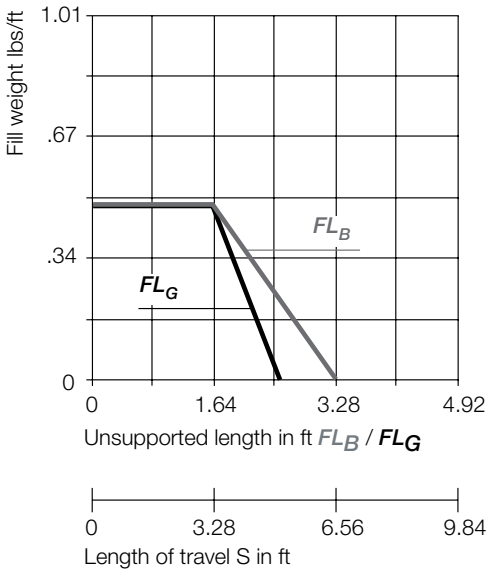
3.28 ft (1 m) **08-30-038-0**	**e-chain®**
1 Set **080-30-12PZ**	**Mounting Bracket**

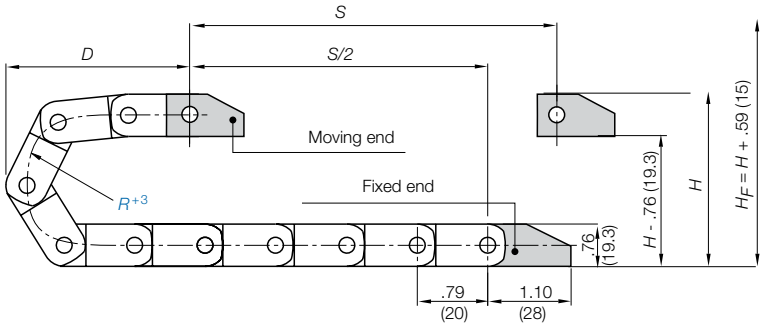
e-chain system® E2 Micro Series 08
Installation Dimensions

Short travel, unsupported length

● FL_B = unsupported with permitted sag
● FL_G = unsupported with straight upper run
Further information ➤ Design, Chapter 1







Pitch per link: = .79" (20 mm)
Links per ft (m): = 15.24 (50)
For center mount applications:
Chain length = $_{S}/_{2}$ + K

The required clearance height: $H_F = H + .59$ **in. (15 mm)** (with .20 lbs/ft (0.3 kg/m) fill weight. Please consult igus® if space is particularly restricted.

R	.98 (025*)	1.10 (028)	1.50 (038)	1.89 (048)
H	2.72 (69)	2.95 (75)	3.74 (95)	4.53 (115)
D	2.56 (65)	2.68 (68)	3.07 (78)	3.46 (88)
K	4.72 (120)	5.12 (130)	6.30 (160)	7.48 (190)

*Only for 08-10 and 08-20 e-chain®

Short Travels - Unsupported

Unsupported e-chains® feature positive camber over short travels. This must be accounted for when specifying the clearance height. Please refer to **Installation dimensions** for further details.

Legend

S = Length of travel
R = Bending radius
H = Nominal clearance height
D = Overlength e-chain® radius in final position
K = π • R + *safety buffer*
H_F = Required clearance height

*If the mounting bracket location is set lower

Speed / acceleration FL_G	max. 65.6 ft/s (20 m/s) / max. 656 ft/s² (200 m/s²)
Speed / acceleration FL_B	max. 9.84 ft/s (3 m/s) / max. 19.69 ft/s² (6 m/s²)
Material - permitted temperature	igumid G / -40°F (-40°C) up to +248°F (+120° C)
Flammability Class, igumid G	VDE 0304 IIC UL94 HB

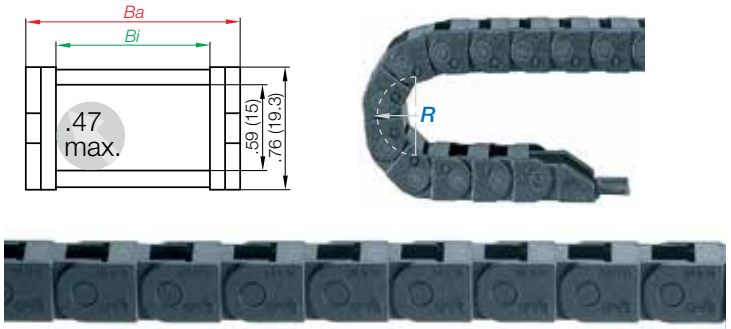
Technical Data

Details of material properties
➤ **Chapter 1**

PDF: igus.com/e-chain-pdfs
Product information: igus.com/e-chains

e-chain system® E2 Micro
Series 08

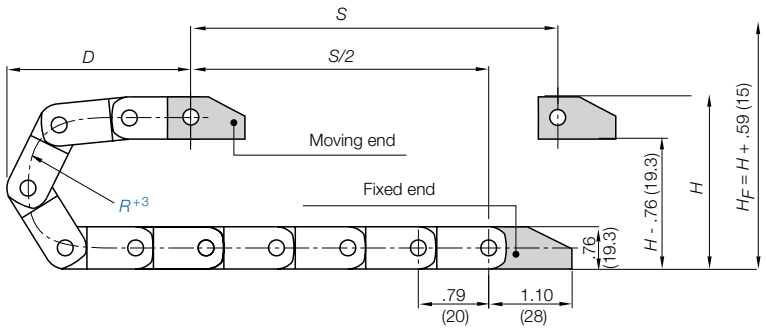
Series 08 - e-chain® non snap-open



Part Number Structure

08-	30-	038-	0

- 038- : Bending radius
- 30- : Width
- 08- : Series
- 0 : Color - Black



Supplement part number with required radius. Example: 08-20-038 -0
Pitch: .79 in. (20 mm) per link links/ft (m) = 15.24 (50)

Part Number			Bi in. (mm)	Ba in. (mm)	Weight lbs/ft (kg/m)
08-10-		-0	.39 (10)	.72 (18.2)	≈ 0.14 (0.21)
08-13-**		-0	.51 (13)	.83 (21.2)	≈ 0.15 (0.23)
08-16-		-0	.63 (16)	.95 (24.2)	≈ 0.16 (0.24)
08-20-		-0	.79 (20)	1.11 (28.2)	≈ 0.17 (0.25)
08-30-		-0	1.18 (30)	1.50 (38.2)	≈ 0.19 (0.28)
08-40-		-0	1.57 (40)	1.90 (48.2)	≈ 0.21 (0.31)
08-50-		-0	1.97 (50)	2.29 (58.2)	≈ 0.25 (0.37)

Choose from the radii below for all of the above sizes
Radius (mm) Example: 08-20-038 -0

	025*	028	038	048
R	.98 (025*)	1.10 (028)	1.50 (038)	1.89 (048)
H	2.72 (69)	2.95 (75)	3.74 (95)	4.53 (115)
D	2.56 (65)	2.68 (68)	3.07 (78)	3.46 (88)
K	4.72 (120)	5.12 (130)	6.30 (160)	7.48 (190)

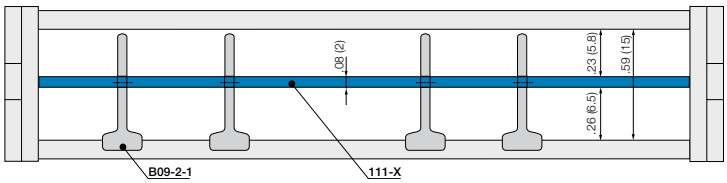
*Only for 08-10 and 08-20 e-chain®
0=Standard color black. For other colors see Chapter 1
**only for 028 and 038 radius

Additional Accessories



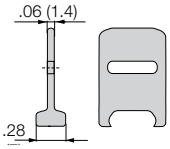
Quicksnap - the complete, detachable mounting unit, upon request
Part No.
080-20-QS
080-30-QS

e-chain system® E2 Micro
Series 08
Interior Separation - Mounting Brackets



Separators, full-width shelves -
In the standard configuration separators are assembled every other Energy-Chain® link!



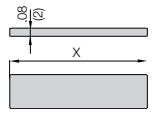


Vertical Separator, slotted

Unassembled	**Part No. B09-2**
Assembled	**Part No. B09-2-1**

- **Slotted separator B09-2**
  This component is used when vertical separation is required. Due to its slot, it allows basic vertical/ horizontal shelving arrangements.





Full width shelf

Unassembled	**Part No. 110-X**
Assembled	**Part No. 111-X**

- **Full width shelf 110-X**
  This component is used in applications with many thin cables with similar diamters.

Width X in.	(mm)	Part No. Unassembled	Part No. Assembled
.39	(010)	**110-10**	**111-10**
.51	(013)	**110-13**	**111-13**
.63	(016)	**110-16**	**111-16**

Width X in.	(mm)	Part No. Unassembled	Part No. Assembled
.79	(020)	**110-20**	**111-20**
1.18	(030)	**110-30**	**111-30**
1.57	(040)	**110-40**	**111-40**

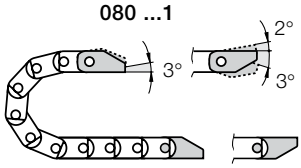
Width X in.	(mm)	Part No. Unassembled	Part No. Assembled
1.97	(050)	**110-50**	**111-50**

Mounting Brackets

Plastic, one-piece

- One-piece mounting bracket
- Corrosion resistant
- Available preassembled
- Inner and outer attachment possible
- Available with or without strain relief tiewrap plates

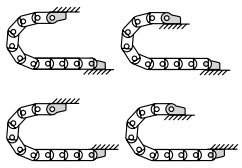
Moving end
080 ...1



Fixed end
080...2





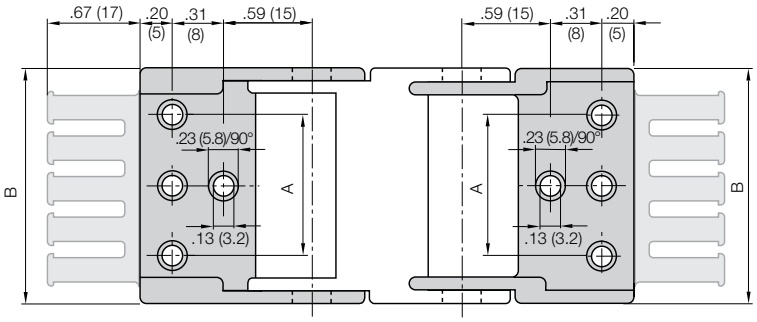


Possible installation configurations -

Part Number Structure

080-	20-	12	PZ

- PZ: With assembled strain relief tiewrap plates
- 12: Complete Set
- 20-: Width
- 080-: Mounting brackets for selected chain type

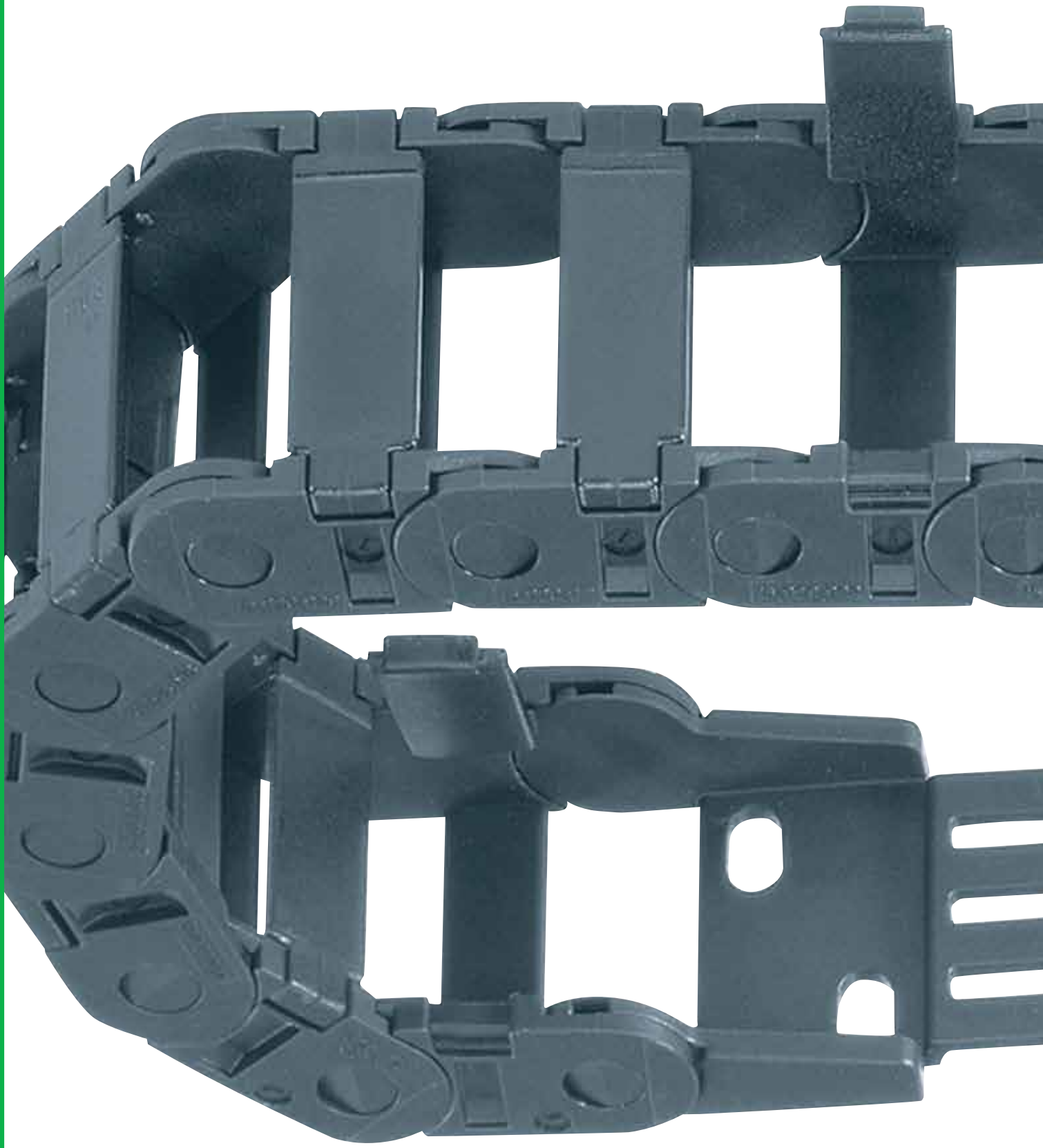


080-10-12 - 080-20-12: Center bores only
080-30-12 – 080-50-12: Outer bores only

Full set, for both ends:
080- 20- 12 Full set, **each part with pin/bore**
Single-part order:
080- 20- 1 Mounting bracket **with bore**
080- 20- 2 Mounting bracket **with pin**

Chain Type	Part No. Full set with Tiewrap Plate	Part No. Full Set without Tiewrap Plate	Dimension A in.	(mm)	Dimensions B in.	(mm)	Number of Teeth
08-10	**080-10-12PZ**	**080-10-12**	—	—	.72	(18.2)	1
08-13	—	**080-13-12**	—	—	.83	(21.2)	—
08-16	**080-16-12PZ**	**080-16-12**	—	—	.95	(24.2)	2
08-20	**080-20-12PZ**	**080-20-12**	—	—	1.11	(28.2)	2
08-30	**080-30-12PZ**	**080-30-12**	.87	(22)	1.50	(38.2)	3
08-40	**080-40-12PZ**	**080-40-12**	1.26	(32)	1.90	(48.2)	4
08-50	**080-50-12PZ**	**080-50-12**	1.65	(42)	2.29	(58.2)	5

PDF: igus.com/e-chain-pdfs
Product information: igus.com/e-chains



igus®

E2 Mini





E2 mini - Small sized e-chains

System E2 mini is low-cost and can come equipped with interior separation to prevent cables from chaffing, twisting and corkscrewing. These e-chains can be used in applications with long, unsupported lengths and offer a variety of different connection options

Typical industries and applications

- Construction machinery
- Furniture
- Packaging machines
- Textile machines
- Vehicle construction
- Woodworking machines
- Glass machines
- Automation
- General machinery



Special equipment: Electrically conductive
ESD/ATEX version upon request

Cleanroom Class 1 (ISO class 3) for Series 10, tested by the Dryden Engineering Company, California

Flammability Class
VDE 0304 IIC UL94 HB

E2 mini e-chain®, RBR-version with reverse bending radius

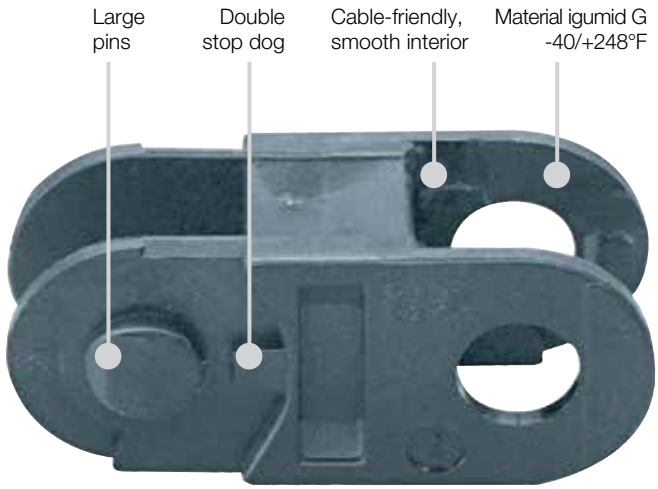


E2 mini e-chain® in a tooling machine, coolant resistant



Long-travel applications up to 131 ft. (40 m) are possible - here: Series 10 in textile machine

e-chain system® E2 Mini
Selection Guide



- Small pitch for smooth running
- High torsional rigidity
- Double stop dog and large pins for long service life
- Optimized relationship: weight - stability
- Large pins for long unsupported lengths
- Easy to assemble
- Various interior separation options
- You can find more technical data about the material, chemical resistance, temperatures **Design, Chapter 1**

E2 Mini - one-piece e-chains®
One-piece, non snap-open



Series	Inner height *hi*		Inner width *Bi*		Outer width *Ba*		Outer height *ha*		Bending radius *R*	
	in.	(mm)	in.	(mm)	in.	(mm)	in.	(mm)	*in.*	(mm)
10	.71	(18)	.59-3.94	(15-100)	1.02-4.45	(26-113)	.91	(23)	1.10-7.09	(028-180)
11.031	.91	(23)	1.22	(31)	1.62	(41.2)	1.10	(28)	1.77-2.76	(045-070)
11.080	1.10	(28)	3.15	(80)	3.66	(93)	1.31	(33.4)	1.50-2.56	(038-065)
11.1/11.2	1.61	(41)	.59-.98	(15-25)	1.00-1.40	(25.5-35.5)	1.81	(46)	1.57-3.94	(040-100)

E2 Mini - one-piece e-chains®
Snap-open along the inner radius with film-hinge



Series	Inner height *hi*		Inner width *Bi*		Outer width *Ba*		Outer height *ha*		Bending radius *R*	
	in.	(mm)	in.	(mm)	in.	(mm)	in.	(mm)	*in.*	(mm)
14	.79	(20)	.59-1.97	(15-50)	1.02-2.40	(26-61)	.98	(25)	1.10-4.92	(028-125)
F17	1.26	(32)	.59	(15)	1.02	(26)	1.54	(39)	1.89	(048)

E2 Mini - two-piece e-chains®
Snap-open along the outer radius



Series	Inner height *hi*		Inner width *Bi*		Outer width *Ba*		Outer height *ha*		Bending radius *R*	
	in.	(mm)	in.	(mm)	in.	(mm)	in.	(mm)	*in.*	(mm)
B15	.67	(17)	.59-3.94	(15-100)	1.02-4.45	(26-113)	.91	(23)	1.50-7.09	(038-180)
B17	1.26	(32)	.59-3.94	(15-100)	1.00-4.45	(25.5-113)	1.54	(39)	1.89-4.92	(048-125)

E2 Mini - two-piece e-chains®
Snap-open along the inner radius



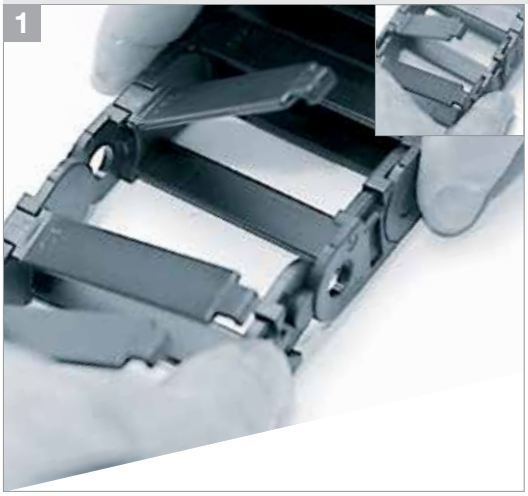
Series	Inner height *hi*		Inner width *Bi*		Outer width *Ba*		Outer height *ha*		Bending radius *R*	
	in.	(mm)	in.	(mm)	in.	(mm)	in.	(mm)	*in.*	(mm)
B15i	.67	(17)	.59-3.94	(15-100)	1.02-4.45	(26-113)	.91	(23)	1.50-7.09	(038-180)
B17i	1.26	(32)	.98-1.50	(25-38)	1.40-1.91	(35.5-48.5)	1.54	(39)	1.89-4.92	(048-125*)

Available from stock. Orders ship as early as today.*

*On average 90% of orders ship the same day..

e-chain system® E2 Mini
Assembly Instructions

Assembling | E2 mini



Push, click and snap in pin



Push and snap crossbars

Separating | E2 mini



Lever crossbars open



Open crossbars



Release side link



Twist and pull apart

e-chain system® E2 Mini
Series 10

.71

Price Index

Series 10

Special Features / Options

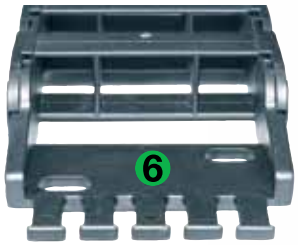
Cleanroom Class 1 (ISO class 3)

ESD Classification:
Electrically conductive ESD/
ATEX version upon request

Features & Benefits

1. Large pins and double stop dog for superior life and long unsupported length
2. Dirt repellent exterior
3. Mounting bracket with integrated strain relief
4. One piece link design
5. Interior separation available
6. Molded-in separator available

Series 10-050-075-S





Assembly Tips





Easy to assemble and disassemble

Usage Guidelines

- If snap-open links are not necessary
- If a small but very stable chain is required

- If snap-open links are necessary
  ➤ **Series 15 “Zipper”**
- If quick insertion of cables with preassembled connector is required
  ➤ **Series E14 E-Z Chain**

Order Example: Complete e-chain®

Please indicate chain length or number of links. Example:

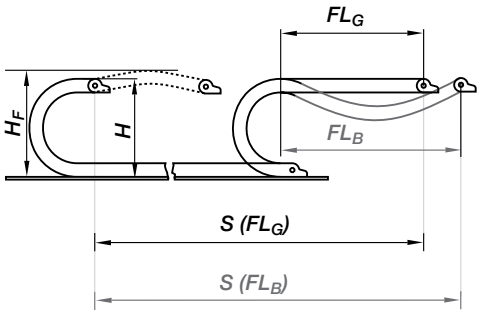
3.28 ft (1 m) **10-025-038-0**	**e-chain®**
With 2 separators **111** assembled every 2nd link	**Interior Separation**
1 Set **1025-12PZ**	**Mounting Bracket**

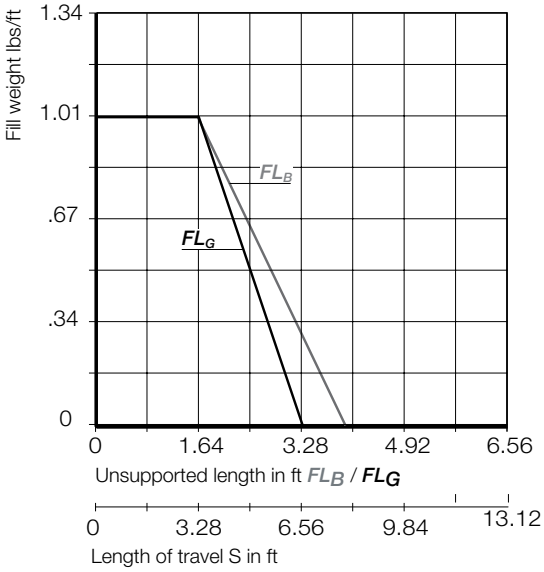
e-chain system® E2 Mini
Series 10
Installation Dimensions

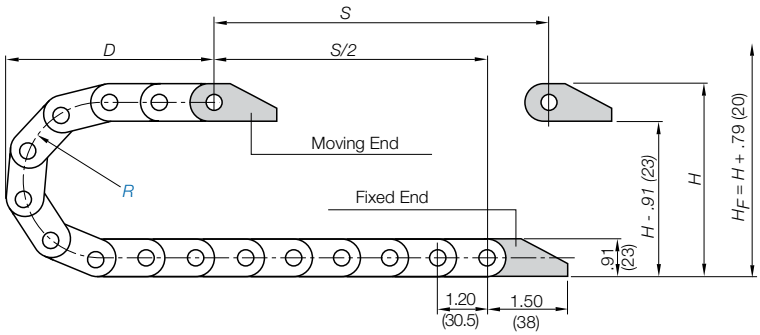
Short travel, unsupported length

- FL_B = unsupported with permitted sag
- FL_G = unsupported with straight upper run

Further information ➤ Design, Chapter 1







Pitch per link: = 1.20" (30.5 mm)
Links per ft (m): = 10.06 (33)
For center mount applications:
Chain length = $\frac{S}{2} + K$

The required clearance height: H_F **= H + .79 in. (20 mm)** (with 1.01 lbs/ft (1.5 kg/m) fill weight.
Please consult igus® if space is particularly restricted.

R	1.10 (028)	1.50 (038)	1.89 (048)	2.95 (075)	3.94 (100)	4.33 (110)	4.92 (125)	5.71 (145)	7.09 (180)
H	3.11 (79)	3.90 (99)	4.69 (119)	6.81 (173)	8.78 (223)	9.57 (243)	10.75 (273)	12.32 (313)	15.08 (383)
D	3.35 (85)	3.74 (95)	4.3 (105)	5.20 (132)	6.18 (157)	6.57 (167)	7.16 (182)	7.95 (202)	9.33 (237)
K	5.91 (150)	7.28 (185)	8.46 (215)	11.81 (300)	14.96 (380)	16.14 (410)	17.91 (455)	20.47 (520)	24.80 (630)

Speed / acceleration FL_G	max. 65.6 ft/s (20 m/s) / max. 656 ft/s² (200 m/s²)
Speed / acceleration FL_B	max. 9.84 ft/s (3 m/s) / max. 19.69 ft/s² (6 m/s²)
Gliding speed / acceleration (maximum)	max. 9.84 ft/s (3 m/s) / max. 32.8 ft/s² (10 m/s²)
Material - permitted temperature	igumid G / -40°F (-40°C) up to +248°F (+120° C)
Flammability Class, igumid G	VDE 0304 IIC UL94 HB

Short Travels - Unsupported

Unsupported e-chains® feature positive camber over short travels. This must be accounted for when specifying the clearance height. Please refer to **Installation dimensions** for further details.

Legend

S = Length of travel
R = Bending radius
H = Nominal clearance height
D = Overlength e-chain® radius in final position
$K = \pi \bullet R + safety\ buffer$
H_F = Required clearance height

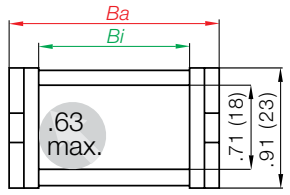
Technical Data

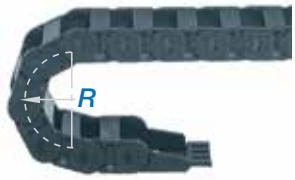
Details of material properties
➤ Chapter 1

PDF: igus.com/e-chain-pdfs
Product information: igus.com/e-chains

e-chain system® E2 Mini
Series 10

Series 10 - e-chain® non snap-open



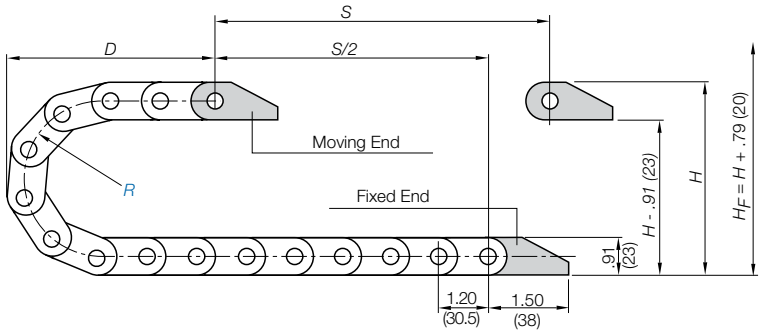




Part Number Structure

10-	025-	038-	0

- 038: Bending radius
- 025: Width
- 10: Series
- 0: Color - Black



Supplement part number with required radius. Example: 10-025-[038]-0
Pitch: 1.20 in. (30.5 mm) per link links/ft (m) = 10.06 (33)

Part Number			Bi in. (mm)	Ba in. (mm)	Weight lbs/ft (kg/m)
10-015-	☐	-0	.59 (15)	1.02 (26)	≈ 0.24 (0.35)
10-025-	☐	-0	.98 (25)	1.42 (36)	≈ 0.27 (0.40)
10-038-	☐	-0	1.50 (38)	1.93 (49)	≈ 0.31 (0.46)
10-050-	☐	-0	1.97 (50)	2.40 (61)	≈ 0.35 (0.52)
10-5-	☐	-0	2.48 (63)	2.99 (76)	≈ 0.42 (0.63)
10-6	☐	-0	3.15 (80)	3.70 (94)	≈ 0.47 (0.70)
10-7	☐	-0	3.94 (100)	4.45 (113)	≈ 0.51 (0.76)

Choose from the radii below for all of the above sizes
Radius (mm) Example: 10-025-[038]-0

	028	038	048	075	100	110	125	145	180
R	1.10 (028)	1.50 (038)	1.89 (048)	2.95 (075)	3.94 (100)	4.33 (110)	4.92 (125)	5.71 (145)	7.09 (180)
H	3.11 (79)	3.90 (99)	4.69 (119)	6.81 (173)	8.78 (223)	9.57 (243)	10.75 (273)	12.32 (313)	15.08 (383)
D	3.35 (85)	3.74 (95)	4.3 (105)	5.20 (132)	6.18 (157)	6.57 (167)	7.16 (182)	7.95 (202)	9.33 (237)
K	5.91 (150)	7.28 (185)	8.46 (215)	11.81 (300)	14.96 (380)	16.14 (410)	17.91 (455)	20.47 (520)	24.80 (630)

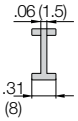
0=Standard color black. For other colors see Chapter 1

Interior Separation

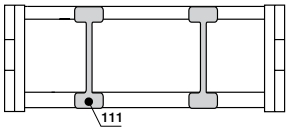


Option 1: Vertical separators

Vertical separators are used if a vertical subdivision of the e-chain® interior is required. By standard, vertical separators are assembled every other e-chain® link.



Separator	
Unassembled	Part No. 101
Assembled	Part No. 111



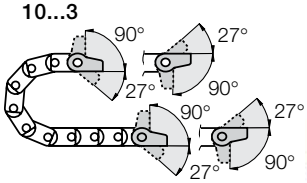
e-chain system® E2 Mini
Series 10
Mounting Brackets - Plastic

Standard

Option 1: pivoting

- Short and long travel
- Space-restricted conditions
- Corrosion resistant

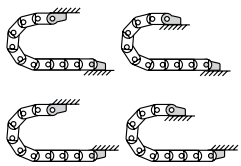
Moving end
10...3



Fixed end
10...4P(Z)





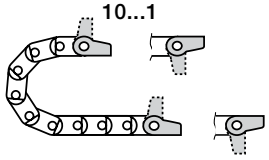


Possible installation configurations -

Option 2: locking

- Vertical hanging/standing travels
- Extreme accelerations
- Corrosion resistant

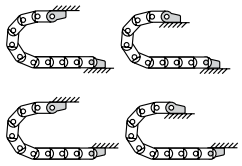
Moving end
10...1



Fixed end
10...2P(Z)

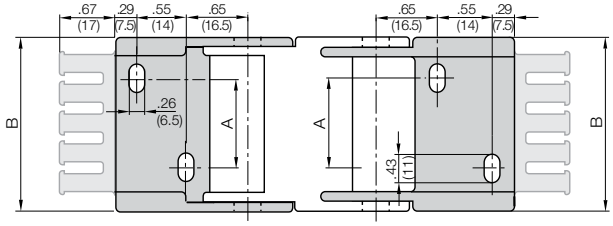




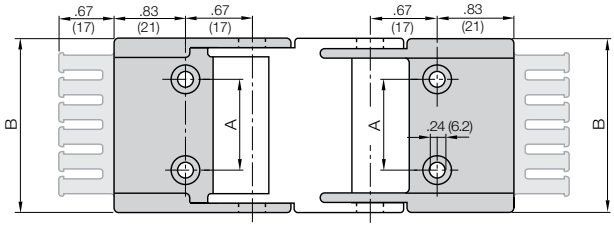


Possible installation configurations -

For e-chain
10-015 to 10-050



For e-chain
10-5 to 10-7



Part Number Structure

1025- | 34- | P | PZ

- With tiewrap plate
- Without tiewrap plate
- Complete Set
  12 = Locking
  34 = Pivoting
- Mounting brackets for selected chain type

Part number examples are shown for pivoting brackets. For locking brackets fill in the blank with 12

Part No. Full Set (pivoting)
with Tiewrap Plate
Series 10 with 25mm inner width
1025-34PZ

Part No. Full Set (pivoting)
without Tiewrap Plate
Series 10 with 25 mm inner width
1025-34P

Full set, for both ends:
1025- 34- PZ Full set, **each part with pin/bore + tiewrap plate**

Single-part order:
1025- 3- PZ Mounting bracket **with bore + tiewrap plate**
1025- 4- PZ Mounting bracket **with pin + tiewrap plate**

For Chain Type	Part No. Full set with Tiewrap Plate	Part No. Full Set without Tiewrap Plate	Dimension A in.	(mm)	Dimensions B in.	(mm)
10-015	1015- ☐ PZ	1015- ☐ P	—	—	1.00	(25.5)
10-025	1025- ☐ PZ	1025- ☐ P	.39	(10)	1.40	(35.5)
10-038	1038- ☐ PZ	1038- ☐ P	.91	(23)	1.91	(48.5)
10-050	1050- ☐ PZ	1050- ☐ P	1.38	(35)	2.38	(60.5)
10-5	105- ☐ PZ	105- ☐ P	1.89	(48)	2.95	(75.0)
10-6	106- ☐ PZ	106- ☐ P	2.56	(65)	3.62	(92.0)
10-7	107- ☐ PZ	107- ☐ P	3.35	(85)	4.41	(112.0)

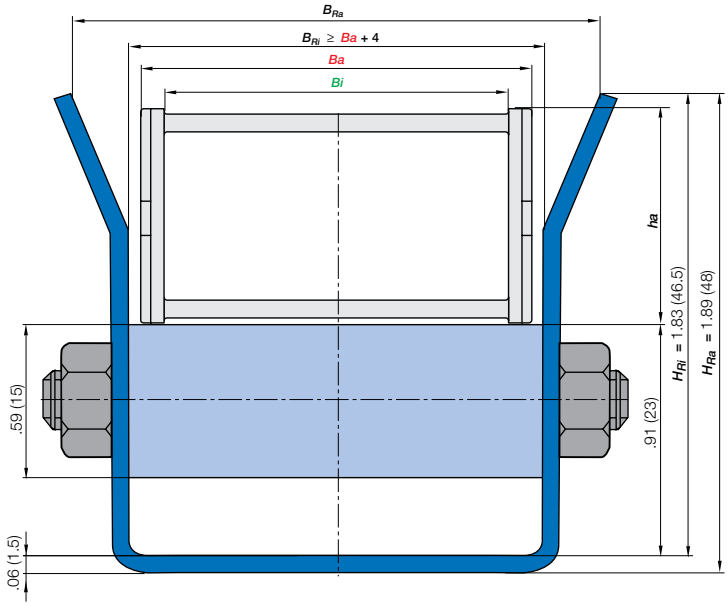
34 or 12

For pivoting brackets choose 34
For locking brackets choose 12
Example: 1025- 34 PZ

PDF: igus.com/e-chain-pdfs
Product information: igus.com/e-chains

e-chain system® E2 Mini
Series 10
Guide Trough

One-piece guide troughs made of steel are available for the Series 10 Energy Chains®. These guide troughs are available from stock for outer chain widths up to 4.45 in. (113 mm). For wider e-chains® and Tubes, special solutions are possible with short lead times.
No installation sets are required for these trough sizes since the guide troughs consist of a one-piece U-profile. The joint connection with this type of guide trough is specified individually for every application.



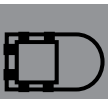
Dimensions Guide troughs 91-10 — 91-71

For Series	Part No.	B_{Ra} in.	B_{Ra} (mm)	B_{Ri} in.	B_{Ri} (mm)	Weight lbs/ft	Weight (kg/m)
10-015							
Trough **without** glide bar 6.56 ft. (2m section)	**91-10**	1.59	(40.5)	1.18	(30)	1.01	(1.50)
Glide bar 6.56 ft. (2m section)	**91-11**	1.59	(40.5)	1.18	(30)	.30	(.45)
10-025							
Trough **without** glide bar 6.56 ft. (2m section)	**91-20**	1.99	(50.5)	1.57	(40)	1.11	(1.65)
Glide bar 6.56 ft. (2m section)	**91-21**	1.99	(50.5)	1.57	(40)	.38	(.57)
10-038							
Trough **without** glide bar 6.56 ft. (2m section)	**91-30**	2.46	(62.5)	2.05	(52)	1.21	(1.80)
Glide bar 6.56 ft. (2m section)	**91-31**	2.46	(62.5)	2.05	(52)	.46	(.68)
10-050							
Trough **without** glide bar 6.56 ft. (2m section)	**91-40**	2.85	(72.5)	2.44	(62)	1.28	(1.90)
Glide bar 6.56 ft. (2m section)	**91-41**	2.85	(72.5)	2.44	(62)	.61	(.91)
10-5							
Trough **without** glide bar 6.56 ft. (2m section)	**91-50**	3.60	(91.5)	3.19	(81)	1.52	(2.26)
Glide bar 6.56 ft. (2m section)	**91-51**	3.60	(91.5)	3.19	(81)	.84	(1.25)
10-6							
Trough **without** glide bar 6.56 ft. (2m section)	**91-60**	4.27	(108.5)	3.86	(98)	1.83	(2.72)
Glide bar 6.56 ft. (2m section)	**91-61**	4.27	(108.5)	3.86	(98)	.91	(1.35)
10-7							
Trough **without** glide bar 6.56 ft. (2m section)	**91-70**	5.06	(128.5)	4.65	(118)	2.13	(3.17)
Glide bar 6.56 ft. (2m section)	**91-71**	5.06	(128.5)	4.65	(118)	1.14	(1.70)

Trough material in general: St 1203 galvanized











e-chain system® E2 Mini
Series 11.031

Price Index

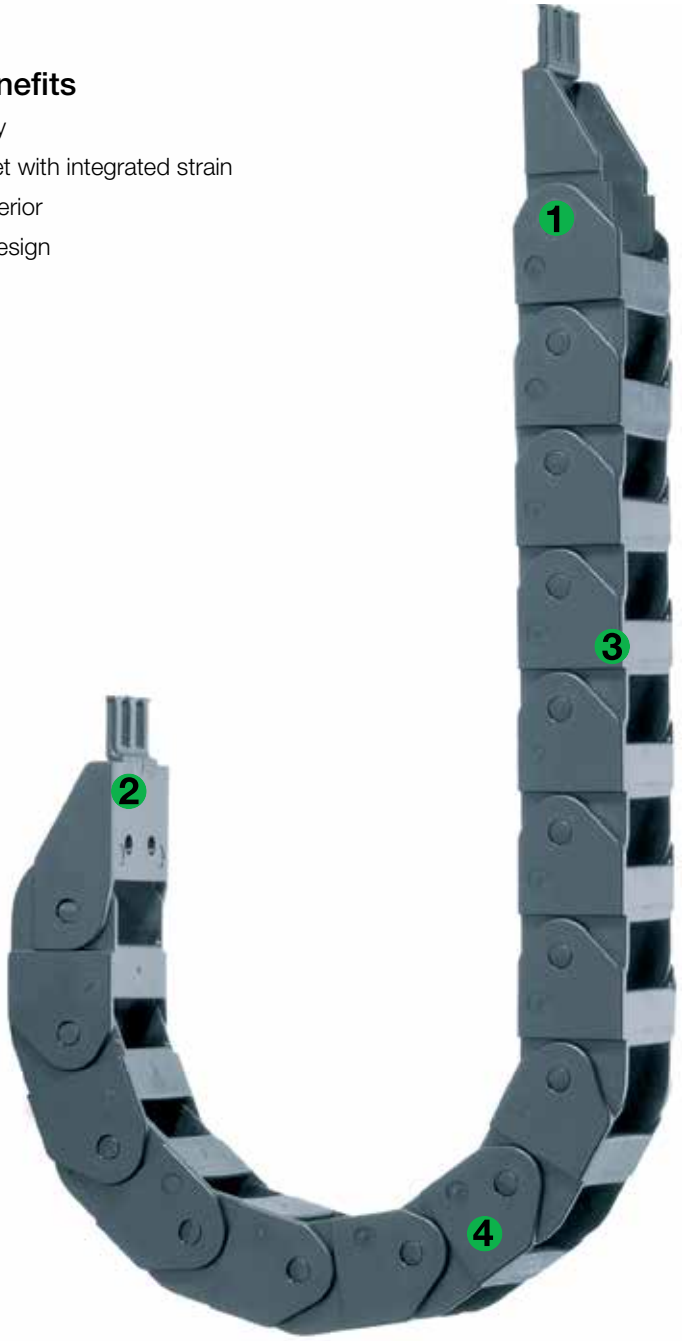
Series 11.031

Special Features / Options

ESD Classification:
Electrically conductive ESD version upon request

Features & Benefits

1. Torsional stability
2. Mounting bracket with integrated strain
3. Dirt repellent exterior
4. One piece link design



Assembly Tips





Easy to assemble and disassemble

Usage Guidelines

- If space is restricted
- If many cables are arranged vertically adjacent

- If snap-open links are required
  ➤ **similar width/height from Series "Zipper"**
- If quick insertion of cables with preassembled connector is required
  ➤ **similar width/height from Series E-Z Chain**

Order Example: Complete e-chain®

Please indicate chain length or number of links. Example:

3.28 ft (1 m) **11.031.070.0**	**e-chain®**
1 Set **11.031.12PZ**	**Mounting Bracket**

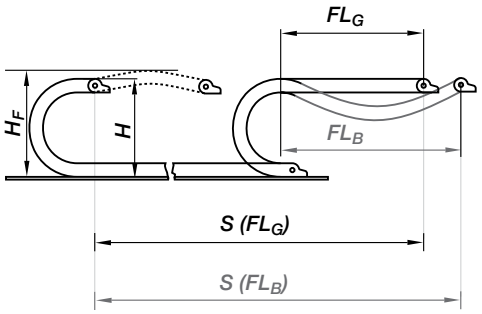
e-chain system® E2 Mini
Series 11.031
Installation Dimensions

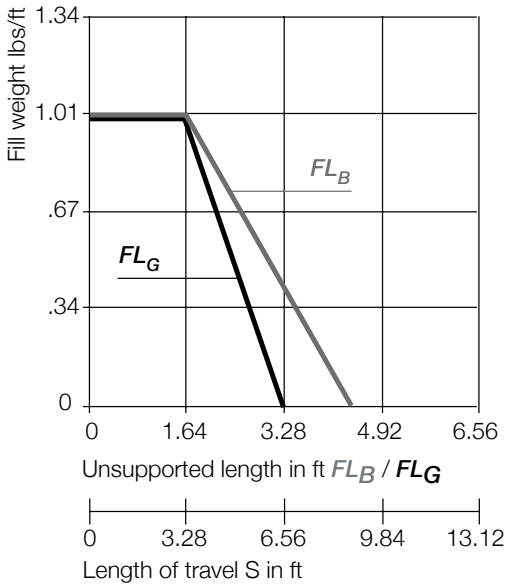
Short travel, unsupported length

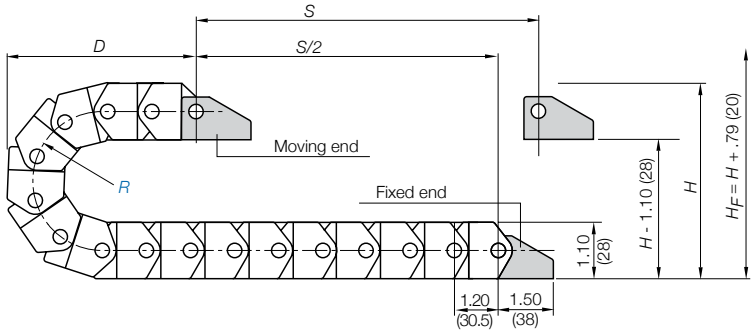
● FL_B = unsupported with permitted sag

● FL_G = unsupported with straight upper run

Further information ➤ Design, Chapter 1







Pitch per link: = 1.20" (30.5 mm)
Links per ft (m): = 10.06 (33)
For center mount applications:
Chain length = $\frac{S}{2} + K$

The required clearance height: ***HF* = *H* + .79 in. (20 mm)** (with .34 lbs/ft (0.5 kg/m) fill weight.
Please consult igus® if space is particularly restricted.

R	1.77 (045)	2.76 (070)
H	4.84 (123)	6.81 (173)
D	3.54 (107)	5.20 (132)
K	8.07 (205)	11.22 (285)

Short Travels - Unsupported

Unsupported e-chains® feature positive camber over short travels. This must be accounted for when specifying the clearance height. Please refer to **Installation dimensions** for further details.

Legend

S = Length of travel
R = Bending radius
H = Nominal clearance height
D = Overlength e-chain® radius in final position
K = π • *R* + *safety buffer*
HF = Required clearance height

Speed / acceleration FL_G	max. 65.6 ft/s (20 m/s) / max. 656 ft/s² (200 m/s²)
Speed / acceleration FL_B	max. 9.84 ft/s (3 m/s) / max. 19.69 ft/s² (6 m/s²)
Gliding speed / acceleration (maximum)	max. 9.84 ft/s (3 m/s) / max. 32.8 ft/s² (10 m/s²)
Material - permitted temperature	igumid G / -40°F (-40°C) up to +248°F (+120° C)
Flammability Class, igumid G	VDE 0304 IIC UL94 HB

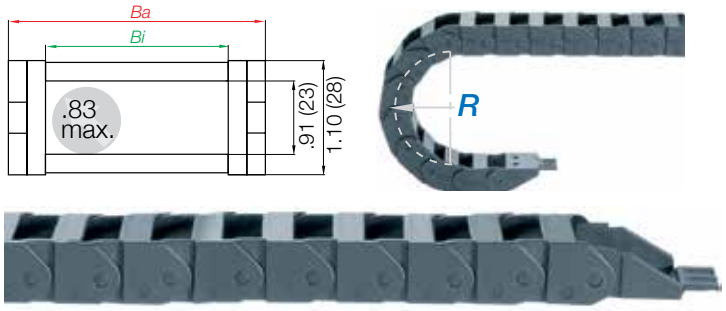
Technical Data

Details of material properties
➤ Chapter 1

PDF: igus.com/e-chain-pdfs
Product information: igus.com/e-chains

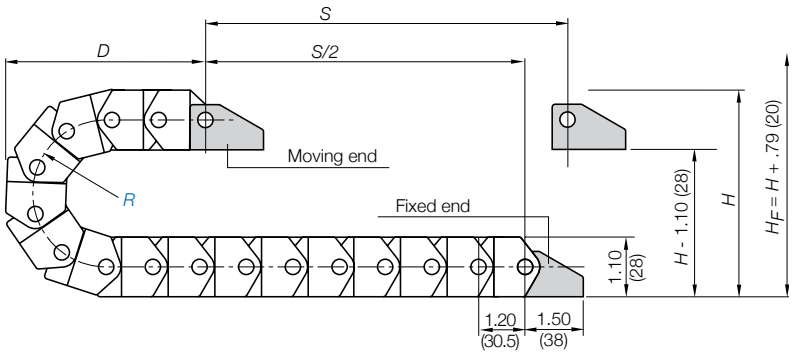
e-chain system® E2 Mini
Series 11.031
Large inner height, asymmetric design

Series 11.031 - e-chain® non snap-open



Part Number Structure

11.	031.	070.	0
			Color - Black
		Bending radius	
	Width		
Series			



Supplement part number with required radius. Example: 11.031. 070 .0
Pitch: 1.20 in. (30.5 mm) per link links/ft (m) = 10.06 (33)

Part Number	Bi in. (mm)	Ba in. (mm)	Weight lbs/ft (kg/m)
11.031. □ .0	1.22 (31)	1.62 (41.2)	≈ 0.29 (0.43)

Choose from the radii below for all of the above sizes
Radius (mm) Example: 11.031. 070 .0

	045	070
R	1.77 (045)	2.76 (070)
H	4.84 (123)	6.81 (173)
D	3.54 (107)	5.20 (132)
K	8.07 (205)	11.22 (285)

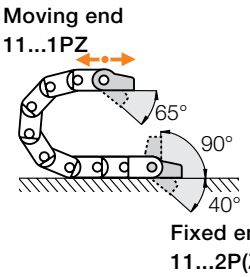
0=Standard color black. For other colors see Chapter 1

e-chain system® E2 Mini
Series 11.031
Mounting Brackets - plastic one piece - pivoting

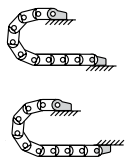
Standard

Option: pivoting

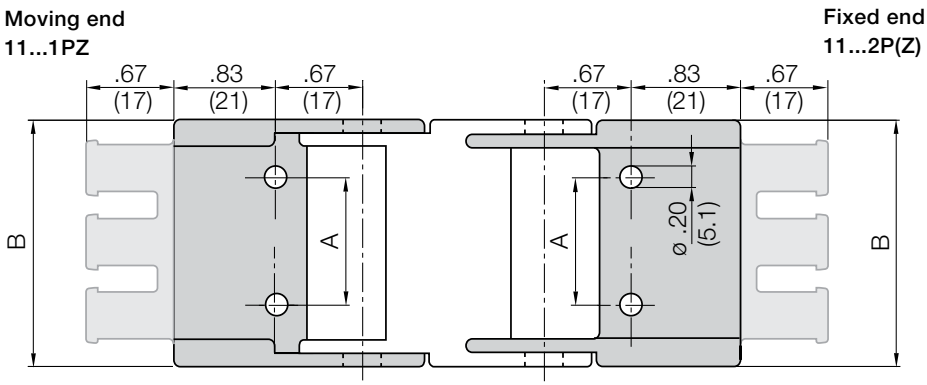
- Short and long travel
- Space-restricted conditions
- Corrosion resistant







Possible installation configurations -



Part Number Structure

11.	031.	12	PZ

- PZ: With tiewrap plate
- 12: Complete Set = 12
- 031.: Width
- 11.: Mounting brackets for selected chain type

Full set, for both ends:

11.031.12PZ Full set, **each part with pin/bore + tiewrap plate**

Single-part order:

11.031.1PZ Mounting bracket **with bore + tiewrap plate**

11.031.2PZ Mounting bracket **with pin + tiewrap plate**

For Chain Type	Part No. Full set with Tiewrap Plate	Part No. Full Set without Tiewrap Plate	Dimension A in.	(mm)	Dimensions B in.	(mm)	Number of teeth
11.031	**11.031.12 PZ**	**11.031.12P**	.63	(16)	1.65	(42)	3

PDF: igus.com/e-chain-pdfs
Product information: igus.com/e-chains

e-chain system® E2 Mini
Series 11.080

Price Index

Series 11.080

Special Features / Options

ESD Classification:
Electrically conductive ESD version upon request

Assembly Tips



Easy to assemble and disassemble

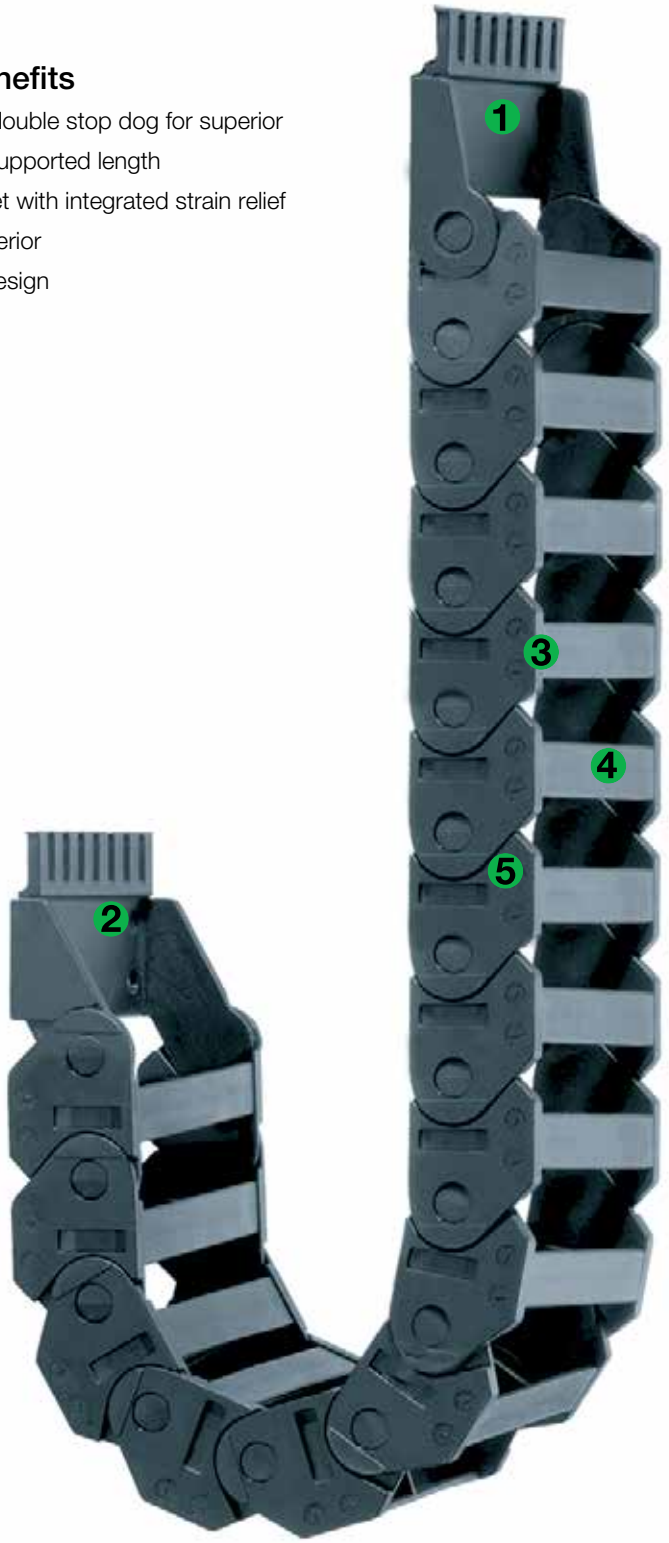
Usage Guidelines

- If space is restricted
- If many cables are arranged vertically adjacent

- If snap-open links are required
  ➤ **similar width/height from Series "Zipper"**
- If quick insertion of cables with preassembled connector is required
  ➤ **similar width/height from Series E-Z Chain**

Features & Benefits

1. Large pins and double stop dog for superior life and long unsupported length
2. Mounting bracket with integrated strain relief
3. Dirt repellent exterior
4. One piece link design
5. Stable design



Order Example: Complete e-chain®

Please indicate chain length or number of links. Example:

3.28 ft (1 m) **11.080.038.0**	**e-chain®**
1 Set **11.080.12PZ**	**Mounting Bracket**

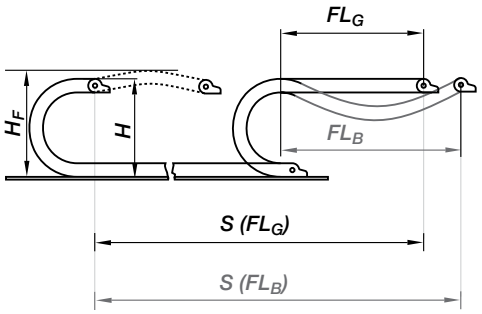
e-chain system® E2 Mini
Series 11.080
Installation Dimensions

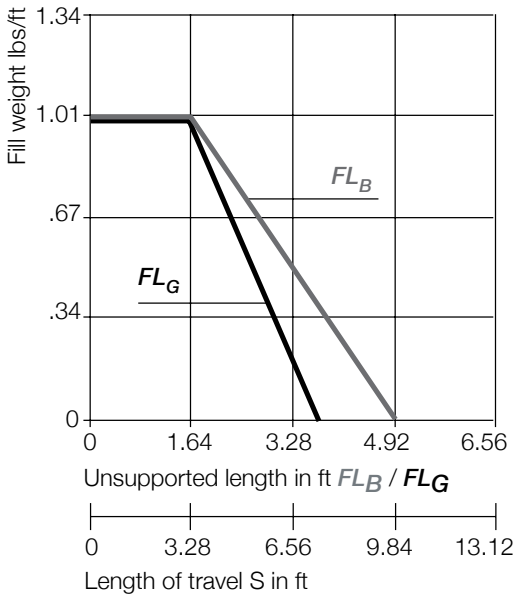
Short travel, unsupported length

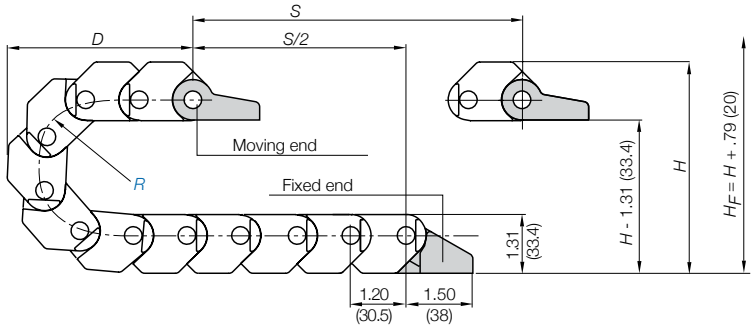
● FL_B = unsupported with permitted sag

● FL_G = unsupported with straight upper run

Further information ➤ Design, Chapter 1







Pitch per link: = 1.20" (30.5 mm)
Links per ft (m): = 10.06 (33)
For center mount applications:
Chain length = $\frac{S}{2}$ + K

The required clearance height: H_F = **H + .79 in. (20 mm)** (with .34 lbs/ft (0.5 kg/m) fill weight.
Please consult igus® if space is particularly restricted.

R	1.50 (038)	2.56 (065)
H	4.69 (119)	6.81 (173)
D	4.13 (105)	5.20 (132)
K	7.28 (185)	10.63 (270)

Short Travels - Unsupported

Unsupported e-chains® feature positive camber over short travels. This must be accounted for when specifying the clearance height. Please refer to **Installation dimensions** for further details.

Legend

S = Length of travel
R = Bending radius
H = Nominal clearance height
D = Overlength e-chain® radius in final position
K = π • R + *safety buffer*
H_F = Required clearance height

Speed / acceleration FL_G	max. 65.6 ft/s (20 m/s) / max. 656 ft/s² (200 m/s²)
Speed / acceleration FL_B	max. 9.84 ft/s (3 m/s) / max. 19.69 ft/s² (6 m/s²)
Gliding speed / acceleration (maximum)	max. 9.84 ft/s (3 m/s) / max. 32.8 ft/s² (10 m/s²)
Material - permitted temperature	igumid G / -40°F (-40°C) up to +248°F (+120° C)
Flammability Class, igumid G	VDE 0304 IIC UL94 HB

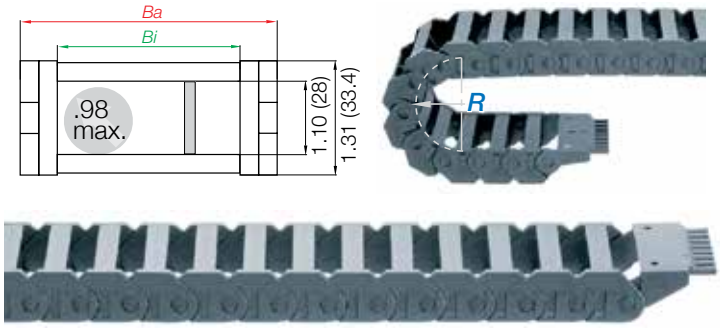
Technical Data

Details of material properties
➤ Chapter 1

PDF: igus.com/e-chain-pdfs
Product information: igus.com/e-chains

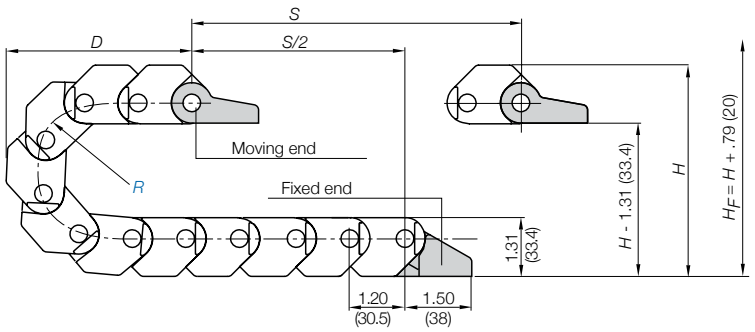
e-chain system® E2 Mini
Series 11.080
Large inner height, asymmetric design

Series 11.080 - e-chain® non openable.
With molded in vertical separation

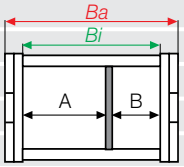


Part Number Structure

11.	080.	038.	0
Series	Width	Bending radius	Color - Black



Supplement part number with required radius. Example: 11.080. 038 .0
Pitch: 1.20 in. (30.5 mm) per link links/ft (m) = 10.06 (33)

Part Number	Bi in. (mm)	Ba in. (mm)	Chamber Design	A in. (mm)	B in. (mm)	Weight lbs/ft (kg/m)
11.080. □ .0	3.15 (80)	3.66 (93)		1.81 (46)	1.26 (32)	≈ 0.49 (0.73)

Choose from the radii below for all of the above sizes
Radius (mm) Example: 11.080. 038 .0

	038	065
R	1.50 (038)	2.56 (065)
H	4.69 (119)	6.81 (173)
D	4.13 (105)	5.20 (132)
K	7.28 (185)	10.63 (270)

0=Standard color black. For other colors see Chapter 1

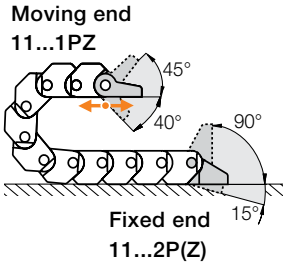
igus® e-chain system®
Telephone 1-800-521-2747
Internet: igus.com
email: sales@igus.com
QuickSpec: igus.com/quickspec

e-chain system® E2 Mini
Series 11.080
Mounting Brackets - plastic one piece - pivoting

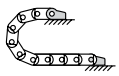
Standard

Option: pivoting

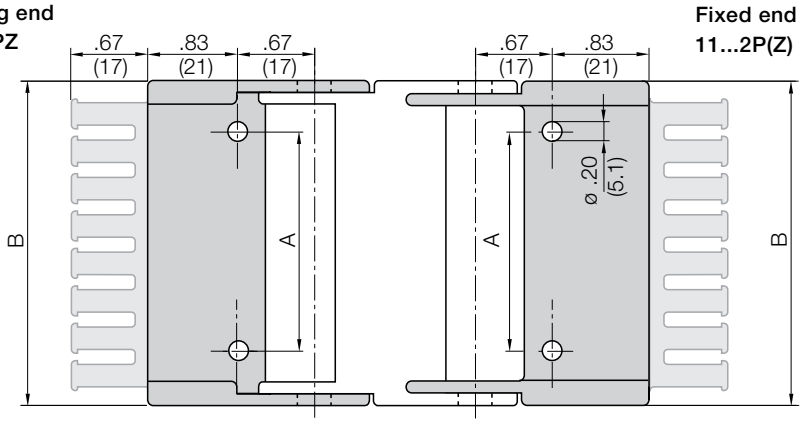
- Short and long travel
- Space-restricted conditions
- Corrosion resistant







Possible installation configurations -



Part Number Structure

11.	080.	12	PZ

- PZ: With tiewrap plate
- 12: Complete Set = 12
- 080.: Width
- 11.: Mounting brackets for selected chain type

Full set, for both ends:

11.080.12PZ Full set, **each part with pin/bore + tiewrap plate**

Single-part order:

11.080.1PZ Mounting bracket **with bore + tiewrap plate**

11.080.2PZ Mounting bracket **with pin + tiewrap plate**

For Chain Type	Part No. Full set with Tiewrap Plate	Part No. Full Set without Tiewrap Plate	Dimension A in.	(mm)	Dimension B in.	(mm)	Number of teeth
11.080	**11.080.12PZ**	**11.080.12P**	2.56	(65)	3.66	(93)	8

PDF: igus.com/e-chain-pdfs
Product information: igus.com/e-chains

e-chain system® E2 Mini
Series 11.1 / 11.2

Price Index

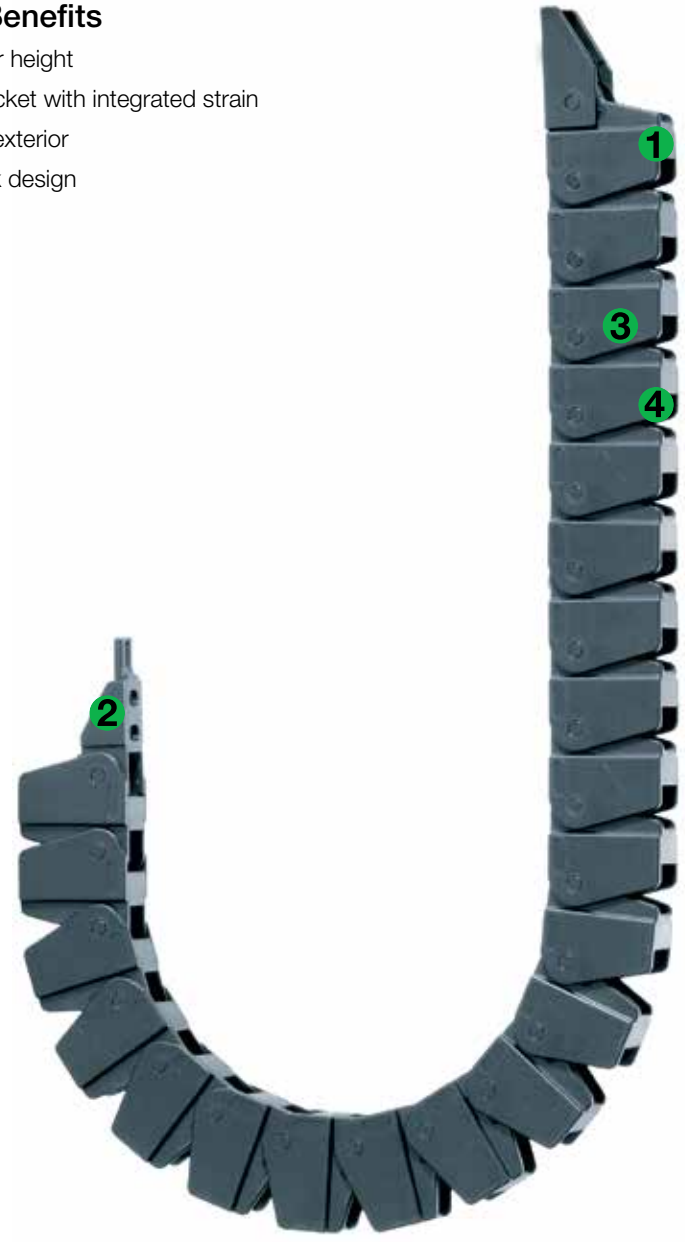
Series 11.1/11.2

Special Features / Options

ESD Classification:
Electrically conductive ESD version upon request

Features & Benefits

1. Enlarged inner height
2. Mounting bracket with integrated strain
3. Dirt repellent exterior
4. One piece link design



Assembly Tips



Easy to assemble and disassemble

Usage Guidelines

- If space is restricted
- If many cables are arranged vertically adjacent

- If snap-open links are required
  ➤ **similar width/height from Series "Zipper"**
- If quick insertion of cables with preassembled connector is required
  ➤ **similar width/height from Series E-Z Chain**

Order Example: Complete e-chain®

Please indicate chain length or number of links. Example:

3.28 ft (1 m) **11.2.100.0**	**e-chain®**
1 Set **102.12PZ**	**Mounting Bracket**

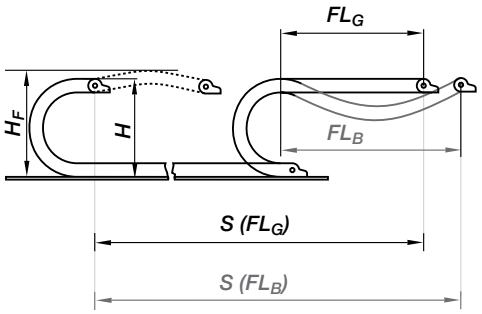
e-chain system® E2 Mini
Series 11.1 / 11.2
Installation Dimensions

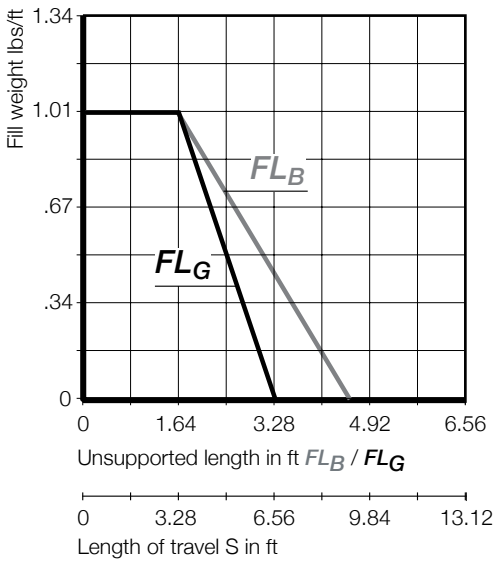
Short travel, unsupported length

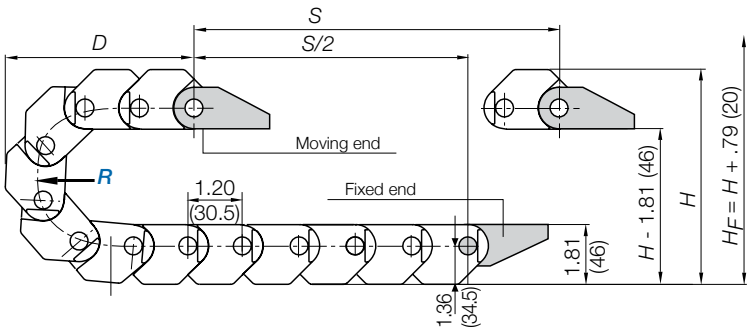
● FL_B = unsupported with permitted sag

● FL_G = unsupported with straight upper run

Further information ➤ Design, Chapter 1







Pitch per link: = 1.20" (30.5 mm)
Links per ft (m): = 10.06 (33)
For center mount applications:
Chain length = $\frac{S}{2} + K$

The required clearance height: H_F **= H + .79 in. (20 mm)** (with .34 lbs/ft (0.5 kg/m) fill weight.
Please consult igus® if space is particularly restricted.

R	1.57 (040)	2.48 (063)	2.95 (075)	3.94 (100)
H	5.87 (149)	7.68 (195)	8.62 (219)	10.59 (269)
D	4.72 (120)	5.63 (143)	6.10 (155)	7.09 (180)
K	7.48 (190)	10.24 (260)	11.81 (300)	14.96 (380)

Short Travels - Unsupported

Unsupported e-chains® feature positive camber over short travels. This must be accounted for when specifying the clearance height. Please refer to **Installation dimensions** for further details.

Legend

S = Length of travel
R = Bending radius
H = Nominal clearance height
D = Overlength e-chain® radius in final position
K = π • *R* + *safety buffer*
H_F = Required clearance height

Speed / acceleration FL_G	max. 65.6 ft/s (20 m/s) / max. 656 ft/s² (200 m/s²)
Speed / acceleration FL_B	max. 9.84 ft/s (3 m/s) / max. 19.69 ft/s² (6 m/s²)
Gliding speed / acceleration (maximum)	max. 9.84 ft/s (3 m/s) / max. 32.8 ft/s² (10 m/s²)
Material - permitted temperature	igumid G / -40°F (-40°C) up to +248°F (+120° C)
Flammability Class, igumid G	VDE 0304 IIC UL94 HB

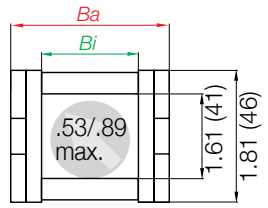
Technical Data

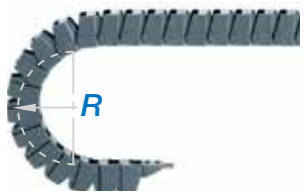
Details of material properties
➤ Chapter 1

PDF: igus.com/e-chain-pdfs
Product information: igus.com/e-chains

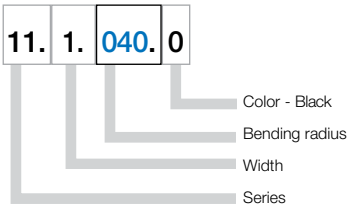
e-chain system® E2 Mini
Series 11.1 / 11.2
Very large inner height, small outer width, asymmetric design

Series 11.1/11.2 - e-chain® one-piece, non-openable

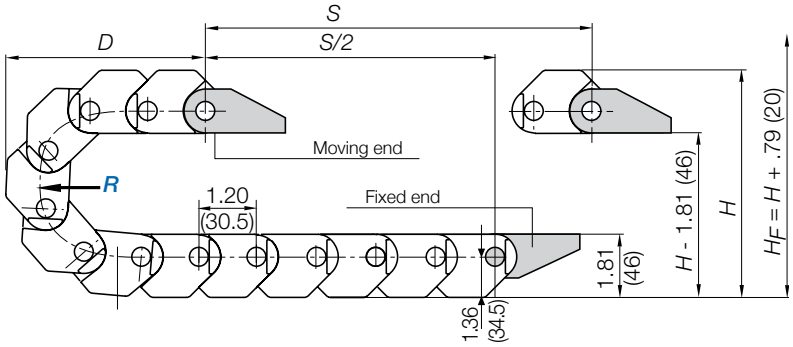




Part Number Structure







Supplement part number with required radius. Example: 11.1. 040 .0
Pitch: 1.20 in. (30.5 mm) per link links/ft (m) = 10.06 (33)

Part Number	Bi in. (mm)	Ba in. (mm)	Weight lbs/ft (kg/m)
11.1. □ .0	.59 (15)	1.00 (25.5)	≈ 0.33 (0.50)
11.2. □ .0	.98 (25)	1.40 (35.5)	≈ 0.35 (0.53)

Choose from the radii below for all of the above sizes
Radius (mm) Example: 11.1. 040 .0

	040	063	075	100
R	1.57 (040)	2.48 (063)	2.95 (075)	3.94 (100)
H	5.87 (149)	7.68 (195)	8.62 (219)	10.59 (269)
D	4.72 (120)	5.63 (143)	6.10 (155)	7.09 (180)
K	7.48 (190)	10.24 (260)	11.81 (300)	14.96 (380)

0=Standard color black. For other colors see Chapter 1

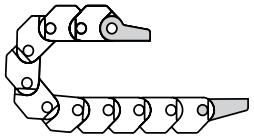
e-chain system® E2 Mini
Series 11.1 / 11.2
Mounting Brackets - plastic one piece - locking

Standard

Option: locking

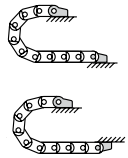
- Short and long travel
- Space-restricted conditions
- Corrosion resistant

Moving end
10...1PZ





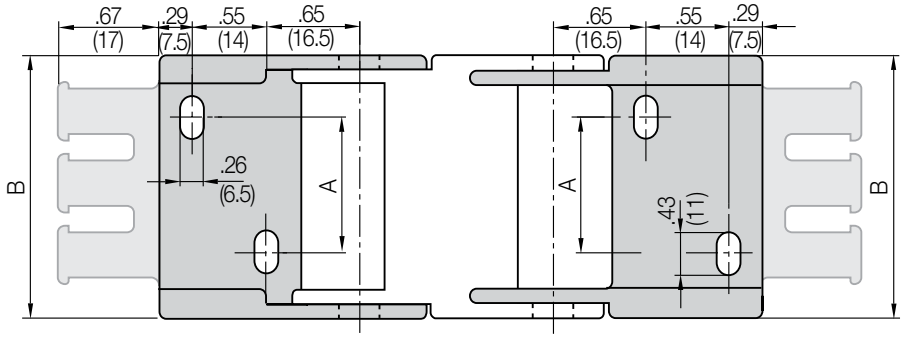
Fixed end
10...2P(Z)



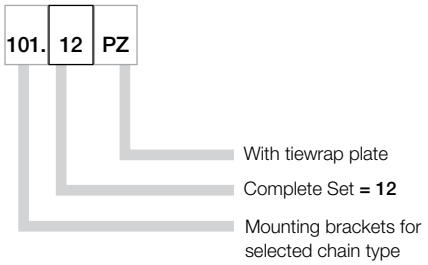
Possible installation configurations -

Moving end
10...1PZ

Fixed end
10...2P(Z)



Part Number Structure



Full set, for both ends:

101. 12 PZ Full set, **each part with pin/bore + tiewrap plate**

Single-part order:

101. 1 PZ Mounting bracket **with bore + tiewrap plate**

101. 2 PZ Mounting bracket **with pin + tiewrap plate**

For Chain Type	Part No. Full set with Tiewrap Plate	Part No. Full Set without Tiewrap Plate	Dimension A in.	(mm)	Dimensions B in.	(mm)	Number of teeth
11.1	**101.12PZ**	**101.12P**	-	-	1.02	(26)	2
11.2	**102.12PZ**	**102.12P**	.39	(10)	1.42	(36)	3

PDF: igus.com/e-chain-pdfs
Product information: igus.com/e-chains

e-chain system® E2 Mini
Series 14

.79

Price Index

Series 14

Special Features / Options

Clean-Room — Cleanroom Class 1 (ISO class 3)

EX — ESD Classification: Electrically conductive ESD/ ATEX version upon request

UL94-V2 Classifications

Assembly Tips





Easy to assemble and disassemble

Features & Benefits

1. Flammability class UL 94
2. Mounting bracket with integrated strain relief
3. Dirt-repellent exterior
4. Snap-open along inner radius with film-hinge



Usage Guidelines

- For applications with low loads
- Fast installation of the cables

- For gliding applications
  ➤ **Series 15 Zipper**
- For long unsupported lengths
  ➤ **Series 15 Zipper**

Order Example: Complete e-chain®

Please indicate chain length or number of links. Example:

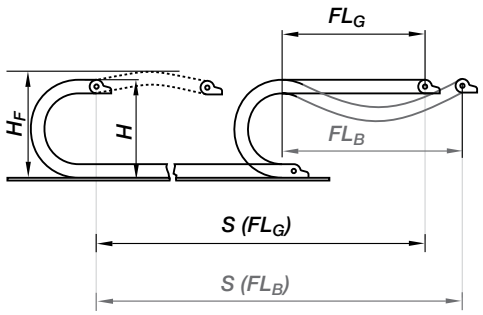
3.28 ft (1 m) **14-2-038-0**	**e-chain®**
1 Set **114-2-12PZ**	**Mounting Bracket**

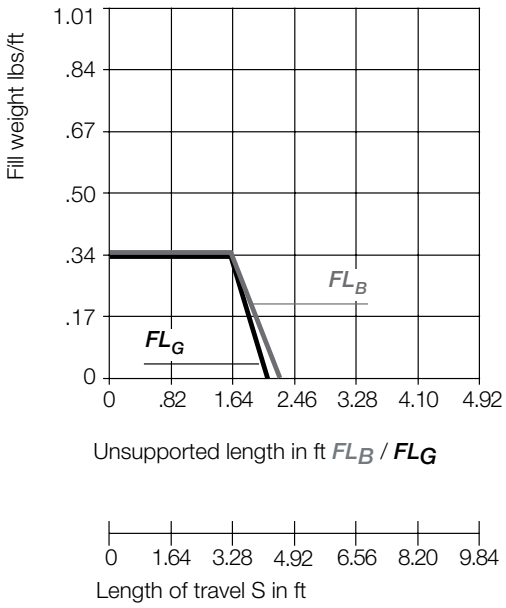
e-chain system® E2 Mini
Series 14
Installation Dimensions

Short travel, unsupported length

- FL_B = unsupported with permitted sag
- FL_G = unsupported with straight upper run

Further information ➤ Design, Chapter 1



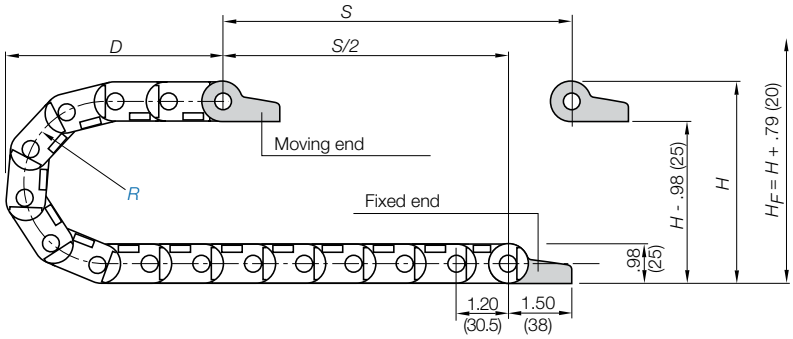


Short Travels - Unsupported

Unsupported e-chains® feature positive camber over short travels. This must be accounted for when specifying the clearance height. Please refer to **Installation dimensions** for further details.

Legend

S = Length of travel
R = Bending radius
H = Nominal clearance height
D = Overlength e-chain® radius in final position
K = π • R + *safety buffer*
H_F = Required clearance height



Pitch per link: = 1.20" (30.5 mm)
Links per ft (m): = 10.06 (33)
For center mount applications:
Chain length = $\frac{S}{2}$ + K

The required clearance height: $H_F = H + .79$ **in. (20 mm)** (with 0.34 lbs/ft (0.5 kg/m) fill weight. Please consult igus® if space is particularly restricted.

R	1.10 (028)	1.50 (038)	1.89 (048)	2.95 (075)	3.94 (100)	4.92 (125)
H	3.19 (81)	3.98 (101)	4.76 (121)	6.89 (175)	8.86 (225)	10.83 (275)
D	3.39 (86)	3.78 (96)	4.17 (106)	5.24 (133)	6.22 (158)	7.20 (183)
K	6.02 (150)	7.42 (185)	8.61 (215)	11.81 (300)	14.96 (380)	17.91(455)

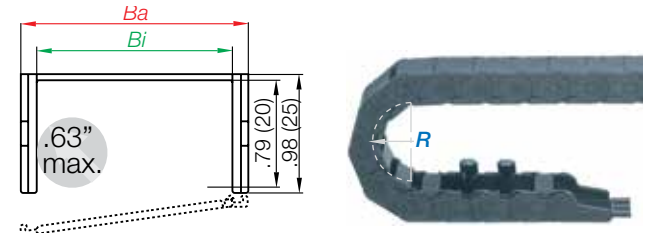
Speed / acceleration FL_G	max. 6.56 ft/s (20 m/s) / max. 656 ft/s² (200 m/s²)
Speed / acceleration FL_B	max. 9.84 ft/s (3 m/s) / max. 19.69 ft/s² (6 m/s²)
Gliding speed / acceleration (maximum)	max. 9.84 ft/s (3 m/s) / max. 32.8 ft/s² (10 m/s²)
Material - permitted temperature	igumid G / -40°F (-40°C) up to +248°F (+120° C)
Flammability Class, igumid NB	VDE 0304 IIC UL94 V2

Technical Data

Details of material properties
➤ **Chapter 1**

PDF: igus.com/e-chain-pdfs
Product information: igus.com/e-chains

Series 14 - e-chain® snap-open along the inner radius

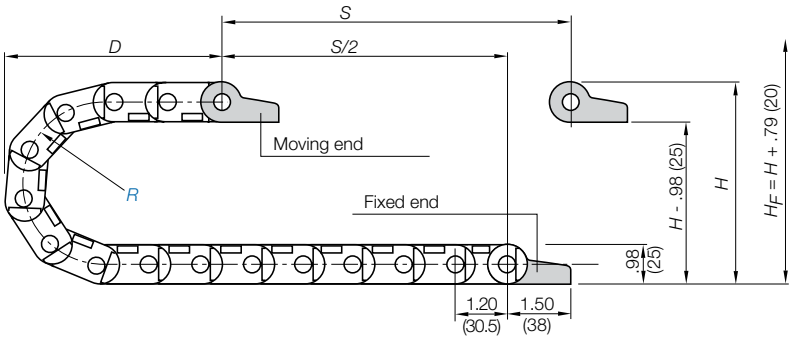




Part Number Structure

14-	2-	038-	0

- 0 – Color - Black
- 038 – Bending radius
- 2 – Width
- 14 – Series



Supplement part number with required radius. Example: 14-2-038-0

Pitch: 1.20 in. (30.5 mm) per link links/ft (m) = 10.06 (33)

Part Number			Bi in. (mm)	Ba in. (mm)	Weight lbs/ft (kg/m)
14-1-		-0	.59 (15)	1.02 (26)	≈ 0.21 (0.31)
14-2-		-0	.98 (25)	1.42 (36)	≈ 0.22 (0.32)
14-3-		-0	1.50 (38)	1.93 (49)	≈ 0.27 (0.40)
14-4-		-0	1.97 (50)	2.40 (61)	≈ 0.28 (0.41)

Choose from the radii below for all of the above sizes

Radius (mm) Example: 14-2-038-0

	028	038	048	075	100	125
R	1.10 (028)	1.50 (038)	1.89 (048)	2.95 (075)	3.94 (100)	4.92 (125)
H	3.19 (81)	3.98 (101)	4.76 (121)	6.89 (175)	8.86 (225)	10.83 (275)
D	3.39 (86)	3.78 (96)	4.17 (106)	5.24 (133)	6.22 (158)	7.20 (183)
K	6.02 (150)	7.42 (185)	8.61 (215)	11.81 (300)	14.96 (380)	17.91(455)

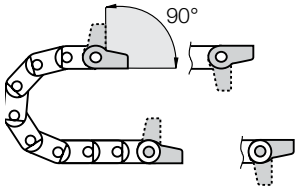
0=Standard color black. For other colors see Chapter 1

e-chain system® E2 Mini
Series 14
Mounting Brackets

Polymer, one-piece

- One-piece mounting bracket
- Corrosion resistant
- Available preassembled
- Inner and outer attachment possible
- Available with or without strain relief tiewrap plates

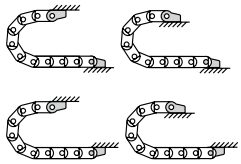
Moving end
114...1P(Z)



Fixed end
114...2P(Z)



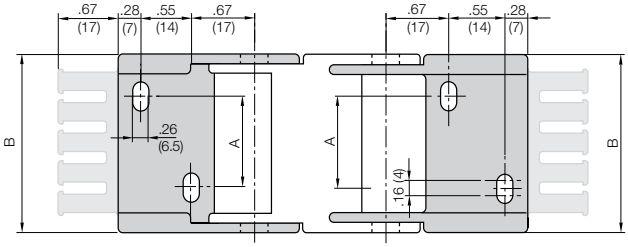




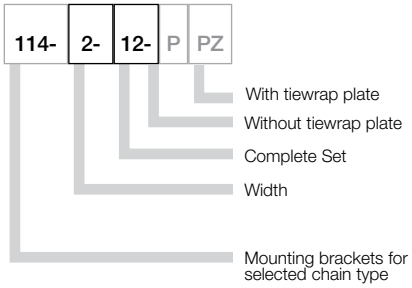
Possible installation configurations -

Moving end
114...1P(Z)

Fixed end
114...2P(Z)



Part Number Structure



For Chain Type	Part No. Full set with Tiewrap Plate	Part No. Full Set without Tiewrap Plate	Dimension A in.	(mm)	Dimensions B in.	(mm)
14.1	**114-1-12-PZ**	**114-1-12-P**	—	—	1.04	(26.3)
14.2	**114-2-12-PZ**	**114-2-12-P**	.39	(10)	1.43	(36.3)
14.3	**114-3-12-PZ**	**114-3-12-P**	.91	(23)	1.94	(49.3)
14.4	**114-4-12-PZ**	**114-4-12-P**	1.38	(35)	2.41	(61.3)

Full set, for both ends:
114- 2- 12- PZ Full set, **each part with pin/bore + tiewrap plate**

Single-part order:
114- 2- 1- PZ Mounting bracket **with bore + tiewrap plate**
114- 2- 2- PZ Mounting bracket **with pin + tiewrap plate**

Additional Accessories



Quickfix - mounting bracket with dowel, upon request
Part No.
114-3-12QZ

PDF: igus.com/e-chain-pdfs
Product information: igus.com/e-chains

e-chain system® E2 Mini
Series B15 / B15i

.67 .67

Price Index

Series B15 / B15i

Special Features / Options

ESD Classification:
Electrically conductive ESD/
ATEX version upon request

Flammability Class
VDE 0304 IIC UL94 HB

Features & Benefits

1. Large pins and double stop dog for superior life and long unsupported length
2. Mounting bracket with integrated strain relief
3. Can be opened along the outer radius (Series B15) or along the inner radius (Series B15i), these Series can be combined
4. Interior separation available
5. Dirt repellent exterior



Assembly Tips





Easy to assemble and disassemble

Usage Guidelines

- If snap-open accessibility is required
- If a small but very stable chain is required

- If snap-open accessibility is not required
  ➤ **Series 10 E2 Mini**
- If quick insertion of cables is needed
  ➤ **Series E14 E-Z Chain**

Order Example: Complete e-chain®

Please indicate chain length or number of links. Example:

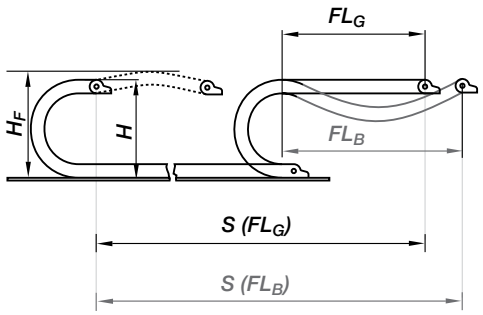
3.28 ft (1 m) **B15-025-038-0**	**e-chain®**
With 2 separators **154** assembled every 2nd link	**Interior Separation**
1 Set **1025-12PZ**	**Mounting Bracket**

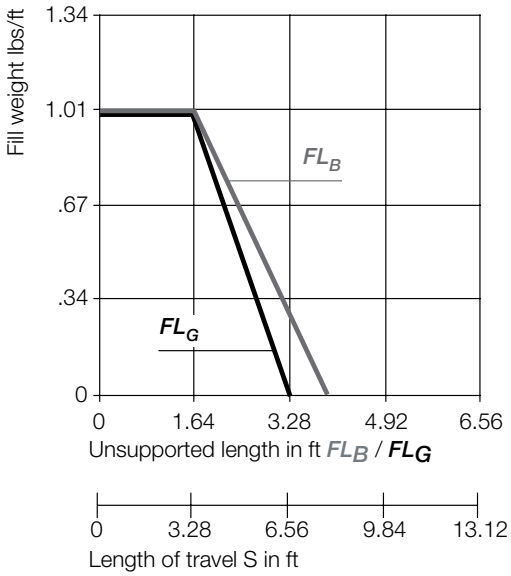
e-chain system® E2 Mini
Series B15 / B15i
Installation Dimensions

Short travel, unsupported length

- FL_B = unsupported with permitted sag
- FL_G = unsupported with straight upper run

Further information ➤ Design, Chapter 1



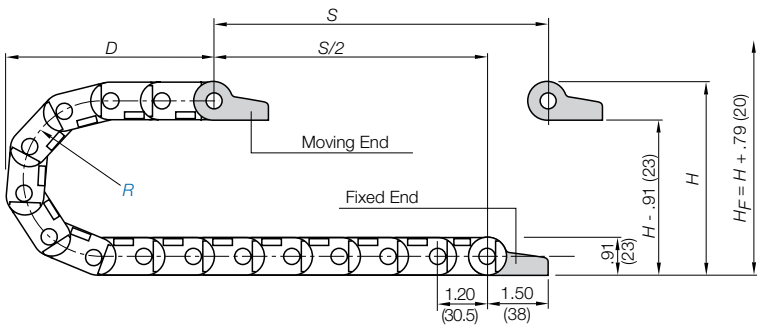


Short Travels - Unsupported

Unsupported e-chains® feature positive camber over short travels. This must be accounted for when specifying the clearance height. Please refer to **Installation dimensions** for further details.

Legend

S = Length of travel
R = Bending radius
H = Nominal clearance height
D = Overlength e-chain® radius in final position
K = π • *R* + *safety buffer*
H_F = Required clearance height



Pitch per link: = 1.20" (30.5 mm)
Links per ft (m): = 10.06 (33)
For center mount applications:
Chain length = $\frac{S}{2}$ + K

The required clearance height: ***H_F = H* + .79 in. (20 mm)** (with 1.01 lbs/ft (0.5 kg/m) fill weight.
Please consult igus® if space is particularly restricted.

R	1.50 (038)	1.89 (048)	2.95 (075)	3.94 (100)	4.33 (110)	4.92 (125)	5.71 (145)	7.09 (180)
H	3.90 (99)	4.69 (119)	6.81 (173)	8.78 (223)	9.57 (243)	10.75 (273)	12.32 (313)	15.08 (383)
D	3.74 (95)	4.13 (105)	5.20 (132)	6.18 (157)	6.57 (167)	7.17 (182)	7.95 (202)	9.33 (237)
K	7.28 (185)	8.46 (215)	11.81 (300)	14.96 (380)	16.14 (410)	17.91 (455)	20.47 (520)	24.80 (630)

Speed / acceleration FL_G	max. 65.6 ft/s (20 m/s) / max. 656 ft/s² (200 m/s²)
Speed / acceleration FL_B	max. 9.84 ft/s (3 m/s) / max. 19.69 ft/s² (6 m/s²)
Gliding speed / acceleration (maximum)	max. 9.84 ft/s (3 m/s) / max. 32.8 ft/s² (10 m/s²)
Material - permitted temperature	igumid G / -40°F (-40°C) up to +248°F (+120° C)
Flammability Class, igumid G	VDE 0304 IIC UL94 HB

Technical Data

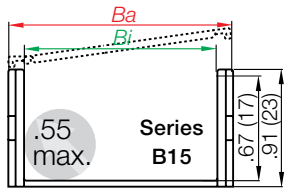
Details of material properties
➤ Chapter 1

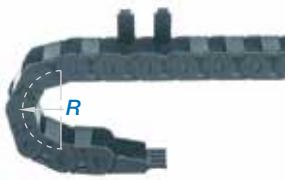
PDF: igus.com/e-chain-pdfs
Product information: igus.com/e-chains

e-chain system® E2 Mini
Series B15 / B15i

STANDARD

Series B15 - Snap-open along the outer radius - Standard



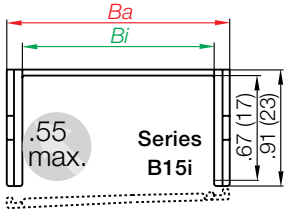


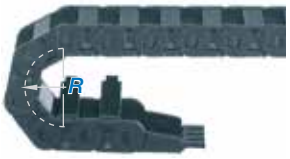
Part Number Structure

B15- 025- 038- 0

- Color - Black
- Bending radius
- Width
- Series

Series B15i - Snap-open along the inner radius

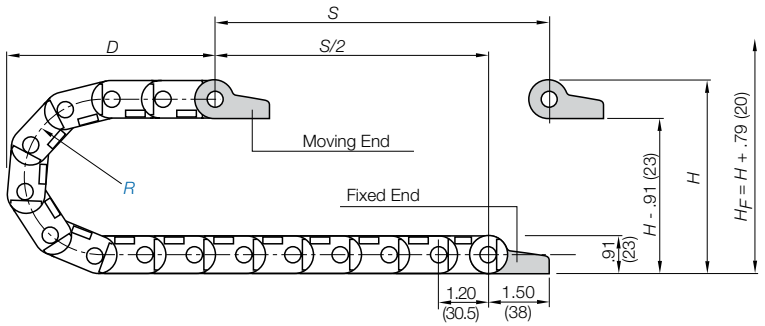




Part Number Structure

B15i- 025- 038- 0

- Color - Black
- Bending radius
- Width
- Series



Supplement part number with required radius. Example: B15-025- 038 -0
Pitch: 1.20 in. (30.5 mm) per link links/ft (m) = 10.06 (33)

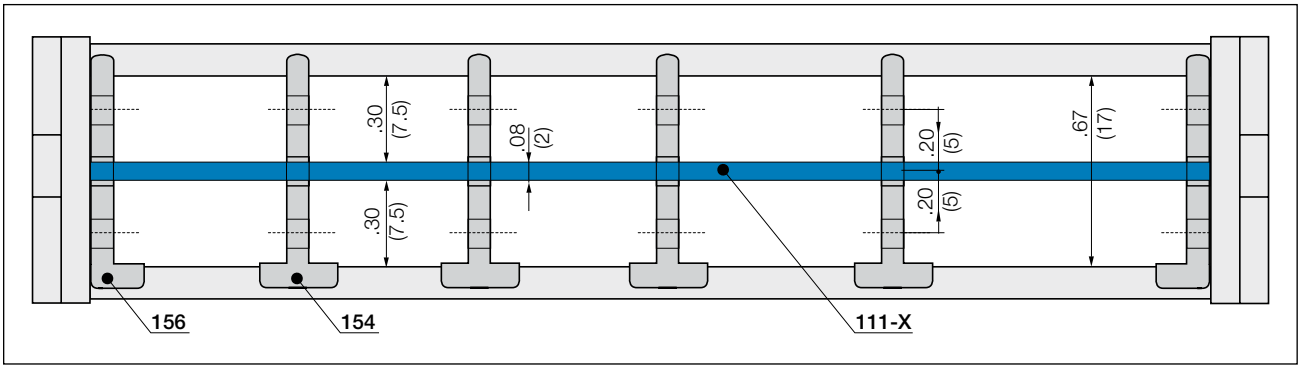
Part Number Snap-open outer radius	Snap-open inner radius			Bi in. (mm)	Ba in. (mm)	Weight lbs/ft (kg/m)
B15-015-	B15i-015-	☐	-0	.59 (15)	1.02 (26)	≈ 0.24 (0.35)
B15-025-	B15i-025-	☐	-0	.98 (25)	1.42 (36)	≈ 0.27 (0.40)
B15-038-	B15i-038-	☐	-0	1.50 (38)	1.93 (49)	≈ 0.31 (0.46)
B15-050-	B15i-050-	☐	-0	1.97 (50)	2.40 (61)	≈ 0.35 (0.52)
B15-5-	B15i-5-	☐	-0	2.48 (63)	2.99 (76)	≈ 0.42 (0.63)
B15-6-	B15i-6-	☐	-0	3.15 (80)	3.70 (94)	≈ 0.47 (0.70)
B15-7-	B15i-7-	☐	-0	3.94 (100)	4.45 (113)	≈ 0.51 (0.76)

Choose from the radii below for all of the above sizes
Radius (mm) Example: B15-025- 038 -0

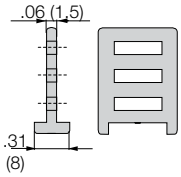
	038	048	075	100	110	125	145	180
R	1.50 (038)	1.89 (048)	2.95 (075)	3.94 (100)	4.33 (110)	4.92 (125)	5.71 (145)	7.09 (180)
H	3.90 (99)	4.69 (119)	6.81 (173)	8.78 (223)	9.57 (243)	10.75 (273)	12.32 (313)	15.08 (383)
D	3.74 (95)	4.13 (105)	5.20 (132)	6.18 (157)	6.57 (167)	7.17 (182)	7.95 (202)	9.33 (237)
K	7.28 (185)	8.46 (215)	11.81 (300)	14.96 (380)	16.14 (410)	17.91 (455)	20.47 (520)	24.80 (630)

0=Standard color black. For other colors see Chapter 1

e-chain system® E2 Mini
Series B15 / B15i
Interior Separation





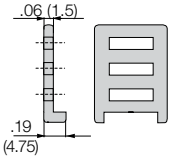


Slotted separator for e-chains®

Unassembled	**Part No. 153**
Assembled	**Part No. 154**

- **Slotted separator 153**
  is used when vertical and horizontal separation is required. Due to its slot, it allows basic vertical/horizontal shelving arrangements.



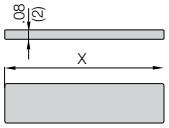


Side plate for e-chains®

Unassembled	**Part No. 155**
Assembled	**Part No. 156**

- **Side plate 155**
  Side plate for use with full-width shelf 110-X and slotted separator 153





Full width shelf for e-chains®

Unassembled	**Part No. 110-X**
Assembled	**Part No. 111-X**

- **Full width shelf 110-X**
  this option makes sense in applications with many thin cables with similar diameters. Full width shelves can be arranged at 3 different heights in .20" (5 mm) increments.

Width X in.	(mm)	Part No. Unassembled	Part No. Assembled
.59	(015)	**110-15**	**111-15**
.98	(025)	**110-25**	**111-25**
1.50	(038)	**110-38**	**111-38**
1.97	(050)	**110-50**	**111-50**

Width X in.	(mm)	Part No. Unassembled	Part No. Assembled
2.48	(063)	**110-63**	**111-63**
3.15	(080)	**110-80**	**111-80**
3.94	(100)	**110-100**	**111-100**

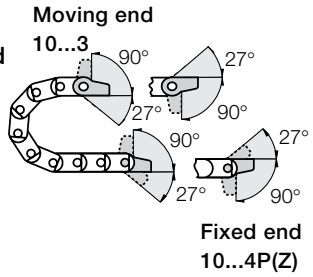
PDF: igus.com/e-chain-pdfs
Product information: igus.com/e-chains

e-chain system® E2 Mini
Series B15 / B15i
Mounting Brackets - Plastic

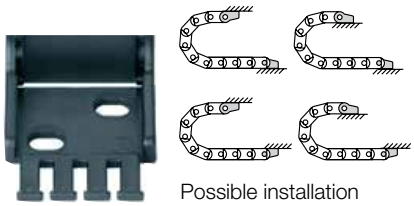
Standard

Option 1: pivoting

- Short and long travel
- Space-restricted conditions
- Corrosion resistant



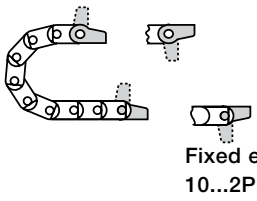




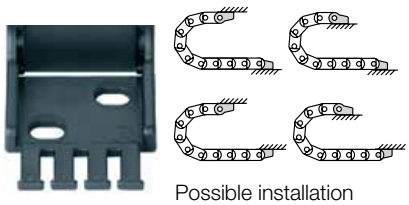
Possible installation configurations -

Option 2: locking

- Vertical hanging/standing travels
- Extreme accelerations
- Corrosion resistant

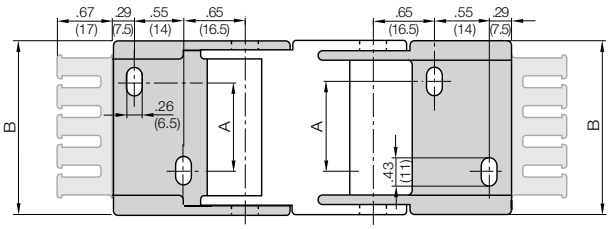




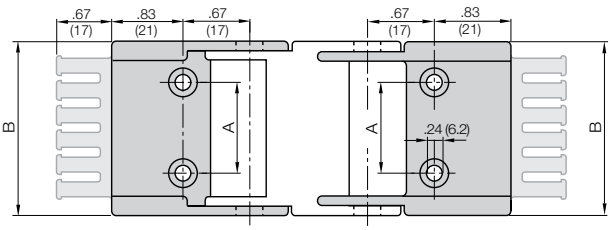


Possible installation configurations -

For e-chain B15/B15i-015 to B15/B15i-050



For e-chain B15/B15i-5 to B15/B15i-7



Part Number Structure

1025- **34-** P PZ

- With tiewrap plate
- Without tiewrap plate
- Complete Set **12 = Locking** **34 = Pivoting**
- Mounting brackets for selected chain type

Part number examples are shown for pivoting brackets. For locking brackets fill in the blank with 12

Part No. Full Set (pivoting)
with Tiewrap Plate
Series B15/B15i with 25mm inner width
1025-34PZ

Part No. Full Set (pivoting)
without Tiewrap Plate
Series B15/B15i with 25 mm inner width
1025-34P

Full set, for both ends:
1025- 34- PZ Full set, **each part with pin/bore + tiewrap plate**
Single-part order:
1025- 3- PZ Mounting bracket **with bore + tiewrap plate**
1025- 4- PZ Mounting bracket **with pin + tiewrap plate**

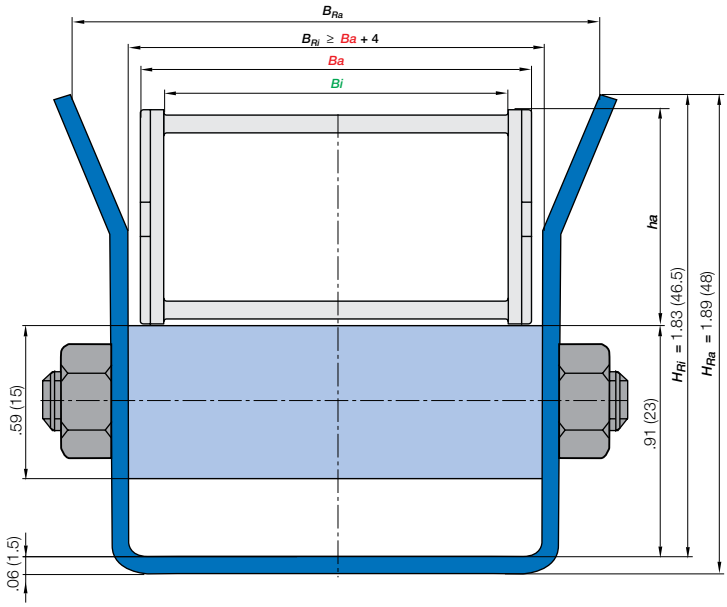
For Chain Type	Part No. Full set with Tiewrap Plate	Part No. Full Set without Tiewrap Plate	Dimension A in.	Dimension A (mm)	Dimensions B in.	Dimensions B (mm)
B15/B15i-015	1015- ☐ PZ	1015- ☐ P	—	—	1.00	(25.5)
B15/B15i-025	1025- ☐ PZ	1025- ☐ P	.39	(10)	1.40	(35.5)
B15/B15i-038	1038- ☐ PZ	1038- ☐ P	.91	(23)	1.91	(48.5)
B15/B15i-050	1050- ☐ PZ	1050- ☐ P	1.38	(35)	2.38	(60.5)
B15/B15i-5	105- ☐ PZ	105- ☐ P	1.89	(48)	2.95	(75.0)
B15/B15i-6	106- ☐ PZ	106- ☐ P	2.56	(65)	3.62	(92.0)
B15/B15i-7	107- ☐ PZ	107- ☐ P	3.35	(85)	4.41	(112.0)

34 or 12

For pivoting brackets choose 34
For locking brackets choose 12
Example: 1025- 34 PZ

e-chain system® E2 Mini
Series B15 / B15i
Guide Trough

One-piece guide troughs made of steel are available for the Series B15 Energy Chains®. These guide troughs are available from stock for outer chain widths up to 4.45 in. (113 mm). For wider e-chains® and Tubes, special solutions are possible with short lead times.
No installation sets are required for these trough sizes since the guide troughs consist of a one-piece U-profile. The joint connection with this type of guide trough is specified individually for every application.



Dimensions Guide troughs 91-10 — 91-71

For Series	Part No.	B_{Ra} in.	B_{Ra} (mm)	B_{Ri} in.	B_{Ri} (mm)	Weight lbs/ft	Weight (kg/m)
B15/015							
Trough **without** glide bar 6.56 ft. (2m section)	**91-10**	1.59	(40.5)	1.18	(30)	1.01	(1.50)
Glide bar 6.56 ft. (2m section)	**91-11**	1.59	(40.5)	1.18	(30)	.30	(.45)
B15-025							
Trough **without** glide bar 6.56 ft. (2m section)	**91-20**	1.99	(50.5)	1.57	(40)	1.11	(1.65)
Glide bar 6.56 ft. (2m section)	**91-21**	1.99	(50.5)	1.57	(40)	.38	(.57)
B15-038							
Trough **without** glide bar 6.56 ft. (2m section)	**91-30**	2.46	(62.5)	2.05	(52)	1.21	(1.80)
Glide bar 6.56 ft. (2m section)	**91-31**	2.46	(62.5)	2.05	(52)	.46	(.68)
B15-050							
Trough **without** glide bar 6.56 ft. (2m section)	**91-40**	2.85	(72.5)	2.44	(62)	1.28	(1.90)
Glide bar 6.56 ft. (2m section)	**91-41**	2.85	(72.5)	2.44	(62)	.61	(.91)
B15-5							
Trough **without** glide bar 6.56 ft. (2m section)	**91-50**	3.60	(91.5)	3.19	(81)	1.52	(2.26)
Glide bar 6.56 ft. (2m section)	**91-51**	3.60	(91.5)	3.19	(81)	.84	(1.25)
B15-6							
Trough **without** glide bar 6.56 ft. (2m section)	**91-60**	4.27	(108.5)	3.86	(98)	1.83	(2.72)
Glide bar 6.56 ft. (2m section)	**91-61**	4.27	(108.5)	3.86	(98)	.91	(1.35)
B15-7							
Trough **without** glide bar 6.56 ft. (2m section)	**91-70**	5.06	(128.5)	4.65	(118)	2.13	(3.17)
Glide bar 6.56 ft. (2m section)	**91-71**	5.06	(128.5)	4.65	(118)	1.14	(1.70)

Trough material in general: St 1203 galvanized

PDF: igus.com/e-chain-pdfs
Product information: igus.com/e-chains

e-chain system® E2 Mini
Series B17/B17i

Price Index

Series B17

Special Features / Options

Special Equipment:
Electrically conductive ESD/
ATEX version upon request

Flammability Class
VDE 0304 IIC UL94 HB

Assembly Tips

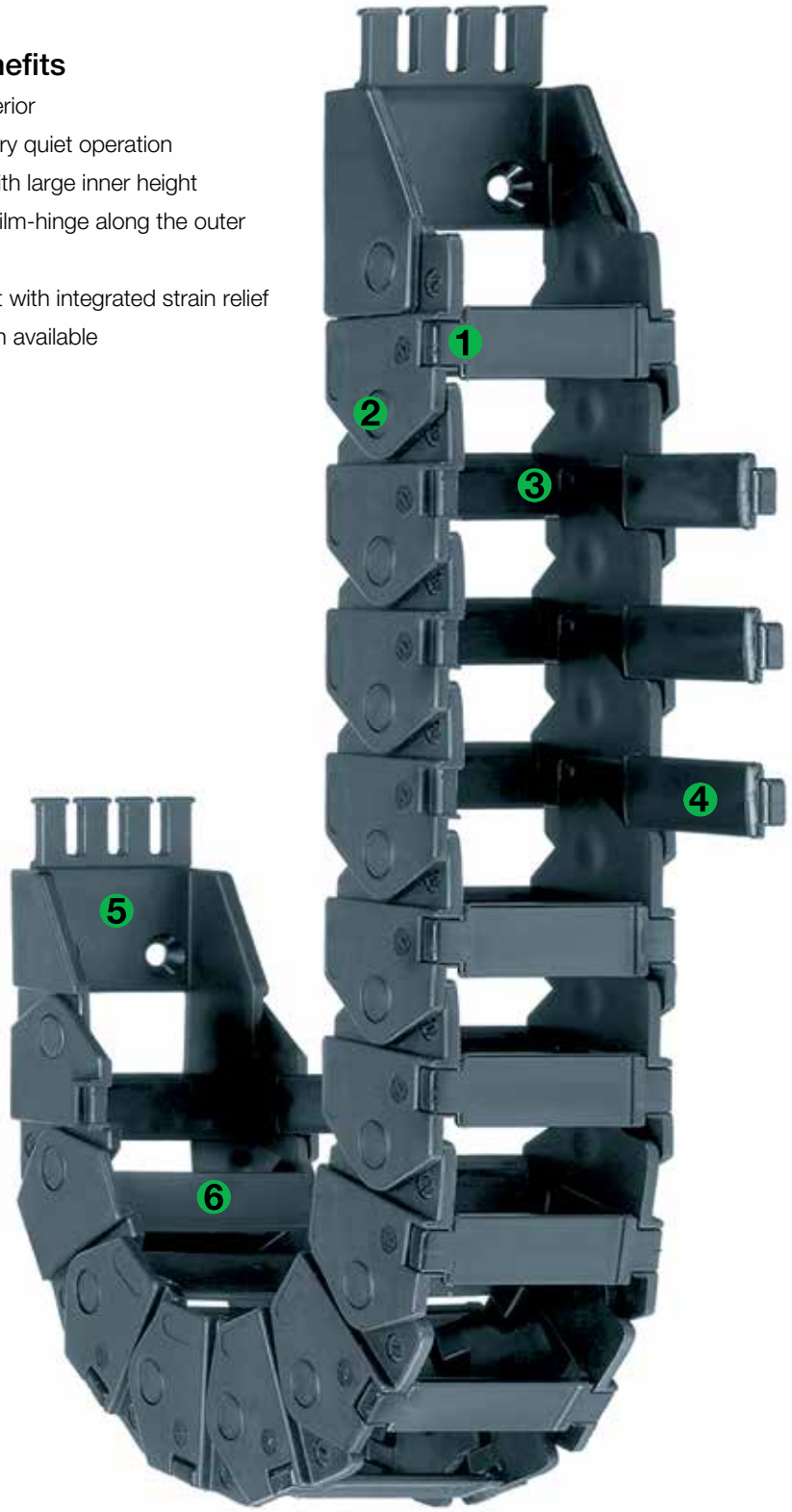




Easy to assemble and disassemble

Features & Benefits

1. Dirt-repellent exterior
2. Small pitch for very quiet operation
3. Small e-chain® with large inner height
4. Snap-open with film-hinge along the outer radius
5. Mounting bracket with integrated strain relief
   Interior separation available



Usage Guidelines

- If snap-open accessibility is required
- If a rather small chain with a broad inner width is required

- If quick opening of the links is required
  ➤ **Series 17 Zipper**
- If quick insertion of cables with preassembled connectors is required
  ➤ **Series E16 E-Z Chain**

Order Example: Complete e-chain®

Please indicate chain length or number of links. Example:

3.28 ft (1 m) **B17-1-063-0**	**e-chain®**
With 2 separators **172** assembled every 2nd link	**Interior Separation**
1 Set **117-1-12PZ**	**Mounting Bracket**

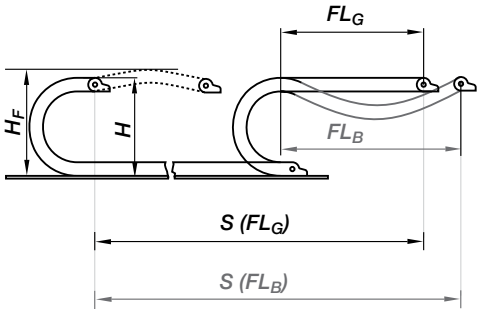
e-chain system® E2 Mini
Series B17/B17i
Installation Dimensions

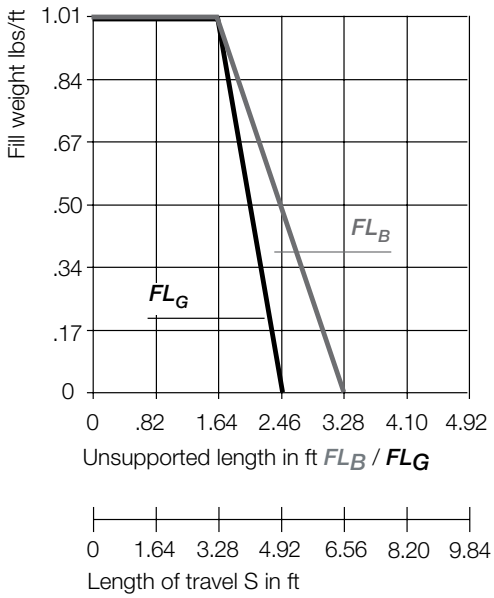
Short travel, unsupported length

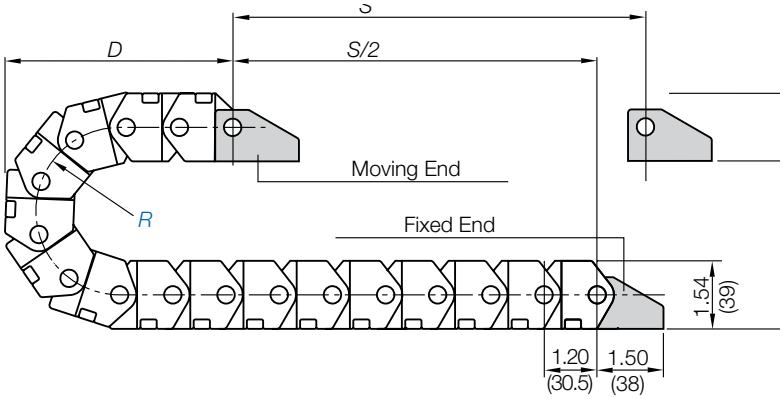
● FL_B = unsupported with permitted sag

● FL_G = unsupported with straight upper run

Further information ➤ Design, Chapter 1







Pitch per link: = 1.20" (30.5 mm)
Links per ft (m): = 10.06 (33)
For center mount applications:
Chain length = $\frac{S}{2} + K$

The required clearance height: H_F **= H + .98 in. (25 mm)** (with 1.01 lbs/ft (1.5 kg/m) fill weight.
Please consult igus® if space is particularly restricted.

R	1.89 (048)	2.48 (063)	2.95 (075)	3.94 (100)	4.92 (125)
H	5.31 (135)	6.50 (165)	7.44 (189)	9.41 (239)	11.38 (289)
D	4.45 (113)	5.04 (128)	5.51 (140)	6.50 (165)	7.48 (190)
K	8.46 (215)	10.24 (260)	11.81 (300)	14.96 (380)	17.91 (455)

Short Travels - Unsupported

Unsupported e-chains® feature positive camber over short travels. This must be accounted for when specifying the clearance height. Please refer to **Installation dimensions** for further details.

Legend

S = Length of travel
R = Bending radius
H = Nominal clearance height
D = Overlength e-chain® radius in final position
$K = \pi \bullet R + safety\ buffer$
H_F = Required clearance height

Speed / acceleration FL_G	max. 65.6 ft/s (20 m/s) / max. 656 ft/s² (200 m/s²)
Speed / acceleration FL_B	max. 9.84 ft/s (3 m/s) / max. 19.69 ft/s² (6 m/s²)
Gliding speed / acceleration (maximum)	max. 9.84 ft/s (3 m/s) / max. 32.8 ft/s² (10 m/s²)
Material - permitted temperature	igumid G / -40°F (-40°C) up to +248°F (+120° C)
Flammability Class, igumid G	VDE 0304 IIC UL94 HB

Technical Data

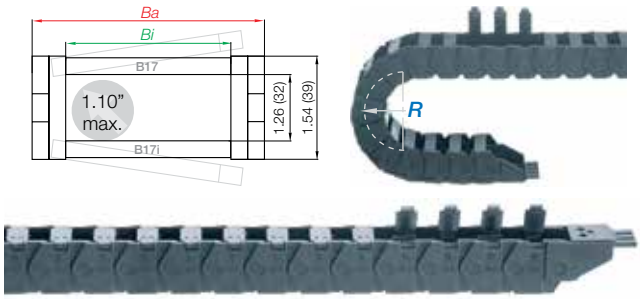
Details of material properties
➤ Chapter 1

PDF: igus.com/e-chain-pdfs
Product information: igus.com/e-chains

e-chain system® E2 Mini
Series B17/B17i

STANDARD

Series B17 - Snap-open along the outer radius - Standard

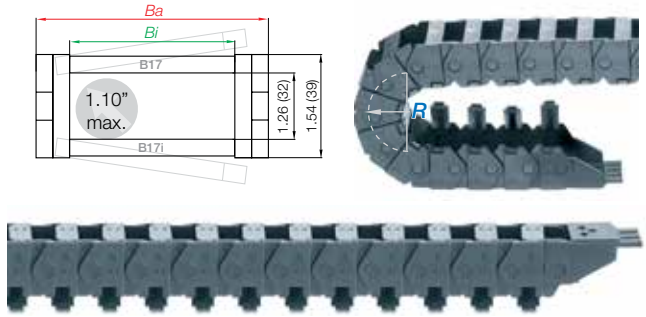


Part Number Structure

B17-	2-	075-	0

Color - Black
Bending radius
Width
Series

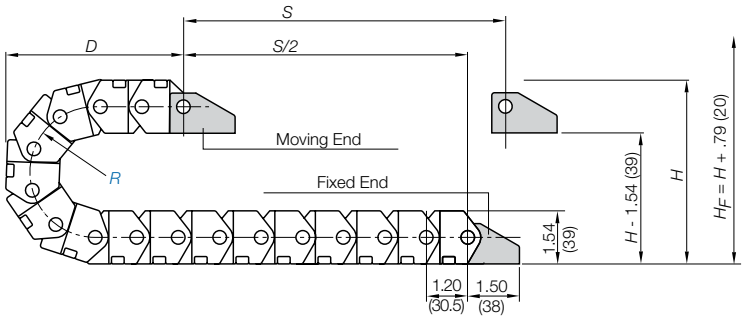
Series B17i - Snap-open along the inner radius



Part Number Structure

B17i-	2-	075-	0

Color - Black
Bending radius
Width
Series



Supplement part number with required radius. Example: B17-2-[063]-0
Pitch: 1.20 in. (30.5 mm) per link links/ft (m) = 10.06 (33)

Part number Snap-open along outer radius	Part number Snap-open along inner radius			*Bi* in. (mm)	*Ba* in. (mm)	Weight lbs/ft (kg/m)
B17-1-	—	[ ]	-0	.59 (15)	1.00 (25.5)	≈ 0.35 (0.52)
B17-2-	B17i-2-	[ ]	-0	.98 (25)	1.40 (35.5)	≈ 0.40 (0.59)
B17-3-	B17i-3-	[ ]	-0	1.50 (38)	1.91 (48.5)	≈ 0.44 (0.65)
B17-4-	B17i-4-	[ ]	-0	1.97 (50)	2.38 (60.5)	≈ 0.47 (0.70)
B17-5-	—	[ ]	-0	2.48 (63)	2.99 (76)	≈ 0.56 (0.83)
B17-6	—	[ ]	-0	3.15 (80)	3.66 (93)	≈ 0.62 (0.92)
B17-7	—	[ ]	-0	3.94 (100)	4.45 (113)	≈ 0.71 (1.06)

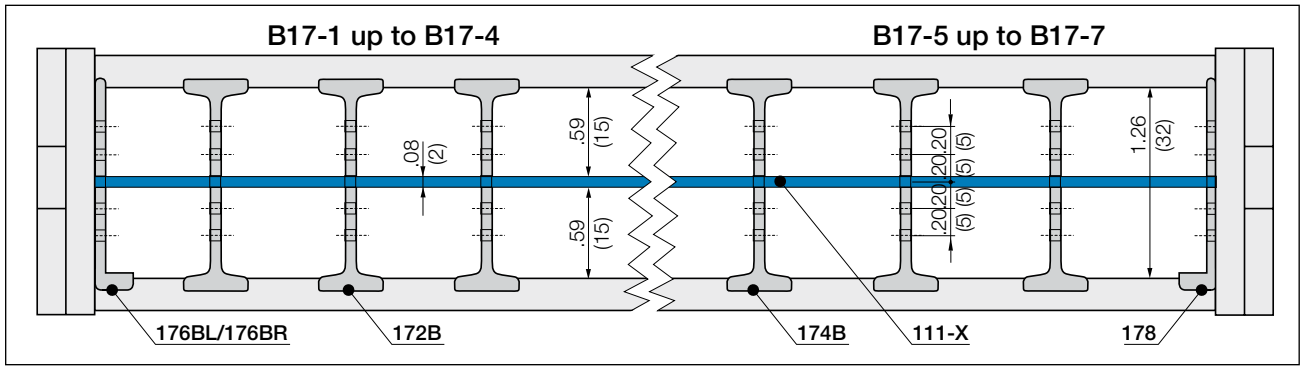
Choose from the radii below for all of the above sizes
Radius (mm) Example: B17-2-[075]-0

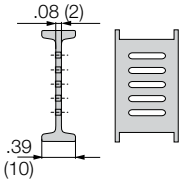
	048**	063*	075	100*	125*
R	1.89 (048)	2.48 (063)	2.95 (075)	3.94 (100)	4.92 (125)
H	5.31 (135)	6.50 (165)	7.44 (189)	9.41 (239)	11.38 (289)
D	4.45 (113)	5.04 (128)	5.51 (140)	6.50 (165)	7.48 (190)
K	8.46 (215)	10.24 (260)	11.81 (300)	14.96 (380)	17.91 (455)

* Radii 063, 100, 125 not available for the B17i-3
** Radius 048 is not available for the B17-5 or B17-7

0=Standard color black. For other colors see Chapter 1

e-chain system® E2 Mini
Series B17/B17i
Interior Separation

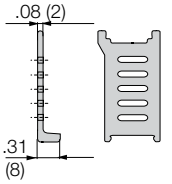


Slotted separator for B17-1 up to B17-4

Unassembled	**Part No. 171B**
Assembled	**Part No. 172B**

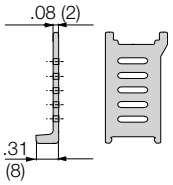
- **Slotted separator 171B**
  (B17-1 up to B17-4)
  is used when vertical and horizontal separation is required. Due to its slot, it allows basic vertical/horizontal shelving arrangements.

Side plate (left) for B17-1 up to B17-4

Unassembled	**Part No. 175BL**
Assembled	**Part No. 176BL**

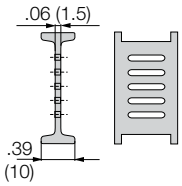
- **Side plate 175BL**
  (B17-1 up to B17-4)
  Side plate (left) for use with full-width shelf 110-X and slotted separator 171B

Side plate (right) for B17-1 up to B17-4

Unassembled	**Part No. 175BR**
Assembled	**Part No. 176BR**

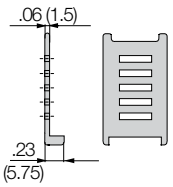
- **Side plate 175BR**
  (B17-1 up to B17-4)
  Side plate (right) for use with full-width shelf 110-X and slotted separator 171B

Slotted separator for B17-5 up to B17-7

Unassembled	**Part No. 173B**
Assembled	**Part No. 174B**

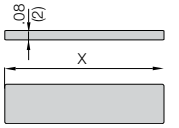
- **Slotted separator 173B**
  (B17-5 up to B17-7)
  is used when vertical and horizontal separation is required. Due to its slot, it allows basic vertical/horizontal shelving arrangements.

Side plate for B17-5 up to B17-7

Unassembled	**Part No. 177**
Assembled	**Part No. 178**

- **Side plate 177**
  (B17-5 up to B17-7)
  Side plate for use with full-width shelf 110-X and slotted separator 173B

Full width shelf, for all widths

Unassembled	**Part No. 110-X**
Assembled	**Part No. 111-X**

- **Full width shelf 110-X**
  this option makes sense in applications with many thin cables with similar diameters. Full width shelves can be arranged at 5 different heights in .20" (5 mm) increments.

Width X in.	(mm)	Part No. Unassembled	Part No. Assembled
.59	(015)	**110-15**	**111-15**
.98	(025)	**110-25**	**111-25**
1.50	(038)	**110-38**	**111-38**
1.97	(050)	**110-50**	**111-50**

Width X in.	(mm)	Part No. Unassembled	Part No. Assembled
2.48	(063)	**110-63**	**111-63**
3.15	(080)	**110-80**	**111-80**
3.94	(100)	**110-100**	**111-100**

PDF: igus.com/e-chain-pdfs
Product information: igus.com/e-chains

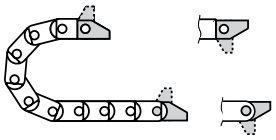
e-chain system® E2 Mini
Series B17/B17i
Mounting Brackets - Plastic

Standard

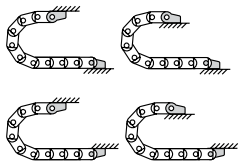
Option: locking

- One-piece mounting bracket
- Corrosion resistant
- Available pre-assembled
- Inner and outer attachment possible
- With or without strain relief tiewrap plates

Moving end with bore 117...1P(Z)

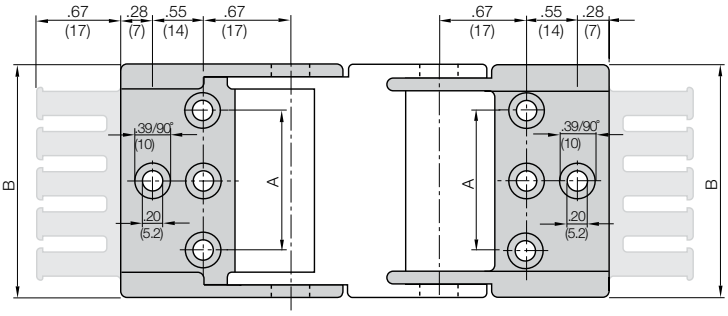




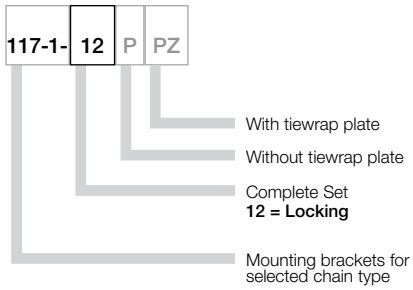


Possible installation configurations -

Fixed end with pin 117...2P(Z)



Part Number Structure



Full set, for both ends:

117-1-12-PZ Full set, **each part with pin/bore + tiewrap plate**

Single-part order:

117-1-1-PZ Mounting bracket **with bore + tiewrap plate**

117-1-2-PZ Mounting bracket **with pin + tiewrap plate**

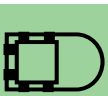
For Chain Type	Part No. Full set with Tiewrap Plate	Part No. Full Set without Tiewrap Plate	Number of Teeth	Dimension A in.	(mm)	Dimensions B in.	(mm)
B17-1	**117-1-12PZ**	**117-1-12P**	2	—	—	1.00	(25.5)
B17/B17i-2	**117-2-12PZ**	**117-2-12P**	3	.47	(12)	1.40	(35.5)
B17/B17i-3	**117-3-12PZ**	**117-3-12P**	4	.98	(25)	1.91	(48.5)
B17/B17i-4	**117-4-12PZ**	**117-4-12P**	5	1.46	(37)	2.38	(60.5)
B17-5	**117-5-12PZ**	**117-5-12P**	6	1.89	(48)	2.99	(76.0)
B17-6	**117-6-12PZ**	**117-6-12P**	8	2.56	(65)	3.66	(93.0)
B17-7	**117-7-12PZ**	**117-7-12P**	10	3.35	(85)	4.45	(113.0)

117-1-P(Z): Center bores only
117-2-12P(Z) - 117-7-P(Z): Outer bores only

PDF: igus.com/e-chain-pdfs
Product information: igus.com/e-chains











e-chain system® E2 Mini
Series F17

Price Index

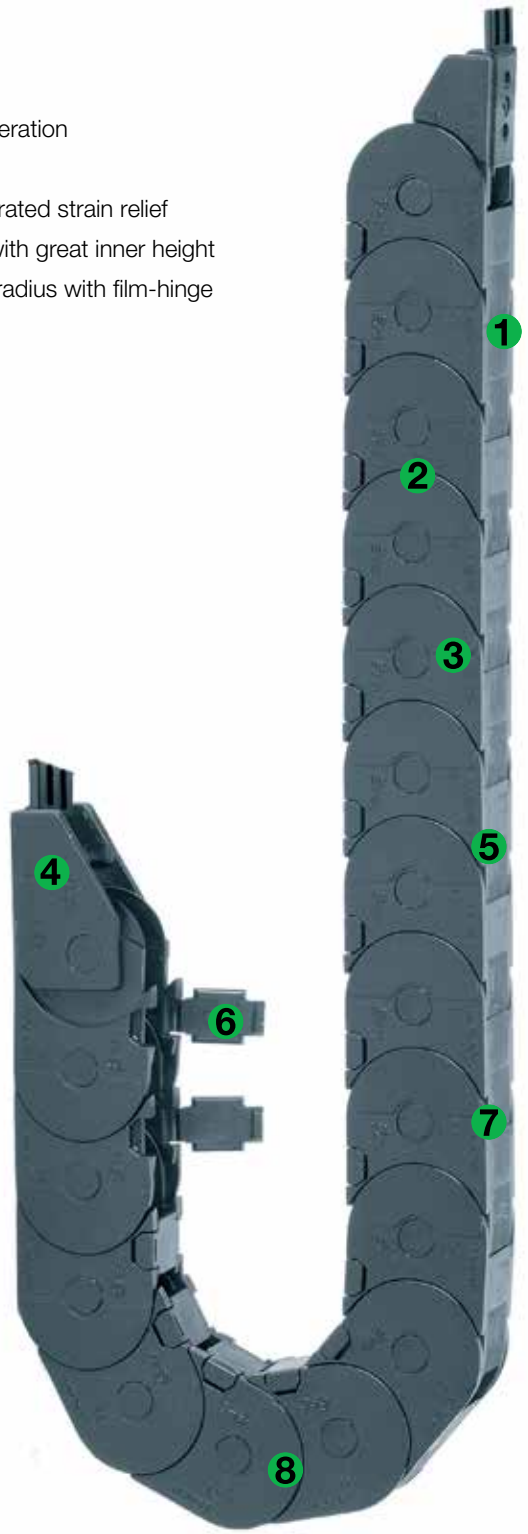
Series F17

Special Features / Options

Special Equipment:
Electrically conductive ESD/
ATEX version upon request

Features & Benefits

1. Dirt-repellent exterior
2. Small pitch for very quiet operation
3. Elegant design
4. Mounting bracket with integrated strain relief
5. Two-piece, small e-chain® with great inner height
6. Snap-open along the outer radius with film-hinge
7. Closed outside
8. Small bending radii



Assembly Tips



Easy to assemble and disassemble

Usage Guidelines

- For applications with low loads
- If a quick access to cables is required
- For small bending radii with a large interior height is required
- For fast applications
- If a small e-chain® with large interior height is required
- If aesthetic design is required

- If cable installation without opening lids is possible
  ➤ **Series 11.080 E2 mini**
- If extremely quick, zipper-like access to cables is required
  ➤ **Series R17 Zipper**
- For gliding applications
  ➤ **Series 2600/2700/2650/2680 E2/000**

Order Example: Complete e-chain®

Please indicate chain length or number of links. Example:

3.28 ft (1 m) **F17-025-063-0**	**e-chain®**
With 2 separators **R172** assembled every 2nd link	**Interior Separation**
1 Set **117-025-12PZ**	**Mounting Bracket**

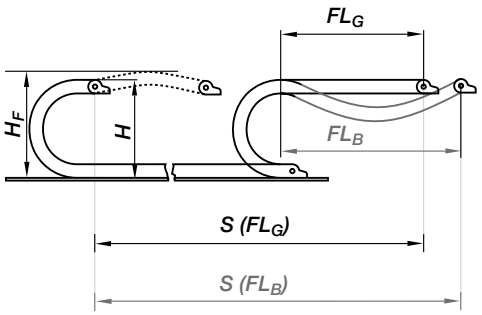
e-chain system® E2 Mini
Series F17
Installation Dimensions

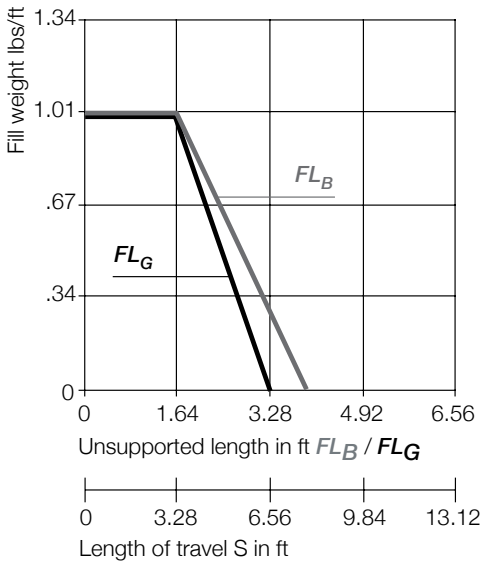
Short travel, unsupported length

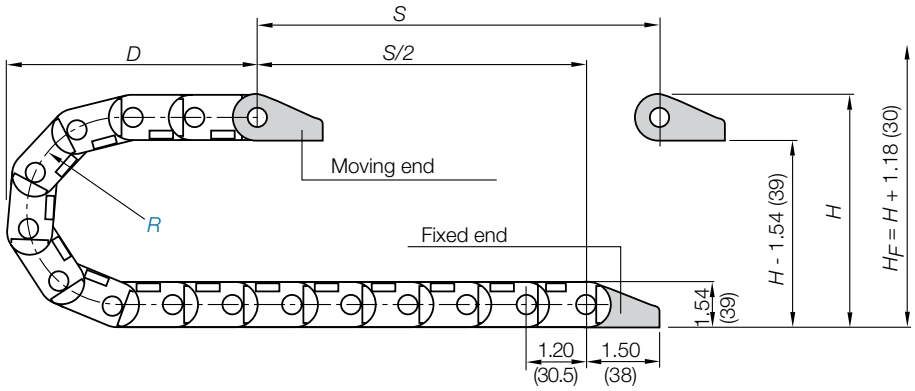
● FL_B = unsupported with permitted sag

● FL_G = unsupported with straight upper run

Further information ➤ Design, Chapter 1







The required clearance height: H_F = **H + 1.18 in. (30 mm)** (with .34 lbs/ft (0.5 kg/m) fill weight.
Please consult igus® if space is particularly restricted.

R	1.89 (048)	2.95 (075)
H	5.31 (135)	7.44 (189)
D	4.45 (113)	5.51 (140)
K	8.46 (215)	11.81 (300)

Short Travels - Unsupported

Unsupported e-chains® feature positive camber over short travels. This must be accounted for when specifying the clearance height. Please refer to **Installation dimensions** for further details.

Legend

S = Length of travel
R = Bending radius
H = Nominal clearance height
D = Overlength e-chain® radius in final position
K = π • *R* + *safety buffer*
H_F = Required clearance height

Pitch per link: = 1.20" (30.5 mm)
Links per ft (m): = 10.06 (33)
For center mount applications:
Chain length = $S/2 + K$

Speed / acceleration FL_G	max. 65.6 ft/s (20 m/s) / max. 656 ft/s² (200 m/s²)
Speed / acceleration FL_B	max. 9.84 ft/s (3 m/s) / max. 19.69 ft/s² (6 m/s²)
Gliding speed / acceleration (maximum)	max. 9.84 ft/s (3 m/s) / max. 32.8 ft/s² (10 m/s²)
Material - permitted temperature	igumid G / -40°F (-40°C) up to +248°F (+120° C)
Flammability Class, igumid G	VDE 0304 IIC UL94 HB

Technical Data

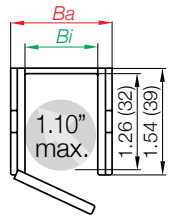
Details of material properties
➤ Chapter 1

PDF: igus.com/e-chain-pdfs
Product information: igus.com/e-chains

e-chain system® E2 Mini
Series F17
Product Range

Series F17 - Openable along the inner radius from one side with film-hinge

STANDARD



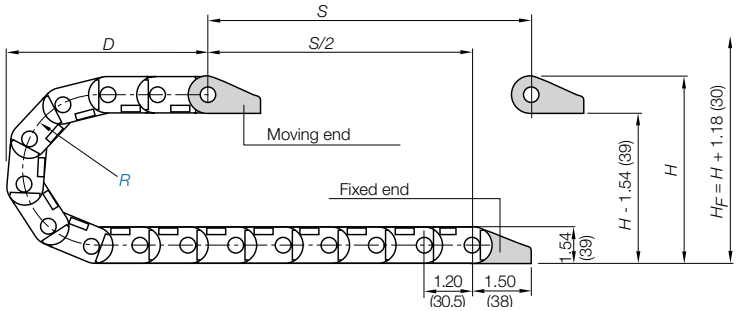




Part Number Structure

F17. 015. 075. 0

- Color - Black
- Bending radius
- Width
- Series



Supplement part number with required radius. Example: F17.015.075.0
Pitch: 1.20 in. (30.5 mm) per link links/ft (m) = 10.06 (33)

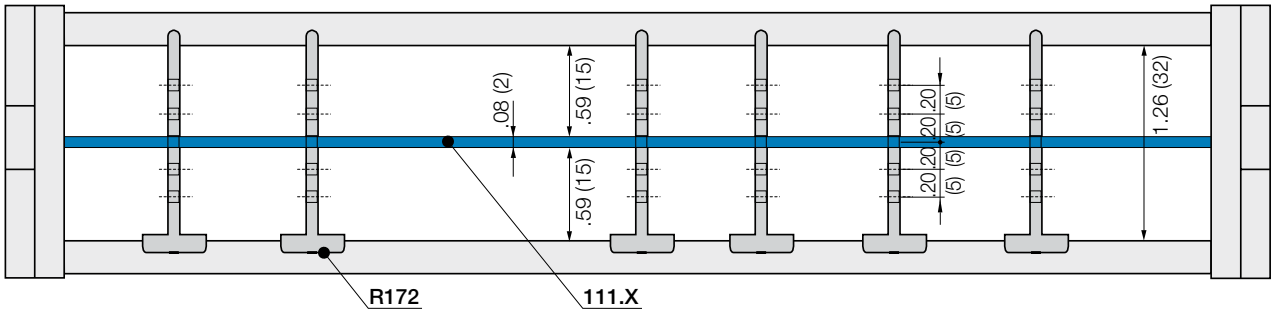
For e-chain® type		Bi in. (mm)	Ba in. (mm)	Weight lbs/ft (kg/m)
F17.015.	.0	.59 (15)	1.02 (26)	≈ 0.35 (0.52)

Choose from the radii below for all of the above sizes
Radius (mm) Example: F17.015.075.0

	048**	075
R	1.89 (048)	2.95 (075)
H	5.31 (135)	7.44 (189)
D	4.45 (113)	5.51 (140)
K	8.46 (215)	11.81 (300)

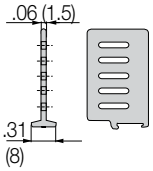
0=Standard color black. For other colors see Chapter 1

e-chain system® E2 Mini
Series F17
Interior Separation



No lateral gap to side links necessary.
As standard separators are fitted every 2nd e-chain® link!



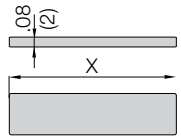


Slotted separator

Unassembled	**Part No. R171**
Assembled	**Part No. R172**

- **Slotted separator R171**
  is used when vertical separation is required. The slot allows basic vertical/horizontal shelving arrangements.





Full width shelf, for all widths

Unassembled	**Part No. 110-15**
Assembled	**Part No. 111-15**

- **Full width shelf 110-15**
  this option makes sense in applications with many thin cables with similar diameters. For full-width separation

Full-width shelves

Width = X [mm]

Width X in.	(mm)	Part No. Unassembled	Part No. Assembled
.59	(015)	**110-15**	**111-15**

PDF: igus.com/e-chain-pdfs
Product information: igus.com/e-chains

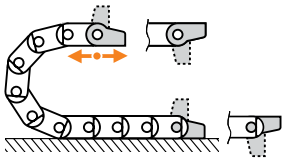
e-chain system® E2 Mini
Series F17
Mounting Brackets - Plastic

Standard

Option: locking

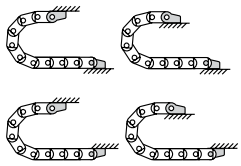
- One-piece mounting bracket
- Corrosion resistant
- Available preassembled
- Inner and outer attachment possible
- With or without strain relief tiewrap plates

Moving end with bore
117...1P(Z)

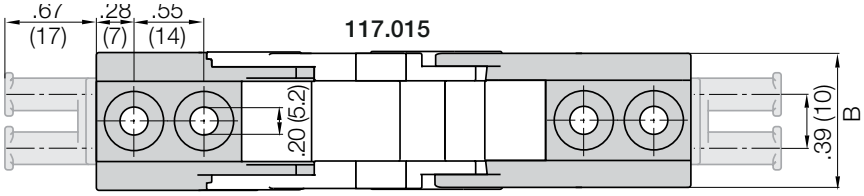




Fixed end with pin
117...2P(Z)



Possible installation configurations -



For Chain Type	Part No. Full set with Tiewrap Plate	Part No. Full Set without Tiewrap Plate	Number of Teeth	Dimension A in.	Dimension A (mm)	Dimensions B in.	Dimensions B (mm)
F17.015	**117.015.12PZ**	**117.015.12P**	2	—	—	1.09	(27.7)

Full set, for both ends:
117.015. 12 PZ Full set, **each part with pin/bore + tiewrap plate**

Single-part order:
117.015. 1 PZ Mounting bracket **with bore + tiewrap plate**
117.015. 2 PZ Mounting bracket **with pin + tiewrap plate**

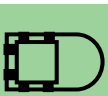
Part Number Structure

117.015. 12 P PZ

- PZ: With tiewrap plate
- P: Without tiewrap plate
- 12: Complete Set **12 = Locking**
- 117.015.: Mounting brackets for selected chain type

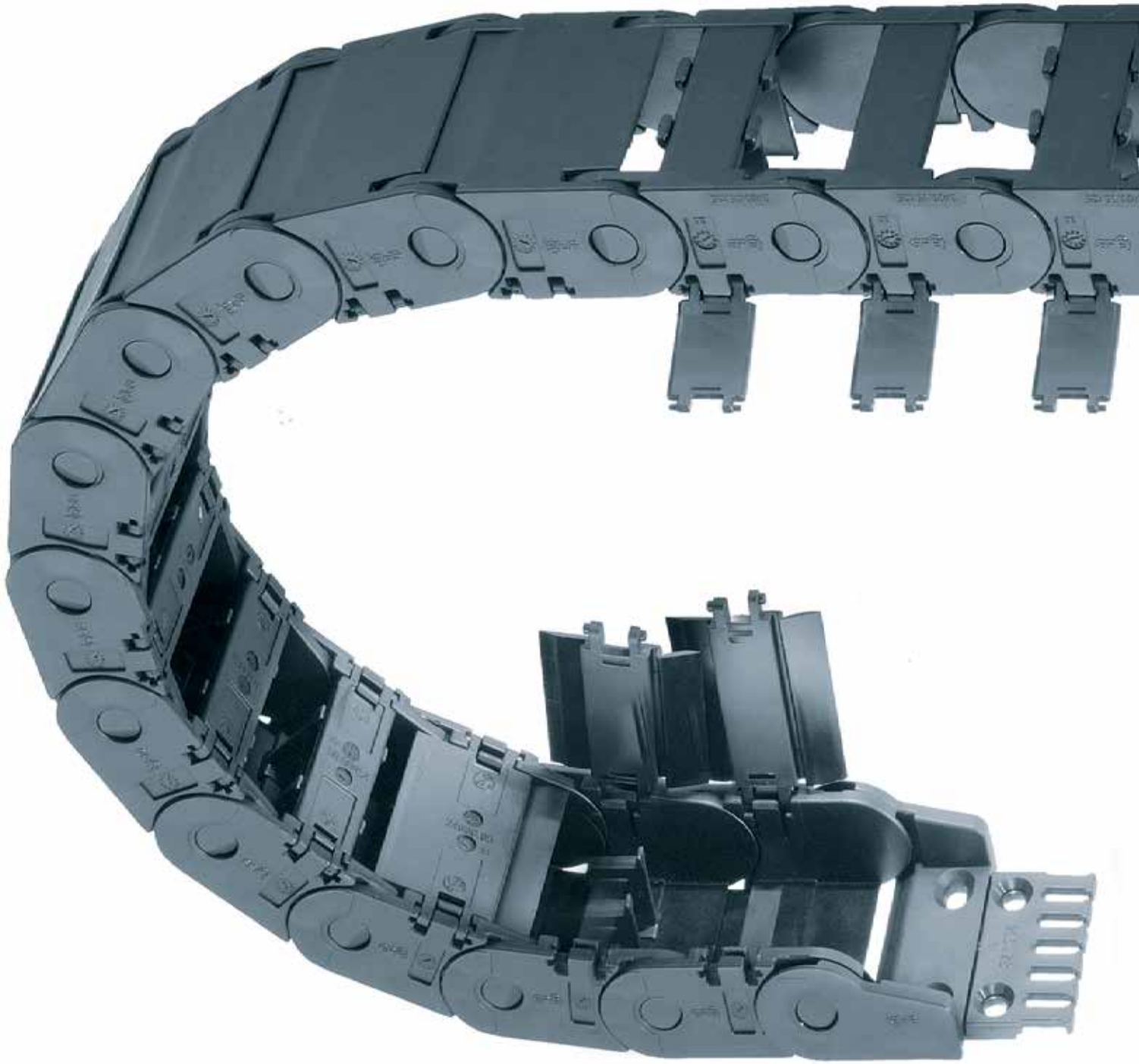


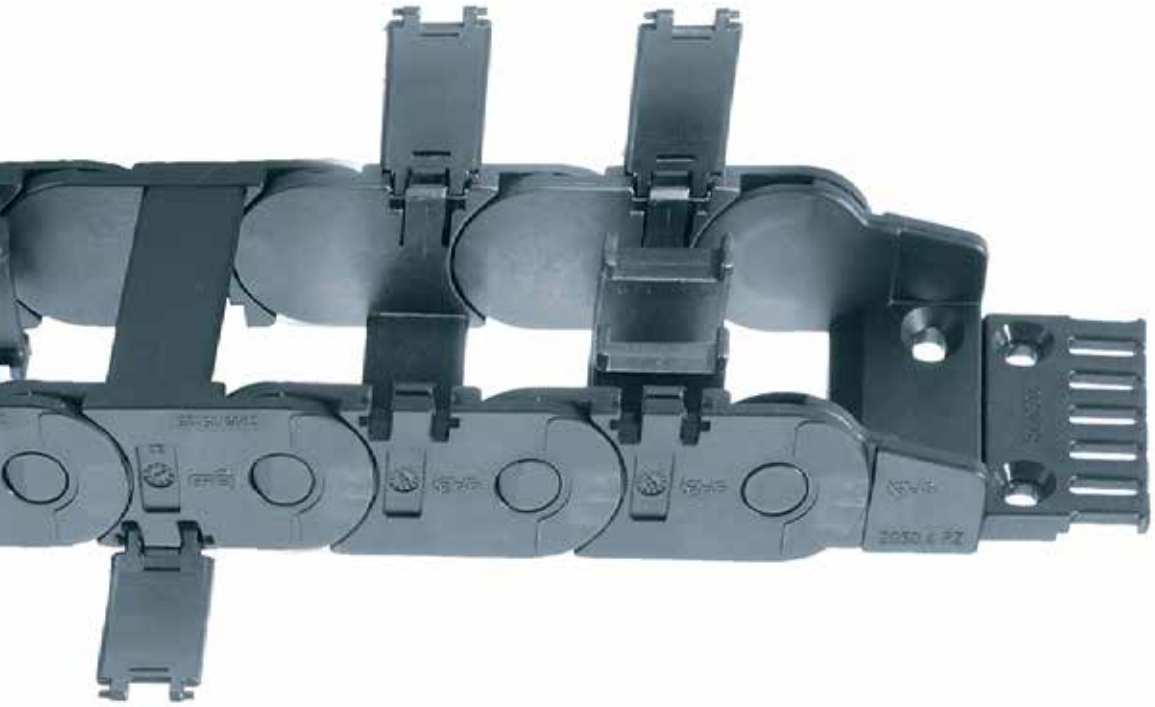












igus®
E2/000

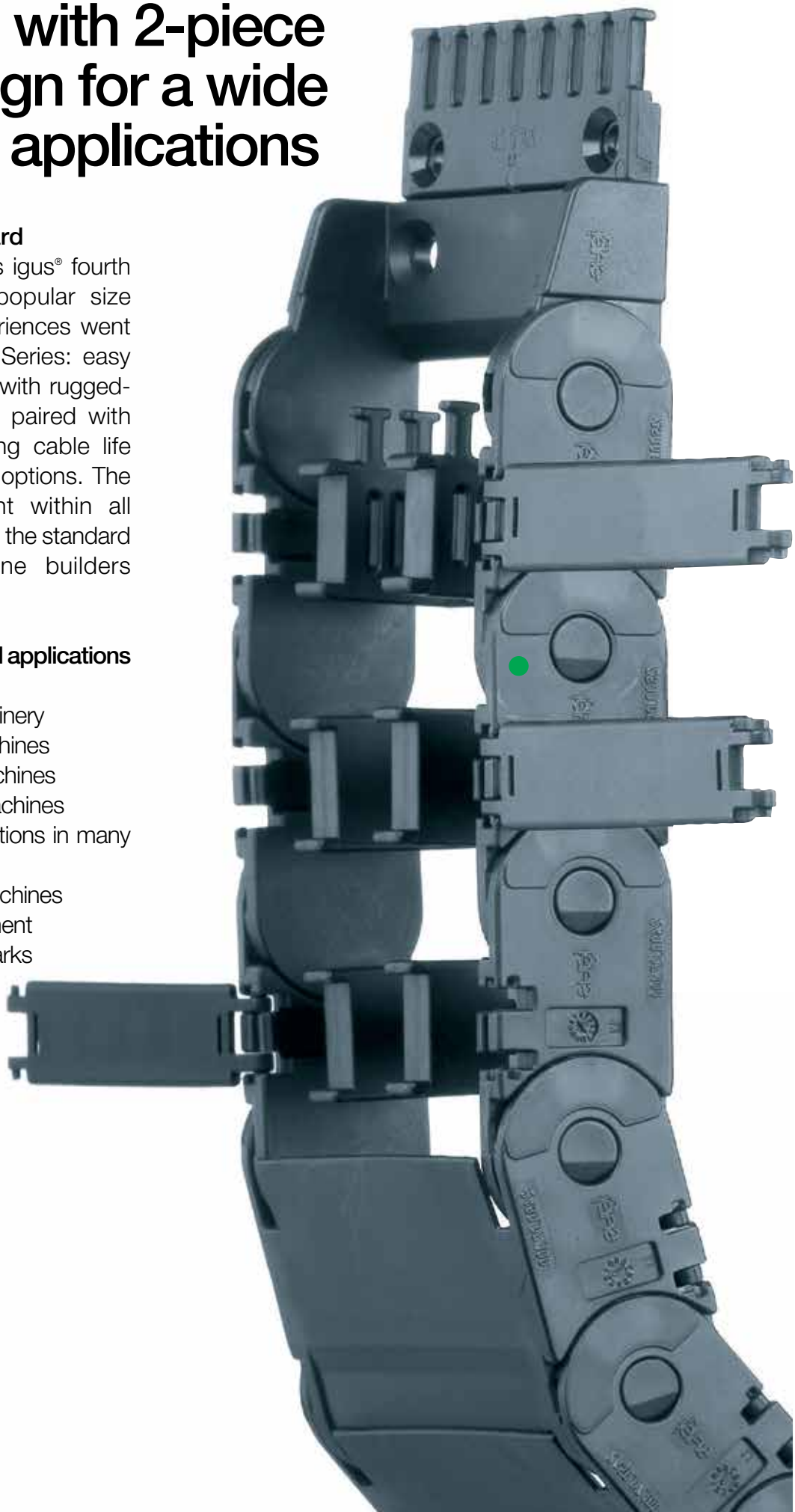
E2/000 - with 2-piece link-design for a wide range of applications

E2/000 - the standard

The E2/000 Series is igus® fourth generation in this popular size range. All past experiences went into this Millennium Series: easy assembly combined with ruggedness - high stability paired with quieter motion - long cable life and many mounting options. The design is consistent within all E2/000 variations. It is the standard product for machine builders around the world.

Typical industries and applications

- Material handling
- Construction machinery
- Woodworking machines
- Glass handling machines
- Plastic handling machines
- Long travel applications in many industries
- Semiconductor machines
- Theatre, entertainment and amusement parks
- Vehicles
- General machinery



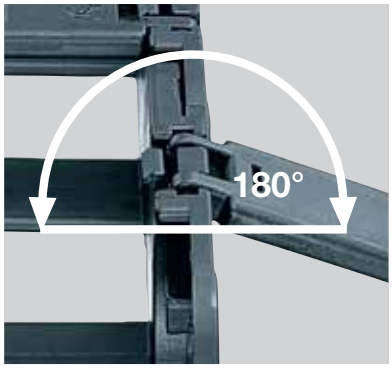


Pre-assembled E2/000 e-chain® - turnkey solution delivered with cables and sheet metal parts attached and ready for installation

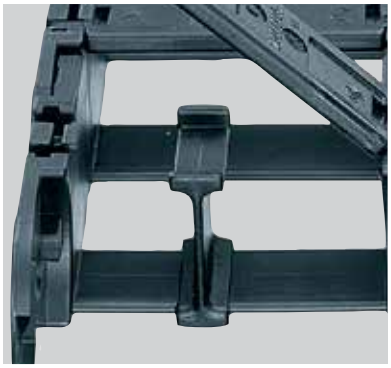
E2/000 features



New snap-open mechanism, choice of snap-open on left or right



Hinged crossbar can be swiveled by more than 180° on both sides



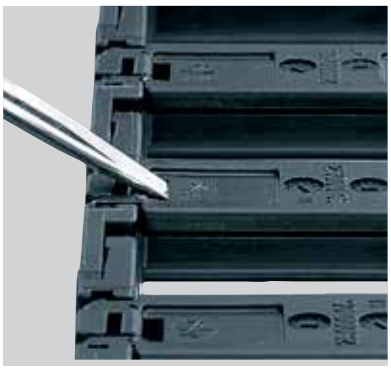
Secure fit of separators and interior separation even when e-chain® is open



Half e-tube - Fully enclosed in outer radius. Choice of swiveling interior radius to the left or right

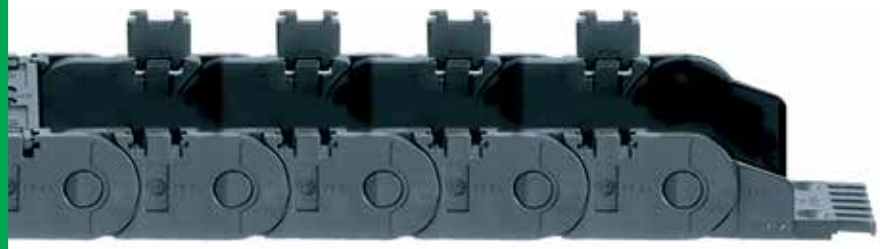


Lightning-fast closing by the touch of a thumb - secure fit without additional locking devices



Opening mechanism accessible from above - rapid opening with a screwdriver or the e-chain® opener

e-chain system® E2/000
Selection Guide



E2/000 e-chains®
Standard for System E2
snap-open along outer radius from both sides

Series	Inner height *hi* in.	(mm)	Inner width *Bi* in.	(mm)	Outer width *Ba* in.	(mm)	Outer height *ha* in.	(mm)	Bending radius *R* in.	(mm)
1500	.83	(21)	.59-4.92	(15 - 125)	1.12-5.45	(28.5 - 138.5)	1.10	(28)	1.38-7.09	(35 - 180)
2500	.98	(25)	.98-4.92	(25 - 125)	1.61-5.55	(41.0 - 141.0)	1.38	(35)	2.44-9.84	(55 - 250)
2700	1.38	(35)	1.97-6.89	(50 - 175)	2.60-7.64	(66.0 - 194.0)	1.97	(50)	2.48-9.84	(63 - 250)
3500	1.77	(45)	1.97-9.84	(50 - 250)	2.76-10.63	(70.0 - 270.0)	2.52	(64)	2.95-11.81	(75 - 300)
255	.94	(24)	1.50-4.06	(38 - 103)	2.13-4.69	(54.0 - 119.0)	1.38	(35)	2.17-9.84	(55 - 250)



E2/000 e-chains®
snap-open along inner radius from both sides

1400	.83	(21)	.59-4.92	(15 - 125)	1.12-5.45	(28.5 - 138.5)	1.10	(28)	1.38-7.09	(35 - 180)
2400	.98	(25)	.98-4.92	(25 - 125)	1.61-5.55	(41.0 - 141.0)	1.38	(35)	2.44-9.84	(55 - 250)
2600	1.38	(35)	1.97-6.89	(50 - 175)	2.60-7.64	(66.0 - 194.0)	1.97	(50)	2.48-9.84	(63 - 250)
3400	1.77	(45)	1.97-9.84	(50 - 250)	2.76-10.63	(70.0 - 270.0)	2.52	(64)	2.95-11.81	(75 - 300)



Half e-tubes
snap-open along inner radius from both sides

1450	.83	(21)	.59-4.92	(15 - 125)	1.12-5.45	(28.5 - 138.5)	1.10	(28)	2.95-7.09	(75 - 180)
2450	.98	(25)	.98-4.92	(25 - 125)	1.61-5.55	(41.0 - 141.0)	1.38	(35)	2.95-9.84	(75 - 250)
2650	1.38	(35)	1.97-6.89	(50 - 175)	2.60-7.64	(66.0 - 194.0)	1.97	(50)	3.94-9.84	(100 - 250)
3450	1.77	(45)	1.97-9.84	(50 - 250)	2.76-10.63	(70.0 - 270.0)	2.52	(64)	4.92-11.81	(125 - 300)



Full e-tubes
snap-open along inner radius from both sides

1480	.83	(21)	.59-4.92	(15 - 125)	1.12-5.45	(28.5 - 138.5)	1.10	(28)	2.95-7.09	(75 - 180)
2480	.98	(25)	.98-4.92	(25 - 125)	1.61-5.55	(41.0 - 141.0)	1.38	(35)	2.95-9.84	(75 - 250)
2680	1.38	(35)	1.97-6.89	(50 - 175)	2.60-7.64	(66.0 - 194.0)	1.97	(50)	3.94-9.84	(100 - 250)
3480	1.77	(45)	1.97-9.84	(50 - 250)	2.76-10.63	(70.0 - 270.0)	2.52	(64)	4.92-11.81	(125 - 300)

e-chain system® E2/000
Assembly Instructions

e-chains® - Opening and Closing E2 Series R1000 e-tubes



Open: swivel lids



Close: push and snap



Insert screwdriver into the slot, using a lever action apply pressure to the screwdriver to release



Remove lid

e-chains® - Separating E2 Series R1000 e-tubes



Release side link



Twist and pull apart

Available from stock. Orders ship as early as today.*

*On average 90% of orders ship the same day..

e-chain system® E2/000
Series 1400/1500

.83 .83

Price Index

Series 1400/1450/1500

Special Features / Options

IPA Qualification Certificate, Air Cleanliness Class ISO Class 3 (at v = 2 m/s) upon request

ESD classification: Electrically conductive ESD/ ATEX version upon request

Flammability Class VDE 0304 IIC UL94 HB

Assembly Tips



Snap-open mechanism, choice of snap-open on left or right. Hinged crossbar can be swiveled by more than 180° on both sides. Lightning-fast closing by hand. Secure fit without additional locking devices.

Other Installation Methods

Vertical, hanging ≤ 65.6 ft (20 m)
Vertical, standing ≤ 6.56 ft (2 m)
Side-mounted, unsupp. ≤ 2.30 ft (0.7 m)
Rotary requires further calculation

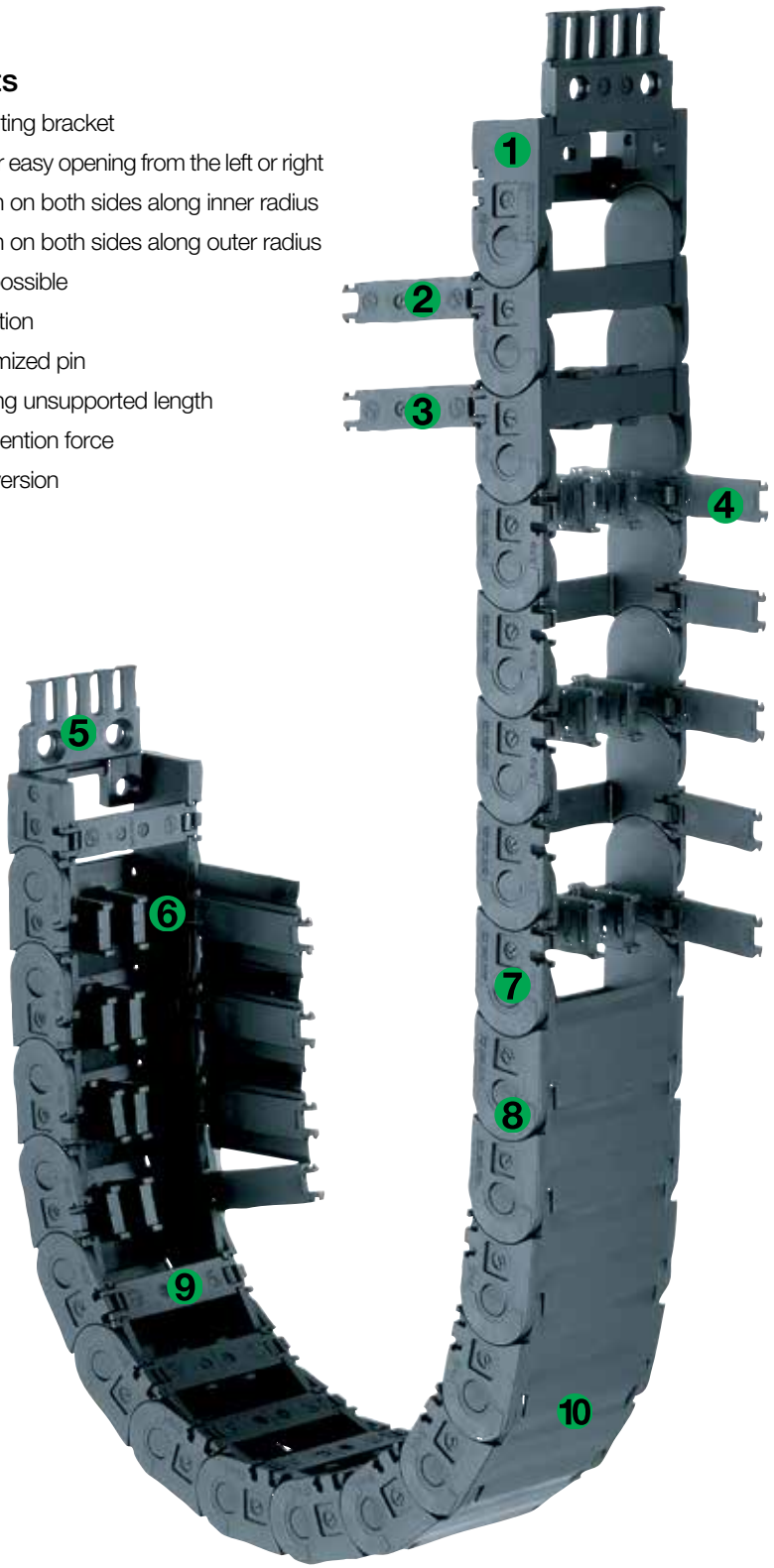
Usage Guidelines

- If snap-open accessibility along the inner or outer radius is required
- If integrated strain relief at the mounting point is required
- If half e-tube is required (Series 1450)
- If long service life is required
- If easy installation is required

- If the application is very simple
  ➤ **Series E200 E-Z Chain**
- If greater stability is required
  ➤ **Series E4-21 E4-1 Series**

Features & Benefits

1. Tried-and-tested mounting bracket
2. Snap-open crossbar for easy opening from the left or right
3. Series 1400 snap-open on both sides along inner radius
4. Series 1500 snap-open on both sides along outer radius
5. Integrated strain relief possible
6. Modular interior separation
7. Easy assembly by optimized pin
8. Double stop dog for long unsupported length
9. Crossbars with high retention force
10. Also available as ESD version



Order Example: Complete e-chain®

Please indicate chain length or number of links. Example:

9.84 ft (3 m) **1400-038-100-0**	**e-chain®**
With 2 separators **14011** assembled every 2nd link	**Interior Separation**
1 Set **15000-038-34PZB**	**Mounting Bracket**

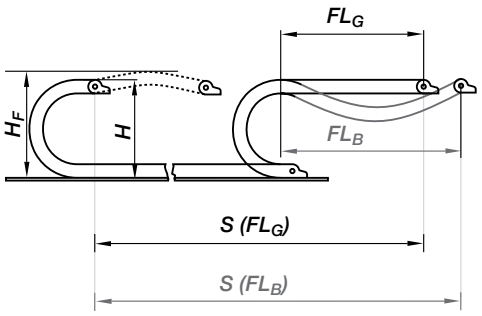
e-chain system® E2/000
Series 1400/1500
Installation Dimensions

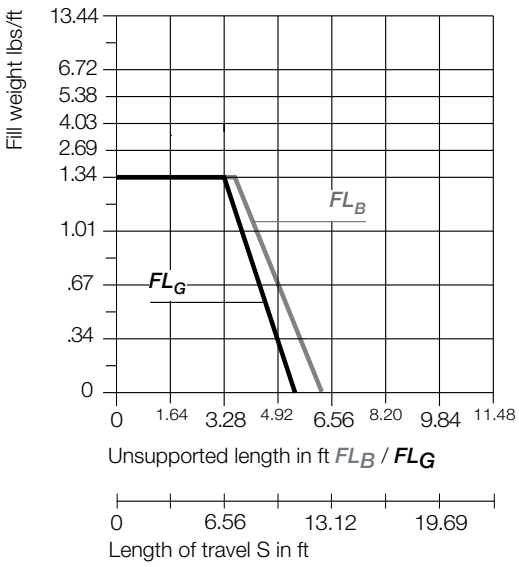
Short travel, unsupported length

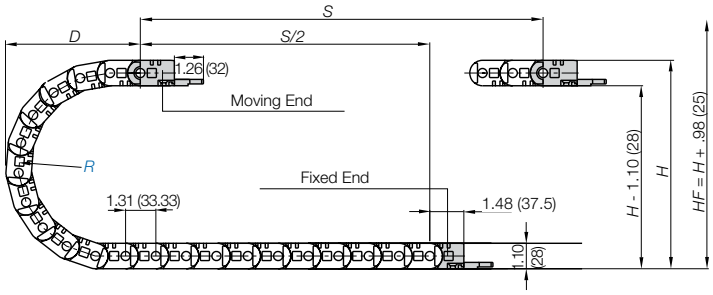
● FL_B = unsupported with permitted sag

● FL_G = unsupported with straight upper run

Further information ➤ Design, Chapter 1







Pitch per link: = 1.31" (33.3 mm)
Links per ft (m): = 9.16 (30)
For center mount applications:
Chain length = $^{S}/_{2}$ + K

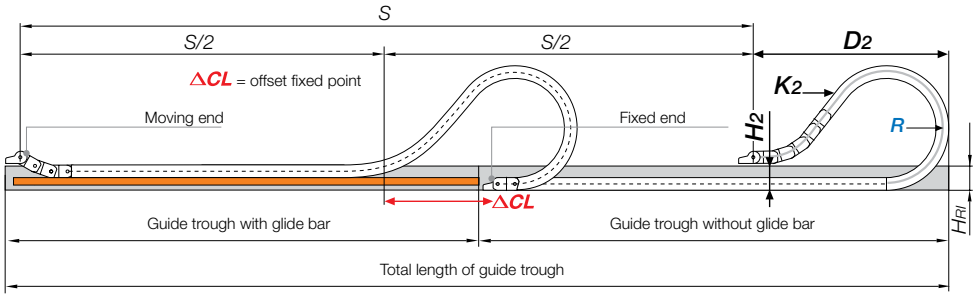
The required clearance height: $H_F = H$ + **.98 in. (25 mm)** (with .34 lbs/ft (0.5 kg/m) fill weight.
Please consult igus® if space is particularly restricted.

R	1.38 (035)	1.50 (038)	1.89 (048)	2.95 (075)	3.94 (100)	4.92 (125)	5.71 (145)	7.09 (180)
H	3.86 (98)	4.09 (104)	4.88 (124)	7.01 (178)	8.98 (228)	10.94 (278)	12.52 (318)	15.28 (388)
D	3.90 (99)	4.02 (102)	4.41 (112)	5.47 (139)	6.46 (164)	7.44 (189)	8.23 (209)	9.61 (244)
K	7.09 (180)	7.48 (190)	8.66 (220)	12.01 (305)	15.16 (385)	18.11 (460)	20.67 (525)	25.00 (635)

For long travels with lowered mounting height

Long travel lengths from 32.8 ft. (10 m) to max. 246 ft. (75 m)

For center mount applications:
Chain length: = $^{S}/_{2} + K_2$



In case of travels between 13 ft. (4m) and 32.8 ft. (10m) we recommend a longer unsupported length.

R	1.38 (035)	1.50 (038)	1.89 (048)	2.95 (075)	3.94 (100)	4.92 (125)	5.71 (145)	7.09 (180)
H_2	–	–	–	–	3.94 (100)	3.94 (100)	3.94 (100)	3.94 (100)
D_2^{+25}	–	–	–	–	13.39 (340)	19.49 (495)	21.26 (540)	27.17 (690)
K_2	–	–	–	–	23.62 (600)	31.50 (800)	37.01 (940)	46.06 (1170)
ΔCL	–	–	–	–	7.05 (179)	12.01 (305)	13.39 (340)	17.52 (445)

Speed / acceleration FL_G	max. 65.6 ft/s (20 m/s) / max. 656 ft/s² (200 m/s²)
Speed / acceleration FL_B	max. 9.84 ft/s (3 m/s) / max. 19.69 ft/s² (6 m/s²)
Gliding speed / acceleration (maximum)	max. 32.81 ft/s (10 m/s) / max. 164 ft/s² (50 m/s²)
Material - permitted temperature	igumid G / -40°F (-40°C) up to +248°F (+120° C)
Flammability Class, igumid G	VDE 0304 IIC UL94 HB

Short Travels - Unsupported

Unsupported e-chains® feature positive camber over short travels. This must be accounted for when specifying the clearance height. Please refer to **Installation dimensions** for further details.

Legend

S = Length of travel
R = Bending radius
H = Nominal clearance height
D = Overlength e-chain® radius in final position
K = π • R + safety buffer
H_F = Required clearance height
HRI = Trough inner height
H_2 = *Mounting height
D_2 = Overlength - long travels, gliding
K_2 = *Add-on

*If the mounting bracket location is set lower

Long Travels - Gliding

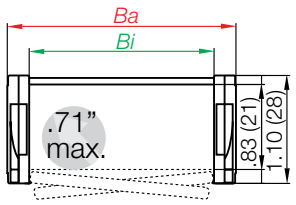
If the unsupported length is exceeded, the e-chain®/ Tube must glide on itself. This requires a guide trough.
Design, Chapter 1

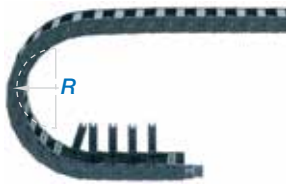
Technical Data

Details of material properties
➤ **Chapter 1**

e-chain system® E2/000
Series 1400/1500

Series 1400 - Snap-open along the inner radius



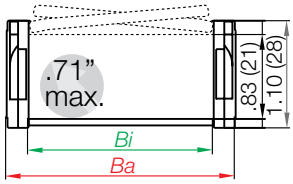


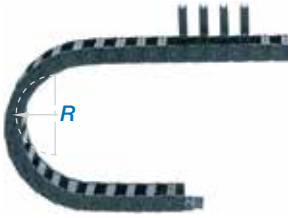
Part Number Structure

1400- 038- 100- 0

- Color - Black
- Bending radius
- Width
- Series

Series 1500 - Snap open along the outer radius

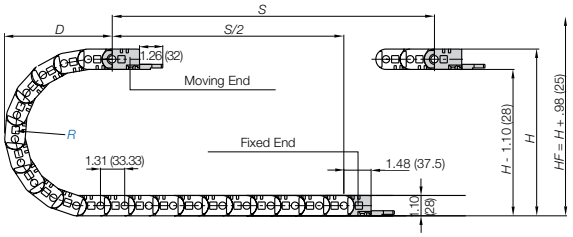




Part Number Structure

1500- 038- 100- 0

- Color - Black
- Bending radius
- Width
- Series



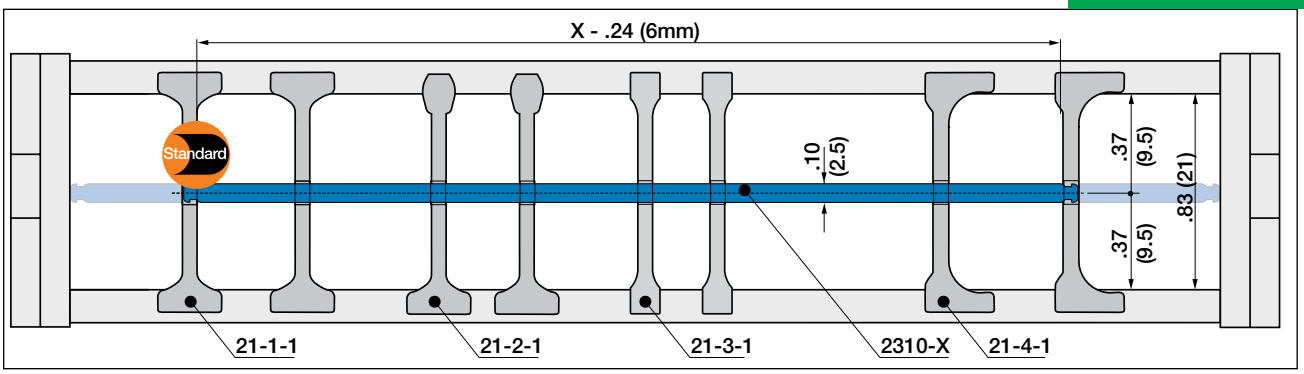
Supplement part number with required radius. Example: 1400-038-100 -0
Pitch: 1.31 in. (33.3 mm) per link links/ft (m) = 9.14 (30)

Part Number Snap-open Inner Radius	Part Number Snap-open Outer Radius		Bi in. (mm)	Ba in. (mm)	Weight 1400/1500 lbs/ft (kg/m)	Weight 1450 lbs/ft (kg/m)
1400-015-	1500-015-	-0	.59 (15)	1.12 (28.5)	≈ 0.31 (0.46)	≈ 0.32 (0.48)
1400-020-	1500-020-	-0	.79 (20)	1.32 (33.5)	≈ 0.32 (0.47)	–
1400-025-	1500-025-	-0	.98 (25)	1.52 (38.5)	≈ 0.33 (0.49)	≈ 0.38 (0.57)
1400-038-	1500-038-	-0	1.50 (38)	2.03 (51.5)	≈ 0.36 (0.53)	≈ 0.40 (0.59)
1400-050-	1500-050-	-0	1.97 (50)	2.50 (63.5)	≈ 0.38 (0.56)	≈ 0.44 (0.65)
1400-068-	1500-068-	-0	2.68 (68)	3.21 (81.5)	≈ 0.42 (0.63)	≈ 0.50 (0.74)
1400-080-	1500-080-	-0	3.15 (80)	3.68 (93.5)	≈ 0.45 (0.67)	≈ 0.54 (0.80)
1400-100-	1500-100-	-0	3.94 (100)	4.47 (113.5)	≈ 0.50 (0.74)	≈ 0.60 (0.90)
1400-125-	1500-125-	-0	4.92 (125)	5.45 (138.5)	≈ 0.56 (0.83)	≈ 0.69 (1.03)

Choose from the radii below for all of the above sizes
Radius (mm) Example: 1400-038-100 -0

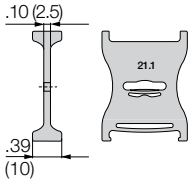
	035	038	048	075	100	125	145	180
R	1.38 (035)	1.50 (038)	1.89 (048)	2.95 (075)	3.94 (100)	4.92 (125)	5.71 (145)	7.09(180)
H+4	3.86 (98)	4.09 (104)	4.88 (124)	7.01 (178)	8.98 (228)	10.94 (278)	12.52 (318)	15.28 (388)
D	3.90 (99)	4.02 (102)	4.41 (112)	5.47 (139)	6.46 (164)	7.44 (189)	8.23 (209)	9.61 (244)
K	7.09 (180)	7.48 (190)	8.66 (220)	12.01 (305)	15.16 (385)	18.11 (460)	20.67 (525)	25.00 (635)

e-chain system® E2/000
Series 1400/1500
Interior Separation - New Generation



In the standard configuration separators are assembled every 2nd e-chain® link
Note: Only suitable for e-chain® Series 1400/1500



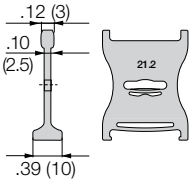


Separator, wide base

Unassembled	**Part No. 21.1**
Assembled	**Part No. 21.1.1**

- **Standard separator 21.1**
  for all applications
  Separator with wide base for maximum locking strength and safe standing in e-chains®.



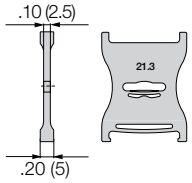


Separator, narrow head

Unassembled	**Part No. 21.2**
Assembled	**Part No. 21.2.1**

- **Separator 21.2**
  For even faster installation
  is used when vertical and horizontal separation is required. Due to its slot, it allows basic vertical/horizontal shelving arrangements.



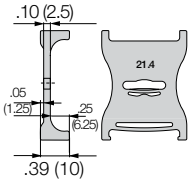


Separator, narrow base

Unassembled	**Part No. 21.3**
Assembled	**Part No. 21.3.1**

- **Separator 21.3**
  For many thin cables
  is used when vertical and horizontal separation is required. Due to its slot, it allows basic vertical/horizontal shelving arrangements.





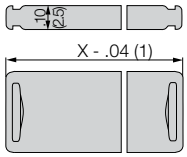
Separator, assymetrical

Unassembled	**Part No. 21.4**
Assembled	**Part No. 21.4.1**

- **Separator 21.4**
  For side mounted applications
  is used when vertical and horizontal separation is required. Due to its slot, it allows basic vertical/horizontal shelving arrangements.

Lockable full-width shelves - for the standard interior separation





Full width shelf, lockable

Unassembled	**Part No. 2300-X**
Assembled	**Part No. 2310-X**

- **Full width shelf, lockable**
  is used when vertical and horizontal separation is required.

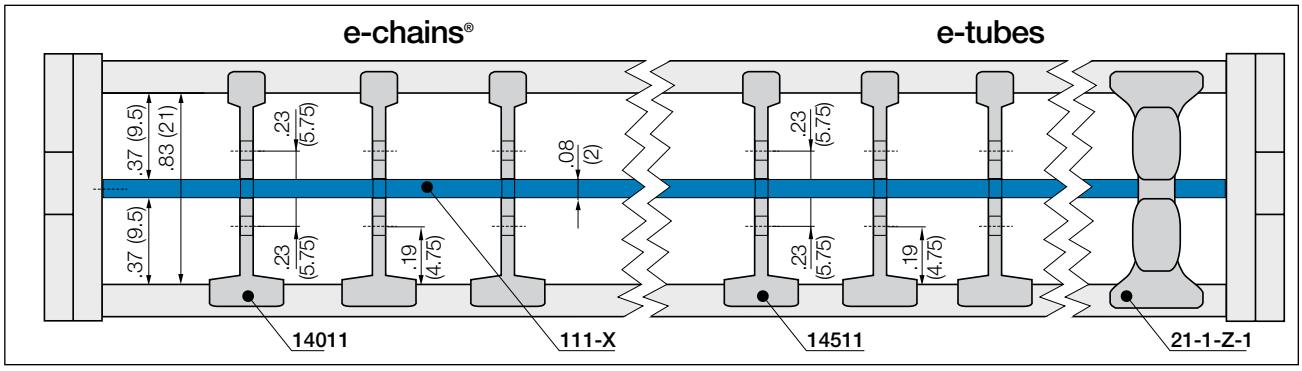
Width X in. (mm)	Part No. Unassembled	Part No. Assembled	Width X in. (mm)	Part No. Unassembled	Part No. Assembled	Width X in. (mm)	Part No. Unassembled	Part No. Assembled
015	**2300-15**	**2310-15**	060	**2300-60**	**2310-60**	087	**2300-87**	**2310-87**
025	**2300-25**	**2310-25**	062	**2300-62**	**2310-62**	090	**2300-90**	**2310-90**
030	**2300-30**	**2310-30**	065	**2300-65**	**2310-65**	100	**2300-100**	**2310-100**
038	**2300-38**	**2310-38**	070	**2300-70**	**2310-70**	103	**2300-103**	**2310-103**
040	**2300-40**	**2310-40**	075	**2300-75**	**2310-75**	110	**2300-110**	**2310-110**
050	**2300-50**	**2310-50**	077	**2300-77**	**2310-77**	120	**2300-120**	**2310-120**
057	**2300-57**	**2310-57**	080	**2300-80**	**2310-80**	125	**2300-125**	**2310-125**

e-chain system® E2/000
Series 1400/1500
Mounting Brackets - One Piece

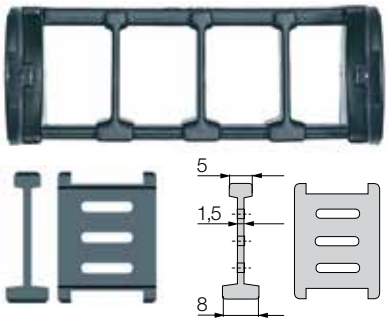
igus® e-chain system®
Telephone 1-800-521-2747
Internet: igus.com
email: sales@igus.com
QuickSpec: igus.com/quickspec

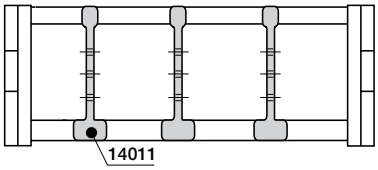
Option 1: Vertical separators

Vertical separators are used if a vertical subdivision of the e-tube interior is required. By standard, vertical separators are assembled every other e-tube link.



Separators, full-width shelves, Strain relief separators
In the standard configuration separators are assembled every 2nd e-chain® link





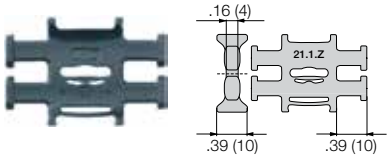
Slotted separator for e-tubes

Unassembled	**Part No. 14001**
Assembled	**Part No. 14011**

- **Slotted separator 14001 (Chains only)** is used when vertical and horizontal separation is required. Due to its slot, it allows basic vertical/horizontal shelving arrangements.

Option 2: Strain relief separator

Can be integrated into the mounting bracket and can be placed there at any position. To be used assembled on either the first or last e-chain® link. Ideal for restricted space conditions.



Strain relief separator for e-chains®

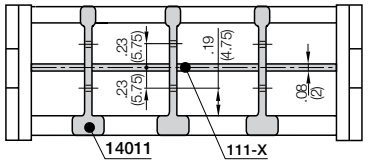
Unassembled	**Part No. 21.1.Z**
Assembled	**Part No. 21.1.Z.1**

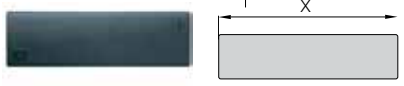
- **Slotted separator 21.1.Z (Chains only)** It combines strain relief and interior separation.

Option 3: Full-width shelf

It is ideal for use in applications involving many thin cables with similar or identical diameters. This shelf slides into place and spans the entire width of the chain.







Width X in.	(mm)	Part No. Unassembled	Part No. Assembled
0.59	(15)	**110-15**	**111-15**
0.79	(20)	**110-20**	**111-20**
0.98	(25)	**110-25**	**111-25**
1.50	(38)	**110-38**	**111-38**
1.97	(50)	**110-50**	**111-50**
2.68	(68)	**110-68**	**111-68**
3.15	(80)	**110-80**	**111-80**
3.94	(100)	**110-100**	**111-100**
4.92	(125)	**110-125**	**111-125**

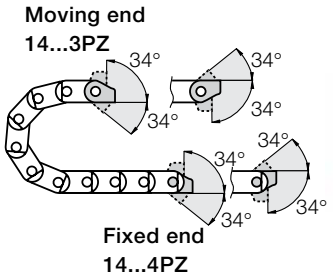
- **Full-width shelf 110-X (Chains®/Tubes)** this option makes sense in applications with many thin cables with similar diameters. Full-width shelves can be inserted at 3 different heights in .23" (5.75mm) increments

e-chain system® E2/000
Series 1400/1500
Mounting Brackets - Plastic

Standard

Option 1: pivoting

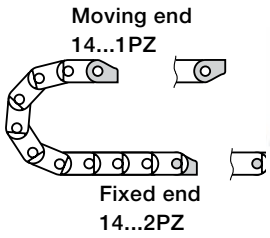
- Unsupported and gliding applications
- Space-restricted conditions
- Integrated strain relief
- Easy to assemble
- Various mounting positions





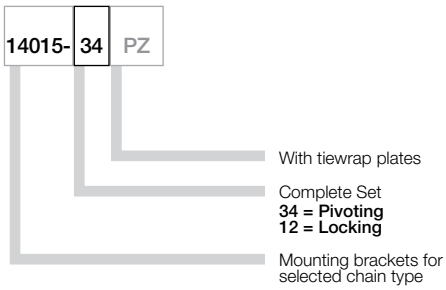
Option 2: locking

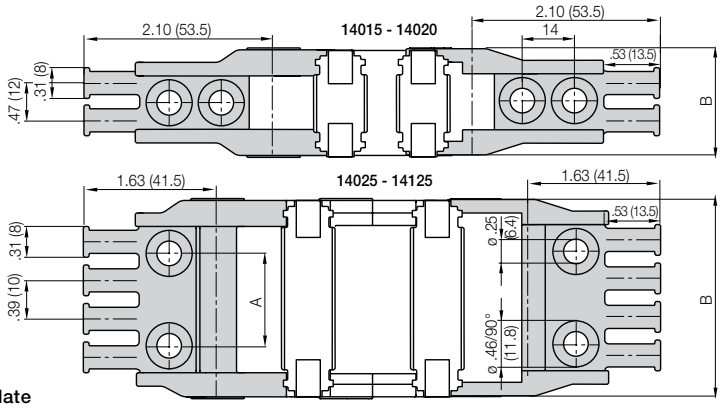
- Unsupported applications
- Extreme speed/accelerations
- If space is limited for height (H_F)
- Various mounting positions





Part Number Structure





Full set, for both ends:

14015- 34 PZ Full set, **each part with pin/bore + tiewrap plate**

Single-part order:

14015- 3 PZ Mounting bracket **with bore + tiewrap plate**

14015- 4 PZ Mounting bracket **with pin + tiewrap plate**

For Chain Type	Part No. Full Set with Tiewrap Plate	Dimension A in.	(mm)	Dimension B in.	(mm)	Number
1400/1450/1500-015	**14015-** ☐ **PZ**	–	–	1.12	(28.5)	2
1400/1450/1500-020	**14020-** ☐ **PZ**	–	–	1.32	(33.5)	2
1400/1450/1500-025	**14025-** ☐ **PZ**	.51	(13)	1.52	(38.5)	2
1400/1450/1500-038	**14038-** ☐ **PZ**	.94	(24)	2.03	(51.5)	4
1400/1450/1500-050	**14050-** ☐ **PZ**	1.42	(36)	2.50	(63.5)	6
1400/1450/1500-068	**14068-** ☐ **PZ**	2.13	(54)	3.21	(81.5)	7
1400/1450/1500-080	**14080-** ☐ **PZ**	2.60	(66)	3.68	(93.5)	8
1400/1450/1500-100	**14100-** ☐ **PZ**	3.39	(86)	4.47	(113.5)	10
1400/1450/1500-125	**14125-** ☐ **PZ**	4.37	(111)	5.45	(138.5)	13

34 or 12

For pivoting brackets choose 34
For locking brackets choose 12
Example: 14015- 34 PZB

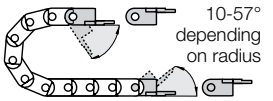
PDF: igus.com/e-chain-pdfs
Product information: igus.com/e-chains

e-chain system® E2/000
Series 1400/1500
Mounting Brackets - Plastic

Option 3: plastic

- Unsupported applications
- Space-restricted conditions
- Strain relief with detachable tiewrap plates
- Can be attached at either the fixed end or the moving end

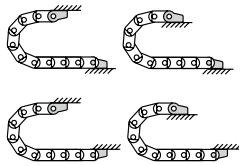
Moving end with bore
15000...3PZ(B)



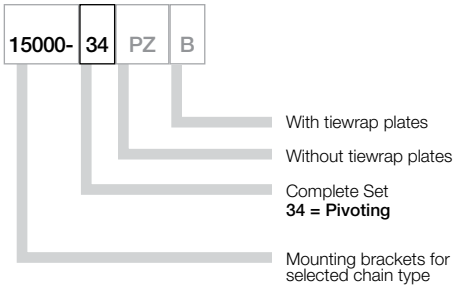
Fixed end with pin
15000...4PZ(B)





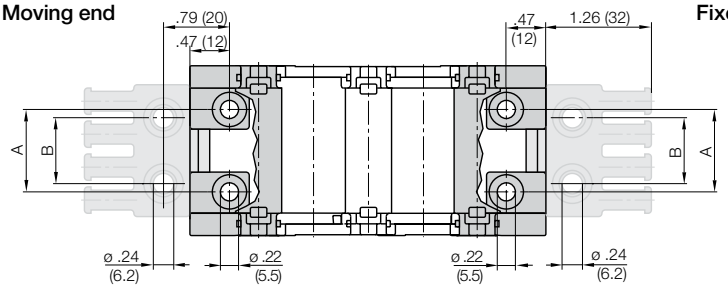


Part Number Structure



15000...3PZ(B)
Moving end

15000...4PZ(B)
Fixed end



Full set, for both ends:

15000-34PZB Full set, **each part with pin/bore + tiewrap plate**

Single-part order:

15000-3PZB Mounting bracket **with bore + tiewrap plate**

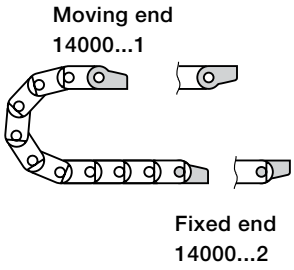
15000-4PZB Mounting bracket **with pin + tiewrap plate**

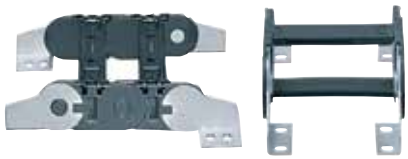
For Chain Type	Part No. Full Set with Tiewrap Plate	Part No. Full Set without Tiewrap Plate	Part No. Full Set with Tiewrap Plate + 10 cable ties	Dimension A in.	(mm)	Dimension B in.	(mm)
1400/1500-015	–	–	–	–	–	–	–
1400/1500-020	–	–	–	–	–	–	–
1400/1500-025	**15000-025-34PZB**	**15000-025-34PZ**	**15000-025-34PZBK1**	.47	(12)	.59	(15)
1400/1500-038	**15000-038-34PZB**	**15000-038-34PZ**	**15000-038-34PZBK1**	.98	(25)	.79	(20)
1400/1500-050	**15000-050-34PZB**	**15000-050-34PZ**	**15000-050-34PZBK1**	1.46	(37)	1.18	(30)
1400/1500-068	**15000-068-34PZB**	**15000-068-34PZ**	**15000-068-34PZBK1**	2.17	(55)	1.57	(40)
1400/1500-080	**15000-080-34PZB**	**15000-080-34PZ**	**15000-080-34PZBK1**	2.64	(67)	2.36	(60)
1400/1500-100	**15000-100-34PZB**	**15000-100-34PZ**	**15000-100-34PZBK1**	3.43	(87)	3.15	(80)
1400/1500-125	**15000-125-34PZB**	**15000-125-34PZ**	**15000-125-34PZBK1**	4.41	(112)	4.13	(105)

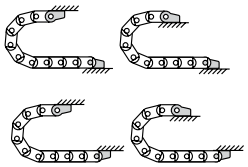
e-chain system® E2/000
Series 1400/1500
Mounting Brackets - Steel

Option 4: Steel

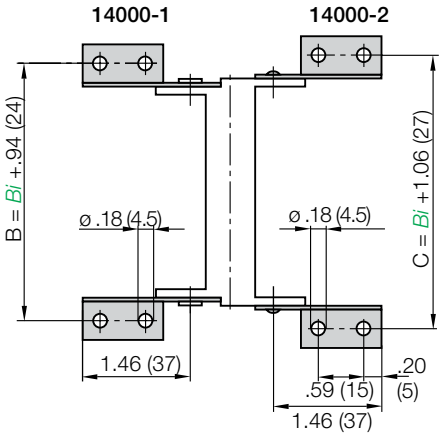
- Locked connections
- One part (two-piece) for all chain widths
- Electrically conductive
- Bolted connection outside of chain cross-section possible

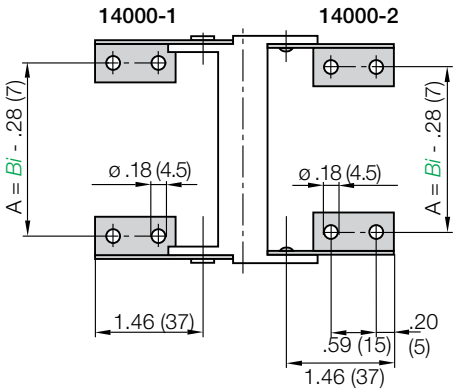






Possible installation configurations -





Chain Type	Part No. Full Set	Dimension A in.	(mm)	Dimension B in.	(mm)	Dimension C in.	(mm)
1400/1500-015	**14000-12**	.31	(8)	1.54	(39)	1.65	(42)
1400/1500-020	**14000-12**	.51	(13)	1.73	(44)	1.85	(47)
1400/1500-025	**14000-12**	.71	(18)	1.93	(49)	2.05	(52)
1400/1500-038	**14000-12**	1.22	(31)	2.44	(62)	2.56	(65)
1400/1500-050	**14000-12**	1.69	(43)	2.91	(74)	3.03	(77)
1400/1500-068	**14000-12**	2.40	(61)	3.62	(92)	3.74	(95)
1400/1500-080	**14000-12**	2.87	(73)	4.09	(104)	4.21	(107)
1400/1500-100	**14000-12**	3.66	(93)	4.88	(124)	5.00	(127)
1400/1500-125	**14000-12**	4.65	(118)	5.87	(149)	5.98	(152)

Part No. Mounting Brackets Full Set
4 parts, 2 with pin, 2 with bore
Series 1400/1500:
14000-12

Part No. Mounting Bracket Moving End
2 parts, 1 left & 1 right
Series 1400/1500:
14000-1

Part No. Mounting Bracket Fixed End
2 parts, 1 left & 1 right
Series 1400/1500:
14000-2

PDF: igus.com/e-chain-pdfs
Product information: igus.com/e-chains

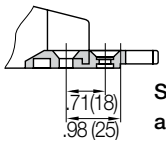
e-chain system® E2/000
Series 1400/1500
Strain Relief

Telephone 1-800-521-2747

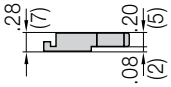
Internet: igus.com
email: sales@igus.com
QuickSpec: igus.com/quickspec

Tiewrap Plates





Shown assembled

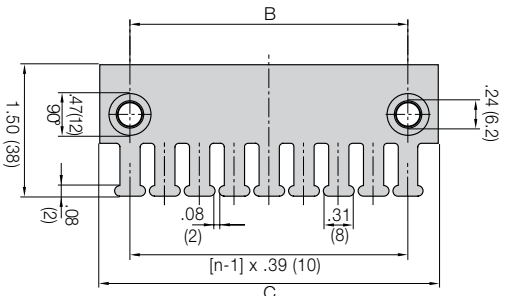


Single tiewrap plate

Option 1:
Tiewrap plates as an individual part

Available as an individual component, can be fixed onto a mounting bracket with the use of a profile rail.

Tiewrap Plates	n Number of Teeth	Dimension C	Dimension B
2020-ZB	3	1.18 (30)	.59 (15)
2030-ZB	4	1.57 (40)	.79 (20)
2040-ZB	5	1.97 (50)	1.18 (30)
2050-ZB	6	2.36 (60)	1.57 (40)
2070-ZB	8	3.15 (80)	2.36 (60)
2090-ZB	9	3.54 (90)	2.76 (70)
2100-ZB	10	3.94 (100)	3.15 (80)
2125-ZB	12	4.72 (120)	3.94 (100)



For more information please refer to strain relief section of Chapter 10



Strain relief for steel mounting brackets

Clip-on connection is not possible with steel mounting brackets. In this case, the tiewrap plates must be bolted directly into separate bore holes in front of the mounting bracket. Alternatively the tiewrap plates **20XX-ZB** can be also used here. **Details chapter 10**



Cable tiewraps as individual parts

Cable tiewraps	Width x Length		Maximum Ø		Tensile Strength	
100 pieces/bag	in.	(mm)	in.	(mm)	lbs	(N)
CFB-001	.19 x 5.91	(4.8 x 150)	1.42	(36)	50	(222)

PDF: igus.com/e-chain-pdfs
Product information: igus.com/e-chains











e-chain system® E2/000
Series 1450/1480 Half-Tubes and Full Tubes

Price Index

Series R1480

Special Features / Options

IPA Qualification Certificate
Air Cleanliness Class ISO Class 3
(at v = 6.56 ft/s) upon request

ESD classification:
Electrically conductive ESD/
ATEX version upon request

Flammability Class
VDE 0304 IIC UL94 HB

Assembly Tips



Insert screwdriver into the slot, using a lever action apply pressure to the screw-driver to release

Other Installation Methods

Vertical, hanging ≤ 65.6 ft (20 m)
Vertical, standing ≤ 6.56 ft (2 m)
Side-mounted, unsupp. ≤ 2.3 ft (0.7 m)
Rotary requires further calculation

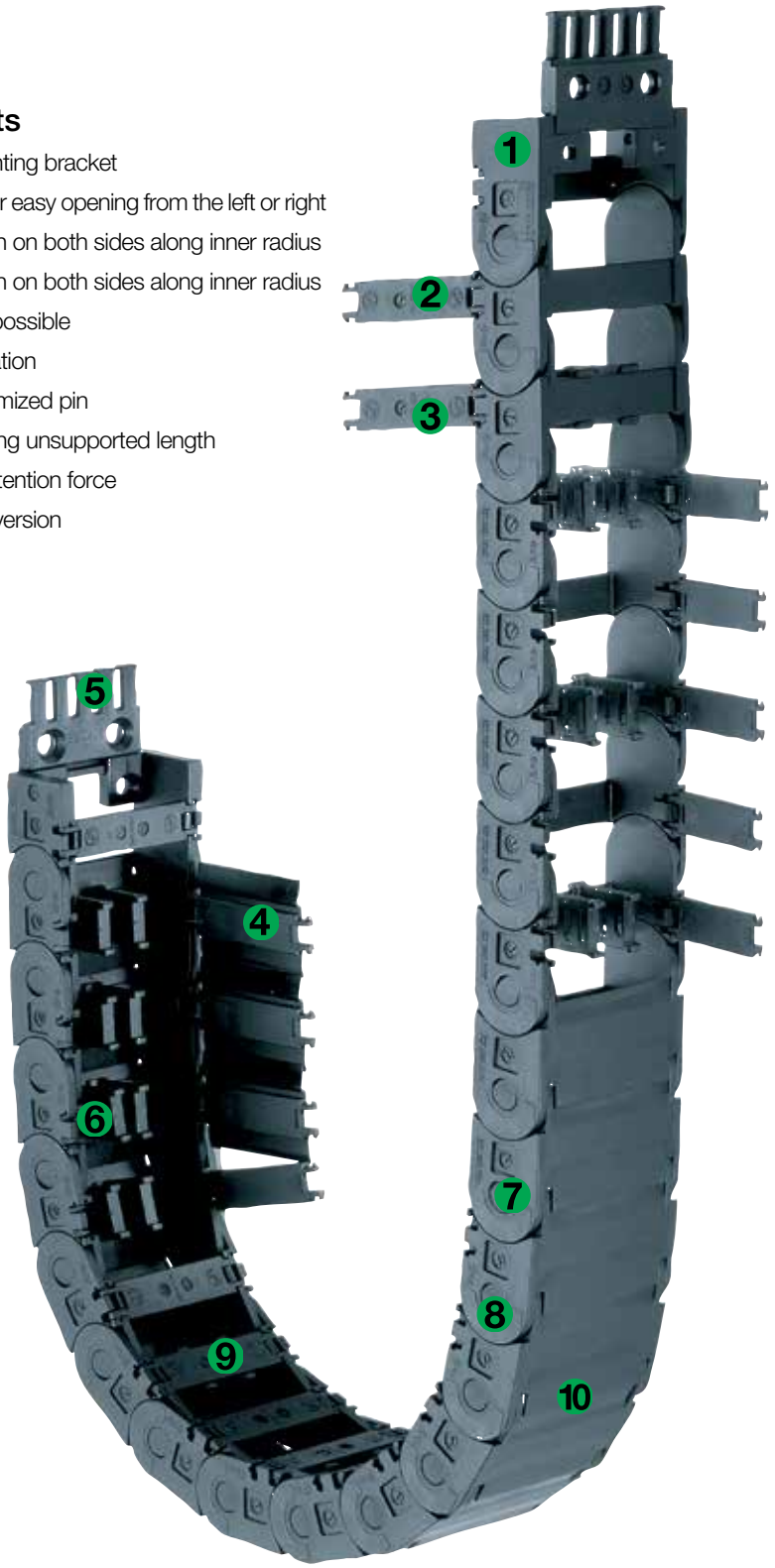
Usage Guidelines

- If hinged, snap-open accessibility along the inner radius is required
- If integrated strain relief is required at the connection point
- If long service life is required
- If chip protection is required
- If easy installation is required

- If the application is very simple
  ➤ **Series E14 E-Z Chain**
- If greater stability is needed
  ➤ **Series E4-21 System E4-1**
- If an e-tube with a small bending radius is required
  ➤ **Series R117 E2 Tubes**

Features & Benefits

1. Tried-and-tested mounting bracket
2. Snap-open crossbar for easy opening from the left or right
3. Series 1450 snap-open on both sides along inner radius
4. Series 1480 snap-open on both sides along inner radius
5. Integrated strain relief possible
6. Modular interior separation
7. Easy assembly by optimized pin
8. Double stop dog for long unsupported length
9. Crossbars with high retention force
10. Also available as ESD version



Order Example: Complete e-chain®

Please indicate chain length or number of links. Example:

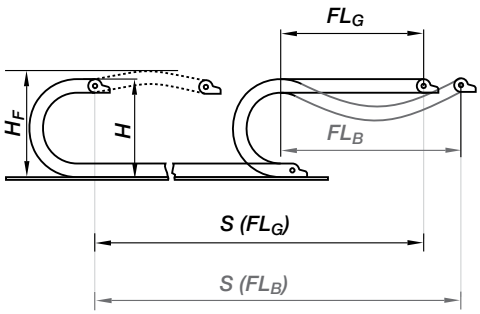
3.28 ft (1 m) **1480-038-075-0**	**e-chain®**
With 2 separators **14501** assembled every 2nd link	**Interior Separation**
1 Set **15000-038-34PZB**	**Mounting Bracket**

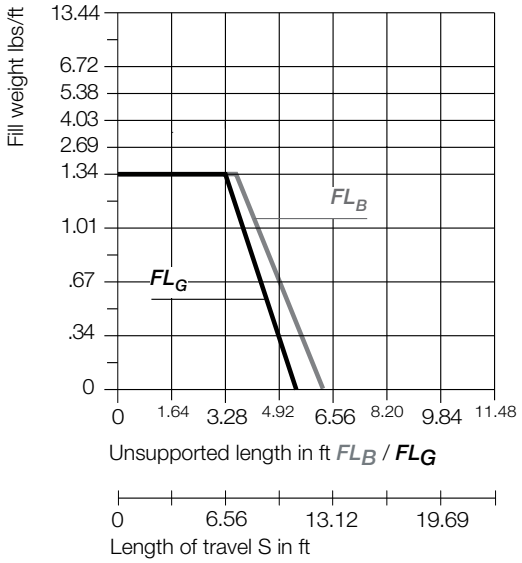
e-chain system® E2/000
Series 1450/1480 Half-Tubes and Full Tubes
Installation Dimensions

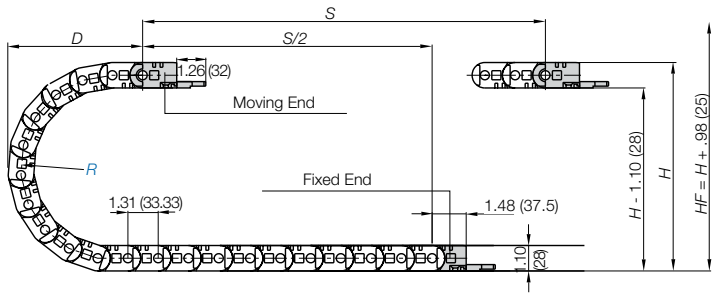
Short travel, unsupported length

- FL_B = unsupported with permitted sag
- FL_G = unsupported with straight upper run

Further information ➤ Design, Chapter 1







Pitch per link: = 1.31" (33 mm)
Links per ft (m): = 9.16 (30)
For center mount applications:
Chain length = $S/2 + K$

The required clearance height: ***HF = H + .98 in. (25 mm)*** (with .34 lbs/ft (0.5 kg/m) fill weight.
Please consult igus® if space is particularly restricted.

R	2.95 (075)	3.94 (100)	4.92 (125)	5.71 (145)	7.09 (180)
H	7.01 (178)	8.98 (228)	10.94 (278)	12.52 (318)	15.28 (388)
D	5.47 (139)	6.46 (164)	7.44 (189)	8.23 (209)	9.61 (244)
K	12.01 (305)	15.16 (385)	18.11 (460)	20.67 (525)	25.00 (635)

Short Travels - Unsupported

Unsupported e-chains® feature positive camber over short travels. This must be accounted for when specifying the clearance height. Please refer to **Installation dimensions** for further details.

Legend

S = Length of travel
R = Bending radius
H = Nominal clearance height
D = Overlength e-chain® radius in final position
K = $\pi \bullet R$ + *safety buffer*
HF = Required clearance height

Speed / acceleration FL_G	max. 65.6 ft/s (20 m/s) / max. 656 ft/s² (200 m/s²)
Speed / acceleration FL_B	max. 9.84 ft/s (3 m/s) / max. 19.69 ft/s² (6 m/s²)
Material - permitted temperature	igumid G / -40°F (-40°C) up to +248°F (+120° C)
Flammability Class, igumid G	VDE 0304 IIC UL94 HB

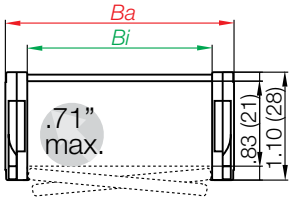
Technical Data

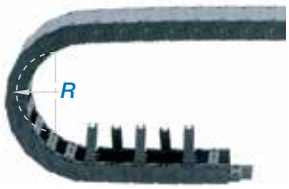
Details of material properties
➤ Chapter 1

PDF: igus.com/e-chain-pdfs
Product information: igus.com/e-chains

e-chain system® E2/000
Series 1450/1480 Half-Tubes and Full Tubes

Series 1450 - Half e-tube - Snap-open along the inner radius



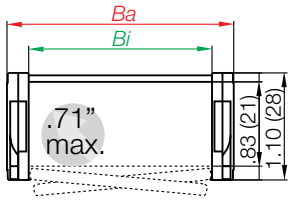


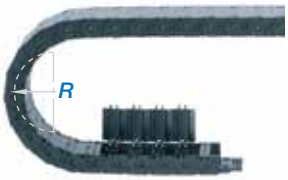
Part Number Structure

1450- 038- 100- 0

- Color - Black
- Bending radius
- Width
- Series

Series 1480 - hinged, snap-open along the inner radius

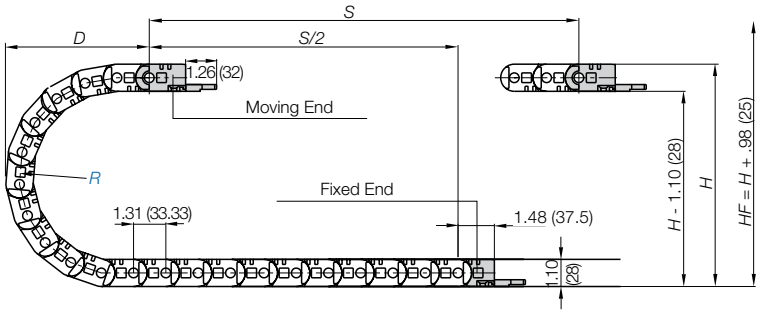




Part Number Structure

1480- 038- 075- 0

- Color - Black
- Bending radius
- Width
- Series



Supplement part number with required radius. Example: 1480-038-100-0
Pitch: 1.31 in. (33 mm) per link links/ft(m) = 9.41 (30)

Part Number. Half e-tube Snap-open Inner Radius	Full e-tube Snap-open Inner Radius		*Bi* in. (mm)	*Ba* in. (mm)	Weight 1450 lbs/ft (kg/m)	Weight 1480 lbs/ft (kg/m)
1450-015-	1480-015-	-0	.79 (15)	1.12 (28.5)	≈ 0.32 (0.48)	≈ 0.34 (0.50)
1450-025-	1480-025-	-0	.98 (25)	1.52 (38.5)	≈ 0.36 (0.54)	≈ 0.38 (0.57)
1450-038-	1480-038-	-0	1.50 (38)	2.03 (51.5)	≈ 0.40 (0.59)	≈ 0.41 (0.61)
1450-050-	1480-050-	-0	1.97 (50)	2.50 (63.5)	≈ 0.44 (0.65)	≈ 0.45 (0.67)
1450-068-	1480-068-	-0	2.68 (68)	3.21 (81.5)	≈ 0.50 (0.74)	≈ 0.52 (0.77)
1450-080-	1480-080-	-0	3.15 (80)	3.68 (93.5)	≈ 0.54 (0.80)	≈ 0.56 (0.84)
1450-100-	1480-100-	-0	3.94 (100)	4.47 (113.5)	≈ 0.60 (0.90)	≈ 0.65 (0.96)
1450-125-	1480-125-	-0	4.92 (125)	5.45 (138.5)	≈ 0.69 (1.03)	≈ 0.73 (1.08)

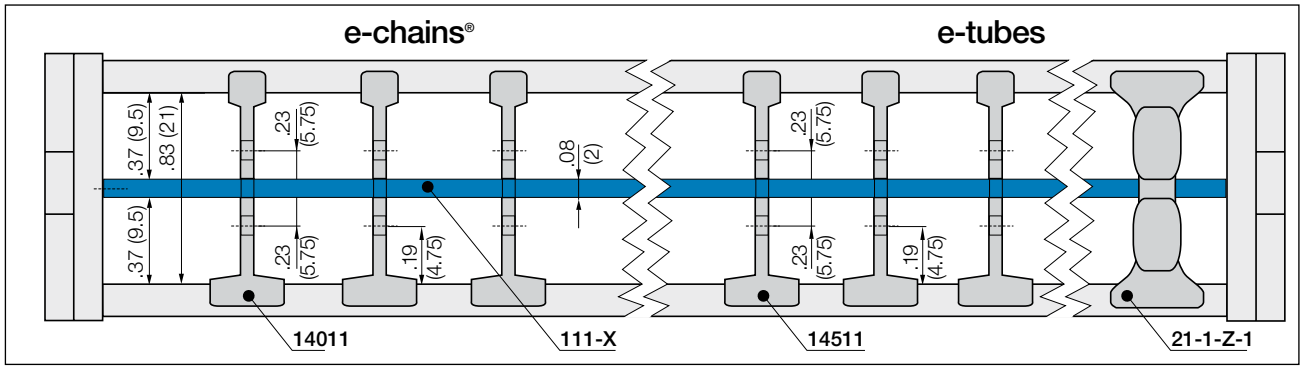
Choose from the radii below for all of the above sizes
Radius (mm) Example: 1480-038-100-0

	075	100	125	145	180
R	2.95 (075)	3.94 (100)	4.92 (125)	5.71 (145)	7.09 (180)
H	7.01 (178)	8.98 (228)	10.94 (278)	12.52 (318)	15.28 (388)
D	5.47 (139)	6.46 (164)	7.44 (189)	8.23 (209)	9.61 (244)
K	12.01 (305)	15.16 (385)	18.11 (460)	20.67 (525)	25.00 (635)

e-chain system® E2/000
Series 1450/1480 Half-Tubes and Full Tubes
Interior Separation

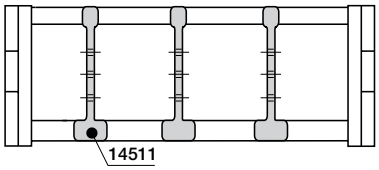
Option 1: Vertical separators

Vertical separators are used if a vertical subdivision of the e-tube interior is required. By standard, vertical separators are assembled every other e-tube link.

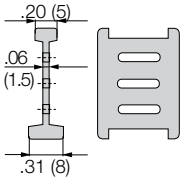


Separators, full-width shelves
In the standard configuration separators are assembled every 2nd e-chain® link









Slotted separator for e-tubes

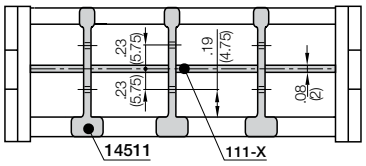
Unassembled	**Part No. 14501**
Assembled	**Part No. 14511**

- **Slotted separator 14501 (Tubes only)** is used when vertical and horizontal separation is required. Due to its slot, it allows basic vertical/horizontal shelving arrangements.

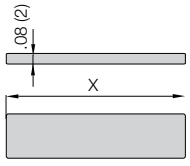
Option 2: Full-width shelf

It is ideal for use in applications involving many thin cables with similar or identical diameters. This shelf slides into place and spans the entire width of the chain.









Width X in.	(mm)	Part No. Unassembled	Part No. Assembled
0.59	(15)	**110-15**	**111-15**
0.79	(20)	**110-20**	**111-20**
0.98	(25)	**110-25**	**111-25**
1.50	(38)	**110-38**	**111-38**
1.97	(50)	**110-50**	**111-50**
2.68	(68)	**110-68**	**111-68**
3.15	(80)	**110-80**	**111-80**
3.94	(100)	**110-100**	**111-100**
4.92	(125)	**110-125**	**111-125**

- **Full-width shelf 110-X (Chains®/Tubes)** this option makes sense in applications with many thin cables with similar diameters. For a consequent subdivision. Full-width shelves can be inserted at 3 different heights in .23" (5.75mm) increments

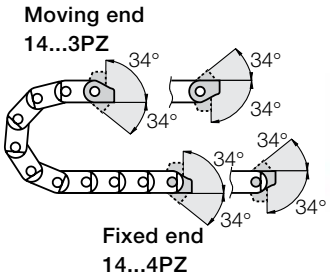
PDF: igus.com/e-chain-pdfs
Product information: igus.com/e-chains

e-chain system® E2/000
Series 1450/1480 Half-Tubes and Full Tubes
Mounting Brackets - One Piece

Standard

Option 1: pivoting

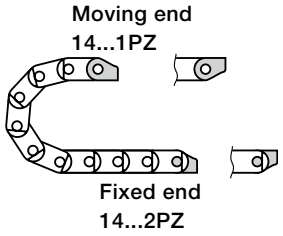
- Unsupported and gliding applications
- Space-restricted conditions
- Integrated strain relief
- Easy to assemble
- Various mounting positions





Option 2: locking

- Unsupported applications
- Extreme speed/accelerations
- If space is limited for height (H_F)
- Various mounting positions

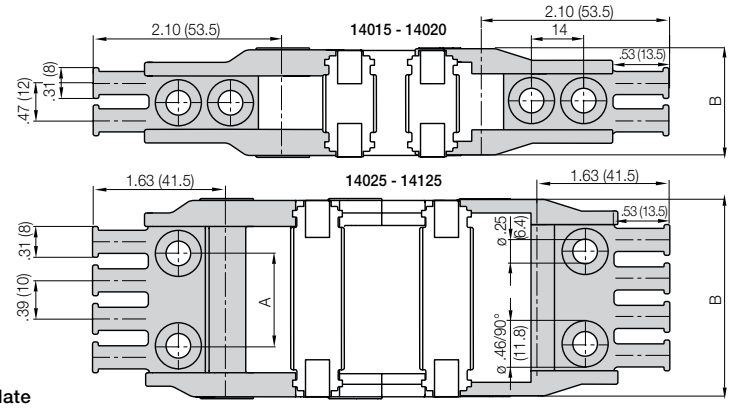




Part Number Structure

14015- | 34 | PZ

- 34 = With tiewrap plates
- Complete Set
  - 34 = Pivoting
  - 12 = Locking
- Mounting brackets for selected chain type



Full set, for both ends:

14015- | 34 | PZ Full set, **each part with pin/bore + tiewrap plate**

Single-part order:

14015- | 3 | PZ Mounting bracket **with bore + tiewrap plate**

14015- | 4 | PZ Mounting bracket **with pin + tiewrap plate**

For Chain Type	Part No. Full Set with Tiewrap Plate	Dimension A in.	Dimension A (mm)	Dimension B in.	Dimension B (mm)	Number
1450/1480-015	14015- ☐ PZ	–	–	1.12	(28.5)	2
1450/1480-020	14020- ☐ PZ	–	–	1.32	(33.5)	2
1450/1480-025	14025- ☐ PZ	.51	(13)	1.52	(38.5)	2
1450/1480-038	14038- ☐ PZ	.94	(24)	2.03	(51.5)	4
1450/1480-050	14050- ☐ PZ	1.42	(36)	2.50	(63.5)	6
1450/1480-068	14068- ☐ PZ	2.13	(54)	3.21	(81.5)	7
1450/1480-080	14080- ☐ PZ	2.60	(66)	3.68	(93.5)	8
1450/1480-100	14100- ☐ PZ	3.39	(86)	4.47	(113.5)	10
1450/1480-125	14125- ☐ PZ	4.37	(111)	5.45	(138.5)	13

☐ = 34 or 12

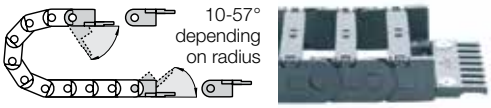
For pivoting brackets choose 34
For locking brackets choose 12
Example: 14015- 34 PZB

e-chain system® E2/000
Series 1450/1480 Half-Tubes and Full Tubes
Mounting Brackets - Plastic

Option 3: plastic

- Unsupported applications
- Space-restricted conditions
- Strain relief with detachable tiewrap plates
- Can be attached at either the fixed end or the moving end

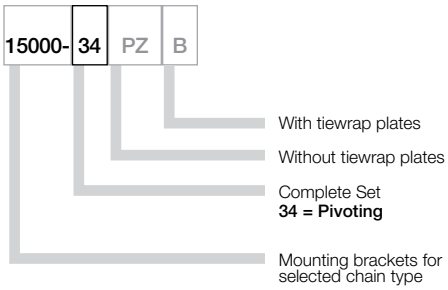
Moving end with bore
15000...3PZ(B)



Fixed end with pin
15000...4PZ(B)

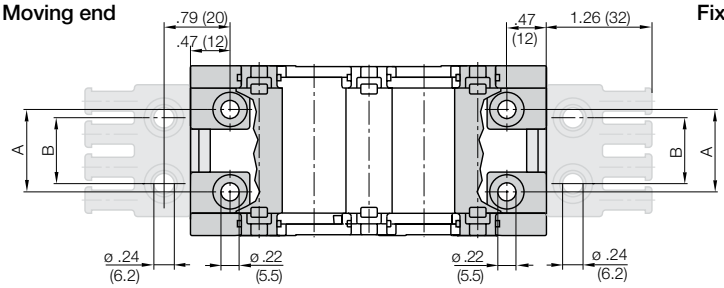


Part Number Structure



15000...3PZ(B)
Moving end

15000...4PZ(B)
Fixed end



Full set, for both ends:
15000-34PZB Full set, **each part with pin/bore + tiewrap plate**
Single-part order:
15000-3PZB Mounting bracket **with bore + tiewrap plate**
15000-4PZB Mounting bracket **with pin + tiewrap plate**

Part No. Mounting Brackets Full Set
4 parts, 2 with pin, 2 with bore
Series 1480:
15000-Width-34

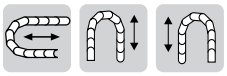
Part No. Mounting bracket with bore
2 parts, 1 left & 1 right
Series 1480:
15000-Width-3

Part No. Mounting bracket with pin
2 parts, 1 left & 1 right
Series 1480:
15000-Width-4

For Chain Type	Part No. Full Set with Tiewrap Plate	Part No. Full Set with Tiewrap Plate + 10 cable ties	Dimension A in.	(mm)	Dimension B in.	(mm)
1450/1480-025	**15000-025-34PZB**	**15000-025-34PZBK1**	.47	(12)	.59	(15)
1450/1480-038	**15000-038-34PZB**	**15000-038-34PZBK1**	.98	(25)	.79	(20)
1450/1480-050	**15000-050-34PZB**	**15000-050-34PZBK1**	1.46	(37)	1.18	(30)
1450/1480-068	**15000-068-34PZB**	**15000-068-34PZBK1**	2.17	(55)	1.57	(40)
1450/1480-080	**15000-080-34PZB**	**15000-080-34PZBK1**	2.64	(67)	2.36	(60)
1450/1480-100	**15000-100-34PZB**	**15000-100-34PZBK1**	3.43	(87)	3.15	(80)
1450/1480-125	**15000-125-34PZB**	**15000-125-34PZBK1**	4.41	(112)	4.13	(105)

PDF: igus.com/e-chain-pdfs
Product information: igus.com/e-chains

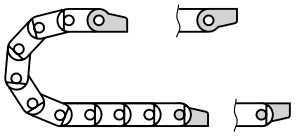
e-chain system® E2/000
Series 1450/1480 Half-Tubes and Full Tubes
Mounting Bracket - Steel



Option 4: steel

- Locked connections
- One part (two-piece) for all chain widths
- Electrically conductive
- Bolted connection outside of chain cross-section possible

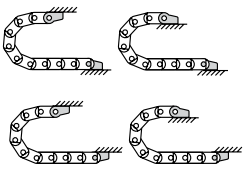
Moving end
14000...1



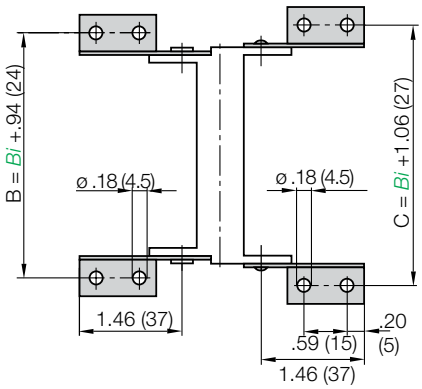
Fixed end
14000...2

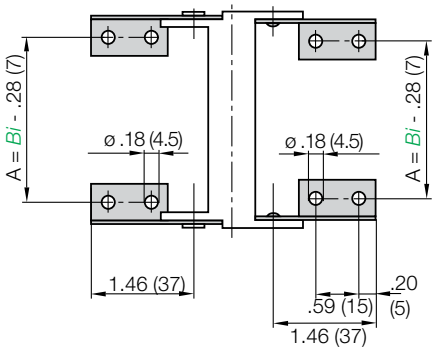






Possible installation configurations -





Chain Type	Part No. Full Set	Dimension A in.	(mm)	Dimension B in.	(mm)	Dimension C in.	(mm)
1450/1480-015	**14000-12**	.31	(8)	1.54	(39)	1.65	(42)
1450/1480-020	**14000-12**	.51	(13)	1.73	(44)	1.85	(47)
1450/1480-025	**14000-12**	.71	(18)	1.93	(49)	2.05	(52)
1450/1480-038	**14000-12**	1.22	(31)	2.44	(62)	2.56	(65)
1450/1480-050	**14000-12**	1.69	(43)	2.91	(74)	3.03	(77)
1450/1480-068	**14000-12**	2.40	(61)	3.62	(92)	3.74	(95)
1450/1480-080	**14000-12**	2.87	(73)	4.09	(104)	4.21	(107)
1450/1480-100	**14000-12**	3.66	(93)	4.88	(124)	5.00	(127)
1450/1480-125	**14000-12**	4.65	(118)	5.87	(149)	5.98	(152)

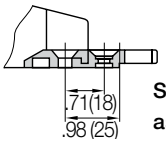
Part No. Mounting Brackets Full Set
4 parts, 2 with pin, 2 with bore
Series 1480:
14000-12

Part No. Mounting Bracket Moving End
2 parts, 1 left & 1 right
Series 1480:
14000-1

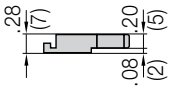
Part No. Mounting Bracket Fixed End
2 parts, 1 left & 1 right
Series 1480:
14000-2

Tiewrap Plates





Shown assembled

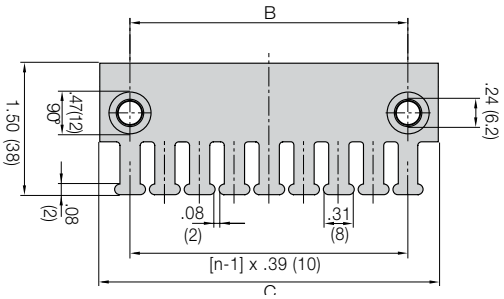


Single tiewrap plate

Option 1:
Tiewrap plates as an individual part

Available as an individual component, can be fixed onto a mounting bracket with the use of a profile rail.

Tiewrap Plates	n Number of Teeth	Dimension C	Dimension B
2020-ZB	3	1.18 (30)	.59 (15)
2030-ZB	4	1.57 (40)	.79 (20)
2040-ZB	5	1.97 (50)	1.18 (30)
2050-ZB	6	2.36 (60)	1.57 (40)
2070-ZB	8	3.15 (80)	2.36 (60)
2090-ZB	9	3.54 (90)	2.76 (70)
2100-ZB	10	3.94 (100)	3.15 (80)
2125-ZB	12	4.72 (120)	3.94 (100)



For more information please refer to strain relief section of Chapter 10



Cable tiewraps as individual parts

Cable tiewraps	Width x Length		Maximum Ø		Tensile Strength	
100 pieces/bag	in.	(mm)	in.	(mm)	lbs	(N)
CFB-001	.19 x 5.91	(4.8 x 150)	1.42	(36)	50	(222)



Strain relief for steel mounting brackets

Clip-on connection is not possible with steel mounting brackets. In this case, the tiewrap plates must be bolted directly into separate bore holes in front of the mounting bracket. Alternatively the tiewrap plates **20XX-ZB** can be also used here. **Details chapter 10**

PDF: igus.com/e-chain-pdfs
Product information: igus.com/e-chains

e-chain system® E2/000
Series 2400/2500

.98 .98

Price Index

Series 2400/2500

Special Features / Options

IPA Qualification Certificate, Air Cleanliness Class ISO Class 3 (at v = 2 m/s) upon request

ESD classification: Electrically conductive ESD/ ATEX version upon request

UL94 V2 classifications upon request

Assembly Tips



Snap-open mechanism, choice of snap-open on left or right. Hinged crossbar can be swiveled by more than 180° on both sides. Lightning-fast closing by hand. Secure fit without additional locking devices.

Other Installation Methods

Vertical, hanging ≤ 131.24 ft (40 m)
Vertical, standing ≤ 9.84 ft (3 m)
Side-mounted, unsupp. ≤ 3.28 ft (1 m)
Rotary requires further calculation

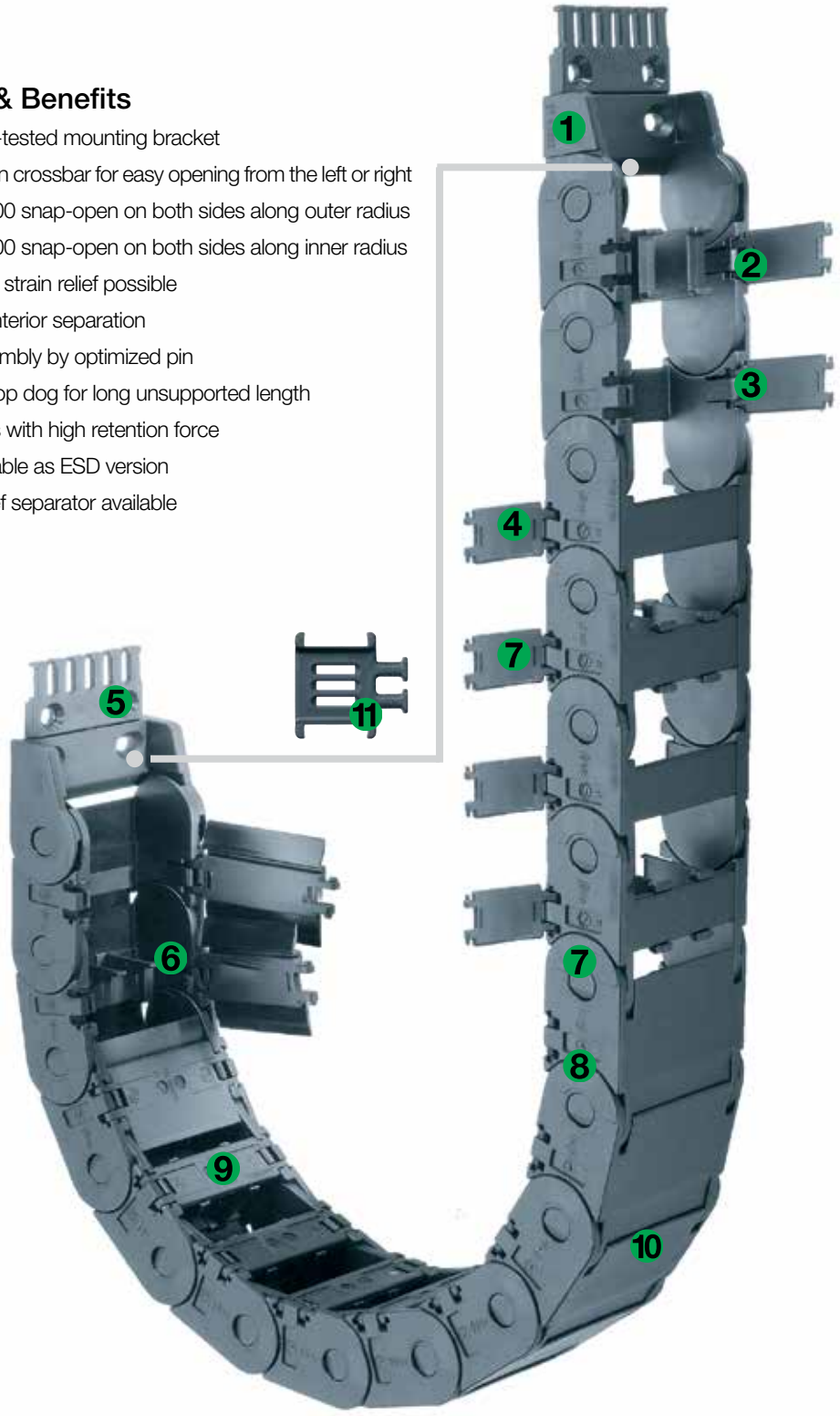
Usage Guidelines

- If snap-open accessibility along the inner or outer radius is required
- If integrated strain relief at the mounting point is required
- If modular interior separation is needed
- If long service life is required
- If easy installation is required

- If the application is very simple
  ➤ **Series E200 E-Z Chain**
- If greater stability is required
  ➤ **Series E4-21 E4-1 Series**

Features & Benefits

1. Tried-and-tested mounting bracket
2. Snap-open crossbar for easy opening from the left or right
3. Series 2500 snap-open on both sides along outer radius
4. Series 2400 snap-open on both sides along inner radius
5. Integrated strain relief possible
6. Modular interior separation
7. Easy assembly by optimized pin
8. Double stop dog for long unsupported length
9. Crossbars with high retention force
10. Also available as ESD version
11. Strain relief separator available



Order Example: Complete e-chain®

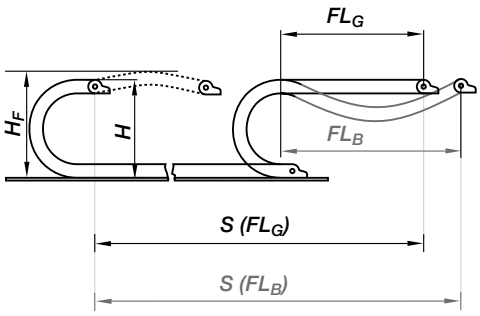
Please indicate chain length or number of links. Example:

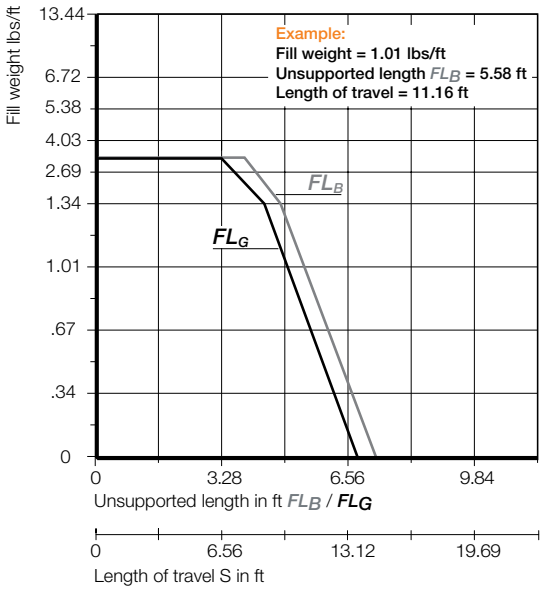
9.84 ft (3 m) **2500-10-100-0**	**e-chain®**
With 2 separators **25.1** assembled every 2nd link	**Interior Separation**
1 Set **2100-34PZB**	**Mounting Bracket**

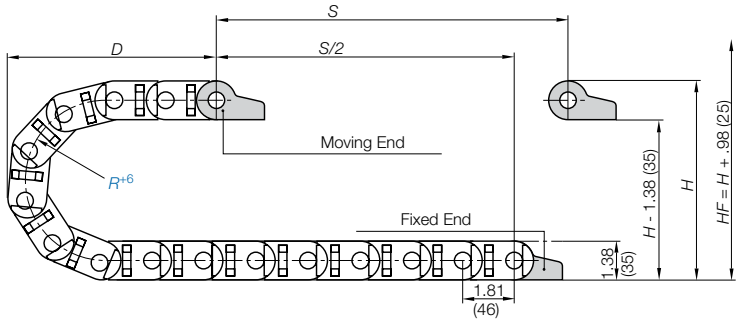
e-chain system® E2/000
Series 2400/2500
Installation Dimensions

Short travel, unsupported length

● FL_B = unsupported with permitted sag
● FL_G = unsupported with straight upper run
Further information ➤ Design, Chapter 1







Pitch per link: = 1.81" (46 mm)
Links per ft (m): = 6.71 (22)
For center mount applications:
Chain length = $^{S}/_{2}$ + K

The required clearance height: H_F **= H + .98 in. (25 mm)** (with 1.01 lbs/ft (1.5 kg/m) fill weight.
Please consult igus® if space is particularly restricted.

R	2.16 (055**)	2.95 (075)	3.94 (100)	4.92 (125)	5.91 (150)	6.89 (175)	7.87 (200)	8.86 (225)	9.84 (250)
H	5.71 (145)	7.28 (185)	9.25 (235)	11.22 (285)	13.19 (335)	15.16 (385)	17.13 (435)	19.09 (485)	21.06 (535)
D	5.59 (142)	6.38 (162)	7.36 (187)	8.35 (212)	9.33 (237)	10.31 (262)	11.30 (287)	12.28 (312)	13.27 (337)
K	10.43 (265)	12.99 (330)	16.14 (410)	19.09 (485)	22.24 (565)	25.39 (645)	28.54 (725)	31.50 (800)	34.65 (880)

**upon request

Short Travels - Unsupported

Unsupported e-chains® feature positive camber over short travels. This must be accounted for when specifying the clearance height. Please refer to **Installation dimensions** for further details.

Legend

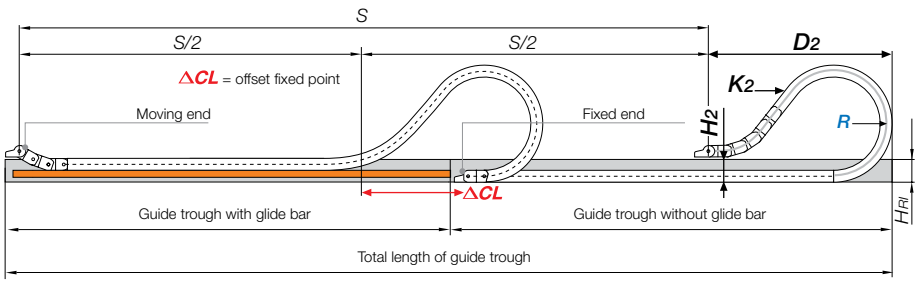
S = Length of travel
R = Bending radius
H = Nominal clearance height
D = Overlength e-chain® radius in final position
K = $\pi \bullet R$ + *safety buffer*
H_F = Required clearance height
H_{RI} = Trough inner height
H_2 = *Mounting height
D_2 = Overlength - long travels, gliding
K_2 = *Add-on

*If the mounting bracket location is set lower

For long travels with lowered mounting height

Long travel lengths from 32.8 ft. (10 m) to max. 328 ft. (100 m)
Note: For using Series 2400 for long travels (gliding), please consult with igus® first.
For long travels, igus® specifies Series 2500 that snap open on the outer radius.

For center mount applications:
Chain length: = $^{S}/_{2} + K_2$



R	2.16 (055)	2.95 (075)	3.94 (100)	4.92 (125)	5.91 (150)	6.89 (175)	7.87 (200)	8.86 (225)	9.84 (250)
H_2	4.33 (110)	5.91 (150)	3.94 (100)	3.94 (100)	3.94 (100)	3.94 (100)	3.94 (100)	3.94 (100)	3.94 (100)
D_2+25	5.59 (142)	6.38 (162)	14.96 (380)	17.32 (440)	23.23 (590)	29.72 (755)	37.40 (950)	40.94 (1040)	44.49 (1130)
K_2	10.43 (265)	12.99 (330)	25.35 (644)	28.98 (736)	39.84 (1012)	48.90 (1242)	57.95 (1472)	63.39 (1610)	70.63 (1794)
ΔCL	–	–	8.03 (204)	9.61 (244)	14.33 (364)	19.84 (504)	26.54 (674)	29.69 (754)	31.65 (804)

Long Travels - Gliding

If the unsupported length is exceeded, the e-chain®/ Tube must glide on itself. This requires a guide trough.
Design, Chapter 1

Speed / acceleration FL_G	max. 65.6 ft/s (20 m/s) / max. 656 ft/s² (200 m/s²)
Speed / acceleration FL_B	max. 9.84 ft/s (3 m/s) / max. 19.69 ft/s² (6 m/s²)
Gliding speed / acceleration (maximum)	max. 32.8 ft/s (10 m/s) / max. 164 ft/s² (50 m/s²)
Material - permitted temperature	igumid G / -40°F (-40°C) up to +248°F (+120° C)
Flammability Class, igumid G	VDE 0304 IIC UL94 HB

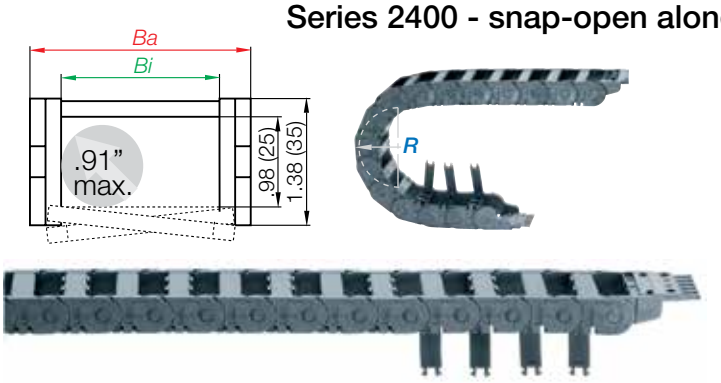
Technical Data

Details of material properties
➤ **Chapter 1**

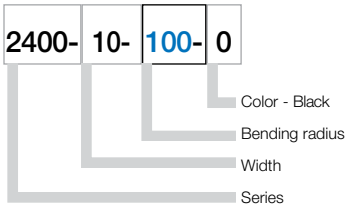
PDF: igus.com/e-chain-pdfs
Product information: igus.com/e-chains

e-chain system® E2/000
Series 2400/2500

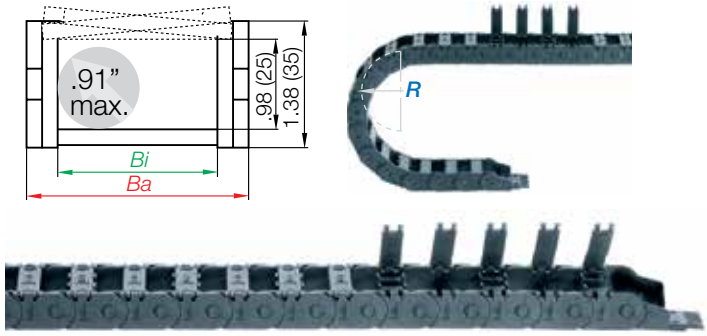
Series 2400 - snap-open along the inner radius



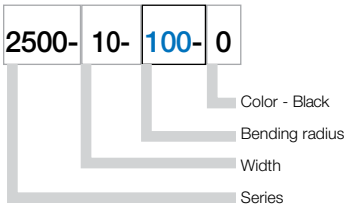
Part Number Structure

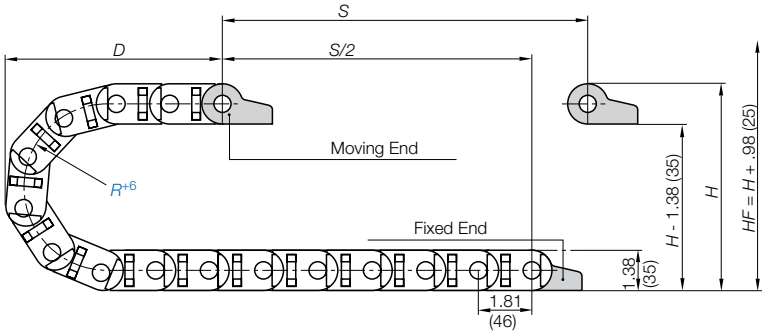


Series 2500 - snap-open along the outer radius



Part Number Structure





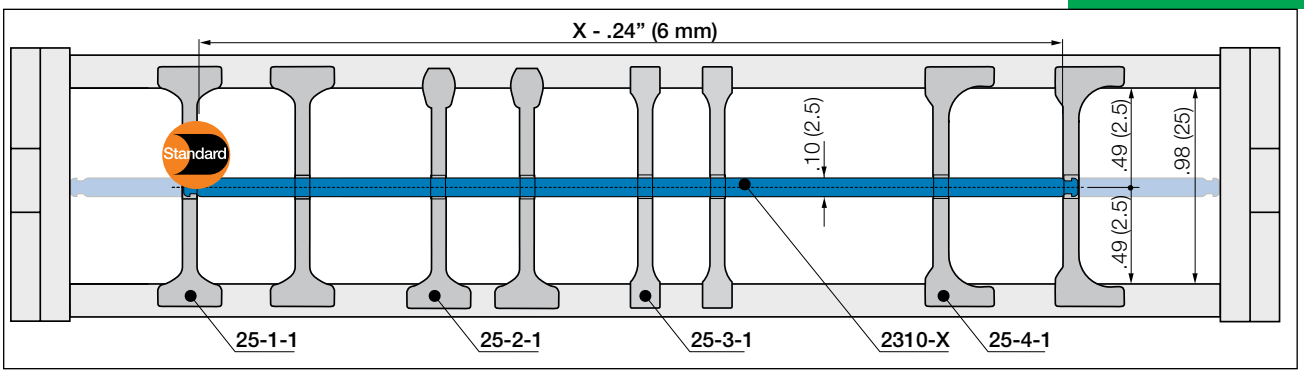
Supplement part number with required radius. Example: 2400-10-100-0
Pitch: 1.81 in. (46 mm) per link links/ft(m) = 6.71 (22)

Part Number. Snap-open inner radius	Part Number. Snap-open outer radius	Bi in. (mm)	Ba in. (mm)	Weight lbs/ft (kg/m)
2400-02-[ ]-0	2500-02-[ ]-0	.98 (25)	1.61 (41)	≈ 0.52 (0.77)
2400-03-[ ]-0	2500-03-[ ]-0	1.50 (38)	2.13 (54)	≈ 0.56 (0.83)
2400-05-[ ]-0	2500-05-[ ]-0	2.24 (57)	2.87 (73)	≈ 0.61 (0.91)
2400-07-[ ]-0	2500-07-[ ]-0	3.03 (77)	3.66 (93)	≈ 0.68 (1.01)
2400-09-[ ]-0	2500-09-[ ]-0	3.50 (89)	4.13 (105)	≈ 0.73 (1.08)
2400-10-[ ]-0	2500-10-[ ]-0	4.06 (103)	4.69 (119)	≈ 0.77 (1.15)
2400-12-[ ]-0	2500-12-[ ]-0	4.92 (125)	5.55 (141)	≈ 0.82 (1.22)

Choose from the radii below for all of the above sizes
Radius (mm) Example: 2400-10-100-0

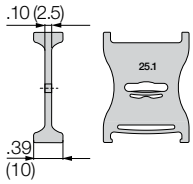
	055	075	100	125	150	175	200	225	250
R	2.16 (055)	2.95 (075)	3.94 (100)	4.92 (125)	5.91 (150)	6.89 (175)	7.87 (200)	8.86 (225)	9.84 (250)
H	5.71 (145)	7.28 (185)	9.25 (235)	11.22 (285)	13.19 (335)	15.16 (385)	17.13 (435)	19.09 (485)	21.06 (535)
D	5.59 (142)	6.38 (162)	7.36 (187)	8.35 (212)	9.33 (237)	10.31 (262)	11.30 (287)	12.28 (312)	13.27 (337)
K	10.43 (265)	12.99 (330)	16.14 (410)	19.09 (485)	22.24 (565)	25.39 (645)	28.54 (725)	31.50 (800)	34.65 (880)

e-chain system® E2/000
Series 2400/2500
Interior Separation



In the standard configuration separators are assembled every 2nd e-chain® link



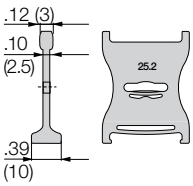


Separator, wide base

Unassembled	**Part No. 25.1**
Assembled	**Part No. 25.1.1**

- **Standard separator 25.1 for all applications**
  Separator with wide base for maximum locking strength and safe standing in e-chains®.



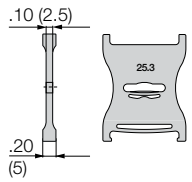


Separator, narrow head

Unassembled	**Part No. 25.2**
Assembled	**Part No. 25.2.1**

- **Separator 25.2 For even faster installation**
  is used when vertical and horizontal separation is required. Due to its slot, it allows basic vertical/horizontal shelving arrangements.



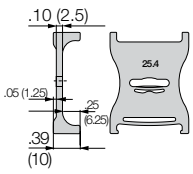


Separator, narrow base

Unassembled	**Part No. 25.3**
Assembled	**Part No. 25.3.1**

- **Separator 25.3 For many thin cables**
  is used when vertical and horizontal separation is required. Due to its slot, it allows basic vertical/horizontal shelving arrangements.





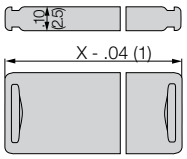
Separator, asymmetrical

Unassembled	**Part No. 25.4**
Assembled	**Part No. 25.4.1**

- **Separator 25.4 For side mounted applications**
  is used when vertical and horizontal separation is required. Due to its slot, it allows basic vertical/horizontal shelving arrangements.

Lockable full-width shelves - for the standard interior separation





Full width shelf, lockable

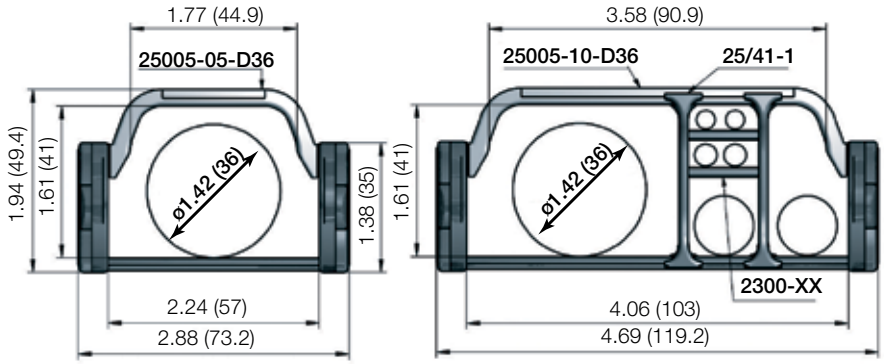
Unassembled	**Part No. 2300-X**
Assembled	**Part No. 2310-X**

- **Full width shelf, lockable**
  is used when vertical and horizontal separation is required. .

Width X in. (mm)	Part No. Unassembled	Part No. Assembled	Width X in. (mm)	Part No. Unassembled	Part No. Assembled	Width X in. (mm)	Part No. Unassembled	Part No. Assembled
0.59 (015)	**2300-15**	**2310-15**	2.36 (060)	**2300-60**	**2310-60**	3.43 (087)	**2300-87**	**2310-87**
0.98 (025)	**2300-25**	**2310-25**	2.44 (062)	**2300-62**	**2310-62**	3.54 (090)	**2300-90**	**2310-90**
1.18 (030)	**2300-30**	**2310-30**	2.56 (065)	**2300-65**	**2310-65**	3.94 (100)	**2300-100**	**2310-100**
1.50 (038)	**2300-38**	**2310-38**	2.76 (070)	**2300-70**	**2310-70**	4.06 (103)	**2300-103**	**2310-103**
1.57 (040)	**2300-40**	**2310-40**	2.95 (075)	**2300-75**	**2310-75**	4.33 (110)	**2300-110**	**2310-110**
1.97 (050)	**2300-50**	**2310-50**	3.03 (077)	**2300-77**	**2310-77**	4.72 (120)	**2300-120**	**2310-120**
2.24 (057)	**2300-57**	**2310-57**	3.15 (080)	**2300-80**	**2310-80**	4.92 (125)	**2300-125**	**2310-125**

PDF: igus.com/e-chain-pdfs
Product information: igus.com/e-chains

e-chain system® E2/000
Series 2400/2500
Extender crossbars





Part Number.

Extender crossbars for e-chains® that snap-open along inner radius	Extender crossbars for e-chains® that snap-open along outer radius	*Bi* in. (mm)	*Ba* in. (mm)
2400-05D36- ☐ -0	2500-05D36- ☐ -0	2.24 (57)	2.87 (73)
2400-10D36- ☐ -0	2500-10D36- ☐ -0	4.06 (103)	4.69 (119)

Choose from the radii below for all of the above sizes

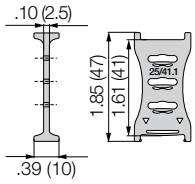
Radius (mm) Example: 2400-10D36- 100 -0

	055*	075	100	125	150	175	200	225	250
R	1.38 (055*)	1.50 (075*)	3.94 (100)	4.92 (125)	5.91 (150)	6.89 (175)	7.87 (200)	8.86 (225)	9.84 (250)

*Radius 055 only possible with Series 2500 e-chains®

Interior separation for extender crossbars



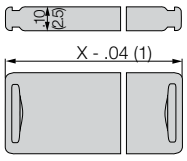


Separator, wide base	
Unassembled	Part No. 25/41.1
Assembled	Part No. 25/41.1.1

- **Standard separator 25/41-1, wide base**
  For maximum locking strength and safe standing. In standard configuration separators are assembled every 2nd e-chain® link.

Lockable full-width shelves - for the standard interior separation





Full width shelf, lockable	
Unassembled	Part No. 2300-X
Assembled	Part No. 2310-X

- **Full width shelf, lockable**
  is used when vertical and horizontal separation is required. Due to its slot, it allows basic vertical/horizontal shelving arrangements.

Width X in. (mm)	Part No. Unassembled	Part No. Assembled	Width X in. (mm)	Part No. Unassembled	Part No. Assembled	Width X in. (mm)	Part No. Unassembled	Part No. Assembled
0.59 (015)	2300-15	2310-15	2.36 (060)	2300-60	2310-60	3.43 (087)	2300-87	2310-87
0.98 (025)	2300-25	2310-25	2.44 (062)	2300-62	2310-62	3.54 (090)	2300-90	2310-90
1.18 (030)	2300-30	2310-30	2.56 (065)	2300-65	2310-65	3.94 (100)	2300-100	2310-100
1.50 (038)	2300-38	2310-38	2.76 (070)	2300-70	2310-70	4.06 (103)	2300-103	2310-103
1.57 (040)	2300-40	2310-40	2.95 (075)	2300-75	2310-75	4.33 (110)	2300-110	2310-110
1.97 (050)	2300-50	2310-50	3.03 (077)	2300-77	2310-77	4.72 (120)	2300-120	2310-120
2.24 (057)	2300-57	2310-57	3.15 (080)	2300-80	2310-80	4.92 (125)	2300-125	2310-125

Separator with integrated strain relief

Strain relief separator Part No. 2020-Z can be integrated into the mounting bracket and can be placed there at any point of the e-chain®. It combines strain relief and interior separation, it can be installed on the first or last e-chain® link and is easy to assemble without any screws.

For more information ➤ **Chapter 10, Strain Relief**

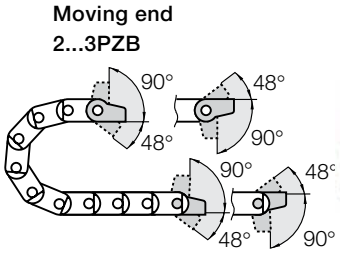


igus® e-chain system®
Telephone 1-800-521-2747
Internet: igus.com
email: sales@igus.com
QuickSpec: igus.com/quickspec

e-chain system® E2/000
Series 2400/2500
Mounting Bracket - Plastic

Option 1: pivoting

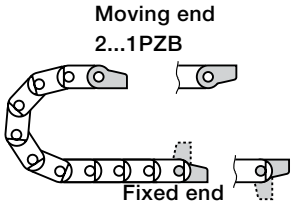
- For unsupported and gliding applications
- Well suited for tight installation conditions
- Detachable strain relief tiewrap plates
- Can be mounted on the fixed and/or moving end





Option 2: locking

- For unsupported and gliding applications
- Extreme speed and/or accelerations
- For height restricted applications
- Can be mounted on the fixed and/or moving end

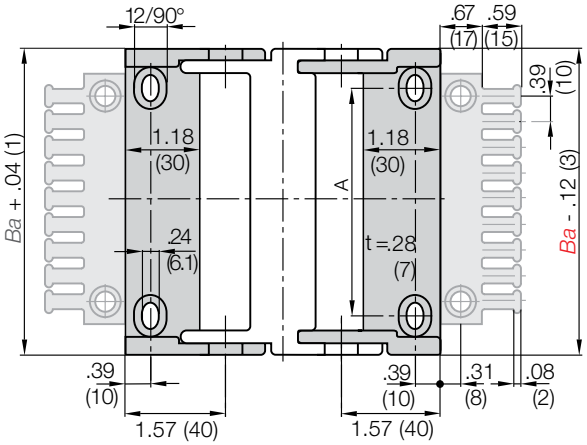




Part Number Structure

2020- | 34 | PZB | K1

- With 10 cable tiewraps
- With tiewrap plates
- Complete Set
  34 = Pivoting
  12 = Locking
- Mounting brackets for selected chain type



Full set, for both ends:

2020- | 34 | PZB — Full set, **each part with pin/bore + tiewrap plate**

Single-part order:

2020- | 3 | PZB — Mounting bracket **with bore + tiewrap plate**

2020- | 4 | PZB — Mounting bracket **with pin + tiewrap plate**

Part No. Full Set (pivoting)
With Tiewrap Plates
Series 2400/2500:
2020-34PZB

Part No. Full Set (pivoting)
With Tiewrap Plates
+ 10 cable ties
Series 2400/2500:
2020-34PZBK1

For Chain Type	Part No. Full set without Tiewrap Plate	Part No. Full Set with Tiewrap Plate	Part No. Full Set with Tiewrap Plate + 10 cable ties	Dimension A in.	(mm)	Number of teeth
2400/2500-02	2020- [ ] PZ	2020- [ ] PZB	2020- [ ] PZBK1	.47	(12)	3
2400/2500-03	2030- [ ] PZ	2030- [ ] PZB	2030- [ ] PZBK1	.98	(25)	4
2400/2500-05	2050- [ ] PZ	2050- [ ] PZB	2050- [ ] PZBK1	1.73	(44)	6
2400/2500-07	2070- [ ] PZ	2070- [ ] PZB	2070- [ ] PZBK1	2.52	(64)	8
2400/2500-09	2090- [ ] PZ	2090- [ ] PZB	2090- [ ] PZBK1	3.03	(77)	9
2400/2500-10	2100- [ ] PZ	2100- [ ] PZB	2100- [ ] PZBK1	3.54	(90)	10
2400/2500-12	2125- [ ] PZ	2125- [ ] PZB	2125- [ ] PZBK1	4.41	(112)	12

[34] or [12]

For pivoting brackets choose [34]
For locking brackets choose [12]
Example: 2020- [34] PZB

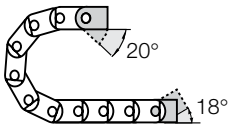
PDF: igus.com/e-chain-pdfs
Product information: igus.com/e-chains

e-chain system® E2/000
Series 2400/2500
Mounting Bracket - KMA

Option 1: pivoting

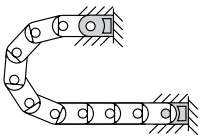
- For unsupported applications
- Bolted connection outside of chain cross section
- Confined installation conditions
- Attachment points on all sides
- Stackable

Moving end
24001...1







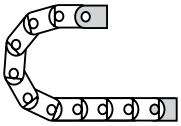


Fixed end
24001...2

Option 2: locking

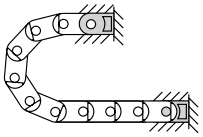
- For vertical hanging/standing applications
- Bolted connection outside of chain cross section
- For very high speeds and accelerations
- Attachment points on all sides
- Stackable

Moving end
24101...1







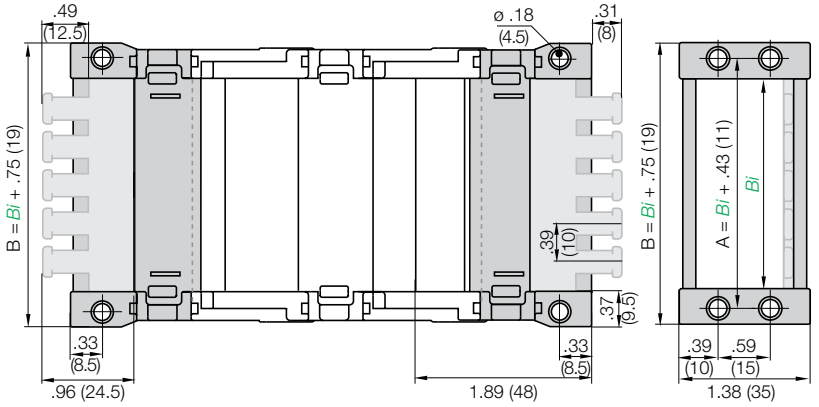


Fixed end
24101...2

Part Number Structure

24001-	02-	12	ZB

- ZB: With tiewrap plates
- 12: Complete Set
- 02-: Width
- 24001-: Mounting brackets for selected chain type
  24001 = Pivoting
  24101 = Locking



Full set, for both ends:

24001- 12 ZB Full set, **each part with pin/bore + tiewrap plate**

Single-part order:

24001- 1 ZB Mounting bracket **with bore + tiewrap plate**

24001- 2 ZB Mounting bracket **with pin + tiewrap plate**

Part No. Full Set (pivoting)
With Tiewrap Plates
Series 2480:
24001-Width-12ZB

Part No. Full Set (pivoting)
Without Tiewrap Plates
Series 2480:
24001-Width-12

For Chain Type	Part No. Full set with Tiewrap Plate	Part No. Full Set without Tiewrap Plate	Dimension A in.	(mm)	Number of Teeth
2400/2500-02	[ ] -02-12ZB	[ ] -02-12	1.42	(36)	2
2400/2500-03	[ ] -03-12ZB	[ ] -03-12	1.93	(49)	4
2400/2500-05	[ ] -05-12ZB	[ ] -05-12	2.68	(68)	6
2400/2500-07	[ ] -07-12ZB	[ ] -07-12	3.46	(88)	7
2400/2500-09	[ ] -09-12ZB	[ ] -09-12	3.94	(100)	9
2400/2500-10	[ ] -10-12ZB	[ ] -10-12	4.49	(114)	10
2400/2500-12	[ ] -12-12ZB	[ ] -12-12	5.35	(136)	12

[24001] or [24101]

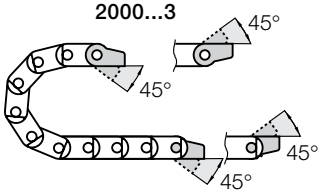
For pivoting brackets choose [24001]
For locking brackets choose [24101]
Example: [24001] -02-12ZB

e-chain system® E2/000
Series 2400/2500
Mounting Bracket - Steel

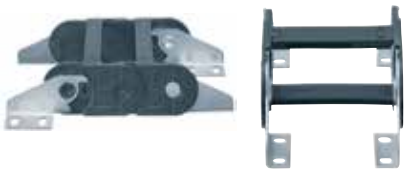
Option 1: Steel

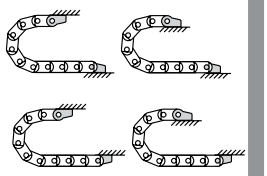
- Pivoting connections
- One part (two-piece) for all chain widths
- Electrically conductive
- Bolted connection outside of chain cross-section possible

Moving end
2000...3

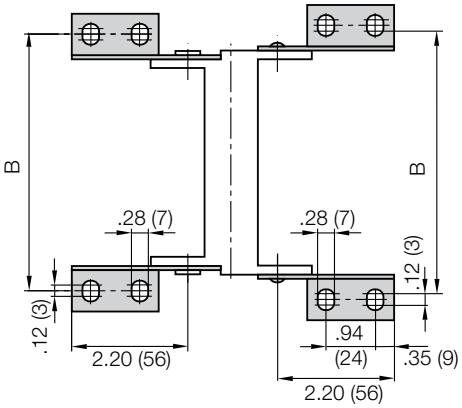


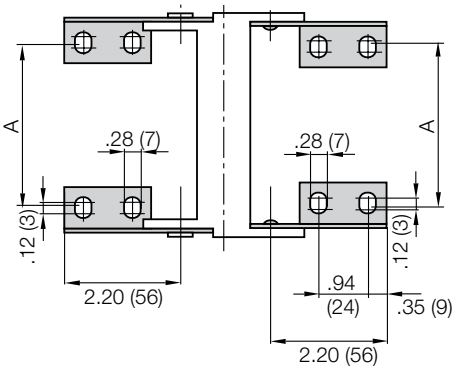
Fixed end
2000...2





Possible installation configurations -





Chain Type	Part No. Full Set	Dimension A in.	(mm)	Dimension B in.	(mm)
2400/2500-02	**2000-32**	—	—	2.36	(60)
2400/2500-03	**2000-32**	.98	(25)	2.87	(73)
2400/2500-05	**2000-32**	1.73	(44)	3.62	(92)
2400/2500-07	**2000-32**	2.52	(64)	4.41	(112)
2400/2500-09	**2000-32**	2.99	(76)	4.88	(124)
2400/2500-10	**2000-32**	3.54	(90)	5.43	(138)
2400/2500-12	**2000-32**	4.41	(112)	6.30	(160)

Part No. Mounting Brackets Full Set
4 parts, 2 with pin, 2 with bore
Series 2400/2500:
2000-32

Part No. Mounting Bracket Moving End
2 parts, 1 left & 1 right
Series 2400/2500:
2000-3

Part No. Mounting Bracket Fixed End
2 parts, 1 left & 1 right
Series 2400/2500:
2000-2

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Product information: igus.com/e-chains

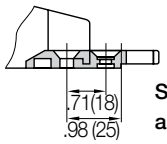
e-chain system® E2/000
Series 2400/2500
Strain Relief

Telephone 1-800-521-2747

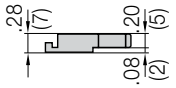
Internet: igus.com
email: sales@igus.com
QuickSpec: igus.com/quickspec

Tiewrap Plates





Shown assembled

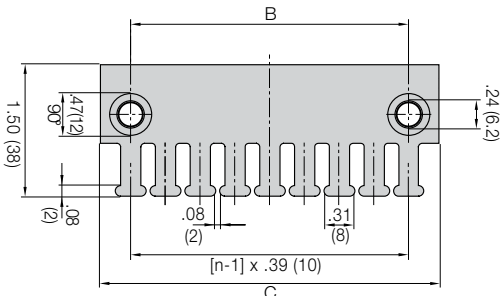


Single tiewrap plate

Option 1:
Tiewrap plates as an individual part

Available as an individual component, can be fixed onto a mounting bracket with the use of a profile rail.

Tiewrap Plates	n Number of Teeth	Dimension C	Dimension B
2020-ZB	3	1.18 (30)	.59 (15)
2030-ZB	4	1.57 (40)	.79 (20)
2040-ZB	5	1.97 (50)	1.18 (30)
2050-ZB	6	2.36 (60)	1.57 (40)
2070-ZB	8	3.15 (80)	2.36 (60)
2090-ZB	9	3.54 (90)	2.76 (70)
2100-ZB	10	3.94 (100)	3.15 (80)
2125-ZB	12	4.72 (120)	3.94 (100)



For more information please refer to strain relief section of Chapter 10



Cable tiewraps as individual parts

Cable tiewraps	Width x Length		Maximum Ø		Tensile Strength	
100 pieces/bag	in.	(mm)	in.	(mm)	lbs	(N)
CFB-001	.19 x 5.91	(4.8 x 150)	1.42	(36)	50	(222)



Strain relief for steel mounting brackets

Clip-on connection is not possible with steel mounting brackets. In this case, the tiewrap plates must be bolted directly into separate bore holes in front of the mounting bracket. Alternatively the tiewrap plates **20XX-ZB** can be also used here. **Details chapter 10**

e-chain system® E2/000
Series 2400/2500
Guide Trough

Guide troughs are used with applications where the upper run of the e-chain® glides on the lower run. If using igus® steel guide troughs, the following components are required:

- Full travel length of guide trough
  Part Number 92-30
- 1/2 travel length of glide bars
  Part Number 92-01
- Installation sets as end connectors
  Part Number 92-50-XX

-XX indicates the length of the profile rail on which the guide trough is mounted. The values and part numbers are specified in the table on the left. The standard length of the trough components and glide bars is 6.56 ft (2 m.) The required overall length of the guide trough directly correlates to the length of travel.

Example:
Length of travel 164 ft (50 m)
Center mounted
Required guide troughs:
164 ft (50 m) guide trough
82 ft (25 m) glide bar
= 25 sections of 6.56 ft (2 m) guide trough
Part No. 92-30
= 13 sections of 6.56 ft (2 m) glide bar
Part No. 92-01

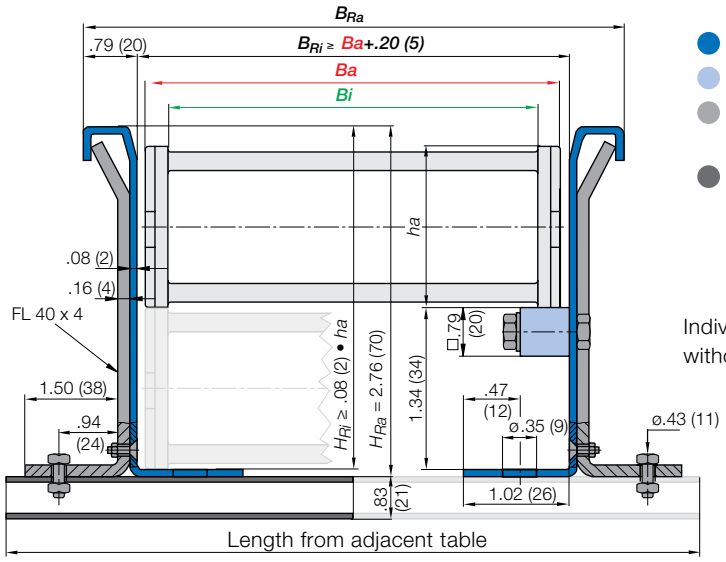


Required number of installation sets:
= Number of guide trough components + 1
= 25 + 1 = 26
Part number of the installation sets

Example: 92-50-400 for 15.75" (400 mm) long profile rail.

Width of Crossbar
2500-**05**-200-0

	B_{Ri}	Installation Part No.
-02*	1.81 (46)	–
-03	2.32 (59)	**92-50-175**
-05	3.07 (78)	**92-50-200**
-07	3.86 (98)	**92-50-225**
-09	4.37 (111)	**92-50-225**
-10	4.88 (124)	**92-50-250**
-12	5.75 (146)	**92-50-275**



- Guide trough
- Glide bars
- Installation set "Basic"
- Profile rail

Individual attachment without profile rail

* Specialized guide trough available upon request

PDF: igus.com/e-chain-pdfs
Product information: igus.com/e-chains

e-chain system® E2/000
Series 2450/2480 Half-Tubes and Full Tubes

.98 .98

Price Index

Series 2450/2480

Special Features / Options

IPA Qualification Certificate, Air Cleanliness Class ISO Class 3 (at v = 2 m/s) upon request

ESD classification: Electrically conductive ESD/ ATEX version upon request

UL94 V2 classifications upon request

Assembly Tips



Insert screwdriver into the slot, using a lever action apply pressure to the screw-driver to release

Other Installation Methods

Vertical, hanging ≤ 131 ft (40 m)
Vertical, standing ≤ 9.84 ft (3 m)
Side-mounted, unsupp. ≤ 3.28 ft (1 m)
Rotary requires further calculation

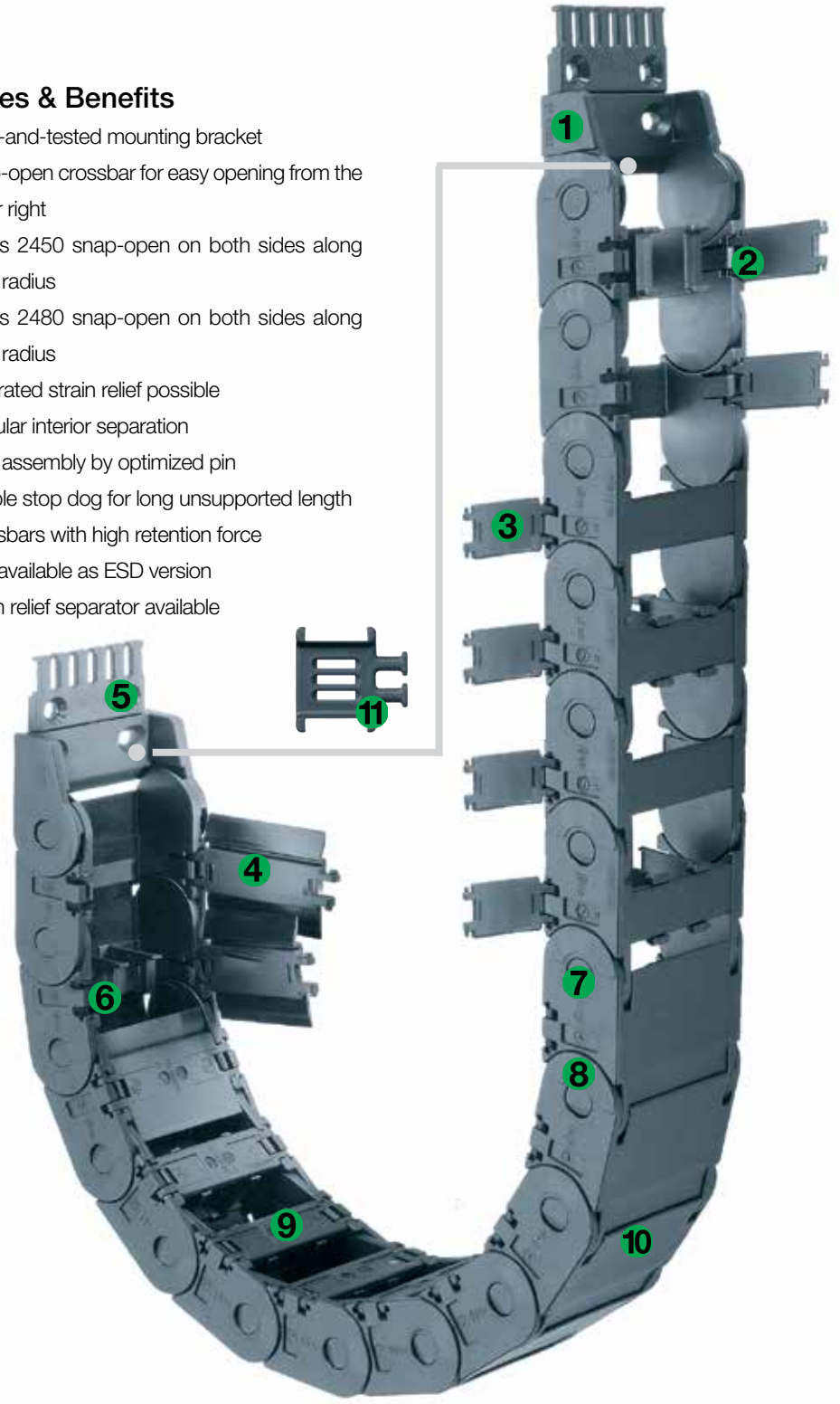
Usage Guidelines

- If snap-open accessibility along the inner or outer radius is required
- If integrated strain relief at the mounting point is required
- If modular interior separation is needed
- If long service life is required
- If easy installation is required

- If the application is very simple
  ➤ **Series E200 E-Z Chain**
- If greater stability is required
  ➤ **Series E4-21 E4-1 Series**

Features & Benefits

1. Tried-and-tested mounting bracket
2. Snap-open crossbar for easy opening from the left or right
3. Series 2450 snap-open on both sides along inner radius
4. Series 2480 snap-open on both sides along inner radius
5. Integrated strain relief possible
6. Modular interior separation
7. Easy assembly by optimized pin
8. Double stop dog for long unsupported length
9. Crossbars with high retention force
10. Also available as ESD version
11. Strain relief separator available



Order Example: Complete e-chain®

Please indicate chain length or number of links. Example:

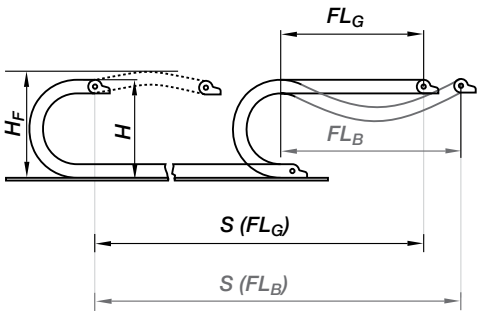
9.84 ft (3 m) **2450-10-100-0**	**e-chain®**
With 2 separators **24501** assembled every 2nd link	**Interior Separation**
1 Set **2100-34PZB**	**Mounting Bracket**

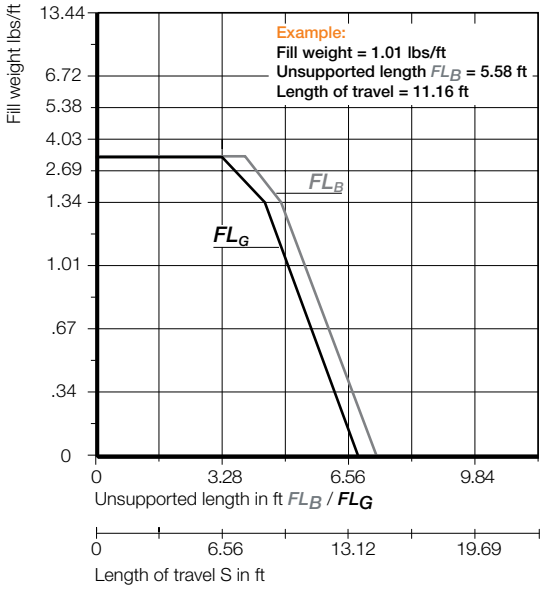
e-chain system® E2/000
Series 2450/2480 Half-Tubes and Full Tubes
Installation Dimensions

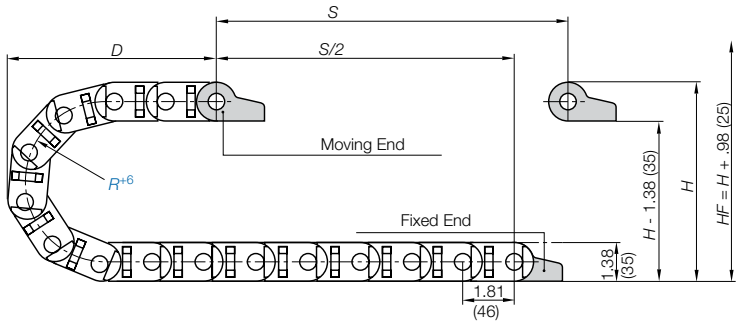
Short travel, unsupported length

- FL_B = unsupported with permitted sag
- FL_G = unsupported with straight upper run

Further information ➤ Design, Chapter 1







Pitch per link: = 1.81" (46 mm)
Links per ft (m): = 6.71 (22)
For center mount applications:
Chain length = $S/2 + K$

The required clearance height: $H_F = H + .98$ **in. (25 mm)** (with 1.01 lbs/ft (1.5 kg/m) fill weight.
Please consult igus® if space is particularly restricted.

R	2.16 (055*)	2.95 (075*)	3.94 (100)	4.92 (125)	5.91 (150)	6.89 (175)	7.87 (200)	8.86 (225)	9.84 (250)
H	5.71 (145)	7.28 (185)	9.25 (235)	11.22 (285)	13.19 (335)	15.16 (385)	17.13 (435)	19.09 (485)	21.06 (535)
D	5.59 (142)	6.38 (162)	7.36 (187)	8.35 (212)	9.33 (237)	10.31 (262)	11.30 (287)	12.28 (312)	13.27 (337)
K	10.43 (265)	12.99 (330)	16.14 (410)	19.09 (485)	22.24 (565)	25.39 (645)	28.54 (725)	31.50 (800)	34.65 (880)

*upon request
Radii 055: the e-tube is not completely enclosed. Please consult igus®

Short Travels - Unsupported

Unsupported e-chains® feature positive camber over short travels. This must be accounted for when specifying the clearance height. Please refer to **Installation dimensions** for further details.

Legend

S = Length of travel
R = Bending radius
H = Nominal clearance height
D = Overlength e-chain® radius in final position
K = $\pi \bullet R$ + *safety buffer*
H_F = Required clearance height

Speed / acceleration FL_G	max. 65.6 ft/s (20 m/s) / max. 656 ft/s² (200 m/s²)
Speed / acceleration FL_B	max. 9.84 ft/s (3 m/s) / max. 19.69 ft/s² (6 m/s²)
Gliding speed / acceleration (maximum)	max. 32.8 ft/s (10 m/s) / max. 164 ft/s² (50 m/s²)
Material - permitted temperature	igumid G / -40°F (-40°C) up to +248°F (+120° C)
Flammability Class, igumid G	VDE 0304 IIC UL94 HB

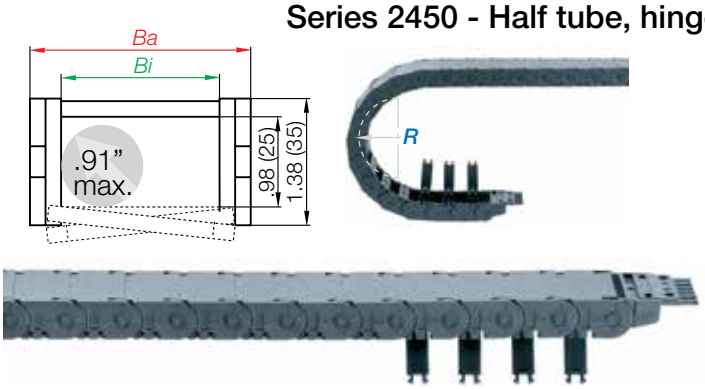
Technical Data

Details of material properties
➤ Chapter 1

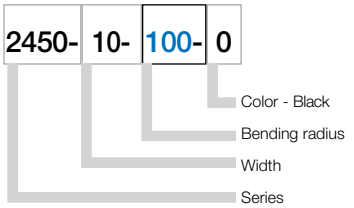
PDF: igus.com/e-chain-pdfs
Product information: igus.com/e-chains

e-chain system® E2/000
Series 2450/2480 Half-Tubes and Full Tubes

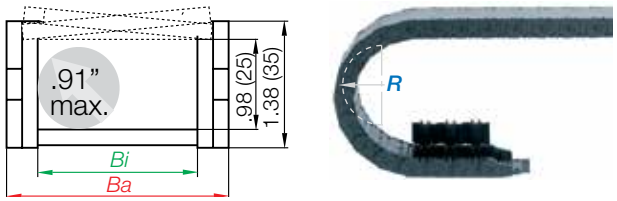
Series 2450 - Half tube, hinged, snap-open along the inner radius



Part Number Structure

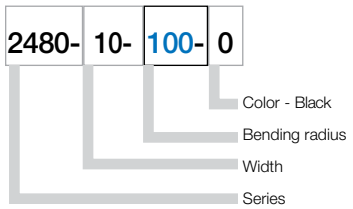


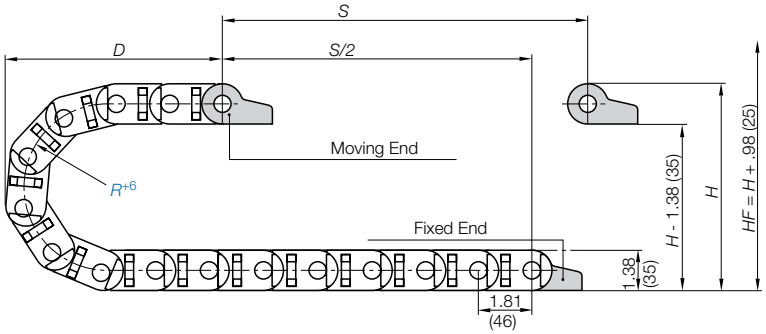
Series 2480 - Full tube, hinged, snap-open along the inner radius





Part Number Structure





Supplement part number with required radius. Example: 2480-10-100-0
Pitch: 1.81 in. (46 mm) per link links/ft(m) = 6.71 (22)

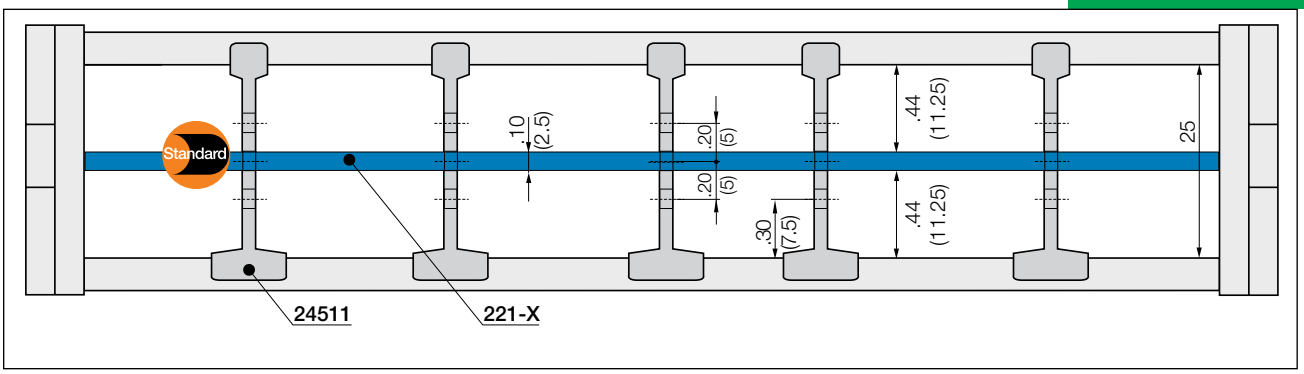
Part Number Snap-open inner radius	Part Number Snap-open inner radius	Bi in. (mm)	Ba in. (mm)	Series 2450 Weight lbs/ft (kg/m)	Series 2480 Weight lbs/ft (kg/m)
2450-02-□-0	2480-02-□-0	.98 (25)	1.61 (41)	≈ 0.54 (0.80)	≈ 0.55 (0.82)
2450-03-□-0	2480-03-□-0	1.50 (38)	2.13 (54)	≈ 0.59 (0.88)	≈ 0.62 (0.92)
2450-05-□-0	2480-05-□-0	2.24 (57)	2.87 (73)	≈ 0.66 (0.99)	≈ 0.69 (1.03)
2450-07-□-0	2480-07-□-0	3.03 (77)	3.66 (93)	≈ 0.75 (1.12)	≈ 0.79 (1.17)
2450-09-□-0	2480-09-□-0	3.50 (89)	4.13 (105)	≈ 0.81 (1.20)	≈ 0.85 (1.26)
2450-10-□-0	2480-10-□-0	4.06 (103)	4.69 (119)	≈ 0.85 (1.27)	≈ 0.90 (1.34)
2450-12-□-0	2480-12-□-0	4.92 (125)	5.55 (141)	≈ 0.91 (1.35)	≈ 0.96 (1.43)

Choose from the radii below for all of the above sizes
Radius (mm) Example: 2400-10-100-0

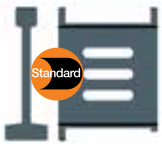
	055*	075*	100	125	150	175	200	225	250
R	2.16 (055)	2.95 (075)	3.94 (100)	4.92 (125)	5.91 (150)	6.89 (175)	7.87 (200)	8.86 (225)	9.84 (250)
H	5.71 (145)	7.28 (185)	9.25 (235)	11.22 (285)	13.19 (335)	15.16 (385)	17.13 (435)	19.09 (485)	21.06 (535)
D	5.59 (142)	6.38 (162)	7.36 (187)	8.35 (212)	9.33 (237)	10.31 (262)	11.30 (287)	12.28 (312)	13.27 (337)
K	10.43 (265)	12.99 (330)	16.14 (410)	19.09 (485)	22.24 (565)	25.39 (645)	28.54 (725)	31.50 (800)	34.65 (880)

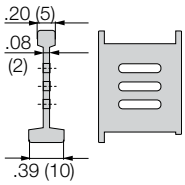
*upon request
Radii 055: the e-tube is not completely enclosed. Please consult igus®

e-chain system® E2/000
Series 2450/2480 Half-Tubes and Full Tubes
Interior Separation



In the standard configuration separators are assembled every 2nd e-chain® link





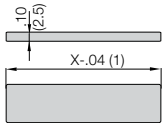
Separator, wide base

Unassembled	**Part No. 24501**
Assembled	**Part No. 24511**

- **Slotted separator 24501**
  Separator with wide base for maximum locking strength and safe standing in e-chains®.

Full-width shelves - for the standard interior separation





Separator, narrow head

Unassembled	**Part No. 220-X**
Assembled	**Part No. 221-X**

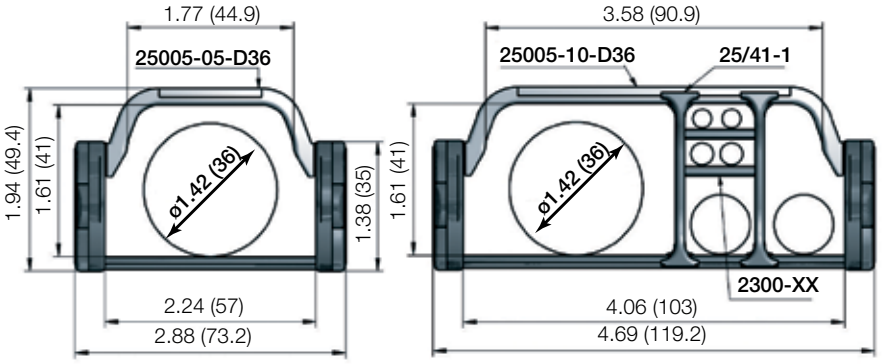
- **Full-width shelf 220-X**
  this option makes sense in applications with many thin cables with similar diameters. For a consequent subdivision. Full-width shelves can be inserted at 3 different heights in .20" (5 mm) increments

Width X in.	(mm)	Part No. Unassembled	Part No. Assembled
.98	(25)	**220-25**	**221-25**
1.50	(38)	**220-38**	**221-38**
2.24	(57)	**220-57**	**221-57**
3.03	(77)	**220-77**	**221-77**

Width X in.	(mm)	Part No. Unassembled	Part No. Assembled
3.54	(90)	**220-90**	**221-90**
4.06	(103)	**220-103**	**221-103**
4.92	(125)	**220-125**	**221-125**

PDF: igus.com/e-chain-pdfs
Product information: igus.com/e-chains

e-chain system® E2/000
Series 2450 Half-Tubes
Extender crossbars





Part Number. Extender crossbars for e-chains® that snap-open along inner radius		*Bi* in. (mm)	*Ba* in. (mm)
2450-05D36- ☐	-0	2.24 (57)	2.87 (73)
2450-10D36- ☐	-0	4.06 (103)	4.69 (119)

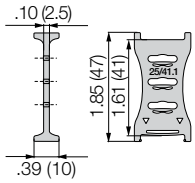
Choose from the radii below for all of the above sizes

Radius (mm) Example: 2400-10D36- 100 -0

	075	100	125	150	175	200	225	250
R	1.50 (075)	3.94 (100)	4.92 (125)	5.91 (150)	6.89 (175)	7.87 (200)	8.86 (225)	9.84 (250)

Interior separation for extender crossbars





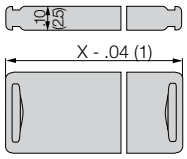
Separator, wide base

Unassembled	**Part No. 25/41.1**
Assembled	**Part No. 25/41.1.1**

- **Standard separator 25/41-1, wide base**
  For maximum locking strength and safe standing. In standard configuration separators are assembled every 2nd e-chain® link.

Lockable full-width shelves - for the standard interior separation





Full width shelf, lockable

Unassembled	**Part No. 2300-X**
Assembled	**Part No. 2310-X**

- **Full width shelf, lockable**
  is used when vertical and horizontal separation is required.

Width X in. (mm)	Part No. Unassembled	Part No. Assembled	Width X in. (mm)	Part No. Unassembled	Part No. Assembled	Width X in. (mm)	Part No. Unassembled	Part No. Assembled
0.59 (015)	**2300-15**	**2310-15**	2.36 (060)	**2300-60**	**2310-60**	3.43 (087)	**2300-87**	**2310-87**
0.98 (025)	**2300-25**	**2310-25**	2.44 (062)	**2300-62**	**2310-62**	3.54 (090)	**2300-90**	**2310-90**
1.18 (030)	**2300-30**	**2310-30**	2.56 (065)	**2300-65**	**2310-65**	3.94 (100)	**2300-100**	**2310-100**
1.50 (038)	**2300-38**	**2310-38**	2.76 (070)	**2300-70**	**2310-70**	4.06 (103)	**2300-103**	**2310-103**
1.57 (040)	**2300-40**	**2310-40**	2.95 (075)	**2300-75**	**2310-75**	4.33 (110)	**2300-110**	**2310-110**
1.97 (050)	**2300-50**	**2310-50**	3.03 (077)	**2300-77**	**2310-77**	4.72 (120)	**2300-120**	**2310-120**
2.24 (057)	**2300-57**	**2310-57**	3.15 (080)	**2300-80**	**2310-80**	4.92 (125)	**2300-125**	**2310-125**

Separator with integrated strain relief



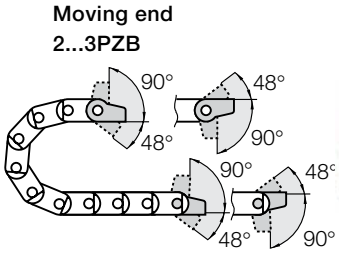
Strain relief separator Part No. 2020-ZR can be integrated into the mounting bracket and can be placed there at any point of the e-chain®. It combines strain relief and interior separation, it can be installed on the first or last e-chain® link and is easy to assemble without any screws.

For more information ➤ **Chapter 10, Strain Relief**

e-chain system® E2/000
Series 2450/2480 Half-Tubes and Full Tubes
Mounting Bracket - Plastic

Option 1: pivoting

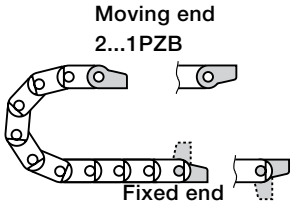
- For unsupported and gliding applications
- Well suited for tight installation conditions
- Detachable strain relief tiewrap plates
- Can be mounted on the fixed and/or moving end





Option 2: locking

- For unsupported and gliding applications
- Extreme speed and/or accelerations
- For height restricted applications
- Can be mounted on the fixed and/or moving end

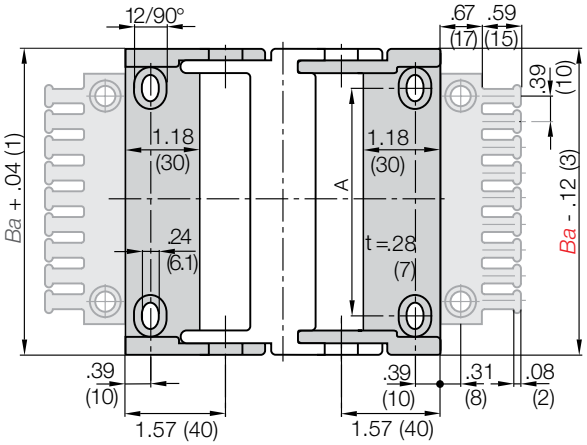




Part Number Structure

2020- | 34 | PZB | K1

- With 10 cable tiewraps
- With tiewrap plates
- Complete Set
  34 = Pivoting
  12 = Locking
- Mounting brackets for selected chain type



Full set, for both ends:

2020- 34 PZB Full set, **each part with pin/bore + tiewrap plate**

Single-part order:

2020- 3 PZB Mounting bracket **with bore + tiewrap plate**

2020- 4 PZB Mounting bracket **with pin + tiewrap plate**

Part No. Full Set (pivoting)
With Tiewrap Plates
Series 2400/2500:
2020-34PZB

Part No. Full Set (pivoting)
With Tiewrap Plates
+ 10 cable ties
Series 2400/2500:
2020-34PZBK1

For Chain Type	Part No. Full set without Tiewrap Plate	Part No. Full Set with Tiewrap Plate	Part No. Full Set with Tiewrap Plate + 10 cable ties	Dimension A in.	(mm)
2450/2480-02	2020- ☐ PZ	2020- ☐ PZB	2020- ☐ PZBK1	.47	(12)
2450/2480-03	2030- ☐ PZ	2030- ☐ PZB	2030- ☐ PZBK1	.98	(25)
2450/2480-05	2050- ☐ PZ	2050- ☐ PZB	2050- ☐ PZBK1	1.73	(44)
2450/2480-07	2070- ☐ PZ	2070- ☐ PZB	2070- ☐ PZBK1	2.52	(64)
2450/2480-09	2090- ☐ PZ	2090- ☐ PZB	2090- ☐ PZBK1	3.03	(77)
2450/2480-10	2100- ☐ PZ	2100- ☐ PZB	2100- ☐ PZBK1	3.54	(90)
2450/2480-12	2125- ☐ PZ	2125- ☐ PZB	2125- ☐ PZBK1	4.41	(112)

34 or 12

For pivoting brackets choose 34
For locking brackets choose 12
Example: 2020- 34 PZB

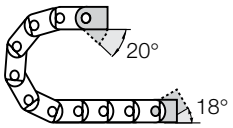
PDF: igus.com/e-chain-pdfs
Product information: igus.com/e-chains

e-chain system® E2/000
Series 2450/2480 e-chain® Half-Tubes and Full Tubes
Mounting Bracket - KMA

Option 1: pivoting

- For unsupported applications
- Bolted connection outside of chain cross section
- Confined installation conditions
- Attachment points on all sides
- Stackable

Moving end
2450 = 24501...1
2480 = 24801...1



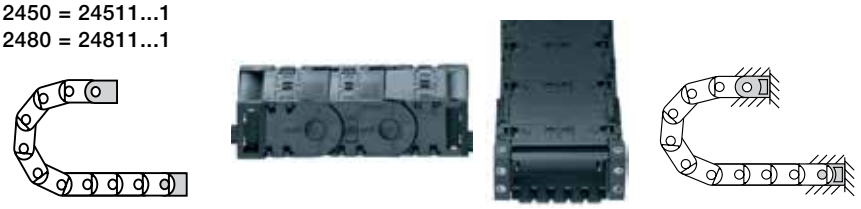


Fixed end
2450 = 24501...2
2480 = 24801...2

Option 2: locking

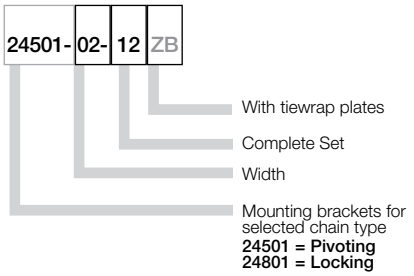
- For vertical hanging/standing applications
- Bolted connection outside of chain cross section
- For very high speeds and accelerations
- Attachment points on all sides
- Stackable

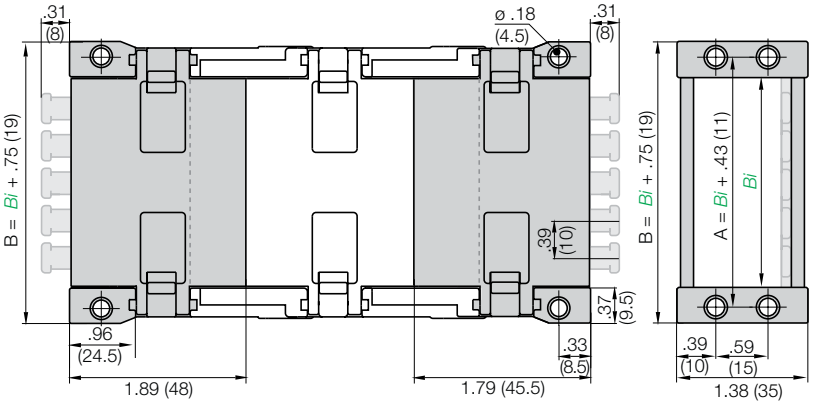
Moving end
2450 = 24511...1
2480 = 24811...1



Fixed end
2450 = 24511...2
2480 = 24811...2

Part Number Structure





Full set, for both ends:
24501- 12 ZB Full set, **each part with pin/bore + tiewrap plate**

Single-part order:
24501- 1 ZB Mounting bracket **with bore + tiewrap plate**
24501- 2 ZB Mounting bracket **with pin + tiewrap plate**

Part No. Full Set (pivoting)
With Tiewrap Plates
Series 2450:
24501-Width-12ZB

Part No. Full Set (pivoting)
Without Tiewrap Plates
Series 2450:
24501-Width-12

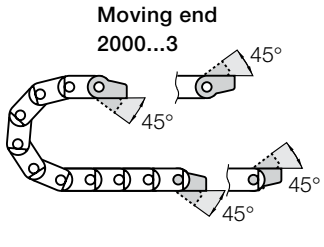
For Chain Type	Part No. Full set with Tiewrap Plate	Part No. Full Set without Tiewrap Plate	Dimension A in.	(mm)	Number of Teeth
2450/2480-02	[ ] -02-12ZB	[ ] -02-12	1.42	(36)	2
2450/2480-03	[ ] -03-12ZB	[ ] -03-12	1.93	(49)	4
2450/2480-05	[ ] -05-12ZB	[ ] -05-12	2.68	(68)	6
2450/2480-07	[ ] -07-12ZB	[ ] -07-12	3.46	(88)	7
2450/2480-09	[ ] -09-12ZB	[ ] -09-12	3.94	(100)	9
2450/2480-10	[ ] -10-12ZB	[ ] -10-12	4.49	(114)	10
2450/2480-12	[ ] -12-12ZB	[ ] -12-12	5.35	(136)	12

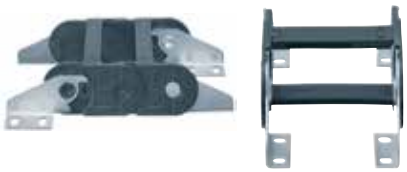
For pivoting brackets choose: 24501 or 24801
For locking brackets choose: 24511 or 24811
Example: 24501 -02-12ZB

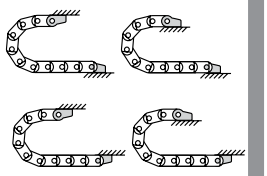
e-chain system® E2/000
Series 2450/2480 e-chain® Half-Tubes and Full Tubes
Mounting Bracket - Steel

Option 1: Steel

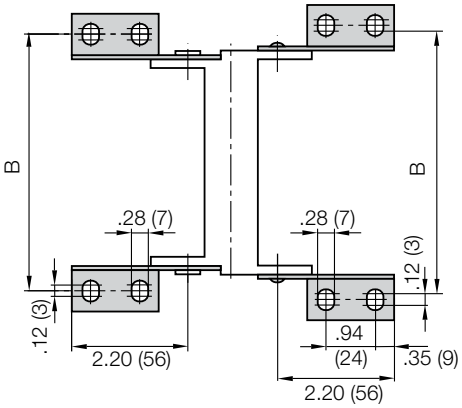
- Pivoting connections
- One part (two-piece) for all chain widths
- Electrically conductive
- Bolted connection outside of chain cross-section possible

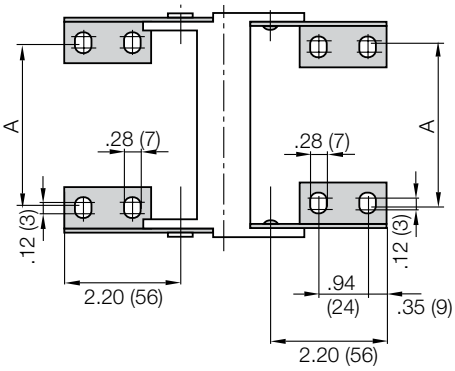






Possible installation configurations -





Chain Type	Part No. Full Set	Dimension A in.	(mm)	Dimension B in.	(mm)
2450/2480-02	**2000-32**			2.36	(60)
2450/2480-03	**2000-32**	.98	(25)	2.87	(73)
2450/2480-05	**2000-32**	1.73	(44)	3.62	(92)
2450/2480-07	**2000-32**	2.52	(64)	4.41	(112)
2450/2480-09	**2000-32**	2.99	(76)	4.88	(124)
2450/2480-10	**2000-32**	3.54	(90)	5.43	(138)
2450/2480-12	**2000-32**	4.41	(112)	6.30	(160)

Part No. Mounting Brackets Full Set
4 parts, 2 with pin, 2 with bore
Series 2450/2480:
2000-32

Part No. Mounting Bracket Moving End
2 parts, 1 left & 1 right
Series 2450/2480:
2000-3

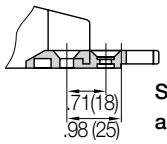
Part No. Mounting Bracket Fixed End
2 parts, 1 left & 1 right
Series 2450/2480:
2000-2

PDF: igus.com/e-chain-pdfs
Product information: igus.com/e-chains

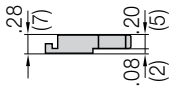
e-chain system® E2/000
Series 2450/2480 Half-Tubes and Full Tubes
Strain Relief

Tiewrap Plates





Shown assembled

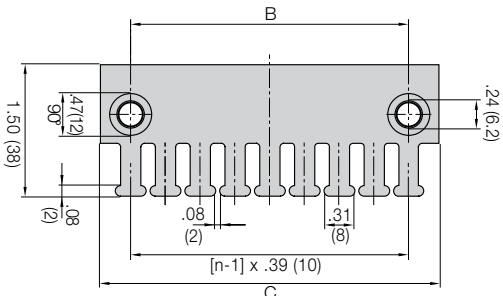


Single tiewrap plate

Option 1:
Tiewrap plates as an individual part

Available as an individual component, can be fixed onto a mounting bracket with the use of a profile rail.

Tiewrap Plates	n Number of Teeth	Dimension C	Dimension B
2020-ZB	3	1.18 (30)	.59 (15)
2030-ZB	4	1.57 (40)	.79 (20)
2040-ZB	5	1.97 (50)	1.18 (30)
2050-ZB	6	2.36 (60)	1.57 (40)
2070-ZB	8	3.15 (80)	2.36 (60)
2090-ZB	9	3.54 (90)	2.76 (70)
2100-ZB	10	3.94 (100)	3.15 (80)
2125-ZB	12	4.72 (120)	3.94 (100)



For more information please refer to strain relief section of Chapter 10



Cable tiewraps as individual parts

Cable tiewraps	Width x Length		Maximum Ø		Tensile Strength	
100 pieces/bag	in.	(mm)	in.	(mm)	lbs	(N)
CFB-001	.19 x 5.91	(4.8 x 150)	1.42	(36)	50	(222)



Strain relief for steel mounting brackets

Clip-on connection is not possible with steel mounting brackets. In this case, the tiewrap plates must be bolted directly into separate bore holes in front of the mounting bracket. Alternatively the tiewrap plates **20XX-ZB** can be also used here. **Details chapter 10**

PDF: igus.com/e-chain-pdfs
Product information: igus.com/e-chains











e-chain system® E2/000
Series 2600/2700

1.38 1.38

Price Index

Series 2600/2700

Special Features / Options

IPA Qualification Certificate, Air Cleanliness Class ISO Class 3 (at v = 2 m/s) upon request

ESD classification: Electrically conductive ESD/ ATEX version upon request

UL94 V2 classifications upon request

Assembly Tips



Snap-open mechanism, choice of snap-open on left or right. Hinged crossbar can be swiveled by more than 180° on both sides. Lightning-fast closing by hand. Secure fit without additional locking devices.

Other Installation Methods

Vertical, hanging ≤ 164 ft (50 m)
Vertical, standing ≤ 9.84 ft (3 m)
Side-mounted, unsupp. ≤ 3.28 ft (1 m)
Rotary requires further calculation

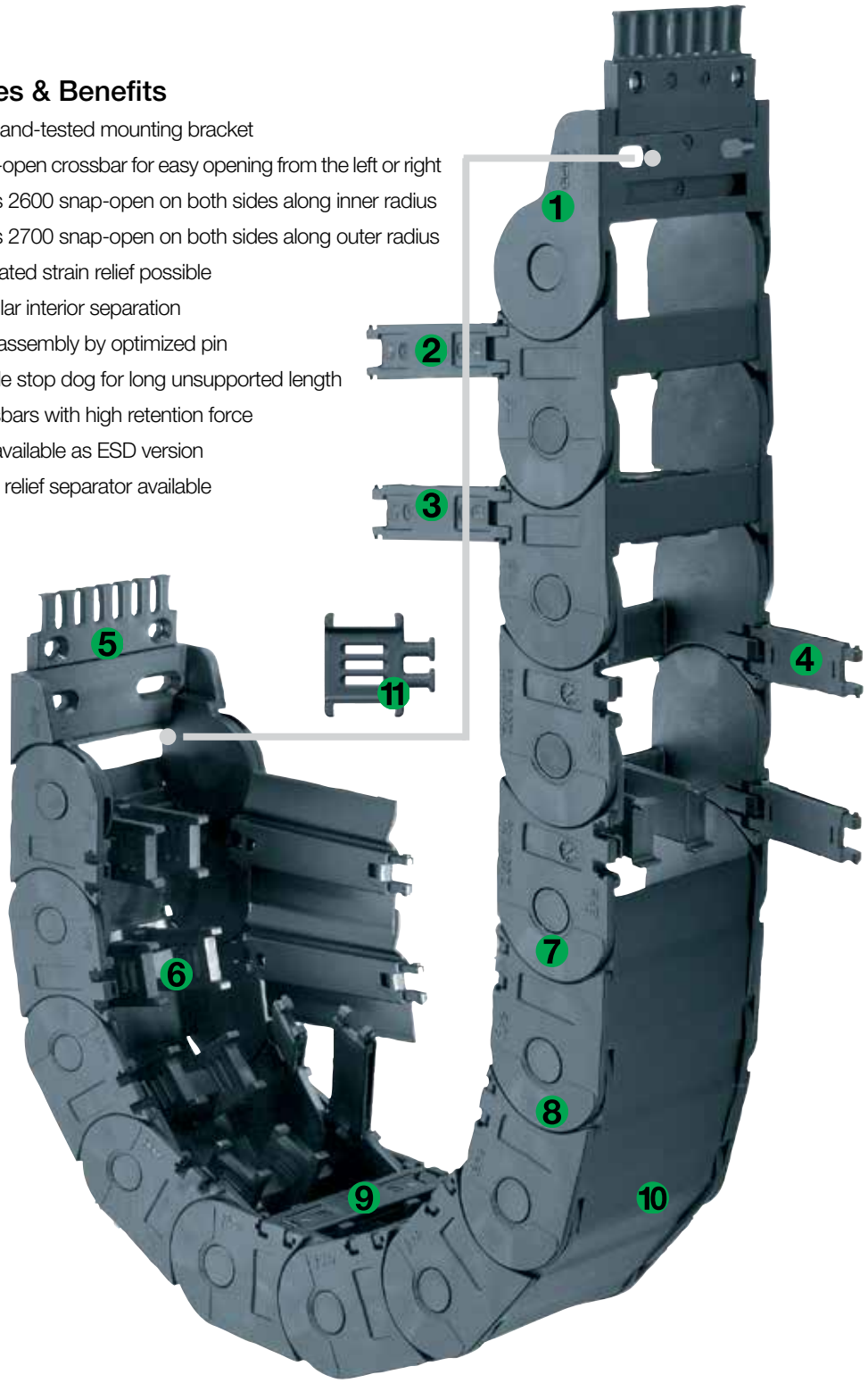
Usage Guidelines

- If snap-open accessibility along the inner or outer radius is required
- If integrated strain relief at the mounting point is required
- If modular interior separation is needed
- If long service life is required
- If easy installation is required

- If the application is very simple
  ➤ **Series E26 E-Z Chain**
- If greater stability is required
  ➤ **Series E4-32 E4-1 Series**

Features & Benefits

1. Tried-and-tested mounting bracket
2. Snap-open crossbar for easy opening from the left or right
3. Series 2600 snap-open on both sides along inner radius
4. Series 2700 snap-open on both sides along outer radius
5. Integrated strain relief possible
6. Modular interior separation
7. Easy assembly by optimized pin
8. Double stop dog for long unsupported length
9. Crossbars with high retention force
10. Also available as ESD version
11. Strain relief separator available



Order Example: Complete e-chain®

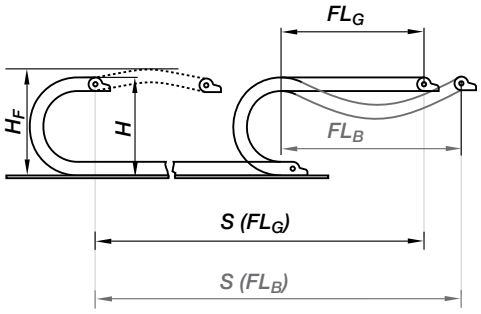
Please indicate chain length or number of links. Example:

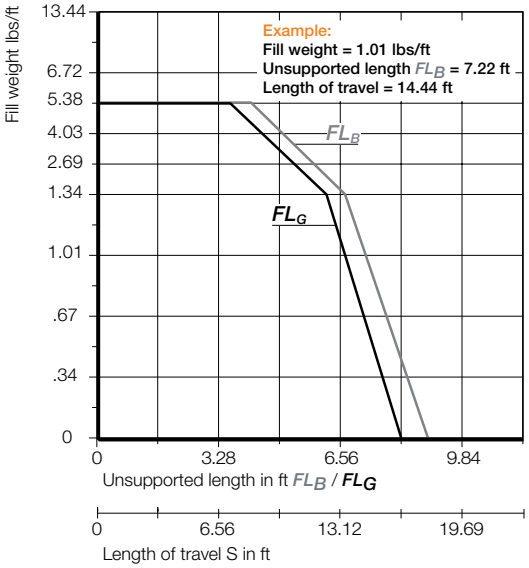
9.84 ft (3 m) **2700-10-100-0**	**e-chain®**
With 2 separators **35.1** assembled every 2nd link	**Interior Separation**
1 Set **2610-34PZB**	**Mounting Bracket**

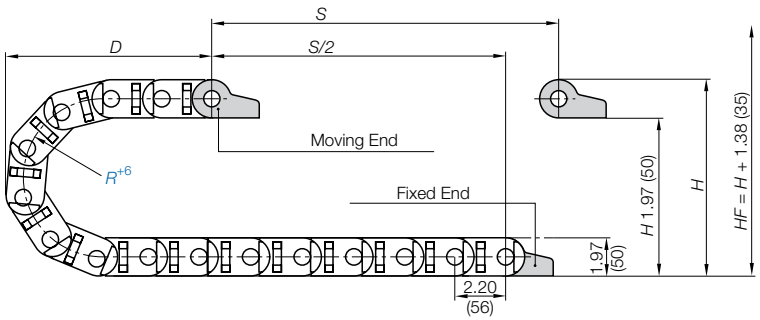
e-chain system® E2/000
Series 2600/2700
Installation Dimensions

Short travel, unsupported length

● FL_B = unsupported with permitted sag
● FL_G = unsupported with straight upper run
Further information ➤ Design, Chapter 1







Pitch per link: = 2.20" (56 mm)
Links per ft (m): = 5.49 (18)
For center mount applications:
Chain length = $^{S}/_{2}$ + K

The required clearance height: $H_F = H$ + **1.38 in. (35 mm)** (with 1.34 lbs/ft (2.0 kg/m) fill weight.
Please consult igus® if space is particularly restricted.

R	2.48 (063)	2.95 (075)	3.94 (100)	4.92 (125)	5.91 (150)	6.89 (175)	7.87 (200)	9.84 (250)
H	6.93 (176)	7.87 (200)	9.84 (250)	11.81 (300)	13.78 (350)	15.75 (400)	17.72 (450)	21.65 (550)
D	6.77 (172)	7.24 (184)	8.23 (209)	9.21 (234)	10.20 (259)	11.18 (284)	12.17 (309)	14.13 (359)
K	12.20 (310)	13.78 (350)	16.93 (430)	19.88 (505)	23.03 (585)	26.18 (665)	29.33 (745)	35.43 (900)

Short Travels - Unsupported

Unsupported e-chains® feature positive camber over short travels. This must be accounted for when specifying the clearance height. Please refer to **Installation dimensions** for further details.

Legend

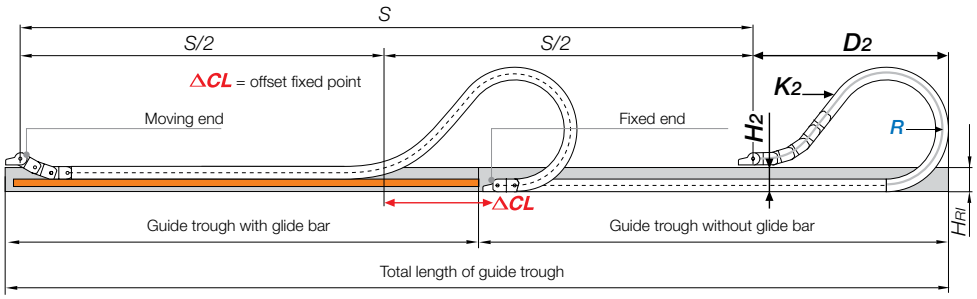
S = Length of travel
R = Bending radius
H = Nominal clearance height
D = Overlength e-chain® radius in final position
K = $\pi \bullet R$ + *safety buffer*
H_F = Required clearance height
H_{RI} = Trough inner height
H_2 = *Mounting height
D_2 = Overlength - long travels, gliding
K_2 = *Add-on

*If the mounting bracket location is set lower

For long travels with lowered mounting height

Long travel lengths from 32.8 ft. (10 m) to max. 394 ft. (120 m)
For long travels, igus® specifies Series 2700 that snap open on the outer radius.

For center mount applications:
Chain length: = $^{S}/_{2} + K_2$



R	2.48 (063)	2.95 (075)	3.94 (100)	4.92 (125)	5.91 (150)	6.89 (175)	7.87 (200)	9.84 (250)
H_2	5.12 (130)	5.91 (150)	6.54 (166)	6.54 (166)	6.54 (166)	6.54 (166)	6.54 (166)	6.54 (166)
D_2^{+25}	5.51 (140)	5.91 (150)	13.78 (350)	18.70 (475)	19.69 (500)	25.79 (655)	30.31 (770)	37.40 (950)
K_2	13.19 (335)	14.76 (375)	24.25 (616)	30.87 (784)	35.28 (896)	44.09 (1120)	50.71 (1288)	63.94 (1624)
ΔCL	–	–	5.67 (144)	9.61 (244)	9.61 (244)	14.72 (374)	18.27 (464)	23.39 (594)

Long Travels - Gliding

If the unsupported length is exceeded, the e-chain® must glide on itself. This requires a guide trough.
Design, Chapter 1

Speed / acceleration FL_G	max. 65.6 ft/s (20 m/s) / max. 656 ft/s² (200 m/s²)
Speed / acceleration FL_B	max. 9.84 ft/s (3 m/s) / max. 19.69 ft/s² (6 m/s²)
Gliding speed / acceleration (maximum)	max. 32.8 ft/s (10 m/s) / max. 164 ft/s² (50 m/s²)
Material - permitted temperature	igumid G / -40°F (-40°C) up to +248°F (+120° C)
Flammability Class, igumid G	VDE 0304 IIC UL94 HB

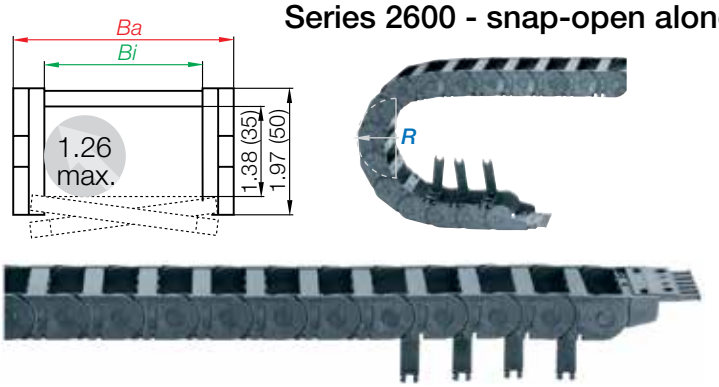
Technical Data

Details of material properties
➤ Chapter 1

PDF: igus.com/e-chain-pdfs
Product information: igus.com/e-chains

e-chain system® E2/000
Series 2600/2700

Series 2600 - snap-open along the inner radius

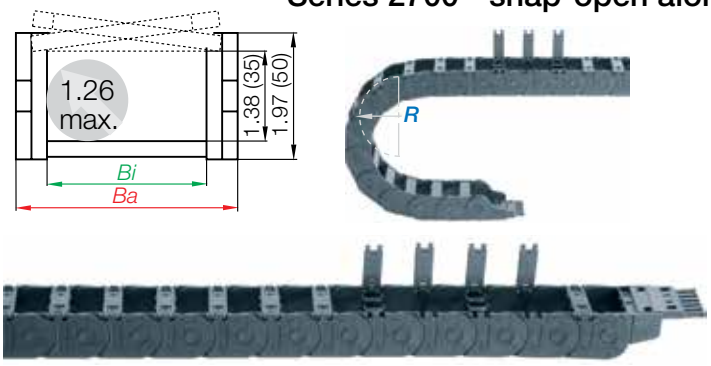


Part Number Structure

2600- 10- 100- 0

- Color - Black
- Bending radius
- Width
- Series

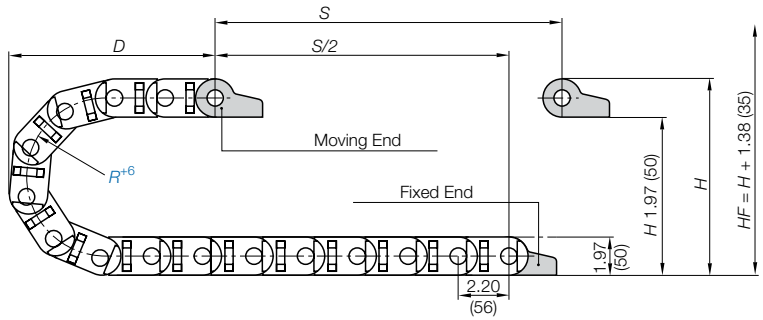
Series 2700 - snap-open along the outer radius



Part Number Structure

2700- 10- 100- 0

- Color - Black
- Bending radius
- Width
- Series



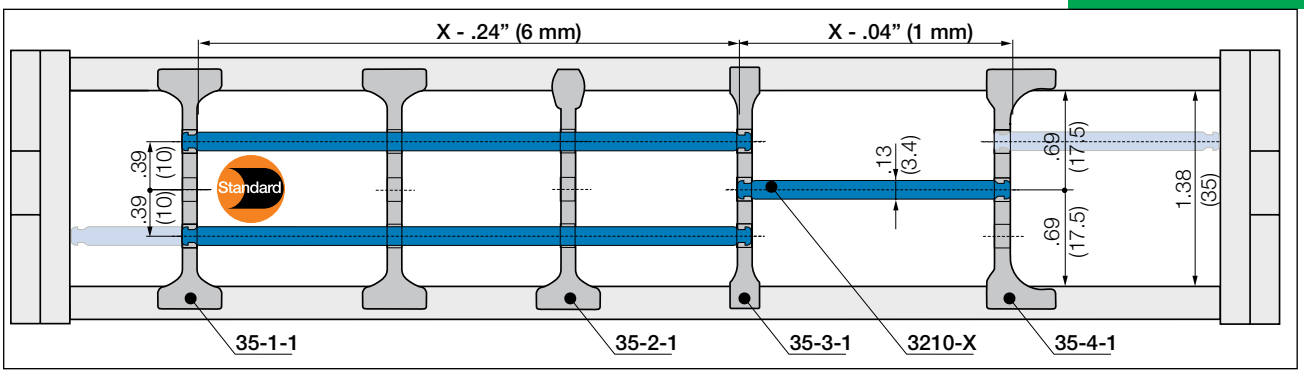
Supplement part number with required radius. Example: 2600-10-100-0
Pitch: 2.20 in. (56 mm) per link links/ft(m) = 5.49 (18)

Part Number. Snap-open inner radius	Part Number. Snap-open outer radius	Bi in. (mm)	Ba in. (mm)	Weight lbs/ft (kg/m)
2600-05-□-0	2700-05-□-0	1.97 (50)	2.60 (66)	≈ 0.79 (1.17)
2600-06-□-0	2700-06-□-0	2.56 (65)	3.19 (81)	≈ 0.83 (1.24)
2600-07-□-0	2700-07-□-0	2.95 (75)	3.58 (91)	≈ 0.87 (1.30)
2600-09-□-0	2700-09-□-0	3.54 (90)	4.17 (106)	≈ 0.92 (1.37)
2600-10-□-0	2700-10-□-0	3.94 (100)	4.57 (116)	≈ 0.93 (1.39)
2600-12-□-0	2700-12-□-0	4.92 (125)	5.55 (141)	≈ 0.99 (1.48)
2600-15-□-0	2700-15-□-0	5.91 (150)	6.53 (166)	≈ 1.09 (1.62)
2600-17-□-0	2700-17-□-0	6.89 (175)	7.64 (194)	≈ 1.24 (1.85)

Choose from the radii below for all of the above sizes
Radius (mm) Example: 2400-10-100-0

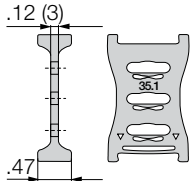
	063	075	100	125	150	175	200	250
R	2.48 (063)	2.95 (075)	3.94 (100)	4.92 (125)	5.91 (150)	6.89 (175)	7.87 (200)	9.84 (250)
H	6.93 (176)	7.87 (200)	9.84 (250)	11.81 (300)	13.78 (350)	15.75 (400)	17.72 (450)	21.65 (550)
D	6.77 (172)	7.24 (184)	8.23 (209)	9.21 (234)	10.20 (259)	11.18 (284)	12.17 (309)	14.13 (359)
K	12.20 (310)	13.78 (350)	16.93 (430)	19.88 (505)	23.03 (585)	26.18 (665)	29.33 (745)	35.43 (900)

e-chain system® E2/000
Series 2600/2700
Interior Separation



In the standard configuration separators are assembled every 2nd e-chain® link



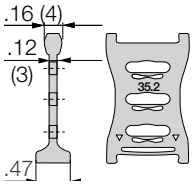


Separator, wide base

Unassembled	**Part No. 35.1**
Assembled	**Part No. 35.1.1**

- **Standard separator 35.1 for all applications**
  Separator with wide base for maximum locking strength and safe standing in e-chains®.



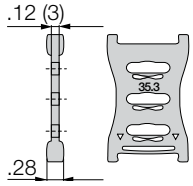


Separator, narrow head

Unassembled	**Part No. 35.2**
Assembled	**Part No. 35.2.1**

- **Separator 35.2 For even faster installation**
  is used when vertical and horizontal separation is required. Due to its slot, it allows basic vertical/horizontal shelving arrangements.



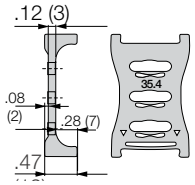


Separator, narrow base

Unassembled	**Part No. 35.3**
Assembled	**Part No. 35.3.1**

- **Separator 35.3 For many thin cables**
  is used when vertical and horizontal separation is required. Due to its slot, it allows basic vertical/horizontal shelving arrangements.





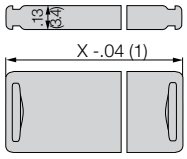
Separator, asymmetrical

Unassembled	**Part No. 35.4**
Assembled	**Part No. 35.4.1**

- **Separator 35.4 For side mounted applications**
  is used when vertical and horizontal separation is required. Due to its slot, it allows basic vertical/horizontal shelving arrangements.

Lockable full-width shelves - for the standard interior separation





Full width shelf, lockable

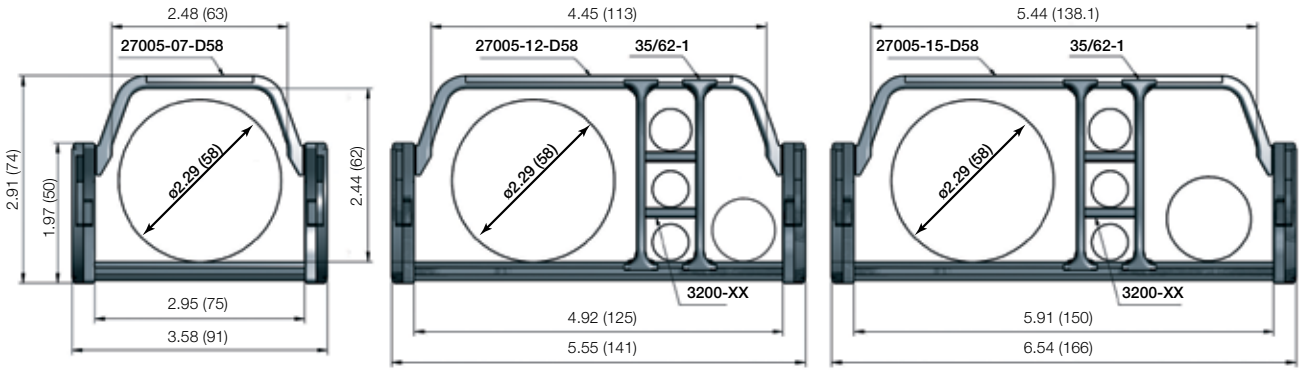
Unassembled	**Part No. 3200-X**
Assembled	**Part No. 3210-X**

- **Full width shelf, lockable**
  is used when vertical and horizontal separation is required. .

Width X in. (mm)	Part No. Unassembled	Part No. Assembled	Width X in. (mm)	Part No. Unassembled	Part No. Assembled
1.97 (050)	**3200-50**	**3210-50**	5.91 (150)	**3200-150**	**3210-150**
2.95 (075)	**3200-75**	**3210-75**	6.89 (175)	**3200-175**	**3210-175**
3.94 (100)	**3200-100**	**3210-100**	7.87 (200)	**3200-200**	**3210-200**
4.53 (115)	**3200-115**	**3210-115**	8.86 (225)	**3200-225**	**3210-225**
4.92 (125)	**3200-125**	**3210-125**	9.84 (250)	**3200-250**	**3210-250**

PDF: igus.com/e-chain-pdfs
Product information: igus.com/e-chains

e-chain system® E2/000
Series 2600/2700
Extender crossbars



Part Number.

Extender crossbars for e-chains® that snap-open along **inner** radius	Extender crossbars for e-chains® that snap-open along **outer** radius	*Bi* in. (mm)	*Ba* in. (mm)
2600-07D58- ☐ -0	2700-07D58- ☐ -0	2.95 (75)	3.58 (91)
2600-12D58- ☐ -0	2700-12D58- ☐ -0	4.92 (125)	5.55 (141)
2600-15D58- ☐ -0	2700-15D58- ☐ -0	5.91 (150)	6.54 (166)

Choose from the radii below for all of the above sizes

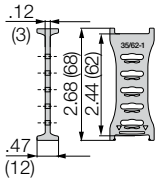
Radius (mm) Example: 2700-10D58- 100 -0

	063*	075*	100	125	150	175	200	250
R	2.48 (063)	2.95 (075)	3.94 (100)	4.92 (125)	5.91 (150)	6.89 (175)	7.87 (200)	9.84 (250)

*Radius 063 and 075 only available for 2700 series

Interior separation for extender crossbars





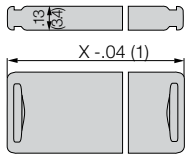
Separator, wide base

Unassembled	**Part No. 35/62-1**
Assembled	**Part No. 35/62-1-1**

- **Standard separator 35/62-1, wide base**
  For maximum locking strength and safe standing. In standard configuration separators are assembled every 2nd e-chain® link.

Lockable full-width shelves - for the standard interior separation





Full width shelf, lockable

Unassembled	**Part No. 3200-X**
Assembled	**Part No. 3210-X**

- **Full width shelf, lockable**
  is used when vertical and horizontal separation is required. Due to its slot, it allows basic vertical/horizontal shelving arrangements.

Width X in. (mm)	Part No. Unassembled	Part No. Assembled	Width X in. (mm)	Part No. Unassembled	Part No. Assembled
1.97 (050)	**3200-50**	**3210-50**	5.91 (150)	**3200-150**	**3210-150**
2.95 (075)	**3200-75**	**3210-75**	6.89 (175)	**3200-175**	**3210-175**
3.94 (100)	**3200-100**	**3210-100**	7.87 (200)	**3200-200**	**3210-200**
4.53 (115)	**3200-115**	**3210-115**	8.86 (225)	**3200-225**	**3210-225**
4.92 (125)	**3200-125**	**3210-125**	9.84 (250)	**3200-250**	**3210-250**

Separator with integrated strain relief



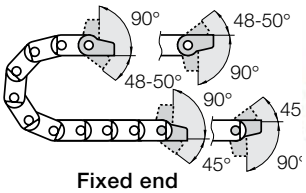
Strain relief separator Part No. 262-Z can be integrated into the mounting bracket and can be placed there at any point of the e-chain®. It combines strain relief and interior separation, it can be installed on the first or last e-chain® link and is easy to assemble without any screws.
For more information ➤ **Chapter 10, Strain Relief**

e-chain system® E2/000
Series 2600/2700
Mounting Bracket - Plastic

Option 1: pivoting

- For unsupported and gliding applications
- Well suited for tight installation conditions
- Detachable strain relief tiewrap plates
- Can be mounted on the fixed and/or moving end

Moving end
26...3PZB



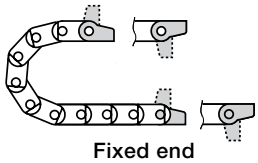
Fixed end
26...4PZB



Option 2: locking

- For unsupported and gliding applications
- Extreme speed and/or accelerations
- For height restricted applications
- Can be mounted on the fixed and/or moving end

Moving end
26...1PZB



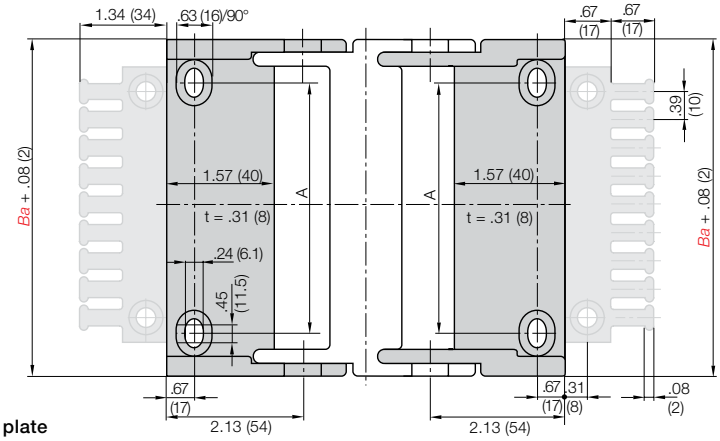
Fixed end
26...2PZB



Part Number Structure

2605- | 34 | PZB | K1

- K1 = With 10 cable tiewraps
- PZB = With tiewrap plates
- 34 = Complete Set (34 = Pivoting, 12 = Locking)
- 2605- = Mounting brackets for selected chain type



Full set, for both ends:
2605- | 34 | PZB | Full set, **each part with pin/bore + tiewrap plate**

Single-part order:
2605- | 3 | PZB | Mounting bracket **with bore + tiewrap plate**
2605- | 4 | PZB | Mounting bracket **with pin + tiewrap plate**

Part No. Full Set (pivoting)
With Tiewrap Plates
Series 2600:
2605-34PZB

Part No. Full Set (pivoting)
With Tiewrap Plates + 10 cable ties
Series 2600:
2605-34PZBK1

For Chain Type	Part No. Full Set without Tiewrap Plate	Part No. Full Set with Tiewrap Plate	Part No. Full Set with Tiewrap Plate + 10 cable ties	Dimension A in.	(mm)	Number of Teeth
2600/2700-05	2605- [ ] PZ	2605- [ ] PZB	2605- [ ] PZBK1	1.18	(30)	5
2600/2700-06	2606- [ ] PZ	2606- [ ] PZB	2606- [ ] PZBK1	1.77	(45)	5
2600/2700-07	2607- [ ] PZ	2607- [ ] PZB	2607- [ ] PZBK1	2.17	(55)	7
2600/2700-09	2609- [ ] PZ	2609- [ ] PZB	2609- [ ] PZBK1	2.76	(70)	9
2600/2700-10	2610- [ ] PZ	2610- [ ] PZB	2610- [ ] PZBK1	3.15	(80)	10
2600/2700-12	2612- [ ] PZ	2612- [ ] PZB	2612- [ ] PZBK1	4.13	(105)	12
2600/2700-15	2615- [ ] PZ	2615- [ ] PZB	2615- [ ] PZBK1	5.12	(130)	15
2600/2700-17	2617- [ ] PZ	2617- [ ] PZB	2617- [ ] PZBK1	6.10	(155)	17

[ ] = 34 or 12

For pivoting brackets choose 34
For locking brackets choose 12
Example: 2605- 34 PZB

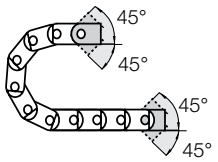
PDF: igus.com/e-chain-pdfs
Product information: igus.com/e-chains

e-chain system® E2/000
Series 2600/2700
Mounting Bracket - KMA

Option 1: pivoting

- For unsupported applications
- Bolted connection outside of chain cross section
- Confined installation conditions
- Attachment points on all sides
- Stackable

Moving end
26001...1



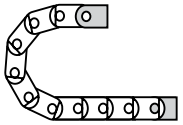
Fixed end
26001...2



Option 2: locking

- For vertical hanging/standing applications
- Bolted connection outside of chain cross section
- For very high speeds and accelerations
- Attachment points on all sides
- Stackable

Moving end
26101...1



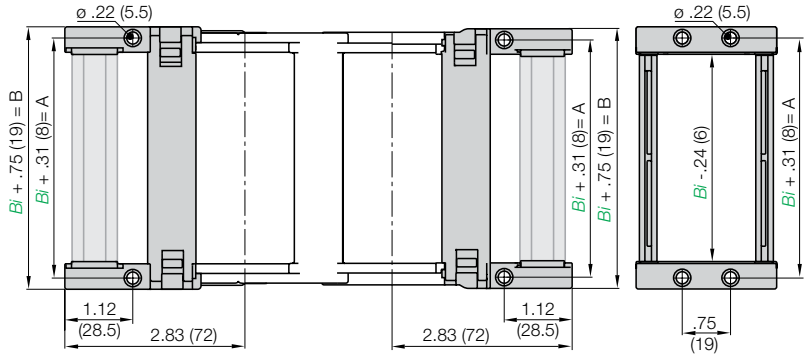
Fixed end
26101...2



Part Number Structure

26001-	10-	12	P

- P: With profile rail
- 12: Complete Set
- 10: Width
- 26001: Mounting brackets for selected chain type
  26001 = Pivoting
  26101 = Locking



Full set, for both ends:

26001- 12 P Full set, **each part with pin/bore + profile rail**

Single-part order:

26001- 1 P Mounting bracket **with bore + profile rail**

26001- 2 P Mounting bracket **with pin + profile rail**

Part No. Full Set (pivoting)
With Profile Rail
Series 2600/2700:
26001-Width-12P

Part No. Full Set (pivoting)
Without Profile Rail
Series 2600/2700:
26001-Width-12

For Chain Type	Part No. Full set with Profile Rail	Part No. Full Set without Profile Rail	Dimension A in.	Dimension A (mm)	Dimension B in.	Dimension B (mm)
2600/2700-05	[ ] -05-12P	[ ] -05-12	2.28	(58)	2.72	(69)
2600/2700-06	[ ] -06-12P	[ ] -06-12	2.87	(73)	3.31	(84)
2600/2700-07	[ ] -07-12P	[ ] -07-12	3.27	(83)	3.70	(94)
2600/2700-09	[ ] -09-12P	[ ] -09-12	3.86	(98)	4.29	(109)
2600/2700-10	[ ] -10-12P	[ ] -10-12	4.25	(108)	4.69	(119)
2600/2700-12	[ ] -12-12P	[ ] -12-12	5.24	(133)	5.67	(144)
2600/2700-15	[ ] -15-12P	[ ] -15-12	6.22	(158)	6.65	(169)
2600/2700-17	[ ] -17-12P	[ ] -17-12	7.20	(183)	7.64	(194)

[26001] or [26101]

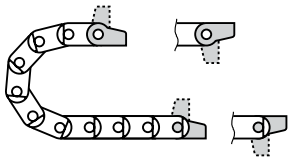
For pivoting brackets choose [26001]
For locking brackets choose [26101]
Example: [26001] -10-12P

e-chain system® E2/000
Series 2600/2700
Mounting Bracket - Steel

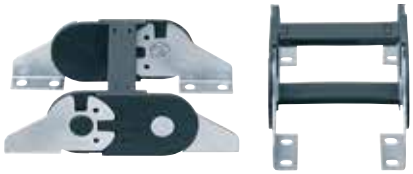
Option 1: Steel

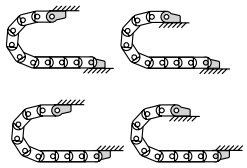
- One part (two-piece) for all chain widths
- Electrically conductive
- Bolted connection outside of chain cross-section possible

Moving end
260...1



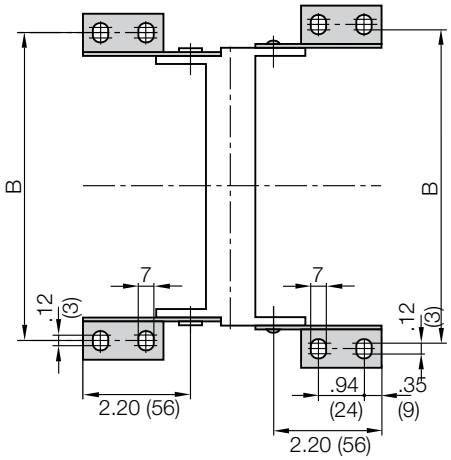
Fixed end
260...2



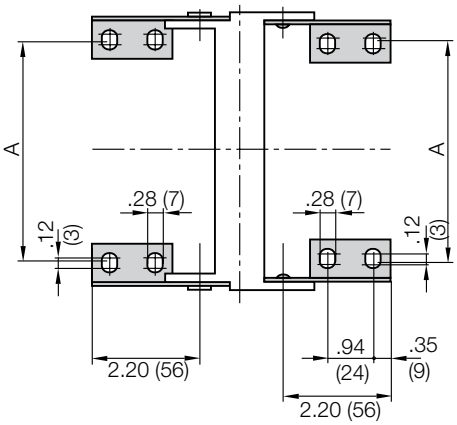


Possible installation configurations -

260-1 260-2*



260-1 260-2



*pivoting with no stop, (360°)

Chain Type	Part No. Full Set	Dimension A in.	(mm)	Dimension B in.	(mm)
2600/2700-05	**260-12**	1.46	(37)	3.27	(83)
2600/2700-07	**260-12**	2.44	(62)	4.25	(108)
2600/2700-10	**260-12**	3.43	(87)	5.24	(133)
2600/2700-12	**260-12**	4.41	(112)	6.22	(158)

Part No. Mounting Brackets Full Set
4 parts, 2 with pin, 2 with bore
Series 2680:
260-12

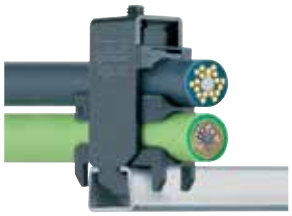
Part No. Mounting Bracket Moving End
2 parts, 1 left & 1 right
Series 2680:
260-1

Part No. Mounting Bracket Fixed End
2 parts, 1 left & 1 right
Series 2680:
260-2

PDF: igus.com/e-chain-pdfs
Product information: igus.com/e-chains

e-chain system® E2/000
Series 2600/2700
Mounting Bracket - KMA

Chainfix clamps for the profile rail



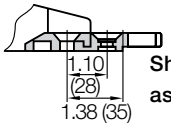
igus® Chainfix strain relief elements are available in either steel or stainless steel. They can be adjusted with a hexagon socket and are available in single, double and triple configurations.

Part No. Single Clamp		Part No. Double Clamp		Part No. Triple Clamp		Cable ø	
Steel	Stainless	Steel	Stainless	Steel	Stainless	in.	(mm)
CFX12-1	CFX12-1E	CFX12-2	CFX12-2E	CFX12-3	–	.24 - .47	(06 - 12)
CFX14-1	CFX14-1E	CFX14-2	CFX14-2E	CFX14-3	–	.47 - .55	(12 - 14)
CFX16-1	CFX16-1E	CFX16-2	CFX16-2E	CFX16-3	–	.55 - .63	(14 - 16)
CFX18-1	CFX18-1E	CFX18-2	CFX18-2E	CFX18-3	–	.63 - .71	(16 - 18)
CFX20-1	CFX20-1E	CFX20-2	CFX20-2E	CFX20-3	–	.71 - .79	(18 - 20)
CFX22-1	CFX22-1E	CFX22-2	CFX22-2E	CFX22-3	–	.79 - .87	(20 - 22)
CFX26-1	CFX26-1E	CFX26-2	CFX26-2E	–	–	.87 - 1.02	(22 - 26)
CFX30-1	CFX30-1E	CFX30-2	CFX30-2E	–	–	1.02 - 1.18	(26 - 30)
CFX34-1	CFX34-1E	CFX34-2	CFX34-2E	–	–	1.18 - 1.34	(30 - 34)
CFX38-1	CFX38-1E	–	–	–	–	1.34 - 1.50	(34 - 38)
CFX42-1	CFX42-1E	–	–	–	–	1.50 - 1.65	(38 - 42)

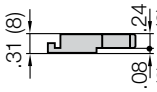
For more information please refer to strain relief section of Chapter 10

Tiewrap Plates





Shown assembled

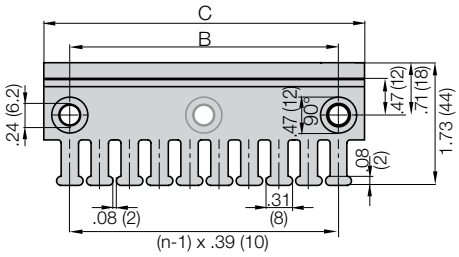


Single tiewrap plate

Option 1:
Tiewrap plates as an individual part

Available as an individual component, can be fixed onto a mounting bracket with the use of a profile rail.

Tiewrap Plate	n Number of Teeth	C Overall Width in. (mm)	B Bore Width in. (mm)	Center Bore
3050-ZB	5	1.97 (50)	1.18 (30)	no
3075-ZB	7	2.95 (75)	2.16 (55)	no
3100-ZB	10	3.94 (100)	3.15 (80)	no
3115-ZB	11	4.53 (115)	3.74 (95)	no
3125-ZB	12	4.92 (125)	4.13 (105)	no
3150-ZB	15	5.91 (150)	5.12 (130)	no
3175-ZB	17	6.89 (175)	6.10 (155)	no
3200-ZB	20	7.87 (200)	7.09 (180)	yes
3225-ZB	22	8.86 (225)	8.07 (205)	yes
3250-ZB	25	9.84 (250)	9.06 (230)	yes



For more information please refer to strain relief section of Chapter 10



Option 2:
Clip-on Tiewrap plates

Available as a clip-on tiewrap plate without the use of bolts They are inserted and removed with a screwdriver used as a lever. Clip-on tiewrap plates are also available as an attachment to the opening crossbars.

Part No.	Number of Teeth	Width of Strain Relief in.	(mm)
3050-ZC	5	1.97	(50)
3075-ZC	7	2.95	(75)

For more information please refer to strain relief section of Chapter 10



Strain relief for steel mounting brackets

Clip-on connection is not possible with steel mounting brackets. In this case, the tiewrap plates must be bolted directly into separate bore holes in front of the mounting bracket. Alternatively the tiewrap plates **30XX-Z and ZS** can be also used here. **Details chapter 10**

e-chain system® E2/000
Series 2600/2700
Strain Relief

Guide troughs are used with applications where the upper run of the e-chain® glides on the lower run. If using igus® steel guide troughs, the following components are required:

- Full travel length of guide trough
  Part Number 95-30
- 1/2 travel length of glide bars
  Part number 92-01
- Installation sets as end connectors
  Part Number 95-50-XX

-XX indicates the length of the profile rail on which the guide trough is mounted. The values and part numbers are specified in the table on the left. The standard length of the trough components and glide bars is 6.56 ft (2 m.) The required overall length of the guide trough directly correlates to the length of travel.

Example:
Length of travel 164 ft (50 m)
Center mounted
Required guide troughs:
164 ft (50 m) guide trough
82 ft (25 m) glide bar



= 25 sections of 6.56 ft (2 m) guide trough

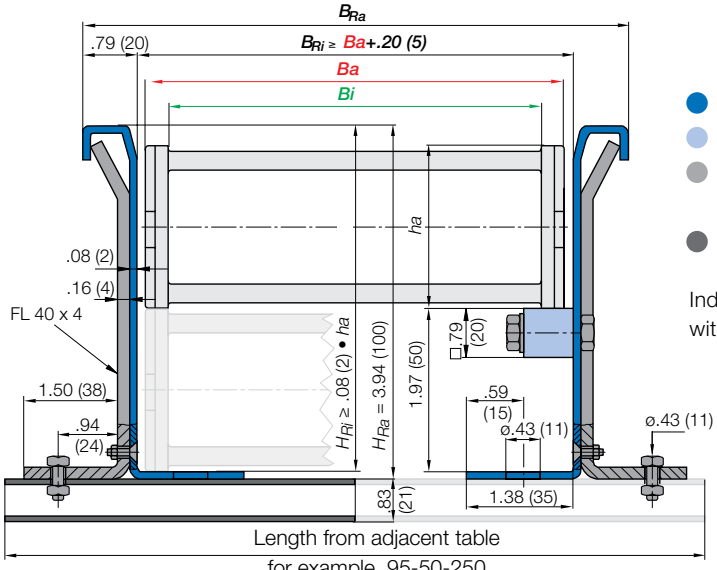
Part No. 95-30



= 13 sections of 6.56 ft (2 m) glide bar

Part No. 92-01

Required number of installation sets:
= Number of guide trough components + 1
= 25 + 1 = 26
Part number of the installation sets
Example: 95-50-400 for 15.75" (400 mm) long profile rail.



- Guide trough
- Glide bars
- Installation set "Basic"
- Profile rail

Individual attachment without profile rail

Width of Crossbar
2700-**05**-200-0

	B_{Ri}	Installation Part No.
-05	2.80 (71)	95-50-200
-06	3.38 (86)	95-50-200
-07	3.78 (96)	95-50-225
-09	4.37 (111)	95-50-225
-10	4.76 (121)	95-50-250
-12	5.75 (146)	95-50-275
-15	6.73 (171)	95-50-300
-17	7.83 (199)	95-50-325

Standard length profile rail

* Specialized guide trough available upon request

PDF: igus.com/e-chain-pdfs
Product information: igus.com/e-chains

e-chain system® E2/000
Series 2650/2680 e-chain®
Half-Tubes and Full Tubes

1.38 1.38

Price Index

Series 2650/2680

Special Features / Options

IPA Qualification Certificate, Air Cleanliness Class ISO Class 3 (at v = 2 m/s) upon request

ESD classification: Electrically conductive ESD/ ATEX version upon request

UL94 V2 classifications upon request

Assembly Tips



Insert screwdriver into the slot, using a lever action apply pressure to the screw-driver to release

Other Installation Methods

Vertical, hanging ≤ 164 ft (50 m)
Vertical, standing ≤ 9.84 ft (3 m)
Side-mounted, unsupp. ≤ 3.28 ft (1 m)
Rotary requires further calculation

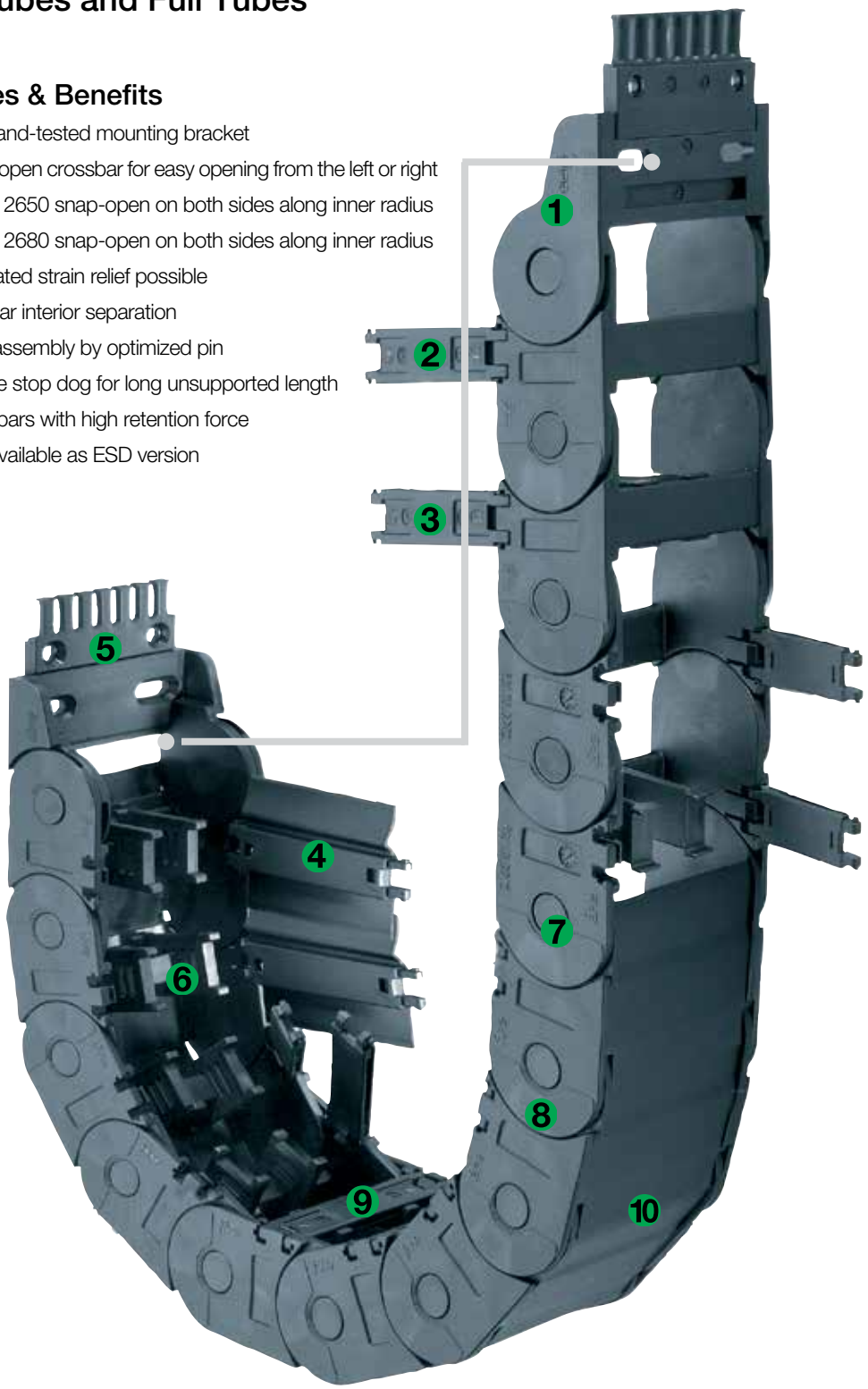
Usage Guidelines

- If snap-open accessibility along the inner or outer radius is required
- If integrated strain relief at the mounting point is required
- If modular interior separation is needed
- If long service life is required
- If easy installation is required
- If a half-Tube is required Series 2650
- If a fully enclosed e-tube is required Series 2680

- If the application is very simple
  ➤ **Series E26 E-Z Chain**
- If greater stability is required
  ➤ **Series E4-32 E4-1 Series**
- If e-tubes with small bending radii are needed
  ➤ **Series R58 E2 Tubes**

Features & Benefits

1. Tried-and-tested mounting bracket
2. Snap-open crossbar for easy opening from the left or right
3. Series 2650 snap-open on both sides along inner radius
4. Series 2680 snap-open on both sides along inner radius
5. Integrated strain relief possible
6. Modular interior separation
7. Easy assembly by optimized pin
8. Double stop dog for long unsupported length
9. Crossbars with high retention force
10. Also available as ESD version



Order Example: Complete e-chain®

Please indicate chain length or number of links. Example:

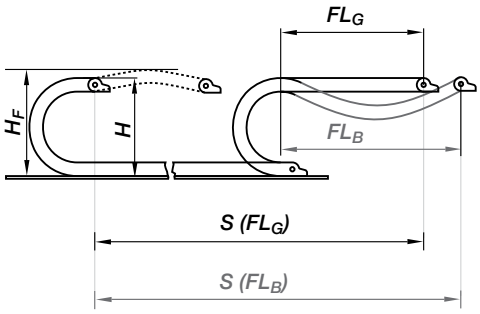
9.84 ft (3 m) **2680-10-100-0**	**e-chain®**
With 2 separators **26501** assembled every 2nd link	**Interior Separation**
1 Set **26500-10-12PZB**	**Mounting Bracket**

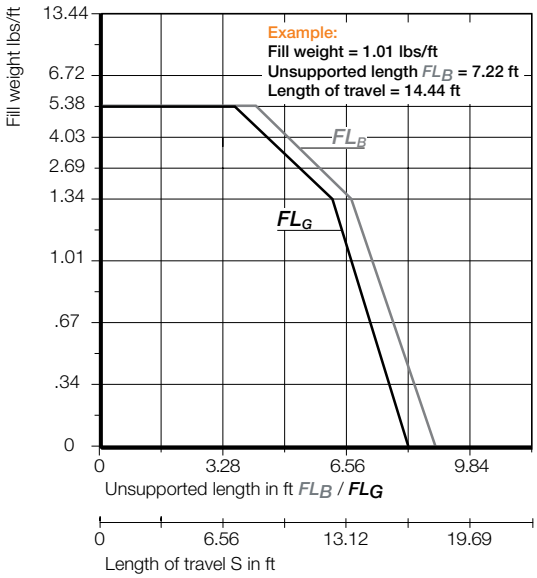
e-chain system® E2/000
Series 2650/2680 e-chain® Half-Tubes and Full Tubes
Installation Dimensions

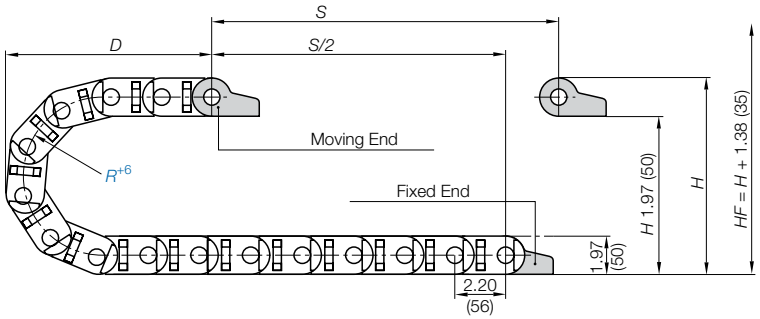
Short travel, unsupported length

- FL_B = unsupported with permitted sag
- FL_G = unsupported with straight upper run

Further information ➤ Design, Chapter 1







Pitch per link: = 2.20" (56 mm)
Links per ft (m): = 5.49 (18)
For center mount applications:
Chain length = $^{S}/_{2} + K$

The required clearance height: $H_F = H + 1.38$ **in. (35 mm)** (with 1.34 lbs/ft (2.0 kg/m) fill weight.
Please consult igus® if space is particularly restricted.

R	2.48 (063*)	2.95 (075*)	3.94 (100)	4.92 (125)	5.91 (150)	6.89 (175)	7.87 (200)	9.84 (250)
H	6.93 (176)	7.87 (200)	9.84 (250)	11.81 (300)	13.78 (350)	15.75 (400)	17.72 (450)	21.65 (550)
D	6.77 (172)	7.24 (184)	8.23 (209)	9.21 (234)	10.20 (259)	11.18 (284)	12.17 (309)	14.13 (359)
K	12.20 (310)	13.78 (350)	16.93 (430)	19.88 (505)	23.03 (585)	26.18 (665)	29.33 (745)	35.43 (900)

* Radius available upon request, please consult igus® for delivery time
Radii 063, 075: the e-tube is not completely enclosed. Please consult igus®

Short Travels - Unsupported

Unsupported e-chains® feature positive camber over short travels. This must be accounted for when specifying the clearance height. Please refer to **Installation dimensions** for further details.

Legend

S = Length of travel
R = Bending radius
H = Nominal clearance height
D = Overlength e-chain® radius in final position
K = $\pi \bullet R$ + *safety buffer*
H_F = Required clearance height

Speed / acceleration FL_G	max. 65.6 ft/s (20 m/s) / max. 656 ft/s² (200 m/s²)
Speed / acceleration FL_B	max. 9.84 ft/s (3 m/s) / max. 19.69 ft/s² (6 m/s²)
Gliding speed / acceleration (maximum)	max. 32.8 ft/s (10 m/s) / max. 164 ft/s² (50 m/s²)
Material - permitted temperature	igumid G / -40°F (-40°C) up to +248°F (+120° C)
Flammability Class, igumid G	VDE 0304 IIC UL94 HB

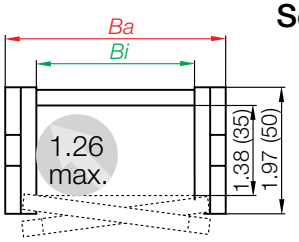
Technical Data

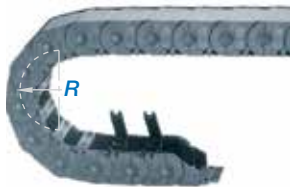
Details of material properties
➤ **Chapter 1**

PDF: igus.com/e-chain-pdfs
Product information: igus.com/e-chains

e-chain system® E2/000
Series 2650/2680 e-chain® Half-Tubes and Full Tubes

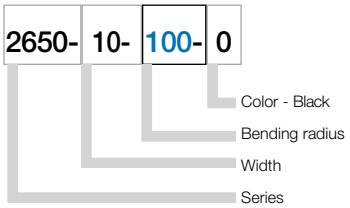
Series 2650 - snap-open along the inner radius



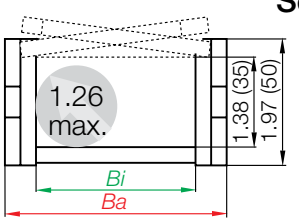




Part Number Structure



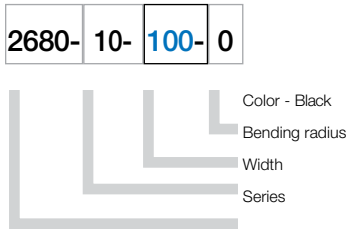
Series 2680 - snap-open along the inner radius

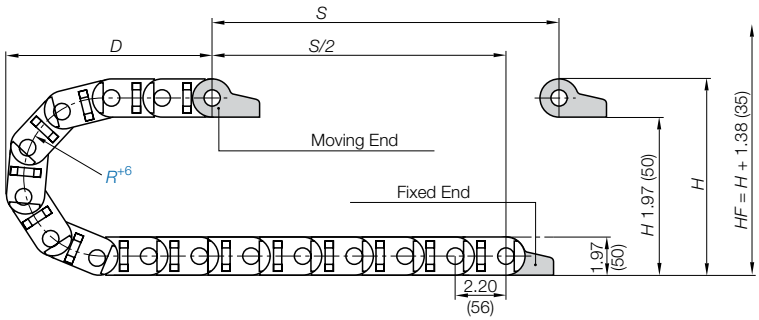






Part Number Structure





Supplement part number with required radius. Example: 2650-10-100-0
Pitch: 2.20 in. (56 mm) per link links/ft(m) = 5.49 (18)

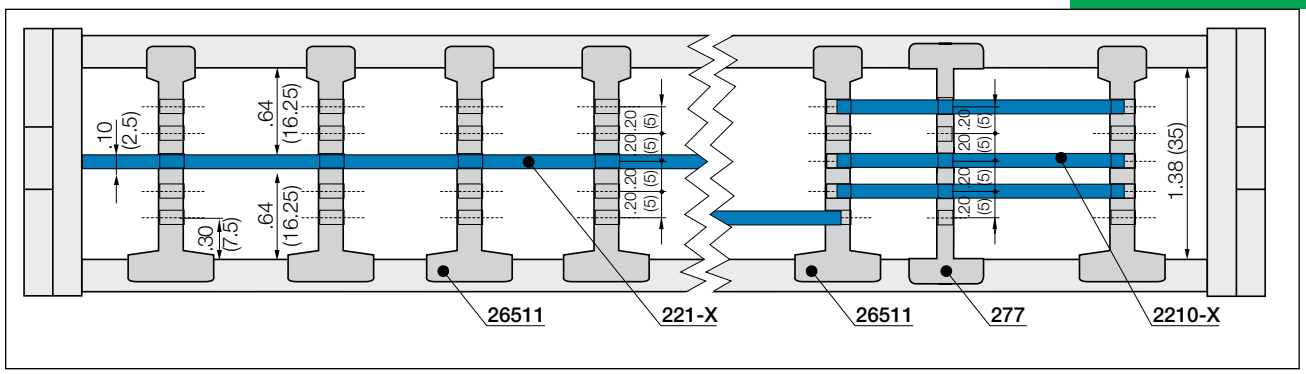
Part Number. Snap-open inner radius	Part Number. Snap-open outer radius	Bi in. (mm)	Ba in. (mm)	Weight 2650 lbs/ft (kg/m)	Weight 2680 lbs/ft (kg/m)
2650-05-[ ]-0	2680-05-[ ]-0	1.97 (50)	2.60 (66)	≈ 0.84 (1.25)	≈ 0.89 (1.33)
2650-06-[ ]-0	2680-06-[ ]-0	2.56 (65)	3.19 (81)	≈ 0.91 (1.36)	≈ 0.96 (1.43)
2650-07-[ ]-0	2680-07-[ ]-0	2.95 (75)	3.58 (91)	≈ 0.94 (1.40)	≈ 1.01 (1.51)
2650-09-[ ]-0	2680-09-[ ]-0	3.54 (90)	4.17 (106)	≈ 1.04 (1.55)	≈ 1.09 (1.62)
2650-10-[ ]-0	2680-10-[ ]-0	3.94 (100)	4.57 (116)	≈ 1.08 (1.61)	≈ 1.22 (1.81)
2650-12-[ ]-0	2680-12-[ ]-0	4.92 (125)	5.55 (141)	≈ 1.14 (1.70)	≈ 1.34 (1.99)
2650-15-[ ]-0	2680-15-[ ]-0	5.91 (150)	6.53 (166)	≈ 1.21 (1.80)	≈ 1.46 (2.17)
2650-17-[ ]-0	2680-17-[ ]-0	6.89 (175)	7.64 (194)	≈ 1.34 (2.00)	≈ 1.58 (2.35)

Choose from the radii below for all of the above sizes
Radius (mm) Example: 2650-10-100-0

	063*	075*	100	125	150	175	200	250
R	2.48 (063*)	2.95 (075*)	3.94 (100)	4.92 (125)	5.91 (150)	6.89 (175)	7.87 (200)	9.84 (250)
H	6.93 (176)	7.87 (200)	9.84 (250)	11.81 (300)	13.78 (350)	15.75 (400)	17.72 (450)	21.65 (550)
D	6.77 (172)	7.24 (184)	8.23 (209)	9.21 (234)	10.20 (259)	11.18 (284)	12.17 (309)	14.13 (359)
K	12.20 (310)	13.78 (350)	16.93 (430)	19.88 (505)	23.03 (585)	26.18 (665)	29.33 (745)	35.43 (900)

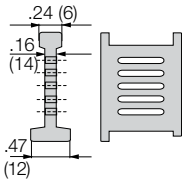
* Radius available upon request, please consult igus® for delivery time
Radii 063, 075: the e-tube is not completely enclosed. Please consult igus®

e-chain system® E2/000
Series 2650/2680 e-chain® Half-Tubes and Full Tubes
Interior Separation



In the standard configuration separators are assembled every 2nd e-chain® link





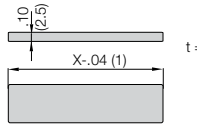
Separator, wide base

Unassembled	**Part No. 26501**
Assembled	**Part No. 26511**

- **Slotted separator 26501**
  Separator with wide base for maximum locking strength and safe standing in e-chains®.

Full-width shelves - for the standard interior separation





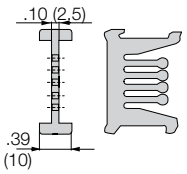
Separator, narrow head

Unassembled	**Part No. 220-X**
Assembled	**Part No. 221-X**

- **Full-width shelf 220-X**
  this option makes sense in applications with many thin cables with similar diameters. For a consequent subdivision. Full-width shelves can be inserted at 5 different heights in .20" (5 mm) increments

Width X in.	(mm)	Part No. Unassembled	Part No. Assembled	Width X in.	(mm)	Part No. Unassembled	Part No. Assembled
.98	(25)	**220-25**	**221-25**	3.54	(90)	**220-90**	**221-90**
1.50	(38)	**220-38**	**221-38**	4.06	(103)	**220-103**	**221-103**
2.24	(57)	**220-57**	**221-57**	4.92	(125)	**220-125**	**221-125**
3.03	(77)	**220-77**	**221-77**				





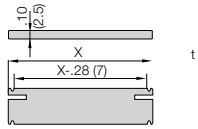
Separator, wide base

Unassembled	**Part No. 276**
Assembled	**Part No. 276**

- **Slotted separator 276**
  Separator with wide base for maximum locking strength and safe standing in e-chains®.

Full-width shelves - for the standard interior separation





Separator, narrow head

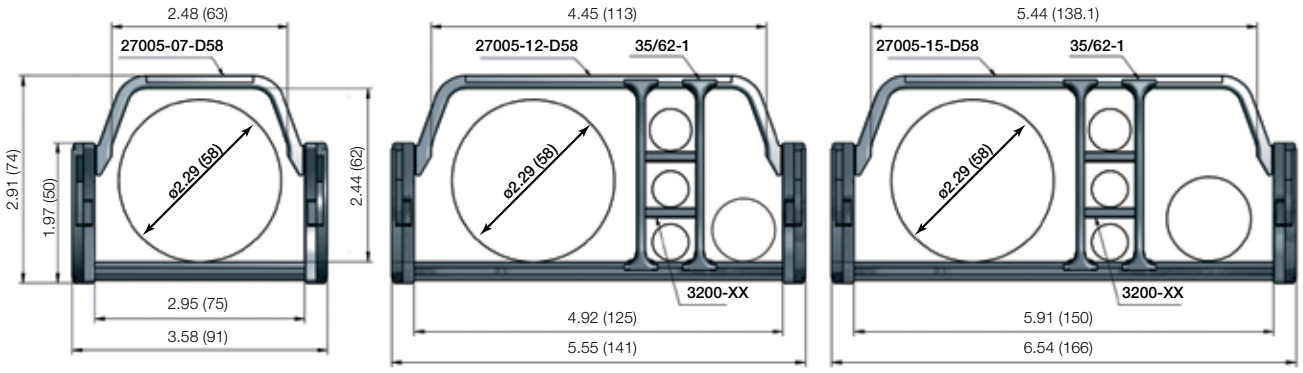
Unassembled	**Part No. 2200-X**
Assembled	**Part No. 2210-X**

- **Full-width shelf 2200-X**
  this option makes sense in applications with many thin cables with similar diameters. For a consequent subdivision. Full-width shelves can be inserted at 5 different heights in .20" (5 mm) increments

Width X in.	(mm)	Part No. Unassembled	Part No. Assembled	Width X in.	(mm)	Part No. Unassembled	Part No. Assembled
.98	(25)	**2200-25**	**2210-25**	3.54	(90)	**2200-90**	**221-90**
1.50	(38)	**2200-38**	**2210-38**	4.06	(103)	**2200-103**	**2210-103**
2.24	(57)	**2200-57**	**2210-57**	4.92	(125)	**2200-125**	**2210-125**
3.03	(77)	**2200-77**	**2210-77**				

PDF: igus.com/e-chain-pdfs
Product information: igus.com/e-chains

e-chain system® E2/000
Series 2650 e-chain® Half-Tubes
Extender crossbars



Part Number.
Extender crossbars for e-chains® that snap-open along inner radius

	Bi in. (mm)	*Ba* in. (mm)
2650-07D58-☐-0	2.95 (75)	3.58 (91)
2650-12D58-☐-0	4.92 (125)	5.55 (141)
2650-15D58-☐-0	5.91 (150)	6.54 (166)

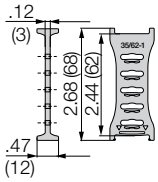
Choose from the radii below for all of the above sizes

Radius (mm) Example: 2700-10D58-100-0

	100	125	150	175	200	250
R	3.94 (100)	4.92 (125)	5.91 (150)	6.89 (175)	7.87 (200)	9.84 (250)

Interior separation for extender crossbars





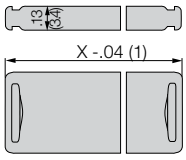
Separator, wide base

Unassembled	**Part No. 35/62-1**
Assembled	**Part No. 35/62-1-1**

- **Standard separator 35/62-1, wide base**
  For maximum locking strength and safe standing. In standard configuration separators are assembled every 2nd e-chain® link.

Lockable full-width shelves - for the standard interior separation





Full width shelf, lockable

Unassembled	**Part No. 3200-X**
Assembled	**Part No. 3210-X**

- **Full width shelf, lockable**
  is used when vertical and horizontal separation is required.

Width X in. (mm)	Part No. Unassembled	Part No. Assembled	Width X in. (mm)	Part No. Unassembled	Part No. Assembled
1.97 (050)	**3200-50**	**3210-50**	5.91 (150)	**3200-150**	**3210-150**
2.95 (075)	**3200-75**	**3210-75**	6.89 (175)	**3200-175**	**3210-175**
3.94 (100)	**3200-100**	**3210-100**	7.87 (200)	**3200-200**	**3210-200**
4.53 (115)	**3200-115**	**3210-115**	8.86 (225)	**3200-225**	**3210-225**
4.92 (125)	**3200-125**	**3210-125**	9.84 (250)	**3200-250**	**3210-250**

Separator with integrated strain relief



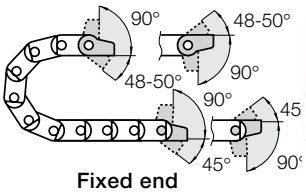
Strain relief separator Part No. 262-Z can be integrated into the mounting bracket and can be placed there at any point of the e-chain®. It combines strain relief and interior separation, it can be installed on the first or last e-chain® link and is easy to assemble without any screws.
For more information ➤ **Chapter 10, Strain Relief**

e-chain system® E2/000
Series 2650/2680 e-chain® Half-Tubes and Full Tubes
Mounting Bracket - Plastic

Option 1: pivoting

- For unsupported and gliding applications
- Well suited for tight installation conditions
- Detachable strain relief tiewrap plates
- Can be mounted on the fixed and/or moving end

Moving end
26...3PZB



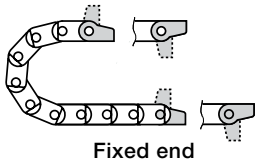
Fixed end
26...4PZB



Option 2: locking

- For unsupported and gliding applications
- Extreme speed and/or accelerations
- For height restricted applications
- Can be mounted on the fixed and/or moving end

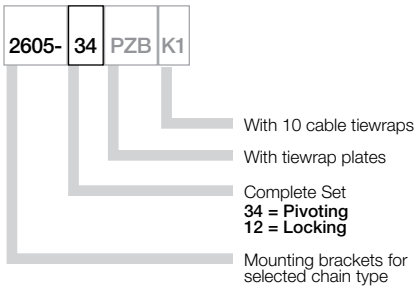
Moving end
26...1PZB

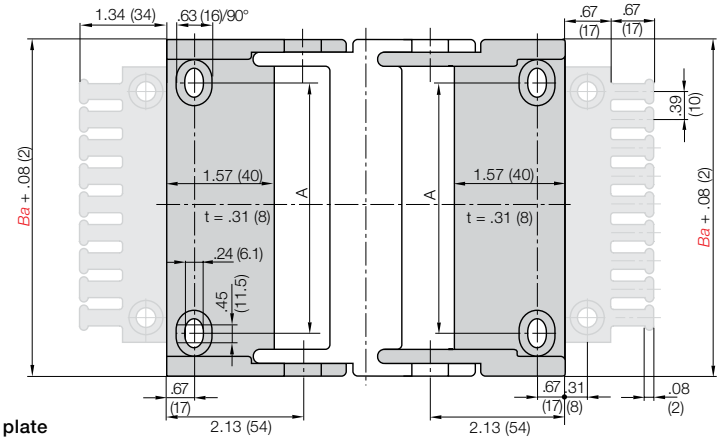


Fixed end
26...2PZB



Part Number Structure





Full set, for both ends:
2605- 34 PZB Full set, **each part with pin/bore + tiewrap plate**

Single-part order:
2605- 3 PZB Mounting bracket **with bore + tiewrap plate**
2605- 4 PZB Mounting bracket **with pin + tiewrap plate**

Part No. Full Set (pivoting)
With Tiewrap Plates
Series 2650:
2605-34PZB

Part No. Full Set (pivoting)
With Tiewrap Plates + 10 cable ties
Series 2650:
2605-34PZBK1

For Chain Type	Part No. Full Set without Tiewrap Plate	Part No. Full Set with Tiewrap Plate	Part No. Full Set with Tiewrap Plate + 10 cable ties	Dimension A in.	(mm)	Number of Teeth
2650/2680-05	2605- [ ] PZ	2605- [ ] PZB	2605- [ ] PZBK1	1.18	(30)	5
2650/2680-06	2606- [ ] PZ	2606- [ ] PZB	2606- [ ] PZBK1	1.77	(45)	5
2650/2680-07	2607- [ ] PZ	2607- [ ] PZB	2607- [ ] PZBK1	2.17	(55)	7
2650/2680-09	2609- [ ] PZ	2609- [ ] PZB	2609- [ ] PZBK1	2.76	(70)	9
2650/2680-10	2610- [ ] PZ	2610- [ ] PZB	2610- [ ] PZBK1	3.15	(80)	10
2650/2680-12	2612- [ ] PZ	2612- [ ] PZB	2612- [ ] PZBK1	4.13	(105)	12
2650/2680-15	2615- [ ] PZ	2615- [ ] PZB	2615- [ ] PZBK1	5.12	(130)	15
2650/2680-17	2617- [ ] PZ	2617- [ ] PZB	2617- [ ] PZBK1	6.10	(155)	17

[34] or [12]

For pivoting brackets choose [34]
For locking brackets choose [12]
Example: 2605- [34] PZB

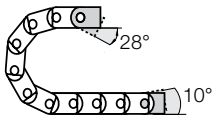
PDF: igus.com/e-chain-pdfs
Product information: igus.com/e-chains

e-chain system® E2/000
Series 2650/2680 e-chain® Half-Tubes and Full Tubes
Mounting Bracket - KMA

Option 1: pivoting

- For unsupported applications
- Bolted connection outside of chain cross section
- Confined installation conditions
- Attachment points on all sides
- Stackable

Moving end
2650 = 26500...1
2680 = 24800...1



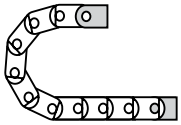


Fixed end
2650 = 26500...2
2680 = 26800...2

Option 2: locking

- For vertical hanging/standing applications
- Bolted connection outside of chain cross section
- For very high speeds and accelerations
- Attachment points on all sides
- Stackable

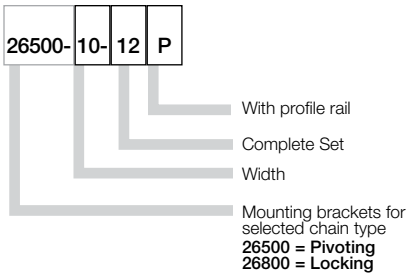
Moving end
2650 = 24510...1
2680 = 24810...1

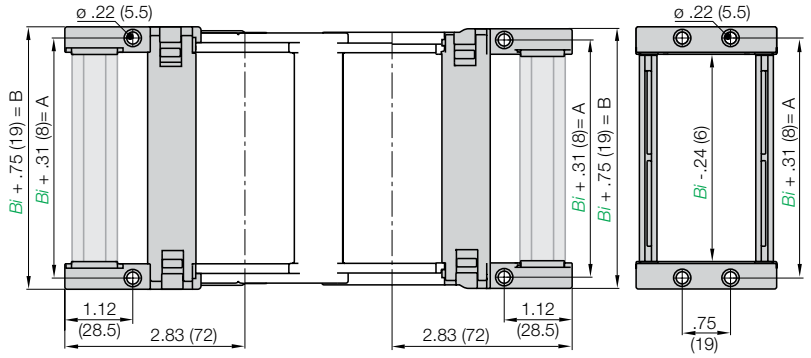




Fixed end
2650 = 24510...2
2680 = 24810...2

Part Number Structure





Full set, for both ends:

26500- 12 P Full set, **each part with pin/bore + profile rail**

Single-part order:

26500- 1 P Mounting bracket **with bore + profile rail**

26500- 2 P Mounting bracket **with pin + profile rail**

Part No. Full Set (pivoting)
With Profile Rail
Series 2650/2680:
26500-Width-12P

Part No. Full Set (pivoting)
Without Profile Rail
Series 2650/2680:
26500-Width-12

For Chain Type	Part No. Full set with Profile Rail	Part No. Full Set without Profile Rail	Dimension A in.	(mm)	Dimension B in.	(mm)
2650/2680-05	[ ] -05-12P	[ ] -05-12	2.28	(58)	2.72	(69)
2650/2680-06	[ ] -06-12P	[ ] -06-12	2.87	(73)	3.31	(84)
2650/2680-07	[ ] -07-12P	[ ] -07-12	3.27	(83)	3.70	(94)
2650/2680-09	[ ] -09-12P	[ ] -09-12	3.86	(98)	4.29	(109)
2650/2680-10	[ ] -10-12P	[ ] -10-12	4.25	(108)	4.69	(119)
2650/2680-12	[ ] -12-12P	[ ] -12-12	5.24	(133)	5.67	(144)
2650/2680-15	[ ] -15-12P	[ ] -15-12	6.22	(158)	6.65	(169)
2650/2680-17	[ ] -17-12P	[ ] -17-12	7.20	(183)	7.64	(194)

[26500 26800] or [26510 26810]

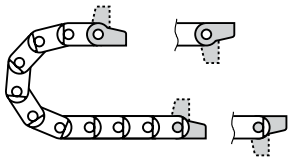
For pivoting brackets choose [26500 or 26800]
For locking brackets choose [26510 or 26810]
Example: [26500] -10-12P

e-chain system® E2/000
Series 2650/2680 e-chain® Half-Tubes and Full Tubes
Mounting Bracket - Steel

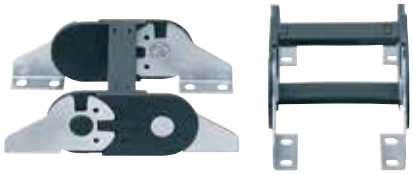
Option 1: Steel

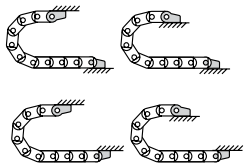
- One part (two-piece) for all chain widths
- Electrically conductive
- Bolted connection outside of chain cross-section possible

Moving end
260...1



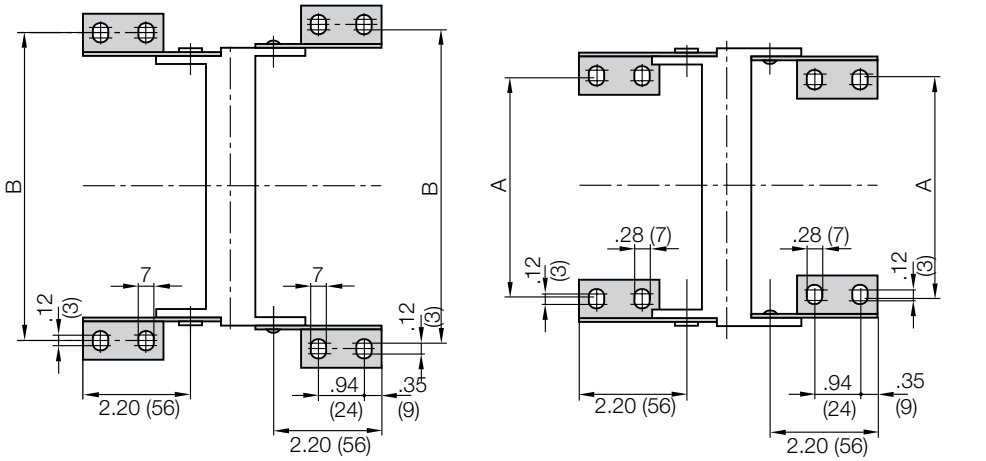
Fixed end
260...2





Possible installation configurations -

260-1 260-2* 260-1 260-2



*pivoting with no stop, (360°)

Chain Type	Part No. Full Set	Dimension A in.	(mm)	Dimension B in.	(mm)
2650/2680-05	**260-12**	1.46	(37)	3.27	(83)
2650/2680-06	**260-12**	2.05	(52)	3.86	(98)
2650/2680-07	**260-12**	2.44	(62)	4.25	(108)
2650/2680-09	**260-12**	3.03	(77)	4.84	(123)
2650/2680-10	**260-12**	3.43	(87)	5.24	(133)
2650/2680-12	**260-12**	4.41	(112)	6.22	(158)
2650/2680-15	**260-12**	5.39	(137)	7.20	(183)
2650/2680-17	**260-12**	6.42	(163)	8.23	(209)

Part No. Mounting Brackets Full Set
4 parts, 2 with pin, 2 with bore
Series 2650/2680:
260-12

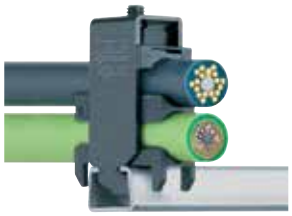
Part No. Mounting Bracket Moving End
2 parts, 1 left & 1 right
Series 2650/2680:
260-1

Part No. Mounting Bracket Fixed End
2 parts, 1 left & 1 right
Series 2650/2680:
260-2

PDF: igus.com/e-chain-pdfs
Product information: igus.com/e-chains

e-chain system® E2/000
Series 2650/2680 e-chain® Half-Tubes and Full Tubes
Strain Relief

Chainfix clamps for the profile rail



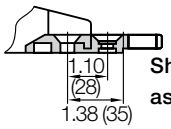
igus® Chainfix strain relief elements are available in either steel or stainless steel. They can be adjusted with a hexagon socket and are available in single, double and triple configurations.

Part No. Single Clamp		Part No. Double Clamp		Part No. Triple Clamp		Cable ø	
Steel	Stainless	Steel	Stainless	Steel	Stainless	in.	(mm)
CFX12-1	CFX12-1E	CFX12-2	CFX12-2E	CFX12-3	–	.24 - .47	(06 - 12)
CFX14-1	CFX14-1E	CFX14-2	CFX14-2E	CFX14-3	–	.47 - .55	(12 - 14)
CFX16-1	CFX16-1E	CFX16-2	CFX16-2E	CFX16-3	–	.55 - .63	(14 - 16)
CFX18-1	CFX18-1E	CFX18-2	CFX18-2E	CFX18-3	–	.63 - .71	(16 - 18)
CFX20-1	CFX20-1E	CFX20-2	CFX20-2E	CFX20-3	–	.71 - .79	(18 - 20)
CFX22-1	CFX22-1E	CFX22-2	CFX22-2E	CFX22-3	–	.79 - .87	(20 - 22)
CFX26-1	CFX26-1E	CFX26-2	CFX26-2E	–	–	.87 - 1.02	(22 - 26)
CFX30-1	CFX30-1E	CFX30-2	CFX30-2E	–	–	1.02 - 1.18	(26 - 30)
CFX34-1	CFX34-1E	CFX34-2	CFX34-2E	–	–	1.18 - 1.34	(30 - 34)
CFX38-1	CFX38-1E	–	–	–	–	1.34 - 1.50	(34 - 38)
CFX42-1	CFX42-1E	–	–	–	–	1.50 - 1.65	(38 - 42)

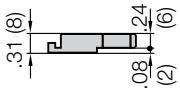
For more information please refer to strain relief section of Chapter 10

Tiewrap Plates





Shown assembled

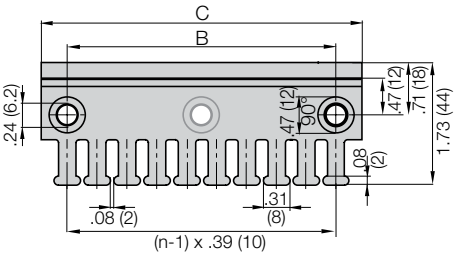


Single tiewrap plate

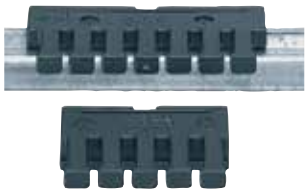
Option 1:
Tiewrap plates as an individual part

Available as an individual component, can be fixed onto a mounting bracket with the use of a profile rail.

Tiewrap Plate	n Number of Teeth	C Overall Width in. (mm)	B Bore Width in. (mm)	Center Bore
3050-ZB	5	1.97 (50)	1.18 (30)	no
3075-ZB	7	2.95 (75)	2.16 (55)	no
3100-ZB	10	3.94 (100)	3.15 (80)	no
3115-ZB	11	4.53 (115)	3.74 (95)	no
3125-ZB	12	4.92 (125)	4.13 (105)	no
3150-ZB	15	5.91 (150)	5.12 (130)	no
3175-ZB	17	6.89 (175)	6.10 (155)	no
3200-ZB	20	7.87 (200)	7.09 (180)	yes
3225-ZB	22	8.86 (225)	8.07 (205)	yes
3250-ZB	25	9.84 (250)	9.06 (230)	yes



For more information please refer to strain relief section of Chapter 10



Option 2:
Clip-on Tiewrap plates

Available as a clip-on tiewrap plate without the use of bolts They are inserted and removed with a screwdriver used as a lever. Clip-on tiewrap plates are also available as an attachment to the opening crossbars.

Part No.	Number of Teeth	Width of Strain Relief in.	(mm)
3050-ZC	5	1.97	(50)
3075-ZC	7	2.95	(75)

For more information please refer to strain relief section of Chapter 10



Strain relief for steel mounting brackets

Clip-on connection is not possible with steel mounting brackets. In this case, the tiewrap plates must be bolted directly into separate bore holes in front of the mounting bracket. Alternatively the tiewrap plates **30XX-Z and ZS** can be also used here. **Details chapter 10**











e-chain system® E2/000
Series 3400/3500

1.77 1.77

Price Index

Series 3400/3500

Special Features / Options

IPA Qualification Certificate, Air Cleanliness Class ISO Class 3 (at v = 2 m/s) upon request

ESD classification: Electrically conductive ESD/ ATEX version upon request

UL94 V2 classifications upon request

Assembly Tips



Snap-open mechanism, choice of snap-open on left or right. Hinged crossbar can be swiveled by more than 180° on both sides. Lightning-fast closing by hand. Secure fit without additional locking devices.

Other Installation Methods

Vertical, hanging ≤ 262 ft (80 m)
Vertical, standing ≤ 9.84 ft (3 m)
Side-mounted, unsupp. ≤ 3.28 ft (1 m)
Rotary requires further calculation

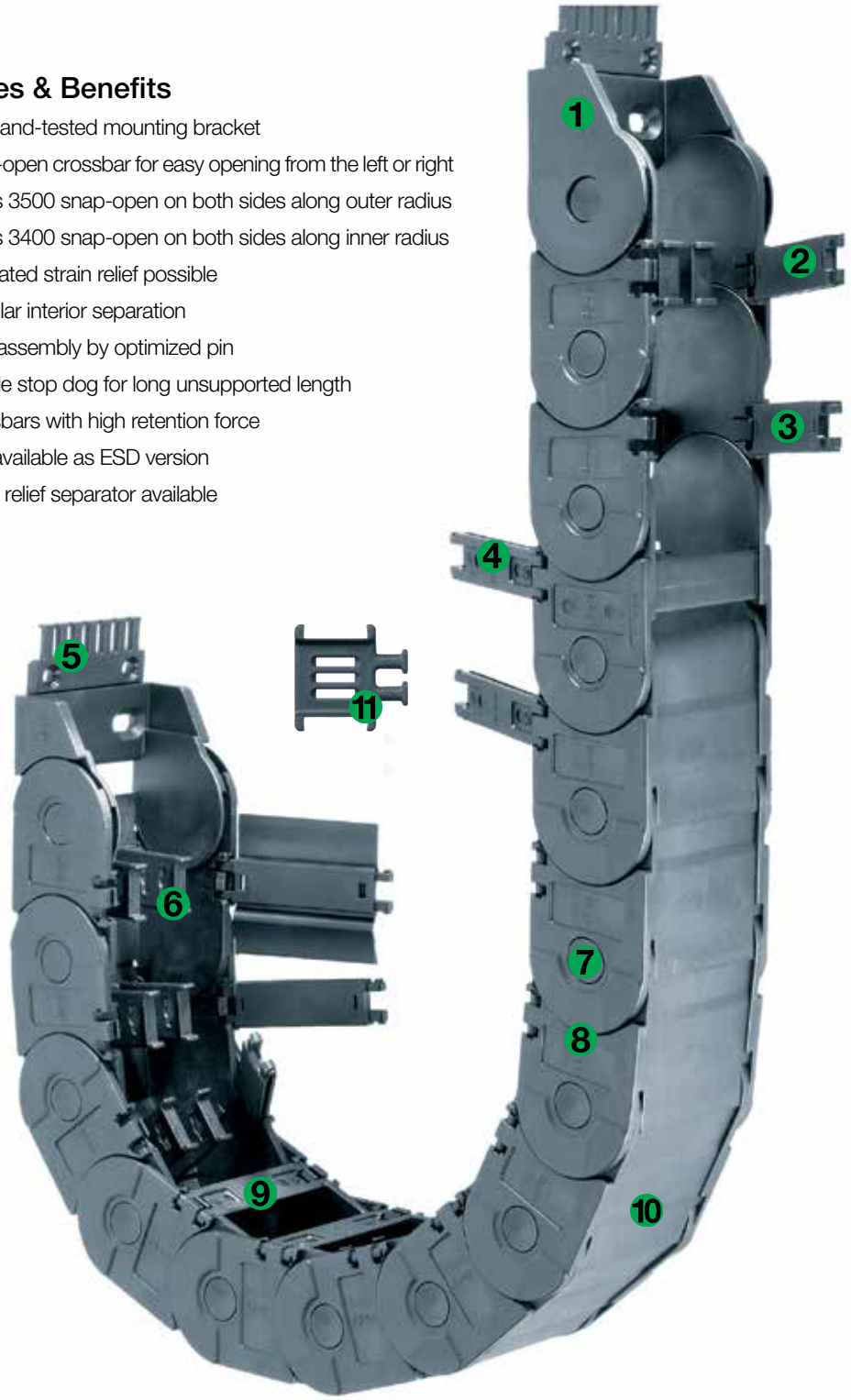
Usage Guidelines

- If snap-open accessibility along the inner or outer radius is required
- If integrated strain relief at the mounting point is required
- If modular interior separation is needed
- If long service life is required
- If easy installation is required

- If the application is very simple
  ➤ **Series E300 E-Z Chain**
- If greater stability is required
  ➤ **Series E4-42 E4-1 Series**

Features & Benefits

1. Tried-and-tested mounting bracket
2. Snap-open crossbar for easy opening from the left or right
3. Series 3500 snap-open on both sides along outer radius
4. Series 3400 snap-open on both sides along inner radius
5. Integrated strain relief possible
6. Modular interior separation
7. Easy assembly by optimized pin
8. Double stop dog for long unsupported length
9. Crossbars with high retention force
10. Also available as ESD version
11. Strain relief separator available



Order Example: Complete e-chain®

Please indicate chain length or number of links. Example:

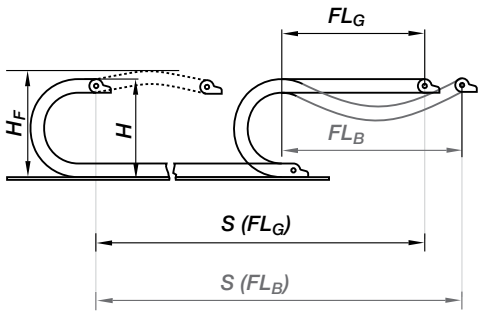
9.84 ft (3 m) **3400-100-100-0**	**e-chain®**
With 2 separators **45.1.1** assembled every 2nd link	**Interior Separation**
1 Set **3100-34PZB**	**Mounting Bracket**

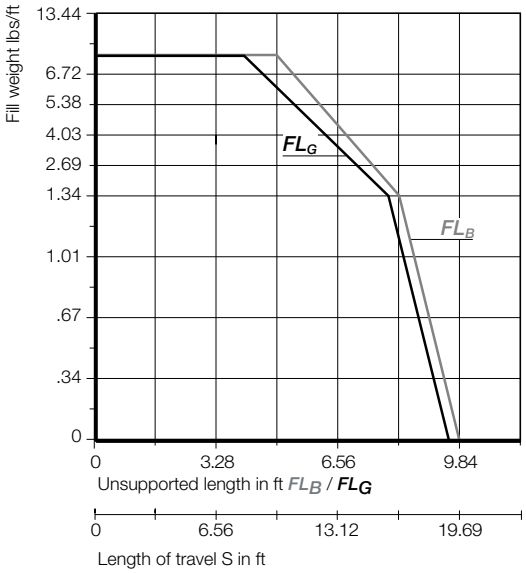
e-chain system® E2/000
Series 3400/3500
Installation Dimensions

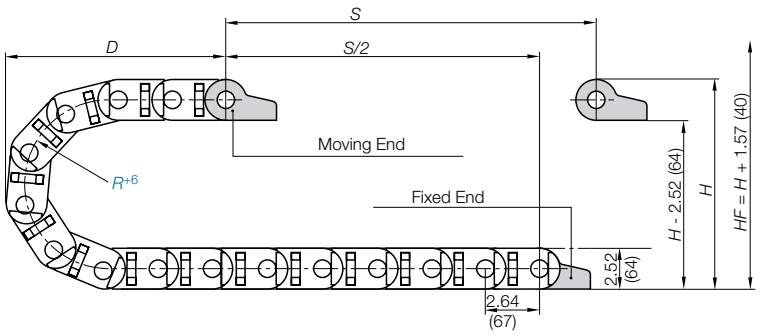
Short travel, unsupported length

- FL_B = unsupported with permitted sag
- FL_G = unsupported with straight upper run

Further information ➤ Design, Chapter 1







Pitch per link: = 2.64" (67 mm)
Links per ft (m): = 4.57 (15)
For center mount applications:
Chain length = $S/2 + K$

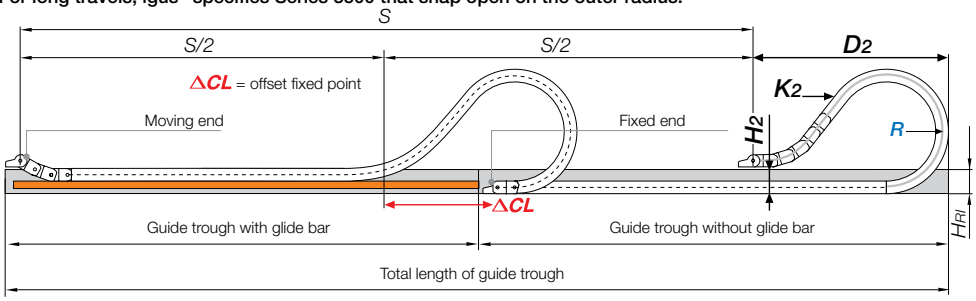
The required clearance height: $H_F = H + 1.57$ **in. (40 mm)** (with 1.68 lbs/ft (2.5 kg/m) fill weight.
Please consult igus® if space is particularly restricted.

R	1.50 (075)	3.94 (100)	4.92 (125)	5.91 (150)	7.87 (200)	9.84 (250)	11.81 (300)
H	8.43 (214)	10.39 (264)	12.36 (314)	14.33 (364)	18.27 (464)	22.20 (564)	26.14 (664)
D	8.19 (208)	9.17 (233)	10.16 (258)	11.14 (283)	13.11 (333)	15.08 (383)	17.05 (433)
K	14.57 (370)	17.72 (450)	20.87 (530)	24.02 (610)	30.11 (765)	36.22 (920)	42.52 (1080)

For long travels with lowered mounting height

Long travel lengths from 32.8 ft. (10 m) to max. 492 ft. (150 m)
For long travels, igus® specifies Series 3500 that snap open on the outer radius.

For center mount applications:
Chain length: = $S/2 + K_2$



R	1.50 (075)	3.94 (100)	4.92 (125)	5.91 (150)	7.87 (200)	9.84 (250)	11.81 (300)
H_2	5.91 (150)	7.87 (200)	7.32 (186)	7.32 (186)	7.32 (186)	7.32 (186)	7.32 (186)
$D_{2^{+25}}$	8.19 (208)	9.17 (233)	18.70 (475)	22.44 (570)	30.71 (780)	39.76 (1010)	45.28 (1150)
K_2	14.57 (370)	17.72 (450)	31.65 (804)	39.57 (1005)	52.76 (1340)	65.94 (1675)	76.50 (1943)
ΔCL	–	–	9.17 (233)	11.93 (303)	18.23 (463)	25.31 (643)	28.86 (733)

Speed / acceleration FL_G	max. 65.6 ft/s (20 m/s) / max. 656 ft/s² (200 m/s²)
Speed / acceleration FL_B	max. 9.84 ft/s (3 m/s) / max. 19.69 ft/s² (6 m/s²)
Gliding speed / acceleration (maximum)	max. 32.8 ft/s (10 m/s) / max. 164 ft/s² (50 m/s²)
Material - permitted temperature	igumid G / -40°F (-40°C) up to +248°F (+120° C)
Flammability Class, igumid G	VDE 0304 IIC UL94 HB

Short Travels - Unsupported

Unsupported e-chains® feature positive camber over short travels. This must be accounted for when specifying the clearance height. Please refer to **Installation dimensions** for further details.

Legend

S = Length of travel
R = Bending radius
H = Nominal clearance height
D = Overlength e-chain® radius in final position
K = $\pi \bullet R$ + *safety buffer*
H_F = Required clearance height
H_{RI} = Trough inner height
H_2 = *Mounting height
D_2 = Overlength - long travels, gliding
K_2 = *Add-on

*If the mounting bracket location is set lower

Long Travels - Gliding

If the unsupported length is exceeded, the e-chain® must glide on itself. This requires a guide trough.
Design, Chapter 1

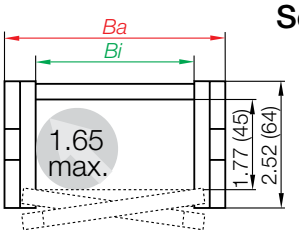
Technical Data

Details of material properties
➤ **Chapter 1**

PDF: igus.com/e-chain-pdfs
Product information: igus.com/e-chains

e-chain system® E2/000
Series 3400/3500

Series 3400 - snap-open along the inner radius



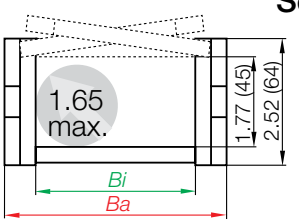


Part Number Structure

3400- 100- 100- 0

- Color - Black
- Bending radius
- Width
- Series

Series 3500 - snap-open along the outer radius

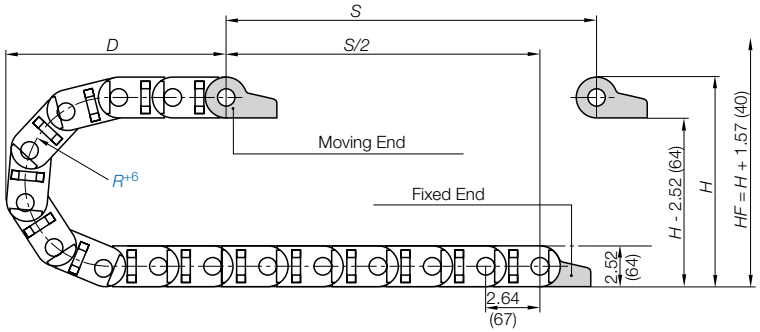




Part Number Structure

3500- 100- 100- 0

- Color - Black
- Bending radius
- Width
- Series



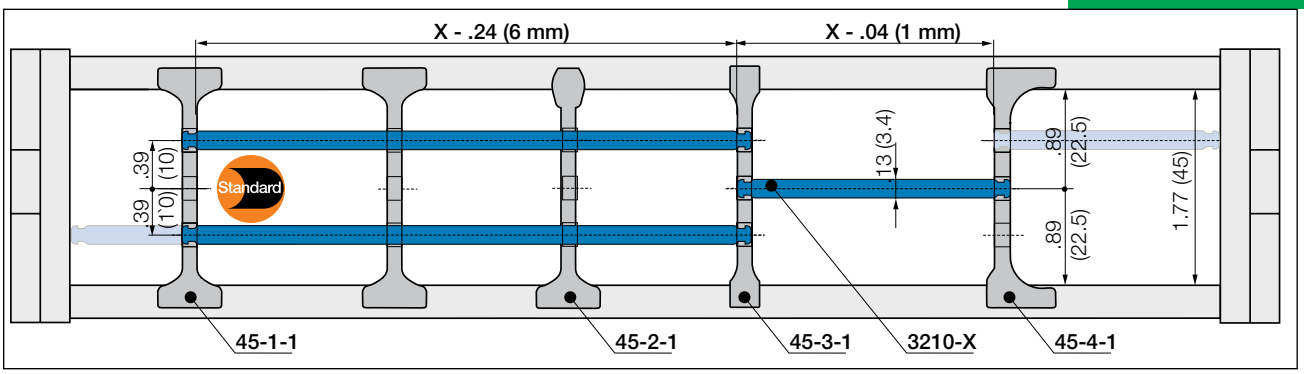
Supplement part number with required radius.
Example: 3500-100-100-0
Pitch: 264 in. (67 mm) per link links/ft(m) = 4.57 (15)

Part Number. Snap-open inner radius	Snap-open outer radius	*Bi* in. (mm)	*Ba* in. (mm)	Weight lbs/ft (kg/m)
3400-050-□-0	3500-050-□-0	1.97 (50)	2.76 (70)	≈ 1.07 (1.60)
3400-075-□-0	3500-075-□-0	2.95 (75)	3.74 (95)	≈ 1.20 (1.78)
3400-100-□-0	3500-100-□-0	3.94 (100)	4.72 (120)	≈ 1.30 (1.93)
3400-115-□-0	3500-115-□-0	4.53 (115)	5.31 (135)	≈ 1.34 (1.99)
3400-125-□-0	3500-125-□-0	4.92 (125)	5.71 (145)	≈ 1.36 (2.03)
3400-150-□-0	3500-150-□-0	5.91 (150)	6.69 (170)	≈ 1.46 (2.17)
3400-175-□-0	3500-175-□-0	6.89 (175)	7.68 (195)	≈ 1.53 (2.28)
3400-200-□-0	3500-200-□-0	7.87 (200)	8.66 (220)	≈ 1.65 (2.45)
3400-225-□-0	3500-225-□-0	8.86 (225)	9.65 (245)	≈ 1.74 (2.59)
3400-250-□-0	3500-250-□-0	9.84 (250)	10.63 (270)	≈ 1.83 (2.73)

Choose from the radii below for all of the above sizes
Radius (mm) Example: 3500-100-100-0

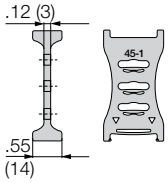
	075	100	125	150	200	250	300
R	1.50 (075)	3.94 (100)	4.92 (125)	5.91 (150)	7.87 (200)	9.84 (250)	11.81 (300)
H	8.43 (214)	10.39 (264)	12.36 (314)	14.33 (364)	18.27 (464)	22.20 (564)	26.14 (664)
D	8.19 (208)	9.17 (233)	10.16 (258)	11.14 (283)	13.11 (333)	15.08 (383)	17.05 (433)
K	14.57 (370)	17.72 (450)	20.87 (530)	24.02 (610)	30.11 (765)	36.22 (920)	42.52 (1080)

e-chain system® E2/000
Series 3400/3500
Interior Separation



In the standard configuration separators are assembled every 2nd e-chain® link



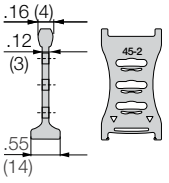


Separator, wide base

Unassembled	**Part No. 45.1**
Assembled	**Part No. 45.1.1**

- **Standard separator 45.1 for all applications**
  Separator with wide base for maximum locking strength and safe standing in e-chains®.



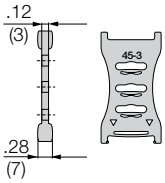


Separator, narrow head

Unassembled	**Part No. 45.2**
Assembled	**Part No. 45.2.1**

- **Separator 45.2 For even faster installation**
  is used when vertical and horizontal separation is required. Due to its slot, it allows basic vertical/horizontal shelving arrangements.



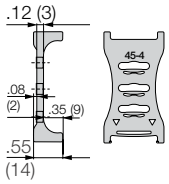


Separator, narrow base

Unassembled	**Part No. 45-3**
Assembled	**Part No. 45.3.1**

- **Separator 45.3 For many thin cables**
  is used when vertical and horizontal separation is required. Due to its slot, it allows basic vertical/horizontal shelving arrangements.





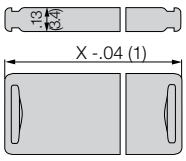
Separator, asymmetrical

Unassembled	**Part No. 45.4**
Assembled	**Part No. 45.4.1**

- **Separator 45.4 For side mounted applications**
  is used when vertical and horizontal separation is required. Due to its slot, it allows basic vertical/horizontal shelving arrangements.

Lockable full-width shelves - for the standard interior separation





Full width shelf, lockable

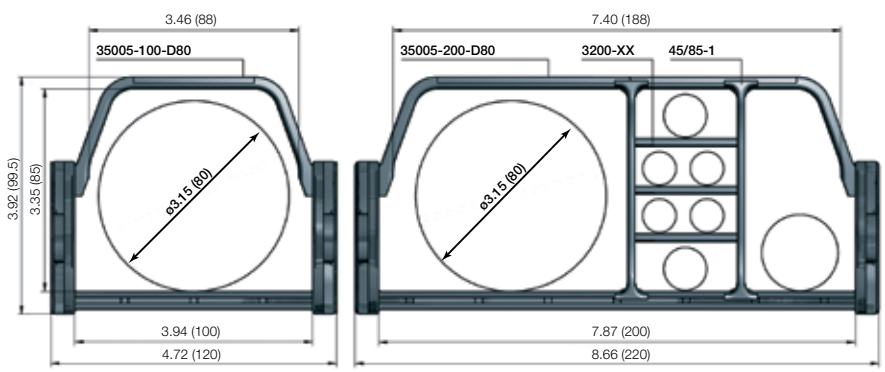
Unassembled	**Part No. 3200-X**
Assembled	**Part No. 3210-X**

- **Full width shelf, lockable**
  is used when vertical and horizontal separation is required.

Width X in. (mm)	Part No. Unassembled	Part No. Assembled	Width X in. (mm)	Part No. Unassembled	Part No. Assembled
1.97 (050)	**3200-50**	**3210-50**	5.91 (150)	**3200-150**	**3210-150**
2.95 (075)	**3200-75**	**3210-75**	6.89 (175)	**3200-175**	**3210-175**
3.94 (100)	**3200-100**	**3210-100**	7.87 (200)	**3200-200**	**3210-200**
4.53 (115)	**3200-115**	**3210-115**	8.86 (225)	**3200-225**	**3210-225**
4.92 (125)	**3200-125**	**3210-125**	9.84 (250)	**3200-250**	**3210-250**

PDF: igus.com/e-chain-pdfs
Product information: igus.com/e-chains

e-chain system® E2/000
Series 3400/3500
Extender crossbars





Part Number.

Extender crossbars for e-chains® that snap-open along **inner** radius	Extender crossbars for e-chains® that snap-open along **outer** radius	*Bi* in. (mm)	*Ba* in. (mm)
3400-100D80-☐-0	3500-100D80-☐-0	2.95 (100)	3.58 (120)
3400-200D80-☐-0	3400-200D80-☐-0	4.92 (200)	5.55 (220)

Choose from the radii below for all of the above sizes

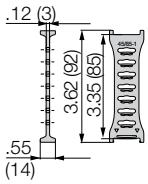
Radius (mm) Example: 2700-10D58-100-0

	075*	100*	125	150	200	250	300
R	2.95 (075)	3.94 (100)	4.92 (125)	5.91 (150)	6.89 (175)	7.87 (200)	9.84 (250)

*Radius 075 and 100 are only available for Series 3500 e-chains®

Interior separation for extender crossbars





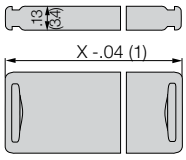
Separator, wide base

Unassembled	**Part No. 45/85.1**
Assembled	**Part No. 45/85.1.1**

- **Standard separator 45/85.1, wide base**
  For maximum locking strength and safe standing. In standard configuration separators are assembled every 2nd e-chain® link.

Lockable full-width shelves - for the standard interior separation





Full width shelf, lockable

Unassembled	**Part No. 3200-X**
Assembled	**Part No. 3210-X**

- **Full width shelf, lockable**
  is used when vertical and horizontal separation is required.

Width X in. (mm)	Part No. Unassembled	Part No. Assembled	Width X in. (mm)	Part No. Unassembled	Part No. Assembled
1.97 (050)	**3200-50**	**3210-50**	5.91 (150)	**3200-150**	**3210-150**
2.95 (075)	**3200-75**	**3210-75**	6.89 (175)	**3200-175**	**3210-175**
3.94 (100)	**3200-100**	**3210-100**	7.87 (200)	**3200-200**	**3210-200**
4.53 (115)	**3200-115**	**3210-115**	8.86 (225)	**3200-225**	**3210-225**
4.92 (125)	**3200-125**	**3210-125**	9.84 (250)	**3200-250**	**3210-250**

Separator with integrated strain relief



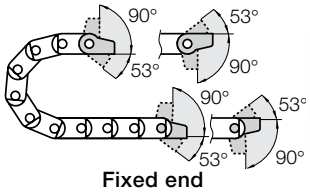
Strain relief separator Part No. 301-Z can be integrated into the mounting bracket and can be placed there at any point of the e-chain®. It combines strain relief and interior separation, it can be installed on the first or last e-chain® link and is easy to assemble without any screws.
For more information ➤ **Chapter 10, Strain Relief**

e-chain system® E2/000
Series 3400/3500
Mounting Bracket - Plastic

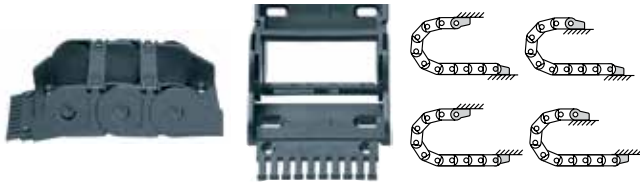
Option 1: pivoting

- For unsupported and gliding applications
- Well suited for tight installation conditions
- Detachable strain relief tiewrap plates
- Can be mounted on the fixed and/or moving end

Moving end
3...3PZB



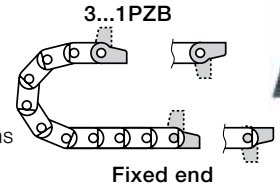
Fixed end
3...4PZB



Option 2: locking

- For unsupported and gliding applications
- Extreme speed and/or accelerations
- For height restricted applications
- Can be mounted on the fixed and/or moving end

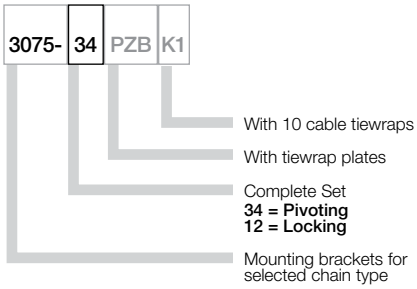
Moving end
3...1PZB

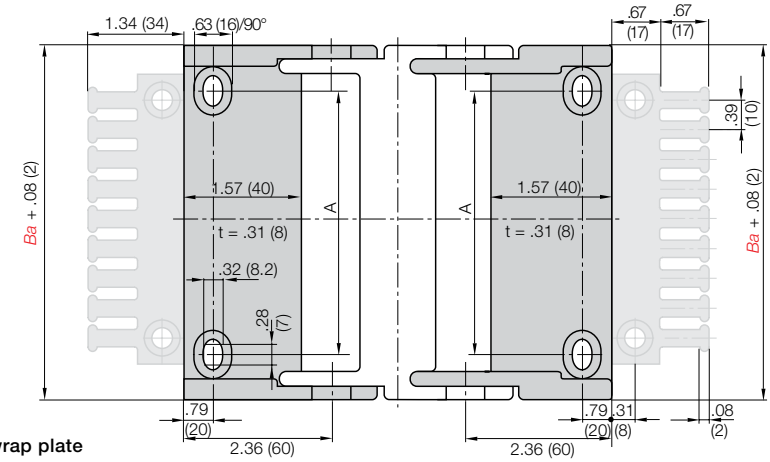


Fixed end
3...2PZB



Part Number Structure





Full set, for both ends:
3075- 34 PZB Full set, **each part with pin/bore + tiewrap plate**

Single-part order:
3075- 3 PZB Mounting bracket **with bore + tiewrap plate**
3075- 4 PZB Mounting bracket **with pin + tiewrap plate**

Part No. Full Set (pivoting)
Without Tiewrap Plates
Series 3400:
3075-34PZ

Part No. Full Set (pivoting)
With Tiewrap Plates
Series 3400:
3075-34PZB

Part No. Full Set (pivoting)
With Tiewrap Plates + 10 cable ties
Series 3400:
3075-34PZBK1

For Chain Type	Part No. Full Set without Tiewrap Plate	Part No. Full Set with Tiewrap Plate	Part No. Full Set with Tiewrap Plate + 10 cable ties	Dimension A in.	(mm)	Number of Teeth
3400/3500-050	3050- ☐ PZ	3050- ☐ PZB	3050- ☐ PZBK1	2.09	(28)	5
3400/3500-075	3075- ☐ PZ	3075- ☐ PZB	3075- ☐ PZBK1	2.09	(53)	7
3400/3500-100	3100- ☐ PZ	3100- ☐ PZB	3100- ☐ PZBK1	3.07	(78)	10
3400/3500-115	3115- ☐ PZ	3115- ☐ PZB	3115- ☐ PZBK1	3.66	(93)	11
3400/3500-125	3125- ☐ PZ	3125 ☐ PZB	3125 ☐ PZBK1	4.06	(103)	12
3400/3500-150	3150- ☐ PZ	3150- ☐ PZB	3150- ☐ PZBK1	5.04	(128)	15
3400/3500-175	3175- ☐ PZ	3175- ☐ PZB	3175- ☐ PZBK1	6.02	(153)	17
3400/3500-200	3200- ☐ PZ	3200- ☐ PZB	3200- ☐ PZBK1	7.01	(178)	20
3400/3500-225	3225- ☐ PZ	3225- ☐ PZB	3225- ☐ PZBK1	7.99	(203)	22
3400/3500-250	3250- ☐ PZ	3250- ☐ PZB	3250- ☐ PZBK1	8.98	(228)	25

34 or 12

For pivoting brackets choose 34
For locking brackets choose 12
Example: 3075- 34 PZB

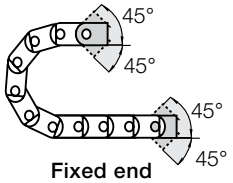
PDF: igus.com/e-chain-pdfs
Product information: igus.com/e-chains

e-chain system® E2/000
Series 3400/3500
Mounting Bracket - KMA

Option 1: pivoting

- For unsupported applications
- Bolted connection outside of chain cross section
- Confined installation conditions
- Attachment points on all sides
- Stackable

Moving end
34001...1



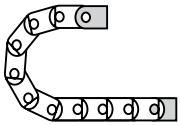
Fixed end
34001...2



Option 2: locking

- For vertical hanging/standing applications
- Bolted connection outside of chain cross section
- For very high speeds and accelerations
- Attachment points on all sides
- Stackable

Moving end
34101...1



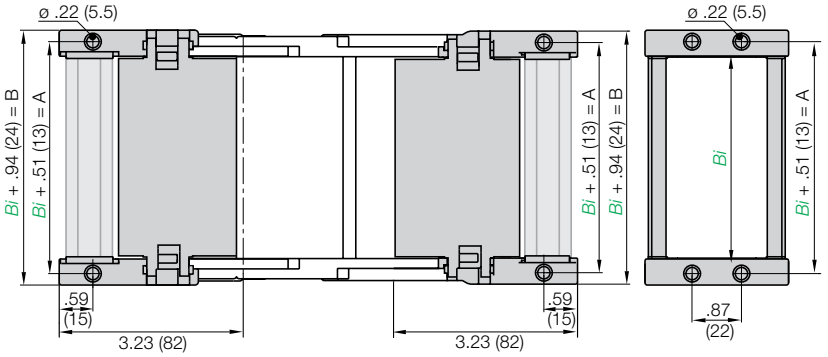
Fixed end
34101...2



Part Number Structure

34001-	075-	12	P

- P: With profile rail
- 12: Complete Set
- 075: Width
- 34001-: Mounting brackets for selected chain type
  34001 = Pivoting
  34101 = Locking



Full set, for both ends:
34001- 12 P Full set, **each part with pin/bore + profile rail**
Single-part order:
34001- 1 P Mounting bracket **with bore + profile rail**
34001- 2 P Mounting bracket **with pin + profile rail**

Part No. Full Set (pivoting)
With Profile Rail
Series 3400/3500:
34001-Width-12P

Part No. Full Set (pivoting)
Without Profile Rail
Series 3400/3500:
34001-Width-12

For Chain Type	Part No. Full set with Profile Rail	Part No. Full Set without Profile Rail	Dimension A in.	Dimension A (mm)	Dimension B in.	Dimension B (mm)
3400/3500-050	[ ] -050-12P	[ ] -050-12	2.48	(63)	2.91	(74)
3400/3500-075	[ ] -075-12P	[ ] -075-12	3.46	(88)	3.90	(99)
3400/3500-100	[ ] -100-12P	[ ] -100-12	4.45	(113)	4.88	(124)
3400/3500-115	[ ] -115-12P	[ ] -115-12	5.04	(128)	5.47	(139)
3400/3500-150	[ ] -150-12P	[ ] -150-12	6.42	(163)	6.85	(174)
3400/3500-175	[ ] -175-12P	[ ] -175-12	7.40	(188)	7.83	(199)

[34001] or [34101]

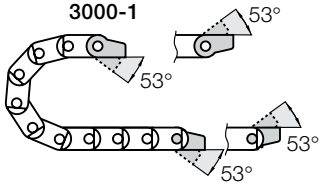
For pivoting brackets choose [34001]
For locking brackets choose [34101]
Example: [34001] -075-12P

e-chain system® E2/000
Series 3400/3500
Mounting Bracket - Steel

Option 1: Steel

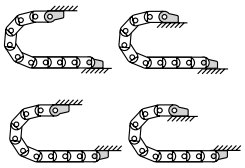
- One part (two-piece) for all chain widths
- Electrically conductive
- Bolted connection outside of chain cross-section possible

Moving end
3000-1





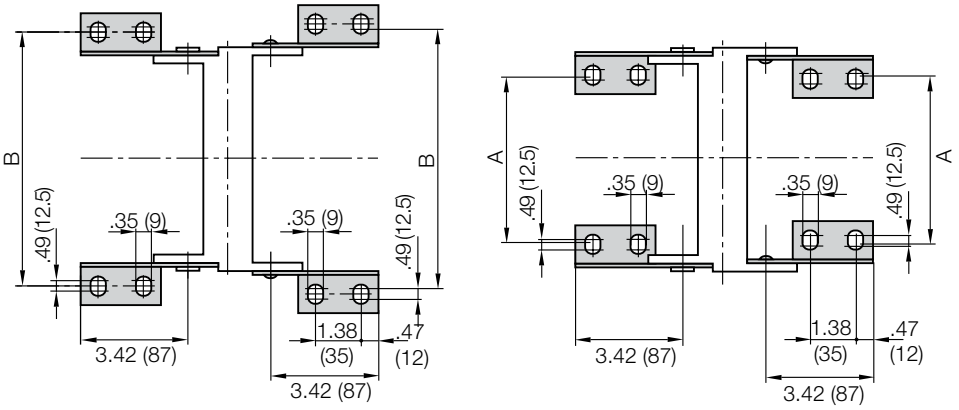




Possible installation configurations -

Fixed end
3000-2

3000-1 3000-2* 3000-1 3000-2



*pivoting with no stop, (360°)

Chain Type	Part No. Full Set	Dimension A in.	(mm)	Dimension B in.	(mm)	in.	(mm)
3400/3500-075	**3000-12**	2.09	(53)	4.37	(111)	4.80	(122)
3400/3500-100	**3000-12**	3.07	(78)	5.35	(136)	5.79	(147)
3400/3500-115	**3000-12**	3.66	(93)	5.94	(151)	6.38	(162)
3400/3500-150	**3000-12**	5.04	(128)	7.32	(186)	7.76	(197)
3400/3500-175	**3000-12**	6.02	(153)	8.35	(212)	8.82	(224)

Part No. Mounting Brackets Full Set
4 parts, 2 with pin, 2 with bore
Series 3400/3500:
3000-12

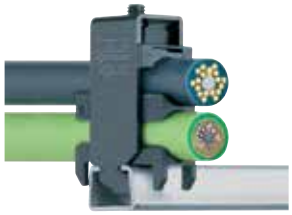
Part No. Mounting Bracket Moving End
2 parts, 1 left & 1 right
Series 3400/3500:
3000-1

Part No. Mounting Bracket Fixed End
2 parts, 1 left & 1 right
Series 3400/3500:
3000-2

PDF: igus.com/e-chain-pdfs
Product information: igus.com/e-chains

e-chain system® E2/000
Series 3400/3500
Strain Relief

Chainfix clamps for the profile rail



igus® Chainfix strain relief elements are available in either steel or stainless steel. They can be adjusted with a hexagon socket and are available in single, double and triple configurations.

Part No. Single Clamp		Part No. Double Clamp		Part No. Triple Clamp		Cable ø	
Steel	Stainless	Steel	Stainless	Steel	Stainless	in.	(mm)
CFX12-1	CFX12-1E	CFX12-2	CFX12-2E	CFX12-3	–	.24 - .47	(06 - 12)
CFX14-1	CFX14-1E	CFX14-2	CFX14-2E	CFX14-3	–	.47 - .55	(12 - 14)
CFX16-1	CFX16-1E	CFX16-2	CFX16-2E	CFX16-3	–	.55 - .63	(14 - 16)
CFX18-1	CFX18-1E	CFX18-2	CFX18-2E	CFX18-3	–	.63 - .71	(16 - 18)
CFX20-1	CFX20-1E	CFX20-2	CFX20-2E	CFX20-3	–	.71 - .79	(18 - 20)
CFX22-1	CFX22-1E	CFX22-2	CFX22-2E	CFX22-3	–	.79 - .87	(20 - 22)
CFX26-1	CFX26-1E	CFX26-2	CFX26-2E	–	–	.87 - 1.02	(22 - 26)
CFX30-1	CFX30-1E	CFX30-2	CFX30-2E	–	–	1.02 - 1.18	(26 - 30)
CFX34-1	CFX34-1E	CFX34-2	CFX34-2E	–	–	1.18 - 1.34	(30 - 34)
CFX38-1	CFX38-1E	–	–	–	–	1.34 - 1.50	(34 - 38)
CFX42-1	CFX42-1E	–	–	–	–	1.50 - 1.65	(38 - 42)

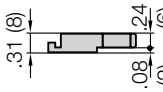
For more information please refer to strain relief section of Chapter 10

Tiewrap Plates





Shown assembled

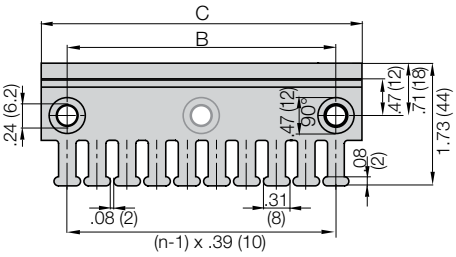


Single tiewrap plate

Option 1:
Tiewrap plates as an individual part

Available as an individual component, can be fixed onto a mounting bracket with the use of a profile rail.

Tiewrap Plate	n Number of Teeth	C Overall Width in. (mm)	B Bore Width in. (mm)	Center Bore
3050-ZB	5	1.97 (50)	1.18 (30)	no
3075-ZB	7	2.95 (75)	2.16 (55)	no
3100-ZB	10	3.94 (100)	3.15 (80)	no
3115-ZB	11	4.53 (115)	3.74 (95)	no
3125-ZB	12	4.92 (125)	4.13 (105)	no
3150-ZB	15	5.91 (150)	5.12 (130)	no
3175-ZB	17	6.89 (175)	6.10 (155)	no
3200-ZB	20	7.87 (200)	7.09 (180)	yes
3225-ZB	22	8.86 (225)	8.07 (205)	yes
3250-ZB	25	9.84 (250)	9.06 (230)	yes



For more information please refer to strain relief section of Chapter 10



Option 2:
Clip-on Tiewrap plates

Available as a clip-on tiewrap plate without the use of bolts They are inserted and removed with a screwdriver used as a lever. Clip-on tiewrap plates are also available as an attachment to the opening crossbars.

Part No.	Number of Teeth	Width of Strain Relief in.	(mm)
3050-ZC	5	1.97	(50)
3075-ZC	7	2.95	(75)

For more information please refer to strain relief section of Chapter 10



Strain relief for steel mounting brackets

Clip-on connection is not possible with steel mounting brackets. In this case, the tiewrap plates must be bolted directly into separate bore holes in front of the mounting bracket. Alternatively the tiewrap plates **30XX-Z and ZS** can be also used here. **Details chapter 10**

e-chain system® E2/000
Series 3400/3500
Guide Troughs

Guide troughs are used with applications where the upper run of the e-chain® glides on the lower run. If using igus® steel guide troughs, the following components are required:

- Full travel length of guide trough
  Part Number 93-30
- 1/2 travel length of glide bars
  Part number 93-01
- Installation sets as end connectors
  Part Number 93-50 -XX

-XX indicates the length of the profile rail on which the guide trough is mounted. The values and part numbers are specified in the table on the left. The standard length of the trough components and glide bars is 6.56 ft (2 m.) The required overall length of the guide trough directly correlates to the length of travel.

Length of travel 164 ft (50 m)
Center mounted
Required guide troughs:
164 ft (50 m) guide trough
82 ft (25 m) glide bar
= 25 sections of 6.56 ft (2 m) guide trough
Part No. 93-30
= 13 sections of 6.56 ft (2 m) glide bar
Part No. 93-01
Required number of installation sets:
= Number of guide trough components + 1
= 25 + 1 = 26
Part number of the installation sets
Example: 93-50-300 for 15.75" (400 mm) long profile rail.

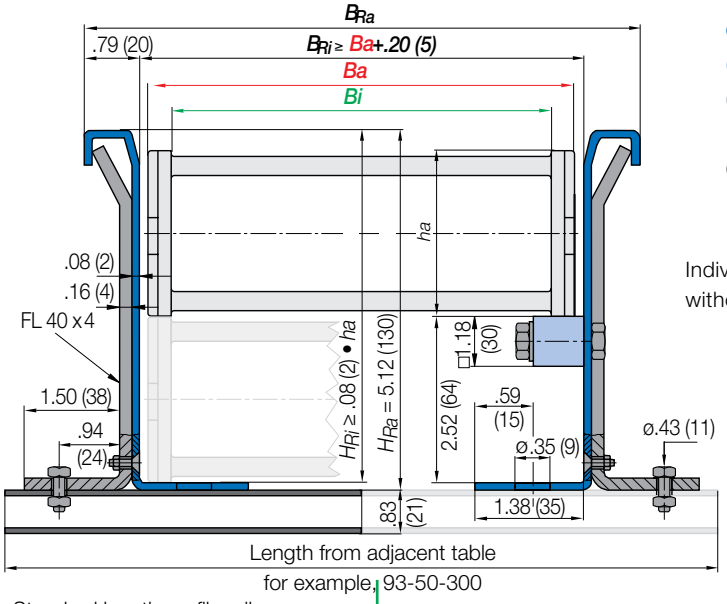


Example:

Width of Crossbar
3500-**075**-200-0

	B_{Ri}	Installation Part No.
-050	2.95 (75)	**93-50-200**
-075	3.94 (100)	**93-50-225**
-100	4.92 (125)	**93-50-250**
-115	5.51 (140)	**93-50-250**
-125	5.91 (150)	**93-50-275**
-150	6.89 (175)	**93-50-300**
-175	7.87 (200)	**93-50-325**
-200	8.86 (225)	**93-50-350**
-225	9.84 (250)	**93-50-375**
-250	10.83 (275)	**93-50-400**

Standard length profile rail



- Guide trough
- Glide bars
- Installation set "Basic"
- Profile rail

Individual attachment without profile rail

* Specialized guide trough available upon request

PDF: igus.com/e-chain-pdfs
Product information: igus.com/e-chains

e-chain system® E2/000
Series 3450/3480 e-chain®
Half-Tubes and Full Tubes

1.77 1.77

Price Index

Series 3450/3480

Special Features / Options

IPA Qualification Certificate, Air Cleanliness Class ISO Class 3 (at v = 2 m/s) upon request

ESD classification: Electrically conductive ESD/ ATEX version upon request

UL94 V2 classifications upon request

Assembly Tips



Insert screwdriver into the slot, using a lever action apply pressure to the screw-driver to release

Other Installation Methods

Vertical, hanging ≤ 262 ft (80 m)
Vertical, standing ≤ 9.84 ft (3 m)
Side-mounted, unsupp. ≤ 3.28 ft (1 m)
Rotary requires further calculation

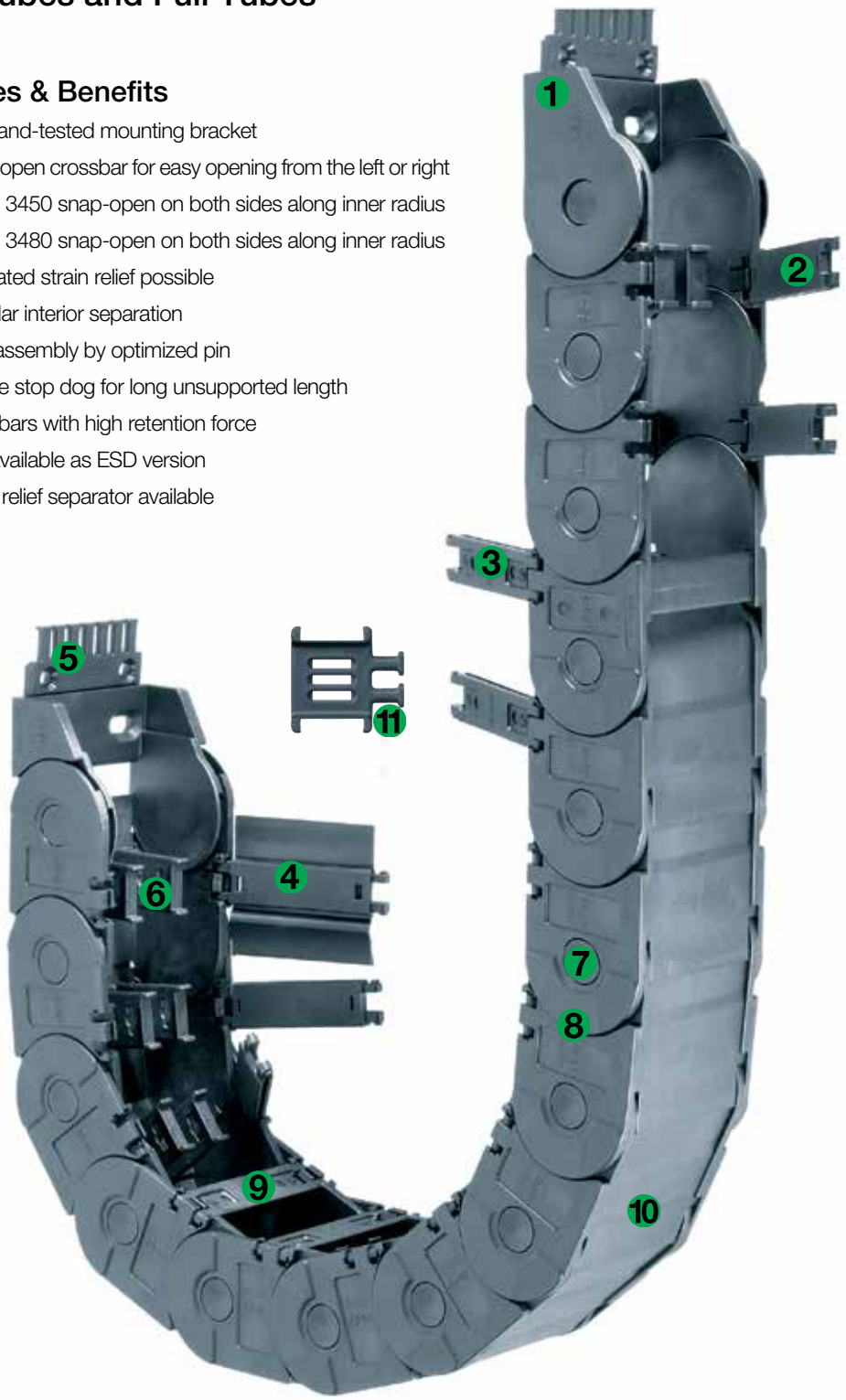
Usage Guidelines

- If snap-open accessibility along the inner or outer radius is required
- If integrated strain relief at the mounting point is required
- If modular interior separation is needed
- If long service life is required
- If easy installation is required

- If the application is very simple
  ➤ **Series E300 E-Z Chain**
- If greater stability is required
  ➤ **Series E4-42 E4-1 Series**

Features & Benefits

1. Tried-and-tested mounting bracket
2. Snap-open crossbar for easy opening from the left or right
3. Series 3450 snap-open on both sides along inner radius
4. Series 3480 snap-open on both sides along inner radius
5. Integrated strain relief possible
6. Modular interior separation
7. Easy assembly by optimized pin
8. Double stop dog for long unsupported length
9. Crossbars with high retention force
10. Also available as ESD version
11. Strain relief separator available



Order Example: Complete e-chain®

Please indicate chain length or number of links. Example:

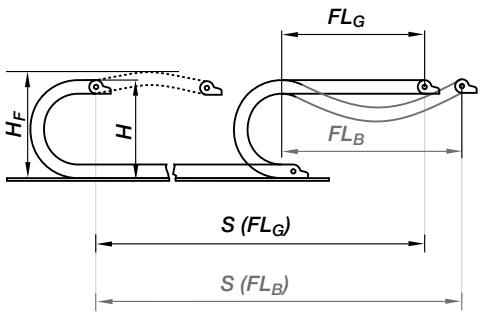
9.84 ft (3 m) **3450-100-125-0**	**e-chain®**
With 2 separators **45.1.1** assembled every 2nd link	**Interior Separation**
1 Set **3125-34PZB**	**Mounting Bracket**

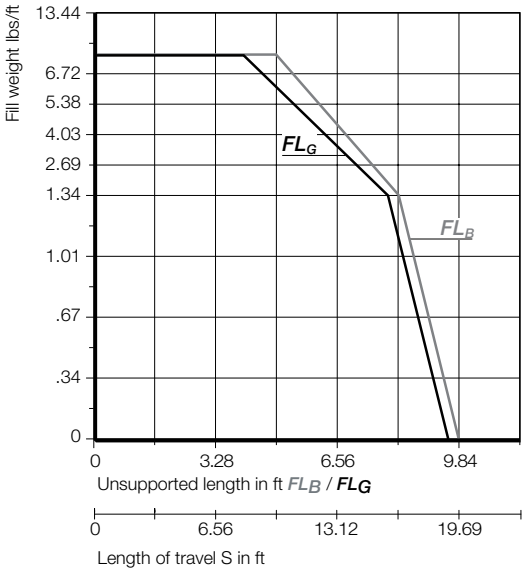
e-chain system® E2/000
Series 3450/3480 e-chain® Half-Tubes and Full Tubes
Installation Dimensions

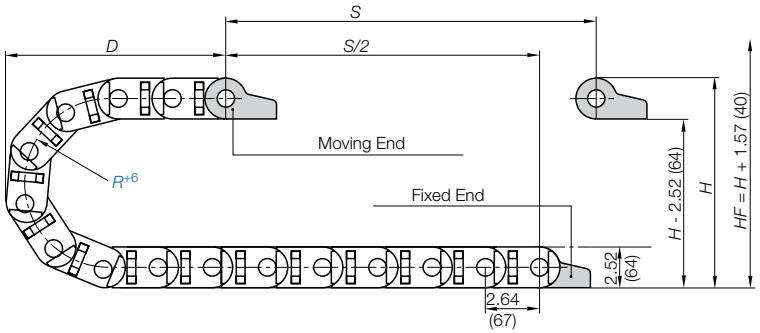
Short travel, unsupported length

- FL_B = unsupported with permitted sag
- FL_G = unsupported with straight upper run

Further information ➤ Design, Chapter 1







Pitch per link: = 2.64" (67 mm)
Links per ft (m): = 4.57 (15)
For center mount applications:
Chain length = $S/2 + K$

The required clearance height: $H_F = H + 1.57$ **in. (40 mm)** (with 1.68 lbs/ft (2.5 kg/m) fill weight.
Please consult igus® if space is particularly restricted.

R	2.95 (075*)	3.94 (100*)	4.92 (125)	5.91 (150)	7.87 (200)	9.84 (250)	11.81 (300)
H	8.42 (214)	10.39 (264)	12.36 (314)	14.33 (364)	18.27 (464)	22.20 (564)	26.14 (664)
D	8.19 (208)	9.17 (233)	10.16 (258)	11.14 (283)	13.11 (333)	15.08 (383)	17.05 (433)
K	14.57 (370)	17.72 (450)	20.87 (530)	24.02 (610)	30.11 (765)	36.22 (920)	42.52 (1080)

* Radius available upon request, please consult igus® for delivery time
Radii 075, 100: the e-tube is not completely enclosed. Please consult igus®
Before using Series 3450/3480 on long travels please consult igus®.

Short Travels - Unsupported

Unsupported e-chains® feature positive camber over short travels. This must be accounted for when specifying the clearance height. Please refer to **Installation dimensions** for further details.

Legend

S = Length of travel
R = Bending radius
H = Nominal clearance height
D = Overlength e-chain® radius in final position
K = $\pi \bullet R$ + *safety buffer*
H_F = Required clearance height

Speed / acceleration FL_G	max. 65.6 ft/s (20 m/s) / max. 656 ft/s² (200 m/s²)
Speed / acceleration FL_B	max. 9.84 ft/s (3 m/s) / max. 19.69 ft/s² (6 m/s²)
Gliding speed / acceleration (maximum)	max. 32.8 ft/s (10 m/s) / max. 164 ft/s² (50 m/s²)
Material - permitted temperature	igumid G / -40°F (-40°C) up to +248°F (+120° C)
Flammability Class, igumid G	VDE 0304 IIC UL94 HB

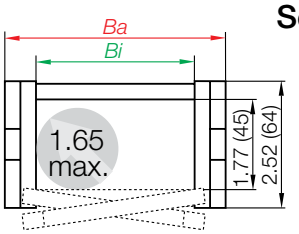
Technical Data

Details of material properties
➤ Chapter 1

PDF: igus.com/e-chain-pdfs
Product information: igus.com/e-chains

e-chain system® E2/000
Series 3450/3480 e-chain® Half-Tubes and Full Tubes

Series 3450 - snap-open along the inner radius, closed along the outer

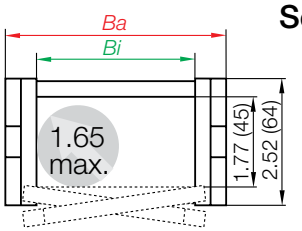




Part Number Structure

3450	100-	125-	0
Series	Width	Bending radius	Color - Black

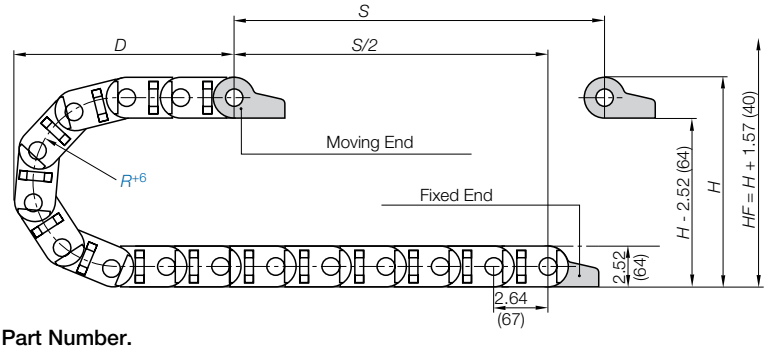
Series 3480 - snap-open along the inner radius, fully enclosed





Part Number Structure

3480-	100-	125-	0
Series	Width	Bending radius	Color - Black



Supplement part number with required radius.
Example: 3450-100-125-0
Pitch: 264 in. (67 mm) per link links/ft(m) = 4.57 (15)

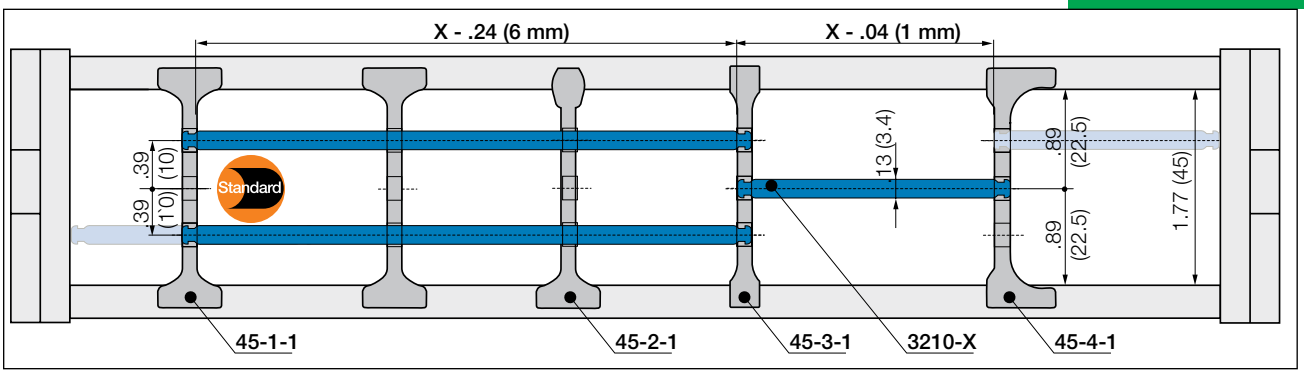
Part Number. Snap-open inner radius	Snap-open outer radius	Bi in. (mm)	Ba in. (mm)	Weight 3450 lbs/ft (kg/m)	Weight 3480 lbs/ft (kg/m)
3450-050-□-0	3480-050-□-0	1.97 (50)	2.76 (70)	≈ 1.19 (1.77)	≈ 1.32 (1.96)
3450-075-□-0	3480-075-□-0	2.95 (75)	3.74 (95)	≈ 1.31 (1.95)	≈ 1.39 (2.07)
3450-100-□-0	3480-100-□-0	3.94 (100)	4.72 (120)	≈ 1.44 (2.15)	≈ 1.55 (2.30)
3450-115-□-0	3480-115-□-0	4.53 (115)	5.31 (135)	≈ 1.55 (2.30)	≈ 1.65 (2.46)
3450-125-□-0	3480-125-□-0	4.92 (125)	5.71 (145)	≈ 1.63 (2.42)	≈ 1.67 (2.49)
3450-150-□-0	3480-150-□-0	5.91 (150)	6.69 (170)	≈ 1.75 (2.60)	≈ 1.76 (2.62)
3450-175-□-0	3480-175-□-0	6.89 (175)	7.68 (195)	≈ 1.84 (2.75)	≈ 1.88 (2.80)
3450-200-□-0	3480-200-□-0	7.87 (200)	8.66 (220)	≈ 1.95 (2.90)	≈ 1.98 (2.94)
3450-225-□-0	3480-225-□-0	8.86 (225)	9.65 (245)	≈ 2.12 (3.15)	≈ 2.10 (3.12)
3450-250-□-0	3480-250-□-0	9.84 (250)	10.63 (270)	≈ 2.22 (3.30)	≈ 2.20 (3.28)

Choose from the radii below for all of the above sizes
Radius (mm) Example: 3450-100-125-0

	075*	100*	125	150	200	250	300
R	2.95 (075*)	3.94 (100*)	4.92 (125)	5.91 (150)	7.87 (200)	9.84 (250)	11.81 (300)
H	8.42 (214)	10.39 (264)	12.36 (314)	14.33 (364)	18.27 (464)	22.20 (564)	26.14 (664)
D	8.19 (208)	9.17 (233)	10.16 (258)	11.14 (283)	13.11 (333)	15.08 (383)	17.05 (433)
K	14.57 (370)	17.72 (450)	20.87 (530)	24.02 (610)	30.11 (765)	36.22 (920)	42.52 (1080)

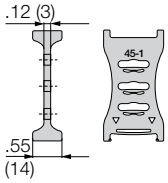
* Radius available upon request, please consult igus® for delivery time
Radii 075, 100: the e-tube is not completely enclosed. Please consult igus®

e-chain system® E2/000
Series 3450/3480 e-chain® Half-Tubes and Full Tubes
Interior Separation



In the standard configuration separators are assembled every 2nd e-chain® link



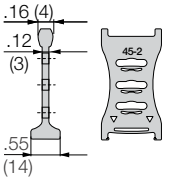


Separator, wide base

Unassembled	**Part No. 45.1**
Assembled	**Part No. 45.1.1**

- **Standard separator 45.1**
  for all applications
  Separator with wide base for maximum locking strength and safe standing in e-chains®.



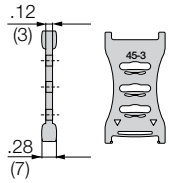


Separator, narrow head

Unassembled	**Part No. 45.2**
Assembled	**Part No. 45.2.1**

- **Separator 45.2**
  For even faster installation
  is used when vertical and horizontal separation is required. Due to its slot, it allows basic vertical/horizontal shelving arrangements.



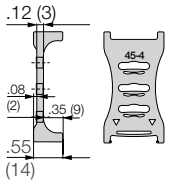


Separator, narrow base

Unassembled	**Part No. 45.3**
Assembled	**Part No. 45.3.1**

- **Separator 45.3**
  For many thin cables
  is used when vertical and horizontal separation is required. Due to its slot, it allows basic vertical/horizontal shelving arrangements.





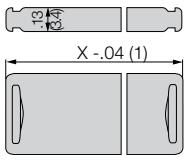
Separator, asymmetrical

Unassembled	**Part No. 45.4**
Assembled	**Part No. 45.4.1**

- **Separator 45.4**
  For side mounted applications
  is used when vertical and horizontal separation is required.

Lockable full-width shelves - for the standard interior separation





Full width shelf, lockable

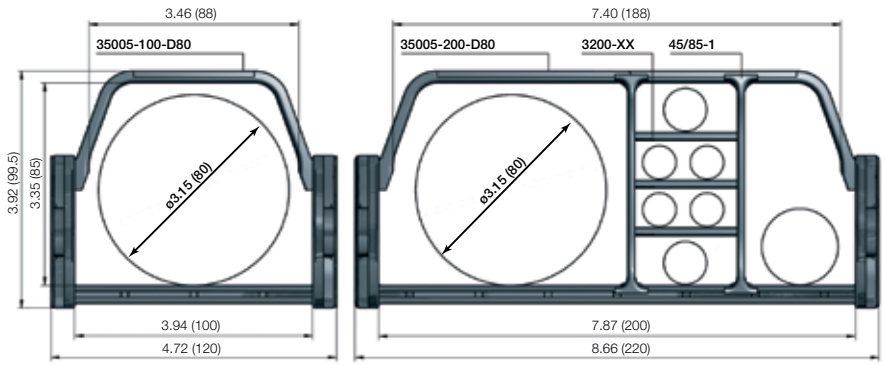
Unassembled	**Part No. 3200-X**
Assembled	**Part No. 3210-X**

- **Full width shelf, lockable**
  is used when vertical and horizontal separation is required.

Width X in. (mm)	Part No. Unassembled	Part No. Assembled	Width X in. (mm)	Part No. Unassembled	Part No. Assembled
1.97 (050)	**3200-050**	**3210-050**	5.91 (150)	**3200-150**	**3210-150**
2.95 (075)	**3200-075**	**3210-075**	6.89 (175)	**3200-175**	**3210-175**
3.94 (100)	**3200-100**	**3210-100**	7.87 (200)	**3200-200**	**3210-200**
4.53 (115)	**3200-115**	**3210-115**	8.86 (225)	**3200-225**	**3210-225**
4.92 (125)	**3200-125**	**3210-125**	9.84 (250)	**3200-250**	**3210-250**

PDF: igus.com/e-chain-pdfs
Product information: igus.com/e-chains

e-chain system® E2/000
Series 3450 e-chain® Half-Tubes
Extender crossbars





Part Number.
Extender crossbars
for e-chains®
that snap-open
along **inner** radius

	Bi in. (mm)	*Ba* in. (mm)
3450-100D80- ☐ -0	2.95 (100)	3.58 (120)
3450-200D80- ☐ -0	4.92 (200)	5.55 (220)

Choose from the radii below for all of the above sizes

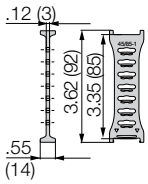
Radius (mm) Example: 3450-100D80- 100 -0

	125	150	200	250	300
R	4.92 (125)	5.91 (150)	6.89 (175)	7.87 (200)	9.84 (250)

*Extender crossbars are only available for Series 3450 e-chains®

Interior separation for extender crossbars





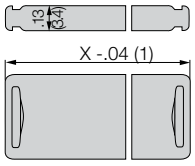
Separator, wide base

Unassembled	**Part No. 45/85.1**
Assembled	**Part No. 45/85.1.1**

- **Standard separator 45/85.1, wide base**
  For maximum locking strength and safe standing. In standard configuration separators are assembled every 2nd e-chain® link.

Lockable full-width shelves - for the standard interior separation





Full width shelf, lockable

Unassembled	**Part No. 3200-X**
Assembled	**Part No. 3210-X**

- **Full width shelf, lockable**
  is used when vertical and horizontal separation is required.

Width X in. (mm)	Part No. Unassembled	Part No. Assembled	Width X in. (mm)	Part No. Unassembled	Part No. Assembled
1.97 (050)	**3200-050**	**3210-050**	5.91 (150)	**3200-150**	**3210-150**
2.95 (075)	**3200-075**	**3210-075**	6.89 (175)	**3200-175**	**3210-175**
3.94 (100)	**3200-100**	**3210-100**	7.87 (200)	**3200-200**	**3210-200**
4.53 (115)	**3200-115**	**3210-115**	8.86 (225)	**3200-225**	**3210-225**
4.92 (125)	**3200-125**	**3210-125**	9.84 (250)	**3200-250**	**3210-250**

Separator with integrated strain relief



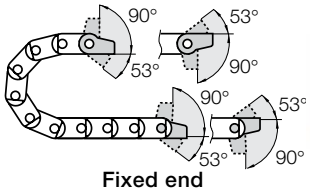
Strain relief separator Part No. 34501-Z can be integrated into the mounting bracket and can be placed there at any point of the e-chain®. It combines strain relief and interior separation, it can be installed on the first or last e-chain® link and is easy to assemble without any screws.
For more information ➤ **Chapter 10, Strain Relief**

e-chain system® E2/000
Series 3450/3480 e-chain® Half-Tubes and Full Tubes
Mounting Bracket - Plastic

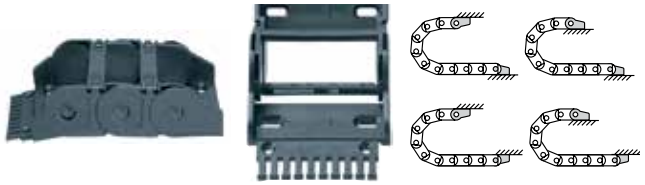
Option 1: pivoting

- For unsupported and gliding applications
- Well suited for tight installation conditions
- Detachable strain relief tiewrap plates
- Can be mounted on the fixed and/or moving end

Moving end
3...3PZB



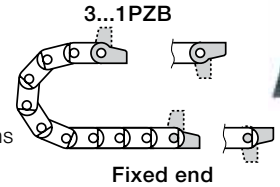
Fixed end
3...4PZB



Option 2: locking

- For unsupported and gliding applications
- Extreme speed and/or accelerations
- For height restricted applications
- Can be mounted on the fixed and/or moving end

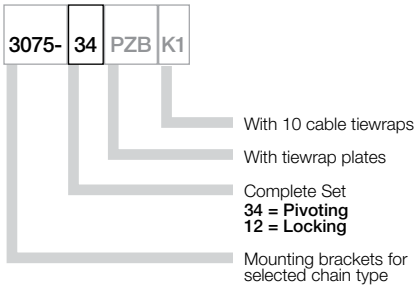
Moving end
3...1PZB

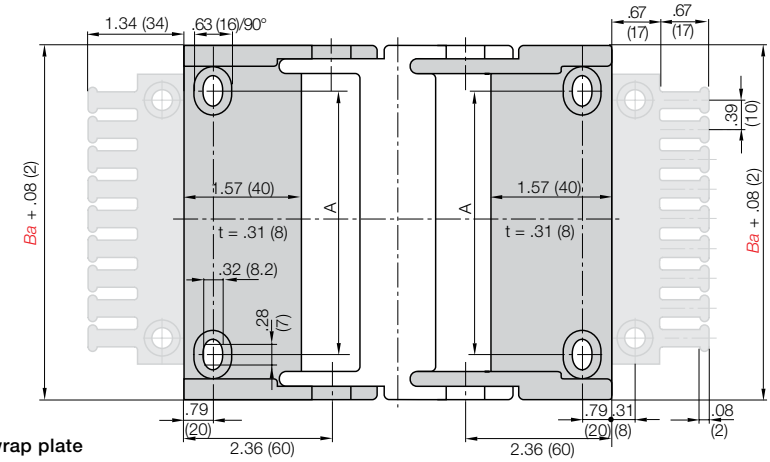


Fixed end
3...2PZB



Part Number Structure





Full set, for both ends:
3075- 34 PZB Full set, **each part with pin/bore + tiewrap plate**

Single-part order:
3075- 3 PZB Mounting bracket **with bore + tiewrap plate**
3075- 4 PZB Mounting bracket **with pin + tiewrap plate**

Part No. Full Set (pivoting)
Without Tiewrap Plates
Series 3450:
3075-34PZ

Part No. Full Set (pivoting)
With Tiewrap Plates
Series 3450:
3075-34PZB

Part No. Full Set (pivoting)
With Tiewrap Plates + 10 cable ties
Series 3450:
3075-34PZBK1

For Chain Type	Part No. Full Set without Tiewrap Plate	Part No. Full Set with Tiewrap Plate	Part No. Full Set with Tiewrap Plate + 10 cable ties	Dimension A in.	(mm)	Number of Teeth
3450/3480-050	3050- ☐ PZ	3050- ☐ PZB	3050- ☐ PZBK1	2.09	(28)	5
3450/3480-075	3075- ☐ PZ	3075- ☐ PZB	3075- ☐ PZBK1	2.09	(53)	7
3450/3480-100	3100- ☐ PZ	3100- ☐ PZB	3100- ☐ PZBK1	3.07	(78)	10
3450/3480-115	3115- ☐ PZ	3115- ☐ PZB	3115- ☐ PZBK1	3.66	(93)	11
3450/3480-125	3125- ☐ PZ	3125 ☐ PZB	3125 ☐ PZBK1	4.06	(103)	12
3450/3480-150	3150- ☐ PZ	3150- ☐ PZB	3150- ☐ PZBK1	5.04	(128)	15
3450/3480-175	3175- ☐ PZ	3175- ☐ PZB	3175- ☐ PZBK1	6.02	(153)	17
3450/3480-200	3200- ☐ PZ	3200- ☐ PZB	3200- ☐ PZBK1	7.01	(178)	20
3450/3480-225	3225- ☐ PZ	3225- ☐ PZB	3225- ☐ PZBK1	7.99	(203)	22
3450/3480-250	3250- ☐ PZ	3250- ☐ PZB	3250- ☐ PZBK1	8.98	(228)	25

34 or 12

For pivoting brackets choose 34
For locking brackets choose 12
Example: 3075- 34 PZB

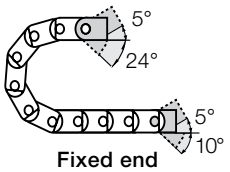
PDF: igus.com/e-chain-pdfs
Product information: igus.com/e-chains

e-chain system® E2/000
Series 3450/3480 e-chain® Half-Tubes and Full Tubes
Mounting Bracket - KMA

Option 1: pivoting

- For unsupported applications
- Bolted connection outside of chain cross section
- Confined installation conditions
- Attachment points on all sides
- Stackable

Moving end
34800...1



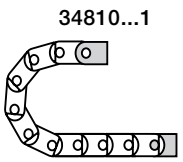
Fixed end
34800...2



Option 2: locking

- For vertical hanging/standing applications
- Bolted connection outside of chain cross section
- For very high speeds and accelerations
- Attachment points on all sides
- Stackable

Moving end
34810...1



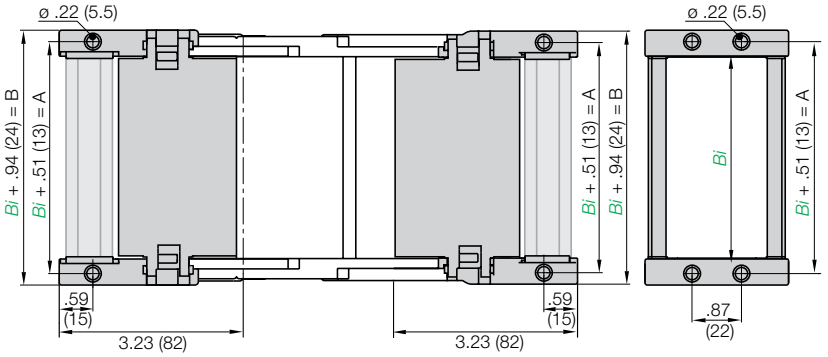
Fixed end
34810...2



Part Number Structure

34800-	075-	12	P

- P: With profile rail
- 12: Complete Set
- 075: Width
- 34800-: Mounting brackets for selected chain type
  34800 = Pivoting
  34810 = Locking



Full set, for both ends:
34800- 12 P Full set, **each part with pin/bore + profile rail**

Single-part order:
34800- 1 P Mounting bracket **with bore + profile rail**
34800- 2 P Mounting bracket **with pin + profile rail**

Part No. Full Set (pivoting)
With Profile Rail
Series 3480:
34800-Width-12P

Part No. Full Set (pivoting)
Without Profile Rail
Series 3480:
34800-Width-12

For Chain Type	Part No. Full set with Profile Rail	Part No. Full Set without Profile Rail	Dimension A in.	Dimension A (mm)	Dimension B in.	Dimension B (mm)
3450/3480-050	[ ]-050-12P	[ ]-050-12	2.48	(63)	2.91	(74)
3450/3480-075	[ ]-075-12P	[ ]-075-12	3.46	(88)	3.90	(99)
3450/3480-100	[ ]-100-12P	[ ]-100-12	4.45	(113)	4.88	(124)
3450/3480-115	[ ]-115-12P	[ ]-115-12	5.04	(128)	5.47	(139)
3450/3480-125	[ ]-125-12P	[ ]-125-12	5.43	(138)	5.87	(149)
3450/3480-150	[ ]-150-12P	[ ]-150-12	6.42	(163)	6.85	(174)
3450/3480-175	[ ]-175-12P	[ ]-175-12	7.40	(188)	7.83	(199)
3450/3480-200	[ ]-200-12P	[ ]-200-12	8.38	(213)	8.82	(224)
3450/3480-225	[ ]-225-12P	[ ]-225-12	9.37	(238)	9.80	(249)
3450/3480-250	[ ]-250-12P	[ ]-250-12	10.35	(263)	10.79	(274)

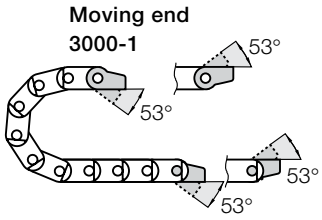
[34800] or [34810]

For pivoting brackets choose [34800]
For locking brackets choose [34810]
Example: [34800]-075-12P

e-chain system® E2/000
Series 3450/3480 e-chain® Half-Tubes and Full Tubes
Mounting Bracket - Steel

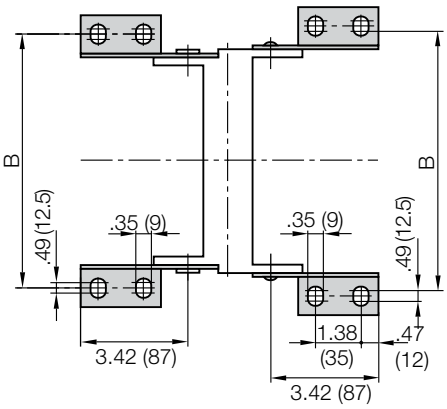
Option 1: Steel

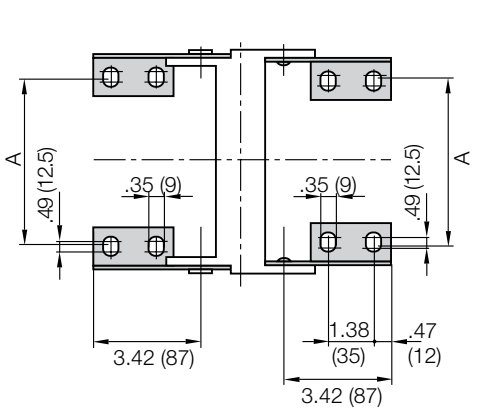
- One part (two-piece) for all chain widths
- Electrically conductive
- Bolted connection outside of chain cross-section possible





Possible installation configurations -





*pivoting with no stop, (360°)

Chain Type	Part No. Full Set	Dimension A in.	(mm)	Dimension B in.	(mm)
3450/3480-050	**3000-12**	1.10	(28)	3.39	(86)
3450/3480-075	**3000-12**	2.09	(53)	4.37	(111)
3450/3480-100	**3000-12**	3.07	(78)	5.35	(136)
3450/3480-115	**3000-12**	3.66	(93)	5.94	(151)
3450/3480-125	**3000-12**	4.06	(103)	6.34	(161)
3450/3480-150	**3000-12**	5.04	(128)	7.32	(186)
3450/3480-175	**3000-12**	6.02	(153)	8.35	(212)
3450/3480-200	**3000-12**	7.01	(178)	9.29	(236)
3450/3480-225	**3000-12**	7.99	(203)	10.28	(261)
3450/3480-250	**3000-12**	8.98	(228)	11.26	(286)

Part No. Mounting Brackets Full Set
4 parts, 2 with pin, 2 with bore
Series 3480:
3000-12

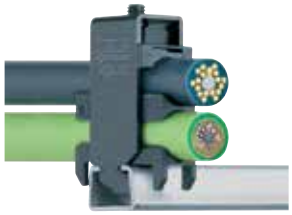
Part No. Mounting Bracket Moving End
2 parts, 1 left & 1 right
Series 3480:
3000-1

Part No. Mounting Bracket Fixed End
2 parts, 1 left & 1 right
Series 3480:
3000-2

PDF: igus.com/e-chain-pdfs
Product information: igus.com/e-chains

e-chain system® E2/000
Series 3450/3480 e-chain® Half-Tubes and Full Tubes
Strain Relief

Chainfix clamps for the profile rail



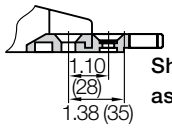
igus® Chainfix strain relief elements are available in either steel or stainless steel. They can be adjusted with a hexagon socket and are available in single, double and triple configurations.

Part No. Single Clamp		Part No. Double Clamp		Part No. Triple Clamp		Cable ø	
Steel	Stainless	Steel	Stainless	Steel	Stainless	in.	(mm)
CFX12-1	CFX12-1E	CFX12-2	CFX12-2E	CFX12-3	–	.24 - .47	(06 - 12)
CFX14-1	CFX14-1E	CFX14-2	CFX14-2E	CFX14-3	–	.47 - .55	(12 - 14)
CFX16-1	CFX16-1E	CFX16-2	CFX16-2E	CFX16-3	–	.55 - .63	(14 - 16)
CFX18-1	CFX18-1E	CFX18-2	CFX18-2E	CFX18-3	–	.63 - .71	(16 - 18)
CFX20-1	CFX20-1E	CFX20-2	CFX20-2E	CFX20-3	–	.71 - .79	(18 - 20)
CFX22-1	CFX22-1E	CFX22-2	CFX22-2E	CFX22-3	–	.79 - .87	(20 - 22)
CFX26-1	CFX26-1E	CFX26-2	CFX26-2E	–	–	.87 - 1.02	(22 - 26)
CFX30-1	CFX30-1E	CFX30-2	CFX30-2E	–	–	1.02 - 1.18	(26 - 30)
CFX34-1	CFX34-1E	CFX34-2	CFX34-2E	–	–	1.18 - 1.34	(30 - 34)
CFX38-1	CFX38-1E	–	–	–	–	1.34 - 1.50	(34 - 38)
CFX42-1	CFX42-1E	–	–	–	–	1.50 - 1.65	(38 - 42)

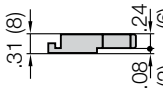
For more information please refer to strain relief section of Chapter 10

Tiewrap Plates





Shown assembled

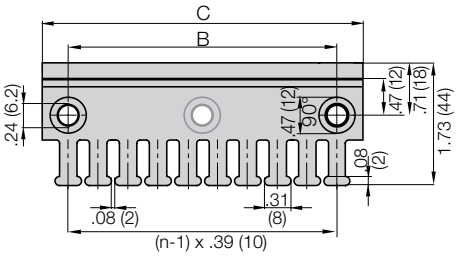


Single tiewrap plate

Option 1:
Tiewrap plates as an individual part

Available as an individual component, can be fixed onto a mounting bracket with the use of a profile rail.

Tiewrap Plate	n Number of Teeth	C Overall Width in. (mm)	B Bore Width in. (mm)	Center Bore
3050-ZB	5	1.97 (50)	1.18 (30)	no
3075-ZB	7	2.95 (75)	2.16 (55)	no
3100-ZB	10	3.94 (100)	3.15 (80)	no
3115-ZB	11	4.53 (115)	3.74 (95)	no
3125-ZB	12	4.92 (125)	4.13 (105)	no
3150-ZB	15	5.91 (150)	5.12 (130)	no
3175-ZB	17	6.89 (175)	6.10 (155)	no
3200-ZB	20	7.87 (200)	7.09 (180)	yes
3225-ZB	22	8.86 (225)	8.07 (205)	yes
3250-ZB	25	9.84 (250)	9.06 (230)	yes



For more information please refer to strain relief section of Chapter 10



Option 2:
Clip-on Tiewrap plates

Available as a clip-on tiewrap plate without the use of bolts They are inserted and removed with a screwdriver used as a lever. Clip-on tiewrap plates are also available as an attachment to the opening crossbars.

Part No.	Number of Teeth	Width of Strain Relief in.	(mm)
3050-ZC	5	1.97	(50)
3075-ZC	7	2.95	(75)

For more information please refer to strain relief section of Chapter 10

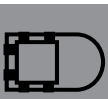


Strain relief for steel mounting brackets

Clip-on connection is not possible with steel mounting brackets. In this case, the tiewrap plates must be bolted directly into separate bore holes in front of the mounting bracket. Alternatively the tiewrap plates **30XX-Z and ZS** can be also used here. **Details chapter 10**

PDF: igus.com/e-chain-pdfs
Product information: igus.com/e-chains







e-chain system® E2 Medium
Series 255 e-chain®

Price Index

Series 255

Special Features / Options

IPA Qualification Certificate, Air Cleanliness Class ISO Class 3 (at v = 2 m/s) upon request

ESD classification: Electrically conductive ESD/ ATEX version upon request

UL94 V2 classifications upon request

Assembly Tips



Insert screwdriver into the slot, using a lever action apply pressure to the screw-driver to release

Other Installation Methods

Vertical, hanging ≤ 131 ft (40 m)
Vertical, standing ≤ 9.84 ft (3 m)
Side-mounted, unsupp. ≤ 3.28 ft (1 m)
Rotary requires further calculation

Usage Guidelines

- If quieter operation at very high speeds is required
- If integrated strain relief at the mounting point is required
- If modular interior separation is needed
- If easy installation is required

- If each link requires snap-open accessibility on both sides
  ➤ **Series E4-21 E4-1**
- If maximum stability is required
  ➤ **Series E4-21 E4-1**
- If the application is very simple and easy filling is required
  ➤ **Series E300 E-Z Chain**

Features & Benefits

1. Tried-and-tested mounting bracket
2. Snap-open crossbar for easy opening from the left or right
3. Series 255 snap-open on both sides along outer radius
4. Integrated strain relief possible
5. Modular interior separation
6. Easy assembly by optimized pin
7. Double stop dog for long unsupported length
8. Crossbars with high retention force
9. Also available as ESD version



Order Example: Complete e-chain®

Please indicate chain length or number of links. Example:

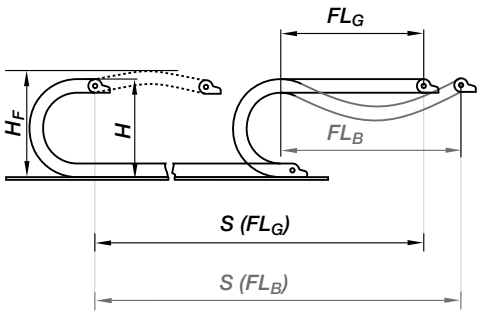
3.28 ft (1 m) **255-10-200-0**	**e-chain®**
With 2 separators **2552** assembled every 2nd link	**Interior Separation**
1 Set **2105-34PZ1B** with tiewrap plate	**Mounting Bracket**

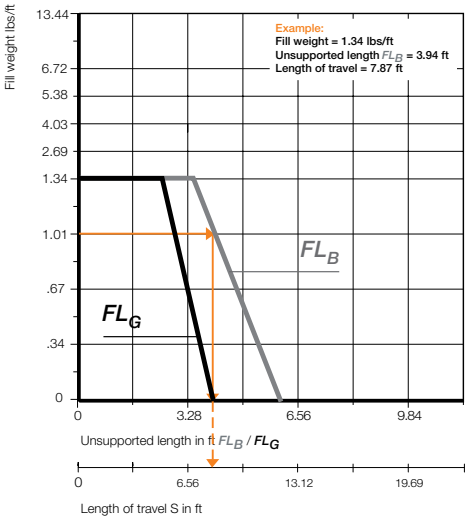
e-chain system® E2 Medium Series 255 e-chain® Installation Dimensions

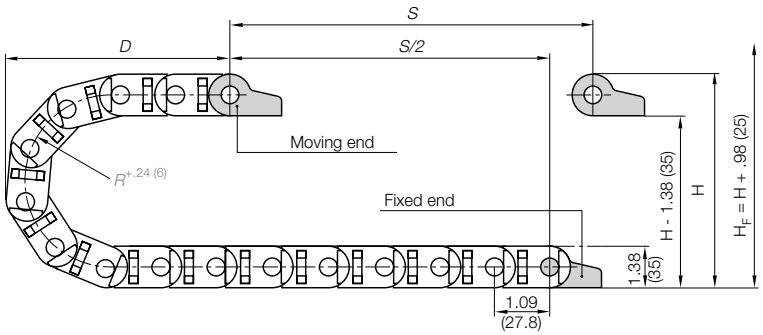
Short travel, unsupported length

- FL_B = unsupported with permitted sag
- FL_G = unsupported with straight upper run

Further information ➤ Design, Chapter 1







Pitch per link: = 1.09" (27.8 mm)
Links per ft (m): = 11 (36)
For center mount applications:
Chain length = $S/2 + K$

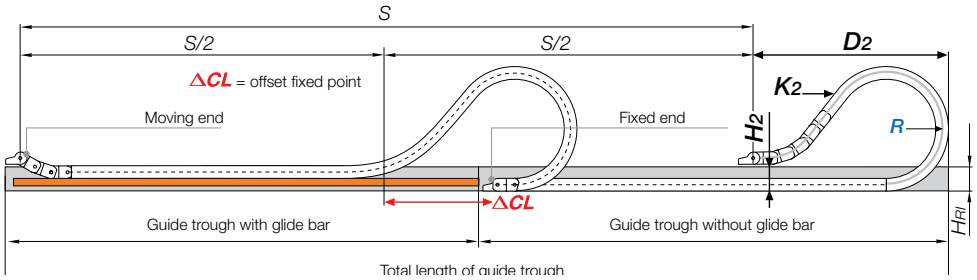
The required clearance height: ***HF = H + .98 in. (25 mm)*** (with 1.01 lbs/ft (1.5 kg/m) fill weight.
Please consult igus® if space is particularly restricted.

R	2.17 (055)	2.95 (075)	3.94 (100)	4.92 (125)	5.91 (150)	6.89 (175)	7.87 (200)	8.86 (225)	9.84 (250)
H^{+4}_{0}	5.71 (145)	7.28 (185)	9.25 (235)	11.22 (285)	13.19 (335)	15.16 (385)	17.13 (435)	19.09 (485)	21.06 (535)
D	4.48 (114)	5.28 (134)	6.26 (159)	7.24 (184)	8.23 (209)	9.21 (234)	10.20 (259)	11.18 (284)	12.17 (309)
K	9.06 (230)	11.61 (295)	14.57 (370)	17.72 (450)	20.87 (530)	24.02 (610)	26.97 (685)	30.12 (765)	33.27 (845)

For long travels with lowered mounting height

Long travel lengths from 32.8 ft. (10 m) to max. 328 ft. (100 m)

For center mount applications:
Chain length: = $S/2 + K_2$



In the case of travels between 13 ft. (4m) and 32.8 ft. (10m) we recommend a longer unsupported length.

R	2.17 (055)	2.95 (075)	3.94 (100)	4.92 (125)	5.91 (150)	6.89 (175)	7.87 (200)	8.86 (225)	9.84 (250)
H_2	4.33 (110)	5.91 (150)	3.94 (100)	3.94 (100)	3.94 (100)	3.94 (100)	3.94 (100)	3.94 (100)	3.94 (100)
$D_{2^{+25}}$	4.49 (114)	5.28 (134)	14.96 (380)	19.49 (495)	22.44 (570)	26.18 (665)	29.13 (740)	40.94 (1040)	44.49 (1130)
K_2	9.06 (230)	11.61 (295)	24.09 (612)	31.73 (806)	37.20 (945)	43.78 (1112)	48.15 (1223)	63.39 (1610)	70.04 (1779)
ΔCL	–	–	8.74 (222)	12.68 (322)	14.65 (372)	17.20 (437)	19.57 (497)	–	32.36 (822)

Speed / acceleration FL_G	max. 65.6 ft/s (20 m/s) / max. 656 ft/s² (200 m/s²)
Speed / acceleration FL_B	max. 9.84 ft/s (3 m/s) / max. 19.69 ft/s² (6 m/s²)
Gliding speed / acceleration (maximum)	max. 32.8 ft/s (10 m/s) / max. 164 ft/s² (50 m/s²)
Material - permitted temperature	igumid G / -40°F (-40°C) up to +248°F (+120° C)
Flammability Class, igumid G	VDE 0304 IIC UL94 HB

Short Travels - Unsupported

Unsupported e-chains® feature positive camber over short travels. This must be accounted for when specifying the clearance height. Please refer to **Installation dimensions** for further details.

Legend

S = Length of travel
R = Bending radius
H = Nominal clearance height
D = Overlength e-chain® radius in final position
K = $\pi \bullet R$ + *safety buffer*
H_F = Required clearance height

Long Travels - Gliding

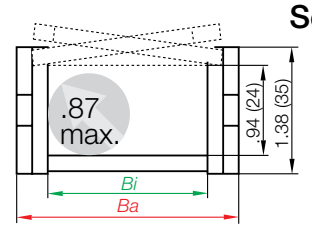
If the unsupported length is exceeded, the e-chain® must glide on itself. This requires a guide trough.
Design, Chapter 1

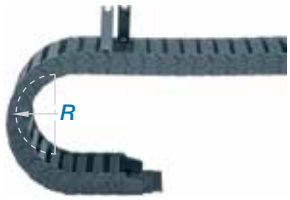
Technical Data

Details of material properties
➤ **Chapter 1**

e-chain system® E2 Medium
Series 255 e-chain®

Series 255 - snap-open along the outer radius



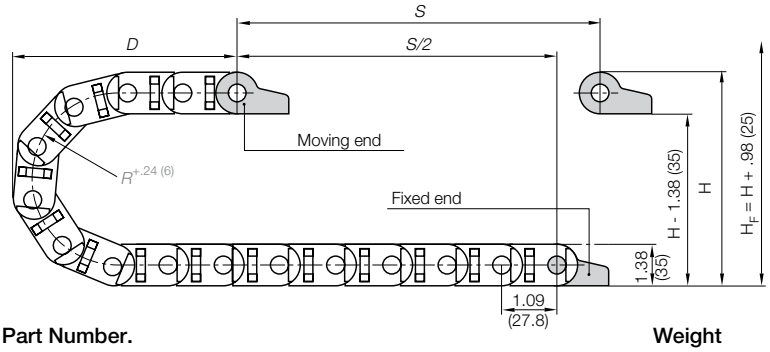




Part Number Structure

255-	03-	200-	0

- 0 — Color - Black
- 200 — Bending radius
- 03 — Width
- 255 — Series



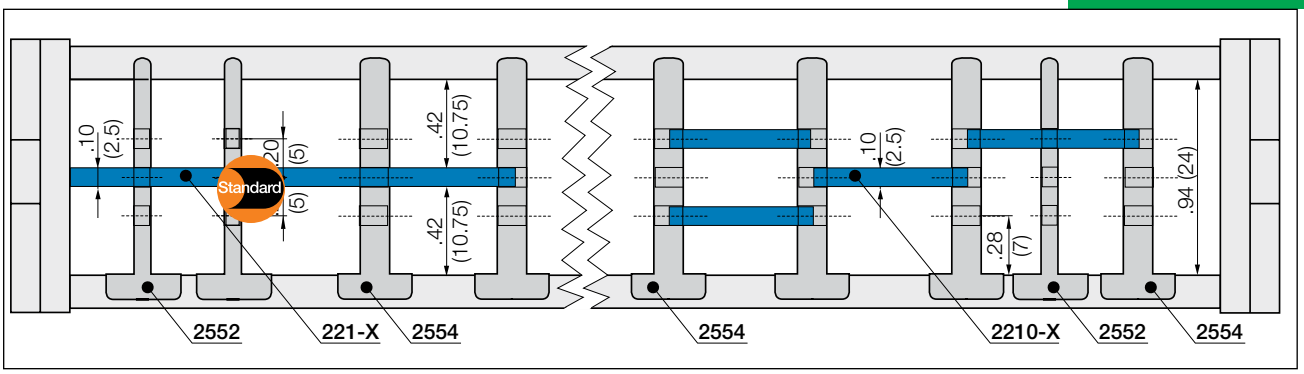
Supplement part number with required radius.
Example: 255-03-200-0
Pitch: 1.09 in. (27.8 mm) per link
links/ft(m) = 11 (36)

Part Number. Snap-open inner radius	Bi in. (mm)	Ba in. (mm)	Weight lbs/ft (kg/m)
255-03-☐-0	1.97 (38)	2.76 (54)	≈ 0.54 (0.81)
255-05-☐-0	2.95 (57)	3.74 (73)	≈ 0.60 (0.90)
255-07-☐-0	3.94 (77)	4.72 (93)	≈ 0.68 (1.01)
255-10-☐-0	4.53 (103)	5.31 (119)	≈ 0.77 (1.15)

Choose from the radii below for all of the above sizes
Radius (mm) Example: 255-03-200-0

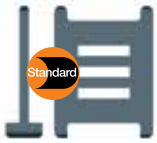
055	075	100	125	150	175	200	225	250
2.17 (055)	2.95 (075)	3.94 (100)	4.92 (125)	5.91 (150)	6.89 (175)	7.87 (200)	8.86 (225)	9.84 (250)
5.71 (145)	7.28 (185)	9.25 (235)	11.22 (285)	13.19 (335)	15.16 (385)	17.13 (435)	19.09 (485)	21.06 (535)
4.48 (114)	5.28 (134)	6.26 (159)	7.24 (184)	8.23 (209)	9.21 (234)	10.20 (259)	11.18 (284)	12.17 (309)
9.06 (230)	11.61 (295)	14.57 (370)	17.72 (450)	20.87 (530)	24.02 (610)	26.97 (685)	30.12 (765)	33.27 (845)

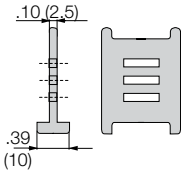
e-chain system® E2 Medium
Series 255 e-chain®
Interior Separation



In the standard configuration separators are assembled every 2nd e-chain® link

Separators



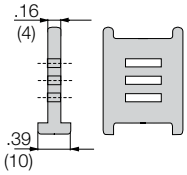


Slotted Separator for e-chains®

Unassembled	**Part No. 2551**
Assembled	**Part No. 2552**

- **Standard slotted separator 2551**
  Separator with wide base for maximum locking strength and safe standing in e-chains®.





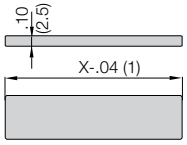
Slotted separator for e-chains®

Unassembled	**Part No. 2553**
Assembled	**Part No. 2554**

- **Slotted Separator 2553**
  is used when vertical and horizontal separation is required. Due to its slot, it allows basic vertical/horizontal shelving arrangements.

Full-width shelves





Full-width shelf for e-chains®

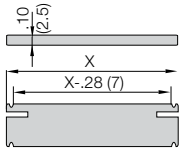
Unassembled	**Part No. 220-X**
Assembled	**Part No. 221-X**

- **Full-width shelf 220-X**
  is used when vertical and horizontal separation is required. Due to its slot, it allows basic vertical/horizontal shelving arrangements.

Width X in. (mm)	Part No. Unassembled	Part No. Assembled	Width X in. (mm)	Part No. Unassembled	Part No. Assembled
1.50 (038)	**2200-38**	**2210-38**	3.03 (077)	**2200-73**	**2210-73**
2.24 (057)	**2200-58**	**2210-58**	4.06 (103)	**2200-88**	**2210-88**

Shelves





Shelf for e-chains®

Unassembled	**Part No. 2200-X**
Assembled	**Part No. 2210-X**

- **Shelf 2200-X**
  is used when vertical and horizontal separation is required.

Width X in. (mm)	Part No. Unassembled	Part No. Assembled	Width X in. (mm)	Part No. Unassembled	Part No. Assembled	Width X in. (mm)	Part No. Unassembled	Part No. Assembled
0.71 (018)	**2200-18**	**2210-18**	1.69 (043)	**2200-43**	**2210-43**	3.46 (088)	**2200-88**	**2210-88**
0.91 (023)	**2200-23**	**2210-23**	1.89 (048)	**2200-48**	**2210-48**	3.90 (099)	**2200-99**	**2210-99**
1.10 (028)	**2200-28**	**2210-28**	2.28 (058)	**2200-58**	**2210-58**			
1.30 (033)	**2200-33**	**2210-33**	2.68 (068)	**2200-68**	**2210-68**			
1.50 (038)	**2200-38**	**2210-38**	2.87 (073)	**2200-73**	**2210-73**			

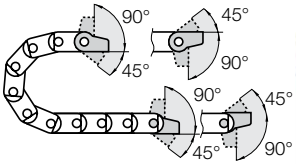
PDF: igus.com/e-chain-pdfs
Product information: igus.com/e-chains

e-chain system® E2 Medium
Series 255 e-chain®
Mounting Bracket - Plastic

Option 1: pivoting

- For unsupported and gliding applications
- Well suited for tight installation conditions
- Detachable strain relief tiewrap plates
- Can be mounted on the fixed and/or moving end

Moving end
3...3PZB



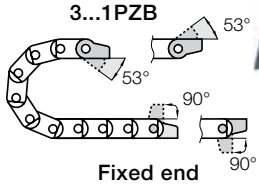


Fixed end
3...4PZB

Option 2: locking

- For vertical hanging and standing applications
- Extreme speed and/or accelerations
- For height restricted applications
- Can be mounted on the fixed and/or moving end

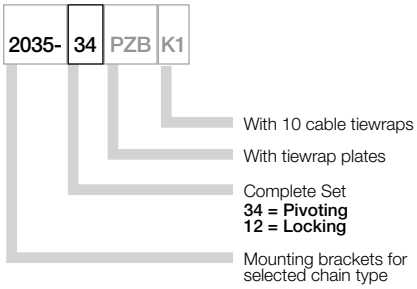
Moving end
3...1PZB

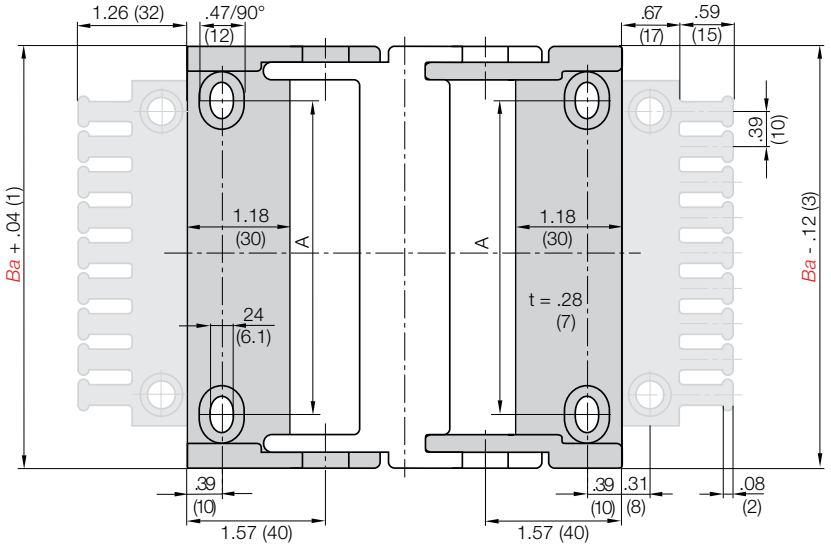




Fixed end
3...2PZB

Part Number Structure





Full set, for both ends:
2035- 34 PZB Full set, **each part with pin/bore + tiewrap plate**
Single-part order:
2035- 3 PZB Mounting bracket **with bore + tiewrap plate**
2035- 4 PZB Mounting bracket **with pin + tiewrap plate**

Part No. Full Set (pivoting)
Without Tiewrap Plates
Series 255:
2035-34PZ1

Part No. Full Set (pivoting)
With Tiewrap Plates
Series 255:
2035-34PZ1B

Part No. Full Set (pivoting)
With Tiewrap Plates + 10 cable ties
Series 255:
2035-34PZ1BK1

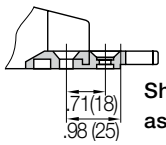
For Chain Type	Part No. Full Set without Tiewrap Plate	Part No. Full Set with Tiewrap Plate	Part No. Full Set with Tiewrap Plate + 10 cable ties	Dimension A in.	(mm)	Number of Teeth
255-03	2035- ☐ PZ1	2035- ☐ PZ1B	2035- ☐ PZ1BK1	.98	(25)	4
255-05	2055- ☐ PZ1	2055- ☐ PZ1B	2055- ☐ PZ1BK1	1.73	(44)	6
255-07	2075- ☐ PZ1	2075- ☐ PZ1B	2075- ☐ PZ1BK1	2.52	(64)	8
255-10	2105- ☐ PZ1	2105- ☐ PZ1B	2105- ☐ PZ1BK1	3.54	(90)	10

34 or 12

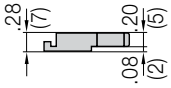
For pivoting brackets choose 34
For locking brackets choose 12
Example: 2035- 34 PZ1B

Tiewrap Plates





Shown assembled



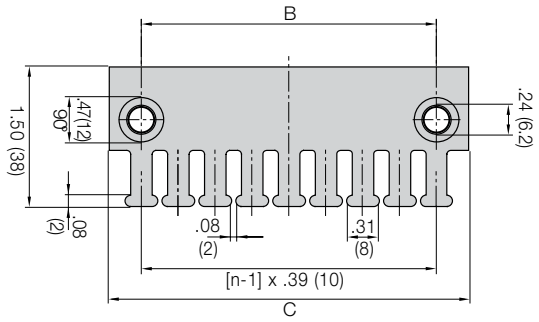
Single tiewrap plate

Option 1:

Tiewrap plates as an individual part

Available as an individual component or can be fixed onto a mounting bracket with the use of a profile rail.

Series 2000



Tiewrap Plates	n Number of Teeth	Dimension C	Dimension B	
2020-ZB	3	1.18 (30)	.59 (15)	
2030-ZB	4	1.57 (40)	.79 (20)	
2040-ZB	5	1.97 (50)	1.18 (30)	
2050-ZB	6	2.36 (60)	1.57 (40)	
2070-ZB	8	3.15 (80)	2.36 (60)	
2090-ZB	9	3.54 (90)	2.76 (70)	= 2030-ZB + 2040-ZB combined
2100-ZB	10	3.94 (100)	3.15 (80)	=2050-ZB x 2 pieces combined
2125-ZB	12	4.72 (120)	3.94 (100)	

If used with KMA brackets with profile rail please add “KMA” to the end of the part number.
Example: 2020-ZBKMA

PDF: igus.com/e-chain-pdfs
Product information: igus.com/e-chains

e-chain system® E2 Medium
Series 255 e-chain®
Guide Troughs

Guide troughs are used with applications where the upper run of the e-chain® glides on the lower run. If using igus® steel guide troughs, the following components are required:

- Full travel length of guide trough
  Part Number 92-30
- 1/2 travel length of glide bars
  Part Number 92-01
- Installation sets as end connectors
  Part Number 92-50-XX

-XX indicates the length of the profile rail on which the guide trough is mounted. The values and part numbers are specified in the table on the left. The standard length of the trough components and glide bars is 6.56 ft (2 m.) The required overall length of the guide trough directly correlates to the length of travel.

Example:
Length of travel 164 ft (50 m)
Center mounted
Required guide troughs:
164 ft (50 m) guide trough
82 ft (25 m) glide bar
= 25 sections of 6.56 ft (2 m) guide trough
Part No. 92-30
= 13 sections of 6.56 ft (2 m) glide bar
Part No. 92-01

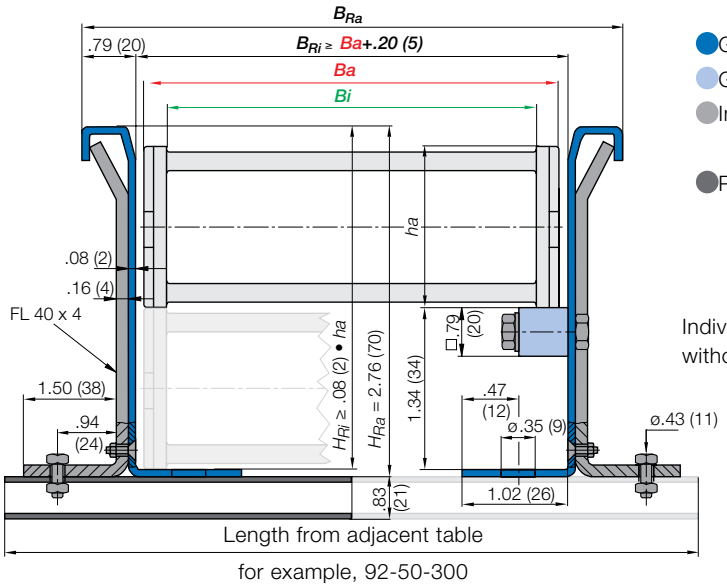


Required number of installation sets:
= Number of guide trough components + 1
= 25 + 1 = 26
Part number of the installation sets

Example: 92-50-400 for 15.75" (400 mm) long profile rail.

Width of Crossbar
255-**03**-200-0

	B_{Ri}	Installation Part No.
-03	2.32 (59)	**92-50-175**
-05	3.07 (78)	**92-50-200**
-07	3.86 (98)	**92-50-225**
-10	4.88 (124)	**92-50-250**



- Guide trough
- Glide bars
- Installation set "Basic"
- Profile rail

Individual attachment without profile rail

* Specialized guide trough available upon request

PDF: igus.com/e-chain-pdfs
Product information: igus.com/e-chains


158.100.100
158.100.100

igus®

E2 tubes



E2 tubes - protection against hot chips and debris

E2 e-tube
Series R100, R and R1000

Laboratory tests and numerous field applications over the past 20 years prove that igus®' e-chains® and fully enclosed e-tubes protect cables used in welding robots and machine tools. For extreme-temperature applications, igus® offers e-tubes made from its igumid HT material, which repels hot chips and flying debris reaching 1,562°F (850°C). All standard E2 and E4 e-tubes are available made from igumid HT, upon request.

Typical industries and applications

- Tooling machines
- Woodworking machines
- All kind of industries and machines with chip, dirt and dust

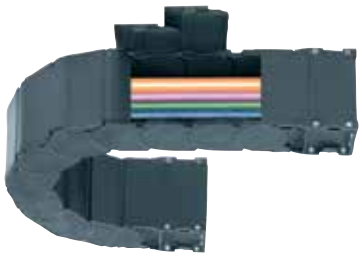
iF-Design Awards -
Series R117/118 and Series R68

ESD Classification: Electrically conductive
ESD/ATEX version upon request

Flammability Class
VDE 0304 IIC UL94 HB



Series R - For higher speeds and smooth running



Series R100 - Cost effective alternative, for applications with low and medium speeds





E2 e-tubes in chip-area of a tooling machine. Resistant against hot metal chips up to 1,562°F (850°C)



U-shaped supported e-tube
for high lateral acceleration



Standing application - R68 Tube -
Note: the first links are supported

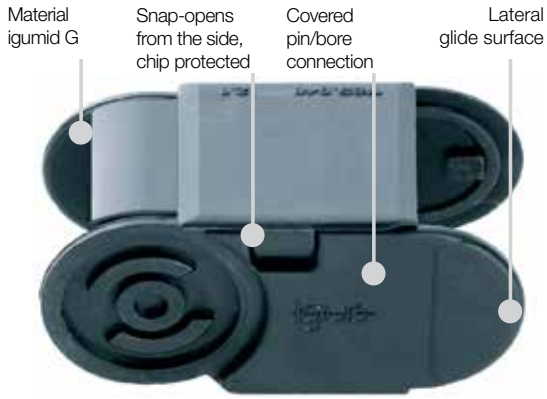
RX system e-tube with chip repellent design

Repels chips, is extremely tight, and can still be opened!

Series RX ➤ Page 5.69



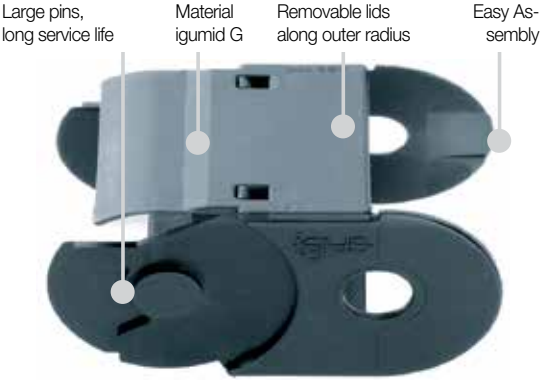
e-chain system® E2 tubes
Selection Guide



E2 Series R100 - robust and tight

- Very good protection against chips (also hot chips)
- Hinged, snap-open, removable lids along inner or outer radius reduce assembly time
- Space-efficient with optimized ratio of inner dimension to outer dimension
- Double stop dog for long service life and strong unsupported lengths
- Universal KMA mounting brackets with attachment capability on all sides
- You can find more technical data about the material, chemical resistance, temperatures ➤ **Design, Chapter 1**

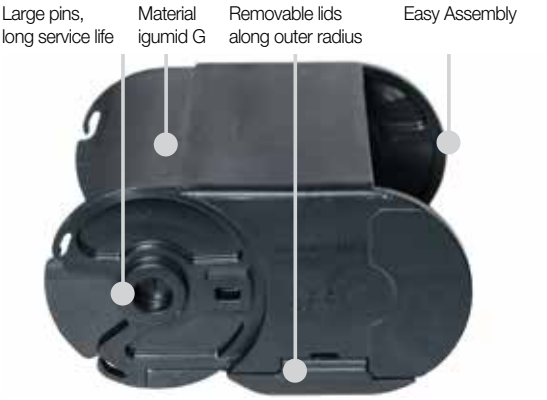
Series	Inner height *hi*		Inner width *Bi*		Outer width *Ba*		Outer height *ha*		Bending radius *R*	
	in.	(mm)	in.	(mm)	in.	(mm)	in.	(mm)	*in.*	(mm)
R117/118	.83	(21)	.79-3.94	(20-100)	1.26-4.41	(32-112)	1.10	(28)	2.48-7.09	(63 - 180)
R157/158	1.57	(40)	1.57-7.87	(40-200)	2.20-8.50	(56-216)	1.97	(50)	3.94-9.84	(100 - 250)
R167/168	1.97	(50)	1.97-9.84	(50-250)	2.68-10.55	(68-268)	2.52	(64)	3.94-11.81	(100 - 300)



E2 Series R - small pitch for smooth motion

- Protection for cables and hoses against chips (also hot chips)
- Small pitch for low noise, smooth operation
- Smooth, chip repellent exterior
- Lids removable for assembly time reduction
- Double stop dog for strong unsupported lengths
- KMA mounting brackets with attachment capability on all sides
- Very small radii possible due to small pitch
- You can find more technical data about the material, chemical resistance, temperatures ➤ **Design, Chapter 1**

Series	Inner height *hi*		Inner width *Bi*		Outer width *Ba*		Outer height *ha*		Bending radius *R*	
	in.	(mm)	in.	(mm)	in.	(mm)	in.	(mm)	*in.*	(mm)
R48	.98	(25)	.98-5.12	(25-130)	1.42-5.55	(36-141)	1.42	(36)	2.36-9.84	(60 - 250)
R58	1.38	(35)	1.97-7.87	(50-200)	2.60-8.50	(66-216)	1.97	(50)	2.95-9.84	(75 - 250)
R68	1.77	(45)	1.97-9.84	(50-250)	2.68-10.55	(68-268)	2.52	(64)	3.94-11.81	(100 - 300)



Series R2 - Cost-effective chip protection

- Protection for cables and hoses against chips (also hot chips)
- Covered in/bore connection
- Smooth, chip repellent exterior
- Lids openable along the outer radius from left or right sides
- Double stop dog for strong unsupported lengths
- KMA mounting brackets with attachment capability on all sides
- Light with large inner height
- You can find more technical data about the material, chemical resistance, temperatures ➤ **Design, Chapter 1**

Series	Inner height *hi*		Inner width *Bi*		Outer width *Ba*		Outer height *ha*		Bending radius *R*	
	in.	(mm)	in.	(mm)	in.	(mm)	in.	(mm)	*in.*	(mm)
R2.75	2.95	(75)	4.37-7.87	(111-200)	5.31-8.82	(135-224)	3.54	(90)	5.12-9.84	(130-250)

Available from stock. Orders ship as early as today.*

*On average 90% of orders ship the same day..

e-chain system® E2 tubes
Assembly Instructions

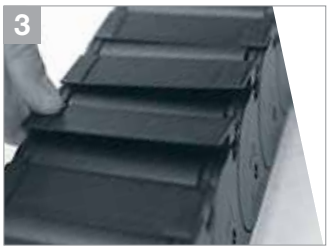
e-chains® - Assembling E2 Series R100 e-tubes



Push, click - and snap in pin



Swivel lids - push and snap

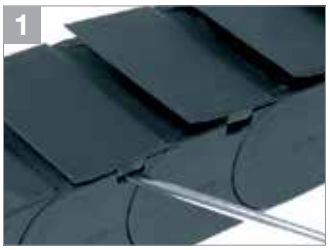


Slide last lid



Push and snap

e-chains® - Separating E2 Series R100 e-tubes



Lever open lid



Bend e-tube to remove lid



Release side-link

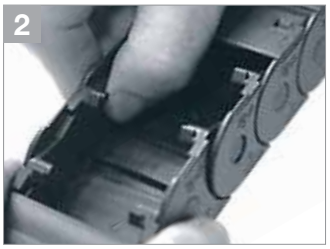


Twist and pull apart

e-chains® - Assembling E2 Series R48, R58, R68 e-tubes



Push and click



Snap in pin



Slide lid



Push and snap

e-chains® - Separating E2 Series R48, R58, R68 e-tubes



Lever open lid



Remove lid



Release side-link



Twist and pull apart

e-chains® - Separating E2 Series R2.75 e-tubes



Lever open lid



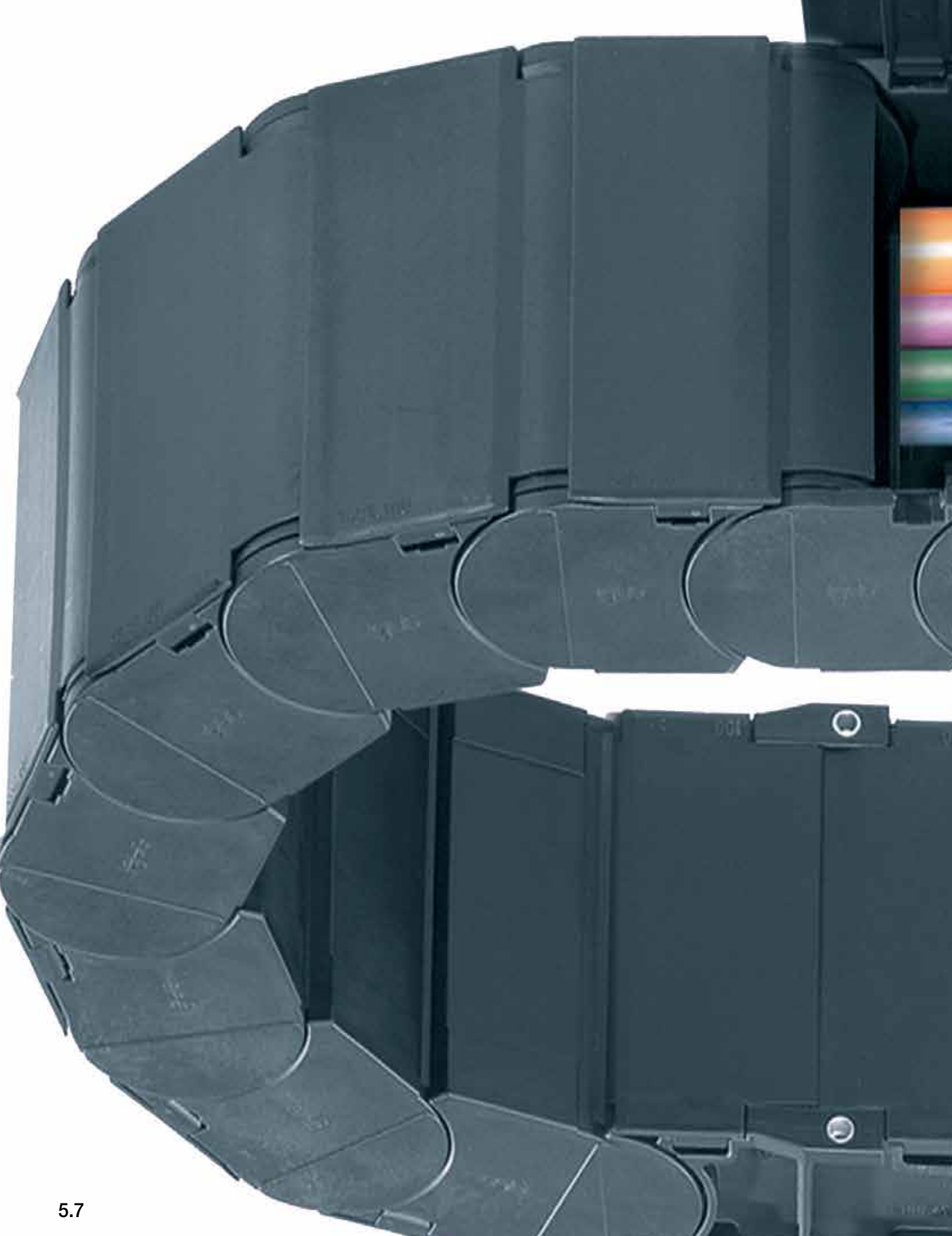
Remove lid



Release side-link



Twist and pull apart





E2 R100

e-tubes for cost-effective protection against dirt and chips

e-chain system® E2 tubes
Series R117/R118

.83 .83

Price Index

Series R117/R118

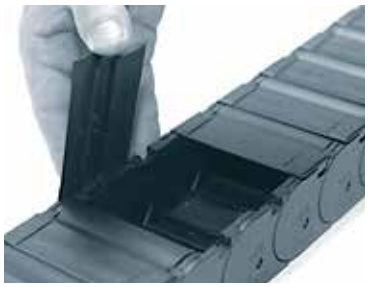
Special Features / Options

ESD classification:
Electrically conductive ESD/
ATEX version upon request

Flammability Class
VDE 0304 IIC UL94 HB

iF-Design Award Winner

Assembly Tips



Lids of the e-tube Series R100 are hinged for easy access

Features & Benefits

1. Effective chip protection, even against hot metal
2. chips
3. Double stop dog for strong unsupported length
4. Smooth, chip-repellent exterior
5. Lateral glide surfaces for side-mounted operation
6. Universal KMA mounting brackets with attachment capability on all sides
7. Snap-open from the side, covered pin/bore connection
8. Space-efficient with optimized ratio of inner to outer dimension
   Snap-open lids along the inner or outer radius



Other Installation Methods

Vertical, hanging ≤ 65.6 ft (20 m)
Vertical, standing ≤ 6.56 ft (2 m)
Side-mounted, unsupp. ≤ 2.29 ft (0.7 m)
Rotary requires further calculation

Usage Guidelines

- If snap-open accessibility along inner or outer radius is required
- If price is an issue
- If flush attachment is required

- For smoother running and smaller pitch
  ➤ **Series R48 E2 tubes**
- If accessibility along the sides of the radius is required
  ➤ **Series R4-28 E4-1**

Order Example: Complete e-chain®

Please indicate chain length or number of links. Example:

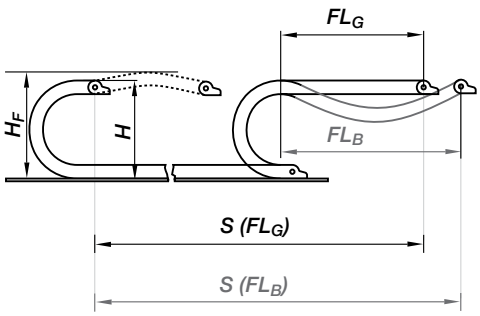
3.28 ft (1 m) **117-100-100-0**	**e-chain®**
With 2 separators **1186-01** assembled every 2nd link	**Interior Separation**
1 Set **11800-100-14**	**Mounting Bracket**

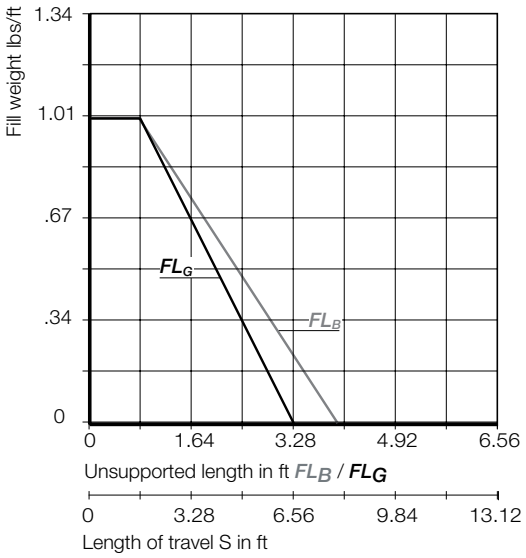
e-chain system® E2 tubes
Series R117/R118
Installation Dimensions

Short travel, unsupported length

- FL_B = unsupported with permitted sag
- FL_G = unsupported with straight upper run

Further information ➤ Design, Chapter 1



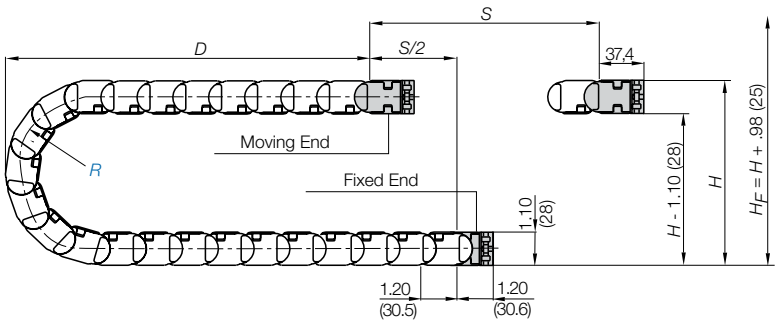


Short Travels - Unsupported

Unsupported e-chains® feature positive camber over short travels. This must be accounted for when specifying the clearance height. Please refer to **Installation dimensions** for further details.

Legend

S = Length of travel
R = Bending radius
H = Nominal clearance height
D = Overlength e-chain® radius in final position
K = π • R + *safety buffer*
H_F = Required clearance height



Pitch per link: = 1.20" (30.5 mm)
Links per ft (m): = 10.06 (33)
For center mount applications:
Chain length = $^{S}/_{2}$ + K

The required clearance height: H_F = **H + .98 in. (25 mm)** (with .67 lbs/ft (1.0 kg/m) fill weight. Please consult igus® if space is particularly restricted.

R	2.48 (063)	2.95 (075)	3.94 (100)	4.33 (110)	4.92 (125)	5.71 (145)	7.09 (180)
H	6.06 (154)	7.01 (178)	8.98 (228)	9.76 (248)	10.94 (278)	12.52 (318)	15.28 (388)
D	4.84 (123)	5.31 (135)	6.30 (160)	6.69 (170)	7.28 (185)	8.07 (205)	9.45 (240)
K	10.24 (260)	1181 (300)	14.96 (380)	16.14 (410)	17.91 (455)	20.47 (520)	24.80 (630)

Speed / acceleration FL_G	max. 32.8 ft/s (10 m/s) / max. 328 ft/s² (100 m/s²)
Speed / acceleration FL_B	max. 9.84 ft/s (3 m/s) / max. 19.69 ft/s² (6 m/s²)
Gliding speed / acceleration (maximum)	max. 1.64 ft/s (0.5 m/s) / max. 16.4 ft/s² (5 m/s²)
Material - permitted temperature	igumid G / -40°F (-40°C) up to +248°F (+120° C)
Flammability Class, igumid G	VDE 0304 IIC UL94 HB

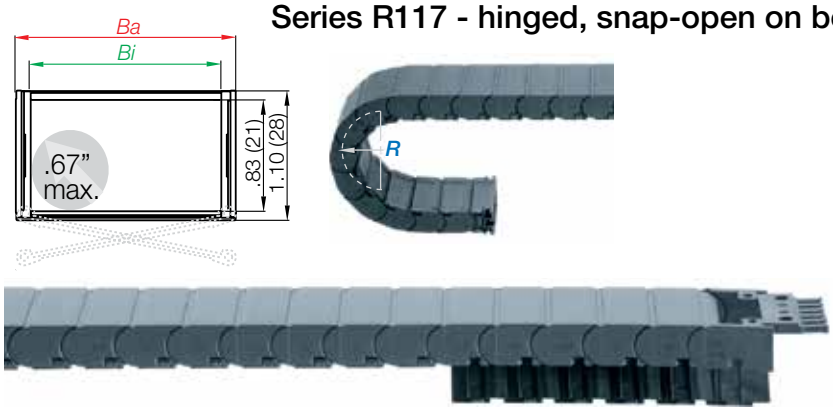
Technical Data

Details of material properties
➤ Chapter 1

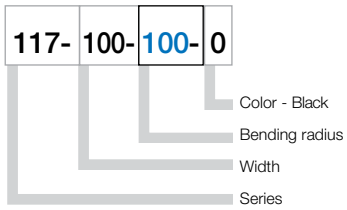
PDF: igus.com/e-chain-pdfs
Product information: igus.com/e-chains

e-chain system® E2 tubes
Series R117/R118

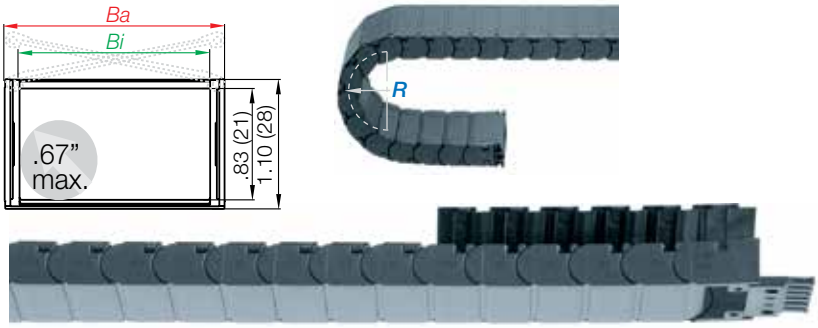
Series R117 - hinged, snap-open on both sides of the inner radius



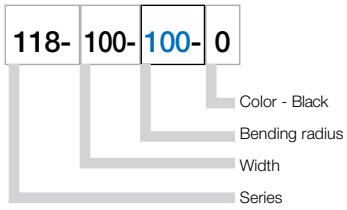
Part Number Structure

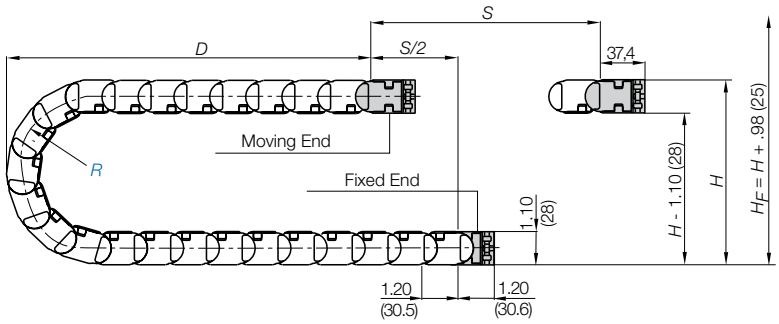


Series R118 - hinged, snap-open on both sides of the outer radius



Part Number Structure





Supplement part number with required radius. Example: 117-100-100-0
Pitch: 1.20 in. (30.5 mm) per link links/ft (m) = 10.06 (33)

Part Number. Snap-open inner radius	Snap-open outer radius		Bi in. (mm)	Ba in. (mm)	Weight lbs/ft (kg/m)
117-020-		-0	.79 (20)	1.26 (32)	≈ 0.29 (0.43)
117-025-	118-025-	-0	.98 (25)	1.46 (37)	≈ 0.31 (0.46)
117-038-		-0	1.50 (38)	1.97 (50)	≈ 0.38 (0.56)
117-048-	118-048-	-0	1.89 (48)	2.40 (60)	≈ 0.44 (0.66)
117-063-		-0	2.48 (63)	2.95 (75)	≈ 0.51 (0.76)
117-080-	118-080-	-0	3.15 (80)	3.62 (92)	≈ 0.60 (0.89)
117-100-		-0	3.94 (100)	4.41 (112)	≈ 0.71 (1.06)

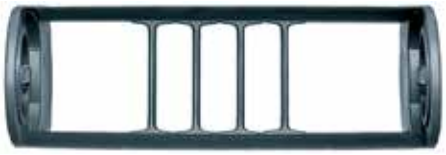
Choose from the radii below for all of the above sizes
Radius (mm) Example: 117-100-100-0

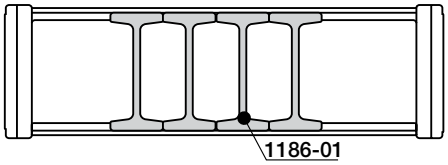
	063	075	100	110	125	145	180
R	2.48 (063)	2.95 (075)	3.94 (100)	4.33 (110)	4.92 (125)	5.71 (145)	7.09 (180)
H	6.06 (154)	7.01 (178)	8.98 (228)	9.76 (248)	10.94 (278)	12.52 (318)	15.28 (388)
D	4.84 (123)	5.31 (135)	6.30 (160)	6.69 (170)	7.28 (185)	8.07 (205)	9.45 (240)
K	10.24 (260)	1181 (300)	14.96 (380)	16.14 (410)	17.91 (455)	20.47 (520)	24.80 (630)

e-chain system® E2 tubes
Series R117/R118
Interior Separation
Mounting Brackets - KMA

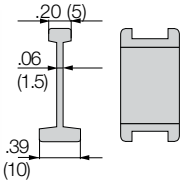
Option 1: Vertical separators and spacers

Vertical separators are used if a vertical subdivision of the e-chain® interior is required. By standard, vertical separators are assembled every other e-chain® link. .







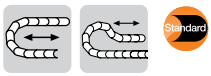


Vertical Separator

Unassembled	**Part No. 1185-01**
Assembled	**Part No. 1186-01**

- **Standard separator 1185-01 for e-chains®**
  This separator is used for general subdivision of e-chain®.

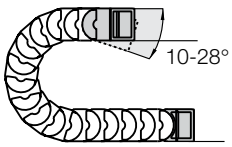
Mounting Brackets - KMA



Option: KMA pivoting

- Short and long travels
- Space restricted
- Corrosion-resistant

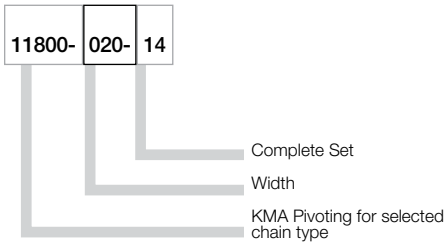
Moving end
11800...1



Fixed end
11800...4



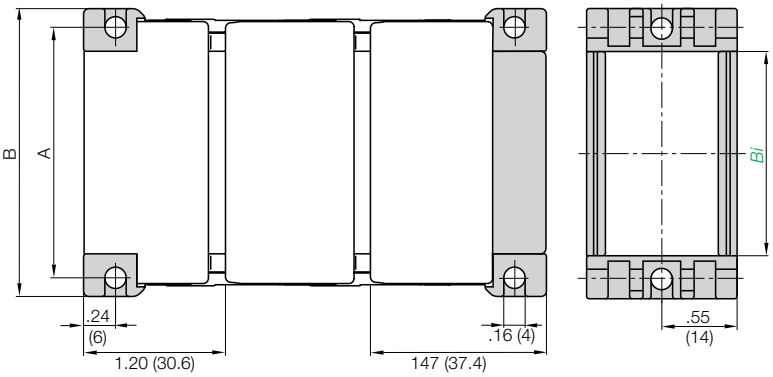
Part Number Structure



Full set, for both ends:
11800- 020- 14 Full set, **each part with pin/bore**
Single-part order:
11800- 020- 1 Mounting bracket **with bore**
11800- 020- 4 Mounting bracket **with pin**

Fixed end
11800...4

Moving end
11800...1



Series	Part No. Full Set	Dimension A in.	(mm)	Dimension B in.	(mm)
117-020	**11800-020-14**	1.14	(29)	1.42	(36)
117/118-025	**11800-025-14**	1.34	(34)	1.61	(41)
117-038	**11800-038-14**	1.85	(47)	2.13	(54)
117/118-048	**11800-048-14**	2.24	(57)	2.52	(64)
117-063	**11800-063-14**	2.83	(72)	3.11	(79)
117/118-080	**11800-080-14**	3.50	(89)	3.78	(96)
117-100	**11800-100-14**	4.29	(109)	4.57	(116)

- **The mounting brackets are supplied with hexagon nuts and can be attached with M4 bolts, or the mounting brackets may also be attached with M4 socket head cap bolts**

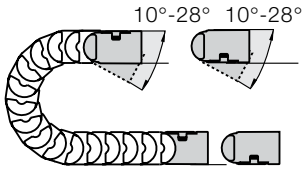
PDF: igus.com/e-chain-pdfs
Product information: igus.com/e-chains

e-chain system® E2 tubes
Series R117/R118
Mounting Brackets - Plastic

Option: plastic bracket

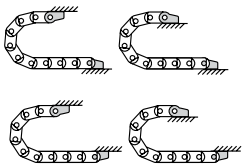
- For long travels
- Attachment option for strain relief tiewrap plate
- Locked connection to e-tube
- Minimized external width

Moving end
1180...1PZ(B)



Fixed end
1180...4PZ(B)

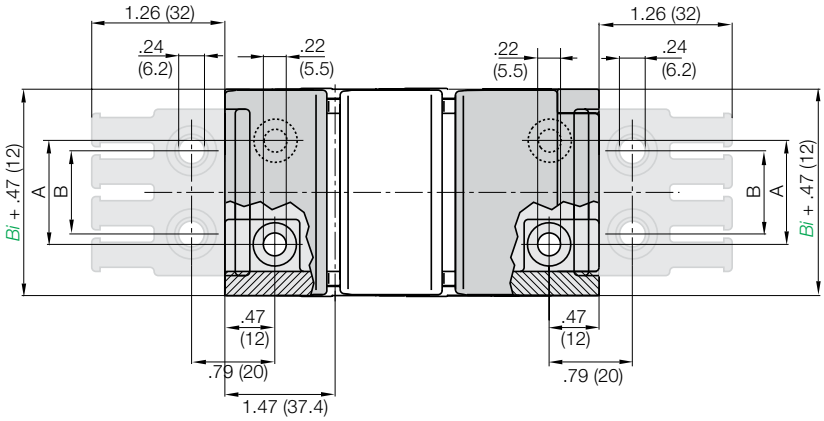




Possible installation configurations -

Moving end
1180...1PZ(B)

Fixed end
1180...4PZ(B)



Part Number Structure

1180-	048-	14-	PZB

- PZB: With tiewrap plate
- 14-: Complete Set
- 048-: Width
- 1180-: Mounting brackets for selected chain type

Full set, for both ends:

1180-048-14 Full set, **each part with pin/bore**

Single-part order:

1180-048-1 Mounting bracket **with bore**

1180-048-4 Mounting bracket **with pin**

Part No. Mounting Brackets Full Set
4 parts, 2 with pin, 2 with bore
Series R117/R118:
1180-Width-14

Part No. Mounting bracket with bore
2 parts, 1 left & 1 right
Series R117/R118:
1180-Width-1

Part No. Mounting bracket with pin
2 parts, 1 left & 1 right
Series R117/R118:
1180-Width-4

For Series	Part No. Full Set without Tiewrap Plate	Part No. Full Set with Tiewrap Plate	Dimension A in.	(mm)	Dimension B in.	(mm)
R117/R118-025	**1180-025-14PZ**	**1180-025-14PZB**	.47	(12)	.59	(15)
R117-038	**1180-038-14PZ**	**1180-038-14PZB**	.98	(25)	.79	(20)
R117/R118-048	**1180-048-14PZ**	**1180-048-14PZB**	1.38	(35)	1.18	(30)
R117-063	**1180-063-14PZ**	**1180-063-14PZB**	1.97	(50)	1.57	(40)
R117/R118-080	**1180-080-14PZ**	**1180-080-14PZB**	2.64	(67)	2.36	(60)
R117-100	**1180-100-14PZ**	**1180-100-14PZB**	3.43	(87)	3.15	(80)

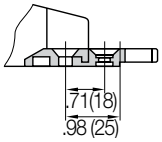
The following parts are required for attachment of the mounting brackets:

- **Countersunk bolt M5* DIN 912-8.8**
- **Hexagon nut M5 DIN 934-8**
  4 pieces/set

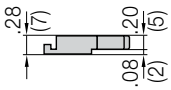
* The length of the socket head cap bolt is dependent on the thickness of the attachment base.

Tiewrap Plates





Shown assembled

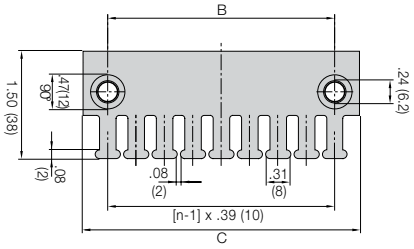


Single tiewrap plate

Option 1:
Tiewrap plates as an individual part

Available as an individual component, can be fixed onto a mounting bracket with the use of a profile rail.

Tiewrap Plates	n Number of Teeth	Dimension C	Dimension B
2020-ZB	3	1.18 (30)	.59 (15)
2030-ZB	4	1.57 (40)	.79 (20)
2040-ZB	5	1.97 (50)	1.18 (30)
2050-ZB	6	2.36 (60)	1.57 (40)
2070-ZB	8	3.15 (80)	2.36 (60)
2090-ZB	9	3.54 (90)	2.76 (70)
2100-ZB	10	3.94 (100)	3.15 (80)
2125-ZB	12	4.72 (120)	3.94 (100)



For more information please refer to strain relief section of Chapter 10



Cable tiewraps as individual parts

Cable tiewraps	Width x Length		Maximum Ø		Tensile Strength	
100 pieces/bag	in.	(mm)	in.	(mm)	lbs	(N)
CFB-001	.19 x 5.91	(4.8 x 150)	1.42	(36)	50	(222)

PDF: igus.com/e-chain-pdfs
Product information: igus.com/e-chains

e-chain system® E2 tubes
Series R157/R158

1.57 1.57

Price Index

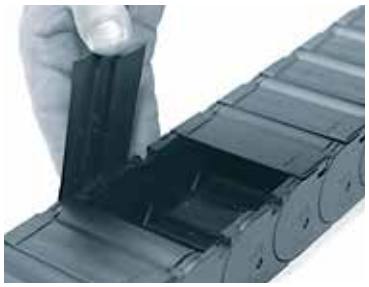
Series R157/R158

Special Features / Options

ESD classification:
Electrically conductive ESD/
ATEX version upon request

Flammability Class
VDE 0304 IIC UL94 HB

Assembly Tips



Lids of the e-tube Series R100 are hinged for easy access

Other Installation Methods

Vertical, hanging ≤ 131.2 ft (40 m)
Vertical, standing ≤ 9.84 ft (3 m)
Side-mounted, unsupp. ≤ 3.28 ft (1 m)
Rotary requires further calculation

Usage Guidelines

- If hinged, snap-open accessibility along inner **or** outer radius is required
- If a low-cost, lightweight e-tube for many types of applications is required
- If flush attachment is required
- If chip-repellent features are required

- If particularly quiet operation is required
  ➤ **Series R58 E2 tubes**
- If snap-open accessibility along both radii simultaneously is required
  ➤ **Series R4-32 E4-1**

Features & Benefits

1. Effective chip protection even against hot chips
2. Space-efficient with optimized ratio of inner dimension to outer dimension
3. Snap-open lids along the inner and outer radius
4. Snap-open from the side, covered pin/bore connection
5. Double stop dog for strong unsupported length
6. Universal KMA mounting brackets with attachment capability on all sides
7. Lateral glide surfaces for side mounted operation



Order Example: Complete e-chain®

Please indicate chain length or number of links. Example:

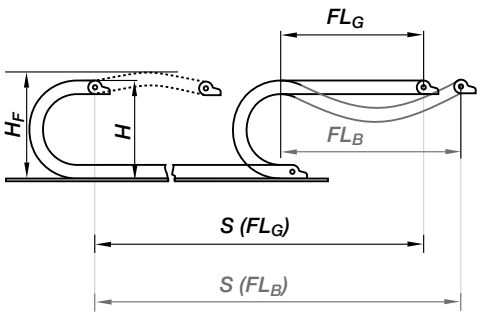
3.28 ft (1 m) **157-088-100-0**	**e-chain®**
With 2 separators **1586-01** assembled every 2nd link	**Interior Separation**
1 Set **15800-088-12**	**Mounting Bracket**

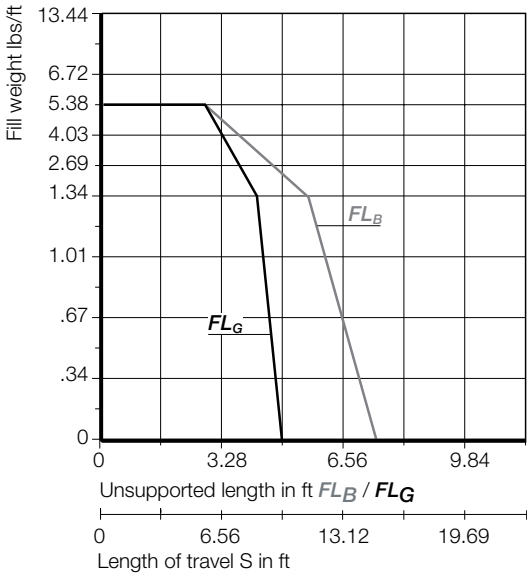
e-chain system® E2 tubes
Series R157/R158
Installation Dimensions

Short travel, unsupported length

- FL_B = unsupported with permitted sag
- FL_G = unsupported with straight upper run

Further information ➤ Design, Chapter 1



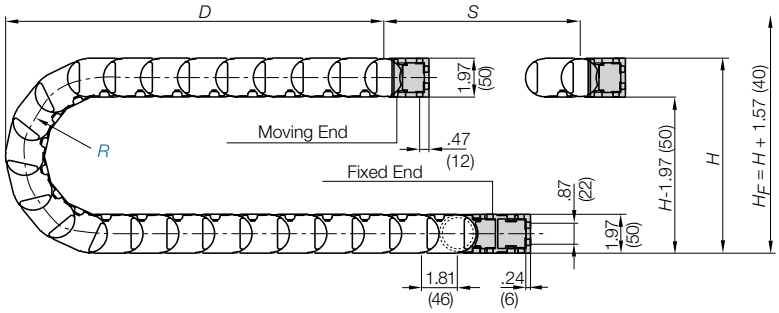


Short Travels - Unsupported

Unsupported e-chains® feature positive camber over short travels. This must be accounted for when specifying the clearance height. Please refer to **Installation dimensions** for further details.

Legend

S = Length of travel
R = Bending radius
H = Nominal clearance height
D = Overlength e-chain® radius in final position
K = π • *R* + *safety buffer*
H_F = Required clearance height



Pitch per link: = 1.81" (46 mm)
Links per ft (m): = 6.71 (22)
For center mount applications:
Chain length = $\frac{S}{2}$ + K

The required clearance height: ***H_F* = *H* + 1.57 in. (40 mm)** (with .67 lbs/ft (1.0 kg/m) fill weight. Please consult igus® if space is particularly restricted.

R	3.94 (100)	4.92 (125)	5.91 (150)	6.89 (175)	7.87 (200)	9.84 (250)
H	9.84 (250)	11.81 (300)	13.78 (350)	15.75 (400)	17.72 (450)	21.65 (550)
D	7.64 (194)	8.62 (219)	9.61 (244)	10.59 (269)	11.57 (294)	13.54 (344)
K	16.14 (410)	19.09 (485)	22.24 (565)	25.39 (645)	28.54 (725)	34.65 (880)

Speed / acceleration FL_G	max. 32.8 ft/s (10 m/s) / max. 328 ft/s² (100 m/s²)
Speed / acceleration FL_B	max. 9.84 ft/s (3 m/s) / max. 19.69 ft/s² (6 m/s²)
Gliding speed / acceleration (maximum)	max. 1.64 ft/s (0.5 m/s) / max. 16.4 ft/s² (5 m/s²)
Material - permitted temperature	igumid G / -40°F (-40°C) up to +248°F (+120° C)
Flammability Class, igumid G	VDE 0304 IIC UL94 HB

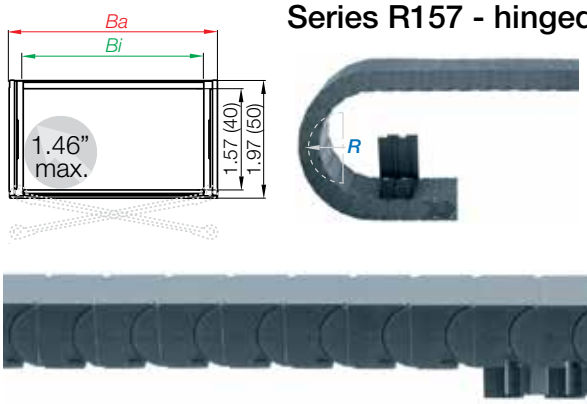
Technical Data

Details of material properties
➤ Chapter 1

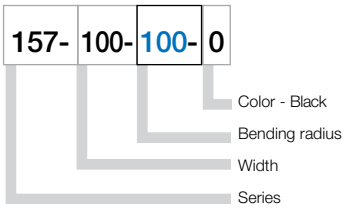
PDF: igus.com/e-chain-pdfs
Product information: igus.com/e-chains

e-chain system® E2 tubes
Series R157/R158

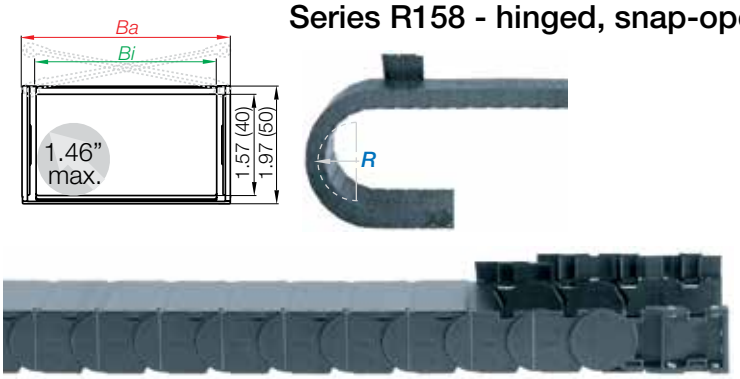
Series R157 - hinged, snap-open on both sides of the inner radius



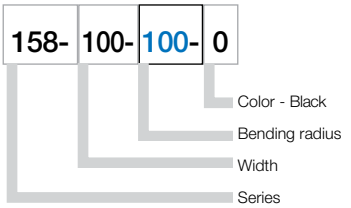
Part Number Structure

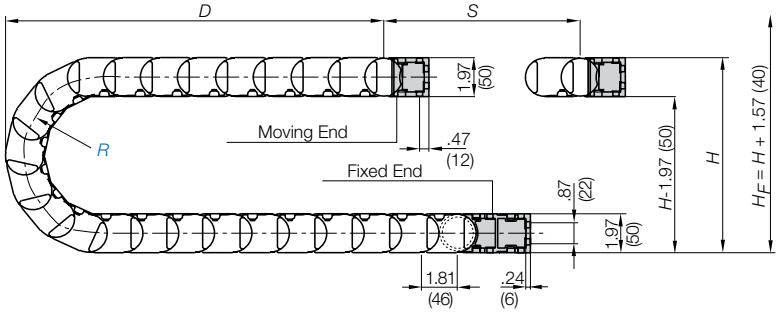


Series R158 - hinged, snap-open on both sides of the outer radius



Part Number Structure





Supplement part number with required radius.
Example: 157-100-[100]-0
Pitch: 1.81 in. (46 mm) per link links/ft (m) = 6.71 (22)

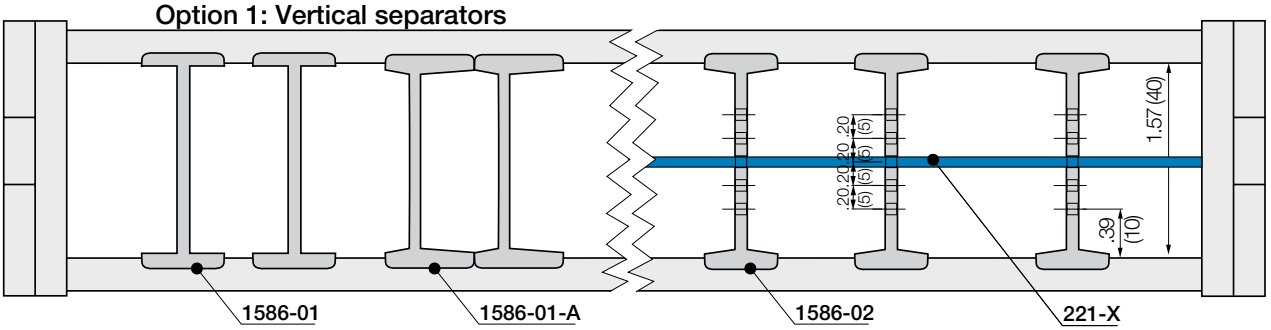
Part Number. Snap-open inner radius	Snap-open outer radius		Bi in. (mm)	Ba in. (mm)	Weight lbs/ft (kg/m)
157-040-*	158-040-*	[ ] -0	1.57 (40)	2.20 (56)	≈ 0.81 (1.21)
157-050-	158-050-	[ ] -0	1.97 (50)	2.60 (66)	≈ 0.87 (1.30)
157-075-	158-075-	[ ] -0	2.95 (75)	3.58 (91)	≈ 1.01 (1.50)
157-088-	158-088-	[ ] -0	3.46 (88)	4.09 (104)	≈ 1.06 (1.57)
157-090-**	158-090-**	[ ] -0	3.46 (88)	4.09 (104)	≈ 1.10 (1.63)
157-100-	158-100-	[ ] -0	3.94 (100)	4.57 (116)	≈ 1.15 (1.71)
157-125-	158-125-	[ ] -0	4.92 (125)	5.55 (141)	≈ 1.29 (1.92)
157-135-	158-135-	[ ] -0	5.31 (135)	5.91 (150)	≈ 1.41 (2.10)
157-150-	158-150-	[ ] -0	5.91 (150)	6.54 (166)	≈ 1.43 (2.13)
157-175-	158-175-	[ ] -0	6.89 (175)	7.52 (191)	≈ 1.57 (2.34)
157-200-	158-200-	[ ] -0	7.87 (200)	8.50 (216)	≈ 1.71 (2.55)

Choose from the radii below for all of the above sizes
Radius (mm) Example: 157-100-[100]-0

	100	125	150	175	200	250
R	3.94 (100)	4.92 (125)	5.91 (150)	6.89 (175)	7.87 (200)	9.84 (250)
H	9.84 (250)	11.81 (300)	13.78 (350)	15.75 (400)	17.72 (450)	21.65 (550)
D	7.64 (194)	8.62 (219)	9.61 (244)	10.59 (269)	11.57 (294)	13.54 (344)
K	16.14 (410)	19.09 (485)	22.24 (565)	25.39 (645)	28.54 (725)	34.65 (880)

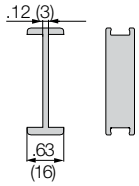
*Removable lid only, not hinged
**Same dimensions as 157/158-088 - removable lids only

e-chain system® E2 tubes
Series R157/R158
Interior Separation - New Generation



No lateral spacing to side links is necessary
In the standard configuration separators are assembled every 2nd e-chain® link



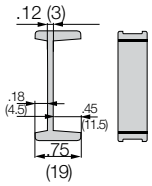


Separator for e-tubes

Unassembled	**Part No. 1585-01**
Assembled	**Part No. 1586-01**

- **Separator 1585-01**
  For vertical separation with wide base for maximum stability when used with thick cables or hoses



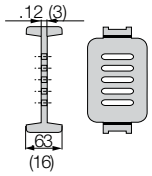


Assymetrical separator for e-tubes

Unassembled	**Part No. 1585-01-A**
Assembled	**Part No. 1586-01-A**

- **Asymmetrical separator 1585-01-A**
  For side-mounted applications. Asymmetrical separator for defined distance. No additional spacers necessary.



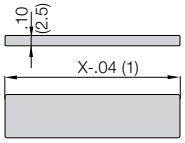


Slotted Separator for e-tubes

Unassembled	**Part No. 1585-02**
Assembled	**Part No. 1586-02**

- **Slotted separator 1585-02**
  is used when vertical and horizontal separation is required. Due to its slot, it allows basic vertical/horizontal shelving arrangements.





Full width shelf for e-tubes

Unassembled	**Part No. 220-X**
Assembled	**Part No. 221-X**

- **Full width shelf 220-X**
  is used in applications with many thin cables with similar diameters. Full-width shelves can be arranged at 5 different heights in .20" (5mm) increments.

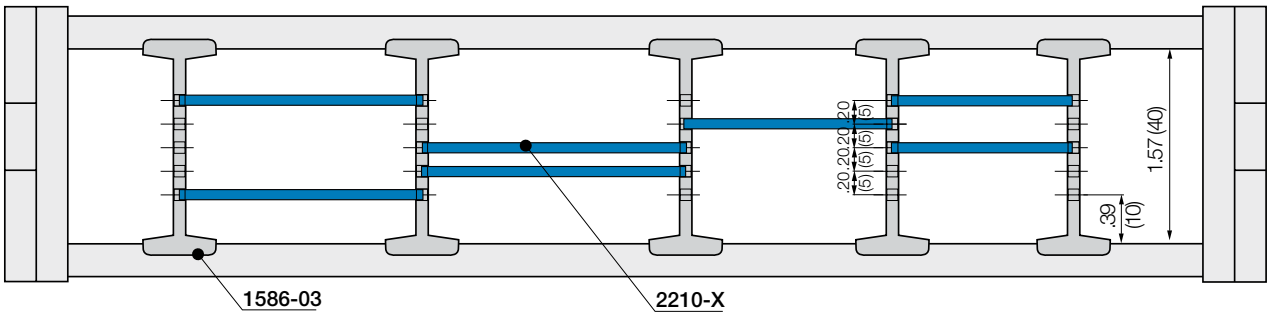
Width X in.	(mm)	Part No. Unassembled	Part No. Assembled
1.57	(040)	220-40	221-40
1.97	(050)	**220-50**	**221-50**
2.95	(075)	**220-75**	**221-75**
3.46	(088)	**220-88**	**221-88**

Width X in.	(mm)	Part No. Unassembled	Part No. Assembled
3.94	(100)	**220-100**	**221-100**
4.92	(125)	**220-125**	**221-125**
5.31	(135)	**220-135**	**221-135**
5.91	(150)	**220-150**	**221-150**

Width X in.	(mm)	Part No. Unassembled	Part No. Assembled
6.89	(175)	**220-175**	**221-175**
7.87	(200)	**220-200**	**221-200**

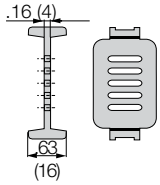
PDF: igus.com/e-chain-pdfs
Product information: igus.com/e-chains

e-chain system® E2 tubes
Series R157/R158
Interior Separation - New Generation



No lateral spacing to side links is necessary
In the standard configuration separators are assembled every 2nd e-chain® link





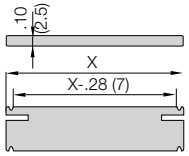
Separator, narrow base

Unassembled	**Part No. 1585-03**
Assembled	**Part No. 1586-03**

- **Slotted separator 1585-03**
  is used when vertical and horizontal separation is required. Due to its slot, it allows basic vertical/horizontal shelving arrangements.

Full-width shelves - for the standard interior separation





Full width shelf

Unassembled	**Part No. 2200-X**
Assembled	**Part No. 2210-X**

- **Full width shelf 2200-X**
  For applications involving many cables with different diameters, shelves can be arranged at alternate heights. They can be arranged at 5 different heights in .20" (5mm) increments.

Width X in.	(mm)	Part No. Unassembled	Part No. Assembled
.71	(18)	**2200-18**	**2210-18**
.91	(23)	**2200-23**	**2210-23**
1.10	(28)	**2200-28**	**2210-28**
1.30	(33)	**2200-33**	**2210-33**
1.50	(38)	**2200-38**	**2210-38**

Width X in.	(mm)	Part No. Unassembled	Part No. Assembled
1.69	(43)	**2200-43**	**2210-43**
1.89	(48)	**2200-48**	**2210-48**
2.28	(58)	**2200-58**	**2210-58**
2.68	(68)	**2200-68**	**2210-68**
2.87	(73)	**2200-73**	**2210-73**

Width X in.	(mm)	Part No. Unassembled	Part No. Assembled
3.46	(88)	**2200-88**	**2210-88**
3.90	(99)	**2200-99**	**2210-99**
4.88	(124)	**2200-124**	**2210-124**
5.87	(149)	**2200-149**	**2210-149**

Separator with integrated strain relief

Strain relief separator Part No. 1585-01-Z can be integrated into the mounting bracket and can be placed there at any point of the e-tube®. It combines strain relief and interior separation, it can be installed on the first or last e-tube® link and is easy to assemble without any screws.

For more information ➤ **Chapter 10, Strain Relief**





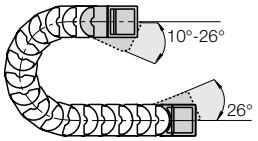
PDF: igus.com/e-chain-pdfs
Product information: igus.com/e-chains

e-chain system® E2 tubes
Series R157/R158
Mounting Brackets - KMA Extended

Option 1: KMA pivoting

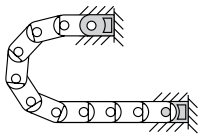
- Extended, pivoting
- Easy to install
- Universal use
- Corrosion-resistant
- Long travels with lowered mounting height possible

Moving end
15800/15801...1





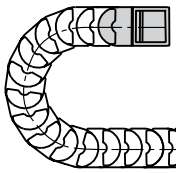




Fixed end
15800/15801...2

Option 2: KMA locking

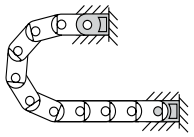
- Extended, locking
- Easy to install
- Flush mounting at both ends of the e-tube
- Mounting points on all sides
- Corrosion resistant



Moving end
15800/15801...3







Fixed end
15800/15801...4

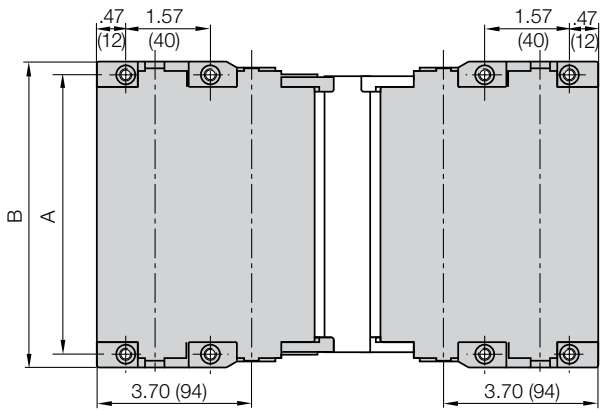
Part Number Structure

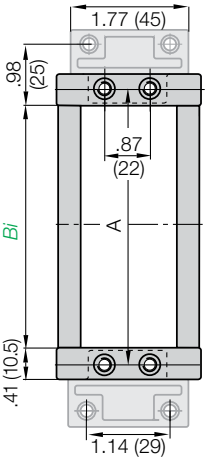
15800- 100- 12

- 12 = Complete Set (12 = Pivoting, 34 = Locking)
- 100- = Width
- 15800- = KMA Pivoting for selected chain type

Moving end
1580...1/1580...3

Fixed end
1580...2/1580...4





Full set, for both ends:
15800- 100- 12 Full set, **each part with pin/bore**

Single-part order:
15800- 100- 1 Mounting bracket **with bore**
15800- 100- 2 Mounting bracket **with pin**



Quickflange upon request
- Unassembled

Part number 15800-QF

Series	Part No. Full Set	Dimension A in.	Dimension A (mm)	Dimension B in.	Dimension B (mm)
157/158-040	15801-040-	1.97	(50)	2.40	(61)
157/158-050	15800-050-	2.40	(60)	2.80	(71)
157/158-075	15800-075-	3.35	(85)	3.78	(96)
157/158-088	15800-088-	3.86	(98)	4.29	(109)
157/158-090	15801-090-	3.86	(98)	4.29	(109)
157/158-100	15800-100-	4.33	(110)	4.76	(121)
157/158-125	15800-125-	5.31	(135)	5.75	(146)
157/158-135	15800-135-	5.71	(145)	6.14	(156)
157/158-150	15800-150-	6.30	(160)	6.73	(171)
157/158-175	15800-175-	7.28	(185)	7.72	(196)
157/158-200	15800-200-	8.27	(210)	8.70	(221)

12 or 34

For pivoting brackets choose 12
For locking brackets choose 34
Example: 15800-100-34

The following parts are required for attachment of the mounting brackets:

- **Socket head cap bolt**
  M5* DIN 912-8.8
  8 pieces/set
- **Washer**
  5.3 DIN 125-ST
  8 pieces/set
- **Hexagon nut**
  M5 DIN 934-8
  8 pieces/set

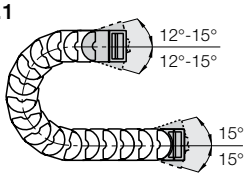
* The length of the socket head cap bolt is dependent on the thickness of the attachment base.

e-chain system® E2 tubes
Series R157/R158
Mounting Brackets - KMA Abbreviated

Option 1: KMA pivoting

- Extended, pivoting
- Easy to install
- Universal use
- Corrosion-resistant
- Long travels with lowered mounting height possible

Moving end
1580...1



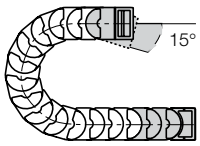
Fixed end
1580...2



Option 2: KMA locking

- Extended, locking
- Easy to install
- Flush mounting at both ends of the e-tube
- Mounting points on all sides
- Corrosion resistant

Moving end
1585...1

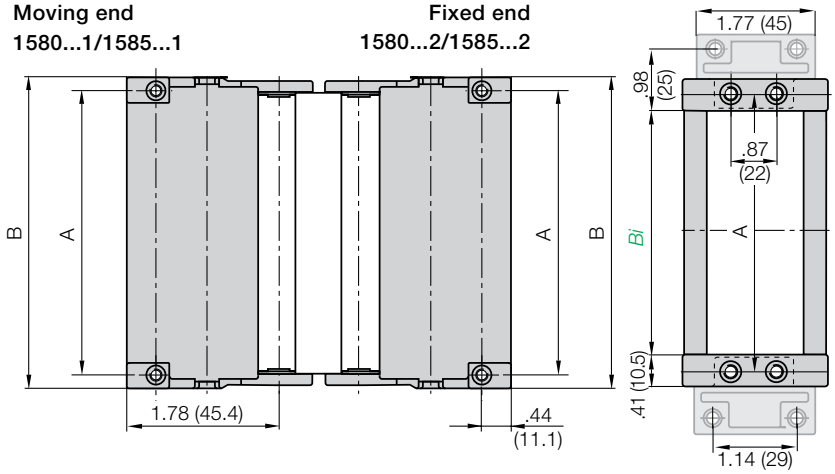


Fixed end
1585...2

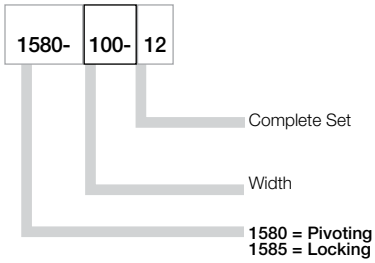


Moving end
1580...1/1585...1

Fixed end
1580...2/1585...2



Part Number Structure



Part number examples are shown for pivoting brackets.
For locking brackets change part number to 1585

Full set, for both ends:
1580- 100- 12 Full set, **each part with pin/bore**

Single-part order:
1580- 100- 1 Mounting bracket **with bore**
1580- 100- 2 Mounting bracket **with pin**



Quickflange upon request
- Unassembled

Part number 15800-QF

Series	Part No. Full Set		Dimension A		Dimension B	
	Pivoting	Locking	in.	(mm)	in.	(mm)
157/158-040	**1580-040-12**	**1585-040-12**	1.97	(50)	2.40	(61)
157/158-050	**1580-050-12**	**1585-050-12**	2.40	(60)	2.80	(71)
157/158-075	**1580-075-12**	**1585-075-12**	3.35	(85)	3.78	(96)
157/158-088	**1580-088-12**	**1585-088-12**	3.86	(98)	4.29	(109)
157/158-090	**1580-090-12**	**1585-090-12**	3.86	(98)	4.29	(109)
157/158-100	**1580-100-12**	**1585-100-12**	4.33	(110)	4.76	(121)
157/158-125	**1580-125-12**	**1585-125-12**	5.31	(135)	5.75	(146)
157/158-135	**1580-135-12**	**1585-135-12**	5.71	(145)	6.14	(156)
157/158-150	**1580-150-12**	**1585-150-12**	6.30	(160)	6.73	(171)
157/158-175	**1580-175-12**	**1585-175-12**	7.28	(185)	7.72	(196)
157/158-200	**1580-200-12**	**1585-200-12**	8.27	(210)	8.70	(221)

The following parts are required for attachment of the mounting brackets:

- **Socket head cap bolt**
  M5* DIN 912-8.8
  8 pieces/set
- **Washer**
  5.3 DIN 125-ST
  8 pieces/set
- **Hexagon nut**
  M5 DIN 934-8
  8 pieces/set

* The length of the socket head cap bolt is dependent on the thickness of the attachment base.

PDF: igus.com/e-chain-pdfs
Product information: igus.com/e-chains

e-chain system® E2 tubes
Series R167/R168

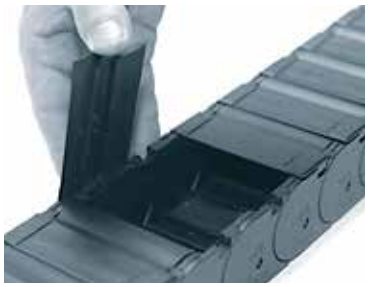
1.97 1.97

Series R167/R168

Special Features / Options

ESD classification:
Electrically conductive ESD/
ATEX version upon request

Flammability Class
VDE 0304 IIC UL94 HB



Lids of the e-tube Series R100 are hinged for easy access

Other Installation Methods

Vertical, hanging ≤ 164 ft (50 m)
Vertical, standing ≤ 9.84 ft (3 m)
Side-mounted, unsupp. ≤ 3.28 ft (1 m)
Rotary requires further calculation

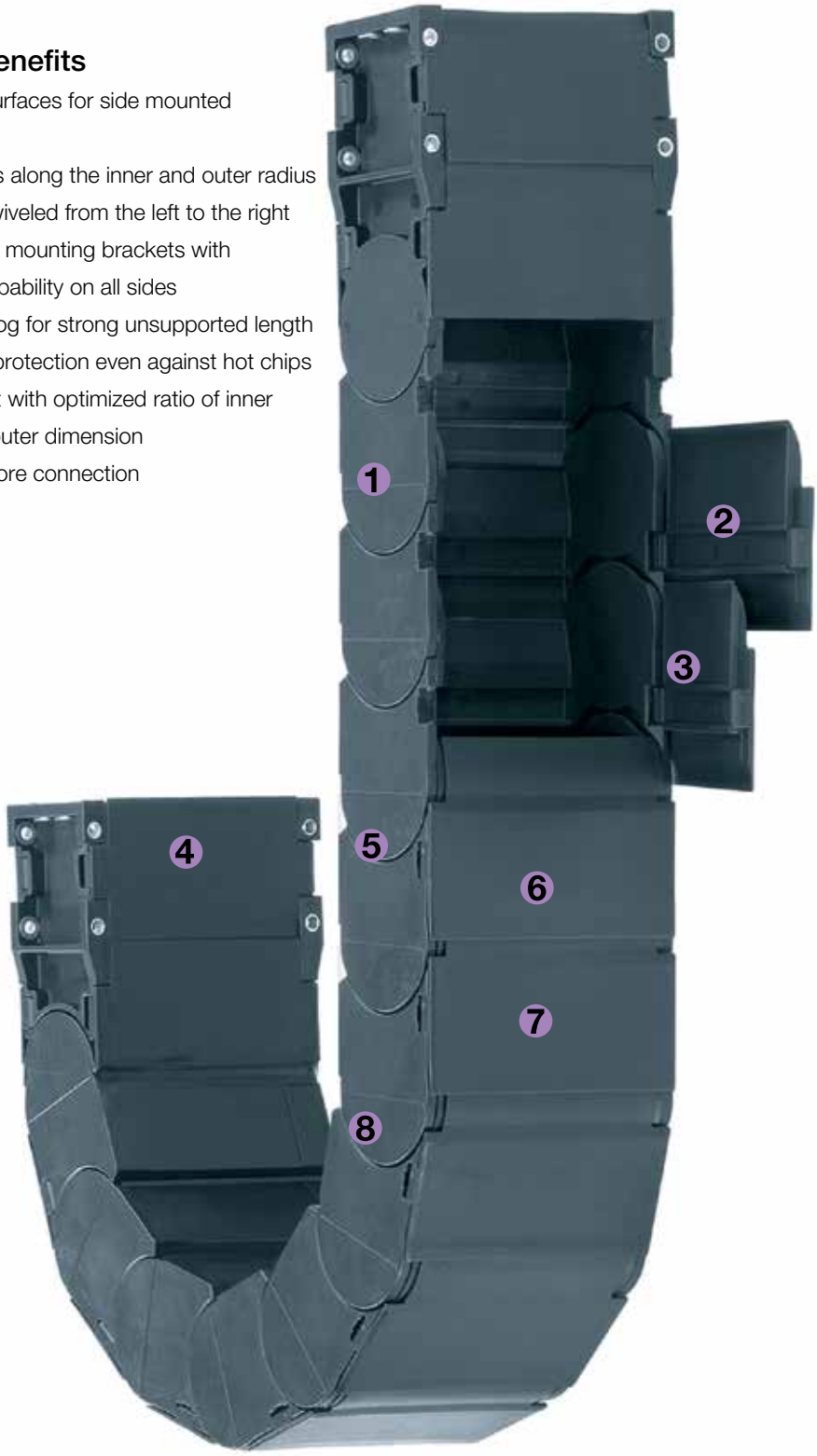
Usage Guidelines

- If snap-open accessibility along inner outer radius is required
- If a low-cost, lightweight e-tube for many types of applications is required
- If flush attachment is required
- If chip-repellent features are required

- If very smooth travel due to small pitch is required
  ➤ **Series R68 E2 tubes**
- If snap-open accessibility along both radii simultaneously is required
  ➤ **Series R4-42 E4-1**

Features & Benefits

1. Lateral glide surfaces for side mounted operation
2. Snap-open lids along the inner and outer radius
3. Lids can be swiveled from the left to the right
4. Universal KMA mounting brackets with attachment capability on all sides
5. Double stop dog for strong unsupported length
6. Effective chip protection even against hot chips
7. Space-efficient with optimized ratio of inner dimension to outer dimension
8. Covered pin/bore connection



Order Example: Complete e-chain®

Please indicate chain length or number of links. Example:

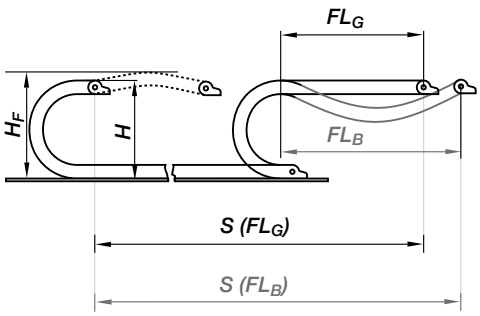
3.28 ft (1 m) **167-100-100-0**	**e-chain®**
With 2 separators **1686-01** assembled every 2nd link	**Interior Separation**
1 Set **1680-100-12**	**Mounting Bracket**

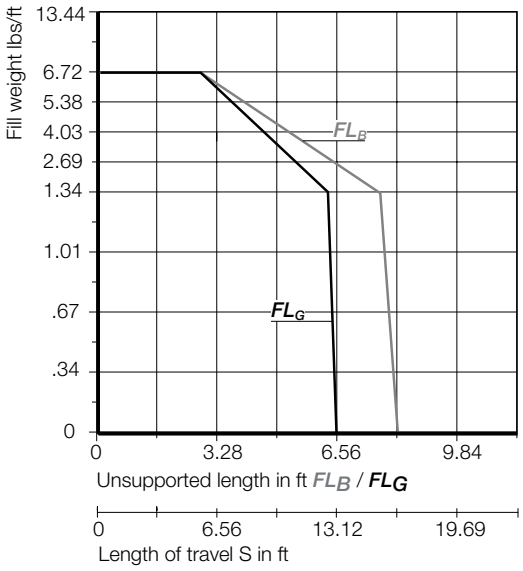
e-chain system® E2 tubes
Series R167/R168
Installation Dimensions

Short travel, unsupported length

- FL_B = unsupported with permitted sag
- FL_G = unsupported with straight upper run

Further information ➤ Design, Chapter 1



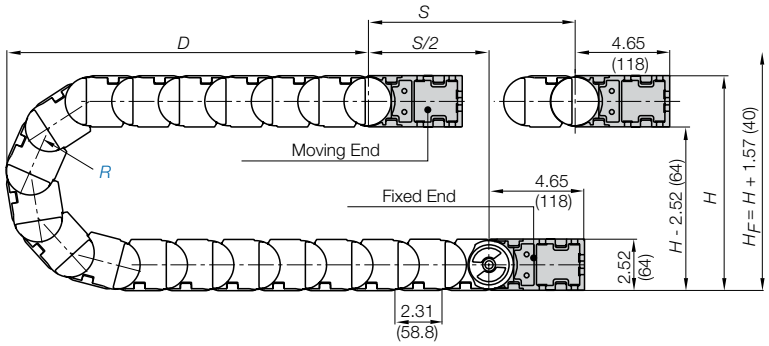


Short Travels - Unsupported

Unsupported e-chains® feature positive camber over short travels. This must be accounted for when specifying the clearance height. Please refer to **Installation dimensions** for further details.

Legend

S = Length of travel
R = Bending radius
H = Nominal clearance height
D = Overlength e-chain® radius in final position
K = π • *R* + *safety buffer*
H_F = Required clearance height



Pitch per link: = 2.31" (58.8 mm)
Links per ft (m): = 5.18 (17)
For center mount applications:
Chain length = $^{S}/_{2}$ + K

The required clearance height: **H_F = *H* + 1.57 in. (40 mm)** (with 1.34 lbs/ft (2.0 kg/m) fill weight. Please consult igus® if space is particularly restricted.

R	3.94 (100)	4.92 (125)	5.91 (150)	6.89 (175)	7.87 (200)	8.86 (225)	9.84 (250)	11.81 (300)
H	10.39 (264)	12.36 (314)	14.33 (364)	16.30 (414)	18.27 (464)	20.24 (514)	22.20 (564)	26.14 (664)
D	8.66 (220)	9.65 (245)	10.63 (270)	11.61 (295)	12.60 (320)	13.58 (345)	14.57 (370)	16.54 (420)
K	17.12 (435)	20.28 (515)	23.23 (590)	26.38 (670)	29.53 (750)	32.48 (825)	35.63 (905)	41.93 (1065)

Speed / acceleration FL_G	max. 32.8 ft/s (10 m/s) / max. 328 ft/s² (100 m/s²)
Speed / acceleration FL_B	max. 9.84 ft/s (3 m/s) / max. 19.69 ft/s² (6 m/s²)
Gliding speed / acceleration (maximum)	max. 1.64 ft/s (0.5 m/s) / max. 16.4 ft/s² (5 m/s²)
Material - permitted temperature	igumid G / -40°F (-40°C) up to +248°F (+120° C)
Flammability Class, igumid G	VDE 0304 IIC UL94 HB

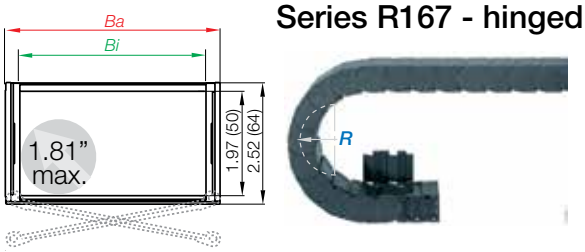
Technical Data

Details of material properties
➤ Chapter 1

PDF: igus.com/e-chain-pdfs
Product information: igus.com/e-chains

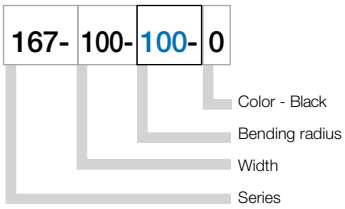
e-chain system® E2 tubes
Series R167/R168

Series R167 - hinged, snap-open on both sides of the inner radius

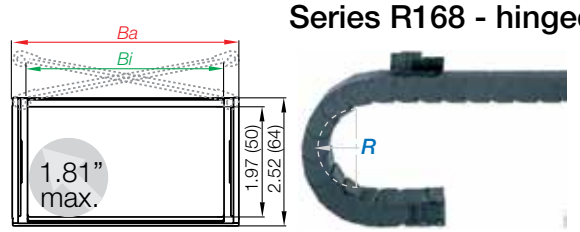




Part Number Structure

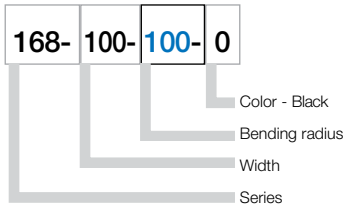


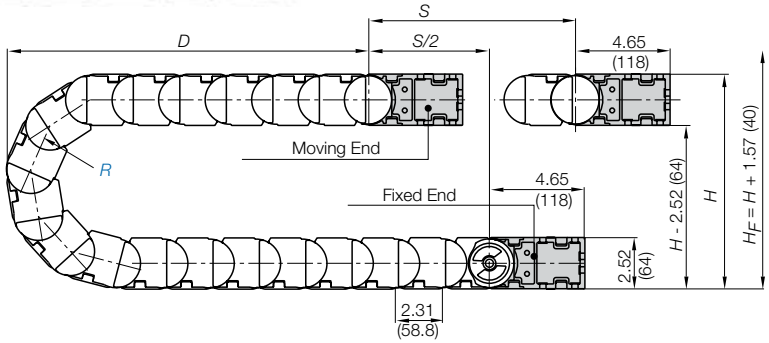
Series R168 - hinged, snap-open on both sides of the outer radius





Part Number Structure





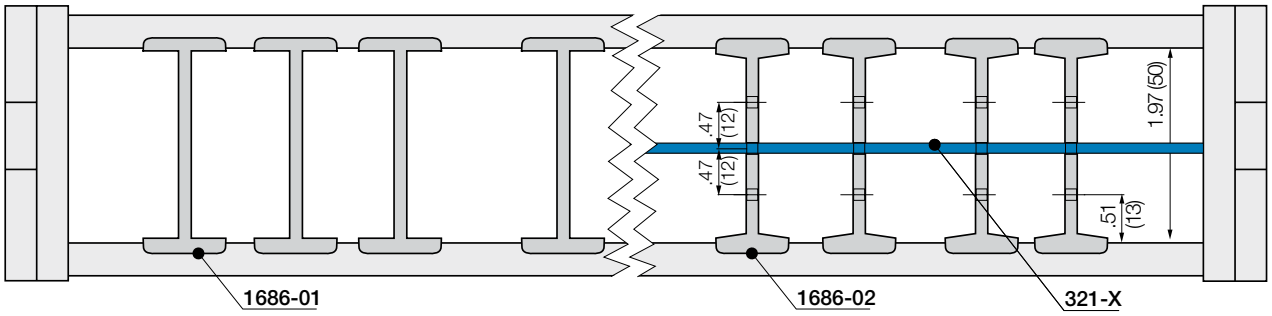
Supplement part number with required radius.
Example: 167-100-100-0
Pitch: 2.31 in. (58.8 mm) per link links/ft (m) = 5.18 (17)

Part Number. Snap-open inner radius	Snap-open outer radius		*Bi* in. (mm)	*Ba* in. (mm)	Weight lbs/ft (kg/m)
167-050-	168-050-	-0	1.97 (50)	2.68 (68)	≈ 1.06 (1.58)
167-075-	168-075-	-0	2.95 (75)	3.66 (93)	≈ 1.24 (1.84)
167-100-	168-100-	-0	3.94 (100)	4.65 (118)	≈ 1.40 (2.09)
167-115-	168-115-	-0	4.53 (115)	5.24 (133)	≈ 1.51 (2.24)
167-125-	—	-0	4.92 (125)	5.63 (143)	≈ 1.58 (2.35)
167-150-	168-150-	-0	5.91 (150)	6.61 (168)	≈ 1.75 (2.60)
167-175-	168-175-	-0	6.89 (175)	7.60 (193)	≈ 1.92 (2.86)
167-200-	168-200-	-0	7.87 (200)	8.58 (218)	≈ 2.09 (3.11)
167-225-	—	-0	8.86 (225)	9.57 (243)	≈ 2.26 (3.37)
167-250-	—	-0	9.84 (250)	10.55 (268)	≈ 2.43 (3.62)

Choose from the radii below for all of the above sizes
Radius (mm) Example: 167-100-100-0

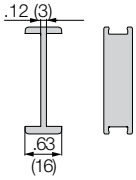
100	125	150	175	200	225	250	300
10.39 (264)	12.36 (314)	14.33 (364)	16.30 (414)	18.27 (464)	20.24 (514)	22.20 (564)	26.14 (664)
8.66 (220)	9.65 (245)	10.63 (270)	11.61 (295)	12.60 (320)	13.58 (345)	14.57 (370)	16.54 (420)
17.12 (435)	20.28 (515)	23.23 (590)	26.38 (670)	29.53 (750)	32.48 (825)	35.63 (905)	41.93 (1065)

e-chain system® E2 tubes
Series R167/R168
Interior Separation



No lateral spacing to side links is necessary
In the standard configuration separators are assembled every 2nd e-chain® link



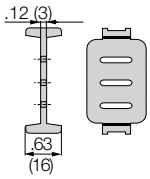


Separator for e-tubes

Unassembled	**Part No. 1685-01**
Assembled	**Part No. 1686-01**

- **Separator 1685-01**
  For vertical separation with wide base for maximum stability when used with thick cables or hoses





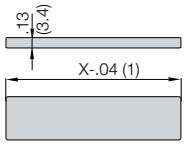
Slotted Separator for e-tubes

Unassembled	**Part No. 1685-02**
Assembled	**Part No. 1686-02**

- **Slotted separator 1685-02**
  is used when vertical subdivision is required. Due to its slot, it allows basic vertical/horizontal shelving arrangements.

Full-width shelves - for the standard interior separation





Full width shelf for e-tubes

Unassembled	**Part No. 320-X**
Assembled	**Part No. 321-X**

- **Full width shelf 320-X**
  is used in applications with many thin cables with similar diameters. Full-width shelves can be arranged at 3 different heights in .47" (12mm) increments.

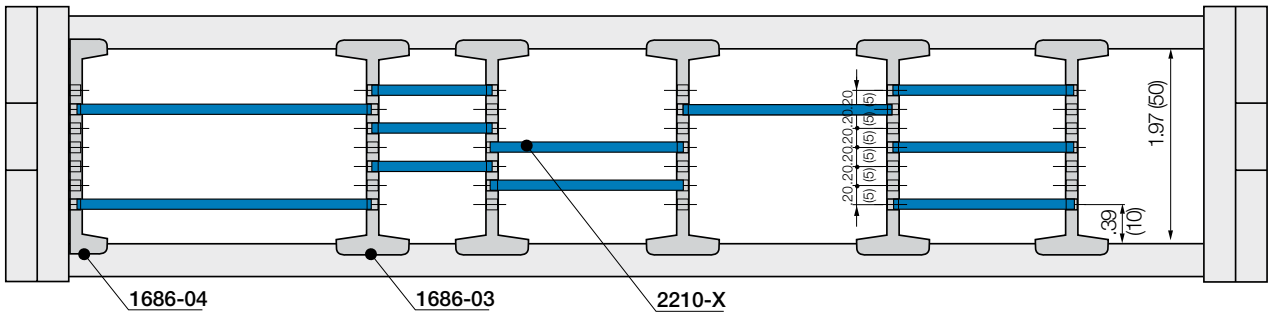
Width X in.	(mm)	Part No. Unassembled	Part No. Assembled
1.97	(50)	**320-50**	**321-50**
2.95	(75)	**320-75**	**321-75**
4.53	(115)	**320-115**	**321-115**

Width X in.	(mm)	Part No. Unassembled	Part No. Assembled
4.92	(125)	**320-125**	**321-125**
5.91	(150)	**320-150**	**321-150**
6.89	(175)	**320-175**	**321-175**

Width X in.	(mm)	Part No. Unassembled	Part No. Assembled
7.87	(200)	**320-200**	**321-200**
8.86	(225)	**320-225**	**321-225**
9.84	(250)	**320-250**	**321-250**

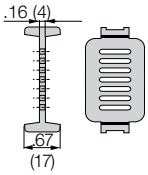
PDF: igus.com/e-chain-pdfs
Product information: igus.com/e-chains

e-chain system® E2 tubes
Series R167/R168
Mounting Brackets



No lateral spacing to side links is necessary
In the standard configuration separators are assembled every 2nd e-chain® link



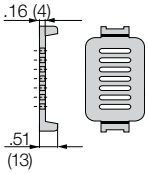


Separator, narrow base

Unassembled	**Part No. 1685-03**
Assembled	**Part No. 1686-03**

- **Middle plate 1685-03**
  To achieve modular separation the shelf 2200-X can be arranged at 7 different heights in .20" (5mm) increments.





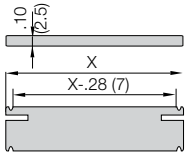
Separator, narrow base

Unassembled	**Part No. 1685-04**
Assembled	**Part No. 1686-04**

- **Side plate 1685-04**
  For use with shelf 2200-X and middle plate 1685-03

Full-width shelves - for the standard interior separation





Full width shelf

Unassembled	**Part No. 2200-X**
Assembled	**Part No. 2210-X**

- **Full width shelf 2200-X**
  For applications involving many cables with different diameters, shelves can be arranged at alternate heights. They can be arranged at 5 different heights in .20" (5mm) increments.

Width X in.	(mm)	Part No. Unassembled	Part No. Assembled
.71	(18)	**2200-18**	**2210-18**
.91	(23)	**2200-23**	**2210-23**
1.10	(28)	**2200-28**	**2210-28**
1.30	(33)	**2200-33**	**2210-33**
1.50	(38)	**2200-38**	**2210-38**

Width X in.	(mm)	Part No. Unassembled	Part No. Assembled
1.69	(43)	**2200-43**	**2210-43**
1.89	(48)	**2200-48**	**2210-48**
2.28	(58)	**2200-58**	**2210-58**
2.68	(68)	**2200-68**	**2210-68**
2.87	(73)	**2200-73**	**2210-73**

Width X in.	(mm)	Part No. Unassembled	Part No. Assembled
3.46	(88)	**2200-88**	**2210-88**
3.90	(99)	**2200-99**	**2210-99**
4.88	(124)	**2200-124**	**2210-124**
5.87	(149)	**2200-149**	**2210-149**

Separator with integrated strain relief

Strain relief separator Part No. 1685-01-Z can be integrated into the mounting bracket and can be placed there at any point of the e-tube®. It combines strain relief and interior separation, it can be installed on the first or last e-tube® link and is easy to assemble without any screws.
For more information ➤ **Chapter 10, Strain Relief**



e-chain system® E2 tubes
Series R167/R168
Mounting Brackets - KMA Extended

Option 1: pivoting

- Unsupported and gliding applications
- Mounting points on all sides
- Quickflange Option, bolted outside of e-tube cross section
- Long travels with lowered mounting height possible
- Corrosion-resistant



Option 2: locking

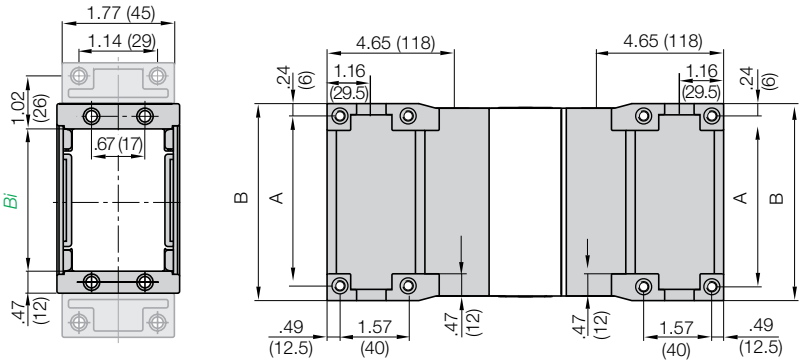
- Vertical hanging/standing applications
- Quickflange Option, bolted outside of e-tube cross section
- Extreme speeds and accelerations
- Mounting points on all sides
- Flush mounting at both ends of the e-tube



Part Number Structure

1680- 100- 12 QF

- With Quickflange
- Complete Set
  12 = Pivoting
  14 = Locking
- Width
- Mounting brackets for selected chain type



Full set, for both ends:

1680-100-12 QF Full set, **each part with pin/bore + tiewrap plate**

Single-part order:

1680-100-1 QF Mounting bracket **with bore + tiewrap plate**

1680-100-2 QF Mounting bracket **with pin + tiewrap plate**



Quickflange Unassembled
Part number 16800-QF

For Tube Type	Part No. Full set with Tiewrap Plate	Part No. Full Set with Quickflange	Dimension A in.	Dimension A (mm)	Dimension B in.	Dimension B (mm)
167/168-050	1680-050-☐	1680-050-☐ QF	2.44	(62)	2.91	(74)
167/168-075	1680-075-☐	1680-075-☐ QF	3.43	(87)	3.90	(99)
167/168-100	1680-100-☐	1680-100-☐ QF	4.41	(112)	4.88	(124)
167/168-115	1680-115-☐	1680-115-☐ QF	5.00	(127)	5.47	(139)
167/168-125	1680-125-☐	1680-125-☐ QF	5.39	(137)	5.87	(149)
167/168-150	1680-150-☐	1680-150-☐ QF	6.38	(162)	6.85	(174)
167/168-175	1680-175-☐	1680-175-☐ QF	7.36	(187)	7.83	(199)
167/168-200	1680-200-☐	1680-200-☐ QF	8.35	(212)	8.82	(224)
167/168-225	1680-225-☐	1680-225-☐ QF	9.33	(237)	9.80	(249)
167/168-250	1680-250-☐	1680-250-☐ QF	10.31	(262)	10.79	(274)

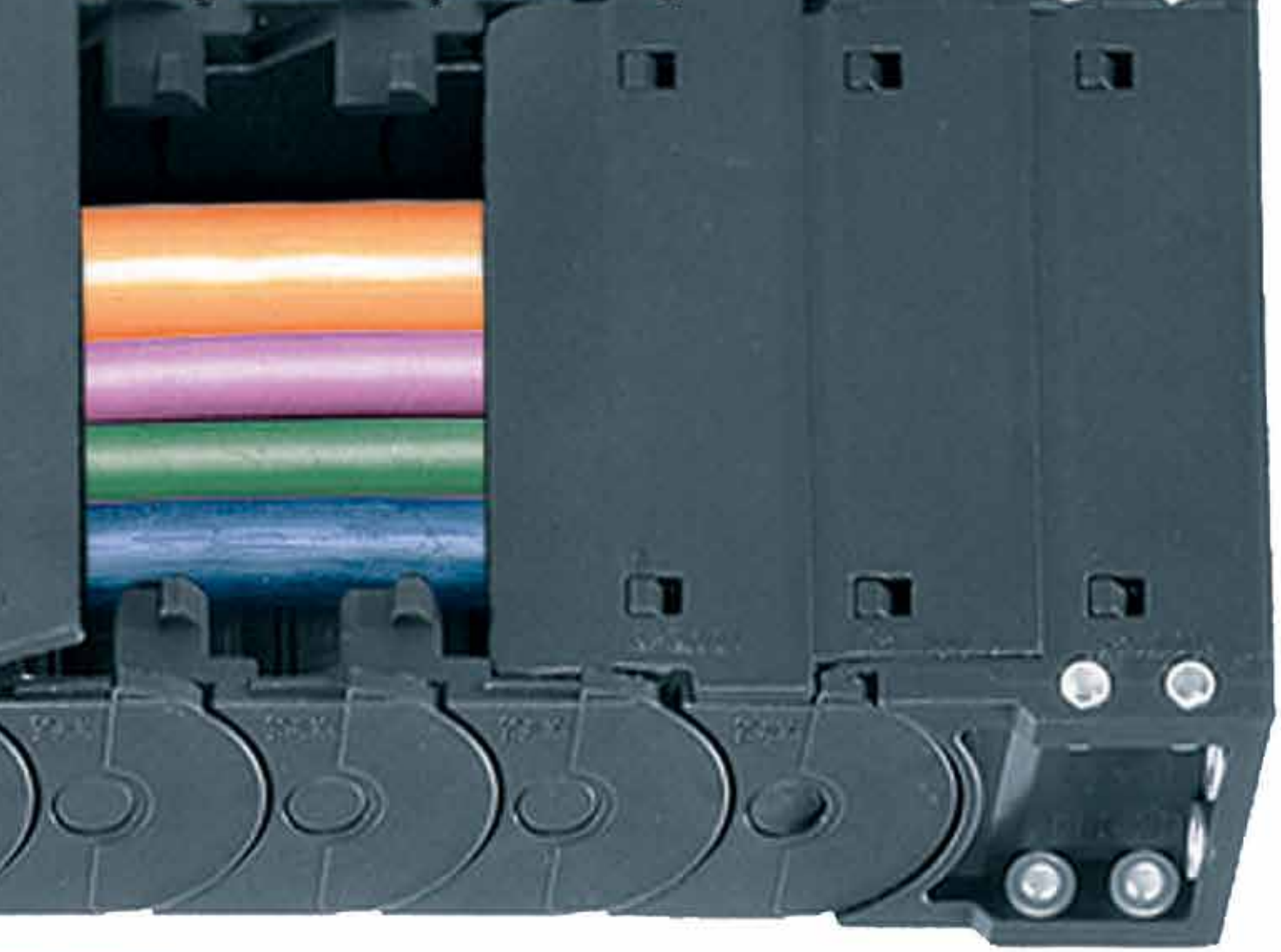
For pivoting brackets choose 12
For locking brackets choose 14
Example: 1680-100-14 QF

12 or 14

The following parts are required for attachment of the mounting brackets:
* The length of the socket head cap bolt is dependent on the thickness of the attachment base.

PDF: igus.com/e-chain-pdfs
Product information: igus.com/e-chains







E2 R

e-tubes for chip protection at higher speeds and smooth running



Chip protection at higher speeds and smooth running - E2 R e-tubes

E2 R e-tubes - small pitch for higher speeds and smooth motion. igus® e-tubes work in hot chip areas, in areas of dirt and dust generated by woodworking, steel mills, pulp and paper, textile, agriculture, coal plant and many other hostile environments.

- High level of protection against chips (including hot chips)
- Robust and sealed
- Space-efficient with optimized ratio of inner to outer dimensions
- Modular interior separation
- Universal KMA mounting brackets with attachment options from any side

Typical industries and applications

- Machine tools
- Wood processing machines
- General mechanical engineering
- In all areas with dirt and chips

e-tubes with igumid HT-Material for hot chips up to +1,562°F available upon request

Electrically conductive ESD e-tubes upon request

UL94-V0 classifications upon request

iF product design award
1987 igus® series R68

Energy Chain System® E2 R tubes
Selection Guide

Series	Inner height *hi*		Inner width *Bi*		Outer width *Ba*		Outer height *ha*		Bend radius *R*		Unsupported
	in.	(mm)	in.	(mm)	in.	(mm)	in.	(mm)	in.	(mm)	length ≤ ft. (m)
											
R48	.98	(25)	.98-5.12	(25-130)	1.42-5.55	(36-141)	1.42	(36)	2.36-9.84	(060-250)	4.92 (1.50)
R58	1.38	(35)	1.97-7.87	(50-200)	2.60-8.50	(66-216)	1.97	(50)	2.95-9.84	(075-250)	7.55 (2.30)
R68	1.77	(45)	1.97-9.84	(50-250)	2.68-10.55	(68-268)	2.52	(64)	3.94-11.81	(100-300)	8.20 (2.50)

Available from stock. Orders ship as early as today.*

*On average 90% of orders ship the same day..



E2 e-tubes in chip area of a machine tool. Resistant to chips up to +1,562°F with special igumid HT material

e-chain system® E2 tubes
Series R48

.98

Price Index

Series R48

Special Features / Options

ESD classification:
Electrically conductive ESD/
ATEX version upon request

Flammability Class
VDE 0304 IIC UL94 HB

Assembly Tips



To open the e-tube Series R, lift up the lid (with a screwdriver) and remove the lid

Other Installation Methods

Vertical, hanging ≤ 164 ft (50 m)
Vertical, standing ≤ 13.12 ft (4 m)
Side-mounted, unsupp. ≤ 4.92 ft (1.5 m)
Rotary requires further calculation

Usage Guidelines

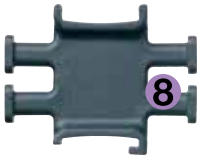
- If particularly quiet operation is required
- If very high speeds are required
- If chip repellent features are required

- If a particularly low-cost solution is the main factor
  ➤ **Series R117/R118 E2 tubes**
- If no chip protection is required
  ➤ **Series 2500 E2/000**

Features & Benefits

1. Large pins for high stability
2. Protection for cables and hoses against hot chips
3. Removable lids along the outer radius
4. Small pitch for low-noise, smooth operation
5. KMA mounting brackets with attachment capabilities on all sides
6. Smooth, chip-repellent exterior
7. Fully enclosed
8. Strain relief separator option: Separator with integrated strain relief for use in the first or last chain link ➤ **Strain Relief, Chapter 10**





Order Example: Complete e-chain®

Please indicate chain length or number of links. Example:

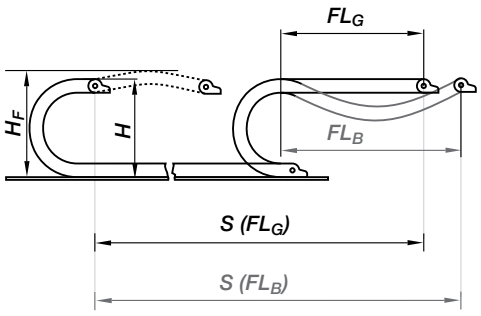
3.28 ft (1 m) **48-075-060-0**	**e-chain®**
With 2 separators **482** assembled every 2nd link	**Interior Separation**
1 Set **480-075-12**	**Mounting Bracket**

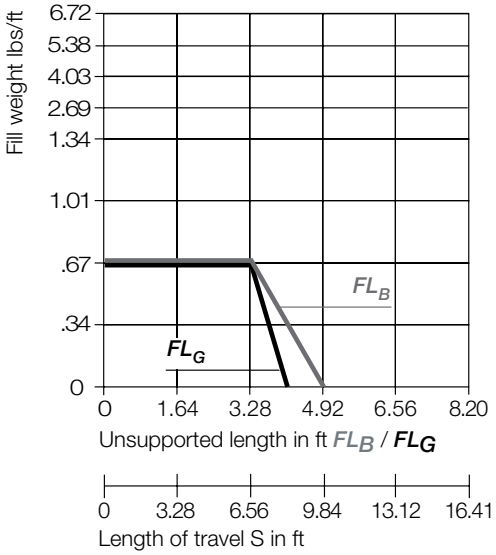
e-chain system® E2 tubes
Series R48
Installation Dimensions

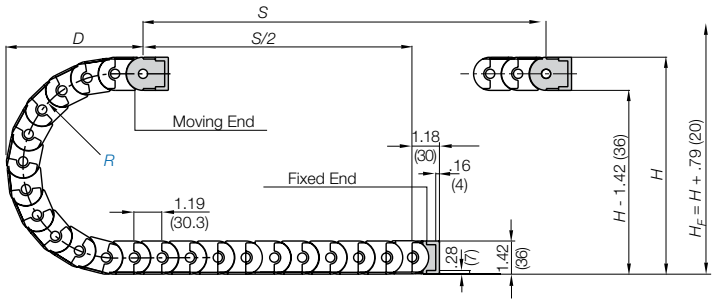
Short travel, unsupported length

- FL_B = unsupported with permitted sag
- FL_G = unsupported with straight upper run

Further information ➤ Design, Chapter 1







Pitch per link: = 1.19" (30.3 mm)
Links per ft (m): = 10.06 (33)
For center mount applications:
Chain length = $^{S}/_{2} + K$

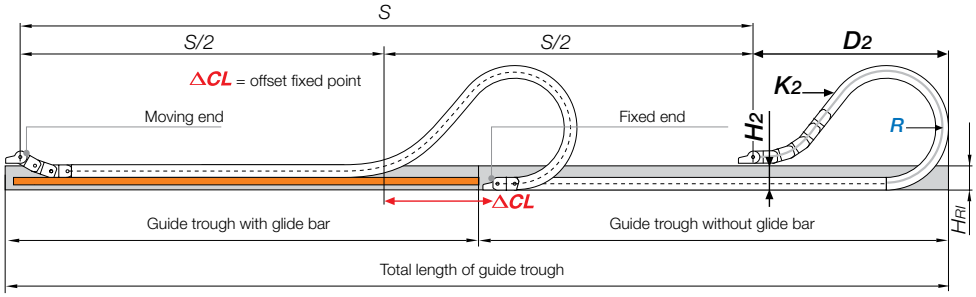
The required clearance height: ***HF = H* + .79 in. (20 mm)** (with .34 lbs/ft (0.5 kg/m) fill weight. Please consult igus® if space is particularly restricted.

R	2.36 (060)	2.95 (075)	3.94 (100)	4.92 (125)	5.91 (150)	6.89 (175)	7.87 (200)	9.84 (250)
H	6.14 (156)	7.32 (186)	9.29 (236)	11.26 (286)	13.23 (336)	15.20 (386)	17.17 (436)	21.10 (536)
D	4.84 (123)	5.43 (138)	6.42 (163)	7.40 (188)	8.39 (213)	9.37 (238)	10.35 (263)	12.32 (313)
K	9.84 (250)	11.81 (300)	14.76 (375)	17.91(455)	21.06 (535)	24.21 (615)	27.17 (690)	33.46 (850)

For long travels with lowered mounting height

Long travel lengths from 16.41 ft. (5 m) to max. 164 ft. (50 m)

For center mount applications:
Chain length: = $^{S}/_{2} + K_2$



R	2.36 (060)	2.95 (075)	3.94 (100)	4.92 (125)	5.91 (150)	6.89 (175)	7.87 (200)	9.84 (250)
H	6.14 (156)	7.32 (186)	6.93 (176)	6.93 (176)	6.93 (176)	6.93 (176)	6.93 (176)	*
D	4.33 (110)	4.92 (125)	12.99 (330)	17.72 (450)	24.02 (610)	28.74 (730)	27.16 (690)	*
K	9.84 (250)	11.81 (300)	21.46 (545)	29.84 (758)	38.19 (970)	45.31 (1151)	46.54 (1182)	*
ΔCL	*	*	6.69 (170)	10.63 (270)	14.96 (380)	18.50 (470)	*	*

Speed / acceleration FL_G	max. 32.8 ft/s (10 m/s) / max. 328 ft/s² (100 m/s²)
Speed / acceleration FL_B	max. 9.84 ft/s (3 m/s) / max. 19.69 ft/s² (6 m/s²)
Gliding speed / acceleration (maximum)	max. 9.84 ft/s (3 m/s) / max. 32.8 ft/s² (10 m/s²)
Material - permitted temperature	igumid G / -40°F (-40°C) up to +248°F (+120° C)
Flammability Class, igumid G	VDE 0304 IIC UL94 HB

Short Travels - Unsupported

Unsupported e-chains® feature positive camber over short travels. This must be accounted for when specifying the clearance height. Please refer to **Installation dimensions** for further details.

Legend

S = Length of travel
R = Bending radius
H = Nominal clearance height
D = Overlength e-chain® radius in final position
K = π • *R* + *safety buffer*
HF = Required clearance height

Long Travels - Gliding

If the unsupported length is exceeded, the e-chain®/ Tube must glide on itself. This requires a guide trough.
Design, Chapter 1

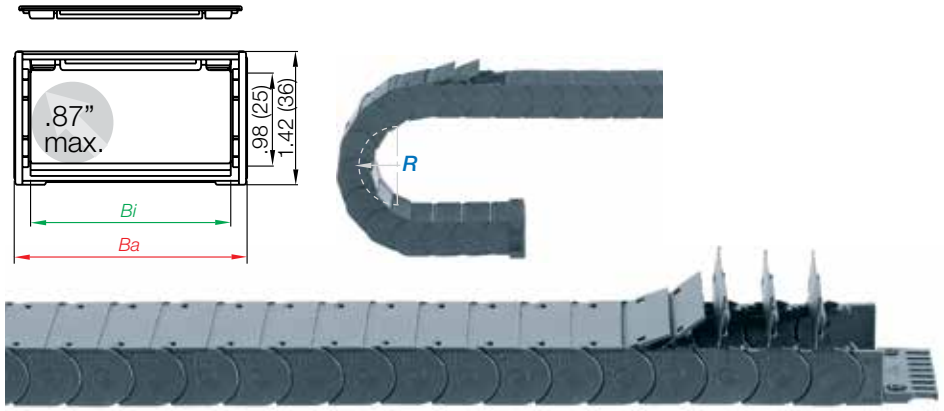
Technical Data

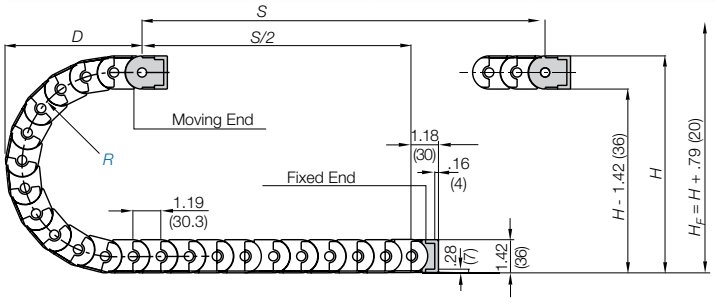
Details of material properties
➤ Chapter 1

PDF: igus.com/e-chain-pdfs
Product information: igus.com/e-chains

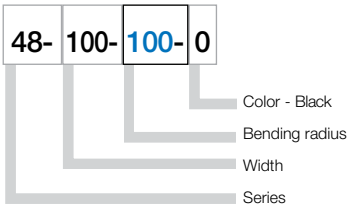
e-chain system® E2 tubes
Series R48

Series R48 - e-tube snap-open along the outer radius





Part Number Structure

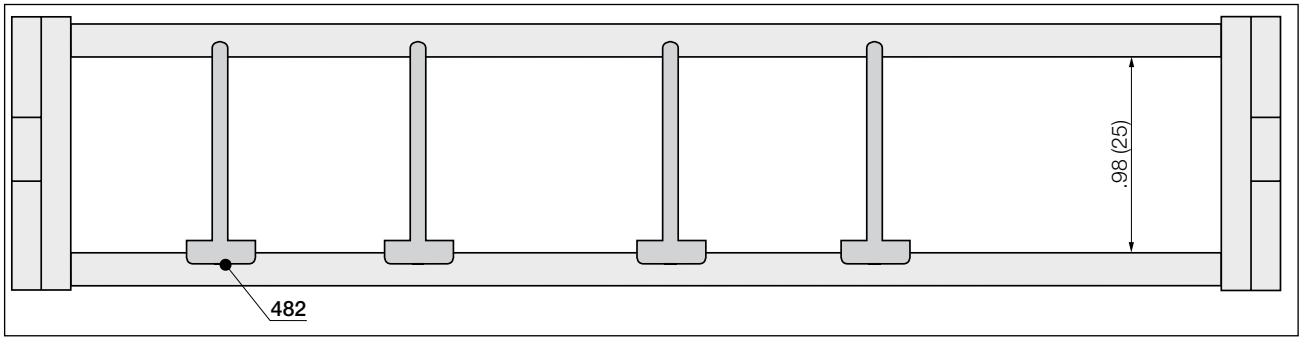


Supplement part number with required radius. Example: R48-100-100-0
Pitch: 1.19 in. (30.3 mm) per link links/ft (m) = 10.06 (33)

Part Number			*Bi* in. (mm)	*Ba* in. (mm)	Weight lbs/ft (kg/m)
48-025-		-0	.98 (25)	1.42 (36)	≈ 0.43 (0.64)
48-050-		-0	1.97 (50)	2.40 (61)	≈ 0.56 (0.84)
48-075-		-0	2.95 (75)	3.39 (86)	≈ 0.69 (1.03)
48-100-		-0	3.94 (100)	4.37 (111)	≈ 0.83 (1.23)
48-130-		-0	5.12 (130)	5.55 (141)	≈ 0.98 (1.46)

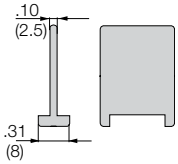
Choose from the radii below for all of the above sizes
Radius (mm) Example: R48-100-100-0

	060	075	100	125	150	175	200	250
R	2.36 (060)	2.95 (075)	3.94 (100)	4.92 (125)	5.91 (150)	6.89 (175)	7.87 (200)	9.84 (250)
H	6.14 (156)	7.32 (186)	9.29 (236)	11.26 (286)	13.23 (336)	15.20 (386)	17.17 (436)	21.10 (536)
D	4.84 (123)	5.43 (138)	6.42 (163)	7.40 (188)	8.39 (213)	9.37 (238)	10.35 (263)	12.32 (313)
K	9.84 (250)	11.81 (300)	14.76 (375)	17.91(455)	21.06 (535)	24.21 (615)	27.17 (690)	33.46 (850)



No lateral spacing to side links is necessary.
In the standard configuration separators are assembled every 2nd e-chain® link





Separator, wide base

Unassembled	**Part No. 481**
Assembled	**Part No. 482**

- **Standard separator 481**
  Vertical separators are used if a vertical subdivision of the e-tube is required. By standard vertical separators are assembled every other e-tube link.

Separator with integrated strain relief

Strain relief separator Part No. 481-ZR can be integrated into the mounting bracket and can be placed there at any point of the e-tube®. It combines strain relief and interior separation, it can be installed on the first or last e-tube® link and is easy to assemble without any screws.
For more information ➤ **Chapter 10, Strain Relief**



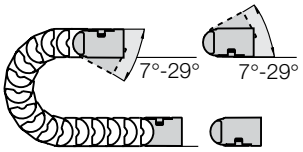
PDF: igus.com/e-chain-pdfs
Product information: igus.com/e-chains

e-chain system® E2 tubes
Series R48
Mounting Bracket - Plastic

Option 1: Plastic

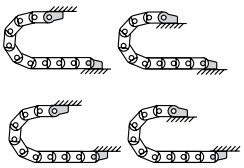
- Attachment option for strain relief tiewrap plate
- Locked connection to e-tube
- Minimized external width

Moving end
4800...1

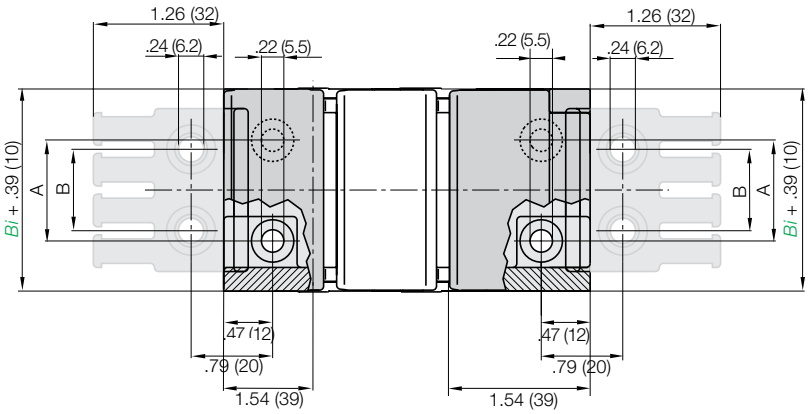


Fixed end
4800...2





Possible installation configurations -



Part Number Structure

4800- | 025- | 12- | PZB

- PZB: With tiewrap plate
- 12-: Complete Set
- 025-: Width
- 4800-: Mounting brackets for selected chain type

Full set, for both ends:

4800-025-12 Full set, **each part with pin/bore**

Single-part order:

4800-025-1 Mounting bracket **with bore**

4800-025-2 Mounting bracket **with pin**

Part No. Mounting Brackets Full Set
4 parts, 2 with pin, 2 with bore
Series R48:
4800-Width-12

Part No. Mounting bracket with bore
2 parts, 1 left & 1 right
Series R48:
4800-Width -1

Part No. Mounting bracket with pin
2 parts, 1 left & 1 right
Series R48:
4800-Width-2

For Series	Part No. Full Set	Part No. Full Set with Tiewrap Plate	Dimension A in.	(mm)	Dimension B in.	(mm)	Number of teeth
48-025	**4800-025-12**	**4800-025-12PZB**	.47	(12)	.59	(15)	3
48-050	**4800-050-12**	**4800-050-12PZB**	1.46	(37)	1.18	(30)	5
48-075	**4800-075-12**	**4800-075-12PZB**	2.44	(62)	2.36	(60)	8
48-100	**4800-100-12**	**4800-100-12PZB**	3.43	(87)	3.15	(80)	10
48-130	**4800-130-12**	**4800-130-12PZB**	4.61	(117)	–	–	–

The following parts are required for attachment of the mounting brackets:

- **Socket head cap bolt M5* DIN 912-8.8**
  4 pieces/set
- **Washer 5.3 DIN 125-ST**
  8 pieces/set
- **Hexagon nut M5 DIN 934-8**
  4 pieces/set

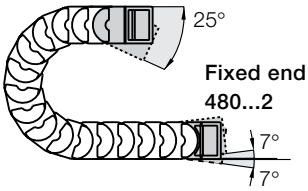
* The length of the socket head cap bolt is dependent on the thickness of the attachment base.

e-chain system® E2 tubes
Series R48
Mounting Bracket - KMA

Option 1: KMA pivoting

- Attachment points on all sides
- Corrosion resistant

Moving end
480...1

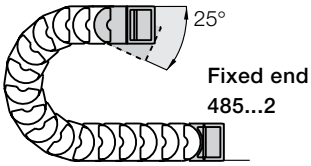




Option 2: KMA locking

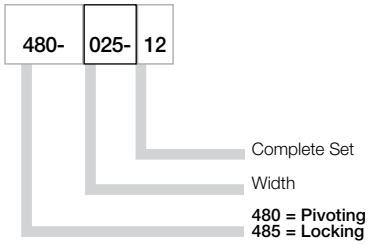
- Vertical hanging, standing travel
- Attachment points on all sides
- Corrosion resistant

Moving end
485...1





Part Number Structure



Full set, for both ends:

480- 025- 12 Full set, **each part with pin/bore**

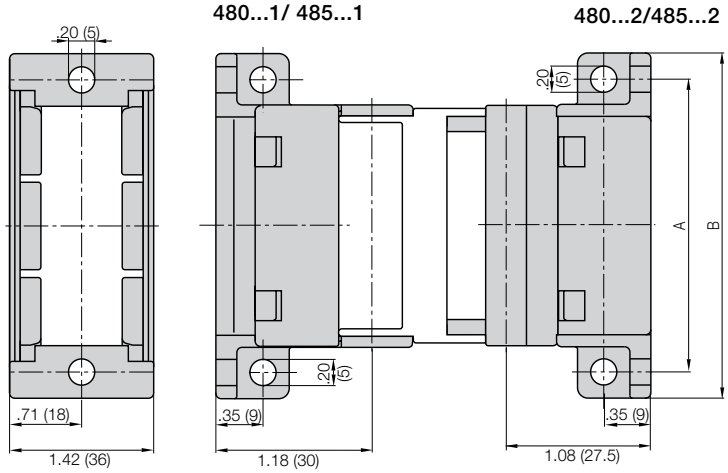
Single-part order:

480- 025- 1 Mounting bracket **with bore**

480- 025- 2 Mounting bracket **with pin**

Moving end
480...1/ 485...1

Fixed end
480...2/485...2



Width	Part No. Full Set			Dimension A		Dimension B	
	Pivoting	Locking		in.	(mm)	in.	(mm)
-025	480	485	-025-12	1.77	(45)	2.17	(55)
-050	480	485	-050-12	2.76	(70)	3.15	(80)
-075	480	485	-075-12	3.74	(95)	4.13	(105)
-100	480	485	-100-12	4.72	(120)	5.12	(130)
-130	480	485	-130-12	5.91	(150)	6.30	(160)

The following parts are required for attachment of the mounting brackets:

- **Socket head cap bolt M5* DIN 912-8.8**
  4 pieces/set
- **Washer 5.3 DIN 125-ST**
  8 pieces/set
- **Hexagon nut M5 DIN 934-8**
  4 pieces/set

* The length of the socket head cap bolt is dependent on the thickness of the attachment base.

PDF: igus.com/e-chain-pdfs
Product information: igus.com/e-chains

e-chain system® E2 tubes
Series R48
Mounting Bracket - Steel

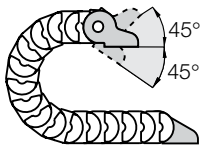
Telephone 1-800-521-2747

Internet: igus.com
email: sales@igus.com
QuickSpec: igus.com/quickspec

Option 1: Steel

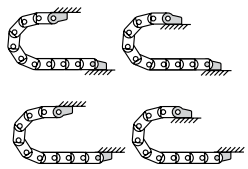
- Locked connection to e-tube
- Electrically conductive
- Minimized external width

Moving end
482...1

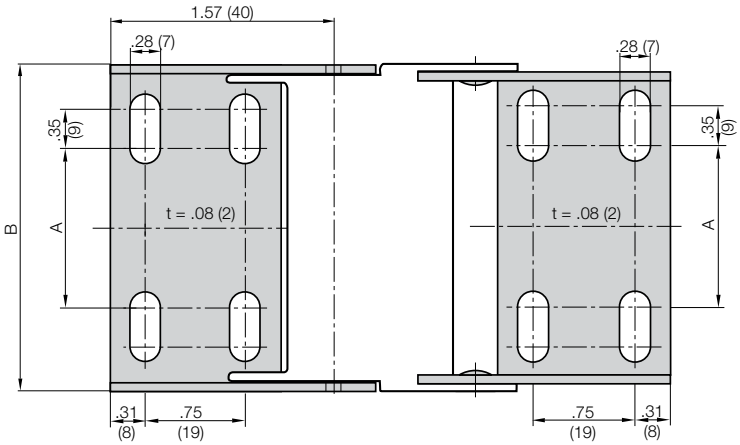




Fixed end
482...2



Possible installation configurations -



Full set, for both ends:

482-	025-	12	Full set, **each part with pin/bore**

Single-part order:

482-	025-	1	Mounting bracket **with bore**
482-	025-	2	Mounting bracket **with pin**

For Series	Part No. Full Set	Dimension A in.	(mm)	Dimension B in.	(mm)
48-025	**482-025-12**		–	1.38	(35)
48-050	**482-050-12**	.87	(22)	2.36	(60)
48-075	**482-075-12**	1.85	(47)	3.35	(85)
48-100	**482-100-12**	2.83	(72)	4.33	(110)
48-130	**482-130-12**	4.02	(102)	5.51	(140)

The following parts are required for attachment of the mounting brackets:

- **Socket head cap bolt M5* DIN 912-8.8**
  4 pieces/set
- **Washer 5.3 DIN 125-ST**
  8 pieces/set
- **Hexagon nut M5 DIN 934-8**
  4 pieces/set

* The length of the socket head cap bolt is dependent on the thickness of the attachment base.

Part No. Mounting Brackets Full Set
4 parts, 2 with pin, 2 with bore
Series R48:
482-Width-12

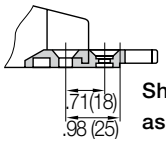
Part No. Mounting bracket with bore
2 parts, 1 left & 1 right
Series R48:
482-Width -1

Part No. Mounting bracket with pin
2 parts, 1 left & 1 right
Series R48:
482-Width-2

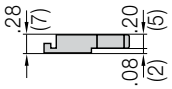
e-chain system® E2 tubes
Series R48
Strain Relief

Tiewrap Plates





Shown assembled

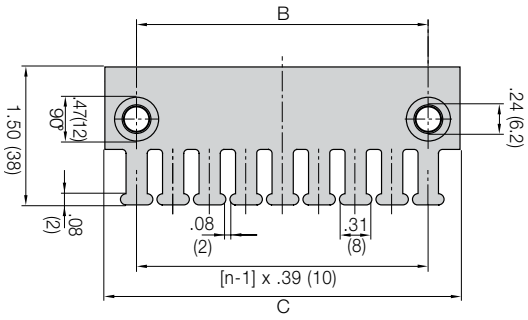


Single tiewrap plate

Option 1:
Tiewrap plates as an individual part

Available as an individual component that can be fixed external to the mounting bracket.

Tiewrap Plates	n Number of Teeth	Dimension C	Dimension B
2020-ZB	3	1.18 (30)	.59 (15)
2030-ZB	4	1.57 (40)	.79 (20)
2040-ZB	5	1.97 (50)	1.18 (30)
2050-ZB	6	2.36 (60)	1.57 (40)
2070-ZB	8	3.15 (80)	2.36 (60)
2090-ZB	9	3.54 (90)	2.76 (70)
2100-ZB	10	3.94 (100)	3.15 (80)
2120-ZB	12	4.72 (120)	3.94 (100)



For more information please refer to strain relief section of Chapter 10



Cable tiewraps as individual parts

Cable tiewraps	Width x Length		Maximum Ø		Tensile Strength	
100 pieces/bag	in.	(mm)	in.	(mm)	lbs	(N)
CFB-001	.19 x 5.91	(4.8 x 150)	1.42	(36)	50	(222)

PDF: igus.com/e-chain-pdfs
Product information: igus.com/e-chains

e-chain system® E2 tubes
Series R58

Price Index

Series R58

Special Features / Options

ESD classification:
Electrically conductive ESD/
ATEX version upon request

Flammability Class
VDE 0304 IIC UL94 HB

Assembly Tips



To open the e-tube Series R, lift up the lid (with a screwdriver) and remove the lid

Other Installation Methods

Vertical, hanging ≤ 164 ft (50 m)
Vertical, standing ≤ 13.12 ft (4 m)
Side-mounted, unsupp. ≤ 6.56 ft (2 m)
Rotary requires further calculation

Usage Guidelines

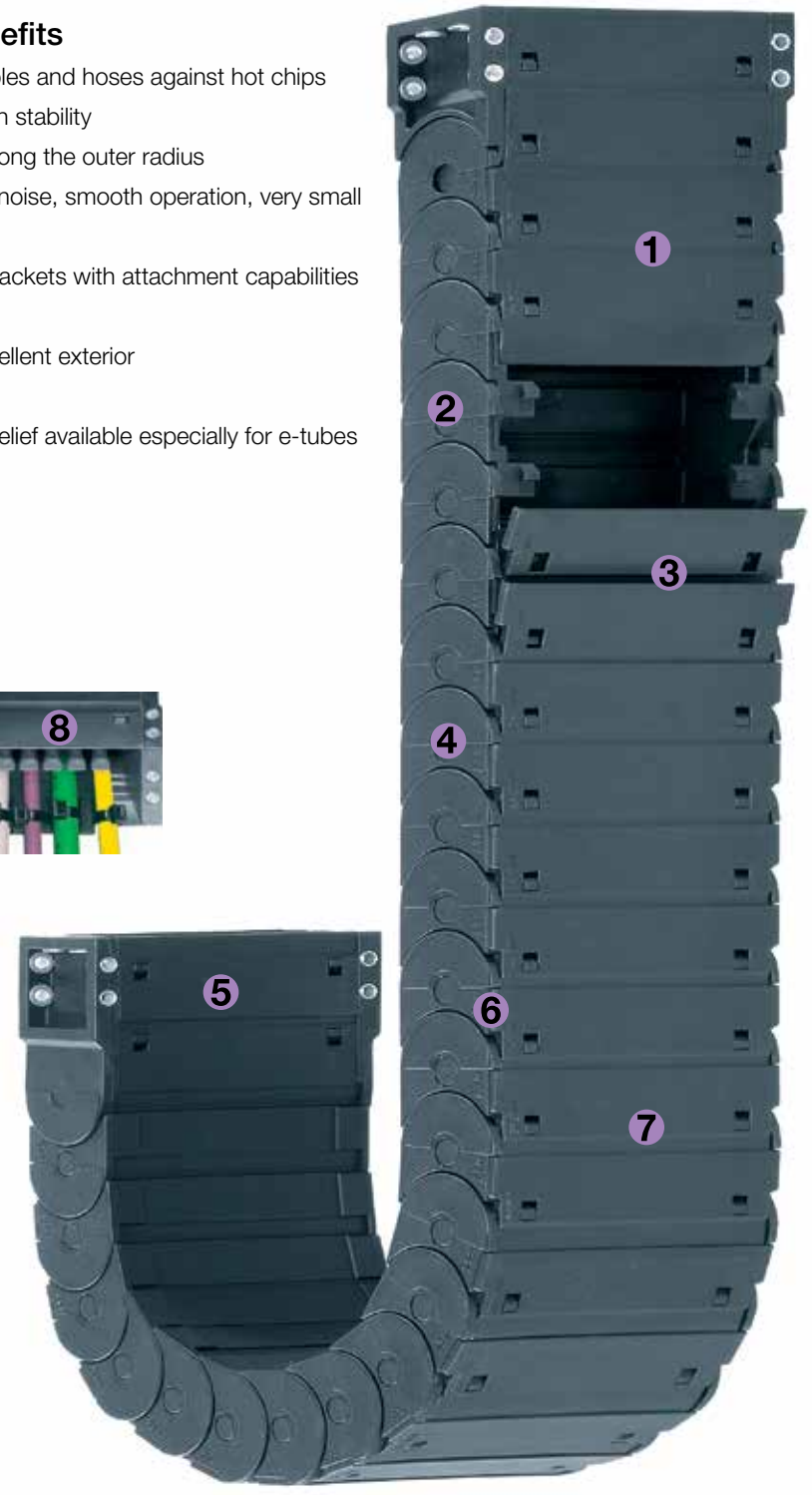
- If particularly quiet operation is required
- If very high speeds are required
- If chip protection is subject to stringent requirements

- If a particularly low-cost solution is the main factor
  ➤ **Series R157/R158 E2 tubes**
- If no chip protection is required
  ➤ **Series 2500 E2/000**

Features & Benefits

1. Protection for cables and hoses against hot chips
2. Large pins for high stability
3. Removable lids along the outer radius
4. Small pitch - low-noise, smooth operation, very small radii
5. KMA mounting brackets with attachment capabilities on all sides
6. Smooth, chip-repellent exterior
7. Fully enclosed
8. Integrated strain relief available especially for e-tubes





Order Example: Complete e-chain®

Please indicate chain length or number of links. Example:

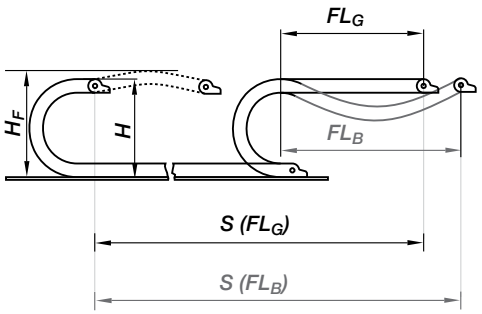
3.28 ft (1 m) **58-100-100-0**	**e-chain®**
With 2 separators **582** assembled every 2nd link	**Interior Separation**
1 Set **580-100-12**	**Mounting Bracket**

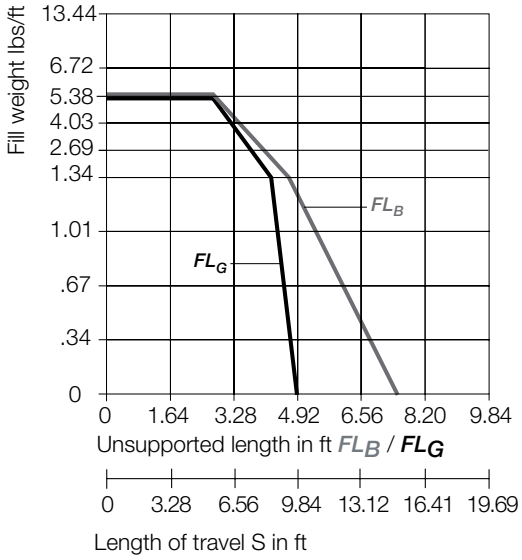
e-chain system® E2 tubes
Series R58
Installation Dimensions

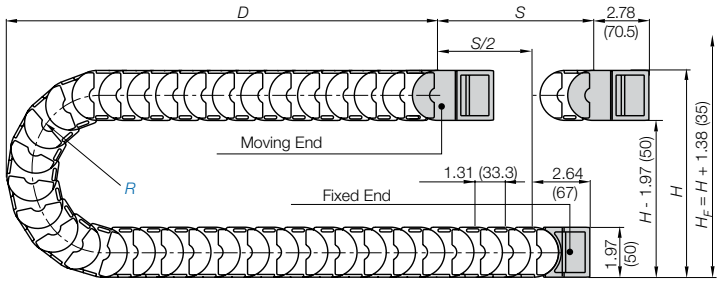
Short travel, unsupported length

- FL_B = unsupported with permitted sag
- FL_G = unsupported with straight upper run

Further information ➤ Design, Chapter 1







Pitch per link: = 1.31" (33.3 mm)
Links per ft (m): = 9.14 (30)
For center mount applications:
Chain length = $S/2 + K$

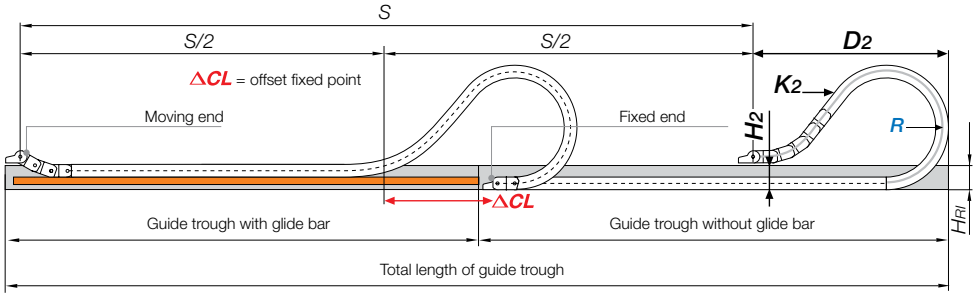
The required clearance height: $H_F = H$ **+ 1.38 in. (35 mm)** (with .34 lbs/ft (0.5 kg/m) fill weight. Please consult igus® if space is particularly restricted.

R	2.95 (075)	3.94 (100)	4.92 (125)	5.91 (150)	7.87 (200)	9.84 (250)
H	7.87 (200)	9.84 (250)	11.81 (300)	13.78 (350)	17.72 (450)	21.65 (550)
D	5.91 (150)	6.89 (175)	7.87 (200)	8.86 (225)	10.83 (275)	12.80 (325)
K	12.96 (305)	15.16 (385)	18.11 (460)	21.26 (540)	27.36 (695)	33.66 (855)

For long travels with lowered mounting height

Long travel lengths from 32.8 ft. (10 m) to max. 246 ft. (75 m)

For center mount applications:
Chain length: = $S/2 + K_2$



R	2.95 (075)	3.94 (100)	4.92 (125)	5.91 (150)	7.87 (200)	9.84 (250)
H_2	5.91 (150)	6.54 (166)	6.54 (166)	6.54 (166)	6.54 (166)	6.54 (166)
D_2	5.91 (150)	12.20 (310)	14.96 (380)	18.90 (480)	31.50 (800)	41.34 (1050)
K_2	14.76 (375)	19.69 (500)	27.52 (699)	34.09 (866)	49.80 (1265)	65.55 (1665)
ΔCL	–	4.80 (122)	6.57 (167)	9.72 (247)	20.16 (512)	28.23 (717)

Speed / acceleration FL_G	max. 32.8 ft/s (10 m/s) / max. 328 ft/s² (100 m/s²)
Speed / acceleration FL_B	max. 9.84 ft/s (3 m/s) / max. 19.69 ft/s² (6 m/s²)
Gliding speed / acceleration (maximum)	max. 9.84 ft/s (3 m/s) / max. 32.8 ft/s² (10 m/s²)
Material - permitted temperature	igumid G / -40°F (-40°C) up to +248°F (+120° C)
Flammability Class, igumid G	VDE 0304 IIC UL94 HB

Short Travels - Unsupported

Unsupported e-chains® feature positive camber over short travels. This must be accounted for when specifying the clearance height. Please refer to **Installation dimensions** for further details.

Legend

S = Length of travel
R = Bending radius
H = Nominal clearance height
D = Overlength e-chain® radius in final position
K = π • *R* + *safety buffer*
H_F = Required clearance height
H_{RI} = Trough inner height
H_2 = *Mounting height
D_2 = Overlength - long travels, gliding
K_2 = *Add-on

*If the mounting bracket location is set lower

Long Travels - Gliding

If the unsupported length is exceeded, the e-chain®/Tube must glide on itself. This requires a guide trough.
Design, Chapter 1

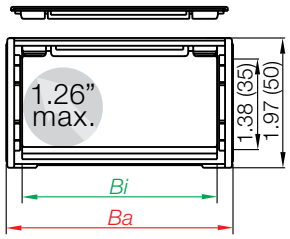
Technical Data

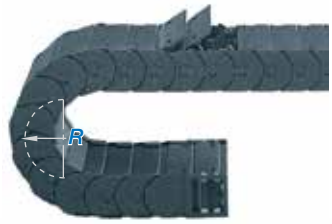
Details of material properties
➤ Chapter 1

PDF: igus.com/e-chain-pdfs
Product information: igus.com/e-chains

e-chain system® E2 tubes
Series R58

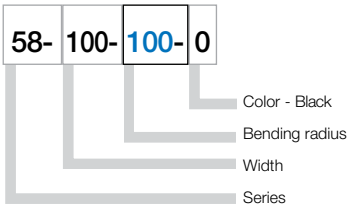
Series R58 - e-tube snap-open along the outer radius

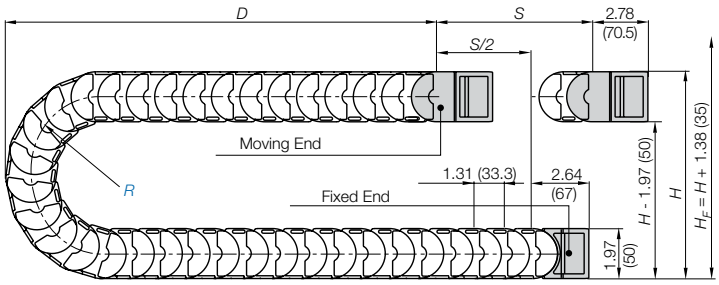






Part Number Structure





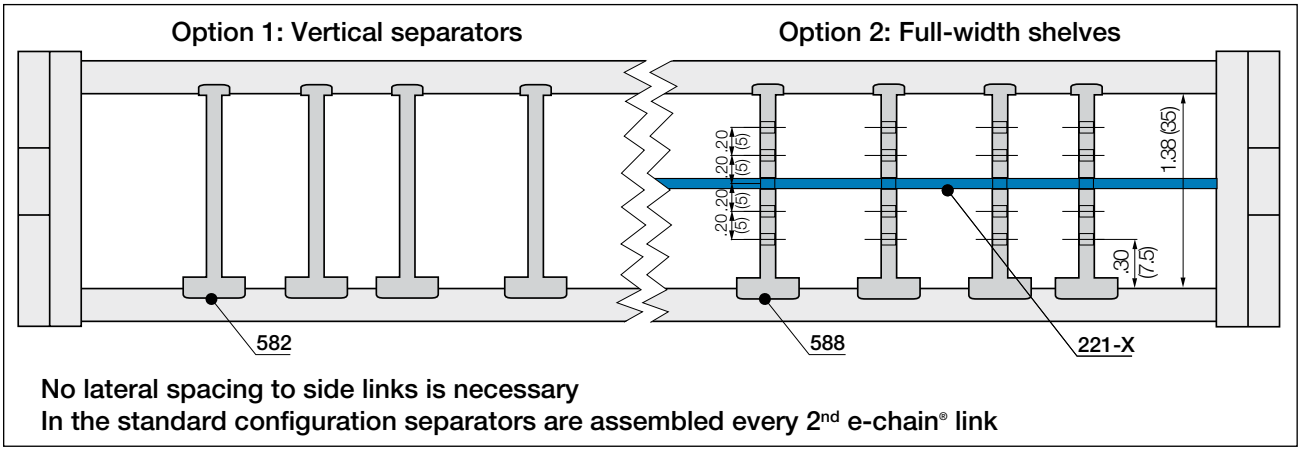
Supplement part number with required radius. Example: R58-100-100-0
Pitch: 1.31 in. (33.3 mm) per link links/ft (m) = 9.14 (30)

Part Number			Bi in. (mm)	Ba in. (mm)	Weight lbs/ft (kg/m)
58-050-		-0	1.97 (50)	2.60 (66)	≈ 1.01 (1.50)
58-075-		-0	2.95 (75)	3.58 (91)	≈ 1.19 (1.77)
58-100-		-0	3.94 (100)	4.57 (116)	≈ 1.37 (2.04)
58-125-		-0	4.92 (125)	5.55 (141)	≈ 1.55 (2.31)
58-150-		-0	5.91 (150)	6.54 (166)	≈ 1.75 (2.61)
58-175-		-0	6.89 (175)	7.52 (191)	≈ 1.94 (2.88)
58-200-		-0	7.87 (200)	8.50 (216)	≈ 2.12 (3.15)

Choose from the radii below for all of the above sizes
Radius (mm)Example: R58-100-100-0

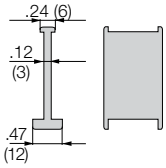
	075	100	125	150	200	250
R	2.95 (075)	3.94 (100)	4.92 (125)	5.91 (150)	7.87 (200)	9.84 (250)
H	7.87 (200)	9.84 (250)	11.81 (300)	13.78 (350)	17.72 (450)	21.65 (550)
D	5.91 (150)	6.89 (175)	7.87 (200)	8.86 (225)	10.83 (275)	12.80 (325)
K	12.96 (305)	15.16 (385)	18.11 (460)	21.26 (540)	27.36 (695)	33.66 (855)

e-chain system® E2 tubes
Series R58
Interior Separation



No lateral spacing to side links is necessary
In the standard configuration separators are assembled every 2nd e-chain® link



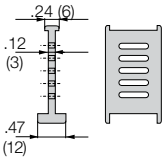


Separator for e-tubes

Unassembled	**Part No. 581**
Assembled	**Part No. 582**

- **Separator 581**
  For vertical separation with wide base for maximum stability when used with thick cables or hoses





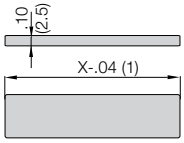
Slotted Separator for e-tubes

Unassembled	**Part No. 587**
Assembled	**Part No. 588**

- **Separator 587**
  is used when vertical and horizontal separation is required. Due to its slot, it allows basic vertical/horizontal shelving arrangements.

Full-width shelves - for the standard interior separation





Full width shelf for e-tubes

Unassembled	**Part No. 220-X**
Assembled	**Part No. 221-X**

- **Full width shelf 220-X**
  is used in applications with many thin cables with similar diameters. Full-width shelves can be arranged at 5 different heights in .20" (5mm) increments..

Width X in.	(mm)	Part No. Unassembled	Part No. Assembled
1.97	(50)	**220-50**	**221-50**
2.95	(75)	**220-75**	**221-75**
3.94	(100)	**220-100**	**221-100**

Width X in.	(mm)	Part No. Unassembled	Part No. Assembled
4.92	(125)	**220-125**	**221-125**
5.91	(150)	**220-150**	**221-150**
6.89	(175)	**220-175**	**221-175**

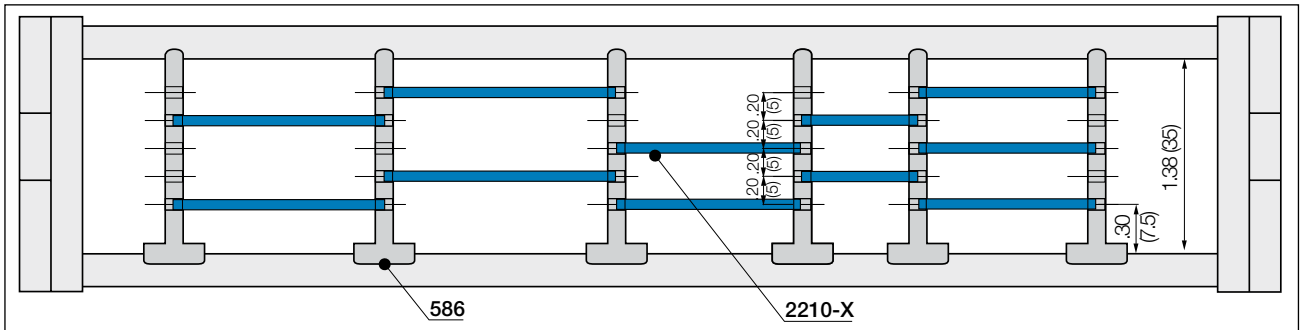
Width X in.	(mm)	Part No. Unassembled	Part No. Assembled
7.87	(200)	**220-200**	**221-200**

PDF: igus.com/e-chain-pdfs
Product information: igus.com/e-chains

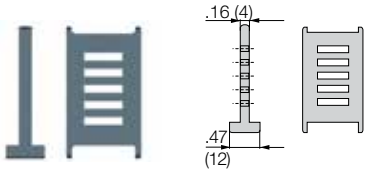
e-chain system® E2 tubes
Series R58
Interior Separation

Telephone 1-800-521-2747

Internet: igus.com
email: sales@igus.com
QuickSpec: igus.com/quickspec



No lateral spacing to side links is necessary
In the standard configuration separators are assembled every 2nd e-chain® link

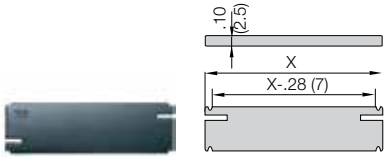


Separator, narrow base

Unassembled	**Part No. 585**
Assembled	**Part No. 586**

- **Slotted separator 585**
  is used when vertical and horizontal separation is required. Due to its slot, it allows basic vertical/horizontal shelving arrangements.

Full-width shelves - for the standard interior separation



Full width shelf

Unassembled	**Part No. 2200-X**
Assembled	**Part No. 2210-X**

- **Full width shelf 2200-X**
  For applications involving many cables with different diameters, shelves can be arranged at alternate heights. They can be arranged at 5 different heights in .20" (5mm) increments.

Width X in.	(mm)	Part No. Unassembled	Part No. Assembled
.71	(18)	**2200-18**	**2210-18**
.91	(23)	**2200-23**	**2210-23**
1.10	(28)	**2200-28**	**2210-28**
1.30	(33)	**2200-33**	**2210-33**
1.50	(38)	**2200-38**	**2210-38**

Width X in.	(mm)	Part No. Unassembled	Part No. Assembled
1.69	(43)	**2200-43**	**2210-43**
1.89	(48)	**2200-48**	**2210-48**
2.28	(58)	**2200-58**	**2210-58**
2.68	(68)	**2200-68**	**2210-68**
2.87	(73)	**2200-73**	**2210-73**

Width X in.	(mm)	Part No. Unassembled	Part No. Assembled
3.46	(88)	**2200-88**	**2210-88**
3.90	(99)	**2200-99**	**2210-99**
4.88	(124)	**2200-124**	**2210-124**
5.87	(149)	**2200-149**	**2210-149**

e-chain system® E2 tubes
Series R58
Mounting Brackets - KMA

Option 1: pivoting

- Unsupported and gliding applications
- Space-restricted conditions
- Mounting points on all sides
- KMA with Quickflange option available for short and long travels



Option 2: locking

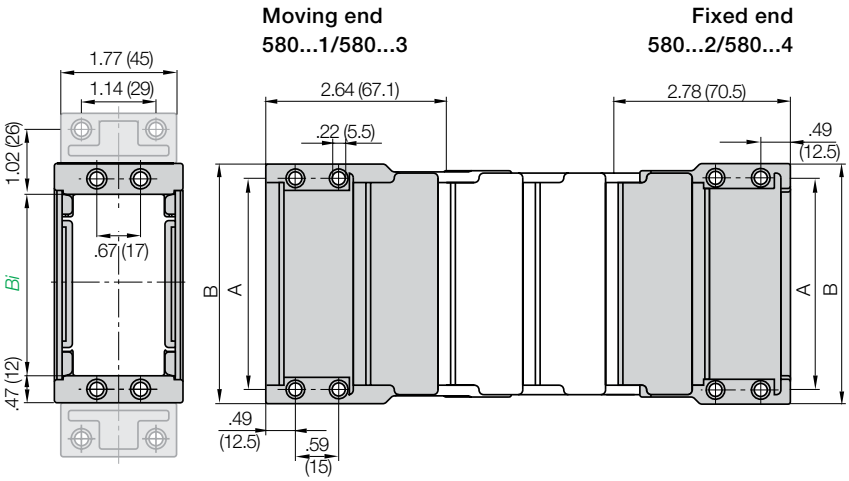
- Vertical hanging/standing travels
- Extreme speeds and accelerations
- Mounting points on all sides
- Flush mounting at both ends of the e-tube
- KMA with Quickflange option



Part Number Structure

580- 050- 12 QF

- With Quickflange
- Complete Set **12 = Pivoting** **34 = Locking**
- Width
- Mounting brackets for selected chain type



Full set, for both ends:

580- 050- 12 QF Full set, **each part with pin/bore + Quickflange**

Single-part order:

580- 050- 1 QF Mounting bracket **with bore + Quickflange**

580- 050- 2 QF Mounting bracket **with pin + Quickflange**



Quickflange upon request
- Unassembled

For Tube Type	Part No. Full set without Quickflange	Part No. Full Set with Quickflange	Dimension A in.	(mm)	Dimension B in.	(mm)
58-050	580-050- ☐	580-050- ☐ QF	2.44	(62)	2.91	(74)
58-075	580-075- ☐	580-075- ☐ QF	3.43	(87)	3.90	(99)
58-100	580-100- ☐	580-100- ☐ QF	4.41	(112)	4.88	(124)
58-125	580-125- ☐	580-125- ☐ QF	5.39	(137)	5.87	(149)
58-150	580-150- ☐	580-150- ☐ QF	6.38	(162)	6.85	(174)
58-175	580-175- ☐	580-175- ☐ QF	7.36	(187)	7.83	(199)
58-200	580-200- ☐	580-200- ☐ QF	8.35	(212)	8.82	(224)

12 or 34

For pivoting brackets choose 12
For locking brackets choose 34
Example: 580-050- 34 QF

The following parts are required for attachment of the mounting brackets:
- **Socket head cap bolt M5* DIN 912-8.8**
  8 pieces/set
- **Washer 5.3 DIN 125-ST**
  8 pieces/set
- **Hexagon nut M5 DIN 934-8**
  8 pieces/set

* The length of the socket head cap bolt is dependent on the thickness of the attachment base.

PDF: igus.com/e-chain-pdfs
Product information: igus.com/e-chains

e-chain system® E2 tubes
Series R58
Strain Relief

Telephone 1-800-521-2747

Internet: igus.com
email: sales@igus.com
QuickSpec: igus.com/quickspec



- Strain relief disappears completely within the e-tube
- Easy to assemble, no screws required

Part. No.	Width (mm)	Number of teeth
5850-Z	1.81 (46)	4

Number of tiewrap plates 5850-Z for selected inner width *Bi*

Bi in. (mm)	Width tiewrap plate in. (mm)	Number of tiewrap plates *n*	Total number of teeth
1.97 (50)	–	–	–
2.95 (75)	1.81 (46)	1	4
3.94 (100)	1.81 (46)	1	4
4.92 (125)	1.81 (46)	2	8
5.91 (150)	1.81 (46)	2	8
6.89 (175)	1.81 (46)	3	12
7.87 (200)	1.81 (46)	3	12

e-chain system® E2 tubes
Series R58
Guide Trough

Guide troughs are used with applications where the upper run of the e-chain® glides on the lower run. If using igus® steel guide troughs, the following components are required:

- Full travel length of guide trough
  Part number 95-30
- 1/2 travel length glide bars
  Part number 92-01
- Installation sets as end connectors
  Part number 95-50-XX

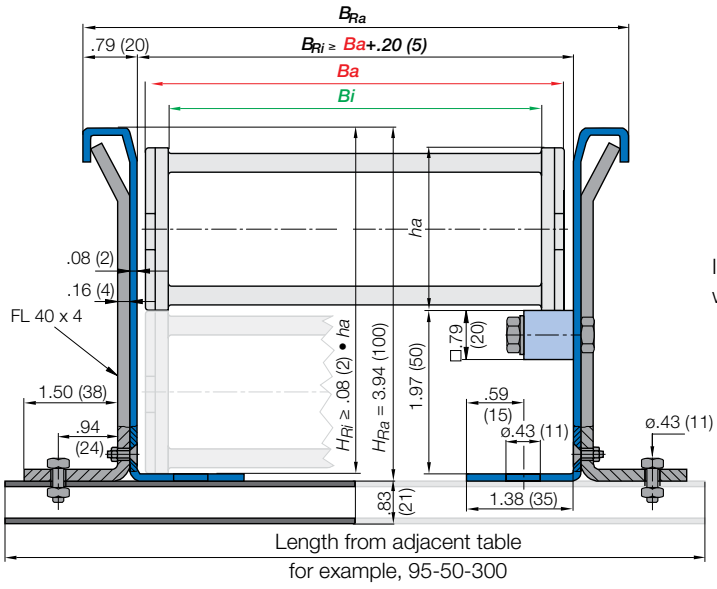
-XX indicates the length of the profile rails on which the guide trough is mounted. The values and part numbers are specified in the table on the right. The standard length of the trough components and glide bars is 6.56 ft (2 m). The required overall length of the guide trough directly correlates to the length of travel.

Example:
Length of travel 164 ft (50 m)
Center mounted
Required guide troughs:
164 ft (50 m) guide trough without glide bar
82 ft (25 m) glide bar
= 25 sections of 6.56 ft (2 m) guide trough
Part No. 95-30
= 13 sections of 6.56 ft (2 m) glide bar
Part No. 92-01
Required number of installation sets:
= Number of guide trough components + 1
= 25 + 1 = 26
Part number of the installation sets
95-50-XXX
Example:
95-50-250 for 9.84" (250 mm) long profile rail.



Width of Crossbar
58-**075**-200-0

	B_{Ri}	Part No. Installation Set
-050	2.80 (71)	**95-50-200**
-075	3.78 (96)	**95-50-225**
-100	4.76 (121)	**95-50-250**
-125	5.75 (146)	**95-50-275**
-150	6.73 (171)	**95-50-300**
-175	7.72 (196)	**95-50-325**
-200	8.70 (221)	**95-50-350**



- Guide trough
- Glide bars
- Installation set "Basic"
- C-profile rail

Individual attachment without profile rail

* Specialized guide trough available upon request

PDF: igus.com/e-chain-pdfs
Product information: igus.com/e-chains

e-chain system® E2 tubes
Series R68

1.77

Price Index

Series R68

Special Features / Options

ESD classification:
Electrically conductive ESD/
ATEX version upon request

Flammability Class
VDE 0304 IIC UL94 HB

iF-Design Award Winner

Assembly Tips



To open the e-tube Series R, lift up the lid (with a screwdriver) and remove the lid

Other Installation Methods

Vertical, hanging ≤ 197 ft (60 m)
Vertical, standing ≤ 13.12 ft (4 m)
Side-mounted, unsupp. ≤ 6.56 ft (2 m)
Rotary requires further calculation

Usage Guidelines

- If particularly quiet operation is required
- If very high speeds are required
- If chip protection is subject to stringent requirements

- If a particularly low-cost solution is the main factor
  ➤ **Series R167/R168 E2 tubes**
- If no chip protection is required
  ➤ **Series 3500 E2/000**

Features & Benefits

1. Large pins for high stability
2. Protection for cables and hoses against hot chips
3. Small pitch for low-noise, smooth operation
4. Removable lids along the outer radius
5. Smooth, chip-repellent exterior
6. KMA mounting brackets with attachment capabilities on all sides
7. Fully enclosed
8. Integrated strain relief available especially for e-tubes



Order Example: Complete e-chain®

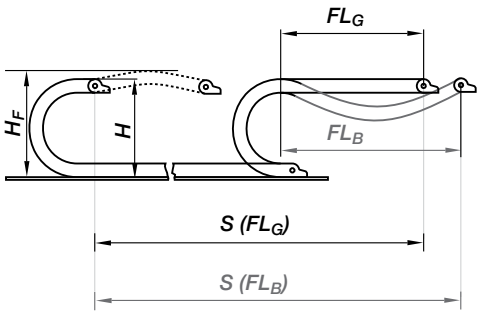
Please indicate chain length or number of links. Example:

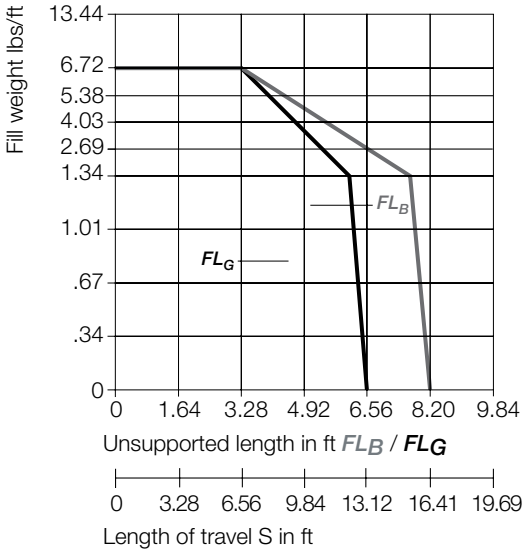
3.28 ft (1 m) **68-100-100-0**	**e-chain®**
With 2 separators **311** assembled every 2nd link	**Interior Separation**
1 Set **680-100-12**	**Mounting Bracket**

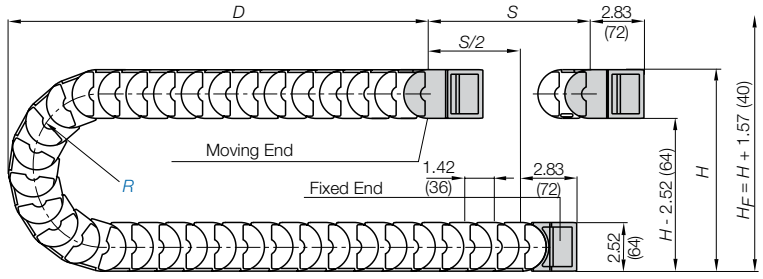
e-chain system® E2 tubes
Series R68
Installation Dimensions

Short travel, unsupported length

● FL_B = unsupported with permitted sag
● FL_G = unsupported with straight upper run
Further information ➤ Design, Chapter 1







Pitch per link: = 1.42" (36 mm)
Links per ft (m): = 8.53 (28)
For center mount applications:
Chain length = $^{S}/_{2} + K$

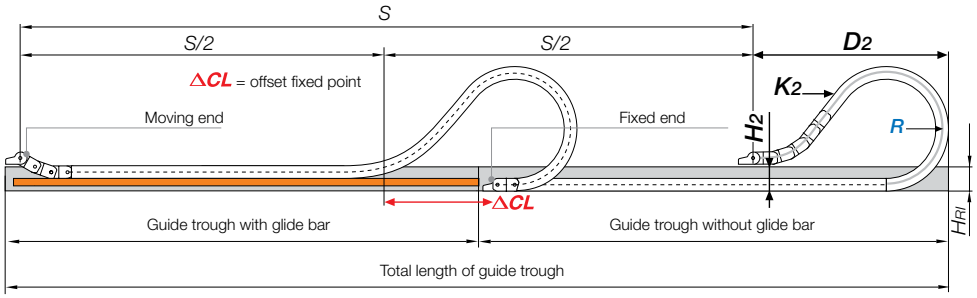
The required clearance height: $H_F = H + 1.57$ **in. (40 mm)** (with 1.68 lbs/ft (2.5 kg/m) fill weight. Please consult igus® if space is particularly restricted.

R	3.94 (100)	4.92 (125)	5.91 (150)	6.89 (175)	7.87 (200)	8.86 (225)	9.84 (250)	11.81 (300)
H	10.39 (264)	12.36 (314)	14.33 (364)	16.30 (414)	18.27 (464)	20.24 (514)	22.20 (564)	26.14 (664)
D	7.32 (186)	8.31 (211)	9.29 (236)	10.28 (261)	11.26 (286)	12.24 (311)	13.23 (336)	15.20 (386)
K	15.35 (390)	18.31 (465)	21.46 (545)	24.60 (625)	27.76 (705)	30.71 (780)	33.86 (860)	39.96 (1015)

For long travels with lowered mounting height

Long travel lengths from 32.8 ft. (10 m) to max. 328 ft. (100 m)

For center mount applications:
Chain length: $= {}^{S}/_{2} + K_2$



R	3.94 (100)	4.92 (125)	5.91 (150)	6.89 (175)	7.87 (200)	8.86 (225)	9.84 (250)	11.81 (300)
H_2	7.91 (201)	8.66 (220)	8.66 (220)	8.66 (220)	8.66 (220)	8.66 (220)	8.66 (220)	8.66 (220)
D_2	7.87 (200)	14.57 (370)	17.32 (440)	21.26 (540)	25.59 (650)	27.56 (700)	33.46 (850)	41.34 (1050)
K_2	19.69 (500)	25.51 (648)	31.18 (792)	35.43 (900)	43.94 (1116)	49.96 (1269)	58.11 (1476)	70.87 (1800)
ΔCL	–	6.46 (164)	8.03 (204)	11.57 (294)	14.33 (364)	17.28 (439)	20.24 (514)	26.14 (664)

Speed / acceleration FL_G	max. 32.8 ft/s (10 m/s) / max. 328 ft/s² (100 m/s²)
Speed / acceleration FL_B	max. 9.84 ft/s (3 m/s) / max. 19.69 ft/s² (6 m/s²)
Gliding speed / acceleration (maximum)	max. 9.84 ft/s (3 m/s) / max. 32.8 ft/s² (10 m/s²)
Material - permitted temperature	igumid G / -40°F (-40°C) up to +248°F (+120° C)
Flammability Class, igumid G	VDE 0304 IIC UL94 HB

Short Travels - Unsupported

Unsupported e-chains® feature positive camber over short travels. This must be accounted for when specifying the clearance height. Please refer to **Installation dimensions** for further details.

Legend

S = Length of travel
R = Bending radius
H = Nominal clearance height
D = Overlength e-chain® radius in final position
K = $\pi \bullet R + safety\ buffer$
H_F = Required clearance height
H_{RI} = Trough inner height
H_2 = *Mounting height
D_2 = Overlength - long travels, gliding
K_2 = *Add-on

*If the mounting bracket location is set lower

Long Travels - Gliding

If the unsupported length is exceeded, the e-chain®/ Tube must glide on itself. This requires a guide trough.
Design, Chapter 1

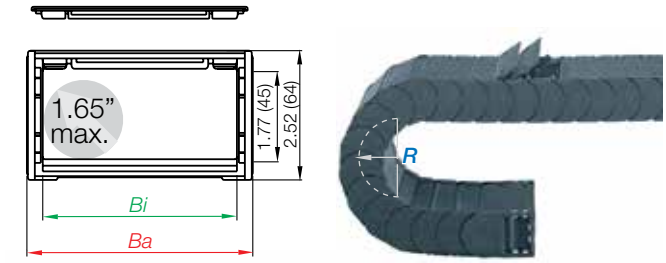
Technical Data

Details of material properties
➤ Chapter 1

PDF: igus.com/e-chain-pdfs
Product information: igus.com/e-chains

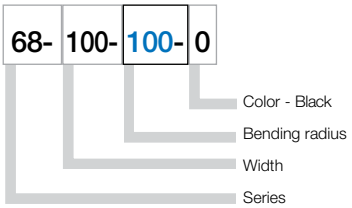
e-chain system® E2 tubes
Series R68
Product Range

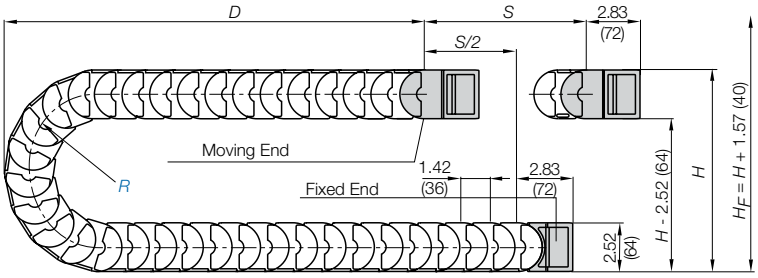
Series R68 - e-tube snap-open along the outer radius





Part Number Structure





Supplement part number with required radius. Example: R68-100-100-0
Pitch: 1.42 in. (36 mm) per link links/ft (m) = 8.53 (28)

Part Number			Bi in. (mm)	Ba in. (mm)	Weight lbs/ft (kg/m)
68-050-		-0	1.97 (50)	2.68 (68)	≈ 1.28 (1.90)
68-075-		-0	2.95 (75)	3.66 (93)	≈ 1.46 (2.18)
68-100-		-0	3.94 (100)	4.65 (118)	≈ 1.65 (2.46)
68-115-		-0	4.53 (115)	5.24 (133)	≈ 1.77 (2.63)
68-125-		-0	4.92 (125)	5.63 (143)	≈ 1.86 (2.77)
68-150-		-0	5.91 (150)	6.61 (168)	≈ 2.05 (3.05)
68-175-		-0	6.89 (175)	7.60 (193)	≈ 2.26 (3.36)
68-200-		-0	7.87 (200)	8.58 (218)	≈ 2.45 (3.64)
68-225-		-0	8.86 (225)	9.57 (243)	≈ 2.63 (3.92)
68-250-		-0	9.84 (250)	10.55 (268)	≈ 2.84 (4.23)

Choose from the radii below for all of the above sizes
Radius (mm) Example: R68-100-100-0

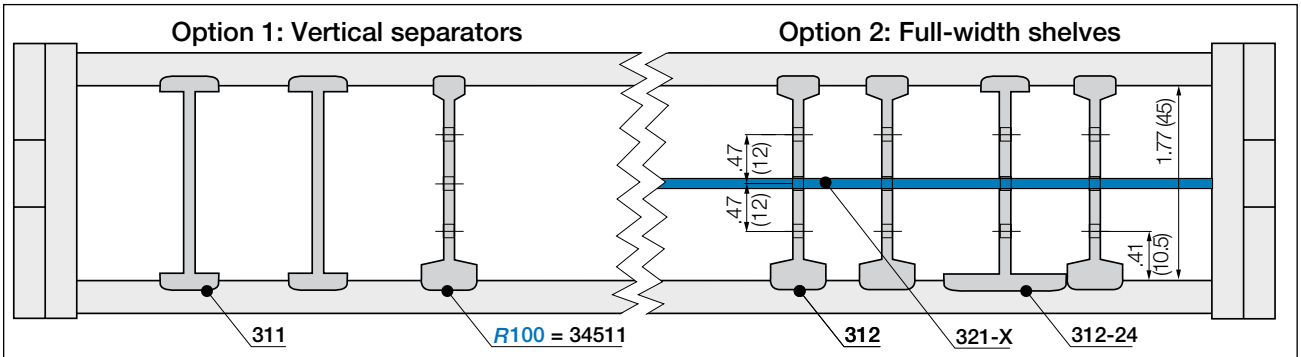
	100	125	150	175	200	225	250	300
R	3.94 (100)	4.92 (125)	5.91 (150)	6.89 (175)	7.87 (200)	8.86 (225)	9.84 (250)	11.81 (300)
H	10.39 (264)	12.36 (314)	14.33 (364)	16.30 (414)	18.27 (464)	20.24 (514)	22.20 (564)	26.14 (664)
D	7.32 (186)	8.31 (211)	9.29 (236)	10.28 (261)	11.26 (286)	12.24 (311)	13.23 (336)	15.20 (386)
K	15.35 (390)	18.31 (465)	21.46 (545)	24.60 (625)	27.76 (705)	30.71 (780)	33.86 (860)	39.96 (1015)

Separator with integrated strain relief

Strain relief separator Part No. 34501-Z can be integrated into the mounting bracket and can be placed there at any point of the e-chain®. It combines strain relief and interior separation, it can be installed on the first or last e-chain® link and is easy to assemble without any screws.
For more information ➤ **Chapter 10, Strain Relief**

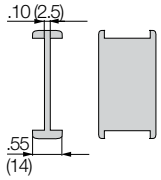


e-chain system® E2 tubes
Series R68
Interior Separation



No lateral spacing to side links is necessary
In the standard configuration separators are assembled every 2nd e-chain® link



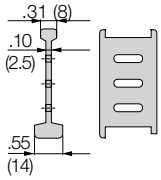


Separator for e-tubes

Unassembled	**Part No. 301**
Assembled	**Part No. 311**

- **Separator 301**
  For vertical separation with wide base for maximum stability when used with thick cables or hoses



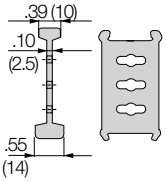


Slotted Separator for e-tubes (for radius R 100)

Unassembled	**Part No. 34501**
Assembled	**Part No. 34511**

- **Separator 34501 (for radius R 100)**
  if you select bending radius R 100 please use this separator for a vertical subdivision.



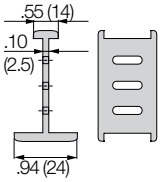


Slotted Separator for e-tubes

Unassembled	**Part No. 302**
Assembled	**Part No. 312**

- **Separator 302**
  is used when vertical separation is required. Due to its slot, it allows basic vertical/horizontal shelving arrangements.





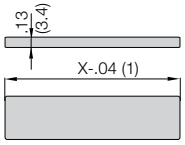
Slotted Separator with wide base* for e-tubes

Unassembled	**Part No. 302-24**
Assembled	**Part No. 312-24**

- **Separator 302-24**
  If a wide space between the separators must be maintained or separators must be in a fixed position. Features a wide base.
  *(for side mounted applications).

Full-width shelves - for the standard interior separation





Full width shelf for e-tubes

Unassembled	**Part No. 320-X**
Assembled	**Part No. 321-X**

- **Full width shelf 320-X**
  is used in applications with many thin cables with similar diameters. Full-width shelves can be arranged at 5 different heights in .20" (5mm) increments..

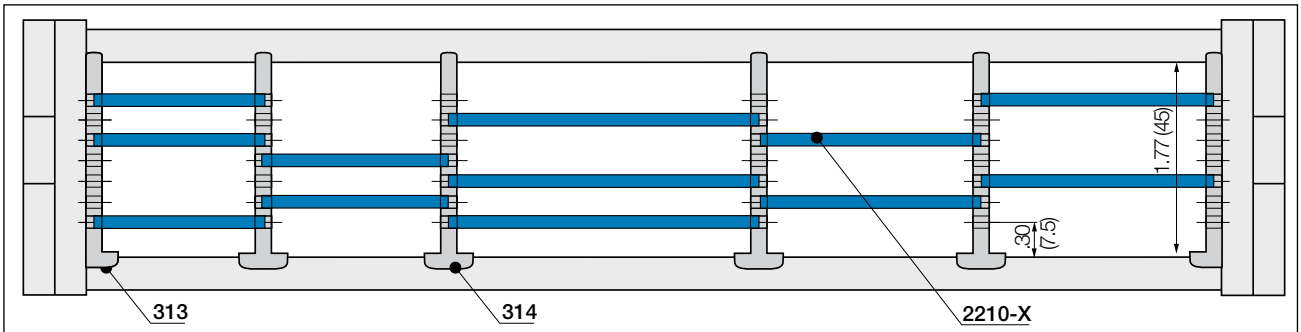
Width X in.	(mm)	Part No. Unassembled	Part No. Assembled	Width X in.	(mm)	Part No. Unassembled	Part No. Assembled	Width X in.	(mm)	Part No. Unassembled	Part No. Assembled
1.97	(50)	**320-50**	**321-50**	4.92	(125)	**320-125**	**321-125**	7.87	(200)	**320-200**	**321-200**
2.95	(75)	**320-75**	**321-75**	5.91	(150)	**320-150**	**321-150**	8.86	(225)	**320-225**	**321-225**
4.53	(115)	**320-115**	**321-115**	6.89	(175)	**320-175**	**321-175**	9.84	(250)	**320-250**	**321-250**

PDF: igus.com/e-chain-pdfs
Product information: igus.com/e-chains

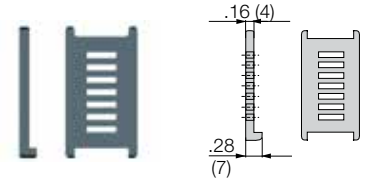
e-chain system® E2 tubes
Series R68
Interior Separation

Telephone 1-800-521-2747

Internet: igus.com
email: sales@igus.com
QuickSpec: igus.com/quickspec



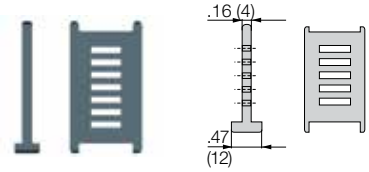
No lateral spacing to side links is necessary
In the standard configuration separators are assembled every 2nd e-chain® link



Separator, narrow base

Unassembled	**Part No. 303**
Assembled	**Part No. 313**

- **Side plate 303**
  Side plate for use with full-width sehlf 2200-X and middle plate 304

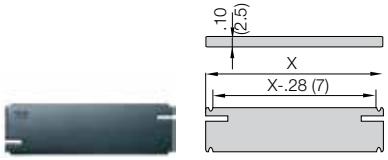


Separator, narrow base

Unassembled	**Part No. 304**
Assembled	**Part No. 314**

- **Middle plate 304**
  To achieve a modular interior separation the shelf 2200-X can be arranged at 7 different heights in .20" (5mm) increments.

Full-width shelves - for the standard interior separation



Full width shelf, lockable

Unassembled	**Part No. 2200-X**
Assembled	**Part No. 2210-X**

- **Full width shelf 2200-X**
  For applications involving many cables with different diameters, shelves can be arranged at alternate heights. They can be arranged at 7 different heights in .20" (5mm) increments.

Width X in.	(mm)	Part No. Unassembled	Part No. Assembled
.71	(18)	**2200-18**	**2210-18**
.91	(23)	**2200-23**	**2210-23**
1.10	(28)	**2200-28**	**2210-28**
1.30	(33)	**2200-33**	**2210-33**
1.50	(38)	**2200-38**	**2210-38**

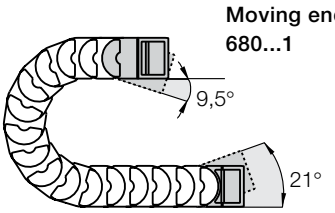
Width X in.	(mm)	Part No. Unassembled	Part No. Assembled
1.69	(43)	**2200-43**	**2210-43**
1.89	(48)	**2200-48**	**2210-48**
2.28	(58)	**2200-58**	**2210-58**
2.68	(68)	**2200-68**	**2210-68**
2.87	(73)	**2200-73**	**2210-73**

Width X in.	(mm)	Part No. Unassembled	Part No. Assembled
3.46	(88)	**2200-88**	**2210-88**
3.90	(99)	**2200-99**	**2210-99**
4.88	(124)	**2200-124**	**2210-124**
5.87	(149)	**2200-149**	**2210-149**

e-chain system® E2 tubes
Series R68
Mounting Bracket

Option 1: pivoting

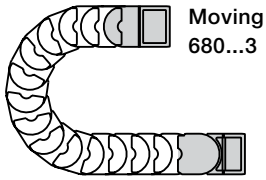
- Unsupported and gliding applications
- Space-restricted conditions
- Mounting points on all sides
- KMA with Quickflange option available for short and long travels





Option 2: locking

- Vertical hanging/standing travels
- Extreme speeds and accelerations
- Mounting points on all sides
- Flush mounting at both ends of the e-tube
- KMA with Quickflange option

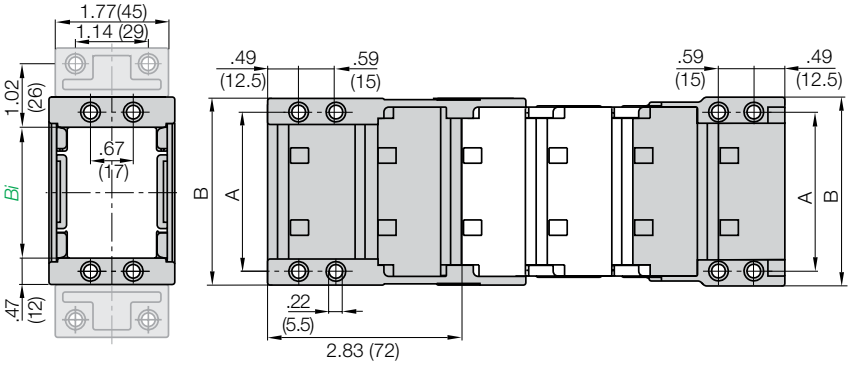




Part Number Structure

680- 050- 12 QF

- 12 / QF: With Quickflange
- 12: Complete Set, 12 = Pivoting, 34 = Locking
- 050-: Width
- 680-: Mounting brackets for selected chain type



Full set, for both ends:

680-050-12 QF Full set, **each part with pin/bore + tiewrap plate**

Single-part order:

680-050-1 QF Mounting bracket **with bore + tiewrap plate**

680-050-2 QF Mounting bracket **with pin + tiewrap plate**



Quickflange unassembled
Part number 16800-QF

For Tube Type	Part No. Full set with Tiewrap Plate	Part No. Full Set with Quickflange	Dimension A in.	(mm)	Dimension B in.	(mm)
68-050	680-050-☐	680-050-☐ QF	2.44	(62)	2.91	(74)
68-075	680-075-☐	680-075-☐ QF	3.43	(87)	3.90	(99)
68-100	680-100-☐	680-100-☐ QF	4.41	(112)	4.88	(124)
68-115	680-115-☐	680-115-☐ QF	5.00	(127)	5.47	(139)
68-125	680-125-☐	680-125-☐ QF	5.39	(137)	5.87	(149)
68-150	680-150-☐	680-150-☐ QF	6.38	(162)	6.85	(174)
68-175	680-175-☐	680-175-☐ QF	7.36	(187)	7.83	(199)
68-200	680-200-☐	680-200-☐ QF	8.35	(212)	8.82	(224)
68-225	680-225-☐	680-225-☐ QF	9.33	(237)	9.80	(249)
68-250	680-250-☐	680-250-☐ QF	10.31	(262)	10.79	(274)

☐ = 12 or 34

For pivoting brackets choose 12

For locking brackets choose 34

Example: 680-050-34 QF

The following parts are required for attachment of the mounting brackets:

- **Socket head cap bolt**
  M5* DIN 912-8.8
  8 pieces/set
- **Washer**
  5.3 DIN 125-ST
  8 pieces/set
- **Hexagon nut**
  M5 DIN 934-8
  8 pieces/set

* The length of the socket head cap bolt is dependent on the thickness of the attachment base.

PDF: igus.com/e-chain-pdfs
Product information: igus.com/e-chains

e-chain system® E2 tubes
Series R68
Strain Relief



Integrated strain relief for E2 e-tubes - Series R

- Strain relief disappears completely within the e-tube
- Easy to assemble, no screws required

Part. No.	Width (mm)	Number of teeth
3050-Z	1.97 (50)	5
3075-Z	2.95 (75)	7

Number of tiewrap plates 3050-Z for selected inner width *Bi*

Bi in.	(mm)	Width tiewrap plate in.	(mm)	Number of tiewrap plates *n*	Total number of teeth
1.97	(50)	–		–	–
2.95	(75)	–		–	–
3.94	(100)	1.97	(50)	1	5
4.52	(115)	1.97	(50)	1	5
4.92	(125)	1.97	(50)	1	5
5.91	(150)	1.97	(50)	2	10
6.89	(175)	1.97	(50)	2	10
7.87	(200)	1.97	(50)	3	15
8.86	(225)	1.97	(50)	3	15
9.89	(250)	1.97	(50)	4	20

Number of tiewrap plates 3075-Z for selected inner width *Bi*

Bi in.	(mm)	Width tiewrap plate in.	(mm)	Number of tiewrap plates *n*	Total number of teeth
1.97	(50)	–		–	–
2.95	(75)	–		–	–
3.94	(100)	–		–	–
4.52	(115)	2.95	(75)	1	7
4.92	(125)	2.95	(75)	1	7
5.91	(150)	2.95	(75)	1	7
6.89	(175)	2.95	(75)	2	14
7.87	(200)	2.95	(75)	2	14
8.86	(225)	2.95	(75)	3	21
9.89	(250)	2.95	(75)	3	21

e-chain system® E2 tubes
Series R68
Guide Trough

Guide troughs are used with applications where the upper run of the e-tube glides on the lower run. If using igus® steel guide troughs, the following components are required:

- Full travel length of guide trough
  Part number 93-30
- 1/2 travel length glide bars
  Part number 93-01
- Installation sets as end connectors
  Part number 93-50-XX

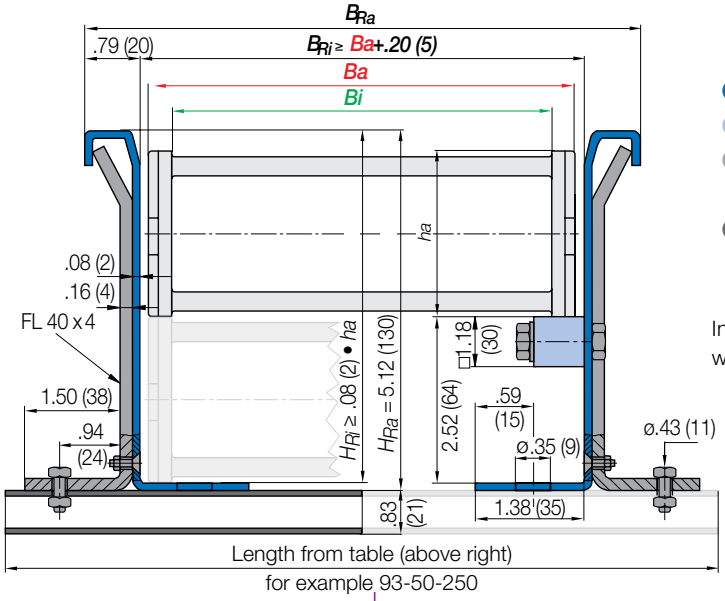
-XX indicates the length of the profile rail on which the guide trough is mounted. The values and part numbers are specified in the table on the right. The standard length of the trough components and glide bars is 6.56 ft (2 m). The required overall length of the guide trough directly correlates to the length of travel.

Example:
Length of travel 164 ft (50 m)
Center mounted
Required guide troughs:
164 ft (50 m) guide trough, 82 ft (25 m) glide bar
= 25 sections of 6.56 ft (2 m) guide trough **Part No. 93-30**
= 13 sections of 6.56 ft (2 m) glide bar **Part No. 93-01**
Required number of installation sets:
= Number of guide trough components + 1
= 25 + 1 = 26
Part number of the installation sets
93-50-XXX
Example:
93-50-250 for 9.84" (250 mm) long profile rail.



Width of Crossbar
68-**075**-200-0

	B_{Ri}	Installation Part No.
-050	2.87 (73)	**93-50-200**
-075	3.86 (98)	**93-50-225**
-100	4.84 (123)	**93-50-250**
-115	5.43 (138)	**93-50-250**
-125	5.83 (148)	**93-50-275**
-150	6.81 (173)	**93-50-300**
-175	7.80 (198)	**93-50-325**
-200	8.78 (223)	**93-50-350**
-225	9.76 (248)	**93-50-375**
-250	10.75 (273)	**93-50-400**



- Guide trough
- Glide bars
- Installation set "Basic"
- C-profile rail

Individual attachment without profile rail

* Specialized guide trough available upon request

PDF: igus.com/e-chain-pdfs
Product information: igus.com/e-chains

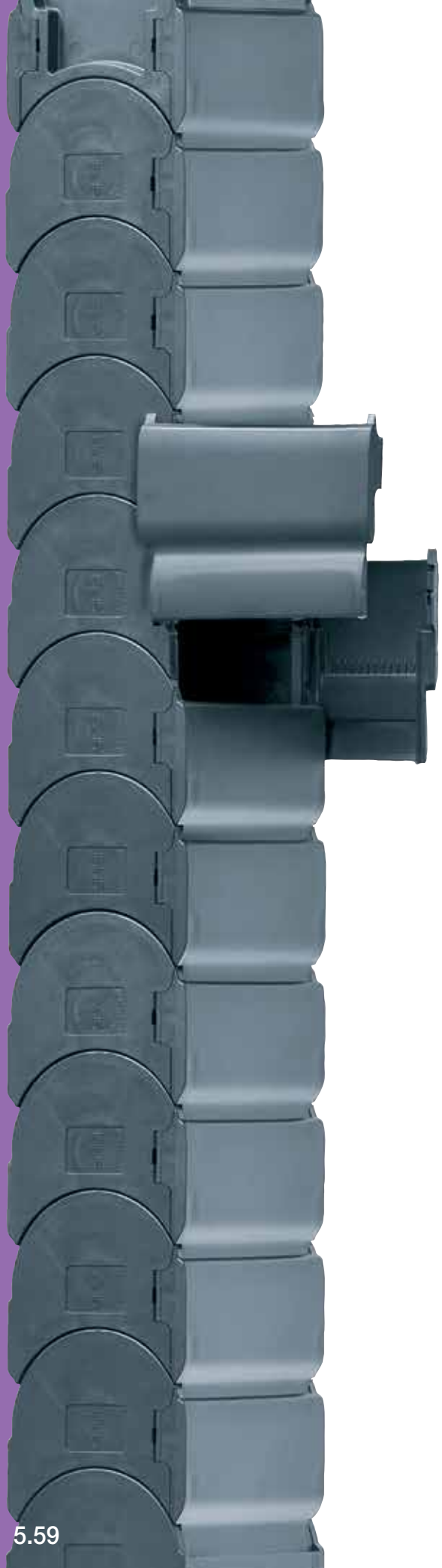


R2.1

Cost-effective chip protection

reddot design award
winner 2018





Cost-effective Chip protection - R2.1 e-tubes

Cost-effective, strong e-tubes with 1.02” (26mm), 1.57” (40mm), 1.89” (48mm) and 2.95” (75mm) inner height. Openable and removable lids along inner or outer radius, openable from both sides. Very sealed design and strong double stop-dogs for high fill weights and unsupported lengths.

- Large inner height and therefore cost-effective
- Cables are protected from chips
- Easy to fill, lids openable along the inner or outer radius, from both sides
- Low noise operation due to integrated brake
- Notch separator, recommended for side-mounted applications

Typical industries and applications

- Machine tools
- Wood processing machines
- Textile machines
- General mechanical engineering
- In all areas with dirt and chips

e-tubes with igumid HT-Material for hot chips up to +1,562°F available upon request

Electrically conductive ESD e-tubes upon request

UL94-V0 classifications upon request

iF product design award
1987 igus® series R68

Energy Chain System® E2 R tubes
Selection Guide

Series	Inner height *hi*		Inner width *Bi*		Outer width *Ba*		Outer height *ha*		Bend radius *R*		Unsupported
	in.	(mm)	in.	(mm)	in.	(mm)	in.	(mm)	in.	(mm)	length ≤ ft. (m)
											
R2.75	2.95	(75)	4.37-7.87	(111-200)	5.31-8.82	(135-224)	3.54	(90)	5.12-9.84	(130-250)	9.84 (3.00)

Available from stock. Orders ship as early as today.*

*On average 90% of orders ship the same day..



E2 e-tubes in chip area of a machine tool. Resistant to chips up to +1,562°F with special igumid HT material

e-chain system® E2 tubes
Series R2.75

Price Index

Series R2.75

Special Features / Options

ESD classification: Electrically conductive ESD version upon request

UL94-V0 classifications upon request

Assembly Tips



To open the e-tube Series R, pry open the lid (with a screwdriver)

Other Installation Methods

Vertical, hanging ≤ 164 ft (50 m)
Vertical, standing ≤ 16.4 ft (5 m)
Side-mounted, unsupp. ≤ 6.56 ft (2 m)
Rotary requires further calculation

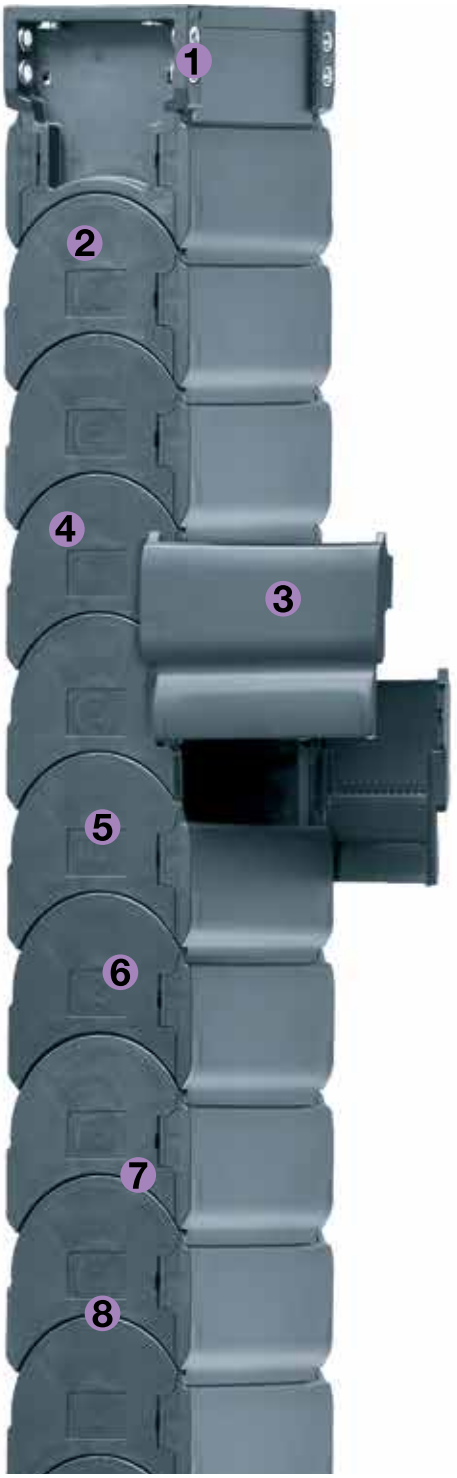
Usage Guidelines

- If a lightweight e-tube ideal for high dynamics is desired
- If a cost-effective carrier with large inner height is required
- If chip resistant features are required
- If lids openable from both sides is required
- If low noise operation is required

- For extreme chip protection according to IP40
  ➤ **Series RX tubes**
- For higher fill weights and unsupported lengths
  ➤ **Series E4-1 e-tubes**

Features & Benefits

1. KMA mounting brackets with attachment capabilities on all sides
2. Smooth design, chips cannot stick
3. Lids openable from both sides
4. Ideal for 90° rotating applications
5. Covered pin/bore connection
6. Low noise operation due to built in brake
7. Lightweight with large inner height, good ratio of inner to outer dimensions
8. Strong double stop-dog system for large unsupported lengths



Order Example: Complete e-chain®

Please indicate chain length or number of links. Example:

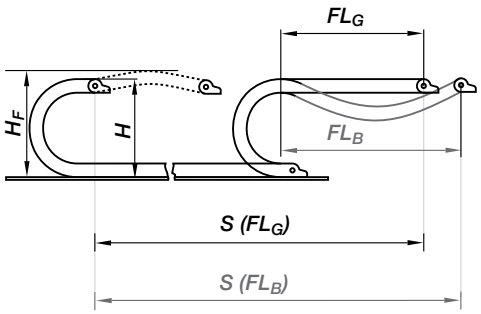
3.28 ft (1 m) **R2.75.111.130.0**	**e-chain®**
With 2 separators **75.1.1** assembled every 2nd link	**Interior Separation**
1 Set **R2.750.111.12**	**Mounting Bracket**

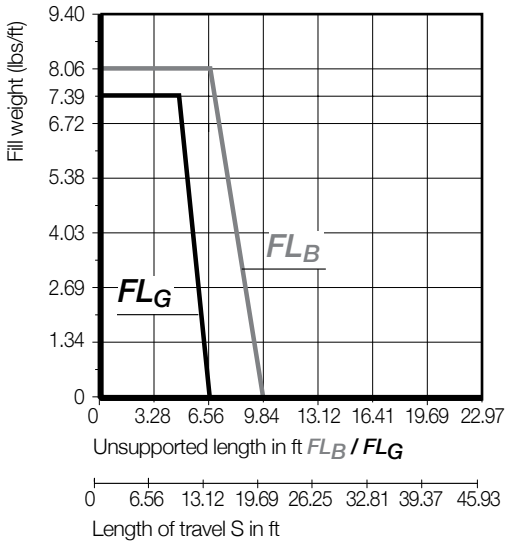
e-chain system® E2 tubes
Series R2.75
Installation Dimensions

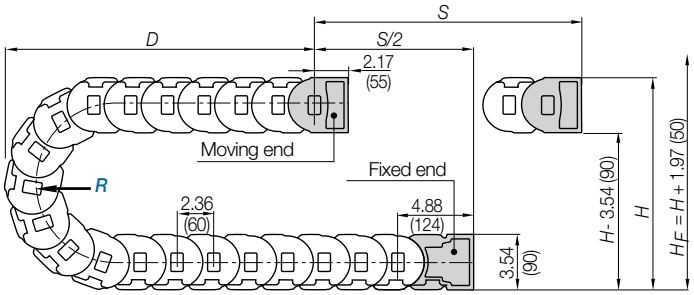
Short travel, unsupported length

- FL_B = unsupported with permitted sag
- FL_G = unsupported with straight upper run

Further information ➤ Design, Chapter 1







Pitch per link: = 2.36" (60 mm)
Links per ft (m): = 5.1 (17)
For center mount applications:
Chain length = $^{S}/_{2}$ + K

The required clearance height: ***HF* = *H* + 1.97 in. (50 mm)** (with 2.02 lbs/ft (3 kg/m) fill weight. Please consult igus® if space is particularly restricted.

R	5.12 (130)	5.91 (150)	7.87 (200)	9.84 (250)
H	13.78 (350)	15.35 (390)	19.29 (490)	23.23 (590)
D	10.43 (265)	11.22 (285)	13.19 (335)	15.16 (385)
K	20.87(530)	23.43 (595)	29.53 (750)	35.83 (910)

If a gliding application for a long travel is required, please consult igus®

Short Travels - Unsupported

Unsupported e-chains® feature positive camber over short travels. This must be accounted for when specifying the clearance height. Please refer to **Installation dimensions** for further details.

Legend

S = Length of travel
R = Bending radius
H = Nominal clearance height
D = Overlength e-chain® radius in final position
K = π • *R* + *safety buffer*
HF = Required clearance height

Speed / acceleration FL_G	max. 32.8 ft/s (10 m/s) / max. 328 ft/s² (100 m/s²)
Speed / acceleration FL_B	max. 9.84 ft/s (3 m/s) / max. 19.69 ft/s² (6 m/s²)
Gliding speed / acceleration (maximum)	max. 9.84 ft/s (3 m/s) / max. 32.8 ft/s² (10 m/s²)
Material - permitted temperature	igumid G / -40°F (-40°C) up to +248°F (+120° C)
Flammability Class, igumid G	VDE 0304 IIC UL94 HB

Technical Data

Details of material properties
➤ Chapter 1

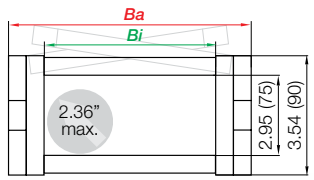
PDF: igus.com/e-chain-pdfs
Product information: igus.com/e-chains

e-chain system® E2 tubes
Series R2.75
Product Range

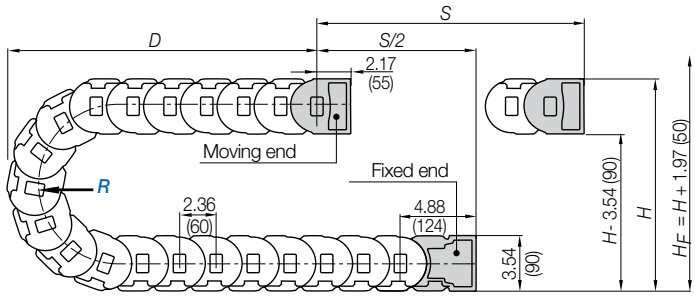
Telephone 1-800-521-2747

Internet: igus.com
email: sales@igus.com
QuickSpec: igus.com/quickspec

Series R2.75 - lids openable from both sides along the outer radius







Part Number Structure

R2.75. 111. 130. 0

- Color - Black
- Bending radius
- Width
- Series

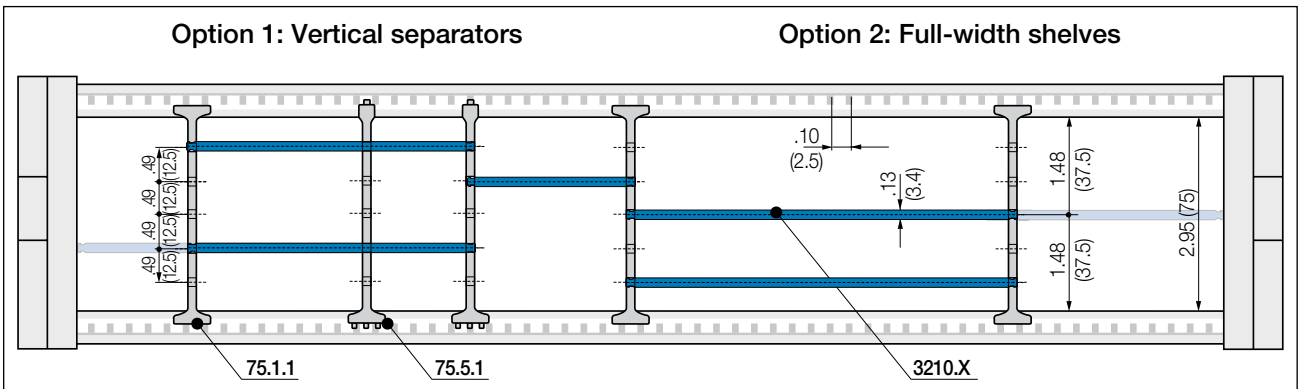
Supplement part number with required radius. Example: R2.75.111. 130 .0
Pitch: 2.36 in. (60 mm) per link links/ft (m) = 5.1 (17)

Part Number	Bi in. (mm)	Ba in. (mm)	Weight lbs/ft (kg/m)
R2.75.111. ☐ .0	4.37 (111)	5.31 (135)	≈ 2.13 (3.175)
R2.75.111. ☐ .0	6.42 (163)	7.36 (187)	≈ 2.47 (3.672)
R2.75.111. ☐ .0	7.87 (200)	8.82 (224)	≈ 2.70 (4.012)

Choose from the radii below for all of the above sizes
Radius (mm) Example: R2.75.111. 130 .0

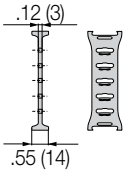
	130	150	200	250
R	5.12 (130)	5.91 (150)	7.87 (200)	9.84 (250)
H	13.78 (350)	15.35 (390)	19.29 (490)	23.23 (590)
D	10.43 (265)	11.22 (285)	13.19 (335)	15.16 (385)
K	20.87(530)	23.43 (595)	29.53 (750)	35.83 (910)

e-chain system® E2 tubes
Series R2.75
Interior Separation



No lateral spacing to side links is necessary
In the standard configuration separators are assembled every 2nd e-tube® link



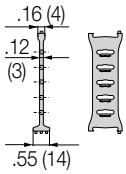


Standard separator

Unassembled	**Part No. 75.1**
Assembled	**Part No. 75.1.1**

- **Separator 75.1**
  Separator with wide base for maximum holding force in the e-tube.





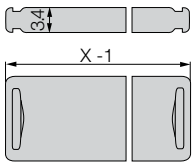
Notch Separator for notched crossbar

Unassembled	**Part No. 75.5**
Assembled	**Part No. 75.5.1**

- **Notch separator 75.5**
  Notch separator for exact positioning in an e-tube®. Recommended for side mounted applications

Full-width shelves - for the standard interior separation





Full width shelf for e-tubes, lockable

Unassembled	**Part No. 3200-X**
Assembled	**Part No. 3210-X**

- **Full width shelf 3200-X**
  Full-width shelf locks securely into separators at both ends, giving a fixed width. Can be used as full-width or partial shelf

Width X in.	(mm)	Part No. Unassembled	Part No. Assembled
1.97	(050)	**3200-050**	**3210-50**
2.95	(075)	**3200-075**	**3210-75**
3.94	(100)	**3200-100**	**3210-100**

Width X in.	(mm)	Part No. Unassembled	Part No. Assembled
4.53	(115)	**3200-115**	**3210-115**
4.92	(125)	**3200-125**	**3210-125**
5.91	(150)	**3200-150**	**3210-150**

Width X in.	(mm)	Part No. Unassembled	Part No. Assembled
6.89	(175)	**3200-175**	**3210-175**
7.87	(200)	**3200-200**	**3210-200**

PDF: igus.com/e-chain-pdfs
Product information: igus.com/e-chains

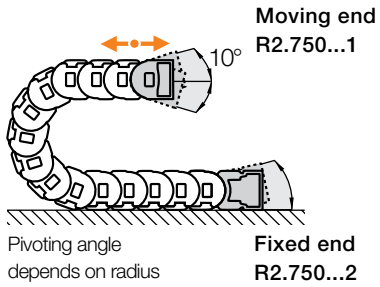
e-chain system® E2 tubes
Series R2.75
Mounting Bracket - Pivoting

Telephone 1-800-521-2747

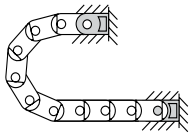
Internet: igus.com
email: sales@igus.com
QuickSpec: igus.com/quickspec

Option 1: pivoting

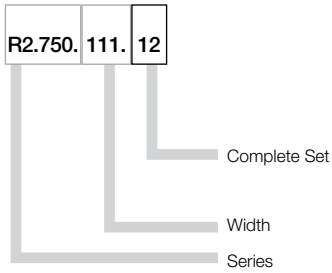
- Unsupported and gliding applications
- Space-restricted conditions
- Mounting points on all sides
- Corrosion-resistant

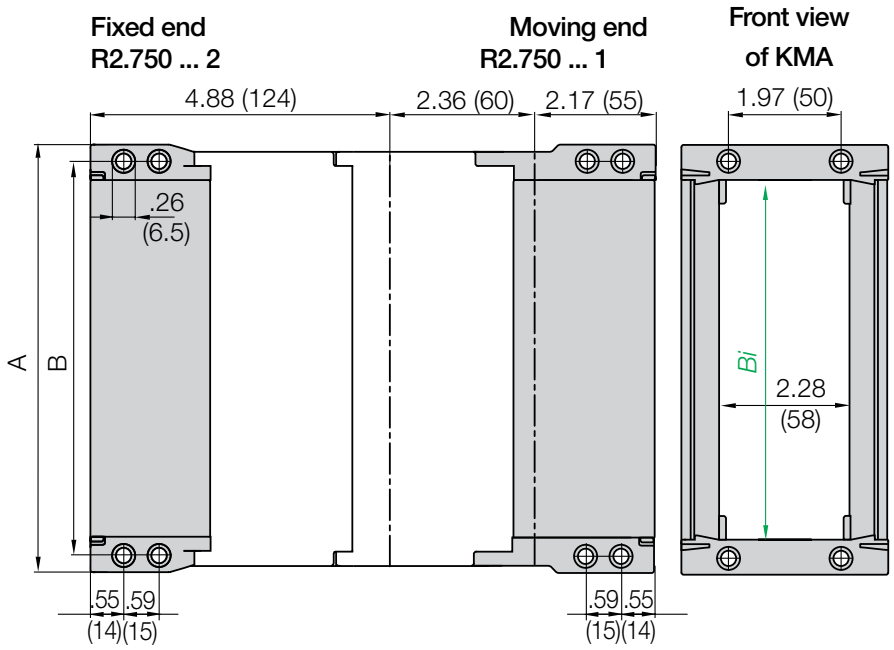






Part Number Structure



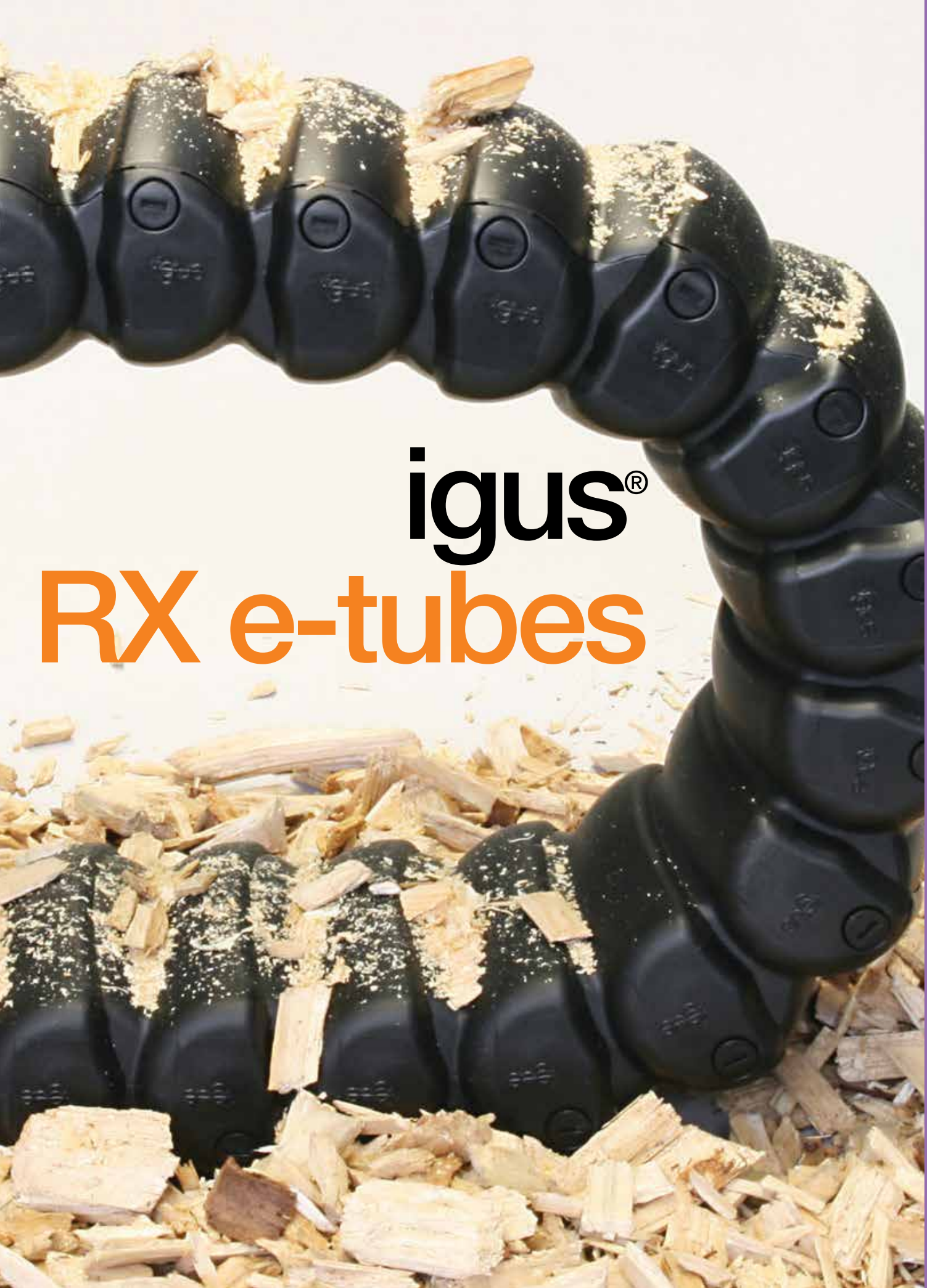


Width index	Standard	Part no. full set KMA pivoting	Part No. full set KMA locking	A in.	A (mm)	B in.	B (mm)	Bi in.	Bi (mm)
.111		**R2.750.111.12**	–	5.55	(141)	5.00	(127)	4.37	(111)
.163		**R2.750.163.12**	–	7.59	(193)	7.05	(179)	6.42	(163)
.200		**R2.750.200.12**	–	9.06	(230)	8.50	(216)	7.87	(200)

Telephone 1-800-521-2747

Internet: igus.com
email: sales@igus.com
QuickSpec: igus.com/quickspec





igus®

RX e-tubes

RX e-tube - with chip repellent design

igus® e-tube repels chips, is extremely tight, and can be opened!

- Full chip protection without undercuts, projecting edges and gaps
- Round contour prevents chip accumulation
- Large interior cross section with 2.87” (73 mm) max. inner height
- Covered pin/bore connection and stop dogs
- Reverse bending radius (RBR) becomes a standard option

Typical industries and applications

- Tooling machines
- Woodworking machines
- All kind of industries and machines with chip, dirt and dust

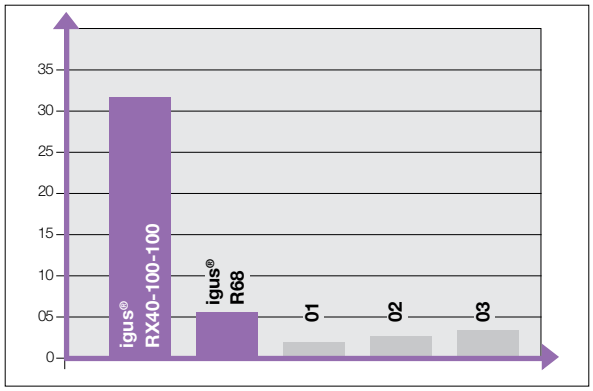


ESD Classification: Electrically conductive
ESD/ATEX version upon request

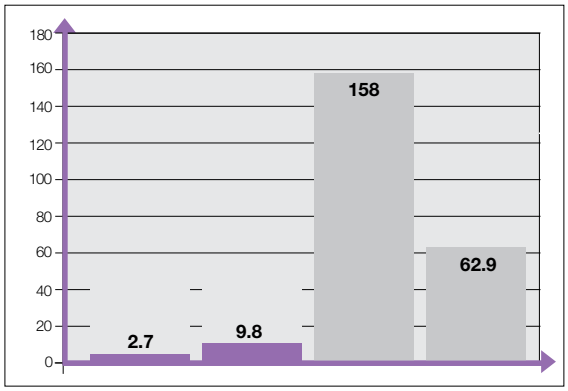
Flammability Class
VDE 0304 IIC UL94 HB

e-tubes with HT-material for hot chips
up to 1562°F (850°C) available upon request

RX e-tubes, without undercuts, projecting edges or gaps



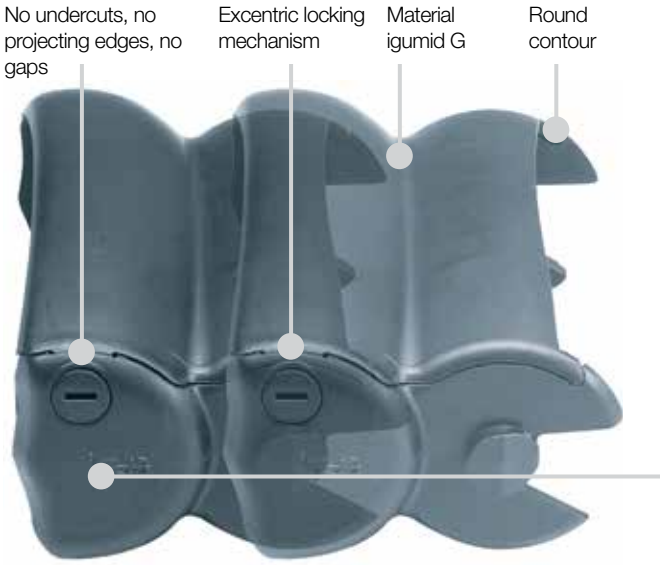
Test 1: Drowning - Various tube styles were submerged under water. For the RX e-tube, it takes more than 30 sec. to fill up with water



Test 2: Chip intrusion - Various tube styles were charged with a defined quantity of chips. Only 3.7 g of chips were found inside the new RX e-tube after 251,900 cycles



Chip-test at the igus® test-lab proven enormous tightness.



Series RX - chip protected design, small pitch, lids open

- Full chip protection without undercuts, projecting edges or gaps
- Round contour prevents chip accumulation
- Large interior cross section with 2.05 (52 mm) maximum inner height
- Covered pin/bore connection and stop dogs
- Reverse bending radius (RBR) becomes a standard option
- Perfect fastening with flange mounting brackets
- You can find more technical data about the material, chemical resistance, temperatures ➤ **Design, Chapter 1**

Selection table

Series	Inner height *hi*		Inner width *Bi*		Outer width *Ba*		Outer height *ha*		Bending radius *R*	
	in.	(mm)	in.	(mm)	in.	(mm)	in.	(mm)	in.	(mm)
RX32	1.02-1.65	(26-42)	3.15	(80)	3.87	(98.4)	2.20	(56)	3.15-5.91	(80-150)
RX40	1.26/2.05	(32/52)	3.94	(100)	4.84	(123)	2.76	(70)	3.94-11.81	(100-300)
RX48	1.38-2.44	(35-62)	4.72	(120)	5.81	(147.6)	3.31	(84)	4.72-5.91	(120-150)
RX56	1.61-2.87	(41-73)	5.51	(140)	6.78	(172.2)	3.86	(98)	5.51	(140)



Protection from all kinds of chips

Available from stock. Orders ship as early as today.*

*On average 90% of orders ship the same day..

e-tubes - Assembling RX e-tube



Easy opening of lids on the outer radius with embedded eccentric locking mechanism

e-tubes - Interior Separation of the RX e-tube



Interior separation with cable-friendly separators and shelves

e-chain system® RX e-tubes
Series RX32

Price Index

Series RX32

Special Features / Options

ESD classification:
Electrically conductive ESD/
ATEX version upon request

Flammability Class
VDE 0304 IIC UL94 HB

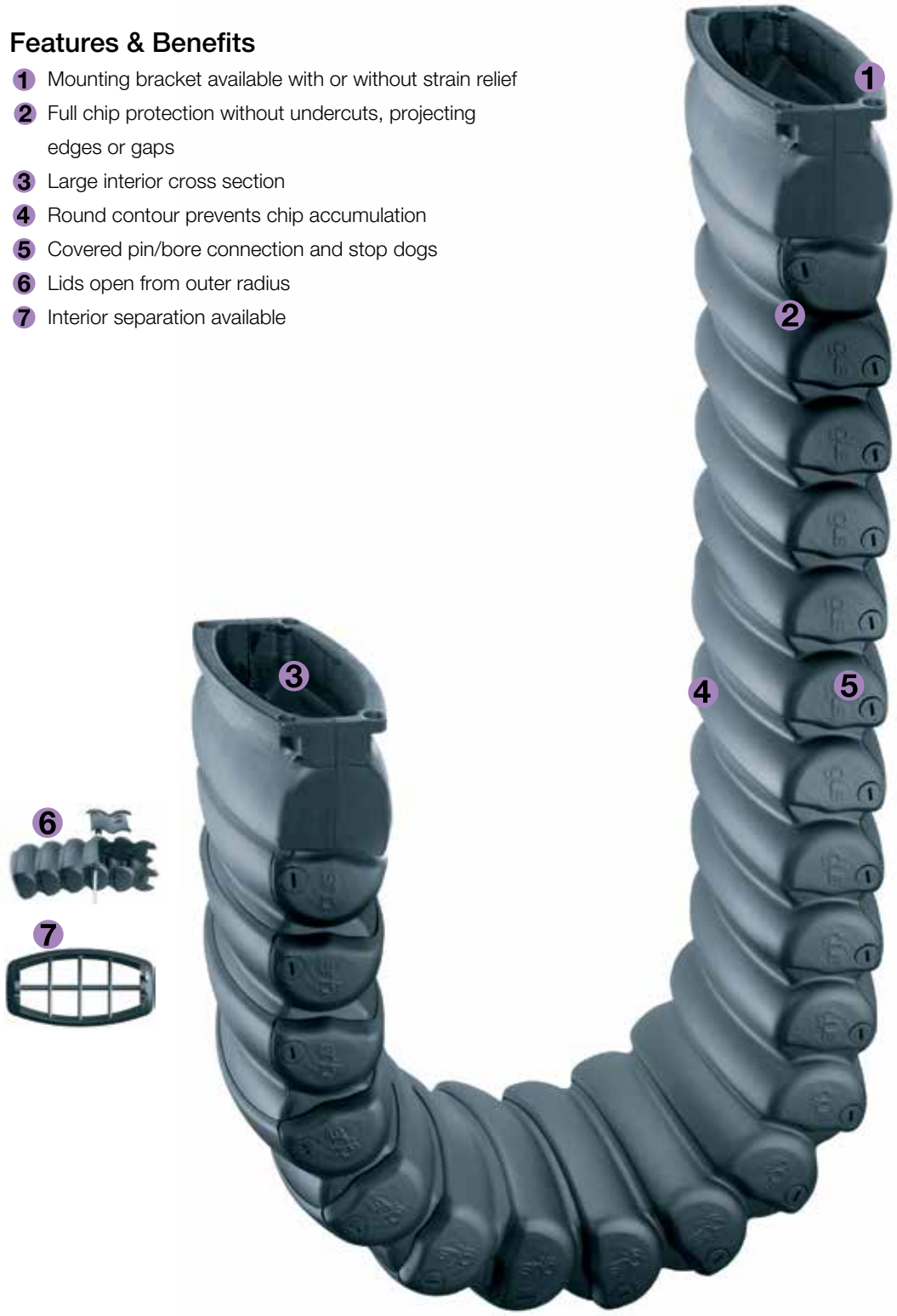
Assembly Tips



Easy opening of lids on the outer radius with embedded excentric locking mechanism

Features & Benefits

1. Mounting bracket available with or without strain relief
2. Full chip protection without undercuts, projecting edges or gaps
3. Large interior cross section
4. Round contour prevents chip accumulation
5. Covered pin/bore connection and stop dogs
6. Lids open from outer radius
7. Interior separation available



Usage Guidelines

- If fully protected e-tube is desired
- If easy access from the outside is required

- If a particularly low-cost solution is the main factor
  ➤ **Series R168 E2 tubes**
- If no chip protection is required
  ➤ **Series E4-56 E4-1**

Order Example: Complete e-chain®

Please indicate chain length or number of links. Example:

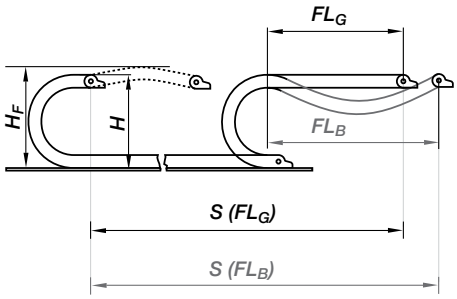
3.28 ft (1 m) **RX32-080-080-0**	**e-chain®**
With 3 separators **RX32-1-1/RX32-1-2** assemb. every 2nd link	**Interior Separation**
1 Set **RX321-080-12**	**Mounting Bracket**

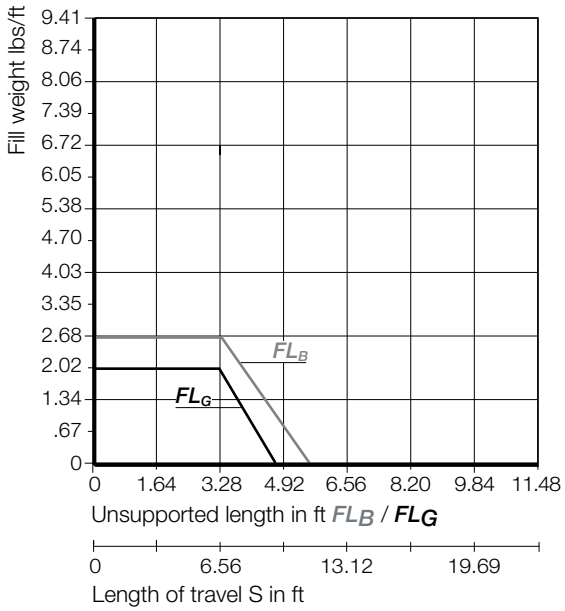
e-chain system® RX e-tubes
Series RX32

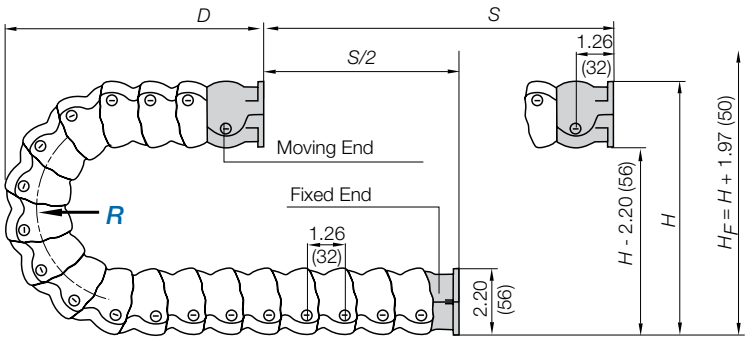
Short travel, unsupported length

- FL_B = unsupported with permitted sag
- FL_G = unsupported with straight upper run

Further information ➤ Design, Chapter 1







R	3.15 (080)	5.91 (150)
H	8.50 (216)	14.02 (356)
D	6.14 (156)	8.89 (226)
K	12.60 (320)	21.26 (540)

The required clearance height: ***HF = H* + 1.97 in. (50 mm)** (with .34 lbs/ft (0.5 kg/m) fill weight. Please consult igus® if space is particularly restricted.

Pitch per link: = 1.26" (32 mm)
Links per ft (m): = 9.52 (32)
For center mount applications:
Chain length = $\frac{S}{2} + K$

Short Travels - Unsupported

Unsupported e-chains® feature positive camber over short travels. This must be accounted for when specifying the clearance height. Please refer to **Installation dimensions** for further details.

Legend

S = Length of travel
R = Bending radius
H = Nominal clearance height
D = Overlength e-chain® radius in final position
K = π • *R* + *safety buffer*
H_F = Required clearance height

Technical Data

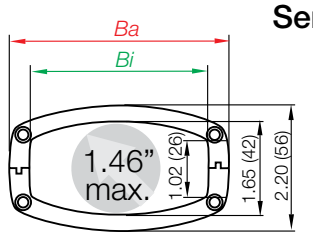
Speed / acceleration FL_G	max. 32.8 ft/s (10 m/s) / max. 328 ft/s² (100 m/s²)
Speed / acceleration FL_B	max. 9.84 ft/s (3 m/s) / max. 19.69 ft/s² (6 m/s²)
Material - permitted temperature	igumid G / -40°F (-40°C) up to +248°F (+120° C)
Flammability Class, igumid G	VDE 0304 IIC UL94 HB

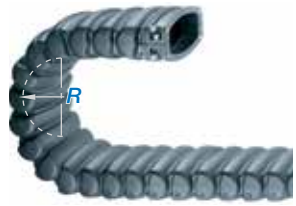
Details of material properties
➤ Chapter 1

PDF: igus.com/e-chain-pdfs
Product information: igus.com/e-chains

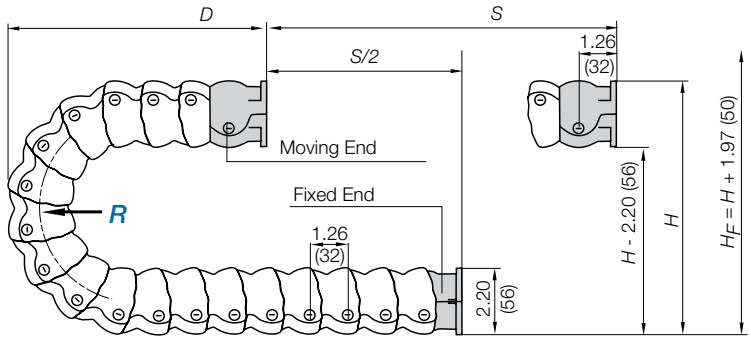
e-chain system® RX e-tubes
Series RX32
Installation Dimensions, Interior Separation

Series RX32 - snap-open along the outer radius









Part Number Structure

RX32- 080- 080- 0

- Color - Black
- Bending radius
- Width
- Series

Supplement part number with required radius. Example: RX32-080-080-0
Pitch: 1.26 in. (32 mm) per link links/ft (m) = 9.52 (32)

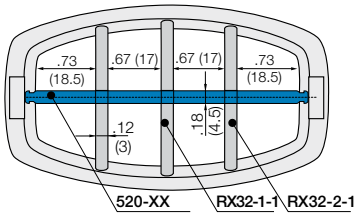
Part Number	*Bi* in. (mm)	*Ba* in. (mm)	Weight lbs/ft (kg/m)
RX32-080-□-0	3.15 (80)	3.87 (98.4)	≈ 0.83 (1.23)
	Choose from the radii below for all of the above sizes		
	Radius (mm)	Example: RX32-080-080-0	

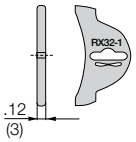
	080	150
R	3.15 (080)	5.91 (150)
H	8.50 (216)	14.02 (356)
D	6.14 (156)	8.89 (226)
K	12.60 (320)	21.26 (540)

Separators and shelves

Vertical separators are used if a vertical subdivision of the e-tube interior is required. By standard, vertical separators are assembled every other e-tube link.

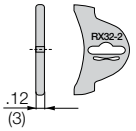






Separator, central

Unassembled	**Part No. RX32-1**
Assembled	**Part No. RX32-1-1**

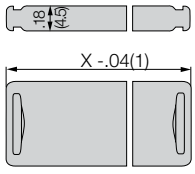


Slotted Separator, lateral

Unassembled	**Part No. RX32-1**
Assembled	**Part No. RX32-2-1**

Shelves 520-XX

Full width shelves lock into separators on both ends, fixed width possible.



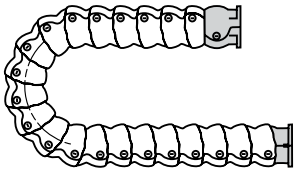
Width X in.	(mm)	Part No. Unassembled	Part No. Assembled
1.14	(29)	**520-29**	**521-29**
2.13	(54)	**520-54**	**521-54**
3.11	(79)	**520-79**	**521-79**
4.09	(104)	**520-104**	**521-104**

e-chain system® RX e-tubes
Series RX32
Mounting Brackets

Option: Flange mounting brackets

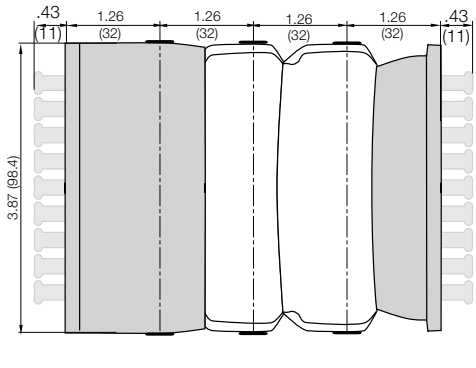
- Universally mountable with flange attachment capability
- Optional strain relief tiewrap plates
- Easy to open
- Optional M4 insert nuts

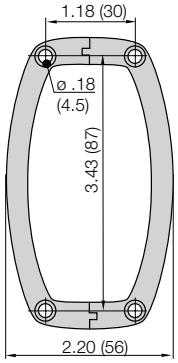
Moving end
RX321-080-1



Fixed end
RX321-080-2

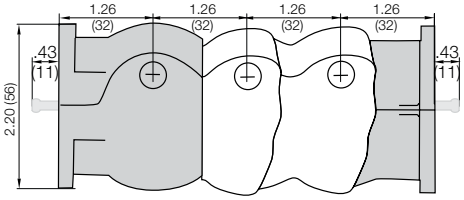












Shown with strain relief



Chain Type	Part No. full set with tiewrap plate	Part No. full set without tiewrap plate	Number of Teeth
RX32	**RX321-080-12ZB**	**RX321-080-12**	8

Full set, for both ends:
RX321-080-12

Single-part order:
RX321-080-1 Mounting bracket **moving end**
RX321-080-2 Mounting bracket **fixed end**

PDF: igus.com/e-chain-pdfs
Product information: igus.com/e-chains

e-chain system® RX e-tubes
Series RX40

Price Index

Series RX40

Special Features / Options

ESD classification:
Electrically conductive ESD/
ATEX version upon request

Flammability Class
VDE 0304 IIC UL94 HB

e-tubes with HT-material for
hot chips up to 1562°F (850°C)
available upon request

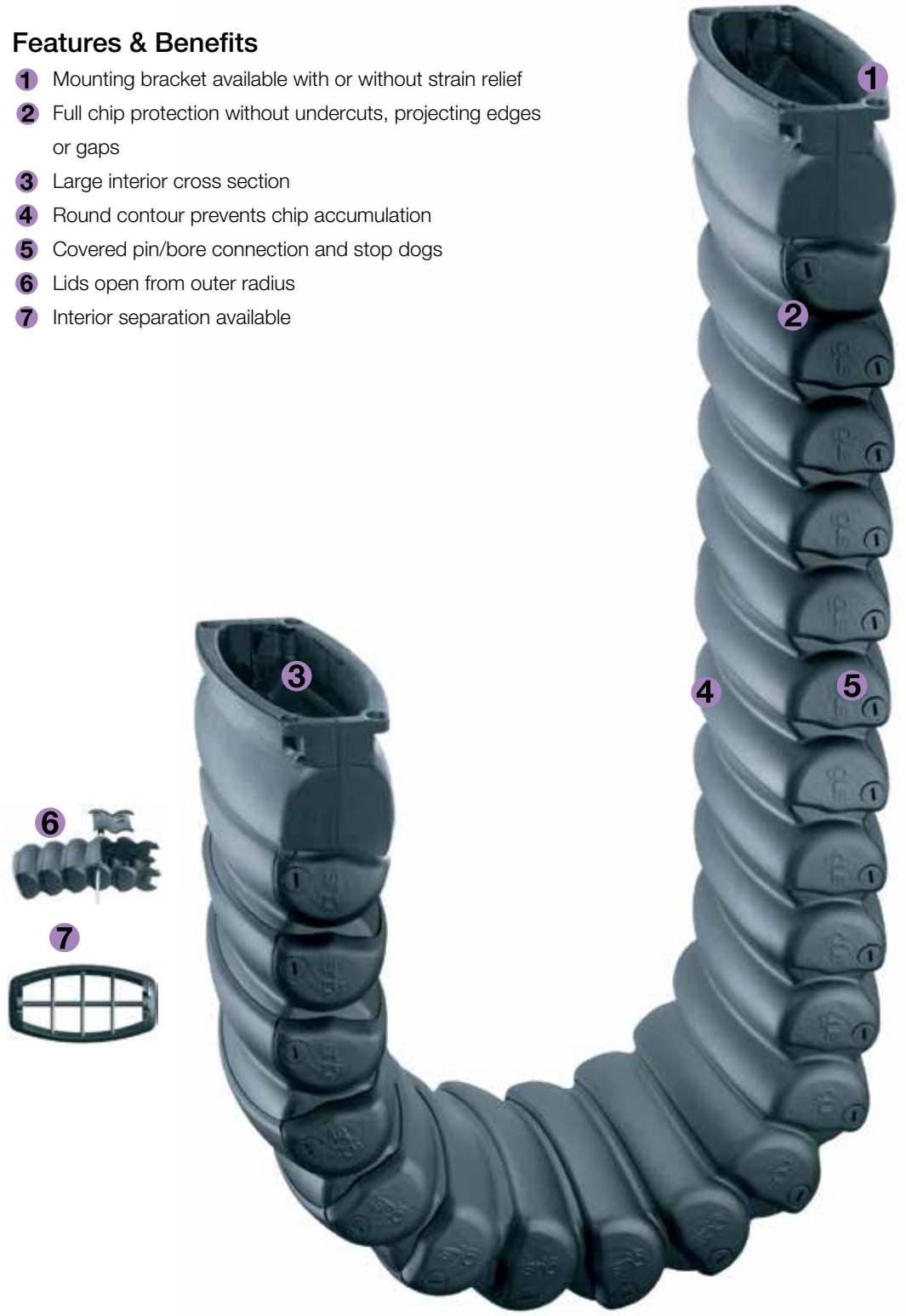
Assembly Tips



Easy opening of lids on the outer radius with embedded excentric locking mechanism

Features & Benefits

1. Mounting bracket available with or without strain relief
2. Full chip protection without undercuts, projecting edges or gaps
3. Large interior cross section
4. Round contour prevents chip accumulation
5. Covered pin/bore connection and stop dogs
6. Lids open from outer radius
7. Interior separation available



Usage Guidelines

- If a fully protected e-tube is desired
- If easy access from the outside is required

- If a particularly low-cost solution is the main factor
  ➤ **Series R68 E2 tubes**
- If no chip protection is required
  ➤ **Series 3500 E2/000**

Order Example: Complete e-chain®

Please indicate chain length or number of links. Example:

3.28 ft (1 m) **RX-40-100-100-0**	**e-chain®**
With 3 separators **RX40-1-1/RX40-1-2** assemb. every 2nd link	**Interior Separation**
1 Set **RX401-100-12**	**Mounting Bracket**

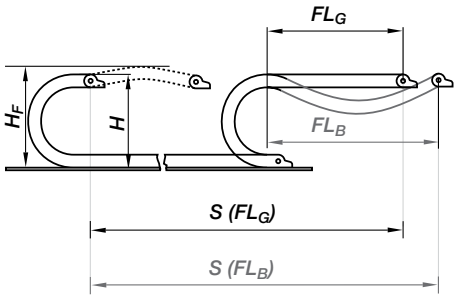
e-chain system® RX e-tubes
Series RX40
Installation Dimensions

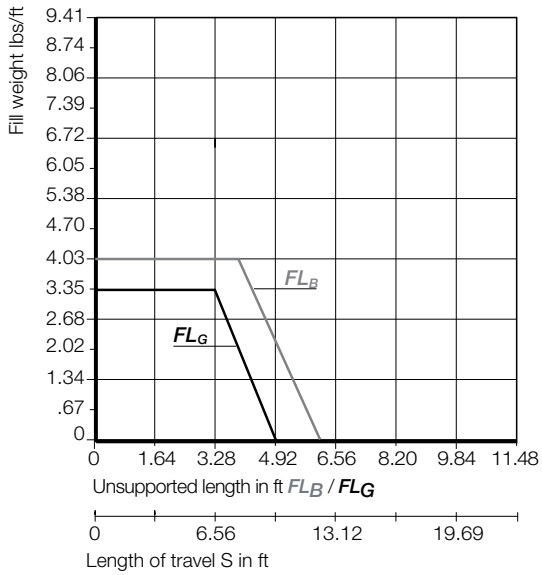
Short travel, unsupported length

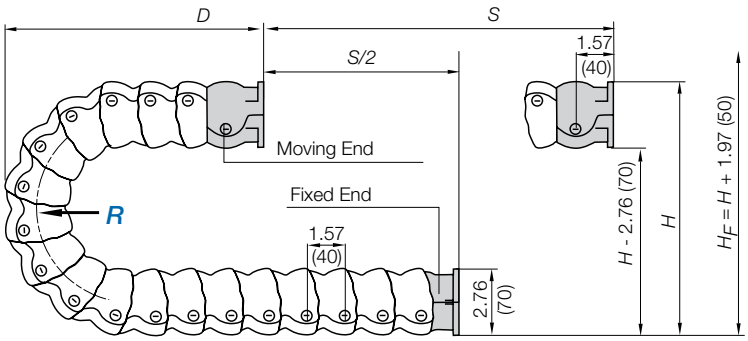
● FL_B = unsupported with permitted sag

● FL_G = unsupported with straight upper run

Further information ➤ Design, Chapter 1







Pitch per link: = 1.57" (40 mm)
Links per ft (m): = 7.62 (25)
For center mount applications:
Chain length = $S/2 + K$

The required clearance height: $H_F = H + 1.97$ **in. (50 mm)** (with 1.68 lbs/ft (2.5 kg/m) fill weight.
Please consult igus® if space is particularly restricted.

R	3.94 (100)	4.92 (125)	5.91 (150)	6.89 (175)	7.87 (200)	8.86 (225)	9.84 (250)	10.83 (275)	11.81 (300)
H	10.63 (270)	12.59 (320)	14.57 (370)	16.54 (420)	18.50 (470)	20.47 (520)	22.44 (570)	24.41 (620)	26.38 (670)
D	7.68 (195)	8.66 (220)	9.65 (245)	10.63 (270)	11.61 (295)	12.60 (320)	13.58 (345)	14.57 (370)	15.55 (395)
K	15.55 (395)	18.70 (475)	21.85 (555)	24.80 (630)	27.95(710)	31.10 (790)	34.25 (870)	37.20 (945)	40.35(1025)

Short Travels - Unsupported

Unsupported e-chains® feature positive camber over short travels. This must be accounted for when specifying the clearance height. Please refer to **Installation dimensions** for further details.

Legend

S = Length of travel
R = Bending radius
H = Nominal clearance height
D = Overlength e-chain® radius in final position
K = π • R + safety buffer
H_F = Required clearance height

Speed / acceleration FL_G	max. 32.8 ft/s (10 m/s) / max. 328 ft/s² (100 m/s²)
Speed / acceleration FL_B	max. 9.84 ft/s (3 m/s) / max. 19.69 ft/s² (6 m/s²)
Material - permitted temperature	igumid G / -40°F (-40°C) up to +248°F (+120° C)
Flammability Class, igumid G	VDE 0304 IIC UL94 HB

Technical Data

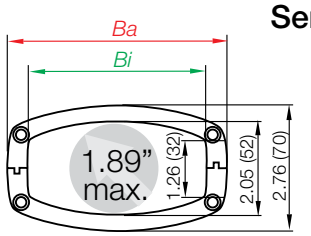
Details of material properties
➤ Chapter 1

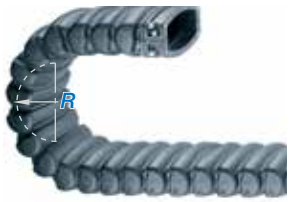
PDF: igus.com/e-chain-pdfs
Product information: igus.com/e-chains

e-chain system® RX e-tubes
Series RX40

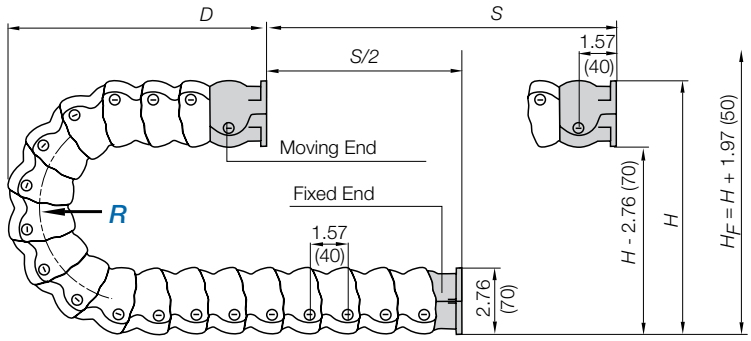
igus® e-chain system®
Telephone 1-800-521-2747
Internet: igus.com
email: sales@igus.com
QuickSpec: igus.com/quickspec

Series RX40 - snap-open along the outer radius









Part Number Structure

RX40- 100- 100- 0

- Color - Black
- Bending radius
- Width
- Series

Supplement part number with required radius. Example: RX40-100-100-0
Pitch: 1.57 in. (40 mm) per link links/ft(m) = 7.62 (25)

Part Number	Bi in. (mm)	Ba in. (mm)	Weight lbs/ft (kg/m)
RX40-100-□-0	3.94 (100)	4.84 (123)	≈ 1.27 (1.89)

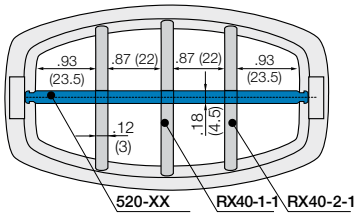
Choose from the radii below for all of the above sizes
Radius (mm) Example: RX40-100-100-0

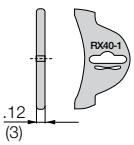
	100	125	150	175	200	225	250	275	300
R	3.94 (100)	4.92 (125)	5.91 (150)	6.89 (175)	7.87 (200)	8.86 (225)	9.84 (250)	10.83 (275)	11.81 (300)
H	10.63 (270)	12.59 (320)	14.57 (370)	16.54 (420)	18.50 (470)	20.47 (520)	22.44 (570)	24.41 (620)	26.38 (670)
D	7.68 (195)	8.66 (220)	9.65 (245)	10.63 (270)	11.61 (295)	12.60 (320)	13.58 (345)	14.57 (370)	15.55 (395)
K	15.55 (395)	18.70 (475)	21.85 (555)	24.80 (630)	27.95(710)	31.10 (790)	34.25 (870)	37.20 (945)	40.35(1025)

Separators and shelves

Vertical separators are used if a vertical subdivision of the e-tube interior is required. By standard, vertical separators are assembled every other e-tube link.

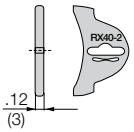






Separator, central

Unassembled	**Part No. RX40-1**
Assembled	**Part No. RX40-1-1**

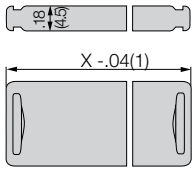


Slotted Separator, lateral

Unassembled	**Part No. RX40-1**
Assembled	**Part No. RX40-2-1**

Shelves 520-XX

Full width shelves lock into separators on both ends, fixed width possible. Separators can be moved freely over the shelf horizontally.



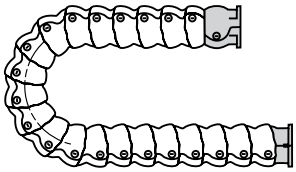
Width X in.	(mm)	Part No. Unassembled	Part No. Assembled
1.14	(29)	**520-24**	**521-24**
2.13	(54)	**520-44**	**521-44**
3.11	(79)	**520-64**	**521-64**
4.09	(104)	**520-84**	**521-84**

e-chain system® RX e-tubes
Series RX40
Mounting Brackets

Option: Flange mounting brackets

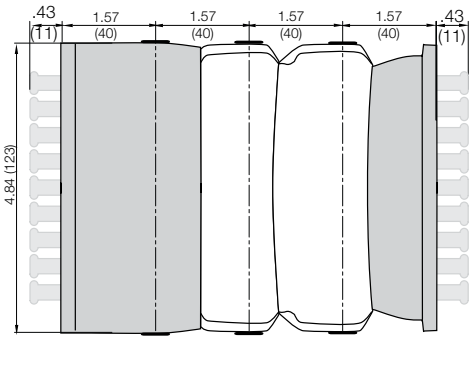
- Universally mountable with flange attachment capability
- Optional strain relief tiewrap plates
- Easy to open
- Optional M4 insert nuts

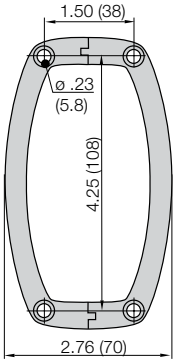
Moving end
RX401-100-1



Fixed end
RX401-100-2

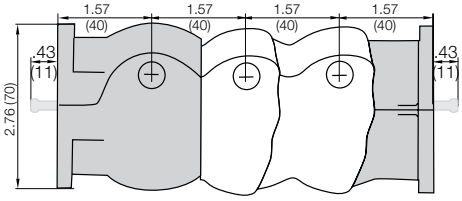












Shown with strain relief



Chain Type	Part No. full set with tiewrap plate	Part No. full set without tiewrap plate	Number of Teeth
RX40	**RX401-100-12ZB**	**RX401-100-12**	10

Full set, for both ends:
RX401-100-12

Single-part order:
RX401-100-1 Mounting bracket **moving end**
RX401-100-2 Mounting bracket **fixed end**

PDF: igus.com/e-chain-pdfs
Product information: igus.com/e-chains

e-chain system® RX e-tubes
Series RX48

Price Index

Series RX48

Special Features / Options

ESD classification:
Electrically conductive ESD/
ATEX version upon request

Flammability Class
VDE 0304 IIC UL94 HB

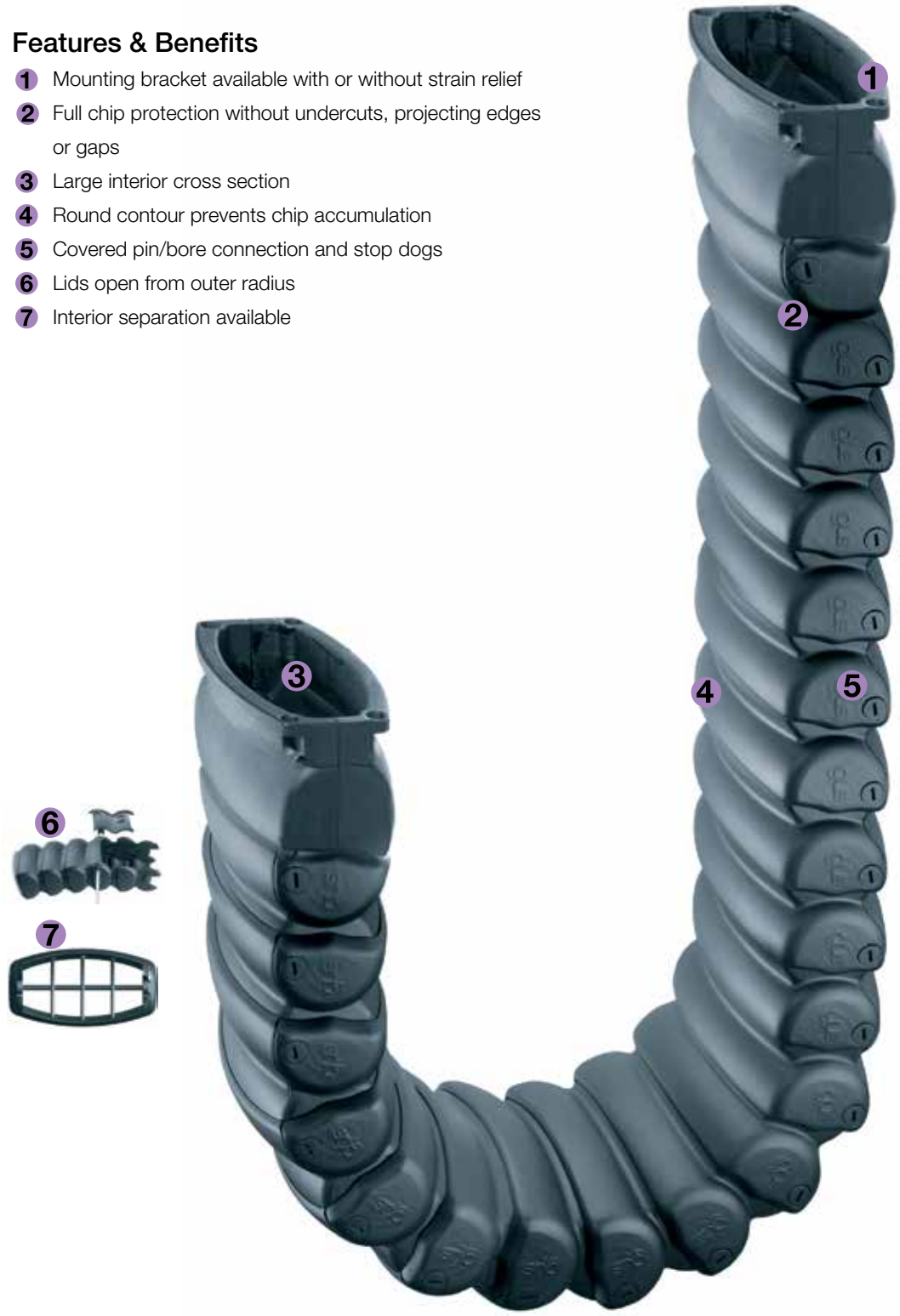
Assembly Tips



Easy opening of lids on the outer radius with embedded excentric locking mechanism

Features & Benefits

1. Mounting bracket available with or without strain relief
2. Full chip protection without undercuts, projecting edges or gaps
3. Large interior cross section
4. Round contour prevents chip accumulation
5. Covered pin/bore connection and stop dogs
6. Lids open from outer radius
7. Interior separation available



Usage Guidelines

- If a fully protected e-tube is desired
- If easy access from the outside is required

- For chip protection in gliding applications
  ➤ **Series R18840 E4 Light**

Order Example: Complete e-chain®

Please indicate chain length or number of links. Example:

9.84 ft (3 m) **RX48-120-120-0**	**e-chain®**
With 3 separators **RX48-1-1/RX48-1-2** assemb. every 2nd link	**Interior Separation**
1 Set **RX48-120-12**	**Mounting Bracket**

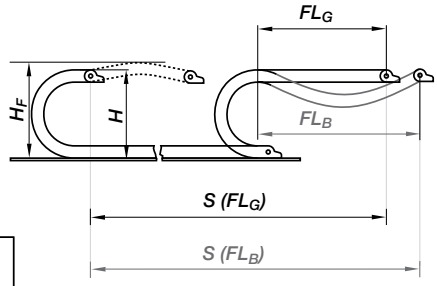
e-chain system® RX e-tubes
Series RX48
Installation Dimensions

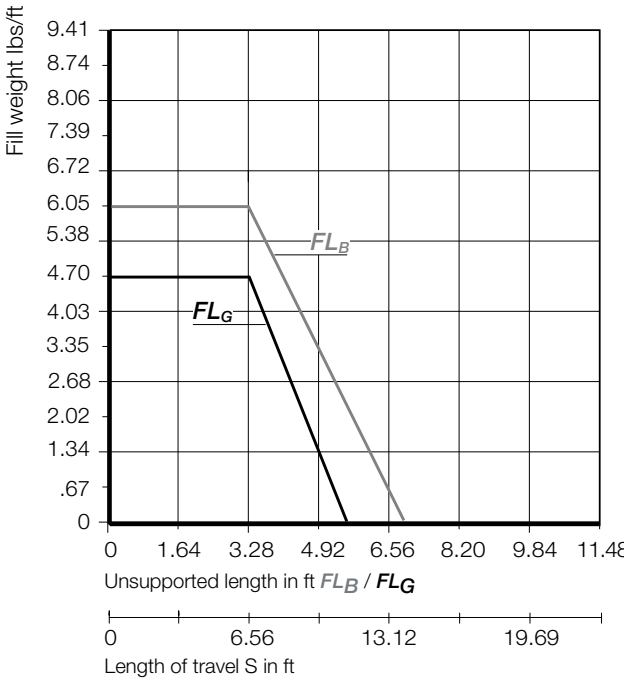
Short travel, unsupported length

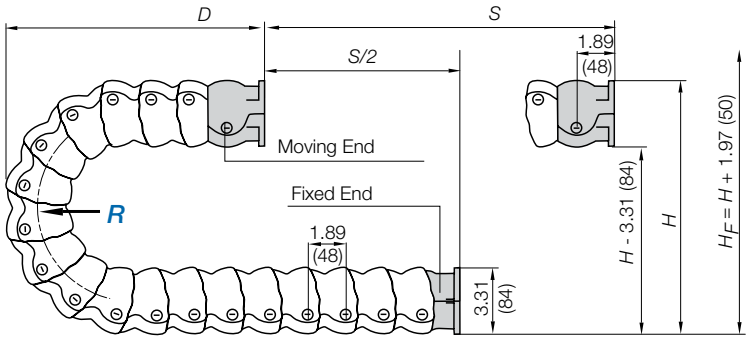
● FL_B = unsupported with permitted sag

● FL_G = unsupported with straight upper run

Further information ➤ Design, Chapter 1







Pitch per link: = 1.89" (48 mm)
Links per ft (m): = 6.35 (21)
For center mount applications:
Chain length = $^{s}/_{2}$ + K

The required clearance height: H_F **= H + 1.97 in. (50 mm)** (with .34 lbs/ft (0.5 kg/m) fill weight.
Please consult igus® if space is particularly restricted.

R	4.72 (120)	5.91 (150)
H	12.76 (324)	15.12 (384)
D	9.21 (234)	10.39 (264)
K	18.70 (475)	22.44 (570)

Short Travels - Unsupported

Unsupported e-chains® feature positive camber over short travels. This must be accounted for when specifying the clearance height. Please refer to **Installation dimensions** for further details.

Legend

S = Length of travel
R = Bending radius
H = Nominal clearance height
D = Overlength e-chain® radius in final position
K = π • *R* + *safety buffer*
H_F = Required clearance height

Technical Data

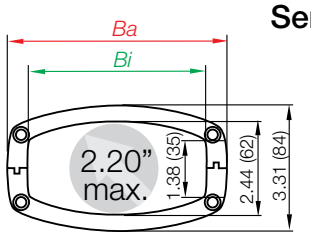
Speed / acceleration FL_G	max. 32.8 ft/s (10 m/s) / max. 328 ft/s² (100 m/s²)
Speed / acceleration FL_B	max. 9.84 ft/s (3 m/s) / max. 19.69 ft/s² (6 m/s²)
Material - permitted temperature	igumid G / -40°F (-40°C) up to +248°F (+120° C)
Flammability Class, igumid G	VDE 0304 IIC UL94 HB

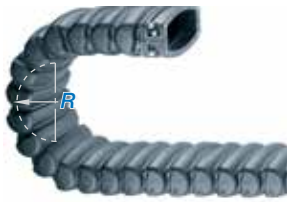
Details of material properties
➤ Chapter 1

PDF: igus.com/e-chain-pdfs
Product information: igus.com/e-chains

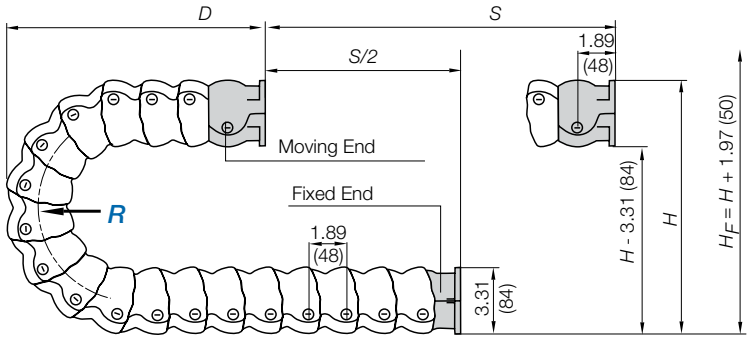
e-chain system® RX e-tubes
Series RX48
Installation Dimensions, Interior Separation

Series RX48 - snap-open along the outer radius

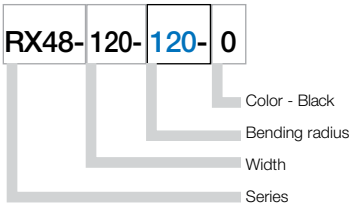








Part Number Structure



Supplement part number with required radius. Example: RX48-120-120-0
Pitch: 1.89 in. (48 mm) per link links/ft(m) = 6.35 (21)

Part Number	Bi in. (mm)	Ba in. (mm)	Weight lbs/ft (kg/m)
RX48-120-□-0	4.72 (120)	5.81 (147.6)	≈ 1.85 (2.76)

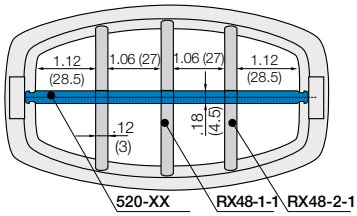
Choose from the radii below for all of the above sizes
Radius (mm) Example: RX48-120-120-0

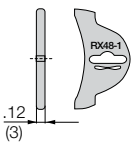
	120	150
R	4.72 (120)	5.91 (150)
H	12.76 (324)	15.12 (384)
D	9.21 (234)	10.39 (264)
K	18.70 (475)	22.44 (570)

Separators and shelves

Vertical separators are used if a vertical subdivision of the e-tube interior is required. By standard, vertical separators are assembled every other e-tube link.

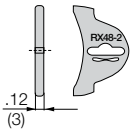






Separator, central

Unassembled	**Part No. RX48-1**
Assembled	**Part No. RX48-1-1**

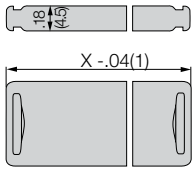


Slotted Separator, lateral

Unassembled	**Part No. RX48-1**
Assembled	**Part No. RX48-2-1**

Shelves 520-XX

Full width shelves lock into separators on both ends, fixed width possible. Separators can be moved freely over the shelf horizontally.



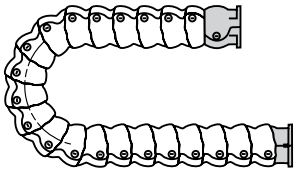
Width X in.	(mm)	Part No. Unassembled	Part No. Assembled
1.34	(34)	**520-34**	**521-34**
2.52	(64)	**520-64**	**521-64**
3.70	(94)	**520-94**	**521-94**
4.88	(124)	**520-124**	**521-124**

e-chain system® RX e-tubes
Series RX48
Mounting Brackets

Option: Flange mounting brackets

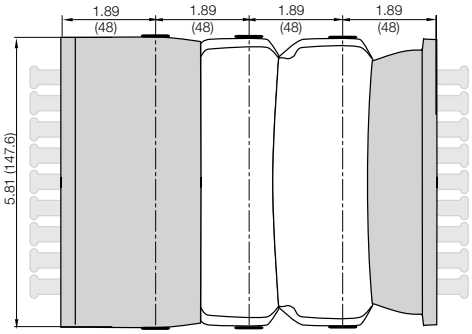
- Universally mountable with flange attachment capability
- Optional strain relief tiewrap plates
- Easy to open
- Optional M4 insert nuts

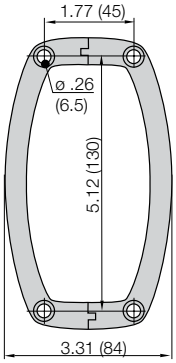
Moving end
RX481-120-1



Fixed end
RX481-120-2

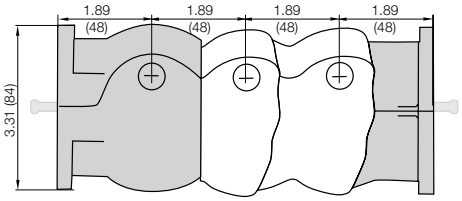












Shown with strain relief



Chain Type	Part No. full set with tiewrap plate	Part No. full set without tiewrap plate	Number of Teeth
RX48	**upon request**	**RX481-120-12**	upon request

Full set, for both ends:
RX481-120-12

Single-part order:
RX481-120-1 Mounting bracket **moving end**
RX481-120-2 Mounting bracket **fixed end**

PDF: igus.com/e-chain-pdfs
Product information: igus.com/e-chains

e-chain system® RX e-tubes
Series RX56

Price Index

Series RX56

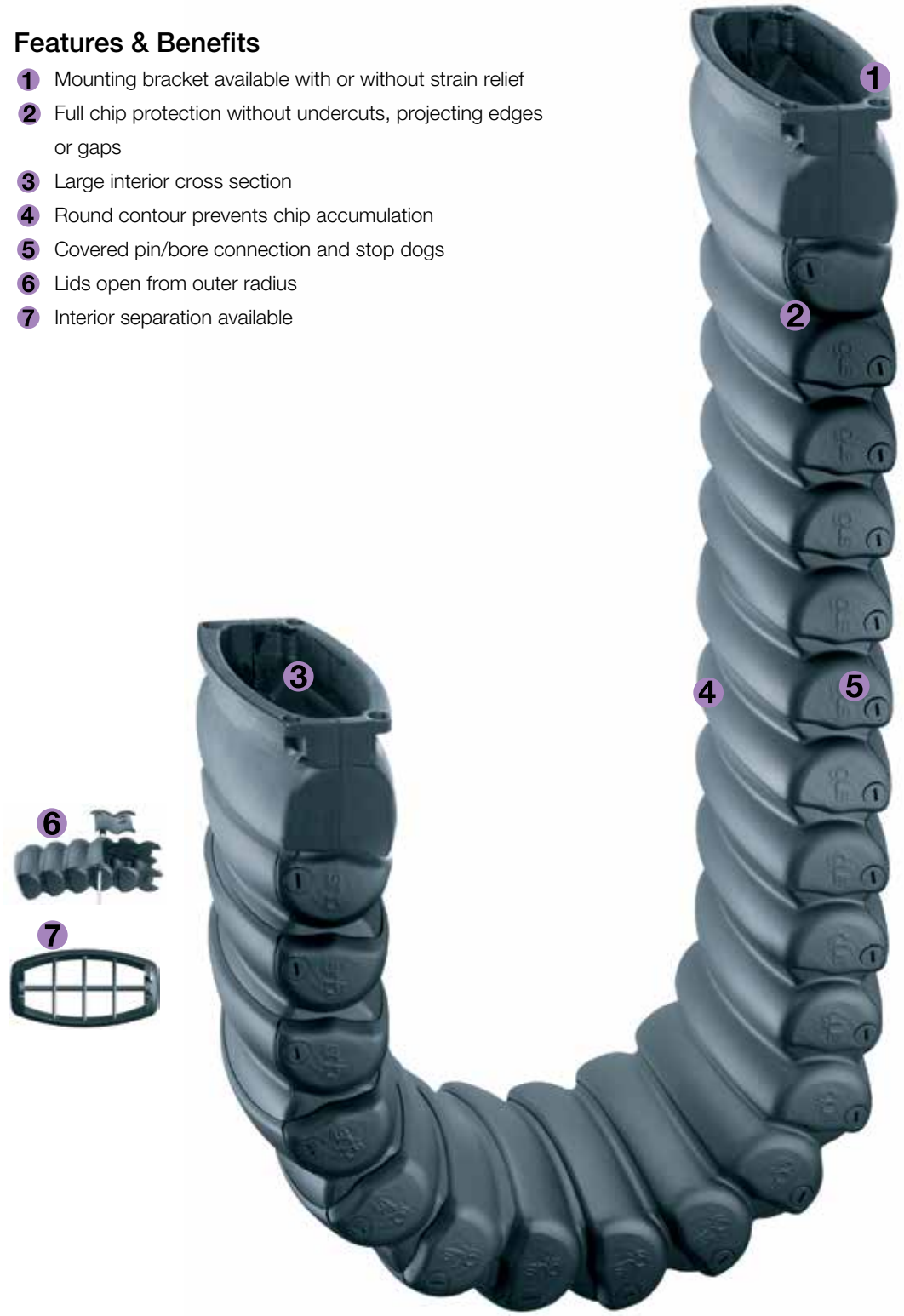
Special Features / Options

ESD classification:
Electrically conductive ESD/
ATEX version upon request

Flammability Class
VDE 0304 IIC UL94 HB

Features & Benefits

1. Mounting bracket available with or without strain relief
2. Full chip protection without undercuts, projecting edges or gaps
3. Large interior cross section
4. Round contour prevents chip accumulation
5. Covered pin/bore connection and stop dogs
6. Lids open from outer radius
7. Interior separation available



Assembly Tips



Easy opening of lids on the outer radius with embedded excentric locking mechanism

Usage Guidelines

- If a fully protected e-tube is desired
- If easy access from the outside is required

- For chip protection in gliding applications
  ➤ **Series R19850 E4 Light**

Order Example: Complete e-chain®

Please indicate chain length or number of links. Example:

9.84 ft (3 m) **RX56-140-140-0**	**e-chain®**
With 3 separators **RX56-1-1/RX56-1-2** assemb. every 2nd link	**Interior Separation**
1 Set **RX561-140-12**	**Mounting Bracket**

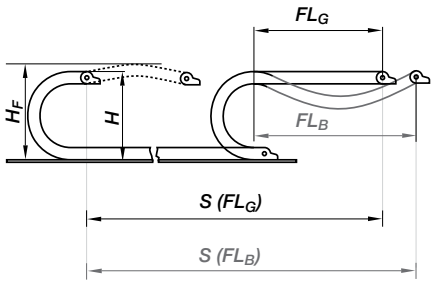
e-chain system® RX e-tubes
Series RX56
Installation Dimensions

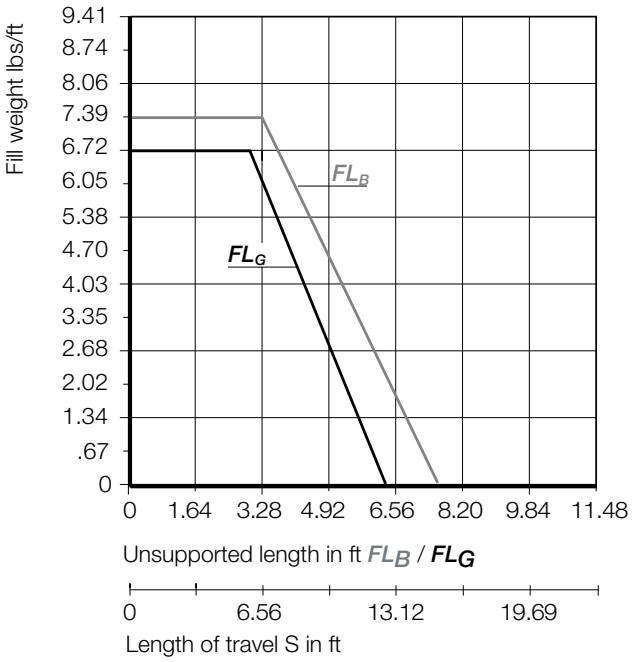
Short travel, unsupported length

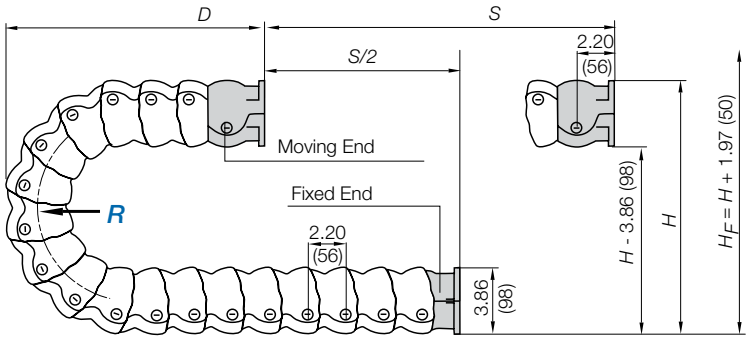
● FL_B = unsupported with permitted sag

● FL_G = unsupported with straight upper run

Further information ➤ Design, Chapter 1







Pitch per link: = 2.20" (56 mm)
Links per ft (m): = 5.45 (18)
For center mount applications:
Chain length = $\frac{S}{2} + K$

The required clearance height: $H_F = H + 1.97$ **in. (50 mm)** (with .34 lbs/ft (0.5 kg/m) fill weight.
Please consult igus® if space is particularly restricted.

R	**5.51 (140)**
H	14.88 (378)
D	10.75 (273)
K	21.85 (555)

Short Travels - Unsupported

Unsupported e-chains® feature positive camber over short travels. This must be accounted for when specifying the clearance height. Please refer to **Installation dimensions** for further details.

Legend

S = Length of travel
R = Bending radius
H = Nominal clearance height
D = Overlength e-chain® radius in final position
K = π • *R* + *safety buffer*
H_F = Required clearance height

Speed / acceleration FL_G	max. 32.8 ft/s (10 m/s) / max. 328 ft/s² (100 m/s²)
Speed / acceleration FL_B	max. 9.84 ft/s (3 m/s) / max. 19.69 ft/s² (6 m/s²)
Material - permitted temperature	igumid G / -40°F (-40°C) up to +248°F (+120° C)
Flammability Class, igumid G	VDE 0304 IIC UL94 HB

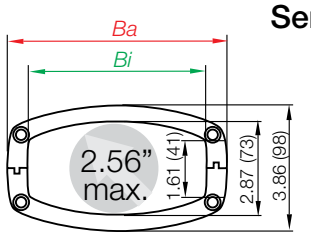
Technical Data

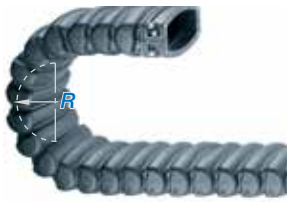
Details of material properties
➤ Chapter 1

PDF: igus.com/e-chain-pdfs
Product information: igus.com/e-chains

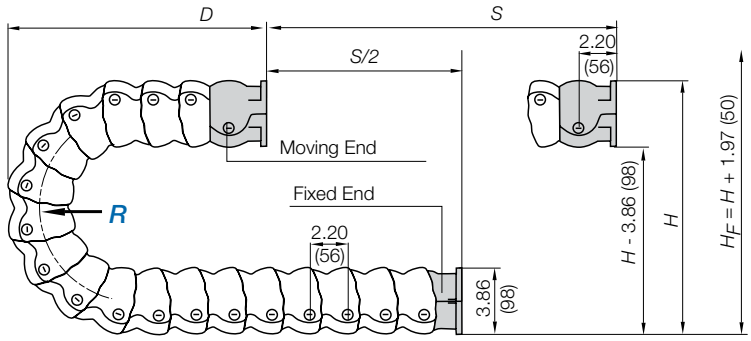
e-chain system® RX e-tubes
Series RX56
Installation Dimensions, Interior Separation

Series RX56 - snap-open along the outer radius









Part Number Structure

RX56-140-140-0

- Color - Black
- Bending radius
- Width
- Series

Supplement part number with required radius. Example: RX56-140-140-0
Pitch: 2.20 in. (56 mm) per link links/ft(m) = 5.45 (18)

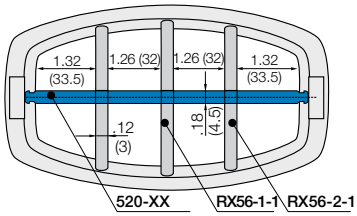
Part Number	*Bi* in. (mm)	*Ba* in. (mm)	Weight lbs/ft (kg/m)
RX56-140-□-0	5.51 (140)	6.78 (172.2)	≈ 2.57 (3.83)
	Choose from the radii below for all of the above sizes		
	Radius (mm)	Example: RX56-140-140-0	

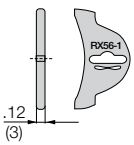
140	
R	5.51 (140)
H	14.88 (378)
D	10.75 (273)
K	21.85 (555)

Separators and shelves

Vertical separators are used if a vertical subdivision of the e-tube interior is required. By standard, vertical separators are assembled every other e-tube link.

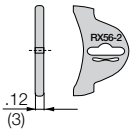






Separator, central

Unassembled	**Part No. RX56-1**
Assembled	**Part No. RX56-1-1**

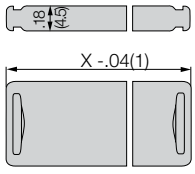


Slotted Separator, lateral

Unassembled	**Part No. RX56-2**
Assembled	**Part No. RX56-2-1**

Shelves RX520-XX

Full width shelves lock into separators on both ends, fixed width possible. Separators can be moved freely over the shelf horizontally.



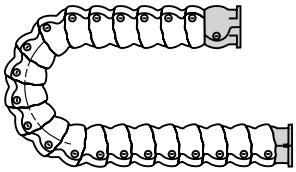
Width X in.	(mm)	Part No. Unassembled	Part No. Assembled
1.54	(39)	**520-39**	**521-39**
2.91	(74)	**520-74**	**521-74**
4.29	(109)	**520-109**	**521-109**
5.67	(144)	**520-144**	**521-144**

e-chain system® RX e-tubes
Series RX56
Mounting Brackets

Option: Flange mounting brackets

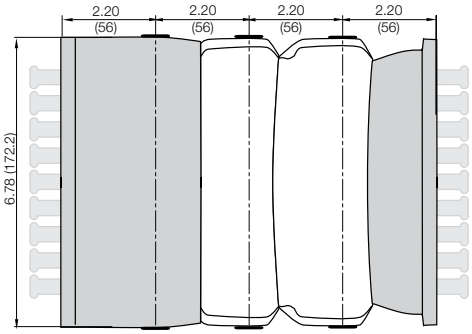
- Universally mountable with flange attachment capability
- Optional strain relief tiewrap plates
- Easy to open
- Optional M4 insert nuts

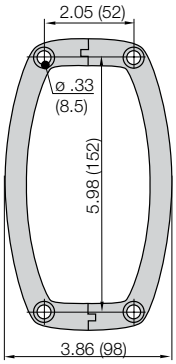
Moving end
RX561-140-1



Fixed end
RX561-140-2

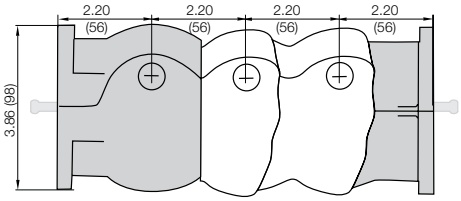












Shown with strain relief

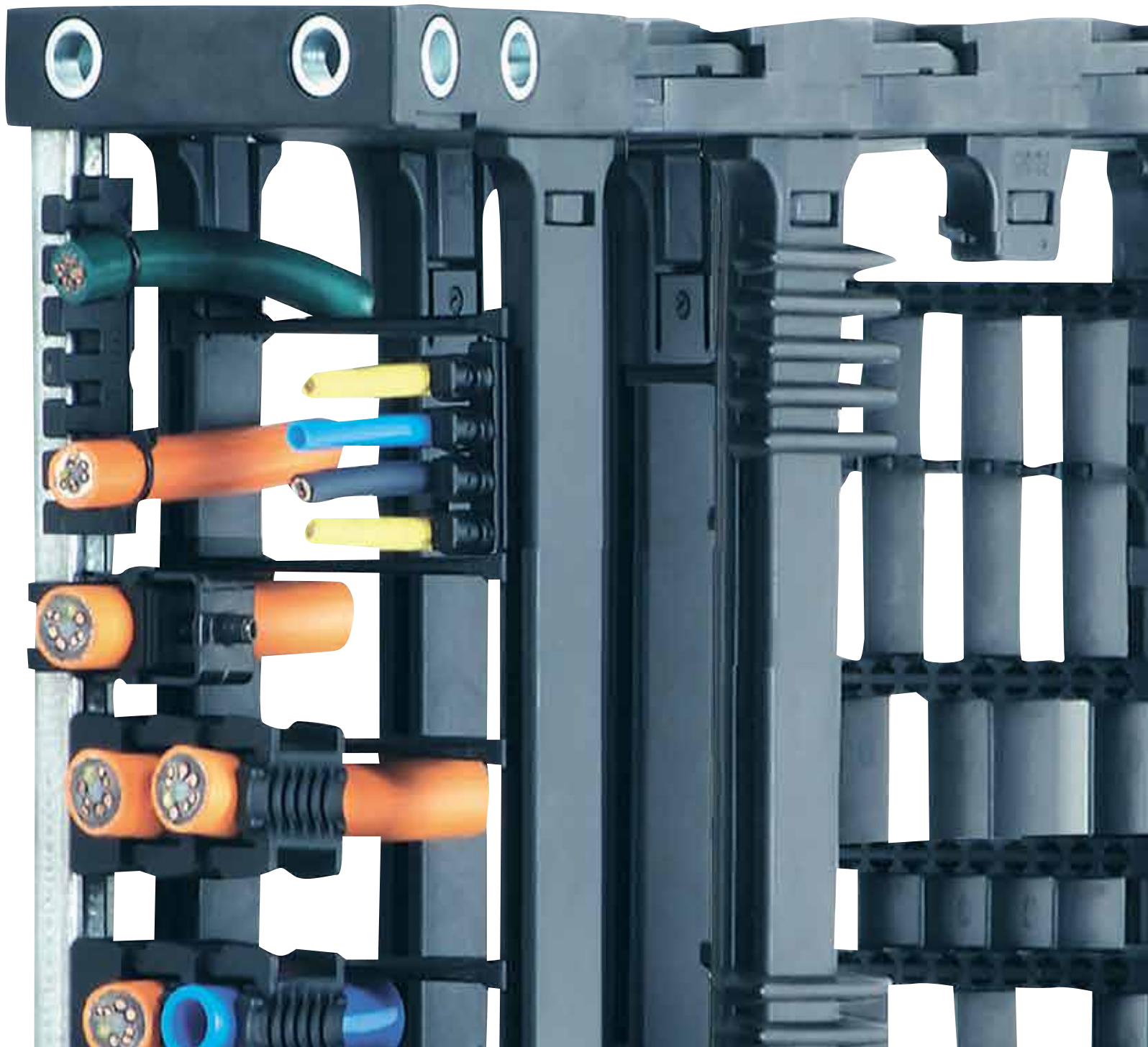


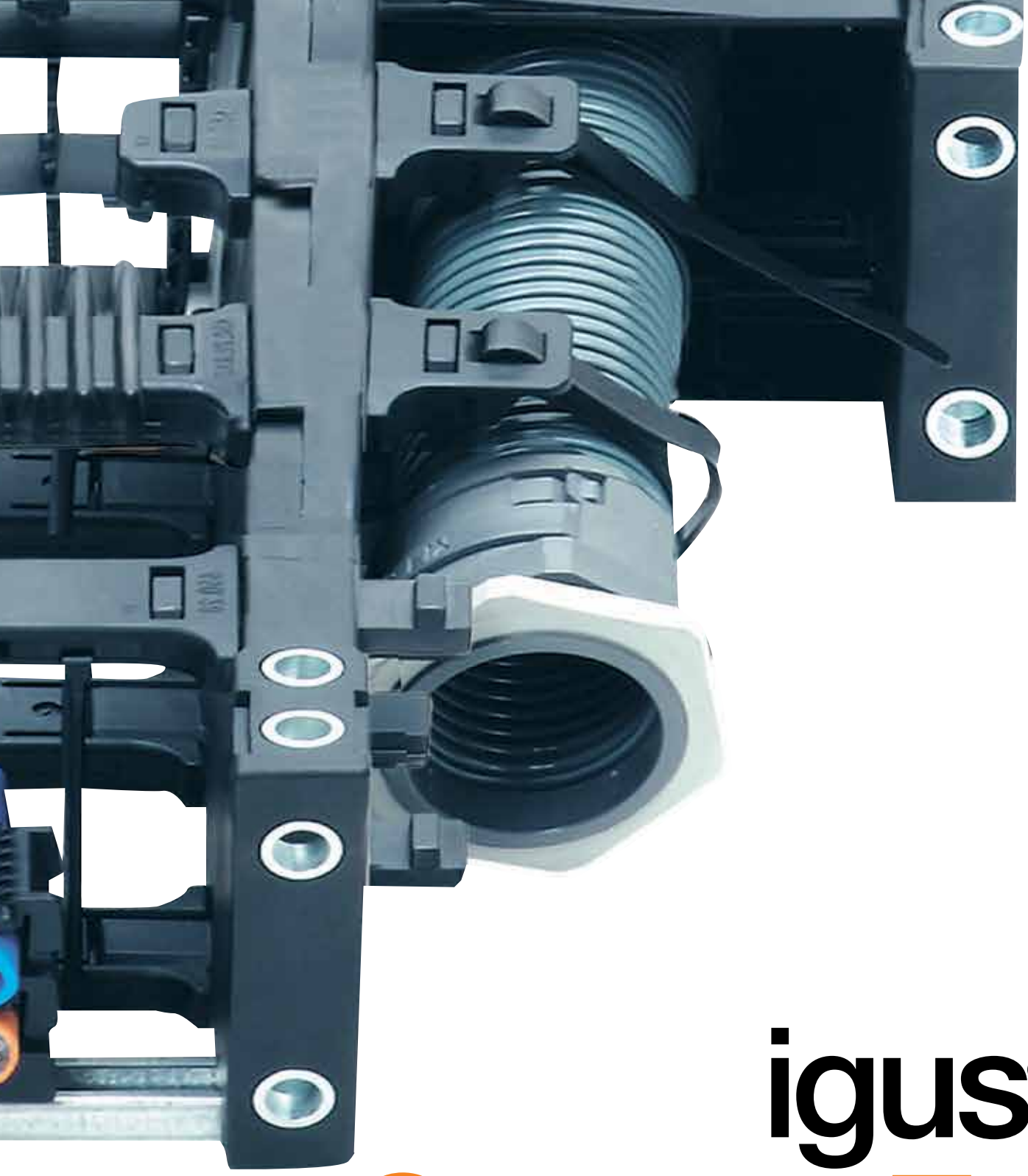
Chain Type	Part No. full set with tiewrap plate	Part No. full set without tiewrap plate	Number of Teeth
RX56	**upon request**	**RX561-120-12**	upon request

Full set, for both ends:
RX561-140-12

Single-part order:
RX561-140-1 Mounting bracket **moving end**
RX561-140-2 Mounting bracket **fixed end**

PDF: igus.com/e-chain-pdfs
Product information: igus.com/e-chains





igus®

System E4

E4-1, E4-1 light, E4/light

E4-1
e-chain® series for almost all applications

The E4-1 system combines all the advantages of its three predecessors:

- Tongue and groove design provides greater lateral stability, high shear force on long travels and for longer unsupported lengths
- Ideal for side-mounted applications
- Noise dampening “brakes” and rubber dampers available
- Snap-open links for quick assembly, with or without pretension
- Dirt repellent and wear-resistant
- Side wear pads

Almost all accessories and mounting dimensions are identical. With the E4-1, the service life of your application can be still increased with lower costs.

Typical industries and applications

- Crane
- Indoor crane
- Composting plants
- Sewage plants
- Machine tools
- General mechanical engineering
- Material handling technology
- Refrigeration engineering
- Construction machinery
- Wood working
- Robotics and handling systems



Cleanroom test upon request

Reduced noise due to special rubber pads and special stop dog design

ESD classification: Electrically conductive ESD/ATEX version upon request

System E4-1 field proven in long travels

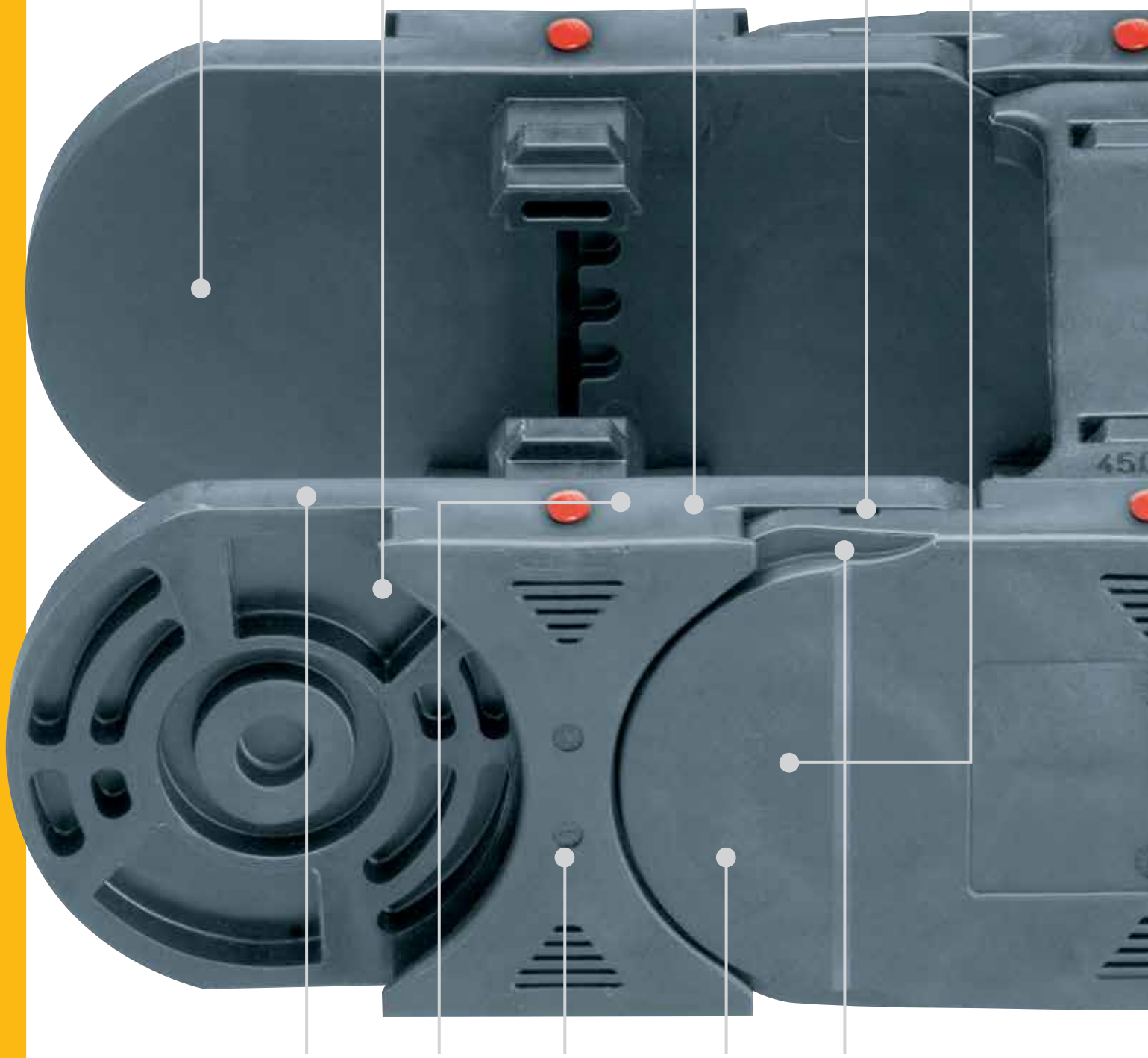
Fully enclosed e-tubes available as special design with HT material for 1562°F hot chips



The E4-42 series in a machine tool, completely assembled with igus® chainflex® cables

Application	Design feature
Long unsupported length	Special stop dogs, tongue and groove link design
Low-noise operation, unsupported gliding	Integrated “brake”, smooth gliding surfaces - rubber dampers optional
Hanging and standing installation	Torsional stability through tongue and groove link design, “no camber” option by flipping the outer link
Long travels	High push/pull forces through tongue and groove link design and stop dogs, large and smooth gliding surfaces
Side-mounted, unsupported	Tongue and groove link design increases unsupported length by about 30% mounted on the side
Fast assembly	“Inner link/outer link” design
Rotary motion	Through simple flipping of links or easy modification, gliding surfaces on the side
Increase service life of cable	Smooth, wide solid polymer support for cables, many quick-mounting shelving options
Increase service life of chains	Large pins, optimized material, high stability
ESD, ATEX	Tongue and groove link design for secure contact surfaces in motion (special version in conductive material)
Operation under dirt, chips, humidity	Tongue and groove link design design prevents chain breakage, dirt-resistant design

The E4-1 Series combines the tongue and groove link design and the inner and outer link design of previous E4 constructions — all in one e-chain®



Stable crossbars with double locking

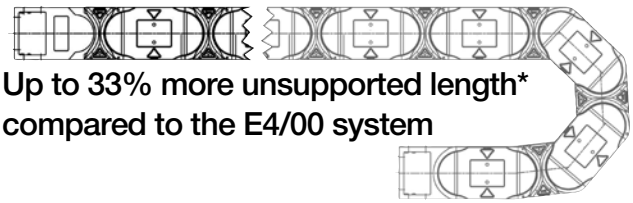
Types “with” or “without camber” by flipping outer links



Cable-friendly, rounded crossbar

Vertical stop dog system for larger unsupported lengths

Cut costs by eliminating additional components with E4-1 e-chains® - Proven durability and stability

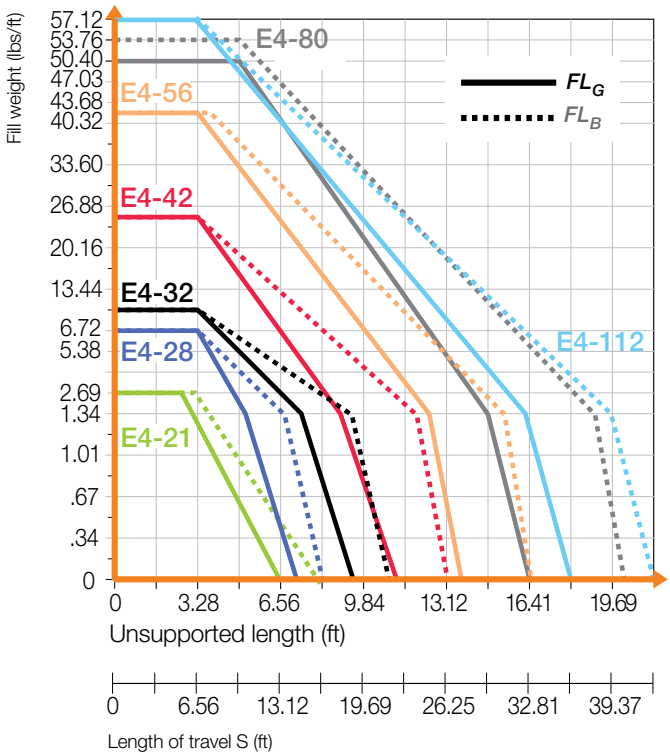


Up to 33% more unsupported length* compared to the E4/00 system

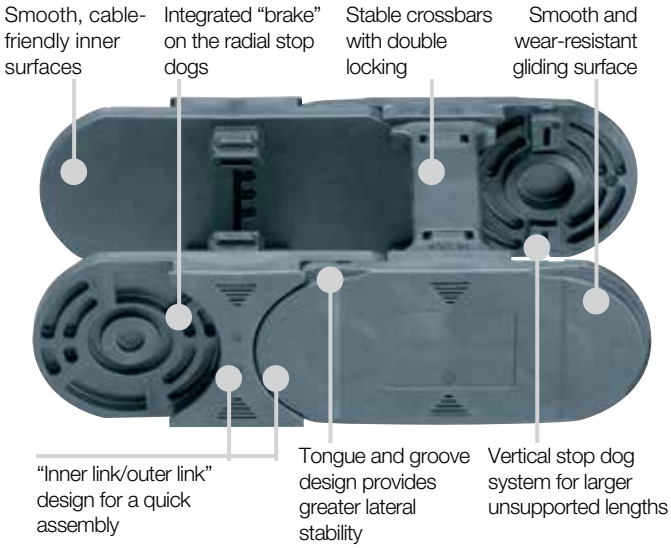
- Up to 133% higher tensile strength*
- Up to 33% more unsupported length*. Save in the purchase cost, as you can now use smaller e-chains®
- Due to the large unsupported lengths or loads, oversized energy supply systems can be optimized with the igus® E4-1 system

* Compared to the igus® E4/00 system series
** Test at igus® laboratory: Sag tested with defined weight and length over 96h

Selection table and assembly instructions ➤ page 6.7



E4-1 Design Features



- Available in 40 width sizes in both e-chain® and e-tube
- Interlocking side links for optimum lateral stability, for high push/pull force on long travels
- Long unsupported lengths
- "Brake" and rubber dampers as additional noise-reducing options
- Inner link/outer link design for quick assembly with various interior separation options
- Double locking stable crossbars that open from both sides
- Support Tray tool kit for the support of the lower run
  ➤ **Chapter 9**
- Find more technical data about the material, chemical resistance, temperatures ➤ **Chapter 1**

Crossbars every link
for particularly demanding applications



Series	Inner height *hi* in.	(mm)	Inner width *Bi* in.	(mm)	Outer width *Ba* in.	(mm)	Outer height *ha* in.	(mm)	Bending radius *R* in.	(mm)
E4-21	.82	(21)	1.18-5.51	(30-140)	1.73-5.28	(44-134)	1.10	(28)	1.50-7.87	(38-200)
E4-28	1.10	(28)	1.57-11.81	(40-300)	2.36-12.60	(60-320)	1.65	(42)	2.16-9.84	(55-250)
E4-32	1.26	(32)	1.97-15.75	(50-400)	2.87-16.65	(73-423)	2.13	(54)	2.48-11.81	(63-300)
E4-42	1.65	(42)	1.97-15.75	(50-400)	2.99-16.77	(76-426)	2.52	(64)	2.95-13.78	(75-350)
E4-56	2.20	(56)	1.97-23.62	(50-600)	3.31-24.96	(84-634)	3.31	(84)	5.31-19.69	(135-500)
E4-80	3.15	(80)	1.97-23.62	(50-600)	3.94-25.59	(100-650)	4.25	(108)	5.91-39.37	(150-1000)
E4-112	4.41	(112)	1.97-23.62	(50-600)	4.02-25.67	(102-652)	5.51	(140)	7.87-39.37	(200-1000)
E4-162	6.38	(162)	7.87-23.62	(200-600)	10.08-25.83	(256-656)	7.68	(195)	9.84-39.37	(250-1000)
800	7.87	(200)	7.87-23.62	(200-600)	10.24-25.98	(260-660)	9.29	(236)	12.80-39.37	(325-1000)
840	8.03	(204)	3.94-22.16	(100-563)	6.30-24.53	(160-623)	9.29	(236)	12.80-39.37	(325-1000)
E4-350	13.78	(350)	15.75-31.50	(400-800)	21.26-37.01	(540-940)	17.72	(450)	19.69-39.37	(500-1000)

Crossbars every 2nd link
for almost all applications



Series	Inner height *hi* in.	(mm)	Inner width *Bi* in.	(mm)	Outer width *Ba* in.	(mm)	Outer height *ha* in.	(mm)	Bending radius *R* in.	(mm)
H4-32	1.26	(32)	1.97-15.75	(50-400)	2.87-16.65	(73-423)	2.13	(54)	2.48-11.81	(63-300)
H4-42	1.65	(42)	1.97-15.75	(50-400)	2.99-16.77	(76-426)	2.52	(64)	2.95-13.78	(75-350)
H4-56	2.20	(56)	1.97-23.62	(50-600)	3.31-24.96	(84-634)	3.31	(84)	5.31-19.69	(135-500)
H4-80	3.15	(80)	1.97-23.62	(50-600)	3.94-25.59	(100-650)	4.25	(108)	5.91-39.37	(150-1000)

e-tubes
fully enclosed, for complete cable protection



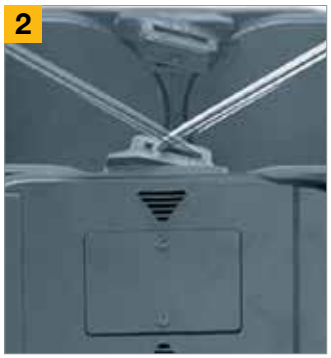
Series	Inner height *hi* in.	(mm)	Inner width *Bi* in.	(mm)	Outer width *Ba* in.	(mm)	Outer height *ha* in.	(mm)	Bending radius *R* in.	(mm)
R4-28	1.10	(28)	1.97-11.81	(50-300)	2.76-12.60	(70-320)	1.65	(42)	2.95-9.84	(75-250)
R4-32	1.26	(32)	1.97-11.81	(50-300)	2.87-12.72	(73-323)	2.13	(54)	4.92-11.81	(125-300)
R4-42	1.65	(42)	1.97-11.81	(50-300)	2.99-12.83	(76-326)	2.52	(64)	4.92-13.78	(125-350)
R4-56	2.20	(56)	2.95-18.19	(75-462)	4.29-19.57	(109-497)	3.31	(84)	5.31-19.69	(135-500)
R4-80	3.15	(80)	5.91-18.19	(150-462)	7.87-20.20	(200-513)	4.25	(108)	7.87-39.37	(200-1000)
R4-112	4.25	(108)	7.87-19.69	(200-500)	9.92-21.73	(252-552)	5.51	(140)	9.84-39.37	(250-1000)

e-chain system® E4-1
Assembly instructions

e-chains® - Opening

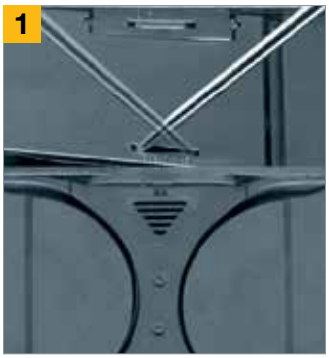


Remove crossbars - Insert screwdriver into the slot, using a lever action, apply pressure to the screwdriver to remove the crossbar.

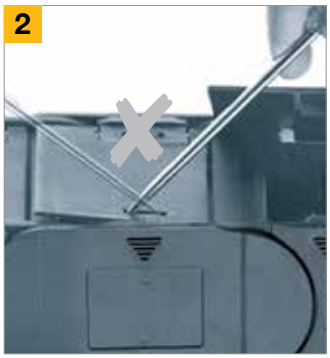


Remove clips - Insert screwdriver into the slot, using a lever action, apply pressure to the screwdriver to remove the clip

e-tube - Opening



Remove lids/bottoms - Insert screwdriver into the slot, using a lever action apply pressure to the screwdriver to release

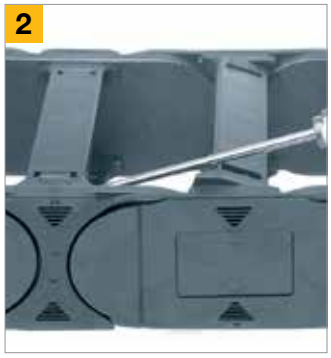


Release only **one side** to open the lid

e-chains® and e-tubes - Assembling



Line up two inner side links side by side. Attach an outer side link between



Assemble crossbars - push down and snap in using a screwdriver



Assemble clips (for e-chains with crossbars every other link) - push down and snap in using a screw-driver



Assemble e-tube lids and bottoms - Attach to the connector at an angle and snap in place

e-chains® and e-tubes - Separating



Remove crossbars, clips, lids and bottoms at the outer links



Insert screwdriver into the slot between the side links. Using a lever action, release the side links



Remove the outer links



Separate the e-chain®

Available from stock. Orders ship as early as today.*

*On average 90% of orders ship the same day..

e-chain system® E4-1
Series E4-21

Price Index

Series E4-21

Special Options Available

Low noise version available with special rubber pads

Cleanroom test upon request

ESD classification: Electrically conductive ESD/ ATEX version upon request

Assembly Tips



Opening e-chains®: Remove crossbars and clips - Insert screwdriver into the slot, push down, release by lever action

Other Installation Methods

Vertical, hanging ≤ 131 ft (40 m)
Vertical, standing ≤ 9.84 ft (3 m)
Side-mounted, unsupp. ≤ 3.28 ft (1 m)
Rotary requires further calculation

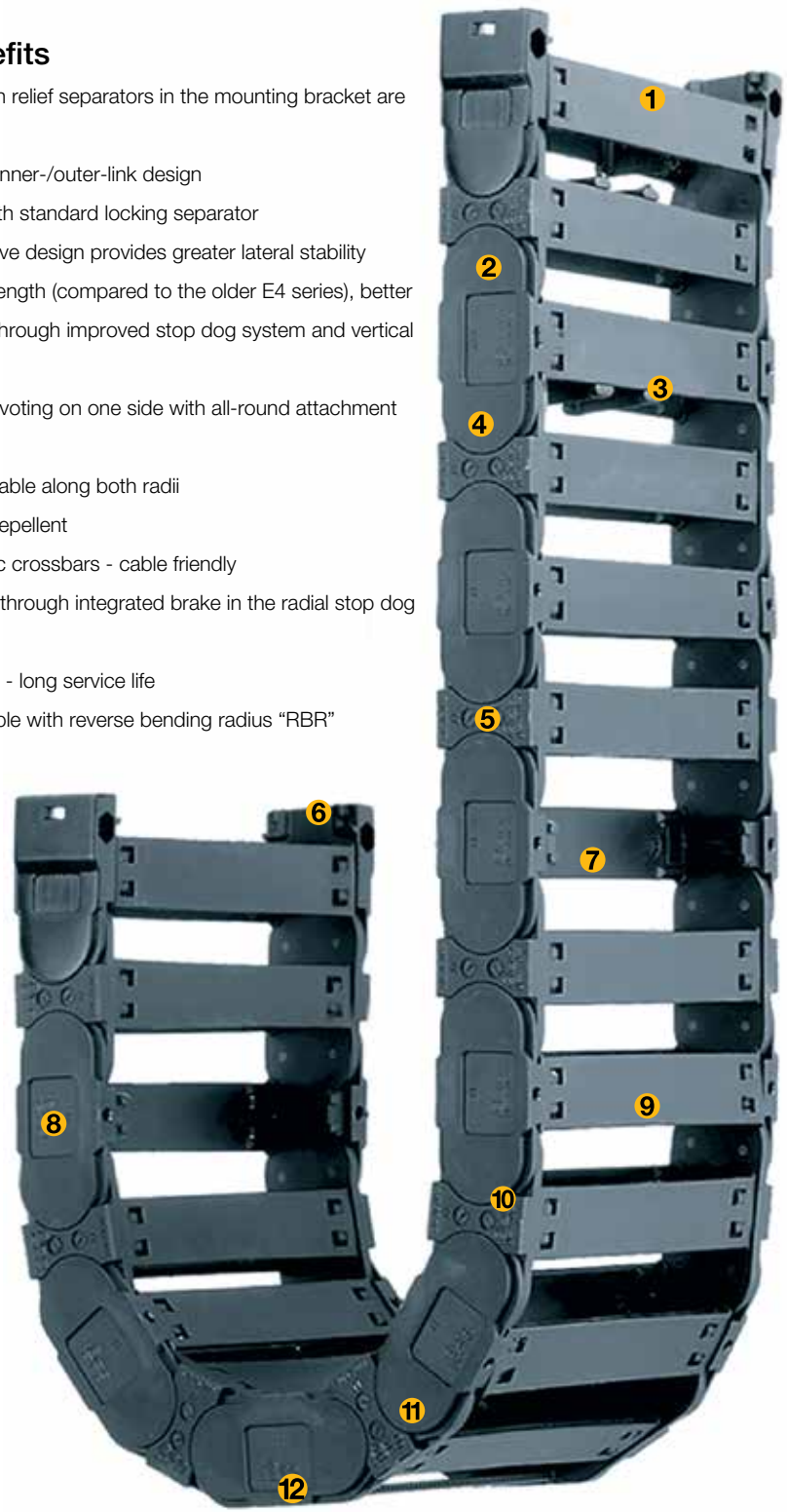
Usage Guidelines

- If quiet operation is required
- If very high speeds and/or accelerations are required
- Long travels
- High fill weights

- When an economic one-sided snap-open e-chain/tube is required
  ➤ **Series 1400/1500**
- When a one-sided snap-open e-tube is required at a low price
  ➤ **Series 1450/1480**

Features & Benefits

1. Strain relief with strain relief separators in the mounting bracket are available
2. Straight run through inner-/outer-link design
3. Interior separation with standard locking separator
4. The tongue and groove design provides greater lateral stability
5. 15% more tensile strength (compared to the older E4 series), better unsupported length through improved stop dog system and vertical radial stops
6. Mounting brackets pivoting on one side with all-round attachment option
7. Crossbars are removable along both radii
8. Smooth outline, dirt repellent
9. Wide, rounded plastic crossbars - cable friendly
10. Low-noise operation through integrated brake in the radial stop dog system
11. Optimized glide pads - long service life
12. e-chains® also available with reverse bending radius “RBR”



Order Example: Complete e-chain®

Please indicate chain length or number of links. Example:

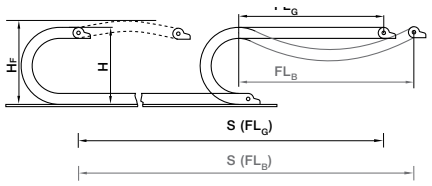
6.56 ft (2 m) **E4-21-120-100-0**	**e-chain®**
With 2 separators **T2112** assembled every 2nd link	**Interior Separation**
1 Set **E4-210-120-12**	**Mounting Bracket**

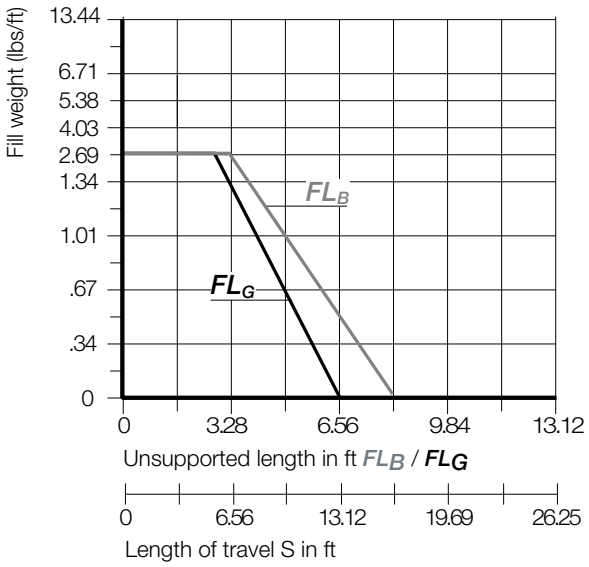
e-chain system® E4-1
Series E4-21
Installation Dimensions

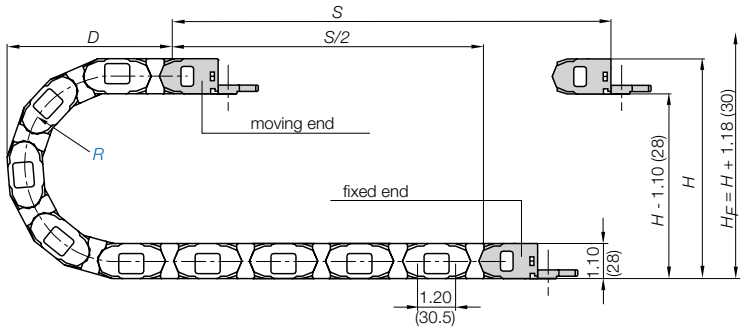
Short travel, unsupported length

- FL_B = unsupported with permitted sag
- FL_G = unsupported with straight upper run

Further information ➤ Design, Chapter 1







Pitch per link: = 1.20" (30.5 mm)
Links per ft (m): = 10.06 (33)
For center mount applications:
Chain length = $S/2 + K$

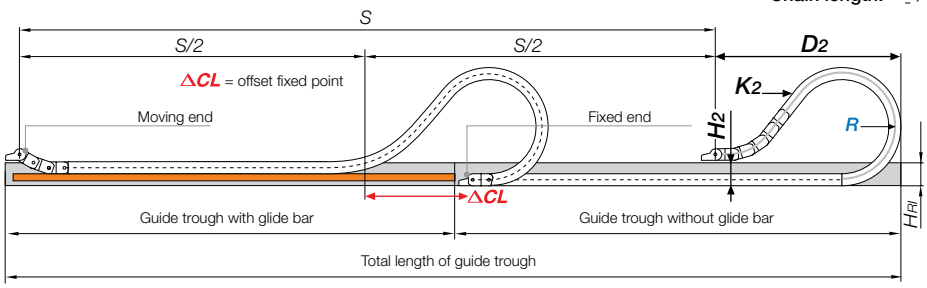
The required clearance height: $H_F = H$ **+ 1.18 in. (30 mm)** (with 1.01 lbs/ft (1.5 kg/m) fill weight. Please consult igus® if space is particularly restricted.

R	1.50 (038)	1.89 (048)	2.48 (063)	2.95 (075)	3.94 (100)	5.91 (150)	7.87 (200)
H	4.09 (104)	4.88 (124)	6.06 (154)	7.01 (178)	8.98 (228)	12.91 (328)	16.85 (428)
D	3.86 (98)	4.25 (108)	4.84 (123)	5.31 (135)	6.30 (160)	8.27 (210)	10.24 (260)
K	7.28 (185)	8.46 (215)	10.24 (260)	11.81 (300)	14.96 (380)	21.06 (535)	27.17 (690)

For long travels with lowered mounting height

Long travel lengths from 32.8 ft. (10m) to max. 394 ft. (120m)

For center mount applications:
Chain length: = $S/2 + K_2$



R	1.50 (038)	1.89 (048)	2.48 (063)	2.95 (075)	3.94 (100)	5.91 (150)	7.87 (200)
H2	-	-	-	-	5.31 (135)	5.31 (135)	5.31 (135)
D2+25	-	-	-	-	19.29 (490)	20.87 (530)	26.18 (665)
K2	-	-	-	-	30.79 (782)	36.22 (920)	43.46 (1104)
ΔCL	-	-	-	-	10.63 (270)	14.57 (370)	18.50 (470)

In case of travels between 13 and 32.8 ft (4 and 10 m) we recommend a longer unsupported length.

Speed / acceleration FL_G	max. 65.6 ft/s (20 m/s) / max. 656 ft/s² (200 m/s²)
Speed / acceleration FL_B	max. 9.84 ft/s (3 m/s) / max. 19.69 ft/s² (6 m/s²)
Gliding speed / acceleration (maximum)	max. 32.8 ft/s (10 m/s) / max. 164 ft/s² (50 m/s²)
Material - permitted temperature	igumid G / -40°F (-40°C) up to +248°F (+120° C)
Flammability Class, igumid G	VDE 0304 IIC UL94 HB

Short Travels - Unsupported

Unsupported e-chains® feature positive camber over short travels. This must be accounted for when specifying the clearance height. Please refer to **Installation dimensions** for further details.

Legend

S = Length of travel
R = Bending radius
H = Nominal clearance height
D = Overlength e-chain® radius in final position
K = $\pi \bullet R$ + *safety buffer*
H_F = Required clearance height
H_{RI} = Trough inner height
H_2 = *Mounting height
D_2 = Overlength - long travels, gliding
K_2 = *Add-on

*If the mounting bracket location is set lower

Long Travels - Gliding

If the unsupported length is exceeded, the e-chain®/Tube must glide on itself. This requires a guide trough.
Design, Chapter 1 main catalog

For support of the lower run, **see Chapter 9** of the main catalog for the **Support Tray tool kit**

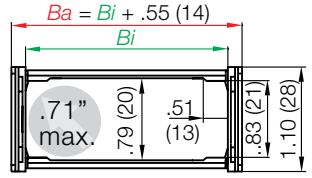
Technical Data

Details of material properties
➤ **Chapter 1**

PDF: igus.com/e-chain-pdfs
Product information: igus.com/e-chains

e-chain system® E4-1
Series E4-21
Product Range

Series E4-21 - e-chain® with crossbars every link

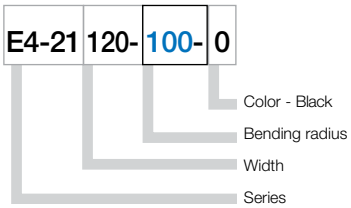




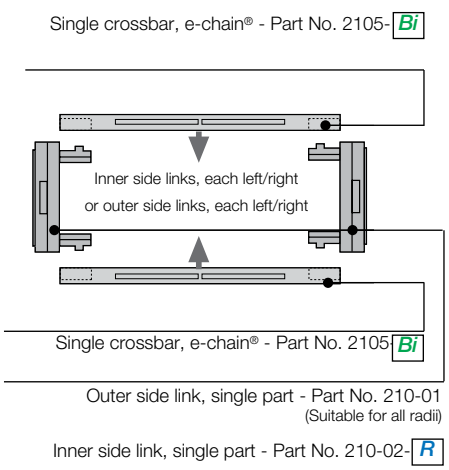


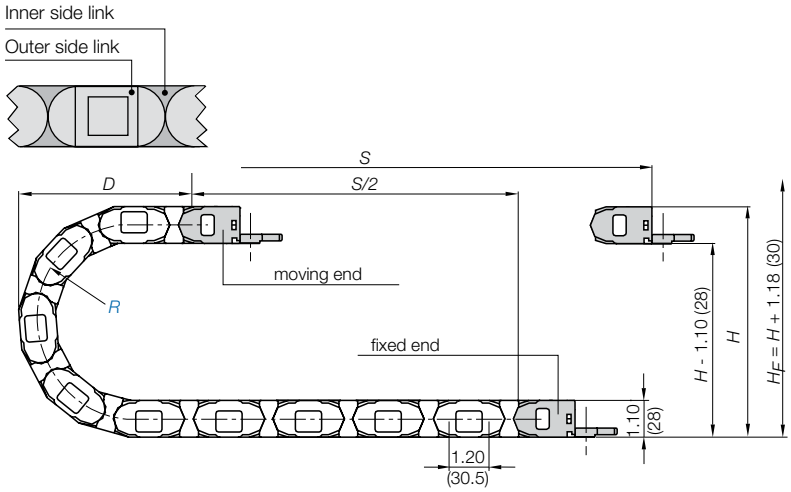
- Crossbars every link
- Removable crossbars
- Separator for locking crossbar (fixable) Standard
- Can be opened from both sides

Part Number Structure



e-chain® as separate parts, links and side plates





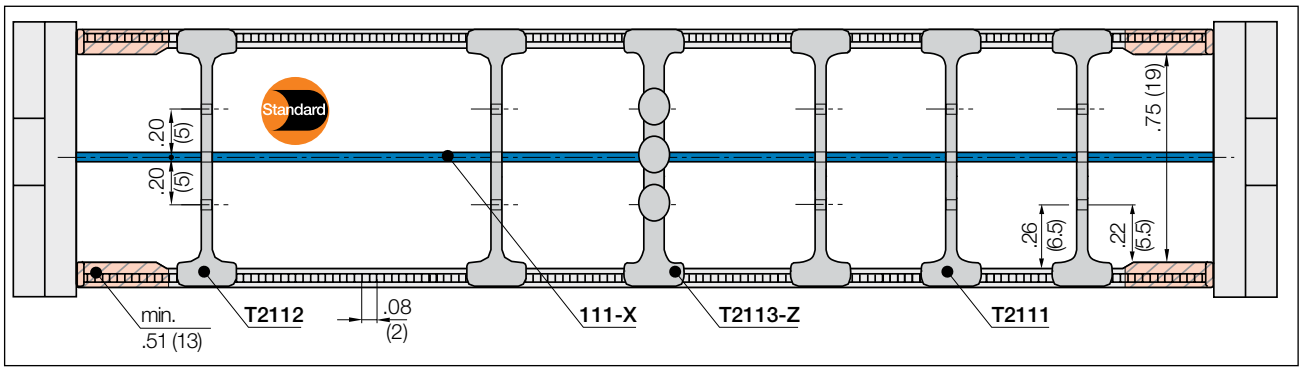
Supplement part number with required radius. Example: E4-21-120-100-0
Pitch: 1.20 in. (30.5 mm) per link links/ft(m) = 10.06 (33)

Part Number. Snap-open inner radius	Bi in. (mm)	Ba in. (mm)	Weight lbs/ft (kg/m)
E4-21-030-□-0	1.18 (30)	1.73 (44)	≈ 0.40 (0.60)
E4-21-040-□-0	1.57 (40)	2.13 (54)	≈ 0.43 (0.64)
E4-21-050-□-0	1.97 (50)	2.52 (64)	≈ 0.45 (0.67)
E4-21-060-□-0	2.36 (60)	2.91 (74)	≈ 0.48 (0.71)
E4-21-070-□-0	2.76 (70)	3.31 (84)	≈ 0.50 (0.74)
E4-21-080-□-0	3.15 (80)	3.70 (94)	≈ 0.52 (0.78)
E4-21-090-□-0	3.54 (90)	4.09 (104)	≈ 0.55 (0.82)
E4-21-100-□-0	3.94 (100)	4.49 (114)	≈ 0.57 (0.85)
E4-21-110-□-0	4.33 (110)	4.88 (124)	≈ 0.60 (0.89)
E4-21-120-□-0	4.72 (120)	5.28 (134)	≈ 0.62 (0.92)
E4-21-140-□-0	5.51 (140)	6.06 (154)	≈ 0.67 (0.99)

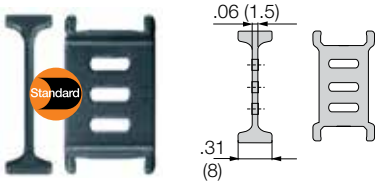
Choose from the radii below for all of the above sizes
Radius (mm) Example: E4-21-120-100-0

	038	048	063	075	100	150	200
R	1.50 (038)	1.89 (048)	2.48 (063)	2.95 (075)	3.94 (100)	5.91 (150)	7.87 (200)
H	4.09 (104)	4.88 (124)	6.06 (154)	7.01 (178)	8.98 (228)	12.91 (328)	16.85 (428)
D	3.86 (98)	4.25 (108)	4.84 (123)	5.31 (135)	6.30 (160)	8.27 (210)	10.24 (260)
K	7.28 (185)	8.46 (215)	10.24 (260)	11.81 (300)	14.96 (380)	21.06 (535)	27.17 (690)

igus® e-chain system®
Telephone 1-800-521-2747
Internet: igus.com
email: sales@igus.com
QuickSpec: igus.com/quickspec



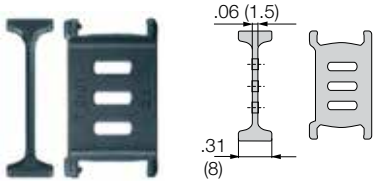
Note: Please maintain a lateral spacing of .51" (13 mm) between the separators and the side links. In the standard configuration separators are assembled every 2nd e-chain® link



Separator, wide base

Unassembled	**Part No. T2102**
Assembled	**Part No. T2112**

- **Standard separator T2102**
  is used when vertical separation is required. Due to its slot, it allows basic vertical/horizontal shelving arrangements.

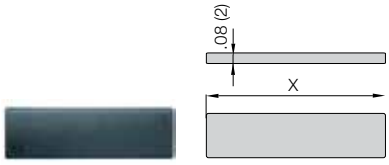


Separator, narrow head

Unassembled	**Part No. T2101**
Assembled	**Part No. T2111**

- **Notch separator T2101**
  Can be locked in .08 (2mm) increments due to notches on the crossbars of the e-chain®. The separator cannot slide sideways during operation.

Full-width shelves - for the standard interior separation



Full width shelf

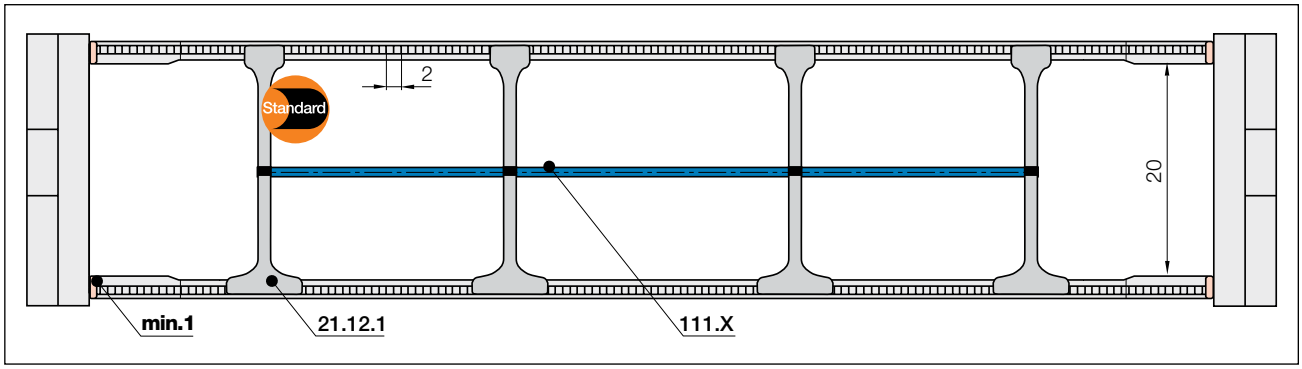
Unassembled	**Part No. 110-X**
Assembled	**Part No. 111-X**

- **Full width shelf 110-X**
  is used in applications with many thin cables with similar diameters. Full width shelves can be arranged at 3 different heights in .20" (5 mm) increments.

Width X in. (mm)	Part No. Unassembled	Part No. Assembled	Width X in. (mm)	Part No. Unassembled	Part No. Assembled	Width X in. (mm)	Part No. Unassembled	Part No. Assembled
1.18 (30)	**110-30**	**111-30**	2.76 (70)	**110-70**	**111-70**	4.33 (110)	**110-110**	**111-110**
1.57 (40)	**110-40**	**111-40**	3.15 (80)	**110-80**	**111-80**	4.72 (120)	**110-120**	**111-120**
1.97 (50)	**110-50**	**111-50**	3.54 (90)	**110-90**	**111-90**			
2.36 (60)	**110-60**	**111-60**	3.94 (100)	**110-100**	**111-100**			

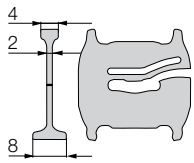
PDF: igus.com/e-chain-pdfs
Product information: igus.com/e-chains

e-chain system® E4-1
Series E4-21
Interior Separation



Note: Please maintain a lateral spacing of .51" (13 mm) between the separators and the side links. In the standard configuration separators are assembled every 2nd e-chain® link





Lean Separator

Unassembled	**Part No. 21-12**
Assembled	**Part No. 21-12-1**

- **Lean separators 31-12**
  New design allows extremely fast fitting of shelves in several layers, which significantly reduces assembly time. Enables extremely fast replacement of individual cables in a very full e-chain®.



- **Lean separator design - several layers of cables fitted quickly, save up to 50%* assembly time**
  (*Lean separator vs. standard separator - measured on a 4m long e-chain® fitted with 12 cables in the igus® harnessing factory)

Separator with integrated strain relief teeth

- Can be integrated into the mounting bracket or placed at any point in the e-chain®
- Combines strain relief and interior separation, for restricted space conditions
- Strain relief separator is easy to assemble without any screws

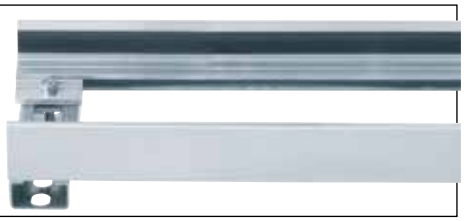
Part No. T2103.Z. More information ➤ Chapter 10



Aluminum support tray

- Corrosion-resistant and seawater-resistant aluminium rails with adjustable width
- Noise-reducing glide strip integrated as standard
- Easy installation and connection of the e-chain®
- Open design - dirt and debris fall through

More information ➤ Chapter 9



Reduce assembly time - E4 e-chain® opener

- e-chain® opener tools for easy opening and closing of e-chains®
- Simple opening and closing of e-chain® crossbars
- Also for use in hard to reach locations
- Significant assembly time reduction

More information ➤ www.igus.com/E4savetime



e-chain system® E4-1
Series E4-21
Mounting Brackets - Polymer

Telephone 1-800-521-2747

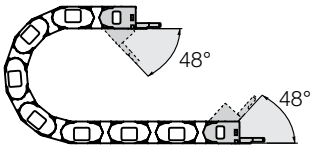
Internet: igus.com
email: sales@igus.com
QuickSpec: igus.com/quickspec

Standard

Option: pivoting

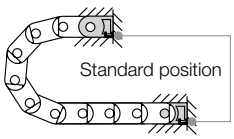
- Recommended for unsupported and gliding applications
- KMA mounting bracket with attachment points on all sides
- Well suited for tight installation conditions
- Integrated strain relief possible

Moving end
E4-210...-2

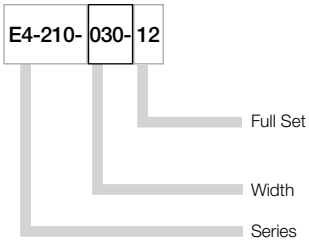


Fixed end
E4-210...-1





Part Number Structure



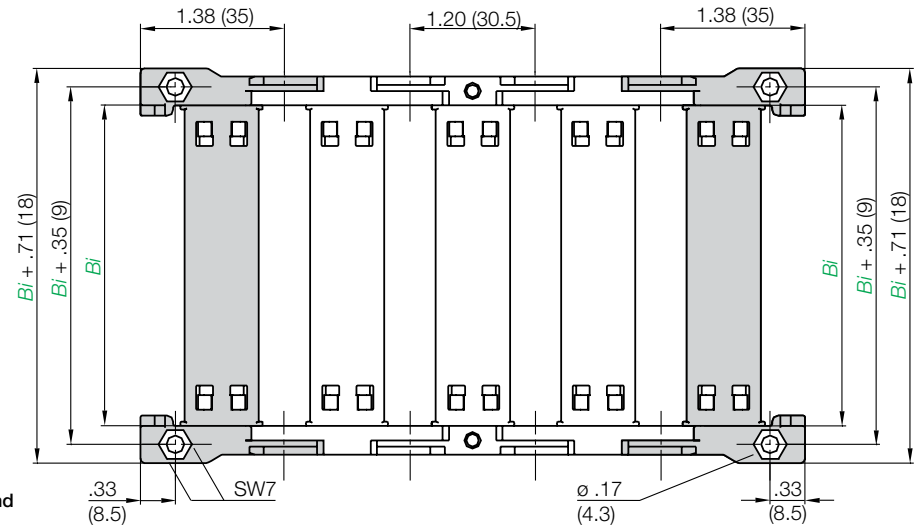
Full set, for both ends:

E4-210- 030- 12

Single-part order:

E4-210- 030- 1 Mounting bracket **moving end**

E4-210- 030- 2 Mounting bracket **fixed end**



Width	Part No. Full Set	Bi in.	Bi (mm)	Width	Part No. Full Set	Bi in.	Bi (mm)
-030	**E4-210-030-12**	1.18	(30)	-090	**E4-210-090-12**	3.54	(90)
-040	**E4-210-040-12**	1.57	(40)	-100	**E4-210-100-12**	3.94	(100)
-050	**E4-210-050-12**	1.97	(50)	-110	**E4-210-110-12**	4.33	(110)
-060	**E4-210-060-12**	2.36	(60)	-120	**E4-210-120-12**	4.72	(120)
-070	**E4-210-070-12**	2.75	(70)	-140	**E4-210-140-12**	5.51	(140)
-080	**E4-210-080-12**	3.15	(80)				



Special feature mounting brackets KMA: Series E4-21

- Mounting brackets with attachment points on all sides
- Mounting hole is countersunk for socket head screw (M4) and hexagon nut (M4)
- **Attention:** Series E4-21 always needs to end with an inner link (odd number of links)





e-chain system® E4-1
Series E4-28/R4-28

1.10 1.10

Price Index

Series E4-28 Series R4-28

Special Options Available

Low noise version available with special rubber pads

Clean-Room Cleanroom test upon request

EX ESD classification: Electrically conductive ESD/ ATEX version upon request

Assembly Tips



Opening e-chains®: Remove crossbars and clips - Insert screwdriver into the slot, push down, release by lever action



Remove lids/bottoms (e-tubes) - Insert screwdriver into the slot, release by lever action

Other Installation Methods

Vertical, hanging ≤ 262 ft (80 m)
Vertical, standing ≤ 16.4 ft (5 m)
Side-mounted, unsupp. ≤ 3.94 ft (1.2 m)
Rotary requires further calculation

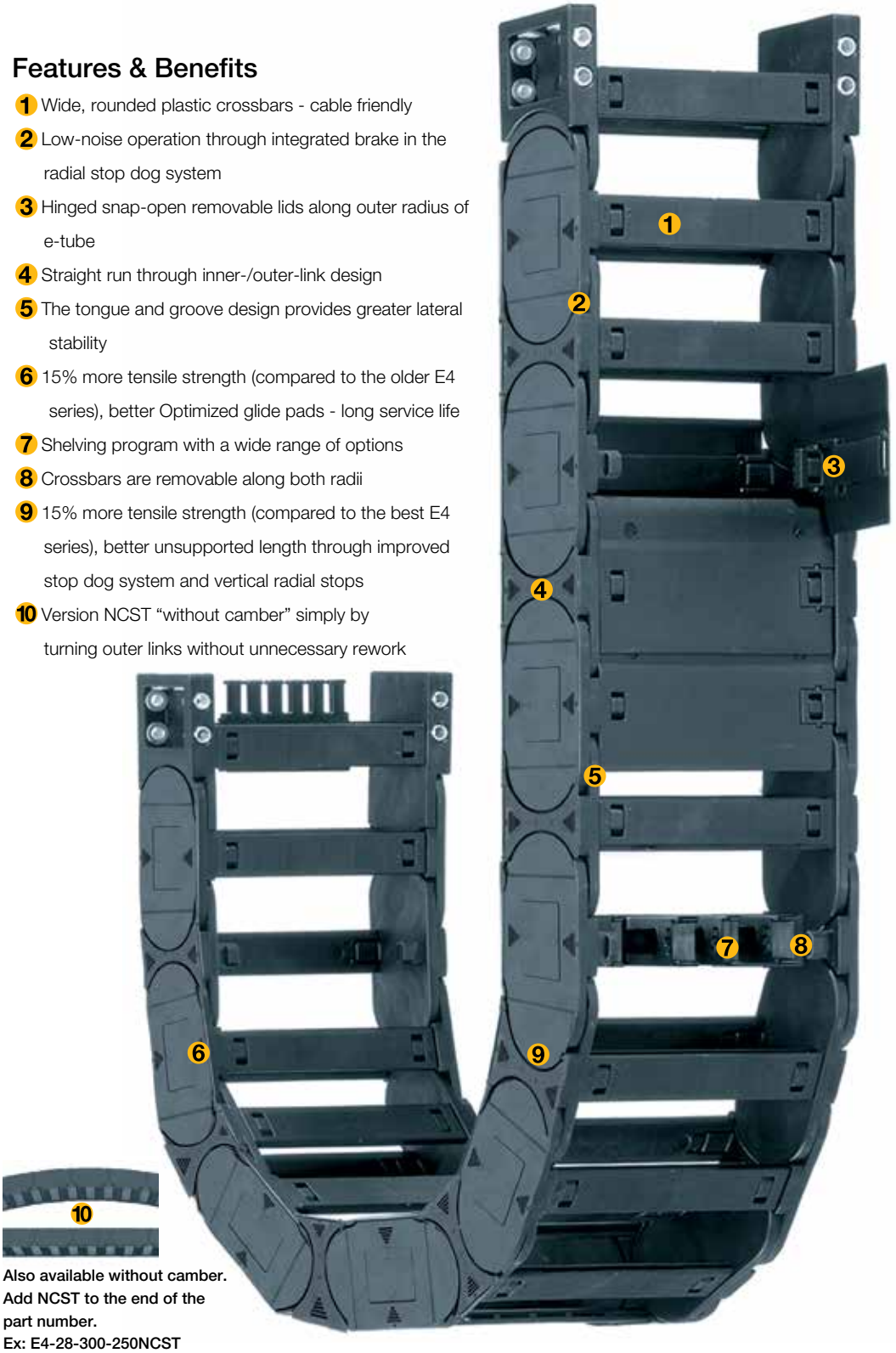
Usage Guidelines

- If quiet operation is required
- If very high speeds and/or accelerations are required
- Long travels
- High fill weights

- When an extremely low vibration e-chain®/e-tube is required
  ➤ **Series E6-29**
  ➤ **Series R6-29**
- When an economic one-sided snap-open e-chain®/e-tube is required
  ➤ **Series 2400/2450/2480/2500**

Features & Benefits

1. Wide, rounded plastic crossbars - cable friendly
2. Low-noise operation through integrated brake in the radial stop dog system
3. Hinged snap-open removable lids along outer radius of e-tube
4. Straight run through inner-/outer-link design
5. The tongue and groove design provides greater lateral stability
6. 15% more tensile strength (compared to the older E4 series), better Optimized glide pads - long service life
7. Shelving program with a wide range of options
8. Crossbars are removable along both radii
9. 15% more tensile strength (compared to the best E4 series), better unsupported length through improved stop dog system and vertical radial stops
10. Version NCST “without camber” simply by turning outer links without unnecessary rework



Also available without camber. Add NCST to the end of the part number. Ex: E4-28-300-250NCST

Order Example: Complete e-chain®

Please indicate chain length or number of links. Example:

9.84 ft (3 m) **E4-28-300-250-0**	**e-chain®**
With 2 separators **2211** assembled every 2nd link	**Interior Separation**
1 Set **E4-280-300-12**	**Mounting Bracket**

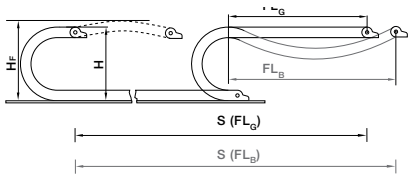
e-chain system® E4-1
Series E4-28/R4-28
Installation Dimensions

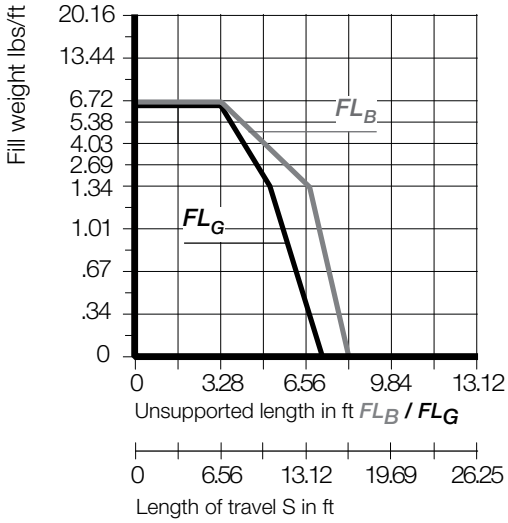
Short travel, unsupported length

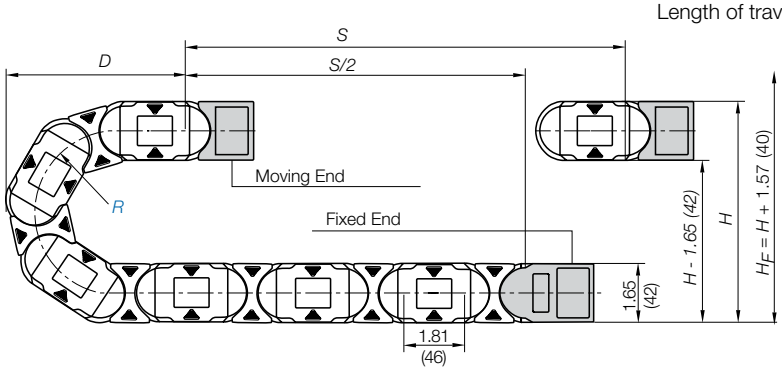
● FL_B = unsupported with permitted sag

● FL_G = unsupported with straight upper run

Further information ➤ Design, Chapter 1







Pitch per link: = 1.81" (46 mm)
Links per ft (m): = 6.71 (22)
For center mount applications:
Chain length = $S/2 + K$

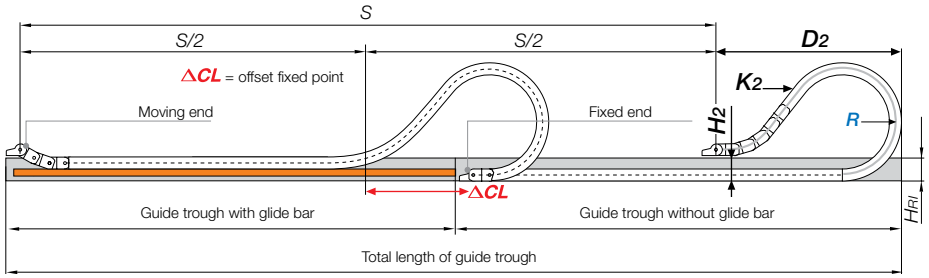
The required clearance height: $H_F = H +$ (with .67 lbs/ft (1.0 kg/m) fill weight.
Please consult igus® if space is particularly restricted.

R	2.17 (055)	2.48 (063)	2.95 (075)	3.94 (100)	4.92 (125)	5.91 (150)	6.89 (175)	7.87 (200)	9.84 (250)
H	5.98 (152)	6.61 (168)	7.56 (192)	9.53 (242)	11.50 (292)	13.46 (342)	15.43 (392)	17.40 (442)	21.34 (542)
D	5.71 (145)	6.02 (153)	6.50 (165)	7.48 (190)	8.46 (215)	9.45 (240)	10.43 (265)	11.42 (290)	13.39 (340)
K	10.43 (265)	11.42 (290)	12.99 (330)	16.14 (410)	19.09 (485)	22.24 (565)	25.39 (645)	28.54 (725)	34.65 (880)

For long travels with lowered mounting height

Long travel lengths from 32.8 ft.(10m) to max. 656 ft. (200m)

For center mount applications:
Chain length: = $S/2 + K_2$



R	2.17 (055)	2.48 (063)	2.95 (075)	3.94 (100)	4.92 (125)	5.91 (150)	6.89 (175)	7.87 (200)	9.84 (250)
H2	-	-	-	6.22 (158)	6.22 (158)	6.22 (158)	6.22 (158)	6.22 (158)	6.22 (158)
D2	-	-	-	13.78 (350)	19.29 (490)	20.87 (530)	26.18 (665)	28.74 (730)	36.81 (935)
K2	-	-	-	23.54 (598)	30.79 (782)	36.22 (920)	43.46 (1104)	48.89 (1242)	63.39 (1610)
ΔCL	-	-	-	5.91 (150)	10.63 (270)	11.81 (300)	15.75 (400)	17.72 (450)	23.62 (600)

In case of travels between 13 and 32.8 ft (4 and 10 m) we recommend a longer unsupported length.

Speed / acceleration FL_G	max. 65.6 ft/s (20 m/s) / max. 656 ft/s² (200 m/s²)
Speed / acceleration FL_B	max. 9.84 ft/s (3 m/s) / max. 19.69 ft/s² (6 m/s²)
Gliding speed / acceleration (maximum)	max. 32.8 ft/s (10 m/s) / max. 164 ft/s² (50 m/s²)
Material - permitted temperature	igumid G / -40°F (-40°C) up to +248°F (+120° C)
Flammability Class, igumid G	VDE 0304 IIC UL94 HB

Short Travels - Unsupported

Unsupported e-chains® feature positive camber over short travels. This must be accounted for when specifying the clearance height. Please refer to **Installation dimensions** for further details.

Legend

S = Length of travel
R = Bending radius
H = Nominal clearance height
D = Overlength e-chain® radius in final position
K = $\pi \bullet R$ + *safety buffer*
H_F = Required clearance height
H_{RI} = Trough inner height
H_2 = *Mounting height
D_2 = Overlength - long travels, gliding
K_2 = *Add-on

*If the mounting bracket location is set lower

Long Travels - Gliding

If the unsupported length is exceeded, the e-chain®/Tube must glide on itself. This requires a guide trough.
Design, Chapter 1

For support of the lower run, **see Chapter 9** of the main catalog for the **Support Tray tool kit**

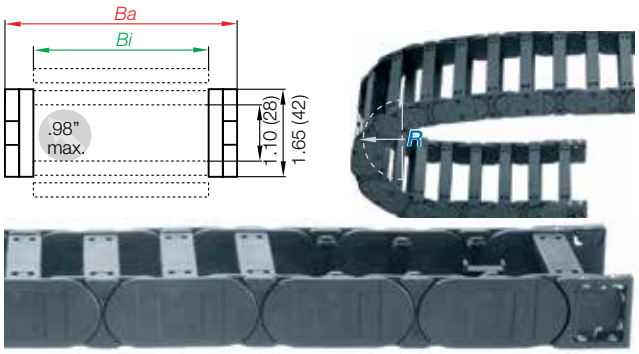
Technical Data

Details of material properties
➤ Chapter 1

PDF: igus.com/e-chain-pdfs
Product information: igus.com/e-chains

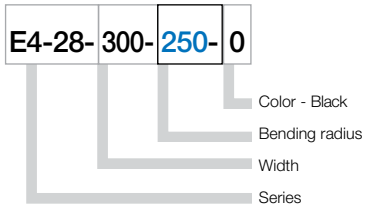
e-chain system® E4-1
Series E4-28/R4-28
Product Range

Series E4-28 - e-chain® with crossbars every link

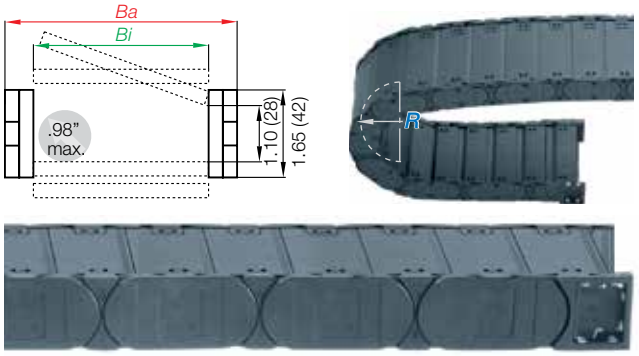


- Robust solution with cross-bars every link
- Can be opened from two sides
- Removable crossbars

Part Number Structure

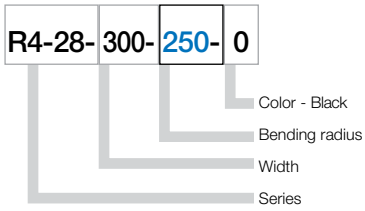


Series R4-28 - fully enclosed e-tube

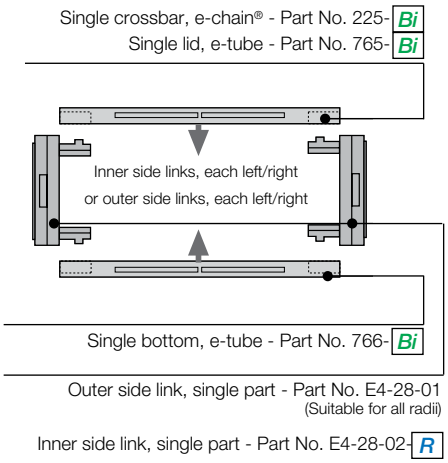


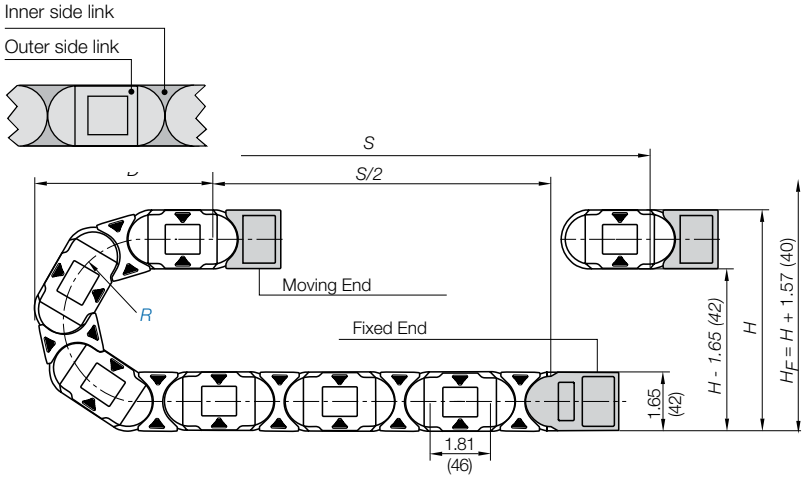
- Fully enclosed
- Excellent cable and hose protection against dirt
- Protection against hot chips
- Lids along inner radius are completely removable
- Lids along the outer radius are single-sided, snap open, hinged on one side as well as completely removable

Part Number Structure



e-chain® as separate parts, links and side plates





e-chain system® E4-1
Series E4-28/R4-28
Product Range

Supplement part number with required radius. Example: E4-28-300-250-0
Pitch: 1.81 in. (46mm) per link links/ft (m) = 6.71 (22)

Part Number. Crossbars Every link	Tube Version			*Bi* in. (mm)	*Ba* in. (mm)	E4-28 lbs/ft (kg/m)	R4-28 lbs/ft (kg/m)
E4-28-040-		☐	-0	1.57 (40)	2.36 (60)	≈ 0.71 (1.06)	–
E4-28-050-	R4-28-050-	☐	-0	1.97 (50)	2.76 (70)	≈ 0.75 (1.11)	≈ 1.48 (2.20)
E4-28-052		☐	-0	2.05 (52)	2.83 (72)	≈ 0.76 (1.13)	–
E4-28-062-		☐	-0	2.44 (62)	3.23 (82)	≈ 0.79 (1.17)	–
E4-28-070-		☐	-0	2.76 (70)	3.54 (90)	≈ 0.81 (1.20)	–
E4-28-075-	R4-28-075	☐	-0	2.95 (75)	3.74 (95)	≈ 0.83 (1.23)	≈ 1.56 (2.32)
E4-28-087-		☐	-0	3.43 (87)	4.21 (107)	≈ 0.86 (1.28)	–
E4-28-100-	R4-28-100-	☐	-0	3.94 (100)	4.72 (120)	≈ 0.92 (1.37)	≈ 1.71 (2.54)
E4-28-125-	R4-28-125-	☐	-0	4.92 (125)	5.71 (145)	≈ 1.01 (1.51)	≈ 1.87 (2.78)
E4-28-150-	R4-28-150-	☐	-0	5.91 (150)	6.69 (170)	≈ 1.08 (1.61)	≈ 2.03 (3.02)
E4-28-175-	R4-28-175-	☐	-0	6.89 (175)	7.68 (195)	≈ 1.15 (1.71)	≈ 2.19 (3.26)
E4-28-200-	R4-28-200-	☐	-0	7.87 (200)	8.66 (220)	≈ 1.24 (1.84)	≈ 2.35 (3.50)
E4-28-225-	R4-28-225-	☐	-0	8.86 (225)	9.65 (245)	≈ 1.34 (1.99)	≈ 2.57 (3.82)
E4-28-250-	R4-28-250-	☐	-0	9.84 (250)	10.63 (270)	≈ 1.44 (2.14)	≈ 2.67 (3.98)
E4-28-275-		☐	-0	10.83 (275)	11.61 (295)	≈ 1.53 (2.27)	–
E4-28-300-	R4-28-300-	☐	-0	11.81 (300)	12.60 (320)	≈ 1.61 (2.39)	≈ 3.00 (4.46)

Choose from the radii below for all of the above sizes
Radius (mm) Example: E4-28-300-250-0

	055*	063*	075	100	125	150	175	200	250
R	2.17 (055*)	2.48 (063*)	2.95 (075)	3.94 (100)	4.92 (125)	5.91 (150)	6.89 (175)	7.87 (200)	9.84 (250)
H	5.98 (152)	6.61 (168)	7.56 (192)	9.53 (242)	11.50 (292)	13.46 (342)	15.43 (392)	17.40 (442)	21.34 (542)
D	5.71 (145)	6.02 (153)	6.50 (165)	7.48 (190)	8.46 (215)	9.45 (240)	10.43 (265)	11.42 (290)	13.39 (340)
K	10.43 (265)	11.42 (290)	12.99 (330)	16.14 (410)	19.09 (485)	22.24 (565)	25.39 (645)	28.54 (725)	34.65 (880)

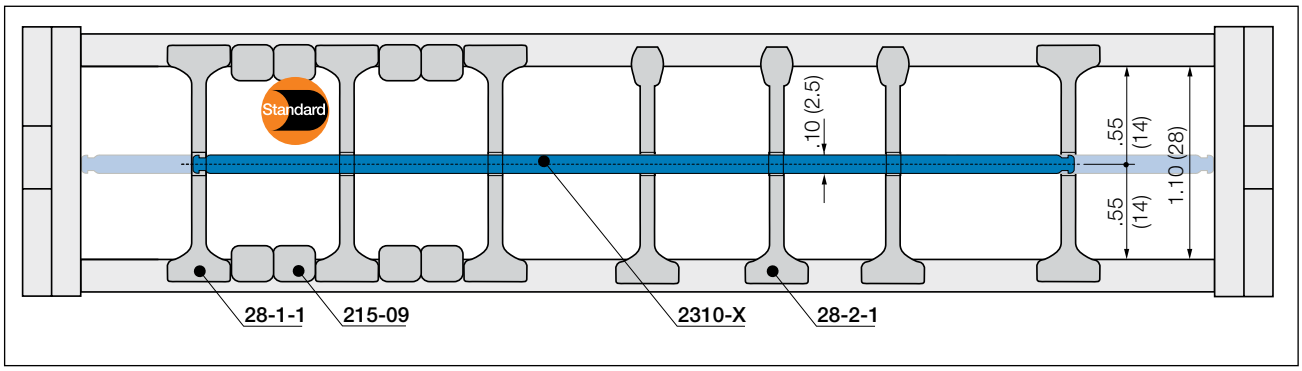
* This radius is not available for the R4-28 Series
0 = Standard color black.
For other colors see Chapter 1

PDF: igus.com/e-chain-pdfs
Product information: igus.com/e-chains

e-chain system® E4-1
Series E4-28
Interior Separation - Only for e-chains® - New Generation

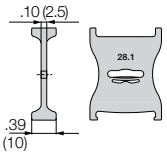
Telephone 1-800-521-2747

Internet: igus.com
email: sales@igus.com
QuickSpec: igus.com/quickspec



In the standard configuration separators are assembled every 2nd e-chain® link



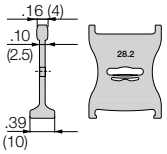


Separator, wide base

Unassembled	**Part No. 28-1**
Assembled	**Part No. 28-1-1**

- **Standard separator 28-1 for all applications**
  Separator with wide base for maximum locking strength and safe standing in e-chains®.



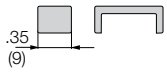


Separator, narrow head

Unassembled	**Part No. 28-2**
Assembled	**Part No. 28-2-1**

- **Separator 28-2**
  For even faster installation
  is used when vertical and horizontal separation is required. Due to its slot, it allows basic vertical/ horizontal shelving arrangements.





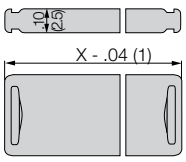
Spacer for e-chains®

Unassembled	**Part No. 205-09**
Assembled	**Part No. 215-09**

- **Spacer 205-09**
  Separators can be fixed in position by spacers. The available interior height is reduced by .08 (2 mm) per spacer (.16 (4 mm) when spacers are fitted on both sides. To avoid this, the parts can also be installed from the outside on the opening crossbar. (Not for long travel applications.)

Lockable full-width shelves - for the standard interior separation





Full width shelf, lockable

Unassembled	**Part No. 2300-X**
Assembled	**Part No. 2310-X**

- **Full width shelf, lockable**
  is used when vertical and horizontal separation is required. Due to its slot, it allows basic vertical/ horizontal shelving arrangements.

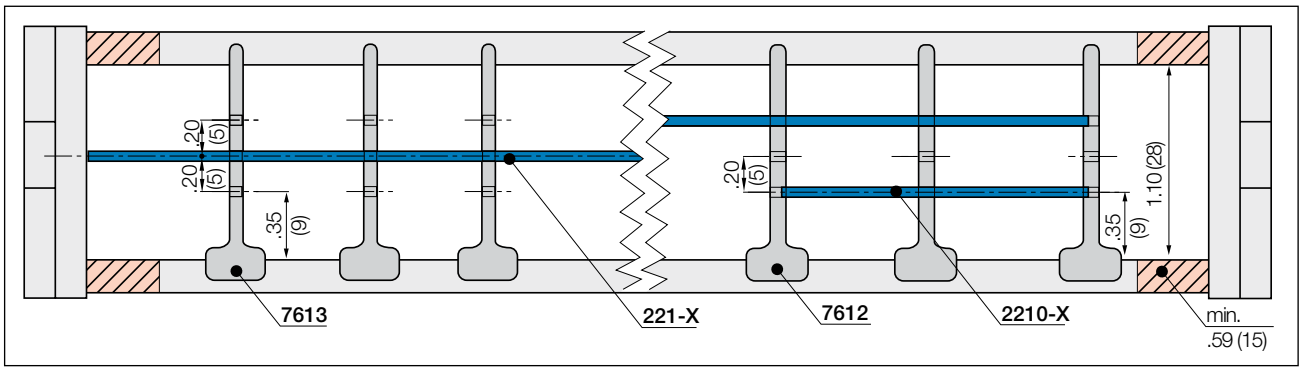
Width X in. (mm)	Part No. Unassembled	Part No. Assembled	Width X in. (mm)	Part No. Unassembled	Part No. Assembled	Width X in. (mm)	Part No. Unassembled	Part No. Assembled
015	**2300-15**	**2310-15**	060	**2300-60**	**2310-60**	087	**2300-87**	**2310-87**
025	**2300-25**	**2310-25**	062	**2300-62**	**2310-62**	090	**2300-90**	**2310-90**
030	**2300-30**	**2310-30**	065	**2300-65**	**2310-65**	100	**2300-100**	**2310-100**
038	**2300-38**	**2310-38**	070	**2300-70**	**2310-70**	103	**2300-103**	**2310-103**
040	**2300-40**	**2310-40**	075	**2300-75**	**2310-75**	110	**2300-110**	**2310-110**
050	**2300-50**	**2310-50**	077	**2300-77**	**2310-77**	120	**2300-120**	**2310-120**
057	**2300-57**	**2310-57**	080	**2300-80**	**2310-80**	125	**2300-125**	**2310-125**

Separator with integrated strain relief teeth

- Can be integrated into the mounting bracket or placed at any point in the e-chain®
- Combines strain relief and interior separation, for restricted space conditions
- Strain relief separator is easy to assemble without any screws

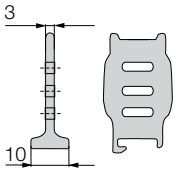
Part No. T2103.Z. More information ➤ Chapter 10





Note e-tube: Please maintain a lateral spacing of .59" (15 mm) between the separators and the side links. In the standard configuration separators are assembled every 2nd e-chain® link





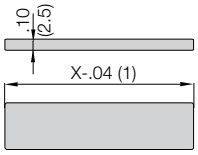
Separator, e-tubes only

Unassembled	**Part No. 7603**
Assembled	**Part No. 7613**

- **Slotted separator for full-width shelves**
  is used when vertical separation is required. Due to its slot, it allows basic vertical/horizontal shelving arrangements.

Full-width shelves - for the standard interior separation





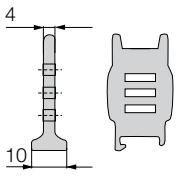
Full width shelf

Unassembled	**Part No. 220-X**
Assembled	**Part No. 221-X**

- **Full width shelf 220-X**
  is used in applications with many thin cables with similar diameters. Full width shelves can be arranged at 3 different heights in .20" (5 mm) increments.

Width X in. (mm)	Part No. Unassembled	Part No. Assembled	Width X in. (mm)	Part No. Unassembled	Part No. Assembled	Width X in. (mm)	Part No. Unassembled	Part No. Assembled
1.57 (40)	**220-40**	**221-40**	2.95 (75)	**220-75**	**221-75**	5.91 (150)	**220-150**	**221-150**
1.97 (50)	**220-50**	**221-50**	3.43 (87)	**220-87**	**221-87**	6.89 (175)	**220-175**	**221-175**
2.44 (62)	**220-62**	**221-62**	3.94 (100)	**220-100**	**221-100**	7.87 (200)	**220-200**	**221-200**
2.76 (70)	**220-70**	**221-70**	1.92 (125)	**220-125**	**221-125**			





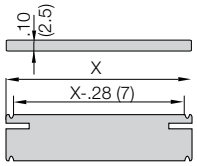
Slotted separator

Unassembled	**Part No. 7602**
Assembled	**Part No. 7612**

- **Slotted separator for partial shelves 7602**
  Can be locked in .08 (2mm) increments due to notches on the crossbars of the e-chain®. The separator cannot slide sideways during operation.

Shelves - for the standard interior separation





Shelf for e-tubes

Unassembled	**Part No. 2200-X**
Assembled	**Part No. 2210-X**

- **Shelves 2200-X**
  is used in applications with many cables with different diameters. Shelves can be fitted at different heights.

Width X	Part No. Unassembled	Part No. Assembled	Width X	Part No. Unassembled	Part No. Assembled	Width X	Part No. Unassembled	Part No. Assembled
018	**2200-18**	**2210-40**	043	**2200-43**	**2210-87**	088	**2200-88**	**2210-200**
023	**2200-23**	**2210-50**	048	**2200-48**	**221-100**	099	**2200-99**	**2210-200**
028	**2200-28**	**2210-62**	058	**2200-58**	**2210-125**	124	**2200-124**	**2210-200**
033	**2200-33**	**2210-70**	068	**2200-68**	**2210-150**	149	**2200-149**	**2210-200**
038	**2200-38**	**2210-75**	073	**2200-73**	**2210-175**			

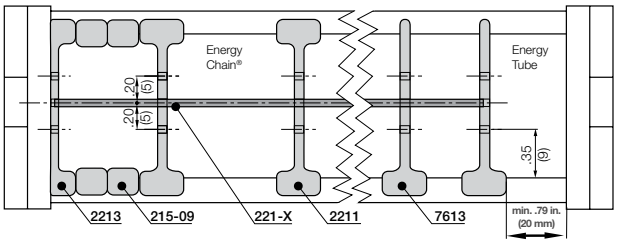
PDF: igus.com/e-chain-pdfs
Product information: igus.com/e-chains

e-chain system® E4-1
Series E4-28
Interior Separation - Previous Generation



Option 1: Vertical separators and spacers

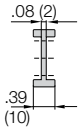
Vertical separators are used if a vertical subdivision of the e-chain® interior is required. By standard, vertical separators are assembled every other e-chain® link.
NOTE: Observe a lateral spacing of at least .79 in. (20mm) for e-tubes and



STANDARD



Vertical separator 2201

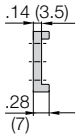


Vertical separator (Chain only)	
Unassembled	**Part No. 2201**
Assembled	**Part No. 2211**

- **Vertical separator 2201 for e-chains®**
  This separator is used for vertical subdivision. Because they are slotted, separators can also be used horizontally to form simple compartments.



Side plate 2203



Side plate (chain only)	
Unassembled	**Part No. 2203**
Assembled	**Part No. 2213**

- **Side plate 2203 for e-chains®**
  Used in conjunction with full-width shelf 220-X, this option is used for applications involving many thin cables with similar diameters.



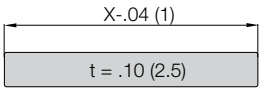
Spacers 205-09



Spacer (chain only)	
Unassembled	**Part No. 205-09**
Assembled	**Part No. 215-09**

- **NOTE ON SPACERS**
  Vertical separators are adjustable, but can be fixed in position by means of a spacer. Spacers are most often necessary for side mounted applications. The available inner height is reduced by .08" (2mm) **per spacer** (for example if one spacer is placed on either side of the separator, the overall inner height is reduced by .16" (4mm). To avoid this, place the spacers on the **outside** of the opening crossbar **(not for long travels)**.

Full-width shelf 220-XX





Width X in.	(mm)	Part No. Unassembled	Part No. Assembled
1.57	(040)	**220-40**	**221-40**
1.97	(050)	**220-50**	**221-50**
2.44	(062)	**220-62**	**221-62**
2.76	(070)	**220-70**	**221-70**
2.95	(075)	**220-75**	**221-75**
3.43	(087)	**220-87**	**221-87**

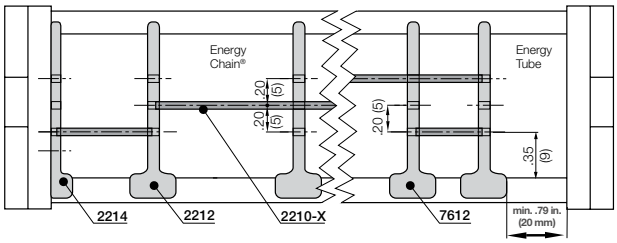
Width X in.	(mm)	Part No. Unassembled	Part No. Assembled
3.94	(100)	**220-100**	**221-100**
4.92	(125)	**220-125**	**221-125**
5.91	(150)	**220-150**	**221-150**
6.89	(175)	**220-175**	**221-175**
7.87	(200)	**220-200**	**221-200**



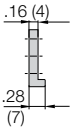
Option 2: Shelves

e-chains® and e-tubes can be subdivided both vertically and horizontally using the various interior separation elements.

➤ **Design, Chapter 1,** for layout recommendations.



- **Side plates 2204**
  This component is used to form the basic pattern of a shelf system.

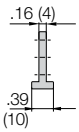


Side plate	
Unassembled	**Part No. 2204**
Assembled	**Part No. 2214**

Side plate 2204



- **Vertical separator 2202 for e-chain®**
  This component is used to form the basic pattern of a shelf system.



Vertical separator (chain only)	
Unassembled	**Part No. 2202**
Assembled	**Part No. 2212**

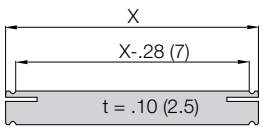
Vertical separator 2202



Shelves 420-XX

These components form the basic pattern of a shelf system. Shelves of various widths can be arranged at 3 different heights in .20" (5mm) increments

Width X in.	(mm)	Part No. Unassembled	Part No. Assembled	Width X in.	(mm)	Part No. Unassembled	Part No. Assembled
.71	(18)	**2200-18**	**2210-18**	2.28	(58)	**2200-58**	**2210-58**
.91	(23)	**2200-23**	**2210-23**	2.68	(68)	**2200-68**	**2210-68**
1.10	(28)	**2200-28**	**2210-28**	2.87	(73)	**2200-73**	**2210-73**
1.30	(33)	**2200-33**	**2210-33**	3.46	(88)	**2200-88**	**2210-88**
1.50	(38)	**2200-38**	**2210-38**	3.90	(99)	**2200-99**	**2210-99**
1.69	(43)	**2200-43**	**2210-43**	4.88	(124)	**2200-124**	**2210-124**
1.89	(48)	**2200-48**	**2210-48**	5.87	(149)	**2200-149**	**2210-149**





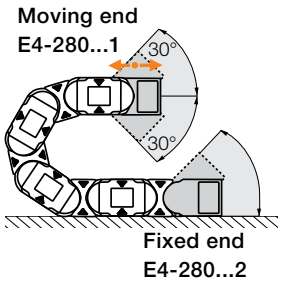
PDF: igus.com/e-chain-pdfs
Product information: igus.com/e-chains

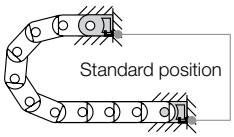
e-chain system® E4-1
Series E4-28
Mounting Bracket - KMA

Standard

Option 1: pivoting

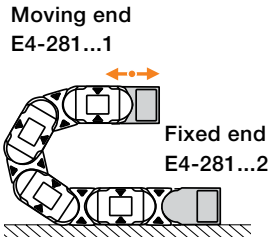
- Unsupported and gliding applications
- mounting capabilities on all sides
- Bolted connection outside of chain cross-section
- Space-restricted conditions
- corrosion-resistant

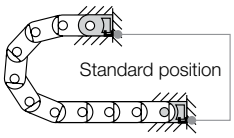




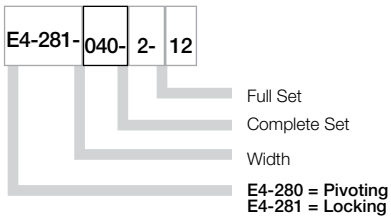
Option 2: locking

- Vertical hanging/standing applications
- For high accelerations
- Universally mountable
- Various mounting positions
- Corrosion-resistant



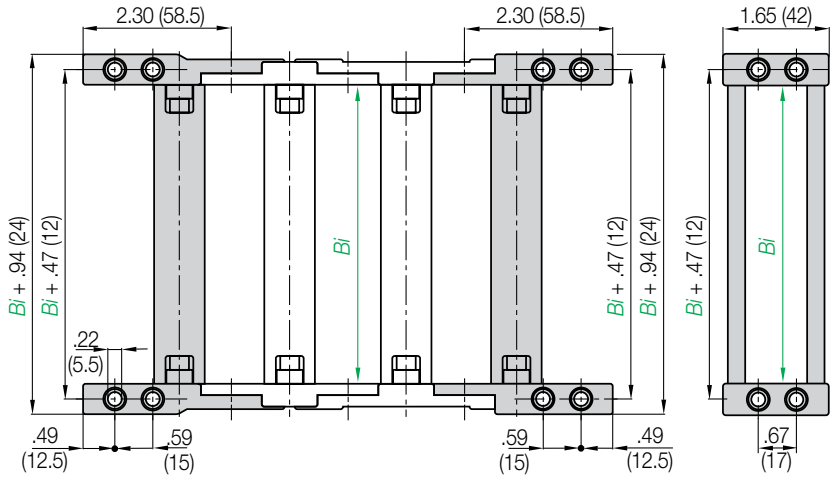


Part Number Structure



Full set, for both ends:
E4-280- 040- 12

Single-part order:
E4-280- 040- 1
Mounting bracket **moving end**
E4-280- 040- 2
Mounting bracket **fixed end**



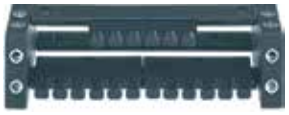
Part number example is shown for pivoting brackets.
For locking brackets change part number to E4-281

Part No. Full Set (pivoting)
Series E4-28
E4-28-Width-12

Width	Part No. Full Set			*Bi*
	Pivoting	Locking		in. (mm)
-040	E4-280	E4-281	-040-12	1.57 (40)
-050	E4-280	E4-281	-050-12	1.97 (50)
-052	E4-280	E4-281	-052-12	2.05 (52)
-062	E4-280	E4-281	-062-12	2.44 (62)
-070	E4-280	E4-281	-070-12	2.76 (70)
-075	E4-280	E4-281	-075-12	2.95 (75)
-087	E4-280	E4-281	-087-12	3.43 (87)
-100	E4-280	E4-281	-100-12	3.94 (100)
-125	E4-280	E4-281	-125-12	4.92 (125)
-150	E4-280	E4-281	-150-12	5.91 (150)
-175	E4-280	E4-281	-175-12	6.89 (175)
-200	E4-280	E4-281	-200-12	7.87 (200)
-225	E4-280	E4-281	-225-12	8.86 (225)
-250	E4-280	E4-281	-250-12	9.84 (250)
-275	E4-280	E4-281	-275-12	10.83 (275)
-300	E4-280	E4-281	-300-12	11.81 (300)

Due to the design of the E4-28 series chains, please note the following when ordering brackets:

Even number of links = full set, part number ending in **-12**
Odd number of links = 2 pieces, part number ending in **-1**



Strain relief tiewrap plate
Part No. 2050-Z can be fixed on the last crossbar.
Details ➤ chapter 10 main catalog

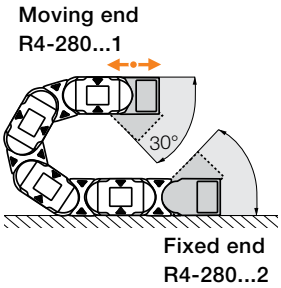
Part. No.	Width [mm]	Number of teeth
2050.Z	60	6

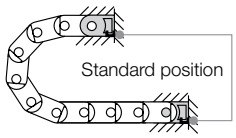
e-chain system® E4-1
Series R4-28
Mounting Bracket - KMA

Standard

Option 1: pivoting

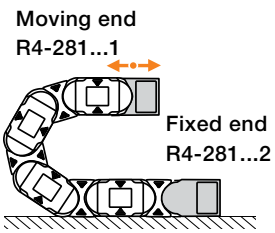
- Unsupported and gliding applications
- mounting capabilities on all sides
- Bolted connection outside of chain cross-section
- Space-restricted conditions
- corrosion-resistant

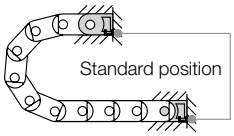




Option 2: locking

- Vertical hanging/standing applications
- For high accelerations
- Universally mountable
- Various mounting positions
- Corrosion-resistant



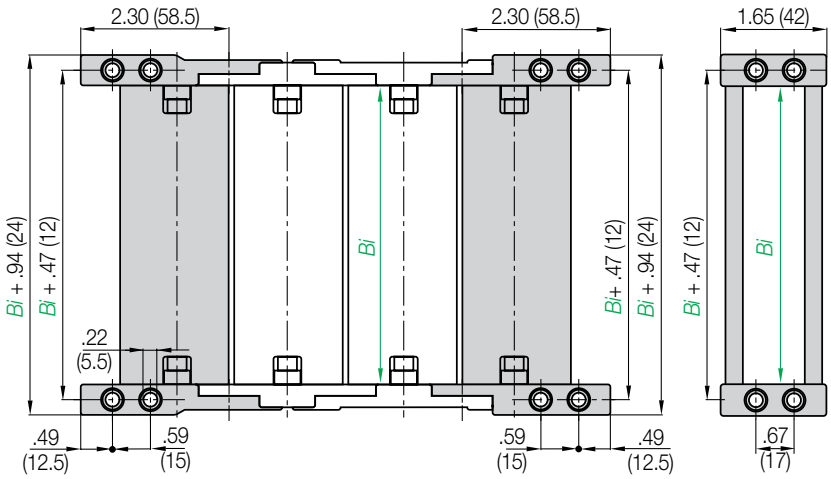


Part Number Structure

R4-281-040-2-12

- 12 = Full Set
- 2 = Complete Set
- 040 = Width
- R4-280 = Pivoting
  R4-281 = Locking

Full set, for both ends:
R4-280-040-12
Single-part order:
R4-280-040-1
Mounting bracket **moving end**
R4-280-040-2
Mounting bracket **fixed end**



Part number example is shown for pivoting brackets.
For locking brackets change part number to R4-281

Width	Part No. Full Set			*Bi*
	Pivoting	Locking		in. (mm)
-050	R4-280	R4-281	-050-12	1.97 (50)
-075	R4-280	R4-281	-075-12	2.95 (75)
-100	R4-280	R4-281	-100-12	3.94 (100)
-125	R4-280	R4-281	-125-12	4.92 (125)
-150	R4-280	R4-281	-150-12	5.91 (150)
-175	R4-280	R4-281	-175-12	6.89 (175)
-200	R4-280	R4-281	-200-12	7.87 (200)
-225	R4-280	R4-281	-225-12	8.86 (225)
-250	R4-280	R4-281	-250-12	9.84 (250)
-300	R4-280	R4-281	-300-12	11.81 (300)

Part No. Full Set (pivoting)
Series R4-28
R4-28-Width-12

Due to the design of the E4-28 series chains, please note the following when ordering brackets:

Even number of links = full set, part number ending in **-12**
Odd number of links = 2 pieces, part number ending in **-1**



Strain relief tiewrap plate
Part No. 2050-Z can be fixed on the last crossbar.
Details ➤ chapter 10 main catalog

Part. No.	Width [mm]	Number of teeth
2050.Z	60	6

PDF: igus.com/e-chain-pdfs
Product information: igus.com/e-chains

e-chain system® E4-1
Series E4-28
Guide Trough

Guide troughs are used with applications where the upper run of the e-chain® glides on the lower run. If using igus® steel guide troughs, the following components are required:

- Full travel length of guide trough
  Part No. 96-30
- 1/2 travel length of glide bars
  Part No. 92-01
- Installation sets as end connectors
  Part No. 95-50-XX

-XX indicates the length of the profile rail on which the guide trough is mounted. The values and part numbers are specified in the table on the left. Standard length of the trough components and glide bars is 6.56 ft (2m). The required overall length of the guide trough directly correlates to the length of travel.

Example:
Length of travel 164 ft. (50 m)
Center mounted

Required guide troughs:
164 ft (50 m) guide trough,
82 ft (25 m) glide bar

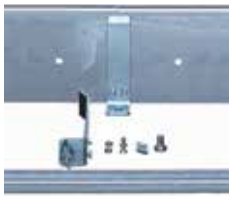
= 25 sections of 6.56 ft (2 m) guide trough
Part No. 96-30

= 13 sections of 6.56 ft. (2 m) glide bar
Part No. 92-01

Required number of installation sets
= Number of guide trough components + 1
= 25 + 1 = 26
Part number of the installation sets
95-50-XXX
Example: 95-50-400 for 15.75 (400 mm) long profile rail



Left: Guide trough with glide bars
Right: Guide troughs without glide bars

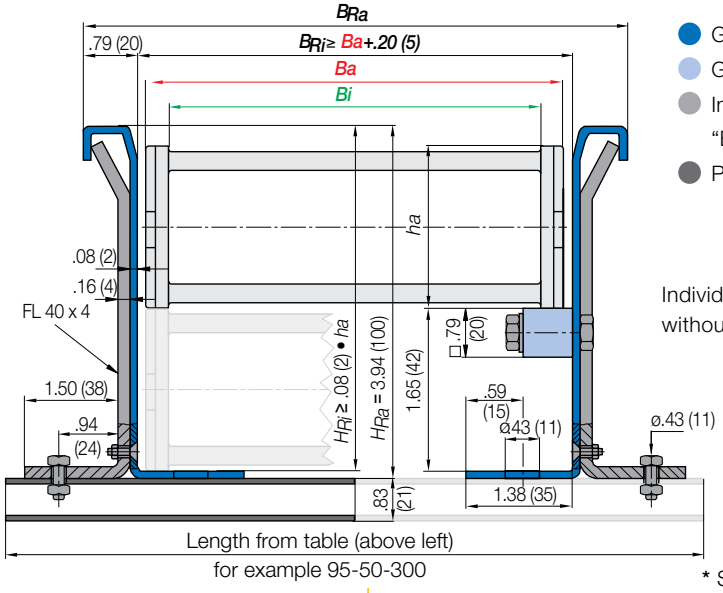


Installation sets as section connectors

Width of Crossbar
E4-28-**040**-200-0

	B_{Ri}	Installation Part No.
-040	2.56 (65)	*
-050	2.95 (75)	**95-50-200**
-052	2.99 (76)	**95.50-200**
-062	3.43 (87)	**95-50-200**
-070	3.74 (95)	**95-50-200**
-075	3.94 (100)	**95-50-225**
-100	4.92 (125)	**95-50-250**
-125	5.91 (150)	**95-50-275**
-150	6.89 (175)	**95-50-300**
-175	7.87 (200)	**95-50-325**
-200	8.86 (225)	**95-50-350**
-225	9.84 (250)	**95-50-375**
-250	10.83 (275)	**95-50-400**
-275	11.81 (300)	**95-50-425**
-300	12.80 (325)	**95-50-450**

Standard length profile rail



- Guide trough
- Glide bars
- Installation set "Basic"
- Profile rail

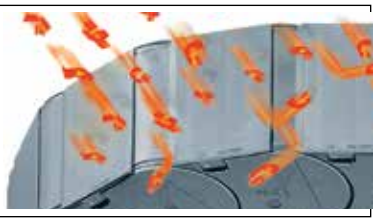
Individual attachment without profile rail

* Specialized guide trough available upon request

Hot chips up to 1562°F

- e-tubes to withstand 1,562°F hot chips, as a special option
- No hot chips melting or embedding into the chain
- igus® igumid HT material

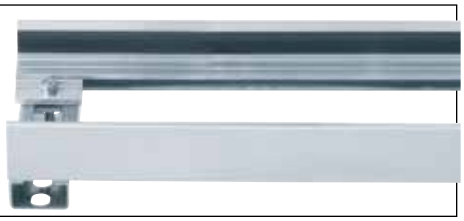
More information ➤ www.igus.com/HT



Aluminum support tray

- Corrosion-resistant and seawater-resistant aluminium rails with adjustable width
- Noise-reducing glide strip integrated as standard
- Easy installation and connection of the e-chain®
- Open design - dirt and debris fall through

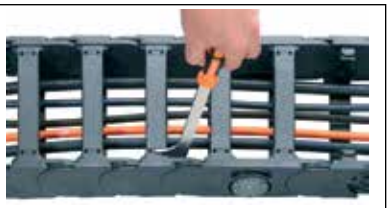
More information ➤ Chapter 9



Reduce assembly time - E4 e-chain® opener

- e-chain® opener tools for easy opening and closing of e-chains®
- Simple opening and closing of e-chain® crossbars
- Also for use in hard to reach locations
- Significant assembly time reduction

More information ➤ www.igus.com/E4savetime



e-chain system® E4-1
Series E4-32/H4-32/R4-32

1.26 1.26

Price Index

Series E4-32

Series H4-32

Series R4-32

Special Options Available

Low noise version available with special rubber pads

Cleanroom test upon request

ESD classification: Electrically conductive ESD/ ATEX version upon request

Assembly Tips



Opening e-chains®: Remove crossbars and clips - Insert screwdriver into the slot, push down, release by lever action



Remove lids/bottoms (e-tubes) - Insert screwdriver into the slot, release by lever action

Other Installation Methods

Vertical, hanging ≤ 262 ft (80 m)
Vertical, standing ≤ 16.4 ft (5 m)
Side-mounted, unsupp. ≤ 4.92 ft (1.5 m)
Rotary requires further calculation

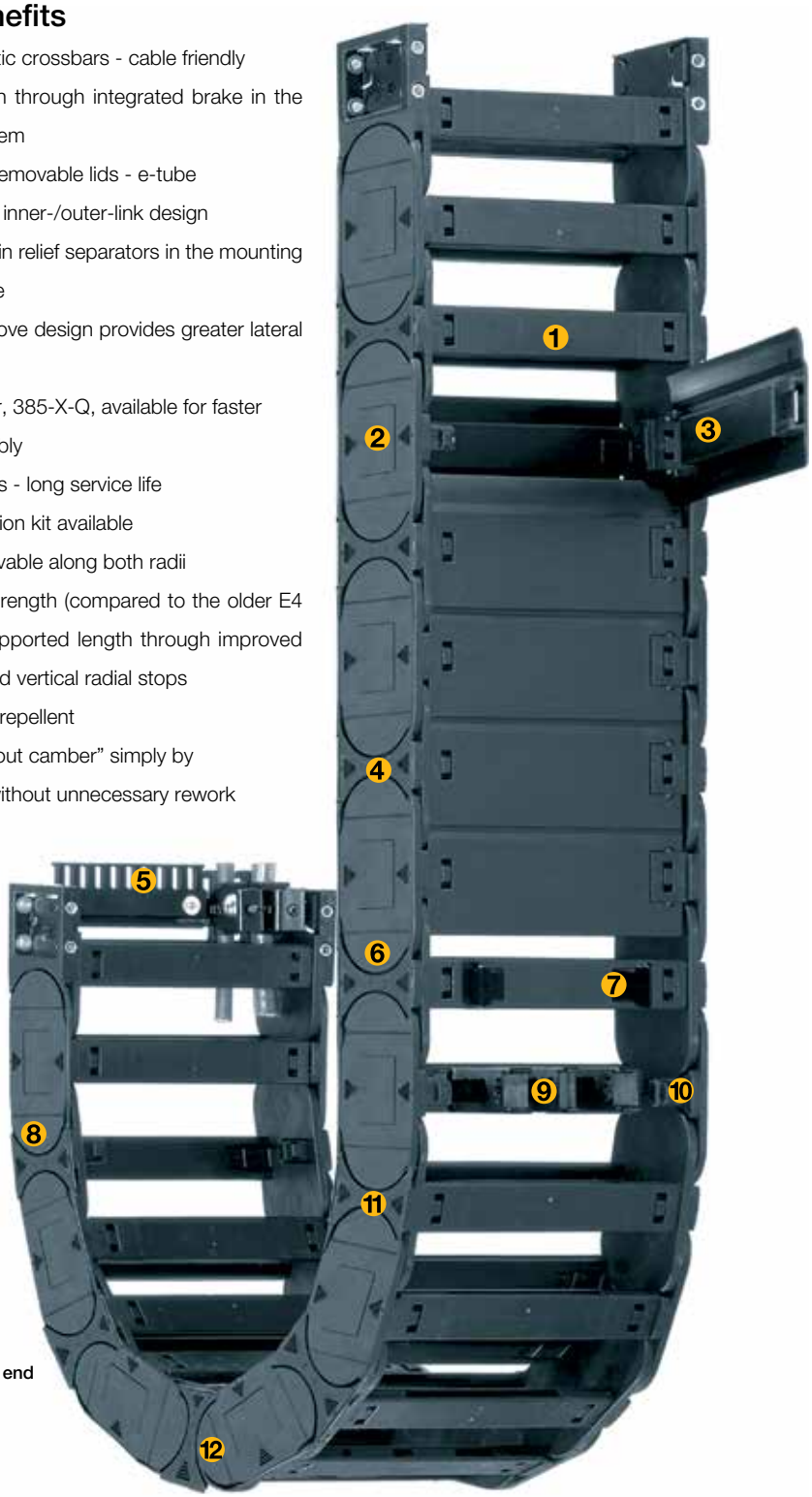
Usage Guidelines

- If quiet operation is required
- If very high speeds and/or accelerations are required
- Long travels
- High additional loads

- When an extremely low vibration e-chain® is required
  ➤ **Series E6-35**
- When an economic one-sided snap-open e-chain®/e-tube is required
  ➤ **Series 2600/2650/2680/2700**

Features & Benefits

1. Wide, rounded plastic crossbars - cable friendly
2. Low-noise operation through integrated brake in the radial stop dog system
3. Hinged snap-open removable lids - e-tube
4. Straight run through inner-/outer-link design
5. Strain relief with strain relief separators in the mounting bracket are available
6. The tongue and groove design provides greater lateral stability
7. QuickLock Crossbar, 385-X-Q, available for faster assembly/disassembly
8. Optimized glide pads - long service life
9. New Interior separation kit available
10. Crossbars are removable along both radii
11. 15% more tensile strength (compared to the older E4 series), better unsupported length through improved stop dog system and vertical radial stops
12. Smooth outline, dirt repellent
13. Version NCST “without camber” simply by turning outer links without unnecessary rework





Also available without camber. Add NCST to the end of the part number.
Ex: E4-32-30-300NCST

Order Example: Complete e-chain®

Please indicate chain length or number of links. Example:

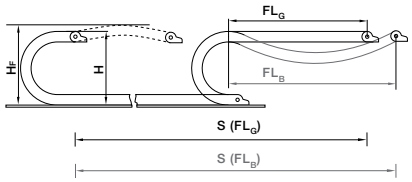
13.12 ft (4 m) **E4-32-30-300-0**	**e-chain®**
With 2 separators **282** assembled every 2nd link	**Interior Separation**
1 Set **E4-320-30-12P**	**Mounting Bracket**

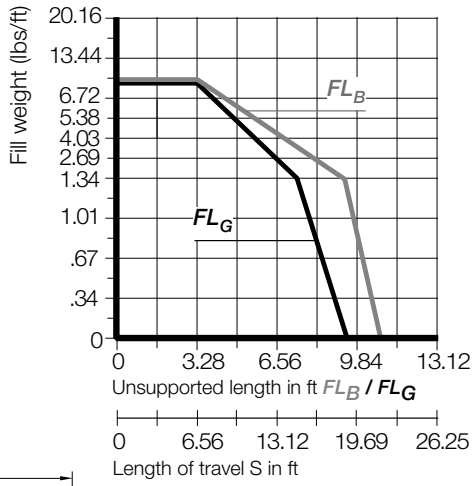
e-chain system® E4-1
Series E4-32/H4-32/R4-32
Installation Dimensions

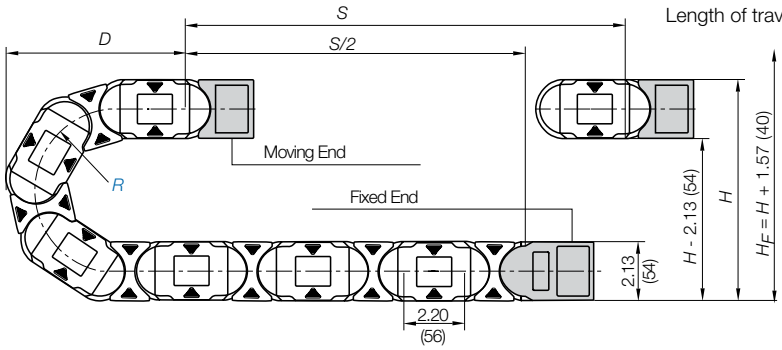
Short travel, unsupported length

● FL_B = unsupported with permitted sag
● FL_G = unsupported with straight upper run

Further information ➤ Design, Chapter 1







Pitch per link: = 2.20" (56 mm)
Links per ft (m): = 5.49 (18)
For center mount applications:
Chain length = $_{S}/_{2} + K$

The required clearance height: $H_F = H + 1.57$ **in. (40 mm)** (with 1.34 lbs/ft (2.0 kg/m) fill weight.
Please consult igus® if space is particularly restricted.

R	2.48 (063)	2.95 (075)	3.94 (100)	4.92 (125)	5.91 (150)	6.89 (175)	7.87 (200)	8.66 (220)	9.84 (250)	11.81 (300)
H	7.09 (180)	8.03 (204)	10.00 (254)	11.97 (304)	13.94 (354)	15.91 (404)	17.87 (454)	19.45 (494)	21.81 (554)	25.75 (654)
D	6.85 (174)	7.32 (186)	8.31 (211)	9.29 (236)	10.28 (261)	11.26 (286)	12.24 (311)	13.03 (331)	14.21 (361)	16.18 (411)
K	12.20 (310)	13.78 (350)	16.93 (430)	19.88 (505)	23.03 (585)	26.18 (665)	29.33 (745)	31.69 (805)	35.43 (900)	41.54 (1055)

Short Travels - Unsupported

Unsupported e-chains® feature positive camber over short travels. This must be accounted for when specifying the clearance height. Please refer to for further details.

Legend

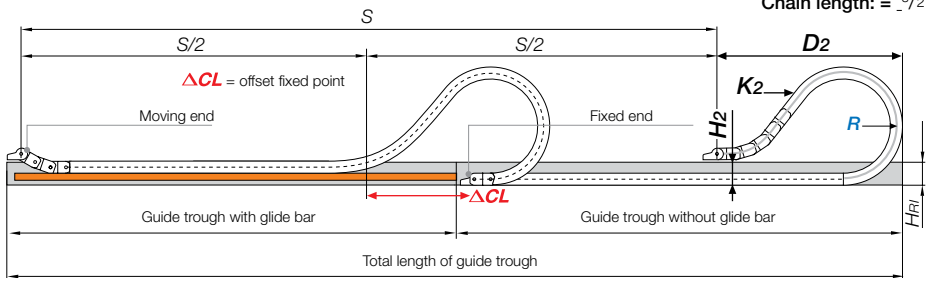
S = Length of travel
R = Bending radius
H = Nominal clearance height
D = Overlength e-chain® radius in final position
K = $\pi \bullet R$ + *safety buffer*
H_F = Required clearance height
H_{RI} = Trough inner height
H_2 = *Mounting height
D_2 = Overlength - long travels, gliding
K_2 = *Add-on

*If the mounting bracket location is set lower

For long travels with lowered mounting height

Long travel lengths from 32.8 ft.(10m) to max. 656 ft. (200m)

For center mount applications:
Chain length: = $_{S}/_{2} + K_2$



R	2.48 (063)	2.95 (075)	3.94 (100)	4.92 (125)	5.91 (150)	6.89 (175)	7.87 (200)	8.66 (220)	9.84 (250)	11.81 (300)
H_2	-	-	6.54 (166)	6.54 (166)	6.54 (166)	6.54 (166)	6.54 (166)	6.54 (166)	6.54 (166)	6.54 (166)
D_2	-	-	14.57 (370)	18.50 (470)	19.69 (500)	25.79 (655)	30.31 (770)	35.43 (900)	36.61 (930)	43.31 (1100)
K_2	-	-	24.25 (616)	30.87 (784)	35.27 (896)	44.10 (1120)	50.71 (1288)	57.32 (1456)	61.73 (1568)	75.00 (1904)
ΔCL	-	-	6.30 (160)	8.27 (210)	9.45 (240)	14.57 (370)	18.11 (460)	21.26 (540)	22.44 (570)	27.17 (690)

In case of travels between 22.9 and 32.8 ft (7 and 10 m) we recommend a longer unsupported length.

For support of the lower run, **see Chapter 9** of the main catalog for the **Support Tray tool kit**

Long Travels - Gliding

If the unsupported length is exceeded, the e-chain®/ Tube must glide on itself. This requires a guide trough.
Design, Chapter 1

Technical Data

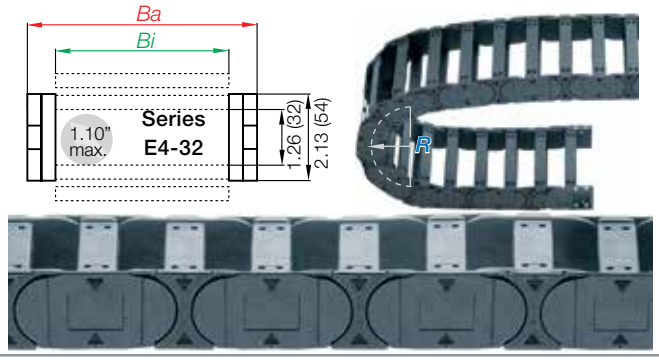
Speed / acceleration FL_G	max. 65.6 ft/s (20 m/s) / max. 656 ft/s² (200 m/s²)
Speed / acceleration FL_B	max. 9.84 ft/s (3 m/s) / max. 19.69 ft/s² (6 m/s²)
Gliding speed / acceleration (maximum)	max. 32.8 ft/s (10 m/s) / max. 164 ft/s² (50 m/s²)
Material - permitted temperature	igumid G / -40°F (-40°C) up to +248°F (+120° C)
Flammability Class, igumid G	VDE 0304 IIC UL94 HB

Details of material properties
➤ Chapter 1

PDF: igus.com/e-chain-pdfs
Product information: igus.com/e-chains

e-chain system® E4-1
Series E4-32/H4-32/R4-32
Product Range

Series E4-32 - e-chain® with crossbars every link



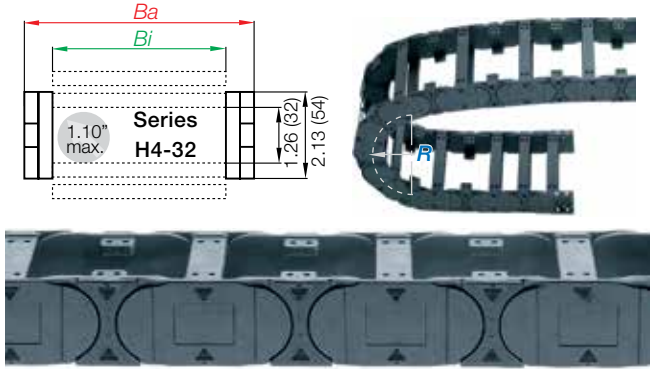
- Crossbars every link
- For use with rigid hydraulic hoses
- For particularly demanding applications
- Can be opened from both sides

Part Number Structure

E4-32 | 30- | 300- | 0

- 300- : Bending radius
- 0 : Color - Black
- 30- : Width
- E4-32 : Series

Series H4-32 - e-chain® with crossbars every other link



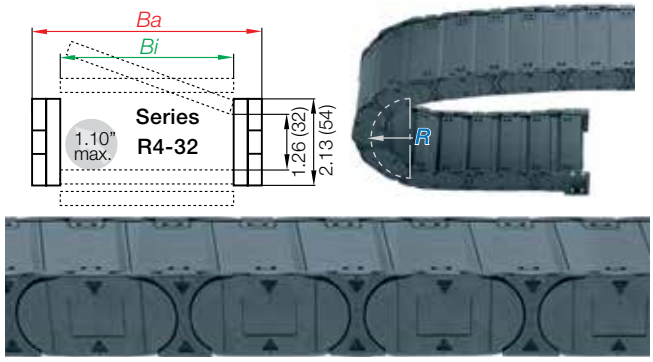
- Crossbars every other link Standard configuration
- For nearly every situation
- Can be opened from both sides
- Easy assembly
- Stable
- Cost-effective

Part Number Structure

H4-32- | 20- | 300- | 0

- 300- : Bending radius
- 0 : Color - Black
- 20- : Width
- H4-32- : Series

Series R4-32 - fully enclosed e-tube



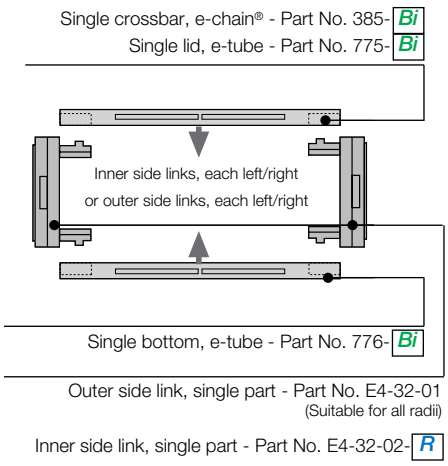
- Fully enclosed
- Excellent cable and hose protection against dirt
- Protection against hot chips
- Lids along inner radius are completely removable
- Lids along the outer radius are single-sided, snap open, hinged on one side as well as completely removable

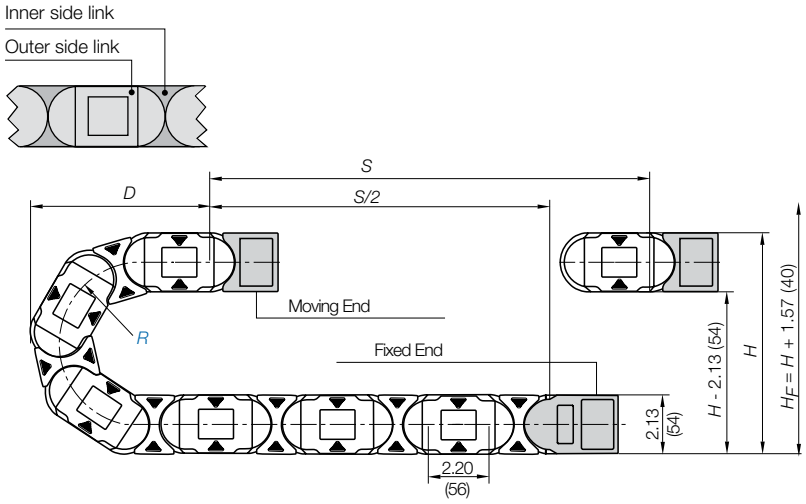
Part Number Structure

R4-32- | 30- | 300- | 0

- 300- : Bending radius
- 0 : Color - Black
- 30- : Width
- R4-32- : Series

e-chain® as separate parts, links and side plates





e-chain system® E4-1
Series E4-32/H4-32/R4-32
Product Range

Supplement part number with required radius. Example: E4-32-30-300-0
Pitch: 2.20 in. (56mm) per link links/ft(m) = 5.49 (18)

Part Number					Bi	Ba	Weight		
Crossbars Every link	Crossbars Every other	Tube Version			in. (mm)	in. (mm)	E4-32 lbs/ft (kg/m)	H4-32 lbs/ft (kg/m)	R4-32 lbs/ft (kg/m)
E4-32-05-	H4-32-05	*R4-32-05-		-0	1.97 (50)	2.87 (73)	≈ 1.05 (1.57)	≈ 0.96 (1.43)	≈ 1.65 (2.45)
E4-32-06-	H4-32-06-			-0	2.68 (68)	3.58 (91)	≈ 1.14 (1.70)	≈ 1.00 (1.49)	–
E4-32-07-	H4-32-07	R4-32-07-		-0	2.95 (75)	3.86 (98)	≈ 1.16 (1.73)	≈ 1.01(1.51)	≈ 1.73 (2.57)
E4-32-087-	H4-32-087-			-0	3.43 (87)	4.33 (110)	≈ 1.21 (1.80)	≈ 1.03 (1.54)	–
E4-32-097-	H4-32-097-			-0	3.82 (97)	4.72 (120)	≈ 1.25 (1.86)	≈ 1.05 (1.57)	–
E4-32-10-	H4-32-10-	R4-32-10-		-0	3.94 (100)	4.84 (123)	≈ 1.27 (1.89)	≈ 1.06 (1.58)	≈ 1.78 (2.65)
E4-32-11-	H4-32-11-	R4-32-11-		-0	4.25 (108)	5.16 (131)	≈ 1.30 (1.94)	≈ 1.08 (1.61)	≈ 1.85 (2.76)
E4-32-112-	H4-32-112-			-0	4.41(112)	5.35 (136)	≈ 1.32 (1.96)	≈ 1.09 (1.62)	–
E4-32-12-	H4-32-12-	R4-32-12-		-0	4.92 (125)	5.83 (148)	≈ 1.39 (2.07)	≈ 1.13 (1.68)	≈ 1.92 (2.85)
E4-32-137-	H4-32-137-			-0	5.39 (137)	6.34 (161)	≈ 1.42 (2.12)	≈ 1.14 (1.70)	–
E4-32-15-	H4-32-15-	R4-32-15-		-0	5.91 (150)	6.81 (173)	≈ 1.49 (2.21)	≈ 1.18 (1.75)	≈ 2.02 (3.01)
E4-32-162-	H4-32-162-			-0	6.38 (162)	7.32 (186)	≈ 1.50 (2.24)	≈ 1.18 (1.76)	–
E4-32-17-	H4-32-17-	R4-32-17-		-0	6.61 (168)	7.52 (191)	≈ 1.56 (2.32)	≈ 1.21 (1.80)	≈ 2.16 (3.21)
E4-32-18-	H4-32-18-			-0	6.89 (175)	7.80 (198)	≈ 1.58 (2.35)	≈ 1.22 (1.81)	–
E4-32-187-	H4-32-187-			-0	7.36 (187)	8.31 (211)	≈ 1.61 (2.39)	≈ 1.24 (1.84)	–
E4-32-20-	H4-32-20-	R4-32-20-		-0	7.87 (200)	8.78 (223)	≈ 1.69 (2.52)	≈ 1.28 (1.90)	≈ 2.29 (3.41)
E4-32-212-	H4-32-212-			-0	8.35 (212)	9.29 (236)	≈ 1.73 (2.57)	≈ 1.30 (1.93)	–
E4-32-23-	H4-32-23-			-0	8.86 (225)	9.76 (248)	≈ 1.79 (2.67)	≈ 1.33 (1.98)	–
E4-32-237-	H4-32-237-			-0	9.33 (237)	10.28 (261)	≈ 1.81 (2.70)	≈ 1.34 (1.99)	–
E4-32-25-	H4-32-25-	R4-32-25-		-0	9.84 (250)	10.75 (273)	≈ 1.90 (2.83)	≈ 1.38 (2.06)	≈ 2.59 (3.86)
E4-32-262-	H4-32-262-			-0	10.31 (262)	11.26 (286)	≈ 1.96 (2.92)	≈ 1.41 (2.10)	–
E4-32-28	H4-32-28-			-0	10.83 (275)	11.73 (298)	≈ 2.01 (2.99)	≈ 1.44 (2.14)	–
E4-32-29-	H4-32-29-			-0	11.30 (287)	12.24 (311)	≈ 2.02 (3.02)	≈ 1.44 (2.15)	–
E4-32-30-	H4-32-30-	R4-32-30-		-0	11.81 (300)	12.72 (323)	≈ 2.12 (3.15)	≈ 1.49 (2.22)	≈ 2.85 (4.25)
E4-32-312-	H4-32-312-			-0	12.28 (312)	13.23 (336)	≈ 2.14 (3.18)	≈ 1.50 (2.23)	–
E4-32-325-	H4-32-325-			-0	12.79 (325)	13.70 (348)	≈ 2.20 (3.28)	≈ 1.53 (2.28)	–
E4-32-337-	H4-32-337-			-0	13.27 (337)	14.21 (361)	≈ 2.24 (3.34)	≈ 1.55 (2.31)	–
E4-32-350-	H4-32-350-			-0	13.78 (350)	14.69 (373)	≈ 2.40 (3.57)	≈ 1.63 (2.42)	–
E4-32-362-	H4-32-362-			-0	14.25 (362)	15.20 (386)	≈ 2.46 (3.66)	≈ 1.66 (2.47)	–
E4-32-375-	H4-32-375-			-0	14.76 (375)	15.67 (398)	≈ 2.51 (3.74)	≈ 1.69 (2.51)	–
E4-32-387-	H4-32-387-			-0	15.24 (387)	16.18 (411)	≈ 2.55 (3.80)	≈ 1.71 (2.54)	–
E4-32-400	H4-32-400-			-0	15.75 (400)	16.65 (423)	≈ 2.60 (3.87)	≈ 1.73 (2.58)	–

Choose from the radii below for all of the above sizes
Radius (mm) Example: E4-32-30-300-0

	063**	075**	100	125	150	175	200	220	250	300
R	2.48 (063**)	2.95 (075**)	3.94 (100)	4.92 (125)	5.91 (150)	6.89 (175)	7.87 (200)	8.66 (220)	9.84 (250)	11.81 (300)
H -0 +20	7.09 (180)	8.03 (204)	10.00 (254)	11.97 (304)	13.94 (354)	15.91 (404)	17.87 (454)	19.45 (494)	21.81 (554)	25.75 (654)
D	6.85 (174)	7.32 (186)	8.31 (211)	9.29 (236)	10.28 (261)	11.26 (286)	12.24 (311)	13.03 (331)	14.21 (361)	16.18 (411)
K	12.20 (310)	13.78 (350)	16.93 (430)	19.88 (505)	23.03 (585)	26.18 (665)	29.33 (745)	31.69 (805)	35.43 (900)	41.54 (1055)

** This radius is not available for the R4-32 Series
*Removable lid only, no hinged option
0 = Standard color black.
For other colors see Chapter 1

For wider chains see page 6.36
For large diameter hoses see page 6.37

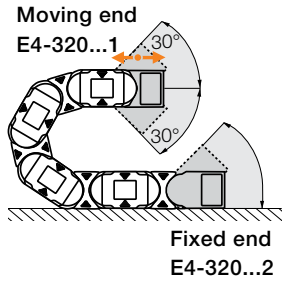
PDF: igus.com/e-chain-pdfs
Product information: igus.com/e-chains

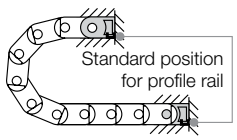
e-chain system® E4-1
Series E4-32/H4-32
Mounting Brackets - KMA

Standard

Option 1: pivoting

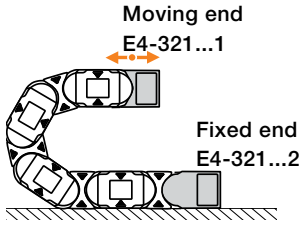
- Recommended for unsupported and gliding applications
- Attachment capability on all sides
- Bolted connection outside of chain cross-section
- Space restricted conditions
- Corrosion resistant

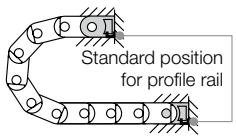




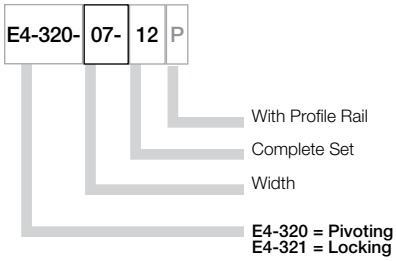
Option 2: locking

- Profile rail option
- Universal use
- Corrosion resistant
- Vertical hanging/standing travels
- Extreme accelerations

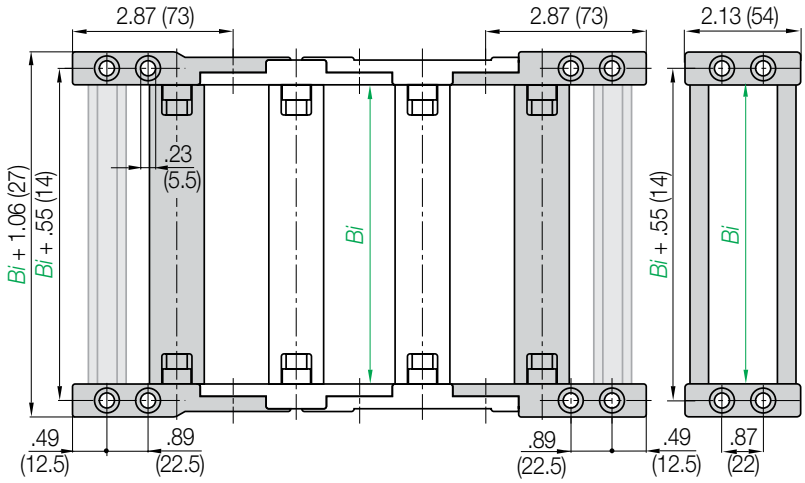




Part Number Structure



Due to the design of the E4-32 series chains, please note the following when ordering brackets:
Even number of links = full set, part number ending in **-12**; **Odd number of links =** 2 pieces, part number ending in **-1**



Part No. Full Set (pivoting)
Series E4-32 or H4-32
E4-320-Width-12

Part No. Full Set (pivoting)
with profile rail
Series E4-32 or H4-32
E4-320-Width-12P

Part number examples are shown for pivoting brackets for e-chain.
For locking brackets change part number to 321

Width	Part No. Full Set chain			With Profile Rail	*Bi* in. (mm)
	Pivoting	Locking			
-05	E4-320	E4-321	-05-12	P	1.97 (50)
-06	E4-320	E4-321	-06-12	P	2.68 (68)
-07	E4-320	E4-321	-07-12	P	2.95 (75)
-087	E4-320	E4-321	-087-12	P	3.43 (87)
-097	E4-320	E4-321	-097-12	P	3.82 (97)
-10	E4-320	E4-321	-10-12	P	3.94 (100)
-11	E4-320	E4-321	-11-12	P	4.25 (108)
-112	E4-320	E4-321	-112-12	P	4.41 (112)
-12	E4-320	E4-321	-12-12	P	4.92 (125)
-137	E4-320	E4-321	-137-12	P	5.39 (137)
-15	E4-320	E4-321	-15-12	P	5.91 (150)
-162	E4-320	E4-321	-162-12	P	6.38 (162)
-17	E4-320	E4-321	-17-12	P	6.61 (168)
-18	E4-320	E4-321	-18-12	P	6.89 (175)
-187	E4-320	E4-321	-187-12	P	7.36 (187)
-20	E4-320	E4-321	-20-12	P	7.87 (200)

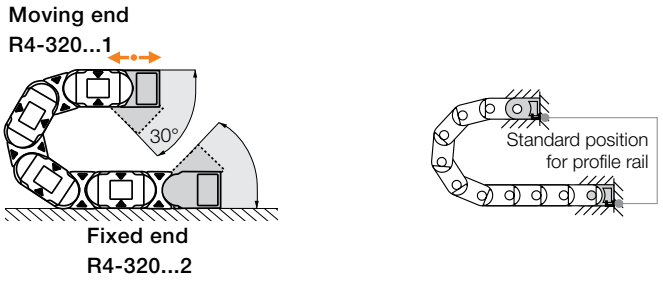
Width	Part No. Full Set chain			With Profile Rail	*Bi* in. (mm)
	Pivoting	Locking			
-212	E4-320	E4-321	-212-12	P	8.35 (212)
-23	E4-320	E4-321	-23-12	P	8.86 (225)
-237	E4-320	E4-321	-237-12	P	9.33 (237)
-25	E4-320	E4-321	-25-12	P	9.84 (250)
-262	E4-320	E4-321	-262-12	P	10.31 (262)
-28	E4-320	E4-321	-28-12	P	10.83 (275)
-29	E4-320	E4-321	-29-12	P	11.30 (287)
-30	E4-320	E4-321	-30-12	P	11.81 (300)
-312	E4-320	E4-321	-312-12	P	12.28 (312)
-325	E4-320	E4-321	-325-12	P	12.79 (325)
-337	E4-320	E4-321	-337-12	P	13.27 (337)
-350	E4-320	E4-321	-350-12	P	13.78 (350)
-362	E4-320	E4-321	-362-12	P	14.25 (362)
-375	E4-320	E4-321	-375-12	P	14.76 (375)
-387	E4-320	E4-321	-387-12	P	15.24 (387)
-400	E4-320	E4-321	-400-12	P	15.75 (400)

e-chain system® E4-1
Series R4-32
Mounting Brackets - KMA

Standard

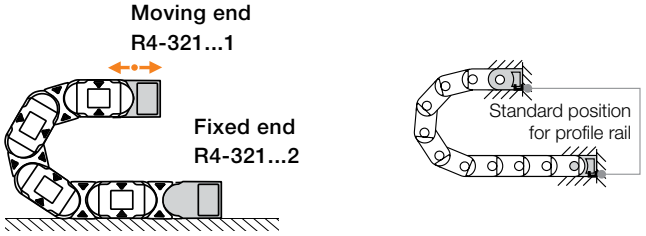
Option 1: pivoting

- Recommended for unsupported and gliding applications
- Attachment capability on all sides
- Bolted connection outside of chain cross-section
- Space restricted conditions
- Corrosion resistant

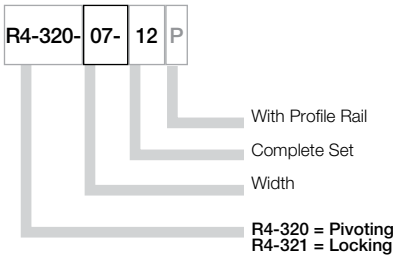


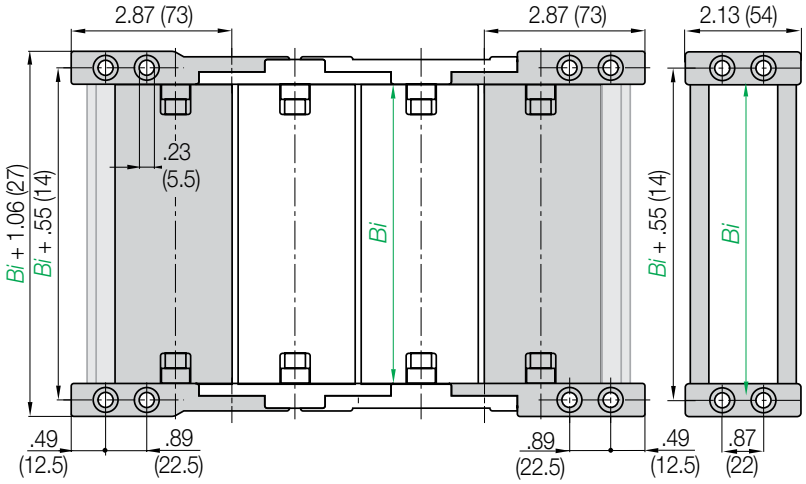
Option 2: locking

- Profile rail option
- Universal use
- Corrosion resistant
- Vertical hanging/standing travels
- Extreme accelerations



Part Number Structure





Due to the design of the E4-32 series chains, please note the following when ordering brackets:
Even number of links = full set, part number ending in **-12**; **Odd number of links =** 2 pieces, part number ending in **-1**

Part No. Full Set (pivoting)
Tube Series R4-32
R4-320-Width-12

Part No. Full Set (pivoting)
with Profile Rail
Tube Series R4-32
R4-320-Width-12P

Part number examples are shown for pivoting brackets for e-chain.
For locking brackets change part number to 321

Width	Part No. Full Set tube			With Profile Rail	*Bi* in. (mm)
	Pivoting	Locking			
-05	R4-320	R4-321	-05-12	P	1.97 (50)
-07	R4-320	R4-321	-07-12	P	2.95 (75)
-10	R4-320	R4-321	-10-12	P	3.94 (100)
-11	R4-320	R4-321	-11-12	P	4.25 (108)
-12	R4-320	R4-321	-12-12	P	4.92 (125)

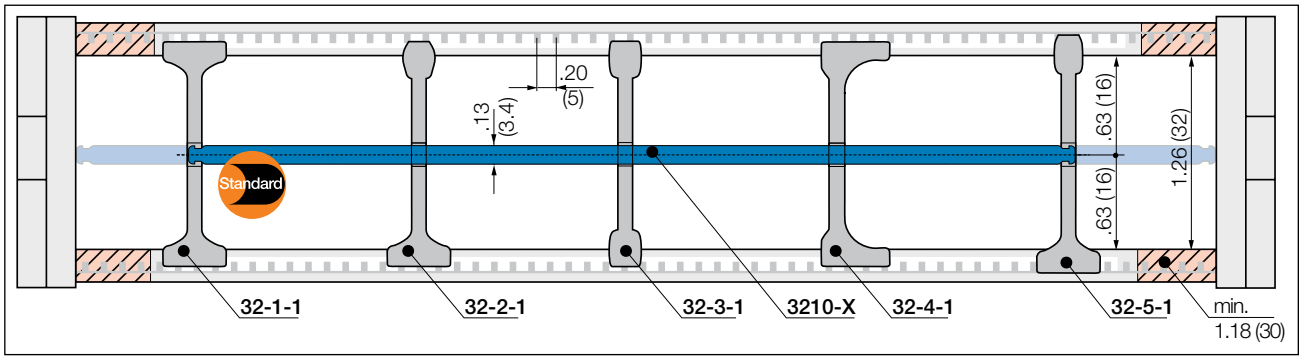
Width	Part No. Full Set tube			With Profile Rail	*Bi* in. (mm)
	Pivoting	Locking			
-15	R4-320	R4-321	-15-12	P	5.91 (150)
-17	R4-320	R4-321	-17-12	P	6.61 (168)
-20	R4-320	R4-321	-20-12	P	7.87 (200)
-25	R4-320	R4-321	-25-12	P	9.84 (250)
-30	R4-320	R4-321	-30-12	P	11.81 (300)

PDF: igus.com/e-chain-pdfs
Product information: igus.com/e-chains

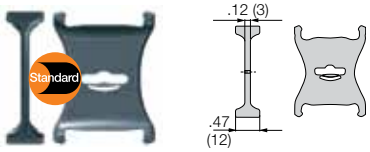
e-chain system® E4-1
Series Series E4-32/H4-32/R4-32
Interior Separation - New Generation

Telephone 1-800-521-2747

Internet: igus.com
email: sales@igus.com
QuickSpec: igus.com/quickspec



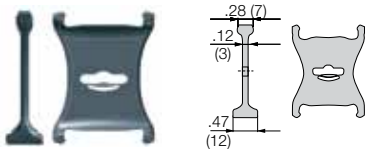
Note e-tube: Please maintain a lateral spacing of 1.18" (30 mm) between the separators and the side links. In the standard configuration separators are assembled every 2nd e-chain® link



Separator, wide base

Unassembled	**Part No. 32-1**
Assembled	**Part No. 32-1-1**

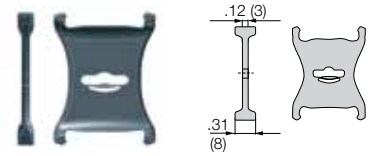
- **Standard separator 32-1 for all applications**
  Separator with wide base for maximum locking strength and safe standing in e-chains®.



Separator, narrow head

Unassembled	**Part No. 32-2**
Assembled	**Part No. 32-2-1**

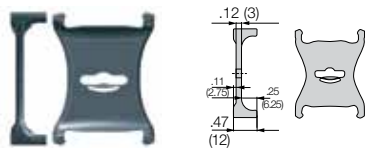
- **Separator 32-2**
  For even faster installation
  is used when vertical and horizontal separation is required. Due to its slot, it allows basic vertical/horizontal shelving arrangements.



Separator, narrow base

Unassembled	**Part No. 32-3**
Assembled	**Part No. 32-3-1**

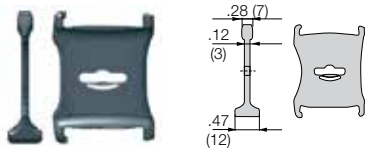
- **Separator 32-3**
  For many thin cables
  is used when vertical and horizontal separation is required. Due to its slot, it allows basic vertical/horizontal shelving arrangements.



Separator, asymmetrical

Unassembled	**Part No. 32-4**
Assembled	**Part No. 32-4-1**

- **Separator 32-4**
  For side mounted applications
  is used when vertical and horizontal separation is required. Due to its slot, it allows basic vertical/horizontal shelving arrangements.

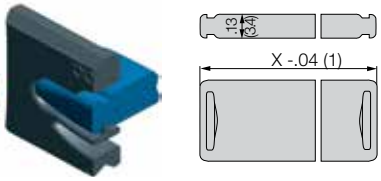


Separator, asymmetrical

Unassembled	**Part No. 32-5**
Assembled	**Part No. 32-5-1**

- **Separator 32-5**
  Locks safely in .20" (5 mm) increments
  Notch separator for exact positioning in e-chains®. Recommended for side-mounted applications.

Lockable full-width shelves - for the standard interior separation



Full width shelf, lockable

Unassembled	**Part No. 3200-X**
Assembled	**Part No. 3210-X**

- **Full width shelf, lockable**
  Shelf locks safely into separators on both ends, fixed width possible. Separators can be moved freely over the shelf in horizontal direction. Can be used at one height.

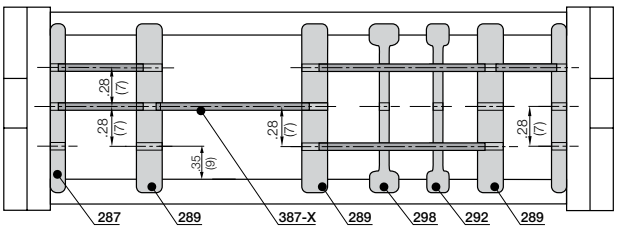
Width X in. (mm)	Part No. Unassembled	Part No. Assembled	Width X in. (mm)	Part No. Unassembled	Part No. Assembled	Width X in. (mm)	Part No. Unassembled	Part No. Assembled
1.97 (050)	**3200-50**	**3210-50**	4.92 (125)	**3200-125**	**3210-125**	8.86 (225)	**3200-225**	**3210-225**
2.95 (075)	**3200-75**	**3210-75**	5.91 (150)	**3200-150**	**3210-150**	9.84 (250)	**3200-250**	**3210-250**
3.94 (100)	**3200-100**	**3210-100**	6.89 (175)	**3200-175**	**3210-175**			
4.53 (115)	**3200-115**	**3210-115**	7.87 (200)	**3200-200**	**3210-200**			

e-chain system® E4-1
Series Series E4-32/H4-32/R4-32
Interior Separation - Previous Generation

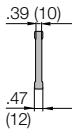


Shelves and Separators

e-chains® and e-tubes can be subdivided both vertically and horizontally using the various interior separation elements. ➤ **Design, Chapter 1** for layout recommendations.





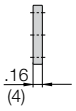


Split Separator (chain only)

Unassembled	**Part No. T323**
Assembled	**Part No. T323M**

- **Split separator T323 for e-chains®**
  This separator is ideal for subsequent shelving or the initial assembly of the e-chain. Fast assembly and disassembly using a hinge/push mechanism. Enhances flexibility





Side Plate

Unassembled	**Part No. 286**
Assembled	**Part No. 287**

- **Side plates 286**
  This component is used to form the basic pattern of a shelf system.



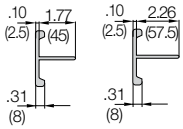


Vertical Separator

Unassembled	**Part No. 288**
Assembled	**Part No. 289**

- **Vertical separator 288**
  This component is used to form the basic pattern of a shelf system.



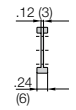


Separators w/Integrated Shelf

Unassembled	**Part No. 281-S-45**
Assembled	**Part No. 282-S-45**
Unassembled	**Part No. 281-S-57**
Assembled	**Part No. 282-S-57**

- **Locking vertical separator 281-S**
  This separator is slotted and able to be combined with shelves



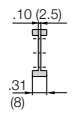


Slotted Separators

Unassembled	**Part No. 291**
Assembled	**Part No. 292**

- **Closed Slotted separators 291**
  These are used for complex subdivisions. However, they cannot be retrofitted into an existing interior separation system without removing the shelves first.





Slotted Separators, Open

Unassembled	**Part No. 297**
Assembled	**Part No. 298**

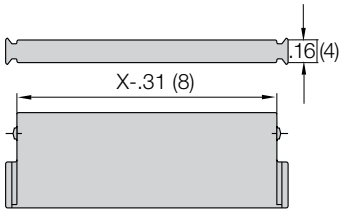
- **Open slotted separator 297**
  This separator can be retrofitted into an existing interior separation system without removing the shelves, as long as these shelves fit into the middle slot only.

Width X in.	Width X (mm)	Usable Width in.	Usable Width (mm)	Part No. Unassembled	Part No. Assembled
.71	(18)	.39	(10)	**386-18**	**387-18**
.91	(23)	.59	(15)	**386-23**	**387-23**
.98	(25)	.67	(17)	**386-25**	**387-25**
1.10	(28)	.79	(20)	**386-28**	**387-28**
1.30	(33)	.98	(25)	**386-33**	**387-33**
1.69	(43)	1.38	(35)	**386-43**	**387-43**
1.97	(50)	1.65	(42)	**386-50**	**387-50**
2.13	(54)	1.81	(46)	**386-54**	**387-54**
2.44	(62)	2.13	(54)	**386-62**	**387-62**
2.95	(75)	2.64	(67)	**386-75**	**387-75**
3.43	(87)	3.12	(87)	**386-87**	**387-87**
3.94	(100)	3.62	(92)	**386-100**	**387-100**
4.25	(108)	3.94	(100)	**386-108**	**387-108**
4.92	(125)	4.61	(117)	**386-125**	**387-125**
5.91	(150)	5.59	(142)	**386-150**	**387-150**
6.89	(175)	6.57	(167)	**386-175**	**387-175**
7.87	(200)	7.56	(192)	**386-200**	**387-200**
8.19	(208)	7.87	(200)	**386-208**	**387-208**
8.86	**(225)**	**8.54**	**(217)**	**386-225**	**387-225**

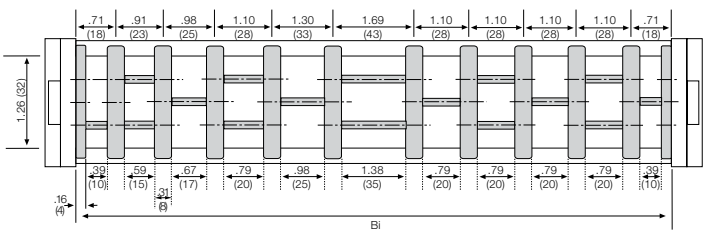
Shelves 386-XX

These components form the basic pattern of a shelf system. Shelves of various widths can be arranged at 3 different heights in .28" (7mm) increments





The diagram below is for reference purposes only. Multiple configurations are possible. To create your e-chain shelving cross section please see our online e-chain configurator. Call 1-800-521-2747 for assistance and/or go to igus.com click on the ***Products*** drop down menu, choose ***e-chain Cable Carriers*** and on the next drop down menu simply click on ***e-chain Configurator***.



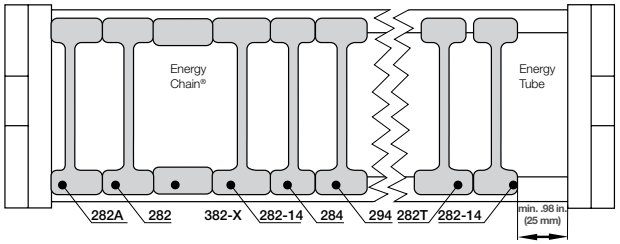
PDF: igus.com/e-chain-pdfs
Product information: igus.com/e-chains

e-chain system® E4-1
Series Series E4-32/H4-32/R4-32
Interior Separation - Previous Generation

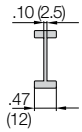


Vertical separators and spacers

Vertical separators are used if a vertical subdivision of the e-chain® interior is required. By standard, vertical separators are assembled every other e-chain® link.



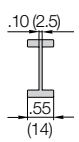
NOTE: Observe a lateral spacing of at least .98 in. (25mm) for e-tubes

Separator (chain/tube)

Unassembled	**Part No. 280**
Assembled	**Part No. 281**

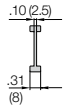
- **Standard separator 280 for e-chains® and e-tubes**
  This separator offers safe stability due to its wide base design, also when used with thick cables or hoses.

Separator (chain/tube)

Unassembled	**Part No. 280-14**
Assembled	**Part No. 281-14**

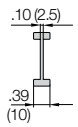
- **Vertical separator 280-14 for e-chains® and e-tubes**
  This separator offers safe stability due to its broad base design when used with thick cables or hoses.

Separator (chain only)

Unassembled	**Part No. 283**
Assembled	**Part No. 284**

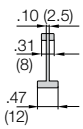
- **Vertical separator 283 for e-chains®**
  This separator features a narrow base for use in applications where a large number of small cables need to be individually separated.

Locking Separator (chain only)

Unassembled	**Part No. 293**
Assembled	**Part No. 294**

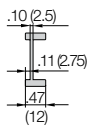
- **Locking separator 293 for e-chains®**
  This separator is used in applications with very high relative humidity It features increased retention force which is produced by asymmetrical retention “clamps” attached to the chain’s cross-bar. Please ensure that they are properly aligned.

Locking Separator (tubes only)

Unassembled	**Part No. 281T**
Assembled	**Part No. 282T**

- **Locking separator 281T for e-tubes**
  It clamps to the fixed radius and remains free along the other radius to facilitate lid removal.

Asymmetric separator (chain only)

Unassembled	**Part No. 280A**
Assembled	**Part No. 281A**

- **Asymmetrical separator 281A for e-chains®**
  This separator features an (12mm) base. It can be used in combinations between spacers of different widths and vertical separators in side mounted applications.




Spacer (chain only)

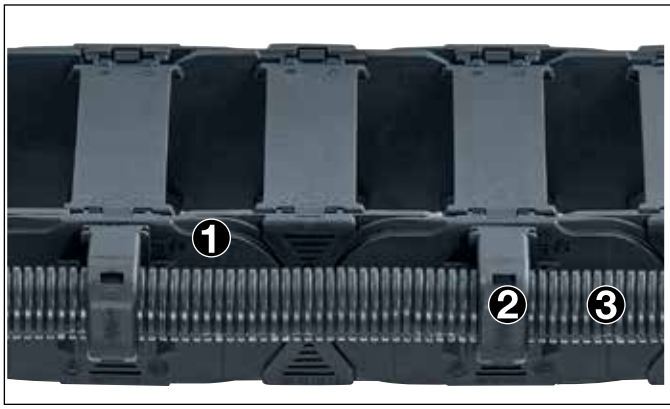
Unassembled	**Part No. 381-XX**
Assembled	**Part No. 382-XX**

XX = width of the spacer

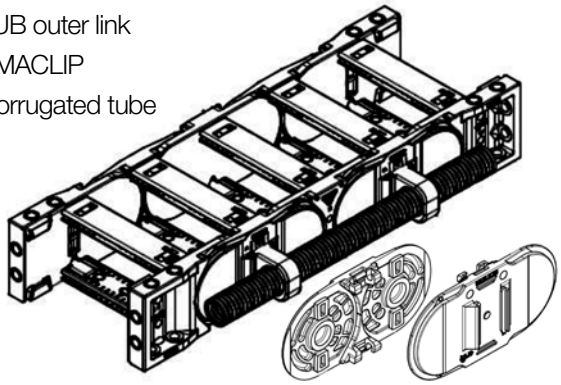
- **NOTE ON SPACERS**
  Vertical separators are adjustable, but can be fixed in position by means of a spacer. Spacers are most often necessary for side mounted applications. The available inner height is reduced by .08” (2mm) **per spacer** (for example if one spacer is placed on either side of the separator, the overall inner height is reduced by .16” (4mm). To avoid this, place the spacers on the **outside** of the opening crossbar **(not for long travels)**.

Spacers available in the following sizes:

Part No. Unassembled	Part No. Assembled	in.	(mm)
381 -10	**382 -10**	.39”	(10)
381 -15	**382 -15**	.59”	(15)
381 -20	**382 -20**	79”	(20)



1 TUB outer link
2 PMACLIP
3 Corrugated tube



TUB | Safe guidance for corrugated tubes parallel to the e-chain®

- Additional, simple guidance for corrugated tubes on the outside of the e-chain®
- PMACLIP allows corrugated tubes with nominal widths .28 (07mm), .39 (10mm), .47 (12mm), .67 (17mm) to be easily clipped on
- Easy access to the corrugated tubes, fast replacement of the hoses
- Reduce assembly time and cost - easy to assemble, without any additional screws or tools
- The part number includes the e-chain® with TUB side sections; the PMACLIP support and the hose are ordered separately

Part No. TUB Outer link right*	Part No. TUB Outer link left*	Part No. TUB Outer link at both ends*	For corrugated tube nominal diameter Ø [mm]
E4-32-XXXTUBR-*R*-0	E4-32-XXXTUBL-*R*-0	E4-32-XXXTUB-*R*-0	.28 (07), .39 (10), .47 (12), .67 (17)

*View from the fixed end

Part number appended with width index **XXX** *Bi* and radius (*R*) e.g.

E4-32-100TUBR-150-0 = with TUB outer sections every 2nd right hand link



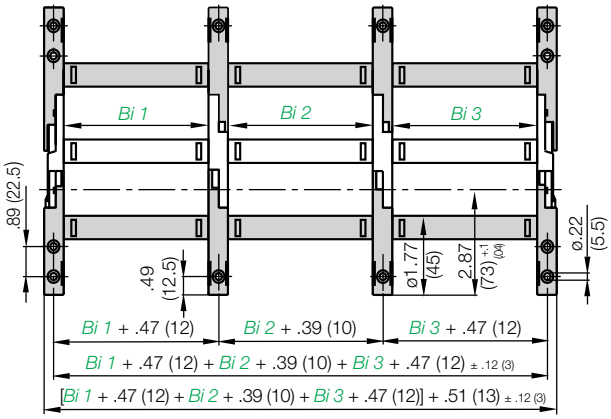


Part number example for e-chain®
E4-32-10/20/10-200-0
E4-32-*Bi1*/*Bi2*/*Bi3*-*R*-0

Extension links - for extremely wide e-chains® up to 9.84 ft (3m)

- For applications in which particularly high fill weights necessitate extremely wide e-chains®
- The extension link design allows virtually limitless side-by-side attachment of chains
- The unsupported length of a chain can be increased when additional loads are required
- Extension links can be used with e-chains®, e-tubes or a combination of both
- They are suitable for unsupported and gliding applications in a guide trough
- e-chains® with extension links are attached with KMA or steel mounting brackets.





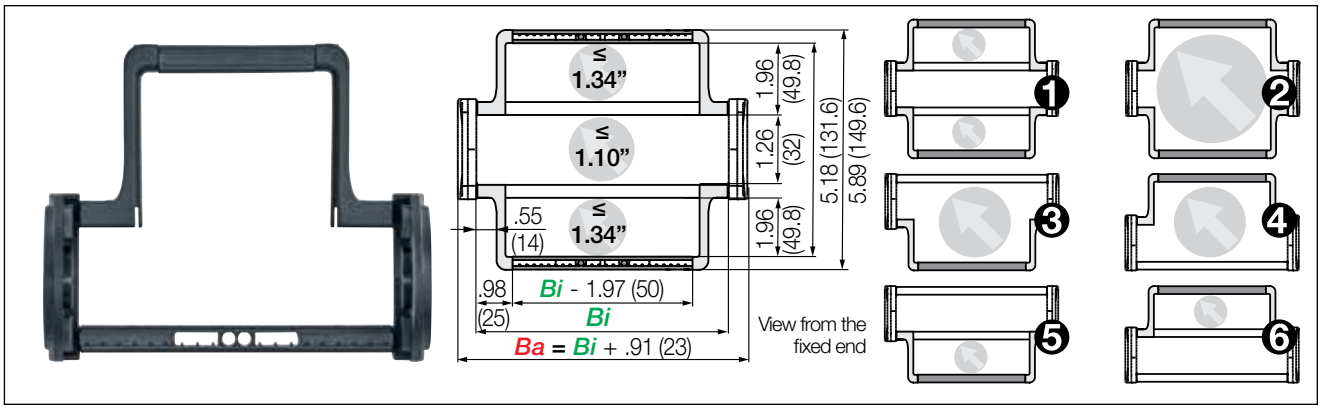
We **strongly recommend** on-site consultation with an igus® technician for individual advice regarding mounting brackets, guide troughs and other design details.

Part No. Extension link e-chain®	Part No. Extension link e-tube	Part No. Extension link as an individual part
E4-32-*Bi1*/*Bi2*/*Bi3*-*R*-0	R4-32-*Bi1*/*Bi2*/*Bi3*-*R*-0	284-*R*-

Complete Part No. with the width index *Bi1*/*Bi2*/*Bi3*/*etc.* and the radius (*R*). Example: **E4-32-10/20/10-200-0**

PDF: igus.com/e-chain-pdfs
Product information: igus.com/e-chains

e-chain system® E4-1
Series E4-32/H4-32/R4-32
Accessories



Extender crossbars with flexible width | Safe guiding for large hoses

- For guiding and protecting large hoses
- With mounting for noise dampers
- Cable-friendly design, high crossbar holding force
- The openable extender crossbars can be fitted in different ways and combinations
- Optionally openable along the inner or outer radius

Versions e-chain® with extender crossbar	Hose Ø ≤ in. (mm)	Part No. e-chain® with extender crossbar
1 Extender crossbar and standard crossbar alternating along the inner and outer radius [1]	1.34 (34)	E4-32-XXXHB50-*R*-0
2 Extender crossbar on both sides along the inner and outer radius [2]	4.72 (120)	E4-32-XXXB50-*R*-0
3 Extender crossbar along the outer radius [3]	2.83 (72)	E4-32-XXXBE50-*R*-0
4 Extender crossbar along the inner radius [2]	2.83 (72)	E4-32-XXXBZ50-*R*-0
5 Extender crossbar and standard crossbar alternating along the outer radius [3]	1.34 (34)	E4-32-XXXHBE50-*R*-0
6 Extender crossbar and standard crossbar alternating along inner radius [1]	1.34 (34)	E4-32-XXXHBZ50-*R*-0

1) Minimum bend radius: *R* 125
2) Minimum bend radius: *R* 150
3) Minimum bend radius: *R* 063 *Width available upon request. Delivery time upon request

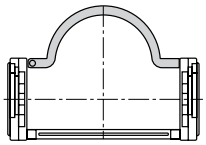
Bi [mm] **Available inner widths**

| 100 | 125 | 137 | 150 | 162 | 175 | 187 | 200 | 212 | 225 | 237 | 250 |
| 262 | 275 | 287 | 300 | 312 | 325 | 337 | 350 | 362 | 375 | 387 | 400 |

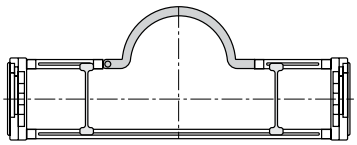
Complete Part No. with the width index XXX *Bi* and the radius (*R*). Example
E4-32-100B50-150-0 = extender crossbar on both sides along inner and outer radius



The E4.1 can be fitted with openable extender crossbars, which increase the size of the interior of the e-chain®. Crossbars can be fitted in various ways: from one or both sides, alternating with standard crossbars and or any combination



Attached directly to the side link.



Round extender crossbar combined with standard snap-open crossbars.

Extender crossbars
For careful guiding of large diameter cables and hoses

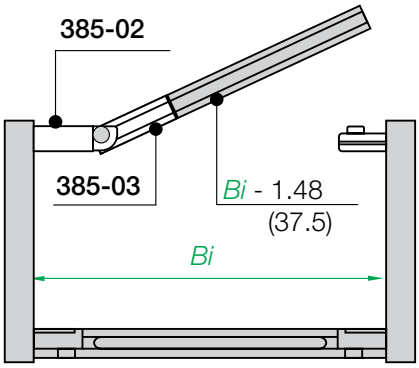


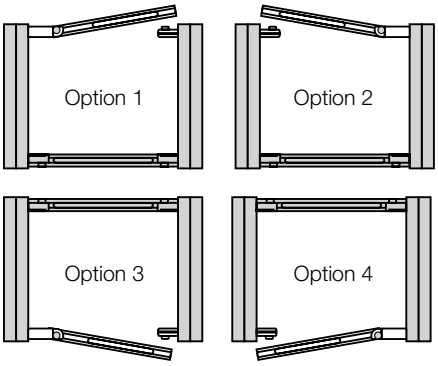
- Intended for cables and hoses with a maximum outer diameter of 4.13 in. (105 mm).
- Gliding operation with crossbars assembled along the outer radius in conjunction with a special guide trough
- Gliding operation not guaranteed with crossbars assembled along the inner radius
- The extender crossbar can either be attached to the side links directly or can be used in combination with two standard snap-open crossbars.

Part No.	Max Ø Hose in. (mm)	Style	Installation Side Link	Combined with Snap-Open Crossbars
385-15-RHD115	4.13 (105)	Round	No	Yes
385-18-RD115	4.13 (105)	Round	Yes	No

Hinged crossbars

- Typically, e-chain® crossbars are completely removable. In cases where it is preferable that the opening crossbars remain on the e-chain®, a hinged design has been developed.
- Hinged crossbar: Part No. 385-02
- Snap-open crossbar (shortened): Bi-1.48" (37.5 mm) Part No. 385-03 (smallest inner width Bi = 3.44" (87.5 mm)





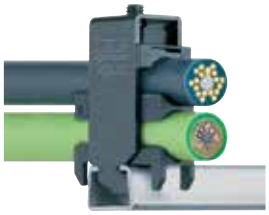


Part No. e-chain® with hinged crossbar	Part No. swivel clip as an individual part	Part No. openable crossbar as an individual part
E4-32-*Bi*-Z-*R*-0	385-02	385-03

PDF: igus.com/e-chain-pdfs
Product information: igus.com/e-chains

e-chain system® E4-1
Series E4-32/H4-32/R4-32
Strain Relief

Chainfix clamps for the profile rail



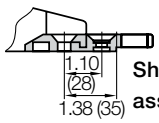
igus® Chainfix strain relief elements are available in either steel or stainless steel. They can be adjusted with a hexagon socket and are available in single, double and triple configurations.

Part No. Single Clamp		Part No. Double Clamp		Part No. Triple Clamp		Cable ø	
Steel	Stainless	Steel	Stainless	Steel	Stainless	in.	(mm)
CFX12-1M	CFX12-1ME	CFX12-2M	CFX12-2ME	CFX12-3M	–	.24 - .47	(06 - 12)
CFX14-1M	CFX14-1ME	CFX14-2M	CFX14-2ME	CFX14-3M	–	.47 - .55	(12 - 14)
CFX16-1M	CFX16-1ME	CFX16-2M	CFX16-2ME	CFX16-3M	–	.55 - .63	(14 - 16)
CFX18-1M	CFX18-1ME	CFX18-2M	CFX18-2ME	CFX18-3M	–	.63 - .71	(16 - 18)
CFX20-1M	CFX20-1ME	CFX20-2M	CFX20-2ME	CFX20-3M	–	.71 - .79	(18 - 20)
CFX22-1M	CFX22-1ME	CFX22-2M	CFX22-2ME	CFX22-3M	–	.79 - .87	(20 - 22)
CFX26-1M	CFX26-1ME	CFX26-2M	CFX26-2ME	–	–	.87 - 1.02	(22 - 26)
CFX30-1M	CFX30-1ME	CFX30-2M	CFX30-2ME	–	–	1.02 - 1.18	(26 - 30)
CFX34-1M	CFX34-1ME	CFX34-2M	CFX34-2ME	–	–	1.18 - 1.34	(30 - 34)
CFX38-1M	CFX38-1ME	–	–	–	–	1.34 - 1.50	(34 - 38)
CFX42-1M	CFX42-1ME	–	–	–	–	1.50 - 1.65	(38 - 42)

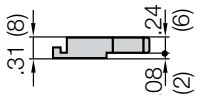
For more information please refer to strain relief section of Chapter 10

Tiewrap Plates





Shown assembled

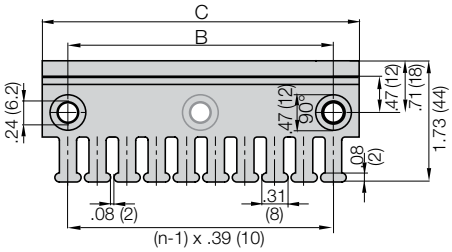


Single tiewrap plate

Option 1:
Tiewrap plates as an individual part

Available as an individual component, can be fixed onto a mounting bracket with the use of a profile rail.

Tiewrap Plate	n Number of Teeth	C Overall Width in. (mm)	B Bore Width in. (mm)	Center Bore
3050-ZB	5	1.97 (50)	1.18 (30)	no
3075-ZB	7	2.95 (75)	2.16 (55)	no
3100-ZB	10	3.94 (100)	3.15 (80)	no
3115-ZB	11	4.53 (115)	3.74 (95)	no
3125-ZB	12	4.92 (125)	4.13 (105)	no
3150-ZB	15	5.91 (150)	5.12 (130)	no
3175-ZB	17	6.89 (175)	6.10 (155)	no
3200-ZB	20	7.87 (200)	7.09 (180)	yes
3225-ZB	22	8.86 (225)	8.07 (205)	yes
3250-ZB	25	9.84 (250)	9.06 (230)	yes



If used with KMA brackets with profile rail please add “KMA” to the end of the part number.
Example: 3050-ZBKMA

For more information please refer to strain relief section of Chapter 10



Option 2:
Clip-on Tiewrap plates

Available as a clip-on tiewrap plate without the use of bolts They are inserted and removed with a screwdriver used as a lever. Clip-on tiewrap plates are also available as an attachment to the opening crossbars.

Part No.	Number of Teeth	Width of Strain Relief in.	(mm)
3050-ZC	5	1.97	(50)
3075-ZC	7	2.95	(75)

e-chain system® E4-1
Series E4-32/H4-32/R4-32
Guide Trough

Guide troughs are used with applications where the upper run of the e-chain® glides on the lower run. If using igus® steel guide troughs, the following components are required:

- Full travel length of guide trough
  Part Number 98-30
- 1/2 travel length of glide bars
  Part number 92-01
- Installation sets as end connectors
  Part Number 93-50-XX

Width of Crossbar
E4-32-**05**-200-0

-05	3.15 (78)	93-50-200
-06	3.86 (96)	93-50-225
-07	4.13 (103)	93-50-225
-087	4.61 (115)	93-50-225
-097	4.92 (125)	93-50-250
-10	5.12 (128)	93-50-250
-11	5.43 (136)	93-50-250
-112	5.59 (141)	93-50-250
-12	6.10 (153)	93-50-275
-137	6.57 (166)	93-50-275
-15	7.09 (178)	93-50-300
-162	7.56 (191)	93-50-300
-17	7.80 (196)	93-50-325
-18	8.07 (203)	93-50-325
-187	8.54 (216)	93-50-325
-20	9.06 (228)	93-50-350
-212	9.53 (241)	93-50-350
-23	10.04 (253)	93-50-375
-237	10.51 (266)	93-50-375
-25	11.02 (278)	93-50-400
-262	11.50 (291)	93-50-400
-28	12.01 (303)	93-50-425
-29	12.48 (316)	93-50-425
-30	12.99 (328)	93-50-450
-312	13.46 (341)	93-50-450
-325	13.98 (353)	93-50-475
-337	14.45 (366)	93-50-475
-350	14.96 (378)	93-50-500
-362	15.43 (391)	93-50-500
-375	15.94 (403)	93-50-525
-387	16.42 (416)	93-50-525
-400	16.93 (428)	93-50-550

B_{Ri}

Installation
Part No.

Standard length profile rail

-XX indicates the length of the profile rail on which the guide trough is mounted. The values and part numbers are specified in the table on the left. The standard length of the trough components and glide bars is 6.56 ft (2 m.) The required overall length of the guide trough directly correlates to the length of travel.

Example:
Length of travel 164 ft (50 m)
Center mounted
Required guide troughs:
164 ft (50 m) guide trough
82 ft (25 m) glide bar

= 25 sections of 6.56 ft (2 m) guide trough
Part No. 98-30

= 13 sections of 6.56 ft (2 m) glide bar
Part No. 92-01

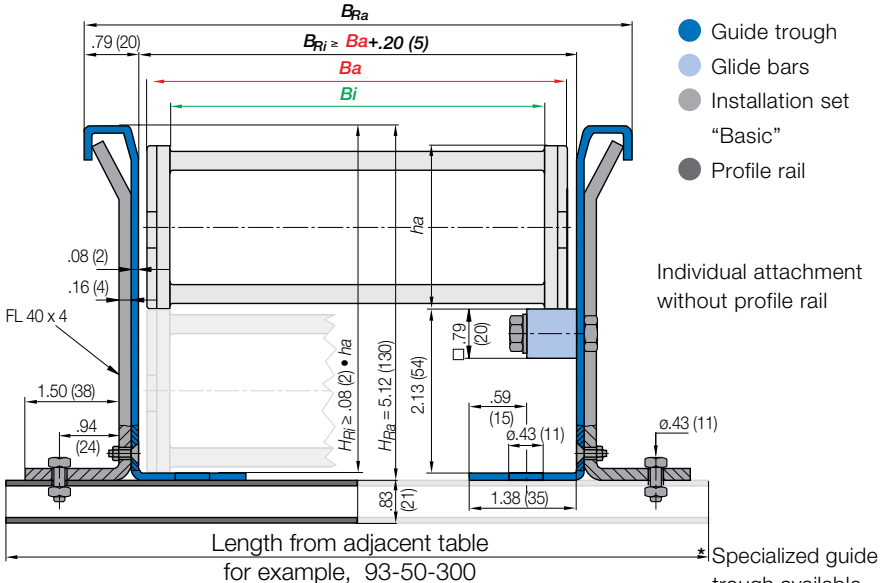
Required number of installation sets:
= Number of guide trough components + 1
= 25 + 1 = 26
Part number of the installation sets
93-50-XXX
Example: 93-50-400 for 15.75" (400 mm) long profile rail.



Left: Guide trough with glide bars
Right: Guide troughs without glide bars



Installation sets as section connectors



PDF: igus.com/e-chain-pdfs
Product information: igus.com/e-chains

e-chain system® E4-1
Series E4-42/H4-42/R4-42

Price Index

Series E4-42

Series H4-42

Series R4-42

Special Options Available

Low noise version available with special rubber pads

Cleanroom test upon request

ESD classification: Electrically conductive ESD/ ATEX version upon request

Assembly Tips



Opening e-chains®: Remove crossbars and clips - Insert screwdriver into the slot, push down, release by lever action



Remove lids/bottoms (e-tubes) - Insert screwdriver into the slot, release by lever action

Other Installation Methods

Vertical, hanging ≤ 328 ft (100 m)
Vertical, standing ≤ 19.69 ft (6 m)
Side-mounted, unsupp. ≤ 6.56 ft (2 m)
Rotary requires further calculation

Usage Guidelines

- If quiet operation is required
- If very high speeds and/or accelerations are required
- Long travels
- High additional loads

- When an extremely low vibration e-chain®/e-tube is required
  ➤ **Series E6-40/R6-40**
- When an economic one-sided snap-open e-chain®/e-tube is required
  ➤ **Series 3400/3450/3480/3500**

Features & Benefits

1. Wide, rounded plastic crossbars - cable friendly
2. Low-noise operation through integrated brake in the radial stop dog system
3. Hinged snap-open removable lids along the outer radius of the e-tube
4. Straight run through inner-/outer-link design
5. QuickLock Crossbar, 385-X-Q, available for faster assembly/disassembly
6. The tongue and groove design provides greater lateral stability
7. New Interior separation kit available
8. Crossbars are removable along both radii
9. 15% more tensile strength (compared to the older E4 series), better unsupported length through improved stop dog system and vertical radial stops
10. Version NCST “without camber” simply by turning outer links without unnecessary rework





Also available without camber. Add NCST to the end of the part number.
Ex: E4-42-20-300NCST

Order Example: Complete e-chain®

Please indicate chain length or number of links. Example:

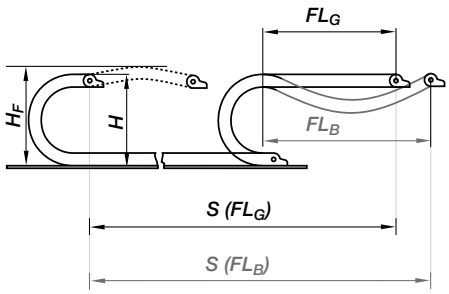
16.4 ft (5 m) **E4-42-20-300-0**	**e-chain®**
With 2 separators **42.1.1** assembled every 2nd link	**Interior Separation**
1 Set **E4-420-20-12P**	**Mounting Bracket**

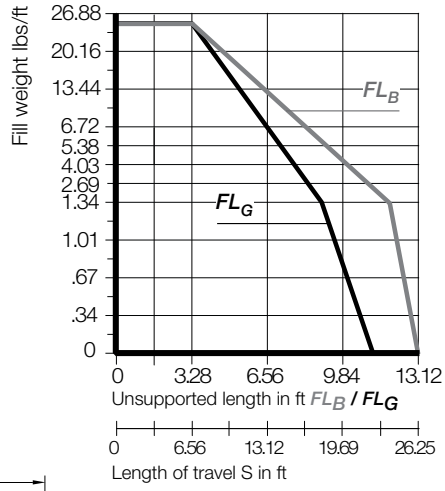
e-chain system® E4-1
Series E4-42/H4-42/R4-42
Installation Dimensions

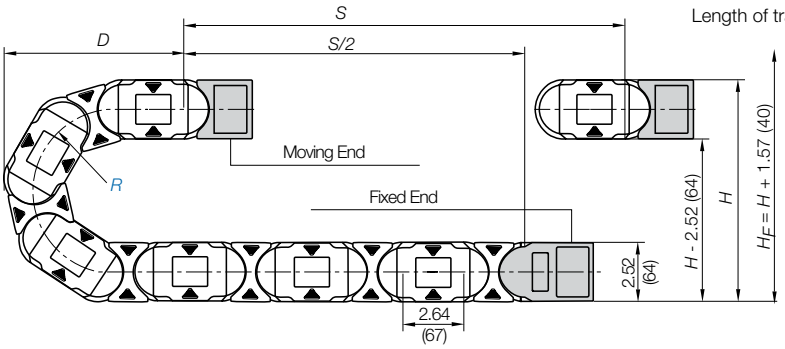
Short travel, unsupported length

- FL_B = unsupported with permitted sag
- FL_G = unsupported with straight upper run

Further information ➤ Design, Chapter 1







Pitch per link: = 2.64" (67 mm)
Links per ft (m): = 4.57 (15)
For center mount applications:
Chain length = $_{S}/_{2}$ + K

The required clearance height: $H_F = H$ **+ 1.57 in. (40 mm)** (with 2.02 lbs/ft (3 kg/m) fill weight.
Please consult igus® if space is particularly restricted.

Short Travels - Unsupported

Unsupported e-chains® feature positive camber over short travels. This must be accounted for when specifying the clearance height. Please refer to **Installation dimensions** for further details.

Legend

S = Length of travel
R = Bending radius
H = Nominal clearance height
D = Overlength e-chain® radius in final position
K = π • *R + safety buffer*
H_F = Required clearance height
H_{RI} = Trough inner height
H_2 = *Mounting height
D_2 = Overlength - long travels, gliding
K_2 = *Add-on

*If the mounting bracket location is set lower

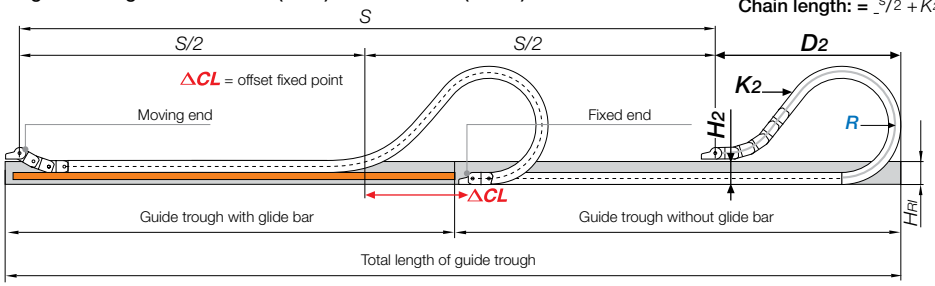
R	2.95 (075*)	3.94 (100*)	4.53 (115*)	4.92 (125)	5.91 (150)	6.30 (160)	6.69 (175)	7.87 (200)	9.84 (250)	11.81 (300)	13.78 (350)
H $^{-0}_{+25}$	8.43 (214)	10.39 (264)	11.57 (294)	12.36 (314)	14.33 (364)	15.12 (384)	16.30 (414)	18.27 (464)	22.20 (564)	26.14 (664)	30.08 (764)
D	8.19 (208)	9.17 (233)	9.76 (248)	10.15 (258)	11.14 (283)	11.54 (293)	12.13 (308)	13.11 (333)	15.08 (383)	17.05 (433)	19.02 (483)
K	14.57 (370)	17.72 (450)	19.69 (500)	20.87 (530)	24.02 (610)	25.20 (640)	26.97 (685)	30.12 (765)	36.22 (920)	42.52 (1080)	48.62 (1235)

*Radius not available for e-tubes

For long travels with lowered mounting height

Long travel lengths from 32.8 ft. (10 m) to max. 984 ft. (300 m)

For center mount applications:
Chain length: = $_{S}/_{2}$ + K_2



Long Travels - Gliding



If the unsupported length is exceeded, the e-chain®/Tube must glide on itself. This requires a guide trough.
Design, Chapter 1

R	2.95 (075*)	3.94 (100*)	4.53 (115*)	4.92 (125)	5.91 (150)	6.30 (160)	6.69 (175)	7.87 (200)	9.84 (250)	11.81 (300)	13.78 (350)
H_2	-	-	9.06 (230)	7.32 (186)	7.32 (186)	7.32 (186)	7.32 (186)	7.32 (186)	7.32 (186)	7.32 (186)	7.32 (186)
D_2 +25	-	-	17.13 (435)	18.70 (475)	22.44 (570)	24.53 (623)	26.38 (670)	30.71 (780)	40.55 (1030)	45.28 (1150)	59.06 (1500)
K_2	-	-	29.02 (737)	31.65 (804)	36.93 (938)	42.20 (1072)	44.84 (1139)	52.76 (1340)	65.94 (1675)	76.50 (1943)	94.96 (2412)
ΔCL	-	-	7.87 (200)	9.06 (230)	11.81 (300)	14.96 (380)	14.96 (380)	18.11 (460)	25.98 (660)	28.74 (730)	40.55 (1030)

In case of travels between 26.3 and 29.4 ft (8 and 12 m) we recommend a longer unsupported length.

For support of the lower run, **see Chapter 9** for the **Support Tray tool kit**

*Radius not available for e-tubes

Technical Data

Speed / acceleration FL_G	max. 65.6 ft/s (20 m/s) / max. 656 ft/s² (200 m/s²)
Speed / acceleration FL_B	max. 9.84 ft/s (3 m/s) / max. 19.69 ft/s² (6 m/s²)
Gliding speed / acceleration (maximum)	max. 32.8 ft/s (10 m/s) / max. 164 ft/s² (50 m/s²)
Material - permitted temperature	igumid G / -40°F (-40°C) up to +248°F (+120° C)
Flammability Class, igumid G	VDE 0304 IIC UL94 HB

Details of material properties
➤ Chapter 1

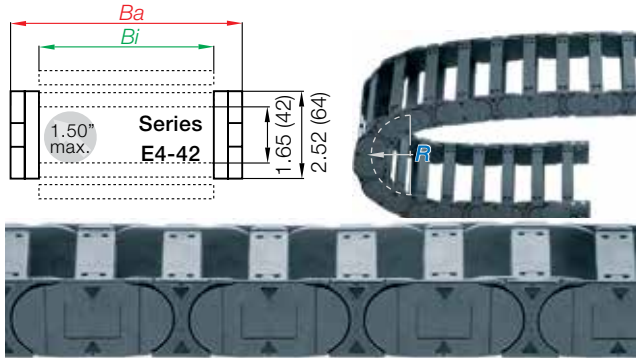
PDF: igus.com/e-chain-pdfs
Product information: igus.com/e-chains

e-chain system® E4-1
Series E4-42/H4-42/R4-42
Product Range

Telephone 1-800-521-2747

Internet: igus.com
email: sales@igus.com
QuickSpec: igus.com/quickspec

Series E4-42 - e-chain® with crossbars every link



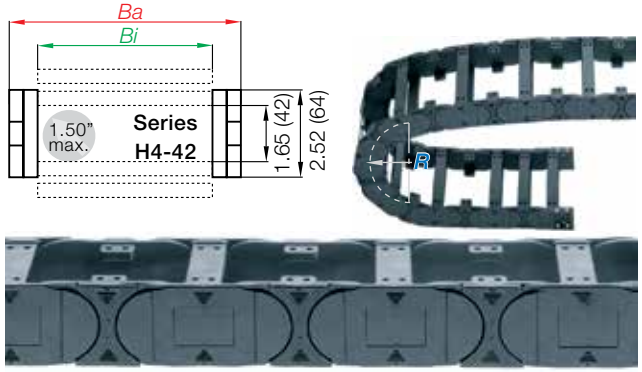
- Crossbars every link
- For use with rigid hydraulic hoses
- For particularly demanding applications
- Can be opened from both sides

Part Number Structure

E4-42- 400- 300- 0

- 300- Color - Black
- 400- Bending radius
- E4-42- Width
- Series

Series H4-42 - e-chain® with crossbars every other link



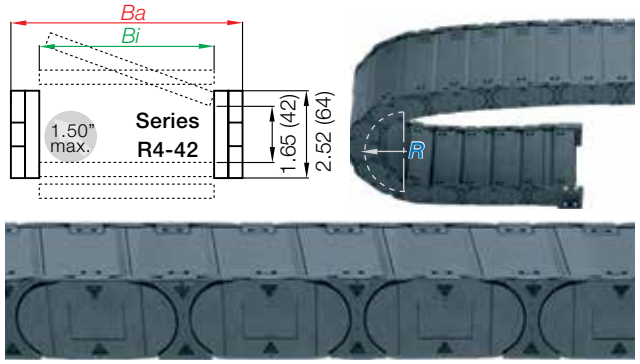
- Crossbars every other link Standard configuration
- For nearly every situation
- Can be opened from both sides
- Easy assembly
- Stable
- Cost-effective

Part Number Structure

H4-42- 400- 300- 0

- 300- Color - Black
- 400- Bending radius
- H4-42- Width
- Series

Series R4-42 - fully enclosed e-tube



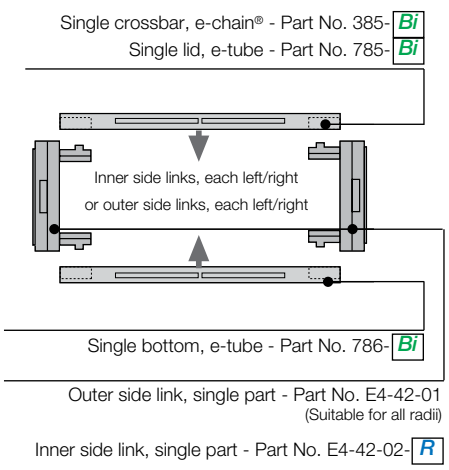
- Fully enclosed
- Excellent cable and hose protection against dirt
- Protection against hot chips
- Lids along inner radius are completely removable
- Lids along the outer radius are single-sided, snap open, hinged on one side as well as completely removable

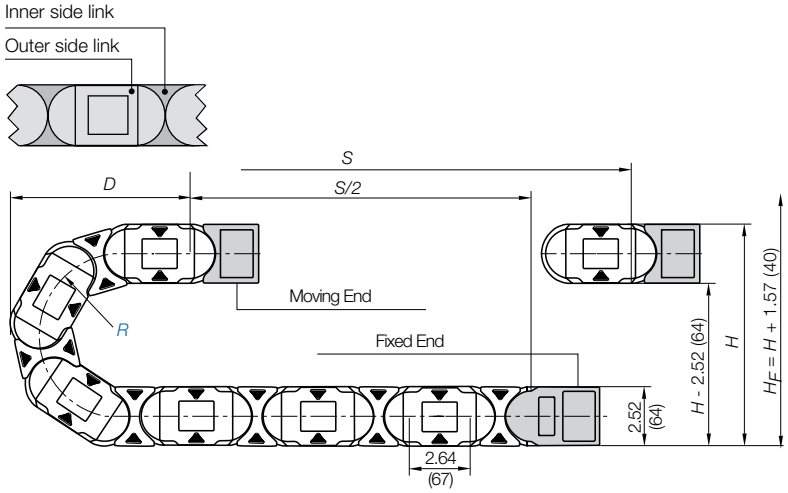
Part Number Structure

R4-42- 25- 300- 0

- 300- Color - Black
- 25- Bending radius
- R4-42- Width
- Series

e-chain® as separate parts, links and side plates





e-chain system® E4-1
Series E4-42/H4-42/R4-42
Product Range

Supplement part number with required radius. Example: E4-42-400-300-0
Pitch: 2.64 in. (67mm) per link, links/ft(m) = 4.57 (15)

Part Number					Bi	Ba	Weight		
Crossbars Every link	Crossbars Every other	Tube Version			in. (mm)	in. (mm)	E4-42 lbs/ft (kg/m)	H4-42 lbs/ft (kg/m)	R4-42 lbs/ft (kg/m)
E4-42-05-	H4-42-05	*R4-42-05-		-0	1.97 (50)	2.99 (76)	≈ 1.29 (1.92)	≈ 1.21 (1.80)	≈ 1.44 (2.15)
E4-42-06-	H4-42-06-			-0	2.68 (68)	3.70 (94)	≈1.36 (2.03)	≈ 1.25 (1.86)	–
E4-42-07-	H4-42-07	R4-42-07-		-0	2.95 (75)	3.98 (101)	≈ 1.38 (2.06)	≈ 1.26 (1.87)	≈ 1.53 (2.28)
E4-42-087-	H4-42-087-			-0	3.43 (87)	4.49 (114)	≈ 1.42 (2.12)	≈ 1.28 (1.90)	≈ 1.62 (2.41)
E4-42-097	H4-42-097			-0	3.82 (97)	4.72 (120)	≈ 1.43 (2.14)	≈ 1.29 (1.92)	–
E4-42-10-	H4-42-10-	R4-42-10-		-0	3.94 (100)	4.96 (126)	≈ 1.47 (2.19)	≈ 1.32 (1.96)	≈ 1.69 (2.52)
E4-42-11-	H4-42-11-	R4-42-11-		-0	4.25 (108)	5.28 (134)	≈ 1.50 (2.24)	≈ 1.32 (1.97)	≈ 1.73 (2.57)
E4-42-112-	H4-42-112-			-0	4.41(112)	5.47 (139)	≈ 1.51 (2.25)	≈ 1.32 (1.97)	–
E4-42-12-	H4-42-12-	R4-42-12-		-0	4.92 (125)	5.94 (151)	≈ 1.57 (2.34)	≈ 1.35 (2.01)	≈ 1.83 (2.73)
E4-42-137-	H4-42-137-			-0	5.39 (137)	6.46 (164)	≈ 1.61 (2.39)	≈ 1.37 (2.04)	–
E4-42-15-	H4-42-15-	R4-42-15-		-0	5.91 (150)	6.93 (176)	≈ 1.65 (2.46)	≈ 1.39 (2.07)	≈ 2.00 (2.98)
E4-42-162-	H4-42-162-			-0	6.38 (162)	7.44 (189)	≈ 1.67 (2.48)	≈ 1.40 (2.09)	–
E4-42-17-	H4-42-17-	R4-42-17-		-0	6.61 (168)	7.64 (194)	≈ 1.71 (2.55)	≈ 1.42 (2.12)	≈ 2.12 (3.15)
E4-42-18-	H4-42-18-			-0	6.89 (175)	7.91 (201)	≈ 1.73 (2.57)	≈ 1.43 (2.13)	–
E4-42-187-	H4-42-187-			-0	7.36 (187)	8.43 (214)	≈ 1.75 (2.61)	≈ 1.44 (2.15)	–
E4-42-20-	H4-42-20-	R4-42-20-		-0	7.87 (200)	8.90 (226)	≈ 1.83 (2.72)	≈ 1.48 (2.20)	≈ 2.32 (3.45)
E4-42-212-	H4-42-212-			-0	8.35 (212)	9.41 (239)	≈ 1.85 (2.76)	≈ 1.49 (2.22)	–
E4-42-23-	H4-42-23-			-0	8.86 (225)	9.88 (251)	≈ 1.90 (2.84)	≈ 1.52 (2.26)	–
E4-42-237-	H4-42-237-			-0	9.33 (237)	10.39 (264)	≈ 1.93 (2.87)	≈ 1.53 (2.28)	–
E4-42-25-	H4-42-25-	R4-42-25-		-0	9.84 (250)	10.87 (276)	≈ 2.00 (2.98)	≈ 1.57 (2.33)	≈ 2.86 (4.25)
E4-42-262-	H4-42-262-			-0	10.31 (262)	11.38 (289)	≈ 2.05 (3.05)	≈ 1.59 (2.37)	–
E4-42-28	H4-42-28-			-0	10.83 (275)	11.85 (301)	≈ 2.09 (3.11)	≈ 1.61 (2.40)	–
E4-42-29-	H4-42-29-			-0	11.30 (287)	12.36 (314)	≈ 2.11 (3.14)	≈ 1.62 (2.41)	–
E4-42-30-	H4-42-30-	R4-42-30-		-0	11.81 (300)	12.83 (326)	≈ 2.18 (3.24)	≈ 1.65 (2.46)	≈ 3.29 (4.89)
E4-42-312-	H4-42-312-			-0	12.28 (312)	13.35 (339)	≈ 2.19 (3.26)	≈ 1.66 (2.47)	–
E4-42-325-	H4-42-325-			-0	12.79 (325)	13.82 (351)	≈ 2.24 (3.34)	≈ 1.69 (2.52)	–
E4-42-337-	H4-42-337-			-0	13.27 (337)	14.33 (364)	≈ 2.28 (3.40)	≈ 1.71 (2.54)	–
E4-42-350-	H4-42-350-			-0	13.78 (350)	14.80 (376)	≈ 2.41 (3.59)	≈ 1.77 (2.64)	–
E4-42-362-	H4-42-362-			-0	14.25 (362)	15.31 (389)	≈ 2.47 (3.67)	≈ 1.80 (2.68)	–
E4-42-375-	H4-42-375-			-0	14.76 (375)	15.83 (402)	≈ 2.51 (3.73)	≈ 1.82 (2.71)	–
E4-42-387-	H4-42-387-			-0	15.24 (387)	16.30 (414)	≈ 2.55 (3.79)	≈ 1.84 (2.74)	–
E4-42-400	H4-42-400-			-0	15.75 (400)	16.77 (426)	≈ 2.58 (3.84)	≈ 1.85 (2.76)	–

Choose from the radii below for all of the above sizes

Radius (mm) Example: E4-42-400-300-0

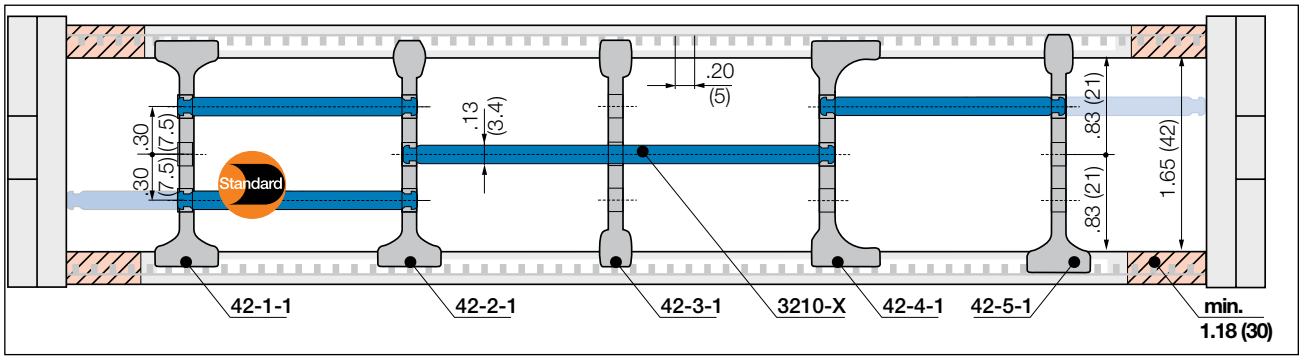
	075**	100**	115**	125	150	160	175	200	250	300	350
R	2.95 (075*)	3.94 (100*)	4.53 (115*)	4.92 (125)	5.91 (150)	6.30 (160)	6.69 (175)	7.87 (200)	9.84 (250)	11.81 (300)	13.78 (350)
H $^{-0}_{+20}$	8.43 (214)	10.39 (264)	11.57 (294)	12.36 (314)	14.33 (364)	15.12 (384)	16.30 (414)	18.27 (464)	22.20 (564)	26.14 (664)	30.08 (764)
D	8.19 (208)	9.17 (233)	9.76 (248)	10.15 (258)	11.14 (283)	11.54 (293)	12.13 (308)	13.11 (333)	15.08 (383)	17.05 (433)	19.02 (483)
K	14.57 (370)	17.72 (450)	19.69 (500)	20.87 (530)	24.02 (610)	25.20 (640)	26.97 (685)	30.12 (765)	36.22 (920)	42.52 (1080)	48.62 (1235)

** This radius is not available for the R4-42 Series
*Removable lid only, no hinged option
0 = Standard color black.
For other colors see Chapter 1

For wider chains see page 6.51
For large diameter hoses see page 6.52

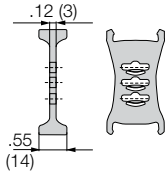
PDF: igus.com/e-chain-pdfs
Product information: igus.com/e-chains

e-chain system® E4-1
Series E4-42/H4-42/R4-42
Interior Separation - New Generation



Note e-tube: Please maintain a lateral spacing of 1.18" (30 mm) between the separators and the side links. In the standard configuration separators are assembled every 2nd e-chain® link



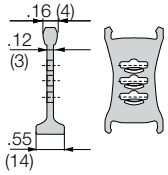


Separator, wide base

Unassembled	**Part No. 42-1**
Assembled	**Part No. 42-1-1**

- **Standard separator 42-1 for all applications**
  Separator with wide base for maximum locking strength and safe standing in e-chains®.



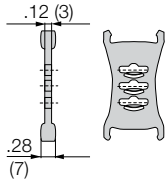


Separator, narrow head

Unassembled	**Part No. 42-2**
Assembled	**Part No. 42-2-1**

- **Separator 42-2**
  For even faster installation
  is used when vertical and horizontal separation is required. Due to its slot, it allows basic vertical/horizontal shelving arrangements.



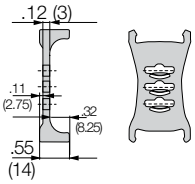


Separator, narrow base

Unassembled	**Part No. 42-3**
Assembled	**Part No. 42-3-1**

- **Separator 42-3**
  For many thin cables
  is used when vertical and horizontal separation is required. Due to its slot, it allows basic vertical/horizontal shelving arrangements.



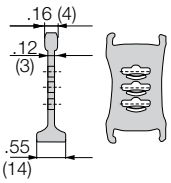


Separator, asymmetrical

Unassembled	**Part No. 42-4**
Assembled	**Part No. 42-4-1**

- **Separator 42-4**
  For side mounted applications
  is used when vertical and horizontal separation is required. Due to its slot, it allows basic vertical/horizontal shelving arrangements.





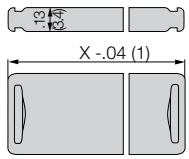
Separator, asymmetrical

Unassembled	**Part No. 42-5**
Assembled	**Part No. 42-5-1**

- **Separator 42-5**
  Locks safely in .30" (7.5 mm) increments
  Notch separator for exact positioning in e-chains®. Recommended for side-mounted applications.

Lockable full-width shelves - for the standard interior separation



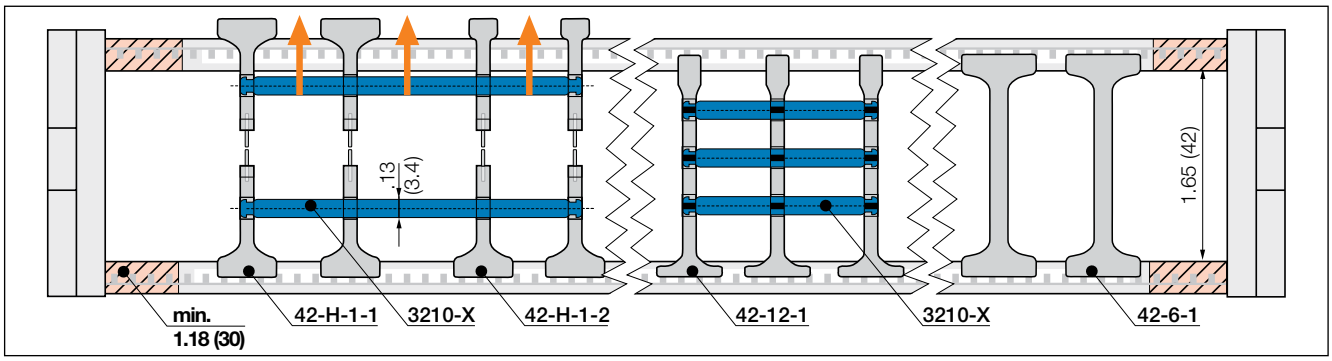


Full width shelf, lockable

Unassembled	**Part No. 3200-X**
Assembled	**Part No. 3210-X**

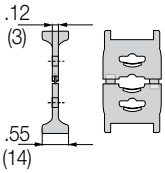
- **Full width shelf, lockable**
  Shelf locks safely into separators on both ends, fixed width possible. Separators can be moved freely over the shelf in horizontal direction. Can be used at one height.

Width X in. (mm)	Part No. Unassembled	Part No. Assembled	Width X in. (mm)	Part No. Unassembled	Part No. Assembled	Width X in. (mm)	Part No. Unassembled	Part No. Assembled
1.97 (050)	**3200-50**	**3210-50**	4.92 (125)	**3200-125**	**3210-125**	8.86 (225)	**3200-225**	**3210-225**
2.95 (075)	**3200-75**	**3210-75**	5.91 (150)	**3200-150**	**3210-150**	9.84 (250)	**3200-250**	**3210-250**
3.94 (100)	**3200-100**	**3210-100**	6.89 (175)	**3200-175**	**3210-175**			
4.53 (115)	**3200-115**	**3210-115**	7.87 (200)	**3200-200**	**3210-200**			



Note e-tube: Please maintain a lateral spacing of 1.18" (30 mm) between the separators and the side links. In the standard configuration separators are assembled every 2nd e-chain® link

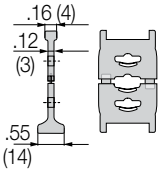




Separator, wide base

Unassembled	**Part No. 42-H-1**
Assembled	**Part No. 42-H-1-1**

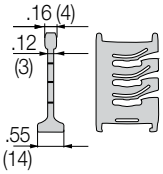




Separator, narrow head

Unassembled	**Part No. 42-H-2**
Assembled	**Part No. 42-H-2-1**





Lean separator

Unassembled	**Part No. 42-12**
Assembled	**Part No. 42-12-1**

- **Split separators for all applications**
  In order to fill e-chains® more easily and effectively, these separators can be split in the middle. This allows easier access to middle shelf partitions. Fast assembly and easy retrofit. 2 types available: with wide or narrow top.

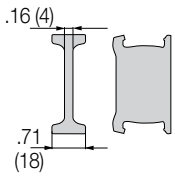
- **Lean separators 42-12**
  New design allows extremely fast fitting of shelves in several layers, which significantly reduces assembly time. Enables extremely fast replacement of individual cables in a very full e-chain®.



- **Lean separator design - several layers of cables fitted quickly, save up to 50%* assembly time**
  (*Lean separator vs. standard separator - measured on a 4m long e-chain® fitted with 12 cables in the igus® harnessing factory)

More interior separation options



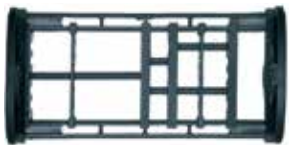


Notch locking separator

Unassembled	**Part No. 42-6**
Assembled	**Part No. 42-6-1**

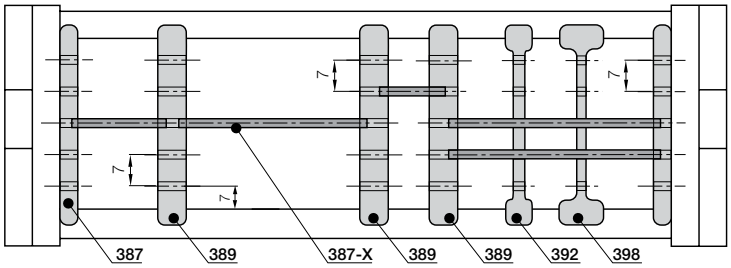
- **Notch locking separator for increased holding force**
  Notch locking separators offer higher crossbar opening forces for high humidity and/or large hydraulic hoses. They can be positioned precisely and then locked in position

e-chain system® E4-1
Series E4-42/H4-42/R4-42
Interior Separation - Previous Generation

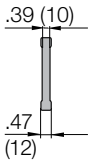


Shelves and Separators

e-chains® and e-tubes can be subdivided both vertically and horizontally using the various interior separation elements. ➤ **Design, Chapter 1** for layout recommendations.





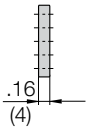


Split separator (chain only)

Unassembled	**Part No. T423**
Assembled	**Part No. T423M**

- **Split separator T423 for e-chains®**
  This separator is ideal for subsequent shelving or the initial assembly of the e-chain. Fast assembly and disassembly using a hinge/push mechanism. Enhances flexibility



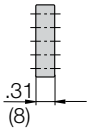


Side Plate

Unassembled	**Part No. 386**
Assembled	**Part No. 387**

- **Side plates 386**
  This component is used to form the basic pattern of a shelf system.





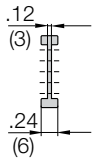
Vertical Separator

Unassembled	**Part No. 388**
Assembled	**Part No. 389**

- **Vertical separator 388**
  This component is used to form the basic pattern of a shelf system.







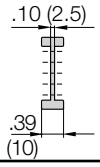
Slotted Separators

Unassembled	**Part No. 391**
Assembled	**Part No. 392**

- **Closed Slotted separators 391**
  These are used for complex subdivisions. However, they cannot be retrofitted into an existing interior separation system without removing the shelves first.







Slotted Separators, Open

Unassembled	**Part No. 397**
Assembled	**Part No. 398**

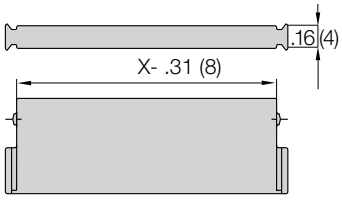
- **Open slotted separator 397**
  This separator can be retrofitted into an existing interior separation system without removing the shelves, as long as these shelves fit into the middle 3 slots only.

Width X in.	Width X (mm)	Usable Width in.	Usable Width (mm)	Part No. Unassembled	Part No. Assembled
.71	(18)	.39	(10)	**386-18**	**387-18**
.91	(23)	.59	(15)	**386-23**	**387-23**
.98	(25)	.67	(17)	**386-25**	**387-25**
1.10	(28)	.79	(20)	**386-28**	**387-28**
1.30	(33)	.98	(25)	**386-33**	**387-33**
1.69	(43)	1.38	(35)	**386-43**	**387-43**
1.97	(50)	1.65	(42)	**386-50**	**387-50**
2.13	(54)	1.81	(46)	**386-54**	**387-54**
2.44	(62)	2.13	(54)	**386-62**	**387-62**
2.95	(75)	2.64	(67)	**386-75**	**387-75**
3.43	(87)	3.12	(87)	**386-87**	**387-87**
3.94	(100)	3.62	(92)	**386-100**	**387-100**
4.25	(108)	3.94	(100)	**386-108**	**387-108**
4.92	(125)	4.61	(117)	**386-125**	**387-125**
5.91	(150)	5.59	(142)	**386-150**	**387-150**
6.89	(175)	6.57	(167)	**386-175**	**387-175**
7.87	(200)	7.56	(192)	**386-200**	**387-200**
8.19	(208)	7.87	(200)	**386-208**	**387-208**

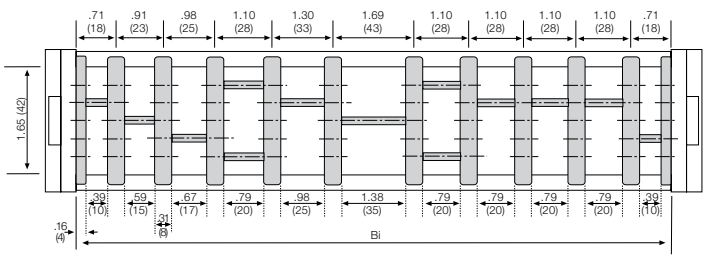
Shelves 386-XX

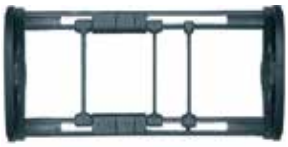
These components form the basic pattern of a shelf system. Shelves of various widths can be arranged at 5 different heights in .28" (7mm) increments

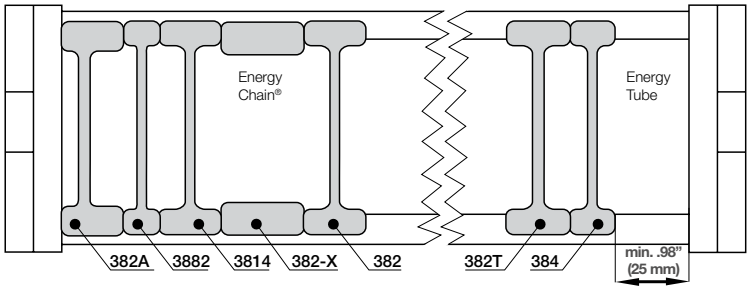




The diagram below is for reference purposes only. Multiple configurations are possible. To create your e-chain shelving cross section please see our online e-chain configurator. Call 1-800-521-2747 for assistance and/or go to igus.com click on the ***Products*** drop down menu, choose ***e-chain Cable Carriers*** and on the next drop down menu simply click on ***e-chain Configurator***.



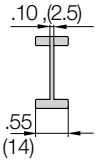




Vertical separators and spacers

Vertical separators are used if a vertical subdivision of the e-chain® interior is required. By standard, vertical separators are assembled every other e-chain® link.
NOTE: Observe a lateral spacing of at least .98 in. (25mm) for e-tubes



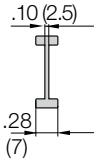


Separator (chain/tube)

Unassembled	**Part No. 380**
Assembled	**Part No. 381**

- **Standard separator 380 for e-chains® and e-tubes**
  This separator offers safe stability due to its wide base design, also when used with thick cables or hoses.



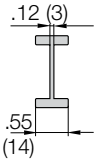


Separator (chain only)

Unassembled	**Part No. 3881**
Assembled	**Part No. 3882**

- **Vertical separator 3881 for e-chains®**
  This separator features a narrow 7mm base for applications where a large number of small cables need to be individually separated.



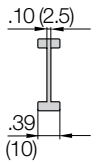


Vertical Separator (tubes only)

Part No. 380T	**Part No. 381T**

- **Locking separator 380T for e-tubes**
  It clamps to the fixed radius and remains free along the other radius to facilitate lid removal. When installing please ensure they are identically aligned.



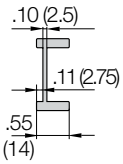


Separator (chain only)

Unassembled	**Part No. 383**
Assembled	**Part No. 384**

- **Vertical separator 383 for e-chains®**
  This separator features an increased retention force for applications exposed to very high humidity or extreme loads. It features asymmetric claws for the crossbar which results in the increased retention force.





Asymmetric separator (chain only)

Unassembled	**Part No. 381A**
Assembled	**Part No. 382A**

- **Asymmetrical separator 381A for e-chains®**
  This separator features an (14mm) base. It can be used in combinations between spacers of different widths and vertical separators in side mounted applications.





Spacer (chain only)

Unassembled	**Part No. 381-XX**
Assembled	**Part No. 382-XX**

XX = width of the spacer

- **NOTE ON SPACERS**
  Vertical separators are adjustable, but can be fixed in position by means of a spacer. Spacers are most often necessary for side mounted applications. The available inner height is reduced by .08" (2mm) **per spacer** (for example if one spacer is placed on either side of the separator, the overall inner height is reduced by .16" (4mm). To avoid this, place the spacers on the **outside** of the opening crossbar **(not for long travels)**.

Spacers available in the following sizes:

Part No. Unassembled	Part No. Assembled	in.	(mm)
381 -10	**382 -10**	.39"	(10)
381 -15	**382 -15**	.59"	(15)
381 -20	**382 -20**	79"	(20)

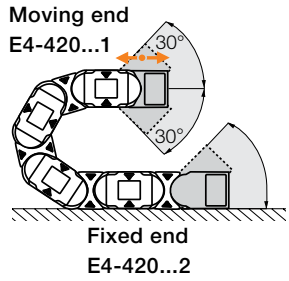
PDF: igus.com/e-chain-pdfs
Product information: igus.com/e-chains

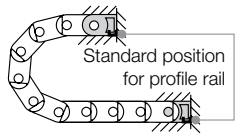
e-chain system® E4-1
Series E4-42/H4-42/R4-42
Mounting Brackets

Standard

Option 1: pivoting

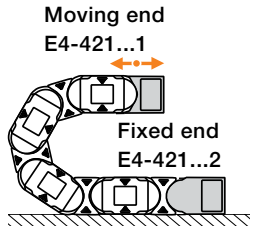
- Recommended for unsupported and gliding applications
- Attachment capability on all sides
- Bolted connection outside of chain cross-section
- Space restricted conditions
- Corrosion resistant

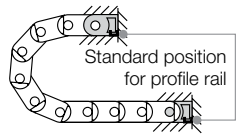




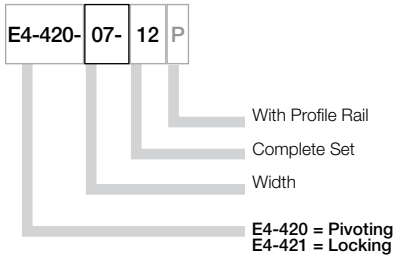
Option 2: locking

- Profile rail option
- Universal use
- Corrosion resistant
- Vertical hanging/standing travels
- Extreme accelerations

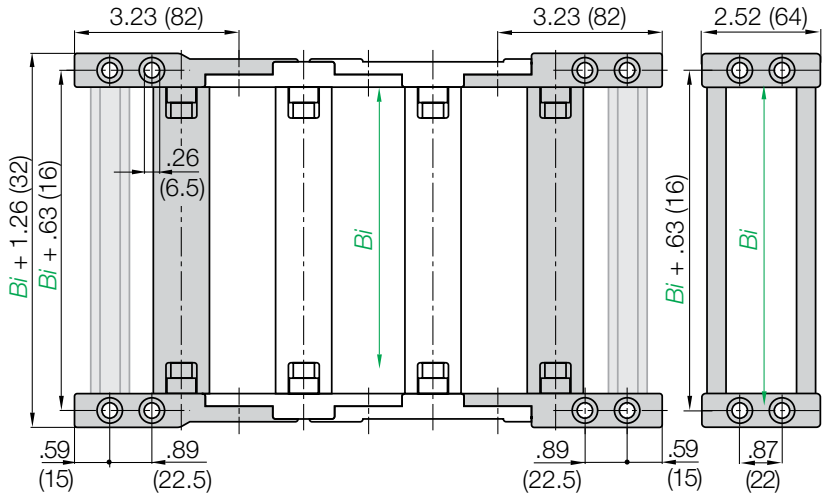




Part Number Structure



Due to the design of the E4-42 series chains, please note the following when ordering brackets:
Even number of links = full set, part number ending in **-12**; **Odd number of links =** 2 pieces, part number ending in **-1**



Part No. Full Set (pivoting)
Series E4-42 or H4-42
E4-420-Width-12

Part No. Full Set (pivoting)
with profile rail
Series E4-42 or H4-42
E4-420-Width-12P

Part number examples are shown for pivoting brackets for e-chain.
For locking brackets change part number to 421

Width	Part No. Full Set chain			With Profile Rail	*Bi* in. (mm)
	Pivoting	Locking			
-05*	E4-420	E4-421	-05-12	P	1.97 (50)
-06	E4-420	E4-421	-06-12	P	2.68 (68)
-07	E4-420	E4-421	-07-12	P	2.95 (75)
-087	E4-420	E4-421	-087-12	P	3.43 (87)
-097	E4-420	E4-421	-097-12	P	3.82 (97)
-10	E4-420	E4-421	-10-12	P	3.94 (100)
-11	E4-420	E4-421	-11-12	P	4.25 (108)
-112	E4-420	E4-421	-112-12	P	4.41 (112)
-12	E4-420	E4-421	-12-12	P	4.92 (125)
-137	E4-420	E4-421	-137-12	P	5.39 (137)
-15	E4-420	E4-421	-15-12	P	5.91 (150)
-162	E4-420	E4-421	-162-12	P	6.38 (162)
-17	E4-420	E4-421	-17-12	P	6.61 (168)
-18	E4-420	E4-421	-18-12	P	6.89 (175)
-187	E4-420	E4-421	-187-12	P	7.36 (187)
-20	E4-420	E4-421	-20-12	P	7.87 (200)

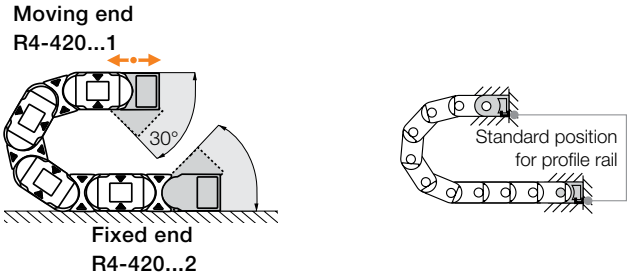
Width	Part No. Full Set chain			With Profile Rail	*Bi* in. (mm)
	Pivoting	Locking			
-212	E4-420	E4-421	-212-12	P	8.35 (212)
-23	E4-420	E4-421	-23-12	P	8.86 (225)
-237	E4-420	E4-421	-237-12	P	9.33 (237)
-25	E4-420	E4-421	-25-12	P	9.84 (250)
-262	E4-420	E4-421	-262-12	P	10.31 (262)
-28	E4-420	E4-421	-28-12	P	10.83 (275)
-29	E4-420	E4-421	-29-12	P	11.30 (287)
-30	E4-420	E4-421	-30-12	P	11.81 (300)
-312	E4-420	E4-421	-312-12	P	12.28 (312)
-325	E4-420	E4-421	-325-12	P	12.79 (325)
-337	E4-420	E4-421	-337-12	P	13.27 (337)
-350	E4-420	E4-421	-350-12	P	13.78 (350)
-362	E4-420	E4-421	-362-12	P	14.25 (362)
-375	E4-420	E4-421	-375-12	P	14.76 (375)
-387	E4-420	E4-421	-387-12	P	15.24 (387)
-400	E4-420	E4-421	-400-12	P	15.75 (400)

e-chain system® E4-1
Series E4-42/H4-42/R4-42
Mounting Brackets

Standard

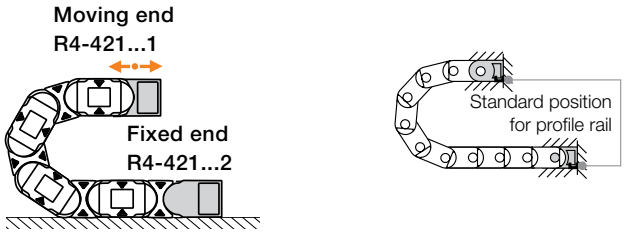
Option 1: pivoting

- Recommended for unsupported and gliding applications
- Attachment capability on all sides
- Bolted connection outside of chain cross-section
- Space restricted conditions
- Corrosion resistant

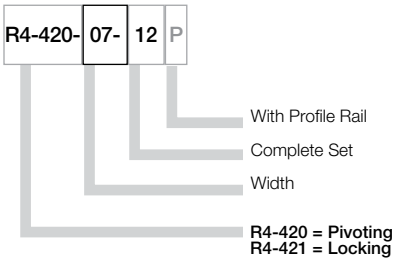


Option 2: locking

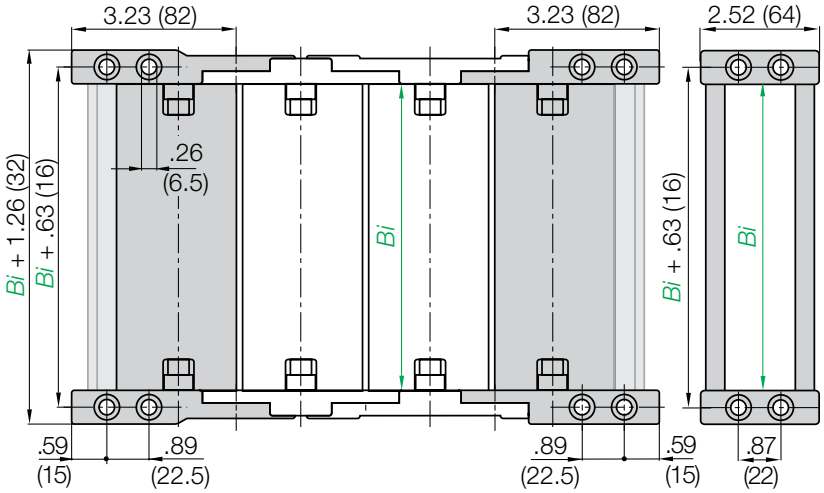
- Profile rail option
- Universal use
- Corrosion resistant
- Vertical hanging/standing travels
- Extreme accelerations



Part Number Structure



Due to the design of the R4-42 series chains, please note the following when ordering brackets:
Even number of links = full set, part number ending in **-12**; **Odd number of links =** 2 pieces, part number ending in **-1**



Part No. Full Set (pivoting)
Tube Series R4-42
R4-420-Width-12

Part No. Full Set (pivoting)
with Profile Rail
Tube Series R4-42
R4-420-Width-12P

Part number examples are shown for pivoting brackets for e-chain.
For locking brackets change part number to 421

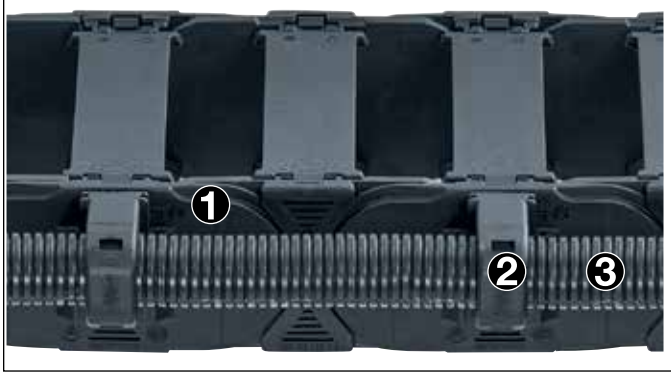
Width	Part No. Full Set chain			With Profile Rail	*Bi* in. (mm)
	Pivoting	Locking			
-05*	R4-420	R4-421	-05-12	P	1.97 (50)
-07	R4-420	R4-421	-07-12	P	2.95 (75)
-087	R4-420	R4-421	-087-12	P	3.43 (87)
-10	R4-420	R4-421	-10-12	P	3.94 (100)
-11	R4-420	R4-421	-11-12	P	4.25 (108)
-12	R4-420	R4-421	-12-12	P	4.92 (125)

Width	Part No. Full Set chain			With Profile Rail	*Bi* in. (mm)
	Pivoting	Locking			
-15	R4-420	R4-421	-15-12	P	5.91 (150)
-17	R4-420	R4-421	-17-12	P	6.61 (168)
-20	R4-420	R4-421	-20-12	P	7.87 (200)
-25	R4-420	R4-421	-25-12	P	9.84 (250)
-30	R4-420	ER4-421	-30-12	P	11.81 (300)

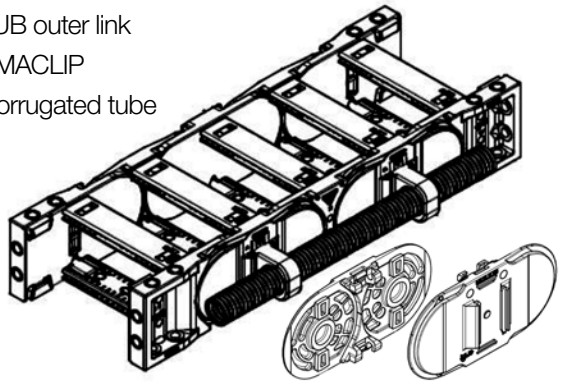
PDF: igus.com/e-chain-pdfs
Product information: igus.com/e-chains

e-chain system® E4-1
Series E4-42/H4-42/R4-42
Accessories

Telephone 1-800-521-2747
Internet: igus.com
email: sales@igus.com
QuickSpec: igus.com/quickspec



1. TUB outer link
2. PMACLIP
3. Corrugated tube



TUB | Safe guidance for corrugated tubes parallel to the e-chain®

- Additional, simple guidance for corrugated tubes on the outside of the e-chain®
- PMACLIP allows corrugated tubes with nominal widths .28 (07mm), .39 (10mm), .47 (12mm), .67 (17mm) to be easily clipped on
- Easy access to the corrugated tubes, fast replacement of the hoses
- Reduce assembly time and cost - easy to assemble, without any additional screws or tools
- The part number includes the e-chain® with TUB side sections; the PMACLIP support and the hose are ordered separately

Part No. TUB Outer link right*	Part No. TUB Outer link left*	Part No. TUB Outer link at both ends*	For corrugated tube nominal diameter Ø [mm]
E4-42-XXXTUBR-*R*-0	E4-42-XXXTUBL-*R*-0	E4-42-XXXTUB-*R*-0	.28 (07), .39 (10), .47 (12), .67 (17)

*View from the fixed end

Part number appended with width index **XXX** ***Bi*** and radius (***R***) e.g.

E4-42-100TUBR-150-0 = with TUB outer sections every 2nd right hand link



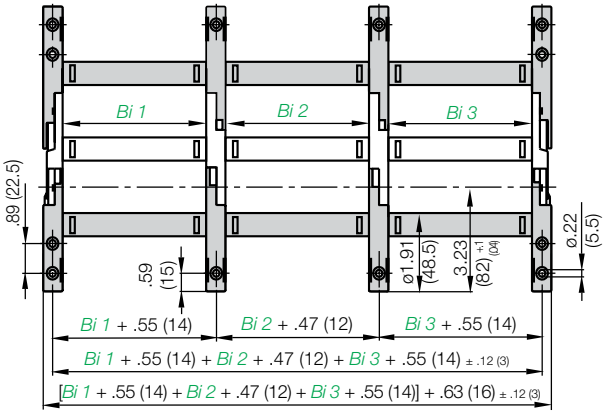


Extension links - for extremely wide e-chains® up to 9.84 ft (3m)

- For applications in which particularly high fill weights necessitate extremely wide e-chains®
- The extension link design allows virtually limitless side-by-side attachment of chains
- The unsupported length of a chain can be increased when additional loads are required
- Extension links can be used with e-chains®, e-tubes or a combination of both
- They are suitable for unsupported and gliding applications in a guide trough
- e-chains® with extension links are attached with KMA or steel mounting brackets.

Part number example for e-chain®
E4-42-10/20/10-[200]-0
E4-42-*Bi1*/*Bi2*/*Bi3*-[*R*]-0

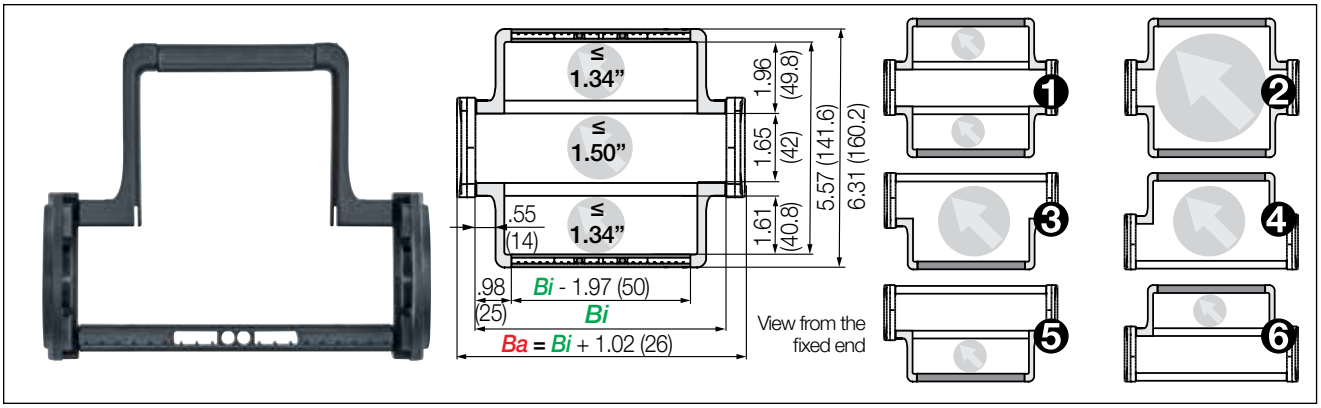




We **strongly recommend** on-site consultation with an igus® technician for individual advice regarding mounting brackets, guide troughs and other design details.

Part No. Extension link e-chain®	Part No. Extension link e-tube	Part No. Extension link as an individual part
E4-42-*Bi1*/*Bi2*/*Bi3*-*R*-0	R4-42-*Bi1*/*Bi2*/*Bi3*-*R*-0	384-*R*-

Complete Part No. with the width index ***Bi1***/***Bi2***/***Bi3***/***etc.*** and the radius (***R***). Example: **E4-32-10/20/10-200-0**



Extender crossbars with flexible width | Safe guiding for large hoses

- For guiding and protecting large hoses
- With mounting for noise dampers
- Cable-friendly design, high crossbar holding force
- The openable extender crossbars can be fitted in different ways and combinations
- Optionally openable along the inner or outer radius

Versions e-chain® with extender crossbar	Hose Ø ≤ in. (mm)	Part No. e-chain® with extender crossbar
1 Extender crossbar and standard crossbar alternating along the inner and outer radius [1]	1.34 (34)	E4-42-XXXHB50-*R*-0
2 Extender crossbar on both sides along the inner and outer radius [2]	5.12 (130)	E4-42-XXXB50-*R*-0
3 Extender crossbar along the outer radius [3]	3.35 (85)	E4-42-XXXBE50-*R*-0
4 Extender crossbar along the inner radius [2]	3.35 (85)	E4-42-XXXBZ50-*R*-0
5 Extender crossbar and standard crossbar alternating along the outer radius [3]	1.34 (34)	E4-42-XXXHBE50-*R*-0
6 Extender crossbar and standard crossbar alternating along inner radius [1]	1.34 (34)	E4-42-XXXHBZ50-*R*-0

1) Minimum bend radius: ***R*** 125
2) Minimum bend radius: ***R*** 150
3) Minimum bend radius: ***R*** 075 *Width available upon request. Delivery time upon request

Bi [mm] **Available inner widths**

| 100 | 125 | 137 | 150 | 162 | 175 | 187 | 200 | 212 | 225 | 237 | 250 |
| 262 | 275 | 287 | 300 | 312 | 325 | 337 | 350 | 362 | 375 | 387 | 400 |

Complete Part No. with the width index XXX ***Bi*** and the radius (***R***). Example
E4-42-100B50-150-0 = extender crossbar on both sides along inner and outer radius



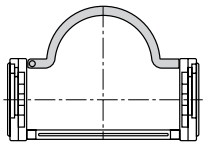
The E4.1 can be fitted with openable extender crossbars, which increase the size of the interior of the e-chain®. Crossbars can be fitted in various ways: from one or both sides, alternating with standard crossbars and or any combination

PDF: igus.com/e-chain-pdfs
Product information: igus.com/e-chains

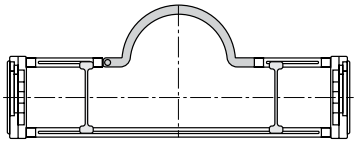
e-chain system® E4-1
Series E4-42/H4-42/R4-42
Accessories

Telephone 1-800-521-2747

Internet: igus.com
email: sales@igus.com
QuickSpec: igus.com/quickspec



Attached directly to the side link.



Round extender crossbar combined with standard snap-open crossbars.

Extender crossbars
For careful guiding of large diameter cables and hoses

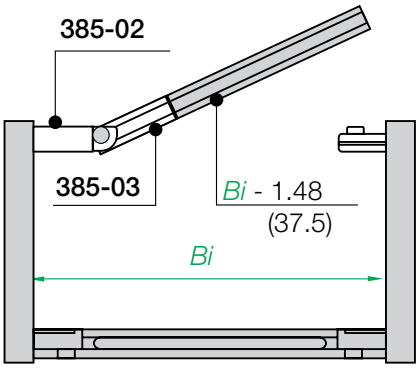


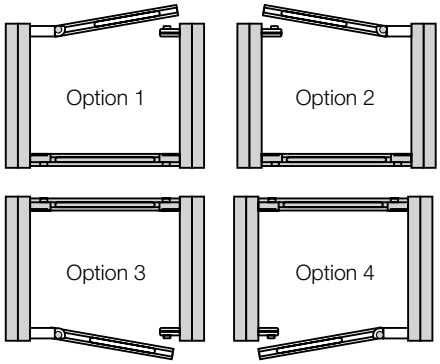
- Intended for cables and hoses with a maximum outer diameter of 4.13 in. (105 mm).
- Gliding operation with crossbars assembled along the outer radius in conjunction with a special guide trough
- Gliding operation not guaranteed with crossbars assembled along the inner radius
- The extender crossbar can either be attached to the side links directly or can be used in combination with two standard snap-open crossbars.

Part No.	Max Ø Hose in. (mm)	Style	Installation Side Link	Combined with Snap-Open Crossbars
385-15-RHD115	4.13 (105)	Round	No	Yes
385-18-RD115	4.13 (105)	Round	Yes	No

Hinged crossbars

- Typically, e-chain® crossbars are completely removable. In cases where it is preferable that the opening crossbars remain on the e-chain®, a hinged design has been developed.
- Hinged crossbar: Part No. 385-02
- Snap-open crossbar (shortened): Bi-1.48" (37.5 mm) Part No. 385-03 (smallest inner width Bi = 3.44" (87.5 mm)

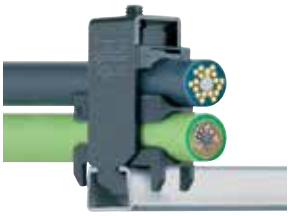






Part No. e-chain® with hinged crossbar	Part No. swivel clip as an individual part	Part No. openable crossbar as an individual part
E4-42-*Bi*-Z-*R*-0	385-02	385-03

Chainfix clamps for the profile rail



igus® Chainfix strain relief elements are available in either steel or stainless steel. They can be adjusted with a hexagon socket and are available in single, double and triple configurations.

Part No. Single Clamp		Part No. Double Clamp		Part No. Triple Clamp		Cable ø	
Steel	Stainless	Steel	Stainless	Steel	Stainless	in.	(mm)
CFX12-1	CFX12-1E	CFX12-2	CFX12-2E	CFX12-3	–	.24 - .47	(06 - 12)
CFX14-1	CFX14-1E	CFX14-2	CFX14-2E	CFX14-3	–	.47 - .55	(12 - 14)
CFX16-1	CFX16-1E	CFX16-2	CFX16-2E	CFX16-3	–	.55 - .63	(14 - 16)
CFX18-1	CFX18-1E	CFX18-2	CFX18-2E	CFX18-3	–	.63 - .71	(16 - 18)
CFX20-1	CFX20-1E	CFX20-2	CFX20-2E	CFX20-3	–	.71 - .79	(18 - 20)
CFX22-1	CFX22-1E	CFX22-2	CFX22-2E	CFX22-3	–	.79 - .87	(20 - 22)
CFX26-1	CFX26-1E	CFX26-2	CFX26-2E	–	–	.87 - 1.02	(22 - 26)
CFX30-1	CFX30-1E	CFX30-2	CFX30-2E	–	–	1.02 - 1.18	(26 - 30)
CFX34-1	CFX34-1E	CFX34-2	CFX34-2E	–	–	1.18 - 1.34	(30 - 34)
CFX38-1	CFX38-1E	–	–	–	–	1.34 - 1.50	(34 - 38)
CFX42-1	CFX42-1E	–	–	–	–	1.50 - 1.65	(38 - 42)

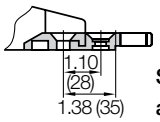
For more information please refer to strain relief section of Chapter 10.

Tiewrap Plates

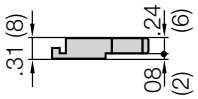
Option 1:
Tiewrap plates as an individual part

Available as an individual component, can be fixed onto a mounting bracket with the use of a profile rail.



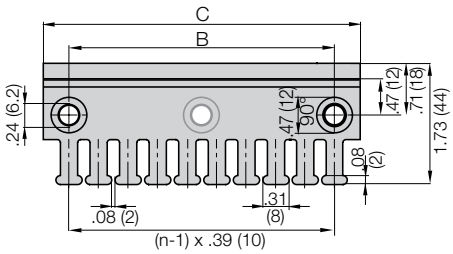


Shown assembled



Single tiewrap plate

Tiewrap Plate	n Number of Teeth	C Overall Width in. (mm)	B Bore Width in. (mm)	Center Bore
3050-ZB	5	1.97 (50)	1.18 (30)	no
3075-ZB	7	2.95 (75)	2.16 (55)	no
3100-ZB	10	3.94 (100)	3.15 (80)	no
3115-ZB	11	4.53 (115)	3.74 (95)	no
3125-ZB	12	4.92 (125)	4.13 (105)	no
3150-ZB	15	5.91 (150)	5.12 (130)	no
3175-ZB	17	6.89 (175)	6.10 (155)	no
3200-ZB	20	7.87 (200)	7.09 (180)	yes
3225-ZB	22	8.86 (225)	8.07 (205)	yes
3250-ZB	25	9.84 (250)	9.06 (230)	yes



If used with KMA brackets with profile rail please add "KMA" to the end of the part number.
Example: 3050-ZBKMA

For more information please refer to strain relief section of Chapter 10



Option 2:
Clip-on Tiewrap plates

Available as a clip-on tiewrap plate without the use of bolts They are inserted and removed with a screwdriver used as a lever. Clip-on tiewrap plates are also available as an attachment to the opening crossbars.

Part No.	Number of Teeth	Width of Strain Relief in.	(mm)
3050-ZC	5	1.97	(50)
3075-ZC	7	2.95	(75)

For more information please refer to strain relief section of Chapter 10.

PDF: igus.com/e-chain-pdfs
Product information: igus.com/e-chains

e-chain system® E4-1
Series E4-42/H4-42/R4-42
Guide Trough

Width of Crossbar
E4-42-**05**-200-0

	B_{Ri}	Installation Part No.
-05	3.19 (81)	**93-50-200**
-06	3.90 (99)	**93-50-225**
-07	4.17 (106)	**93-50-225**
-087	4.69 (119)	**93-50-250**
-097	4.92 (125)	**93-50-250**
-10	5.16 (131)	**93-50-250**
-11	5.47 (139)	**93-50-250**
-112	5.67 (144)	**93-50-275**
-12	6.14 (156)	**93-50-275**
-137	6.65 (169)	**93-50-300**
-15	7.12 (181)	**93-50-300**
-162	7.64 (194)	**93-50-325**
-17	7.83 (199)	**93-50-325**
-18	8.11 (206)	**93-50-325**
-187	8.62 (219)	**93-50-350**
-20	9.09 (231)	**93-50-350**
-212	9.61 (244)	**93-50-375**
-23	10.08 (256)	**93-50-375**
-237	10.59 (269)	**93-50-400**
-25	11.06 (281)	**93-50-400**
-262	11.57 (294)	**93-50-425**
-28	12.05 (306)	**93-50-425**
-29	12.56 (319)	**93-50-450**
-30	13.03 (331)	**93-50-450**
-312	13.54 (344)	**93-50-475**
-325	14.01 (356)	**93-50-475**
-337	14.52 (369)	**93-50-500**
-350	15.00 (381)	**93-50-500**
-362	15.51 (394)	**93-50-525**
-375	16.02 (407)	**93-50-525**
-387	16.50 (419)	**93-50-550**
-400	16.97 (431)	**93-50-550**

Guide troughs are used with applications where the upper run of the e-chain® glides on the lower run. If using igus® steel guide troughs, the following components are required:

- Full travel length of guide trough
  Part No. 93-30
- 1/2 travel length of glide bars
  Part No. 93-01
- Installation sets as end connectors
  Part No. 93-50-XX

-XX indicates the length of the profile rail on which the guide trough is mounted. The values and part numbers are specified in the table below. The standard length of the trough components and glide bars is 6.56 ft (2 m). The required overall length of the guide trough directly correlates to the length of travel

Example:
Length of travel 164 ft (50 m)
Center mounted
Required guide troughs:
164 ft (50 m) guide trough,
82 ft (25 m) glide bar
= 25 sections of 6.56 ft (2 m) guide trough
Part No. 93-30
= 13 sections of 6.56 ft (2 m) glide bar
Part No. 93-01

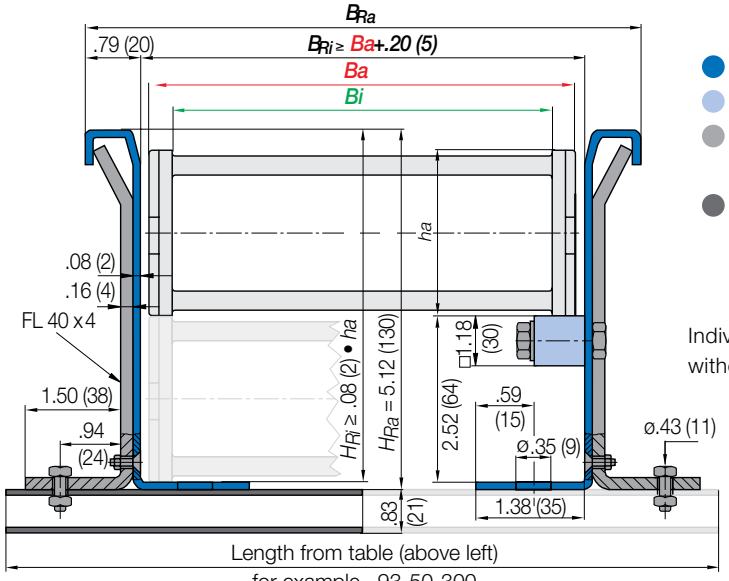
Required number of installation sets:
= Number of guide trough components + 1
= 25 + 1 = 26
Part No. of the installation sets **93-50-XXX**
Example: 93-50-400 for 15.75 (400 mm) long profile rail



Left: Guide trough with glide bars
Right: Guide troughs without glide bars



Installation sets as section connectors



- Guide trough
- Glide bars
- Installation set "Basic"
- Profile rail

Individual attachment without profile rail

* Specialized guide trough available upon request

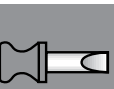












e-chain system® E4-1
Series E4-56/H4-56/R4-56

Price Index

Series E4-56

Series H4-56

Series R4-56

Special Options Available

Low noise version available with special rubber pads

Cleanroom test upon request

ESD classification: Electrically conductive ESD/ ATEX version upon request

Assembly Tips



Opening e-chains®: Remove crossbars and clips - Insert screwdriver into the slot, push down, release by lever action



Remove lids/bottoms (e-tubes) - Insert screwdriver into the slot, release by lever action

Other Installation Methods

Vertical, hanging ≤ 328 ft (100 m)
Vertical, standing ≤ 19.69 ft (6 m)
Side-mounted, unsupp. ≤ 8.20 ft (2.5 m)
Rotary requires further calculation

Usage Guidelines

- If quiet operation is required
- If very high speeds and/or accelerations are required
- Long travels
- High additional loads

- When an extremely low vibration e-chain®/e-tube is required
  ➤ **Series E6-52**
- When an economic one-sided snap-open e-chain®/e-tube is required
  ➤ **Series 14040/14140/R18840**

Features & Benefits

1. Wide, rounded plastic crossbars - cable friendly
2. Low-noise operation through integrated brake in the radial stop dog system
3. Hinged snap-open removable lids along the outer radius of the e-tube
4. Straight run through inner-/outer-link design
5. The tongue and groove design provides greater lateral stability
6. QuickLock Crossbar, 450-X-Q, available for faster assembly/disassembly
7. New Interior separation kit available
8. Crossbars are removable along both radii
9. 15% more tensile strength (compared to the older E4 series), better unsupported length through improved stop dog system and vertical radial stops
10. Version NCST “without camber” simply by turning outer links without unnecessary rework





Also available without camber. Add NCST to the end of the part number.
Ex: E4-56-30-300NCST

Order Example: Complete e-chain®

Please indicate chain length or number of links. Example:

9.84 ft (3 m) **E4-56-30-300-0**	**e-chain®**
With 2 separators **56.1.1** assembled every 2nd link	**Interior Separation**
1 Set **E4-560-30-12P**	**Mounting Bracket**

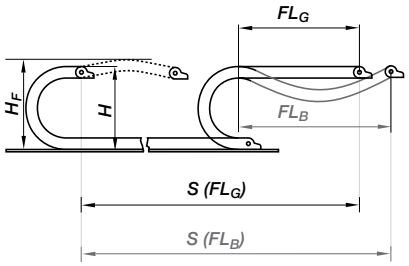
e-chain system® E4-1
Series E4-56/H4-56/R4-56
Installation Dimensions

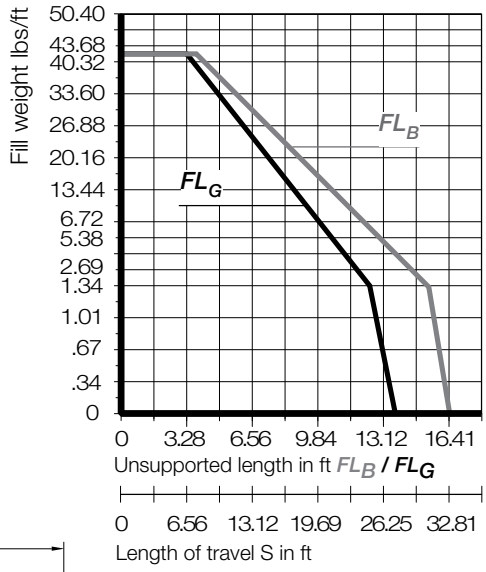
Short travel, unsupported length

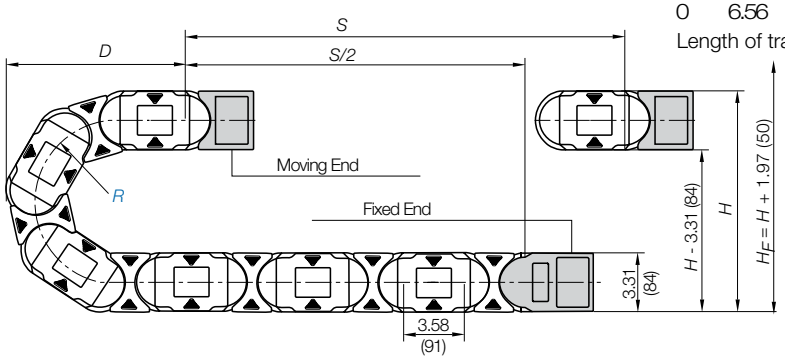
● FL_B = unsupported with permitted sag

● FL_G = unsupported with straight upper run

Further information ➤ Design, Chapter 1







Pitch per link: = 3.58" (91 mm)
Links per ft (m): = 3.35 (11)
For center mount applications:
Chain length = $\frac{S}{2} + K$

The required clearance height: $H_F = H + 1.96$ **in. (50 mm)** (with 2.02 lbs/ft (3 kg/m) fill weight. Please consult igus® if space is particularly restricted.

Short Travels - Unsupported

Unsupported e-chains® feature positive camber over short travels. This must be accounted for when specifying the clearance height. Please refer to **Installation dimensions** for further details.

Legend

S = Length of travel
R = Bending radius
H = Nominal clearance height
D = Overlength e-chain® radius in final position
K = π • *R* + *safety buffer*
H_F = Required clearance height
H_{RI} = Trough inner height
H_2 = *Mounting height
D_2 = Overlength - long travels, gliding
K_2 = *Add-on

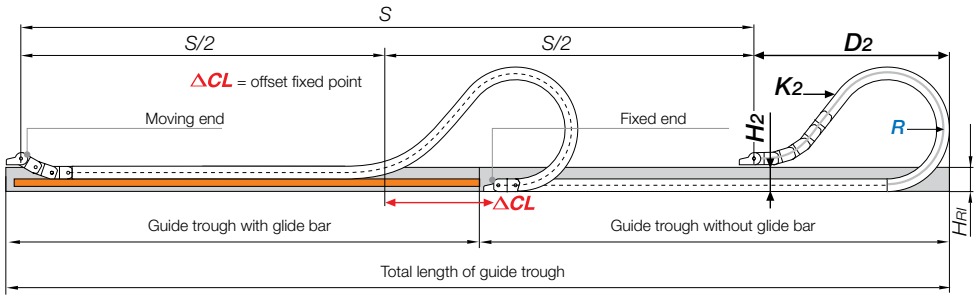
*If the mounting bracket location is set lower

R	*5.31 (135)	5.91 (150)	6.89 (175)	7.87 (200)	9.45 (240)	9.84 (250)	11.81 (300)	13.78 (350)	15.75 (400)	17.72 (450)	19.68 (500)
H^{+0+25}	13.94 (354)	15.12 (384)	17.09 (434)	19.06 (484)	22.20 (564)	22.99 (584)	26.93 (684)	30.87 (784)	34.80 (884)	38.74 (984)	42.68 (1084)
D	12.36 (314)	12.95 (329)	13.94 (354)	14.92 (379)	16.50 (419)	16.89 (429)	18.86 (479)	20.83 (529)	22.79 (579)	24.76 (629)	26.73 (679)
K	24.02 (610)	25.79 (655)	28.94 (735)	32.09 (815)	37.01 (940)	38.19 (970)	44.29 (1125)	50.59 (1285)	56.69 (1440)	62.99 (1600)	69.09 (1755)

For long travels with lowered mounting height

Long travel lengths from 32.8 ft.(10m) to max. 1,312.4 ft. (400m)

For center mount applications:
Chain length: = $\frac{S}{2} + K_2$



Long Travels - Gliding

If the unsupported length is exceeded, the e-chain®/ Tube must glide on itself. This requires a guide trough.
Design, Chapter 1

R	*5.31 (135)	5.91 (150)	6.89 (175)	7.87 (200)	9.45 (240)	9.84 (250)	11.81 (300)	13.78 (350)	15.75 (400)	17.72 (450)	19.68 (500)
H_2	10.63 (270)	10.47 (266)	10.47 (266)	10.47 (266)	10.47 (266)	10.47 (266)	10.47 (266)	10.47 (266)	10.47 (266)	10.47 (266)	10.47 (266)
D_2	10.55 (268)	17.72 (450)	22.83 (580)	27.95 (710)	35.43 (900)	38.58 (980)	46.46 (1180)	56.69 (1440)	60.24 (1530)	66.93 (1700)	72.83 (1850)
K_2	24.02 (610)	32.24 (819)	42.99 (1092)	50.16 (1274)	60.91 (1547)	64.49 (1638)	78.82 (2002)	89.57 (2275)	100.31 (2548)	114.64 (2912)	128.98 (3276)
ΔCL	-	6.26 (159)	10.20 (259)	14.54 (359)	20.04 (509)	22.01 (559)	27.91 (709)	35.79 (909)	37.76 (959)	41.69 (1059)	45.63 (1159)

*135 mm not available for the R4-56 e-chain

In case of travels between 32.8 and 39.4 ft (10 and 12 m) we recommend a longer unsupported length.

For support of the lower run, **see Chapter 9** for the **Support Tray tool kit**

Speed / acceleration FL_G	max. 65.6 ft/s (20 m/s) / max. 656 ft/s² (200 m/s²)
Speed / acceleration FL_B	max. 9.84 ft/s (3 m/s) / max. 19.69 ft/s² (6 m/s²)
Gliding speed / acceleration (maximum)	max. 32.8 ft/s (10 m/s) / max. 164 ft/s² (50 m/s²)
Material - permitted temperature	igumid G / -40°F (-40°C) up to +248°F (+120° C)
Flammability Class, igumid G	VDE 0304 IIC UL94 HB

Technical Data

Details of material properties
➤ **Chapter 1**

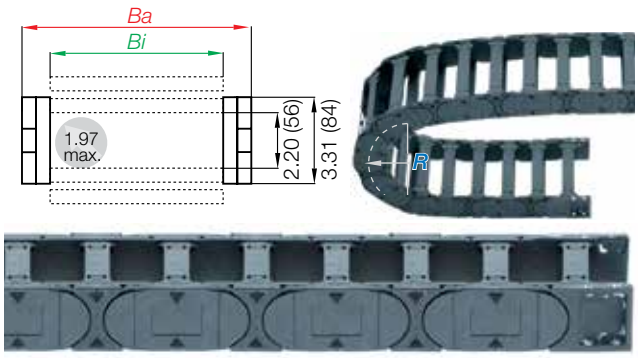
PDF: igus.com/e-chain-pdfs
Product information: igus.com/e-chains

e-chain system® E4-1
Series E4-56/H4-56/R4-56
Product Range

Telephone 1-800-521-2747

Internet: igus.com
email: sales@igus.com
QuickSpec: igus.com/quickspec

Series E4-56 - e-chain® with crossbars every link

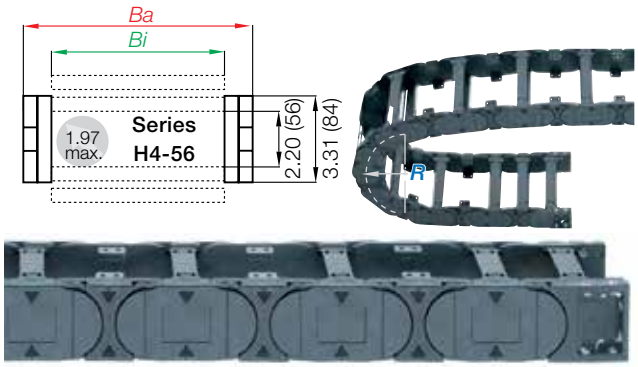


- Crossbars every link
- For use with rigid hydraulic hoses
- For particularly demanding applications
- Can be opened from both sides

Part Number Structure

E4-56-	13-	250-	0
Series	Width	Bending radius	Color - Black

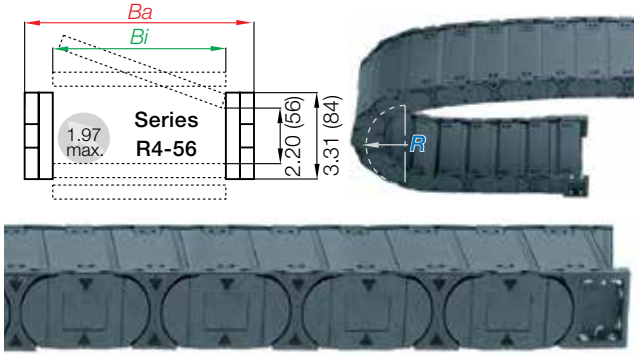
Series H4-56 - e-chain® with crossbars every other link



- Crossbars every other link
- Standard configuration
- For nearly every situation
- Can be opened from both sides
- Easy assembly
- Stable
- Cost-effective

H4-56-	13-	250-	0
Series	Width	Bending radius	Color - Black

Series R4-56 - fully enclosed e-tube

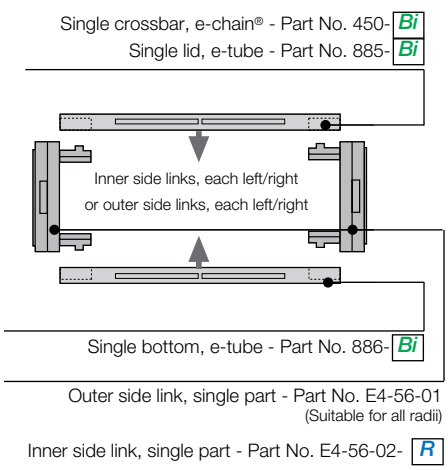


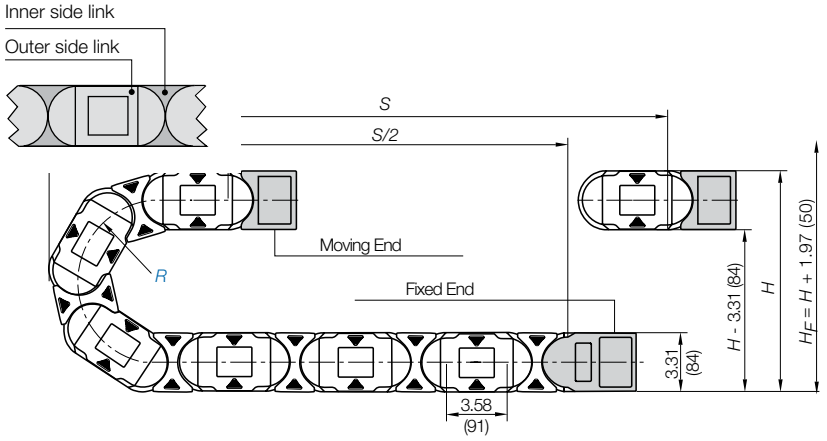
- Fully enclosed
- Excellent cable and hose protection against dirt
- Protection against hot chips
- Lids along inner radius are completely removable
- Lids along the outer radius are single-sided, snap open, hinged on one side as well as completely removable

Part Number Structure

R4-56-	25-	250-	0
Series	Width	Bending radius	Color - Black

e-chain® as separate parts, links and side plates





e-chain system® E4-1
Series E4-56/H4-56/R4-56
Product Range

Part Number				Bi	Ba	Weight		
Crossbars Every link	Crossbars Every other	Tube Version		in. (mm)	in. (mm)	E4-56 lbs/ft (kg/m)	H4-56 lbs/ft (kg/m)	R4-56 lbs/ft (kg/m)
E4-56-05-	H4-56-05-		-0	1.97 (50)	3.31 (84)	≈ 2.22 (3.30)	≈ 2.12 (3.16)	–
E4-56-055-	H4-56-055-		-0	2.17 (55)	3.50 (89)	≈ 2.45 (3.65)	≈ 2.43 (3.62)	–
E4-56-06-	H4-56-06-		-0	2.56 (65)	3.90 (99)	≈ 2.28 (3.39)	≈ 2.15 (3.20)	–
E4-56-07-	H4-56-07-	*R4-56-07-	-0	2.95 (75)	4.29 (109)	≈ 2.33 (3.46)	≈ 2.18 (3.24)	≈ 2.63 (3.91)
E4-56-08-	H4-56-08-		-0	3.43 (87)	4.76 (121)	≈ 2.38 (3.54)	≈ 2.20 (3.28)	–
E4-56-10-	H4-56-10-	R4-56-10-	-0	3.94 (100)	5.28 (134)	≈ 2.44 (3.63)	≈ 2.23 (3.32)	≈ 2.82 (4.20)
E4-56-11-	H4-56-11		-0	4.41 (112)	5.79 (147)	≈ 2.52 (3.75)	≈ 2.27 (3.38)	–
E4-56-12-	H4-56-12-	R4-56-12-	-0	4.92 (125)	6.26 (159)	≈ 2.57 (3.83)	≈ 2.30 (3.42)	≈ 3.06 (4.56)
E4-56-13-	H4-56-13-		-0	5.39 (137)	6.77 (172)	≈ 2.66 (3.96)	≈ 2.35 (3.49)	–
E4-56-15-	H4-56-15-	R4-56-15-	-0	5.91 (150)	7.24 (184)	≈ 2.69 (4.00)	≈ 2.36 (3.51)	≈ 3.32 (4.94)
E4-56-16-	H4-56-16-		-0	6.38 (162)	7.76 (197)	≈ 2.76 (4.11)	≈ 2.39 (3.56)	–
E4-56-169-	H4-56-169-		-0	6.65 (169)	8.03 (204)	≈ 3.02 (4.49)	≈ 2.71 (4.03)	–
E4-56-17-	H4-56-17-	R4-56-17	-0	6.89 (175)	8.23 (209)	≈ 2.86 (4.25)	≈ 2.44 (3.63)	≈ 3.53 (5.25)
E4-56-182-	H4-56-182-		-0	7.16 (182)	8.54 (217)	≈ 3.08 (4.59)	≈ 2.74 (4.08)	–
E4-56-18-	H4-56-18-		-0	7.36 (187)	8.74 (222)	≈ 2.93 (4.36)	≈ 2.48 (3.69)	–
E4-56-20-	H4-56-20-	R4-56-20-	-0	7.87 (200)	9.21 (234)	≈ 2.96 (4.41)	≈ 2.49 (3.71)	≈ 3.74 (5.56)
E4-56-207-	H4-56-207-		-0	8.15 (207)	9.53 (242)	≈ 3.21 (4.77)	≈ 2.80 (4.17)	–
E4-56-21-	H4-56-21-		-0	8.35 (212)	9.72 (247)	≈ 3.01 (4.48)	≈ 2.52 (3.75)	–
E4-56-22-	H4-56-22-		-0	8.86 (225)	10.20 (259)	≈ 3.06 (4.55)	≈ 2.54 (3.78)	–
E4-56-23-	H4-56-23-		-0	9.33 (237)	10.71 (272)	≈ 3.13 (4.66)	≈ 2.58 (3.84)	–
E4-56-25-	H4-56-25-	R4-56-25-	-0	9.84 (250)	11.18 (284)	≈ 3.21 (4.77)	≈ 2.61 (3.89)	≈ 4.23 (6.29)
E4-56-26-	H4-56-26-		-0	10.31 (262)	11.69 (297)	≈ 3.27 (4.87)	≈ 2.65 (3.94)	–
E4-56-27-	H4-56-27-	R4-56-27-	-0	10.83 (275)	12.17 (309)	≈ 3.34 (4.97)	≈ 2.68 (3.99)	≈ 4.47 (6.65)
E4-56-28-	H4-56-28-		-0	11.30 (287)	12.68 (322)	≈ 3.38 (5.03)	≈ 2.70 (4.02)	–
E4-56-30-	H4-56-30-	R4-56-30-	-0	11.81 (300)	13.15 (334)	≈ 3.48 (5.18)	≈ 2.76 (4.10)	≈ 4.67 (6.95)
E4-56-31-	H4-56-31-		-0	12.28 (312)	13.66 (347)	≈ 3.50 (5.21)	≈ 2.76 (4.11)	–
E4-56-32-	H4-56-32-		-0	12.79 (325)	14.13 (359)	≈ 3.57 (5.32)	≈ 2.80 (4.17)	–
E4-56-33-	H4-56-33-		-0	13.27 (337)	14.65 (372)	≈ 3.66 (5.44)	≈ 2.84 (4.23)	–
E4-56-35-	H4-56-35-	R4-56-35-	-0	13.78 (350)	15.12 (384)	≈ 3.79 (5.64)	≈ 2.91 (4.33)	≈ 5.14 (7.65)
E4-56-36-	H4-56-36-		-0	14.25 (362)	15.63 (397)	≈ 3.73 (5.55)	≈ 2.88 (4.28)	–
E4-56-37-	H4-56-37-		-0	14.76 (375)	16.10 (409)	≈ 3.80 (5.65)	≈ 2.91 (4.33)	–
E4-56-38-	H4-56-38-		-0	15.24 (387)	16.61 (422)	≈ 3.87 (5.76)	≈ 2.95 (4.39)	–
E4-56-40-	H4-56-40-	R4-56-40-	-0	15.75 (400)	17.09 (434)	≈ 4.05 (6.03)	≈ 3.04 (4.52)	≈ 5.81 (8.65)
E4-56-41-	H4-56-41-		-0	16.22 (412)	17.60 (447)	≈ 4.00 (5.96)	≈ 3.01 (4.48)	–
E4-56-42-	H4-56-42-		-0	16.73 (425)	18.07 (459)	≈ 4.19 (6.23)	≈ 3.11 (4.63)	–
E4-56-43-	H4-56-43-		-0	17.20 (437)	18.58 (472)	≈ 4.09 (6.09)	≈ 3.06 (4.55)	–
E4-56-45-	H4-56-45-		-0	17.72 (450)	19.06 (484)	≈ 4.31 (6.42)	≈ 3.17 (4.72)	–
E4-56-46-	H4-56-46-	R4-56-46-	-0	18.19 (462)	19.57 (497)	≈ 4.28 (6.37)	≈ 3.15 (4.69)	≈ 6.13 (9.12)
E4-56-47-	H4-56-47-		-0	18.70 (475)	20.04 (509)	≈ 4.31 (6.41)	≈ 3.16 (4.71)	–
E4-56-48-	H4-56-48-		-0	19.17 (487)	20.55 (522)	≈ 4.48 (6.66)	≈ 3.25 (4.84)	–
E4-56-50-	H4-56-50-		-0	19.69 (500)	21.02 (534)	≈ 4.54 (6.76)	≈ 3.29 (4.89)	–
E4-56-51-	H4-56-51-		-0	20.16 (512)	21.54 (547)	≈ 4.48 (6.67)	≈ 3.25 (4.84)	–
E4-56-52-	H4-56-52-		-0	20.67 (525)	22.01 (559)	≈ 4.60 (6.84)	≈ 3.31 (4.93)	–
E4-56-53-	H4-56-53-		-0	21.14 (537)	22.52 (572)	≈ 4.66 (6.93)	≈ 3.34(4.97)	–
E4-56-55-	H4-56-55-		-0	21.65 (550)	22.99 (584)	≈ 4.95 (7.36)	≈ 3.48 (5.18)	–
E4-56-60-	H4-56-60-		-0	23.62 (600)	24.96 (634)	≈ 5.09 (7.58)	≈ 3.56 (5.30)	–

Choose from the radii below for all of the above sizes

Radius (mm) Example: E4-56-30-[300]-0

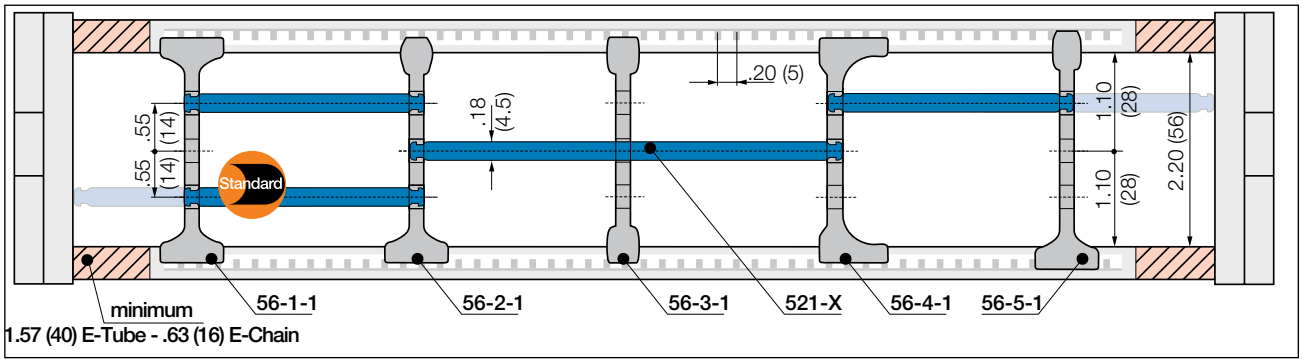
	135**	150	175	200	240	250	300	350	400	450	500
R	5.31 (135)	5.91 (150)	6.89 (175)	7.87 (200)	9.45 (240)	9.84 (250)	11.81 (300)	13.78 (350)	15.75 (400)	17.72 (450)	19.68 (500)
H$^{+0}_{+25}$	13.94 (354)	15.12 (384)	17.09 (434)	19.06 (484)	22.20 (564)	22.99 (584)	26.93 (684)	30.87 (784)	34.80 (884)	38.74 (984)	42.68 (1084)
D	12.36 (314)	12.95 (329)	13.94 (354)	14.92 (379)	16.50 (419)	16.89 (429)	18.86 (479)	20.83 (529)	22.79 (579)	24.76 (629)	26.73 (679)
K	24.02 (610)	25.79 (655)	28.94 (735)	32.09 (815)	37.01 (940)	38.19 (970)	44.29 (1125)	50.59 (1285)	56.69 (1440)	62.99 (1600)	69.09 (1755)

** This radius is not available for the R4-56 Series
*Removable lid only, no hinged option

0 = Standard color black. For other colors see Chapter 1
For wider chains see page 6.69 For large diameter hoses see page 6.69

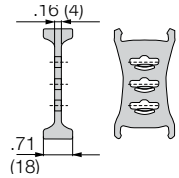
PDF: igus.com/e-chain-pdfs
Product information: igus.com/e-chains

e-chain system® E4-1
Series E4-56/H4-56/R4-56
Interior Separation - New Generation



Note Please maintain a lateral spacing of 1.57" (40 mm) for e-tube and .63" (16 mm) for e-chains® between the separators and the side links. In the standard configuration separators are assembled every 2nd e-chain® link



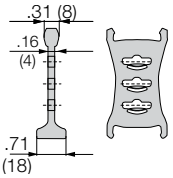


Separator, wide base

Unassembled	**Part No. 56-1**
Assembled	**Part No. 56-1-1**

- **Standard separator 56-1 for all applications**
  Separator with wide base for maximum locking strength and safe standing in e-chains®.



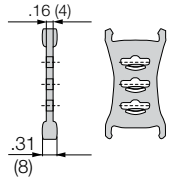


Separator, narrow head

Unassembled	**Part No. 56-2**
Assembled	**Part No. 56-2-1**

- **Separator 56-2**
  For even faster installation
  is used when vertical and horizontal separation is required. Due to its slot, it allows basic vertical/horizontal shelving arrangements.



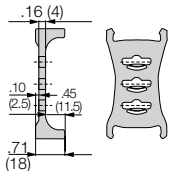


Separator, narrow base

Unassembled	**Part No. 56-3**
Assembled	**Part No. 56-3-1**

- **Separator 56-3**
  For many thin cables
  is used when vertical and horizontal separation is required. Due to its slot, it allows basic vertical/horizontal shelving arrangements.



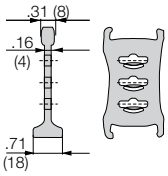


Separator, asymmetrical

Unassembled	**Part No. 56-4**
Assembled	**Part No. 56-4-1**

- **Separator 56-4**
  For side mounted applications
  is used when vertical and horizontal separation is required. Due to its slot, it allows basic vertical/horizontal shelving arrangements.





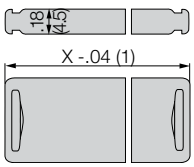
Separator, asymmetrical

Unassembled	**Part No. 56-5**
Assembled	**Part No. 56-5-1**

- **Separator 56-5**
  Locks safely in .30" (7.5 mm) increments
  Notch separator for exact positioning in e-chains®. Recommended for side-mounted applications.

Lockable full-width shelves - for the standard interior separation





Full width shelf, lockable

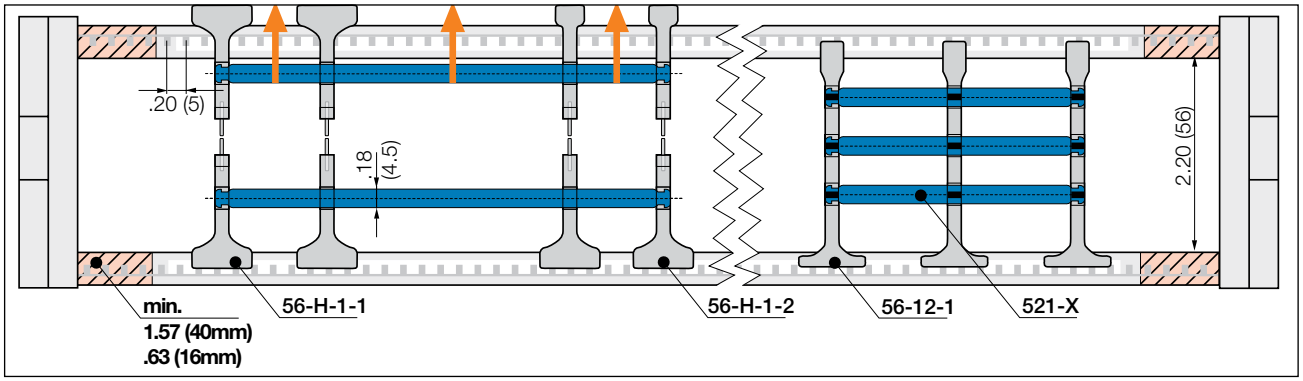
Unassembled	**Part No. 520-X**
Assembled	**Part No. 521-X**

- **Full width shelf, lockable**
  Shelf locks safely into separators on both ends, fixed width possible. Separators can be moved freely over the shelf in horizontal direction. Can be arranged at 3 different heights.

Width X in. (mm)	Part No. Unassembled	Part No. Assembled	Width X in. (mm)	Part No. Unassembled	Part No. Assembled	Width X in. (mm)	Part No. Unassembled	Part No. Assembled
1.97 (050)	**520-50**	**521-50**	5.91 (150)	**520-125**	**521-125**	11.81 (300)	**520-125**	**521-125**
2.56 (065)	**520-65**	**521-65**	6.89 (175)	**520-125**	**521-125**	13.78 (350)	**520-125**	**521-125**
2.95 (075)	**520-75**	**521-75**	7.87 (200)	**520-125**	**521-125**	14.76 (375)	**520-125**	**521-125**
3.94 (100)	**520-100**	**521-100**	8.86 (225)	**520-125**	**521-125**	15.24 (387)	**520-125**	**521-125**
4.92 (125)	**520-125**	**521-125**	9.84 (250)	**520-125**	**521-125**	17.723 (450)	**520-125**	**521-125**

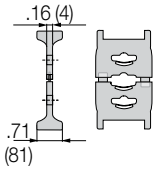
igus® e-chain system®
Telephone 1-800-521-2747
Internet: igus.com
email: sales@igus.com
QuickSpec: igus.com/quickspec

e-chain system® E4-1
Series E4-56/H4-56/R4-56
Interior Separation - New Generation



Note Please maintain a lateral spacing of 1.57" (40 mm) for e-tube and .63" (16 mm) for e-chains® between the separators and the side links. In the standard configuration separators are assembled every 2nd e-chain® link

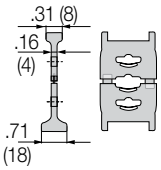




Separator, wide base

Unassembled	**Part No. 56-H-1**
Assembled	**Part No. 56-H-1-1**

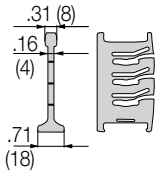




Separator, narrow head

Unassembled	**Part No. 56-H-2**
Assembled	**Part No. 56-H-2-1**





Lean separator

Unassembled	**Part No. 56-12**
Assembled	**Part No. 56-12-1**



- **Split separators for all applications**
  In order to fill e-chains® more easily and effectively, these separators can be split in the middle. This allows easier access to middle shelf partitions. Fast assembly and easy retrofit. 2 types available: with wide or narrow top.

- **Lean separators 56-12**
  New design allows extremely fast fitting of shelves in several layers, which significantly reduces assembly time. Enables extremely fast replacement of individual cables in a very full e-chain®.

- **Lean separator design - several layers of cables fitted quickly, save up to 50%* assembly time**
  (*Lean separator vs. standard separator - measured on a 4m long e-chain® fitted with 12 cables in the igus® harnessing factory)

PDF: igus.com/e-chain-pdfs
Product information: igus.com/e-chains

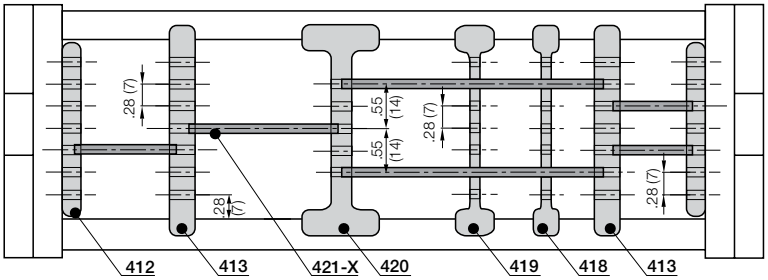
e-chain system® E4-1
Series E4-56/H4-56/R4-56
Interior Separation - Previous Generation



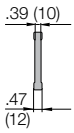
Shelves and separators

e-chains® and e-tubes can be subdivided both vertically and horizontally using the various interior separation elements.

➤ **Design, Chapter 1** for layout recommendations.





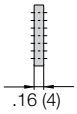


Split separator (chain only)

Unassembled	**Part No. T563**
Assembled	**Part No. T563M**

- **Split separator T563 for e-chains®**
  This separator is ideal for subsequent shelving or the initial assembly of the e-chain. Fast assembly and disassembly using a hinge/push mechanism. Enhances flexibility



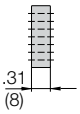


Side plate

Unassembled	**Part No. 402**
Assembled	**Part No. 412**

- **Side plates 402**
  This component is used to form the basic pattern of a shelf system.



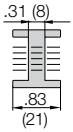


Vertical separator

Unassembled	**Part No. 403**
Assembled	**Part No. 413**

- **Vertical separator 403**
  This component is used to form the basic pattern of a shelf system.

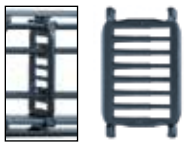


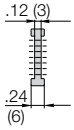


Locking vertical separator

Unassembled	**Part No. 410**
Assembled	**Part No. 420**

- **Locking vertical separator 410**
  This separator is slotted and able to be combined with shelves. For e-chains® only



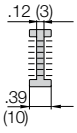


Slotted separators, closed

Unassembled	**Part No. 408**
Assembled	**Part No. 418**

- **Slotted separators 408**
  These are used for very complex subdivisions. However, they cannot be retrofitted into an existing separation system without removing the shelves first.





Slotted separators, open

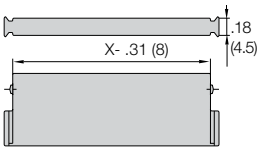
Unassembled	**Part No. 409**
Assembled	**Part No. 419**

- **Slotted separator 409**
  This separator can be retrofitted into an existing interior separation system without removing the shelves, as long as these shelves fit into any of the 3 middle slots

Shelves 420-XX

These components form the basic pattern of a shelf system. Shelves of various widths can be arranged at 7 different heights in .28" (7mm) increments

Width X in. (mm)	Usable Width in. (mm)	Part No. Unassembled	Part No. Assembled	Width X in. (mm)	Usable Width in. (mm)	Part No. Unassembled	Part No. Assembled
.71 (18)	.39 (10)	**420-18**	**421-18**	2.95 (75)	2.64 (67)	**420-75**	**421-75**
.91 (23)	.59 (15)	**420-23**	**421-23**	3.46 (88)	3.15 (80)	**420-88**	**421-88**
.98 (25)	.67 (17)	**420-25**	**421-25**	3.94 (100)	3.62 (92)	**420-100**	**421-100**
1.10 (28)	.79 (20)	**420-28**	**421-28**	4.92 (125)	4.61(117)	**420-125**	**421-125**
1.30 (33)	.98 (25)	**420-33**	**421-33**	5.91 (150)	5.59(142)	**420-150**	**421-150**
1.69 (43)	1.38 (35)	**420-43**	**421-43**	6.89 (175)	6.57(167)	**420-175**	**421-175**
1.97 (50)	1.65 (42)	**420-50**	**421-50**	7.36 (187)	7.05(179)	**420-187**	**421-187**
2.44 (62)	2.13 (54)	**420-62**	**421-62**	7.87 (200)	7.56(192)	**420-200**	**421-200**





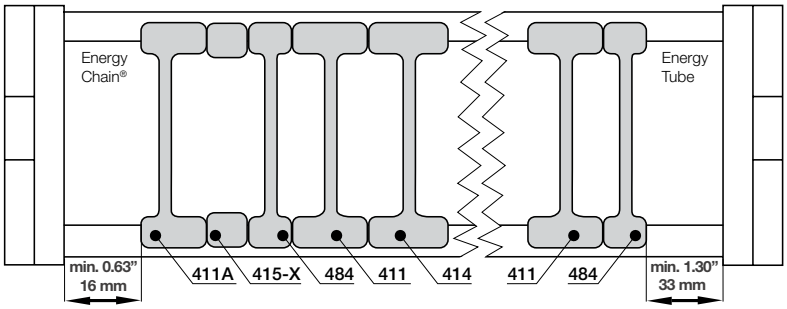
e-chain system® E4-1
Series E4-56/H4-56/R4-56
Interior Separation - Previous Generation



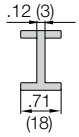
Vertical separators and spacers

Vertical separators are used if a vertical subdivision of the e-chain® interior is required. In standard configuration, a separator is installed every second chain link.

NOTE: Observe a lateral spacing of at least 1.26 in. (32mm) for e-tubes and .63 in. (16mm) for e-chain®. There is no minimum spacing needed for side plates





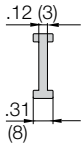


Vertical separator

Unassembled	**Part No. 401**
Assembled	**Part No. 411**

- **Standard separator 401 for e-chains® and e-tubes**
  This separator offers safe stability due to its wide base design.



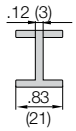


Vertical separator

Unassembled	**Part No. 483**
Assembled	**Part No. 484**

- **Vertical separator 483 for e-chains® and e-tubes**
  This separator offers a narrow base for applications where a large number of small cables need to be individually separated.



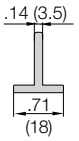


Locking separator (chain only)

Unassembled	**Part No. 404**
Assembled	**Part No. 414**

- **Locking separator 404 for e-chains®**
  This separator features increased retention force for applications exposed to very high humidity and extreme loads. The extra retention force is achieved by asymmetric claws for the crossbar. Take care to ensure proper alignment.



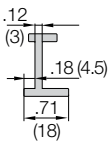


Locking separator (tube only)

Unassembled	**Part No. 406**
Assembled	**Part No. 416**

- **Locking separator 406 for e-tubes**
  It features a single sided, secure fit, and can be placed on the lid or the bottom of the e-tube. The single side locking design helps to eliminate difficulties in assembling the opposite cover or crossbar





Asymmetrical separator (chain only)

Unassembled	**Part No. 401A**
Assembled	**Part No. 411A**

- **Asymmetrical separator 401A for e-chains®**
  This separator features an .71" (18mm) base. It can be used in combinations between spacers of different widths and vertical separators in side mounted applications.





Spacer (chain only)

Unassembled	**Part No. 405-XX**
Assembled	**Part No. 415-XX**

XX = width of the spacer

- **NOTE ON SPACERS**
  Vertical separators are adjustable, but can be fixed in position by means of a spacer. Spacers are most often necessary for side mounted applications.
  The available inner height is reduced by .08" (2mm) **per spacer** (for example if one spacer is placed on either side of the separator, the overall inner height is reduced by .16" (4mm). To avoid this, place the spacers on the **outside** of the opening crossbar **(not for long travels)**.

Spacers available in the following sizes:

Part No. Unassembled	Part No. Assembled	in.	(mm)	Part No. Unassembled	Part No. Assembled	in.	(mm)
405 -10	**415 -10**	.39"	(10)	**405 -30**	**415 -30**	1.18"	(30)
405 -15	**415 -15**	.59"	(15)	**405 -40**	**415 -40**	1.57"	(40)
405 -20	**415 -20**	.79"	(20)				

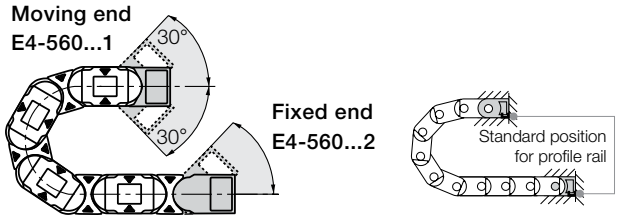
PDF: igus.com/e-chain-pdfs
Product information: igus.com/e-chains

e-chain system® E4-1
Series E4-56/H4-56/R4-56
Mounting Brackets

Option 1: pivoting

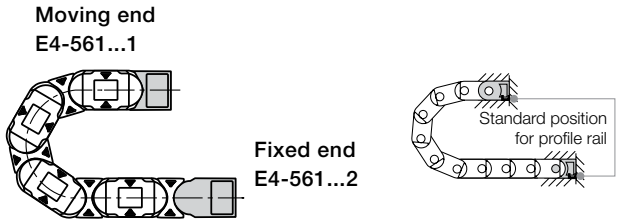
Standard

- Recommended for unsupported and gliding applications
- Attachment capability on all sides
- Bolted connection outside of chain cross-section
- Space restricted conditions
- Corrosion resistant

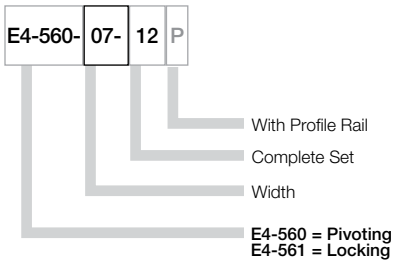


Option 2: locking

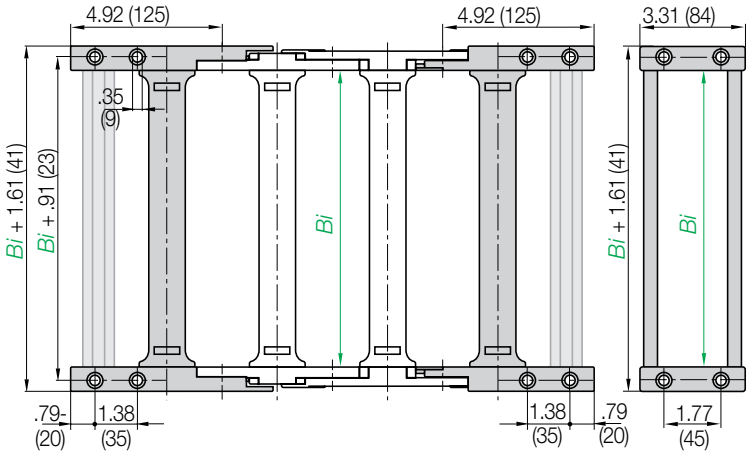
- Profile rail option
- Universal use
- Corcorrosion resistant
- Vertical hanging/standing travels
- Extreme accelerations



Part Number Structure



Due to the design of the E4-56 series chains, please note the following when ordering brackets:
Even number of links = full set, part number ending in **-12**
Odd number of links = 2 pieces, part number ending in **-1**



Part No. Full Set (pivoting)
Series E4-56 or H4-56
E4-560-Width-12

Part No. Full Set (pivoting)
with profile rail
Series E4-56 or H4-56
E4-560-Width-12P

Part number examples are shown for pivoting brackets for e-chain. For locking brackets change part number to 561

idth	Part No. Full Set chain Pivoting	Locking		With Profile Rail	*Bi* in. (mm)
-05*	E4-560	E4-561	-05-12	P	1.97 (50)
-055	E4-560	E4-561	-055-12	P	2.17 (55)
-06	E4-560	E4-561	-06-12	P	2.56 (65)
-07	E4-560	E4-561	-07-12	P	2.95 (75)
-08	E4-560	E4-561	-08-12	P	3.43 (87)
-10	E4-560	E4-561	-10-12	P	3.94 (100)
-11	E4-560	E4-561	-11-12	P	4.41 (112)
-12	E4-560	E4-561	-12-12	P	4.92 (125)
-13	E4-560	E4-561	-13-12	P	5.39 (137)
-15	E4-560	E4-561	-15-12	P	5.91 (150)
-16	E4-560	E4-561	-16-12	P	6.38 (162)
-169	E4-560	E4-561	-169-12	P	6.65 (169)
-17	E4-560	E4-561	-17-12	P	6.89 (175)
-182	E4-560	E4-561	-182-12	P	7.17 (182)
-18	E4-560	E4-561	-18-12	P	7.36 (187)
-20	E4-560	E4-561	-20-12	P	7.87 (200)
-207	E4-560	E4-561	-207-12	P	8.15 (207)
-21	E4-560	E4-561	-21-12	P	8.35 (212)
-22	E4-560	E4-561	-22-12	P	8.86 (225)
-23	E4-560	E4-561	-23-12	P	9.33 (237)
-25	E4-560	E4-561	-25-12	P	9.84 (250)
-26	E4-560	E4-561	-26-12	P	10.31 (262)
-27	E4-560	E4-561	-27-12	P	10.83 (275)

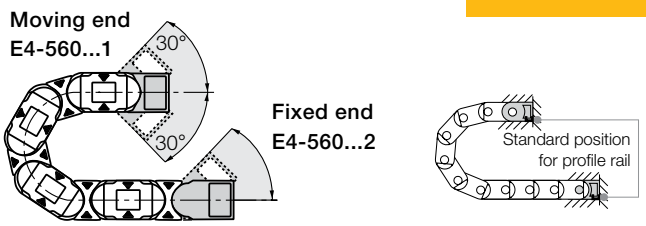
Width	Part No. Full Set chain Pivoting	Locking		With Profile Rail	*Bi* in. (mm)
-28	E4-560	E4-561	-28-12	P	11.30 (287)
-30	E4-560	E4-561	-30-12	P	11.81 (300)
-31	E4-560	E4-561	-31-12	P	12.28 (312)
-32	E4-560	E4-561	-32-12	P	12.79 (325)
-33	E4-560	E4-561	-33-12	P	13.27 (337)
-35	E4-560	E4-561	-35-12	P	13.78 (350)
-36	E4-560	E4-561	-36-12	P	14.25 (362)
-37	E4-560	E4-561	-37-12	P	14.76 (375)
-38	E4-560	E4-561	-38-12	P	15.24 (387)
-40	E4-560	E4-561	-40-12	P	15.75 (400)
-41	E4-560	E4-561	-41-12	P	16.22 (412)
-42	E4-560	E4-561	-42-12	P	16.73 (425)
-43	E4-560	E4-561	-43-12	P	17.20 (437)
-45	E4-560	E4-561	-45-12	P	17.72 (450)
-46	E4-560	E4-561	-46-12	P	18.19 (462)
-47	E4-560	E4-561	-47-12	P	18.70 (475)
-48	E4-560	E4-561	-48-12	P	19.17 (487)
-50	E4-560	E4-561	-50-12	P	19.69 (500)
-51	E4-560	E4-561	-51-12	P	20.16 (512)
-52	E4-560	E4-561	-52-12	P	20.67 (525)
-53	E4-560	E4-561	-53-12	P	21.14 (537)
-55	E4-560	E4-561	-55-12	P	21.65 (550)
-60	E4-560	E4-561	-60-12	P	23.62 (600)

e-chain system® E4-1
Series E4-56/H4-56/R4-56
Mounting Brackets

Option 1: pivoting

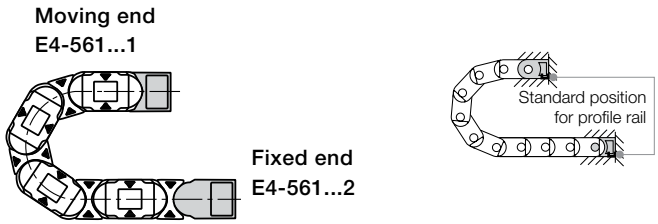
Standard

- Recommended for unsupported and gliding applications
- Attachment capability on all sides
- Bolted connection outside of chain cross-section
- Space restricted conditions
- Corrosion resistant

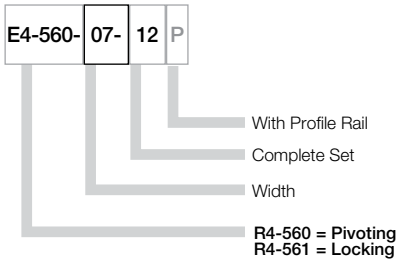


locking

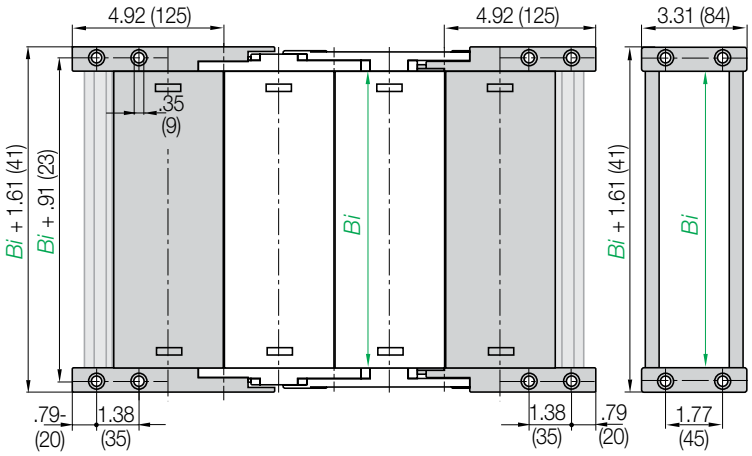
- Profile rail option
- Universal use
- Corrosion resistant
- Vertical hanging/standing travels
- Extreme accelerations



Part Number Structure



Due to the design of the E4-56 series chains, please note the following when ordering brackets:
Even number of links = full set, part number ending in **-12**
Odd number of links = 2 pieces, part number ending in **-1**



Part No. Full Set (pivoting)
Tube Series R4-56
R4-560-Width-12

Part No. Full Set (pivoting)
with Profile Rail
Tube Series R4-56
R4-560-Width-12P

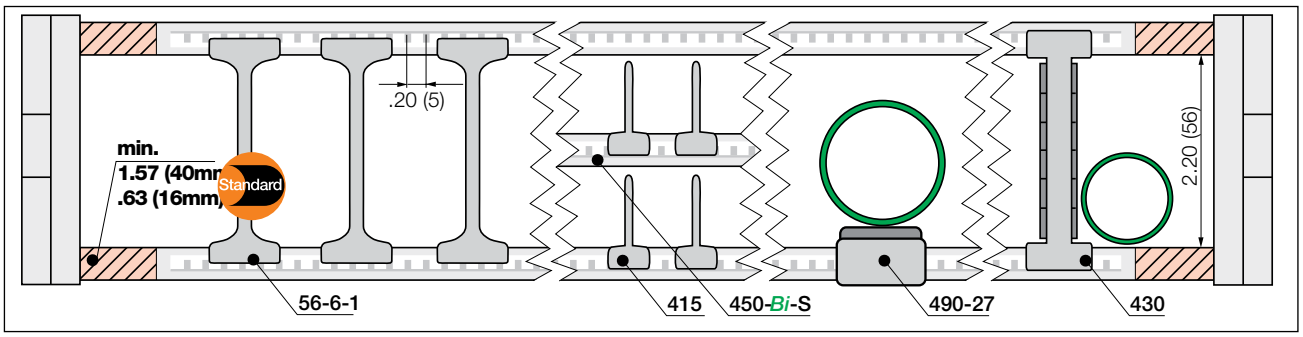
Part number examples are shown for pivoting brackets for e-chain. For locking brackets change part number to 561

Width	Part No. Full Set tube			With Profile Rail	*Bi* in. (mm)
	Pivoting	Locking			
-07	R4-560	R4-561	-07-12	P	2.95 (75)
-10	R4-560	R4-561	-10-12	P	3.94 (100)
-12	R4-560	R4-561	-12-12	P	4.92 (125)
-15	R4-560	R4-561	-15-12	P	5.91 (150)
-17	R4-560	R4-561	-17-12	P	6.89 (175)
-20	R4-560	R4-561	-20-12	P	7.87 (200)

Width	Part No. Full Set tube			With Profile Rail	*Bi* in. (mm)
	Pivoting	Locking			
-25	ER4-560	R4-561	-25-12	P	9.84 (250)
-27	R4-560	R4-561	-27-12	P	10.83 (275)
-30	R4-560	R4-561	-30-12	P	11.81 (300)
-35	R4-560	R4-561	-35-12	P	13.78 (350)
-40	R4-560	R4-561	-40-12	P	15.75 (400)
-46	R4-560	ER4-561	-46-12	P	18.19 (462)

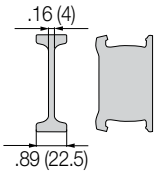
PDF: igus.com/e-chain-pdfs
Product information: igus.com/e-chains

e-chain system® E4-1
Series E4-56/H4-56/R4-56
Interior Separation Options



Note Please maintain a lateral spacing of 1.57" (40 mm) for e-tube and .63" (16 mm) for e-chains® between the separators and the side links. In the standard configuration separators are assembled every 2nd e-chain® link



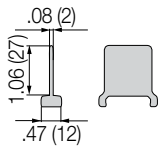


Notch locking separator

Unassembled	**Part No. 56-6**
Assembled	**Part No. 56-6-1**

- **Notch locking separator for increased holding force**
  Notch locking separators offer higher crossbar opening forces for high humidity and/or large hydraulic hoses. They can be positioned precisely and then locked in position.



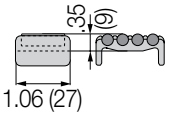


Partial height separator

Unassembled	**Part No. 405**
Assembled	**Part No. 415**

- **Partial height separator***
  In conjunction with an additional opening crossbar, **part no. 450-*Bi*-S**, it provides the option to separate the upper and lower halves of the e-chain® independently of each other.



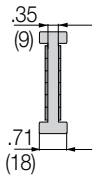


Rollclip* for e-chains®

Unassembled	**Part No. 489-27**
Assembled	**Part No. 490-27**

- **Rollclip***
  Minimizes abrasion of sensitive hoses. Simply clamps onto the opening crossbar. The movable rollers compensate for relative movement between the e-chain® and hose.



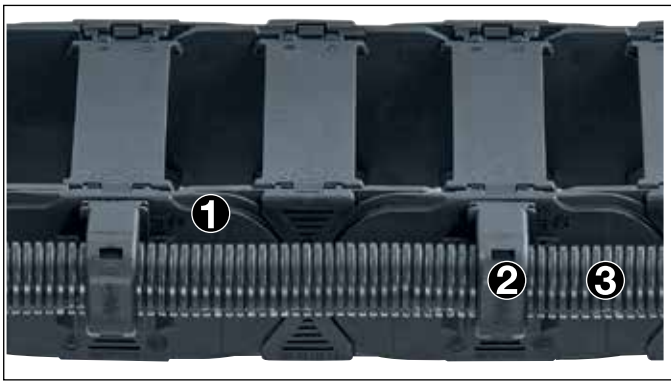


Roller separator for e-chains®

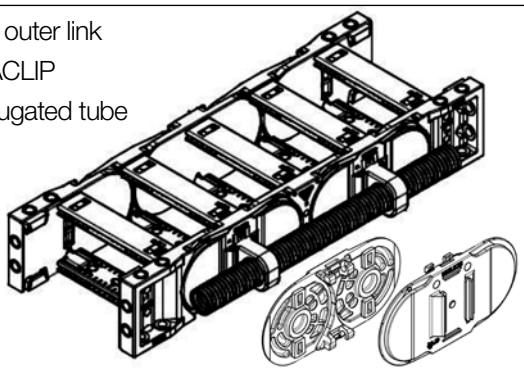
Unassembled	**Part No. 429**
Assembled	**Part No. 430**

- **Roller separator***
  The roller separator is used in a similar way to the rollclip. It is used like a separator. For rigid cables and hoses.
  *Only for e-chains®

igus® e-chain system®
Telephone 1-800-521-2747
Internet: igus.com
email: sales@igus.com
QuickSpec: igus.com/quickspec



1 TUB outer link
2 PMACLIP
3 Corrugated tube



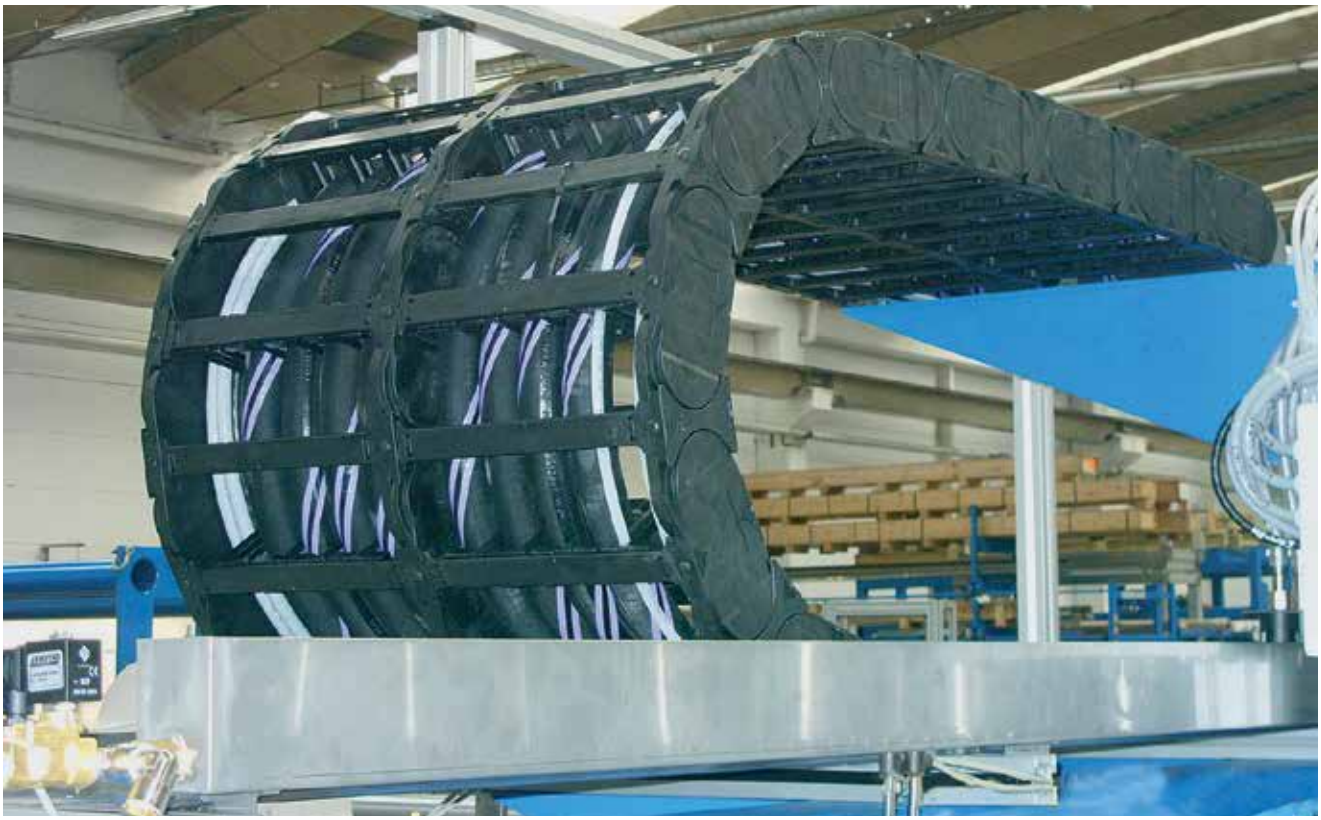
TUB | Safe guidance for corrugated tubes parallel to the e-chain®

- Additional, simple guidance for corrugated tubes on the outside of the e-chain®
- PMACLIP allows corrugated tubes with nominal widths .28 (07mm), .39 (10mm), .47 (12mm), .67 (17mm) to be easily clipped on
- Easy access to the corrugated tubes, fast replacement of the hoses
- Reduce assembly time and cost - easy to assemble, without any additional screws or tools
- The part number includes the e-chain® with TUB side sections; the PMACLIP support and the hose are ordered separately

Part No. TUB Outer link right*	Part No. TUB Outer link left*	Part No. TUB Outer link at both ends*	For corrugated tube nominal diameter Ø [mm]
E4-56-XXXTUBR-*R*-0	E4-56-XXXTUBL-*R*-0	E4-56-XXXTUB-*R*-0	.28 (07), .39 (10), .47 (12), .67 (17)

*View from the fixed end

Part number appended with width index XXX *Bi* and radius (*R*) e.g.
E4-56-100TUBR-150-0 = with TUB outer sections every 2nd right hand link



E4-1 as a noise-optimized version with extension links. Unsupported application with high fill weight. Assembled with rigid hydraulic hoses. The max. noise level can be reduced up to 9dB(A) using the optional rubber dampers

e-chain system® E4-1
Series E4-56/H4-56/R4-56
Accessories

Telephone 1-800-521-2747

Internet: igus.com
email: sales@igus.com
QuickSpec: igus.com/quickspec





Part number example for e-chain®

E4-56-10/20/10- 200 **-0**

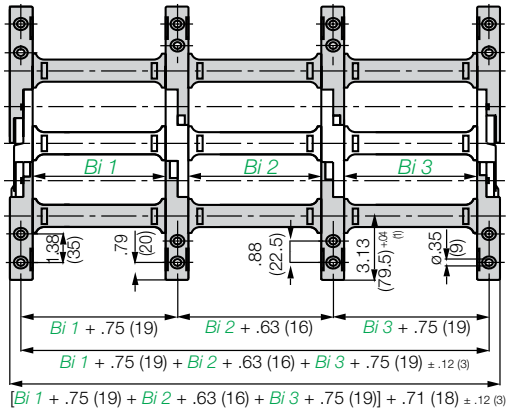
E4-56-*Bi1*/*Bi2*/*Bi3*- *R* **-0**

We **strongly recommend** on-site consultation with an igus® technician for individual advice regarding mounting brackets, guide troughs and other design details.

Extension links - for extremely wide e-chains® up to 9.84 ft (3m)

- For applications in which particularly high fill weights necessitate extremely wide e-chains®
- The extension link design allows virtually limitless side-by-side attachment of chains
- The unsupported length of a chain can be increased when additional loads are required
- Extension links can be used with e-chains®, e-tubes or a combination of both
- They are suitable for unsupported and gliding applications in a guide trough
- e-chains® with extension links are attached with KMA or steel mounting brackets.



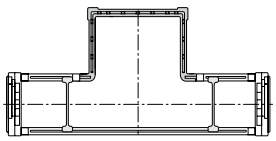




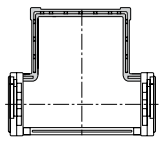
Consult igus® for your extender crossbar applications. We will be happy to assist you with your design layout.

Extender crossbars - For careful guiding of large diameter cables and hoses

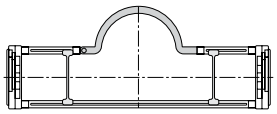
- Intended for cables and hoses with a maximum outer diameter of 9.65 in. (245 mm).
- Can be attached along either the inner or outer radius, inner radius preferred
- Gliding operation with crossbars assembled along the outer radius in conjunction with a special guide trough
- Gliding operation not guaranteed with crossbars assembled along the inner radius
- The extender crossbar can either be attached to the side links directly or can be used in combination with two standard snap-open crossbars.



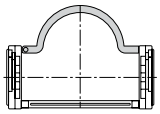
Square extender crossbar combined with standard snap-open crossbars.



Attached directly to the side link.



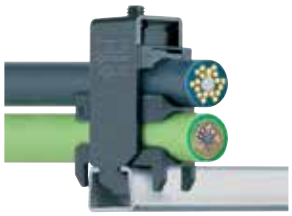
Round extender crossbar combined with standard snap-open crossbars.



Attached directly to the side link.

Part No.	Max Ø Hose	Style	Installation Side Link	Combined with Snap-Open Crossbars
450-15-RHD115	4.52 (115)	Round	No	Yes
450-17-RD115	4.52 (115)	Round	Yes	No
450-25-D150	5.91 (150)	Square	Yes	No
450-30-D200	7.09 (180)	Square	Yes	No
450-35-D250	7.68 (195)	Square	Yes	No
450-40-D300	9.65 (245)	Square	Yes	No
450-20-HD150	5.91 (150)	Square	No	Yes
450-25-HD200	7.09 (180)	Square	No	Yes
450-30-HD250	7.68 (195)	Square	No	Yes

Chainfix clamps for the profile rail



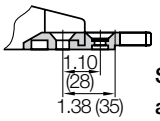
For more information please refer to strain relief section of Chapter 10.

igus® Chainfix strain relief elements are available in either steel or stainless steel. They can be adjusted with a hexagon socket and are available in single, double and triple configurations.

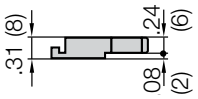
Part No. Single Clamp		Part No. Double Clamp		Part No. Triple Clamp		Cable ø	
Steel	Stainless	Steel	Stainless	Steel	Stainless	in.	(mm)
CFX12-1	CFX12-1E	CFX12-2	CFX12-2E	CFX12-3	–	.24 - .47	(6 - 12)
CFX14-1	CFX14-1E	CFX14-2	CFX14-2E	CFX14-3	–	.47 - .55	(12 - 14)
CFX16-1	CFX16-1E	CFX16-2	CFX16-2E	CFX16-3	–	.55 - .63	(14 - 16)
CFX18-1	CFX18-1E	CFX18-2	CFX18-2E	CFX18-3	–	.63 - .71	(16 - 18)
CFX20-1	CFX20-1E	CFX20-2	CFX20-2E	CFX20-3	–	.71 - .79	(18 - 20)
CFX22-1	CFX22-1E	CFX22-2	CFX22-2E	CFX22-3	–	.79 - .87	(20 - 22)
CFX26-1	CFX26-1E	CFX26-2	CFX26-2E	–	–	.87 - 1.02	(22 - 26)
CFX30-1	CFX30-1E	CFX30-2	CFX30-2E	–	–	1.02 - 1.18	(26 - 30)
CFX34-1	CFX34-1E	CFX34-2	CFX34-2E	–	–	1.18 - 1.34	(30 - 34)
CFX38-1	CFX38-1E	–	–	–	–	1.34 - 1.50	(34 - 38)
CFX42-1	CFX42-1E	–	–	–	–	1.50 - 1.65	(38 - 42)

Tiewrap Plates





Shown assembled

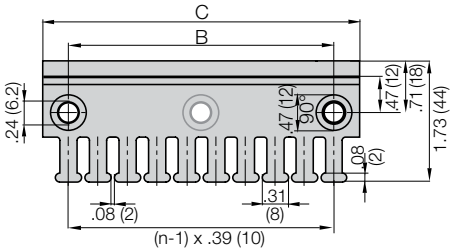


Single tiewrap plate

Option 1:
Tiewrap plates as an individual part

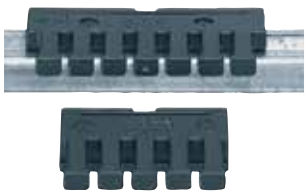
Available as an individual component, can be fixed onto a mounting bracket with the use of a profile rail.

Tiewrap Plate	n Number of Teeth	C Overall Width in. (mm)	B Bore Width in. (mm)	Center Bore
3050-ZB	5	1.97 (50)	1.18 (30)	no
3075-ZB	7	2.95 (75)	2.16 (55)	no
3100-ZB	10	3.94 (100)	3.15 (80)	no
3115-ZB	11	4.53 (115)	3.74 (95)	no
3125-ZB	12	4.92 (125)	4.13 (105)	no
3150-ZB	15	5.91 (150)	5.12 (130)	no
3175-ZB	17	6.89 (175)	6.10 (155)	no
3200-ZB	20	7.87 (200)	7.09 (180)	yes
3225-ZB	22	8.86 (225)	8.07 (205)	yes
3250-ZB	25	9.84 (250)	9.06 (230)	yes



If used with KMA brackets with profile rail please add "KMA" to the end of the part number.
Example: 3050-ZBKMA

For more information please refer to strain relief section of Chapter 10



Option 2:
Clip-on Tiewrap plates

Available as a clip-on tiewrap plate without the use of bolts They are inserted and removed with a screwdriver used as a lever. Clip-on tiewrap plates are also available as an attachment to the opening crossbars.

Part No.	Number of Teeth	Width of Strain Relief in.	(mm)
3050-ZC	5	1.97	(50)
3075-ZC	7	2.95	(75)

For more information please refer to strain relief section of Chapter 10.



Option 3:
Clip-on Tiewrap plates for opening crossbars

Clip-on tiewrap plates are also available as an attachment to opening crossbars. They can be positioned at any point along the e-chain®.

Part No.	Number of Teeth	Width of Strain Relief in.	(mm)
4550-ZS	5	1.89	(48)
4575-ZS	7	2.91	(74)

For more information please refer to strain relief section of Chapter 10

PDF: igus.com/e-chain-pdfs
Product information: igus.com/e-chains

e-chain system® E4-1
Series E4-56/H4-56/R4-56
Guide Trough

Width of Crossbar
E4-56-**05**-200-0

	B_{Ri}	Installation Part No.
-05	3.50 (89)	*
-06	4.09 (104)	**94-50-225**
-07	4.49 (114)	**94-50-225**
-08	5.04 (128)	**94-50-250**
-10	5.47 (139)	**94-50-250**
-11	5.98 (152)	**94-50-275**
-12	6.46 (164)	**94-50-275**
-13	6.97 (177)	**94-50-300**
-15	7.44 (189)	**94-50-300**
-16	7.95 (202)	**94-50-325**
-17	8.42 (214)	**94-50-325**
-18	8.94 (227)	**94-50-350**
-20	9.41 (239)	**94-50-350**
-21	9.92 (252)	**94-50-375**
-22	10.39 (264)	**94-50-375**
-23	10.91 (277)	**94-50-400**
-25	11.38 (289)	**94-50-400**
-26	11.89 (302)	**94-50-425**
-27	12.36 (314)	**94-50-425**
-28	12.87 (327)	**94-50-450**
-30	13.35 (339)	**94-50-450**
-31	13.86 (352)	**94-50-475**
-32	14.33 (364)	**94-50-475**
-33	14.84 (377)	**94-50-500**
-35	15.31 (389)	**94-50-500**
-36	15.82 (402)	**94-50-525**
-37	16.30 (414)	**94-50-525**
-38	16.81 (427)	**94-50-550**
-40	17.28 (439)	**94-50-550**
-41	17.79 (452)	**94-50-575**
-42	18.27 (464)	**94-50-575**
-43	18.78 (477)	**94-50-600**
-45	19.25 (489)	**94-50-600**
-46	19.76 (502)	**94-50-625**
-47	20.24 (514)	**94-50-625**
-48	20.75 (527)	**94-50-650**
-50	21.22 (539)	**94-50-650**
-51	21.73 (552)	**94-50-675**
-52	22.20 (564)	**94-50-675**
-53	22.72 (577)	**94-50-700**
-55	23.19 (589)	**94-50-700**
-60	25.16 (639)	**94-50-750**

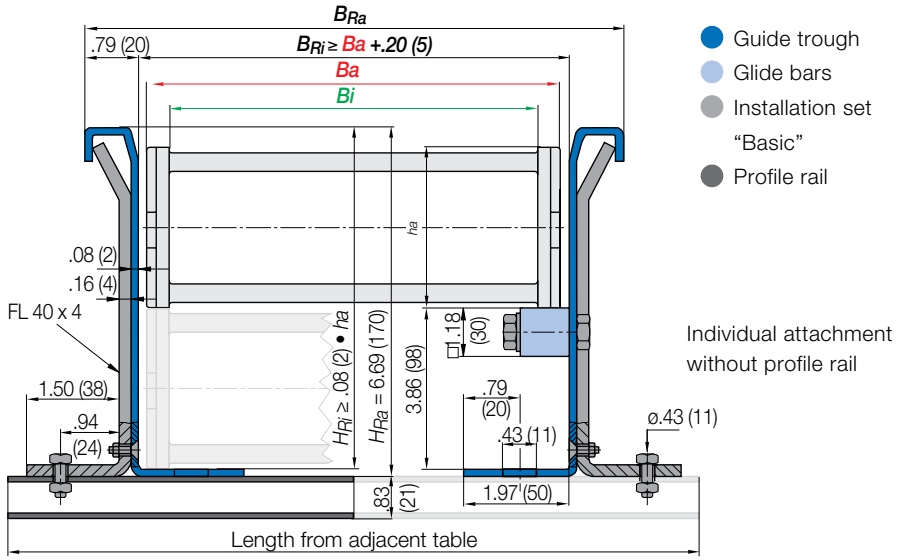
Guide troughs are used with applications where the upper run of the e-chain® glides on the lower run. If using igus® steel guide troughs, the following components are required.

- Full travel length of guide trough
  Part No. 94-30
- 1/2 travel length glide bars
  Part No. 93-01
- Installation sets as end connectors
  Part No. 94-50-XX

.XX indicates the length of the profile rails on which the guide trough is mounted. The values and part numbers are specified in the table on the left. The standard length of the trough components and glide bars is 6.56 ft (2m). The required overall length of the guide trough directly correlates to the length of travel.

Example:
Length of travel 164 ft (50 m)
Center mounted

Required guide troughs:
164 ft (50 m) guide trough
82 ft (25 m) glide bars
= 25 sections of 6.56 ft (2 m) guide trough
Part No. 94-30
= 13 sections of 6.56 ft (2 m) glide bars
Part No. 93-01
Required number of installation sets:
= Number of guide trough components + 1
= 25 + 1 = 26
Part number of the installation sets
94-50-XXX
Example:
94-50-400 for 15.75 (400 mm) long profile rail



* Specialized guide trough available upon request

Standard length profile rail



Left: Guide trough with glide bars
Right: Guide troughs without glide bars



Installation sets as section connectors

PDF: igus.com/e-chain-pdfs
Product information: igus.com/e-chains











e-chain system® E4-1
Series E4-80/H4-80/R4-80

Price Index

Series E4-80

Series H4-80

Series R4-80

Special Options Available

Low noise version available with special rubber pads

Cleanroom test upon request

ESD classification: Electrically conductive ESD/ ATEX version upon request

Assembly Tips



Opening e-chains®: Remove crossbars and clips - Insert screwdriver into the slot, push down, release by lever action



Remove lids/bottoms (e-tubes) - Insert screwdriver into the slot, release by lever action

Other Installation Methods

Vertical, hanging ≤ 394 ft (120 m)
Vertical, standing ≤ 19.69 ft (6 m)
Side-mounted, unsupp. ≤ 9.84 ft (3 m)
Rotary requires further calculation

Usage Guidelines

- If quiet operation is required
- If very high speeds and/or accelerations are required
- Long travels
- High additional loads

- When an extremely low vibration e-chain®/e-tube is required
  ➤ **Series E6-80**
- When an economic one-sided snap-open e-chain®/e-tube is required
  ➤ **Series 15050/15150/R19850**

Features & Benefits

1. Wide, rounded plastic crossbars - cable friendly
2. Low-noise operation through integrated brake in the radial stop dog system
3. Hinged snap-open removable lids along the outer radius of the e-tube
4. Straight run through inner-/outer-link design
5. The tongue and groove design provides greater lateral stability
6. QuickLock Crossbar, 450-X-Q, available for faster assembly/disassembly
7. New Interior separation kit available
8. Crossbars are removable along both radii
9. 15% more tensile strength (compared to the older E4 series), better unsupported length through improved stop dog system and vertical radial stops
10. Version NCST “without camber” simply by turning outer links without unnecessary rework



Also available without camber. Add NCST to the end of the part number.
Ex: E4-80-30-300NCST

Order Example: Complete e-chain®

Please indicate chain length or number of links. Example:

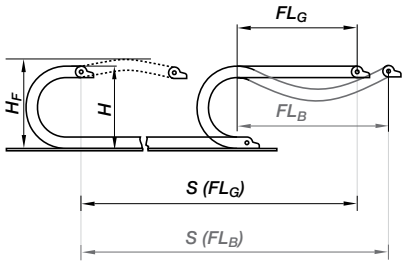
16.4 ft (5 m) **E4-80-30-300-0**	**e-chain®**
With 2 separators **80.1.1** assembled every 2nd link	**Interior Separation**
1 Set **E4-800-30-12P**	**Mounting Bracket**

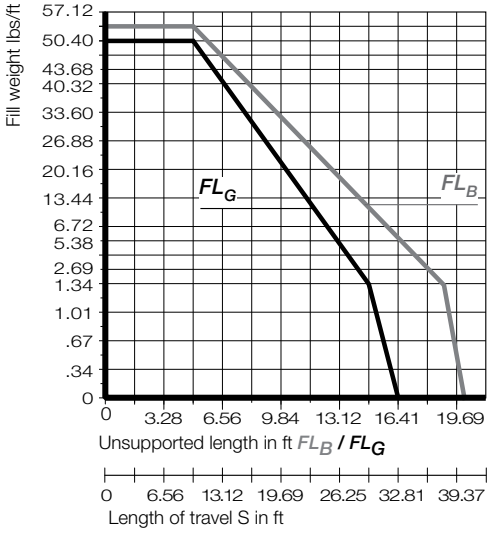
e-chain system® E4-1
Series E4-80/H4-80/R4-80
Installation Dimensions

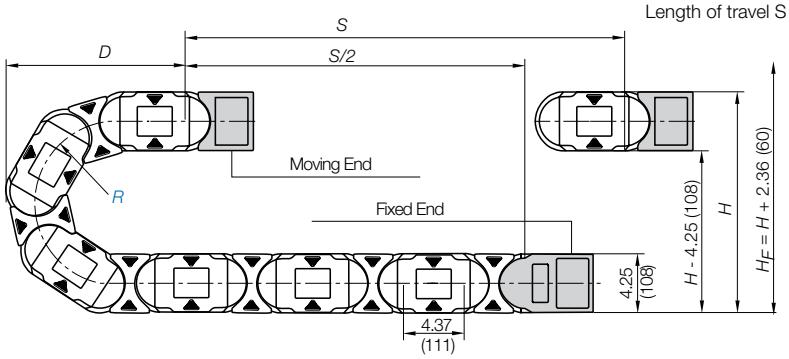
Short travel, unsupported length

- FL_B = unsupported with permitted sag
- FL_G = unsupported with straight upper run

Further information ➤ Design, Chapter 1







Pitch per link: = 4.37" (111 mm)
Links per ft (m): = 2.75 (9)
For center mount applications:
Chain length = $^{S}/_{2} + K$

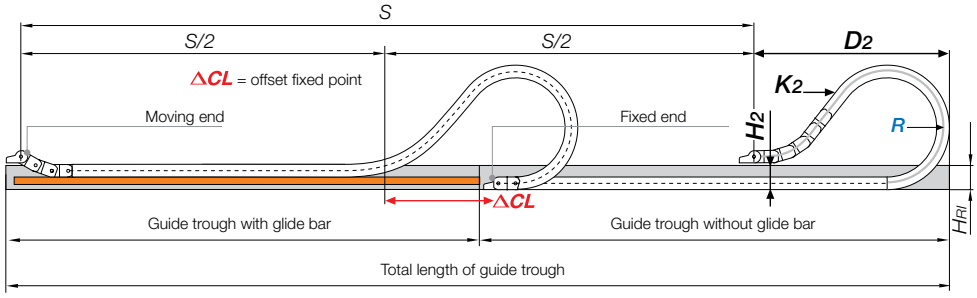
The required clearance height: $H_F = H + 2.36$ **in. (60 mm)** (with 2.02 lbs/ft (3 kg/m) fill weight.
Please consult igus® if space is particularly restricted.

R	5.91 (150)	7.87 (200)	9.84 (250)	11.81 (300)	13.78 (350)	15.75 (400)	19.68 (500)	21.65 (550)	23.62 (600)	39.37 (1000)
H^{-0}_{+25}	16.06 (408)	20.00 (508)	23.94 (608)	27.87 (708)	31.81 (808)	35.75 (908)	43.62 (1108)	47.56 (1208)	51.50 (1308)	82.99 (2108)
D	14.61 (371)	16.57 (421)	18.54 (471)	20.51 (521)	22.48 (571)	24.45 (621)	28.38 (721)	30.35 (771)	32.32 (821)	48.07 (1221)
K	27.36 (695)	33.66 (855)	39.76 (1010)	45.87 (1165)	52.17 (1325)	58.27 (1480)	70.67 (1795)	76.77 (1950)	83.07 (2110)	132.48 (3365)

For long travels with lowered mounting height

Long travel lengths from 32.8 ft.(10m) to max. 1,312 ft. (400m)

For center mount applications:
Chain length: = $^{S}/_{2} + K_2$



R	5.91 (150)	7.87 (200)	9.84 (250)	11.81 (300)	13.78 (350)	15.75 (400)	19.68 (500)	21.65 (550)	23.62 (600)	39.37 (1000)
H2	9.53 (242)	9.53 (242)	9.53 (242)	9.53 (242)	9.53 (242)	9.53 (242)	9.53 (242)	-	-	-
D2 +25	21.65 (550)	31.50 (800)	39.37 (1000)	47.24 (1200)	57.09 (1450)	62.99 (1600)	82.68 (2100)	-	-	-
K2	35.04 (890)	52.36 (1330)	65.55 (1665)	78.74 (2000)	91.73 (2330)	104.72 (2660)	135.43 (3440)	-	-	-
ΔCL	7.44 (189)	15.61 (389)	21.22 (539)	27.13 (689)	35.00 (889)	38.94 (989)	54.69 (1389)	-	-	-

In case of travels between 13 and 32.8 ft (4 and 10 m) we recommend a longer unsupported length.

For support of the lower run, **see Chapter 9** of the main catalog for the **Support Tray tool kit**

Speed / acceleration FL_G	max. 65.6 ft/s (20 m/s) / max. 656 ft/s² (200 m/s²)
Speed / acceleration FL_B	max. 9.84 ft/s (3 m/s) / max. 19.69 ft/s² (6 m/s²)
Gliding speed / acceleration (maximum)	max. 32.8 ft/s (10 m/s) / max. 164 ft/s² (50 m/s²)
Material - permitted temperature	igumid G / -40°F (-40°C) up to +248°F (+120° C)
Flammability Class, igumid G	VDE 0304 IIC UL94 HB

Short Travels - Unsupported

Unsupported e-chains® feature positive camber over short travels. This must be accounted for when specifying the clearance height. Please refer to **Installation dimensions** for further details.

Legend

S = Length of travel
R = Bending radius
H = Nominal clearance height
D = Overlength e-chain® radius in final position
K = π • *R* + *safety buffer*
H_F = Required clearance height
H_{RI} = Trough inner height
H_2 = *Mounting height
D_2 = Overlength - long travels, gliding
K_2 = *Add-on

*If the mounting bracket location is set lower

Long Travels - Gliding

If the unsupported length is exceeded, the e-chain®/Tube must glide on itself. This requires a guide trough.
Design, Chapter 1

Technical Data

Details of material properties
➤ **Chapter 1**

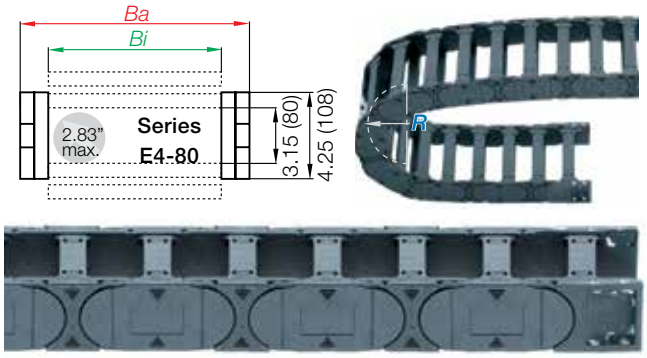
PDF: igus.com/e-chain-pdfs
Product information: igus.com/e-chains

e-chain system® E4-1
Series E4-80/H4-80/R4-80
Product Range

Telephone 1-800-521-2747

Internet: igus.com
email: sales@igus.com
QuickSpec: igus.com/quickspec

Series E4-80 - e-chain® with crossbars every link



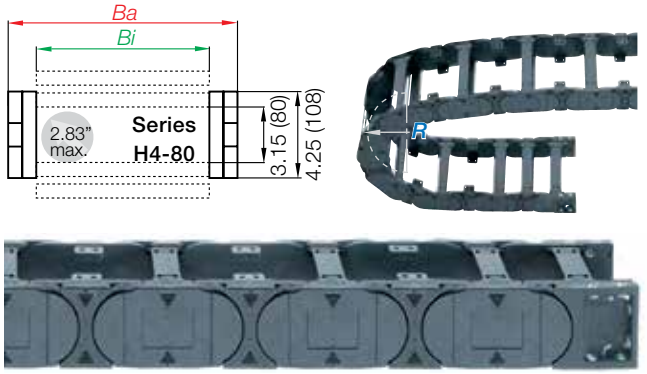
- Crossbars every link
- For use with rigid hydraulic hoses
- For particularly demanding applications
- Can be opened from both sides

Part Number Structure

E4-80- | 30- | 300- | 0

- Color - Black
- Bending radius
- Width
- Series

Series H4-80 - e-chain® with crossbars every other link



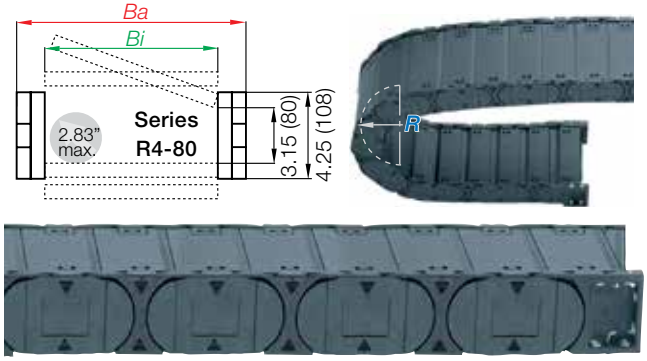
- Crossbars every other link - Standard configuration
- For nearly every situation
- Can be opened from both sides
- Easy assembly
- Stable
- Cost-effective

Part Number Structure

H4-80- | 30- | 300- | 0

- Color - Black
- Bending radius
- Width
- Series

Series R4-80 - fully enclosed e-tube



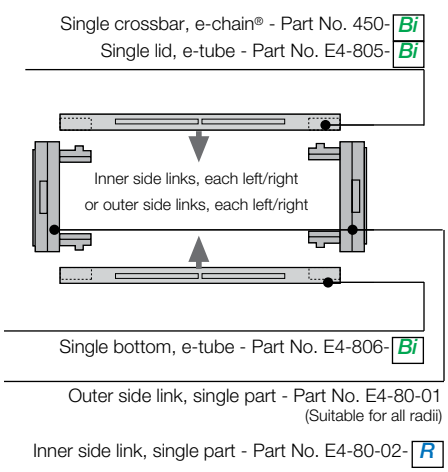
- Fully enclosed
- Excellent cable and hose protection against dirt
- Protection against hot chips
- Lids along inner radius are completely removable
- Lids along the outer radius are single-sided, snap open, hinged on one side as well as completely removable

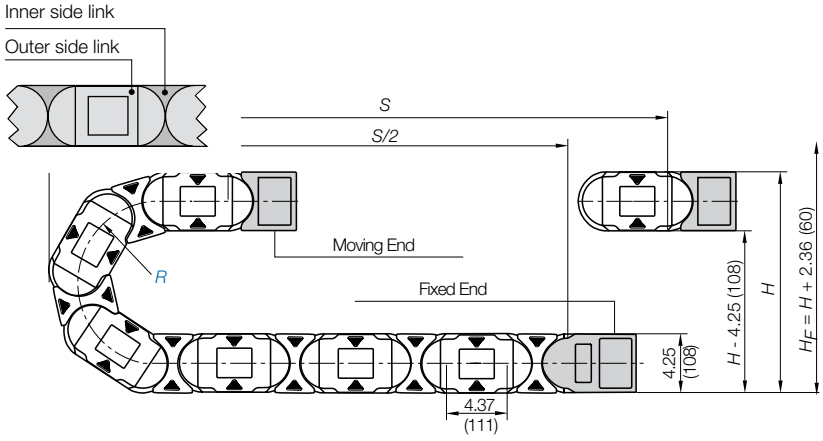
Part Number Structure

R4-80- | 30- | 300- | 0

- Color - Black
- Bending radius
- Width
- Series

e-chain® as separate parts, links and side plates





e-chain system® E4-1
Series E4-80/H4-80/R4-80

Supplement part number with required radius. Example: E4-80-30-300-0
Pitch: 4.37 in. (91mm) per link links/ft (m) = 2.75 (9)

Part Number						Weight		
Crossbars	Crossbars	Tube		*Bi*	*Ba*	E4-80	H4-80	R4-80
Every link	Every other	Version		in. (mm)	in. (mm)	lbs/ft (kg/m)	lbs/ft (kg/m)	lbs/ft (kg/m)
E4-80-05-	H4-80-05-		-0	1.97 (50)	3.94 (100)	≈ 3.59 (5.34)	≈ 3.51 (5.22)	–
E4-80-055-	H4-80-055-		-0	2.17 (55)	4.13 (105)	≈ (5.77)	≈ (5.74)	–
E4-80-06-	H4-80-06-		-0	2.56 (65)	4.53 (115)	≈ 3.64 (5.41)	≈ 3.53 (5.26)	–
E4-80-07-	H4-80-07-	R4-80-07-	-0	2.95 (75)	4.92 (125)	≈ 3.68 (5.47)	≈ 3.55 (5.29)	–
E4-80-08-	H4-80-08-		-0	3.43 (87)	5.39 (137)	≈ 3.74 (5.56)	≈ 3.57 (5.32)	–
E4-80-10-	H4-80-10-	R4-80-10-	-0	3.94 (100)	5.91 (150)	≈ 3.77 (5.61)	≈ 3.60 (5.36)	≈ 4.50 (6.70)
E4-80-11-	H4-80-11		-0	4.41 (112)	6.42 (163)	≈ 3.84 (5.71)	≈ 3.63 (5.40)	–
E4-80-12-	H4-80-12-	R4-80-12-	-0	4.92 (125)	6.89 (175)	≈ 3.88 (5.77)	≈ 3.66 (5.44)	–
E4-80-13-	H4-80-13-		-0	5.39 (137)	7.40 (188)	≈ 3.95 (5.88)	≈ 3.69 (5.49)	–
E4-80-15-	H4-80-15-	R4-80-15-	-0	5.91 (150)	7.87 (200)	≈ 3.97 (5.91)	≈ 3.70 (5.51)	≈ 6.86 (4.52)
E4-80-16-	H4-80-16-		-0	6.38 (162)	8.39 (213)	≈ 4.03 (6.00)	≈ 3.73 (5.55)	–
E4-80-169	H4-80-169-		-0	6.65 (169)	8.66 (220)	≈ 4.34 (6.46)	≈ 4.09 (6.08)	–
E4-80-17-	H4-80-17-	R4-80-17-	-0	6.89 (175)	8.86 (225)	≈ 2.76 (6.11)	≈ 3.77 (5.61)	–
E4-80-182	H4-80-182-		-0	7.17 (182)	9.17 (233)	≈ 4.39 (6.54)	≈ 4.11(6.12)	–
E4-80-18-	H4-80-18-		-0	7.36 (187)	9.37 (238)	≈ 4.17 (6.20)	≈ 3.80 (5.65)	–
E4-80-20-	H4-80-20-	R4-80-20-	-0	7.87 (200)	9.84 (250)	≈ 4.20 (6.25)	≈ 3.82 (5.68)	≈ 6.86 (7.23)
E4-80-207-	H4-80-207-		-0	8.15 (207)	10.16 (258)	≈ 4.49 (6.68)	≈ 4.17 (6.20)	–
E4-80-21-	H4-80-21-		-0	8.35 (212)	10.35 (263)	≈ 4.23 (6.31)	≈ 3.84 (5.71)	–
E4-80-22-	H4-80-22-		-0	8.86 (225)	10.83 (275)	≈ 4.27 (6.36)	≈ 3.85 (5.73)	–
E4-80-23-	H4-80-23-		-0	9.33 (237)	11.34 (288)	≈ 4.33 (6.45)	≈ 3.88(5.78)	–
E4-80-25-	H4-80-25-	R4-80-25-	-0	9.84 (250)	11.81 (300)	≈ 4.39 (6.54)	≈ 3.91 (5.82)	≈ 5.42 (8.06)
E4-80-26-	H4-80-26-		-0	10.31 (262)	12.32 (313)	≈ 4.45 (6.62)	≈ 3.94 (5.86)	–
E4-80-27-	H4-80-27-	R4-80-27-	-0	10.83 (275)	12.80 (325)	≈ 4.50 (6.70)	≈ 3.96 (5.90)	–
E4-80-28-	H4-80-28-		-0	11.30 (287)	13.31 (338)	≈ 4.54 (6.75)	≈ 3.98 (5.93)	–
E4-80-30-	H4-80-30-	R4-80-30-	-0	11.81 (300)	13.78 (350)	≈ 4.62 (6.87)	≈ 4.03 (5.99)	≈ 5.87 (8.73)
E4-80-31-	H4-80-31-		-0	12.28 (312)	14.29 (363)	≈ 4.64 (6.90)	≈ 4.03 (6.00)	–
E4-80-32-	H4-80-32-		-0	12.79 (325)	14.76 (375)	≈ 4.70 (6.99)	≈ 4.07 (6.05)	–
E4-80-33-	H4-80-33-		-0	13.27 (337)	15.28 (388)	≈ 4.76 (7.09)	≈ 4.10 (6.10)	–
E4-80-35-	H4-80-35-	R4-80-35-	-0	13.78 (350)	15.75 (400)	≈ 4.87 (7.25)	≈ 4.15 (6.18)	≈ 6.36 (9.47)
E4-80-36-	H4-80-36-		-0	14.25 (362)	16.26 (413)	≈ 4.82 (7.18)	≈ 2.53 (6.14)	–
E4-80-37-	H4-80-37-		-0	14.76 (375)	16.73 (425)	≈ 4.88 (7.26)	≈ 4.15 (6.18)	–
E4-80-38-	H4-80-38-		-0	15.24 (387)	17.24 (438)	≈ 4.94 (7.35)	≈ 4.19 (6.23)	–
E4-80-40-	H4-80-40-	R4-80-40-	-0	15.75 (400)	17.72 (450)	≈ 5.09 (7.57)	≈ 4.26 (6.34)	≈ 6.86 (10.21)
E4-80-41-	H4-80-41-		-0	16.22 (412)	18.23 (463)	≈ 5.05 (7.51)	≈ 4.24 (6.31)	–
E4-80-42-	H4-80-42-		-0	16.73 (425)	18.70 (475)	≈ 5.21 (7.75)	≈ 4.32 (6.43)	–
E4-80-43-	H4-80-43-		-0	17.20 (437)	19.21 (488)	≈ 5.12 (7.62)	≈ 4.27 (6.36)	–
E4-80-45-	H4-80-45-		-0	17.72 (450)	19.69 (500)	≈ 5.30 (7.89)	≈ 4.37 (6.50)	–
E4-80-46-	H4-80-46-	R4-80-46-	-0	18.19 (462)	20.20 (513)	≈ 5.27 (7.85)	≈ 4.35 (6.48)	≈ 7.36 (10.96)
E4-80-47-	H4-80-47-		-0	18.70 (475)	20.67 (525)	≈ 5.29 (7.88)	≈ 4.36 (6.49)	–
E4-80-48-	H4-80-48-		-0	19.17 (487)	21.19 (538)	≈ 5.44 (8.09)	≈ (4.43 6.60)	–
E4-80-50-	H4-80-50-		-0	19.69 (500)	21.65 (550)	≈ 5.44 (8.09)	≈ 4.43 (6.60)	–
E4-80-51-	H4-80-51-		-0	20.16 (512)	22.16 (563)	≈ 5.49 (8.17)	≈ 4.46 (6.63)	–
E4-80-52-	H4-80-52-		-0	20.67 (525)	22.64 (575)	≈ 5.54 (8.24)	≈ 4.48 (6.67)	–
E4-80-53-	H4-80-53-		-0	21.14 (537)	23.15 (588)	≈ 5.58 (8.31)	≈ 4.51 (6.71)	–
E4-80-55-	H4-80-55-		-0	21.65 (550)	23.62 (600)	≈ 5.82 (8.66)	≈ 4.62 (6.88)	–
E4-80-60-	H4-80-60-		-0	23.62 (600)	25.59 (650)	≈ 5.94 (8.84)	≈ 4.68 (6.97)	–

Choose from the radii below for all of the above sizes

Radius (mm) Example: E4-80-30-300-0

	150	200	250	300	350	400	500	550	600	1000
R	5.91 (150)	7.87 (200)	9.84 (250)	11.81 (300)	13.78 (350)	15.75 (400)	19.68 (500)	21.65 (550)	23.62 (600)	39.37 (1000)
H^{-0}_{+25}	16.06 (408)	20.00 (508)	23.94 (608)	27.87 (708)	31.81 (808)	35.75 (908)	43.62 (1108)	47.56 (1208)	51.50 (1308)	82.99 (2108)
D	14.61 (371)	16.57 (421)	18.54 (471)	20.51 (521)	22.48 (571)	24.45 (621)	28.38 (721)	30.35 (771)	32.32 (821)	48.07 (1221)
K	27.36 (695)	33.66 (855)	39.76 (1010)	45.87 (1165)	52.17 (1325)	58.27 (1480)	70.67 (1795)	76.77 (1950)	83.07 (2110)	132.48 (3365)

0 = Standard color black. For other colors see Chapter 1

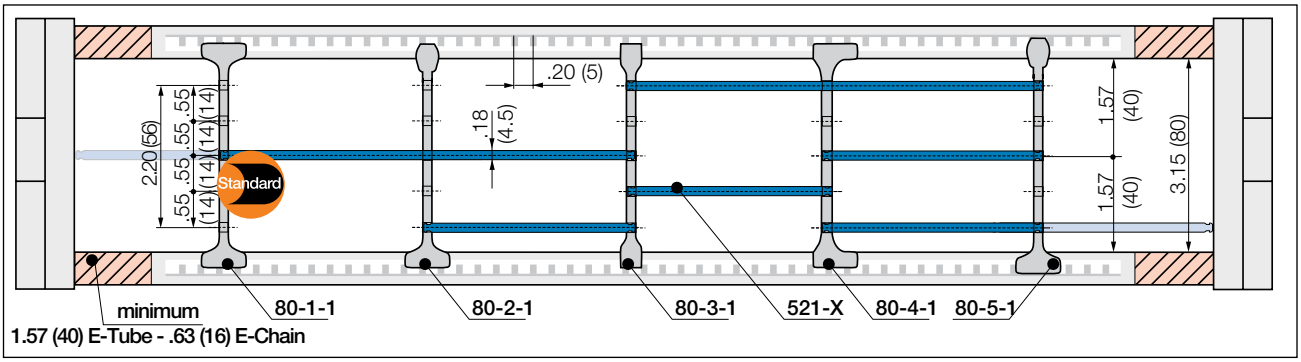
For wider chains see page 6.85 For large diameter hoses see page 6.85

PDF: igus.com/e-chain-pdfs
Product information: igus.com/e-chains

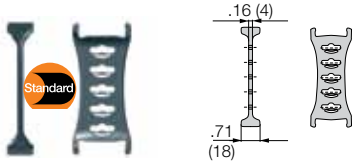
e-chain system® E4-1
Series E4-80/H4-80/R4-80
Interior Separation - New Generation

Telephone 1-800-521-2747

Internet: igus.com
email: sales@igus.com
QuickSpec: igus.com/quickspec



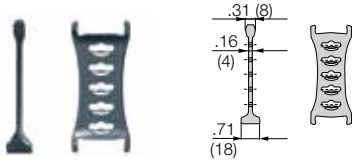
Note Please maintain a lateral spacing of 1.57" (40 mm) for e-tube and .63" (16 mm) for e-chains® between the separators and the side links. In the standard configuration separators are assembled every 2nd e-chain® link



Separator, wide base

Unassembled	**Part No. 80-1**
Assembled	**Part No. 80-1-1**

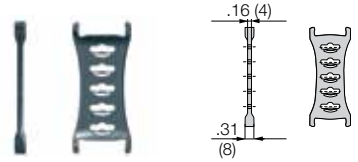
- **Standard separator 80-1 for all applications**
  Separator with wide base for maximum locking strength and safe standing in e-chains®.



Separator, narrow head

Unassembled	**Part No. 80-2**
Assembled	**Part No. 80-2-1**

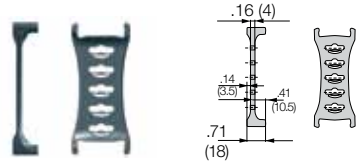
- **Separator 80-2**
  For even faster installation
  is used when vertical and horizontal separation is required. Due to its slot, it allows basic vertical/horizontal shelving arrangements.



Separator, narrow base

Unassembled	**Part No. 80-3**
Assembled	**Part No. 80-3-1**

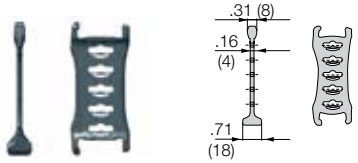
- **Separator 80-3**
  For many thin cables
  is used when vertical and horizontal separation is required. Due to its slot, it allows basic vertical/horizontal shelving arrangements.



Separator, asymmetrical

Unassembled	**Part No. 80-4**
Assembled	**Part No. 80-4-1**

- **Separator 80-4**
  For side mounted applications
  is used when vertical and horizontal separation is required. Due to its slot, it allows basic vertical/horizontal shelving arrangements.

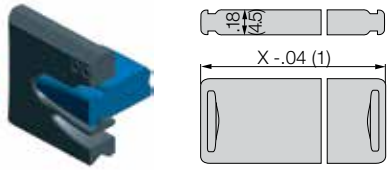


Separator, asymmetrical

Unassembled	**Part No. 80-5**
Assembled	**Part No. 80-5-1**

- **Separator 80-5**
  Locks safely in .30" (7.5 mm) increments
  Notch separator for exact positioning in e-chains®. Recommended for side-mounted applications.

Lockable full-width shelves - for the standard interior separation



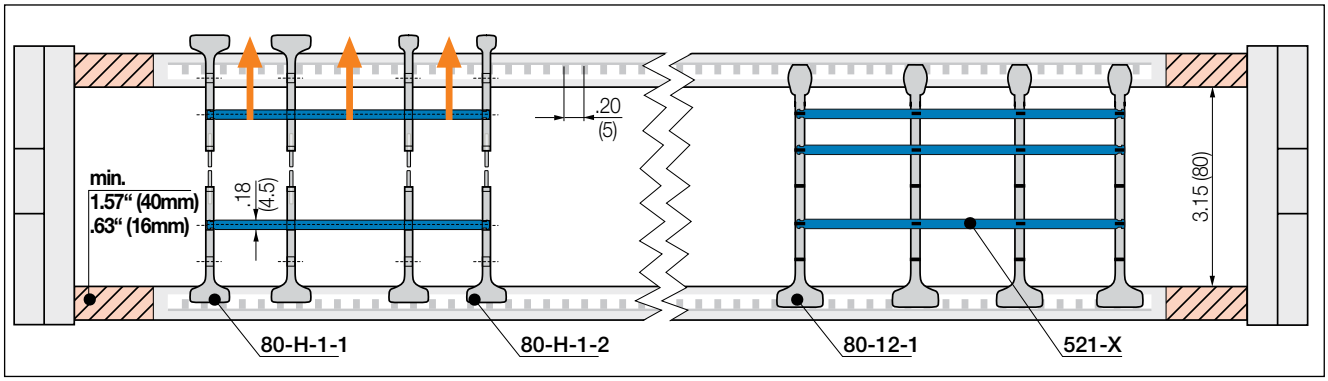
Full width shelf, lockable

Unassembled	**Part No. 520-X**
Assembled	**Part No. 521-X**

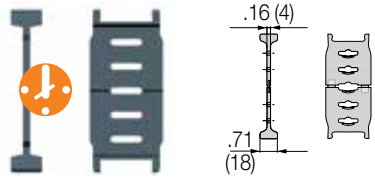
- **Full width shelf, lockable**
  Shelf locks safely into separators on both ends, fixed width possible. Separators can be moved freely over the shelf in horizontal direction. Can be arranged at 5 different heights.

Width X in. (mm)	Part No. Unassembled	Part No. Assembled	Width X in. (mm)	Part No. Unassembled	Part No. Assembled	Width X in. (mm)	Part No. Unassembled	Part No. Assembled
1.97 (050)	**520-50**	**521-50**	5.91 (150)	**520-150**	**521-150**	11.81 (300)	**520-300**	**521-300**
2.56 (065)	**520-65**	**521-65**	6.89 (175)	**520-175**	**521-175**	13.78 (350)	**520-350**	**521-350**
2.95 (075)	**520-75**	**521-75**	7.87 (200)	**520-200**	**521-200**	14.76 (375)	**520-375**	**521-375**
3.94 (100)	**520-100**	**521-100**	8.86 (225)	**520-225**	**521-225**	15.24 (387)	**520-387**	**521-387**
4.92 (125)	**520-125**	**521-125**	9.84 (250)	**520-250**	**521-250**	17.723 (450)	**520-450**	**521-450**

e-chain system® E4-1
Series E4-80/H4-80/R4-80
Interior Separation - New Generation

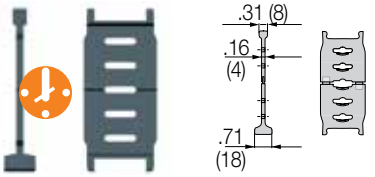


Note Please maintain a lateral spacing of 1.57” (40 mm) for e-tube and .63” (16 mm) for e-chains® between the separators and the side links. In the standard configuration separators are assembled every 2nd e-chain® link



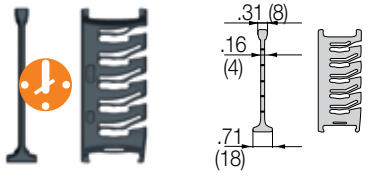
Separator, wide base

Unassembled	**Part No. 80-H-1**
Assembled	**Part No. 80-H-1-1**



Separator, narrow head

Unassembled	**Part No. 80-H-2**
Assembled	**Part No. 80-H-2-1**



Lean separator

Unassembled	**Part No. 80-12**
Assembled	**Part No. 80-12-1**

- **Split separators for all applications**
  In order to fill e-chains® more easily and effectively, these separators can be split in the middle. This allows easier access to middle shelf partitions. Fast assembly and easy retrofit. 2 types available: with wide or narrow top.

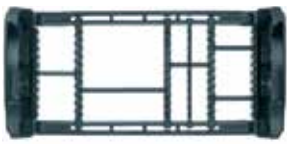
- **Lean separators 80-12**
  New design allows extremely fast fitting of shelves in several layers, which significantly reduces assembly time. Enables extremely fast replacement of individual cables in a very full e-chain®.



- **Lean separator design - several layers of cables fitted quickly, save up to 50%* assembly time**
  (*Lean separator vs. standard separator - measured on a 4m long e-chain® fitted with 12 cables in the igus® harnessing factory)

PDF: igus.com/e-chain-pdfs
Product information: igus.com/e-chains

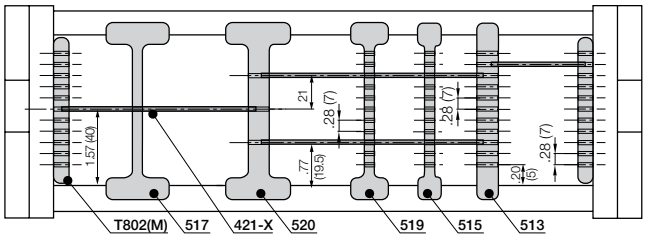
e-chain system® E4-1
Series E4-80/H4-80/R4-80
Interior Separation - Previous Generation



Shelves and separators

e-chains® and e-tubes can be subdivided both vertically and horizontally using the various interior separation elements.

➤ **Design, Chapter 1** for layout recommendations.





.39 (10)
.47 (12)

Side plate (for e-chains®)

Unassembled	**Part No. T803**
Assembled	**Part No. T803M**

- **Split separator T803**
  This component is used to form the basic pattern of a shelf system.



.16 (4)

Side plate (for e-chains®)

Unassembled	**Part No. T802**
Assembled	**Part No. T802M**

- **Side plates 802**
  This component is used to form the basic pattern of a shelf system.



.31 (8)

Vertical separator (for e-chains®)

Unassembled	**Part No. 503**
Assembled	**Part No. 513**

- **Vertical separator 503**
  This component is used to form the basic pattern of a shelf system.



.16 (4)
.83 (21)

Locking vertical separator (for e-chains®)

Unassembled	**Part No. 507**
Assembled	**Part No. 517**

- **Locking vertical separator 507**
  This separator features increased retention force for applications exposed to very high humidity and extreme loads. The extra retention force is achieved by asymmetric claws for the crossbar. Take care to ensure proper alignment.

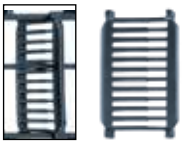


.31 (8)
.83 (21)

Locking vertical separator (for e-chains®)

Unassembled	**Part No. 510**
Assembled	**Part No. 520**

- **Locking vertical separator 510**
  This separator is slotted and able to be combined with shelves. For e-chains® only.

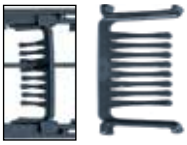


.14 (3,5)
.24 (6)

Slotted separators, closed (for e-chains®)

Unassembled	**Part No. 505**
Assembled	**Part No. 515**

- **Slotted separators 505**
  These are used for very complex subdivisions. However, they cannot be retrofitted into an existing separation system without removing the shelves first.



.12 (3)
.39 (10)

Slotted separators, open (for e-chains®)

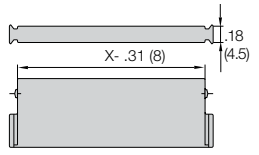
Unassembled	**Part No. 509**
Assembled	**Part No. 519**

- **Slotted separator 509**
  This separator can be retrofitted into an existing interior separation system without removing the shelves, as long as these shelves fit into any of the 7 middle slots

Shelves 420-XX

These components form the basic pattern of a shelf system. Shelves of various widths can be arranged at 11 different heights in .28" (7mm) increments

Width X in. (mm)	Usable Width in. (mm)	Part No. Unassembled	Part No. Assembled	Width X in. (mm)	Usable Width in. (mm)	Part No. Unassembled	Part No. Assembled
.71 (18)	.39 (10)	**420-18**	**421-18**	2.95 (75)	2.64 (67)	**420-75**	**421-75**
.91 (23)	.59 (15)	**420-23**	**421-23**	3.46 (88)	3.15 (80)	**420-88**	**421-88**
.98 (25)	.67 (17)	**420-25**	**421-25**	3.94 (100)	3.62 (92)	**420-100**	**421-100**
1.10 (28)	.79 (20)	**420-28**	**421-28**	4.92 (125)	4.61(117)	**420-125**	**421-125**
1.30 (33)	.98 (25)	**420-33**	**421-33**	5.91 (150)	5.59(142)	**420-150**	**421-150**
1.69 (43)	1.38 (35)	**420-43**	**421-43**	6.89 (175)	6.57(167)	**420-175**	**421-175**
1.97 (50)	1.65 (42)	**420-50**	**421-50**	7.36 (187)	7.05(179)	**420-187**	**421-187**
2.44 (62)	2.13 (54)	**420-62**	**421-62**	7.87 (200)	7.56(192)	**420-200**	**421-200**

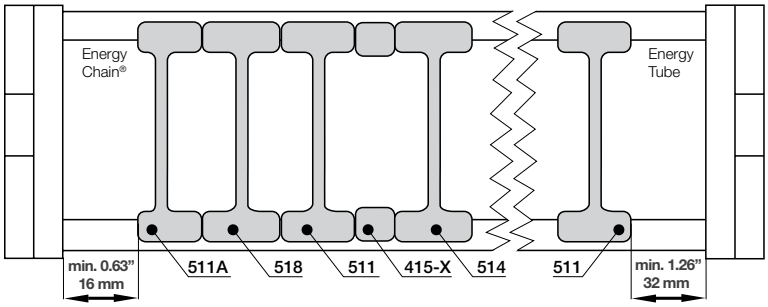




igus®
e-chain system®
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email: sales@igus.com
QuickSpec: igus.com/quickspec

e-chain system® E4-1
Series E4-80/H4-80/R4-80
Interior Separation - Previous Generation



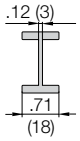


Vertical separators and spacers

Vertical separators are used if a vertical subdivision of the e-chain® interior is required. By standard, vertical separators are assembled every other e-chain® link.

NOTE: Observe a lateral spacing of at least 1.30 in. (33mm) for e-tubes and .63 in. (16mm) for e-chain®. There is no minimum spacing needed for side plates



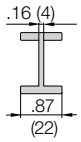


Vertical separator

Unassembled	**Part No. 501**
Assembled	**Part No. 511**

- **Standard separator 501 for e-chains® and e-tubes**
  This separator offers safe stability due to its wide base design, also when used with thick cables or hoses.



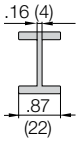


Locking separator (for e-chains®)

Unassembled	**Part No. 504**
Assembled	**Part No. 514**

- **Locking separator 504 for e-chains®**
  This separator features increased retention force for applications exposed to very high humidity and extreme loads. If locking separators are used, the e-chain® is more difficult to open.



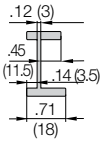


Locking separator (for e-chains®)

Unassembled	**Part No. 508**
Assembled	**Part No. 518**

- **Locking separator 508 for e-tubes**
  This separator is used for applications that are exposed to extremely high humidity. The clamp at the side serves to uniformly align the separators. In order to avoid destroying the separators when opening the e-chain®, make sure all separators are identically aligned.





Asymmetrical separator (for e-chains®)

Unassembled	**Part No. 501A**
Assembled	**Part No. 511A**

- **Asymmetrical separator 501A for e-chains®**
  This separator is NOT for e-tubes. It features an (18mm) base and can be used in combinations between spacers of different widths and vertical separators in side mounted applications.





Spacer (for e-chains®)

Unassembled	**Part No. 405-XX**
Assembled	**Part No. 415-XX**

XX = width of the spacer

- **NOTE ON SPACERS**
  Vertical separators are adjustable, but can be fixed in position by means of a spacer. Spacers are most often necessary for side mounted applications.
  The available inner height is reduced by .08" (2mm) **per spacer** (for example if one spacer is placed on either side of the separator, the overall inner height is reduced by .16" (4mm). To avoid this, place the spacers on the **outside** of the opening crossbar **(not for long travels)**.

Spacers available in the following sizes:

Part No. Unassembled	Part No. Assembled	in.	(mm)	Part No. Unassembled	Part No. Assembled	in.	(mm)
405 -10	**415 -10**	.39"	(10)	**405 -30**	**415 -30**	1.18"	(30)
405 -15	**415 -15**	.59"	(15)	**405 -40**	**415 -40**	1.57"	(40)
405 -20	**415 -20**	79"	(20)				

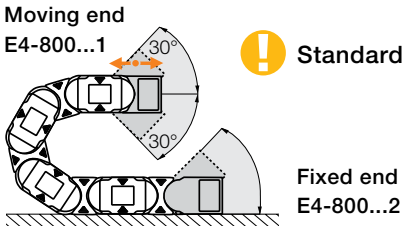


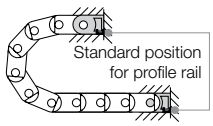
PDF: igus.com/e-chain-pdfs
Product information: igus.com/e-chains

e-chain system® E4-1
Series E4-80/H4-80/R4-80
Mounting Brackets

Option 1: pivoting

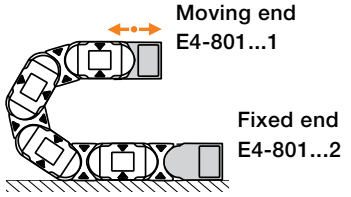
- Recommended for unsupported and gliding applications
- Attachment capability on all sides
- Bolted connection outside of chain cross-section
- Space restricted conditions
- Corrosion resistant

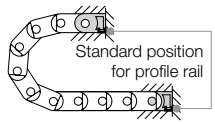




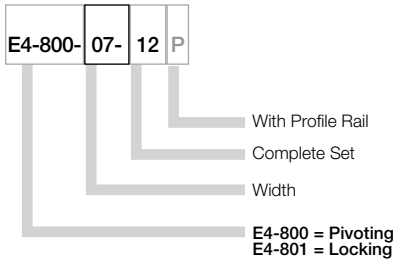
Option 2: locking

- Profile rail option
- Universal use
- Corrosion resistant
- Vertical hanging/standing travels
- Extreme accelerations

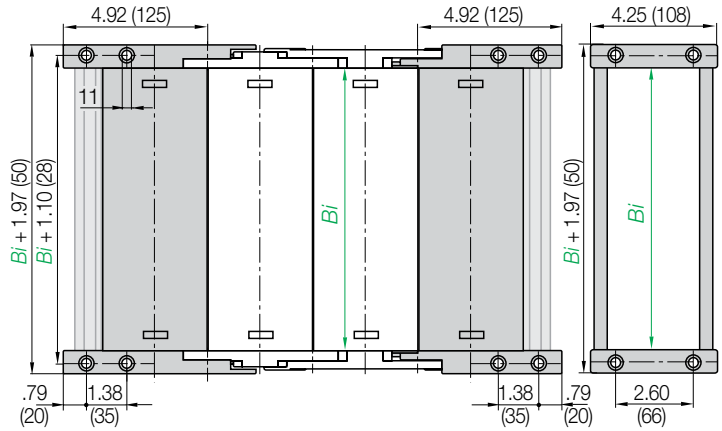




Part Number Structure



Due to the design of the E4-80 series chains, please note the following when ordering brackets:
Even number of links = full set, part number ending in **-12**
Odd number of links = 2 pieces, part number ending in **-1**



Part No. Full Set (pivoting)
Series E4-80 or H4-80
E4-800-Width-12

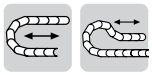
Part No. Full Set (pivoting)
with profile rail
Series E4-80 or H4-80
E4-800-Width-12P

Part number examples are shown for pivoting brackets for e-chain. For locking brackets change part number to 801

Width	Part No. Full Set chain			With Profile Rail	*Bi* in. (mm)
	Pivoting	Locking			
-05*	E4-800	E4-801	-05-12	P	1.97 (50)
-055	E4-800	E4-801	-055-12	P	2.17 (55)
-06	E4-800	E4-801	-06-12	P	2.56 (65)
-07	E4-800	E4-801	-07-12	P	2.95 (75)
-08	E4-800	E4-801	-08-12	P	3.43 (87)
-10	E4-800	E4-801	-10-12	P	3.94 (100)
-11	E4-800	E4-801	-11-12	P	4.41 (112)
-12	E4-800	E4-801	-12-12	P	4.92 (125)
-13	E4-800	E4-801	-13-12	P	5.39 (137)
-15	E4-800	E4-801	-15-12	P	5.91 (150)
-16	E4-800	E4-801	-16-12	P	6.38 (162)
-169	E4-800	E4-801	-169-12	P	6.65 (169)
-17	E4-800	E4-801	-17-12	P	6.89 (175)
-182	E4-800	E4-801	-082-12	P	7.17 (182)
-18	E4-800	E4-801	-18-12	P	7.36 (187)
-20	E4-800	E4-801	-20-12	P	7.87 (200)
-207	E4-800	E4-801	-207-12	P	8.15 (207)
-21	E4-800	E4-801	-21-12	P	8.35 (212)
-22	E4-800	E4-801	-22-12	P	8.86 (225)
-23	E4-800	E4-801	-23-12	P	9.33 (237)
-25	E4-800	E4-801	-25-12	P	9.84 (250)
-26	E4-800	E4-801	-26-12	P	10.31 (262)
-27	E4-800	E4-801	-27-12	P	10.83 (275)

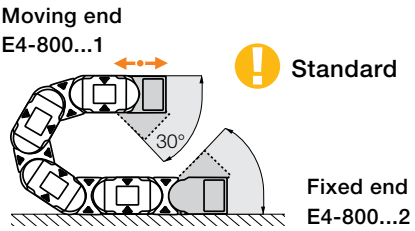
Width	Part No. Full Set chain			With Profile Rail	*Bi* in. (mm)
	Pivoting	Locking			
-28	E4-800	E4-801	-28-12	P	11.30 (287)
-30	E4-800	E4-801	-30-12	P	11.81 (300)
-31	E4-800	E4-801	-31-12	P	12.28 (312)
-32	E4-800	E4-801	-32-12	P	12.79 (325)
-33	E4-800	E4-801	-33-12	P	13.27 (337)
-35	E4-800	E4-801	-35-12	P	13.78 (350)
-36	E4-800	E4-801	-36-12	P	14.25 (362)
-37	E4-800	E4-801	-37-12	P	14.76 (375)
-38	E4-800	E4-801	-38-12	P	15.24 (387)
-40	E4-800	E4-801	-40-12	P	15.75 (400)
-41	E4-800	E4-801	-41-12	P	16.22 (412)
-42	E4-800	E4-801	-42-12	P	16.73 (425)
-43	E4-800	E4-801	-43-12	P	17.20 (437)
-45	E4-800	E4-801	-45-12	P	17.72 (450)
-46	E4-800	E4-801	-46-12	P	18.19 (462)
-47	E4-800	E4-801	-47-12	P	18.70 (475)
-48	E4-800	E4-801	-48-12	P	19.17 (487)
-50	E4-800	E4-801	-50-12	P	19.69 (500)
-51	E4-800	E4-801	-51-12	P	20.16 (512)
-52	E4-800	E4-801	-52-12	P	20.67 (525)
-53	E4-800	E4-801	-53-12	P	21.14 (537)
-55	E4-800	E4-801	-55-12	P	21.65 (550)
-60	E4-800	E4-801	-60-12	P	23.62 (600)

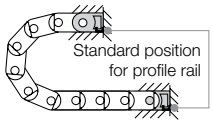
e-chain system® E4-1
Series E4-80/H4-80/R4-80
Mounting Brackets

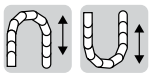


Option 1: pivoting

- Recommended for unsupported and gliding applications
- Attachment capability on all sides
- Bolted connection outside of chain cross-section
- Space restricted conditions
- Corrosion resistant

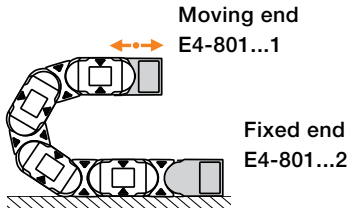


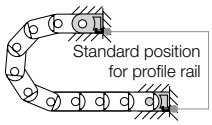




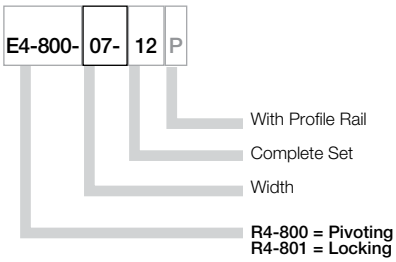
Option 2: locking

- Profile rail option
- Universal use
- Corrosion resistant
- Vertical hanging/standing travels
- Extreme accelerations

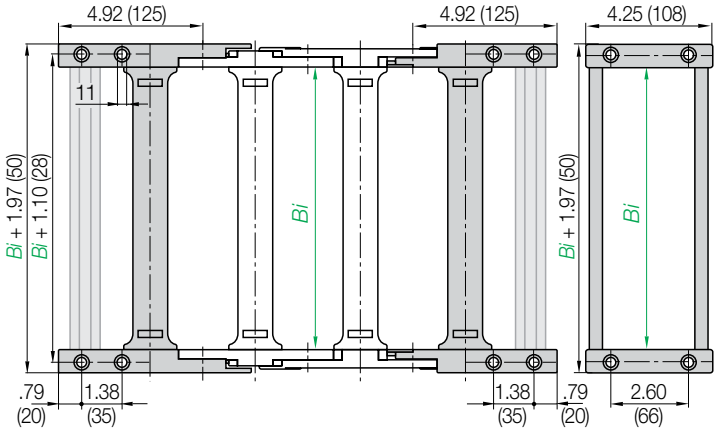




Part Number Structure



Due to the design of the E4-80 series chains, please note the following when ordering brackets:
Even number of links = full set, part number ending in **-12**
Odd number of links = 2 pieces, part number ending in **-1**



Part No. Full Set (pivoting)
Tube Series R4-80
R4-800-Width-12

Part No. Full Set (pivoting)
with Profile Rail
Tube Series R4-80
R4-800-Width-12P

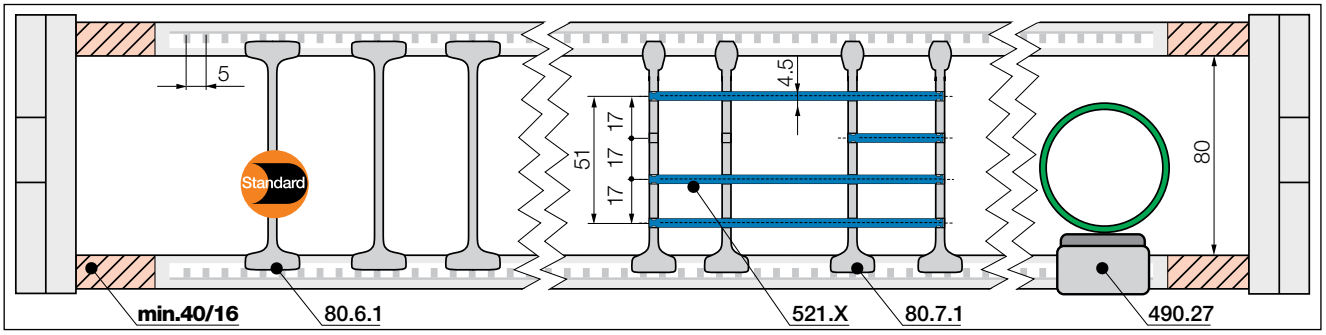
Part number examples are shown for pivoting brackets for e-chain. For locking brackets change part number to 801

Width	Part No. Full Set tube			With Profile Rail	*Bi* in. (mm)
	Pivoting	Locking			
-07	R4-800	R4-801	-07-12	P	2.95 (75)
-10	R4-800	R4-801	-10-12	P	3.94 (100)
-12	R4-800	R4-801	-12-12	P	4.92 (125)
-15	R4-800	R4-801	-15-12	P	5.91 (150)
-17	R4-800	R4-801	-17-12	P	6.89 (175)
-20	R4-800	R4-801	-20-12	P	7.87 (200)

Width	Part No. Full Set tube			With Profile Rail	*Bi* in. (mm)
	Pivoting	Locking			
-25	R4-800	R4-801	-25-12	P	9.84 (250)
-27	R4-800	R4-801	-27-12	P	10.83 (275)
-30	R4-800	R4-801	-30-12	P	11.81 (300)
-35	R4-800	R4-801	-35-12	P	13.78 (350)
-40	R4-800	R4-801	-40-12	P	15.75 (400)
-46	R4-800	R4-801	-46-12	P	18.19 (462)

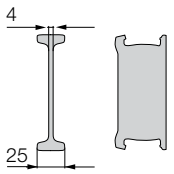
PDF: igus.com/e-chain-pdfs
Product information: igus.com/e-chains

e-chain system® E4-1
Series E4-80/H4-80/R4-80
Interior Separation Options



Note Please maintain a lateral spacing of 1.57" (40 mm) for e-tube and .63" (16 mm) for e-chains® between the separators and the side links. In the standard configuration separators are assembled every 2nd e-chain® link

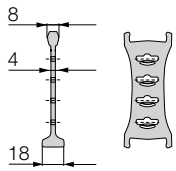




Notch locking separator

Unassembled	**Part No. 80-6**
Assembled	**Part No. 80-6-1**

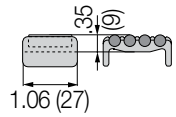




Partial height separator

Unassembled	**Part No. 80-7**
Assembled	**Part No. 80-7-1**





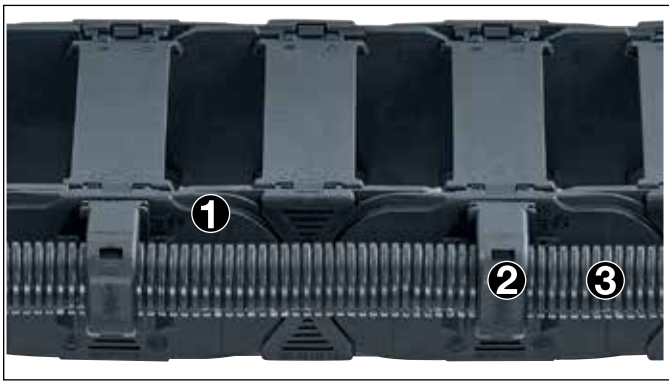
Rollclip* for e-chains®

Unassembled	**Part No. 489-27**
Assembled	**Part No. 490-27**

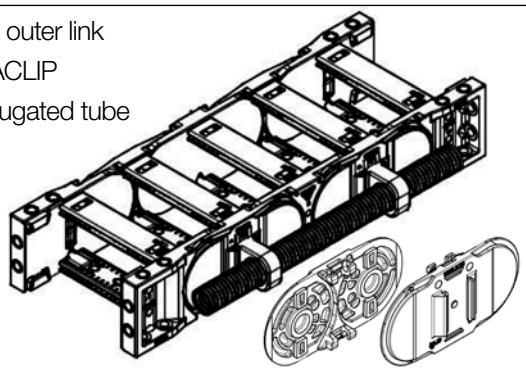
- **Notch locking separator for increased holding force**
  Notch locking separators offer higher crossbar opening forces for high humidity and/or large hydraulic hoses. They can be positioned precisely and then locked in position.

- **Partial height separator***
  In conjunction with an additional opening crossbar, **part no. 450-*Bi*-S**, it provides the option to separate the upper and lower halves of the e-chain® independently of each other.

- **Rollclip***
  Minimizes abrasion of sensitive hoses. Simply clamps onto the opening crossbar. The movable rollers compensate for relative movement between the e-chain® and hose.
  *Only for e-chains®



1 TUB outer link
2 PMACLIP
3 Corrugated tube



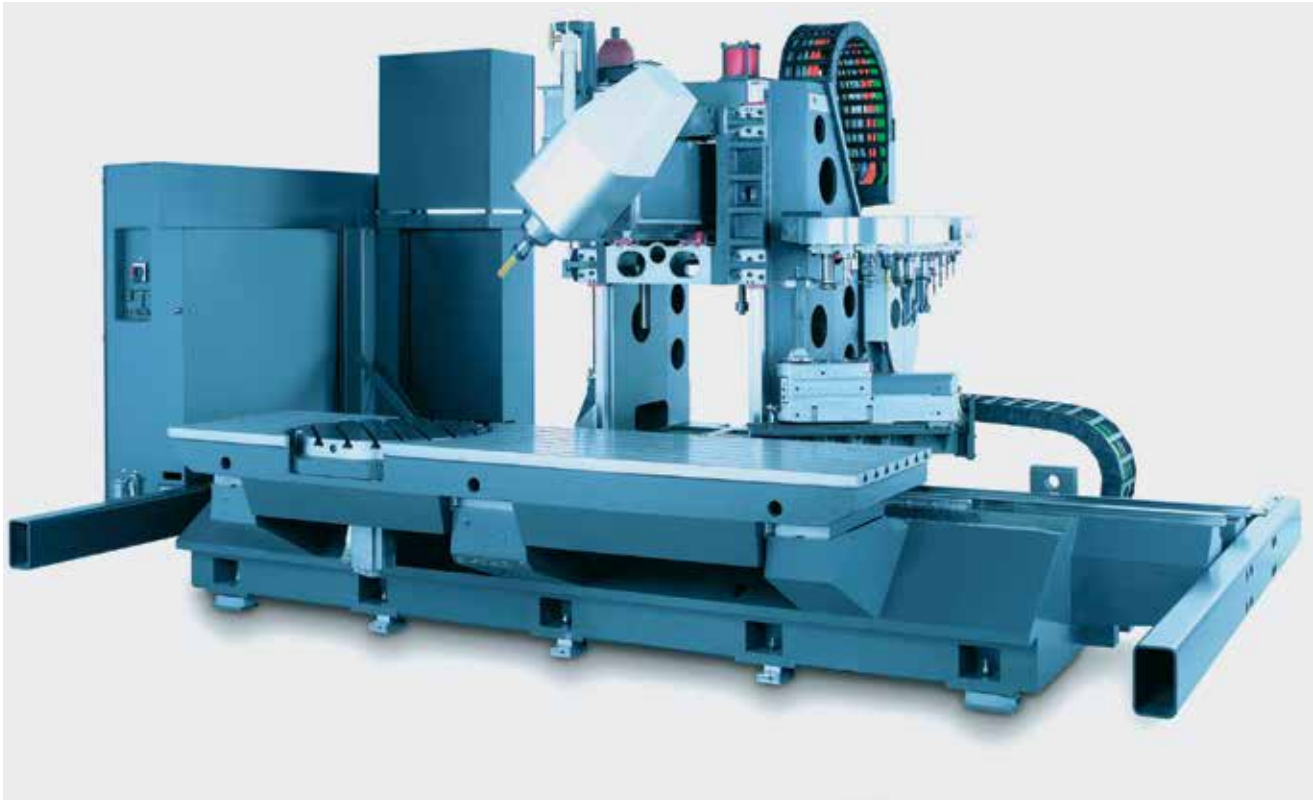
TUB | Safe guidance for corrugated tubes parallel to the e-chain®

- Additional, simple guidance for corrugated tubes on the outside of the e-chain®
- PMACLIP allows corrugated tubes with nominal widths .28 (07mm), .39 (10mm), .47 (12mm), .67 (17mm) to be easily clipped on
- Easy access to the corrugated tubes, fast replacement of the hoses
- Reduce assembly time and cost - easy to assemble, without any additional screws or tools
- The part number includes the e-chain® with TUB side sections; the PMACLIP support and the hose are ordered separately

Part No. TUB Outer link right*	Part No. TUB Outer link left*	Part No. TUB Outer link at both ends*	For corrugated tube nominal diameter Ø [mm]
E4-80-XXXTUBR-*R*-0	E4-80-XXXTUBL-*R*-0	E4-80-XXXTUB-*R*-0	.28 (07), .39 (10), .47 (12), .67 (17)

*View from the fixed end

Part number appended with width index XXX *Bi* and radius (*R*) e.g.
E4-80-100TUBR-150-0 = with TUB outer sections every 2nd right hand link



Due to the undercut design igus® E4-1 series feature high lateral stability. High lateral accelerations of up to 26.25ft/s² (8m/s²) can be managed on this milling machine for bicycles

e-chain system® E4-1
Series E4-80/H4-80/R4-80
Accessories





Part number example for e-chain®

E4-80-10/20/10-200-0

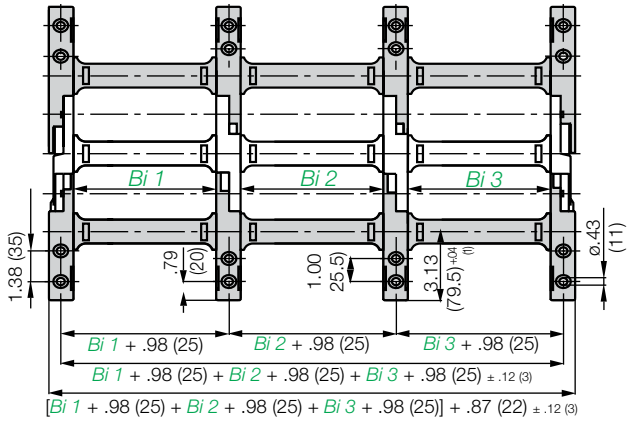
E4-80-*Bi1*/*Bi2*/*Bi3*-R-0

We **strongly recommend** on-site consultation with an igus® technician for individual advice regarding mounting brackets, guide troughs and other design details.

Extension links - for extremely wide e-chains® up to 9.84 ft (3m)

- For applications in which particularly high fill weights necessitate extremely wide e-chains® (up to 118" (3000 mm)
- The extension link design allows virtually limitless side-by-side attachment of chains
- The unsupported length of a chain can be increased when additional loads are required
- Extension links can be used with e-chains®, e-tubes or a combination of both
- They are suitable for unsupported and gliding applications in a guide trough
- e-chains® with extension links are attached with KMA or steel mounting brackets.



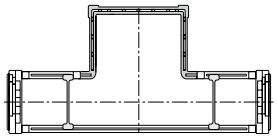




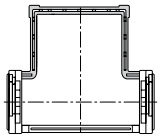
Consult igus® for your extender crossbar applications. We will be happy to assist you with your design layout.

Extender crossbars - For careful guiding of large diameter cables and hoses

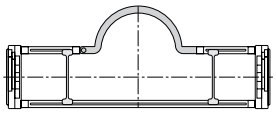
- Intended for cables and hoses with a maximum outer diameter of 10.63 in. (270 mm).
- Can be attached along either the inner or outer radius, inner radius preferred
- Gliding operation with crossbars assembled along the outer radius in conjunction with a special guide trough
- Gliding operation not guaranteed with crossbars assembled along the inner radius
- The extender crossbar can either be attached to the side links directly or can be used in combination with two standard snap-open crossbars.



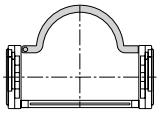
Square extender crossbar combined with standard snap-open crossbars.



Attached directly to the side link.



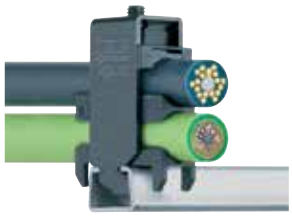
Round extender crossbar combined with standard snap-open crossbars.



Attached directly to the side link.

Part No.	Max Ø Hose	Style	Installation Side Link	Combined with Snap-Open Crossbars
450-15-RHD115	4.52 (115)	Round	No	Yes
450-17-RD115	4.52 (115)	Round	Yes	No
450-25-D150	5.91 (150)	Square	Yes	No
450-30-D200	7.87 (200)	Square	Yes	No
450-35-D250	8.66 (220)	Square	Yes	No
450-40-D300	10.63 (270)	Square	Yes	No
450-20-HD150	5.91 (150)	Square	No	Yes
450-25-HD200	7.87 (200)	Square	No	Yes
450-30-HD250	8.66 (220)	Square	No	Yes

Chainfix clamps for the profile rail



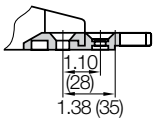
For more information please refer to strain relief section of Chapter 10.

igus® Chainfix strain relief elements are available in either steel or stainless steel. They can be adjusted with a hexagon socket and are available in single, double and triple configurations.

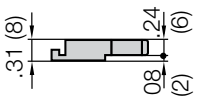
Part No. Single Clamp		Part No. Double Clamp		Part No. Triple Clamp		Cable ø	
Steel	Stainless	Steel	Stainless	Steel	Stainless	in.	(mm)
CFX12-1	CFX12-1E	CFX12-2	CFX12-2E	CFX12-3	–	.24 - .47	(6 - 12)
CFX14-1	CFX14-1E	CFX14-2	CFX14-2E	CFX14-3	–	.47 - .55	(12 - 14)
CFX16-1	CFX16-1E	CFX16-2	CFX16-2E	CFX16-3	–	.55 - .63	(14 - 16)
CFX18-1	CFX18-1E	CFX18-2	CFX18-2E	CFX18-3	–	.63 - .71	(16 - 18)
CFX20-1	CFX20-1E	CFX20-2	CFX20-2E	CFX20-3	–	.71 - .79	(18 - 20)
CFX22-1	CFX22-1E	CFX22-2	CFX22-2E	CFX22-3	–	.79 - .87	(20 - 22)
CFX26-1	CFX26-1E	CFX26-2	CFX26-2E	–	–	.87 - 1.02	(22 - 26)
CFX30-1	CFX30-1E	CFX30-2	CFX30-2E	–	–	1.02 - 1.18	(26 - 30)
CFX34-1	CFX34-1E	CFX34-2	CFX34-2E	–	–	1.18 - 1.34	(30 - 34)
CFX38-1	CFX38-1E	–	–	–	–	1.34 - 1.50	(34 - 38)
CFX42-1	CFX42-1E	–	–	–	–	1.50 - 1.65	(38 - 42)

Tiewrap Plates





Shown assembled

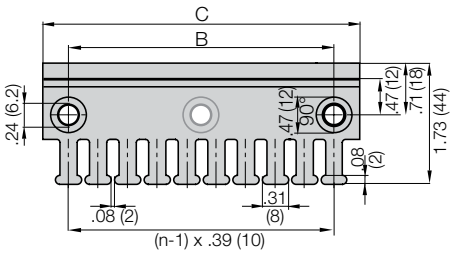


Single tiewrap plate

Option 1:
Tiewrap plates as an individual part

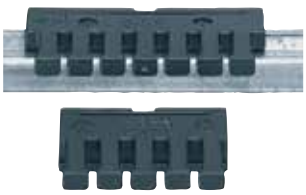
Available as an individual component, can be fixed onto a mounting bracket with the use of a profile rail.

Tiewrap Plate	n Number of Teeth	C Overall Width in. (mm)	B Bore Width in. (mm)	Center Bore
3050-ZB	5	1.97 (50)	1.18 (30)	no
3075-ZB	7	2.95 (75)	2.16 (55)	no
3100-ZB	10	3.94 (100)	3.15 (80)	no
3115-ZB	11	4.53 (115)	3.74 (95)	no
3125-ZB	12	4.92 (125)	4.13 (105)	no
3150-ZB	15	5.91 (150)	5.12 (130)	no
3175-ZB	17	6.89 (175)	6.10 (155)	no
3200-ZB	20	7.87 (200)	7.09 (180)	yes
3225-ZB	22	8.86 (225)	8.07 (205)	yes
3250-ZB	25	9.84 (250)	9.06 (230)	yes



If used with KMA brackets with profile rail please add "KMA" to the end of the part number.
Example: 3050-ZBKMA

For more information please refer to strain relief section of Chapter 10



Option 2:
Clip-on Tiewrap plates

Available as a clip-on tiewrap plate without the use of bolts They are inserted and removed with a screwdriver used as a lever. Clip-on tiewrap plates are also available as an attachment to the opening crossbars.

Part No.	Number of Teeth	Width of Strain Relief in.	(mm)
3050-ZC	5	1.97	(50)
3075-ZC	7	2.95	(75)

For more information please refer to strain relief section of Chapter 10.



Option 3:
Clip-on Tiewrap plates for opening crossbars

Clip-on tiewrap plates are also available as an attachment to opening crossbars. They can be positioned at any point along the e-chain®.

Part No.	Number of Teeth	Width of Strain Relief in.	(mm)
4550-ZS	5	1.89	(48)
4575-ZS	7	2.91	(74)

For more information please refer to strain relief section of Chapter 10

PDF: igus.com/e-chain-pdfs
Product information: igus.com/e-chains

e-chain system® E4-1
Series E4-80/H4-80/R4-80
Guide Trough

Guide troughs are used with applications where the upper run of the e-chain® glides on the lower run. If using igus® steel guide troughs, the following components are required:

- Full travel length of guide trough
  Part No. 99-30
- 1/2 travel length glide bars
  Part No. 93-01
- Installation sets as end connectors
  Part No. 96-50-XX

-XX indicates the length of the profile rails on which the guide trough is mounted. The values and part numbers are specified in the table on the right. The standard length of the trough components and glide bars is 6.56 ft (2 m). The overall length of the guide trough directly correlates to the length of travel.

Example:
Length of travel 164 ft (50 m)
Center-mounted

Required guide troughs:
164 ft (50 m) guide trough, 82 ft. (25 m) glide bar
= 25 sections of 6.56 ft (2 m) guide trough
Part No. 99-30
= 13 sections of 6.56 ft (2 m) glide bar
Part No. 93-01
Required number of installation set:
= Number of guide trough components + 1
= 25 + 1 = 26
Part No. of the installation sets **96-50-XXX**
Example: 96-50-400 for 15.75 (400 mm) long profile rail

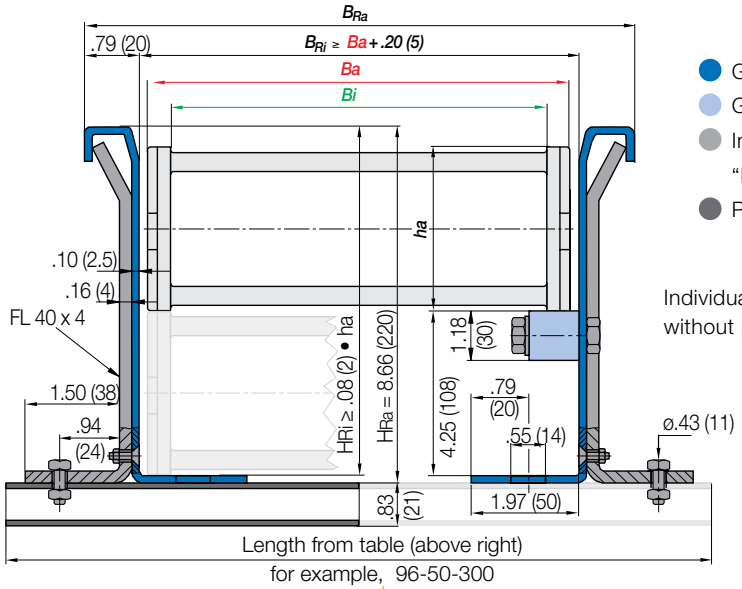
Width of Crossbar E4-80-**05**-200-0	B_{Ri}	Installation Part No.
-05	4.13 (105)	**96-50-225**
-06	4.72 (120)	**96-50-250**
-07	5.12 (130)	**96-50-250**
-08	5.59 (142)	**96-50-275**
-10	6.10 (155)	**96-50-275**
-11	6.61 (168)	**96-50-300**
-12	7.09 (180)	**96-50-300**
-13	7.60 (193)	**96-50-325**
-15	8.07 (205)	**96-50-325**
-16	8.58 (218)	**96-50-350**
-17	9.06 (230)	**96-50-350**
-18	9.57 (243)	**96-50-375**
-20	10.04 (255)	**96-50-375**
-21	10.55 (268)	**96-50-400**
-22	11.02 (280)	**96-50-400**
-23	11.54 (293)	**96-50-425**
-25	12.01 (305)	**96-50-425**
-26	12.52 (318)	**96-50-450**
-27	12.99 (330)	**96-50-450**
-28	13.50 (343)	**96-50-475**
-30	13.98 (355)	**96-50-475**
-31	14.49 (368)	**96-50-500**
-32	14.96 (380)	**96-50-500**
-33	15.47 (393)	**96-50-525**
-35	15.94 (405)	**96-50-525**
-36	16.46 (418)	**96-50-550**
-37	16.93 (430)	**96-50-550**
-38	17.44 (443)	**96-50-575**
-40	17.91 (455)	**96-50-575**
-41	18.43 (468)	**96-50-600**
-42	18.90 (480)	**96-50-600**
-43	19.41 (493)	**96-50-625**
-45	19.88 (505)	**96-50-625**
-46	20.39 (518)	**96-50-650**
-47	20.87 (530)	**96-50-650**
-48	21.38 (543)	**96-50-675**
-50	21.85 (555)	**96-50-675**
-51	22.36 (568)	**96-50-700**
-52	22.83 (580)	**96-50-700**
-53	23.35 (593)	**96-50-725**
-55	23.82 (605)	**96-50-725**
-60	25.79 (655)	**96-50-775**



Left: Guide trough with glide bars
Right: Guide troughs without glide bars



Installation sets as section connectors



- Guide trough
- Glide bars
- Installation set "Basic"
- Profile rail

Individual attachment without profile rail

* Specialized guide trough available upon request

Standard length profile rail

For further technical information on guide troughs
➤ Chapter 9











e-chain system® E4-1
Series E4-112/R4-112

4.41 4.25

Price Index

Series E4-112 Series R4-112

Special Options Available

Low noise version available with special rubber pads

Cleanroom test upon request

ESD classification: Electrically conductive ESD/ ATEX version upon request

Assembly Tips



Opening e-chains®: Remove crossbars and clips - Insert screwdriver into the slot, push down, release by lever action



Remove lids/bottoms (e-tubes) - Insert screwdriver into the slot, release by lever action

Other Installation Methods

Vertical, hanging ≤ 394 ft (120 m)
Vertical, standing ≤ 19.69 ft (6 m)
Side-mounted, unsupp. ≤ 9.84 ft (3 m)
Rotary requires further calculation

Usage Guidelines

- If a robust e-chain/Energy is required
- If inner widths up to 23.62" (600 mm) are required
- For unsupported lengths up to 21.3 ft. (6.5 m) and fill weights up to 57.12 lbs/ft. (85 kg/m)
- For long travels

- When an e-chain is needed for rough applications with greater inner height
  ➤ **Series 800**
- When a lighter e-chain® is needed
  ➤ **Series 1640**

Features & Benefits

1. Steel mounting brackets
2. Hinged, snap-open removable lids along the outer radius
3. Noise dampening pads, optional = -10dB(A)
4. Gliding surfaces, long travels
5. Chip protection with e-tube
6. Undercut for more stability
7. Notch crossbar with backside scaling
8. Straight run due to the inner/outer link design
9. Low noise operation due to integrated "brake"



Also available without camber. Add NCST to the end of the part number. Ex: E4-112-30-300NCST



Order Example: Complete e-chain®

Please indicate chain length or number of links. Example:

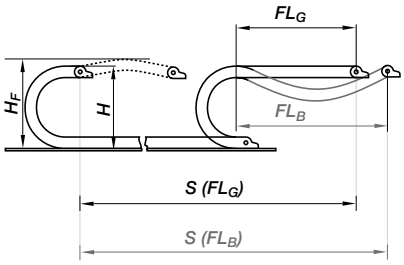
16.4 ft (5 m) **E4-112-30-300-0**	**e-chain®**
With 2 separators **112.1.1** assembled every 2nd link	**Interior Separation**
1 Set **E4.11210.112VS**	**Mounting Bracket**

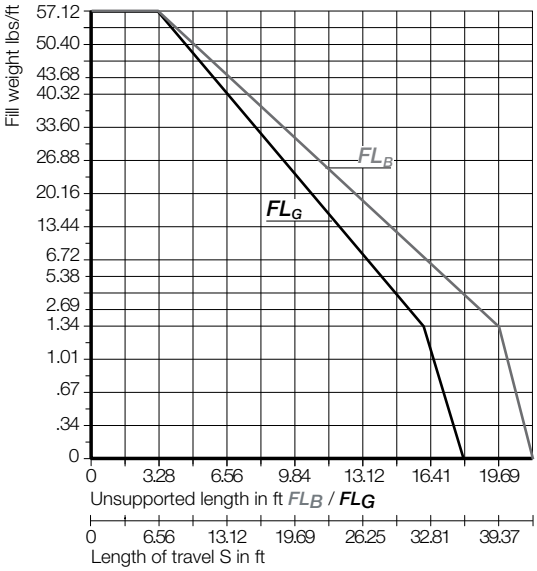
e-chain system® E4-1
Series E4-112/R4-112
Installation Dimensions

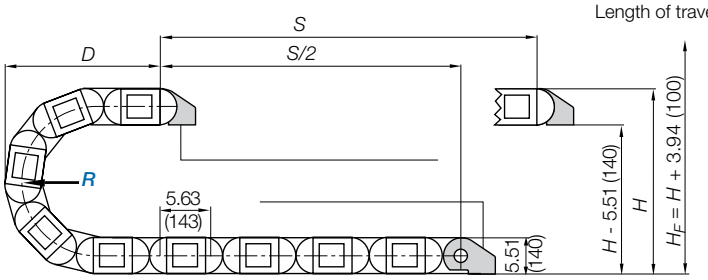
Short travel, unsupported length

- FL_B = unsupported with permitted sag
- FL_G = unsupported with straight upper run

Further information ➤ Design, Chapter 1







Pitch per link: = 5.63"(143 mm)
Links per ft (m): = 2.13 (7)
For center mount applications:
Chain length = $_{-}^{S}/_{2} + K$

The required clearance height: $H_F = H$ **+ 3.94 in. (100 mm)** with 3.36 lbs/ft (5 kg/m) fill weight.
Please consult igus® if space is particularly restricted.

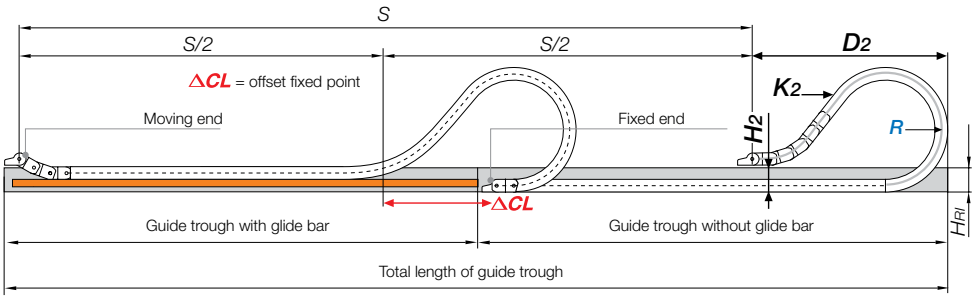
R	7.87 (200*)	9.84 (250)	11.81 (300)	13.78 (350)	15.75 (400)	9.84 (450)	19.68 (500)	21.65 (550)	23.62 (600)	29.53 (750)	39.37 (1000)
H	21.46 (545)	25.39 (645)	29.33 (745)	33.27 (845)	37.20 (945)	41.14 (1045)	45.08 (1145)	49.02 (1245)	52.95 (1345)	64.76 (1645)	84.45 (2145)
D	16.34 (415)	18.31 (465)	20.27 (515)	22.24 (565)	24.21 (615)	26.18 (665)	28.15 (715)	30.12 (765)	32.09 (815)	37.99 (965)	47.83 (1215)
K	36.02 (915)	42.32 (1075)	48.43 (1230)	54.72 (1390)	60.83 (1545)	66.93 (1700)	75.86 (1860)	79.33 (2015)	85.63 (2175)	104.13 (2645)	135.04 (3430)

* Radius not available for e-tubes

For long travels with lowered mounting height

Long travel lengths from 45.9 ft.(14m) to max. 1,476 ft. (450m)

For center mount applications:
Chain length: = $_{-}^{S}/_{2} + K_2$



R	7.87 (200**)	9.84 (250)	11.81 (300)	13.78 (350)	15.75 (400)	9.84 (450)	19.68 (500)	21.65 (550)	23.62 (600)	29.53 (750)	39.37 (1000)
H2	12.80 (325)	12.80 (325)	12.80 (325)	12.80 (325)	12.80 (325)	12.80 (325)	12.80 (325)	12.80 (325)	12.80 (325)	-	-
D2	35.43 (900)	39.37 (1000)	43.31 (1100)	49.21 (1250)	57.09 (1450)	62.99 (1600)	66.93 (1700)	74.80 (1900)	80.71 (2050)	-	-
K2	61.93 (1573)	67.56 (1716)	73.19 (1859)	90.08 (2288)	101.34 (2574)	112.60 (2860)	123.86 (3146)	135.12 (3432)	152.01 (3861)	-	-
ΔCL	17.72 (450)	19.68 (500)	21.65 (550)	25.59 (650)	31.50 (800)	35.43 (900)	37.40 (950)	43.31 (1100)	47.24 (1200)	-	-

In case of travels between 13 and 32.8 ft (4 and 10 m) we recommend a longer unsupported length. **200 radius is not available for the e-tubes

Speed / acceleration FL_G	max. 65.6 ft/s (20 m/s) / max. 656 ft/s² (200 m/s²)
Speed / acceleration FL_B	max. 9.84 ft/s (3 m/s) / max. 19.69 ft/s² (6 m/s²)
Gliding speed / acceleration (maximum)	max. 32.8 ft/s (10 m/s) / max. 164 ft/s² (50 m/s²)
Material - permitted temperature	igumid G / -40°F (-40°C) up to +248°F (+120° C)
Flammability Class, igumid G	VDE 0304 IIC UL94 HB

Short Travels - Unsupported

Unsupported e-chains® feature positive camber over short travels. This must be accounted for when specifying the clearance height. Please refer to **Installation dimensions** for further details.

Legend

S = Length of travel
R = Bending radius
H = Nominal clearance height
D = Overlength e-chain® radius in final position
K = π • R + *safety buffer*
H_F = Required clearance height
H_{RI} = Trough inner height
H_2 = *Mounting height
D_2 = Overlength - long travels, gliding
K_2 = *Add-on

*If the mounting bracket location is set lower

Long Travels - Gliding

If the unsupported length is exceeded, the e-chain®/Tube must glide on itself. This requires a guide trough.
Design, Chapter 1

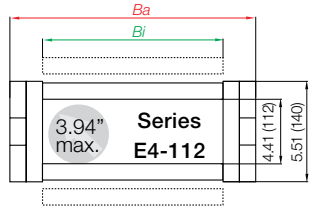
Technical Data

Details of material properties
➤ Chapter 1

PDF: igus.com/e-chain-pdfs
Product information: igus.com/e-chains

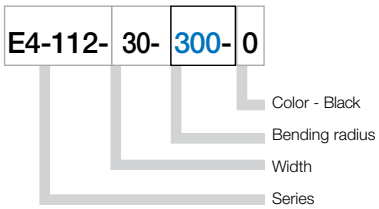
e-chain system® E4-1
Series E4-112/R4-112

Series E4-112 - e-chain® with crossbars every link



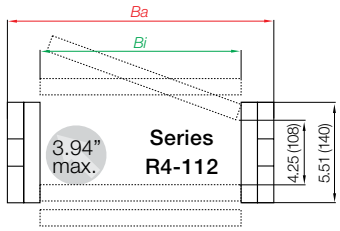
- Crossbars every link
- For use with rigid hydraulic hoses
- For particularly demanding applications
- Can be opened from both sides

Part Number Structure



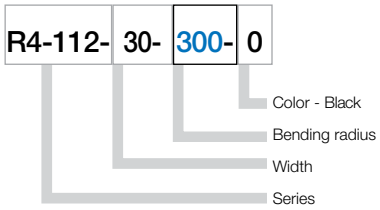


Series R4-112 - fully enclosed e-tube



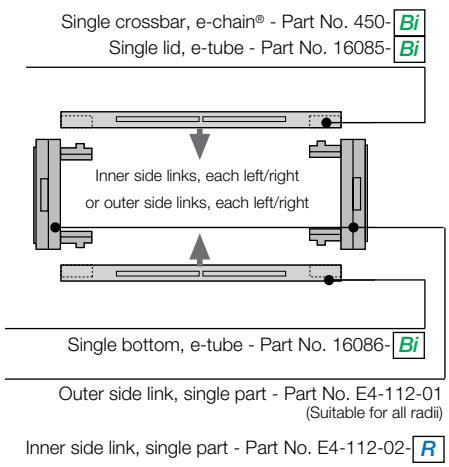
- Fully enclosed
- Excellent cable and hose protection against dirt
- Protection against hot chips
- Lids along the outer radius are single-sided, snap open, hinged on one side as well as completely removable

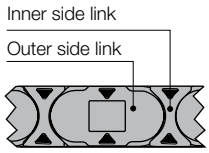
Part Number Structure

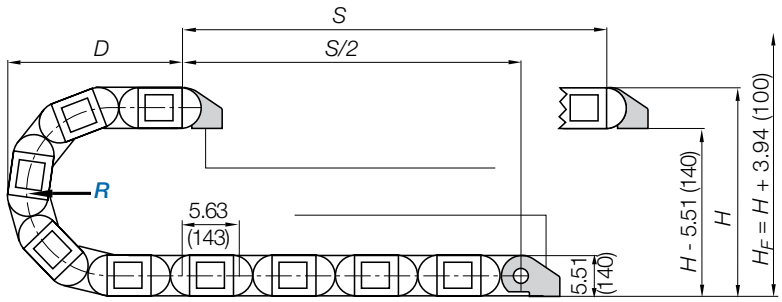




e-chain® as separate parts, links and side plates







e-chain system® E4-1
Series E4-112/R4-112

Supplement part number with required radius. Example: E4-112-30-[300]-0

Pitch: 5.63 in. (143mm) per link links/ft (m) = 2.13 (7)

Part Number					Weight	
Crossbars Every link	Tube Version		Bi in. (mm)	Ba in. (mm)	E4-112 lbs/ft (kg/m)	R4-112 lbs/ft (kg/m)
E4-112-05-		[ ] -0	1.97 (50)	4.02 (102)	≈ 4.63 (6.89)	–
E4-112-055-		[ ] -0	2.17 (55)	4.21 (107)	≈ 5.25 (7.81)	
E4-112-06-		[ ] -0	2.56 (65)	4.61 (117)	≈ 4.67 (6.95)	–
E4-112-07-		[ ] -0	2.95 (75)	5.00 (127)	≈ 4.70 (6.99)	–
E4-112-08-		[ ] -0	3.43 (87)	5.47 (139)	≈ 4.74 (7.05)	–
E4-112-10-		[ ] -0	3.94 (100)	5.98 (152)	≈ 4.77 (7.10)	–
E4-112-11-		[ ] -0	4.41 (112)	6.46 (164)	≈ 4.82 (7.18)	–
E4-112-12-		[ ] -0	4.92 (125)	6.97 (177)	≈ 4.86 (7.23)	–
E4-112-13-		[ ] -0	5.39 (137)	7.44 (189)	≈ 4.91 (7.31)	–
E4-112-15-		[ ] -0	5.91 (150)	7.95 (202)	≈ 4.93 (7.34)	–
E4-112-16-		[ ] -0	6.38 (162)	8.43 (214)	≈ 4.98 (7.41)	–
E4-112-169-		[ ] -0	6.65 (169)	4.21 (222)	≈ 5.61 (8.35)	–
E4-112-17-		[ ] -0	6.89 (175)	8.94 (227)	≈ 5.03 (7.49)	–
E4-112-182-		[ ] -0	7.17 (182)	9.25 (235)	≈ 5.65 (8.41)	–
E4-112-18-		[ ] -0	7.36 (187)	9.41 (239)	≈ 5.08 (7.56)	–
E4-112-20-	R4-112-20-	[ ] -0	7.87 (200)	9.92 (252)	≈ 5.10 (7.60)	≈ 6.22 (9.26)
E4-112-207-		[ ] -0	8.15 (207)	8.11 (206)	≈ 5.72 (8.52)	–
E4-112-21-		[ ] -0	8.35 (212)	10.39 (264)	≈ 5.13 (7.64)	–
E4-112-22-		[ ] -0	8.86 (225)	10.91 (277)	≈ 5.17 (7.69)	–
E4-112-23-		[ ] -0	9.33 (237)	11.38 (289)	≈ 5.21 (7.76)	–
E4-112-25-	R4-112-25-	[ ] -0	9.84 (250)	11.89 (302)	≈ 5.26 (7.83)	≈ 6.66 (9.91)
E4-112-26-		[ ] -0	10.31 (262)	12.36 (314)	≈ 5.30 (7.89)	–
E4-112-27-		[ ] -0	10.83 (275)	12.87 (327)	≈ 5.34 (7.95)	–
E4-112-28-		[ ] -0	11.30 (287)	13.35 (339)	≈ 5.37 (7.99)	–
E4-112-30-	R4-112-30-	[ ] -0	11.81 (300)	13.86 (352)	≈ 5.44 (8.09)	≈ 7.08 (10.53)
E4-112-31-		[ ] -0	12.28 (312)	14.33 (364)	≈ 5.45 (8.11)	–
E4-112-32-		[ ] -0	12.79 (325)	14.84 (377)	≈ 5.50 (8.18)	–
E4-112-33-		[ ] -0	13.27 (337)	15.31 (389)	≈ 5.54 (8.25)	–
E4-112-35-	R4-112-35-	[ ] -0	13.78 (350)	15.83 (402)	≈ 5.63 (8.38)	≈ 7.51 (11.18)
E4-112-36-		[ ] -0	14.25 (362)	16.30 (414)	≈ 5.59 (8.32)	–
E4-112-37-		[ ] -0	14.76 (375)	16.81 (427)	≈ 5.63 (8.38)	–
E4-112-38-		[ ] -0	15.24 (387)	17.28 (439)	≈ 5.68 (8.46)	–
E4-112-40-	R4-112-40-	[ ] -0	15.75 (400)	17.80 (452)	≈ 5.80 (8.63)	≈ 7.94 (11.82)
E4-112-41-		[ ] -0	16.22 (412)	18.27 (464)	≈ 5.77 (8.58)	–
E4-112-42-		[ ] -0	16.73 (425)	18.78 (477)	≈ 5.89 (8.77)	–
E4-112-43-		[ ] -0	17.20 (437)	19.25 (489)	≈ 5.83 (8.67)	–
E4-112-45-		[ ] -0	17.72 (450)	19.76 (502)	≈ 5.97 (8.88)	–
E4-112-46-		[ ] -0	18.19 (462)	20.24 (514)	≈ 5.95 (8.85)	-
E4-112-47-		[ ] -0	18.70 (475)	20.75 (527)	≈ 5.96 (8.87)	–
E4-112-48-		[ ] -0	19.17 (487)	21.22 (539)	≈ 6.07 (9.03)	–
E4-112-50-	R4-112-40-	[ ] -0	19.69 (500)	21.73 (552)	≈ 6.07 (9.03)	≈ 8.54 (12.71)
E4-112-51-		[ ] -0	20.16 (512)	22.20 (564)	≈ 6.11 (9.09)	–
E4-112-52-		[ ] -0	20.67 (525)	22.72 (577)	≈ 6.15 (9.15)	–
E4-112-53-		[ ] -0	21.14 (537)	23.19 (589)	≈ 6.18 (9.20)	–
E4-112-55-		[ ] -0	21.65 (550)	23.70 (602)	≈ 6.36 (9.47)	–
E4-112-60-		[ ] -0	23.62 (600)	25.67 (652)	≈ 6.46 (9.62)	–

Choose from the radii below for all of the above sizes

Radius (mm) Example: E4-112-30-[300]-0

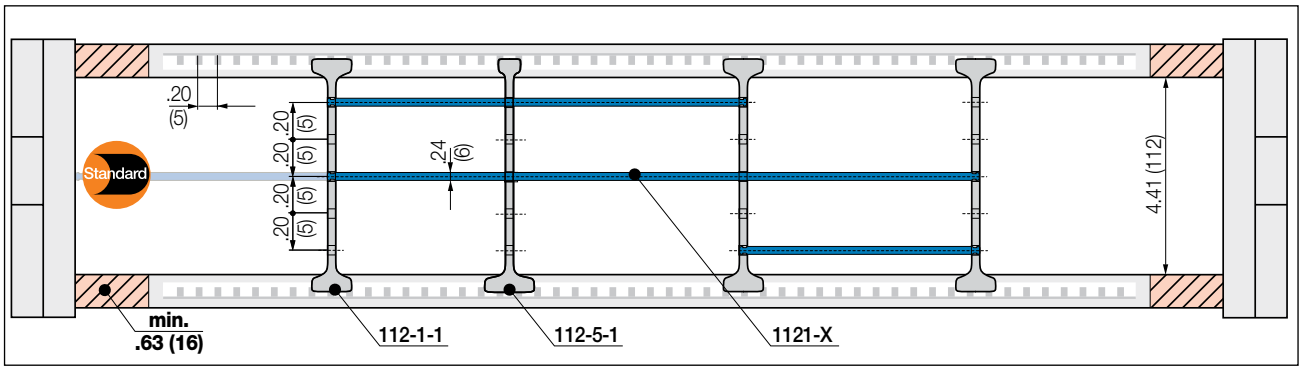
	200**	250	300	350	400	450	500	550	600	750	1000
R	7.87 (200)	9.84 (250)	11.81 (300)	13.78 (350)	15.75 (400)	9.84 (450)	19.68 (500)	21.65 (550)	23.62 (600)	29.53 (750)	39.37 (1000)
H	21.46 (545)	25.39 (645)	29.33 (745)	33.27 (845)	37.20 (945)	41.14 (1045)	45.08 (1145)	49.02 (1245)	52.95 (1345)	64.76 (1645)	84.45 (2145)
D	16.34 (415)	18.31 (465)	20.27 (515)	22.24 (565)	24.21 (615)	26.18 (665)	28.15 (715)	30.12 (765)	32.09 (815)	37.99 (965)	47.83 (1215)
K	36.02 (915)	42.32 (1075)	48.43 (1230)	54.72 (1390)	60.83 (1545)	66.93 (1700)	75.86 (1860)	79.33 (2015)	85.63 (2175)	104.13 (2645)	135.04 (3430)

0=Standard color black. For other colors see Chapter 1

**200 radius is not available for the e-tubes

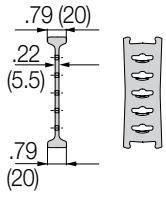
PDF: igus.com/e-chain-pdfs
Product information: igus.com/e-chains

e-chain system® E4-1
Series E4-112
Interior Separation - Only for e-chains®



Note Please maintain a lateral spacing of .63" (16 mm) for e-chains® between the separators and the side links. In the standard configuration separators are assembled every 2nd e-chain® link



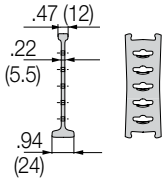


Standard Separator, wide base

Unassembled	**Part No. 112-1**
Assembled	**Part No. 112-1-1**

- **Standard separator for any application**
  Separator with a wide base for maximum holding force in the e-chain®



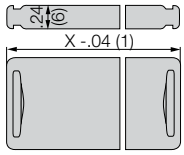


Notched Separator for notched crossbar

Unassembled	**Part No. 112-5**
Assembled	**Part No. 112-5-1**

- **Locks securely in preset increments**
  Notch separator for exact positioning in e-chains®. Recommended for side-mounted applications





Full-width shelf, lockable

Unassembled	**Part No. 1120-X**
Assembled	**Part No. 1121-X**

- **Horizontal separation**
  Full-width shelf locks securely into separators at both ends, giving a fixed width. Can be used as full-width or partial shelf.

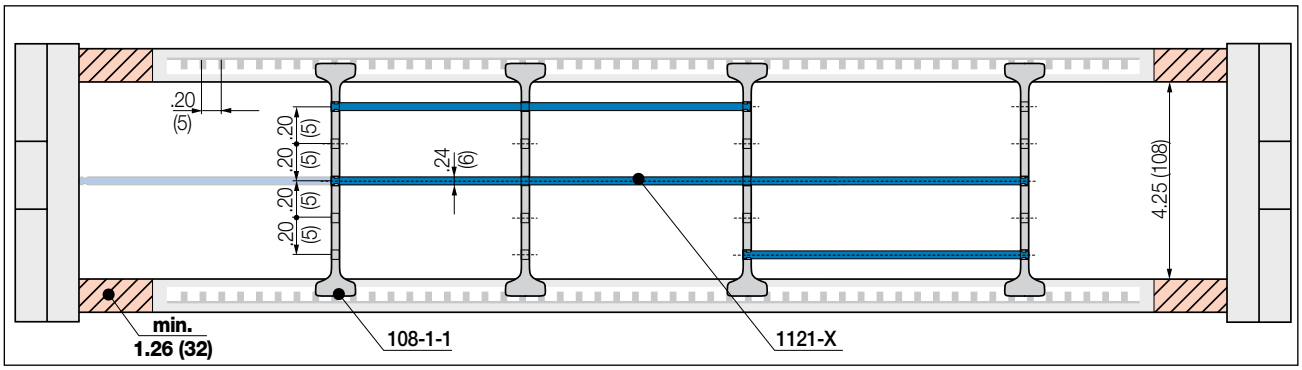
Shelves

Width = X [mm]



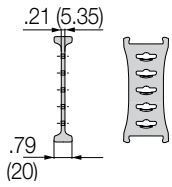
X in. (mm)	unassembled	assembled	X in. (mm)	unassembled	assembled	X in. (mm)	unassembled	assembled
1.97 (050)	**1120-050**	**1121-050**	5.91 (150)	**1120-150**	**1121-150**	11.81 (300)	**1120-300**	**1121-300**
2.56 (065)	**1120-065**	**1121-065**	6.89 (175)	**1120-175**	**1121-175**	13.78 (350)	**1120-350**	**1121-350**
2.95 (075)	**1120-075**	**1121-075**	7.87 (200)	**1120-200**	**1121-200**	14.76 (375)	**1120-375**	**1121-375**
3.94 (100)	**1120-100**	**1121-100**	8.86 (225)	**1120-225**	**1121-225**	15.24 (387)	**1120-387**	**1121-387**
4.92 (125)	**1120-125**	**1121-125**	9.84 (250)	**1120-250**	**1121-250**	17.72 (450)	**1120-450**	**1121-450**

e-chain system® E4-1
Series R4-112
Interior Separation - Only for e-tubes



Note Please maintain a lateral spacing of 1.26" (32 mm) for e-tube between the separators and the side links. In the standard configuration separators are assembled every 2nd e-chain® link



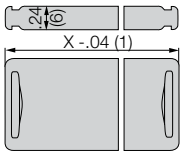


Notched Separator
for notched crossbar

Unassembled	**Part No. 108-1**
Assembled	**Part No. 108-1-1**

- **Standard separator for any application**
  For a vertical subdivision. Offers safe stability due to its wide base design, also when used with thick cables or hoses





Full-width shelf, lockable

Unassembled	**Part No. 1120-X**
Assembled	**Part No. 1121-X**

- **Horizontal separation**
  Full-width shelf locks securely into separators at both ends, giving a fixed width. Can be used as full-width or partial shelf.

Shelves

Width = X [mm]



X in. (mm)	unassembled	assembled	X in. (mm)	unassembled	assembled	X in. (mm)	unassembled	assembled
1.97 (050)	**1120-050**	**1121-050**	5.91 (150)	**1120-150**	**1121-150**	11.81 (300)	**1120-300**	**1121-300**
2.56 (065)	**1120-065**	**1121-065**	6.89 (175)	**1120-175**	**1121-175**	13.78 (350)	**1120-350**	**1121-350**
2.95 (075)	**1120-075**	**1121-075**	7.87 (200)	**1120-200**	**1121-200**	14.76 (375)	**1120-375**	**1121-375**
3.94 (100)	**1120-100**	**1121-100**	8.86 (225)	**1120-225**	**1121-225**	15.24 (387)	**1120-387**	**1121-387**
4.92 (125)	**1120-125**	**1121-125**	9.84 (250)	**1120-250**	**1121-250**	17.72 (450)	**1120-450**	**1121-450**



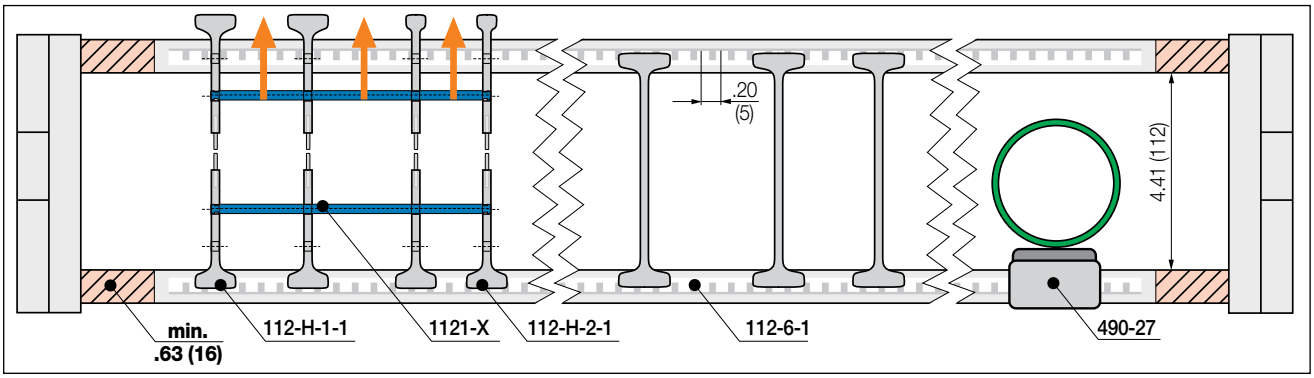
Compact design, custom configuration: two nested E4-112 e-chains® each around 39.4 ft. (12m) long carry very heavy fill weights

PDF: igus.com/e-chain-pdfs
Product information: igus.com/e-chains

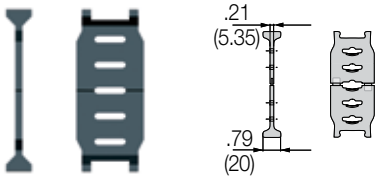
e-chain system® E4-1
Series E4-112
Interior Separation - For e-chains®

Telephone 1-800-521-2747

Internet: igus.com
email: sales@igus.com
QuickSpec: igus.com/quickspec

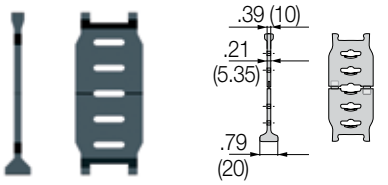


Note Please maintain a lateral spacing of 1.57" (40 mm) for e-tube and .63" (16 mm) for e-chains® between the separators and the side links. In the standard configuration separators are assembled every 2nd e-chain® link



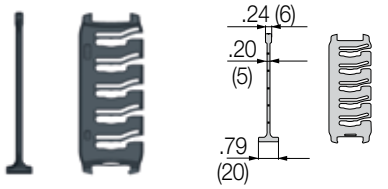
Separator, wide base

Unassembled	**Part No. 112-H-1**
Assembled	**Part No. 112-H-1-1**



Separator, narrow head

Unassembled	**Part No. 112-H-2**
Assembled	**Part No. 112-H-2-1**



Lean separator

Unassembled	**Part No. 112-12**
Assembled	**Part No. 112-12-1**

- **Split separators for all applications**
  In order to fill e-chains® more easily and effectively, these separators can be split in the middle. This allows easier access to middle shelf partitions. Fast assembly and easy retrofit. 2 types available: with wide or narrow top.

- **Lean separators 112-12**
  New design allows extremely fast fitting of shelves in several layers, which significantly reduces assembly time. Enables extremely fast replacement of individual cables in a very full e-chain®.



- **Lean separator design - several layers of cables fitted quickly, save up to 50%* assembly time**
  (*Lean separator vs. standard separator - measured on a 4m long e-chain® fitted with 12 cables in the igus® harnessing factory)

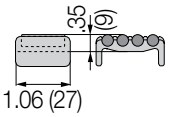
More interior separation options



Notch locking separator

Unassembled	**Part No. 112-6**
Assembled	**Part No. 112-6-1**





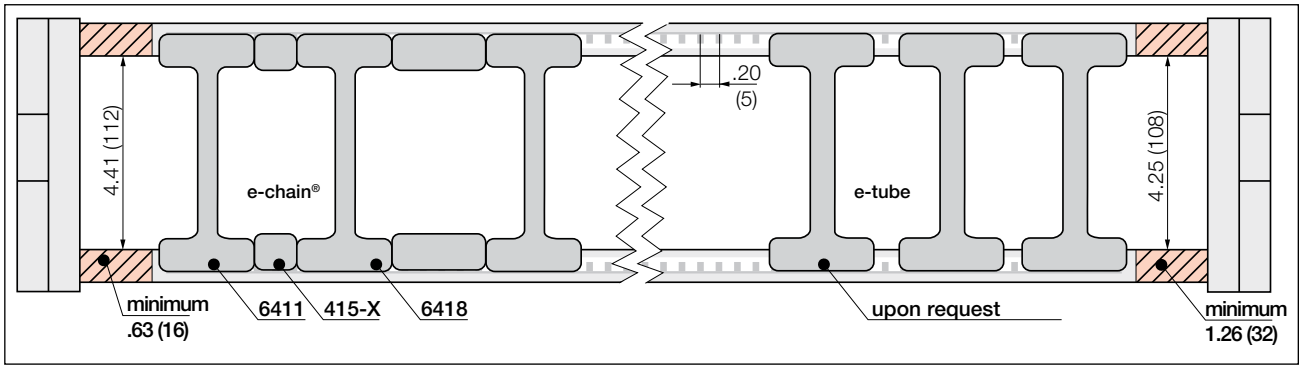
Rollclip* for e-chains®

Unassembled	**Part No. 489-27**
Assembled	**Part No. 490-27**

- **Notch locking separator for increased holding force**
  Notch locking separators offer higher crossbar opening forces for high humidity and/or large hydraulic hoses. They can be positioned precisely and then locked in position.

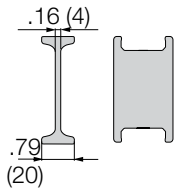
- **Rollclip***
  Minimizes abrasion of sensitive hoses. Simply clamps onto the opening crossbar. The movable rollers compensate for relative movement between the e-chain® and hose.
  *Only for e-chains®

e-chain system® E4-1
Series E4-112/R4-112
Interior Separation



Note Please maintain a lateral spacing of 1.26" (32 mm) for e-tube and .63" (16 mm) for e-chains® between the separators and the side links. In the standard configuration separators are assembled every 2nd e-chain® link

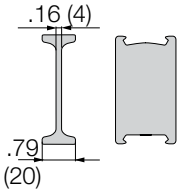




Separator (chain only)

Unassembled	**Part No. 6401**
Assembled	**Part No. 6411**

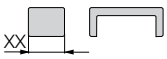




Separator, locking (chain only)

Unassembled	**Part No. 6408**
Assembled	**Part No. 6418**





Spacer (chain only)

Unassembled	**Part No. 405-XX**
Assembled	**Part No. 415-XX**

XX = width of the spacer

Spacers available in the following sizes:

Part No. Unassembled	Part No. Assembled	Width in.	(mm)
405 -10	**415 -10**	.39"	(10)
405 -15	**415 -15**	.59"	(15)
405 -20	**415 -20**	.79"	(20)
405 -30	**415 -30**	1.18"	(30)
405 -40	**415 -40**	1.57"	(40)

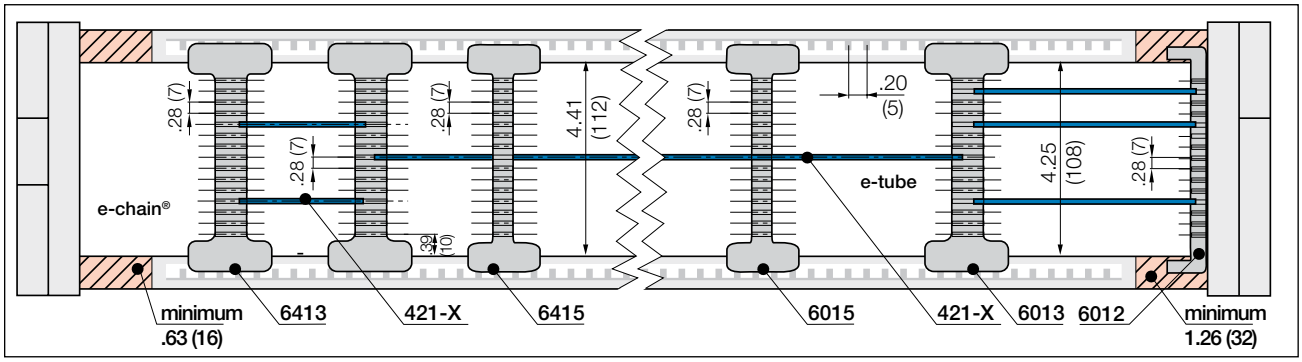
- **Standard separator 6401 for e-chains®**
  For a vertical subdivision. Offers safe stability due to its wide base design, also when used with thick cables or hoses (Separator for e-tubes 1608 upon request)

- **Separator 6408 for e-chains®**
  For applications exposed to very high humidity (>85%). Locks with extra retention force.
  Tip: one locking separator per e-chain® link for better mounting.

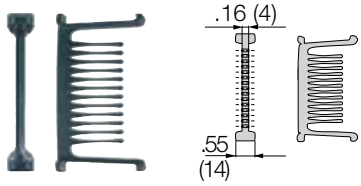
- **NOTE ON SPACERS for e-chains®**
  Vertical separators are adjustable, but can be fixed in position by means of a spacer. Spacers are most often necessary for side mounted applications.
  The available inner height is reduced by .08" (2mm) **per spacer** (for example if one spacer is placed on either side of the separator, the overall inner height is reduced by .16" (4mm). To avoid this, place the spacers on the **outside** of the opening crossbar **(not for long travels)**.

PDF: igus.com/e-chain-pdfs
Product information: igus.com/e-chains

e-chain system® E4-1
Series E4-112/R4-112
Interior Separation



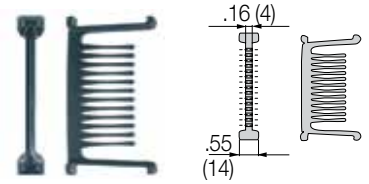
Note Please maintain a lateral spacing of 1.26" (32 mm) for e-tube and .63" (16 mm) for e-chains® between the separators and the side links. In the standard configuration separators are assembled every 2nd e-chain® link



Slotted separator, open (e-chains®)

Unassembled	**Part No. 6405**
Assembled	**Part No. 6415**

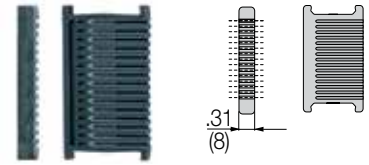
- **Open, slotted separator 6405**
  For e-chains® (unilateral open)
  This separator can be retrofitted into an existing interior separation system without removing the shelves. The top and bottom botches cannot be occupied by shelves



Slotted separator, open (e-tubes)

Unassembled	**Part No. 6005**
Assembled	**Part No. 6015**

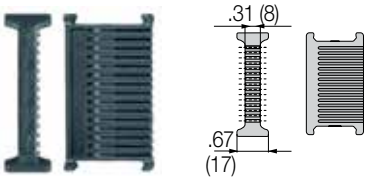
- **Open, slotted separator 6005**
  For e-tubes (unilateral open)
  This separator can be retrofitted into an existing interior separation system without removing the shelves. The top and bottom botches cannot be occupied by shelves



Vertical separator (e-chains®)

Unassembled	**Part No. 6403**
Assembled	**Part No. 6413**

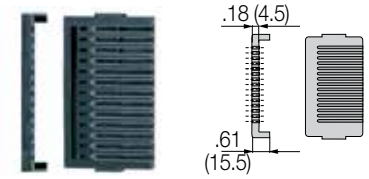
- **Vertical separator 6403**
  For e-chains®
  This component is used to form the basic pattern of a shelf system. The shelf 420-X can be installed at 15 different heights in .28" (7 mm) increments



Vertical separator, locking (e-tubes)

Unassembled	**Part No. 6003**
Assembled	**Part No. 6013**

- **Locking vertical separator 6003**
  For e-tubes
  This component is used to form the basic pattern of a shelf system.

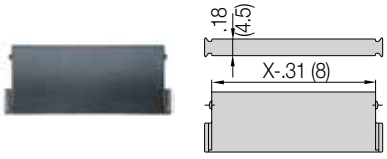


Side plate

Unassembled	**Part No. 6002**
Assembled	**Part No. 6012**

- **Side plate 6002**
  For e-chains® / Tubes
  This component is used to form the basic pattern of a shelf system. Allows modular shelving close to the side links.

Full-width shelves - for the standard interior separation



Full width shelf

Unassembled	**Part No. 420-X**
Assembled	**Part No. 421-X**

- **Full width shelf 420-X**
  These components form the basic pattern of a shelf system. Shelves of various widths can be arranged at 7 different heights in .28" (7mm) increments

Width X in.	(mm)	Part No. Unassembled	Part No. Assembled	Width X in.	(mm)	Part No. Unassembled	Part No. Assembled	Width X in.	(mm)	Part No. Unassembled	Part No. Assembled
.71	(18)	**420-18**	**421-18**	1.97	(50)	**420-50**	**421-50**	5.91	(150)	**420-150**	**421-150**
.91	(23)	**420-23**	**421-23**	2.44	(62)	**420-62**	**421-62**	6.89	(175)	**420-175**	**421-175**
.98	(25)	**420-25**	**421-25**	2.95	(75)	**420-75**	**421-75**	7.36	(187)	**420-187**	**421-187**
1.10	(28)	**420-28**	**421-28**	3.46	(88)	**420-88**	**421-88**	7.87	(200)	**420-200**	**421-200**
1.30	(33)	**420-33**	**421-33**	3.94	(100)	**420-100**	**421-100**				
1.69	(43	**420-43**	**421-43**	4.92	(125)	**420-125**	**421-125**				

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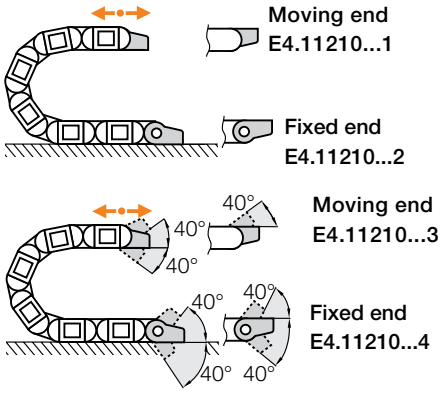
e-chain system® E4-1
Series E4-112/R4-112
Mounting Bracket - Steel

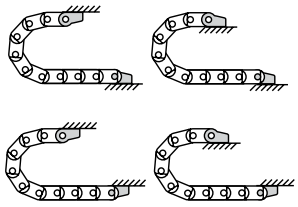
Option 2: Locking

- For vertical hanging and vertical standing applications
- One part for all chain widths
- Electrically conductive

Option 1: pivoting

- For unsupported and gliding applications
- One part for all chain widths
- Electrically conductive

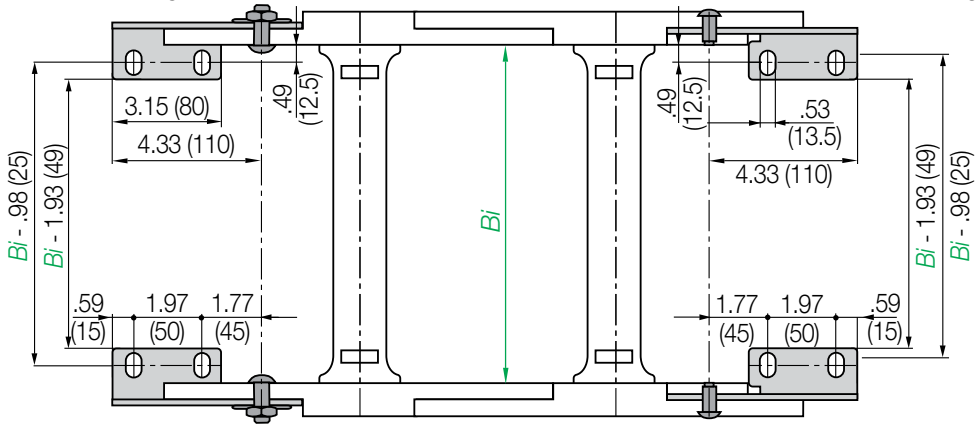




Possible installation configurations -

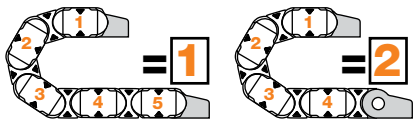
Fixed end
E4.11210.4 Pivoting
E4.11210.2 Locking

Moving end
E4.11210.3 Pivoting
E4.11210.1 Locking



Part No. full set **steel locking**	Description **mounting bracket**
E4.11210.112VS	Full set (both ends), For a chain with an odd number of links
E4.11210.212VS	Full set (both ends), For a chain with an even number of links

Part No. full set **steel pivoting**	Description **mounting bracket**
E4.11210.134VS	Full set (both ends), For a chain with an odd number of links
E4.11210.234VS	Full set (both ends), For a chain with an even number of links



Note: Depending on the chain length, the e-chain® may end with ☐ either an outer or an ☐ inner side link. For the best appearance, make sure the e-chain® ends with ☐ outer side links whenever possible. (with odd number of links)

Strain relief such as clamps, tiewrap plates, nuggets and plug-in clips are available from stock.
The complete chainfix range with ordering options ➤ Chapter 10

PDF: igus.com/e-chain-pdfs
Product information: igus.com/e-chains

e-chain system® E4-1
Series E4-112/R4-112
Accessories





Part number example for e-chain®

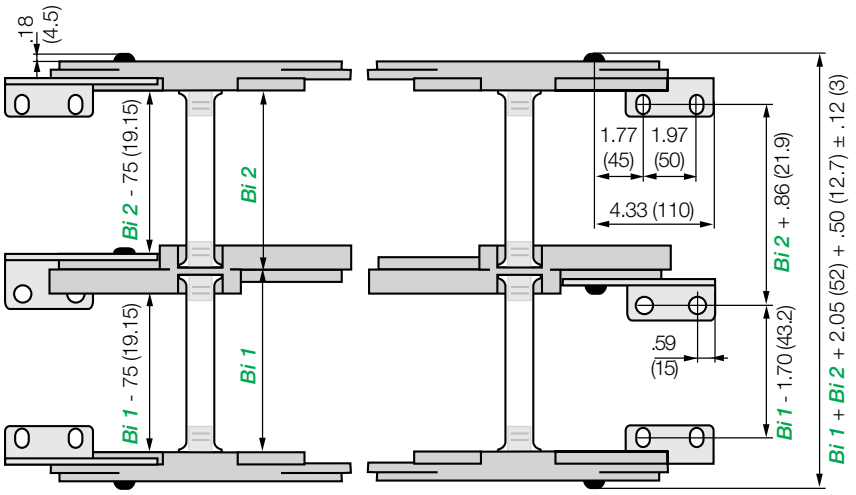
E4-112-10/20/10- 200 **-0**

E4-112-*Bi1*/*Bi2*/*Bi3*- *R* **-0**



Extension links - for extremely wide e-chains® up to 9.84 ft (3m)

- For applications in which particularly high fill weights necessitate extremely wide e-chains®
- The extension link design allows virtually limitless side-by-side attachment of chains
- The unsupported length of a chain can be increased when additional loads are required
- Extension links can be used with e-chains®, e-tubes or a combination of both
- They are suitable for unsupported and gliding applications in a guide trough
- e-chains® with extension links are attached with steel mounting brackets.



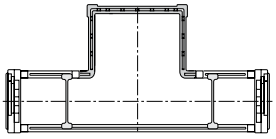
We **strongly recommend** on-site consultation with an igus® technician for individual advice regarding mounting brackets, guide troughs and other design details.



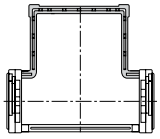
Consult igus® for your extender crossbar applications. We will be happy to assist you with your design layout.

Extender crossbars - For careful guiding of large diameter cables and hoses

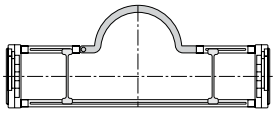
- Intended for cables and hoses with a maximum outer diameter of 11.81 in. (300 mm).
- Can be attached along either the inner or outer radius, inner radius preferred
- Gliding operation with crossbars assembled along the outer radius in conjunction with a special guide trough
- Gliding operation not guaranteed with crossbars assembled along the inner radius
- The extender crossbar can either be attached to the side links directly or can be used in combination with two standard snap-open crossbars.



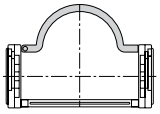
Square extender crossbar combined with standard snap-open crossbars.



Attached directly to the side link.



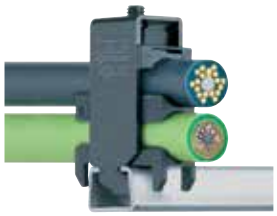
Round extender crossbar combined with standard snap-open crossbars.



Attached directly to the side link.

Part No.	Max Ø Hose	Style	Installation Side Link	Combined with Snap-Open Crossbars
450-15-RHD115	4.53 (115)	Round	No	Yes
450-17-RD115	4.53 (115)	Round	Yes	No
450-25-D150	5.91 (150)	Square	Yes	No
450-30-D200	7.87 (200)	Square	Yes	No
450-35-D250	8.66 (220)	Square	Yes	No
450-40-D300	10.63 (270)	Square	Yes	No
450-20-HD150	5.91 (150)	Square	No	Yes
450-25-HD200	7.87 (200)	Square	No	Yes
450-30-HD250	8.66 (220)	Square	No	Yes

Chainfix clamps for the profile rail



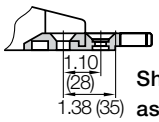
For more information please refer to strain relief section of Chapter 10.

igus® Chainfix strain relief elements are available in either steel or stainless steel. They can be adjusted with a hexagon socket and are available in single, double and triple configurations.

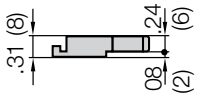
Part No. Single Clamp		Part No. Double Clamp		Part No. Triple Clamp		Cable ø	
Steel	Stainless	Steel	Stainless	Steel	Stainless	in.	(mm)
CFX12-1	CFX12-1E	CFX12-2	CFX12-2E	CFX12-3	–	.24 - .47	(6 - 12)
CFX14-1	CFX14-1E	CFX14-2	CFX14-2E	CFX14-3	–	.47 - .55	(12 - 14)
CFX16-1	CFX16-1E	CFX16-2	CFX16-2E	CFX16-3	–	.55 - .63	(14 - 16)
CFX18-1	CFX18-1E	CFX18-2	CFX18-2E	CFX18-3	–	.63 - .71	(16 - 18)
CFX20-1	CFX20-1E	CFX20-2	CFX20-2E	CFX20-3	–	.71 - .79	(18 - 20)
CFX22-1	CFX22-1E	CFX22-2	CFX22-2E	CFX22-3	–	.79 - .87	(20 - 22)
CFX26-1	CFX26-1E	CFX26-2	CFX26-2E	–	–	.87 - 1.02	(22 - 26)
CFX30-1	CFX30-1E	CFX30-2	CFX30-2E	–	–	1.02 - 1.18	(26 - 30)
CFX34-1	CFX34-1E	CFX34-2	CFX34-2E	–	–	1.18 - 1.34	(30 - 34)
CFX38-1	CFX38-1E	–	–	–	–	1.34 - 1.50	(34 - 38)
CFX42-1	CFX42-1E	–	–	–	–	1.50 - 1.65	(38 - 42)

Tiewrap Plates





Shown assembled

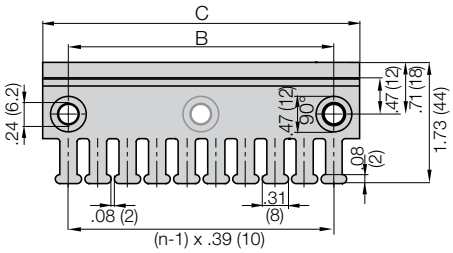


Single tiewrap plate

Option 1:
Tiewrap plates as an individual part

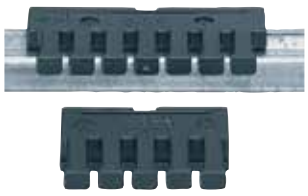
Available as an individual component, can be fixed onto a mounting bracket with the use of a profile rail.

Tiewrap Plate	n Number of Teeth	C Overall Width in. (mm)	B Bore Width in. (mm)	Center Bore
3050-ZB	5	1.97 (50)	1.18 (30)	no
3075-ZB	7	2.95 (75)	2.16 (55)	no
3100-ZB	10	3.94 (100)	3.15 (80)	no
3115-ZB	11	4.53 (115)	3.74 (95)	no
3125-ZB	12	4.92 (125)	4.13 (105)	no
3150-ZB	15	5.91 (150)	5.12 (130)	no
3175-ZB	17	6.89 (175)	6.10 (155)	no
3200-ZB	20	7.87 (200)	7.09 (180)	yes
3225-ZB	22	8.86 (225)	8.07 (205)	yes
3250-ZB	25	9.84 (250)	9.06 (230)	yes



If used with KMA brackets with profile rail please add “KMA” to the end of the part number.
Example: 3050-ZBKMA

For more information please refer to strain relief section of Chapter 10.



Option 2:
Clip-on Tiewrap plates

Available as a clip-on tiewrap plate without the use of bolts They are inserted and removed with a screwdriver used as a lever. Clip-on tiewrap plates are also available as an attachment to the opening crossbars.

Part No.	Number of Teeth	Width of Strain Relief in.	(mm)
3050-ZC	5	1.97	(50)
3075-ZC	7	2.95	(75)

For more information please refer to strain relief section of Chapter 10.



Option 3:
Clip-on Tiewrap plates for opening crossbars

Clip-on tiewrap plates are also available as an attachment to opening crossbars. They can be positioned at any point along the e-chain®.

Part No.	Number of Teeth	Width of Strain Relief in.	(mm)
4550-ZS	5	1.89	(48)
4575-ZS	7	2.91	(74)

For more information please refer to strain relief section of Chapter 10.

PDF: igus.com/e-chain-pdfs
Product information: igus.com/e-chains

Telephone 1-800-521-2747

Internet: igus.com
email: sales@igus.com
QuickSpec: igus.com/quickspec

e-chain system® E4-1
Series E4-112/R4-112
Guide Trough

Width of Crossbar
E4-112-**12**-300-0

	B_{Ri}	Installation Part No.
-05	4.21 (107)	**97-50-225**
-06	4.80 (122)	**97-50-225**
-07	5.20 (132)	**97-50-250**
-10	6.18 (157)	**97-50-275**
-11	6.65 (169)	**97-50-275**
-12	7.17 (182)	**97-50-300**
-13	76.38 (194)	**97-50-300**
-15	8.15 (207)	**97-50-325**
-16	8.62 (219)	**97-50-325**
-17	9.13 (232)	**97-50-350**
-18	9.61 (244)	**97-50-350**
-20	10.12 (257)	**97-50-375**
-21	10.59 (269)	**97-50-375**
-22	11.10 (282)	**97-50-400**
-23	11.57 (294)	**97-50-400**
-25	12.09 (307)	**97-50-425**
-26	12.56 (319)	**97-50-425**
-27	13.07 (332)	**97-50-450**
-28	13.54 (344)	**97-50-450**
-30	14.06 (357)	**97-50-475**
-31	14.53 (369)	**97-50-475**
-32	15.04 (382)	**97-50-500**
-33	15.51 (394)	**97-50-500**
-35	16.02 (407)	**97-50-525**
-36	16.50 (419)	**97-50-525**
-37	17.01 (432)	**97-50-550**
-38	17.48 (444)	**97-50-550**
-40	17.99 (457)	**97-50-575**
-41	18.46 (469)	**97-50-575**
-42	18.98 (482)	**97-50-600**
-43	19.45 (494)	**97-50-600**
-45	19.96 (507)	**97-50-625**
-46	20.43 (519)	**97-50-625**
-47	20.94 (532)	**97-50-650**
-48	21.42 (544)	**97-50-650**
-50	21.93 (557)	**97-50-675**
-51	22.40 (569)	**97-50-675**
-52	22.91 (582)	**97-50-700**
-53	23.39 (594)	**97-50-700**
-55	23.90 (607)	**97-50-725**
-60	25.87 (657)	**97-50-775**

Guide troughs are used with applications where the upper run of the e-chain® glides on the lower run. If using igus® steel guide troughs, the following components are required:

- Full travel length of guide trough
  Part No. 97-30
- 1/2 travel length glide bars
  Part No. 93-01
- Installation sets as end connectors
  Part No. 97-50-XX

-XX indicates the length of the profile rails on which the guide trough is mounted. The values and part numbers are specified in the table on the left. The standard length of the trough components and glide bars is 6.56 ft (2 m). The overall length of the guide trough directly correlates to the length of travel.

Example:

Length of travel 164 ft (50 m)
Center-mounted

Required guide troughs:
164 ft (50 m) guide trough, 82 ft. (25 m) glide bar

= 25 sections of 6.56 ft (2 m) guide trough
Part No. 97-30

= 13 sections of 6.56 ft (2 m) glide bar
Part No. 93-01

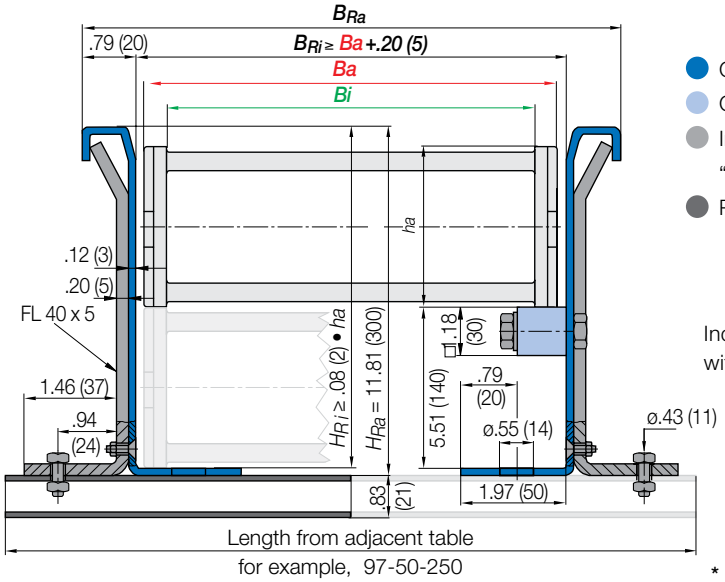
Required number of installation set:
= Number of guide trough components + 1
= 25 + 1 = 26
Part No. of the installation sets **97-50-XXX**
Example:
97-50-400 for 15.75 (400 mm) long profile rail



Left: Guide trough with glide bars
Right: Guide troughs without glide bars



Installation sets as section connectors



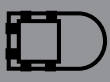
- Guide trough
- Glide bars
- Installation set "Basic"
- Profile rail

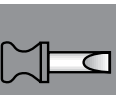
Individual attachment without profile rail

* Specialized guide trough available upon request

PDF: igus.com/e-chain-pdfs
Product information: igus.com/e-chains





e-chain system® E4-1
Series E4-162

4.41 4.25

Price Index

Series E4-162

Special Options Available

Low noise version available with special rubber pads

Cleanroom test upon request

ESD classification: Electrically conductive ESD/ ATEX version upon request

Assembly Tips



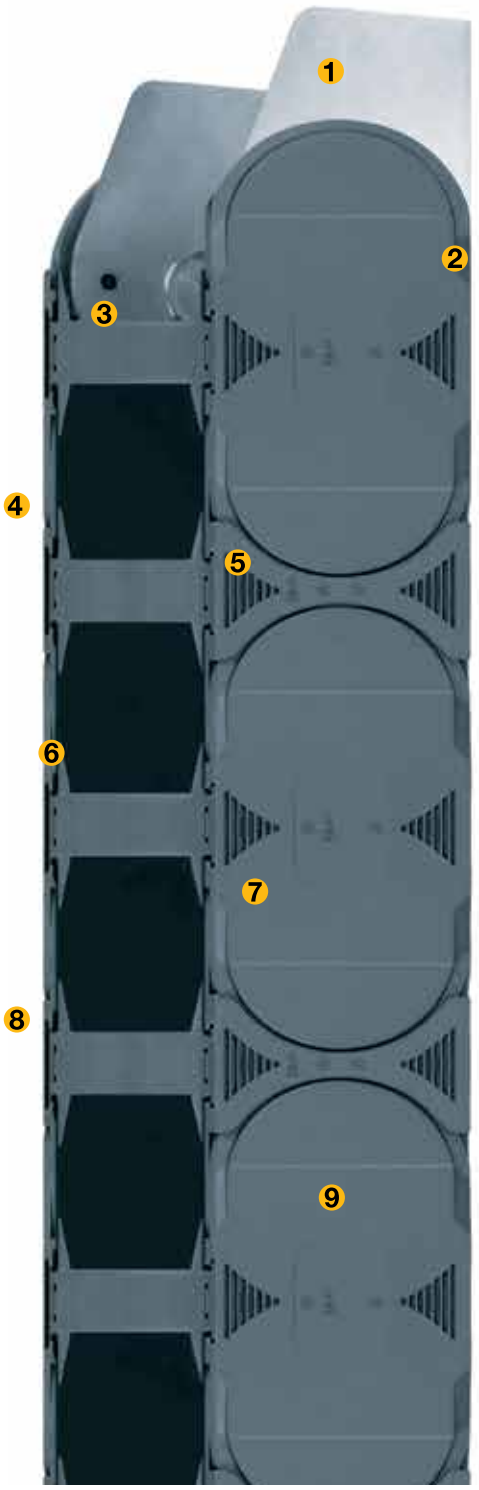
Opening e-chains®: Remove crossbars and clips - Insert screwdriver into the slot, push down, release by lever action

Features & Benefits

1. Steel mounting brackets
2. Hinged, snap-open removable lids along the outer radius
3. Noise dampening pads, optional = -10dB(A)
4. Gliding surfaces, long travels
5. Chip protection with e-tube
6. Undercut for more stability
7. Notch crossbar with backside scaling
8. Straight run due to the inner/outer link design
9. Low noise operation due to integrated “brake”



Also available without camber. Add NCST to the end of the part number.
Ex: E4-162-30-300NCST



Other Installation Methods

Vertical, hanging ≤ 394 ft (120 m)
Vertical, standing ≤ 19.69 ft (6 m)
Side-mounted, unsupp. upon request
Rotary requires further calculation

Usage Guidelines

- If a robust e-chain/Energy is required
- If inner widths up to 23.62” (600 mm) are required
- For unsupported lengths up to 21.3 ft. (6.5 m) and fill weights up to 60.48 lbs/ft. (90 kg/m)
- For long travels

- When an e-chain is needed for rough applications with greater inner height
  ➤ **Series 800**
- When a lighter e-chain® is needed
  ➤ **Series 1640**

Order Example: Complete e-chain®

Please indicate chain length or number of links. Example:

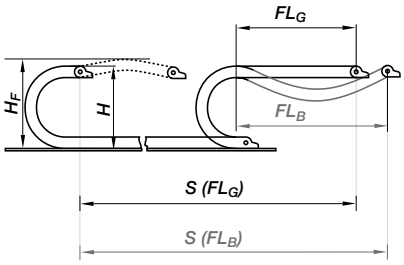
16.4 ft (5 m) **E4-162-30-300-0**	**e-chain®**
With 2 separators **162.1.1** assembled every 2nd lir	**Interior Separation**
1 Set **E4-16210-12**	**Mounting Bracket**

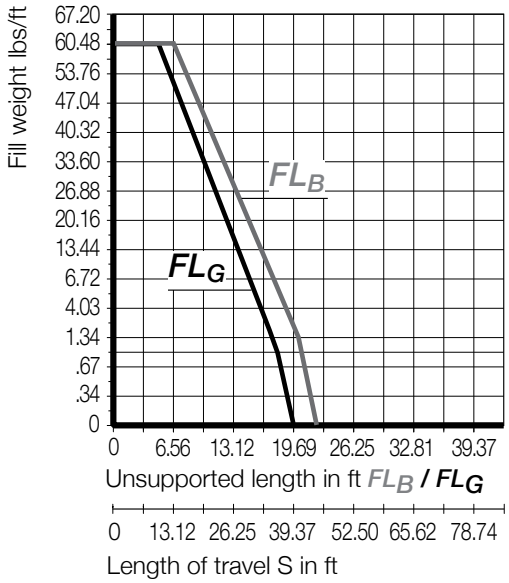
e-chain system® E4-1
Series E4-162
Installation Dimensions

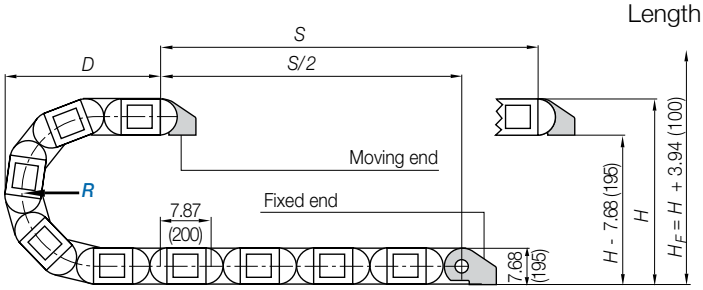
Short travel, unsupported length

- FL_B = unsupported with permitted sag
- FL_G = unsupported with straight upper run

Further information ➤ Design, Chapter 1







Pitch per link: = 7.87" (200 mm)
Links per ft (m): = 1.52 (5)
For center mount applications:
Chain length = $S/2 + K$

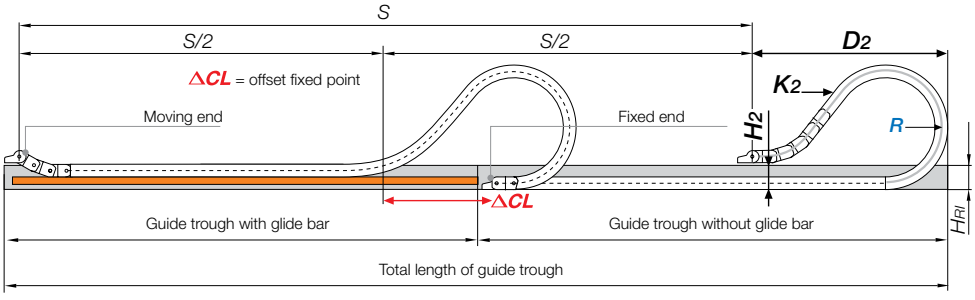
The required clearance height: ***HF = H* + 3.94 in. (100 mm)** with 3.36 lbs/ft (5 kg/m) fill weight.
Please consult igus® if space is particularly restricted.

R	9.84 (250)	11.81 (300)	13.78 (350)	15.75 (400)	9.84 (450)	19.68 (500)	21.65 (550)	23.62 (600)	29.53 (750)	39.37 (1000)
H	27.56 (700)	31.50 (800)	35.43 (900)	39.37 (1000)	43.31 (1100)	47.24 (1200)	51.18 (1300)	55.12 (1400)	66.93 (1700)	86.61 (2200)
D	25.51 (648)	27.48 (698)	29.45 (748)	31.42 (798)	33.39 (848)	35.35 (898)	37.32 (948)	39.29 (998)	45.20 (1148)	55.04 (1398)
K	46.85 (1190)	52.95 (1345)	59.06 (1500)	65.35 (1660)	71.46 (1815)	77.76 (1975)	83.86 (2130)	89.96 (2285)	108.66 (2760)	139.57 (3545)

For long travels with lowered mounting height

Long travel lengths from 45.9 ft.(14m) to max. 1,476 ft. (450m)

For center mount applications:
Chain length = $S/2 + K_2$



R	9.84 (250)	11.81 (300)	13.78 (350)	15.75 (400)	9.84 (450)	19.68 (500)	21.65 (550)	23.62 (600)	29.53 (750)	39.37 (1000)
H2	*	22.83 (580)	22.83 (580)	22.83 (580)	22.83 (580)	22.83 (580)	22.83 (580)	22.83 (580)	**	**
D2	*	37.40 (950)	41.34 (1050)	53.15 (1350)	62.99 (1600)	76.77 (1950)	80.71 (2050)	94.49 (2400)	**	**
K2	*	62.99 (1600)	70.87 (1800)	94.49 (2400)	110.24 (2800)	125.98 (3200)	133.86 (3400)	149.61 (3800)	**	**
ΔCL	*	11.81 (300)	13.78 (350)	23.62 (600)	31.50 (800)	43.31 (1100)	45.28 (1150)	57.09 (1450)	**	**

In case of travels between 39.4 and 45.9 ft (12 and 14 m) we recommend a longer unsupported length.

Speed / acceleration FL_G	max. 65.6 ft/s (20 m/s) / max. 656 ft/s² (200 m/s²)
Speed / acceleration FL_B	max. 9.84 ft/s (3 m/s) / max. 19.69 ft/s² (6 m/s²)
Gliding speed / acceleration (maximum)	max. 32.8 ft/s (10 m/s) / max. 164 ft/s² (50 m/s²)
Material - permitted temperature	igumid G / -40°F (-40°C) up to +248°F (+120° C)
Flammability Class, igumid G	VDE 0304 IIC UL94 HB

Short Travels - Unsupported

Unsupported e-chains® feature positive camber over short travels. This must be accounted for when specifying the clearance height. Please refer to **Installation dimensions** for further details.

Legend

S = Length of travel
R = Bending radius
H = Nominal clearance height
D = Overlength e-chain® radius in final position
K = π • *R* + *safety buffer*
H_F = Required clearance height
H_{RI} = Trough inner height
H_2 = *Mounting height
D_2 = Overlength - long travels, gliding
K_2 = *Add-on

*If the mounting bracket location is set lower

Long Travels - Gliding

If the unsupported length is exceeded, the e-chain®/Tube must glide on itself. This requires a guide trough.
Design, Chapter 1

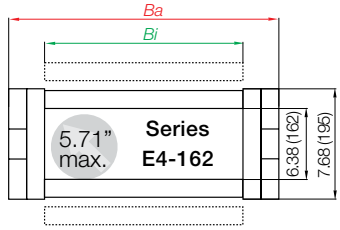
Technical Data

Details of material properties
➤ Chapter 1

PDF: igus.com/e-chain-pdfs
Product information: igus.com/e-chains

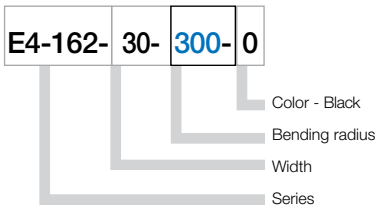
e-chain system® E4-1
Series E4-162

Series E4-112 - e-chain® with crossbars every link



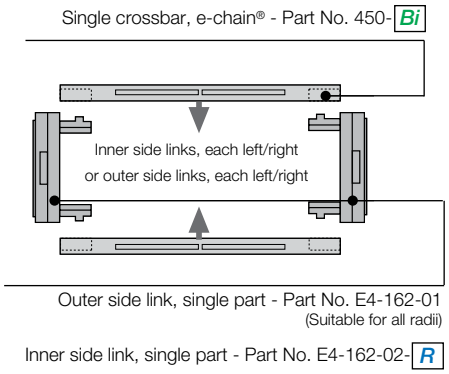
- Crossbars every link
- For use with rigid hydraulic hoses
- For particularly demanding applications
- Can be opened from both sides

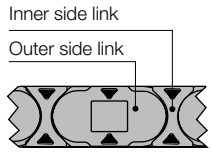
Part Number Structure

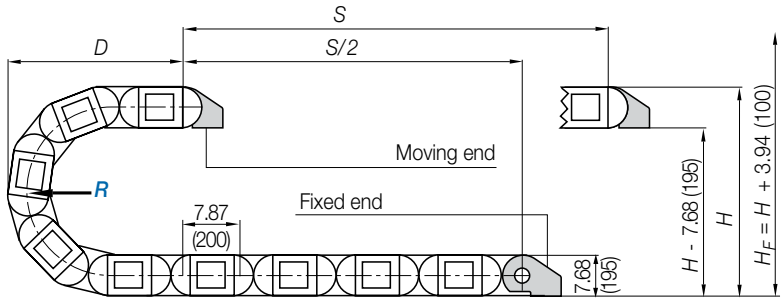




e-chain® as separate parts, links and side plates







Supplement part number with required radius. Example: E4-162-30- 300 -0
Pitch: 7.87 in. (200mm) per link links/ft (m) = 1.52 (5)

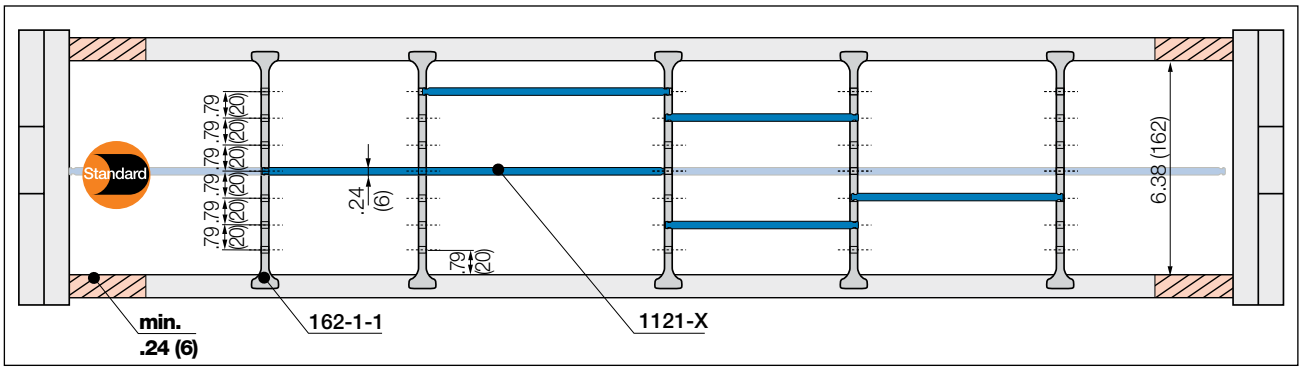
Part Number		Bi	Ba	Weight
Crossbars Every link		Bi in. (mm)	Ba in. (mm)	E4-112 lbs/ft (kg/m)
E4-162-20-	-0	7.87 (200)	10.08 (256)	≈ 7.02 (10.45)
E4-162-25-	-0	9.84 (250)	12.05 (306)	≈ 7.22 (10.74)
E4-162-30-	-0	11.81 (300)	14.02 (356)	≈ 7.38 (10.99)
E4-162-32-	-0	12.79 (325)	15.00 (381)	≈ 7.41 (11.02)
E4-162-35-	-0	13.78 (350)	15.98 (406)	≈ 7.53 (11.21)
E4-162-40-	-0	15.75 (400)	17.95 (456)	≈ 7.73 (11.51)
E4-162-45-	-0	17.72 (450)	19.92 (506)	≈ 7.82 (11.65)
E4-162-50-	-0	19.69 (500)	21.89 (556)	≈ 7.95 (11.83)
E4-162-55-	-0	21.65 (550)	23.86 (606)	≈ 8.14 (12.11)
E4-162-60-	-0	23.62 (600)	25.83 (656)	≈ 8.37 (12.45)

Choose from the radii below for all of the above sizes
Radius (mm) Example: E4-162-30- 300 -0

	250	300	350	400	450	500	550	600	750	1000
R	9.84 (250)	11.81 (300)	13.78 (350)	15.75 (400)	9.84 (450)	19.68 (500)	21.65 (550)	23.62 (600)	29.53 (750)	39.37 (1000)
H	27.56 (700)	31.50 (800)	35.43 (900)	39.37 (1000)	43.31 (1100)	47.24 (1200)	51.18 (1300)	55.12 (1400)	66.93 (1700)	86.61 (2200)
D	25.51 (648)	27.48 (698)	29.45 (748)	31.42 (798)	33.39 (848)	35.35 (898)	37.32 (948)	39.29 (998)	45.20 (1148)	55.04 (1398)
K	46.85 (1190)	52.95 (1345)	59.06 (1500)	65.35 (1660)	71.46 (1815)	77.76 (1975)	83.86 (2130)	89.96 (2285)	108.66 (2760)	139.57 (3545)

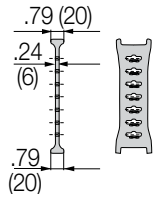
0=Standard color black. For other colors see Chapter 1

e-chain system® E4-1
Series E4-162
Interior Separation



Note Please maintain a lateral spacing of .24" (6 mm) for e-chains® between the separators and the side links. In the standard configuration separators are assembled every 2nd e-chain® link



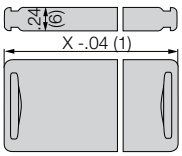


Standard Separator, wide base

Unassembled	**Part No. 162-1**
Assembled	**Part No. 162-1-1**

- **Standard separator for any application**
  Separator with a wide base for maximum holding force in the e-chain®





Full-width shelf, lockable

Unassembled	**Part No. 1120-X**
Assembled	**Part No. 1121-X**

- **Horizontal separation**
  Full-width shelf locks securely into separators at both ends, giving a fixed width. Can be used as full-width or partial shelf.

Shelves

Width = X [mm]



X in. (mm)	unassembled	assembled	X in. (mm)	unassembled	assembled	X in. (mm)	unassembled	assembled
1.97 (050)	**1120-050**	**1121-050**	5.91 (150)	**1120-150**	**1121-150**	11.81 (300)	**1120-300**	**1121-300**
2.56 (065)	**1120-065**	**1121-065**	6.89 (175)	**1120-175**	**1121-175**	13.78 (350)	**1120-350**	**1121-350**
2.95 (075)	**1120-075**	**1121-075**	7.87 (200)	**1120-200**	**1121-200**	14.76 (375)	**1120-375**	**1121-375**
3.94 (100)	**1120-100**	**1121-100**	8.86 (225)	**1120-225**	**1121-225**	15.24 (387)	**1120-387**	**1121-387**
4.92 (125)	**1120-125**	**1121-125**	9.84 (250)	**1120-250**	**1121-250**	17.72 (450)	**1120-450**	**1121-450**

PDF: igus.com/e-chain-pdfs
Product information: igus.com/e-chains

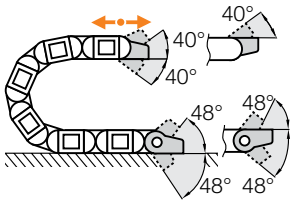
e-chain system® E4-1
Series E4-162
Mounting Bracket - Steel

Option 1: pivoting

- For unsupported and gliding applications
- One part for all chain widths
- Electrically conductive

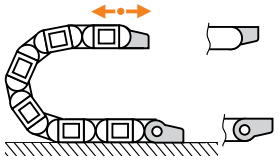
Option 2: Locking

- For vertical hanging and vertical standing applications
- One part for all chain widths
- Electrically conductive



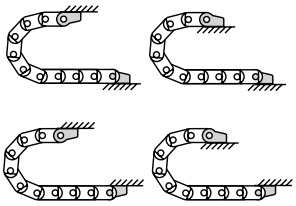
Moving end
E4-16210...3

Fixed end
E4-16210...4



Moving end
E4-16210...1

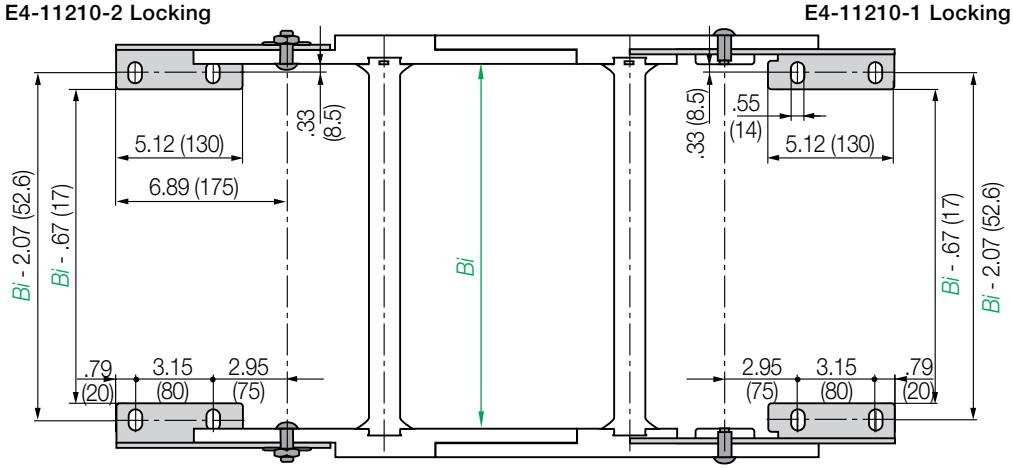
Fixed end
E4-16210...2



Possible installation configurations -

Fixed end
E4-11210-4 Pivoting
E4-11210-2 Locking

Moving end
E4-11210-3 Pivoting
E4-11210-1 Locking

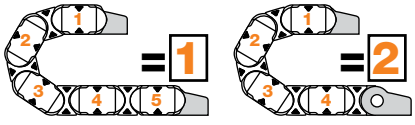


Part No. full set **steel pivoting**	Description **mounting bracket**
E4-16210- ☐ -34-VS-E	Full set (both ends), ending with outer side link, **screwed** - standard
E4-16210- ☐ -34-VS-E	Full set (both ends) - beginning with outer side link (moving end) - ending with inner side link (fixed end), **screwed** - standard

Stainless steel version available. Please add index **-E** (Material: stainless steel 1.4301)

Part No. full set **steel locking**	Description **mounting bracket**
E4-16210- ☐ -12-VS-E	Full set (both ends), ending with outer side link, **screwed** - standard
E4-16210- ☐ -12-VS-E	Full set (both ends) - beginning with outer side link (moving end) - ending with inner side link (fixed end), **screwed** - standard

Stainless steel version available. Please add index **-E** (Material: stainless steel 1.4301)



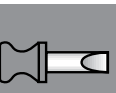
Note: Depending on the chain length, the e-chain® may end with ☐ either an outer or an ☐ inner side link. For the best appearance, make sure the e-chain® ends with ☐ outer side links whenever possible. (with odd number of links)

Strain relief **such as clamps, tiewrap plates, nuggets and plug-in clips are available from stock.**
The complete chainfix range with ordering options ➤ Chapter 10

PDF: igus.com/e-chain-pdfs
Product information: igus.com/e-chains





e-chain system® E4/100
Series 600/601/R608

4.25” 4.25”

Price Index

Series 600 Series 601

Series R608

Special Features / Options

This E4 Series is a low-noise version

Clean-Room Cleanroom test upon request

EX ESD classification: Electrically conductive ESD/ ATEX version upon request

Assembly Tips



Opening e-chains®: Remove crossbars and clips - Insert screwdriver into the slot, push down, release by lever action



Remove lids/bottoms (e-tubes) - Insert screwdriver into the slot, release by lever action

Other Installation Methods

Vertical, hanging ≤ 394 ft (120 m)
Vertical, standing ≤ 19.69 ft (6 m)
Side-mounted, unsupp. ≤ 19.69 ft (6 m)
Rotary requires further calculation

Usage Guidelines

- When quiet operation is required
- When very high speeds and/or accelerations are required
- For long travels
- For high fill weights

- When a simpler, low-cost solution is required
  ➤ **Series 1640**
- If an increased inner height is required
  ➤ **Series 640**

Features & Benefits

1. Hinged snap-open removable lids along the outer radius
2. Optimized glide pads with lateral wear allowance
3. Closed and open styles can be combined
4. Wide, rounded crossbars
5. Dirt-repellent exterior
6. Numerous interior separation possibilities
7. Stop dog with brake for noise reduction
8. Crossbars on e-chains® are removable along both radii
9. e-chains® also available with reverse bending radius “RBR”



Order Example: Complete e-chain®

Please indicate chain length or number of links. Example:

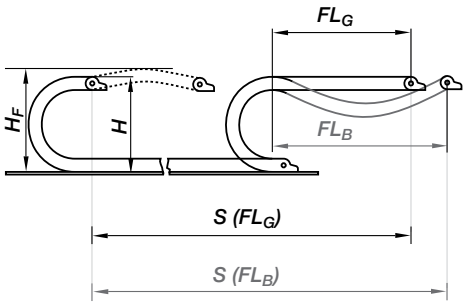
19.69 ft (6 m) **600-30-300-0**	**e-chain®**
With 2 separators **6011** assembled every 2nd link	**Interior Separation**
1 Set **6000-12**	**Mounting Bracket**

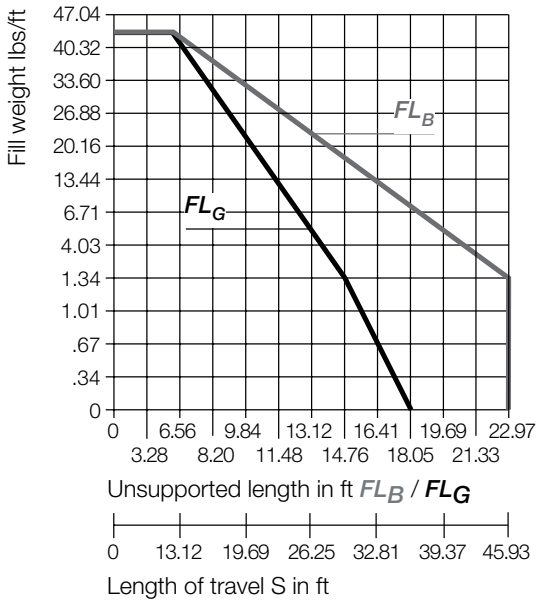
e-chain system® E4/100
Series 600/601/R608
Installation Dimensions

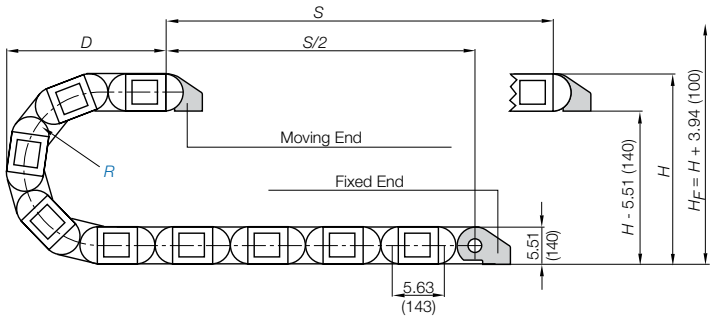
Short travel, unsupported length

- FL_B = unsupported with permitted sag
- FL_G = unsupported with straight upper run

Further information ➤ Design, Chapter 1







Pitch per link: = 5.63" (143 mm)
Links per ft (m): = 2.13 (7)
For center mount applications:
Chain length = $^{S}/_{2} + K$

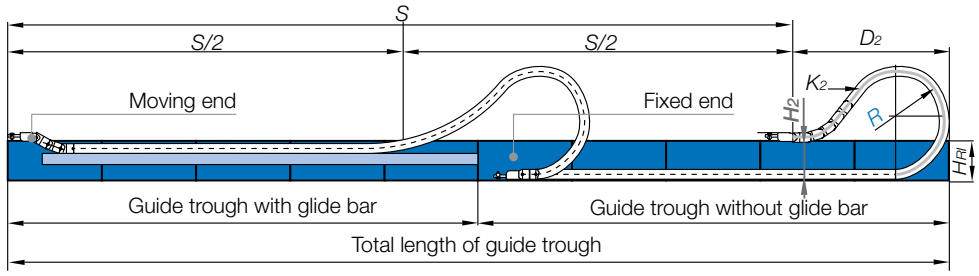
The required clearance height: $H_F = H$ **+ 3.94 in. (100 mm)** (with 3.36 lbs/ft (5 kg/m) fill weight. Please consult igus® if space is particularly restricted.

R	7.87 (200)	9.84 (250)	11.81 (300)	13.78 (350)	15.75 (400)	17.72 (450)	19.69 (500)	21.65 (550)	23.62 (600)	29.53 (750)	39.37 (1000)
H	21.46 (545)	25.39 (645)	29.33 (745)	33.27 (845)	37.20 (945)	41.14 (1045)	45.08 (1145)	49.02 (1245)	52.95 (1345)	64.76 (1645)	84.45 (2145)
D	16.34 (415)	18.31 (465)	20.27 (515)	22.24 (565)	24.21 (615)	26.18 (665)	28.15 (715)	30.12 (765)	32.09 (815)	37.99 (965)	47.83 (1215)
K	36.22 (920)	42.52 (1080)	48.82 (1240)	55.12 (1400)	61.42 (1560)	67.72 (1720)	73.62 (1870)	79.53 (2020)	85.63 (2175)	104.72 (2660)	135.24 (3435)

For long travels with lowered mounting height

Long travel lengths from 32.8 ft. (10 m) to max. 1,476 ft. (450 m)

For center mount applications:
Chain length: = $^{S}/_{2} + K_2$



R	7.87 (200)	9.84 (250)	11.81 (300)	13.78 (350)	15.75 (400)	17.72 (450)	19.69 (500)	21.65 (550)	23.62 (600)	29.53 (750)	39.37 (1000)
H_2	12.80 (325)	12.80 (325)	12.80 (325)	12.80 (325)	12.80 (325)	12.80 (325)	12.80 (325)	12.80 (325)	12.80 (325)	12.80 (325)	-
D_{2+20}	35.43 (900)	39.37 (1000)	43.31 (1100)	49.21 (1250)	57.09 (1450)	62.99 (1600)	66.93 (1700)	74.80 (1900)	80.71 (2050)	112.20 (2850)	-
K_2	61.93 (1573)	67.56 (1716)	73.19 (1859)	90.08 (2288)	101.33 (2574)	112.60 (2860)	123.86 (3146)	135.12 (3432)	152.01 (3861)	197.05 (5005)	-

Speed / acceleration FL_G	max. 65.6 ft/s (20 m/s) / max. 656 ft/s² (200 m/s²)
Speed / acceleration FL_B	max. 9.84 ft/s (3 m/s) / max. 19.69 ft/s² (6 m/s²)
Gliding speed / acceleration (maximum)	max. 32.8 ft/s (10 m/s) / max. 164 ft/s² (50 m/s²)
Material - permitted temperature	igumid G / -40°F (-40°C) up to +248°F (+120° C)
Flammability Class, igumid G	VDE 0304 IIC UL94 HB

Short Travels - Unsupported

Unsupported e-chains® feature positive camber over short travels. This must be accounted for when specifying the clearance height. Please refer to **Installation dimensions** for further details.

Legend

S = Length of travel
R = Bending radius
H = Nominal clearance height
D = Overlength e-chain® radius in final position
K = π • *R + safety buffer*
H_F = Required clearance height
H_{RI} = Trough inner height
H_2 = *Mounting height
D_2 = Overlength - long travels, gliding
K_2 = *Add-on

*If the mounting bracket location is set lower

Long Travels - Gliding

If the unsupported length is exceeded, the e-chain®/Tube must glide on itself. This requires a guide trough.
Design, Chapter 1

Technical Data

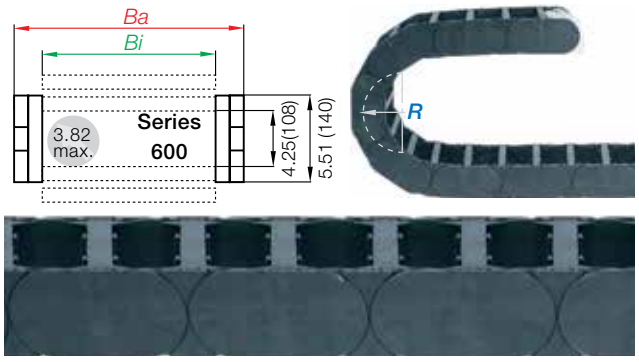
Details of material properties
➤ **Chapter 1**

e-chain system® E4/100
Series 600/601/R608

Telephone 1-800-521-2747

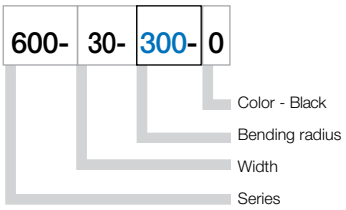
Internet: igus.com
email: sales@igus.com
QuickSpec: igus.com/quickspec

Series 600 - e-chain® with crossbars every link

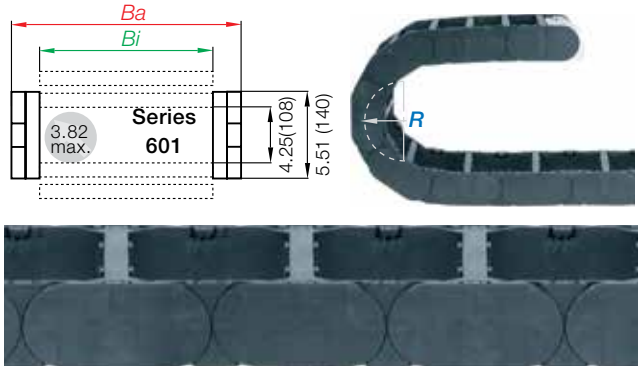


- Crossbars every link
- For use with rigid hydraulic hoses
- For particularly demanding applications
- Can be opened from both sides

Part Number Structure

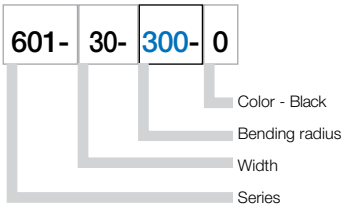


Series 601 - e-chain® with crossbars every other link

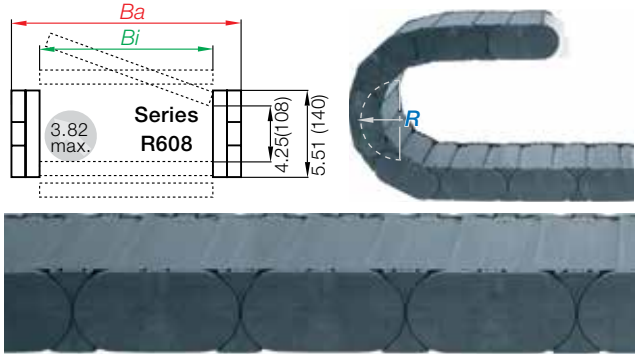


- Crossbars every other link - Standard configuration
- For nearly every situation
- Can be opened from both sides
- Easy assembly
- Stable
- Cost-effective

Part Number Structure

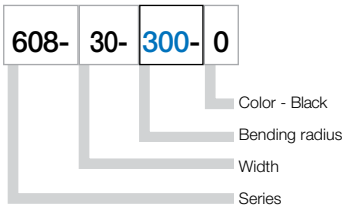


Series R608 - fully enclosed e-tube

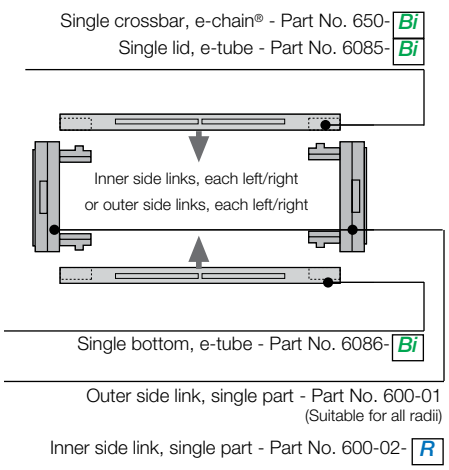


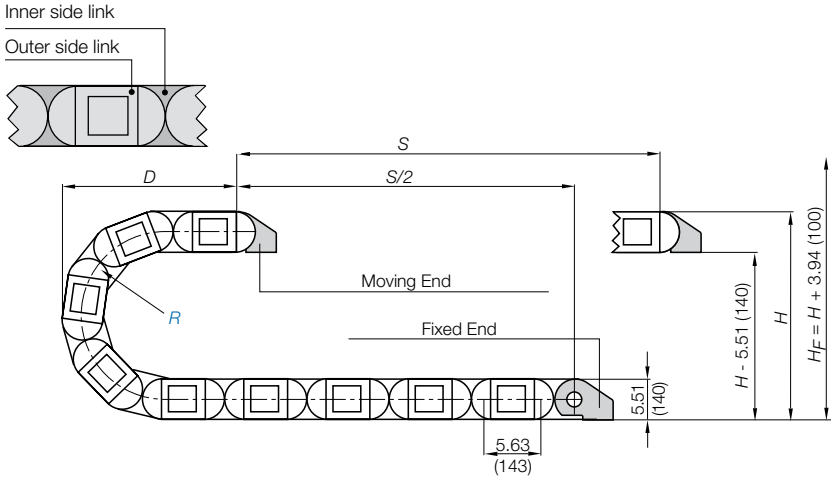
- Fully enclosed
- Excellent cable and hose protection against dirt
- Protection against hot chips
- Lids along inner radius are completely removable
- Lids along the outer radius are single-sided, snap open, hinged on one side as well as completely removable

Part Number Structure



e-chain® as separate parts, links and side plates





e-chain system® E4/100
Series 600/601/R608

Supplement part number with required radius. Example: 600-30-300-0
Pitch: 5.63 in. (143 mm) per link links/ft(m) = 2.13 (7)

Part Number. Crossbars Every link	Crossbars Every other	Tube Version		*Bi* in. (mm)	*Ba* in. (mm)	600 lbs/ft (kg/m)	601 lbs/ft (kg/m)	R608 lbs/ft (kg/m)
600-20-	601-20-	608-20-	[ ] -0	7.87 (200)	9.92 (252)	≈ 3.00 (4.46)	≈ 2.63 (3.91)	*
600-25-	601-25-	608-25-	[ ] -0	9.84 (250)	11.89 (302)	≈ 3.26 (4.85)	≈ 2.76 (4.10)	*
600-30-	601-30-	608-30-	[ ] -0	11.81 (300)	13.86 (352)	≈ 3.55 (5.29)	≈ 2.90 (4.32)	*
600-32-	601-32-		[ ] -0	12.60 (320)	14.65 (372)	≈ 3.62 (5.38)	≈ 2.94 (4.37)	–
600-35-	601-35-	608-35-	[ ] -0	13.78 (350)	15.83 (402)	≈ 3.84 (5.71)	≈ 3.04 (4.53)	*
600-40-	601-40-	608-40-	[ ] -0	15.75 (400)	17.80 (452)	≈ 4.05 (6.02)	≈ 3.15 (4.69)	*
600-45-	601-45-		[ ] -0	17.72 (450)	19.76 (502)	≈ 4.34 (6.46)	≈ 3.30 (4.91)	–
600-50-	601-50-		[ ] -0	19.69 (500)	21.73 (552)	≈ 4.53 (6.74)	≈ 3.39 (5.05)	–
600-55-	601-55-		[ ] -0	21.65 (550)	23.70 (602)	≈ 5.01 (7.45)	≈ 3.63 (5.40)	–
600-60-	601-60-		[ ] -0	23.62 (600)	25.67 (652)	≈ 5.14 (7.65)	≈ 3.70 (5.50)	–

Choose from the radii below for all of the above sizes
Radius (mm) Example: 600-30-300-0

	200**	250	300	350	400	450	500	550	600	750	1000
R	7.87 (200)	9.84 (250)	11.81 (300)	13.78 (350)	15.75 (400)	17.72 (450)	19.69 (500)	21.65 (550)	23.62 (600)	29.53 (750)	39.37 (1000)
H	21.46 (545)	25.39 (645)	29.33 (745)	33.27 (845)	37.20 (945)	41.14 (1045)	45.08 (1145)	49.02 (1245)	52.95 (1345)	64.76 (1645)	84.45 (2145)
D	16.34 (415)	18.31 (465)	20.27 (515)	22.24 (565)	24.21 (615)	26.18 (665)	28.15 (715)	30.12 (765)	32.09 (815)	37.99 (965)	47.83 (1215)
K	36.22 (920)	42.52 (1080)	48.82 (1240)	55.12 (1400)	61.42 (1560)	67.72 (1720)	73.62 (1870)	79.53 (2020)	85.63 (2175)	104.72 (2660)	135.24 (3435)

** This radius is not available for the R608 Series
*Upon request

0=Standard color black. For other colors see Chapter 1

PDF: igus.com/e-chain-pdfs
Product information: igus.com/e-chains

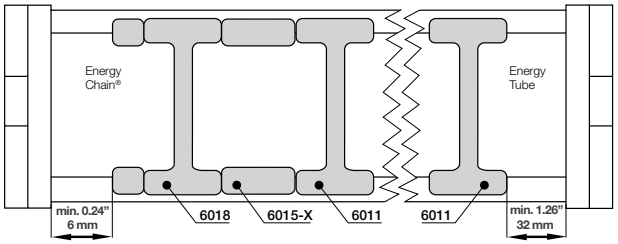
e-chain system® E4/100
Series 600/601/R608
Interior Separation



Option 1: Vertical separators and spacers

Vertical separators are used if a vertical subdivision of the e-chain® interior is required. By standard, vertical separators are assembled every other e-chain® link.

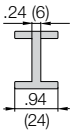
NOTE: Observe a lateral spacing of at least 1.26 in. (32mm) for e-tubes and .63 in. (16mm) for e-chain®.
There is no minimum spacing needed for side plates
Exception: Minimum spacing
Locking separator 6008 = .91" (23 mm)





Standard

Vertical separator 6001

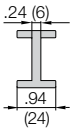


Vertical separator	
Unassembled	**Part No. 6001**
Assembled	**Part No. 6011**

- **Standard separator 6001 for e-chains® and e-tubes**
  This separator offers safe stability due to its wide base design, also when used with thick cables or hoses.



Locking separator 6008



Locking separator (chain only)	
Unassembled	**Part No. 6008**
Assembled	**Part No. 6018**

- **Locking separator 6008 for e-chains®**
  This separator features increased retention force for applications exposed to very high humidity and extreme loads. The extra retention force is achieved by asymmetric claws for the crossbar. Take care to ensure proper alignment.



Spacers 6005-XX



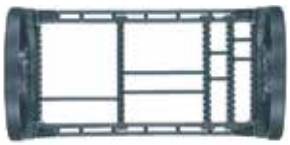
Spacers available in the following sizes:

Part No. Unassembled	Part No. Assembled	in.	(mm)
6005 -10	**6015 -10**	.39"	(10)
6005 -15	**6015 -15**	.59"	(15)
6005 -20	**6015 -20**	79"	(20)

- **NOTE ON SPACERS**
  Vertical separators are adjustable, but can be fixed in position by means of a spacer. Spacers are most often necessary for side mounted applications. The available inner height is reduced by .08" (2mm) **per spacer** (for example if one spacer is placed on either side of the separator, the overall inner height is reduced by .16" (4mm). To avoid this, place the spacers on the **outside** of the opening crossbar **(not for long travels)**.

igus® e-chain system®
Telephone 1-800-521-2747
Internet: igus.com
email: sales@igus.com
QuickSpec: igus.com/quickspec

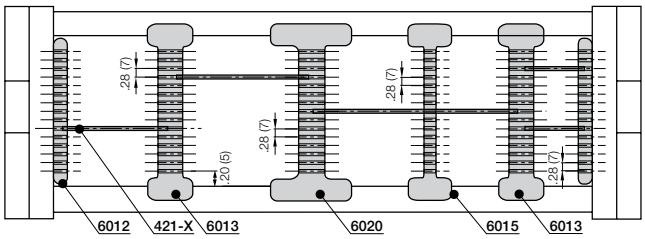
e-chain system® E4/100
Series 600/601/R608
Interior Separation



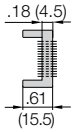
Option 2: Shelves

e-chains® and e-tubes can be subdivided both vertically and horizontally using the various interior separation elements.

➤ **Design, Chapter 1** for layout recommendations.



- **Side plates 6002**
  This component is used to form the basic pattern of a shelf system.



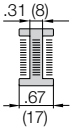
Side plate

Unassembled	**Part No. 6002**
Assembled	**Part No. 6012**

Side plate 6002



- **Vertical separator 6003**
  This component is used to form the basic pattern of a shelf system.



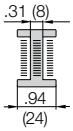
Vertical separator

Unassembled	**Part No. 6003**
Assembled	**Part No. 6013**

Vertical separator 6003



- **Locking vertical separator 6010**
  This separator is slotted and able to be combined with shelves



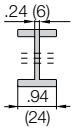
Locking vertical separator

Unassembled	**Part No. 6010**
Assembled	**Part No. 6020**

Locking vertical separator 6010



- **Slotted separators 6004**
  These are used for very complex subdivisions. However, they cannot be retrofitted into an existing separation system without removing the shelves first.



Slotted separators, closed

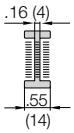
Unassembled	**Part No. 6004**
Assembled	**Part No. 6014**

Closed slotted separator 6004





- **Slotted separator 6005**
  This separator can be retrofitted into an existing interior separation system without removing the shelves, as long as these shelves fit into any of the 11 middle slots



Slotted separators, open

Unassembled	**Part No. 6005**
Assembled	**Part No. 6015**

Open slotted separator 6005



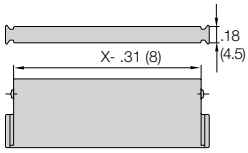


Shelves 420-XX

These components form the basic pattern of a shelf system. Shelves of various widths can be arranged at 7 different heights in .28" (7mm) increments

Width X in.	Width X (mm)	Usable Width in.	Usable Width (mm)	Part No. Unassembled	Part No. Assembled
.71	(18)	.39	(10)	**420-18**	**421-18**
.91	(23)	.59	(15)	**420-23**	**421-23**
.98	(25)	.67	(17)	**420-25**	**421-25**
1.10	(28)	.79	(20)	**420-28**	**421-28**
1.30	(33)	.98	(25)	**420-33**	**421-33**
1.69	(43)	1.38	(35)	**420-43**	**421-43**
1.97	(50)	1.65	(42)	**420-50**	**421-50**
2.44	(62)	2.13	(54)	**420-62**	**421-62**

Width X in.	Width X (mm)	Usable Width in.	Usable Width (mm)	Part No. Unassembled	Part No. Assembled
2.95	(75)	2.64	(67)	**420-75**	**421-75**
3.46	(88)	3.15	(80)	**420-88**	**421-88**
3.94	(100)	3.62	(92)	**420-100**	**421-100**
4.92	(125)	4.61	(117)	**420-125**	**421-125**
5.91	(150)	5.59	(142)	**420-150**	**421-150**
6.89	(175)	6.57	(167)	**420-175**	**421-175**
7.36	(187)	7.05	(179)	**420-187**	**421-187**
7.87	(200)	7.56	(192)	**420-200**	**421-200**





PDF: igus.com/e-chain-pdfs
Product information: igus.com/e-chains

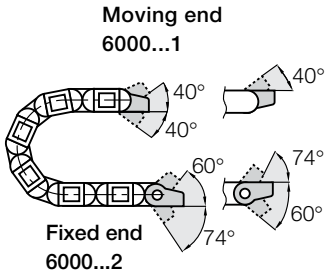
e-chain system® E4/100
Series 600/601/R608
Mounting Brackets - Steel
Strain Relief

Telephone 1-800-521-2747

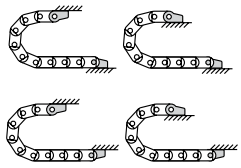
Internet: igus.com
email: sales@igus.com
QuickSpec: igus.com/quickspec

Option 1: pivoting

- For pivoting connections
- One part for all chain widths
- Electrically conductive





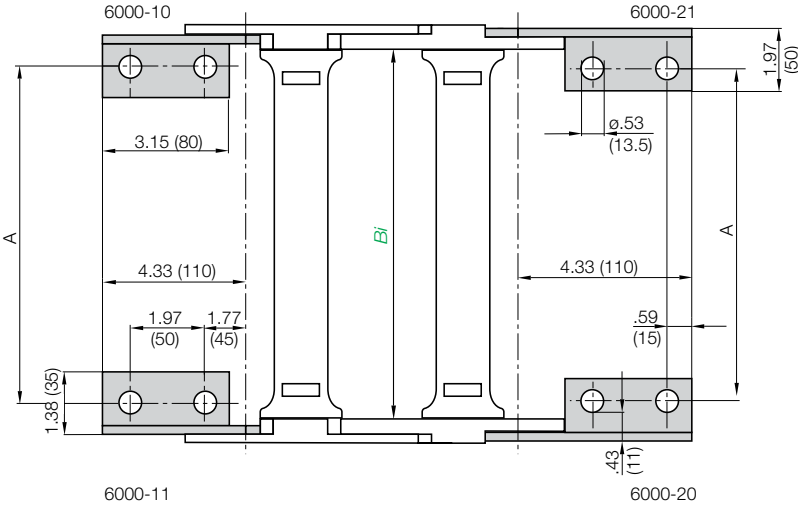


Possible installation configurations -

Part No. Mounting Brackets Full Set
4 parts, 2 with pin, 2 with bore
Series 600/601/R608
6000-12

Part No. Mounting Bracket Moving End
2 parts, 1 left & 1 right with bore
Series 600/601/R608
6000-1

Part No. Mounting Bracket Fixed End
2 parts, 1 left & 1 right with pin
Series 600/601/R608
6000-2



Bracket Mounting Dimensions

Width of Chain *Bi*	Part Number	Mounting Brackets* Full Set	Moving End Only	Fixed End Only	A in. (mm)
7.87 (200)	6000	-12	-1	-2	6.69 (170)
9.84 (250)	6000	-12	-1	-2	8.66 (220)
11.81 (300)	6000	-12	-1	-2	10.63 (270)
12.60 (320)	6000	-12	-1	-2	14.42 (290)
13.78 (350)	6000	-12	-1	-2	12.60 (320)
15.75 (400)	6000	-12	-1	-2	14.57 (370)
17.72 (450)	6000	-12	-1	-2	16.54 (420)
19.69 (500)	6000	-12	-1	-2	18.50 (470)
21.65 (550)	6000	-12	-1	-2	20.47 (520)
23.62 (600)	6000	-12	-1	-2	22.48 (570)

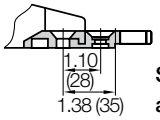
*Ordering information

Due to the design of the E4/100 series chains, please note the following when ordering brackets:

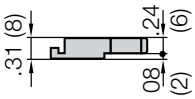
Even number of links = full set, part number ending in **-12**
Odd number of links = 2 pieces, part number ending in **-2**

Tiewrap Plates





Shown assembled

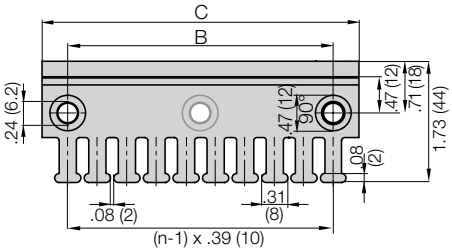


Single tiewrap plate

Option 1:
Tiewrap plates as an individual part

Available as an individual component, can be fixed onto a mounting bracket with the use of a profile rail.

Tiewrap Plate	n Number of Teeth	C Overall Width in. (mm)	B Bore Width in. (mm)	Center Bore
3050-ZB	5	1.97 (50)	1.18 (30)	no
3075-ZB	7	2.95 (75)	2.16 (55)	no
3100-ZB	10	3.94 (100)	3.15 (80)	no
3115-ZB	11	4.53 (115)	3.74 (95)	no
3125-ZB	12	4.92 (125)	4.13 (105)	no
3150-ZB	15	5.91 (150)	5.12 (130)	no
3175-ZB	17	6.89 (175)	6.10 (155)	no
3200-ZB	20	7.87 (200)	7.09 (180)	yes
3225-ZB	22	8.86 (225)	8.07 (205)	yes
3250-ZB	25	9.84 (250)	9.06 (230)	yes



For more information please refer to strain relief section of Chapter 10

e-chain system® E4/100
Series 600/601/R608
Guide Trough

Guide troughs are used with applications where the upper run of the e-chain® glides on the lower run. If using igus® steel guide troughs, the following components are required:

- Full travel length of guide trough
  Part No. 97-30
- 1/2 travel length glide bars
  Part No. 93-01
- Installation sets as end connectors
  Part No. 97-50-XX

-XX indicates the length of the profile rails on which the guide trough is mounted. The values and part numbers are specified in the table below. The standard length of the trough components and glide bars is 6.56 ft (2 m). The overall length of the guide trough directly correlates to the length of travel.

Example:
Length of travel 164 ft (50 m)
Center-mounted

Required guide troughs:
164 ft (50 m) guide trough, 82 ft. (25 m) glide bar

= 25 sections of 6.56 ft (2 m) guide trough
Part No. 97-30

= 13 sections of 6.56 ft (2 m) glide bar
Part No. 93-01

Required number of installation set:
= Number of guide trough components + 1
= 25 + 1 = 26
Part No. of the installation sets **97-50-XXX**
Example:
97-50-400 for 15.75 (400 mm) long profile rail



Left: Guide trough with glide bars
Right: Guide troughs without glide bars

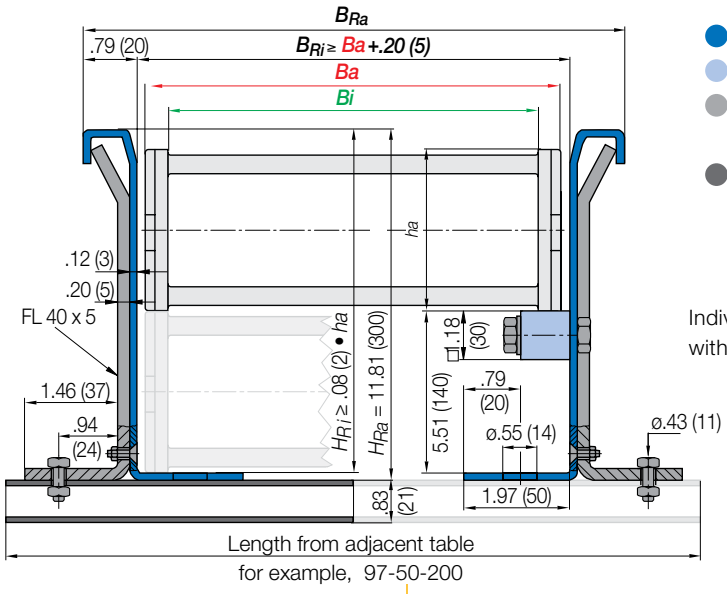


Installation sets as section connectors

Width of Crossbar
600-**05**-200-0

	B_{Ri}	Installation Part No.
-20	10.12 (257)	**97-50-375**
-25	12.09 (307)	**97-50-425**
-30	14.06 (357)	**97-50-475**
-32	14.84 (377)	**97-50-500**
-35	16.02 (407)	**97-50-525**
-40	17.99 (457)	**97-50-575**
-45	19.96 (507)	**97-50-625**
-50	21.93 (557)	**97-50-675**
-55	23.90 (607)	**97-50-725**
-60	25.87 (657)	**97-50-775**

Standard length profile rail



- Guide trough
- Glide bars
- Installation set "Basic"
- Profile rail

Individual attachment without profile rail

* Specialized guide trough available upon request

PDF: igus.com/e-chain-pdfs
Product information: igus.com/e-chains

e-chain system® E4-1
Series 800

7.87”

Price Index

Series 800

Special Features / Options

ESD classification:
Electrically conductive ESD/
ATEX version upon request

Assembly Tips



Opening e-chains®: Remove crossbars and clips - Insert screwdriver into the slot, push down, release by lever action

Other Installation Methods

Vertical, hanging: consult igus®
Vertical, standing ≤ 19.69 ft (6 m)
Side-mounted, unsupp. ≤ 19.69 ft (6 m)
Rotary requires further calculation

Usage Guidelines

- If a particularly large and rigid e-chain® is required
- For very high speeds and/or accelerations
- For long travels
- For high additional loads

Features & Benefits

1. Dirt-repellent exterior
2. Optimized glide pads with lateral wear allowance
3. Wide, rounded crossbars
4. Crossbars on e-chains® are removable along both radii
5. Each chain link consists of four opening crossbars which increases its rigidity and allows for a greater unsupported length
6. Undercut for more stability
7. e-chains also available with reverse bending radius “RBR”



Order Example: Complete e-chain®

Please indicate chain length or number of links. Example:

16.4 ft (5 m) **800-30-350-0**	**e-chain®**
With 2 separators **8011** assembled every 2nd link	**Interior Separation**
1 Set **8000-12**	**Mounting Bracket**

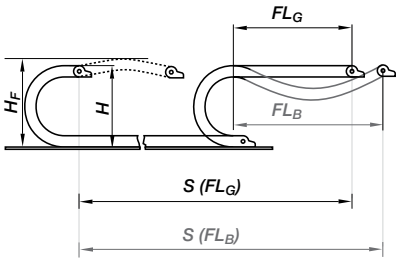
e-chain system® E4-1
Series 800
Installation Dimensions

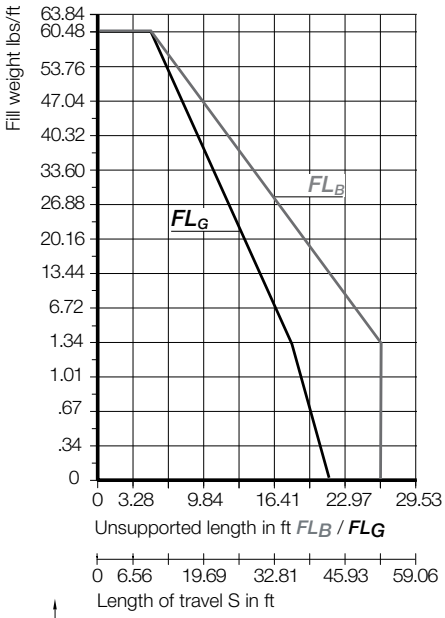
Short travel, unsupported length

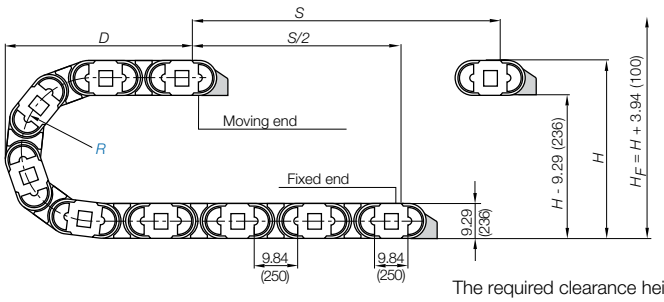
● FL_B = unsupported with permitted sag

● FL_G = unsupported with straight upper run

Further information ➤ Design, Chapter 1







Pitch per link: = 9.84" (250 mm)
Links per ft (m): = 1.22 (4)
For center mount applications:
Chain length = $^{S}/_{2} + K$

The required clearance height: ***HF = H + 3.94 in. (100 mm)*** (with 3.36 lbs/ft (5 kg/m) fill weight. Please consult igus® if space is particularly restricted.

R	12.80 (325)	13.78 (350)	15.75 (400)	17.72 (450)	19.69 (500)	23.62 (600)	29.53 (750)	39.37 (1000)
H*	34.88 (886)	36.85 (936)	40.79 (1036)	44.72 (1136)	48.66 (1236)	56.53 (1436)	68.35 (1736)	88.03 (2236)
D	32.20 (818)	33.19 (843)	35.16 (893)	37.13 (943)	39.09 (993)	43.03 (1093)	48.94 (1243)	58.78 (1493)
K	60.04 (1525)	62.99 (1600)	69.29 (1760)	75.39 (1915)	81.69 (2075)	93.90 (2385)	112.60 (2860)	143.50 (3645)

Short Travels - Unsupported

Unsupported e-chains® feature positive camber over short travels. This must be accounted for when specifying the clearance height. Please refer to **Installation dimensions** for further details.

Legend

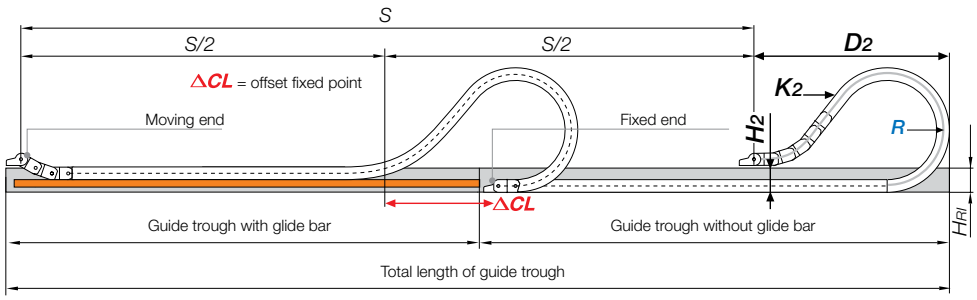
S = Length of travel
R = Bending radius
H = Nominal clearance height
D = Overlength e-chain® radius in final position
K = π • R + safety buffer
H_F = Required clearance height
H_{RI} = Trough inner height
H_2 = *Mounting height
D_2 = Overlength - long travels, gliding
K_2 = *Add-on

*If the mounting bracket location is set lower

For long travels with lowered mounting height

Please consult igus® when choosing to use a lowered mounting height with this series

Long travel lengths from 49.2 ft. (15 m) to max. 1,476 ft. (450 m)



R	12.80 (325)	13.78 (350)	15.75 (400)	17.72 (450)	19.69 (500)	23.62 (600)	29.53 (750)	39.37 (1000)
H2	22.83 (580)	22.83 (580)	22.83 (580)	22.83 (580)	22.83 (580)	22.83 (580)	22.83 (580)	22.83 (580)
D2	40.55 (1030)	42.52 (1080)	54.33 (1380)	63.39 (1610)	78.74 (2000)	97.64 (2480)	*	*
K2	78.74 (2000)	78.74 (2000)	98.43 (2500)	118.11 (3000)	127.95 (3250)	157.48 (4000)	*	*
ΔCL	9.84 (250)	11.81 (300)	21.65 (550)	29.53 (750)	41.34 (1050)	55.12 (1400)	*	*

In case of travels between 39.4 and 32.8 ft (12 and 15 m) we recommend a longer unsupported length. **200 radius is not available for the e-tubes

Long Travels - Gliding

If the unsupported length is exceeded, the e-chain®/Tube must glide on itself. This requires a guide trough.
Design, Chapter 1

For center mount applications:
Chain length: = $^{S}/_{2} + K_2$

Speed / acceleration FL_G	max. 65.6 ft/s (20 m/s) / max. 656 ft/s² (200 m/s²)
Speed / acceleration FL_B	max. 9.84 ft/s (3 m/s) / max. 19.69 ft/s² (6 m/s²)
Gliding speed / acceleration (maximum)	max. 32.8 ft/s (10 m/s) / max. 164 ft/s² (50 m/s²)
Material - permitted temperature	igumid G / -40°F (-40°C) up to +248°F (+120° C)
Flammability Class, igumid G	VDE 0304 IIC UL94 HB

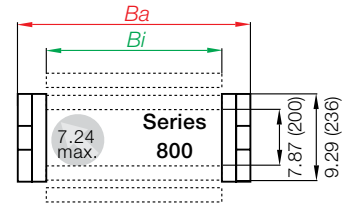
Technical Data

Details of material properties
➤ Chapter 1

PDF: igus.com/e-chain-pdfs
Product information: igus.com/e-chains

e-chain system® E4-1
Series 800

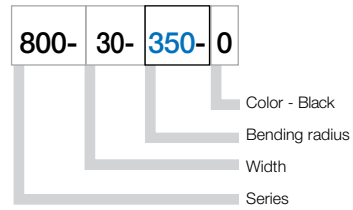
Series 800 - e-chain® with crossbars every link





- Crossbars every link
- For use with rigid hydraulic hoses
- For particularly demanding applications
- Can be opened from both sides

Part Number Structure





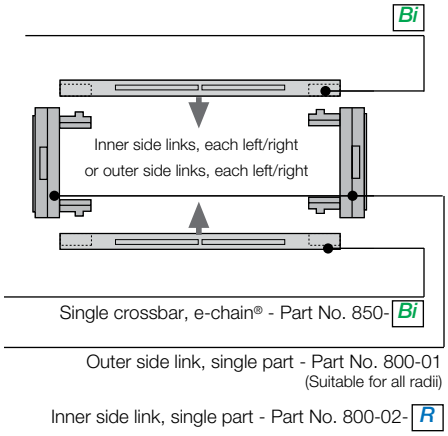
Supplement part number with required radius. Example: 800-30-350-0
Pitch: 9.84 in. (250 mm) per link links/ft(m) = 1.22 (4)

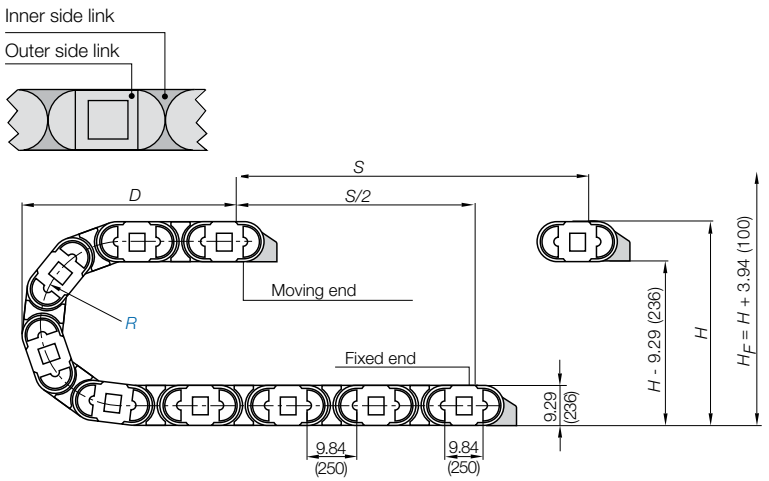
Part Number. Crossbars Every link			Bi in. (mm)	Ba in. (mm)	800 lbs/ft (kg/m)
800-20-		-0	7.87 (200)	10.24 (260)	≈ 10.14 (15.09)
800-25-		-0	9.84 (250)	12.20 (310)	≈ 10.42 (15.50)
800-30-		-0	11.81 (300)	14.17 (360)	≈ 10.68 (15.89)
800-32-		-0	12.80 (325)	15.16 (385)	≈ 10.79 (16.05)
800-35-		-0	13.78 (350)	16.14 (410)	≈ 10.90 (16.22)
800-40-		-0	15.75 (400)	18.11 (460)	≈ 11.25 (16.74)
800-45-		-0	17.72 (450)	20.08 (510)	≈ 11.34 (16.88)
800-50-		-0	19.69 (500)	22.04 (560)	≈ 11.58 (17.23)
800-55-		-0	21.65 (550)	24.02 (610)	≈ 11.85 (17.63)
800-60-		-0	23.62 (600)	25.98 (660)	≈ 12.22 (18.19)

Choose from the radii below for all of the above sizes
Radius (mm) Example: 800-30-350-0

	325	350	400	450	500	600	750	1000
R	12.80 (325)	13.78 (350)	15.75 (400)	17.72 (450)	19.69 (500)	23.62 (600)	29.53 (750)	39.37 (1000)
*H**	34.88 (886)	36.85 (936)	40.79 (1036)	44.72 (1136)	48.66 (1236)	56.53 (1436)	60.47 (1536)	88.03 (2236)
D	32.20 (818)	33.19 (843)	35.16 (893)	37.13 (943)	39.09 (993)	43.03 (1093)	48.94 (1243)	58.78 (1493)
K	60.04 (1525)	62.99 (1600)	69.29 (1760)	75.39 (1915)	81.69 (2075)	93.90 (2385)	112.60 (2860)	143.50 (3645)

e-chain® as separate parts, links and side plates





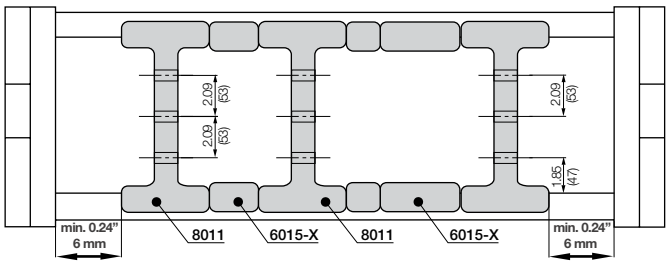
e-chain system® E4-1
Series 800
Interior Separation



Option 1: Vertical separators and spacers

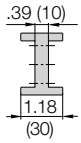
Vertical separators are used if a vertical subdivision of the e-chain® interior is required. By standard, vertical separators are assembled every other e-chain® link.

NOTE: Observe a lateral spacing of at least 1.26 in. (32mm) for e-tubes and .63 in. (16mm) for e-chain®.
There is no minimum spacing needed for side plates
Exception: Minimum spacing
Locking separator 6008 = .91" (23 mm)





Vertical separator 8001



Vertical separator

Unassembled	**Part No. 8001**
Assembled	**Part No. 8011**

- **Standard separator 8001 for e-chains®**
  This separator offers safe stability due to its wide base design, also when used with thick cables or hoses.



Spacers 6005-XX



Spacer (chain only)

Unassembled	**Part No. 6005**
Assembled	**Part No. 6015**

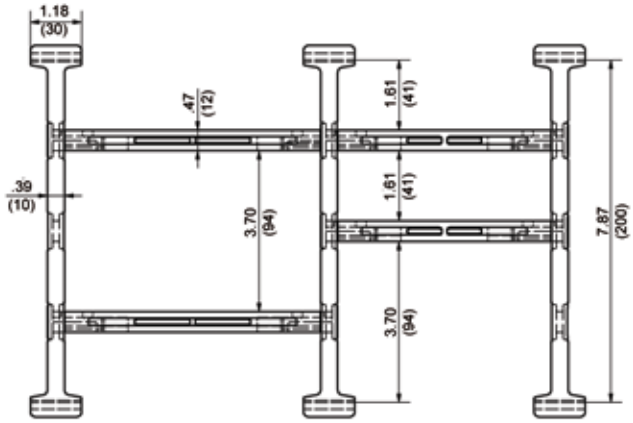
Spacers available in the following sizes:

Part No. Unassembled	Part No. Assembled	in.	(mm)
6005 -10	**6015 -10**	.39"	(10)
6005 -15	**6015 -15**	.59"	(15)
6005 -20	**6015 -20**	79"	(20)

- **NOTE ON SPACERS**
  Vertical separators are adjustable, but can be fixed in position by means of a spacer. Spacers are most often necessary for side mounted applications. The available inner height is reduced by .08" (2mm) **per spacer** (for example if one spacer is placed on either side of the separator, the overall inner height is reduced by .16" (4mm). To avoid this, place the spacers on the **outside** of the opening crossbar **(not for long travels)**.

Modular E4 shelving system safeguards large cables - Series 800





- Easy assembly
- Robust, also for large cable diameters
- Modular
- Widths from 50 to 600 mm
- For use with **vertical separator 8001** and **crossbar 450-XX**

Modular Shelving
Single sided snap in tab

Unassembled	**Part No. 8001H1**
Assembled	**Part No. 8011H1**

Modular Shelving

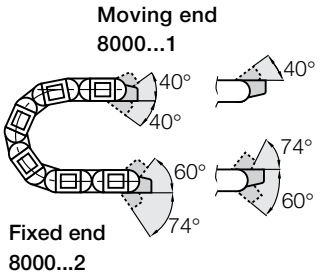
Part No. 8001H2Part No. 8011H2

PDF: igus.com/e-chain-pdfs
Product information: igus.com/e-chains

e-chain system® E4-1
Series 800
Mounting Brackets - Steel

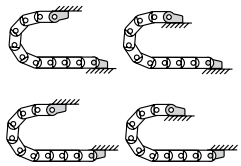
Option 1: pivoting

- For pivoting connections
- One part for all chain widths
- Electrically conductive





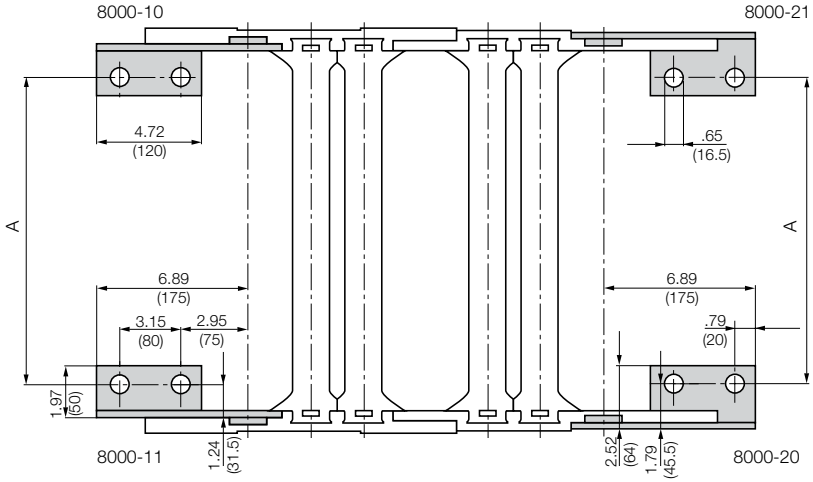




Part No. Mounting Brackets Full Set
4 parts, 2 with pin, 2 with bore
Series 800
8000-12

Part No. Mounting Bracket Moving End
2 parts, 1 left & 1 right with bore
Series 800
8000-1

Part No. Mounting Bracket Fixed End
2 parts, 1 left & 1 right with pin
Series 800
8000-2



Bracket Mounting Dimensions

	Mounting Brackets				
Width of Chain *Bi*	Part Number	Full Set	Moving End Only	Fixed End Only	A in. (mm)
7.87 (200)	8000	-12	-1	-2	5.91 (150)
9.84 (250)	8000	-12	-1	-2	7.87 (200)
11.81 (300)	8000	-12	-1	-2	9.84 (250)
12.80 (325)	8000	-12	-1	-2	10.83 (275)
13.78 (350)	8000	-12	-1	-2	11.81 (300)
15.75 (400)	8000	-12	-1	-2	13.78 (350)
17.72 (450)	8000	-12	-1	-2	15.75 (400)
19.69 (500)	8000	-12	-1	-2	17.72 (450)
21.65 (550)	8000	-12	-1	-2	19.69 (500)
23.62 (600)	8000	-12	-1	-2	21.65 (550)

Due to the design of the E4/100 series chains, please note the following when ordering brackets:

Even number of links = full set, part number ending in **-12**
Odd number of links = 2 pieces, part number ending in **-1**

e-chain system® E4-1
Series 800
Guide Trough

Guide troughs are used with applications where the upper run of the e-chain® glides on the lower run. If using igus® steel guide troughs, the following components are required:

- Full travel length of guide trough
  Part No. 90-30
- 1/2 travel length glide bars
  Part No. 90-31
- Installation sets as end connectors
  Part No. 90-50-XX

-XX indicates the length of the profile rails on which the guide trough is mounted. The values and part numbers are specified in the table on the right. Standard length of the trough components and glide bars is 6.56 ft (2m).
The required overall length of the guide trough directly correlates to the length of travel.

Example:
Length of travel 164 ft (50m)
Center mounted

Required guide troughs:
164 ft (50 m) guide trough
82 ft (25 m) glide bars
= 25 sections of (2 m) guide trough without glide bars **Part No. 90-30**
= 13 section of (2 m) guide troughs with glide bars **Part No. 90-31**
Required number of installation sets:
= Number of guide trough components + 1
= 25 + 1 = 26
Part number of the installation sets
90-50-XXX
Example:
90-50-400 for (400 m) long profile rail



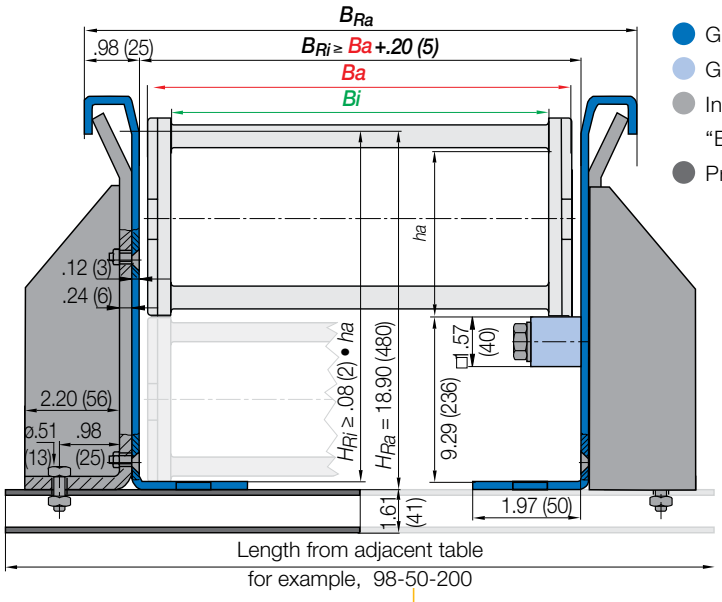
Left: Guide trough with glide bars
Right: Guide troughs without glide bars



Installation sets as section connectors

Width of Crossbar
640-**12**-200-0

	B_{Ri}	Installation Part No.
-20	10.43 (265)	**90-50-450**
-25	12.40 (315)	**90-50-500**
-30	14.37 (365)	**90-50-550**
-32	15.35 (390)	**90-50-575**
-35	16.33 (415)	**90-50-600**
-40	18.31 (465)	**90-50-650**
-45	20.28 (515)	**90-50-700**
-50	22.24 (565)	**90-50-750**
-55	24.21 (615)	**90-50-800**
-60	26.18 (665)	**90-50-850**



- Guide trough
- Glide bars
- Installation set "Basic"
- Profile rail

Individual attachment without profile rail

Standard length profile rail

* Specialized guide trough available upon request

PDF: igus.com/e-chain-pdfs
Product information: igus.com/e-chains

e-chain system® E4-1
Series 840

Price Index

Series 840

Special Options Available

ESD classification:
Electrically conductive ESD/
ATEX version upon request

Assembly Tips



Opening e-chains®: Remove crossbars and clips - Insert screwdriver into the slot, push down, release by lever action

Other Installation Methods

Vertical, hanging: consult igus®
Vertical, standing ≤ 19.69 ft (6 m)
Side-mounted, unsupp. ≤ 19.69 ft (6 m)
Rotary requires further calculation

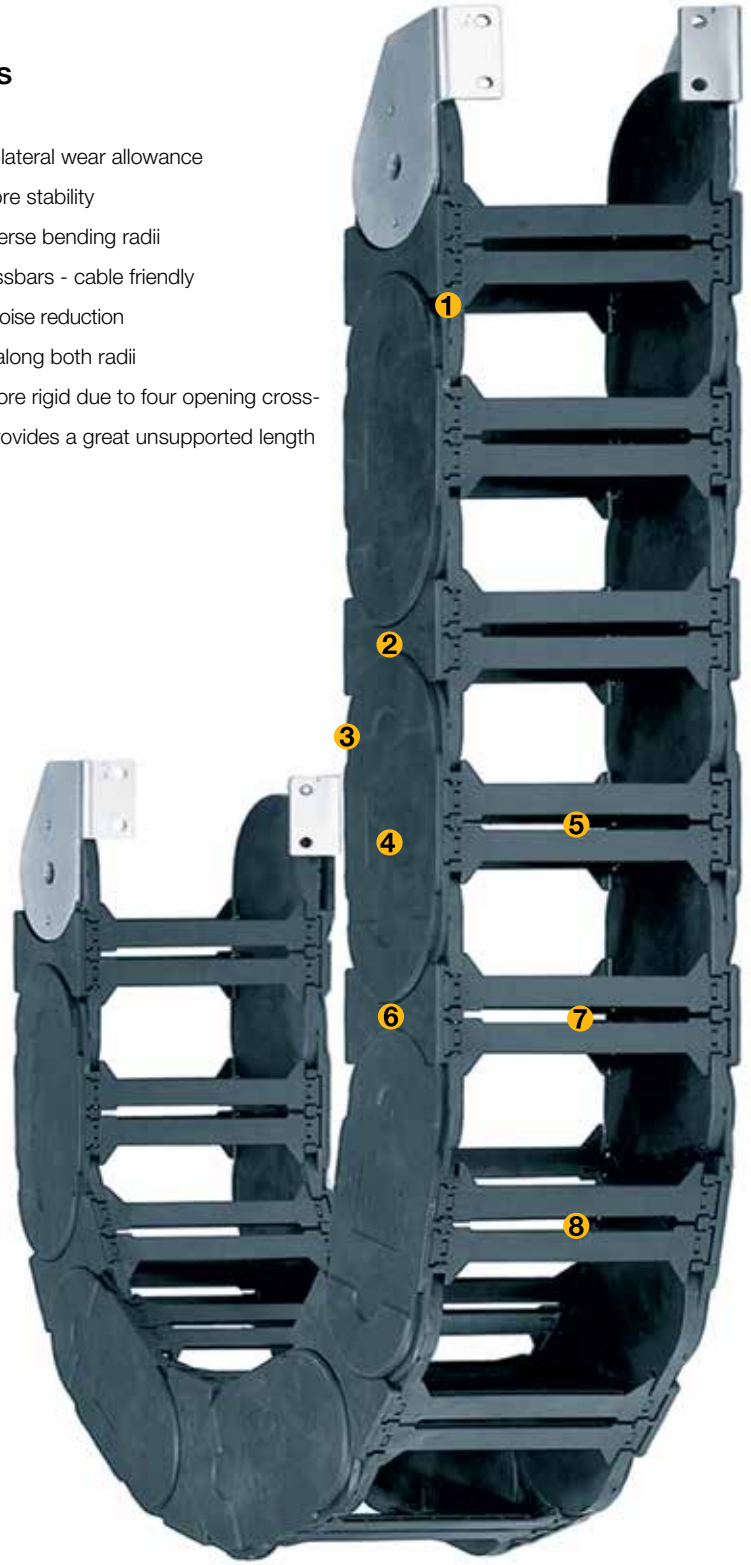
Usage Guidelines

- If a particularly big and stable e-chain® is required
- At very high speeds and/or accelerations
- For long travels
- For high additional loads
- Large cable/hose diameters

- If a more stable e-chain® with identical inner height is required
  ➤ **Series 800**

Features & Benefits

1. Dirt-repellent exterior
2. Optimized glide pads with lateral wear allowance
3. Tongue and groove for more stability
4. e-chain® available with reverse bending radii
5. Wide, rounded plastic crossbars - cable friendly
6. Stop dog with “brake” for noise reduction
7. Crossbars are removable along both radii
8. Each chain link is made more rigid due to four opening cross-bars, and consequently provides a great unsupported length



Order Example: Complete e-chain®

Please indicate chain length or number of links. Example:

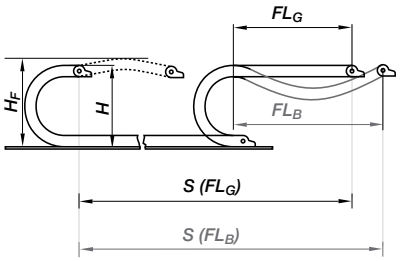
23 ft (7 m) **840-30-350-0**	**e-chain®**
With 2 separators **8411** assembled every 2nd link	**Interior Separation**
1 Set **8000-12**	**Mounting Bracket**

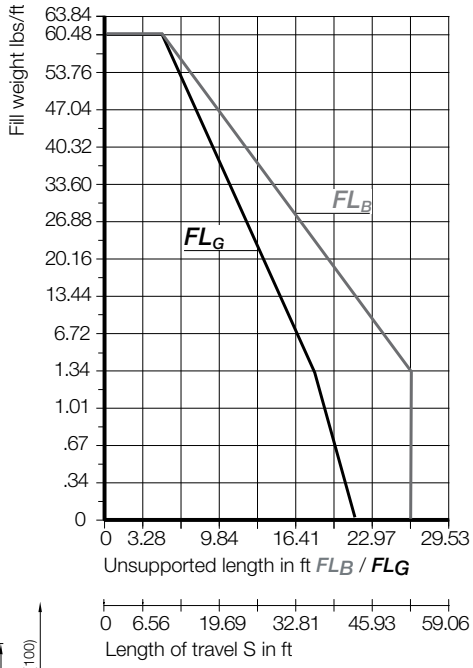
e-chain system® E4-1
Series 840
Installation Dimensions

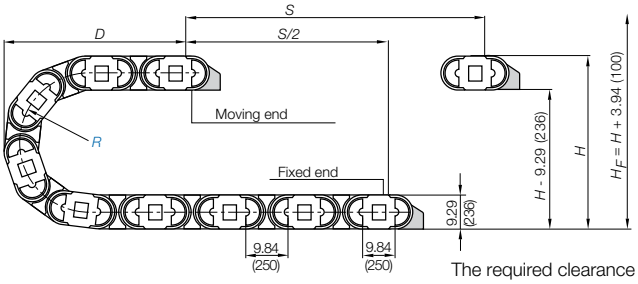
Short travel, unsupported length

- FL_B = unsupported with permitted sag
- FL_G = unsupported with straight upper run

Further information ➤ Design, Chapter 1







Pitch per link: = 9.84" (250 mm)
Links per ft (m): = 1.22 (4)
For center mount applications:
Chain length = $S/2 + K$

The required clearance height: H_F **= H + 3.94 in. (100 mm)** (with 3.36 lbs/ft (5 kg/m) fill weight. Please consult igus® if space is particularly restricted.

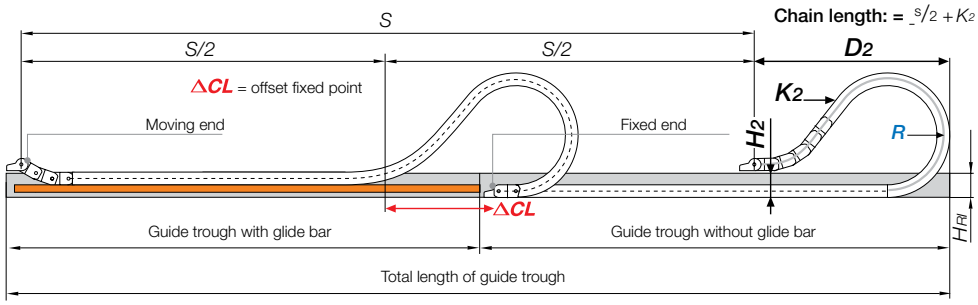
R	12.80 (325)	13.78 (350)	15.75 (400)	17.72 (450)	19.69 (500)	23.62 (600)	29.53 (750)	39.37 (1000)
H*	34.88 (886)	36.85 (936)	40.79 (1036)	44.72 (1136)	48.66 (1236)	56.53 (1436)	68.35 (1736)	88.03 (2236)
D	32.20 (818)	33.19 (843)	35.16 (893)	37.13 (943)	39.09 (993)	43.03 (1093)	48.94 (1243)	58.78 (1493)
K	60.04 (1525)	62.99 (1600)	69.29 (1760)	75.39 (1915)	81.69 (2075)	93.90 (2385)	112.60 (2860)	143.50 (3645)

For long travels with lowered mounting height

Please consult igus® when choosing to use a lowered mounting height with this series

Long travel lengths from 32.8 ft. (10 m) to max. 1,476 ft. (450 m)

For center mount applications:
Chain length: = $S/2 + K_2$



R	12.80 (325)	13.78 (350)	15.75 (400)	17.72 (450)	19.69 (500)	23.62 (600)	29.53 (750)	39.37 (1000)
H2	22.83 (580)	22.83 (580)	22.83 (580)	22.83 (580)	22.83 (580)	22.83 (580)	22.83 (580)	22.83 (580)
D2	40.55 (1030)	42.52 (1080)	54.33 (1380)	63.39 (1610)	78.74 (2000)	97.64 (2480)	*	*
K2	78.74 (2000)	78.74 (2000)	98.43 (2500)	118.11 (3000)	127.95 (3250)	157.48 (4000)	*	*
ΔCL	9.84 (250)	11.81 (300)	21.65 (550)	29.53 (750)	41.34 (1050)	55.12 (1400)	*	*

In case of travels between 39.4 and 32.8 ft (12 and 15 m) we recommend a longer unsupported length. **200 radius is not available for the e-tubes

Speed / acceleration FL_G	max. 65.6 ft/s (20 m/s) / max. 656 ft/s² (200 m/s²)
Speed / acceleration FL_B	max. 9.84 ft/s (3 m/s) / max. 19.69 ft/s² (6 m/s²)
Gliding speed / acceleration (maximum)	max. 32.8 ft/s (10 m/s) / max. 164 ft/s² (50 m/s²)
Material - permitted temperature	igumid G / -40°F (-40°C) up to +248°F (+120° C)
Flammability Class, igumid G	VDE 0304 IIC UL94 HB

Short Travels - Unsupported

Unsupported e-chains® feature positive camber over short travels. This must be accounted for when specifying the clearance height. Please refer to **Installation dimensions** for further details.

Legend

S = Length of travel
R = Bending radius
H = Nominal clearance height
D = Overlength e-chain® radius in final position
K = π • *R* + *safety buffer*
H_F = Required clearance height
H_{RI} = Trough inner height
H_2 = *Mounting height
D_2 = Overlength - long travels, gliding
K_2 = *Add-on

*If the mounting bracket location is set lower

Long Travels - Gliding

If the unsupported length is exceeded, the e-chain®/Tube must glide on itself. This requires a guide trough.
Design, Chapter 1

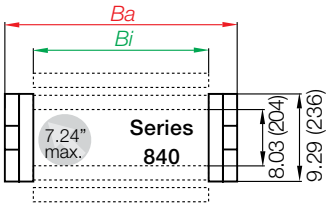
Technical Data

Details of material properties
➤ **Chapter 1**

PDF: igus.com/e-chain-pdfs
Product information: igus.com/e-chains

e-chain system® E4-1
Series 840
Product Range

Series 840 - e-chain® with crossbars every link





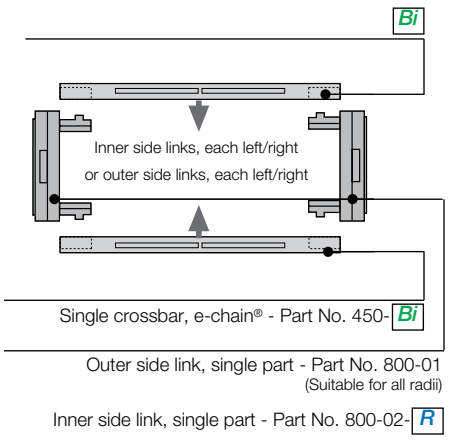
- Crossbars every link
- For use with rigid hydraulic hoses
- For particularly demanding applications
- Can be opened from both sides

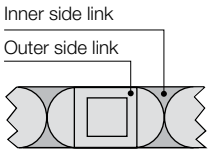
Part Number Structure

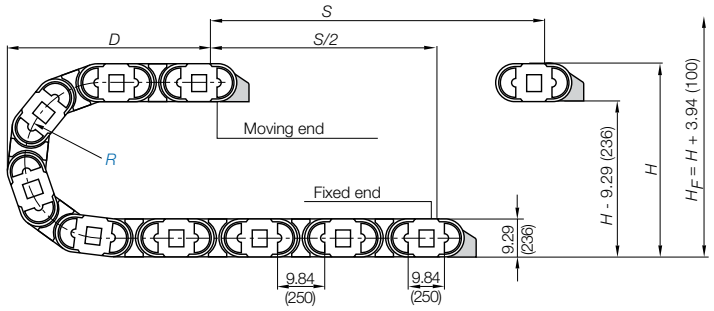
840-	30-	350-	0



e-chain® as separate parts, links and side plates







igus® e-chain system®
Telephone 1-800-521-2747
Internet: igus.com
email: sales@igus.com
QuickSpec: igus.com/quickspec

e-chain system® E4-1
Series 840
Product Range

Supplement part number with required radius. Example: 840-30-350-0
Pitch: 9.84 in. (250 mm) per link links/ft (m) = 1.22 (4)

Part Number. Crossbars Every link			*Bi* in. (mm)	*Ba* in. (mm)	840 lbs/ft (kg/m)
840-13-		-0	3.94 (100)	6.30 (160)	≈ 9.30 (13.84)
840-15-		-0	4.45 (113)	6.81 (173)	≈ 9.32 (13.87)
840-16-		-0	4.92 (125)	7.28 (185)	≈ 9.37 (13.95)
840-17-		-0	5.43 (138)	7.80 (198)	≈ 9.43 (14.04)
840-18-		-0	5.91 (150)	8.27 (210)	≈ 9.49 (14.13)
840-20-		-0	6.42 (163)	8.78 (223)	≈ 9.52 (14.17)
840-21-		-0	6.89 (175)	9.25 (235)	≈ 9.56 (14.22)
840-22-		-0	7.40 (188)	9.76 (248)	≈ 9.59 (14.27)
840-23-		-0	7.87 (200)	10.24 (260)	≈ 9.64 (14.35)
840-25-		-0	8.38 (213)	10.75 (273)	≈ 9.70 (14.43)
840-26-		-0	8.86 (225)	11.22 (285)	≈ 9.74 (14.49)
840-27-		-0	9.37 (238)	11.73 (298)	≈ 9.79 (14.57)
840-28-		-0	9.84 (250)	12.20 (310)	≈ 9.82 (14.61)
840-30-		-0	10.35 (263)	12.72 (323)	≈ 9.89 (14.72)
840-31-		-0	10.83 (275)	13.19 (335)	≈ 9.91 (14.75)
840-32-		-0	11.34 (288)	13.70 (348)	≈ 9.96 (14.82)
840-33-		-0	11.81 (300)	14.17 (360)	≈ 10.02 (14.91)
840-35-		-0	12.32 (313)	14.69 (373)	≈ 10.12 (15.06)
840-36-		-0	12.80 (325)	15.16 (385)	≈ 10.14 (15.09)
840-37-		-0	13.31 (338)	15.67 (398)	≈ 10.15 (15.11)
840-38-		-0	13.78 (350)	16.14 (410)	≈ 10.18 (15.15)
840-40-		-0	14.29 (363)	16.65 (423)	≈ 10.31 (15.34)
840-41-		-0	14.76 (375)	17.13 (435)	≈ 10.34 (15.39)
840-42-		-0	15.28 (388)	17.64 (448)	≈ 10.42 (15.50)
840-43-		-0	15.75 (400)	18.11 (460)	≈ 10.46 (15.57)
840-45-		-0	16.26 (413)	18.62 (473)	≈ 10.50 (15.63)
840-46-		-0	16.73 (425)	19.09 (485)	≈ 10.54 (15.69)
840-47-		-0	17.24 (438)	19.61 (498)	≈ 10.56 (15.72)
840-48-		-0	17.72 (450)	20.08 (510)	≈ 10.62 (15.80)
840-50-		-0	18.23 (463)	20.59 (523)	≈ 10.66 (15.87)
840-51-		-0	18.70 (475)	21.06 (535)	≈ 10.69 (15.91)
840-52-		-0	19.21 (488)	21.57 (548)	≈ 10.70 (15.93)
840-53-		-0	19.69 (500)	22.05 (560)	≈ 10.75 (16.00)
840-55-		-0	20.20 (513)	22.56 (573)	≈ 10.96 (16.31)
840-60-		-0	22.17 (563)	24.53 (623)	≈ (11.07 16.47)

Choose from the radii below for all of the above sizes
Radius (mm) Example: 840-30-350-0

	325	350	400	450	500	600	750	1000
R	12.80 (325)	13.78 (350)	15.75 (400)	17.72 (450)	19.69 (500)	23.62 (600)	29.53 (750)	39.37 (1000)
*H**	34.88 (886)	36.85 (936)	40.79 (1036)	44.72 (1136)	48.66 (1236)	56.53 (1436)	68.34 (1736)	88.03 (2236)
D	32.20 (818)	33.19 (843)	35.16 (893)	37.13 (943)	39.09 (993)	43.03 (1093)	48.94 (1243)	58.78 (1493)
K	60.04 (1525)	62.99 (1600)	69.29 (1760)	75.39 (1915)	81.69 (2075)	93.90 (2385)	112.60 (2860)	143.50 (3645)

0 = Standard color black. For other colors see Chapter 1

PDF: igus.com/e-chain-pdfs
Product information: igus.com/e-chains

e-chain system® E4-1
Series 840
Interior Separation

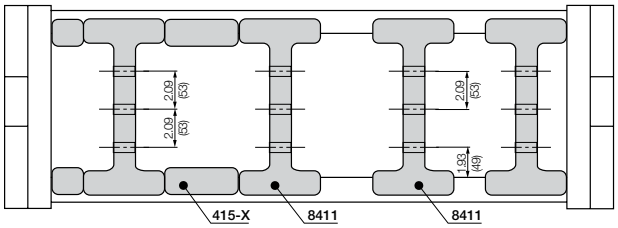
Telephone 1-800-521-2747

Internet: igus.com
email: sales@igus.com
QuickSpec: igus.com/quickspec



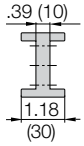
Vertical separators and spacers

Vertical separators are used if a vertical subdivision of the e-chain® interior is required. By standard, vertical separators are assembled every other e-chain® link.





Vertical separator 8401



Vertical separator

Unassembled	**Part No. 8401**
Assembled	**Part No. 8411**



Spacers 405-XX



Spacer (chain only)

Unassembled	**Part No. 405.XX**
Assembled	**Part No. 415.XX**

Spacers available in the following sizes:

Part No. Unassembled	Part No. Assembled	in.	(mm)
405 -10	**415 -10**	.39”	(10)
405 -15	**415 -15**	.59”	(15)
405 -20	**415 -20**	79”	(20)
405 -30	**415 -30**	1.18”	(30)
405 -40	**415 -40**	1.57”	(40)

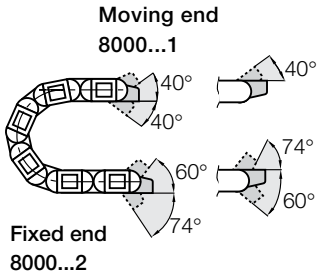
- **Standard separator 8401 for e-chains®**
  This separator offers safe stability due to its wide base design, also when used with thick cables or hoses.

- **NOTE ON SPACERS**
  Vertical separators are adjustable, but can be fixed in position by means of a spacer. Spacers are most often necessary for side mounted applications. The available inner height is reduced by .08” (2mm) **per spacer** (for example if one spacer is placed on either side of the separator, the overall inner height is reduced by .16” (4mm). To avoid this, place the spacers on the **outside** of the opening crossbar **(not for long travels)**.

e-chain system® E4-1
Series 840
Mounting Brackets

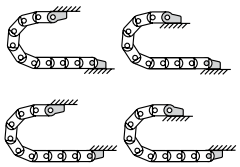
Option 1: pivoting

- For pivoting connections
- One part for all chain widths
- Electrically conductive

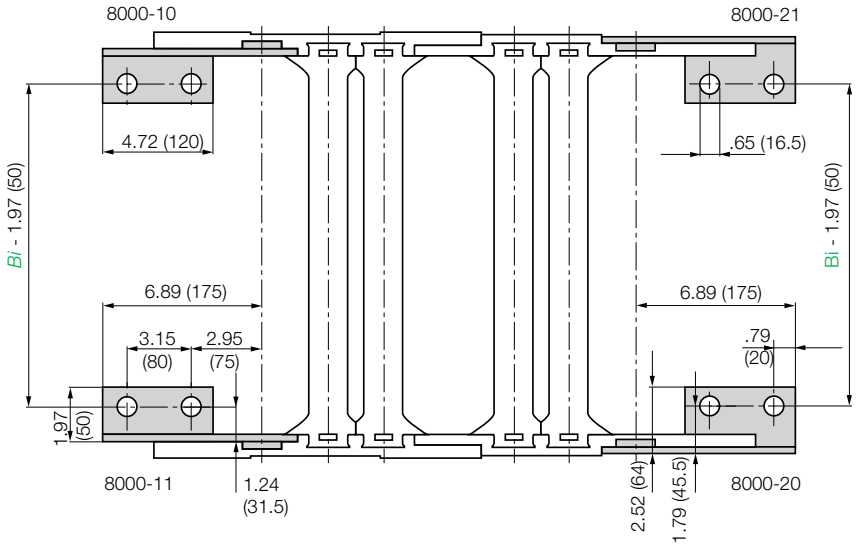








Possible installation configurations -



Part No.	Mounting bracket
8000-12	Full set
8000-1	moving end
8000-2	fixed end

Due to the design of the E4/100 series chains, please note the following when ordering brackets:

Even number of links = full set, part number ending in **-12**
Odd number of links = 2 pieces, part number ending in **-2**

PDF: igus.com/e-chain-pdfs
Product information: igus.com/e-chains

e-chain system® E4-1
Series 840
Guide Trough

Width of Crossbar
840-**20**-200-0

	B_{Ri}	Installation Part No.
-13	6.49 (165)	**90-50-350**
-15	7.01 (178)	**90-50-350**
-16	7.48 (190)	**90-50-375**
-17	7.99 (203)	**90-50-375**
-18	8.46 (215)	**90-50-400**
-20	8.98 (228)	**90-50-400**
-21	9.45 (240)	**90-50-425**
-22	9.96 (253)	**90-50-425**
-23	10.43 (265)	**90-50-450**
-25	10.94 (278)	**90-50-450**
-26	11.42 (290)	**90-50-475**
-27	11.93 (303)	**90-50-475**
-28	12.40 (315)	**90-50-500**
-30	12.91 (328)	**90-50-500**
-31	13.39 (340)	**90-50-525**
-32	13.90 (353)	**90-50-525**
-33	14.37 (365)	**90-50-550**
-35	14.88 (378)	**90-50-550**
-36	15.35 (390)	**90-50-575**
-37	15.87 (403)	**90-50-575**
-38	16.34 (415)	**90-50-600**
-40	16.85 (428)	**90-50-600**
-41	17.32 (440)	**90-50-625**
-42	17.83 (453)	**90-50-625**
-43	18.31 (465)	**90-50-650**
-45	18.82 (478)	**90-50-650**
-46	19.29 (490)	**90-50-675**
-47	19.80 (503)	**90-50-675**
-48	20.20 (513)	**90-50-700**
-50	20.79 (528)	**90-50-700**
-51	21.26 (540)	**90-50-725**
-52	21.77 (553)	**90-50-725**
-53	22.24 (565)	**90-50-750**
-55	22.76 (578)	**90-50-750**
-60	26.18 (665)	**90-50-800**

Guide troughs are used with applications where the upper run of the e-chain® glides on the lower run. If using igus® steel guide troughs, the following components are required:

- Full travel length of guide trough
  Part No. 90-30
- 1/2 travel length glide bars
  Part No. 90-31
- Installation sets as end connectors
  Part No. 90-50-XX

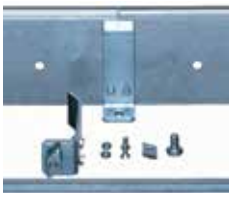
-XX indicates the length of the profile rails on which the guide trough is mounted. The values and part numbers are specified in the table on the right. Standard length of the trough components and glide bars is 6.56 ft (2m).
The required overall length of the guide trough directly correlates to the length of travel.

Example:
Length of travel 164 ft (50m)
Center mounted

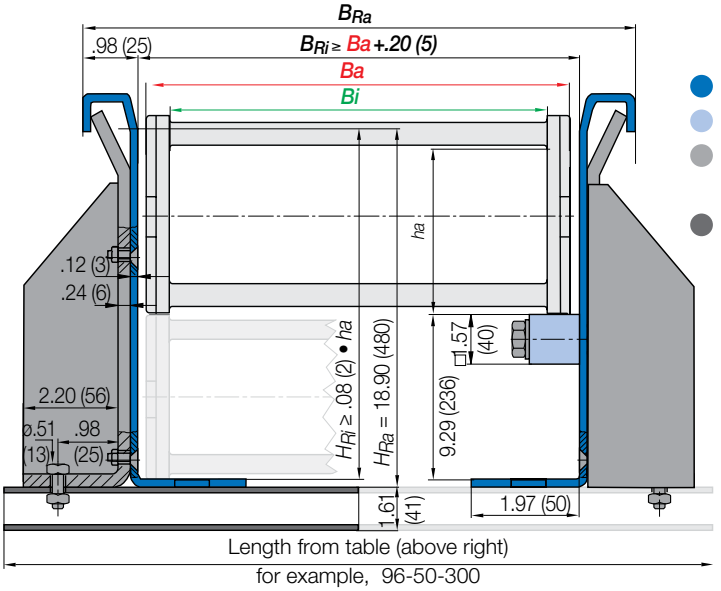
Required guide troughs:
164 ft (50 m) guide trough
82 ft (25 m) glide bars
= 25 sections of (2 m) guide trough without glide bars **Part No. 90-30**
= 13 section of (2 m) guide troughs with glide bars **Part No. 90-31**
Required number of installation sets:
= Number of guide trough components + 1
= 25 + 1 = 26
Part number of the installation sets
90-50-XXX
Example:
90-50-400 for (400 m) long profile rail



Left: Guide trough with glide bars
Right: Guide troughs without glide bars



Installation sets as section connectors



Individual attachment without profile rail

* Specialized guide trough available upon request

Standard length profile rail

For further technical information on guide troughs
➤ Chapter 9

e-chain system® E4-1
Series E4-350

Price Index

Series E4-350

Special Options Available

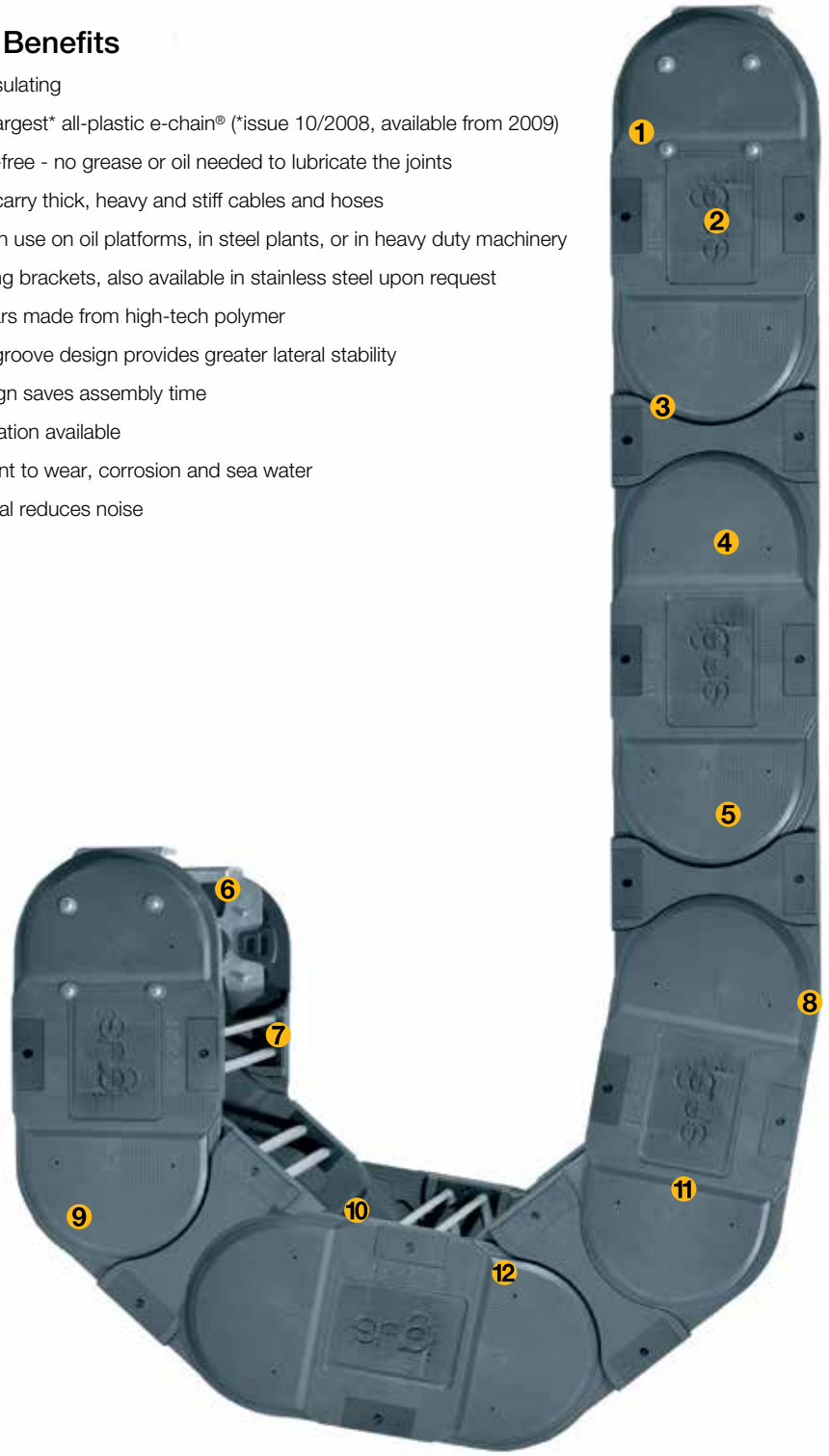
Very high fill weights possible > 100 kg/m

Very huge interior, inner height 13.78" (350 mm), inner width up to 39.37" (1000 mm)

Features & Benefits

1. Electrically insulating
2. The world's largest* all-plastic e-chain® (*issue 10/2008, available from 2009)
3. Maintenance-free - no grease or oil needed to lubricate the joints
4. Designed to carry thick, heavy and stiff cables and hoses
5. Ideal for rough use on oil platforms, in steel plants, or in heavy duty machinery
6. Steel mounting brackets, also available in stainless steel upon request
7. Solid crossbars made from high-tech polymer
8. Tongue and groove design provides greater lateral stability
9. Modular design saves assembly time
10. Interior separation available
11. Highly resistant to wear, corrosion and sea water
12. Plastic material reduces noise





Usage Guidelines

- If a maintenance-free offshore e-chain® is required
- If no use of oil and grease is needed
- If electrical insulation is necessary
- If resistance to corrosion and sea water is required
- If 100% plastics is the first choice for your application

Order Example: Complete e-chain®

Please indicate chain length or number of links. Example:

16.4 ft (5 m) **E4-350-200-500-0**	**e-chain®**
With 2 separators **351-1F** assembled every 2nd link	**Interior Separation**
1 Set **E4-350100-1-12**	**Mounting Bracket**

e-chain system® E4-1
Series E4-350
Installation Dimensions

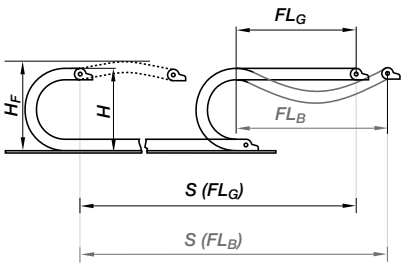
Short travel, unsupported length

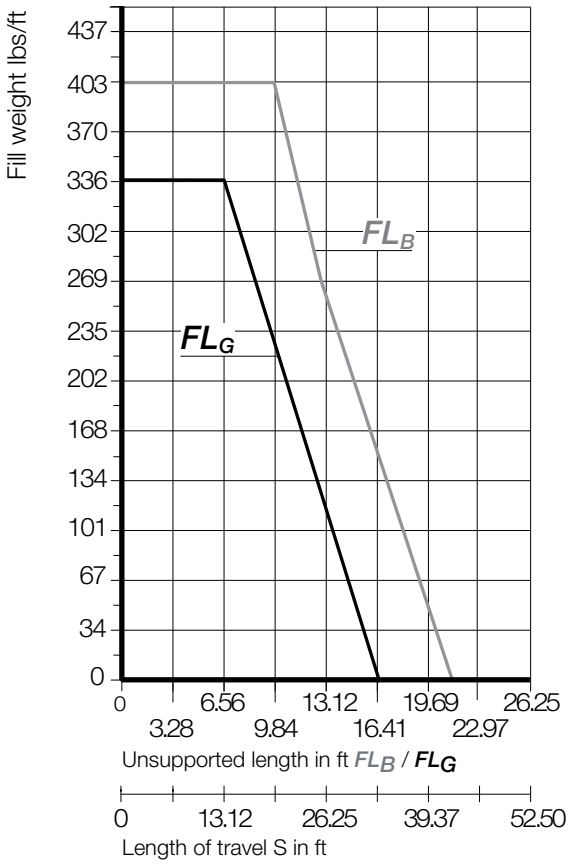
● FL_B = unsupported with permitted sag

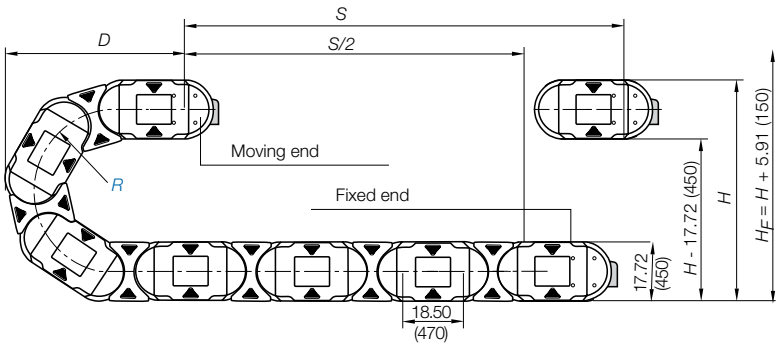
● FL_G = unsupported with straight upper run

Further information

➤ Design, Chapter 1







Pitch per link: = 18.50" (470 mm)

Links per ft (m): = .64 (2)

For center mount applications:

Chain length = $_{S}/_{2} + K$

The required clearance height: $H_F = H + 5.91$ in. (150 mm)

R	19.69 (500)	29.53 (750)	39.37 (1000)
H*	57.09 (1450)	76.77 (1950)	96.46 (2450)
D	56.30 (1430)	66.14 (1680)	75.98 (1930)
K	99.02 (2515)	129.92 (3300)	160.83 (4085)

Material - permitted temperature	igumid G / -40°F (-40°C) up to +248°F (+120° C)
Flammability Class, igumid G	VDE 0304 IIC UL94 HB

Short Travels - Unsupported

Unsupported e-chains® feature positive camber over short travels. This must be accounted for when specifying the clearance height. Please refer to **Installation dimensions** for further details.

Legend

S = Length of travel
R = Bending radius
H = Nominal clearance height
D = Overlength e-chain® radius in final position
K = π • *R* + *safety buffer*
H_F = Required clearance height

Technical Data

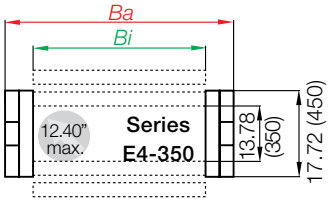
Details of material properties

➤ Chapter 1

PDF: igus.com/e-chain-pdfs
Product information: igus.com/e-chains

e-chain system® E4-1
Series E4-350

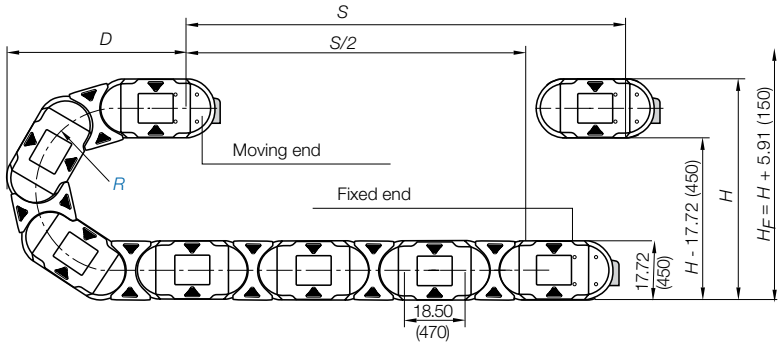
Series E4-350 - e-chain® with crossbars every link





- Crossbars every link
- For rigid hydraulic hoses
- For particularly demanding applications
- Can be opened from both sides





Part Number Structure

E4-350-400-500-0

- Color - Black
- Bending radius
- Width
- Series

Supplement part number with required radius. Example: E4-350-200-500-0
Pitch: 18.50 in. (470 mm) per link links/ft(m) = .64 (2)

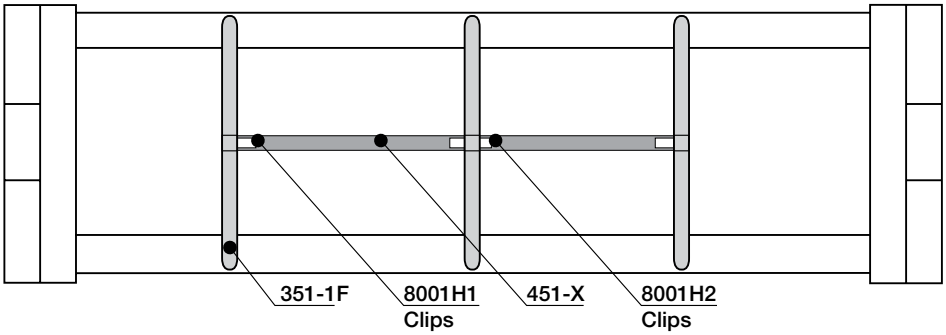
Part Number. Crossbars Every link			Bi in. (mm)	Ba in. (mm)	E4-350(61.9) lbs/ft (kg/m)
E4-350-400 -		-0	15.75 (400)	21.26 (540)	41.59 (61.9)
E4-350-500 -		-0	19.69 (500)	25.20 (640)	44.15 (65.7)
E4-350-600-		-0	23.62 (600)	29.13 (740)	46.77 (69.6)
E4-350-700 -		-0	27.56 (700)	33.07 (840)	49.32 (73.4)
E4-350-800 -		-0	31.50 (800)	37.01 (940)	51.88 (77.2)

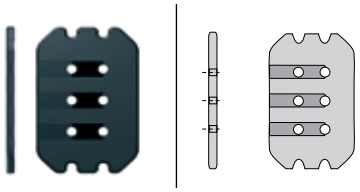
Choose from the radii below for all of the above sizes
Radius (mm) Example: E4-350-400-500-0

	500	750	1000
R	19.69 (500)	29.53 (750)	39.37 (1000)
*H**	57.09 (1450)	76.77 (1950)	96.46 (2450)
D	56.30 (1430)	66.14 (1680)	75.98 (1930)
K	99.02 (2515)	129.92 (3300)	160.83 (4085)

0 = Standard color black. For other colors see Chapter 1

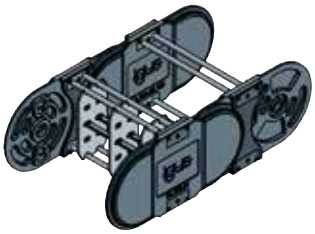
e-chain system® E4-1
Series E4-350
Interior Separation





Separator for vertical subdivision
For a vertical subdivision in 3 positions

unassembled	350.1F
assembled	351.1F



Heavy duty interior separation for cable-safe guidance



Shelf for horizontal subdivision
For horizontal separation with clip separators for vertical subdivision. Horizontal shelves of various widths can be arranged at 3 different positions

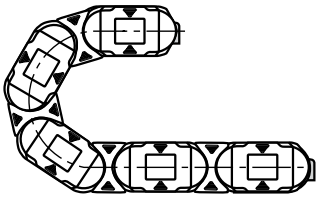
unassembled	450-X
assembled	451-X

Width X in. (mm)	Part No. unassembled	Part No. assembled	Width X in. (mm)	Part No. unassembled	Part No. assembled
1.97 (50)	**450-50**	**451-50**	12.28 (312)	**450-312**	**451-312**
2.56 (65)	**450-65**	**451-65**	12.80 (325)	**450-325**	**451-325**
2.95 (75)	**450-75**	**451-75**	13.27 (337)	**450-337**	**451-337**
3.43 (87)	**450-87**	**451-87**	13.78 (350)	**450-350**	**451-350**
3.94 (100)	**450-100**	**451-100**	14.25 (362)	**450-362**	**451-362**
4.41 (112)	**450-112**	**451-112**	14.76 (375)	**450-375**	**451-375**
4.92 (125)	**450-125**	**451-125**	15.24 (387)	**450-387**	**451-387**
5.39 (137)	**450-137**	**451-137**	15.75 (400)	**450-400**	**451-400**
5.91 (150)	**450-150**	**451-150**	16.22 (412)	**450-412**	**451-412**
6.38 (162)	**450-162**	**451-162**	16.73 (425)	**450-425**	**451-425**
6.89 (175)	**450-175**	**451-175**	17.20 (437)	**450-437**	**451-437**
7.36 (187)	**450-187**	**451-187**	17.72 (450)	**450-450**	**451-450**
7.87 (200)	**450-200**	**451-200**	18.19 (462)	**450-462**	**451-462**
8.34 (212)	**450-212**	**451-212**	18.70 (475)	**450-475**	**451-475**
8.85 (225)	**450-225**	**451-225**	19.17 (487)	**450-487**	**451-487**
9.33 (237)	**450-237**	**451-237**	19.69 (500)	**450-500**	**451-500**
9.84 (250)	**450-250**	**451-250**	20.16 (512)	**450-512**	**451-512**
10.31 (262)	**450-262**	**451-262**	20.67 (525)	**450-525**	**451-525**
10.83 (275)	**450-275**	**451-275**	21.14 (537)	**450-537**	**451-537**
11.30 (287)	**450-287**	**451-287**	21.65 (550)	**450-550**	**451-550**
11.81 (300)	**450-300**	**451-300**	23.62 (600)	**450-600**	**451-600**

PDF: igus.com/e-chain-pdfs
Product information: igus.com/e-chains

e-chain system® E4-1
Series E4-350

Moving end

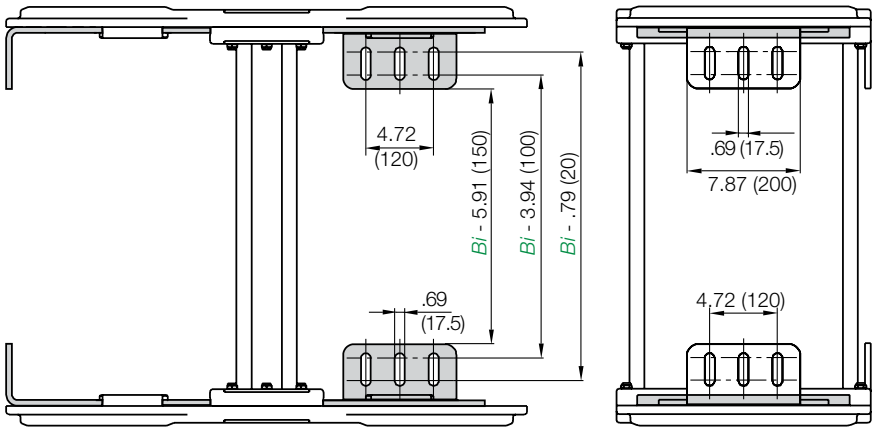


Fixed end



E4-350100-1
Moving end

E4-350100-1
Fixed end



Steel mounting brackets

E4-350100-1-12-SS	Full set (both sides) for e-chain®,
	ending with outer side link (4 pieces)
E4-350100-1-SS	Mounting bracket set (one side)
	for outer side link (2 pieces)

Stainless steel version available please add suffix **-SS**
(Material: stainless steel 1.4301)

Note: By ordering steel mounting brackets in combination with an e-chain® / e-tube, they will be delivered assembled!



- For pivoting connections
- Secure connection
- One part (two-piece) for all e-chain® widths
- Electrically conductive





Robust steel mounting bracket for secure mounting and connection

Telephone 1-800-521-2747

Internet: igus.com
email: sales@igus.com
QuickSpec: igus.com/quickspec





igus®

E4-1 light

E4-1 light
High dynamics, light and cost-effective

All around e-chains® and e-tubes for high dynamics. The E4-1 light series was developed to combine the advantages of the E2/000 and the E4-1 series. The stability of the E4-1 system and the ease of accessibility of the E2/000. The stability and price of the E4-1 light falls between these systems and makes it the perfect alternative for your application.

- Weight reduction and high stability at the same time
- 30% lighter and lower-priced than E4-1
- Crossbars, lid and shelves pivotable on either side
- Very tightly fitting lids and bottoms, virtually no gaps and openings
- Snap-open along the inner and outer radfius
- Ideal ratio of internal and external dimensions due to thinner outer links and optimized crossbar design
- Inner diameter completely accessible for easy filling

Typical industries and applications

- Machine tools
- General mechanical engineering



Low noise operation due to integrated “brakes”

ESD classification: Electrically conductive
ESD/ATEX version upon request

High torsional rigidity



New snap-open machanism, Series E4-1 and R4-1 Light, choice of snap-open on left or right



Denseness test at the igus® lab: High chip protection in the test. Stop-dogs completely free of xhips



Lightweight, stable E4-1 light e-chains® now available as a closed e-tube. Very tight closing, rounded lids

e-chain system® E4-1 light
Selection Guide



Crossbars every link

Crossbars on both sides pivotable, snap-open along the inner and outer radius

Series	Inner height *hi* in.	(mm)	Inner width *Bi* in.	(mm)	Outer width *Ba* in.	(mm)	Outer height *ha* in.	(mm)	Bending radius *R* in.	(mm)
E4-31L	1.22	(31)	1.57-6.89	(40-175)	2.13-7.44	(54-189)	1.65	(42)	2.16-9.84	(55-250)
E4-38L	1.50	(38)	1.97-11.81	(50-300)	2.60-12.44	(66-316)	2.13	(54)	2.48-11.81	(63-300)
E4-48L	1.89	(48)	1.97-11.81	(50-300)	2.76-12.60	(70-320)	2.52	(64)	2.95-13.78	(75-350)
E4-64L	2.52	(64)	3.43-7.87	(87-200)	4.45-7.91	(113-201)	3.31	(84)	3.94-15.75	(100-400)



e-tubes

Fully enclosed, lids on both sides pivotable, snap-open along the inner and outer radius

Series	Inner height *hi* in.	(mm)	Inner width *Bi* in.	(mm)	Outer width *Ba* in.	(mm)	Outer height *ha* in.	(mm)	Bending radius *R* in.	(mm)
R4-31L	1.22	(31)	1.97-3.94	(50-100)	2.52-4.49	(64-114)	1.65	(42)	2.95-9.84	(075-250)
R4-38L	1.50	(38)	1.97-9.84	(50-250)	2.60-10.47	(66-266)	2.13	(54)	4.92-11.81	(125-300)
R4-48L	1.89	(48)	2.95-9.84	(50-250)	2.76-10.63	(70-270)	2.52	(64)	4.92-13.78	(125-350)

E4-1 light e-chains® - options and accessories



pivoting and locking KMA connection elements possible



Extender crossbars increase the inner height by 1.91” (48.5 mm)



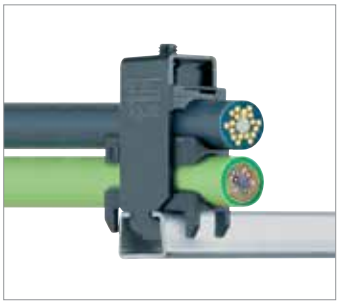
Guide troughs available in steel or aluminum versions



New, particularly cable-friendly interior separation program available



KMA mounting brackets with attachment options on all sides



Wide variety of strain relief options available

e-chain system® E4-1 light
Assembly instructions

E4-1 light e-chains® - Assembly



Line up the two inner side links, side by side



Attach and outer side link between and push side links together

E4-1 light e-chains® - Assembly





Snap the crossbars into place

E4-1 light e-chains® - Opening



To open, place screwdriver on the inside of the fastening mechanism and pry to the outside.

Available from stock. Orders ship as early as today.*

*On average 90% of orders ship the same day..

e-chain system® E4-1 light
Series E4-31L/R4-31L

Price Index

Series E4-31L | Series R4-31L

Special Options Available

Low noise version available with special rubber pads

Cleanroom test upon request

ESD classification: Electrically conductive ESD/ ATEX version upon request

Assembly Tips



Opening To open, insert the screwdriver into the locking mechanism and pry it open outwards

Other Installation Methods

- **Vertical, hanging ≤ 131 ft (40 m)**
- **Vertical, standing ≤ 8.20 ft (2.5 m)**
- **Side-mounted, unsupp. ≤ 1.99 ft (0.6 m)**
- **Rotary requires further calculation**

Usage Guidelines

- If a lightweight, cost-effective e-chain® for high dynamics is required
- If very tight fitting lids and bottoms are required
- If short assembly times are required
- If optimized interior-exterior dimensions ratio is needed

- When the e-chain® needs to be extremely quiet (32dB(A)) with very low vibration
  ➤ **Series E6-1, Chapter 7**
- When the e-chain® is to be used in cleanrooms (cleanroom ISO class 1)

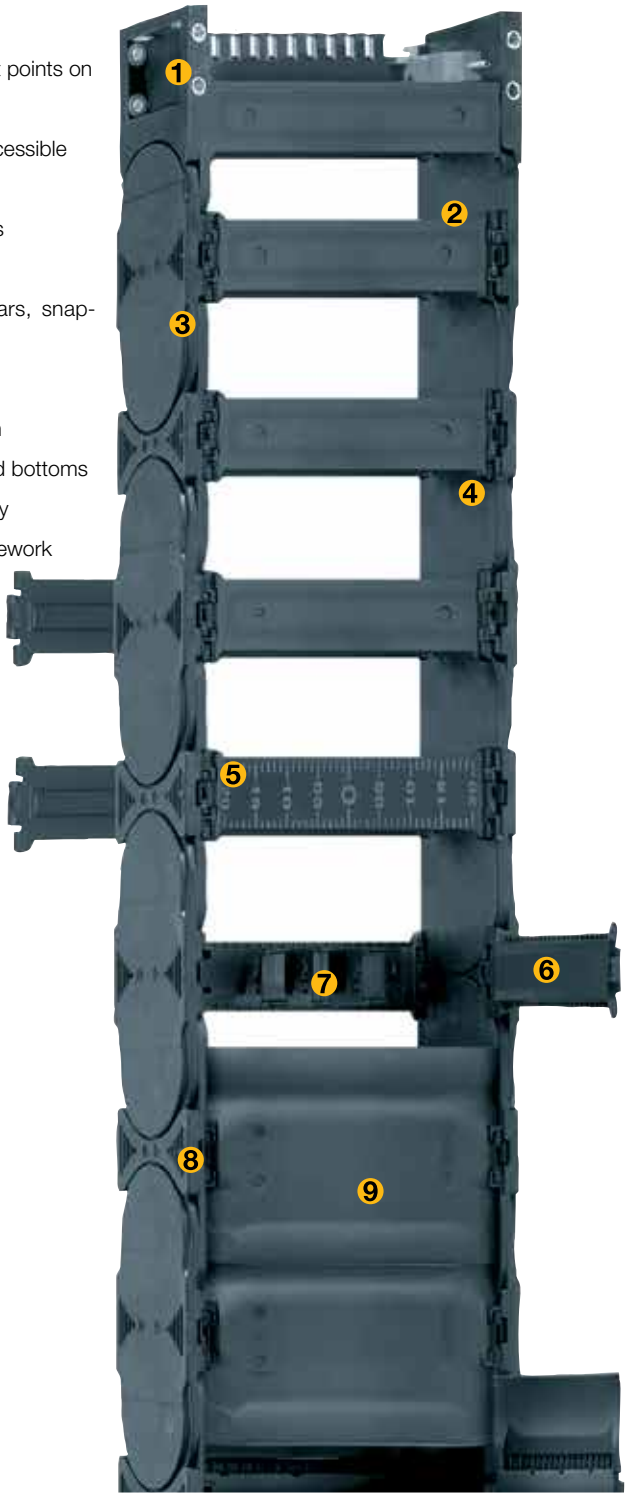
➤ **Series E6-1, Chapter 7**

- If even higher strength is required

➤ **Series E4-1, Chapter 6**

Features & Benefits

1. KMA mounting brackets with attachment points on all sides
2. Easy filling: inner diameter completely accessible
3. High stability due to undercut design
4. Efficient: less weight, enhanced dynamics
5. Notch crossbar with visual scale
6. Short assembly time: pivotable crossbars, snap-open along the inner and outer radius
7. Numerous interior separation possibilities
8. Straight run due to inner/outer link design
9. Chip protection: very tightly fitting lids and bottoms
10. Version NCST “without camber” simply by turning outer links without unnecessary rework





Also available without camber. Add NCST to the end of the part number.
Ex: E4-31L-100-200NCST

Order Example: Complete e-chain®

Please indicate chain length or number of links. Example:

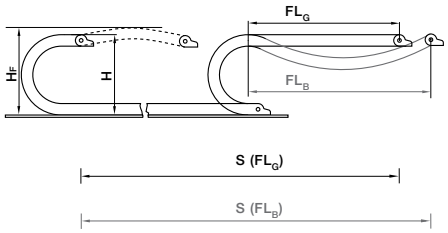
13.12 ft (4 m) **E4-31L-100-200-0**	**e-chain®**
With 2 separators **31-1-1** assembled every 2nd link	**Interior Separation**
1 Set **E4-310-100-12P**	**Mounting Bracket**

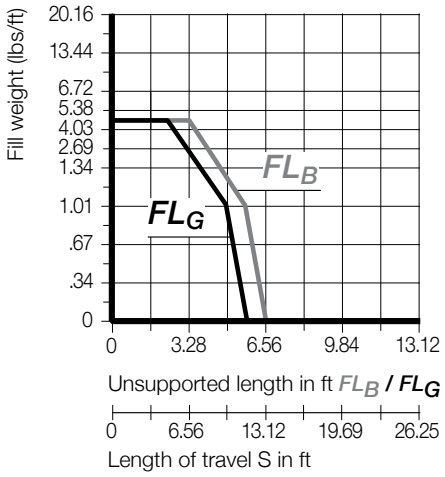
e-chain system® E4-1 light
Series E4-31L/R4-31L
Installation Dimensions

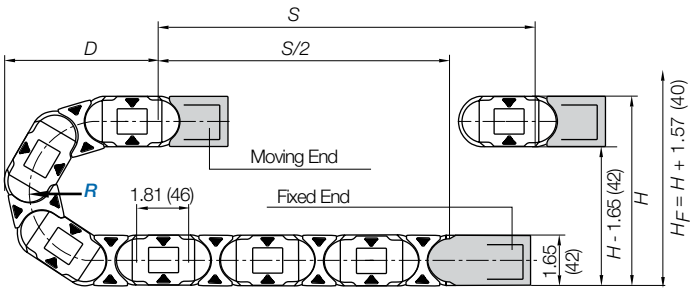
Short travel, unsupported length

- FL_B = unsupported with permitted sag
- FL_G = unsupported with straight upper run

Further information ➤ Design, Chapter 1







Pitch per link: = 1.81" (46 mm)
Links per ft (m): = 6.6 (22)
For center mount applications:
Chain length = $\frac{S}{2}$ + K

Short Travels - Unsupported

Unsupported e-chains® feature positive camber over short travels. This must be accounted for when specifying the clearance height. Please refer to for further details.

Legend

S = Length of travel
R = Bending radius
H = Nominal clearance height
D = Overlength e-chain® radius in final position
K = π • *R* + *safety buffer*
H_F = Required clearance height
H_{RI} = Trough inner height
H_2 = *Mounting height
D_2 = Overlength - long travels, gliding
K_2 = *Add-on
*If the mounting bracket location is set lower

The required clearance height: ***H_F = H* + 1.57 in. (40 mm)** (with .67 lbs/ft (1.0 kg/m) fill weight. Please consult igus® if space is particularly restricted.

R	2.16 (055[1])	2.48 (063[1])	2.95 (075)	3.94 (100)	4.92 (125)	5.91 (150)	6.89 (175)	7.87 (200)	9.84 (250)
H	5.98 (152)	6.61 (168)	7.56 (192)	9.52 (242)	11.50 (292)	13.46 (342)	15.43 (392)	17.40 (442)	21.34 (542)
D	5.71 (145)	6.02 (153)	6.50 (165)	7.48 (190)	8.46 (215)	9.45 (240)	10.43 (265)	11.42 (290)	13.39 (340)
K	10.43 (265)	11.42 (290)	12.99 (330)	16.14 (410)	19.09 (485)	22.24 (565)	25.39 (645)	28.54 (725)	34.65 (880)

1) Radius not available for e-tubes

For support of the lower run, **see Chapter 9** of the main catalog for the **Support Tray tool kit**

Speed / acceleration FL_G	max. 65.6 ft/s (20 m/s) / max. 656 ft/s² (200 m/s²)
Speed / acceleration FL_B	max. 9.84 ft/s (3 m/s) / max. 19.69 ft/s² (6 m/s²)
Gliding speed / acceleration (maximum)	max. 16.4 ft/s (5 m/s) / max. 82 ft/s² (25 m/s²)
Material - permitted temperature	igumid G / -40°F (-40°C) up to +248°F (+120° C)
Flammability Class, igumid G	VDE 0304 IIC UL94 HB

Technical Data

Details of material properties
➤ Chapter 1

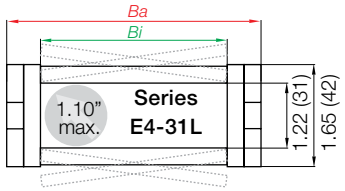
PDF: igus.com/e-chain-pdfs
Product information: igus.com/e-chains

e-chain system® E4-1 light
Series E4-31L/R4-31L
Product Range

Telephone 1-800-521-2747

Internet: igus.com
email: sales@igus.com
QuickSpec: igus.com/quickspec

Series E4-31L - e-chain® with crossbars every link



- Crossbars every link
- For use with rigid hydraulic hoses
- For particularly demanding applications
- Can be opened from both sides

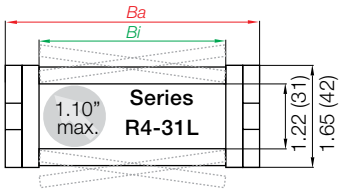
Part Number Structure

E4-31L | 100- | 200- | 0

- Color - Black
- Bending radius
- Width
- Series



Series R4-31L - fully enclosed e-tube



- Fully enclosed
- Excellent cable and hose protection against dirt
- Protection against hot chips
- Lids along inner radius are completely removable
- Lids along the outer radius are single-sided, snap open, hinged on one side as well as completely removable

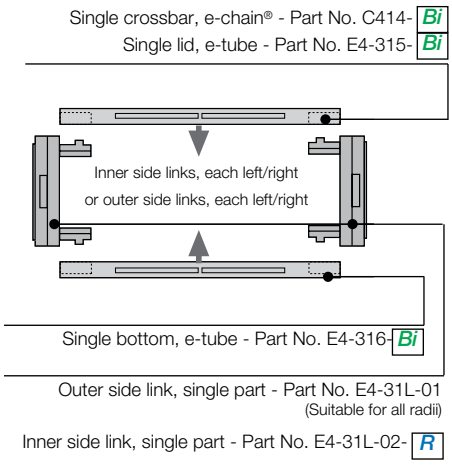
Part Number Structure

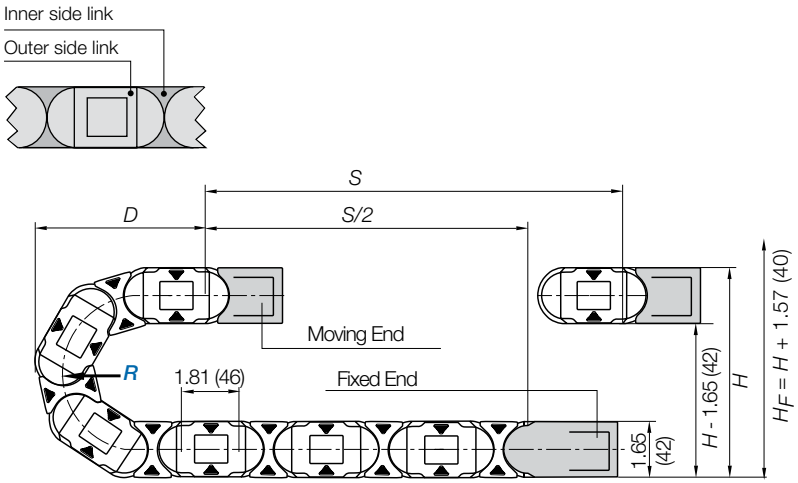
R4-31L- | 100- | 200- | 0

- Color - Black
- Bending radius
- Width
- Series



e-chain® as separate parts, links and side plates





e-chain system® E4-1 light
Series E4-31L/R4-31L
Product Range

Supplement part number with required radius. Example: E4-31L-100-200-0
Pitch: 1.81 in. (46 mm) per link links/ft (m) = 6.6 (22)

Part Number				Bi	Ba	Weight	
Crossbars Every link	Tube Version			in. (mm)	in. (mm)	E4-31L lbs/ft (kg/m)	R4-31L lbs/ft (kg/m)
E4-31L-040-		□	-0	1.97 (40)	2.13 (54)	≈ 0.47 (0.70)	–
E4-31L-050-	R4-31L-050-	□	-0	1.97 (50)	2.52 (64)	≈ 0.54 (0.74)	≈ 0.58(0.87)
E4-31L-062-		□	-0	2.44 (62)	2.99 (76)	≈ 0.51 (0.76)	–
E4-31L-075-		□	-0	2.95 (75)	3.50 (89)	≈ 0.52 (0.78)	≈ 0.68(1.01)
E4-31L-087-		□	-0	3.94 (87)	3.98 (101)	≈ 0.56 (0.83)	–
E4-31L-100-	R4-31L-100-	□	-0	3.94 (100)	4.49 (114)	≈ 0.59 (0.88)	≈ 0.74(1.10)
E4-31L-112-		□	-0	4.41 (112)	4.96 (126)	≈ 0.62 (0.93)	–
E4-31L-125-		□	-0	4.92 (125)	5.47 (139)	≈ 0.64 (0.96)	≈ 0.86 (1.28)
E4-31L-150-		□	-0	5.91 (150)	6.46 (164)	≈ 0.67 (1.00)	≈ 0.94 (1.40)
E4-31L-162-		□	-0	6.38 (162)	6.93 (176)	≈ 0.70 (1.04)	–
E4-31L-175-		□	-0	6.89 (175)	7.44 (189)	≈ 0.75 (1.13)	≈ 1.04 (1.55)

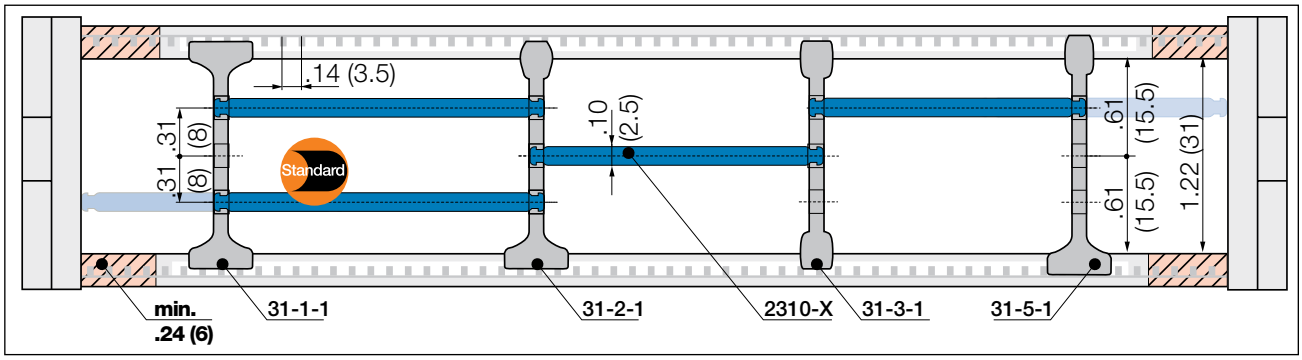
Choose from the radii below for all of the above sizes
Radius (mm) Example: E4-31L-100-200-0

	055[1)]	063[1)]	075	125	150	175	200	250	300
R	2.16 (055[1)])	2.48 (063[1)])	2.95 (075)	3.94 (100)	4.92 (125)	5.91 (150)	6.89 (175)	7.87 (200)	9.84 (250)
H	5.98 (152)	6.61 (168)	7.56 (192)	9.52 (242)	11.50 (292)	13.46 (342)	15.43 (392)	17.40 (442)	21.34 (542)
D	5.71 (145)	6.02 (153)	6.50 (165)	7.48 (190)	8.46 (215)	9.45 (240)	10.43 (265)	11.42 (290)	13.39 (340)
K	10.43 (265)	11.42 (290)	12.99 (330)	16.14 (410)	19.09 (485)	22.24 (565)	25.39 (645)	28.54 (725)	34.65 (880)

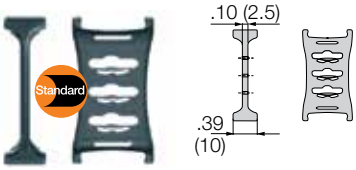
1) Radius not available for e-tubes
For other colors see Chapter 1

PDF: igus.com/e-chain-pdfs
Product information: igus.com/e-chains

e-chain system® E4-1 light
Series E4-31L/R4-31L
Interior Separation



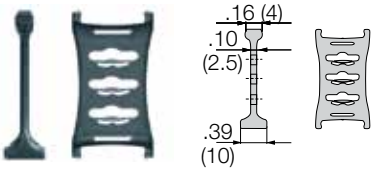
Note e-tube: Please maintain a lateral spacing of .24" (6 mm) between the separators and the side links. In the standard configuration separators are assembled every 2nd e-chain® link



Separator, wide base

Unassembled	**Part No. 31-1**
Assembled	**Part No. 31-1-1**

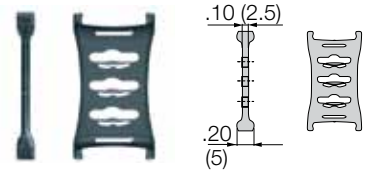
- **Standard separator 31-1**
  for all applications
  Separator with wide base for maximum locking strength and safe standing in e-chains® and e-tubes.



Separator, narrow head

Unassembled	**Part No. 31-2**
Assembled	**Part No. 31-2-1**

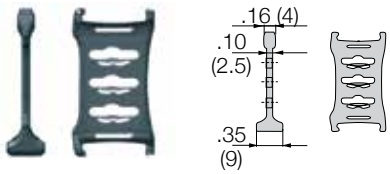
- **Separator 31-2**
  For even faster installation
  Firm hold to one side with a wide base, narrow on opposed side for easy cable assembly (slight grip).



Separator, narrow base

Unassembled	**Part No. 31-3**
Assembled	**Part No. 31-3-1**

- **Separator 31-3**
  For many thin cables
  Separator with a narrow base for a large number of thin cables side by side. Saves space in e-chains®.

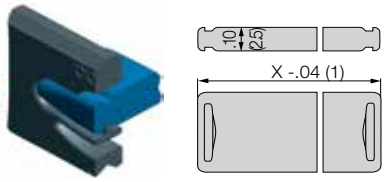


Notch separator for notch crossbar

Unassembled	**Part No. 31-5**
Assembled	**Part No. 31-5-1**

- **Separator 31-5**
  Locks safely in preset increments
  Notch separator for exact positioning in e-chains®. Recommended for side-mounted applications.

Lockable full-width shelves - for the standard interior separation



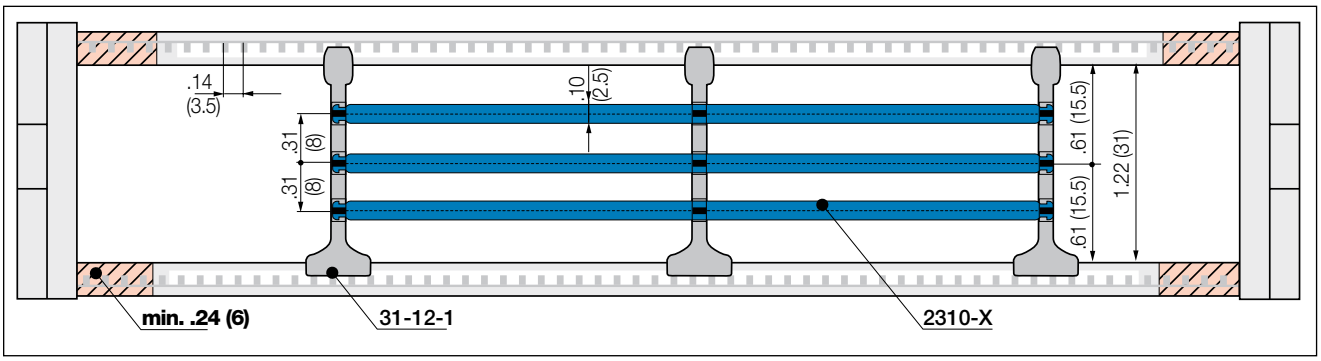
Full width shelf, lockable

Unassembled	**Part No. 2300-X**
Assembled	**Part No. 2310-X**

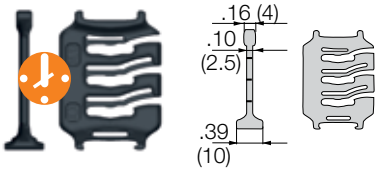
- **Full width shelf, lockable**
  Shelf locks safely into separators on both ends, fixed width possible. Can be used as full width or partial shelf

Width X in.	(mm)	Part No. Unassembled	Part No. Assembled	Width X in.	(mm)	Part No. Unassembled	Part No. Assembled	Width X in.	(mm)	Part No. Unassembled	Part No. Assembled
(015)		**2300-015**	**2310-015**	(060)		**2300-060**	**2310-060**	(087)		**2300-087**	**2310-87**
(025)		**2300-025**	**2310-025**	(062)		**2300-062**	**2310-062**	(090)		**2300-090**	**2310-90**
(030)		**2300-030**	**2310-030**	(065)		**2300-065**	**2310-065**	(100)		**2300-100**	**2310-100**
(038)		**2300-038**	**2310-038**	(070)		**2300-070**	**2310-070**	(103)		**2300-103**	**2310-103**
(040)		**2300-040**	**2310-040**	(075)		**2300-075**	**2310-075**	(110)		**2300-110**	**2310-110**
(050)		**2300-050**	**2310-050**	(077)		**2300-077**	**2310-077**	(120)		**2300-120**	**2310-120**
(057)		**2300-057**	**2310-057**	(080)		**2300-080**	**2310-080**	(125)		**2300-125**	**2310-125**

e-chain system® E4-1 light
Series E4-31L/R4-31L
Interior Separation



Note e-tube: Please maintain a lateral spacing of .24" (6 mm) between the separators and the side links. In the standard configuration separators are assembled every 2nd e-chain® link



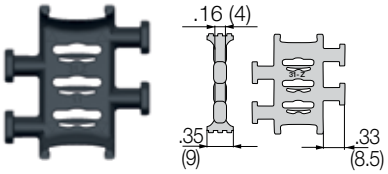
Lean Separator

Unassembled	**Part No. 31-12**
Assembled	**Part No. 31-12-1**

- **Lean separators 31-12**
  New design allows extremely fast fitting of shelves in several layers, which significantly reduces assembly time. Enables extremely fast replacement of individual cables in a very full e-chain®.



- **Lean separator design - several layers of cables fitted quickly, save up to 50%* assembly time**
  (*Lean separator vs. standard separator - measured on a 4m long e-chain® fitted with 12 cables in the igus® harnessing factory)



Separator with integrated strain relief

Unassembled	**Part No. 31-Z**
Assembled	**Part No. 31-Z-1**

- **Separator 31-Z**
  with integrated strain relief
  Can be integrated into the mounting bracket or placed at any point in the e-chain®. Combines strain relief and interior separation, for restricted space conditions. Strain relief separator is easy to assemble without any tools

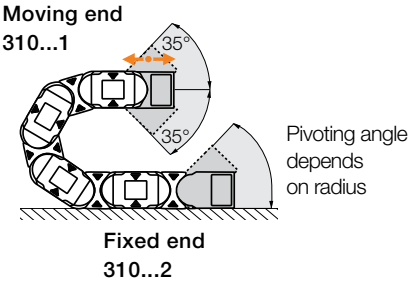
PDF: igus.com/e-chain-pdfs
Product information: igus.com/e-chains

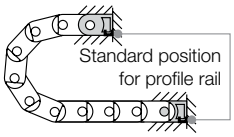
e-chain system® E4-1 light
Series E4-31L
Mounting Brackets - KMA

Standard

Option 1: pivoting

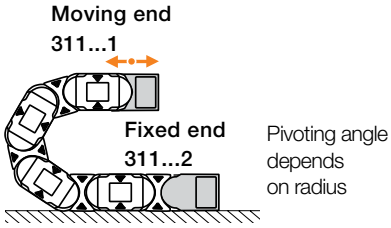
- Recommended for unsupported and gliding applications
- Attachment capability on all sides
- Bolted connection outside of chain cross-section
- Space restricted conditions
- Corrosion resistant

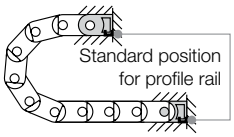




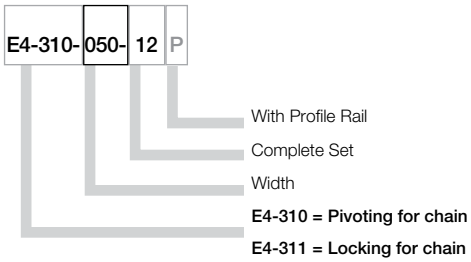
Option 2: locking

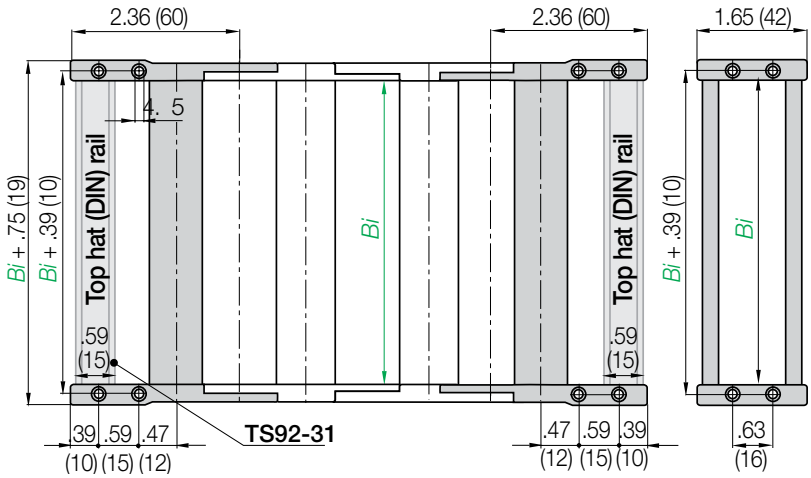
- Profile rail option
- Universal use
- Corrosion resistant
- Vertical hanging/standing travels
- Extreme accelerations





Part Number Structure





Due to the design of the E4-31L series chains, please note the following when ordering brackets:
Even number of links = full set, part number ending in **-12**; **Odd number of links =** 2 pieces, part number ending in **-1**

Part number examples are shown for pivoting brackets for e-chain.
For locking brackets change part number to 311

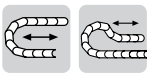
Part No. Full Set (pivoting)
Series E4-31L
E4-310-Width-12

Part No. Full Set (pivoting)
with profile rail
Series E4-31L
E4-310-Width-12P

Width	Part No. Full Set chain			With Profile Rail	*Bi* in. (mm)
	Pivoting	Locking			
-040	E4-310	E4-311	-040-12	P	1.57 (40)
-050	E4-310	E4-311	-050-12	P	1.97 (50)
-062	E4-310	E4-311	-062-12	P	2.68 (62.5)
-075	E4-310	E4-311	-075-12	P	2.95 (75)
-087	E4-310	E4-311	-087-12	P	3.43 (87.5)
-100	E4-310	E4-311	-100-12	P	3.94 (100)

Width	Part No. Full Set chain			With Profile Rail	*Bi* in. (mm)
	Pivoting	Locking			
-112	E4-310	E4-311	-112-12	P	4.41 (112.5)
-125	E4-310	E4-311	-125-12	P	4.92 (125)
-150	E4-310	E4-311	-150-12	P	5.91 (150)
-162	E4-310	E4-311	-162-12	P	6.38 (162.5)
-175	E4-310	E4-311	-175-12	P	6.61 (175)

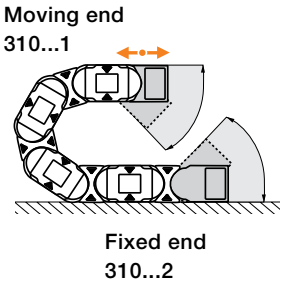
e-chain system® E4-1 light
Series R4-31L
Mounting Brackets - KMA

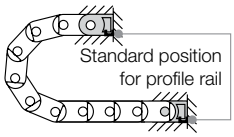


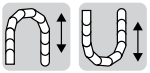
Standard

Option 1: pivoting

- Recommended for unsupported and gliding applications
- Attachment capability on all sides
- Bolted connection outside of chain cross-section
- Space restricted conditions
- Corrosion resistant

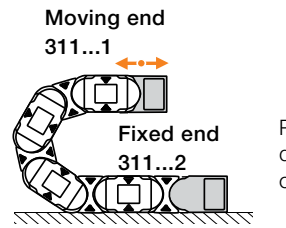


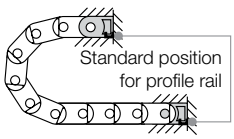




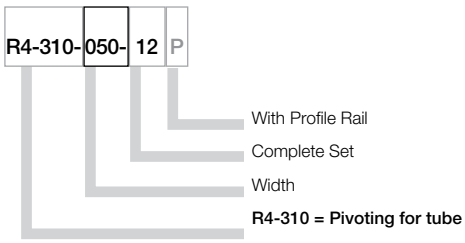
Option 2: locking

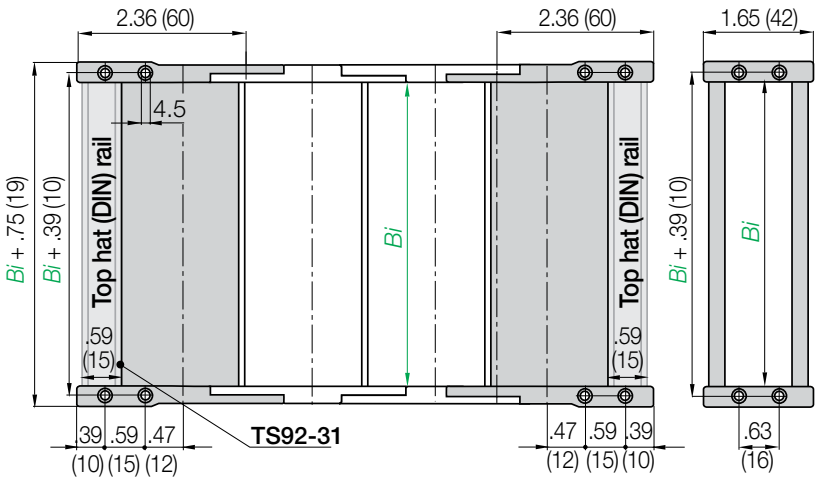
- Profile rail option
- Universal use
- Corrosion resistant
- Vertical hanging/standing travels
- Extreme accelerations





Part Number Structure





Due to the design of the R4-31L series chains, please note the following when ordering brackets:
Even number of links = full set, part number ending in **-12**; **Odd number of links =** 2 pieces, part number ending in **-1**

Part number examples are shown for pivoting brackets for e-chain.
For locking brackets change part number to 311

Part No. Full Set (pivoting)
Tube Series R4-31L
R4-310-Width-12

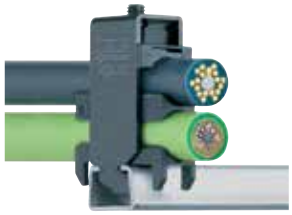
Part No. Full Set (pivoting)
with Profile Rail
Tube Series R4-31L
R4-310-Width-12P

Width	Part No. Full Set e-tube			With Profile Rail	*Bi*
	Pivoting	Locking			in. (mm)
-050	R4-310	R4-311	-050-12	P	1.97 (50)
-100	R4-310	R4-311	-100-12	P	3.94 (100)

PDF: igus.com/e-chain-pdfs
Product information: igus.com/e-chains

e-chain system® E4-1 light
Series E4-31L/R4-31L
Strain Relief

Chainfix clamps for the profile rail



igus® Chainfix strain relief elements are available in either steel or stainless steel. They can be adjusted with a hexagon socket and are available in single, double and triple configurations.

Part No. Single Clamp		Part No. Double Clamp		Part No. Triple Clamp		Cable ø	
Steel	Stainless	Steel	Stainless	Steel	Stainless	in.	(mm)
CFX12-1	CFX12-1E	CFX12-2	CFX12-2E	CFX12-3	–	.24 - .47	(06 - 12)
CFX14-1	CFX14-1E	CFX14-2	CFX14-2E	CFX14-3	–	.47 - .55	(12 - 14)
CFX16-1	CFX16-1E	CFX16-2	CFX16-2E	CFX16-3	–	.55 - .63	(14 - 16)
CFX18-1	CFX18-1E	CFX18-2	CFX18-2E	CFX18-3	–	.63 - .71	(16 - 18)
CFX20-1	CFX20-1E	CFX20-2	CFX20-2E	CFX20-3	–	.71 - .79	(18 - 20)
CFX22-1	CFX22-1E	CFX22-2	CFX22-2E	CFX22-3	–	.79 - .87	(20 - 22)
CFX26-1	CFX26-1E	CFX26-2	CFX26-2E	–	–	.87 - 1.02	(22 - 26)
CFX30-1	CFX30-1E	CFX30-2	CFX30-2E	–	–	1.02 - 1.18	(26 - 30)
CFX34-1	CFX34-1E	CFX34-2	CFX34-2E	–	–	1.18 - 1.34	(30 - 34)
CFX38-1	CFX38-1E	–	–	–	–	1.34 - 1.50	(34 - 38)
CFX42-1	CFX42-1E	–	–	–	–	1.50 - 1.65	(38 - 42)

For more information please refer to strain relief section of Chapter 10

Strain relief with tiewrap teeth



Part No.	For series	Inner height *hi* in. (mm)	For use in
CFV-31-N15	E4-31L/R4-31L	1.22 (31)	Top-hat (DIN) rail 15 (TS92.31)

PDF: igus.com/e-chain-pdfs
Product information: igus.com/e-chains









e-chain system® E4-1 light
Series E4-38L/R4-38L

1.50 1.50

Price Index

Series E4-38L Series R4-38L

Special Options Available

Low noise version available with special rubber pads

Clean-Room Cleanroom test upon request

EX ESD classification: Electrically conductive ESD/ ATEX version upon request

Assembly Tips



Opening To open, insert the screwdriver into the locking mechanism and pry it open outwards

Other Installation Methods

Vertical, hanging ≤ 164 ft (50 m)
Vertical, standing ≤ 9.84 ft (3 m)
Side-mounted, unsupp. ≤ 3.28 ft (1 m)
Rotary requires further calculation

Usage Guidelines

- If a lightweight, cost-effective e-chain® for high dynamics is required
- If very tight fitting lids and bottoms are required
- If short assembly times are required
- If optimized interior-exterior dimensions ratio is needed

- When the e-chain® needs to be extremely quiet (32dB(A)) with very low vibration
  ➤ **Series E6-1, Chapter 7**
- When the e-chain® is to be used in cleanrooms (cleanroom ISO class 1)

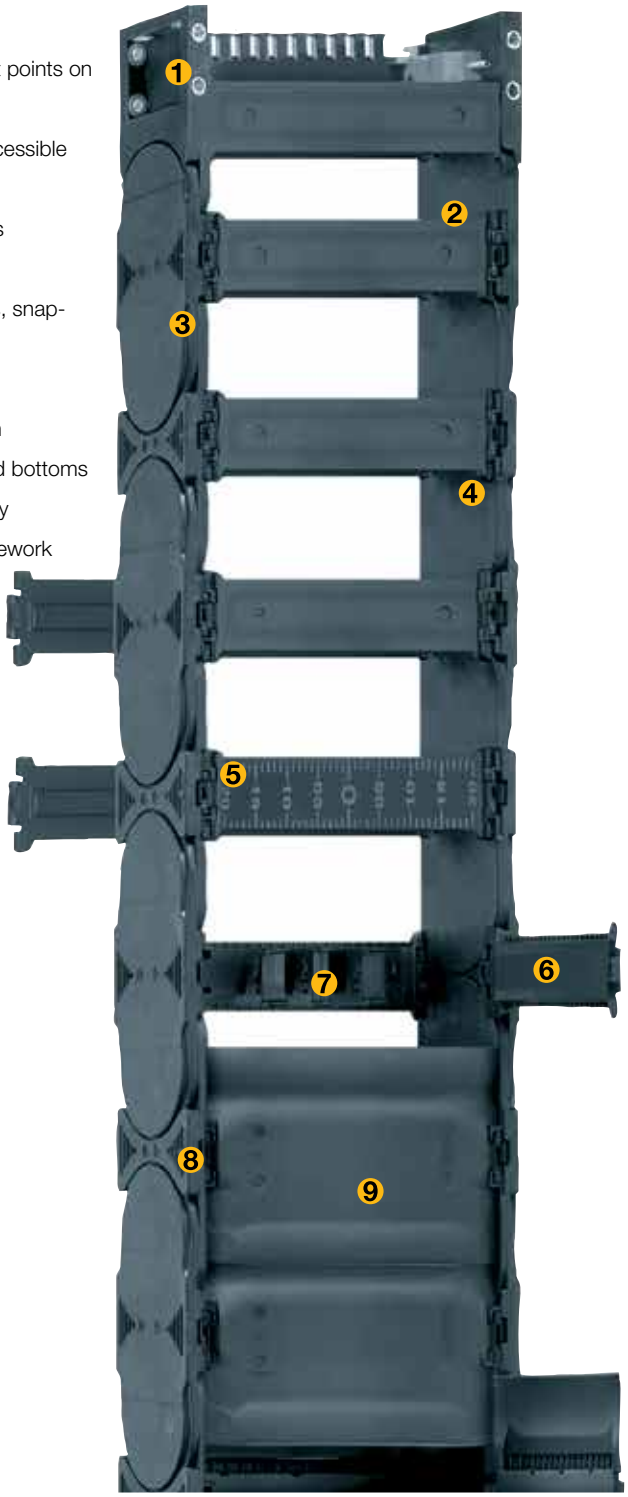
➤ **Series E6-1, Chapter 7**

- If even higher strength is required

➤ **Series E4-1, Chapter 6**

Features & Benefits

1. KMA mounting brackets with attachment points on all sides
2. Easy filling: inner diameter completely accessible
3. High stability due to undercut design
4. Efficient: less weight, enhanced dynamics
5. Notch crossbar with visual scale
6. Short assembly time: pivotable crossbars, snap-open along the inner and outer radius
7. Numerous interior separation possibilities
8. Straight run due to inner/outer link design
9. Chip protection: very tightly fitting lids and bottoms
10. Version NCST “without camber” simply by turning outer links without unnecessary rework





Also available without camber. Add NCST to the end of the part number.
Ex: E4-38L-100-200NCST

Order Example: Complete e-chain®

Please indicate chain length or number of links. Example:

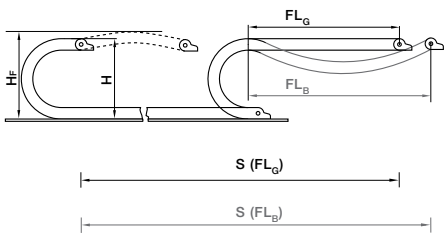
13.12 ft (4 m) **E4-38L-100-200-0**	**e-chain®**
With 2 separators **38-1-1** assembled every 2nd link	**Interior Separation**
1 Set **E4-380-100-12P**	**Mounting Bracket**

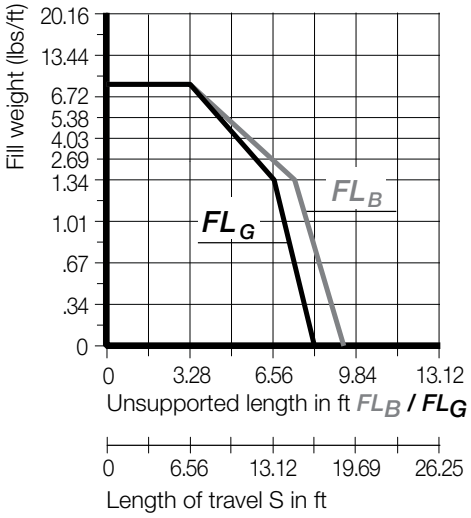
e-chain system® E4-1 light
Series E4-38L/R4-38L
Installation Dimensions

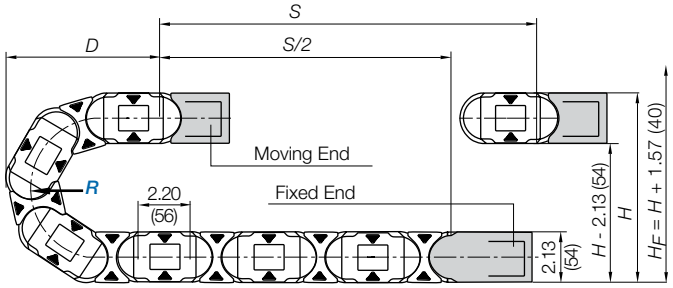
Short travel, unsupported length

- FL_B = unsupported with permitted sag
- FL_G = unsupported with straight upper run

Further information ➤ Design, Chapter 1







Pitch per link: = 2.20" (56 mm)
Links per ft (m): = 5.49 (18)
For center mount applications:
Chain length = $S/2 + K$

Short Travels - Unsupported

Unsupported e-chains® feature positive camber over short travels. This must be accounted for when specifying the clearance height. Please refer to for further details.

Legend

S = Length of travel
R = Bending radius
H = Nominal clearance height
D = Overlength e-chain® radius in final position
$K = \pi \bullet R + safety\ buffer$
H_F = Required clearance height
H_{RI} = Trough inner height
H_2 = *Mounting height
D_2 = Overlength - long travels, gliding
K_2 = *Add-on
*If the mounting bracket location is set lower

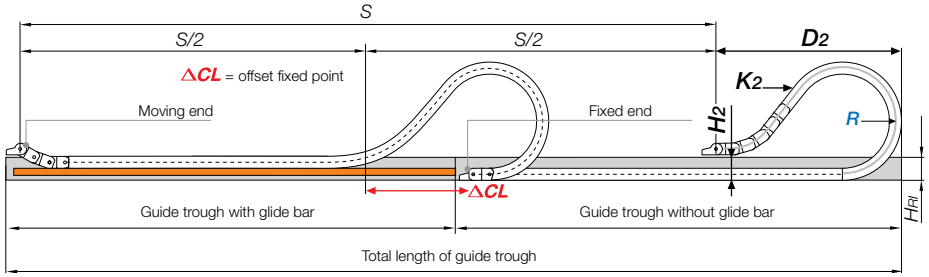
The required clearance height: $H_F = H + 1.57$ **in. (40 mm)** (with 1.34 lbs/ft (2.0 kg/m) fill weight. Please consult igus® if space is particularly restricted.

R	2.48 (063**)	2.95 (075**)	3.94 (100**)	4.92 (125)	5.91 (150)	6.89 (175)	7.87 (200)	9.84 (250)	11.81 (300)
H	7.09 (180)	8.03 (204)	10.00 (254)	11.97 (304)	13.94 (354)	15.91 (404)	17.87 (454)	21.81 (554)	25.75 (654)
D	6.85 (174)	7.32 (186)	8.31 (211)	9.29 (236)	10.28 (261)	11.26 (286)	12.24 (311)	14.21 (361)	16.18 (411)
K	12.20 (310)	13.78 (350)	16.93 (430)	19.88 (505)	23.03 (585)	26.18 (665)	29.33 (745)	35.43 (900)	41.54 (1055)

For long travels with lowered mounting height

Long travel lengths from 32.8 ft.(10m) to max. 262 ft. (80m)

For center mount applications:
Chain length: = $S/2 + K_2$



Long Travels - Gliding

If the unsupported length is exceeded, the e-chain®/ Tube must glide on itself. This requires a guide trough.
Design, Chapter 1

R	2.48 (063**)	2.95 (075**)	3.94 (100**)	4.92 (125)	5.91 (150)	6.89 (175)	7.87 (200)	8.66 (220)	9.84 (250²)	11.81 (300²)
H_2	–	–	3.78 (96)	3.78 (96)	3.78 (96)	3.78 (96)	3.78 (96)	3.78 (96)	–	–
D_2	–	–	14.57 (370)	18.50 (470)	19.69 (500)	25.79 (655)	30.31 (770)	35.43 (900)	–	–
K_2	–	–	24.25 (616)	30.87 (784)	35.27 (896)	44.10 (1120)	50.71 (1288)	57.32 (1456)	–	–
ΔCL	–	–	6.30 (160)	8.27 (210)	9.45 (240)	14.57 (370)	18.11 (460)	21.26 (540)	–	–

In case of travels between 16.4 and 32.8 ft (5 and 10 m) we recommend a longer unsupported length.
Radius not available for e-tubes 2) Radius not suitable for long travel applications. Please consult igus®

For support of the lower run, **see Chapter 9** of the main catalog for the **Support Tray tool kit**

Technical Data

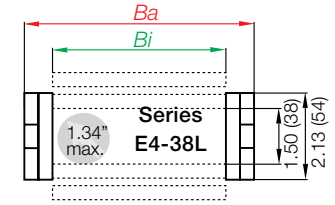
Speed / acceleration FL_G	max. 65.6 ft/s (20 m/s) / max. 656 ft/s² (200 m/s²)
Speed / acceleration FL_B	max. 9.84 ft/s (3 m/s) / max. 19.69 ft/s² (6 m/s²)
Gliding speed / acceleration (maximum)	max. 16.4 ft/s (5 m/s) / max. 82 ft/s² (25 m/s²)
Material - permitted temperature	igumid G / -40°F (-40°C) up to +248°F (+120° C)
Flammability Class, igumid G	VDE 0304 IIC UL94 HB

Details of material properties
➤ Chapter 1

PDF: igus.com/e-chain-pdfs
Product information: igus.com/e-chains

e-chain system® E4-1 light
Series E4-38L/R4-38L
Product Range

Series E4-38L - e-chain® with crossbars every link



- Crossbars every link
- For use with rigid hydraulic hoses
- For particularly demanding applications
- Can be opened from both sides

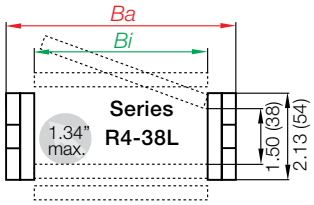
Part Number Structure

E4-38L | 100- | 200- | 0

- 0 – Color - Black
- 200- – Bending radius
- 100- – Width
- E4-38L – Series



Series R4-38L - fully enclosed e-tube



- Fully enclosed
- Excellent cable and hose protection against dirt
- Protection against hot chips
- Lids along inner radius are completely removable
- Lids along the outer radius are single-sided, snap open, hinged on one side as well as completely removable

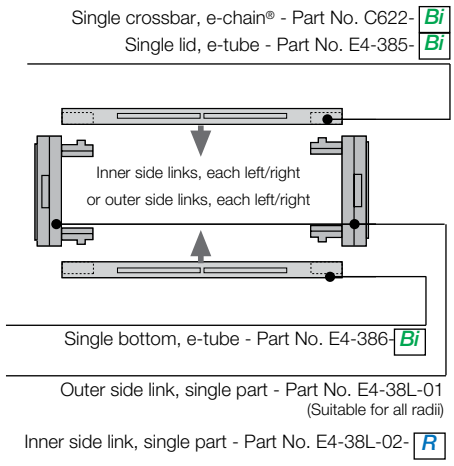
Part Number Structure

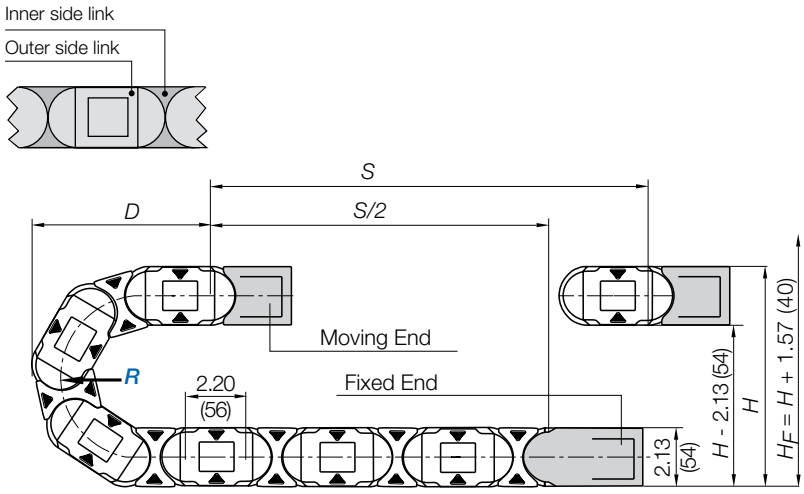
R4-38L- | 100- | 200- | 0

- 0 – Color - Black
- 200- – Bending radius
- 100- – Width
- R4-38L- – Series



e-chain® as separate parts, links and side plates

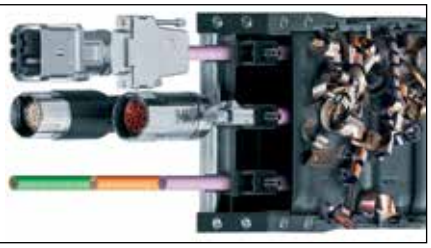




Hot chips up to +1,562°F

- e-tubes to withstand +1,562°F hot chips, as a special option
- No hot chip melting or embedding into the chain
- igus® igumid HT material

More information ▶ www.igus.com/HT



e-chain system® E4-1 light
Series E4-38L/R4-38L
Product Range

Supplement part number with required radius. Example: E4-38L-100-[200]-0
Pitch: 2.20 in. (56 mm) per link links/ft (m) = 5.49 (18)

Part Number				Bi	Ba	Weight	
Crossbars Every link	Tube Version			in. (mm)	in. (mm)	E4-38L lbs/ft (kg/m)	R4-38L lbs/ft (kg/m)
E4-38L-050-	R4-38L-050	[ ]	-0	1.97 (50)	2.60 (66)	≈ 0.76 (1.13)	≈ 0.81(1.20)
E4-38L-062-		[ ]	-0	2.46 (62.5)	3.09 (78.5)	≈ 0.80 (1.19)	–
E4-38L-075-	R4-38L-075-	[ ]	-0	2.95 (75)	3.58 (91)	≈ 0.85 (1.26)	≈ 0.93 (1.38)
E4-38L-087-		[ ]	-0	3.44 (87.5)	4.07 (103.5)	≈ 0.87 (1.30)	–
E4-38L-100-	R4-38L-100-	[ ]	-0	3.94 (100)	4.57 (116)	≈ 0.92 (1.37)	≈ 1.08 (1.60)
E4-38L-105-		[ ]	-0	4.13 (105)	4.92 (125)	≈ 0.93 (1.39)	–
E4-38L-112-		[ ]	-0	4.43 (112.5)	5.06 (128.5)	≈ 0.97 (1.44)	–
E4-38L-125-	R4-38L-125-	[ ]	-0	4.92 (125)	5.55 (141)	≈ 1.01 (1.50)	≈ 1.18 (1.75)
E4-38L-137-		[ ]	-0	5.41 (137.5)	6.04 (153.5)	≈ 1.04 (1.55)	–
E4-38L-150-	R4-38L-150-	[ ]	-0	5.91 (150)	6.54 (166)	≈ 1.11 (1.65)	≈ 1.29 (1.92)
E4-38L-162-		[ ]	-0	6.40 (162.5)	7.03 (178.5)	≈ 1.14 (1.69)	–
E4-38L-175-	R4-38L-175-	[ ]	-0	6.89 (175)	7.52 (191)	≈ 1.17 (1.74)	≈ 1.41 (2.10)
E4-38L-187-		[ ]	-0	7.36 (187)	7.99 (203)	≈ 1.21 (1.80)	–
E4-38L-200-	R4-38L-200-	[ ]	-0	7.87 (200)	8.50 (216)	≈ 1.25 (1.86)	≈ 1.54 (2.29)
E4-38L-212-		[ ]	-0	8.35 (212)	8.98 (228)	≈ 1.28 (1.90)	–
E4-38L-225-		[ ]	-0	8.86 (225)	9.49 (241)	≈ 1.32 (1.97)	–
E4-38L-237-		[ ]	-0	9.33 (237)	9.96 (253)	≈ 1.38 (2.05)	–
E4-38L-250-	R4-38L-250-	[ ]	-0	9.84 (250)	10.47 (266)	≈ 1.42 (2.11)	≈ 1.78 (2.65)
E4-38L-262-		[ ]	-0	10.31 (262)	10.94 (278)	≈ 1.44 (2.15)	–
E4-38L-300-		[ ]	-0	11.81 (300)	12.44 (316)	≈ 1.59 (2.36)	≈ 2.02 (3.00)

Choose from the radii below for all of the above sizes
Radius (mm) Example: E4-38L-100-[200]-0

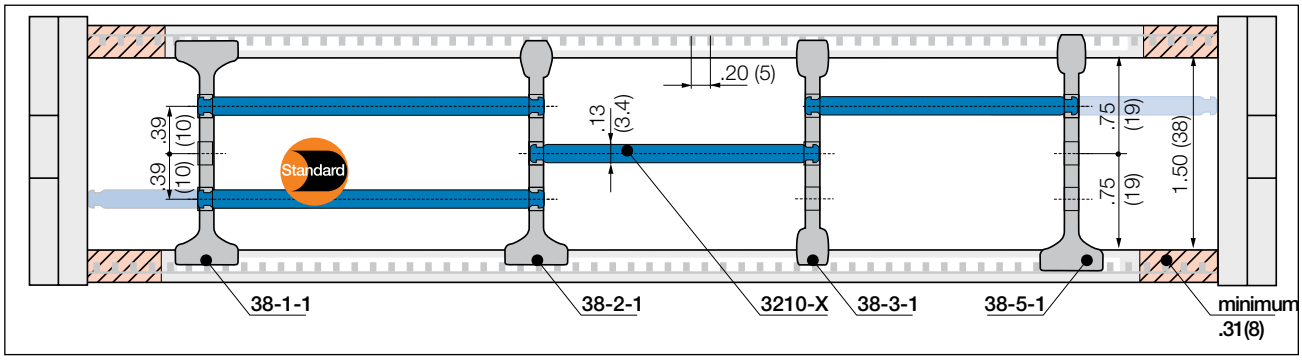
	[063**]	[075**]	[100**]	[125]	[150]	[175]	[200]	[250]	[300]
R	2.48 (063*)	2.95 (075)	3.94 (100)	4.92 (125)	5.91 (150)	6.89 (175)	7.87 (200)	9.84 (250)	11.81 (300)
H	7.09 (180)	8.03 (204)	10.00 (254)	11.97 (304)	13.94 (354)	15.91 (404)	17.87 (454)	21.81 (554)	25.75 (654)
D	6.85 (174)	7.32 (186)	8.31 (211)	9.29 (236)	10.28 (261)	11.26 (286)	12.24 (311)	14.21 (361)	16.18 (411)
K	12.20 (310)	13.78 (350)	16.93 (430)	19.88 (505)	23.03 (585)	26.18 (665)	29.33 (745)	35.43 (900)	41.54 (1055)

** This radius is not available for the R4-32 Series
*Removable lid only, no hinged option
0 = Standard color black.
For other colors see Chapter 1

For large diameter hoses see page 6.161

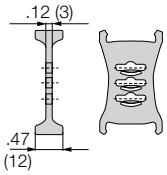
PDF: igus.com/e-chain-pdfs
Product information: igus.com/e-chains

e-chain system® E4-1 light
Series E4-38L/R4-38L
Interior Separation



Note e-tube: Please maintain a lateral spacing of .31" (8 mm) between the separators and the side links. In the standard configuration separators are assembled every 2nd e-chain® link



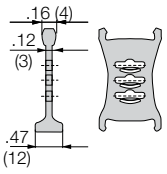


Separator, wide base

Unassembled	**Part No. 38-1**
Assembled	**Part No. 38-1-1**

- **Standard separator 38-1 for all applications**
  Separator with wide base for maximum locking strength and safe standing in e-chains® and e-tubes.



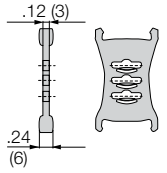


Separator, narrow head

Unassembled	**Part No. 38-2**
Assembled	**Part No. 38-2-1**

- **Separator 38-2**
  For even faster installation
  Firm hold to one side with a wide base, narrow on opposed side for easy cable assembly (slight grip).



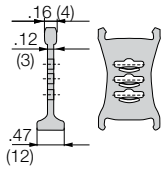


Separator, narrow base

Unassembled	**Part No. 38-3**
Assembled	**Part No. 38-3-1**

- **Separator 38-3**
  For many thin cables
  Separator with a narrow base for a large number of thin cables side by side. Saves space in e-chains®.





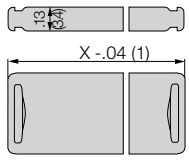
Notch separator for notch crossbar

Unassembled	**Part No. 38-5**
Assembled	**Part No. 38-5-1**

- **Separator 38-5**
  Locks safely in .20" (5 mm) increments
  Notch separator for exact positioning in e-chains®. Recommended for side-mounted applications.

Lockable full-width shelves - for the standard interior separation





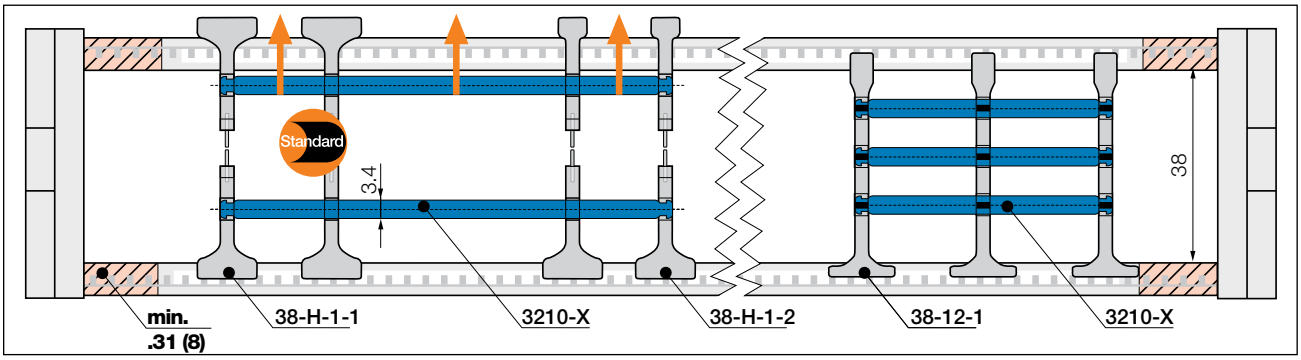
Full width shelf, lockable

Unassembled	**Part No. 3200-X**
Assembled	**Part No. 3210-X**

- **Full width shelf, lockable**
  Shelf locks safely into separators on both ends, fixed width possible. Separators can be moved freely over the shelf in horizontal direction. Can be used at 3 different heights.

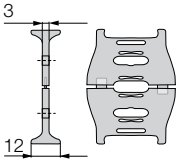
Width X in. (mm)	Part No. Unassembled	Part No. Assembled	Width X in. (mm)	Part No. Unassembled	Part No. Assembled	Width X in. (mm)	Part No. Unassembled	Part No. Assembled
1.97 (050)	**3200-50**	**3210-50**	4.92 (125)	**3200-125**	**3210-125**	8.86 (225)	**3200-225**	**3210-225**
2.95 (075)	**3200-75**	**3210-75**	5.91 (150)	**3200-150**	**3210-150**	9.84 (250)	**3200-250**	**3210-250**
3.94 (100)	**3200-100**	**3210-100**	6.89 (175)	**3200-175**	**3210-175**			
4.53 (115)	**3200-115**	**3210-115**	7.87 (200)	**3200-200**	**3210-200**			

e-chain system® E4-1 light
Series E4-38L
Special Accessories



Note e-tube: Please maintain a lateral spacing of .24" (6 mm) between the separators and the side links. In the standard configuration separators are assembled every 2nd e-chain® link

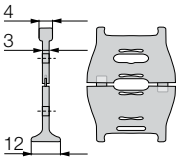




Separator, wide base

Unassembled	**Part No. 38-H-1**
Assembled	**Part No. 38-H-1-1**

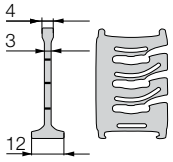




Lean Separator

Unassembled	**Part No. 38-H-2**
Assembled	**Part No. 38-H-2-1**





Lean Separator

Unassembled	**Part No. 38-12**
Assembled	**Part No. 38-12-1**



- **Split separators for all applications**
  In order to fill e-chains® more easily and effectively, these separators can be split in the middle. This allows easier access to middle shelf partitions. Fast assembly and easy retrofit. 2 types available: with wide or narrow top.

- **Lean separators 38-12**
  New design allows extremely fast fitting of shelves in several layers, which significantly reduces assembly time. Enables extremely fast replacement of individual cables in a very full e-chain®.

- **Lean separator design - several layers of cables fitted quickly, save up to 50%* assembly time**
  (*Lean separator vs. standard separator - measured on a 4m long e-chain® fitted with 12 cables in the igus® harnessing factory)

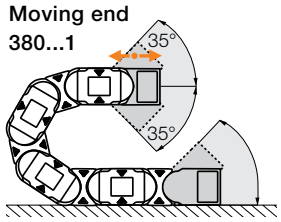
PDF: igus.com/e-chain-pdfs
Product information: igus.com/e-chains

e-chain system® E4-1 light
Series E4-38L
Mounting Brackets - KMA

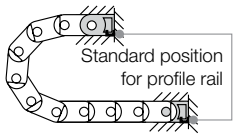
Standard

Option 1: pivoting

- Recommended for unsupported and gliding applications
- Attachment capability on all sides
- Bolted connection outside of chain cross-section
- Space restricted conditions
- Corrosion resistant

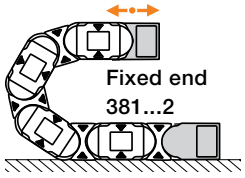


Pivoting angle depends on radius

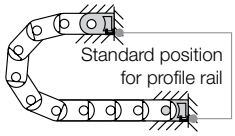


Option 2: locking

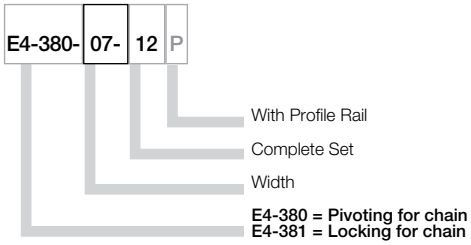
- Profile rail option
- Universal use
- Corrosion resistant
- Vertical hanging/standing travels
- Extreme accelerations

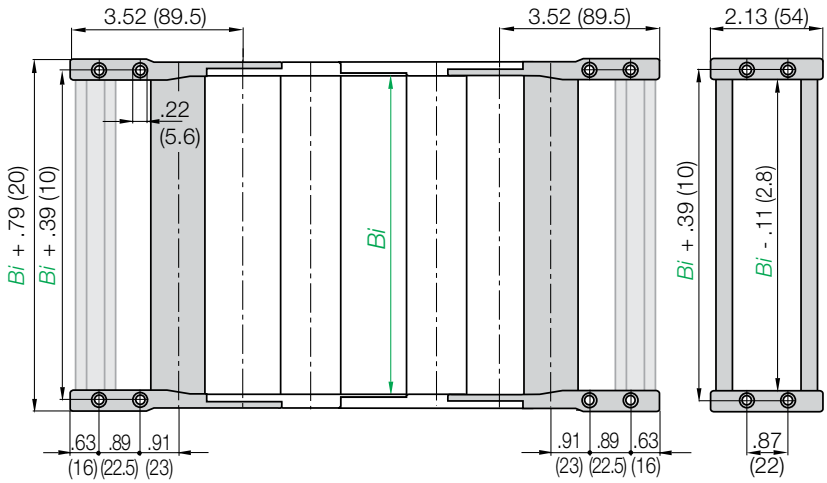


Pivoting angle depends on radius



Part Number Structure





Due to the design of the E4-38L series chains, please note the following when ordering brackets:
Even number of links = full set, part number ending in **-12**; **Odd number of links =** 2 pieces, part number ending in **-1**

Part number examples are shown for pivoting brackets for e-chain.
For locking brackets change part number to 381

Part No. Full Set (pivoting)
Series E4-38L
E4-380-Width-12

Part No. Full Set (pivoting)
with profile rail
Series E4-38L
E4-380-Width-12P

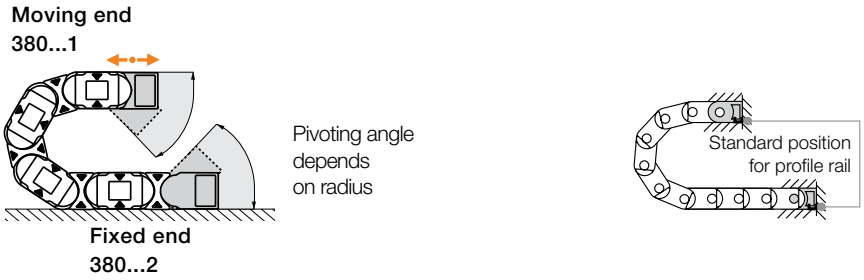
Width	Part No. Full Set chain			With Profile Rail	*Bi* in. (mm)	Width	Part No. Full Set chain			With Profile Rail	*Bi* in. (mm)
	Pivoting	Locking					Pivoting	Locking			
-050	E4-380	E4-381	-050-12	P	1.97 (50)	-150	E4-380	E4-381	-150-12	P	5.91 (150)
-062	E4-380	E4-381	-062-12	P	2.68 (62.5)	-162	E4-380	E4-381	-162-12	P	6.38 (162.5)
-075	E4-380	E4-381	-075-12	P	2.95 (75)	-175	E4-380	E4-381	-175-12	P	6.61 (175)
-087	E4-380	E4-381	-087-12	P	3.43 (87.5)	-200	E4-380	E4-381	-200-12	P	7.87 (200)
-100	E4-380	E4-381	-100-12	P	3.94 (100)	-225	E4-380	E4-381	-225-12	P	
-105	E4-380	E4-381	-105-12	P	4.25 (105)	-237	E4-380	E4-381	-237-12	P	
-112	E4-380	E4-381	-112-12	P	4.41 (112.5)	-250	E4-380	E4-381	-250-12	P	9.84 (250)
-125	E4-380	E4-381	-125-12	P	4.92 (125)	-262	E4-380	E4-381	-262-12	P	
-137	E4-380	E4-381	-137-12	P	5.39 (137.5)	-300	E4-380	E4-381	-300-12	P	

e-chain system® E4-1 light
Series R4-38L
Mounting Brackets - KMA

Standard

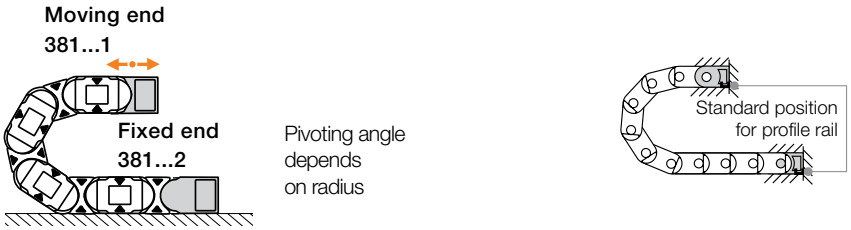
Option 1: pivoting

- Recommended for unsupported and gliding applications
- Attachment capability on all sides
- Bolted connection outside of chain cross-section
- Space restricted conditions
- Corrosion resistant

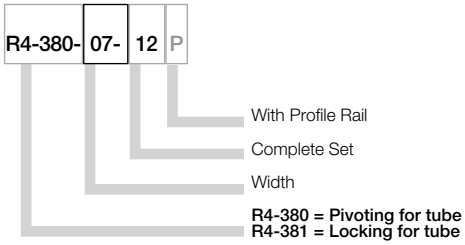


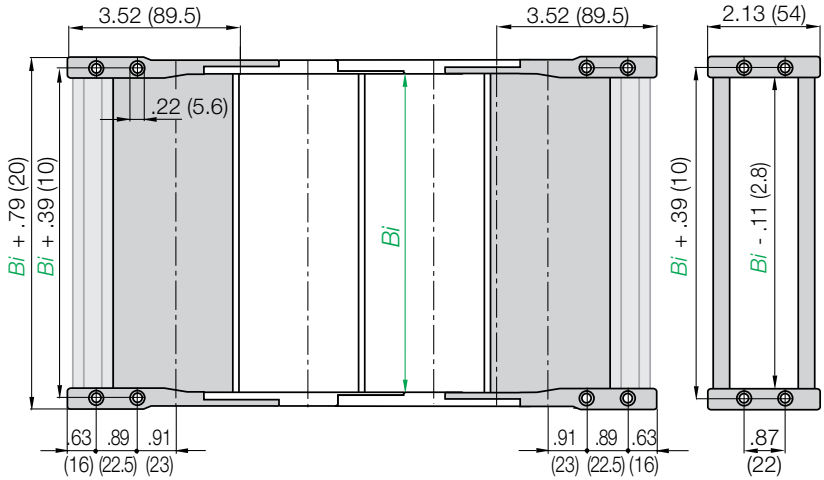
Option 2: locking

- Profile rail option
- Universal use
- Corrosion resistant
- Vertical hanging/standing travels
- Extreme accelerations



Part Number Structure





Due to the design of the R4-38L series chains, please note the following when ordering brackets:
Even number of links = full set, part number ending in **-12**; **Odd number of links =** 2 pieces, part number ending in **-1**

Part number examples are shown for pivoting brackets for e-chain.
For locking brackets change part number to 381

Part No. Full Set (pivoting)
Tube Series R4-38L
R4-380-Width-12

Part No. Full Set (pivoting)
with Profile Rail
Tube Series R4-38L
R4-380-Width-12P

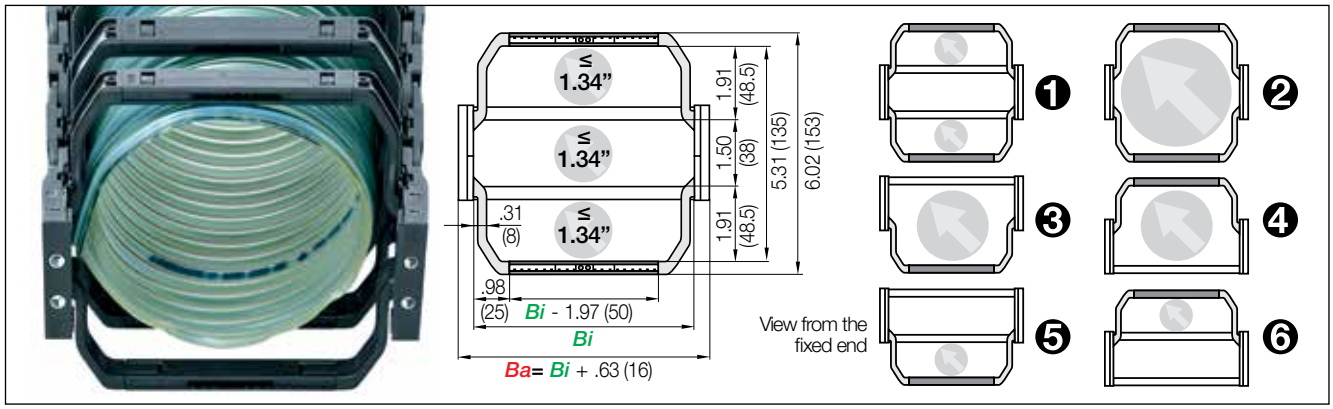
Width	Part No. Full Set tube			With Profile Rail	*Bi* in. (mm)	Width	Part No. Full Set tube			With Profile Rail	*Bi* in. (mm)
	Pivoting	Locking					Pivoting	Locking			
-050	R4-380	R4-381	-050-12	P	1.97 (50)	-150	R4-380	R4-381	-150-12	P	5.91 (150)
-075	R4-380	R4-381	-075-12	P	2.95 (75)	-175	R4-380	R4-381	-175-12	P	6.61 (175)
-100	R4-380	R4-381	-100-12	P	3.94 (100)	-200	R4-380	R4-381	-200-12	P	7.87 (200)
-125	R4-380	R4-381	-125-12	P	4.92 (125)	-250	R4-380	R4-381	-250-12	P	9.84 (250)

PDF: igus.com/e-chain-pdfs
Product information: igus.com/e-chains

e-chain system® E4-1 light
Series E4-38L
Accessories

Telephone 1-800-521-2747

Internet: igus.com
email: sales@igus.com
QuickSpec: igus.com/quickspec



Extender crossbars with flexible width | Safe guiding for large hoses

- For guiding and protecting large hoses
- With mounting for noise dampers
- Cable-friendly design, high crossbar holding force
- The openable extender crossbars can be fitted in different ways and combinations
- Optionally openable along the inner or outer radius

Versions e-chain® with extender crossbar	Hose Ø ≤ in. (mm)	Part No. e-chain® with extender crossbar
❶ Extender crossbar and standard crossbar alternating along the inner and outer radius [1]	1.34 (34)	E4-38L-XXXHB48-*R*-0
❷ Extender crossbar on both sides along the inner and outer radius [2]	4.80 (122)	E4-38L-XXXB48-*R*-0
❸ Extender crossbar along the outer radius [3]	3.07 (78)	E4-38L-XXXBE48-*R*-0
❹ Extender crossbar along the inner radius [2]	3.07 (78)	E4-38L-XXXBZ48-*R*-0
❺ Extender crossbar and standard crossbar alternating along the outer radius [3]	1.34 (34)	E4-38L-XXXHBE48-*R*-0
❻ Extender crossbar and standard crossbar alternating along inner radius [1]	1.34 (34)	E4-38L-XXXHBZ48-*R*-0

1) Minimum bend radius: *R* 125 2) Minimum bend radius: *R* 150 3) Minimum bend radius: *R* 063 *Width available upon request. Delivery time upon request

Bi [mm] **Available inner widths**

| 100 | 125 | 137 | 150 | 162 | 175 | 187 | 200 | 212 | 225 | 237 | 250 |

Complete Part No. with the width index XXX *Bi* and the radius (*R*). Example
E4-38L-100B48-150-0 = extender crossbar on both sides along inner and outer radius



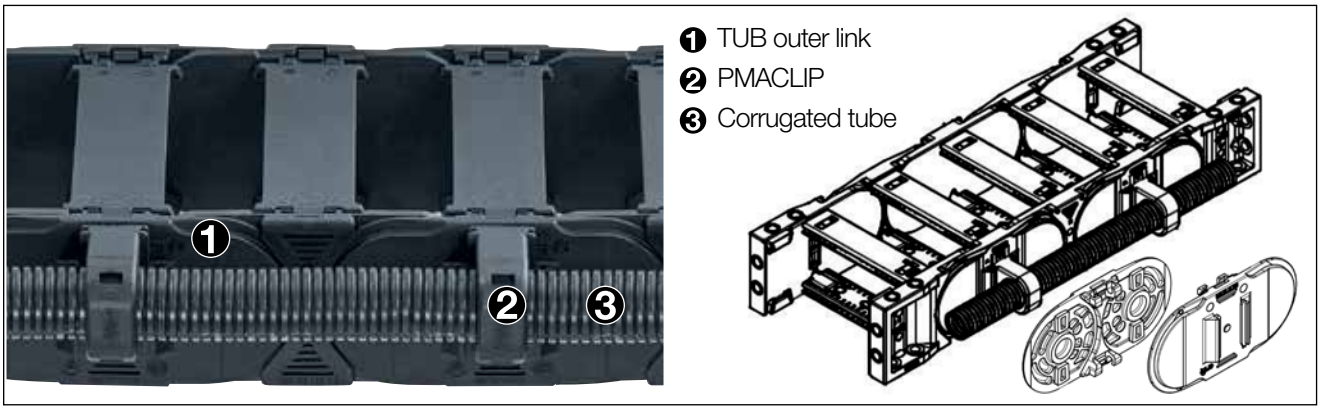
The E4.1L can be fitted with openable extender crossbars, which increase the size of the interior of the e-chain®. Crossbars can be fitted in various ways: from one or both sides, alternating with standard crossbars and or any combination

Aluminum support tray

- Corrosion-resistant and seawater-resistant aluminium rails with adjustable width
- Noise-reducing glide strip integrated as standard
- Easy installation and connection of the e-chain®
- Open design - dirt and debris fall through

More information ➤ Chapter 9





TUB | Safe guidance for corrugated tubes parallel to the e-chain®

- Additional, simple guidance for corrugated tubes on the outside of the e-chain®
- PMACLIP allows corrugated tubes with nominal widths .28 (07mm), .39 (10mm), .47 (12mm), .67 (17mm) to be easily clipped on
- Easy access to the corrugated tubes, fast replacement of the hoses
- Reduce assembly time and cost - easy to assemble, without any additional screws or tools
- The part number includes the e-chain® with TUB side sections; the PMACLIP support and the hose are ordered separately

Part No. TUB Outer link right*	Part No. TUB Outer link left*	Part No. TUB Outer link at both ends*	For corrugated tube nominal diameter Ø in. (mm)
E4-38L-XXXTUBR-*R*-0	E4-38L-XXXTUBL-*R*-0	E4-38L-XXXTUB-*R*-0	.28 (07), .39 (10), .47 (12), .67 (17)

*View from the fixed end

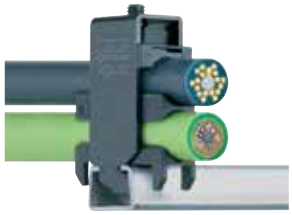
Part number appended with width index XXX *Bi* and radius (*R*) e.g.

E4-38L-100TUBR-150-0 = with TUB outer sections every 2nd right hand link

PDF: igus.com/e-chain-pdfs
Product information: igus.com/e-chains

e-chain system® E4-1 light
Series E4-38L/R4-38L
Strain Relief

Chainfix clamps for the profile rail



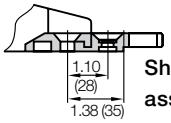
igus® Chainfix strain relief elements are available in either steel or stainless steel. They can be adjusted with a hexagon socket and are available in single, double and triple configurations.

Part No. Single Clamp		Part No. Double Clamp		Part No. Triple Clamp		Cable ø	
Steel	Stainless	Steel	Stainless	Steel	Stainless	in.	(mm)
CFX12-1	CFX12-1E	CFX12-2	CFX12-2E	CFX12-3	–	.24 - .47	(06 - 12)
CFX14-1	CFX14-1E	CFX14-2	CFX14-2E	CFX14-3	–	.47 - .55	(12 - 14)
CFX16-1	CFX16-1E	CFX16-2	CFX16-2E	CFX16-3	–	.55 - .63	(14 - 16)
CFX18-1	CFX18-1E	CFX18-2	CFX18-2E	CFX18-3	–	.63 - .71	(16 - 18)
CFX20-1	CFX20-1E	CFX20-2	CFX20-2E	CFX20-3	–	.71 - .79	(18 - 20)
CFX22-1	CFX22-1E	CFX22-2	CFX22-2E	CFX22-3	–	.79 - .87	(20 - 22)
CFX26-1	CFX26-1E	CFX26-2	CFX26-2E	–	–	.87 - 1.02	(22 - 26)
CFX30-1	CFX30-1E	CFX30-2	CFX30-2E	–	–	1.02 - 1.18	(26 - 30)
CFX34-1	CFX34-1E	CFX34-2	CFX34-2E	–	–	1.18 - 1.34	(30 - 34)
CFX38-1	CFX38-1E	–	–	–	–	1.34 - 1.50	(34 - 38)
CFX42-1	CFX42-1E	–	–	–	–	1.50 - 1.65	(38 - 42)

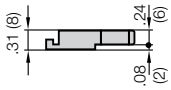
For more information please refer to strain relief section of Chapter 10

Tiewrap Plates





Shown assembled

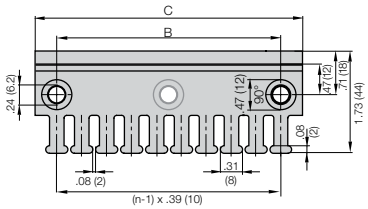


Single tiewrap plate

Option 1:
Tiewrap plates as an individual part

Available as an individual component, can be fixed onto a mounting bracket with the use of a profile rail.

Tiewrap Plate	n Number of Teeth	C Overall Width in. (mm)	B Bore Width in. (mm)	Center Bore
3050-ZB	5	1.97 (50)	1.18 (30)	no
3075-ZB	7	2.95 (75)	2.16 (55)	no
3100-ZB	10	3.94 (100)	3.15 (80)	no
3115-ZB	11	4.53 (115)	3.74 (95)	no
3125-ZB	12	4.92 (125)	4.13 (105)	no
3150-ZB	15	5.91 (150)	5.12 (130)	no
3175-ZB	17	6.89 (175)	6.10 (155)	no
3200-ZB	20	7.87 (200)	7.09 (180)	yes
3225-ZB	22	8.86 (225)	8.07 (205)	yes
3250-ZB	25	9.84 (250)	9.06 (230)	yes



If used with KMA brackets with profile rail please add “KMA” to the end of the part number.

For more information please refer to strain relief section of Chapter 10



Option 2:
Clip-on Tiewrap plates

Available as a clip-on tiewrap plate without the use of bolts They are inserted and removed with a screwdriver used as a lever. Clip-on tiewrap plates are also available as an attachment to the opening crossbars.

Part No.	Number of Teeth	Width of Strain Relief in.	(mm)
3050-ZC	5	1.97	(50)
3075-ZC	7	2.95	(75)

For more information please refer to strain relief section of Chapter 10

Strain relief with tiewrap teeth



Part No.	For series	Inner height *hi* in. (mm)	For use in
CFV-42-C	E4-64L	2.52 (64)	Top-hat (DIN) rail 15 (TS92.31)

e-chain system® E4-1 light
Series E4-38L/R4-38L
Guide Trough

Guide troughs are used with applications where the upper run of the e-chain® glides on the lower run. If using igus® steel guide troughs, the following components are required:

- Full travel length of guide trough
  Part Number 98-30
- 1/2 travel length of glide bars
  Part number 92-01
- Installation sets as end connectors
  Part Number 93-50-XX

-XX indicates the length of the profile rail on which the guide trough is mounted. The values and part numbers are specified in the table on the left. The standard length of the trough components and glide bars is 6.56 ft (2 m.) The required overall length of the guide trough directly correlates to the length of travel.

Example:
Length of travel 164 ft (50 m)
Center mounted
Required guide troughs:
164 ft (50 m) guide trough
82 ft (25 m) glide bar
= 25 sections of 6.56 ft (2 m) guide trough
Part No. 98-30
= 13 sections of 6.56 ft (2 m) glide bar
Part No. 92-01
Required number of installation sets:
= Number of guide trough components + 1
= 25 + 1 = 26
Part number of the installation sets
93-50-XXX
Example: 93-50-400 for 15.75" (400 mm) long profile rail.



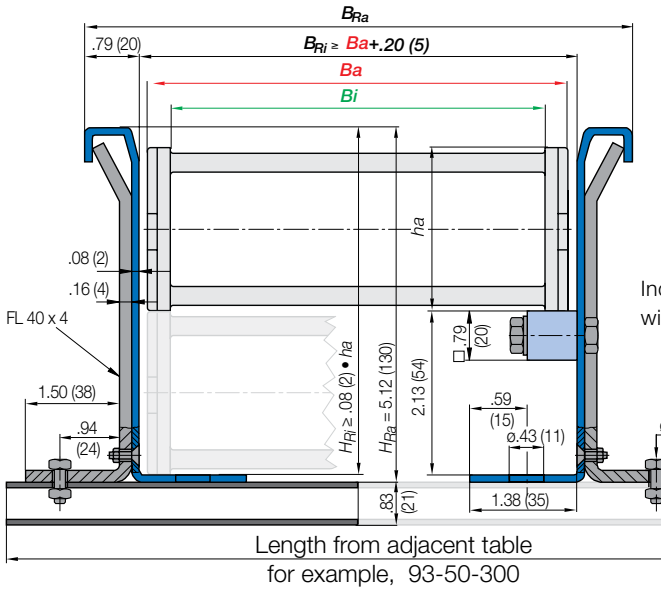
Left: Guide trough with glide bars
Right: Guide troughs without glide bars



Installation sets as section connectors

Width of Crossbar
E4-38-**050**-200-0

	B_{Ri}	Installation Part No.
-050	2.80 (71)	**93-50-200**
-062	3.27 (83)	**93-50-200**
-075	3.78 (96)	**93-50-225**
-087	4.25 (108)	**93-50-225**
-100	4.76 (121)	**93-50-250**
-105	4.96 (126)	**93-50-250**
-112	5.24 (133)	**93-50-250**
-125	5.75 (146)	**93-50-275**
-137	6.22 (158)	**93-50-275**
-150	6.73 (171)	**93-50-300**
-162	7.21 (183)	**93-50-300**
-175	7.72 (196)	**93-50-325**
-187	8.19 (208)	**93-50-325**
-200	8.70 (221)	**93-50-350**
-212	9.17 (233)	**93-50-350**
-225	9.69 (246)	**93-50-375**
-237	10.16 (258)	**93-50-375**
-250	10.67 (271)	**93-50-400**
-262	11.14 (283)	**93-50-400**
-300	12.64 (321)	**93-50-450**



- Guide trough
- Glide bars
- Installation set "Basic"
- Profile rail

Individual attachment without profile rail

* Specialized guide trough available upon request

Standard length profile rail

PDF: igus.com/e-chain-pdfs
Product information: igus.com/e-chains

e-chain system® E4-1 light
Series E4-48L/R4-48L

1.50 1.50

Price Index

Series E4-48L Series R4-48L

Special Options Available

Low noise version available with special rubber pads

Clean-Room Cleanroom test upon request

EX ESD classification: Electrically conductive ESD/ ATEX version upon request

Assembly Tips



Opening To open, insert the screwdriver into the locking mechanism and pry it open outwards

Other Installation Methods

Vertical, hanging ≤ 262 ft (80 m)
Vertical, standing ≤ 9.84 ft (3 m)
Side-mounted, unsupp. ≤ 3.94 ft (1.2 m)
Rotary requires further calculation

Usage Guidelines

- If a lightweight, cost-effective e-chain® for high dynamics is required
- If very tight fitting lids and bottoms are required
- If short assembly times are required
- If optimized interior-exterior dimensions ratio is needed

- When the e-chain® needs to be extremely quiet (32dB(A)) with very low vibration
  ➤ **Series E6-1, Chapter 7**
- When the e-chain® is to be used in cleanrooms (cleanroom ISO class 1)

➤ **Series E6-1, Chapter 7**

- If even higher strength is required

➤ **Series E4-1, Chapter 6**

Features & Benefits

1. KMA mounting brackets with attachment points on all sides
2. Easy filling: inner diameter completely accessible
3. High stability due to undercut design
4. Efficient: less weight, enhanced dynamics
5. Notch crossbar with visual scale
6. Short assembly time: pivotable crossbars, snap-open along the inner and outer radius
7. Numerous interior separation possibilities
8. Straight run due to inner/outer link design
9. Chip protection: very tightly fitting lids and bottoms
10. Version NCST “without camber” simply by turning outer links without unnecessary rework





Also available without camber. Add NCST to the end of the part number.
Ex: E4-38L-100-300NCST

Order Example: Complete e-chain®

Please indicate chain length or number of links. Example:

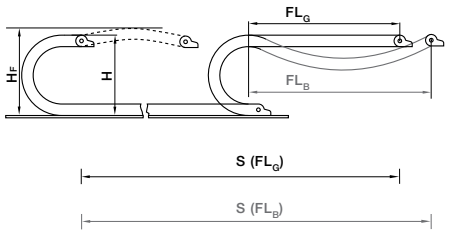
13.12 ft (4 m) **E4-48L-100-200-0**	e-chain®
With 2 separators **48-1-1** assembled every 2nd link	Interior Separation
1 Set **E4-480-100-12P**	Mounting Bracket

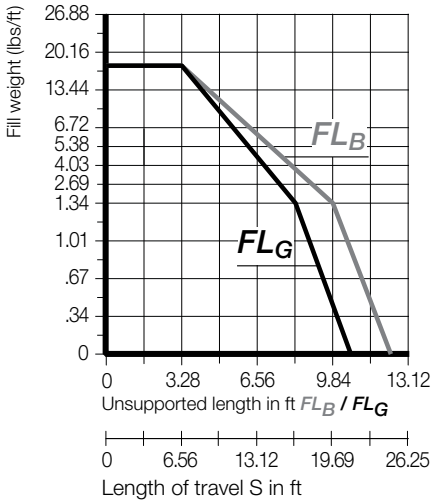
e-chain system® E4-1 light
Series E4-48L/R4-48L
Installation Dimensions

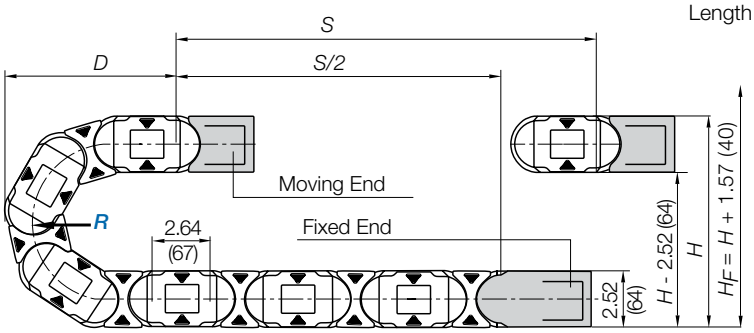
Short travel, unsupported length

- FL_B = unsupported with permitted sag
- FL_G = unsupported with straight upper run

Further information ➤ Design, Chapter 1







Pitch per link: = 2.64" (67 mm)
Links per ft (m): = 4.54 (15)
For center mount applications:
Chain length = $^{S}/_{2} + K$

Short Travels - Unsupported

Unsupported e-chains® feature positive camber over short travels. This must be accounted for when specifying the clearance height. Please refer to for further details.

Legend

S = Length of travel
R = Bending radius
H = Nominal clearance height
D = Overlength e-chain® radius in final position
K = π • *R* + *safety buffer*
H_F = Required clearance height
H_{RI} = Trough inner height
H_2 = *Mounting height
D_2 = Overlength - long travels, gliding
K_2 = *Add-on
*If the mounting bracket location is set lower

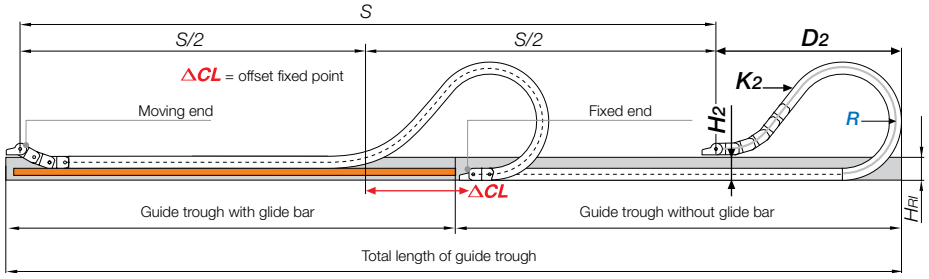
The required clearance height: $H_F = H + 1.57$ **in. (40 mm)** (with 1.68 lbs/ft (2.5 kg/m) fill weight. Please consult igus® if space is particularly restricted.

R	2.95 (075*)	3.94 (100*)	4.92 (125)	5.91 (150)	6.69 (175)	7.87 (200)	9.84 (250)	11.81 (300)	13.78 (350)
H	8.43 (214)	10.39 (264)	12.36 (314)	14.33 (364)	16.30 (414)	18.27 (464)	22.20 (564)	26.14 (664)	30.08 (764)
D	8.19 (208)	9.17 (233)	10.16 (258)	11.14 (283)	12.13 (308)	13.11 (333)	15.08 (383)	17.05 (433)	19.02 (483)
K	14.57 (370)	17.72 (450)	20.87 (530)	24.02 (610)	26.97 (685)	30.12 (765)	36.22 (920)	42.52 (1080)	48.62 (1235)

For long travels with lowered mounting height

Long travel lengths from 32.8 ft.(10m) to max. 262 ft. (80m)

For center mount applications:
Chain length: = $^{S}/_{2} + K_2$



Long Travels - Gliding

If the unsupported length is exceeded, the e-chain®/ Tube must glide on itself. This requires a guide trough.
Design, Chapter 1

R	2.95 (075**)	3.94 (100**)	4.92 (125)	5.91 (150)	6.69 (175)	7.87 (200)	9.84 (250)	11.81 (300[2])	13.78 (350[2])
H_2	–	–	4.17 (106)	4.17 (106)	4.17 (106)	4.17 (106)	4.17 (106)	–	–
D_2	–	–	18.70 (475)	22.44 (570)	26.38 (670)	30.71 (780)	40.55 (1030)	–	–
K_2	–	–	31.65 (804)	36.93 (938)	44.84 (1139)	52.76 (1340)	65.94 (1675)	–	–
ΔCL	–	–	9.06 (230)	11.81 (300)	14.96 (380)	18.11 (460)	25.98 (660)	–	–

In case of travels between 16.4 and 32.8 ft (5 and 10 m) we recommend a longer unsupported length.
Radius not available for e-tubes 2) Radius not suitable for long travel applications. Please consult igus®

For support of the lower run, **see Chapter 9** of the main catalog for the **Support Tray tool kit**

Technical Data

Speed / acceleration FL_G	max. 65.6 ft/s (20 m/s) / max. 656 ft/s² (200 m/s²)
Speed / acceleration FL_B	max. 9.84 ft/s (3 m/s) / max. 19.69 ft/s² (6 m/s²)
Gliding speed / acceleration (maximum)	max. 16.4 ft/s (5 m/s) / max. 82 ft/s² (25 m/s²)
Material - permitted temperature	igumid G / -40°F (-40°C) up to +248°F (+120° C)
Flammability Class, igumid G	VDE 0304 IIC UL94 HB

Details of material properties
➤ Chapter 1

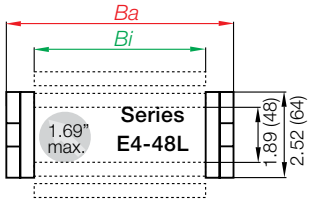
PDF: igus.com/e-chain-pdfs
Product information: igus.com/e-chains

e-chain system® E4-1 light
Series E4-48L/R4-48L
Product Range

Telephone 1-800-521-2747

Internet: igus.com
email: sales@igus.com
QuickSpec: igus.com/quickspec

Series E4-48L - e-chain® with crossbars every link



- Crossbars every link
- For use with rigid hydraulic hoses
- For particularly demanding applications
- Can be opened from both sides

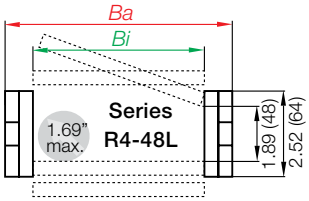
Part Number Structure

E4-48L | 100- | 200- | 0

- Color - Black
- Bending radius
- Width
- Series



Series R4-48L - fully enclosed e-tube



- Fully enclosed
- Excellent cable and hose protection against dirt
- Protection against hot chips
- Lids along inner radius are completely removable
- Lids along the outer radius are single-sided, snap open, hinged on one side as well as completely removable

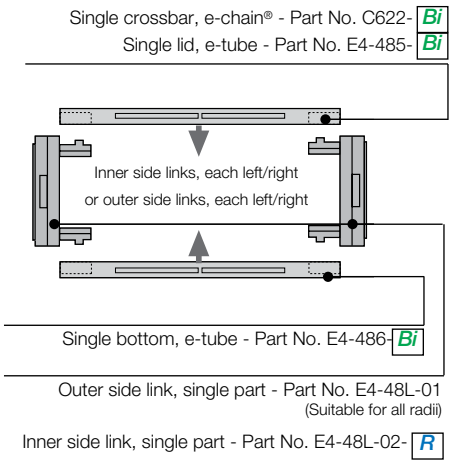
Part Number Structure

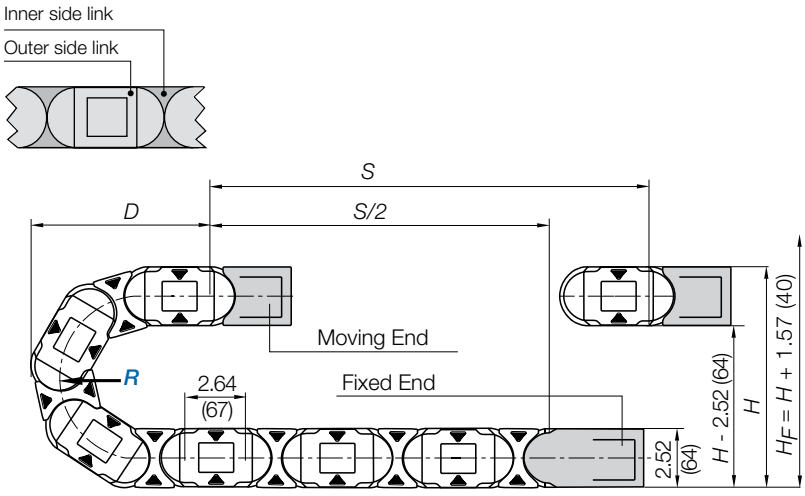
R4-48L- | 100- | 200- | 0

- Color - Black
- Bending radius
- Width
- Series



e-chain® as separate parts, links and side plates





e-chain system® E4-1 light
Series E4-48L/R4-48L
Product Range

Supplement part number with required radius. Example: E4-48L-100-[200]-0
Pitch: 2.64 in. (67 mm) per link links/ft (m) = 4.54 (15)

Part Number				Bi	Ba	Weight	
Crossbars Every link	Tube Version			in. (mm)	in. (mm)	E4-48L lbs/ft (kg/m)	R4-48L lbs/ft (kg/m)
E4-48L-050-	R4-48L-050-	[ ]	-0	1.97 (50)	2.76 (70)	≈ 1.02 (1.53)	≈ 1.10 (1.64)
E4-48L-062-	R4-48L-062-	[ ]	-0	2.46 (62.5)	3.25 (82.5)	≈ 1.06 (1.58)	≈ 1.16 (1.73)
E4-48L-075-	R4-48L-075-	[ ]	-0	2.95 (75)	3.74 (95)	≈ 1.10 (1.64)	≈ 1.22 (1.82)
E4-48L-087-		[ ]	-0	3.44 (87.5)	4.23 (107.5)	≈ 1.20 (1.67)	–
E4-48L-100-	R4-48L-100-	[ ]	-0	3.94 (100)	4.72 (120)	≈ 1.16 (1.73)	≈ 1.35 (2.01)
E4-48L-105-		[ ]	-0	4.13 (105)	4.92 (125)	≈ 1.17 (1.74)	–
E4-48L-112-		[ ]	-0	4.41 (112)	5.20 (132)	≈ 1.20 (1.79)	–
E4-48L-125-	R4-48L-125-	[ ]	-0	4.92 (125)	5.71 (145)	≈ 1.24 (1.84)	≈ 1.46 (2.18)
E4-48L-137-		[ ]	-0	5.39 (137)	6.18 (157)	≈ 1.26 (1.88)	–
E4-48L-150-	R4-48L-150-	[ ]	-0	5.91 (150)	6.69 (170)	≈ 1.32 (1.97)	≈ 1.59 (2.36)
E4-48L-162-		[ ]	-0	6.38 (162)	7.17 (182)	≈ 1.34 (2.00)	–
E4-48L-175-	R4-48L-175-	[ ]	-0	6.89 (175)	7.68 (195)	≈ 1.37 (2.04)	≈ 1.73 (2.58)
E4-48L-200-	R4-48L-200-	[ ]	-0	7.87 (200)	8.66 (220)	≈ 1.44 (2.14)	≈ 1.81 (2.70)
E4-48L-225-		[ ]	-0	8.86 (225)	9.65 (245)	≈ 1.50 (2.24)	–
E4-48L-237-		[ ]	-0	9.33 (237)	10.12 (257)	≈ 1.55 (2.30)	–
E4-48L-250-	R4-48L-250-	[ ]	-0	9.84 (250)	10.63 (270)	≈ 1.58 (2.35)	≈ 2.07 (3.08)
E4-48L-262-		[ ]	-0	10.31 (262)	11.10 (282)	≈ 1.61 (2.39)	–
E4-48L-300-		[ ]	-0	11.81 (300)	12.60 (320)	≈ 1.73 (2.56)	–

Choose from the radii below for all of the above sizes
Radius (mm) Example: E4-48L-100-[200]-0

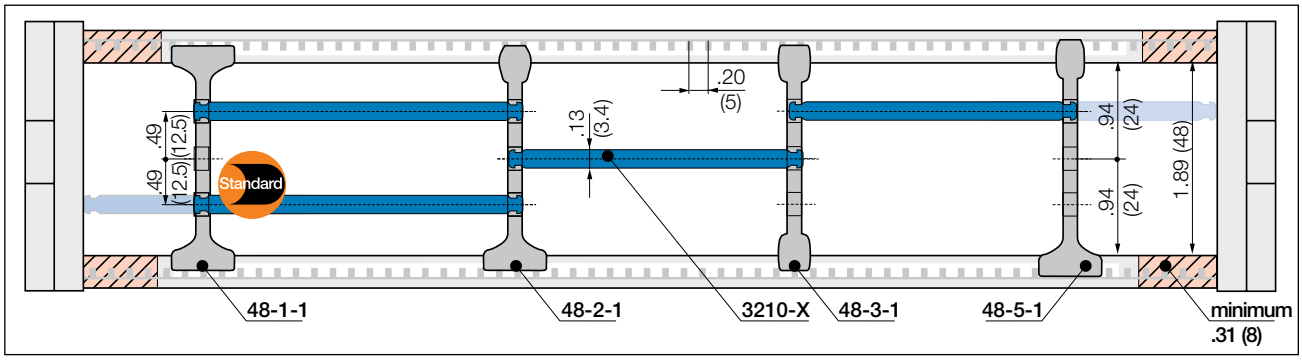
	[075**]	[100**]	[125]	[150]	[175]	[200]	[250]	[300]	[350]
R	2.95 (075)	3.94 (100)	4.92 (125)	5.91 (150)	6.89 (175)	7.87 (200)	9.84 (250)	11.81 (300)	13.78 (350)
H	8.43 (214)	10.39 (264)	12.36 (314)	14.33 (364)	16.30 (414)	18.27 (464)	22.20 (564)	26.14 (664)	30.08 (764)
D	8.19 (208)	9.17 (233)	10.16 (258)	11.14 (283)	12.13 (308)	13.11 (333)	15.08 (383)	17.05 (433)	19.02 (483)
K	14.57 (370)	17.72 (450)	20.87 (530)	24.02 (610)	26.97 (685)	30.12 (765)	36.22 (920)	42.52 (1080)	48.62 (1235)

** This radius is not available for the R4-32 Series
*Removable lid only, no hinged option
0 = Standard color black.
For other colors see Chapter 1

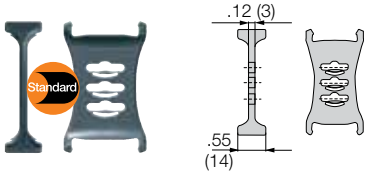
For large diameter hoses see page 6.174

PDF: igus.com/e-chain-pdfs
Product information: igus.com/e-chains

e-chain system® E4-1 light
Series E4-48L/R4-48L
Interior Separation



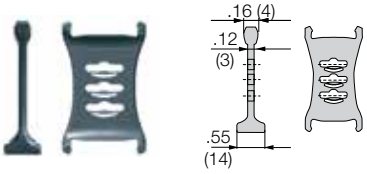
Note e-tube: Please maintain a lateral spacing of .31" (8 mm) between the separators and the side links. In the standard configuration separators are assembled every 2nd e-chain® link



Separator, wide base

Unassembled	**Part No. 48-1**
Assembled	**Part No. 48-1-1**

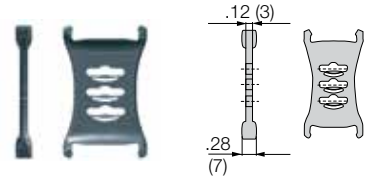
- **Standard separator 48-1**
  for all applications
  Separator with wide base for maximum locking strength and safe standing in e-chains® and e-tubes.



Separator, narrow head

Unassembled	**Part No. 48-2**
Assembled	**Part No. 48-2-1**

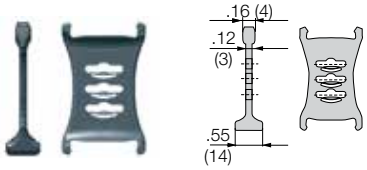
- **Separator 48-2**
  For even faster installation
  is used when vertical and horizontal separation is required. Due to its slot, it allows basic vertical/horizontal shelving arrangements.



Separator, narrow base

Unassembled	**Part No. 48-3**
Assembled	**Part No. 42-3-1**

- **Separator 48-3**
  For many thin cables
  is used when vertical and horizontal separation is required. Due to its slot, it allows basic vertical/horizontal shelving arrangements.

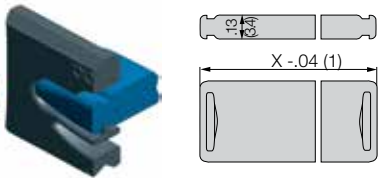


Separator, asymmetrical

Unassembled	**Part No. 48-5**
Assembled	**Part No. 48-5-1**

- **Separator 48-5**
  Locks safely in .30" (7.5 mm) increments
  Notch separator for exact positioning in e-chains®. Recommended for side-mounted applications.

Lockable full-width shelves - for the standard interior separation



Full width shelf, lockable

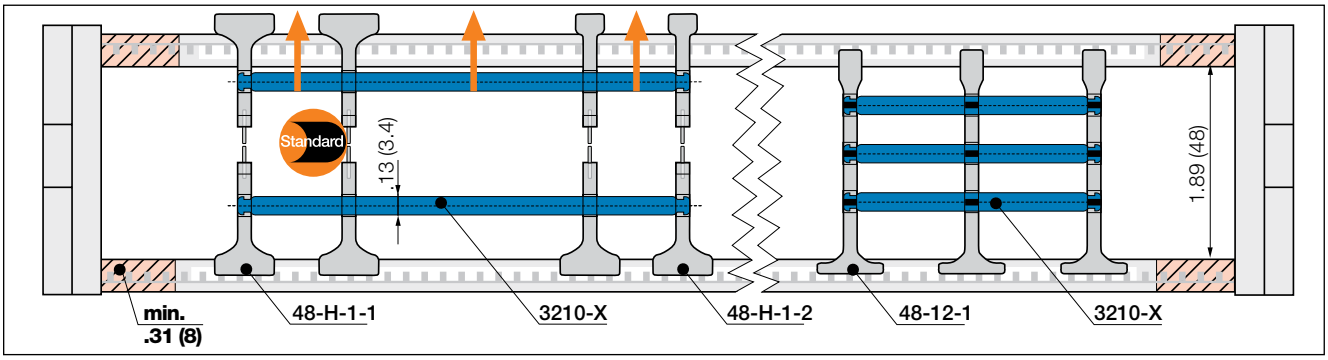
Unassembled	**Part No. 3200-X**
Assembled	**Part No. 3210-X**

- **Full width shelf, lockable**
  Shelf locks safely into separators on both ends, fixed width possible. Separators can be moved freely over the shelf in horizontal direction. Can be used at 3 different heights.

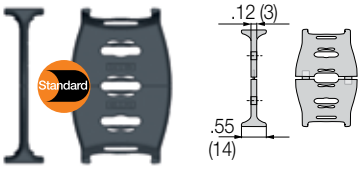
Width X in. (mm)	Part No. Unassembled	Part No. Assembled	Width X in. (mm)	Part No. Unassembled	Part No. Assembled	Width X in. (mm)	Part No. Unassembled	Part No. Assembled
1.97 (050)	**3200-50**	**3210-50**	4.92 (125)	**3200-125**	**3210-125**	8.86 (225)	**3200-225**	**3210-225**
2.95 (075)	**3200-75**	**3210-75**	5.91 (150)	**3200-150**	**3210-150**	9.84 (250)	**3200-250**	**3210-250**
3.94 (100)	**3200-100**	**3210-100**	6.89 (175)	**3200-175**	**3210-175**			
4.53 (115)	**3200-115**	**3210-115**	7.87 (200)	**3200-200**	**3210-200**			

igus® e-chain system®
Telephone 1-800-521-2747
Internet: igus.com
email: sales@igus.com
QuickSpec: igus.com/quickspec

e-chain system® E4-1 light
Series E4-48L/R4-48L
Special Accessories

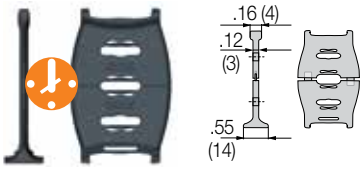


Note e-tube: Please maintain a lateral spacing of .24" (6 mm) between the separators and the side links. In the standard configuration separators are assembled every 2nd e-chain® link



Separator, wide base/top

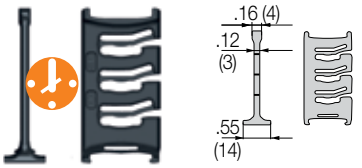
Unassembled	**Part No. 48-H-1**
Assembled	**Part No. 48-H-1-1**



Split separator, narrow top

Unassembled	**Part No. 48-H-2**
Assembled	**Part No. 48-H-2-1**

- **Split separators for all applications**
  In order to fill e-chains® more easily and effectively, these separators can be split in the middle. This allows easier access to middle shelf partitions. Fast assembly and easy retrofit. 2 types available: with wide or narrow top.



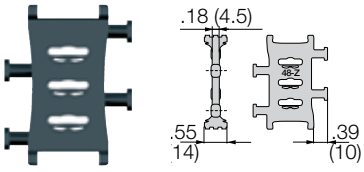
Lean Separator

Unassembled	**Part No. 48-12**
Assembled	**Part No. 48-12-1**

- **Lean separators 48-12**
  New design allows extremely fast fitting of shelves in several layers, which significantly reduces assembly time. Enables extremely fast replacement of individual cables in a very full e-chain®.



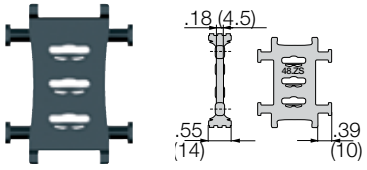
- **Lean separator design - several layers of cables fitted quickly, save up to 50%* assembly time**
  (*Lean separator vs. standard separator - measured on a 4m long e-chain® fitted with 12 cables in the igus® harnessing factory)



Separator, integrated strain relief

Unassembled	**Part No. 48-Z**
Assembled	**Part No. 48-Z-1**

- **Separator 48-Z with integrated strain relief**
  Can be integrated into the mounting bracket or placed at any point in the e-chain®. Combines strain relief and interior separation, for restricted space conditions. Strain relief separator is easy to assemble without any tools



Separator, integrated strain relief

Unassembled	**Part No. 48-ZS**
Assembled	**Part No. 48-ZS-1**

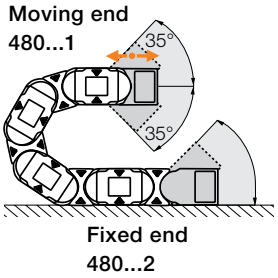
PDF: igus.com/e-chain-pdfs
Product information: igus.com/e-chains

e-chain system® E4-1 light
Series E4-48L/R4-48L
Mounting Brackets - KMA

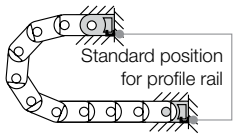
Standard

Option 1: pivoting

- Recommended for unsupported and gliding applications
- Attachment capability on all sides
- Bolted connection outside of chain cross-section
- Space restricted conditions
- Corrosion resistant

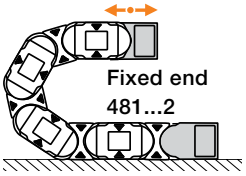


Pivoting angle depends on radius

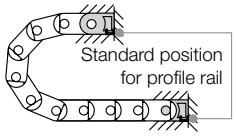


Option 2: locking

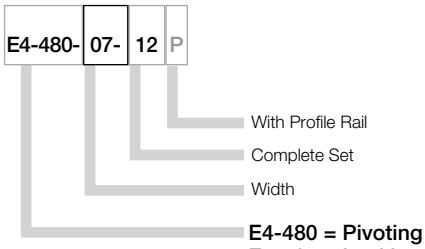
- Profile rail option
- Universal use
- Corrosion resistant
- Vertical hanging/standing travels
- Extreme accelerations

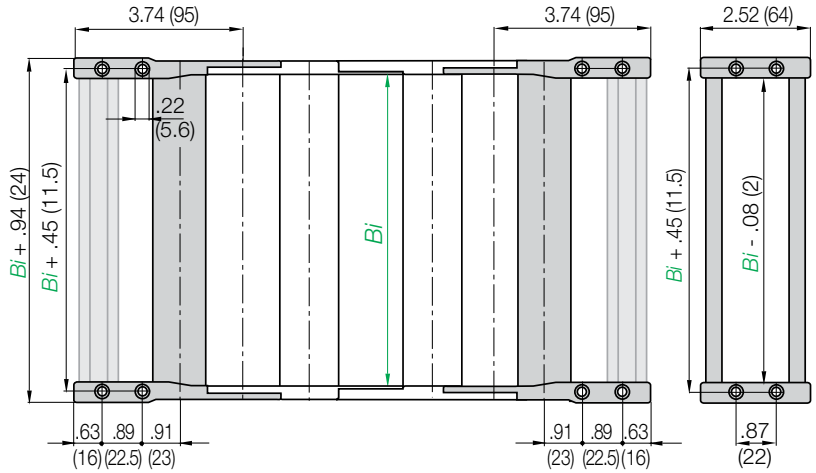


Pivoting angle depends on radius



Part Number Structure





Due to the design of the E4-48L series chains, please note the following when ordering brackets:
Even number of links = full set, part number ending in **-12**; **Odd number of links =** 2 pieces, part number ending in **-1**

Part number examples are shown for pivoting brackets for e-chain.
For locking brackets change part number to 481

Part No. Full Set (pivoting)
Series E4-48L
E4-480-Width-12

Part No. Full Set (pivoting)
with profile rail
Series E4-48L
E4-480-Width-12P

Width	Part No. Full Set chain		With Profile Rail	*Bi* in. (mm)
	Pivoting	Locking		
-050	E4-480	E4-481	-050-12 P	1.97 (50)
-062	E4-480	E4-481	-062-12 P	2.68 (62.5)
-075	E4-480	E4-481	-075-12 P	2.95 (75)
-087	E4-480	E4-481	-087-12 P	3.43 (87.5)
-100	E4-480	E4-481	-100-12 P	3.94 (100)
-105	E4-480	E4-481	-105-12 P	4.25 (105)
-112	E4-480	E4-481	-112-12 P	4.41 (112)
-125	E4-480	E4-481	-125-12 P	4.92 (125)
-137	E4-480	E4-481	-137-12 P	5.39 (137)

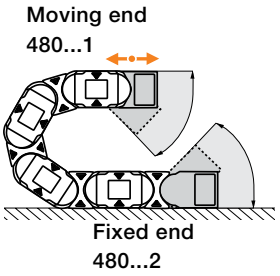
Width	Part No. Full Set chain		With Profile Rail	*Bi* in. (mm)
	Pivoting	Locking		
-150	E4-480	E4-481	-150-12 P	5.91 (150)
-162	E4-480	E4-481	-162-12 P	6.38 (162)
-175	E4-480	E4-481	-175-12 P	6.61 (175)
-200	E4-480	E4-481	-200-12 P	7.87 (200)
-225	E4-480	E4-481	-225-12 P	8.86 (225)
-237	E4-480	E4-481	-237-12 P	9.33 (237)
-250	E4-480	E4-481	-250-12 P	9.84 (250)
-262	E4-480	E4-481	-262-12 P	10.31 (262)

e-chain system® E4-1 light
Series E4-48L/R4-48L
Mounting Brackets - KMA

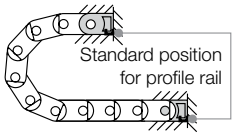
Standard

Option 1: pivoting

- Recommended for unsupported and gliding applications
- Attachment capability on all sides
- Bolted connection outside of chain cross-section
- Space restricted conditions
- Corrosion resistant

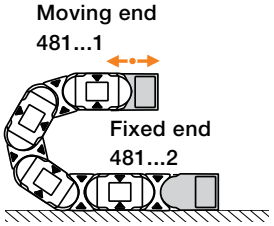


Pivoting angle depends on radius

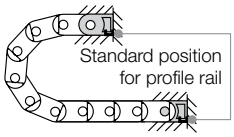


Option 2: locking

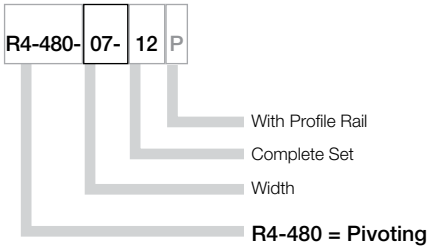
- Profile rail option
- Universal use
- Corrosion resistant
- Vertical hanging/standing travels
- Extreme accelerations

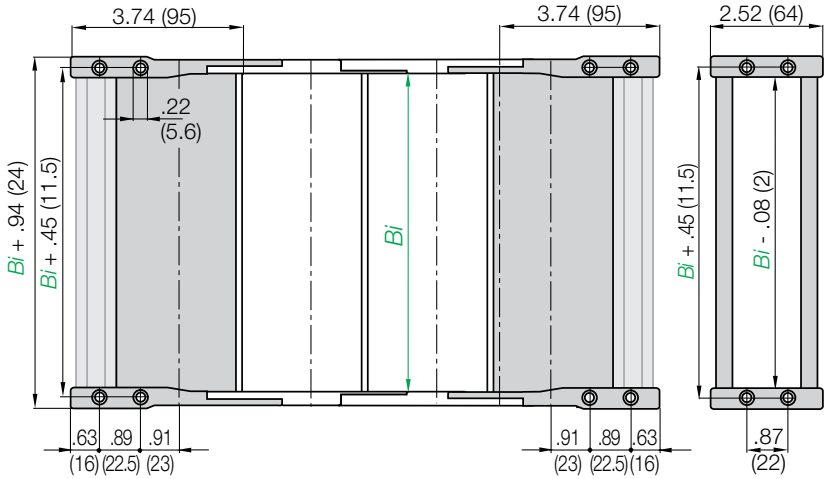


Pivoting angle depends on radius



Part Number Structure





Due to the design of the R4-48L series chains, please note the following when ordering brackets:
Even number of links = full set, part number ending in **-12**; **Odd number of links =** 2 pieces, part number ending in **-1**

Part number examples are shown for pivoting brackets for e-chain.
For locking brackets change part number to 481

Part No. Full Set (pivoting)
Tube Series R4-48L
R4-480-Width-12

Part No. Full Set (pivoting)
with Profile Rail
Tube Series R4-48L
R4-480-Width-12P

Width	Part No. Full Set tube			With Profile Rail	*Bi* in. (mm)
	Pivoting	Locking			
-050	R4-480	R4-481	-050-12	P	1.97 (50)
-062	R4-480	R4-481	-062-12	P	2.68 (62.5)
-075	R4-480	R4-481	-075-12	P	2.95 (75)
-100	R4-480	R4-481	-100-12	P	3.94 (100)
-125	R4-480	R4-481	-125-12	P	4.92 (125)

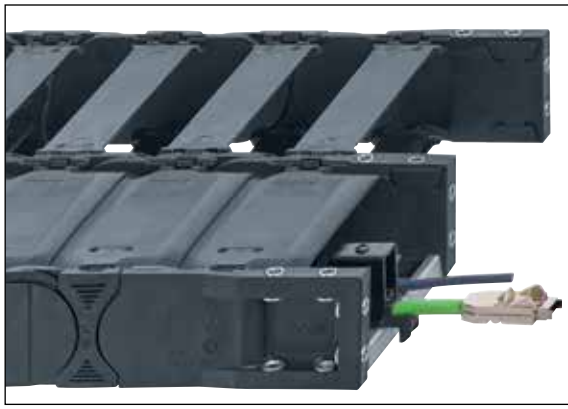
Width	Part No. Full Set tube			With Profile Rail	*Bi* in. (mm)
	Pivoting	Locking			
-150	R4-480	R4-481	-150-12	P	5.91 (150)
-175	R4-480	R4-481	-175-12	P	6.61 (175)
-200	R4-480	R4-481	-200-12	P	7.87 (200)
-250	R4-480	R4-481	-250-12	P	9.84 (250)

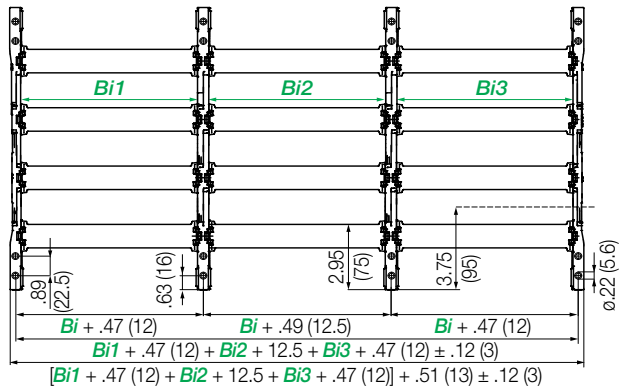
PDF: igus.com/e-chain-pdfs
Product information: igus.com/e-chains

e-chain system® E4-1 light
Series E4-48L
Accessories

Telephone 1-800-521-2747

Internet: igus.com
email: sales@igus.com
QuickSpec: igus.com/quickspec





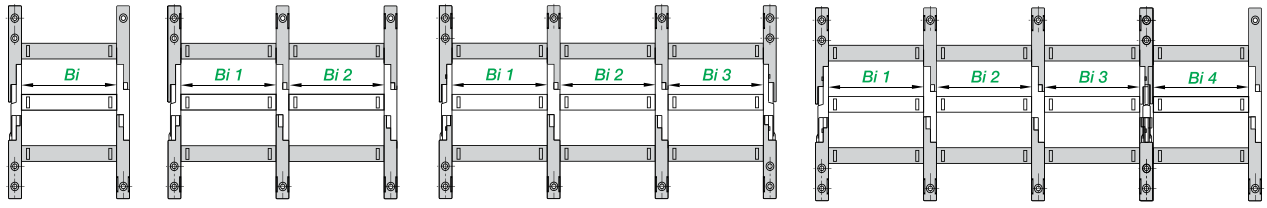
Extension links | For extremely wide e-chains® up to 6.56 ft. (2.0m) with 50% more fill weight

- Extension link e-chains® for 50% higher fill weight extension link up to widths of 6.56 ft. (2.0m) and more
- For heavy fill weights or e-chains® with many heavy cables next to each other
- e-chains® and e-tubes can be combined

Part No. Extension link e-chain®	Part No. Extension link e-tube	Part No. Extension link as an individual part
E4-48L-*Bi1*/*Bi2*/*Bi3*-*R*-0	R4-48L-*Bi1*/*Bi2*/*Bi3*-*R*-0	E4-48ML-*R*-

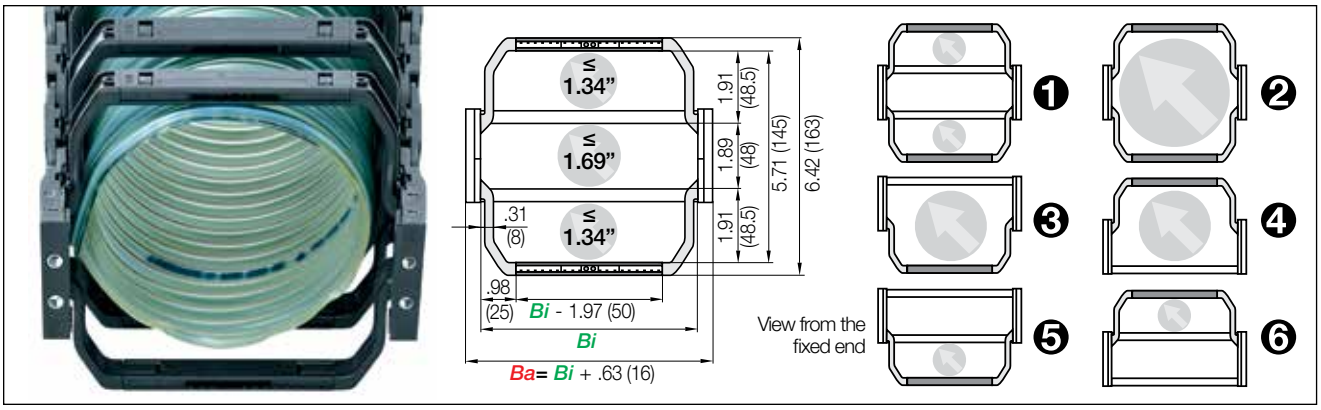
Complete Part No. with the width index *Bi1*/*Bi2*/*Bi3*/*etc.* and the radius (*R*). Example: **E4-48L-175/175/175-150-0**

Increase of the fill weight per extension link



Normal fill weight | **+50% more fill weight** | **+100% more fill weight** | **+150% more fill weight**

e-chain system® E4-1 light
Series E4-48L
Accessories



Extender crossbars with flexible width | Safe guiding for large hoses

- For guiding and protecting large hoses
- With mounting for noise dampers
- Cable-friendly design, high crossbar holding force
- The openable extender crossbars can be fitted in different ways and combinations
- Optionally openable along the inner or outer radius

Versions e-chain® with extender crossbar	Hose Ø ≤ in. (mm)	Part No. e-chain® with extender crossbar
1 Extender crossbar and standard crossbar alternating along the inner and outer radius [1]	1.34 (34)	E4-48L-XXXHB48-*R*-0
2 Extender crossbar on both sides along the inner and outer radius [2]	5.12 (130)	E4-48L-XXXB48-*R*-0
3 Extender crossbar along the outer radius [3]	3.35 (85)	E4-48L-XXXBE48-*R*-0
4 Extender crossbar along the inner radius [2]	3.35 (85)	E4-48L-XXXBZ48-*R*-0
5 Extender crossbar and standard crossbar alternating along the outer radius [3]	1.34 (34)	E4-48L-XXXHBE48-*R*-0
6 Extender crossbar and standard crossbar alternating along inner radius [1]	1.34 (34)	E4-48L-XXXHBZ48-*R*-0

1) Minimum bend radius: *R* 125
2) Minimum bend radius: *R* 150
3) Minimum bend radius: *R* 075 *Width available upon request. Delivery time upon request

Bi [mm] **Available inner widths**

| 100 | 125 | 137 | 150 | 162 | 175 | 187 | 200 | 212 | 225 | 237 | 250 |

Complete Part No. with the width index XXX *Bi* and the radius (*R*). Example
E4-48L-100B48-150-0 = extender crossbar on both sides along inner and outer radius



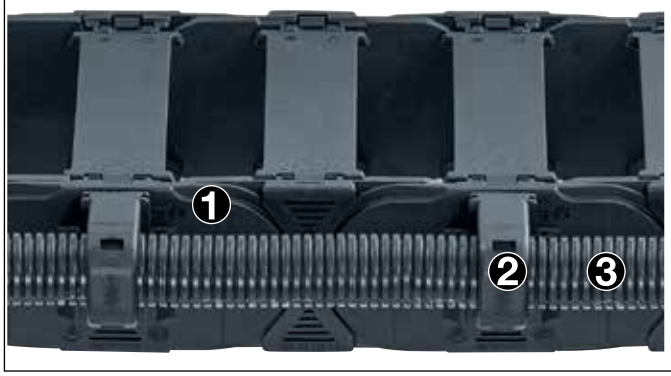
The E4.1L can be fitted with openable extender crossbars, which increase the size of the interior of the e-chain®. Crossbars can be fitted in various ways: from one or both sides, alternating with standard crossbars and or any combination

PDF: igus.com/e-chain-pdfs
Product information: igus.com/e-chains

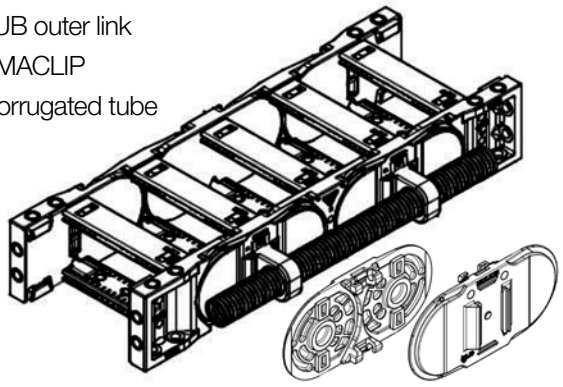
e-chain system® E4-1 light
Series E4-48L/R4-48L
Accessories

Telephone 1-800-521-2747

Internet: igus.com
email: sales@igus.com
QuickSpec: igus.com/quickspec



1 TUB outer link
2 PMACLIP
3 Corrugated tube



TUB | Safe guidance for corrugated tubes parallel to the e-chain®

- Additional, simple guidance for corrugated tubes on the outside of the e-chain®
- PMACLIP allows corrugated tubes with nominal widths .28 (07mm), .39 (10mm), .47 (12mm), .67 (17mm) to be easily clipped on
- Easy access to the corrugated tubes, fast replacement of the hoses
- Reduce assembly time and cost - easy to assemble, without any additional screws or tools
- The part number includes the e-chain® with TUB side sections; the PMACLIP support and the hose are ordered separately

Part No. TUB Outer link right*	Part No. TUB Outer link left*	Part No. TUB Outer link at both ends*	For corrugated tube nominal diameter Ø [mm]
E4-48L-XXXTUBR-*R*-0	E4-48L-XXXTUBL-*R*-0	E4-48L-XXXTUB-*R*-0	.28 (07), .39 (10), .47 (12), .67 (17)

*View from the fixed end

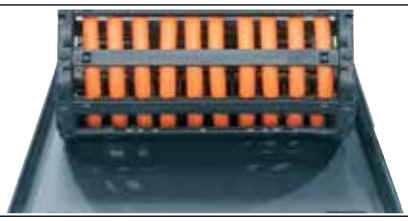
Part number appended with width index XXX *Bi* and radius (*R*) e.g.

E4-48L-100TUBR-150-0 = with TUB outer sections every 2nd right hand link

Steel support tray for saupport on the lower ruun

- Simple one-piece support trays for the lower run
- To your requirements and specifications
- 4 options available

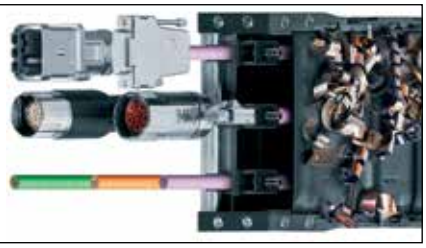
More information ➤ Chapter 9



Hot chips up to +1,562°F

- e-tubes to withstand +1,562°F hot chips, as a special option
- No hot chip melting or embedding into the chain
- igus® igumid HT material

More information ➤ www.igus.com/HT



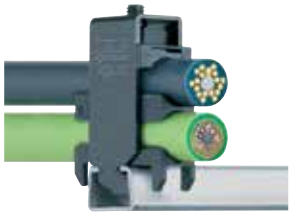
Honeycomb strain relief - CFU - Assembled in seconds

- Simply insert cables and hoses into the honeycomb and close
- Strain relief of different cables in one slot
- Easy to make changes to the filling
- Can be used in gliding applications

More information ➤ Chapter 10



Chainfix clamps for the profile rail



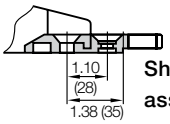
igus® Chainfix strain relief elements are available in either steel or stainless steel. They can be adjusted with a hexagon socket and are available in single, double and triple configurations.

Part No. Single Clamp		Part No. Double Clamp		Part No. Triple Clamp		Cable ø	
Steel	Stainless	Steel	Stainless	Steel	Stainless	in.	(mm)
CFX12-1	CFX12-1E	CFX12-2	CFX12-2E	CFX12-3	–	.24 - .47	(06 - 12)
CFX14-1	CFX14-1E	CFX14-2	CFX14-2E	CFX14-3	–	.47 - .55	(12 - 14)
CFX16-1	CFX16-1E	CFX16-2	CFX16-2E	CFX16-3	–	.55 - .63	(14 - 16)
CFX18-1	CFX18-1E	CFX18-2	CFX18-2E	CFX18-3	–	.63 - .71	(16 - 18)
CFX20-1	CFX20-1E	CFX20-2	CFX20-2E	CFX20-3	–	.71 - .79	(18 - 20)
CFX22-1	CFX22-1E	CFX22-2	CFX22-2E	CFX22-3	–	.79 - .87	(20 - 22)
CFX26-1	CFX26-1E	CFX26-2	CFX26-2E	–	–	.87 - 1.02	(22 - 26)
CFX30-1	CFX30-1E	CFX30-2	CFX30-2E	–	–	1.02 - 1.18	(26 - 30)
CFX34-1	CFX34-1E	CFX34-2	CFX34-2E	–	–	1.18 - 1.34	(30 - 34)
CFX38-1	CFX38-1E	–	–	–	–	1.34 - 1.50	(34 - 38)
CFX42-1	CFX42-1E	–	–	–	–	1.50 - 1.65	(38 - 42)

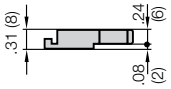
For more information please refer to strain relief section of Chapter 10

Tiewrap Plates





Shown assembled

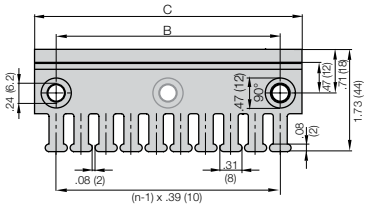


Single tiewrap plate

Option 1:
Tiewrap plates as an individual part

Available as an individual component, can be fixed onto a mounting bracket with the use of a profile rail.

Tiewrap Plate	n Number of Teeth	C Overall Width in. (mm)	B Bore Width in. (mm)	Center Bore
3050-ZB	5	1.97 (50)	1.18 (30)	no
3075-ZB	7	2.95 (75)	2.16 (55)	no
3100-ZB	10	3.94 (100)	3.15 (80)	no
3115-ZB	11	4.53 (115)	3.74 (95)	no
3125-ZB	12	4.92 (125)	4.13 (105)	no
3150-ZB	15	5.91 (150)	5.12 (130)	no
3175-ZB	17	6.89 (175)	6.10 (155)	no
3200-ZB	20	7.87 (200)	7.09 (180)	yes
3225-ZB	22	8.86 (225)	8.07 (205)	yes
3250-ZB	25	9.84 (250)	9.06 (230)	yes



If used with KMA brackets with profile rail please add “KMA” to the end of the part number.

For more information please refer to strain relief section of Chapter 10



Option 2:
Clip-on Tiewrap plates

Available as a clip-on tiewrap plate without the use of bolts They are inserted and removed with a screwdriver used as a lever. Clip-on tiewrap plates are also available as an attachment to the opening crossbars.

Part No.	Number of Teeth	Width of Strain Relief in.	(mm)
3050-ZC	5	1.97	(50)
3075-ZC	7	2.95	(75)

For more information please refer to strain relief section of Chapter 10

Strain relief with tiewrap teeth



Part No.	For series	Inner height *hi* in. (mm)	For use in
CFV-42-C	E4-64L	2.52 (64)	Top-hat (DIN) rail 15 (TS92.31)

PDF: igus.com/e-chain-pdfs
Product information: igus.com/e-chains

e-chain system® E4-1 light
Series E4-48L/R4-48L
Guide Trough

Telephone 1-800-521-2747

Internet: igus.com
email: sales@igus.com
QuickSpec: igus.com/quickspec

Guide troughs are used with applications where the upper run of the e-chain® glides on the lower run. If using igus® steel guide troughs, the following components are required:

- Full travel length of guide trough
  Part No. 93-30
- 1/2 travel length of glide bars
  Part No. 93-01
- Installation sets as end connectors
  Part No. 93-50-XX

-XX indicates the length of the profile rail on which the guide trough is mounted. The values and part numbers are specified in the table below. The standard length of the trough components and glide bars is 6.56 ft (2 m). The required overall length of the guide trough directly correlates to the length of travel

Example:
Length of travel 164 ft (50 m)
Center mounted
Required guide troughs:
164 ft (50 m) guide trough,
82 ft (25 m) glide bar

= 25 sections of 6.56 ft (2 m) guide trough
Part No. 93-30

= 13 sections of 6.56 ft (2 m) glide bar
Part No. 93-01

Required number of installation sets:
= Number of guide trough components + 1
= 25 + 1 = 26
Part No. of the installation sets **93-50-XXX**
Example: 93-50-400 for 15.75 (400 mm) long profile rail



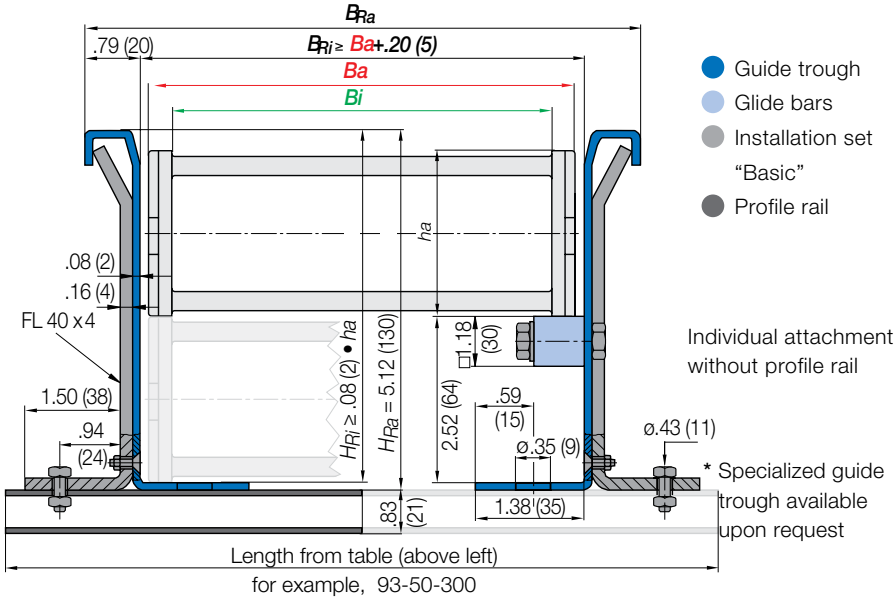
Left: Guide trough with glide bars
Right: Guide troughs without glide bars



Installation sets as section connectors

Width of Crossbar
E4-48L-**100**-200-0

	B_{Ri}	Installation Part No.
-050	2.95 (75)	**93-50-200**
-062	3.43 (87)	**93-50-200**
-075	3.94 (100)	**93-50-225**
-087	4.41 (112)	**93-50-225**
-100	4.92 (125)	**93-50-250**
-105	5.11 (130)	**93-50-250**
-112	5.39 (137)	**93-50-250**
-125	5.91 (150)	**93-50-275**
-137	6.38 (162)	**93-50-275**
-150	6.89 (175)	**93-50-300**
-162	7.36 (187)	**93-50-300**
-175	7.87 (200)	**93-50-325**
-200	8.86 (225)	**93-50-350**
-225	9.84 (250)	**93-50-375**
-237	10.31 (262)	**93-50-375**
-250	10.83 (275)	**93-50-400**
-262	11.30 (287)	**93-50-400**
-300	12.80 (325)	**93-50-450**



Telephone 1-800-521-2747

Internet: igus.com
email: sales@igus.com
QuickSpec: igus.com/quickspec

e-chain system® E4-1 light
Series E4-64L

Price Index

Series E4-64L Series R4-64L

Special Options Available

Low noise version available with special rubber pads

Clean-Room — Cleanroom test upon request

EX — ESD classification: Electrically conductive ESD/ ATEX version upon request

Assembly Tips



Opening To open, insert the screwdriver into the locking mechanism and pry it open outwards

Other Installation Methods

Vertical, hanging ≤ 262.5 ft (80 m)
Vertical, standing ≤ 26.25 ft (8 m)
Side-mounted, unsupp. ≤ 6.56 ft (2.0 m)
Rotary requires further calculation

Usage Guidelines

- If a lightweight, cost-effective e-chain® for high dynamics is required
- If short assembly times are required
- If optimized interior-exterior dimensions ratio is needed

- When the e-chain® needs to be extremely quiet (32dB(A)) with very low vibration
  ➤ **Series E6-1, Chapter 7**
- When the e-chain® is to be used in cleanrooms (cleanroom ISO class 1)

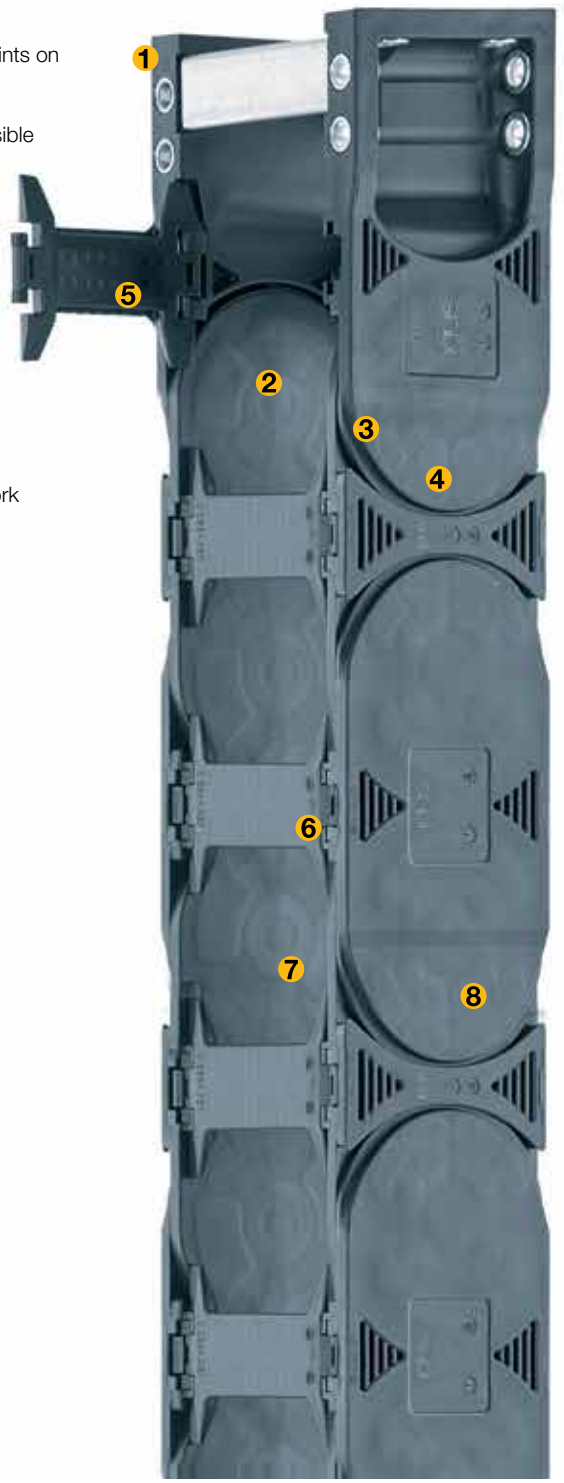
➤ **Series E6-1, Chapter 7**

- If even higher strength is required

➤ **Series E4-1, Chapter 6**

Features & Benefits

1. KMA mounting brackets with attachment points on all sides
2. Easy filling: inner diameter completely accessible
3. High stability due to undercut design
4. Efficient: less weight, enhanced dynamics
5. Notch crossbar with visual scale
6. Short assembly time: pivotable crossbars, snap-open along the inner and outer radius
7. Interior separation possible
8. Straight run due to inner/outer link design
9. Version NCST “without camber” simply by turning outer links without unnecessary rework





Also available without camber. Add NCST to the end of the part number.
Ex: E4-64L-100-200NCST

Order Example: Complete e-chain®

Please indicate chain length or number of links. Example:

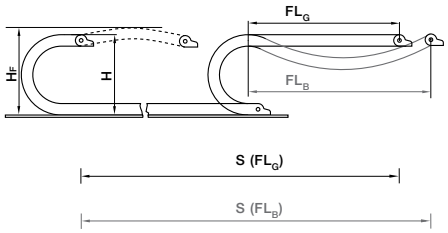
13.12 ft (4 m) **E4-64L-100-200-0**	**e-chain®**
With 2 separators **64-2-1** assembled every 2nd link	**Interior Separation**
1 Set **E4-640-100-12P**	**Mounting Bracket**

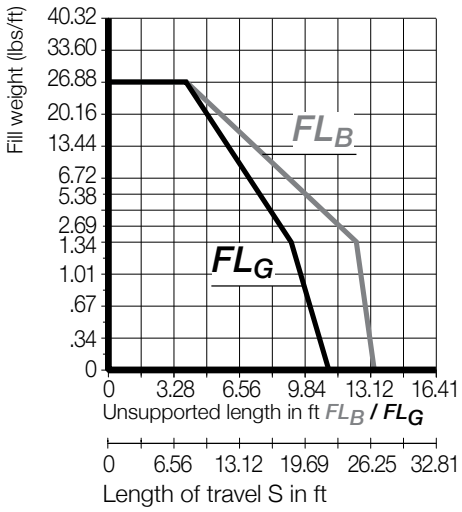
e-chain system® E4-1 light
Series E4-64L
Installation Dimensions

Short travel, unsupported length

- FL_B = unsupported with permitted sag
- FL_G = unsupported with straight upper run

Further information ➤ Design, Chapter 1



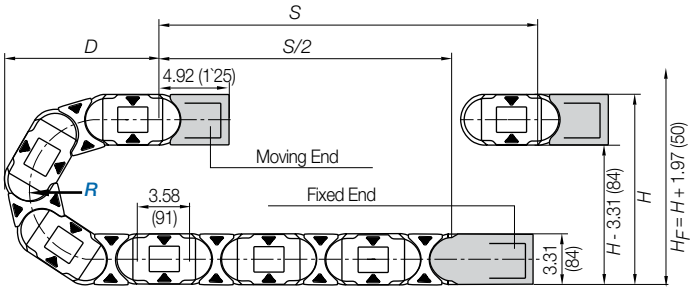


Short Travels - Unsupported

Unsupported e-chains® feature positive camber over short travels. This must be accounted for when specifying the clearance height. Please refer to for further details.

Legend

S = Length of travel
R = Bending radius
H = Nominal clearance height
D = Overlength e-chain® radius in final position
K = π • *R* + *safety buffer*
H_F = Required clearance height
H_{RI} = Trough inner height
H_2 = *Mounting height
D_2 = Overlength - long travels, gliding
K_2 = *Add-on
*If the mounting bracket location is set lower

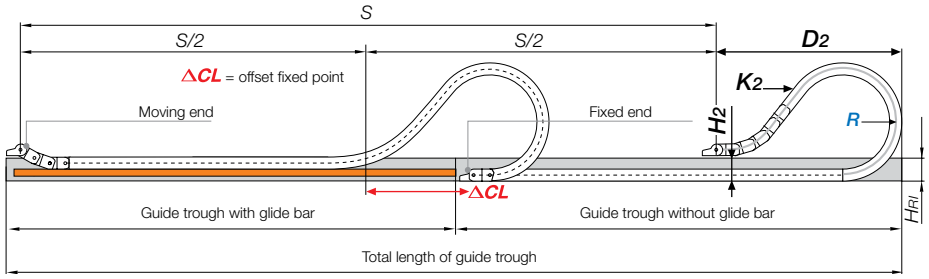


Pitch per link: = 3.58" (91 mm)
Links per ft (m): = (11)
For center mount applications:
Chain length = $S/2 + K$

The required clearance height: $H_F = H + 1.97$ **in. (50 mm)** (with .67 lbs/ft (1.0 kg/m) fill weight. Please consult igus® if space is particularly restricted.

R	3.94 (100)	4.92 (125)	5.91 (150)	6.89 (175)	7.87 (200)	9.84 (250)	11.81 (300)	13.78 (350)	15.75 (400)
H	11.18 (284)	13.15 (334)	15.12 (384)	17.09 (434)	19.06 (484)	22.99 (584)	26.93 (684)	30.87 (784)	34.80 (884)
D	10.98 (279)	11.97 (304)	12.95 (329)	13.94 (354)	14.92 (379)	16.89 (429)	18.86 (479)	20.83 (529)	22.80 (579)
K	19.69 (500)	22.64 (575)	25.79 (655)	28.94 (735)	32.09 (815)	38.19 (970)	44.29 (1125)	50.59 (1285)	56.69 (1440)

Gliding applications | For long travels, upon request



For center mount applications:
Chain length: = $S/2 + K_2$

Note: We recommend the project planning of such a system to be carried out by igus®.
In case of travels between 16.4 and 32.8 ft. (5 and 10m) we recommend an e-chain® with a longer unsupported length.

R	3.94 (100)	4.92 (125)	5.91 (150)	6.89 (175)	7.87 (200)	9.84 (250)	11.81 (300)	13.78 (350)	15.75 (400)
H_2	–	7.09 (180)	7.09 (180)	7.09 (180))	7.09 (180)	7.09 (180)	–	–	–
D_2	–	19.88 (505)	22.83 (580)	27.76 (705)	32.68 (830)	42.52 (1080)	–	–	–
K_2	–	32.24 (819)	35.83 (910)	46.57 (1183)	53.74 (1365)	68.07 (1729)	–	–	–
ΔCL	–	**	**	**	**	**	–	–	–

**Values upon request

Technical Data

Speed / acceleration FL_G	max. 65.6 ft/s (20 m/s) / max. 656 ft/s² (200 m/s²)
Speed / acceleration FL_B	max. 9.84 ft/s (3 m/s) / max. 19.69 ft/s² (6 m/s²)
Gliding speed / acceleration (maximum)	max. 16.4 ft/s (5 m/s) / max. 82 ft/s² (25 m/s²)
Material - permitted temperature	igumid G / -40°F (-40°C) up to +248°F (+120° C)
Flammability Class, igumid G	VDE 0304 IIC UL94 HB

Details of material properties
➤ Chapter 1

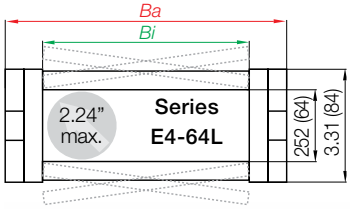
PDF: igus.com/e-chain-pdfs
Product information: igus.com/e-chains

e-chain system® E4-1 light
Series E4-64L/R4-64L
Product Range

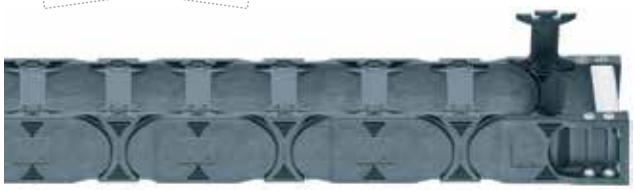
Telephone 1-800-521-2747

Internet: igus.com
email: sales@igus.com
QuickSpec: igus.com/quickspec

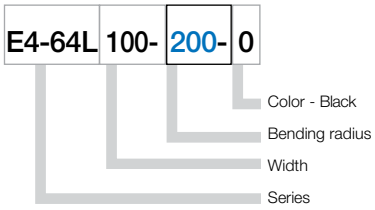
Series E4-64L - e-chain® with crossbars every link



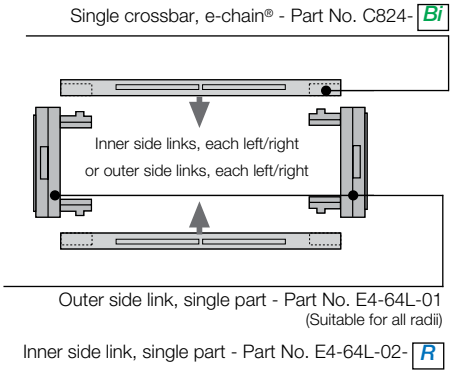
- Crossbars every link
- For use with rigid hydraulic hoses
- For particularly demanding applications
- Can be opened from both sides

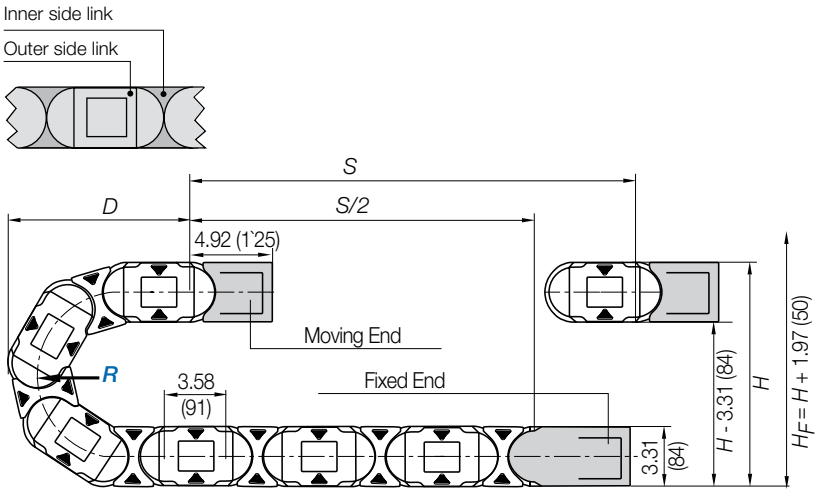


Part Number Structure



e-chain® as separate parts, links and side plates





Supplement part number with required radius. Example: E4-64L-100-200-0
Pitch: 3.58 in. (91 mm) per link links/ft (m) = (11)

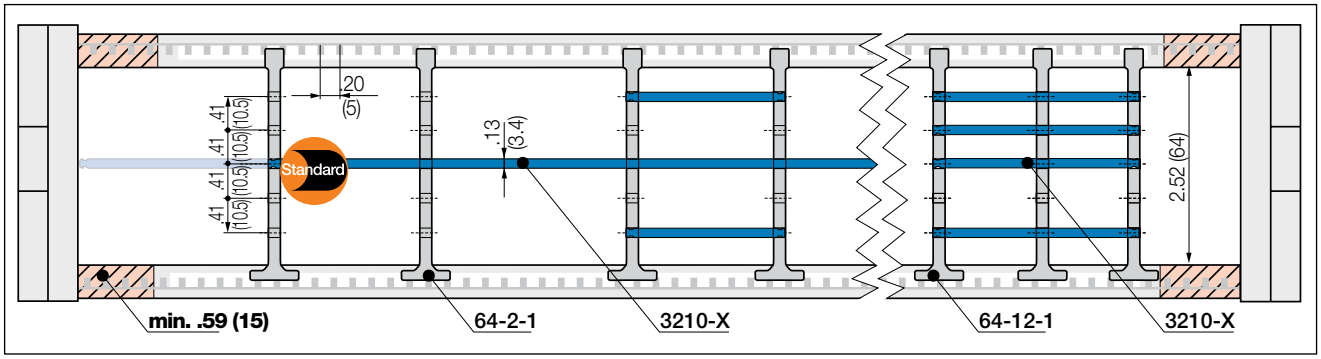
Part Number Crossbars Every link		Bi in. (mm)	Ba in. (mm)	Weight E4-64L lbs/ft (kg/m)
E4-64L-087-	-0	3.94 (87)	3.98 (101)	≈ 0.56 (0.83)
E4-64L-100-	-0	3.94 (100)	4.49 (114)	≈ 0.59 (0.88)
E4-64L-150-	-0	5.91 (150)	6.46 (164)	≈ 0.67 (1.00)
E4-64L-175-	-0	6.89 (175)	7.44 (189)	≈ 0.75 (1.13)
E4-64L-200-	-0	9.84 (200)	8.43 (214)	≈ 0.79 (1.17)

Choose from the radii below for all of the above sizes
Radius (mm) Example: E4-64L-100-200-0

	100	125	150	175	200	250	300	350	400
R	3.94 (100)	4.92 (125)	5.91 (150)	6.89 (175)	7.87 (200)	9.84 (250)	11.81 (300)	13.78 (350)	15.75 (400)
H	11.18 (284)	13.15 (334)	15.12 (384)	17.09 (434)	19.06 (484)	22.99 (584)	26.93 (684)	30.87 (784)	34.80 (884)
D	10.98 (279)	11.97 (304)	12.95 (329)	13.94 (354)	14.92 (379)	16.89 (429)	18.86 (479)	20.83 (529)	22.80 (579)
K	19.69 (500)	22.64 (575)	25.79 (655)	28.94 (735)	32.09 (815)	38.19 (970)	44.29 (1125)	50.59 (1285)	56.69 (1440)

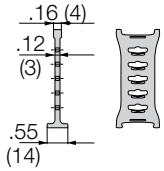
For other colors see Chapter 1

e-chain system® E4-1 light
Series E4-64L/R4-64L
Interior Separation



Note: Please maintain a lateral spacing of .24" (6 mm) between the separators and the side links. In the standard configuration separators are assembled every 2nd e-chain® link





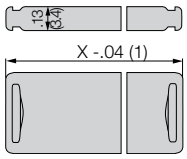
Separator, narrow top

Unassembled	**Part No. 64-2**
Assembled	**Part No. 64-2-1**

- **Separator 64-2**
  For even faster installation
  Firm hold to one side with a wide base, narrow on opposed side for easy cable assembly (slight grip).

Lockable full-width shelves - for the standard interior separation





Full width shelf, lockable

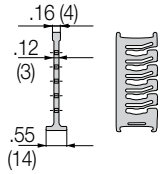
Unassembled	**Part No. 3200-X**
Assembled	**Part No. 3210-X**

- **Full width shelf, lockable**
  Shelf locks safely into separators on both ends, fixed width possible. Separators can be moved freely over the shelf in horizontal direction. Can be used at 3 different heights.

Width X in. (mm)	Part No. Unassembled	Part No. Assembled	Width X in. (mm)	Part No. Unassembled	Part No. Assembled	Width X in. (mm)	Part No. Unassembled	Part No. Assembled
1.97 (050)	**3200-50**	**3210-50**	4.92 (125)	**3200-125**	**3210-125**	8.86 (225)	**3200-225**	**3210-225**
2.95 (075)	**3200-75**	**3210-75**	5.91 (150)	**3200-150**	**3210-150**	9.84 (250)	**3200-250**	**3210-250**
3.94 (100)	**3200-100**	**3210-100**	6.89 (175)	**3200-175**	**3210-175**			
4.53 (115)	**3200-115**	**3210-115**	7.87 (200)	**3200-200**	**3210-200**			

Interior separation | To allow faster filling





Lean Separator

Unassembled	**Part No. 64-2**
Assembled	**Part No. 64-2-1**

- **Lean separators**
  New design allows extremely fast fitting of shelves in several layers, which significantly reduces assembly time. Enables extremely fast replacement of individual cables in a very full e-chain®.



- **Lean separator design - several layers of cables fitted quickly, save up to 50%* assembly time**
  (*Lean separator vs. standard separator - measured on a 13.12 ft. (4m) long e-chain® fitted with 12 cables in the igus® harnessing factory)

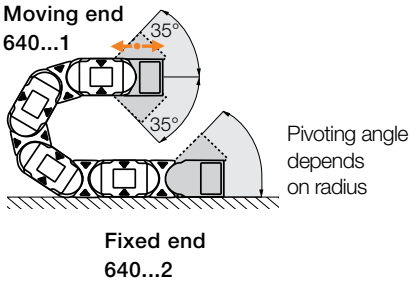
PDF: igus.com/e-chain-pdfs
Product information: igus.com/e-chains

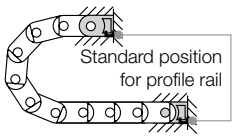
e-chain system® E4-1 light
Series E4-64L
Mounting Brackets - KMA

Standard

Option 1: pivoting

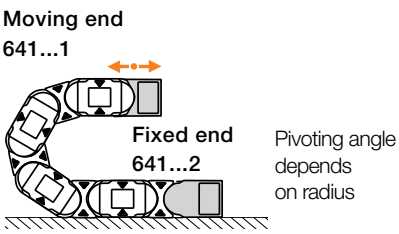
- Recommended for unsupported and gliding applications
- Attachment capability on all sides
- Bolted connection outside of chain cross-section
- Space restricted conditions
- Corrosion resistant

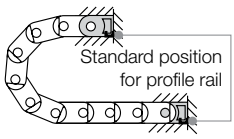




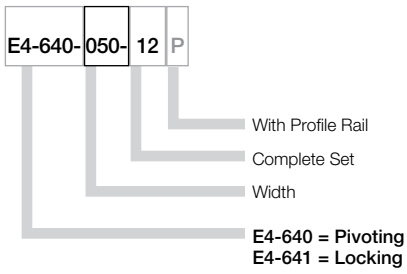
Option 2: locking

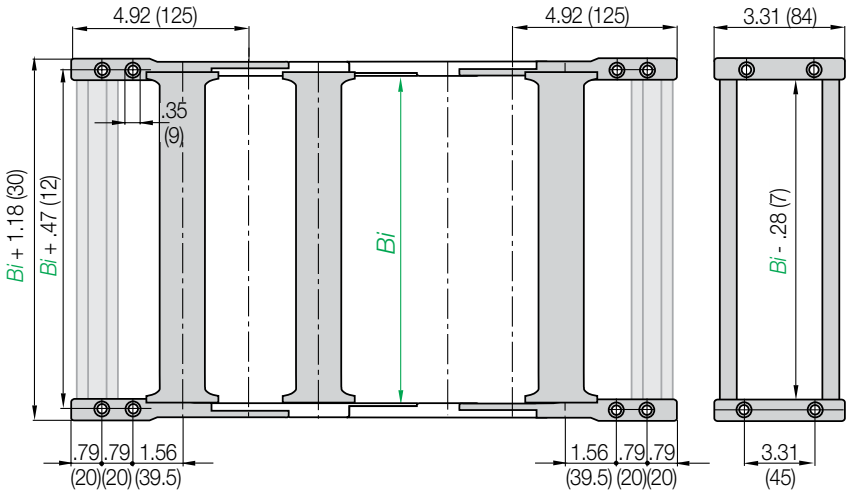
- Profile rail option
- Universal use
- Corrosion resistant
- Vertical hanging/standing travels
- Extreme accelerations





Part Number Structure





Due to the design of the E4-64L series chains, please note the following when ordering brackets:
Even number of links = full set, part number ending in **-12**; **Odd number of links =** 2 pieces, part number ending in **-1**

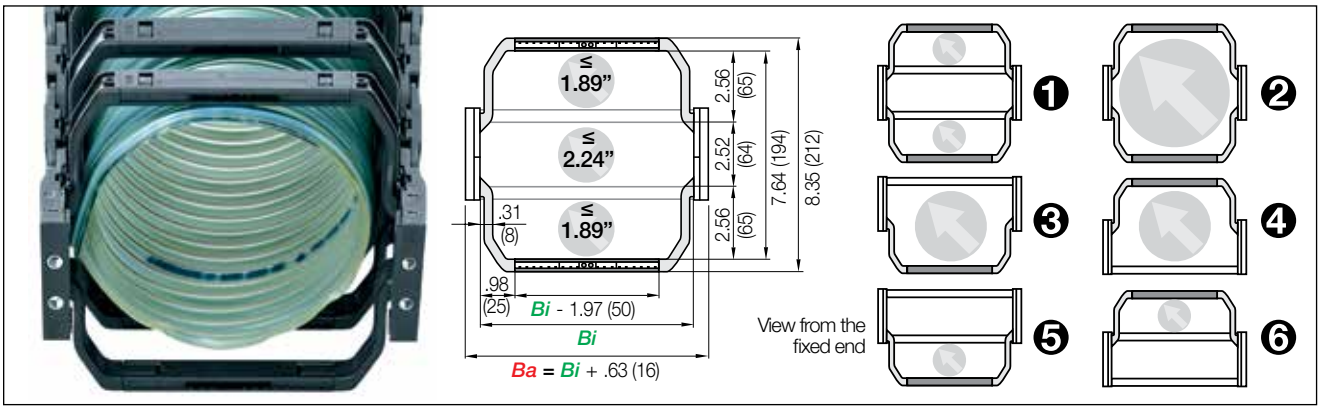
Part number examples are shown for pivoting brackets for e-chain.
For locking brackets change part number to 641

Part No. Full Set (pivoting)
Series E4-64L
E4-640-Width-12

Part No. Full Set (pivoting)
with profile rail
Series E4-64L
E4-640-Width-12P

Width	Part No. Full Set chain			With Profile Rail	*Bi* in. (mm)	Width	Part No. Full Set chain			With Profile Rail	*Bi* in. (mm)
	Pivoting	Locking					Pivoting	Locking			
-040	E4-640	E4-641	-040-12	P	1.57 (40)	-125	E4-640	E4-641	-125-12	P	4.92 (125)
-050	E4-640	E4-641	-050-12	P	1.97 (50)	-137	E4-640	E4-641	-137-12	P	5.39 (137.5)
-062	E4-640	E4-641	-062-12	P	2.68 (62.5)	-150	E4-640	E4-641	-150-12	P	5.91 (150)
-075	E4-640	E4-641	-075-12	P	2.95 (75)	-162	E4-640	E4-641	-162-12	P	6.38 (162.5)
-087	E4-640	E4-641	-087-12	P	3.43 (87.5)	-175	E4-640	E4-641	-175-12	P	6.61 (175)
-100	E4-640	E4-641	-100-12	P	3.94 (100)	-187	E4-640	E4-641	-187-12	P	7.36 (187)
-112	E4-640	E4-641	-112-12	P	4.41 (112.5)	-200	E4-640/	E4-641	-200-12	P	7.87 (200)

e-chain system® E4-1 light
Series E4-64L
Interior Separation



Extender crossbars with flexible width | Safe guiding for large hoses

- For guiding and protecting large hoses
- With mounting for noise dampers
- Cable-friendly design, high crossbar holding force
- The openable extender crossbars can be fitted in different ways and combinations
- Optionally openable along the inner or outer radius

Versions e-chain® with extender crossbar	Hose Ø ≤ in. (mm)	Part No. e-chain® with extender crossbar
❶ Extender crossbar and standard crossbar alternating along the inner and outer radius [1]	1.89 (48)	**E4-64L-XXXHB65-*R*-0**
❷ Extender crossbar on both sides along the inner and outer radius [2]	6.69 (170)	**E4-64L-XXXB65-*R*-0**
❸ Extender crossbar along the outer radius [3]	3.35 (115)	**E4-64L-XXXBE65-*R*-0**
❹ Extender crossbar along the inner radius [2]	3.35 (115)	**E4-48L-XXXBZ65-*R*-0**
❺ Extender crossbar and standard crossbar alternating along the outer radius [3]	1.89 (48)	**E4-48L-XXXHBE65-*R*-0**
❻ Extender crossbar and standard crossbar alternating along inner radius [1]	1.89 (48)	**E4-48L-XXXHBZ65-*R*-0**

1) Minimum bend radius: ***R*** 125
2) Minimum bend radius: ***R*** 150
3) Minimum bend radius: ***R*** 100 *Width available upon request. Delivery time upon request

Bi [mm] **Available inner widths**

| 100 | 125 | 137 | 150 | 162 | 175 | 187 | 200 | 212 | 225 | 237 | 250 |

Complete Part No. with the width index XXX ***Bi*** and the radius (***R***). Example
E4-64L-100B65-150-0 = extender crossbar on both sides along inner and outer radius

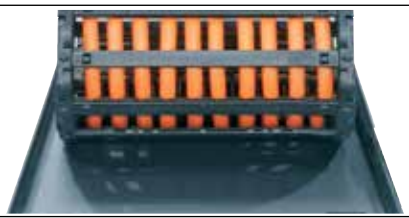


The E4.1L can be fitted with openable extender crossbars, which increase the size of the interior of the e-chain®. Crossbars can be fitted in various ways: from one or both sides, alternating with standard crossbars and or any combination

Steel support tray for saupport on the lower ruun

- Simple one-piece support trays for the lower run
- To your requirements and specifications
- 4 options available

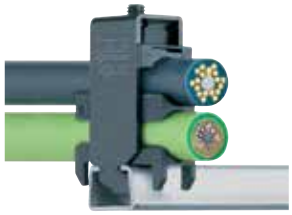
More information ➤ Chapter 9



PDF: igus.com/e-chain-pdfs
Product information: igus.com/e-chains

e-chain system® E4-1 light
Series E4-64L
Strain Relief

Chainfix clamps for the profile rail



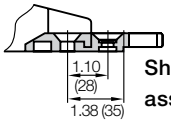
igus® Chainfix strain relief elements are available in either steel or stainless steel. They can be adjusted with a hexagon socket and are available in single, double and triple configurations.

Part No. Single Clamp		Part No. Double Clamp		Part No. Triple Clamp		Cable ø	
Steel	Stainless	Steel	Stainless	Steel	Stainless	in.	(mm)
CFX12-1	CFX12-1E	CFX12-2	CFX12-2E	CFX12-3	–	.24 - .47	(06 - 12)
CFX14-1	CFX14-1E	CFX14-2	CFX14-2E	CFX14-3	–	.47 - .55	(12 - 14)
CFX16-1	CFX16-1E	CFX16-2	CFX16-2E	CFX16-3	–	.55 - .63	(14 - 16)
CFX18-1	CFX18-1E	CFX18-2	CFX18-2E	CFX18-3	–	.63 - .71	(16 - 18)
CFX20-1	CFX20-1E	CFX20-2	CFX20-2E	CFX20-3	–	.71 - .79	(18 - 20)
CFX22-1	CFX22-1E	CFX22-2	CFX22-2E	CFX22-3	–	.79 - .87	(20 - 22)
CFX26-1	CFX26-1E	CFX26-2	CFX26-2E	–	–	.87 - 1.02	(22 - 26)
CFX30-1	CFX30-1E	CFX30-2	CFX30-2E	–	–	1.02 - 1.18	(26 - 30)
CFX34-1	CFX34-1E	CFX34-2	CFX34-2E	–	–	1.18 - 1.34	(30 - 34)
CFX38-1	CFX38-1E	–	–	–	–	1.34 - 1.50	(34 - 38)
CFX42-1	CFX42-1E	–	–	–	–	1.50 - 1.65	(38 - 42)

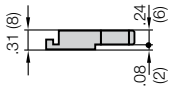
For more information please refer to strain relief section of Chapter 10

Tiewrap Plates





Shown assembled

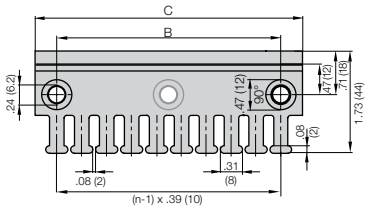


Single tiewrap plate

Option 1:
Tiewrap plates as an individual part

Available as an individual component, can be fixed onto a mounting bracket with the use of a profile rail.

Tiewrap Plate	n Number of Teeth	C Overall Width in. (mm)	B Bore Width in. (mm)	Center Bore
3050-ZB	5	1.97 (50)	1.18 (30)	no
3075-ZB	7	2.95 (75)	2.16 (55)	no
3100-ZB	10	3.94 (100)	3.15 (80)	no
3115-ZB	11	4.53 (115)	3.74 (95)	no
3125-ZB	12	4.92 (125)	4.13 (105)	no
3150-ZB	15	5.91 (150)	5.12 (130)	no
3175-ZB	17	6.89 (175)	6.10 (155)	no
3200-ZB	20	7.87 (200)	7.09 (180)	yes
3225-ZB	22	8.86 (225)	8.07 (205)	yes
3250-ZB	25	9.84 (250)	9.06 (230)	yes



If used with KMA brackets with profile rail please add “KMA” to the end of the part number.

For more information please refer to strain relief section of Chapter 10



Option 2:
Clip-on Tiewrap plates

Available as a clip-on tiewrap plate without the use of bolts They are inserted and removed with a screwdriver used as a lever. Clip-on tiewrap plates are also available as an attachment to the opening crossbars.

Part No.	Number of Teeth	Width of Strain Relief in.	(mm)
3050-ZC	5	1.97	(50)
3075-ZC	7	2.95	(75)

For more information please refer to strain relief section of Chapter 10

Strain relief with tiewrap teeth



Part No.	For series	Inner height *hi* in. (mm)	For use in
CFV-80-C	E4-64L	2.52 (64)	Top-hat (DIN) rail 15 (TS92.31)

e-chain system® E4-1 light
Series E4-64L
Guide Trough

Guide troughs are used with applications where the upper run of the e-chain® glides on the lower run. If using igus® steel guide troughs, the following components are required.

- Full travel length of guide trough
  Part No. 94-30
- 1/2 travel length glide bars
  Part No. 93-01
- Installation sets as end connectors
  Part No. 94-50-XX

.XX indicates the length of the profile rails on which the guide trough is mounted. The values and part numbers are specified in the table on the left. The standard length of the trough components and glide bars is 6.56 ft (2m). The required overall length of the guide trough directly correlates to the length of travel.

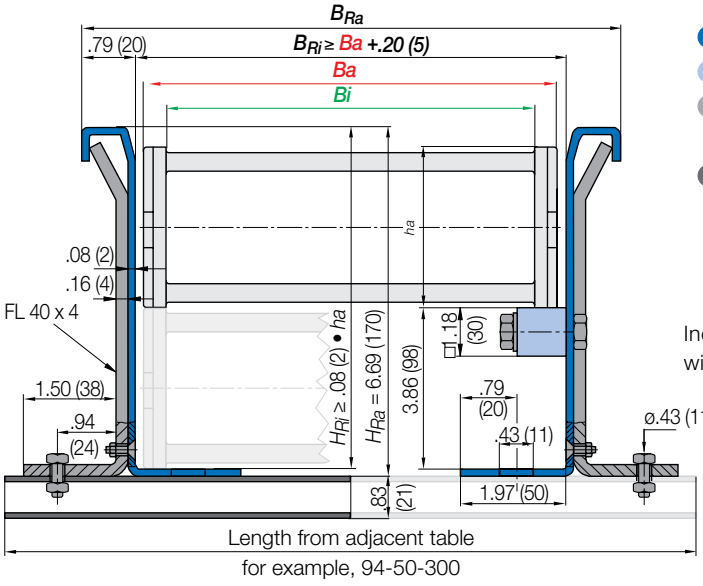
Example:
Length of travel 164 ft (50 m)
Center mounted
-
Required guide troughs:
164 ft (50 m) guide trough
82 ft (25 m) glide bars
= 25 sections of 6.56 ft (2 m) guide trough
Part No. 94-30
= 13 sections of 6.56 ft (2 m) glide bars
Part No. 93-01
Required number of installation sets:
= Number of guide trough components + 1
= 25 + 1 = 26
Part number of the installation sets
94-50-XXX
Example:
94-50-400 for 15.75 (400 mm) long profile rail



Left: Guide trough with glide bars
Right: Guide troughs without glide bars



Installation sets as section connectors



- Guide trough
- Glide bars
- Installation set "Basic"
- Profile rail

Individual attachment without profile rail

Width of Crossbar
E4-56-**05**-200-0

	B_{Ri}	Installation Part No.
-087	4.65 (118)	**94-50-250**
-100	5.16 (131)	**94-50-250**
-150	7.13 (181)	**94-50-300**
-200	9.09 (231)	**94-50-350**

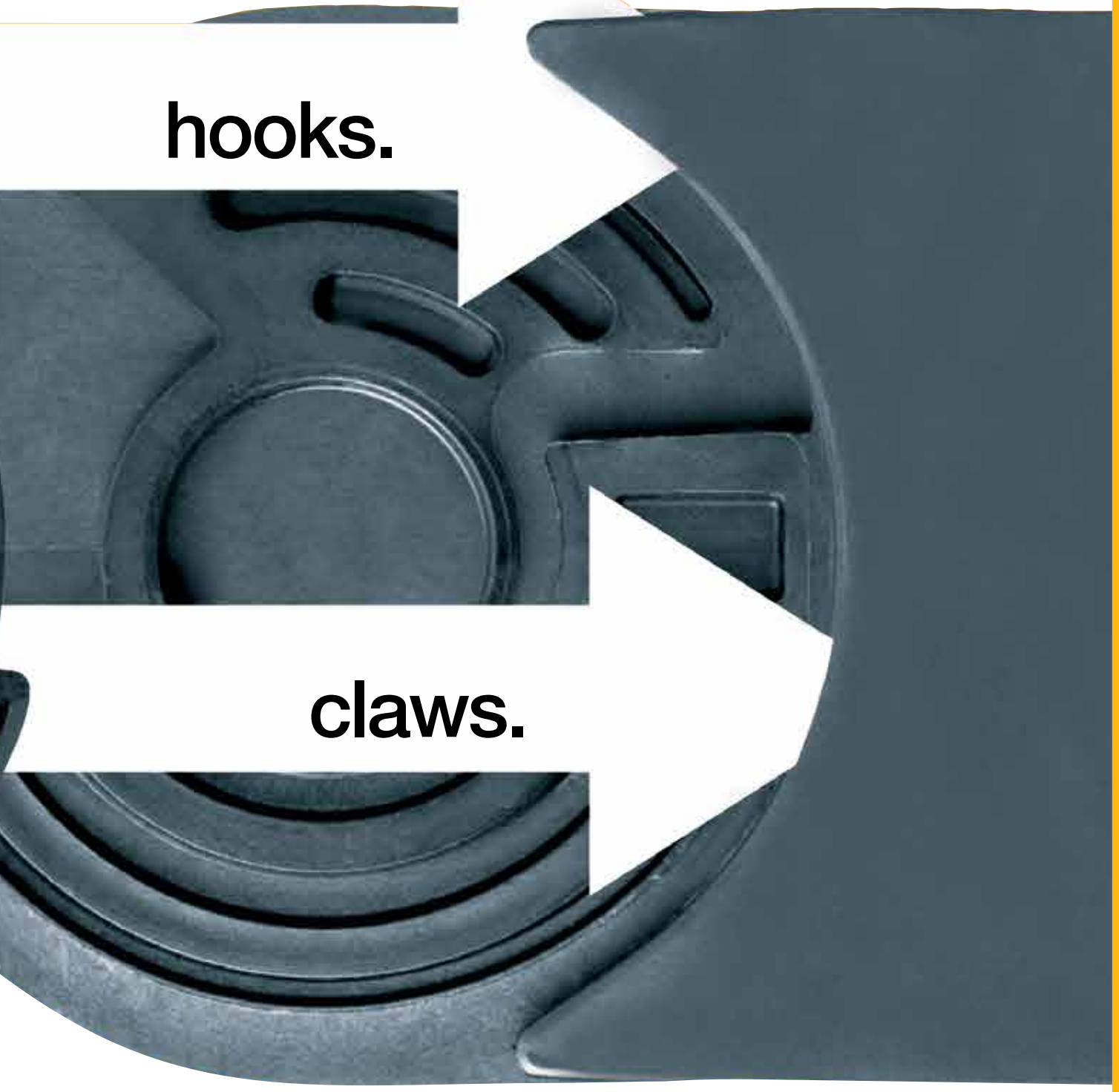
Standard length profile rail

* Specialized guide trough available upon request

PDF: igus.com/e-chain-pdfs
Product information: igus.com/e-chains



hooks.



claws.

igus®
E4/light

6.188

E4/light - stable, lightweight and cost-effective

System E4/Light – E4 ‘light’ features smaller side links (all sizes and styles) and thinner crossbars (specifically styles 14240 and 14340) when compared to igus®’ standard E4 cable carriers. It’s cost-effective, lightweight and still offers a large interior space for multiple cables and hoses. E4 light works especially for un-supported, short travel applications and is also ideal in hanging and short-standing designs.



Typical industries and applications

- Machine tools
- Material handling
- Stone cutting machines
- Woodworking machines
- General machinery
- Vehicles
- Construction machinery
- Limited long travel applications

ATEX/ESD: Excellent performance with the special material igumid ESD (upon request) “Rear grip” achieves long-term electrical conductivity

Side-mounted - unsupported

High torsional rigidity

System E4/4 approved with long travels

E4/light e-chains® and e-tubes are ideal in Machine Tools

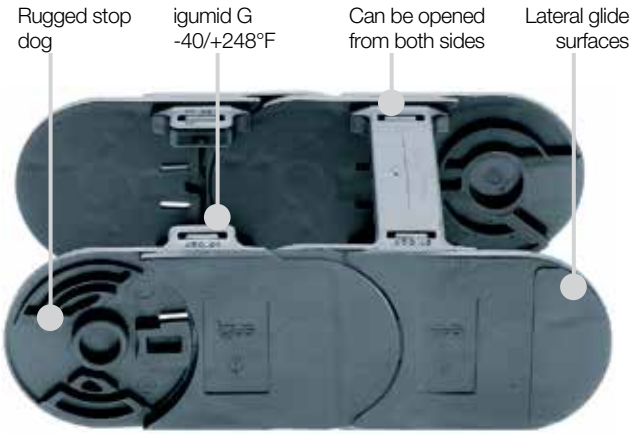


E4/light in an unsuppoted application



With the space-saving igus® E4 polymer e-chains® the overall dimension for the installation for this crane system was considerably reduced

e-chain system® E4 light
Selection Guide



E4/light version with the approved E4/4 Series undercut design

- Lightweight
- Optimized ratio of interior and exterior dimension
- Cost-effective
- Numerous interior separation possibilities
- Wide range of modular accessories
- Narrow outer links
- Maximum stability in the igus® range
- Maximum travel: 492 - 820 ft (150 - 250 m)
- You can find more technical data about the material, chemical resistance, temperatures ➤ **Design, Chapter 1**

Crossbars every link
for particularly demanding applications



Series	Inner height *hi* in. (mm)	Inner width *Bi* in. (mm)	Outer width *Ba* in. (mm)	Outer height *ha* in. (mm)	Bending radius *R* in. (mm)
14040	2.20 (56)	1.97-23.62 (50-600)	2.99-24.65 (76-626)	3.31 (84)	5.31-19.69 (135-500)
14240	2.44 (62)	1.97-15.75 (50-400)	2.99-16.77 (76-426)	3.31 (84)	5.31-19.69 (135-500)
14550	2.76 (70)	1.97-23.62 (50-600)	3.03-24.69 (77-627)	3.86 (98)	5.91-23.62 (150-600)
15050	3.15 (80)	1.97-23.62 (50-600)	3.15-24.80 (80-630)	4.25 (108)	5.91-19.69 (150-500)
15250	3.39 (86)	1.97-23.62 (50-400)	3.15-16.93 (80-430)	4.25 (108)	5.91-23.62 (150-600)
1640	4.41 (112)	1.97-23.62 (50-600)	3.31-24.96 (84-634)	5.51 (140)	7.87-23.62 (200-600)

Crossbars every 2nd link
for almost all applications



Series	Inner height *hi* in. (mm)	Inner width *Bi* in. (mm)	Outer width *Ba* in. (mm)	Outer height *ha* in. (mm)	Bending radius *R* in. (mm)
14140	2.20 (56)	1.97-23.62 (50-600)	2.99-24.65 (76-626)	3.31 (84)	5.31-19.69 (135-500)
14340	2.44 (62)	1.97-15.75 (50-400)	2.99-16.77 (76-426)	3.31 (84)	5.31-19.69 (135-500)
14650	2.76 (70)	1.97-23.62 (50-600)	3.03-24.69 (77-627)	3.86 (98)	5.91-23.62 (150-600)
15150	3.15 (80)	1.97-23.62 (50-600)	3.15-24.80 (80-630)	4.25 (108)	5.91-19.69 (150-500)
15350	3.39 (86)	1.97-23.62 (50-400)	3.15-16.93 (80-430)	4.25 (108)	5.91-23.62 (150-600)

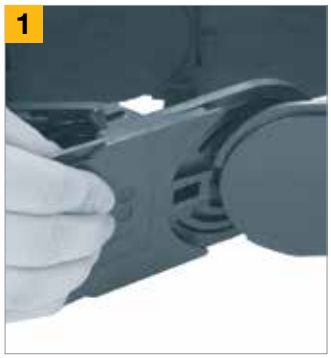
e-tubes
fully enclosed,
excellent cable protection
Available for certain widths and radii



Series	Inner height *hi* in. (mm)	Inner width *Bi* in. (mm)	Outer width *Ba* in. (mm)	Outer height *ha* in. (mm)	Bending radius *R* in. (mm)
R18840	2.20 (56)	2.95-18.19 (75-462)	3.98-19.25 (101-489)	3.31 (84)	5.91-19.69 (150-500)
R19050	2.76 (70)	2.95-18.19 (75-462)	4.01-19.25 (102-489)	3.86 (98)	7.87-23.62 (200-600)
R19850	3.15 (80)	2.95-18.19 (75-462)	4.13-19.41 (105-493)	4.25 (108)	7.87-19.69 (200-500)
R1608	4.25 (108)	7.87-19.69 (200-500)	9.21-17.09 (234-434)	5.51 (140)	9.84-23.62 (250-600)

e-chain system® E4 light
Assembly instructions

e-chains® and e-tubes - Assembling



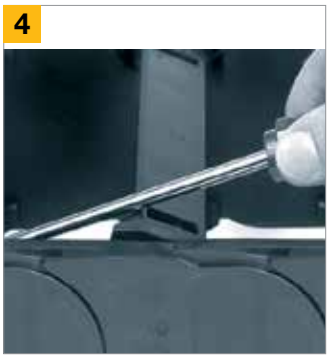
Position at one side ...



... and snap in

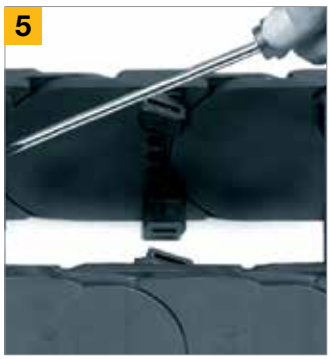


Position opposite side.
Press together and snap in



Assemble crossbars - push down and snap in using a screwdriver

Assembling continued



Assemble clips (for e-chains with crossbars every other link) - push down and snap in using a screwdriver

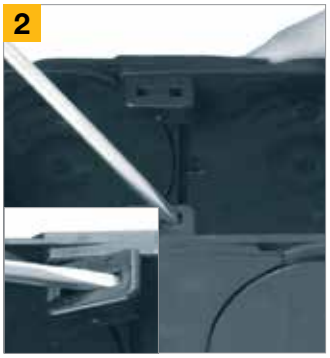


Assemble e-tube lids and bottoms - Attach to the connector at an angle and snap in place

e-chains® - Opening

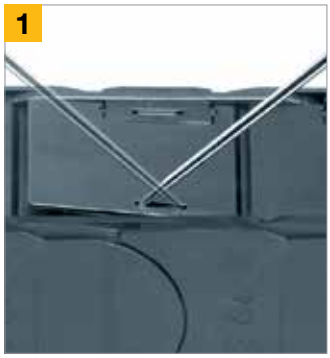


Remove crossbars - Insert screwdriver into the slot, using a lever action, apply pressure to the screwdriver to remove the crossbar.

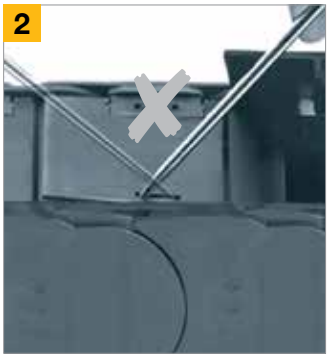


Remove clips - Insert screwdriver into the slot, using a lever action, apply pressure to the screwdriver to remove the clip

e-tube - Opening



Remove lids/bottoms - Insert screwdriver into the slot, using a lever action apply pressure to the screwdriver to release



Release only **one side** to open the lid

e-chains® and e-tubes - Separating



Remove crossbars, clips, lids and bottoms at the outer links



Insert screwdriver into the slot between the side links. Using a lever action, release the side links

Available from stock. Orders ship as early as today.*

*On average 90% of orders ship the same day..

e-chain system® E4 light
Series 14040/14140/R18840

2.20” 2.20”

Price Index

Series 14040 Series 14140

Series R18840

Special Features / Options

ESD classification: Electrically conductive ESD/ ATEX version upon request

High torsional rigidity

Side-mounted - unsupported

Assembly Tips



Opening e-chains®: Remove crossbars and clips - Insert screwdriver into the slot, push down, release by lever action



Remove lids/bottoms (e-tubes) - Insert screwdriver into the slot, release by lever action

Other Installation Methods

Vertical, hanging ≤ 262 ft (80 m)
Vertical, standing ≤ 19.69 ft (6 m)
Side-mounted, unsupp. ≤ 6.56 ft (2 m)
Rotary requires further calculation

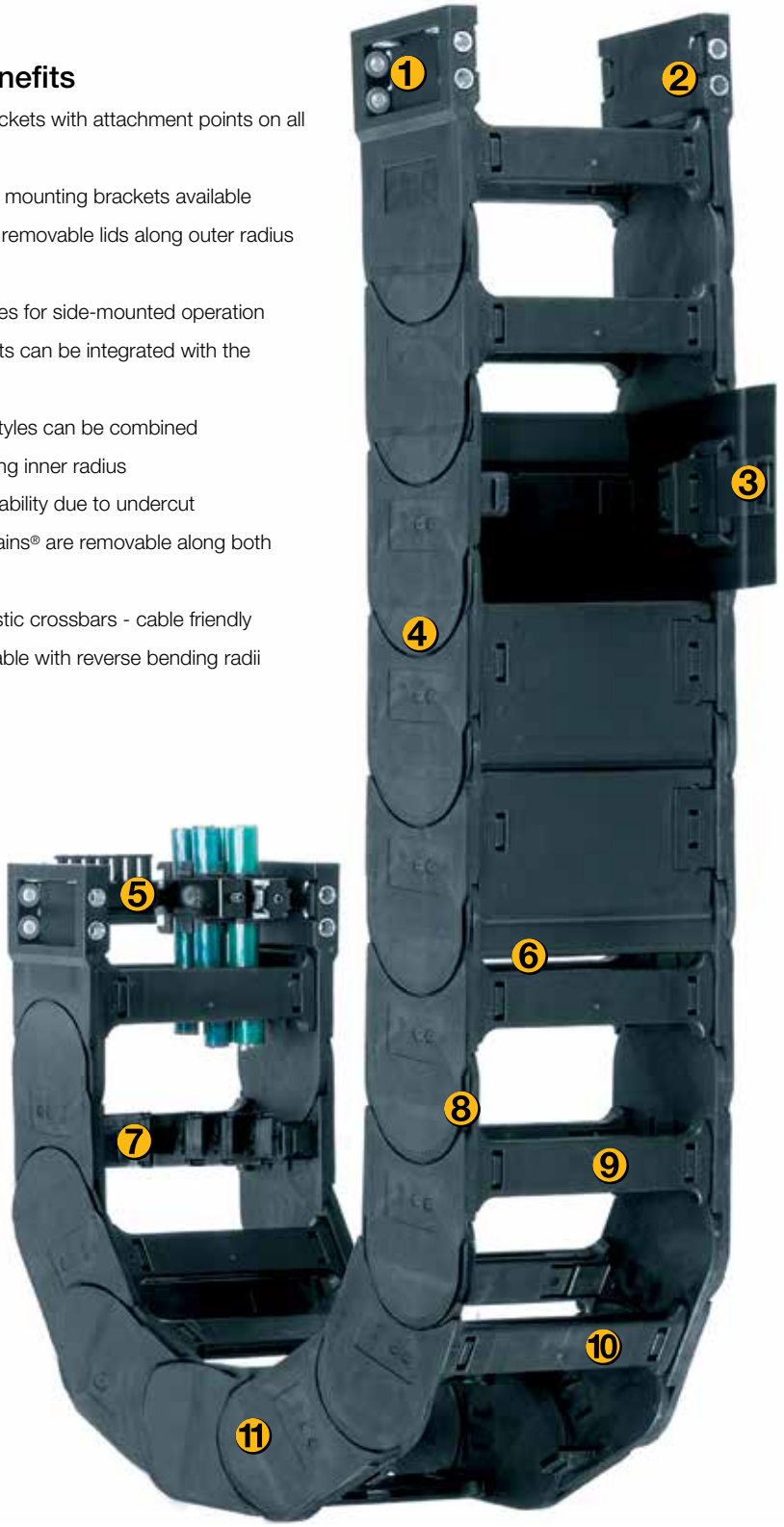
Usage Guidelines

- If a simpler low-cost solution is required
- For maximum inner width with minimal outer width
- If the Series 400 is too large

- If a quieter version is required
  ➤ **Series E6-52**
- If side-mounted chain/tube with a long unsupported travel is required
  ➤ **Series E4-56/H4-56/R4-56**
- If increased unsupported lengths and longer travels are required
  ➤ **Series E4-56/H4-56/R4-56**

Features & Benefits

1. KMA mounting brackets with attachment points on all sides
2. Locking or pivoting mounting brackets available
3. Hinged snap-open removable lids along outer radius of e-tube
4. Lateral glide surfaces for side-mounted operation
5. Strain relief elements can be integrated with the mounting bracket
6. Closed and open styles can be combined
7. Removable lids along inner radius
8. High side-mount stability due to undercut
9. Crossbars on e-chains® are removable along both radii
10. Wide, rounded plastic crossbars - cable friendly
11. e-chain® also available with reverse bending radii



Order Example: Complete e-chain®

Please indicate chain length or number of links. Example:

16.4 ft (5 m) **14040-30-300-0**	**e-chain®**
With 2 separators **56.1.1** assembled every 2nd link	**Interior Separation**
1 Set **141400-30-12P**	**Mounting Bracket**

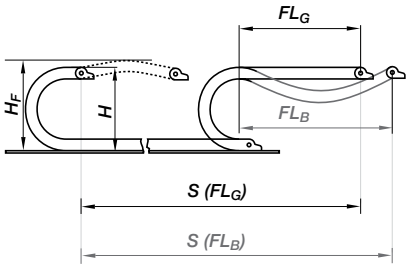
e-chain system® E4 light
Series 14040/14140/R18840
Installation Dimensions

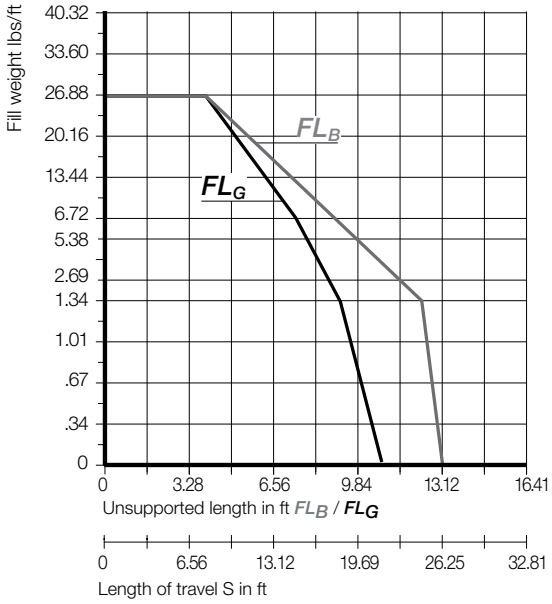
Short travel, unsupported length

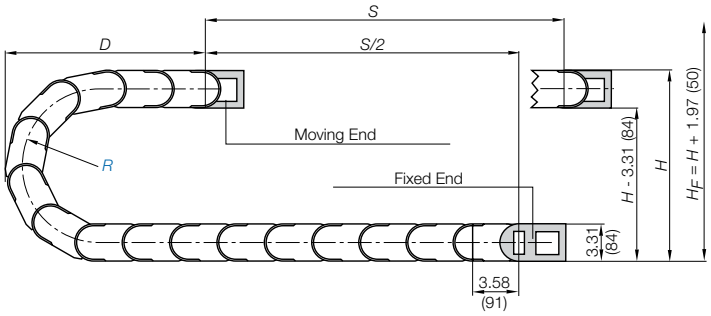
● FL_B = unsupported with permitted sag

● FL_G = unsupported with straight upper run

Further information ➤ Design, Chapter 1







Pitch per link: = 3.58" (91 mm)
Links per ft (m): = 3.35 (11)
For center mount applications:
Chain length = $\frac{S}{2} + K$

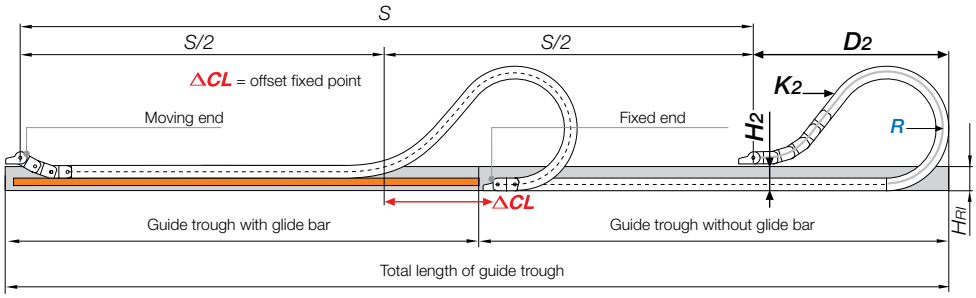
The required clearance height: $H_F = H + 1.97$ **in. (50 mm)** (with 1.34 lbs/ft (2 kg/m) fill weight. Please consult igus® if space is particularly restricted.

R $^{-0}_{+25}$	5.31 (135)	5.91 (150)	6.89 (175)	7.87 (200)	9.84 (250)	11.81 (300)	15.75 (400)	19.68 (500)
H	14.17 (360)	15.16 (385)	17.13 (435)	19.09 (485)	23.03 (585)	26.97 (685)	34.84 (885)	42.72 (1085)
D	10.63 (270)	11.22 (285)	12.20 (310)	13.19 (335)	15.16 (385)	17.13 (435)	21.06 (535)	25.00 (635)
K	25.59 (650)	29.53 (750)	32.48 (825)	35.43 (900)	41.34 (1050)	48.23 (1225)	57.09 (1450)	69.88 (1775)

For long travels with lowered mounting height

Long travel lengths from 32.8 ft.(10m) to max. 492 ft. (150m)

For center mount applications:
Chain length: = $\frac{S}{2} + K_2$



R	5.31 (135)	5.91 (150)	6.89 (175)	7.87 (200)	9.84 (250)	11.81 (300)	15.75 (400)	19.68 (500)
H2	10.47 (266)	10.47 (266)	10.47 (266)	10.47 (266)	10.47 (266)	10.47 (266)	10.47 (266)	10.47 (266)
D2 +25	15.35 (390)	17.72 (450)	20.87 (530)	27.95 (710)	36.22 (920)	44.09 (1120)	60.24 (1530)	72.05 (1830)
K2	28.66 (728)	32.24 (819)	39.41 (1001)	50.16 (1274)	64.49 (1638)	75.23 (1911)	100.31 (2548)	125.39 (3185)
ΔCL	4.88 (124)	6.26 (159)	8.22 (209)	14.13 (359)	20.04 (509)	25.94 (659)	37.76 (959)	45.63 (1159)

Speed / acceleration FL_G	max. 65.6 ft/s (20 m/s) / max. 656 ft/s² (200 m/s²)
Speed / acceleration FL_B	max. 9.84 ft/s (3 m/s) / max. 19.69 ft/s² (6 m/s²)
Gliding speed / acceleration (maximum)	max. 32.8 ft/s (10 m/s) / max. 164 ft/s² (50 m/s²)
Material - permitted temperature	igumid G / -40°F (-40°C) up to +248°F (+120° C)
Flammability Class, igumid G	VDE 0304 IIC UL94 HB

Short Travels - Unsupported

Unsupported e-chains® feature positive camber over short travels. This must be accounted for when specifying the clearance height. Please refer to **Installation dimensions** for further details.

Legend

S = Length of travel
R = Bending radius
H = Nominal clearance height
D = Overlength e-chain® radius in final position
K = π • *R + safety buffer*
H_F = Required clearance height
HRI = Trough inner height
H_2 = *Mounting height
D_2 = Overlength - long travels, gliding
K_2 = *Add-on
*If the mounting bracket location is set lower

Long Travels - Gliding

If the unsupported length is exceeded, the e-chain®/Tube must glide on itself. This requires a guide trough.
Design, Chapter 1

For support of the lower run, **see Chapter 9** of the main catalog for the **Support Tray tool kit**

Technical Data

Details of material properties ➤ **Chapter 1**

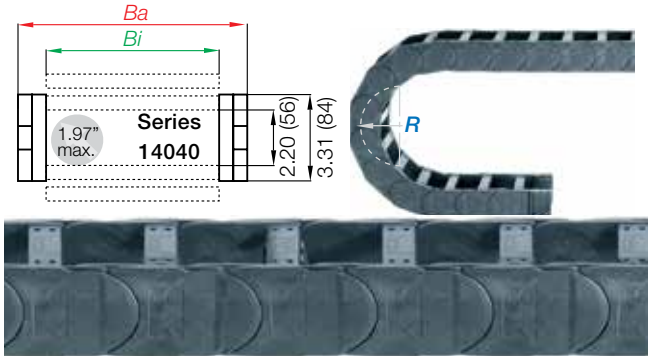
PDF: igus.com/e-chain-pdfs
Product information: igus.com/e-chains

e-chain system® E4 light
Series 14040/14140/R18840

Telephone 1-800-521-2747

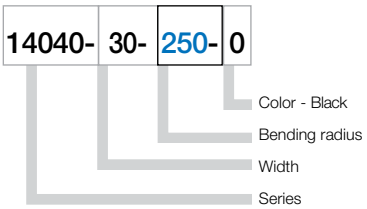
Internet: igus.com
email: sales@igus.com
QuickSpec: igus.com/quickspec

Series 14040 - e-chain® with crossbars every link

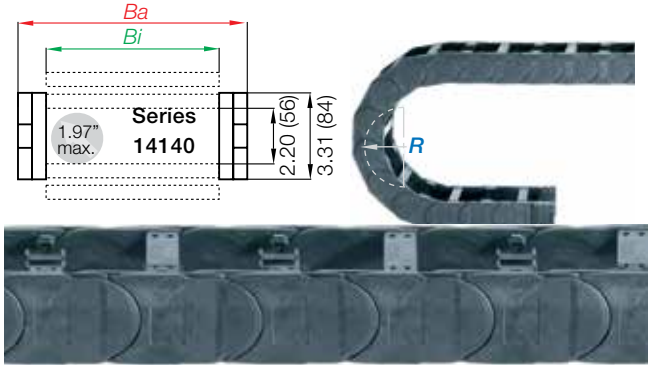


- Crossbars every link
- For use with rigid hydraulic hoses
- For particularly demanding applications
- Can be opened from both sides

Part Number Structure

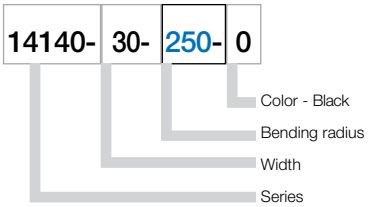


Series 14140 - e-chain® with crossbars every other link

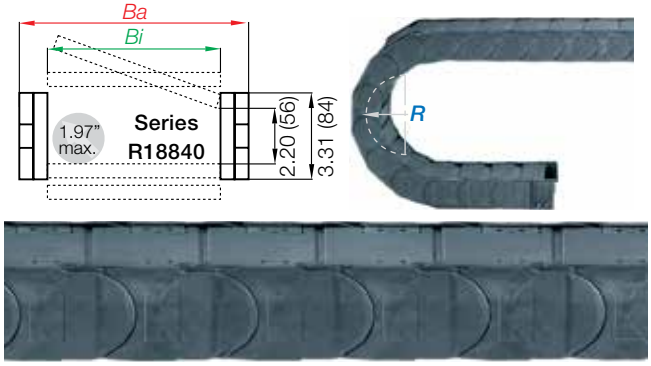


- Crossbars every other link - Standard configuration
- For nearly every situation
- Can be opened from both sides
- Easy assembly
- Stable
- Cost-effective

Part Number Structure

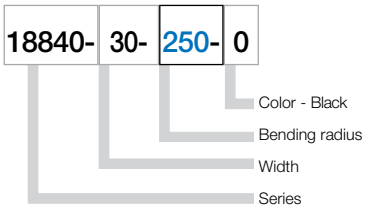


Series R18840 - fully enclosed e-tube

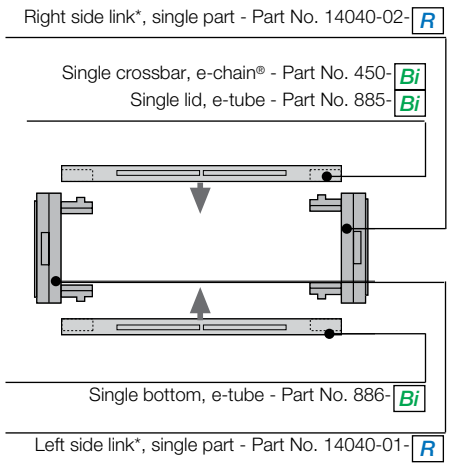


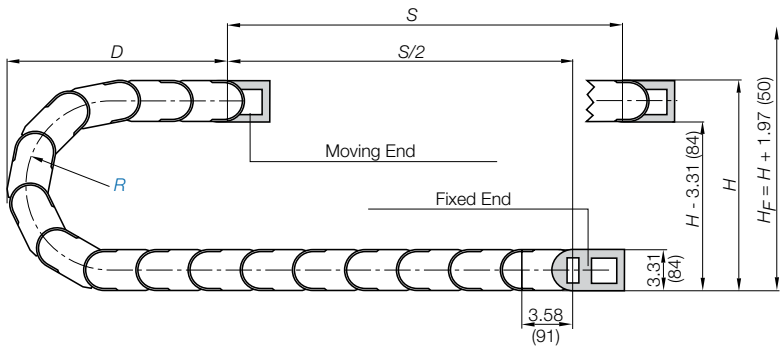
- Fully enclosed
- Excellent cable and hose protection against dirt
- Protection against hot chips
- Lids along inner radius are completely removable
- Lids along the outer radius are single-sided, snap open, hinged on one side as well as completely removable

Part Number Structure



e-chain® as separate parts, links and side plates





*View from the fixed point of the e-chain®/e-tube

e-chain system® E4 light
Series 14040/14140/R18840

Supplement part number with required radius. Example: 14040-30-300-0
Pitch: 3.58 in. (91mm) per link links/ft (m) = 3.35 (11)

Part Number. Crossbars Every link	Crossbars Every other	Tube Version		Bi in. (mm)	Ba in. (mm)	14040 lbs/ft (kg/m)	14140 lbs/ft (kg/m)	R18840 lbs/ft (kg/m)
14040-05-	14140-05-		-0	1.97 (50)	2.99 (76)	≈ 1.79 (2.66)	≈ 1.67 (2.48)	–
14040-06-	14140-06-		-0	2.56 (65)	3.58 (91)	≈ 1.66 (2.47)	≈ 1.69 (2.51)	–
14040-07-	14140-07-	18840-07-	-0*	2.95 (75)	3.98 (101)	≈ 1.85 (2.75)	≈ 1.51 (2.25)	≈ 2.15 (3.20)
14040-08-	14140-08-		-0	3.43 (87)	4.45 (113)	≈ 1.91 (2.84)	≈ 1.61 (2.44)	–
14040-10-	14140-10-	18840-10-	-0	3.94 (100)	4.96 (126)	≈ 1.97 (2.93)	≈ 1.75 (2.61)	≈ 2.35 (3.49)
14040-11-	14140-11-		-0	4.41 (112)	5.47 (139)	≈ 2.06 (3.06)	≈ 1.79 (2.67)	–
14040-12-	14140-12-	18840-12-	-0	4.92 (125)	5.94 (151)	≈ 2.10 (3.12)	≈ 1.82 (2.71)	≈ 2.59 (3.85)
14040-13-	14140-13-		-0	5.39 (137)	6.46 (164)	≈ 2.19 (3.26)	≈ 1.86 (2.77)	–
14040-15-	14140-15-	18840-15-	-0	5.91 (150)	6.93 (176)	≈ 2.23 (3.32)	≈ 1.89 (2.81)	≈ 2.88 (4.28)
14040-16-	14140-16-		-0	6.38 (162)	7.44 (189)	≈ 2.30 (3.43)	≈ 1.92 (2.86)	–
14040-17-	14140-17-	18840-17-	-0	6.89 (175)	7.91 (201)	≈ 2.38 (3.54)	≈ 1.96 (2.92)	≈ 3.05 (4.54)
14040-18-	14140-18-		-0	7.36 (187)	8.43 (214)	≈ 2.45 (3.65)	≈ 2.00 (2.97)	–
14040-20-	14140-20-	18840-20-	-0	7.87 (200)	8.90 (226)	≈ 2.47 (3.67)	≈ 2.00 (2.98)	≈ 3.26 (4.85)
14040-21-	14140-21-		-0	8.35 (212)	9.41 (239)	≈ 2.54 (3.78)	≈ 2.04 (3.04)	–
14040-22-	14140-22-		-0	8.86 (225)	9.88 (251)	≈ 2.59 (3.85)	≈ 2.06 (3.07)	–
14040-23-	14140-23-		-0	9.33 (237)	10.39 (264)	≈ 2.67 (3.98)	≈ 2.11 (3.14)	–
14040-25-	14140-25-	18840-25-	-0	9.84 (250)	10.87 (276)	≈ 2.73 (4.07)	≈ 2.14 (3.18)	≈ 3.75 (5.58)
14040-26-	14140-26-		-0	10.31 (262)	11.38 (289)	≈ 2.80 (4.16)	≈ 2.16 (3.22)	–
14040-27-	14140-27-	18840-27-	-0	10.83 (275)	11.85 (301)	≈ 2.87 (4.27)	≈ 2.20 (3.28)	≈ 3.93 (5.85)
14040-28-	14140-28-		-0	11.30 (287)	12.36 (314)	≈ 2.88 (4.29)	≈ 2.21 (3.29)	–
14040-30-	14140-30-	18840-30-	-0	11.81 (300)	12.83 (326)	≈ 3.03 (4.51)	≈ 2.28 (3.40)	≈ 4.19 (6.24)
14040-31-	14140-31-		-0	12.28 (312)	13.35 (339)	≈ 3.07 (4.57)	≈ 2.30 (3.42)	–
14040-32-	14140-32-		-0	12.79 (325)	13.82 (351)	≈ 3.09 (4.60)	≈ 2.31 (3.44)	–
14040-33-	14140-33-		-0	13.27 (337)	14.33 (364)	≈ 3.21 (4.77)	≈ 2.37 (3.53)	–
14040-35-	14140-35-	18840-35-	-0	13.78 (350)	14.80 (376)	≈ 3.31 (4.93)	≈ 2.43 (3.61)	≈ 4.70 (6.99)
14040-36-	14140-36-		-0	14.25 (362)	15.31 (389)	≈ 3.32 (4.94)	≈ 2.43 (3.61)	–
14040-37-	14140-37-		-0	14.76 (375)	15.79 (401)	≈ 3.33 (4.95)	≈ 2.43 (3.62)	–
14040-38-	14140-38-		-0	15.24 (387)	16.30 (414)	≈ 3.39 (5.04)	≈ 2.46 (3.66)	–
14040-40-	14140-40-	18840-40-	-0	15.75 (400)	16.77 (426)	≈ 3.52 (5.24)	≈ 2.53 (3.76)	≈ 5.34 (7.94)
14040-41-	14140-41-		-0	16.22 (412)	17.28 (439)	≈ 3.62 (5.39)	≈ 2.58 (3.84)	–
14040-42-	14140-42-		-0	16.73 (425)	17.76 (451)	≈ 3.72 (5.54)	≈ 2.63 (3.92)	–
14040-43-	14140-43-		-0	17.20 (437)	18.27 (464)	≈ 3.77 (5.61)	≈ 2.65 (3.95)	–
14040-45-	14140-45-		-0	17.72 (450)	18.74 (476)	≈ 3.82 (5.68)	≈ 2.67 (3.98)	–
14040-46-	14140-46-	18840-46-	-0	18.19 (462)	19.25 (489)	≈ 3.83 (5.70)	≈ 2.68 (3.99)	≈ 5.64 (8.40)
14040-47-	14140-47-		-0	18.70 (475)	19.72 (501)	≈ 3.92 (5.83)	≈ 2.73 (4.06)	–
14040-48-	14140-48-		-0	19.17 (487)	20.24 (514)	≈ 3.94 (5.86)	≈ 2.74 (4.08)	–
14040-50-	14140-50-		-0	19.69 (500)	20.71 (526)	≈ 4.00 (5.96)	≈ 2.78 (4.13)	–
14040-51-	14140-51-		-0	20.16 (512)	21.22 (539)	≈ 4.02 (5.98)	≈ 2.78 (4.14)	–
14040-52-	14140-52-		-0	20.67 (525)	21.69 (551)	≈ 4.05 (6.03)	≈ 2.80 (4.16)	–
14040-53-	14140-53-		-0	21.14 (537)	22.20 (564)	≈ 4.15 (6.18)	≈ 2.85 (4.24)	–
14040-55-	14140-55-		-0	21.65 (550)	22.68 (576)	≈ 4.48 (6.67)	≈ 3.01 (4.48)	–
14040-60-	14140-60-		-0	23.62 (600)	24.65 (626)	≈ 4.69 (6.98)	≈ 3.08 (4.58)	–

Choose from the radii below for all of the above sizes

Radius (mm) Example: 14040-30-300-0

	135**	150	175	200	250	300	400	500
R	5.31 (135)	5.91 (150)	6.89 (175)	7.87 (200)	9.84 (250)	11.81 (300)	15.75 (400)	19.68 (500)
H^{0}_{+25}	14.17 (360)	15.16 (385)	17.13 (435)	19.09 (485)	23.03 (585)	26.97 (685)	34.84 (885)	42.72 (1085)
D	10.63 (270)	11.22 (285)	12.20 (310)	13.19 (335)	15.16 (385)	17.13 (435)	21.06 (535)	25.00 (635)
K	25.59 (650)	29.53 (750)	32.48 (825)	35.43 (900)	41.34 (1050)	48.23 (1225)	57.09 (1450)	69.88 (1775)

** This radius is not available for the R18840 Series
*Removable lid only, no hinged option

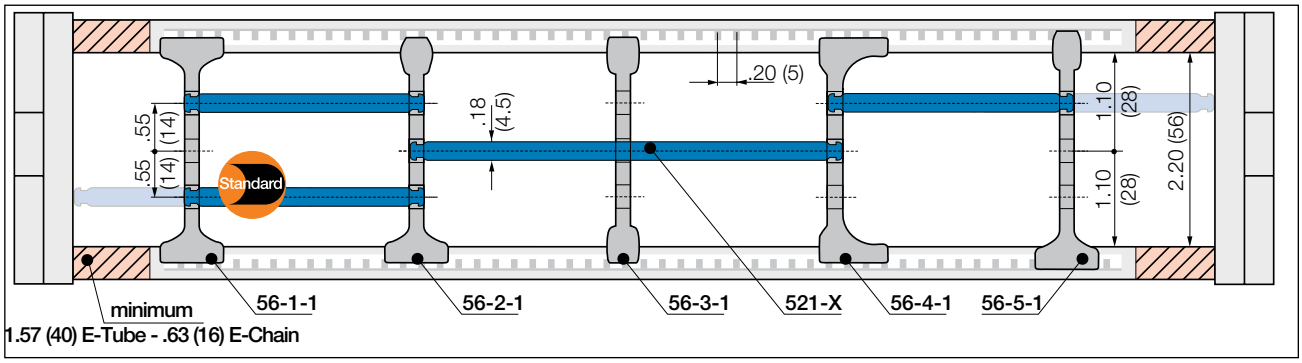
0=Standard color black. For other colors see Chapter 1
For wider chains see page 6.200 For large diameter hoses see page 6.200

PDF: igus.com/e-chain-pdfs
Product information: igus.com/e-chains

e-chain system® E4 light
Series 14040/14140/R18840
Interior Separation - New Generation

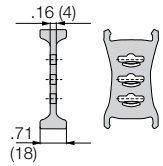
Telephone 1-800-521-2747

Internet: igus.com
email: sales@igus.com
QuickSpec: igus.com/quickspec



Note Please maintain a lateral spacing of 1.57" (40 mm) for e-tube and .63" (16 mm) for e-chains® between the separators and the side links. In the standard configuration separators are assembled every 2nd e-chain® link



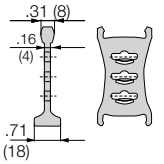


Separator, wide base

Unassembled	**Part No. 56-1**
Assembled	**Part No. 56-1-1**

- **Standard separator 56-1 for all applications**
  Separator with wide base for maximum locking strength and safe standing in e-chains®.



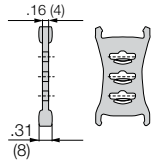


Separator, narrow head

Unassembled	**Part No. 56-2**
Assembled	**Part No. 56-2-1**

- **Separator 56-2**
  For even faster installation
  is used when vertical and horizontal separation is required. Due to its slot, it allows basic vertical/horizontal shelving arrangements.



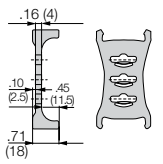


Separator, narrow base

Unassembled	**Part No. 56-3**
Assembled	**Part No. 56-3-1**

- **Separator 56-3**
  For many thin cables
  is used when vertical and horizontal separation is required. Due to its slot, it allows basic vertical/horizontal shelving arrangements.



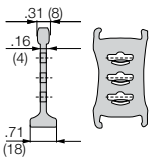


Separator, asymmetrical

Unassembled	**Part No. 56-4**
Assembled	**Part No. 56-4-1**

- **Separator 56-4**
  For side mounted applications
  is used when vertical and horizontal separation is required. Due to its slot, it allows basic vertical/horizontal shelving arrangements.





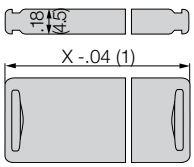
Separator, asymmetrical

Unassembled	**Part No. 56-5**
Assembled	**Part No. 56-5-1**

- **Separator 56-5**
  Locks safely in .30" (7.5 mm) increments
  Notch separator for exact positioning in e-chains®. Recommended for side-mounted applications.

Lockable full-width shelves - for the standard interior separation





Full width shelf, lockable

Unassembled	**Part No. 520-X**
Assembled	**Part No. 521-X**

- **Full width shelf, lockable**
  Shelf locks safely into separators on both ends, fixed width possible. Separators can be moved freely over the shelf in horizontal direction. Can be arranged at 3 different heights.

Width X in. (mm)	Part No. Unassembled	Part No. Assembled	Width X in. (mm)	Part No. Unassembled	Part No. Assembled	Width X in. (mm)	Part No. Unassembled	Part No. Assembled
1.97 (050)	**520-50**	**521-50**	5.91 (150)	**520-150**	**521-150**	11.81 (300)	**520-300**	**521-300**
2.56 (065)	**520-65**	**521-65**	6.89 (175)	**520-175**	**521-175**	13.78 (350)	**520-350**	**521-350**
2.95 (075)	**520-75**	**521-75**	7.87 (200)	**520-200**	**521-200**	14.76 (375)	**520-375**	**521-375**
3.94 (100)	**520-100**	**521-100**	8.86 (225)	**520-225**	**521-225**	15.24 (387)	**520-387**	**521-387**
4.92 (125)	**520-125**	**521-125**	9.84 (250)	**520-250**	**521-250**	17.72 (450)	**520-450**	**521-450**

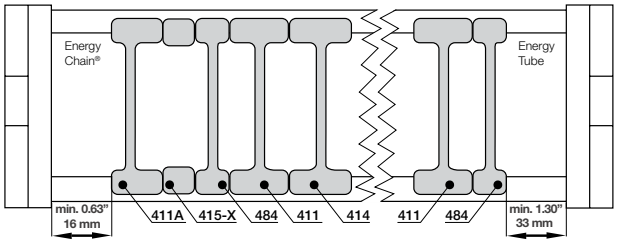
e-chain system® E4 light
Series 14040/14140/R18840
Interior Separation - Previous Generation



Option 1: Vertical separators and spacers

Vertical separators are used if a vertical subdivision of the e-chain® interior is required. By standard, vertical separators are assembled every other e-chain® link.

NOTE: Observe a lateral spacing of at least 1.30 in. (33mm) for e-tubes and .63 in. (16mm) for e-chain®. There is no minimum spacing needed for side plates





Standard

STANDARD Vertical separator 401



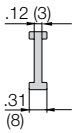
Vertical separator

Unassembled	**Part No. 401**
Assembled	**Part No. 411**

- **Standard separator 401 for e-chains® and e-tubes**
  This separator offers safe stability due to its wide base design, also when used with thick cables or hoses.



Vertical separator 483



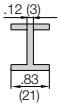
Vertical separator

Unassembled	**Part No. 483**
Assembled	**Part No. 484**

- **Vertical separator 483 for e-chains® and e-tubes**
  This separator offers a narrow base for applications where a large number of small cables need to be individually separated.



Locking separator 404



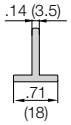
Locking separator (chain only)

Unassembled	**Part No. 404**
Assembled	**Part No. 414**

- **Locking separator 404 for e-chains®**
  This separator features increased retention force for applications exposed to very high humidity and extreme loads. The extra retention force is achieved by asymmetric claws for the crossbar. Take care to ensure proper alignment.



Locking separator 406



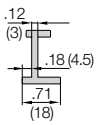
Locking separator (tube only)

Unassembled	**Part No. 406**
Assembled	**Part No. 416**

- **Locking separator 406 for e-tubes**
  It features a single sided, secure fit, and can be placed on the lid or the bottom of the e-tube. The single side locking design helps to eliminate difficulties in assembling the opposite cover or crossbar



Asymmetric separator 401A



Asymmetrical separator (chain only)

Unassembled	**Part No. 401A**
Assembled	**Part No. 411A**

- **Asymmetrical separator 401A for e-chains®**
  This separator features an (18mm) base. It can be used in combinations between spacers of different widths and vertical separators in side mounted applications.



Spacers 405-XX



Spacer (chain only)

Unassembled	**Part No. 405-XX**
Assembled	**Part No. 415-XX**

XX = width of the spacer

- **NOTE ON SPACERS**
  Vertical separators are adjustable, but can be fixed in position by means of a spacer. Spacers are most often necessary for side mounted applications.
  The available inner height is reduced by .08" (2mm) **per spacer** (for example if one spacer is placed on either side of the separator, the overall inner height is reduced by .16" (4mm). To avoid this, place the spacers on the **outside** of the opening crossbar **(not for long travels)**.

Spacers available in the following sizes:

Part No. Unassembled	Part No. Assembled	in.	(mm)
405 -10	415 -10	.39"	(10)
405 -15	415 -15	.59"	(15)
405 -20	415 -20	79"	(20)
405 -30	415 -30	1.18"	(30)
405 -40	415 -40	1.57"	(40)

PDF: igus.com/e-chain-pdfs
Product information: igus.com/e-chains

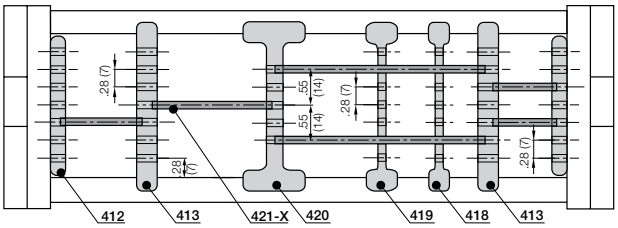
e-chain system® E4 light
Series 14040/14140/R18840
Interior Separation - Previous Generation



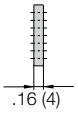
Shelves and separators

e-chains® and e-tubes can be subdivided both vertically and horizontally using the various interior separation elements.

➤ **Design, Chapter 1** for layout recommendations.





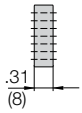


Side plate

Unassembled	**Part No. 402**
Assembled	**Part No. 412**

- **Side plates 402**
  This component is used to form the basic pattern of a shelf system.



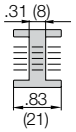


Vertical separator

Unassembled	**Part No. 403**
Assembled	**Part No. 413**

- **Vertical separator 403**
  This component is used to form the basic pattern of a shelf system.

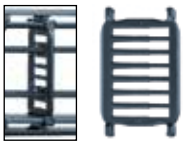


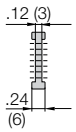


Locking vertical separator

Unassembled	**Part No. 410**
Assembled	**Part No. 420**

- **Locking vertical separator 410**
  This separator is slotted and able to be combined with shelves. For e-chains® only



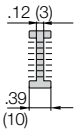


Slotted separators, closed

Unassembled	**Part No. 408**
Assembled	**Part No. 418**

- **Slotted separators 408**
  These are used for very complex subdivisions. However, they cannot be retrofitted into an existing separation system without removing the shelves first.





Slotted separators, open

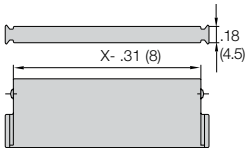
Unassembled	**Part No. 409**
Assembled	**Part No. 419**

- **Slotted separator 409**
  This separator can be retrofitted into an existing interior separation system without removing the shelves, as long as these shelves fit into any of the 3 middle slots

Shelves 420-XX

These components form the basic pattern of a shelf system. Shelves of various widths can be arranged at 7 different heights in .28" (7mm) increments

Width X in. (mm)	Usable Width in. (mm)	Part No. Unassembled	Part No. Assembled	Width X in. (mm)	Usable Width in. (mm)	Part No. Unassembled	Part No. Assembled
.71 (18)	.39 (10)	**420-18**	**421-18**	2.95 (75)	2.64 (67)	**420-75**	**421-75**
.91 (23)	.59 (15)	**420-23**	**421-23**	3.46 (88)	3.15 (80)	**420-88**	**421-88**
.98 (25)	.67 (17)	**420-25**	**421-25**	3.94 (100)	3.62 (92)	**420-100**	**421-100**
1.10 (28)	.79 (20)	**420-28**	**421-28**	4.92 (125)	4.61(117)	**420-125**	**421-125**
1.30 (33)	.98 (25)	**420-33**	**421-33**	5.91 (150)	5.59(142)	**420-150**	**421-150**
1.69 (43)	1.38 (35)	**420-43**	**421-43**	6.89 (175)	6.57(167)	**420-175**	**421-175**
1.97 (50)	1.65 (42)	**420-50**	**421-50**	7.36 (187)	7.05(179)	**420-187**	**421-187**
2.44 (62)	2.13 (54)	**420-62**	**421-62**	7.87 (200)	7.56(192)	**420-200**	**421-200**





e-chain system® E4 light
Series 14040/14140/R18840
Special Accessories





Part number example for e-chain®

14040-10/20/10- 200 **-0**

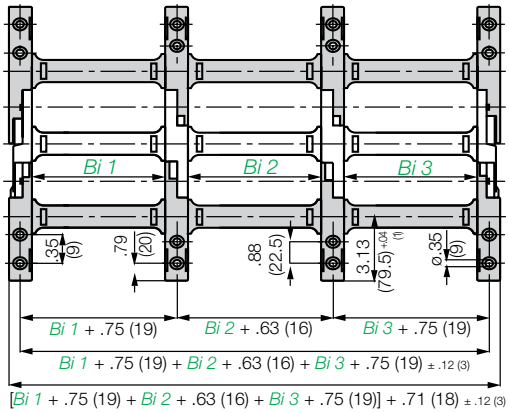
14040-*Bi1*/*Bi2*/*Bi3*- *R* **-0**

We **strongly recommend** on-site consultation with an igus® technician for individual advice regarding mounting brackets, guide troughs and other design details.

Extension links - for extremely wide e-chains® up to 9.84 ft (3m)

- For applications in which particularly high fill weights necessitate extremely wide e-chains®
- The extension link design allows virtually limitless side-by-side attachment of chains
- The unsupported length of a chain can be increased when additional loads are required
- Extension links can be used with e-chains®, e-tubes or a combination of both
- They are suitable for unsupported and gliding applications in a guide trough
- e-chains® with extension links are attached with KMA or steel mounting brackets.



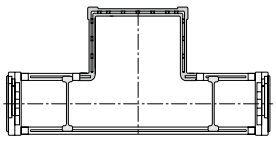




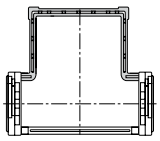
Consult igus® for your extender crossbar applications. We will be happy to assist you with your design layout.

Extender crossbars - For careful guiding of large diameter cables and hoses

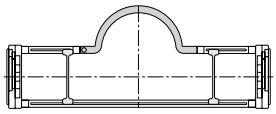
- Intended for cables and hoses with a maximum outer diameter of 9.64 in. (245 mm).
- Can be attached along either the inner or outer radius, inner radius preferred
- Gliding operation with crossbars assembled along the outer radius in conjunction with a special guide trough
- Gliding operation not guaranteed with crossbars assembled along the inner radius
- The extender crossbar can either be attached to the side links directly or can be used in combination with two standard snap-open crossbars.



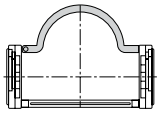
Square extender crossbar combined with standard snap-open crossbars.



Attached directly to the side link.



Round extender crossbar combined with standard snap-open crossbars.



Attached directly to the side link.

Part No.	Max Ø Hose	Style	Installation Side Link	Combined with Snap-Open Crossbars
450-15-RHD115	4.52 (115)	Round	No	Yes
450-17-RD115	4.52 (115)	Round	Yes	No
450-25-D150	5.91 (150)	Square	Yes	No
450-30-D200	7.09 (180)	Square	Yes	No
450-35-D250	7.68 (195)	Square	Yes	No
450-40-D300	9.65 (245)	Square	Yes	No
450-20-HD150	5.91 (150)	Square	No	Yes
450-25-HD200	7.09 (180)	Square	No	Yes
450-30-HD250	7.68 (195)	Square	No	Yes



E4 clip on cable binder

- For side mounted applications
- Serves as a clip-on, lateral guide for hoses and cables on e-chains®
- The loops can be adjusted as needed
- Compatible with many E4 e-chains®
- Economical
- One clip and one locking band are needed for each chain link



Part No.	Form
450-B12	Locking clip, comprised of a locking element
450-B12-200	Locking band, comprised of a locking element and band; 12 x 1.5 x 200 mm

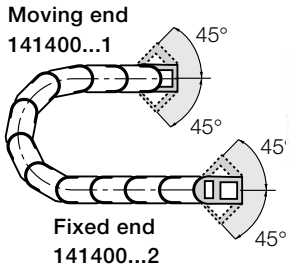
PDF: igus.com/e-chain-pdfs
Product information: igus.com/e-chains

e-chain system® E4 light
Series 14040/14140/R18840
Mounting Brackets

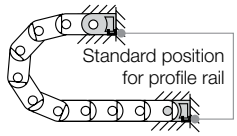
Standard

Option 1: KMA pivoting

- Profile rail option
- Universal use
- Corrosion resistant
- Short and long travels
- Space-restricted conditions

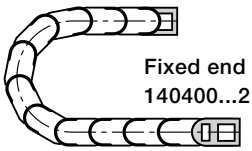




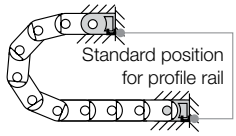


Option 2: KMA locking

- Profile rail option
- Universal use
- Corrosion resistant
- Extreme accelerations
- Vertical hanging/standing travels



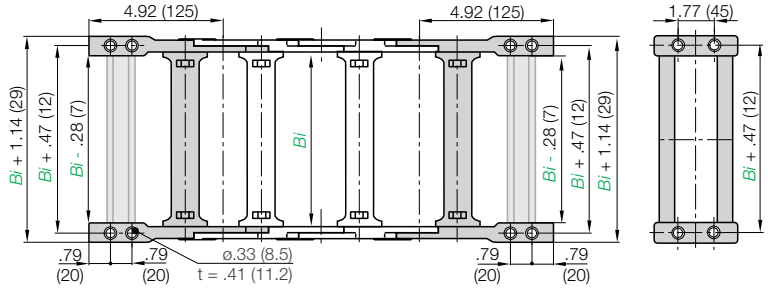




Part Number Structure

140400- 07- 12 T P

- With Profile Rail
- Tube version
- Complete Set
- Width
- 140400 = Locking
  141400 = Pivoting



Full set, for both ends:

140400- 05- 12 Full set, **each part with pin/bore**

Single-part order:

140400- 05- 1 Mounting bracket **with bore**

140400- 05- 2 Mounting bracket **with pin**

Part number examples are shown for pivoting brackets. For locking brackets change part number to 140400

Part No. Full Set (pivoting)
Series 14040 or 14140:
141400-Width-12

Width	Part No. Full Set Locking	Pivoting		Tube Option	With Profile Rail	*Bi* in. (mm)
-05	140400	141400	-05-12		P	1.97 (50)
-06	140400	141400	-06-12		P	2.56 (65)
-07	140400	141400	-07-12	T	P	2.95 (75)
-08	140400	141400	-08-12		P	3.43 (87)
-10	140400	141400	-10-12	T	P	3.94 (100)
-11	140400	141400	-11-12		P	4.41 (112)
-12	140400	141400	-12-12	T	P	4.92 (125)
-13	140400	141400	-13-12		P	5.39 (137)
-15	140400	141400	-15-12	T	P	5.91 (150)
-16	140400	141400	-16-12		P	6.38 (162)
-17	140400	141400	-17-12	T	P	6.89 (175)
-18	140400	141400	-18-12		P	7.36 (187)
-20	140400	141400	-20-12	T	P	7.87 (200)
-21	140400	141400	-21-12		P	8.35 (212)
-22	140400	141400	-22-12		P	8.86 (225)
-23	140400	141400	-23-12		P	9.33 (237)
-25	140400	141400	-25-12	T	P	9.84 (250)
-26	140400	141400	-26-12		P	10.31 (262)
-27	140400	141400	-27-12	T	P	10.83 (275)
-28	140400	141400	-28-12		P	11.30 (287)
-30	140400	141400	-30-12	T	P	11.81 (300)

Part No. Full Set (pivoting)
with profile rail
Series 14040 or 14140
141400-Width-12P

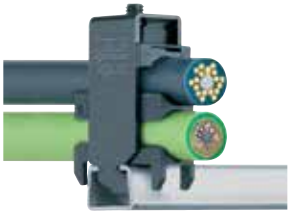
Part No. Full Set (pivoting)
Tube Series R18840
141400-Width-12T

Width	Part No. Full Set Locking	Pivoting		Tube Option	With Profile Rail	*Bi* in. (mm)
-31	140400	141400	-31-12		P	12.28 (312)
-32	140400	141400	-32-12		P	12.79 (325)
-33	140400	141400	-33-12		P	13.27 (337)
-35	140400	141400	-35-12	T	P	13.78 (350)
-36	140400	141400	-36-12		P	14.25 (362)
-37	140400	141400	-37-12		P	14.76 (375)
-38	140400	141400	-38-12		P	15.24 (387)
-40*	140400	141400	-40-12	T	P	15.75 (400)
-41	140400	141400	-41-12		P	16.22 (412)
-42	140400	141400	-42-12		P	16.73 (425)
-43	140400	141400	-43-12		P	17.20 (437)
-45	140400	141400	-45-12		P	17.72 (450)
-46	140400	141400	-46-12	T	P	18.19 (462)
-47	140400	141400	-47-12		P	18.70 (475)
-48	140400	141400	-48-12		P	19.17 (487)
-50	140400	141400	-50-12		P	19.69 (500)
-51	140400	141400	-51-12		P	20.16 (512)
-52	140400	141400	-52-12		P	20.67 (525)
-53	140400	141400	-53-12		P	21.14 (537)
-55	140400	141400	-55-12		P	21.65 (550)
-60	140400	141400	-60-12		P	23.62 (600)

Part No. Full Set (pivoting)
with Profile Rail
Tube Series R18840
141400-Width-12TP

e-chain system® E4 light
Series 14040/14140/R18840
Strain Relief

Chainfix clamps for the profile rail



igus® Chainfix strain relief elements are available in either steel or stainless steel. They can be adjusted with a hexagon socket and are available in single, double and triple configurations.

Part No. Single Clamp		Part No. Double Clamp		Part No. Triple Clamp		Cable ø	
Steel	Stainless	Steel	Stainless	Steel	Stainless	in.	(mm)
CFX12-1	CFX12-1E	CFX12-2	CFX12-2E	CFX12-3	–	.24 - .47	(6 - 12)
CFX14-1	CFX14-1E	CFX14-2	CFX14-2E	CFX14-3	–	.47 - .55	(12 - 14)
CFX16-1	CFX16-1E	CFX16-2	CFX16-2E	CFX16-3	–	.55 - .63	(14 - 16)
CFX18-1	CFX18-1E	CFX18-2	CFX18-2E	CFX18-3	–	.63 - .71	(16 - 18)
CFX20-1	CFX20-1E	CFX20-2	CFX20-2E	CFX20-3	–	.71 - .79	(18 - 20)
CFX22-1	CFX22-1E	CFX22-2	CFX22-2E	CFX22-3	–	.79 - .87	(20 - 22)
CFX26-1	CFX26-1E	CFX26-2	CFX26-2E	–	–	.87 - 1.02	(22 - 26)
CFX30-1	CFX30-1E	CFX30-2	CFX30-2E	–	–	1.02 - 1.18	(26 - 30)
CFX34-1	CFX34-1E	CFX34-2	CFX34-2E	–	–	1.18 - 1.34	(30 - 34)
CFX38-1	CFX38-1E	–	–	–	–	1.34 - 1.50	(34 - 38)
CFX42-1	CFX42-1E	–	–	–	–	1.50 - 1.65	(38 - 42)

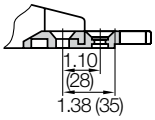
For more information please refer to strain relief section of Chapter 10

Tiewrap Plates

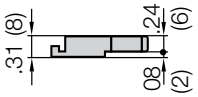
Option 1:
Tiewrap plates as an individual part

Available as an individual component, can be fixed onto a mounting bracket with the use of a profile rail.



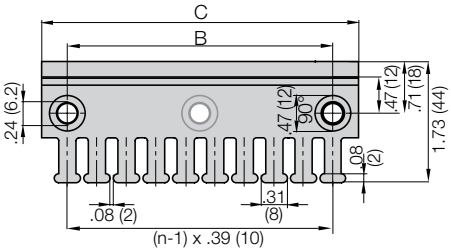


Shown assembled



Single tiewrap plate

Tiewrap Plate	n Number of Teeth	C Overall Width in. (mm)	B Bore Width in. (mm)	Center Bore
3050-ZB	5	1.97 (50)	1.18 (30)	no
3075-ZB	7	2.95 (75)	2.16 (55)	no
3100-ZB	10	3.94 (100)	3.15 (80)	no
3115-ZB	11	4.53 (115)	3.74 (95)	no
3125-ZB	12	4.92 (125)	4.13 (105)	no
3150-ZB	15	5.91 (150)	5.12 (130)	no
3175-ZB	17	6.89 (175)	6.10 (155)	no
3200-ZB	20	7.87 (200)	7.09 (180)	yes
3225-ZB	22	8.86 (225)	8.07 (205)	yes
3250-ZB	25	9.84 (250)	9.06 (230)	yes



If used with KMA brackets with profile rail please add “KMA” to the end of the part number.
Example: 3050-ZBKMA

For more information please refer to strain relief section of Chapter 10



Option 2:
Clip-on Tiewrap plates

Available as a clip-on tiewrap plate without the use of bolts They are inserted and removed with a screwdriver used as a lever. Clip-on tiewrap plates are also available as an attachment to the opening crossbars.

Part No.	Number of Teeth	Width of Strain Relief in.	(mm)
3050-ZC	5	1.97	(50)
3075-ZC	7	2.95	(75)

For more information please refer to strain relief section of Chapter 10



Option 3:
Clip-on Tiewrap plates for opening crossbars

Clip-on tiewrap plates are also available as an attachment to opening crossbars. They can be positioned at any point along the e-chain®.

Part No.	Number of Teeth	Width of Strain Relief in.	(mm)
4550-ZS	5	1.89	(48)
4575-ZS	7	2.91	(74)

For more information please refer to strain relief section of Chapter 10

PDF: igus.com/e-chain-pdfs
Product information: igus.com/e-chains

e-chain system® E4 light
Series 14040/14140/R18840
Guide Trough

Telephone 1-800-521-2747

Internet: igus.com
email: sales@igus.com
QuickSpec: igus.com/quickspec

Width of Crossbar
14040-**05**-200-0

B_{Ri}

		Installation Part No.
-05	3.19 (81)	*
-06	3.78 (96)	*
-07	4.17 (106)	**94-50-225**
-10	5.16 (131)	**94-50-250**
-11	5.63 (143)	**94-50-275**
-12	6.14 (156)	**94-50-275**
-13	6.61 (168)	**94-50-300**
-15	7.13 (181)	**94-50-300**
-16	7.60 (193)	**94-50-325**
-17	8.11 (206)	**94-50-325**
-18	8.58 (218)	**94-50-350**
-20	9.09 (231)	**94-50-350**
-21	9.57 (243)	**94-50-375**
-22	10.08 (256)	**94-50-375**
-23	10.55 (268)	**94-50-400**
-25	11.06 (281)	**94-50-400**
-26	11.54 (293)	**94-50-425**
-27	12.05 (306)	**94-50-425**
-28	12.52 (318)	**94-50-450**
-30	13.03 (331)	**94-50-450**
-31	13.50 (343)	**94-50-475**
-32	14.02 (356)	**94-50-475**
-33	14.49 (368)	**94-50-500**
-35	15.00 (381)	**94-50-500**
-36	15.47 (393)	**94-50-525**
-37	15.98 (406)	**94-50-525**
-38	16.46 (418)	**94-50-550**
-40	16.97 (431)	**94-50-550**
-41	17.44 (443)	**94-50-575**
-42	17.95 (456)	**94-50-575**
-43	18.43 (468)	**94-50-600**
-45	18.94 (481)	**94-50-600**
-46	19.41 (493)	**94-50-625**
-47	19.92 (506)	**94-50-625**
-48	20.59 (518)	**94-50-650**
-50	20.91 (531)	**94-50-650**
-51	21.38 (543)	**94-50-675**
-52	21.89 (556)	**94-50-675**
-53	22.36 (568)	**94-50-700**
-55	22.87 (581)	**94-50-700**
-60	24.84 (631)	**94-50-750**

Standard length profile rail

Guide troughs are used with applications where the upper run of the e-chain® glides on the lower run. If using igus® steel guide troughs, the following components are required:

- Full travel length of guide trough
  Part No. 94-30
- 1/2 travel length glide bars
  Part No. 93-01
- Installation sets as end connectors
  Part No. 94-50-XX

.XX indicates the length of the profile rails on which the guide trough is mounted. The values and part numbers are specified in the table on the left. The standard length of the trough components and glide bars is 6.56 ft (2 m). The required overall length of the guide trough directly correlates to the length of travel.

Example:
Length of travel 164 ft (50 m)
Center mounted

Required guide troughs
164 ft (50 m) guide trough
82 ft (25 m) glide bars
= 25 sections of 6.56 ft (2 m) guide trough
Part No. 94-30
= 13 sections of 6.56 ft (2 m) glide bars
Part No. 93-01
Required number of installation sets:
= Number of guide trough components + 1
= 25 + 1 = 26
Part number of the installation sets
94-50-XXX
Example:
94-50-400 for 15.75 (400 mm) long profile rail

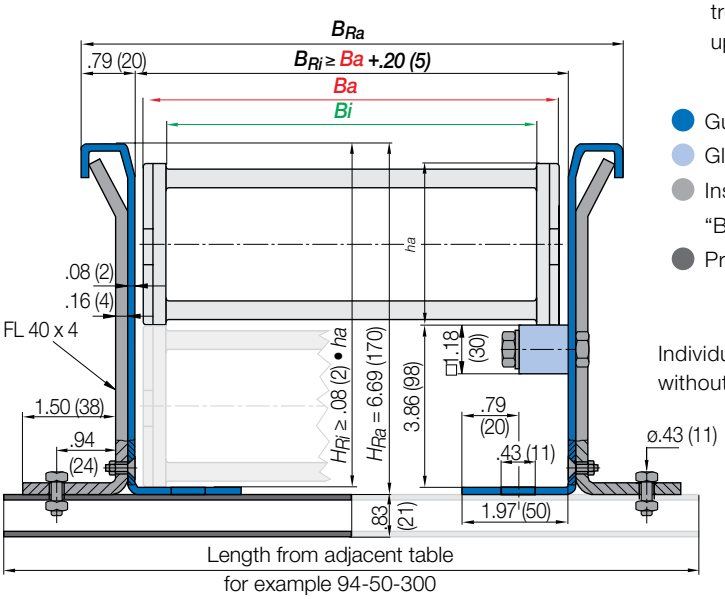


Installation sets as section connectors



Left: Guide trough with glide bars
Right: Guide troughs without glide bars

* Specialized guide trough available upon request



- Guide trough
- Glide bars
- Installation set "Basic"
- Profile rail

Individual attachment without profile rail

e-chain system® E4 light
Series 14240/14340

2.44”

Price Index

Series 14240 | Series 14340

Special Features / Options

- ESD classification: Electrically conductive ESD/ ATEX version upon request
- High torsional rigidity
- Side-mounted - unsupported

Assembly Tips



Opening e-chains®: Remove crossbars and clips - Insert screwdriver into the slot, push down, release by lever action

Other Installation Methods

Vertical, hanging ≤ 262 ft (80 m)
Vertical, standing ≤ 19.69 ft (6 m)
Side-mounted, unsupp. ≤ 6.56 ft (2 m)
Rotary requires further calculation

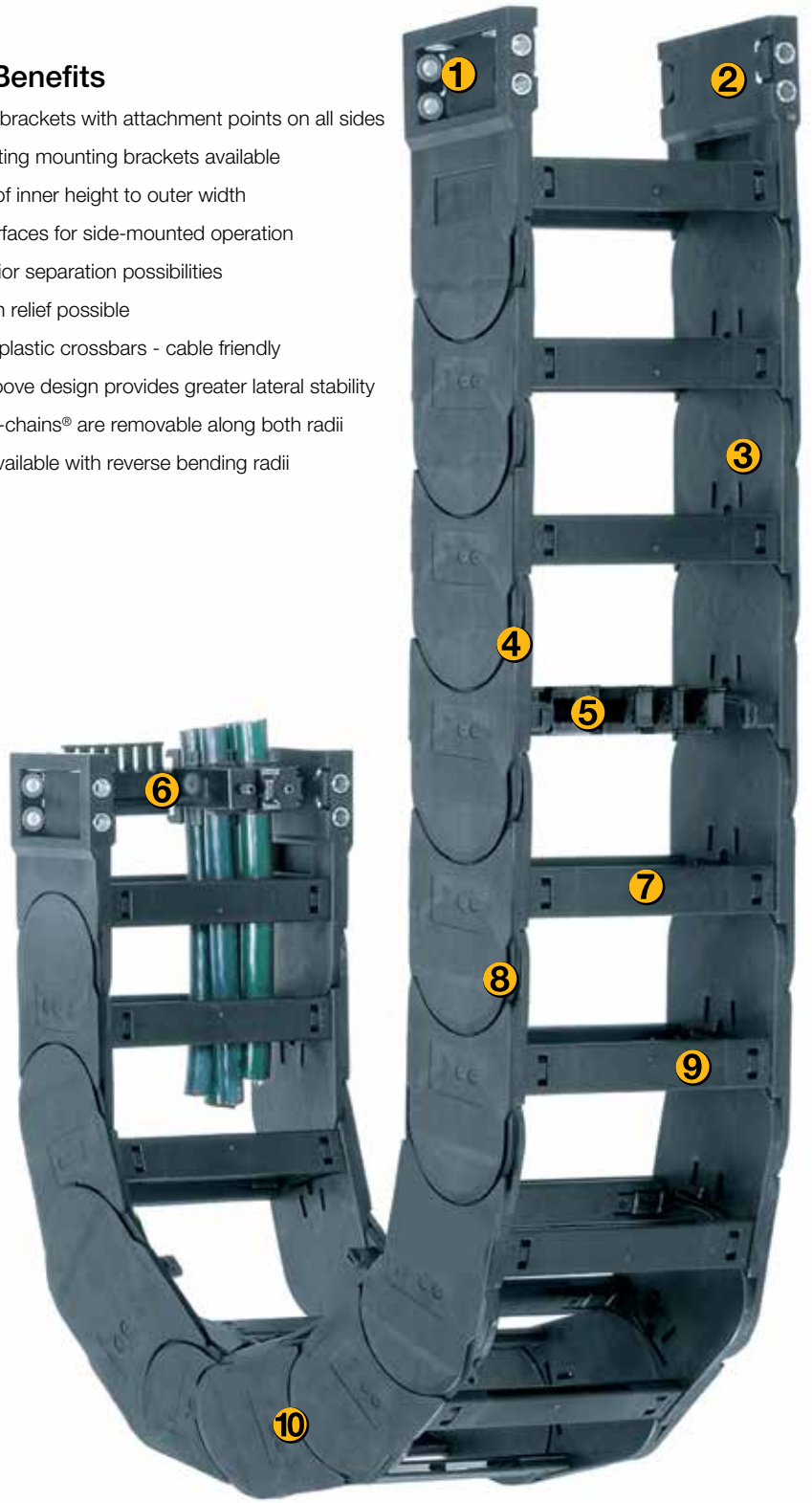
Usage Guidelines

- If a simpler low-cost solution is required
- If optimized interior space is required
- If the Series 400 is too large

- If a quieter version is required
  ➤ **Series E6-62**
- If side-mounted chain/tube with a long unsupported travel is required
  ➤ **Series E4-56/H4-56/R4-56**
- If increased unsupported lengths and longer travels are required
  ➤ **Series E4-56/H4-56/R4-56**
- If high fill weights and/or stiff cables and hoses are used
  ➤ **Series 14040**
- If chip protection is necessary
  ➤ **Series 18840**

Features & Benefits

1. KMA mounting brackets with attachment points on all sides
2. Locking or pivoting mounting brackets available
3. Optimum ratio of inner height to outer width
4. Lateral glide surfaces for side-mounted operation
5. Numerous interior separation possibilities
6. Integrated strain relief possible
7. Wide, rounded plastic crossbars - cable friendly
8. Tongue and groove design provides greater lateral stability
9. Crossbars on e-chains® are removable along both radii
10. e-chain® also available with reverse bending radii



Order Example: Complete e-chain®

Please indicate chain length or number of links. Example:

19.69 ft (6 m) **14240-30-300-0**	**e-chain®**
With 2 separators **62.1.1** assembled every 2nd link	**Interior Separation**
1 Set **142400-30-12P**	**Mounting Bracket**

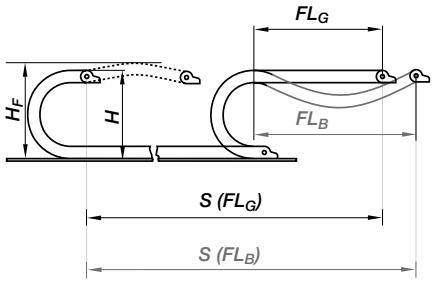
e-chain system® E4 light
Series 14240/14340
Installation Dimensions

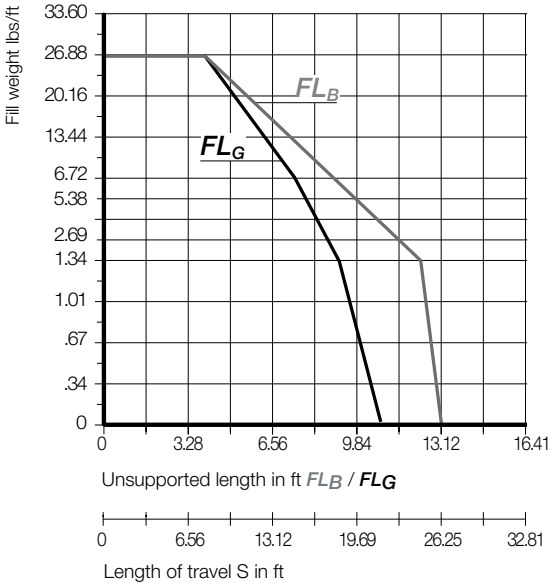
Short travel, unsupported length

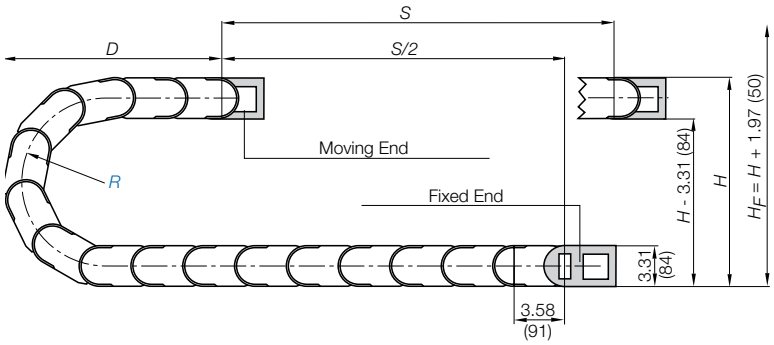
● FL_B = unsupported with permitted sag

● FL_G = unsupported with straight upper run

Further information ➤ Design, Chapter 1







Pitch per link: = 3.58" (91 mm)

Links per ft (m): = 3.35 (11)

For center mount applications:

Chain length = $S/2 + K$

The required clearance height: $H_F = H$ **+ 1.97 in. (50 mm)** (with 1.34 lbs/ft (2 kg/m) fill weight. Please consult igus® if space is particularly restricted.

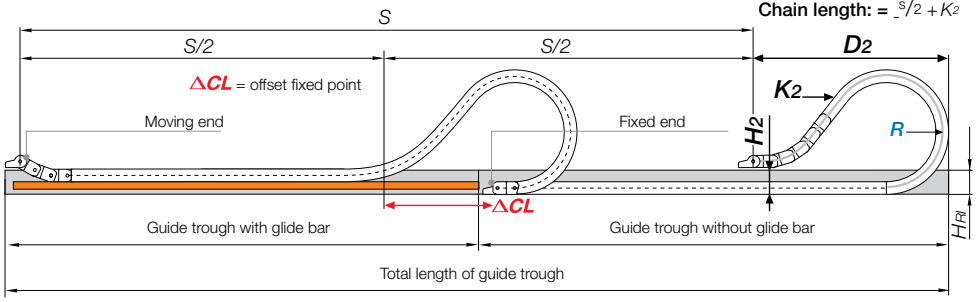
R	5.31 (135)	5.91 (150)	6.89 (175)	7.87 (200)	9.84 (250)	11.81 (300)	15.75 (400)	19.68 (500)
H^{0}_{+25}	14.17 (360)	15.16 (385)	17.13 (435)	19.09 (485)	23.03 (585)	26.97 (685)	34.84 (885)	42.72 (1085)
D	10.63 (270)	11.22 (285)	12.20 (310)	13.19 (335)	15.16 (385)	17.13 (435)	21.06 (535)	25.00 (635)
K	25.59 (650)	29.53 (750)	32.48 (825)	35.43 (900)	41.34 (1050)	48.23 (1225)	57.09 (1450)	69.88 (1775)

For long travels with lowered mounting height

Long travel lengths from 32.8 ft.(10m) to max. 492 ft. (150m)

For center mount applications:

Chain length: = $S/2 + K_2$



R	5.31 (135)	5.91 (150)	6.89 (175)	7.87 (200)	9.84 (250)	11.81 (300)	15.75 (400)	19.68 (500)
H_2	10.47 (266)	10.47 (266)	10.47 (266)	10.47 (266)	10.47 (266)	10.47 (266)	10.47 (266)	10.47 (266)
D_2^{+25}	15.35 (390)	17.72 (450)	20.87 (530)	27.95 (710)	36.22 (920)	44.09 (1120)	60.24 (1530)	72.05 (1830)
K_2	28.66 (728)	32.24 (819)	39.41 (1001)	50.16 (1274)	64.49 (1638)	75.23 (1911)	100.31 (2548)	125.39 (3185)
ΔCL	4.88 (124)	6.26 (159)	8.22 (209)	14.13 (359)	20.04 (509)	25.94 (659)	37.76 (959)	45.63 (1159)

Speed / acceleration FL_G	max. 65.6 ft/s (20 m/s) / max. 656 ft/s² (200 m/s²)
Speed / acceleration FL_B	max. 9.84 ft/s (3 m/s) / max. 19.69 ft/s² (6 m/s²)
Gliding speed / acceleration (maximum)	max. 32.8 ft/s (10 m/s) / max. 164 ft/s² (50 m/s²)
Material - permitted temperature	igumid G / -40°F (-40°C) up to +248°F (+120° C)
Flammability Class, igumid G	VDE 0304 IIC UL94 HB

Short Travels - Unsupported

Unsupported e-chains® feature positive camber over short travels. This must be accounted for when specifying the clearance height. Please refer to **Installation dimensions** for further details.

Legend

S = Length of travel
R = Bending radius
H = Nominal clearance height
D = Overlength e-chain® radius in final position
K = π • *R* + *safety buffer*
H_F = Required clearance height
H_{RI} = Trough inner height
H_2 = *Mounting height
D_2 = Overlength - long travels, gliding
K_2 = *Add-on

*If the mounting bracket location is set lower

Long Travels - Gliding

If the unsupported length is exceeded, the e-chain®/ Tube must glide on itself. This requires a guide trough.
Design, Chapter 1

For support of the lower run, **see Chapter 9** of the main catalog for the **Support Tray tool kit**

Technical Data

Details of material properties
➤ **Chapter 1**

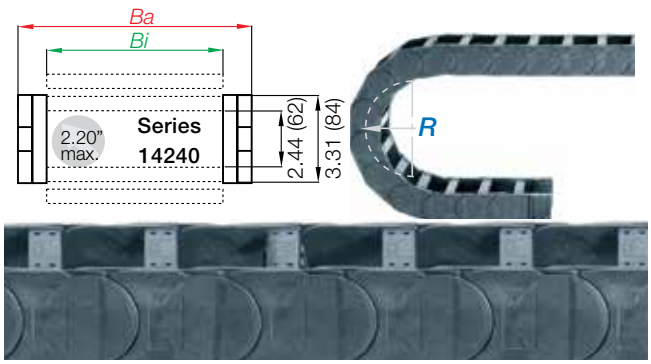
PDF: igus.com/e-chain-pdfs
Product information: igus.com/e-chains

e-chain system® E4 light
Series 14240/14340

Telephone 1-800-521-2747

Internet: igus.com
email: sales@igus.com
QuickSpec: igus.com/quickspec

Series 14240 - e-chain® with crossbars every link

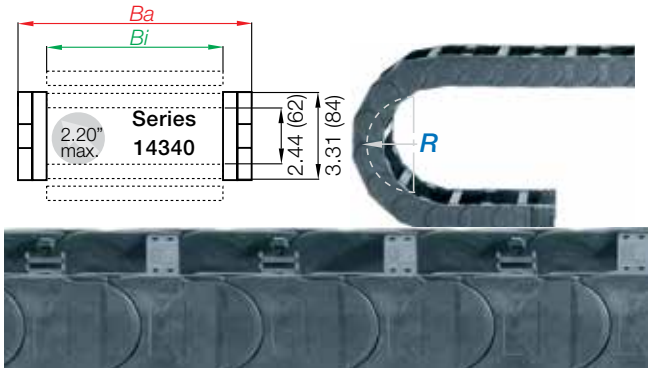


- Crossbars every link
- For use with rigid hydraulic hoses
- For particularly demanding applications
- Can be opened from both sides

Part Number Structure

14240-	12-	250-	0
Series	Width	Bending radius	Color - Black

Series 14340 - e-chain® with crossbars every other link

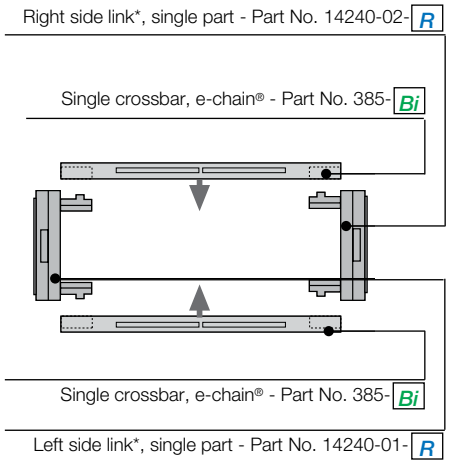


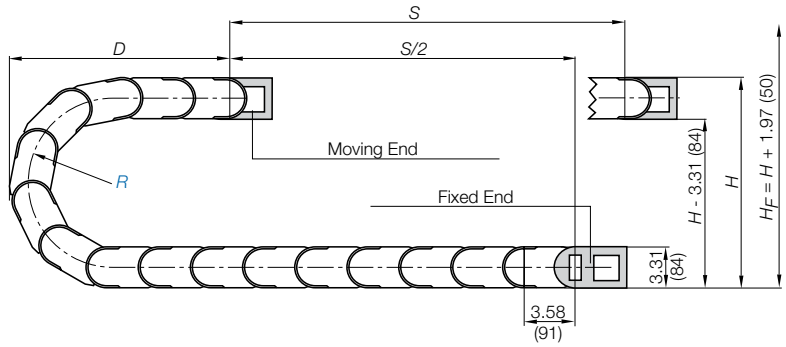
- Crossbars every other link - Standard configuration
- For nearly every situation
- Can be opened from both sides
- Easy assembly
- Stable
- Cost-effective

Part Number Structure

14340-	12-	250-	0
Series	Width	Bending radius	Color - Black

e-chain® as separate parts, links and side plates





*View from the fixed point of the e-chain®/e-tube

e-chain system® E4 light
Series 14240/14340

Supplement part number with required radius. Example: 14040-30-300 -0
Pitch: 3.58 in. (91mm) per link links/ft (m) = 3.35 (11)

Part Number. Crossbars Every link	Crossbars Every other			*Bi* in. (mm)	*Ba* in. (mm)	14240 lbs/ft (kg/m)	14340 lbs/ft (kg/m)
14240-05-	14340-05-		-0	1.97 (50)	2.99 (76)	≈1.59 (2.37)	≈ 1.56 (2.32)
14240-06-	14340-06-		-0	2.68 (68)	3.70 (94)	≈ 1.61 (2.40)	≈ 1.57 (2.33)
14240-07-	14340-07-		-0	2.95 (75)	3.98 (101)	≈ 1.63 (2.42)	≈ 1.57 (2.34)
14240-087-	14340-087-		-0	3.43 (87)	4.49 (114)	≈ 1.66 (2.47)	≈ 1.59 (2.36)
14240-10-	14340-10-		-0	3.94 (100)	4.96 (126)	≈ 1.69 (2.52)	≈ 1.61 (2.39)
14240-11-	14340-11-		-0	4.25 (108)	5.28 (134)	≈ 1.71 (2.55)	≈ 1.61 (2.40)
14240-112-	14340-112-		-0	4.41 (112)	5.47 (139)	≈ 1.71 (2.55)	≈ 1.62 (2.41)
14240-12-	14340-12-		-0	4.92 (125)	5.94 (151)	≈ 1.76 (2.62)	≈ 1.64 (2.44)
14240-137-	14340-137-		-0	5.39 (137)	6.46 (164)	≈ 1.79 (2.66)	≈ 1.65 (2.46)
14240-15-	14340-15-		-0	5.91 (150)	6.93 (176)	≈ 1.83 (2.72)	≈ 1.67 (2.49)
14240-162-	14340-162-		-0	6.38 (162)	7.44 (189)	≈ 1.83 (2.73)	≈ 1.67 (2.49)
14240-17-	14340-17-		-0	6.61 (168)	7.64 (194)	≈ 1.88 (2.79)	≈ 1.69 (2.52)
14240-18-	14340-18-		-0	6.89 (175)	7.91 (201)	≈ 1.90 (2.82)	≈ 1.70 (2.53)
14240-187-	14340-187-		-0	7.36 (187)	8.43 (214)	≈ 1.91 (2.84)	≈ 1.71 (2.55)
14240-20-	14340-20-		-0	7.87 (200)	8.90 (226)	≈ 1.94 (2.89)	≈ 1.73 (2.58)
14240-212-	14340-212-		-0	8.35 (212)	9.41 (239)	≈ 1.98 (2.95)	≈ 1.75 (2.60)
14240-23-	14340-23-		-0	8.86 (225)	9.88 (251)	≈ 2.02 (3.01)	≈ 1.77 (2.63)
14240-237-	14340-237-		-0	9.33 (237)	10.39 (264)	≈ 2.04 (3.04)	≈ 1.78 (2.65)
14240-25-	14340-25-		-0	9.84 (250)	10.87 (276)	≈ 2.08 (3.10)	≈ 1.80 (2.68)
14240-262-	14340-262-		-0	10.31 (262)	11.38 (289)	≈ 2.09 (3.11)	≈ 1.81 (2.69)
14240-28-	14340-28-		-0	10.83 (275)	11.85 (301)	≈ 2.14 (3.19)	≈ 1.83 (2.72)
14240-29-	14340-29-		-0	11.30 (287)	12.36 (314)	≈ 2.15 (3.20)	≈ 1.83 (2.73)
14240-30-	14340-30-		-0	11.81 (300)	12.83 (326)	≈ 2.22 (3.30)	≈ 1.87 (2.78)
14240-312-	14340-312-		-0	12.28 (312)	13.35 (339)	≈ 2.22 (3.31)	≈ 1.88 (2.79)
14240-325-	14340-325-		-0	12.79 (325)	13.82 (351)	≈ 2.26 (3.37)	≈ 1.89 (2.81)
14240-337-	14340-337-		-0	13.27 (337)	14.33 (364)	≈ 2.28 (3.40)	≈ 1.90 (2.83)
14240-350-	14340-350-		-0	13.78 (350)	14.80 (376)	≈ 2.39 (3.56)	≈ 1.96 (2.91)
14240-362-	14340-362-		-0	14.25 (362)	15.31 (389)	≈ 2.43 (3.61)	≈ 1.97 (2.93)
14240-375-	14340-375-		-0	14.76 (375)	15.79 (401)	≈ 2.45 (3.64)	≈ 1.98 (2.95)
14240-387-	14340-387-		-0	15.24 (387)	16.30 (414)	≈ 2.48 (3.69)	≈ 2.00 (2.97)
14240-400-	14340-400-		-0	15.75 (400)	16.77 (426)	≈ 2.51 (3.73)	≈ 2.00 (2.99)

Choose from the radii below for all of the above sizes
Radius (mm) Example: 14240-30-300 -0

	135	150	175	200	250	300	400	500
R	5.31 (135)	5.91 (150)	6.89 (175)	7.87 (200)	9.84 (250)	11.81 (300)	15.75 (400)	19.68 (500)
H $^{0}_{+25}$	14.17 (360)	15.16 (385)	17.13 (435)	19.09 (485)	23.03 (585)	26.97 (685)	34.84 (885)	42.72 (1085)
D	10.63 (270)	11.22 (285)	12.20 (310)	13.19 (335)	15.16 (385)	17.13 (435)	21.06 (535)	25.00 (635)
K	25.59 (650)	29.53 (750)	32.48 (825)	35.43 (900)	41.34 (1050)	48.23 (1225)	57.09 (1450)	69.88 (1775)

*Removable lid only, no hinged option
0=Standard color black. For other colors see Chapter 1

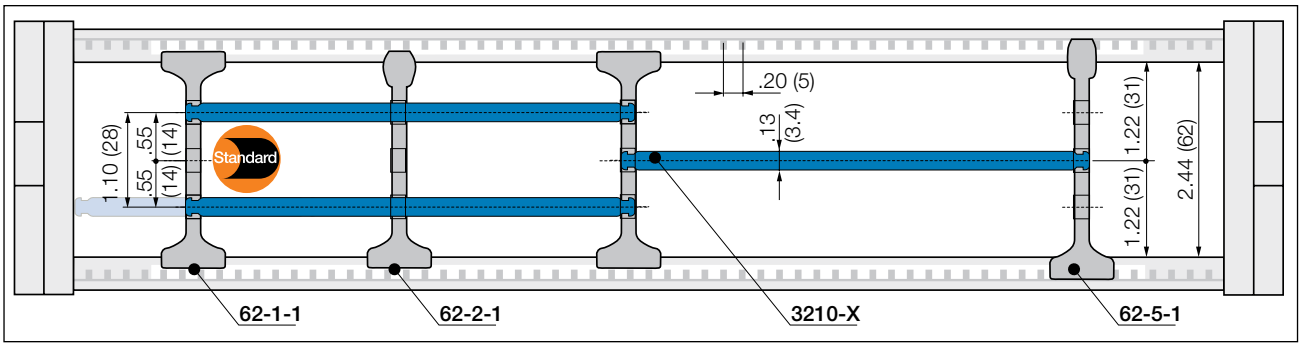
For large diameter hoses see page 6.212

PDF: igus.com/e-chain-pdfs
Product information: igus.com/e-chains

e-chain system® E4 light
Series 14240/14340
Interior Separation - New Generation

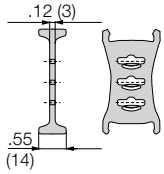
Telephone 1-800-521-2747

Internet: igus.com
email: sales@igus.com
QuickSpec: igus.com/quickspec



In the standard configuration separators are assembled every 2nd e-chain® link



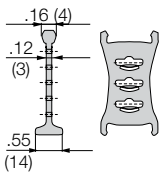


Separator, wide base

Unassembled	**Part No. 62-1**
Assembled	**Part No. 62-1-1**

- **Standard separator 62-1 for all applications**
  Separator with wide base for maximum locking strength and safe standing in e-chains®.



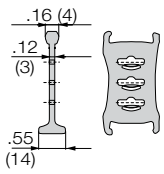


Separator for QuickLock crossbar

Unassembled	**Part No. 62-2**
Assembled	**Part No. 62-2-1**

- **Separator 62-2**
  For even faster installation
  Separator for igus® QuickLock crossbar 385-X-Q. Firm hold to one side with a wide base, narrow on opposed side for easy cable assembly (slight grip)





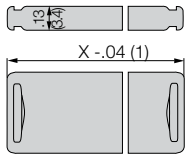
Notch separator for notch crossbar

Unassembled	**Part No. 62-5**
Assembled	**Part No. 62-5-1**

- **Separator 62-5**
  Locks safely in .20" (5 mm) increments
  Notch separator for exact positioning in e-chains®. Recommended for side mounted applications.

Lockable full-width shelves - for the standard interior separation





Full width shelf, lockable

Unassembled	**Part No. 3200-X**
Assembled	**Part No. 3210-X**

- **Full width shelf, lockable**
  Shelf locks into separators on both ends, fixed width possible. Separators can be moved freely over the shelf in horizontal direction. Can be arranged at 3 different heights.

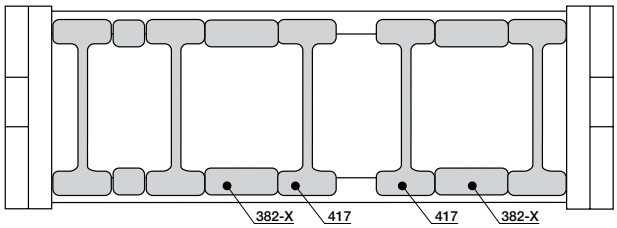
Width X in. (mm)	Part No. Unassembled	Part No. Assembled	Width X in. (mm)	Part No. Unassembled	Part No. Assembled
1.97 (050)	**3200-50**	**3210-50**	5.91 (150)	**3200-150**	**3210-150**
2.95 (075)	**3200-75**	**3210-75**	6.89 (175)	**3200-175**	**3210-175**
3.94 (100)	**3200-100**	**3210-100**	7.87 (200)	**3200-200**	**3210-200**
4.53 (115)	**3200-115**	**3210-115**	8.86 (225)	**3200-225**	**3210-225**
4.92 (125)	**3200-125**	**3210-125**	9.84 (250)	**3200-250**	**3210-250**

e-chain system® E4 light
Series 14240/14340
Interior Separation - Previous Generation

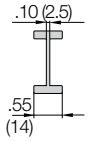
Option 1: Vertical separators and spacers

Vertical separators are used if a vertical subdivision of the e-chain® interior is required. By standard, vertical separators are assembled every other e-chain® link.
NOTE: Observe a lateral spacing of at least 1.30 in. (33mm) for e-tubes and .63 in. (16mm) for e-chain®. There is no minimum spacing needed for side plates









Vertical separator

Unassembled	**Part No. 407**
Assembled	**Part No. 417**





Spacer (chain only)

Unassembled	**Part No. 381-XX**
Assembled	**Part No. 382-XX**

XX = width of the spacer

Spacers available in the following sizes:

Part No. Unassembled	Part No. Assembled	in.	(mm)
381-10	**382-10**	.39”	(10)
381-15	**382-15**	.59”	(15)
381-20	**382-20**	79”	(20)

- **Standard separator 407 for e-chains® and e-tubes**
  This separator offers safe stability due to its wide base design, also when used with thick cables or hoses.

- **NOTE ON SPACERS**
  Vertical separators are adjustable, but can be fixed in position by means of a spacer. Spacers are most often necessary for side mounted applications.
  The available inner height is reduced by .08” (2mm) **per spacer** (for example if one spacer is placed on either side of the separator, the overall inner height is reduced by .16” (4mm). To avoid this, place the spacers on the **outside** of the opening crossbar **(not for long travels)**.

PDF: igus.com/e-chain-pdfs
Product information: igus.com/e-chains

e-chain system® E4 light
Series 14240/14340
Interior Separation - Previous Generation

Telephone 1-800-521-2747

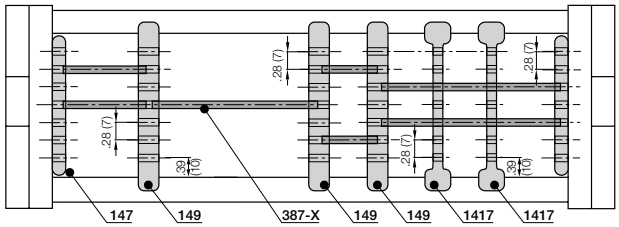
Internet: igus.com
email: sales@igus.com
QuickSpec: igus.com/quickspec

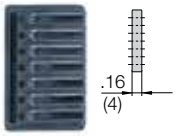
Option 2: Shelves

e-chains® and e-tubes can be subdivided both vertically and horizontally using the various interior separation elements.

➤ **Design, Chapter 1** for layout recommendations.



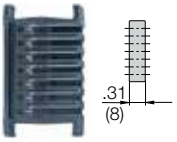




Side plate

Unassembled	**Part No. 146**
Assembled	**Part No. 147**

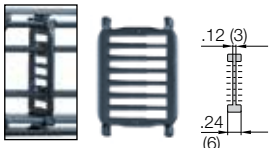
- **Side plates 146**
  This component is used to form the basic pattern of a shelf system.



Vertical separator

Unassembled	**Part No. 148**
Assembled	**Part No. 149**

- **Vertical separator 148**
  This component is used to form the basic pattern of a shelf system.



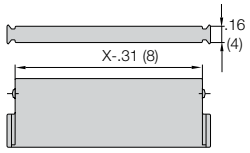
Slotted separators, closed

Unassembled	**Part No. 1407**
Assembled	**Part No. 1417**

- **Slotted separators 1407**
  These are used for very complex subdivisions. However, they cannot be retrofitted into an existing separation system without removing the shelves first.

Shelves 420-XX

These components form the basic pattern of a shelf system.
Shelves of various widths can be arranged at 7 different heights in .28" (7mm) increments





Width X in.	Width X (mm)	Usable Width in.	Usable Width (mm)	Part No. Unassembled	Part No. Assembled
.71	(18)	.39	(10)	**386-18**	**387-18**
.91	(23)	.59	(15)	**386-23**	**387-23**
.98	(25)	.67	(17)	**386-25**	**387-25**
1.10	(28)	.79	(20)	**386-28**	**387-28**
1.30	(33)	.98	(25)	**386-33**	**387-33**
1.69	(43)	1.38	(35)	**386-43**	**387-43**
1.97	(50)	1.65	(42)	**386-50**	**387-50**
2.13	(54)	1.81	(46)	**386-54**	**387-54**
2.44	(62)	2.13	(54)	**386-62**	**387-62**

Width X in.	Width X (mm)	Usable Width in.	Usable Width (mm)	Part No. Unassembled	Part No. Assembled
2.95	(75)	2.64	(67)	**386-75**	**387-75**
3.43	(87)	3.11	(79)	**386-87**	**387-87**
3.94	(100)	3.62	(92)	**386-100**	**387-100**
4.25	(108)	3.94	(100)	**386-108**	**387-108**
4.92	(125)	4.61	(117)	**386-125**	**387-125**
5.91	(150)	5.59	(142)	**386-150**	**387-150**
6.89	(175)	6.57	(167)	**386-175**	**387-175**
7.87	(200)	7.56	(192)	**386-200**	**387-200**
8.19	(208)	7.87	(200)	**386-208**	**387-208**

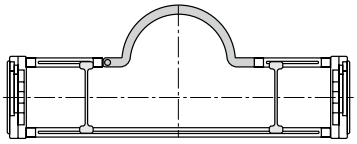
e-chain system® E4 light
Series 14240/14340
Special Accessories



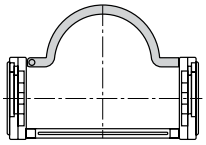
Consult igus® for your extender crossbar applications. We will be happy to assist you with your design layout.

Extender crossbars - For careful guiding of large diameter cables and hoses

- Intended for cables and hoses with a maximum outer diameter of 4.53 in. (115 mm).
- Gliding operation with crossbars assembled along the outer radius in conjunction with a special guide trough
- Gliding operation not guaranteed with crossbars assembled along the inner radius
- The extender crossbar can either be attached to the side links directly or can be used in combination with two standard snap-open crossbars.



Round extender crossbar combined with standard snap-open crossbars.



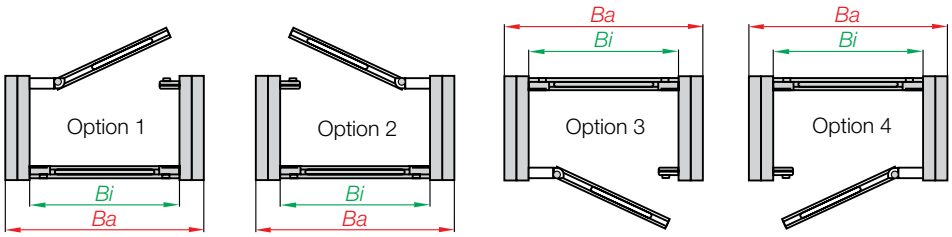
Attached directly to the side link.

Part No.	Max Ø Hose in. (mm)	Style	Installation Side Link	Combined with Snap-Open Crossbars
385-15-RHD115	4.53 (115)	Round	No	Yes
385-18-RD115	4.53 (115)	Round	Yes	No

Hinged crossbars

- Typically, e-chain® crossbars are completely removable. In cases where it is preferable that the opening crossbars remain on the e-chain®, a hinged design has been developed.
- Please consult igus® for design assistance





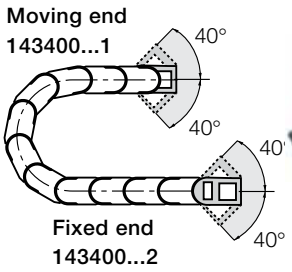
PDF: igus.com/e-chain-pdfs
Product information: igus.com/e-chains

e-chain system® E4 light
Series 14240/14340
Mounting Brackets - KMA

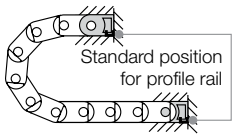
Standard

Option 1: KMA pivoting

- Profile rail option
- Universal use
- Corrosion resistant
- Short and long travels
- Space-restricted conditions

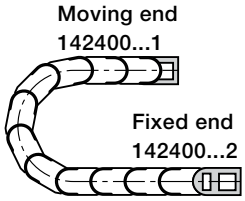




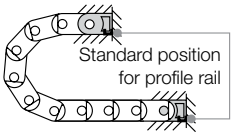


Option 2: KMA locking

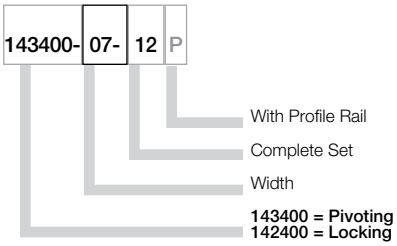
- Profile rail option
- Universal use
- Corrosion resistant
- Extreme accelerations
- Vertical hanging/standing travels

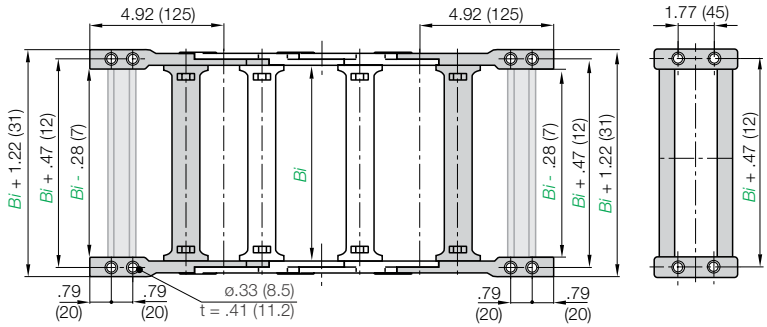






Part Number Structure





Full set, for both ends:

143400- 05- 12 Full set, **each part with pin/bore**

Single-part order:

143400- 05- 1 Mounting bracket **with bore**

143400- 05- 2 Mounting bracket **with pin**

Part number examples are shown for pivoting brackets. For locking brackets change part number to 142400

Part No. Full Set (pivoting)
Series 14240 or 14340:
143400-Width-12

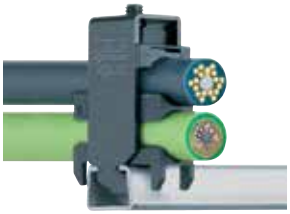
Part No. Full Set (pivoting)
with profile rail
Series 14240 or 14340
143400-Width-12P

Width	Part No. Full Set Pivoting	Locking		With Profile Rail	*Bi* in. (mm)
-05	143400	142400	-05-12	P	1.97 (50)
-06	143400	142400	-06-12	P	2.68 (68)
-07	143400	142400	-07-12	P	2.95 (75)
-087	143400	142400	-087-12	P	3.43 (87)
-10	143400	142400	-10-12	P	3.94 (100)
-11	143400	142400	-11-12	P	4.25 (108)
-112	143400	142400	-112-12	P	4.41 (112)
-12	143400	142400	-12-12	P	4.92 (125)
-137	143400	142400	-137-12	P	5.39 (137)
-15	143400	142400	-15-12	P	5.91 (150)
-162	143400	142400	-162-12	P	6.38 (162)
-17	143400	142400	-17-12	P	6.61 (168)
-18	143400	142400	-18-12	P	6.89 (175)
-187	143400	142400	-187-12	P	7.36 (187)
-20	143400	142400	-20-12	P	7.87 (200)
-212	143400	142400	-212-12	P	8.35 (212)

Width	Part No. Full Set Pivoting	Locking		With Profile Rail	*Bi* in. (mm)
-23	143400	142400	-23-12	P	8.86 (225)
-237	143400	142400	-237-12	P	9.33 (237)
-25	143400	142400	-25-12	P	9.84 (250)
-262	143400	142400	-262-12	P	10.31 (262)
-28	143400	142400	-28-12	P	10.83 (275)
-29	143400	142400	-29-12	P	11.30 (287)
-30	143400	142400	-30-12	P	11.81 (300)
-312	143400	142400	-312-12	P	12.28 (312)
-325	143400	142400	-325-12	P	12.79 (325)
-337	143400	142400	-337-12	P	13.27 (337)
-350	143400	142400	-350-12	P	13.78 (350)
-362	143400	142400	-362-12	P	14.25 (362)
-375	143400	142400	-375-12	P	14.76 (375)
-387	143400	142400	-387-12	P	15.24 (387)
-400	143400	142400	-400-12	P	15.75 (400)

e-chain system® E4 light
Series 14240/14340
Strain Relief

Chainfix clamps for the profile rail



igus® Chainfix strain relief elements are available in either steel or stainless steel. They can be adjusted with a hexagon socket and are available in single, double and triple configurations.

Part No. Single Clamp		Part No. Double Clamp		Part No. Triple Clamp		Cable ø	
Steel	Stainless	Steel	Stainless	Steel	Stainless	in.	(mm)
CFX12-1	CFX12-1E	CFX12-2	CFX12-2E	CFX12-3	–	.24 - .47	(6 - 12)
CFX14-1	CFX14-1E	CFX14-2	CFX14-2E	CFX14-3	–	.47 - .55	(12 - 14)
CFX16-1	CFX16-1E	CFX16-2	CFX16-2E	CFX16-3	–	.55 - .63	(14 - 16)
CFX18-1	CFX18-1E	CFX18-2	CFX18-2E	CFX18-3	–	.63 - .71	(16 - 18)
CFX20-1	CFX20-1E	CFX20-2	CFX20-2E	CFX20-3	–	.71 - .79	(18 - 20)
CFX22-1	CFX22-1E	CFX22-2	CFX22-2E	CFX22-3	–	.79 - .87	(20 - 22)
CFX26-1	CFX26-1E	CFX26-2	CFX26-2E	–	–	.87 - 1.02	(22 - 26)
CFX30-1	CFX30-1E	CFX30-2	CFX30-2E	–	–	1.02 - 1.18	(26 - 30)
CFX34-1	CFX34-1E	CFX34-2	CFX34-2E	–	–	1.18 - 1.34	(30 - 34)
CFX38-1	CFX38-1E	–	–	–	–	1.34 - 1.50	(34 - 38)
CFX42-1	CFX42-1E	–	–	–	–	1.50 - 1.65	(38 - 42)

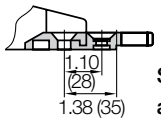
For more information please refer to strain relief section of Chapter 10

Tiewrap Plates

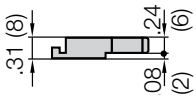
Option 1:
Tiewrap plates as an individual part

Available as an individual component, can be fixed onto a mounting bracket with the use of a profile rail.



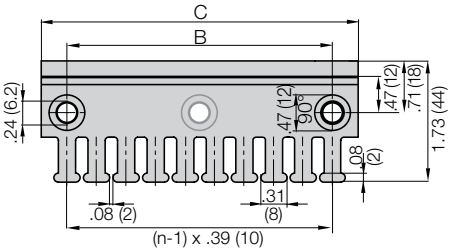


Shown assembled



Single tiewrap plate

Tiewrap Plate	n Number of Teeth	C Overall Width in. (mm)	B Bore Width in. (mm)	Center Bore
3050-ZB	5	1.97 (50)	1.18 (30)	no
3075-ZB	7	2.95 (75)	2.16 (55)	no
3100-ZB	10	3.94 (100)	3.15 (80)	no
3115-ZB	11	4.53 (115)	3.74 (95)	no
3125-ZB	12	4.92 (125)	4.13 (105)	no
3150-ZB	15	5.91 (150)	5.12 (130)	no
3175-ZB	17	6.89 (175)	6.10 (155)	no
3200-ZB	20	7.87 (200)	7.09 (180)	yes
3225-ZB	22	8.86 (225)	8.07 (205)	yes
3250-ZB	25	9.84 (250)	9.06 (230)	yes



If used with KMA brackets with profile rail please add “KMA” to the end of the part number.
Example: 3050-ZBKMA

For more information please refer to strain relief section of Chapter 10



Option 2:
Clip-on Tiewrap plates

Available as a clip-on tiewrap plate without the use of bolts They are inserted and removed with a screwdriver used as a lever. Clip-on tiewrap plates are also available as an attachment to the opening crossbars.

Part No.	Number of Teeth	Width of Strain Relief in.	(mm)
3050-ZC	5	1.97	(50)
3075-ZC	7	2.95	(75)

For more information please refer to strain relief section of Chapter 10



Option 3:
Clip-on Tiewrap plates for opening crossbars

Clip-on tiewrap plates are also available as an attachment to opening crossbars. They can be positioned at any point along the e-chain®.

Part No.	Number of Teeth	Width of Strain Relief in.	(mm)
3850-ZS	5	1.89	(48)

For more information please refer to strain relief section of Chapter 10

PDF: igus.com/e-chain-pdfs
Product information: igus.com/e-chains

e-chain system® E4 light
Series 14240/14340
Guide Trough

Width of Crossbar
14240-**05**-200-0

	B_{Ri}	Installation Part No.
-05	3.19 (81)	*
-06	3.90 (99)	*
-07	4.17 (106)	**94-50-225**
-087	4.65 (118)	**94-50-250**
-10	5.16 (131)	**94-50-250**
-11	5.47 (139)	**94-50-250**
-112	5.63 (143)	**94-50-275**
-12	6.14 (156)	**94-50-275**
-137	6.61 (168)	**94-50-300**
-15	7.12 (181)	**94-50-300**
-162	7.60 (193)	**94-50-325**
-17	7.83 (199)	**94-50-325**
-18	8.11 (206)	**94-50-325**
-187	8.58 (218)	**94-50-350**
-20	9.09 (231)	**94-50-350**
-212	9.57 (243)	**94-50-375**
-23	10.08 (256)	**94-50-375**
-237	10.55 (268)	**94-50-400**
-25	11.06 (281)	**94-50-400**
-262	11.54 (293)	**94-50-425**
-28	12.05 (306)	**94-50-425**
-29	12.52 (318)	**94-50-450**
-30	13.03 (331)	**94-50-450**
-312	13.50 (343)	**94-50-475**
-325	14.02 (356)	**94-50-475**
-337	14.49 (368)	**94-50-500**
-350	15.00 (381)	**94-50-500**
-362	15.47 (393)	**94-50-525**
-375	15.98 (406)	**94-50-525**
-387	16.46 (418)	**94-50-550**
-400	16.97 (431)	**94-50-550**

Guide troughs are used with applications where the upper run of the e-chain® glides on the lower run. If using igus® steel guide troughs, the following components are required:

- Full travel length of guide trough
  Part No. 94-30
- 1/2 travel length glide bars
  Part No. 93-01
- Installation sets as end connectors
  Part No. 94-50-XX

.XX indicates the length of the profile rails on which the guide trough is mounted. The values and part numbers are specified in the table on the left. The standard length of the trough components and glide bars is 6.56 ft (2 m). The required overall length of the guide trough directly correlates to the length of travel.

Example:
Length of travel 164 ft (50 m)
Center mounted

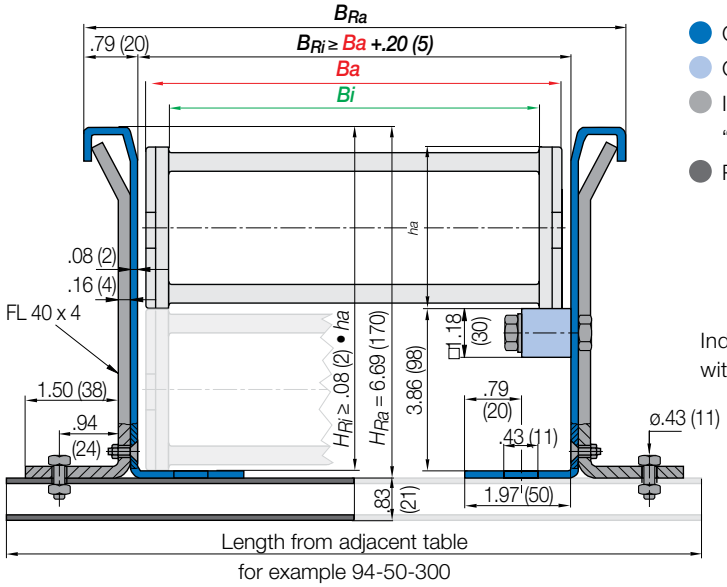
Required guide troughs
164 ft (50 m) guide trough
82 ft (25 m) glide bars
= 25 sections of 6.56 ft (2 m) guide trough
Part No. 94-30
= 13 sections of 6.56 ft (2 m) glide bars
Part No. 93-01
Required number of installation sets:
= Number of guide trough components + 1
= 25 + 1 = 26
Part number of the installation sets
94-50-XXX
Example:
94-50-400 for 15.75 (400 mm) long profile rail



Left: Guide trough with glide bars
Right: Guide troughs without glide bars



Installation sets as section connectors

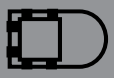


* Specialized guide trough available upon request

PDF: igus.com/e-chain-pdfs
Product information: igus.com/e-chains











14550
14650
R19050

e-chain system® E4 light
Series 14550/14650/R19050

2.76 2.76

Price Index

Series 14550 Series 14650

Series R18840

Special Features / Options

ESD classification: Electrically conductive ESD/ ATEX version upon request

High torsional rigidity

Side-mounted - unsupported

Assembly Tips



Opening e-chains®: Remove crossbars and clips - Insert screwdriver into the slot, push down, release by lever action



Remove lids/bottoms (e-tubes) - Insert screwdriver into the slot, release by lever action

Other Installation Methods

Vertical, hanging ≤ 262 ft (80 m)
Vertical, standing ≤ 19.69 ft (6 m)
Side-mounted, unsupp. ≤ 6.56 ft (2 m)
Rotary requires further calculation

Usage Guidelines

- If weight and price reduction is needed
- If an e-chain®/e-tube with an inner height of 2.76” (70 mm) is required

- If an extremely low-noise version is required
  ➤ **Series E6-80L**
- If side-mounted chain/tube with a longer unsupported travel is required
  ➤ **Series E4-800**
- If increased unsupported lengths and longer travels are required
  ➤ **Series E4-80**

Features & Benefits

1. KMA mounting brackets with attachment points on all sides
2. Noise dampening pads, optional = -10dB(A)
3. Hinged snap-open removable lids along outer radius of e-tube
4. Lateral glide surfaces for side-mounted operation
5. 25% faster assembly with QuickLock Crossbar
6. High stability due to undercut design
7. Notch crossbar with visual scale
8. No camber: no rework due to special design



Order Example: Complete e-chain®

Please indicate chain length or number of links. Example:

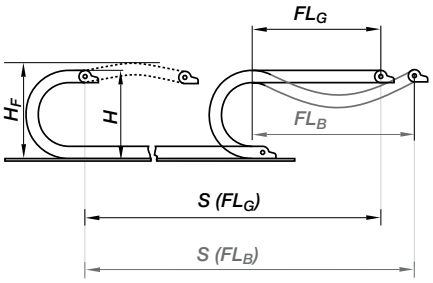
16.4 ft (5 m) **14550-30-300-0**	**e-chain®**
With 2 separators **70-1-1** assembled every 2nd link	**Interior Separation**
1 Set **145500-30-12P**	**Mounting Bracket**

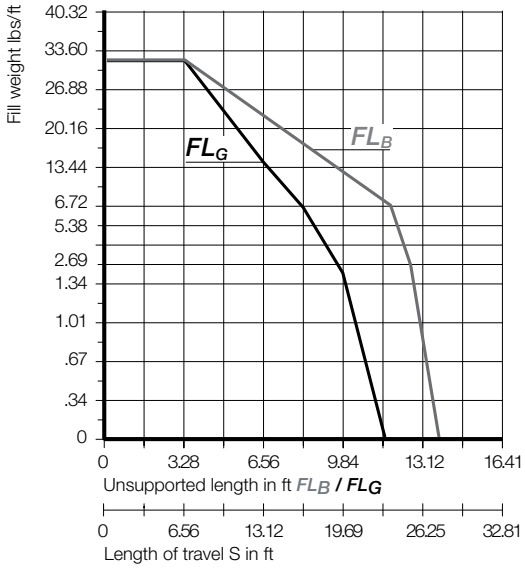
e-chain system® E4 light
Series 14550/14650/R19050
Installation Dimensions

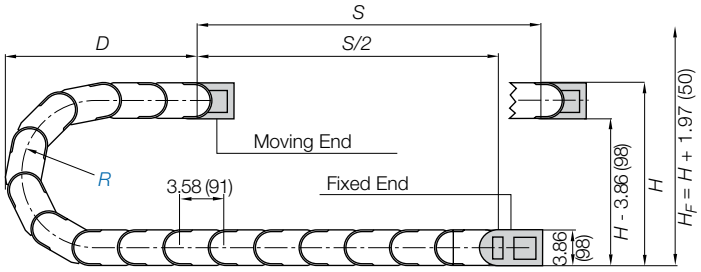
Short travel, unsupported length

- FL_B = unsupported with permitted sag
- FL_G = unsupported with straight upper run

Further information ➤ Design, Chapter 1







Pitch per link: = 3.58" (91 mm)
Links per ft (m): = 3.35 (11)
For center mount applications:
Chain length = $_S/_2 + K$

Short Travels - Unsupported

Unsupported e-chains® feature positive camber over short travels. This must be accounted for when specifying the clearance height. Please refer to **Installation dimensions** for further details.

Legend

S = Length of travel
R = Bending radius
H = Nominal clearance height
D = Overlength e-chain® radius in final position
K = π • *R + safety buffer*
H_F = Required clearance height
HRI = Trough inner height
H_2 = *Mounting height
D_2 = Overlength - long travels, gliding
K_2 = *Add-on

*If the mounting bracket location is set lower

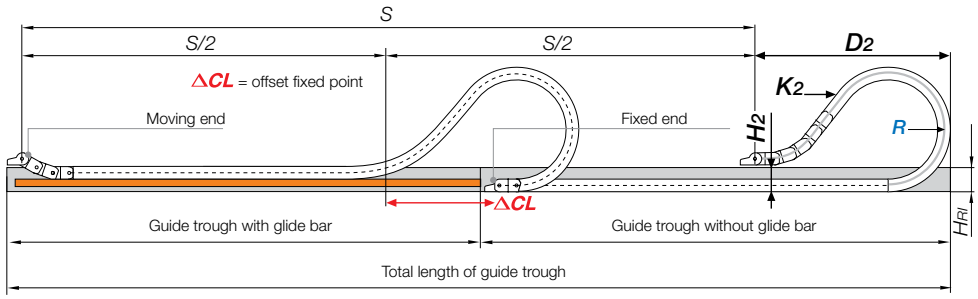
The required clearance height: ***H_F = H* + 1.97 in. (50 mm)** (with 1.68 lbs/ft (2.5 kg/m) fill weight. Please consult igus® if space is particularly restricted.

R	5.91 (150*)	6.89 (175*)	7.87 (200)	9.84 (250)	11.81 (300)	13.78 (350)	15.75 (400)	17.72 (450)	19.68 (500)	23.62 (600)
H	15.67 (398)	17.64 (448)	19.61 (498)	23.54 (598)	27.48 (698)	31.42 (798)	35.35 (898)	39.29 (998)	43.23(1098)	51.10 (1298)
D	13.23 (336)	14.21 (361)	15.19 (386)	17.17 (436)	19.13 (486)	21.10 (536)	23.07 (586)	25.04 (636)	27.01 (686)	30.94 (786)
K	25.79 (655)	28.94 (735)	32.09 (815)	38.19 (970)	44.29 (1125)	50.59 (1285)	56.29 (1440)	62.99 (1600)	69.09 (1755)	81.50 (2070)

For long travels with lowered mounting height

Long travel lengths from 32.8 ft.(10m) to max. 492 ft. (150m)

For center mount applications:
Chain length: = $_S/_2 + K_2$



Long Travels - Gliding

If the unsupported length is exceeded, the e-chain®/ Tube must glide on itself. This requires a guide trough.

Design, Chapter 1

R	5.91 (150*)	6.89 (175*)	7.87 (200)	9.84 (250)	11.81 (300)	13.78 (350)	15.75 (400)	17.72 (450)	19.68 (500)	23.62 (600)[2)]
H_2	10.47 (266)	10.47 (266)	10.47 (266)	10.47 (266)	10.47 (266)	10.47 (266)	10.47 (266)	10.47 (266)	10.47 (266)	–
D_2+25	17.72 (450)	20.87 (530)	27.95 (710)	36.22 (920)	44.09 (1120)	52.76 (1340)	60.24 (1530)	41.25 (1048)	72.05 (1830)	–
K_2	32.24 (819)	39.41 (1001)	50.16 (1274)	64.49 (1638)	75.24 (1911)	85.98 (2184)	100.31 (2548)	111.06 (2821)	125.39 (3185)	–
ΔCL	4.88 (124)	6.26 (159)	8.22 (209)	14.13 (359)	20.04 (509)	25.94 (659)	32.64 (829)	37.76 (959)	45.63 (1159)	–

*Radius not available for e-tubes [2)] R600 not suitable for long travels. Please consult igus®

For support of the lower run, **see Chapter 9** of the main catalog for the **Support Tray tool kit**

Speed / acceleration FL_G	max. 65.6 ft/s (20 m/s) / max. 656 ft/s² (200 m/s²)
Speed / acceleration FL_B	max. 9.84 ft/s (3 m/s) / max. 19.69 ft/s² (6 m/s²)
Gliding speed / acceleration (maximum)	max. 32.8 ft/s (10 m/s) / max. 164 ft/s² (50 m/s²)
Material - permitted temperature	igumid G / -40°F (-40°C) up to +248°F (+120° C)
Flammability Class, igumid G	VDE 0304 IIC UL94 HB

Technical Data

Details of material properties ➤ **Chapter 1**

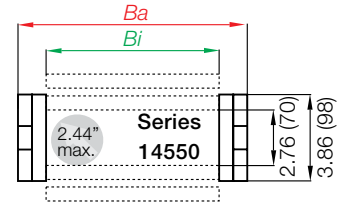
PDF: igus.com/e-chain-pdfs
Product information: igus.com/e-chains

e-chain system® E4 light
Series 14550/14650/R19050

Telephone 1-800-521-2747

Internet: igus.com
email: sales@igus.com
QuickSpec: igus.com/quickspec

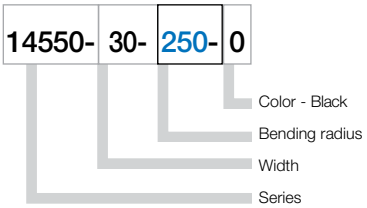
Series 14550 - e-chain® with crossbars every link



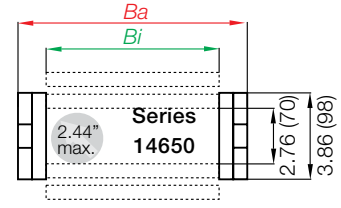


- Crossbars every link
- For use with rigid hydraulic hoses
- For particularly demanding applications
- Can be opened from both sides

Part Number Structure



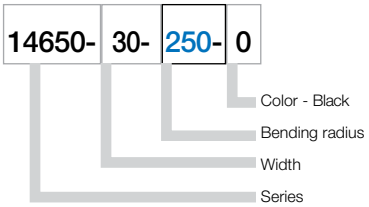
Series 14650 - e-chain® with crossbars every other link



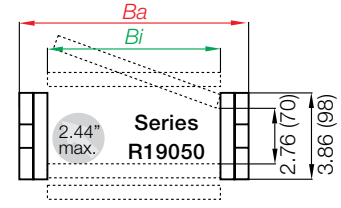


- Crossbars every other link - Standard configuration
- For nearly every situation
- Can be opened from both sides
- Easy assembly
- Stable
- Cost-effective

Part Number Structure



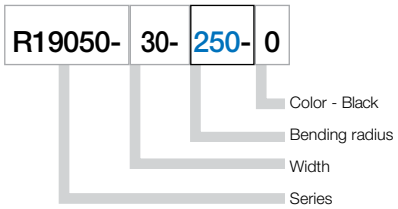
Series R19050 - fully enclosed e-tube



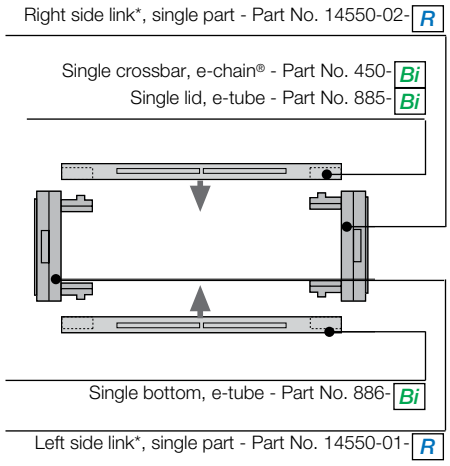


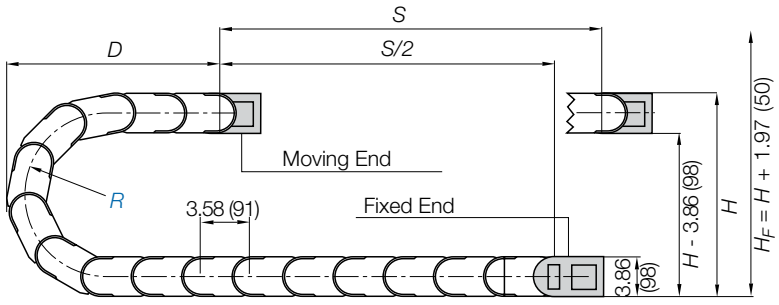
- Fully enclosed
- Excellent cable and hose protection against dirt
- Protection against hot chips
- Lids along inner radius are completely removable
- Lids along the outer radius are single-sided, snap open, hinged on one side as well as completely removable

Part Number Structure



e-chain® as separate parts, links and side plates





*View from the fixed point of the e-chain®/e-tube

e-chain system® E4 light
Series 14550/14650/R19050

Supplement part number with required radius. Example: 14550-30-300-0
Pitch: 3.58 in. (91mm) per link links/ft (m) = 3.35 (11)

Part Number Crossbars Every link	Crossbars Every other	Tube Version		Bi in. (mm)	Ba in. (mm)	14550 lbs/ft (kg/m)	14650 lbs/ft (kg/m)	R19050 lbs/ft (kg/m)
14550-05-	14650-05-		-0	1.97 (50)	3.03 (77)	≈ 2.41 (3.28)	≈ 2.49 (3.27)	–
14550-06-	14650-06-		-0	2.56 (65)	3.62 (92)	≈ 2.26 (3.37)	≈ 2.22 (3.31)	–
14550-07-	14650-07-	19050-07-	-0	2.95 (75)	4.02 (102)	≈ 2.31 (3.44)	≈ 2.25 (3.35)	≈ 2.69 (4.00)
14550-08-	14650-08-		-0	3.43 (87)	4.49 (114)	≈ 2.37 (3.52)	≈ 2.27 (3.38)	–
14550-10-	14650-10-	19050-10-	-0	3.94 (100)	5.00 (127)	≈ 2.43 (3.61)	≈ 2.30 (3.43)	≈ 2.91 (4.33)
14550-11-	14650-11-		-0	4.41 (112)	5.47 (139)	≈ 2.51 (3.73)	≈ 2.35 (3.49)	–
14550-12-	14650-12-	19050-12-	-0	4.92 (125)	5.98 (152)	≈ 2.56 (3.81)	≈ 2.37 (3.53)	≈ 3.16 (4.70)
14550-13-	14650-13-		-0	5.39 (137)	6.46 (164)	≈ 2.65 (3.94)	≈ 2.42 (3.60)	–
14550-15-	14650-15-	19050-15-	-0	5.91 (150)	6.97 (177)	≈ 2.67 (3.98)	≈ 2.43 (3.62)	≈ 3.39 (5.04)
14550-16-	14650-16-		-0	6.38 (162)	7.44 (189)	≈ 2.75 (4.09)	≈ 2.47 (3.67)	–
14550-17-	14650-17-	19050-17-	-0	6.89 (175)	7.95 (202)	≈ 2.84 (4.23)	≈ 2.51 (3.74)	≈ 3.64 (5.41)
14550-18-	14650-18-		-0	7.36 (187)	8.43 (214)	≈ 2.92 (4.34)	≈ 2.55 (3.80)	–
14550-20-	14650-20-	19050-20-	-0	7.87 (200)	8.94 (227)	≈ 2.95 (4.39)	≈ 2.57 (3.82)	≈ 3.79 (5.64)
14550-21-	14650-21-		-0	8.35 (212)	9.41 (239)	≈ 3.00 (4.46)	≈ 2.59 (3.86)	–
14550-22-	14650-22-		-0	8.86 (225)	9.92 (252)	≈ 3.04 (4.53)	≈ 2.61 (3.89)	–
14550-23-	14650-23-		-0	9.33 (237)	10.39 (264)	≈ 3.12 (4.64)	≈ 2.84 (3.95)	–
14550-25-	14650-25-	19050-25-	-0	9.84 (250)	10.91 (277)	≈ 3.20 (4.76)	≈ 2.69 (4.00)	≈ 4.25 (6.32)
14550-26-	14650-26-		-0	10.31 (262)	11.38 (289)	≈ 3.26 (4.85)	≈ 2.72 (4.05)	–
14550-27-	14650-27-	19050-27-	-0	10.83 (275)	11.89 (302)	≈ 3.33 (4.95)	≈ 2.76 (4.10)	≈ 4.47 (6.65)
14550-28-	14650-28-		-0	11.30 (287)	12.36 (314)	≈ 3.37 (5.01)	≈ 2.78 (4.13)	–
14550-30-	14650-30-	19050-30-	-0	11.81 (300)	12.87 (327)	≈ 3.47 (5.16)	≈ 2.83 (4.21)	≈ 4.70 (6.99)
14550-31-	14650-31-		-0	12.28 (312)	13.35 (339)	≈ 3.49 (5.20)	≈ 2.84 (4.23)	–
14550-32-	14650-32-		-0	12.79 (325)	13.86 (352)	≈ 3.56 (5.30)	≈ 2.88 (4.28)	–
14550-33-	14650-33-		-0	13.27 (337)	14.33 (364)	≈ 3.64 (5.42)	≈ 2.92 (4.34)	–
14550-35-	14650-35-	19050-35-	-0	13.78 (350)	14.84 (377)	≈ 3.78 (5.62)	≈ 2.98 (4.44)	≈ 5.16 (7.68)
14550-36-	14650-36-		-0	14.25 (362)	15.31 (389)	≈ 3.72 (5.53)	≈ 2.95 (4.39)	–
14550-37-	14650-37-		-0	14.76 (375)	15.83 (402)	≈ 3.78 (5.63)	≈ 2.98 (4.44)	–
14550-38-	14650-38-		-0	15.24 (387)	16.30 (414)	≈ 3.86 (5.74)	≈ 3.02 (4.50)	–
14550-40-	14650-40-	19050-40-	-0	15.75 (400)	16.81 (427)	≈ 4.04 (6.01)	≈ 3.11 (4.63)	≈ 5.62 (8.36)
14550-41-	14650-41-		-0	16.22 (412)	17.28 (439)	≈ 3.99 (5.94)	≈ 3.09 (4.60)	–
14550-42-	14650-42-		-0	16.73 (425)	17.79 (452)	≈ 4.19 (6.23)	≈ 3.19 (4.74)	–
14550-43-	14650-43-		-0	17.20 (437)	18.27 (464)	≈ 4.08 (6.07)	≈ 3.13 (4.66)	–
14550-45-	14650-45-		-0	17.72 (450)	18.78 (477)	≈ 4.30 (6.40)	≈ 3.25 (4.83)	–
14550-46-	14650-46-	19050-46-	-0	18.19 (462)	19.25 (489)	≈ 4.27 (6.35)	≈ 3.23 (4.80)	≈ 6.19 (9.21)
14550-47-	14650-47-		-0	18.70 (475)	19.76 (502)	≈ 4.29 (6.39)	≈ 3.24 (4.82)	–
14550-48-	14650-48-		-0	19.17 (487)	20.24 (514)	≈ 4.46 (6.64)	≈ 3.33 (4.95)	–
14550-50-	14650-50-		-0	19.69 (500)	20.75 (527)	≈ 4.53 (6.74)	≈ 3.36 (5.00)	–
14550-51-	14650-51-		-0	20.16 (512)	21.22 (539)	≈ 4.47 (6.65)	≈ 3.33 (4.95)	–
14550-52-	14650-52-		-0	20.67 (525)	21.73 (552)	≈ 4.58 (6.82)	≈ 3.39 (5.04)	–
14550-53-	14650-53-		-0	21.14 (537)	22.20 (564)	≈ 4.65 (6.92)	≈ 3.42 (5.09)	–
14550-55-	14650-55-		-0	21.65 (550)	22.72 (577)	≈ 4.93 (7.34)	≈ 3.56 (5.30)	–
14550-60-	14650-60-		-0	23.62 (600)	24.69 (627)	≈ 5.09 (7.57)	≈ 3.64 (5.41)	–

Choose from the radii below for all of the above sizes

Radius (mm) Example: 14550-30-300-0

	150*	175*	200	250	300	350	400	450	500	600
R	5.91 (150)	6.89 (175)	7.87 (200)	9.84 (250)	11.81 (300)	13.78 (350)	15.75 (400)	17.72 (450)	19.68 (500)	23.62 (600)
H	15.67 (398)	17.64 (448)	19.61 (498)	23.54 (598)	27.48 (698)	31.42 (798)	35.35 (898)	39.29 (998)	43.23(1098)	51.10 (1298)
D	13.23 (336)	14.21 (361)	15.19 (386)	17.17 (436)	19.13 (486)	21.10 (536)	23.07 (586)	25.04 (636)	27.01 (686)	30.94 (786)
K	25.79 (655)	28.94 (735)	32.09 (815)	38.19 (970)	44.29 (1125)	50.59 (1285)	56.29 (1440)	62.99 (1600)	69.09 (1755)	81.50 (2070)

* This radius is not available for the Tube Series
[1] Values upon request
[2] Note: for using *R 600* for long travels (gliding) please consult igus® first.

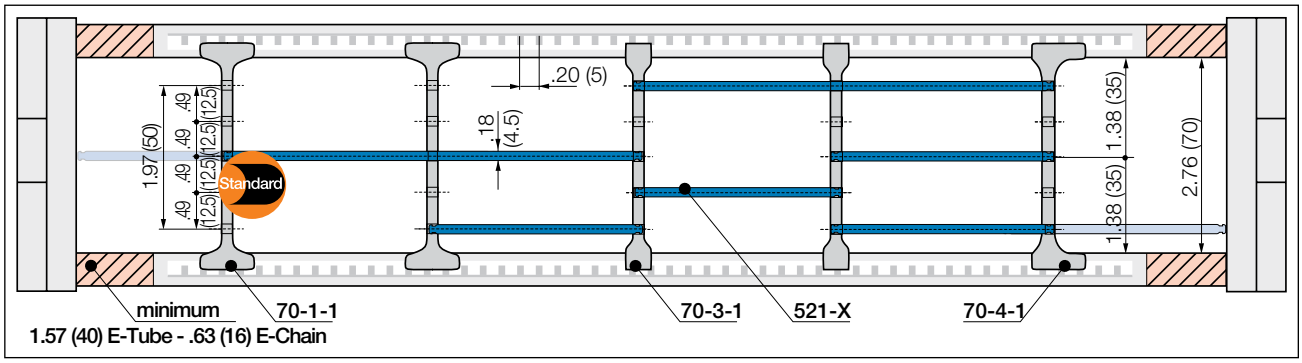
0=Standard color black. For other colors see Chapter 1
For large diameter hoses see page 6.222

PDF: igus.com/e-chain-pdfs
Product information: igus.com/e-chains

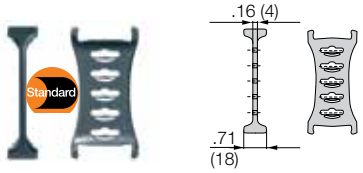
e-chain system® E4 light
Series 14550/14650/R19050
Interior Separation

Telephone 1-800-521-2747

Internet: igus.com
email: sales@igus.com
QuickSpec: igus.com/quickspec



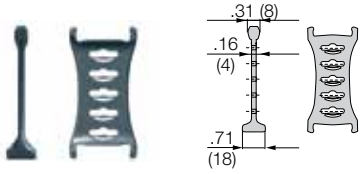
Note Please maintain a lateral spacing of 1.57" (40 mm) for e-tube and .63" (16 mm) for e-chains® between the separators and the side links. In the standard configuration separators are assembled every 2nd e-chain® link



Separator, wide base

Unassembled	**Part No. 70-1**
Assembled	**Part No. 70-1-1**

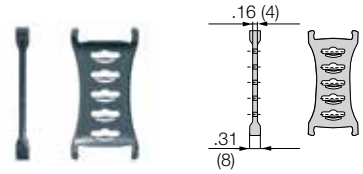
- **Standard separator 70-1**
  for all applications
  Separator with wide base for maximum locking strength and safe standing in e-chains®.



Separator, narrow head

Unassembled	**Part No. 70-2**
Assembled	**Part No. 70-2-1**

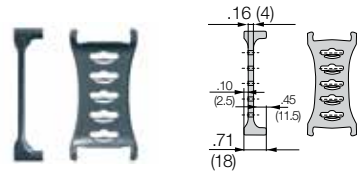
- **Separator 70-2**
  For even faster installation
  Separator for igus® QuickLock crossbar 385-X-Q. Firm hold to one side with a wide base, narrow on opposed side for easy cable assembly (slight grip)



Separator, narrow base

Unassembled	**Part No. 70-3**
Assembled	**Part No. 70-3-1**

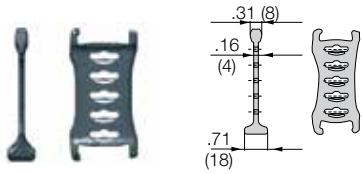
- **Separator 70-3**
  For many thin cables
  Separator with a narrow base for many thin cables side by side. Saves space in e-chains® and e-tubes.



Separator, asymmetrical

Unassembled	**Part No. 70-4**
Assembled	**Part No. 70-4-1**

- **Separator 70-4**
  For side mounted applications
  Asymmetrical separator, for defined distance. No additional spacers necessary for e-chains® and e-tubes.

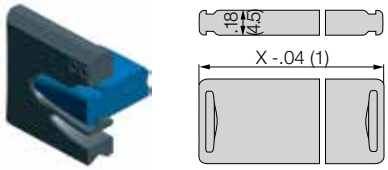


Separator, asymmetrical

Unassembled	**Part No. 70-5**
Assembled	**Part No. 70-5-1**

- **Separator 70-5**
  Locks safely in .20" (5 mm) increments
  Notch separator for exact positioning in e-chains®. Recommended for side-mounted applications.

Lockable full-width shelves - for the standard interior separation



Full width shelf, lockable

Unassembled	**Part No. 520-X**
Assembled	**Part No. 521-X**

- **Full width shelf, lockable**
  Shelf locks safely into separators on both ends, fixed width possible. Separators can be moved freely over the shelf in horizontal direction. Can be arranged at 5 different heights.

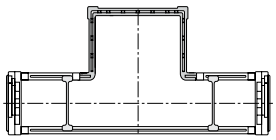
Width X in. (mm)	Part No. Unassembled	Part No. Assembled	Width X in. (mm)	Part No. Unassembled	Part No. Assembled	Width X in. (mm)	Part No. Unassembled	Part No. Assembled
1.97 (050)	**520-50**	**521-50**	5.91 (150)	**520-150**	**521-150**	11.81 (300)	**520-300**	**521-300**
2.56 (065)	**520-65**	**521-65**	6.89 (175)	**520-175**	**521-175**	13.78 (350)	**520-350**	**521-350**
2.95 (075)	**520-75**	**521-75**	7.87 (200)	**520-200**	**521-200**	14.76 (375)	**520-375**	**521-375**
3.94 (100)	**520-100**	**521-100**	8.86 (225)	**520-225**	**521-225**	15.24 (387)	**520-387**	**521-387**
4.92 (125)	**520-125**	**521-125**	9.84 (250)	**520-250**	**521-250**	17.723 (450)	**520-450**	**521-450**



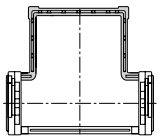
Consult igus® for your extender crossbar applications. We will be happy to assist you with your design layout.

Extender crossbars - For careful guiding of large diameter cables and hoses

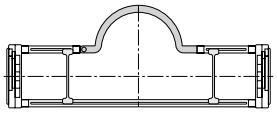
- Intended for cables and hoses with a maximum outer diameter of 9.64 in. (245 mm).
- Can be attached along either the inner or outer radius, inner radius preferred
- Gliding operation with crossbars assembled along the outer radius in conjunction with a special guide trough
- Gliding operation not guaranteed with crossbars assembled along the inner radius
- The extender crossbar can either be attached to the side links directly or can be used in combination with two standard snap-open crossbars.



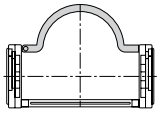
Square extender crossbar combined with standard snap-open crossbars.



Attached directly to the side link.



Round extender crossbar combined with standard snap-open crossbars.



Attached directly to the side link.

Part No.	Max Ø Hose	Style	Installation Side Link	Combined with Snap-Open Crossbars
450-15-RHD115	4.52 (115)	Round	No	Yes
450-17-RD115	4.52 (115)	Round	Yes	No
450-25-D150	5.91 (150)	Square	Yes	No
450-30-D200	7.09 (180)	Square	Yes	No
450-35-D250	7.68 (195)	Square	Yes	No
450-40-D300	9.65 (245)	Square	Yes	No
450-20-HD150	5.91 (150)	Square	No	Yes
450-25-HD200	7.09 (180)	Square	No	Yes
450-30-HD250	7.68 (195)	Square	No	Yes

PDF: igus.com/e-chain-pdfs
Product information: igus.com/e-chains

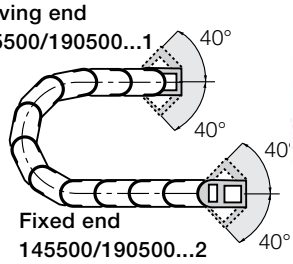
e-chain system® E4 light
Series 14550/14650/R19050
Mounting Brackets

Standard

Option 1: KMA pivoting

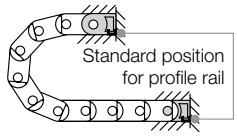
- Profile rail option
- Universal use
- Corrosion resistant
- Short and long travels
- Space-restricted conditions

Moving end
145500/190500...1



Fixed end
145500/190500...2

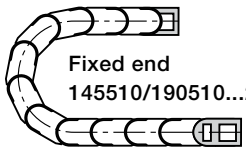




Option 2: KMA locking

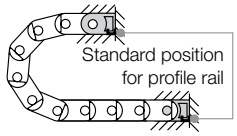
- Profile rail option
- Universal use
- Corrosion resistant
- Extreme accelerations
- Vertical hanging/standing travels

Moving end
145510/190510...1



Fixed end
145510/190510...2

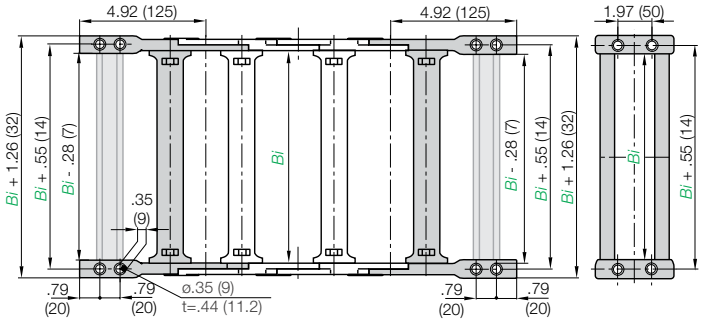




Part Number Structure

145500	05-	12	P

- P: With Profile Rail
- 12: Complete Set
- 05-: Width
- 145500: 145500/190500 = Locking, 145510/190510 = Pivoting



Full set, for both ends:

145500- 05- 12 Full set, **each part with pin/bore**

Single-part order:

145500- 05- 1 Mounting bracket **with bore**

145500- 05- 2 Mounting bracket **with pin**

Part number examples are shown for pivoting brackets. For locking brackets change part number to 145510

Part No. Full Set (pivoting for Chain)
Series 14550 or 14650:
145500-Width-12

Part No. Full Set (pivoting for Chain)
with profile rail
Series 14550 or 14650
145550-Width-12P

Part No. Full Set (pivoting for Tube)
Tube Series R19050
190500-Width-12

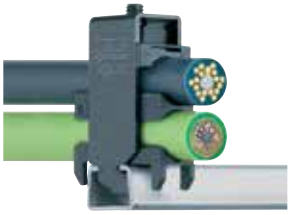
Part No. Full Set (pivoting for Tube)
with Profile Rail
Tube Series R19050
190510-Width-12P

Width	Part No. Full Set Pivoting Chain/Tube	Part No. Full Set Locking Chain/Tube		With Profile	Bi in. (mm)
-05	145500-	145510-	05-12	P	1.97 (50)
-06	145500-	145510-	06-12	P	2.56 (65)
-07	145500-/190500-	145510-/190510-	07-12	P	2.95 (75)
-08	145500-	145510-	08-12	P	3.43 (87)
-10	145500-/190500-	145510-/190510-	10-12	P	3.94 (100)
-11	145500-	145510-	11-12	P	4.41 (112)
-12	145500-/190500-	145510-/190510-	12-12	P	4.92 (125)
-13	145500-	145510-	13-12	P	5.39 (137)
-15	145500-/190500-	145510-/190510-	15-12	P	5.91 (150)
-16	145500-	145510-	16-12	P	6.38 (162)
-17	145500-/190500-	145510-/190510-	17-12	P	6.89 (175)
-18	145500-	145510-	18-12	P	7.36 (187)
-20	145500-/190500-	145510-/190510-	20-12	P	7.87 (200)
-21	145500-	145510-	21-12	P	8.35 (212)
-22	145500-	145510-	22-12	P	8.86 (225)
-23	145500-	145510-	23-12	P	9.33 (237)
-25	145500-/190500-	145510-/190510-	25-12	P	9.84 (250)
-26	145500-	145510-	26-12	P	10.31 (262)
-27	145500-/190500-	145510-/190510-	27-12	P	10.83 (275)
-28	145500-	145510-	28-12	P	11.30 (287)
-30	145500-/190500-	145510-/190510-	30-12	P	11.81 (300)

Width	Part No. Full Set Pivoting Chain/Tube	Part No. Full Set Locking Chain/Tube		With Profile	Bi in. (mm)
-31	145500-	145510-	31-12	P	12.28 (312)
-32	145500-	145510-	32-12	P	12.79 (325)
-33	145500-	145510-	33-12	P	13.27 (337)
-35	145500-/190500-	145510-/190510-	35-12	P	13.78 (350)
-36	145500-	145510-	36-12	P	14.25 (362)
-37	145500-	145510-	37-12	P	14.76 (375)
-38	145500-	145510-	38-12	P	15.24 (387)
-40	145500-/190500-	145510-/190510-	40-12	P	15.75 (400)
-41	145500-	145510-	41-12	P	16.22 (412)
-42	145500-	145510-	42-12	P	16.73 (425)
-43	145500-	145510-	43-12	P	17.20 (437)
-45	145500-	145510-	45-12	P	17.72 (450)
-46	145500-/190500-	145510-/190510-	46-12	P	18.19 (462)
-47	145500-	145510-	47-12	P	18.70 (475)
-48	145500-	145510-	48-12	P	19.17 (487)
-50	145500-	145510-	50-12	P	19.69 (500)
-51	145500-	145510-	51-12	P	20.16 (512)
-52	145500-	145510-	52-12	P	20.67 (525)
-53	145500-	145510-	53-12	P	21.14 (537)
-55	145500-	145510-	55-12	P	21.65 (550)
-60	145500-	145510-	60-12	P	23.62 (600)

e-chain system® E4 light
Series 14550/14650/R19050
Strain Relief

Chainfix clamps for the profile rail



igus® Chainfix strain relief elements are available in either steel or stainless steel. They can be adjusted with a hexagon socket and are available in single, double and triple configurations.

Part No. Single Clamp		Part No. Double Clamp		Part No. Triple Clamp		Cable ø	
Steel	Stainless	Steel	Stainless	Steel	Stainless	in.	(mm)
CFX12-1	CFX12-1E	CFX12-2	CFX12-2E	CFX12-3	–	.24 - .47	(6 - 12)
CFX14-1	CFX14-1E	CFX14-2	CFX14-2E	CFX14-3	–	.47 - .55	(12 - 14)
CFX16-1	CFX16-1E	CFX16-2	CFX16-2E	CFX16-3	–	.55 - .63	(14 - 16)
CFX18-1	CFX18-1E	CFX18-2	CFX18-2E	CFX18-3	–	.63 - .71	(16 - 18)
CFX20-1	CFX20-1E	CFX20-2	CFX20-2E	CFX20-3	–	.71 - .79	(18 - 20)
CFX22-1	CFX22-1E	CFX22-2	CFX22-2E	CFX22-3	–	.79 - .87	(20 - 22)
CFX26-1	CFX26-1E	CFX26-2	CFX26-2E	–	–	.87 - 1.02	(22 - 26)
CFX30-1	CFX30-1E	CFX30-2	CFX30-2E	–	–	1.02 - 1.18	(26 - 30)
CFX34-1	CFX34-1E	CFX34-2	CFX34-2E	–	–	1.18 - 1.34	(30 - 34)
CFX38-1	CFX38-1E	–	–	–	–	1.34 - 1.50	(34 - 38)
CFX42-1	CFX42-1E	–	–	–	–	1.50 - 1.65	(38 - 42)

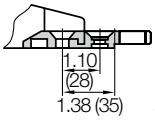
For more information please refer to strain relief section of Chapter 10

Tiewrap Plates

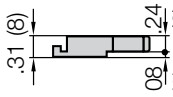
Option 1:
Tiewrap plates as an individual part

Available as an individual component, can be fixed onto a mounting bracket with the use of a profile rail.



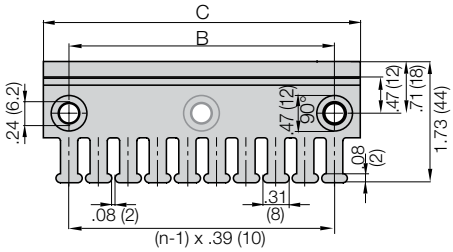


Shown assembled



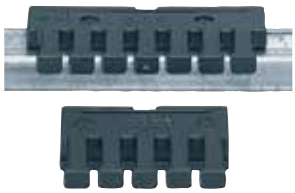
Single tiewrap plate

Tiewrap Plate	n Number of Teeth	C Overall Width in. (mm)	B Bore Width in. (mm)	Center Bore
3050-ZB	5	1.97 (50)	1.18 (30)	no
3075-ZB	7	2.95 (75)	2.16 (55)	no
3100-ZB	10	3.94 (100)	3.15 (80)	no
3115-ZB	11	4.53 (115)	3.74 (95)	no
3125-ZB	12	4.92 (125)	4.13 (105)	no
3150-ZB	15	5.91 (150)	5.12 (130)	no
3175-ZB	17	6.89 (175)	6.10 (155)	no
3200-ZB	20	7.87 (200)	7.09 (180)	yes
3225-ZB	22	8.86 (225)	8.07 (205)	yes
3250-ZB	25	9.84 (250)	9.06 (230)	yes



If used with KMA brackets with profile rail please add "KMA" to the end of the part number.
Example: 3050-ZBKMA

For more information please refer to strain relief section of Chapter 10



Option 2:
Clip-on Tiewrap plates

Available as a clip-on tiewrap plate without the use of bolts They are inserted and removed with a screwdriver used as a lever. Clip-on tiewrap plates are also available as an attachment to the opening crossbars.

Part No.	Number of Teeth	Width of Strain Relief in.	(mm)
3050-ZC	5	1.97	(50)
3075-ZC	7	2.95	(75)

For more information please refer to strain relief section of Chapter 10



Option 3:
Clip-on Tiewrap plates for opening crossbars

Clip-on tiewrap plates are also available as an attachment to opening crossbars. They can be positioned at any point along the e-chain®.

Part No.	Number of Teeth	Width of Strain Relief in.	(mm)
4550-ZS	5	1.89	(48)
4575-ZS	7	2.91	(74)

For more information please refer to strain relief section of Chapter 10

PDF: igus.com/e-chain-pdfs
Product information: igus.com/e-chains

e-chain system® E4 light
Series 14550/14650/R19050
Guide Trough

igus® e-chain system®
Telephone 1-800-521-2747
Internet: igus.com
email: sales@igus.com
QuickSpec: igus.com/quickspec

Width of Crossbar
14550-**10**-200-0

	B_{Ri}	Installation Part No.
-05	3.23 (82)	*
-06	3.82 (97)	*
-07	4.21 (107)	**94-50-225**
-08	4.69 (119)	**94-50-250**
-10	5.20 (132)	**94-50-250**
-11	5.67 (144)	**94-50-275**
-12	6.18 (157)	**94-50-275**
-13	6.65 (169)	**94-50-300**
-15	7.17 (182)	**94-50-300**
-16	7.64 (194)	**94-50-325**
-17	8.15 (207)	**94-50-325**
-18	8.62 (219)	**94-50-350**
-20	9.13 (232)	**94-50-350**
-21	9.61 (244)	**94-50-375**
-22	10.12 (257)	**94-50-375**
-23	10.59 (269)	**94-50-400**
-25	11.10 (282)	**94-50-400**
-26	11.57 (294)	**94-50-425**
-27	12.09 (307)	**94-50-425**
-28	12.56 (319)	**94-50-450**
-30	13.07 (332)	**94-50-450**
-31	13.54 (344)	**94-50-475**
-32	14.06 (357)	**94-50-475**
-33	14.53 (369)	**94-50-500**
-35	15.04 (382)	**94-50-500**
-36	15.51 (394)	**94-50-525**
-37	16.02 (407)	**94-50-525**
-38	16.50 (419)	**94-50-550**
-40	17.01 (432)	**94-50-550**
-41	17.48 (444)	**94-50-575**
-42	17.99 (457)	**94-50-575**
-43	18.46 (469)	**94-50-600**
-45	18.98 (482)	**94-50-600**
-46	19.45 (494)	**94-50-625**
-47	19.96 (507)	**94-50-625**
-48	20.43 (519)	**94-50-650**
-50	20.94 (532)	**94-50-650**
-51	21.42 (544)	**94-50-675**
-52	21.93 (557)	**94-50-675**
-53	22.40 (569)	**94-50-700**
-55	22.91 (582)	**94-50-700**
-60	24.88 (632)	**94-50-750**

Standard length profile rail

Guide troughs are used with applications where the upper run of the e-chain® glides on the lower run. If using igus® steel guide troughs, the following components are required:

- Full travel length of guide trough
  Part No. 94-14550-30
- 1/2 travel length glide bars
  Part No. 93-01
- Installation sets as end connectors
  Part No. 94-50-XX

.XX indicates the length of the profile rails on which the guide trough is mounted. The values and part numbers are specified in the table on the left. The standard length of the trough components and glide bars is 6.56 ft (2 m). The required overall length of the guide trough directly correlates to the length of travel.

Example:
Length of travel 164 ft (50 m)
Center mounted

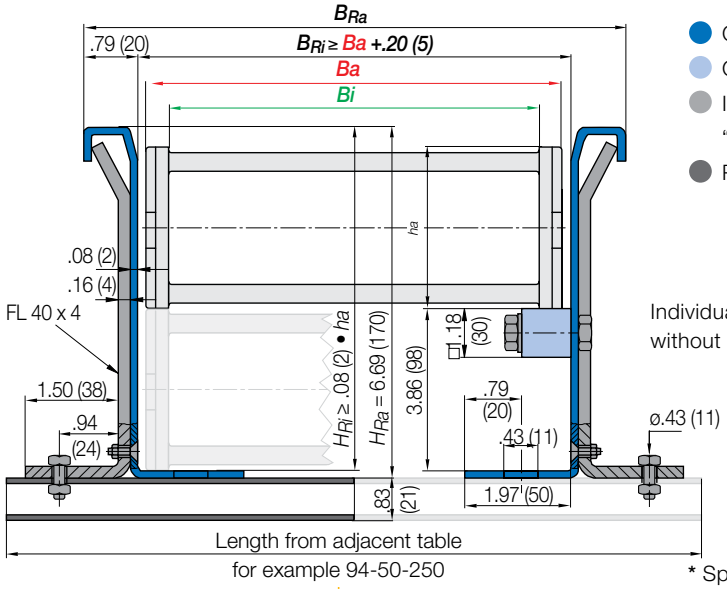
Required guide troughs
164 ft (50 m) guide trough
82 ft (25 m) glide bars
= 25 sections of 6.56 ft (2 m) guide trough
Part No. 94-30
= 13 sections of 6.56 ft (2 m) glide bars
Part No. 93-01
Required number of installation sets:
= Number of guide trough components + 1
= 25 + 1 = 26
Part number of the installation sets
94-50-XXX
Example:
94-50-400 for 15.75 (400 mm) long profile rail



Left: Guide trough with glide bars
Right: Guide troughs without glide bars



Installation sets as section connectors



- Guide trough
- Glide bars
- Installation set "Basic"
- Profile rail

Individual attachment without profile rail

* Specialized guide trough available upon request

PDF: igus.com/e-chain-pdfs
Product information: igus.com/e-chains











e-chain system® E4 light
Series 15050/15150/R19850

3.15” 3.15”

Price Index

Series 15050

Series 15150

Series R19850

Special Features / Options

ESD classification: Electrically conductive ESD/ ATEX version upon request

High torsional rigidity

Side-mounted - unsupported

Assembly Tips



Opening e-chains®: Remove crossbars and clips - Insert screwdriver into the slot, push down, release by lever action



Remove lids/bottoms (e-tubes) - Insert screwdriver into the slot, release by lever action

Other Installation Methods

Vertical, hanging ≤ 328 ft (100 m)
Vertical, standing ≤ 19.69 ft (6 m)
Side-mounted, unsupp. ≤ 6.56 ft (2 m)
Rotary requires further calculation

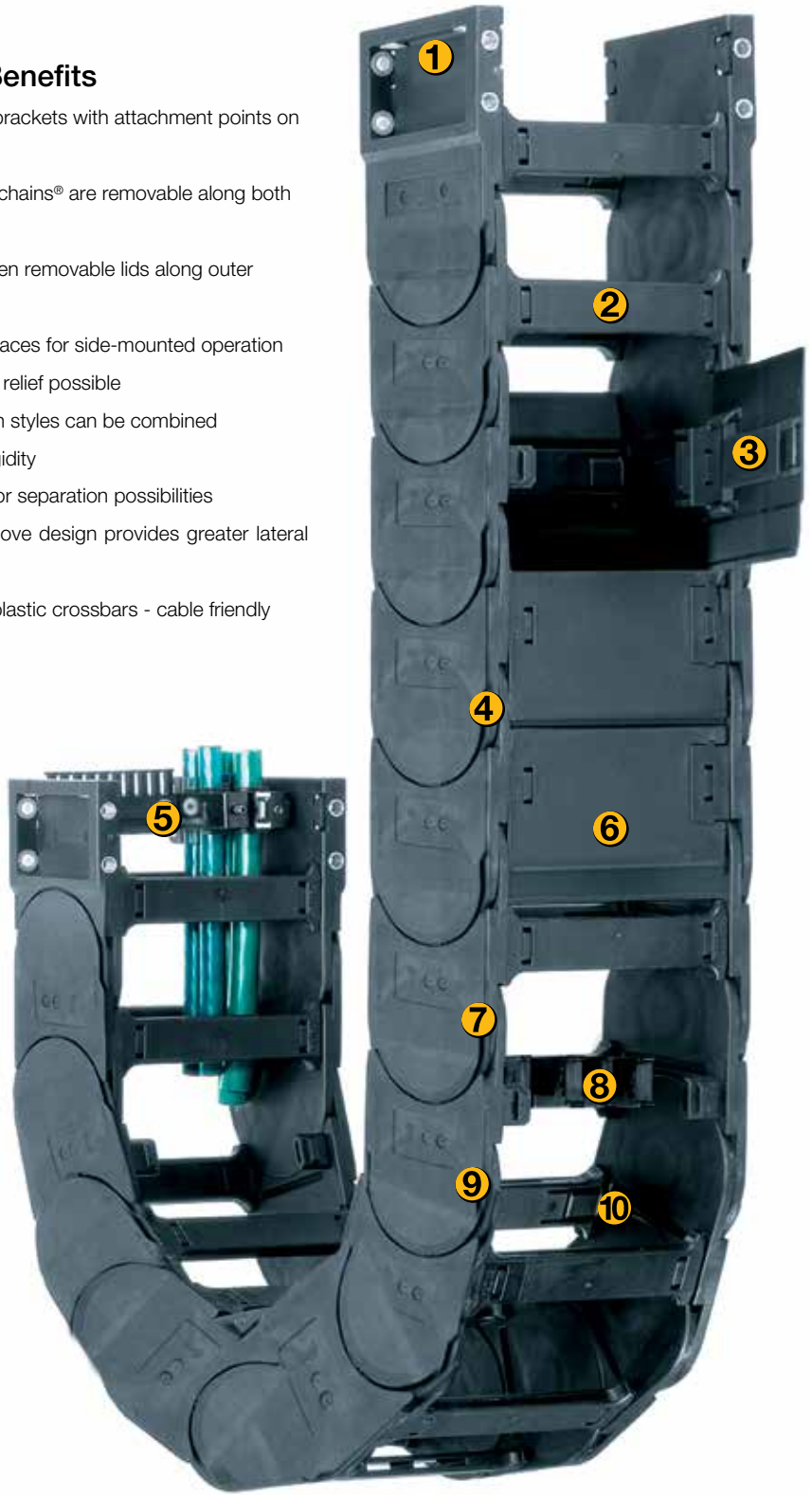
Usage Guidelines

- If a simpler low-cost solution is required
- For maximum inner width with minimal outer width
- If the Series 5050 is too large

- If side-mounted chain/tube with a long unsupported travel is required
  ➤ **Series E4-80/H4-80/R4-80**

Features & Benefits

1. KMA mounting brackets with attachment points on all sides
2. Crossbars on e-chains® are removable along both radii
3. Hinged snap-open removable lids along outer radius of e-tube
4. Lateral glide surfaces for side-mounted operation
5. Integrated strain relief possible
6. Closed and open styles can be combined
7. High torsional rigidity
8. Numerous interior separation possibilities
9. Tongue and groove design provides greater lateral stability
10. Wide, rounded plastic crossbars - cable friendly



Order Example: Complete e-chain®

Please indicate chain length or number of links. Example:

16.4 ft (5 m) **15050-30-300-0**	**e-chain®**
With 2 separators **80.1.1** assembled every 2nd link	**Interior Separation**
1 Set **150500-30-12P**	**Mounting Bracket**

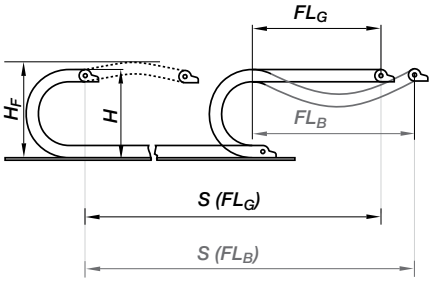
e-chain system® E4 light
Series 15050/15150/R19850
Installation Dimensions

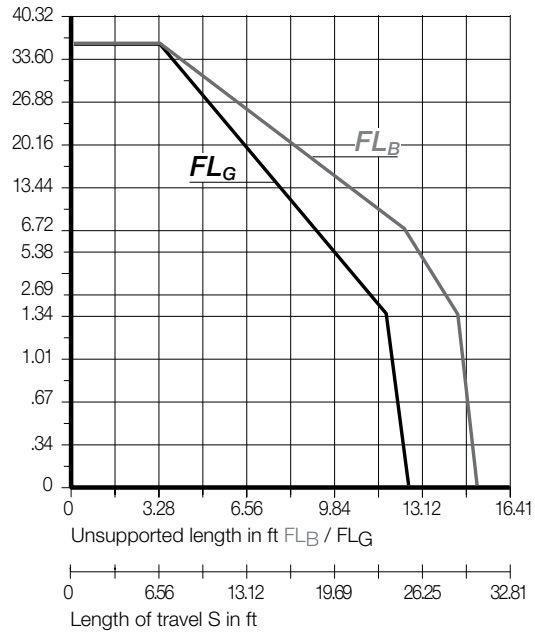
Short travel, unsupported length

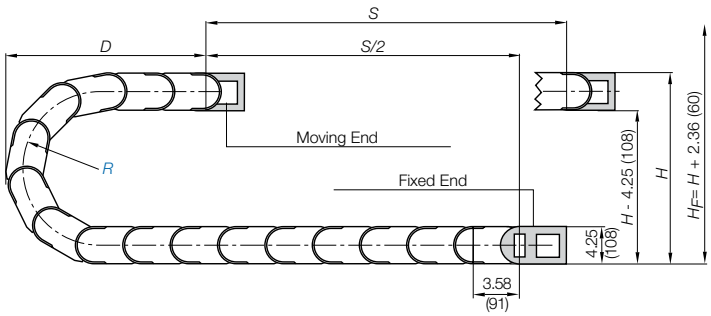
● FL_B = unsupported with permitted sag

● FL_G = unsupported with straight upper run

Further information ➤ Design, Chapter 1







Pitch per link: = 3.58" (91 mm)

Links per ft (m): = 3.35 (11)

For center mount applications:

Chain length = $^{S}/_{2} + K$

Short Travels - Unsupported

Unsupported e-chains® feature positive camber over short travels. This must be accounted for when specifying the clearance height. Please refer to **Installation dimensions** for further details.

Legend

S = Length of travel
R = Bending radius
H = Nominal clearance height
D = Overlength e-chain® radius in final position
K = $\pi \bullet R$ + *safety buffer*
H_F = Required clearance height
H_{RI} = Trough inner height
H_2 = *Mounting height
D_2 = Overlength - long travels, gliding
K_2 = *Add-on

*If the mounting bracket location is set lower

The required clearance height: **H_F = H + 2.36 in. (60 mm)** (with 2.02 lbs/ft (3 kg/m) fill weight. Please consult igus® if space is particularly restricted.

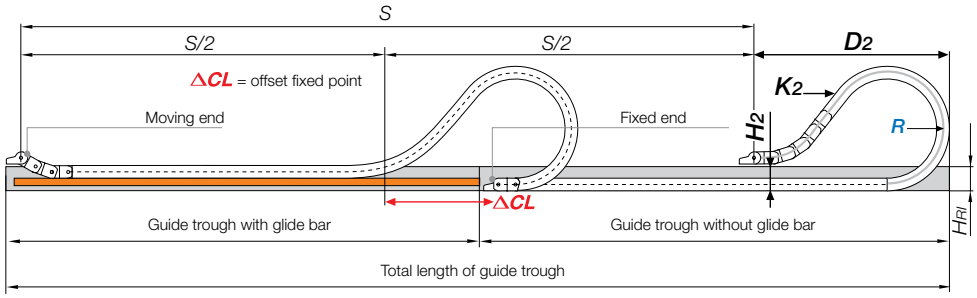
R	5.91 (150)	7.87 (200)	9.84 (250)	11.81 (300)	13.78 (350)	15.75 (400)	19.68 (500)	23.62 (600)
H^{0}_{+25}	16.06 (408)	20.00 (508)	23.94 (608)	27.87 (708)	31.81 (808)	35.75 (908)	43.62 (1108)	51.50 (1308)
D	13.43 (341)	15.39 (391)	17.36 (441)	19.33 (491)	21.30 (541)	23.27 (591)	27.20 (691)	31.14 (791)
K	25.79 (655)	32.09 (815)	38.19 (970)	44.29 (1125)	50.59 (1285)	56.69 (1440)	69.09 (1755)	81.50 (2070)

For long travels with lowered mounting height

Long travel lengths from 32.8 ft.(10m) to max. 820 ft. (250m)

For center mount applications:

Chain length: = $^{S}/_{2} + K_2$



Long Travels - Gliding

If the unsupported length is exceeded, the e-chain®/ Tube must glide on itself. This requires a guide trough.

Design, Chapter 1

R	5.91 (150*)	7.87 (200)	9.84 (250)	11.81 (300)	13.78 (350)	15.75 (400)	19.68 (500)	23.62 (600[1])
H_2	9.53 (242)	9.53 (242)	9.53 (242)	9.53 (242)	9.53 (242)	9.53 (242)	9.53 (242)	*
D_2 +25	21.65 (550)	31.50 (800)	37.40 (950)	47.24 (1200)	61.02 (1550)	66.93 (1700)	85.63 (2175)	*
K_2	35.83 (910)	50.16 (1274)	64.49 (1638)	78.82 (2002)	96.73 (2457)	107.48 (2730)	136.14 (3458)	*
ΔCL	8.23 (209)	16.10 (409)	20.04 (509)	27.91 (709)	39.72 (1009)	43.66 (1109)	58.42 (1484)	*

[1] *R 600* not suitable for long travel applications. Please consult igus®

For support of the lower run, **see Chapter 9** of the main catalog for the **Support Tray tool kit**

Speed / acceleration FL_G	max. 65.6 ft/s (20 m/s) / max. 656 ft/s² (200 m/s²)
Speed / acceleration FL_B	max. 9.84 ft/s (3 m/s) / max. 19.69 ft/s² (6 m/s²)
Gliding speed / acceleration (maximum)	max. 32.8 ft/s (10 m/s) / max. 164 ft/s² (50 m/s²)
Material - permitted temperature	igumid G / -40°F (-40°C) up to +248°F (+120° C)
Flammability Class, igumid G	VDE 0304 IIC UL94 HB

Technical Data

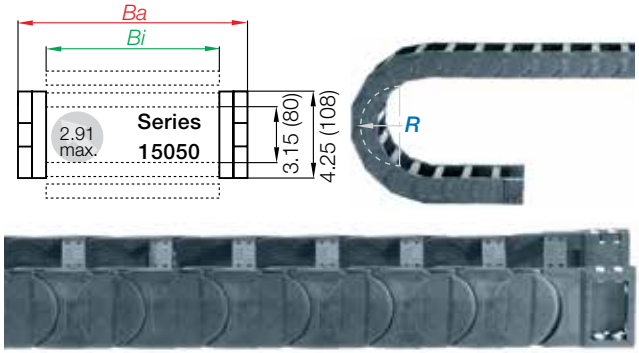
Details of material properties ➤ **Chapter 1**

e-chain system® E4 light
Series 15050/15150/R19850

Telephone 1-800-521-2747

Internet: igus.com
email: sales@igus.com
QuickSpec: igus.com/quickspec

Series 15050 - e-chain® with crossbars every link



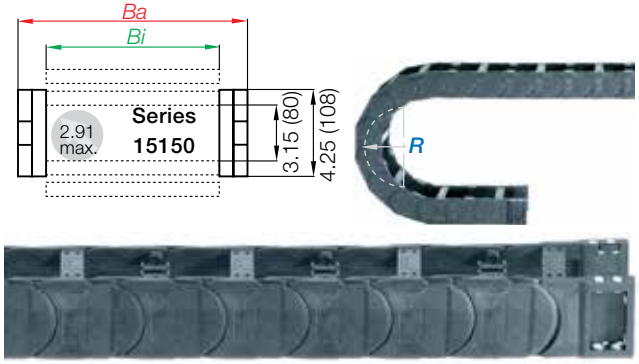
- Crossbars every link
- For use with rigid hydraulic hoses
- For particularly demanding applications
- Can be opened from both sides

Part Number Structure

15050- 30- 300- 0

- Color - Black
- Bending radius
- Width
- Series

Series 15150 - e-chain® with crossbars every other link



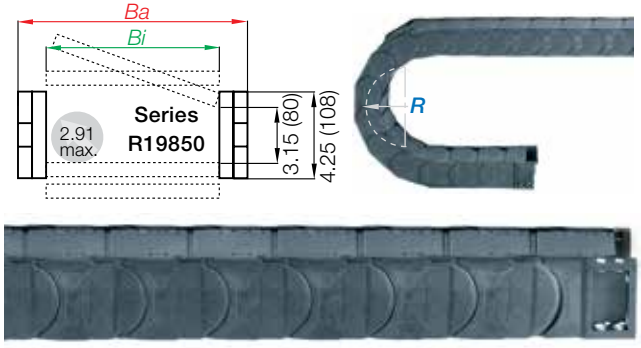
- Crossbars every other link - Standard configuration
- For nearly every situation
- Can be opened from both sides
- Easy assembly
- Stable
- Cost-effective

Part Number Structure

15150- 30- 300- 0

- Color - Black
- Bending radius
- Width
- Series

Series R19850 - fully enclosed e-tube



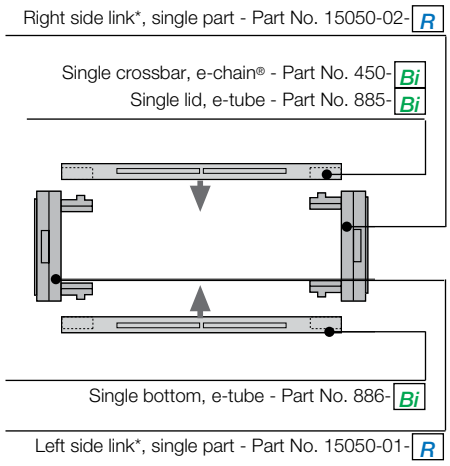
- Fully enclosed
- Excellent cable and hose protection against dirt
- Protection against hot chips
- Lids along inner radius are completely removable
- Lids along the outer radius are single-sided, snap open, hinged on one side as well as completely removable

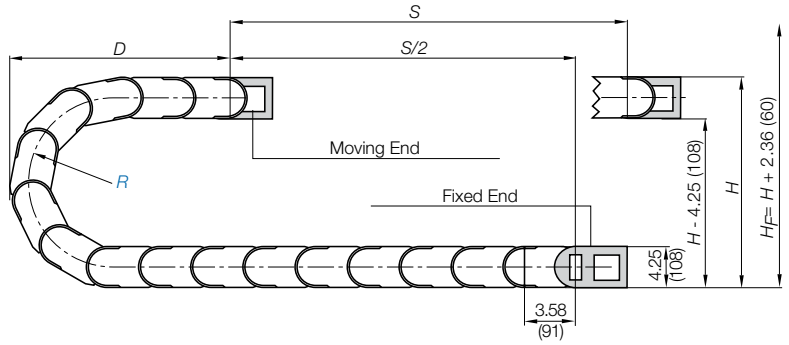
Part Number Structure

19850- 30- 300- 0

- Color - Black
- Bending radius
- Width
- Series

e-chain® as separate parts, links and side plates





*View from the fixed point of the e-chain®/e-tube

e-chain system® E4 light
Series 15050/15150/R19850

Supplement part number with required radius. Example: 15050-30-300-0
Pitch: 3.58 in. (91mm) per link links/ft (m) = 3.35 (11)

Part Number. Crossbars Every link	Crossbars Every other	Tube Version			Bi in. (mm)	Ba in. (mm)	15050 lbs/ft (kg/m)	15150 lbs/ft (kg/m)	R19850 lbs/ft (kg/m)
15050-05-	15150-05-			-0	1.97 (50)	3.15 (80)	≈2.59 (3.85)	≈ 2.58 (3.84)	–
15050-06-	15150-06-			-0	2.56 (65)	3.74 (95)	≈2.65 (3.95)	≈ 2.61 (3.88)	–
15050-07-	15150-07-	19850-07-		-0*	2.95 (75)	4.13 (105)	≈2.69 (4.00)	≈ 2.63 (3.92)	≈ 3.00 (4.46)
15050-08-	15150-08-			-0	3.43 (87)	4.61 (117)	≈ 2.72 (4.05)	≈ 2.66 (3.96)	–
15050-10-	15150-10-	19850-10-		-0	3.94 (100)	5.12 (130)	≈ 2.81 (4.18)	≈ 2.69 (4.00)	≈ 3.18 (4.74)
15050-11-	15150-11-			-0	4.41 (112)	5.63 (143)	≈ 2.90 (4.31)	≈ 2.73 (4.07)	–
15050-12-	15150-12-	19850-12-		-0	4.92 (125)	6.10 (155)	≈ 2.94 (4.38)	≈ 2.76 (4.10)	≈ 3.43 (5.10)
15050-13-	15150-13-			-0	5.39 (137)	6.61 (168)	≈ 3.03 (4.51)	≈ 2.80 (4.17)	–
15050-15-	15150-15-	19850-15-		-0	5.91 (150)	7.09 (180)	≈ 3.08 (4.58)	≈ 2.82 (4.20)	≈ 3.72 (5.53)
15050-16-	15150-16-			-0	6.38 (162)	7.60 (193)	≈ 3.15 (4.69)	≈ 2.86 (4.26)	–
15050-17-	15150-17-	19850-17-		-0	6.89 (175)	8.07 (205)	≈ 3.23 (4.80)	≈ 2.90 (4.31)	≈ 3.95 (5.80)
15050-18-	15150-18-			-0	7.36 (187)	8.58 (218)	≈ 3.30 (4.91)	≈ 2.94 (4.37)	–
15050-20-	15150-20-	19850-20-		-0	7.87 (200)	9.06 (230)	≈ 3.31 (4.93)	≈ 2.94 (4.38)	≈ 4.11 (6.11)
15050-21-	15150-21-			-0	8.35 (212)	9.57 (243)	≈ 3.39 (5.04)	≈ 2.98 (4.43)	–
15050-22-	15150-22-			-0	8.86 (225)	10.04 (255)	≈ 3.43 (5.10)	≈ 3.00 (4.47)	–
15050-23-	15150-23-			-0	9.33 (237)	10.55 (268)	≈ 3.52 (5.24)	≈ 3.04 (4.53)	–
15050-25-	15150-25-	19850-25-		-0	9.84 (250)	11.02 (280)	≈ 3.57 (5.32)	≈ 3.08 (4.58)	≈ 4.59 (6.83)
15050-26-	15150-26-			-0	10.31 (262)	11.54 (293)	≈ 3.64 (5.41)	≈ 3.10 (4.62)	–
15050-27-	15150-27-	19850-27-		-0	10.83 (275)	12.01 (305)	≈ 3.71 (5.52)	≈ 3.14 (4.68)	≈ 4.87 (7.26)
15050-28-	15150-28-			-0	11.30 (287)	12.52 (318)	≈ 3.72 (5.54)	≈ 3.15 (4.69)	–
15050-30-	15150-30-	19850-30-		-0	11.81 (300)	12.99 (330)	≈ 3.87 (5.76)	≈ 3.23 (4.80)	≈ 5.03 (7.49)
15050-31-	15150-31-			-0	12.28 (312)	13.50 (343)	≈ 3.90 (5.80)	≈ 3.24 (4.82)	–
15050-32-	15150-32-			-0	12.79 (325)	13.98 (355)	≈ 3.93 (5.85)	≈ 3.25 (4.84)	–
15050-33-	15150-33-			-0	13.27 (337)	14.49 (368)	≈ 4.05 (6.03)	≈ 3.31 (4.93)	–
15050-35-	15150-35-	19850-35-		-0	13.78 (350)	14.96 (380)	≈ 4.15 (6.18)	≈ 3.37 (5.01)	≈ 5.54 (8.24)
15050-36-	15150-36-			-0	14.25 (362)	15.47 (393)	≈ 4.16 (6.19)	≈ 3.37 (5.02)	–
15050-37-	15150-37-			-0	14.76 (375)	15.94 (405)	≈ 4.17 (6.20)	≈ 3.37 (5.02)	–
15050-38-	15150-38-			-0	15.24 (387)	16.46 (418)	≈ 4.23 (6.29)	≈ 3.40 (5.06)	–
15050-40-	15150-40-	19850-40-		-0	15.75 (400)	16.93 (430)	≈ 4.36 (6.49)	≈ 3.47 (5.16)	≈ 6.18 (9.20)
15050-41-	15150-41-			-0	16.22 (412)	17.44 (443)	≈ 4.46 (6.64)	≈ 3.52 (5.24)	–
15050-42-	15150-42-			-0	16.73 (425)	17.91 (455)	≈ 4.57 (6.80)	≈ 3.57 (5.31)	–
15050-43-	15150-43-			-0	17.20 (437)	18.43 (468)	≈ 4.61 (6.86)	≈ 3.60 (5.35)	–
15050-45-	15150-45-			-0	17.72 (450)	18.90 (480)	≈ 4.66 (6.93)	≈ 3.62 (5.38)	–
15050-46-	15150-46-	19850-46-		-0	18.19 (462)	19.41 (493)	≈ 4.67 (6.95)	≈ 3.62 (5.39)	≈ 6.49 (9.66)
15050-47-	15150-47-			-0	18.70 (475)	19.88 (505)	≈ 4.76 (7.08)	≈ 3.67 (5.46)	–
15050-48-	15150-48-			-0	19.17 (487)	20.39 (518)	≈ 4.81 (7.16)	≈ 3.69 (5.49)	–
15050-50-	15150-50-			-0	19.69 (500)	20.87 (530)	≈ 4.85 (7.22)	≈ 3.71 (5.52)	–
15050-51-	15150-51-			-0	20.16 (512)	21.38 (543)	≈ 4.87 (7.24)	≈ 3.72 (5.53)	–
15050-52-	15150-52-			-0	20.67 (525)	21.85 (555)	≈ 4.89 (7.28)	≈ 3.74 (5.56)	–
15050-53-	15150-53-			-0	21.14 (537)	22.36 (568)	≈ 5.00 (7.44)	≈ 3.78 (5.63)	–
15050-55-	15150-55-			-0	21.65 (550)	22.83 (580)	≈ 5.32 (7.92)	≈ 3.94 (5.87)	–
15050-60-	15150-60-			-0	23.62 (600)	24.80 (630)	≈ 5.46 (8.12)	≈ 4.01 (5.97)	–

Choose from the radii below for all of the above sizes
Radius (mm)Example: 15050-30-300-0

	150**	200	250	300	350	400	500
R	5.91 (150)	7.87 (200)	9.84 (250)	11.81 (300)	13.78 (350)	15.75 (400)	19.68 (500)
H $^{-0}_{+25}$	16.14 (410)	20.08 (510)	24.02 (610)	27.95 (710)	31.89 (810)	35.83 (910)	43.70 (1110)
D	11.81 (300)	13.78 (350)	15.75 (400)	17.72 (450)	19.69 (500)	21.65 (550)	25.59 (650)
K	29.53 (750)	35.43 (900)	41.34 (1050)	48.23 (1225)	54.13 (1375)	57.09 (1450)	65.94 (1675)

** This radius is not available for the R19850 Series
* Removable lid only, no hinged option

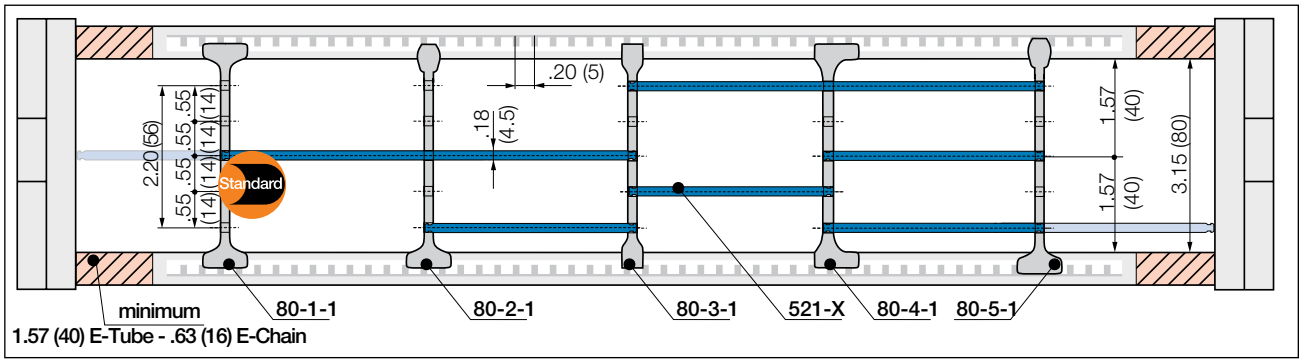
0=Standard color black. For other colors see Chapter 1
For wider chains see page 6.234 For large diameter hoses see page 6.234

PDF: igus.com/e-chain-pdfs
Product information: igus.com/e-chains

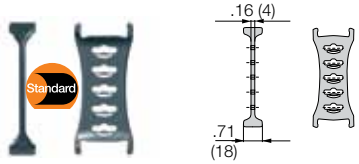
e-chain system® E4 light
Series 15050/15150/R19850
Interior Separation - New Generation

Telephone 1-800-521-2747

Internet: igus.com
email: sales@igus.com
QuickSpec: igus.com/quickspec



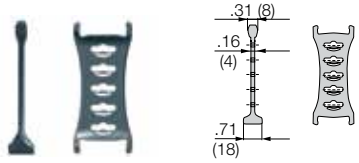
Note Please maintain a lateral spacing of 1.57" (40 mm) for e-tube and .63" (16 mm) for e-chains® between the separators and the side links. In the standard configuration separators are assembled every 2nd e-chain® link



Separator, wide base

Unassembled	**Part No. 80-1**
Assembled	**Part No. 80-1-1**

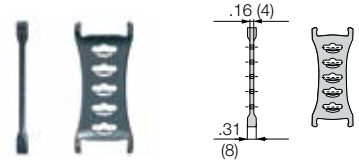
- **Standard separator 80-1 for all applications**
  Separator with wide base for maximum locking strength and safe standing in e-chains®.



Separator, narrow head

Unassembled	**Part No. 80-2**
Assembled	**Part No. 80-2-1**

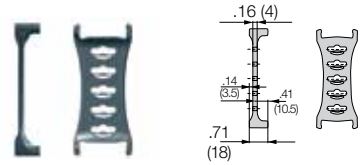
- **Separator 80-2**
  For even faster installation
  is used when vertical and horizontal separation is required. Due to its slot, it allows basic vertical/horizontal shelving arrangements.



Separator, narrow base

Unassembled	**Part No. 80-3**
Assembled	**Part No. 80-3-1**

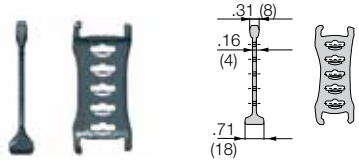
- **Separator 80-3**
  For many thin cables
  is used when vertical and horizontal separation is required. Due to its slot, it allows basic vertical/horizontal shelving arrangements.



Separator, asymmetrical

Unassembled	**Part No. 80-4**
Assembled	**Part No. 80-4-1**

- **Separator 80-4**
  For side mounted applications
  is used when vertical and horizontal separation is required. Due to its slot, it allows basic vertical/horizontal shelving arrangements.

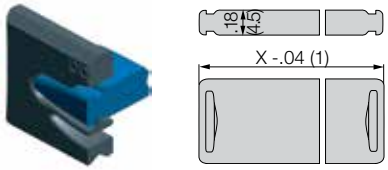


Separator, asymmetrical

Unassembled	**Part No. 80-5**
Assembled	**Part No. 80-5-1**

- **Separator 80-5**
  Locks safely in .30" (7.5 mm) increments
  Notch separator for exact positioning in e-chains®. Recommended for side-mounted applications.

Lockable full-width shelves - for the standard interior separation



Full width shelf, lockable

Unassembled	**Part No. 520-X**
Assembled	**Part No. 521-X**

- **Full width shelf, lockable**
  Shelf locks safely into separators on both ends, fixed width possible. Separators can be moved freely over the shelf in horizontal direction. Can be arranged at 5 different heights.

Width X in. (mm)	Part No. Unassembled	Part No. Assembled	Width X in. (mm)	Part No. Unassembled	Part No. Assembled	Width X in. (mm)	Part No. Unassembled	Part No. Assembled
1.97 (050)	**520-50**	**521-50**	5.91 (150)	**520-150**	**521-150**	11.81 (300)	**520-300**	**521-300**
2.56 (065)	**520-65**	**521-65**	6.89 (175)	**520-175**	**521-175**	13.78 (350)	**520-350**	**521-350**
2.95 (075)	**520-75**	**521-75**	7.87 (200)	**520-200**	**521-200**	14.76 (375)	**520-375**	**521-375**
3.94 (100)	**520-100**	**521-100**	8.86 (225)	**520-225**	**521-225**	15.24 (387)	**520-387**	**521-387**
4.92 (125)	**520-125**	**521-125**	9.84 (250)	**520-250**	**521-250**	17.723 (450)	**520-450**	**521-450**

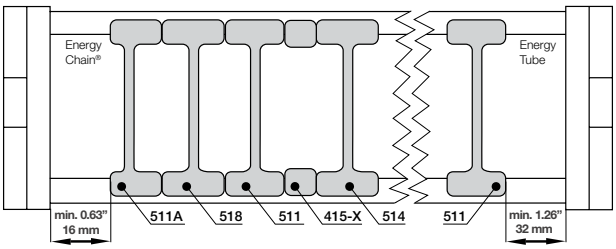
e-chain system® E4 light
Series 15050/15150/R19850
Interior Separation - Previous Generation



Option 1: Vertical separators and spacers

Vertical separators are used if a vertical subdivision of the e-chain® interior is required. By standard, vertical separators are assembled every other e-chain® link.

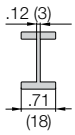
NOTE: Observe a lateral spacing of at least 1.30 in. (33mm) for e-tubes and .63 in. (16mm) for e-chain®. There is no minimum spacing needed for side plates





Standard

STANDARD Vertical separator 501



Vertical separator

Unassembled	**Part No. 501**
Assembled	**Part No. 511**

- **Standard separator 501 for e-chains® and e-tubes**
  This separator offers safe stability due to its wide base design, also when used with thick cables or hoses.



Locking separator 504



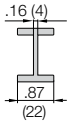
Locking separator (chain only)

Unassembled	**Part No. 504**
Assembled	**Part No. 514**

- **Locking separator 504 for e-chains®**
  This separator features increased retention force for applications exposed to very high humidity and extreme loads. If locking separators are used, the e-chain® is more difficult to open.



Locking separator 508



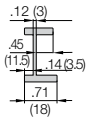
Locking separator (chain only)

Unassembled	**Part No. 508**
Assembled	**Part No. 518**

- **Locking separator 508 for e-chains®**
  This separator is used for applications that are exposed to extremely high humidity. The clamp at the side serves to uniformly align the separators. In order to avoid destroying the separators when opening the e-chain®, make sure all separators are identically aligned.



Asymmetric separator 501A



Asymmetrical separator (chain only)

Unassembled	**Part No. 501A**
Assembled	**Part No. 511A**

- **Asymmetrical separator 501A for e-chains®**
  This separator features an (18mm) base. It can be used in combinations between spacers of different widths and vertical separators in side mounted applications.



Spacers 405-XX



Spacer (chain only)

Unassembled	**Part No. 405-XX**
Assembled	**Part No. 415-XX**

XX = width of the spacer

- **NOTE ON SPACERS**
  Vertical separators are adjustable, but can be fixed in position by means of a spacer. Spacers are most often necessary for side mounted applications. The available inner height is reduced by .08" (2mm) **per spacer** (for example if one spacer is placed on either side of the separator, the overall inner height is reduced by .16" (4mm). To avoid this, place the spacers on the **outside** of the opening crossbar **(not for long travels)**.

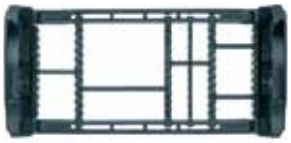


Spacers available in the following sizes:

Part No. Unassembled	Part No. Assembled	in.	(mm)
405 -10	**415 -10**	.39"	(10)
405 -15	**415 -15**	.59"	(15)
405 -20	**415 -20**	79"	(20)
405 -30	**415 -30**	1.18"	(30)
405 -40	**415 -40**	1.57"	(40)

PDF: igus.com/e-chain-pdfs
Product information: igus.com/e-chains

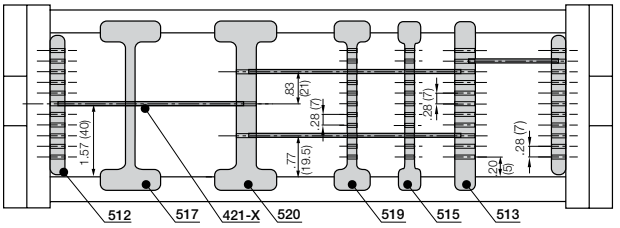
e-chain system® E4 light
Series 15050/15150/R19850
Interior Separation - Previous Generation



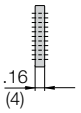
Option 2: Shelves

e-chains® and e-tubes can be subdivided both vertically and horizontally using the various interior separation elements.

➤ **Design, Chapter 1** for layout recommendations.



- **Side plates 502**
  This component is used to form the basic pattern of a shelf system.

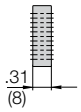


Side plate	
Unassembled	**Part No. 502**
Assembled	**Part No. 512**

Side plate 502



- **Vertical separator 503**
  This component is used to form the basic pattern of a shelf system.

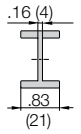


Vertical separator	
Unassembled	**Part No. 503**
Assembled	**Part No. 513**

Vertical separator 503



- **Locking vertical separator 507**
  This separator features increased retention force for applications exposed to very high humidity and extreme loads. The extra retention force is achieved by asymmetric claws for the crossbar. Take care to ensure proper alignment.

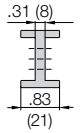


Locking vertical separator	
Unassembled	**Part No. 507**
Assembled	**Part No. 517**

Locking vertical separator 507



- **Locking vertical separator 510**
  This separator is slotted and able to be combined with shelves. For e-chains® only.

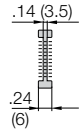


Locking vertical separator	
Unassembled	**Part No. 510**
Assembled	**Part No. 520**

Locking vertical separator 510

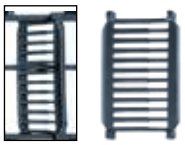


- **Slotted separators 505**
  These are used for very complex subdivisions. However, they cannot be retrofitted into an existing separation system without removing the shelves first.

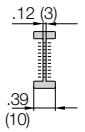


Slotted separators, closed	
Unassembled	**Part No. 505**
Assembled	**Part No. 515**

Closed slotted separator 505

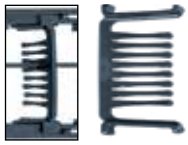


- **Slotted separator 509**
  This separator can be retrofitted into an existing interior separation system without removing the shelves, as long as these shelves fit into any of the 7 middle slots



Slotted separators, open	
Unassembled	**Part No. 509**
Assembled	**Part No. 519**

Open slotted separator 509

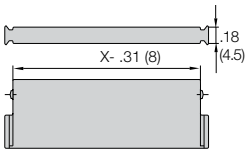


Shelves 420-XX

These components form the basic pattern of a shelf system. Shelves of various widths can be arranged at 7 different heights in .28" (7mm) increments

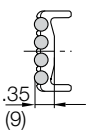
Width X in.	(mm)	Usable Width in.	(mm)	Part No. Unassembled	Part No. Assembled
.71	(18)	.39	(10)	**420-18**	**421-18**
.91	(23)	.59	(15)	**420-23**	**421-23**
.98	(25)	.67	(17)	**420-25**	**421-25**
1.10	(28)	.79	(20)	**420-28**	**421-28**
1.30	(33)	.98	(25)	**420-33**	**421-33**
1.69	(43)	1.38	(35)	**420-43**	**421-43**
1.97	(50)	1.65	(42)	**420-50**	**421-50**
2.44	(62)	2.13	(54)	**420-62**	**421-62**

Width X in.	(mm)	Usable Width in.	(mm)	Part No. Unassembled	Part No. Assembled
2.95	(75)	2.64	(67)	**420-75**	**421-75**
3.46	(88)	3.15	(80)	**420-88**	**421-88**
3.94	(100)	3.62	(92)	**420-100**	**421-100**
4.92	(125)	4.61	(117)	**420-125**	**421-125**
5.91	(150)	5.59	(142)	**420-150**	**421-150**
6.89	(175)	6.57	(167)	**420-175**	**421-175**
7.36	(187)	7.05	(179)	**420-187**	**421-187**
7.87	(200)	7.56	(192)	**420-200**	**421-200**





Rollclip - minimizes abrasion of particularly sensitive hoses or cables in an e-chain®. The integrated rollers compensate for relative movement between the chain and the hose or cable. This reduces the abrasion of the hoses or cables



Rollclip	
Unassembled	**Part No. 489-27**
Assembled	**Part No. 490-27**



igus® e-chain system®
Telephone 1-800-521-2747
Internet: igus.com
email: sales@igus.com
QuickSpec: igus.com/quickspec

e-chain system® E4 light
Series 15050/15150/R19850
Special Accessories





Part number example for e-chain®

15050-10/20/10- 200 **-0**

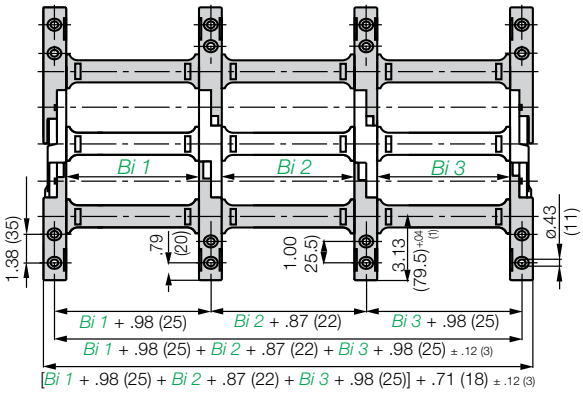
15050-*Bi1*/*Bi2*/*Bi3*- *R* **-0**

We **strongly recommend** on-site consultation with an igus® technician for individual advice regarding mounting brackets, guide troughs and other design details.

Extension links - for extremely wide e-chains® up to 9.84 ft (3m)

- For applications in which particularly high fill weights necessitate extremely wide e-chains®
- The extension link design allows virtually limitless side-by-side attachment of chains
- The unsupported length of a chain can be increased when additional loads are required
- Extension links can be used with e-chains®, e-tubes or a combination of both
- They are suitable for unsupported and gliding applications in a guide trough
- e-chains® with extension links are attached with KMA or steel mounting brackets.



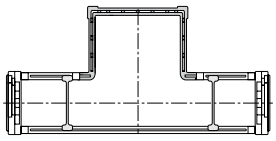




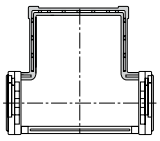
Consult igus® for your extender crossbar applications. We will be happy to assist you with your design layout.

Extender crossbars - For careful guiding of large diameter cables and hoses

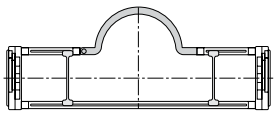
- Intended for cables and hoses with a maximum outer diameter of 10.63 in. (270 mm).
- Can be attached along either the inner or outer radius, inner radius preferred
- Gliding operation with crossbars assembled along the outer radius in conjunction with a special guide trough
- Gliding operation not guaranteed with crossbars assembled along the inner radius
- The extender crossbar can either be attached to the side links directly or can be used in combination with two standard snap-open crossbars.



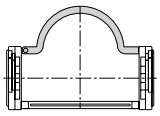
Square extender crossbar combined with standard snap-open crossbars.



Attached directly to the side link.



Round extender crossbar combined with standard snap-open crossbars.



Attached directly to the side link.

Part No.	Max Ø Hose	Style	Installation Side Link	Combined with Snap-Open Crossbars
450-15-RHD115	4.52 (115)	Round	No	Yes
450-17-RD115	4.52 (115)	Round	Yes	No
450-25-D150	5.91 (150)	Square	Yes	No
450-30-D200	7.09 (180)	Square	Yes	No
450-35-D250	7.68 (195)	Square	Yes	No
450-40-D300	9.65 (245)	Square	Yes	No
450-20-HD150	5.91 (150)	Square	No	Yes
450-25-HD200	7.09 (180)	Square	No	Yes
450-30-HD250	7.68 (195)	Square	No	Yes



E4 clip on cable binder

- For side mounted applications
- Serves as a clip-on, lateral guide for hoses and cables on e-chains®
- The loops can be adjusted as needed
- Compatible with many E4 e-chains®
- Economical
- One clip and one locking band are needed for each chain link



Part No.	Form
450-B12	Locking clip, comprised of a locking element
450-B12-200	Locking band, comprised of a locking element and band; 12 x 1.5 x 200 mm

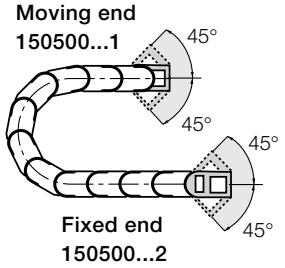
PDF: igus.com/e-chain-pdfs
Product information: igus.com/e-chains

e-chain system® E4 light
Series 15050/15150/R19850
Mounting Brackets - KMA

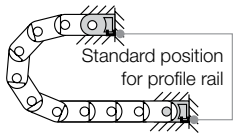
Standard

Option 1: KMA pivoting

- Profile rail option
- Universal use
- Corrosion resistant
- Short and long travels
- Space-restricted conditions

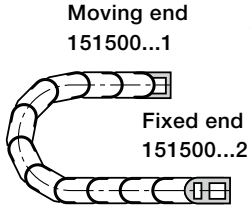




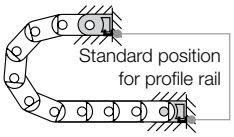


Option 2: KMA locking

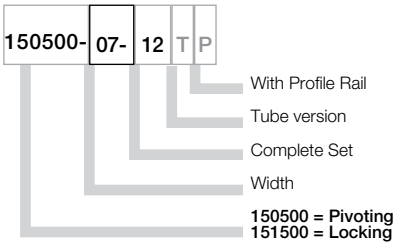
- Profile rail option
- Universal use
- Corrosion resistant
- Extreme accelerations
- Vertical hanging/standing travels

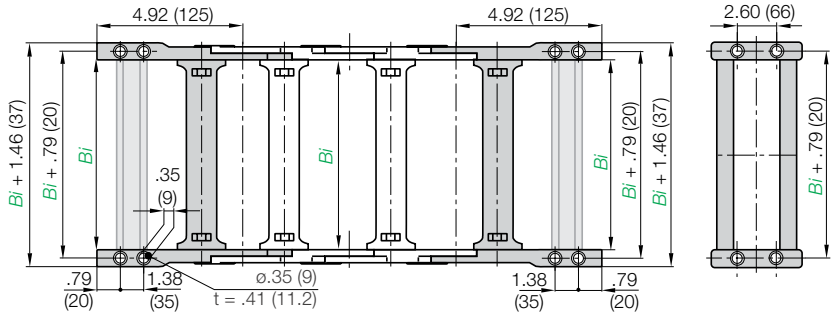






Part Number Structure





Full set, for both ends:

150500- 05- 12 Full set, **each part with pin/bore**

Single-part order:

150500 - 05- 1 Mounting bracket **with bore**

150500 - 05- 2 Mounting bracket **with pin**

Part number examples are shown for pivoting brackets. For locking brackets change part number to 151500

Part No. Full Set (pivoting)
Series 15050 or 15150:
150500-Width-12

Part No. Full Set (pivoting)
with profile rail
Series 15050 or 15150
150500-Width-12P

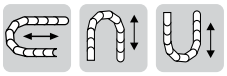
Part No. Full Set (pivoting)
Tube Series R19850
150500-Width-12T

Part No. Full Set (pivoting)
with Profile Rail
Tube Series R19850
150500-Width-12TP

Width	Part No. Full Set Pivoting	Part No. Full Set Locking		Tube Option	With Profile Rail	*Bi* in. (mm)
-05	150500	151500	-05-12		P	1.97 (50)
-06	150500	151500	-06-12		P	2.56 (65)
-07	150500	151500	-07-12	T	P	2.95 (75)
-10	150500	151500	-10-12	T	P	3.94 (100)
-11	150500	151500	-11-12		P	4.41 (112)
-12	150500	151500	-12-12	T	P	4.92 (125)
-13	150500	151500	-13-12		P	5.39 (137)
-15	150500	151500	-15-12	T	P	5.91 (150)
-16	150500	151500	-16-12		P	6.38 (162)
-17	150500	151500	-17-12	T	P	6.89 (175)
-18	150500	151500	-18-12		P	7.36 (187)
-20	150500	151500	-20-12	T	P	7.87 (200)
-21	150500	151500	-21-12		P	8.35 (212)
-22	150500	151500	-22-12		P	8.86 (225)
-23	150500	151500	-23-12		P	9.33 (237)
-25	150500	151500	-25-12	T	P	9.84 (250)
-26	150500	151500	-26-12		P	10.31 (262)
-27	150500	151500	-27-12	T	P	10.83 (275)
-28	150500	151500	-28-12		P	11.30 (287)
-30	150500	151500	-30-12	T	P	11.81 (300)

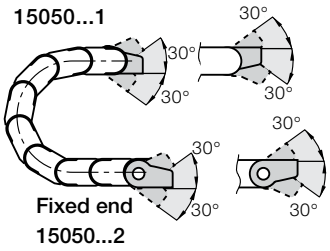
Width	Part No. Full Set Pivoting	Part No. Full Set Locking		Tube Option	With Profile Rail	*Bi* in. (mm)
-31	150500	151500	-31-12		P	12.28 (312)
-32	150500	151500	-32-12		P	12.79 (325)
-33	150500	151500	-33-12		P	13.27 (337)
-35	150500	151500	-35-12	T	P	13.78 (350)
-36	150500	151500	-36-12		P	14.25 (362)
-37	150500	151500	-37-12		P	14.76 (375)
-38	150500	151500	-38-12		P	15.24 (387)
-40	150500	151500	-40-12	T	P	15.75 (400)
-41	150500	151500	-41-12		P	16.22 (412)
-42	150500	151500	-42-12		P	16.73 (425)
-43	150500	151500	-43-12		P	17.20 (437)
-45	150500	151500	-45-12		P	17.72 (450)
-46	150500	151500	-46-12	T	P	18.19 (462)
-47	150500	151500	-47-12		P	18.70 (475)
-48	150500	151500	-48-12		P	19.17 (487)
-50	150500	151500	-50-12		P	19.69 (500)
-51	150500	151500	-51-12		P	20.16 (512)
-52	150500	151500	-52-12		P	20.67 (525)
-53	150500	151500	-53-12		P	21.14 (537)
-55	150500	151500	-55-12		P	21.65 (550)
-60	150500	151500	-60-12		P	23.62 (600)

e-chain system® E4 light
Series 15050/15150/R19850
Mounting Brackets - Steel

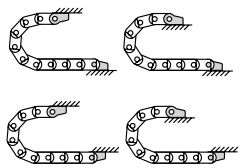


Option 1: pivoting

- For pivoting connections
- One part for all chain widths
- Electrically conductive





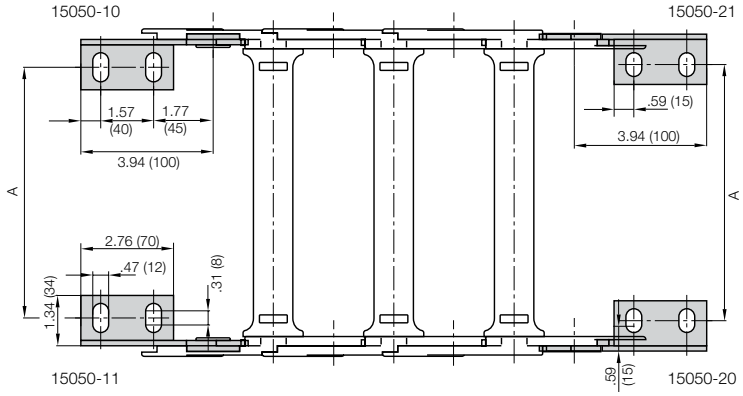


Possible installation configurations -

Part No. Mounting Brackets Full Set
4 parts, 2 with pin, 2 with bore
Series 15050, 15150 or R19850:
15050-12

Part No. Mounting Bracket Moving End
2 parts, 1 left & 1 right with bore
Series 15050, 15150 or R19850:
15050-1

Part No. Mounting Bracket Fixed End
2 parts, 1 left & 1 right with pin
Series 15050, 15150 or R19850:
15050-2



Bracket Mounting Dimensions

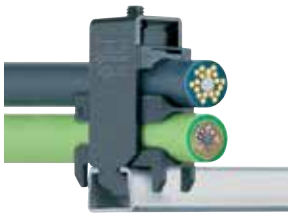
Width of Chain *Bi*	Mounting Brackets Part Number	Full Set	Moving End Only	Fixed End Only	Mounting Dimension A in. (mm)
1.97 (50)	15050	-12	-1	-2	1.02 (26)
2.56 (65)	15050	-12	-1	-2	1.61 (41)
2.95 (75)	15050	-12	-1	-2	2.01 (51)
3.94 (100)	15050	-12	-1	-2	2.99 (76)
4.41 (112)	15050	-12	-1	-2	3.46 (88)
4.92 (125)	15050	-12	-1	-2	3.98 (101)
5.39 (137)	15050	-12	-1	-2	4.45 (113)
5.91 (150)	15050	-12	-1	-2	4.96 (126)
6.38 (162)	15050	-12	-1	-2	5.43 (138)
6.89 (175)	15050	-12	-1	-2	5.94 (151)
7.36 (187)	15050	-12	-1	-2	6.42 (163)
7.87 (200)	15050	-12	-1	-2	6.93 (176)
8.35 (212)	15050	-12	-1	-2	7.40 (188)
8.86 (225)	15050	-12	-1	-2	7.91 (201)
9.33 (237)	15050	-12	-1	-2	8.39 (213)
9.84 (250)	15050	-12	-1	-2	8.90 (226)
10.31 (262)	15050	-12	-1	-2	9.37 (238)
10.83 (275)	15050	-12	-1	-2	9.88 (251)
11.30 (287)	15050	-12	-1	-2	10.35 (263)
11.81 (300)	15050	-12	-1	-2	10.87 (276)
12.28 (312)	15050	-12	-1	-2	11.34 (288)

Width of Chain *Bi*	Mounting Brackets Part Number	Full Set	Moving End Only	Fixed End Only	Mounting Dimension A in. (mm)
12.79 (325)	15050	-12	-1	-2	11.85 (301)
13.27 (337)	15050	-12	-1	-2	12.32 (313)
13.78 (350)	15050	-12	-1	-2	12.83 (326)
14.25 (362)	15050	-12	-1	-2	15.28 (388)
14.76 (375)	15050	-12	-1	-2	13.82 (351)
15.24 (387)	15050	-12	-1	-2	14.29 (363)
15.75 (400)	15050	-12	-1	-2	14.80 (376)
16.22 (412)	15050	-12	-1	-2	15.28 (388)
16.73 (425)	15050	-12	-1	-2	15.79 (401)
17.20 (437)	15050	-12	-1	-2	16.26 (413)
17.72 (450)	15050	-12	-1	-2	16.77 (426)
18.19 (462)	15050	-12	-1	-2	17.24 (438)
18.70 (475)	15050	-12	-1	-2	17.76 (451)
19.17 (487)	15050	-12	-1	-2	18.23 (463)
19.69 (500)	15050	-12	-1	-2	18.74 (476)
20.16 (512)	15050	-12	-1	-2	19.21 (488)
20.67 (525)	15050	-12	-1	-2	19.72 (501)
21.14 (537)	15050	-12	-1	-2	20.20 (513)
21.65 (550)	15050	-12	-1	-2	20.71 (526)
23.62 (600)	15050	-12	-1	-2	22.68 (576)

PDF: igus.com/e-chain-pdfs
Product information: igus.com/e-chains

e-chain system® E4 light
Series 15050/15150/R19850
Strain Relief

Chainfix clamps for the profile rail



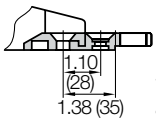
igus® Chainfix strain relief elements are available in either steel or stainless steel. They can be adjusted with a hexagon socket and are available in single, double and triple configurations.

Part No. Single Clamp		Part No. Double Clamp		Part No. Triple Clamp		Cable ø	
Steel	Stainless	Steel	Stainless	Steel	Stainless	in.	(mm)
CFX12-1	CFX12-1E	CFX12-2	CFX12-2E	CFX12-3	–	.24 - .47	(6 - 12)
CFX14-1	CFX14-1E	CFX14-2	CFX14-2E	CFX14-3	–	.47 - .55	(12 - 14)
CFX16-1	CFX16-1E	CFX16-2	CFX16-2E	CFX16-3	–	.55 - .63	(14 - 16)
CFX18-1	CFX18-1E	CFX18-2	CFX18-2E	CFX18-3	–	.63 - .71	(16 - 18)
CFX20-1	CFX20-1E	CFX20-2	CFX20-2E	CFX20-3	–	.71 - .79	(18 - 20)
CFX22-1	CFX22-1E	CFX22-2	CFX22-2E	CFX22-3	–	.79 - .87	(20 - 22)
CFX26-1	CFX26-1E	CFX26-2	CFX26-2E	–	–	.87 - 1.02	(22 - 26)
CFX30-1	CFX30-1E	CFX30-2	CFX30-2E	–	–	1.02 - 1.18	(26 - 30)
CFX34-1	CFX34-1E	CFX34-2	CFX34-2E	–	–	1.18 - 1.34	(30 - 34)
CFX38-1	CFX38-1E	–	–	–	–	1.34 - 1.50	(34 - 38)
CFX42-1	CFX42-1E	–	–	–	–	1.50 - 1.65	(38 - 42)

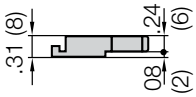
For more information please refer to strain relief section of Chapter 10

Tiewrap Plates





Shown assembled

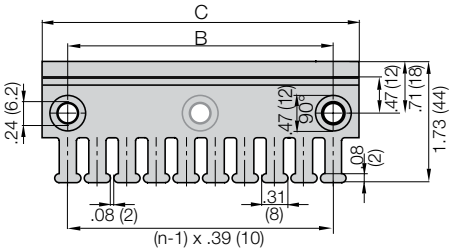


Single tiewrap plate

Option 1:
Tiewrap plates as an individual part

Available as an individual component, can be fixed onto a mounting bracket with the use of a profile rail.

Tiewrap Plate	n Number of Teeth	C Overall Width in. (mm)	B Bore Width in. (mm)	Center Bore
3050-ZB	5	1.97 (50)	1.18 (30)	no
3075-ZB	7	2.95 (75)	2.16 (55)	no
3100-ZB	10	3.94 (100)	3.15 (80)	no
3115-ZB	11	4.53 (115)	3.74 (95)	no
3125-ZB	12	4.92 (125)	4.13 (105)	no
3150-ZB	15	5.91 (150)	5.12 (130)	no
3175-ZB	17	6.89 (175)	6.10 (155)	no
3200-ZB	20	7.87 (200)	7.09 (180)	yes
3225-ZB	22	8.86 (225)	8.07 (205)	yes
3250-ZB	25	9.84 (250)	9.06 (230)	yes



If used with KMA brackets with profile rail please add "KMA" to the end of the part number.
Example: 3050-ZBKMA

For more information please refer to strain relief section of Chapter 10



Option 2:
Clip-on Tiewrap plates

Available as a clip-on tiewrap plate without the use of bolts They are inserted and removed with a screwdriver used as a lever. Clip-on tiewrap plates are also available as an attachment to the opening crossbars.

Part No.	Number of Teeth	Width of Strain Relief in.	(mm)
3050-ZC	5	1.97	(50)
3075-ZC	7	2.95	(75)

For more information please refer to strain relief section of Chapter 10



Option 3:
Clip-on Tiewrap plates for opening crossbars

Clip-on tiewrap plates are also available as an attachment to opening crossbars. They can be positioned at any point along the e-chain®.

Part No.	Number of Teeth	Width of Strain Relief in.	(mm)
4550-ZS	5	1.89	(48)
4575-ZS	7	2.91	(74)

For more information please refer to strain relief section of Chapter 10

e-chain system® E4 light
Series 15050/15150/R19850
Guide Trough

Width of Crossbar
15050-**05**-200-0

	B_{Ri}	Installation Part No.
-05	3.35 (85)	*
-07	4.33 (110)	**96-50-225**
-10	5.31 (135)	**96-50-250**
-11	5.83 (148)	**96-50-275**
-12	6.30 (160)	**96-50-275**
-13	6.81 (173)	**96-50-300**
-15	7.28 (185)	**96-50-300**
-16	7.80 (198)	**96-50-325**
-17	8.27 (210)	**96-50-325**
-18	8.78 (223)	**96-50-350**
-20	9.25 (235)	**96-50-350**
-21	9.76 (248)	**96-50-375**
-22	10.24 (260)	**96-50-375**
-23	10.75 (273)	**96-50-400**
-25	11.22 (285)	**96-50-400**
-26	11.73 (298)	**96-50-425**
-27	12.20 (310)	**96-50-425**
-28	12.72 (323)	**96-50-450**
-30	13.19 (335)	**96-50-450**
-31	13.70 (348)	**96-50-475**
-32	14.17 (360)	**96-50-475**
-33	14.69 (373)	**96-50-500**
-35	15.16 (385)	**96-50-500**
-36	15.67 (398)	**96-50-525**
-37	16.14 (410)	**96-50-525**
-38	16.65 (423)	**96-50-550**
-40	17.13 (435)	**96-50-550**
-41	17.63 (448)	**96-50-575**
-42	18.11 (460)	**96-50-575**
-43	18.62 (473)	**96-50-600**
-45	19.09 (485)	**96-50-600**
-46	19.61 (498)	**96-50-625**
-47	20.08 (510)	**96-50-625**
-48	20.59 (523)	**96-50-650**
-50	21.06 (535)	**96-50-650**
-51	21.57 (548)	**96-50-675**
-52	22.04 (560)	**96-50-675**
-53	22.56 (573)	**96-50-700**
-55	23.03 (585)	**96-50-700**
-60	25.00 (635)	**96-50-750**

Standard length profile rail

Guide troughs are used with applications where the upper run of the e-chain® glides on the lower run. If using igus® steel guide troughs, the following components are required:

- Full travel length of guide trough
  Part No. 99-30
- 1/2 travel length glide bars
  Part No. 93-01
- Installation sets as end connectors
  Part No. 96-50-XX

-XX indicates the length of the profile rails on which the guide trough is mounted. The values and part numbers are specified in the table on the left. The standard length of the trough components and glide bars is 6.56 ft (2 m). The overall length of the guide trough directly correlates to the length of travel.

Example:
Length of travel 164 ft (50 m)
Center-mounted

Required guide troughs:
164 ft (50 m) guide trough, 82 ft. (25 m) glide bar

= 25 sections of 6.56 ft (2 m) guide trough
Part No. 99-30

= 13 sections of 6.56 ft (2 m) glide bar
Part No. 93-01

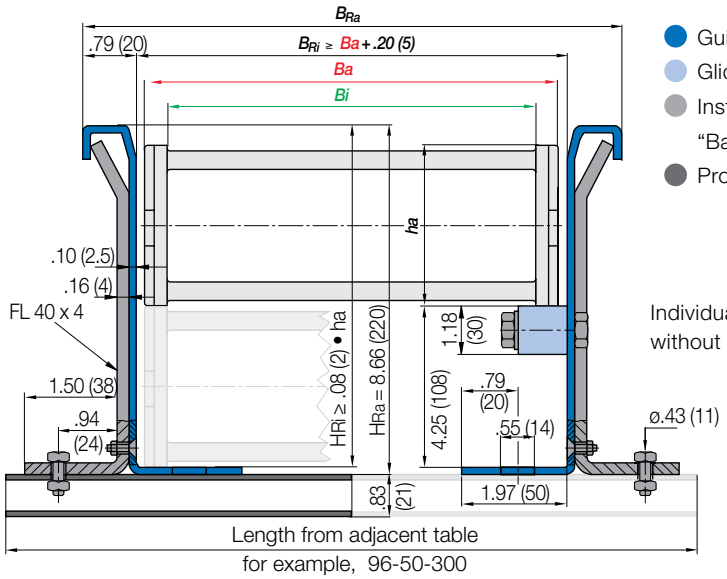
Required number of installation set:
= Number of guide trough components + 1
= 25 + 1 = 26
Part No. of the installation sets **96-50-XXX**
Example:
96-50-400 for 15.75 (400 mm) long profile rail



Left: Guide trough with glide bars Right: Guide troughs without glide bars



Installation sets as section connectors



- Guide trough
- Glide bars
- Installation set "Basic"
- Profile rail

Individual attachment without profile rail

* Specialized guide trough available upon request

PDF: igus.com/e-chain-pdfs
Product information: igus.com/e-chains

e-chain system® E4 light
Series 15050/15150/R19850
Application Example





Spray-painting robot with System E4 e-chain® used in an ATEX version made of igumid ESD. High accelerations of up to 19.69 f/s² (6 m/s²) and high braking rates with a weight of the robot of approximately one ton

igus®
e-chain system®

Telephone 1-800-521-2747

Internet: igus.com
email: sales@igus.com
QuickSpec: igus.com/quickspec

PDF: igus.com/e-chain-pdfs
Product information: igus.com/e-chains











e-chain system® E4 light
Series 15250/15350

Price Index

Series 15250 Series 15350

Special Features / Options

ESD classification: Electrically conductive ESD/ ATEX version upon request

High torsional rigidity

Side-mounted - unsupported

Assembly Tips



Opening e-chains®: Remove crossbars and clips - Insert screwdriver into the slot, push down, release by lever action



Remove lids/bottoms (e-tubes) - Insert screwdriver into the slot, release by lever action

Other Installation Methods

Vertical, hanging ≤ 262 ft (80 m)
Vertical, standing ≤ 19.69 ft (6 m)
Side-mounted, unsupp. ≤ 6.56 ft (2 m)
Rotary requires further calculation

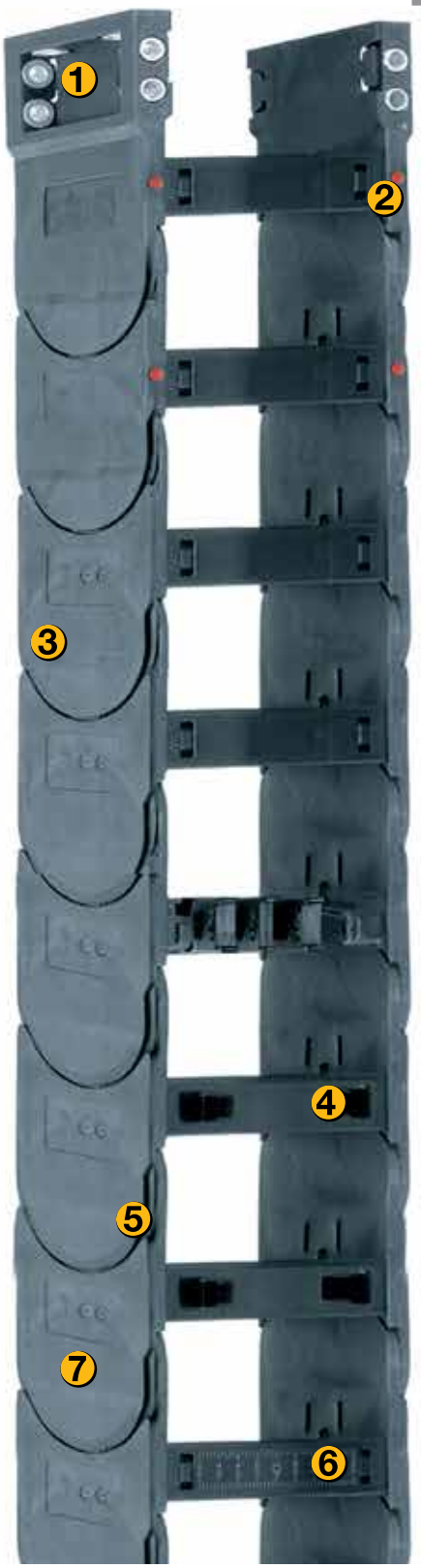
Usage Guidelines

- If weight and price reduction is needed
- If an e-chain®/e-tube with an inner height of 3.39” (86 mm) is required

- If an extremely low-noise and low-vibration version is required
  ➤ **Series E6-80L**
- If side-mounted chain with a longer unsupported travel is required
  ➤ **Series E4-80**
- If increased unsupported lengths and longer travels are required
  ➤ **Series E4-80**
- If high fill weights and/or stiff cables and hoses are used
  ➤ **Series E4-80**
- If chip protection is necessary
  ➤ **Series R4-80**

Features & Benefits

1. KMA mounting brackets with attachment points on all sides
2. Noise dampening pads, optional = -10dB(A)
3. Lateral glide surfaces for side-mounted operation
4. 25% faster assembly with QuickLock Crossbar
5. High stability due to undercut design
6. Notch crossbar with visual scale
7. No camber: no rework due to special design



Order Example: Complete e-chain®

Please indicate chain length or number of links. Example:

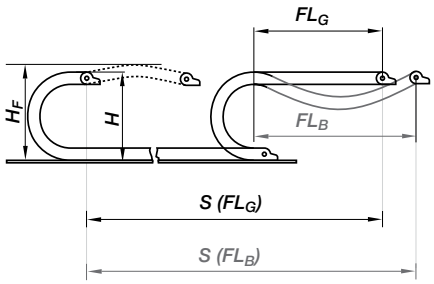
16.4 ft (5 m) **15250-12-250-0**	**e-chain®**
With 2 separators **86-1-1** assembled every 2nd link	**Interior Separation**
1 Set **152500-12-12P**	**Mounting Bracket**

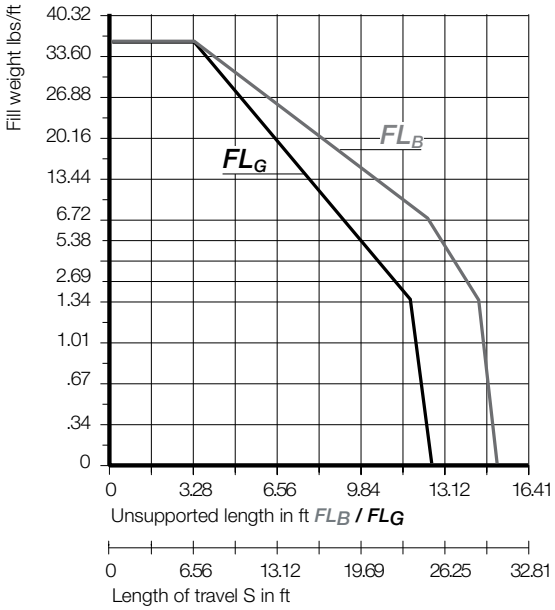
e-chain system® E4 light
Series 15250/15350
Installation Dimensions

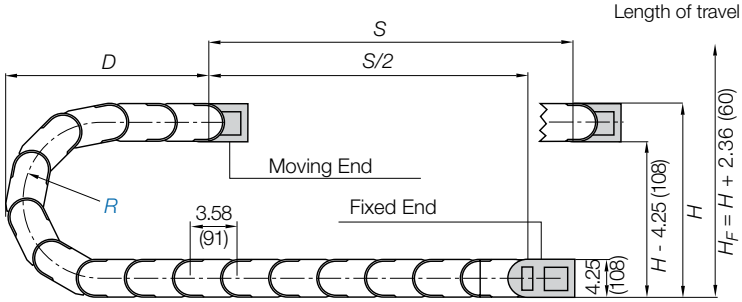
Short travel, unsupported length

- FL_B = unsupported with permitted sag
- FL_G = unsupported with straight upper run

Further information ➤ Design, Chapter 1







Pitch per link: = 3.58" (91 mm)
Links per ft (m): = 3.35 (11)
For center mount applications:
Chain length = $S/2 + K$

Short Travels - Unsupported

Unsupported e-chains® feature positive camber over short travels. This must be accounted for when specifying the clearance height. Please refer to **Installation dimensions** for further details.

Legend

S = Length of travel
R = Bending radius
H = Nominal clearance height
D = Overlength e-chain® radius in final position
K = π • *R + safety buffer*
H_F = Required clearance height
H_{RI} = Trough inner height
H_2 = *Mounting height
D_2 = Overlength - long travels, gliding
K_2 = *Add-on

*If the mounting bracket location is set lower

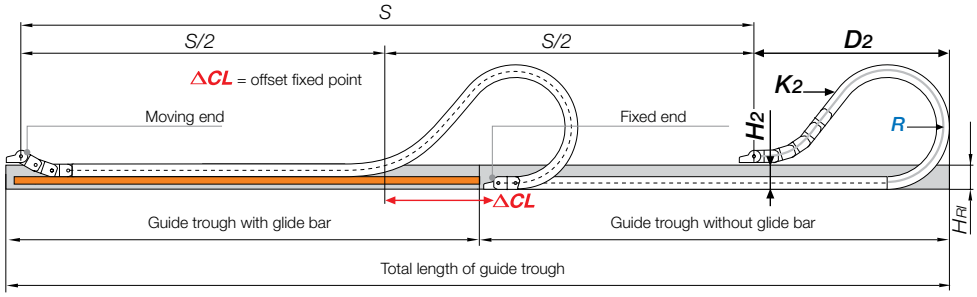
The required clearance height: **$H_F = H + 2.36$ in. (60 mm)** (with 2.02 lbs/ft (3 kg/m) fill weight. Please consult igus® if space is particularly restricted.

R	5.91 (150)	7.87 (200)	9.84 (250)	11.81 (300)	13.78 (350)	15.75 (400)	19.68 (500)	23.62 (600)
H^{0}_{+25}	16.06 (408)	20.00 (508)	23.94 (608)	27.87 (708)	31.81 (808)	35.75 (908)	43.62 (1108)	51.50 (1308)
D	13.43 (341)	15.39 (391)	17.36 (441)	19.33 (491)	21.30 (541)	23.27 (591)	27.20 (691)	31.14 (791)
K	25.79 (655)	32.09 (815)	38.19 (970)	44.29 (1125)	50.59 (1285)	56.69 (1440)	69.09 (1755)	81.50 (2070)

For long travels with lowered mounting height

Long travel lengths from 32.8 ft.(10m) to max. 820 ft. (250m)

For center mount applications:
Chain length: = $S/2 + K_2$



Long Travels - Gliding

If the unsupported length is exceeded, the e-chain®/Tube must glide on itself. This requires a guide trough.
Design, Chapter 1

R	5.91 (150*)	7.87 (200)	9.84 (250)	11.81 (300)	13.78 (350)	15.75 (400)	19.68 (500)	23.62 (600¹)
H_2	9.53 (242)	9.53 (242)	9.53 (242)	9.53 (242)	9.53 (242)	9.53 (242)	9.53 (242)	*
D_2 +25	21.65 (550)	31.50 (800)	37.40 (950)	47.24 (1200)	61.02 (1550)	66.93 (1700)	85.63 (2175)	*
K_2	35.83 (910)	50.16 (1274)	64.49 (1638)	78.82 (2002)	96.73 (2457)	107.48 (2730)	136.14 (3458)	*
ΔCL	8.23 (209)	16.10 (409)	20.04 (509)	27.91 (709)	39.72 (1009)	43.66 (1109)	58.42 (1484)	*

For support of the lower run, **see Chapter 9** of the main catalog for the **Support Tray tool kit**

Speed / acceleration FL_G	max. 65.6 ft/s (20 m/s) / max. 656 ft/s² (200 m/s²)
Speed / acceleration FL_B	max. 9.84 ft/s (3 m/s) / max. 19.69 ft/s² (6 m/s²)
Gliding speed / acceleration (maximum)	max. 32.8 ft/s (10 m/s) / max. 164 ft/s² (50 m/s²)
Material - permitted temperature	igumid G / -40°F (-40°C) up to +248°F (+120° C)
Flammability Class, igumid G	VDE 0304 IIC UL94 HB

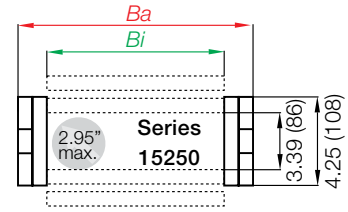
Technical Data

Details of material properties ➤ **Chapter 1**

PDF: igus.com/e-chain-pdfs
Product information: igus.com/e-chains

e-chain system® E4 light
Series 15250/15350

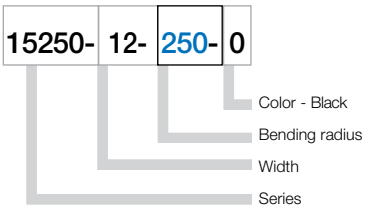
Series 15250 - e-chain® with crossbars every link



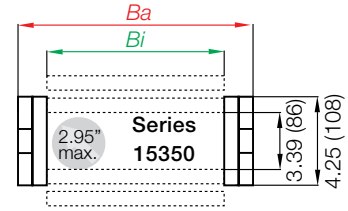


- Crossbars every link
- For use with rigid hydraulic hoses
- For particularly demanding applications
- Can be opened from both sides

Part Number Structure



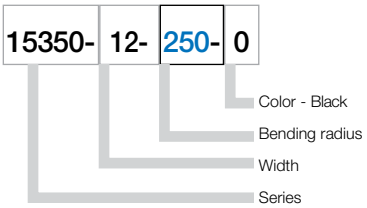
Series 15350 - e-chain® with crossbars every other link



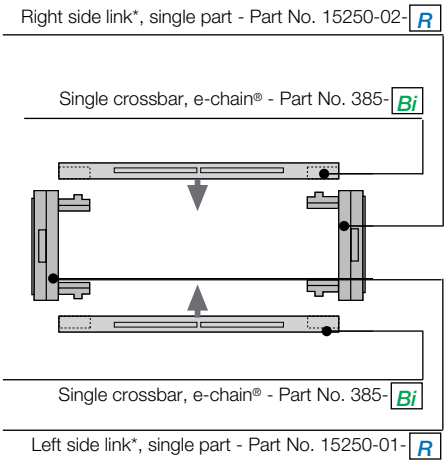


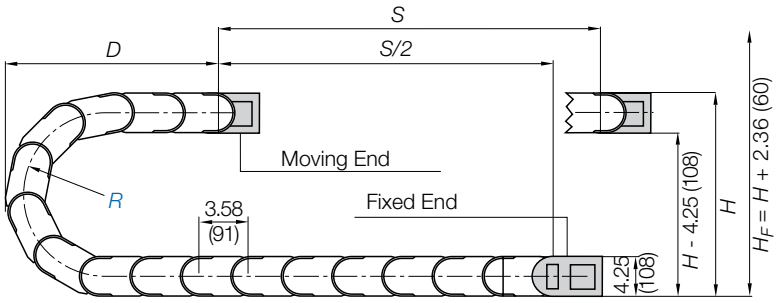
- Crossbars every other link - Standard configuration
- For nearly every situation
- Can be opened from both sides
- Easy assembly
- Stable
- Cost-effective

Part Number Structure



e-chain® as separate parts, links and side plates





*View from the fixed point of the e-chain®/e-tube

e-chain system® E4 light
Series 15250/15350

Supplement part number with required radius. Example: 15250-30-300-0
Pitch: 3.58 in. (91mm) per link links/ft (m) = 3.35 (11)

Part Number. Crossbars Every link	Crossbars Every other			*Bi* in. (mm)	*Ba* in. (mm)	15250 lbs/ft (kg/m)	15350 lbs/ft (kg/m)
15250-05-	15350-05-		-0	1.97 (50)	3.15 (80)	≈ 2.45 (3.64)	≈ 2.39 (3.56)
15250-06-	15350-06-		-0	2.68 (68)	3.86 (98)	≈ 2.50 (3.72)	≈ 2.42 (3.60)
15250-07-	15350-07-		-0	2.95 (75)	4.13 (105)	≈ 2.51 (3.74)	≈ 2.43 (3.61)
15250-087-	15350-087-		-0	3.43 (87)	4.61 (117)	≈ 2.55 (3.79)	≈ 2.44 (3.63)
15250-097-	15350-097-		-0	3.82 (97)	5.00 (127)	≈ 2.57 (3.83)	≈ 2.45 (3.65)
15250-10-	15350-10-		-0	3.94 (100)	5.12 (130)	≈ 2.59 (3.85)	≈ 2.46 (3.66)
15250-11-	15350-11-		-0	4.25 (108)	5.43 (138)	≈ 2.60 (3.87)	≈ 2.47 (3.67)
15250-112-	15350-112-		-0	4.41 (112)	5.63 (143)	≈ 2.61 (3.88)	≈ 2.47 (3.68)
15250-12-	15350-12-		-0	4.92 (125)	6.10 (155)	≈ 2.65 (3.95)	≈ 2.49 (3.71)
15250-137-	15350-137-		-0	5.39 (137)	6.57 (167)	≈ 2.67 (3.98)	≈ 2.51 (3.73)
15250-15-	15350-15-		-0	5.91 (150)	7.09 (180)	≈ 2.71 (4.04)	≈ 2.52 (3.75)
15250-162-	15350-162-		-0	6.38 (162)	7.60 (193)	≈ 2.73 (4.06)	≈ 2.53 (3.76)
15250-17-	15350-17-		-0	6.61 (168)	7.80 (198)	≈ 2.76 (4.11)	≈ 2.55 (3.79)
15250-18-	15350-18-		-0	6.89 (175)	8.07 (205)	≈ 2.77 (4.12)	≈ 2.55 (3.80)
15250-187-	15350-187-		-0	7.36 (187)	8.58 (218)	≈ 2.79 (4.15)	≈ 2.56 (3.81)
15250-20-	15350-20-		-0	7.87 (200)	9.05 (230)	≈ 2.84 (4.23)	≈ 2.59 (3.85)
15250-212-	15350-212-		-0	8.35 (212)	9.56 (243)	≈ 2.86 (4.26)	≈ 2.59 (3.86)
15250-23-	15350-23-		-0	8.86 (225)	10.04 (255)	≈ 2.90 (4.32)	≈ 2.61 (3.89)
15250-237-	15350-237-		-0	9.33 (237)	10.55 (268)	≈ 2.92 (4.34)	≈ 2.62 (3.90)
15250-25-	15350-25-		-0	9.84 (250)	11.02 (280)	≈ 2.97 (4.42)	≈ 2.65 (3.94)
15250-262-	15350-262-		-0	10.31 (262)	11.54 (293)	≈ 3.00 (4.47)	≈ 2.67 (3.97)
15250-28-	15350-28-		-0	10.83 (275)	12.01 (305)	≈ 3.03 (4.51)	≈ 2.68 (3.99)
15250-29-	15350-29-		-0	11.30 (287)	12.52 (318)	≈ 3.04 (4.53)	≈ 2.69 (4.00)
15250-30-	15350-30-		-0	11.81 (300)	12.99 (330)	≈ 3.10 (4.61)	≈ 2.71 (4.04)
15250-312-	15350-312-		-0	12.28 (312)	13.50 (343)	≈ 3.11 (4.63)	≈ 2.72 (4.05)
15250-325-	15350-325-		-0	12.79 (325)	13.98 (355)	≈ 3.15 (4.69)	≈ 2.73 (4.06)
15250-337-	15350-337-		-0	13.27 (337)	14.49 (368)	≈ 3.18 (4.73)	≈ 2.76 (4.10)
15250-350-	15350-350-		-0	13.78 (350)	14.96 (380)	≈ 3.27 (4.87)	≈ 2.80 (4.17)
15250-362-	15350-362-		-0	14.25 (362)	15.47 (393)	≈ 3.31 (4.92)	≈ 2.82 (4.20)
15250-375-	15350-375-		-0	14.76 (375)	15.94 (405)	≈ 3.34 (4.97)	≈ 2.84 (4.22)
15250-387-	15350-387-		-0	15.24 (387)	16.46 (418)	≈ 3.37 (5.01)	≈ 2.85 (4.24)
15250-400-	15350-400-		-0	15.75 (400)	16.93 (430)	≈ 3.39 (5.05)	≈ 2.86 (4.26)

Choose from the radii below for all of the above sizes
Radius (mm) Example: 15250-30-300-0

	150	200	250	300	350	400	500	600
R	5.91 (150)	7.87 (200)	9.84 (250)	11.81 (300)	13.78 (350)	15.75 (400)	19.68 (500)	23.62 (600)
H^{0}_{+25}	16.06 (408)	20.00 (508)	23.94 (608)	27.87 (708)	31.81 (808)	35.75 (908)	43.62 (1108)	51.50 (1308)
D	13.43 (341)	15.39 (391)	17.36 (441)	19.33 (491)	21.30 (541)	23.27 (591)	27.20 (691)	31.14 (791)
K	25.79 (655)	32.09 (815)	38.19 (970)	44.29 (1125)	50.59 (1285)	56.69 (1440)	69.09 (1755)	81.50 (2070)

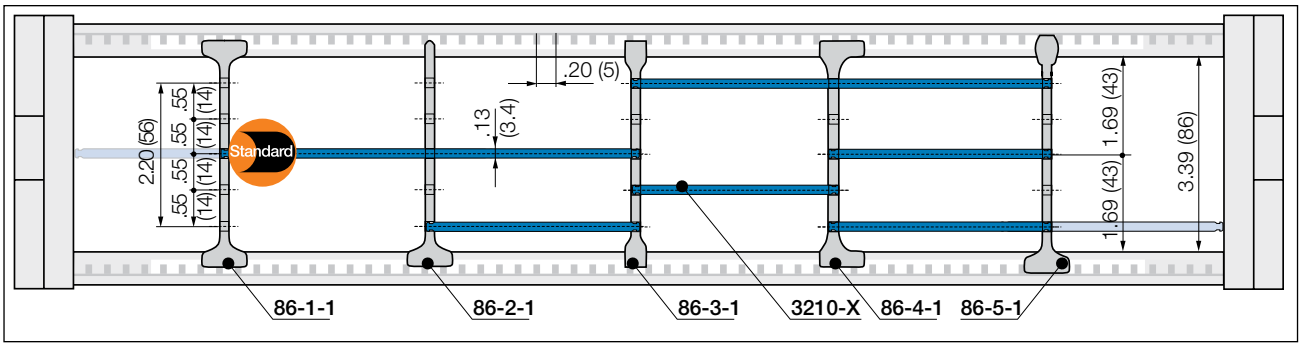
0=Standard color black. For other colors see Chapter 1
For large diameter hoses see page 6.246

PDF: igus.com/e-chain-pdfs
Product information: igus.com/e-chains

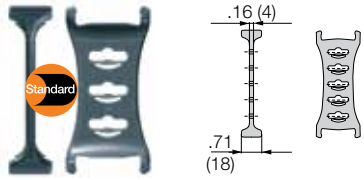
e-chain system® E4 light
Series 15250/15350
Special Accessories

Telephone 1-800-521-2747

Internet: igus.com
email: sales@igus.com
QuickSpec: igus.com/quickspec



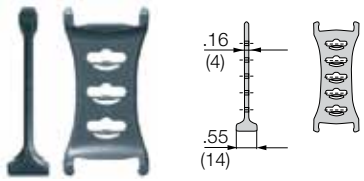
In the standard configuration separators are assembled every 2nd e-chain® link



Separator, wide base

Unassembled	**Part No. 86-1**
Assembled	**Part No. 86-1-1**

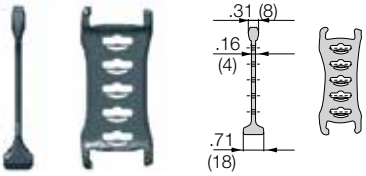
- **Standard separator 86-1 for all applications**
  Separator with wide base for maximum locking strength and safe standing in e-chains®.



Separator for QuickLock crossbar

Unassembled	**Part No. 86-2**
Assembled	**Part No. 86-2-1**

- **Separator 86-2**
  For even faster installation
  Separator for igus® QuickLock crossbar 385-X-Q. Firm hold to one side with a wide base, narrow on opposed side for easy cable assembly (slight grip)

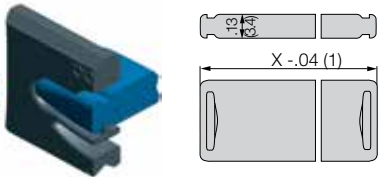


Notch separator for notch crossbar

Unassembled	**Part No. 86-5**
Assembled	**Part No. 86-5-1**

- **Separator 86-5**
  Locks safely in .20" (5 mm) increments
  Notch separator for exact positioning in e-chains®. Recommended for side mounted applications.

Lockable full-width shelves - for the standard interior separation



Full width shelf, lockable

Unassembled	**Part No. 3200-X**
Assembled	**Part No. 3210-X**

- **Full width shelf, lockable**
  Shelf locks into separators on both ends, fixed width possible. Separators can be moved freely over the shelf in horizontal direction. Can be arranged at 3 different heights.

Width X in. (mm)	Part No. Unassembled	Part No. Assembled	Width X in. (mm)	Part No. Unassembled	Part No. Assembled
1.97 (050)	**3200-50**	**3210-50**	5.91 (150)	**3200-150**	**3210-150**
2.95 (075)	**3200-75**	**3210-75**	6.89 (175)	**3200-175**	**3210-175**
3.94 (100)	**3200-100**	**3210-100**	7.87 (200)	**3200-200**	**3210-200**
4.53 (115)	**3200-115**	**3210-115**	8.86 (225)	**3200-225**	**3210-225**
4.92 (125)	**3200-125**	**3210-125**	9.84 (250)	**3200-250**	**3210-250**

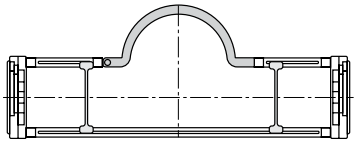
e-chain system® E4 light
Series 15250/15350
Mounting Brackets - KMA



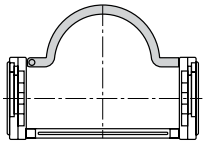
Consult igus® for your extender crossbar applications. We will be happy to assist you with your design layout.

Extender crossbars - For careful guiding of large diameter cables and hoses

- Intended for cables and hoses with a maximum outer diameter of 4.53 in. (115 mm).
- Gliding operation with crossbars assembled along the outer radius in conjunction with a special guide trough
- Gliding operation not guaranteed with crossbars assembled along the inner radius
- The extender crossbar can either be attached to the side links directly or can be used in combination with two standard snap-open crossbars.



Round extender crossbar combined with standard snap-open crossbars.



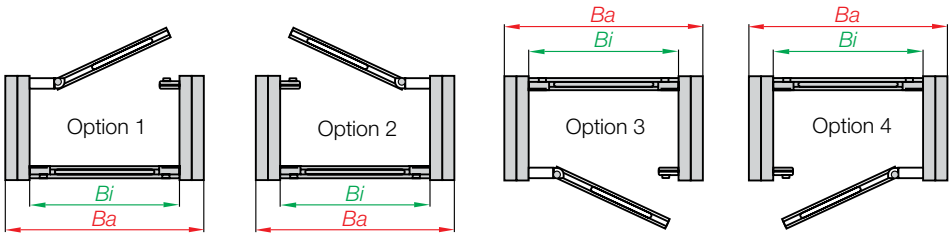
Attached directly to the side link.

Part No.	Max Ø Hose in. (mm)	Style	Installation Side Link	Combined with Snap-Open Crossbars
385-15-RHD115	4.53 (115)	Round	No	Yes
385-18-RD115	4.53 (115)	Round	Yes	No

Hinged crossbars

- Typically, e-chain® crossbars are completely removable. In cases where it is preferable that the opening crossbars remain on the e-chain®, a hinged design has been developed.
- Please consult igus® for design assistance





PDF: igus.com/e-chain-pdfs
Product information: igus.com/e-chains

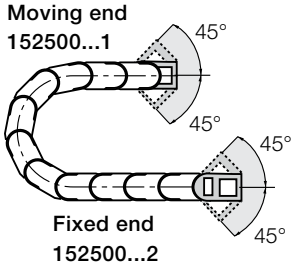
e-chain system® E4 light
Series 15250/15350
Mounting Brackets - KMA

igus® e-chain system®
Telephone 1-800-521-2747
Internet: igus.com
email: sales@igus.com
QuickSpec: igus.com/quickspec

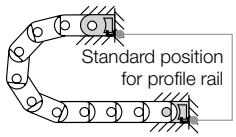
Standard

Option 1: KMA pivoting

- Profile rail option
- Universal use
- Corrosion resistant
- Short and long travels
- Space-restricted conditions

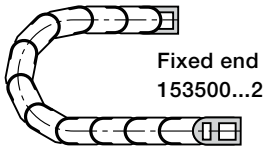




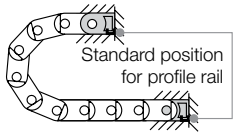


Option 2: KMA locking

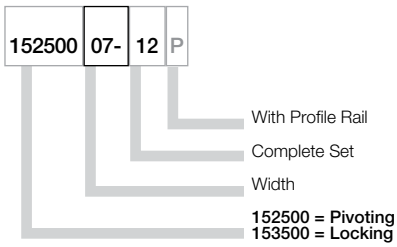
- Profile rail option
- Universal use
- Corrosion resistant
- Extreme accelerations
- Vertical hanging/standing travels

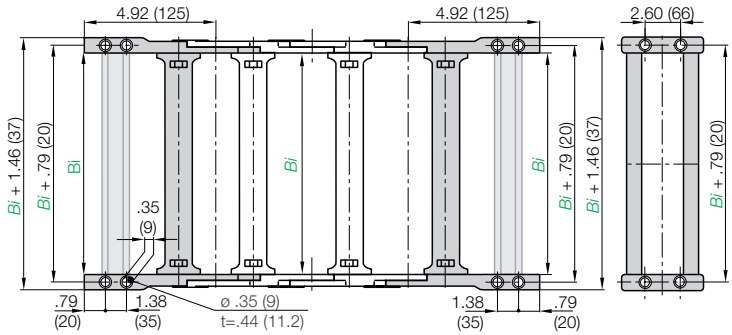






Part Number Structure





Full set, for both ends:

152500- 05- 12 Full set, **each part with pin/bore**

Single-part order:

152500- 05- 1 Mounting bracket **with bore**

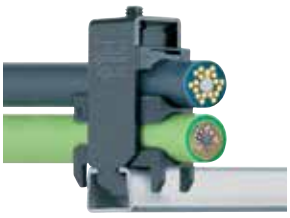
152500- 05- 2 Mounting bracket **with pin**

Bracket Mounting Dimensions

Width	Part No. Full Set Pivoting	Locking		With Profile Rail	*Bi* in. (mm)	Width	Part No. Full Set Pivoting	Locking		With Profile Rail	*Bi* in. (mm)
-05	152500	153500	-05-12	P	1.97 (50)	-212	152500	153500	-212-12	P	8.35 (212)
-06	152500	153500	-06-12	P	2.56 (65)	-23	152500	153500	-23-12	P	8.86 (225)
-07	152500	153500	-07-12	P	2.95 (75)	-237	152500	153500	-237-12	P	9.33 (237)
-087	152500	153500	-087-12	P	3.43 (87)	-25	152500	153500	-25-12	P	9.84 (250)
-09	152500	153500	-09-12	P	3.82 (97)	-262	152500	153500	-262-12	P	10.31 (262)
-10	152500	153500	-10-12	P	3.94 (100)	-28	152500	153500	-28-12	P	10.83 (275)
-11	152500	153500	-11-12	P	4.25 (108)	-29	152500	153500	-29-12	P	11.30 (287)
-112	152500	153500	-112-12	P	4.41 (112)	-30	152500	153500	-30-12	P	11.81 (300)
-12	152500	153500	-12-12	P	4.92 (125)	-312	152500	153500	-312-12	P	12.28 (312)
-137	152500	153500	-137-12	P	5.39 (137)	-325	152500	153500	-325-12	P	12.79 (325)
-15	152500	153500	-15-12	P	5.91 (150)	-337	152500	153500	-337-12	P	13.27 (337)
-162	152500	153500	-162-12	P	6.38 (162)	-350	152500	153500	-350-12	P	13.78 (350)
-17	152500	153500	-17-12	P	6.61 (168)	-362	152500	153500	-362-12	P	14.25 (362)
-18	152500	153500	-18-12	P	6.89 (175)	-375	152500	153500	-375-12	P	14.76 (375)
-187	152500	153500	-187-12	P	7.36 (187)	-387	152500	153500	-387-12	P	15.24 (387)
-20	152500	153500	-20-12	P	7.87 (200)	-400	152500	153500	-400-12	P	15.75 (400)

e-chain system® E4 light
Series 15250/15350
Strain Relief

Chainfix clamps for the profile rail



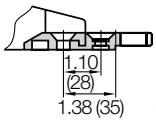
igus® Chainfix strain relief elements are available in either steel or stainless steel. They can be adjusted with a hexagon socket and are available in single, double and triple configurations.

Part No. Single Clamp		Part No. Double Clamp		Part No. Triple Clamp		Cable ø	
Steel	Stainless	Steel	Stainless	Steel	Stainless	in.	(mm)
CFX12-1	CFX12-1E	CFX12-2	CFX12-2E	CFX12-3	–	.24 - .47	(6 - 12)
CFX14-1	CFX14-1E	CFX14-2	CFX14-2E	CFX14-3	–	.47 - .55	(12 - 14)
CFX16-1	CFX16-1E	CFX16-2	CFX16-2E	CFX16-3	–	.55 - .63	(14 - 16)
CFX18-1	CFX18-1E	CFX18-2	CFX18-2E	CFX18-3	–	.63 - .71	(16 - 18)
CFX20-1	CFX20-1E	CFX20-2	CFX20-2E	CFX20-3	–	.71 - .79	(18 - 20)
CFX22-1	CFX22-1E	CFX22-2	CFX22-2E	CFX22-3	–	.79 - .87	(20 - 22)
CFX26-1	CFX26-1E	CFX26-2	CFX26-2E	–	–	.87 - 1.02	(22 - 26)
CFX30-1	CFX30-1E	CFX30-2	CFX30-2E	–	–	1.02 - 1.18	(26 - 30)
CFX34-1	CFX34-1E	CFX34-2	CFX34-2E	–	–	1.18 - 1.34	(30 - 34)
CFX38-1	CFX38-1E	–	–	–	–	1.34 - 1.50	(34 - 38)
CFX42-1	CFX42-1E	–	–	–	–	1.50 - 1.65	(38 - 42)

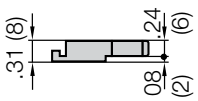
For more information please refer to strain relief section of Chapter 10

Tiewrap Plates





Shown assembled

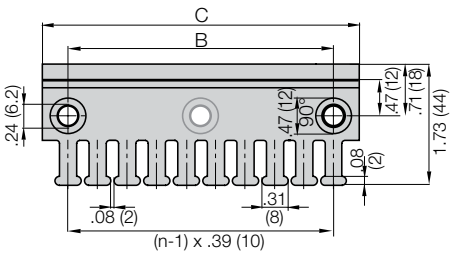


Single tiewrap plate

Option 1:
Tiewrap plates as an individual part

Available as an individual component, can be fixed onto a mounting bracket with the use of a profile rail.

Tiewrap Plate	n Number of Teeth	C Overall Width in. (mm)	B Bore Width in. (mm)	Center Bore
3050-ZB	5	1.97 (50)	1.18 (30)	no
3075-ZB	7	2.95 (75)	2.16 (55)	no
3100-ZB	10	3.94 (100)	3.15 (80)	no
3115-ZB	11	4.53 (115)	3.74 (95)	no
3125-ZB	12	4.92 (125)	4.13 (105)	no
3150-ZB	15	5.91 (150)	5.12 (130)	no
3175-ZB	17	6.89 (175)	6.10 (155)	no
3200-ZB	20	7.87 (200)	7.09 (180)	yes
3225-ZB	22	8.86 (225)	8.07 (205)	yes
3250-ZB	25	9.84 (250)	9.06 (230)	yes



If used with KMA brackets with profile rail please add "KMA" to the end of the part number.
Example: 3050-ZBKMA

For more information please refer to strain relief section of Chapter 10



Option 2:
Clip-on Tiewrap plates

Available as a clip-on tiewrap plate without the use of bolts They are inserted and removed with a screwdriver used as a lever. Clip-on tiewrap plates are also available as an attachment to the opening crossbars.

Part No.	Number of Teeth	Width of Strain Relief in.	(mm)
3050-ZC	5	1.97	(50)
3075-ZC	7	2.95	(75)

For more information please refer to strain relief section of Chapter 10



Option 3:
Clip-on Tiewrap plates for opening crossbars

Clip-on tiewrap plates are also available as an attachment to opening crossbars. They can be positioned at any point along the e-chain®.

Part No.	Number of Teeth	Width of Strain Relief in.	(mm)
3850-ZS	5	1.89	(48)

For more information please refer to strain relief section of Chapter 10

PDF: igus.com/e-chain-pdfs
Product information: igus.com/e-chains

e-chain system® E4 light
Series 15250/15350
Guide Trough

Width of Crossbar
15250-**20**-300-0

B_{Ri}

Installation Part No.

-05	3.35 (85)	*
-06	4.06 (103)	**96-50-225**
-07	4.33 (110)	**96-50-225**
-087	4.80 (122)	**96-50-250**
-09	5.20 (132)	**96-50-250**
-10	5.31 (135)	**96-50-250**
-11	5.63 (143)	**96-50-275**
-112	5.83 (148)	**96-50-275**
-12	6.30 (160)	**96-50-275**
-13	6.77 (172)	**96-50-300**
-15	7.28 (185)	**96-50-300**
-16	7.80 (198)	**96-50-325**
-17	7.99 (203)	**96-50-325**
-17	8.27 (210)	**96-50-325**
-18	8.78 (223)	**96-50-350**
-20	9.25 (235)	**96-50-350**
-21	9.76 (248)	**96-50-375**
-22	10.24 (260)	**96-50-375**
-23	10.75 (273)	**96-50-400**
-25	11.22 (285)	**96-50-400**
-26	11.73 (298)	**96-50-425**
-27	12.20 (310)	**96-50-425**
-28	12.72 (323)	**96-50-450**
-30	13.19 (335)	**96-50-450**
-31	13.70 (348)	**96-50-475**
-32	14.17 (360)	**96-50-475**
-33	14.69 (373)	**96-50-500**
-35	15.16 (385)	**96-50-500**
-36	15.67 (398)	**96-50-525**
-37	16.14 (410)	**96-50-525**
-38	16.65 (423)	**96-50-550**
-40	17.13 (435)	**96-50-550**

* Specialized guide trough available upon request

Guide troughs are used with applications where the upper run of the e-chain® glides on the lower run. If using igus® steel guide troughs, the following components are required:

- Full travel length of guide trough
  Part No. 99-30
- 1/2 travel length glide bars
  Part No. 93-01
- Installation sets as end connectors
  Part No. 96-50-XX

-XX indicates the length of the profile rails on which the guide trough is mounted. The values and part numbers are specified in the table on the left. The standard length of the trough components and glide bars is 6.56 ft (2 m). The overall length of the guide trough directly correlates to the length of travel.

Example:
Length of travel 164 ft (50 m)
Center-mounted

Required guide troughs:
164 ft (50 m) guide trough, 82 ft. (25 m) glide bar

= 25 sections of 6.56 ft (2 m) guide trough
Part No. 99-30

= 13 sections of 6.56 ft (2 m) glide bar
Part No. 93-01

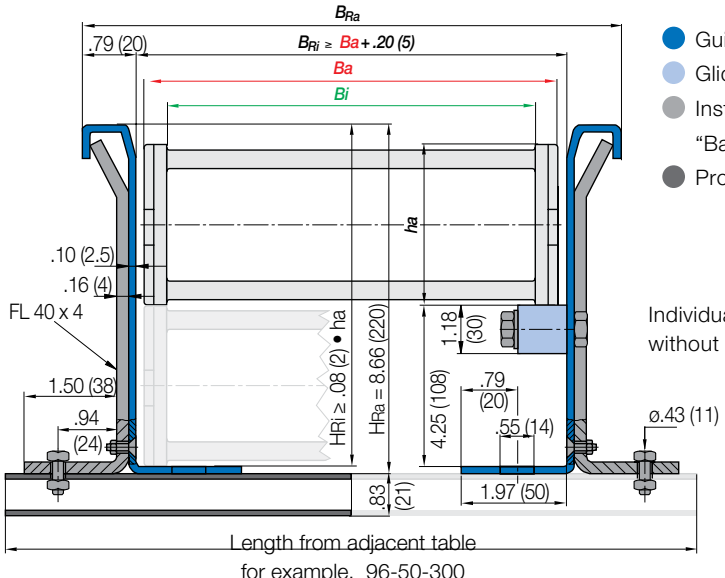
Required number of installation set:
= Number of guide trough components + 1
= 25 + 1 = 26
Part No. of the installation sets **96-50-XXX**
Example:
96-50-400 for 15.75 (400 mm) long profile rail



Left: Guide trough with glide bars Right: Guide troughs without glide bars



Installation sets as section connectors



Standard length profile rail

e-chain system® E4 light
Series 15250/15350
Application Example



System E4/light e-chain® - can be filled with cables with diameters up to 3.94“ (100 mm)

e-chain system® E4 light
Series 1640/R1608

4.41” 4.41”

Price Index

Series 1640 Series R1608

Special Features / Options

ESD classification: Electrically conductive ESD/ ATEX version upon request

High torsional rigidity

Side-mounted - unsupported

Assembly Tips



Opening e-chains®: Remove crossbars and clips - Insert screwdriver into the slot, push down, release by lever action



Remove lids/bottoms (e-tubes) - Insert screwdriver into the slot, release by lever action

Other Installation Methods

Vertical, hanging ≤ consult igus®
Vertical, standing ≤ 16.4 ft (5 m)
Side-mounted, unsupp. ≤ 6.56 ft (2 m)
Rotary requires further calculation

Usage Guidelines

- If a simpler, low-cost solution is required
- If optimized interior space is re-quired
- If the Series 400 is too large

- If maximum stability is required
  ➤ **Series 600/R608**

Features & Benefits

1. Numerous interior separation possibilities
2. Hinged snap-open removable lids along outer radius of e-tube
3. Lateral glide surfaces for side-mounted operation
4. Closed and open styles can be combined
5. Removable lids along inner radius
6. Wide, rounded plastic crossbars - cable friendly
7. Dirt repellent exterior
8. e-chain® also available with reverse bending radii



Order Example: Complete e-chain®

Please indicate chain length or number of links. Example:

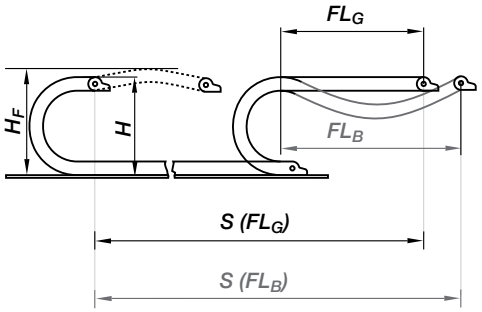
6.56 ft (2 m) **1640-30-300-0**	**e-chain®**
With 2 separators **6411** assembled every 2nd link	**Interior Separation**
1 Set **16000-12**	**Mounting Bracket**

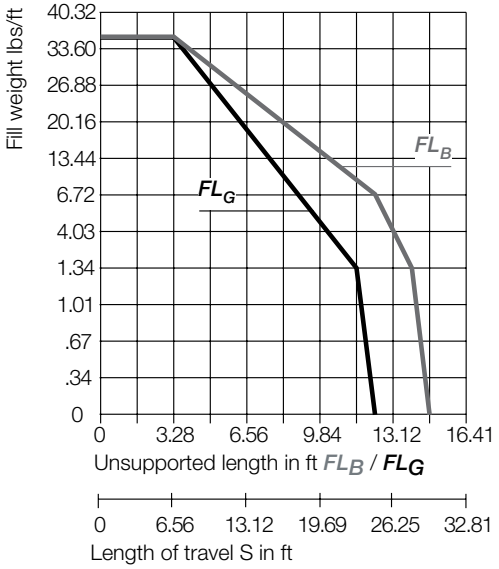
e-chain system® E4 light
Series 1640/R1608
Installation Dimensions

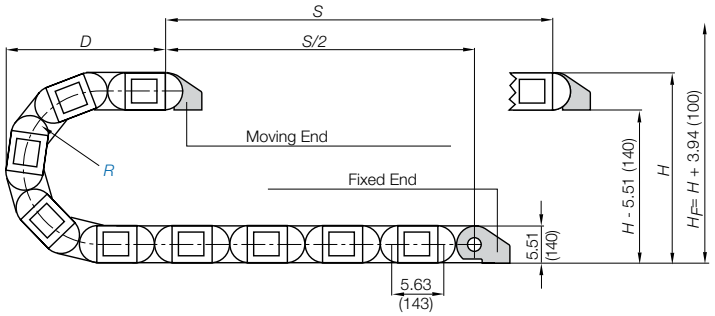
Short travel, unsupported length

- FL_B = unsupported with permitted sag
- FL_G = unsupported with straight upper run

Further information ➤ Design, Chapter 1







Pitch per link: = 5.63" (143 mm)
Links per ft (m): = 2.13 (7)
For center mount applications:
Chain length = $_{S}/_{2} + K$

Short Travels - Unsupported

Unsupported e-chains® feature positive camber over short travels. This must be accounted for when specifying the clearance height. Please refer to **Installation dimensions** for further details.

Legend

S = Length of travel
R = Bending radius
H = Nominal clearance height
D = Overlength e-chain® radius in final position
K = π • *R* + *safety buffer*
H_F = Required clearance height
H_{RI} = Trough inner height
H_2 = *Mounting height
D_2 = Overlength - long travels, gliding
K_2 = *Add-on
*If the mounting bracket location is set lower

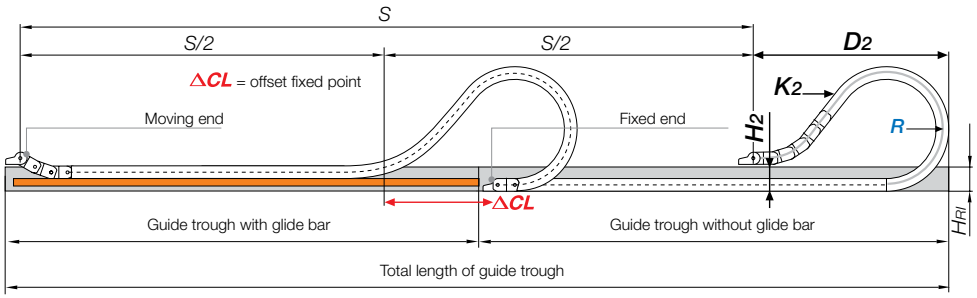
The required clearance height: $H_F = H + 3.94$ **in. (100 mm)** with 3.36 lbs/ft (5 kg/m) fill weight. Please consult igus® if space is particularly restricted.

R	7.87 (200)	9.84 (250)	11.81 (300)	13.78 (350)	15.75 (400)	17.72 (450)	19.69 (500)	21.65 (550)	23.62 (600)
H	21.46 (545)	25.39 (645)	29.41 (747)	33.27 (845)	37.20 (945)	41.14 (1045)	45.08 (1145)	49.02 (1245)	52.95 (1345)
D	16.34 (415)	18.31 (465)	20.27 (515)	22.24 (565)	24.21 (615)	26.18 (665)	28.15 (715)	30.12 (765)	32.09 (815)
K	36.22 (920)	42.52 (1080)	48.82 (1240)	55.12 (1400)	61.42 (1560)	67.72 (1720)	73.62 (1870)	79.53 (2020)	85.63 (2175)

For long travels with lowered mounting height

Long travel lengths from 32.8 ft. (10 m) to max. 1,312 ft. (400 m)

For center mount applications:
Chain length: = $_{S}/_{2} + K_2$



Long Travels - Gliding

If the unsupported length is exceeded, the e-chain®/Tube must glide on itself. This requires a guide trough.
Design, Chapter 1

R	7.87 (200)	9.84 (250)	11.81 (300)	13.78 (350)	15.75 (400)	17.72 (450)	19.69 (500)	21.65 (550)	23.62 (600)
H_2	12.80 (325)	12.80 (325)	12.80 (325)	12.80 (325)	12.80 (325)	12.80 (325)	12.80 (325)	12.80 (325)	12.80 (325)
D_{2+25}	35.43 (900)	39.37 (1000)	43.31 (1100)	49.21 (1200)	57.09 (1450)	62.99 (1600)	66.93 (1700)	74.80 (1900)	80.71 (2050)
K_2	61.93 (1573)	67.56 (1716)	73.19 (1859)	90.08 (2288)	101.33 (2574)	112.60 (2860)	123.86 (3146)	135.12 (3432)	152.01 (3861)
ΔCL	17.72 (450)	19.69 (500)	21.65 (550)	25.59 (650)	31.50 (800)	35.43 (900)	37.40 (950)	43.31 (1100)	47.24 (1200)

Technical Data

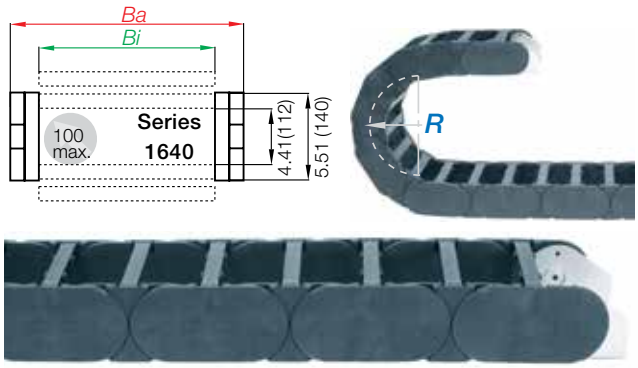
Speed / acceleration FL_G	max. 65.6 ft/s (20 m/s) / max. 656 ft/s² (200 m/s²)
Speed / acceleration FL_B	max. 9.84 ft/s (3 m/s) / max. 19.69 ft/s² (6 m/s²)
Gliding speed / acceleration (maximum)	max. 32.8 ft/s (10 m/s) / max. 164 ft/s² (50 m/s²)
Material - permitted temperature	igumid G / -40°F (-40°C) up to +248°F (+120° C)
Flammability Class, igumid G	VDE 0304 IIC UL94 HB

Details of material properties
➤ **Chapter 1**

PDF: igus.com/e-chain-pdfs
Product information: igus.com/e-chains

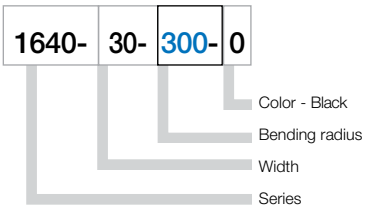
e-chain system® E4 light
Series 1640/R1608

Series 1640 - e-chain® with crossbars every link

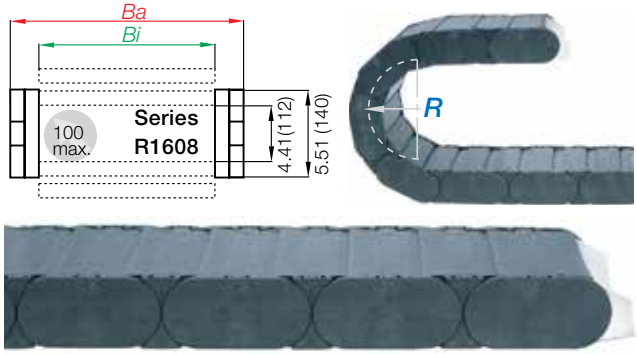


- Crossbars every link
- For use with rigid hydraulic hoses
- For particularly demanding applications
- Can be opened from both sides

Part Number Structure

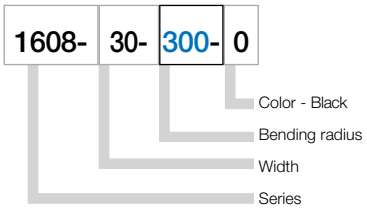


Series R1608 - fully enclosed e-tube

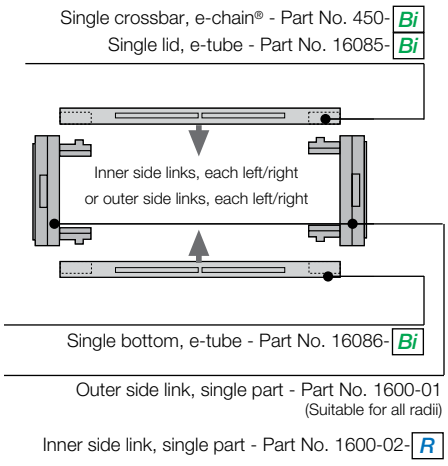


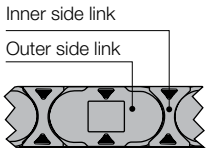
- Fully enclosed
- Excellent cable and hose protection against dirt
- Protection against hot chips
- Lids along inner radius are completely removable
- Lids along the outer radius are single-sided, snap open, hinged on one side as well as completely removable

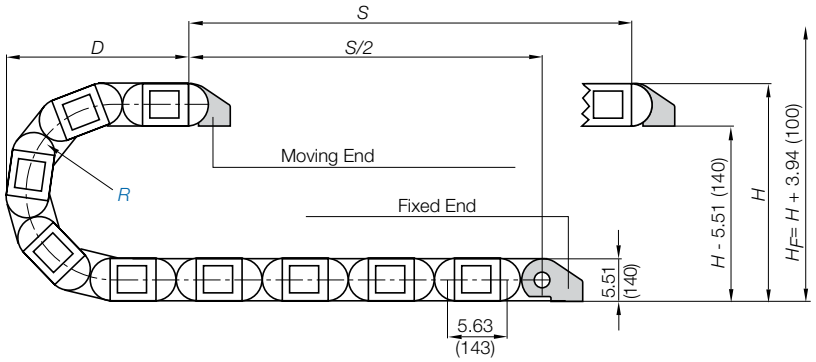
Part Number Structure



e-chain® as separate parts, links and side plates







e-chain system® E4 light
Series 1640/R1608

Supplement part number with required radius. Example: 1640-30-300-0
Pitch: 5.63 in. (143mm) per link links/ft (m) = 2.13 (7)

Part Number. Crossbars Every link	Tube Version			Bi in. (mm)	Ba in. (mm)	1640 lbs/ft (kg/m)	R1608 lbs/ft (kg/m)
1640-05-			-0	1.97 (50)	3.31 (84)	≈ 3.43 (5.10)	–
1640-06-			-0	2.56 (65)	3.90 (99)	≈ 3.48 (5.18)	–
1640-07-			-0	2.95 (75)	4.29 (109)	≈ 3.54 (5.27)	–
1640-08-			-0	3.43 (87)	4.76 (121)	≈ 3.57 (5.31)	–
1640-10-			-0	3.94 (100)	5.28 (134)	≈ 3.60 (5.36)	–
1640-11-			-0	4.41 (112)	5.75 (146)	≈ 3.66 (5.45)	–
1640-12-			-0	4.92 (125)	6.26 (159)	≈ 3.72 (5.54)	–
1640-13-			-0	5.39 (137)	6.73 (171)	≈ 3.78 (5.63)	–
1640-15-			-0	5.91 (150)	7.24 (184)	≈ 3.81 (5.67)	–
1640-16-			-0	6.38 (162)	7.72 (196)	≈ 3.86 (5.74)	–
1640-17-			-0	6.89 (175)	8.23 (209)	≈ 3.90 (5.81)	–
1640-18-			-0	7.36 (187)	8.70 (221)	≈ 3.95 (5.88)	–
1640-20-	1608-20-		-0	7.87 (200)	9.21 (234)	≈ 3.96 (5.89)	≈ 5.17 (7.69)
1640-21-			-0	8.35 (212)	9.69 (246)	≈ 4.00 (5.96)	–
1640-22-			-0	8.86 (225)	10.20 (259)	≈ 4.04 (6.01)	–
1640-23-			-0	9.33 (237)	10.67 (271)	≈ 4.09 (6.09)	–
1640-25-	1608-25-		-0	9.84 (250)	11.18 (284)	≈ 4.13 (6.15)	≈ 5.64 (8.39)
1640-26-			-0	10.31 (262)	11.65 (296)	≈ 4.17 (6.20)	–
1640-27-			-0	10.83 (275)	12.17 (309)	≈ 4.21 (6.27)	–
1640-28-			-0	11.30 (287)	12.64 (321)	≈ 4.23 (6.29)	–
1640-30-	1608-30-		-0	11.81 (300)	13.15 (334)	≈ 4.26 (6.34)	≈ 6.11 (9.09)
1640-31-			-0	12.28 (312)	13.62 (346)	≈ 4.31 (6.41)	–
1640-32-			-0	12.79 (325)	14.13 (359)	≈ 4.35 (6.48)	–
1640-33-			-0	13.27 (337)	14.61 (371)	≈ 4.43 (6.59)	–
1640-35-	1608-35-		-0	13.78 (350)	15.12 (384)	≈ 4.44 (6.61)	≈ 6.58 (9.79)
1640-36-			-0	14.25 (362)	15.59 (396)	≈ 4.48 (6.67)	–
1640-37-			-0	14.76 (375)	16.10 (409)	≈ 4.51 (6.71)	–
1640-38-			-0	15.24 (387)	16.57 (421)	≈ 4.54 (6.76)	–
1640-40-	1608-40-		-0	15.75 (400)	17.09 (434)	≈ 4.63 (6.89)	≈ 7.05 (10.49)
1640-41-			-0	16.22 (412)	17.56 (446)	≈ 4.70 (6.99)	–
1640-42-			-0	16.73 (425)	18.07 (459)	≈ 4.76 (7.08)	–
1640-43-			-0	17.20 (437)	18.54 (471)	≈ 4.79 (7.13)	–
1640-45-			-0	17.72 (450)	19.06 (484)	≈ 4.82 (7.17)	–
1640-46-			-0	18.19 (462)	19.53 (496)	≈ 4.82 (7.18)	-
1640-47-			-0	18.70 (475)	20.04 (509)	≈ 4.85 (7.22)	–
1640-48-			-0	19.17 (487)	20.51 (521)	≈ 4.89 (7.27)	–
1640-50-			-0	19.69 (500)	21.02 (534)	≈ 4.94 (7.35)	–
1640-51-			-0	20.16 (512)	21.50 (546)	≈ 4.95 (7.36)	–
1640-52-			-0	20.67 (525)	22.01 (559)	≈ 4.97 (7.39)	–
1640-53-			-0	21.14 (537)	22.48 (571)	≈ 5.03 (7.49)	–
1640-55-			-0	21.65 (550)	22.99 (584)	≈ 5.24 (7.80)	–
1640-60-			-0	23.62 (600)	24.96 (634)	≈ 5.32 (7.92)	–

Choose from the radii below for all of the above sizes

Radius (mm) Example: 1640-30-300-0

	200**	250	300	350	400	450	500	550	600
R	7.87 (200)	9.84 (250)	11.81 (300)	13.78 (350)	15.75 (400)	9.84 (450)	19.68 (500)	21.65 (550)	23.62 (600)
H	21.46 (545)	25.39 (645)	29.41 (747)	33.27 (845)	37.20 (945)	41.14 (1045)	45.08 (1145)	49.02 (1245)	52.95 (1345)
D	16.34 (415)	18.31 (465)	20.27 (515)	22.24 (565)	24.21 (615)	26.18 (665)	28.15 (715)	30.12 (765)	32.09 (815)
K	36.22 (920)	42.52 (1080)	48.82 (1240)	55.12 (1400)	61.42 (1560)	67.72 (1720)	73.62 (1870)	79.53 (2020)	85.63 (2175)

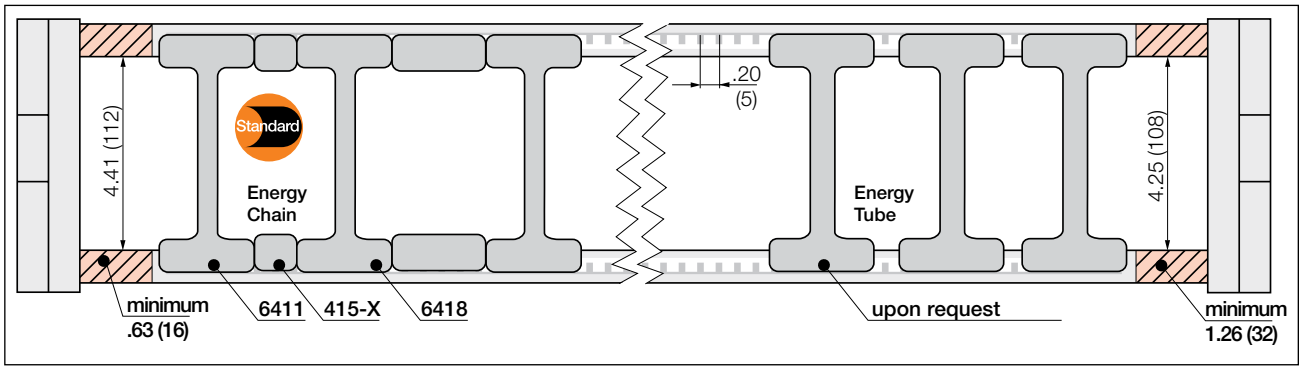
0=Standard color black. For other colors see Chapter 1
For wider chains see page 6.257. For large diameter hoses see page 6.257

PDF: igus.com/e-chain-pdfs
Product information: igus.com/e-chains

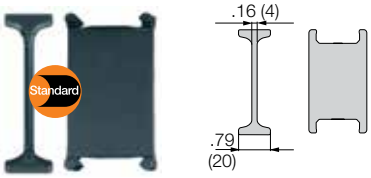
e-chain system® E4 light
Series 1640/R1608
Interior Separation

Telephone 1-800-521-2747

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email: sales@igus.com
QuickSpec: igus.com/quickspec



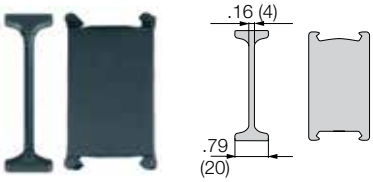
Note Please maintain a lateral spacing of 1.26" (32 mm) for e-tube and .63" (16 mm) for e-chains® between the separators and the side links. In the standard configuration separators are assembled every 2nd e-chain® link



Separator (chain only)

Unassembled	**Part No. 6401**
Assembled	**Part No. 6411**

- **Standard separator 6401 for e-chains®**
  For a vertical subdivision. Offers safe stability due to its wide base design, also when used with thick cables or hoses (Separator for e-tubes 1608 upon request)



Separator, locking (chain only)

Unassembled	**Part No. 6408**
Assembled	**Part No. 6418**

- **Separator 6408 for e-chains®**
  For applications exposed to very high humidity (>85%). Locks with extra retention force.
  Tip: one locking separator per e-chain® link for better mounting.



Spacer (chain only)

Unassembled	**Part No. 405-XX**
Assembled	**Part No. 415-XX**

XX = width of the spacer

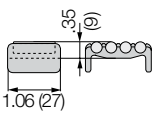
- **NOTE ON SPACERS for e-chains®**
  Vertical separators are adjustable, but can be fixed in position by means of a spacer. Spacers are most often necessary for side mounted applications.
  The available inner height is reduced by .08" (2mm) **per spacer** (for example if one spacer is placed on either side of the separator, the overall inner height is reduced by .16" (4mm). To avoid this, place the spacers on the **outside** of the opening crossbar **(not for long travels)**.

Spacers available in the following sizes:

Part No. Unassembled	Part No. Assembled	Width in.	(mm)
405 -10	**415 -10**	.39"	(10)
405 -15	**415 -15**	.59"	(15)
405 -20	**415 -20**	.79"	(20)
405 -30	**415 -30**	1.18"	(30)
405 -40	**415 -40**	1.57"	(40)

Additional elements - interior separation



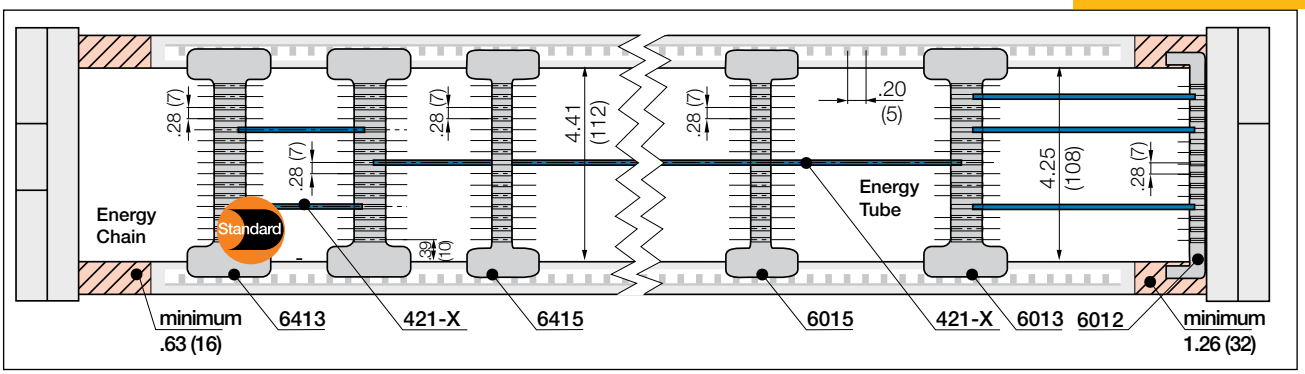


Rollclip

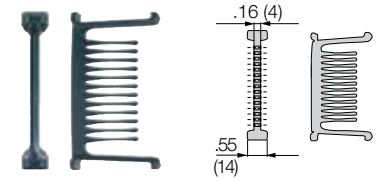
Unassembled	**Part No. 489-27**
Assembled	**Part No. 490-27**

Rollclip - minimizes abrasion of particularly sensitive hoses or cables in an e-chain®. The integrated rollers compensate for relative movement between the chain and the hose or cable. This reduces the abrasion of the hoses or cables

e-chain system® E4 light
Series 1640/R1608
Interior Separation



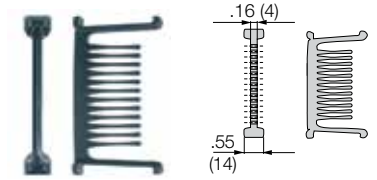
Note Please maintain a lateral spacing of 1.26" (32 mm) for e-tube and .63" (16 mm) for e-chains® between the separators and the side links. In the standard configuration separators are assembled every 2nd e-chain® link



Slotted separator, open (e-chains®)

Unassembled	**Part No. 6405**
Assembled	**Part No. 6415**

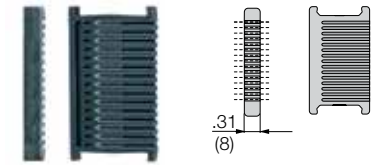
- **Open, slotted separator 6405**
  For e-chains® (unilateral open)
  This separator can be retrofitted into an existing interior separation system without removing the shelves. The top and bottom botches cannot be occupied by shelves



Slotted separator, open (e-tubes)

Unassembled	**Part No. 6005**
Assembled	**Part No. 6015**

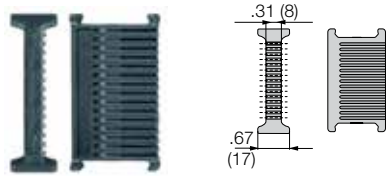
- **Open, slotted separator 6005**
  For e-tubes (unilateral open)
  This separator can be retrofitted into an existing interior separation system without removing the shelves. The top and bottom botches cannot be occupied by shelves



Vertical separator (e-chains®)

Unassembled	**Part No. 6403**
Assembled	**Part No. 6413**

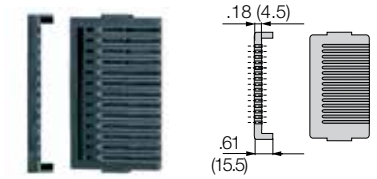
- **Vertical separator 6403**
  For e-chains®
  This component is used to form the basic pattern of a shelf system. The shelf 420-X can be installed at 15 different heights in .28" (7 mm) increments



Vertical separator, locking (e-tubes)

Unassembled	**Part No. 6003**
Assembled	**Part No. 6013**

- **Locking vertical separator 6003**
  For e-tubes
  This component is used to form the basic pattern of a shelf system.

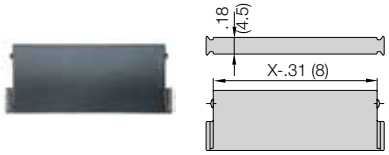


Side plate

Unassembled	**Part No. 6002**
Assembled	**Part No. 6012**

- **Side plate 6002**
  For e-chains® / Tubes
  This component is used to form the basic pattern of a shelf system. Allows modular shelving close to the side links.

Full-width shelves - for the standard interior separation



Full width shelf

Unassembled	**Part No. 420-X**
Assembled	**Part No. 421-X**

- **Full width shelf 420-X**
  These components form the basic pattern of a shelf system. Shelves of various widths can be arranged at 7 different heights in .28" (7mm) increments

Width X in.	(mm)	Part No. Unassembled	Part No. Assembled
.71	(18)	**420-18**	**421-18**
.91	(23)	**420-23**	**421-23**
.98	(25)	**420-25**	**421-25**
1.10	(28)	**420-28**	**421-28**
1.30	(33)	**420-33**	**421-33**
1.69	(43	**420-43**	**421-43**

Width X in.	(mm)	Part No. Unassembled	Part No. Assembled
1.97	(50)	**420-50**	**421-50**
2.44	(62)	**420-62**	**421-62**
2.95	(75)	**420-75**	**421-75**
3.46	(88)	**420-88**	**421-88**
3.94	(100)	**420-100**	**421-100**
4.92	(125)	**420-125**	**421-125**

Width X in.	(mm)	Part No. Unassembled	Part No. Assembled
5.91	(150)	**420-150**	**421-150**
6.89	(175)	**420-175**	**421-175**
7.36	(187)	**420-187**	**421-187**
7.87	(200)	**420-200**	**421-200**

PDF: igus.com/e-chain-pdfs
Product information: igus.com/e-chains

Telephone 1-800-521-2747

Internet: igus.com
email: sales@igus.com
QuickSpec: igus.com/quickspec

e-chain system® E4 light
Series 1640/R1608
Special Accessories





Part number example for e-chain®

1640-10/20/10-200-0

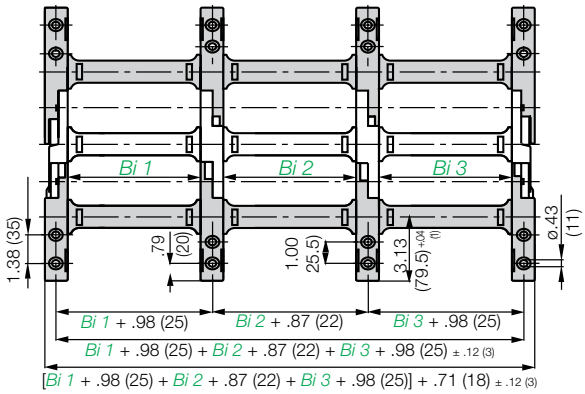
1640-*Bi1*/*Bi2*/*Bi3*-R-0

We **strongly recommend** on-site consultation with an igus® technician for individual advice regarding mounting brackets, guide troughs and other design details.

Extension links - for extremely wide e-chains® up to 9.84 ft (3m)

- For applications in which particularly high fill weights necessitate extremely wide e-chains®
- The extension link design allows virtually limitless side-by-side attachment of chains
- The unsupported length of a chain can be increased when additional loads are required
- Extension links can be used with e-chains®, e-tubes or a combination of both
- They are suitable for unsupported and gliding applications in a guide trough
- e-chains® with extension links are attached with KMA or steel mounting brackets.



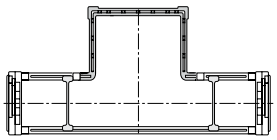


Extender crossbars - For careful guiding of large diameter cables and hoses

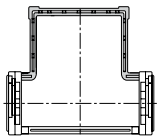
- Intended for cables and hoses with a maximum outer diameter of 11.81 in. (300 mm).
- Can be attached along either the inner or outer radius, inner radius preferred
- Gliding operation with crossbars assembled along the outer radius in conjunction with a special guide trough
- Gliding operation not guaranteed with crossbars assembled along the inner radius
- The extender crossbar can either be attached to the side links directly or can be used in combination with two standard snap-open crossbars.



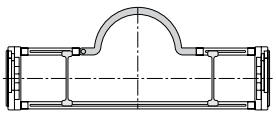
Consult igus® for your extender crossbar applications. We will be happy to assist you with your design layout.



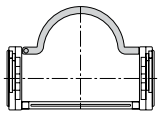
Square extender crossbar combined with standard snap-open crossbars.



Attached directly to the side link.



Round extender crossbar combined with standard snap-open crossbars.



Attached directly to the side link.

Part No.	Max Ø Hose	Style	Installation Side Link	Combined with Snap-Open Crossbars
450-15-RHD115	4.52 (115)	Round	No	Yes
450-17-RD115	4.52 (115)	Round	Yes	No
450-25-D150	5.91 (150)	Square	Yes	No
450-30-D200	7.09 (180)	Square	Yes	No
450-35-D250	7.68 (195)	Square	Yes	No
450-40-D300	9.65 (245)	Square	Yes	No
450-20-HD150	5.91 (150)	Square	No	Yes
450-25-HD200	7.09 (180)	Square	No	Yes
450-30-HD250	7.68 (195)	Square	No	Yes



E4 clip on cable binder

- For side mounted applications
- Serves as a clip-on, lateral guide for hoses and cables on e-chains®
- The loops can be adjusted as needed
- Compatible with many E4 e-chains®
- Economical
- One clip and one locking band are needed for each chain link

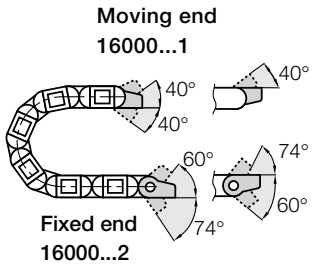


Part No.	Form
450-B12	Locking clip, comprised of a locking element
450-B12-200	Locking band, comprised of a locking element and band; 12 x 1.5 x 200 mm

e-chain system® E4 light
Series 1640/R1608
Mounting Brackets - Steel

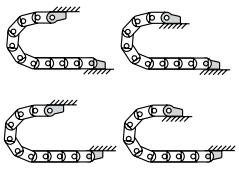
Option 1: pivoting

- For pivoting connections
- One part for all chain widths
- Electrically conductive









Possible installation configurations -

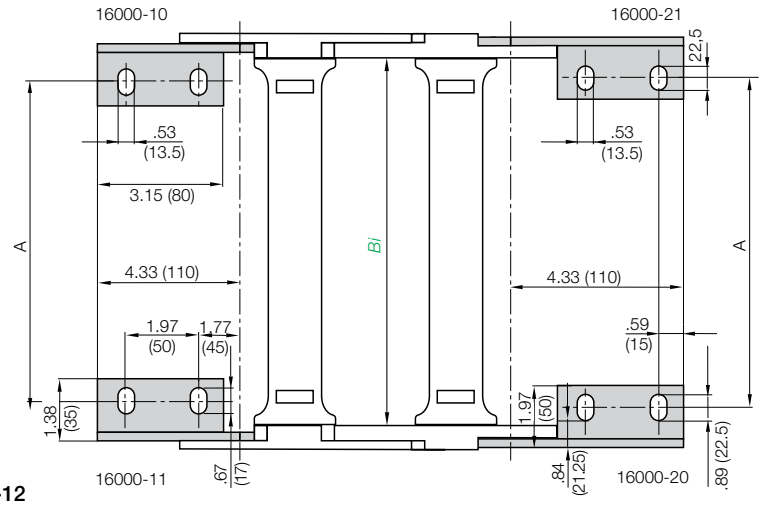
Part No. Mounting Brackets Full Set
4 parts, 2 with pin, 2 with bore
Series 1640 or R1608
16000-12

Part No. Mounting Bracket Moving End
2 parts, 1 left & 1 right with bore
Series 1640 or R1608
16000-1

Part No. Mounting Bracket Fixed End
2 parts, 1 left & 1 right with pin
Series 1640 or R1608
16000-2

Due to the design of the E4/100 series chains, please note the following when ordering brackets:

Even number of links = full set, part number ending in **-12**
Odd number of links = 2 pieces, part number ending in **-1**



Bracket Mounting dimensions

Width of Chain *Bi*	Part Number	Mounting Brackets Full Set	Moving End Only	Fixed End Only	A in. (mm)
1.97 (50)	16000	-12	-1	-2	.79 (20)
2.56 (65)	16000	-12	-1	-2	1.38 (35)
2.95 (75)	16000	-12	-1	-2	1.77 (45)
3.43 (87)	16000	-12	-1	-2	2.24 (57)
3.94 (100)	16000	-12	-1	-2	2.76 (70)
4.41 (112)	16000	-12	-1	-2	3.23 (82)
4.92 (125)	16000	-12	-1	-2	3.74 (95)
5.39 (137)	16000	-12	-1	-2	4.21 (107)
5.91 (150)	16000	-12	-1	-2	4.72 (120)
6.38 (162)	16000	-12	-1	-2	5.20 (132)
6.89 (175)	16000	-12	-1	-2	5.71 (145)
7.36 (187)	16000	-12	-1	-2	6.18 (157)
7.87 (200)	16000	-12	-1	-2	6.69 (170)
8.35 (212)	16000	-12	-1	-2	7.16 (182)
8.86 (225)	16000	-12	-1	-2	7.68 (195)
9.33 (237)	16000	-12	-1	-2	8.15 (207)
9.84 (250)	16000	-12	-1	-2	8.66 (220)
10.31 (262)	16000	-12	-1	-2	9.13 (232)
10.83 (275)	16000	-12	-1	-2	9.65 (245)
11.30 (287)	16000	-12	-1	-2	10.12 (257)
11.81 (300)	16000	-12	-1	-2	10.63 (270)

Width of Chain *Bi*	Part Number	Mounting Brackets Full Set	Moving End Only	Fixed End Only	A in. (mm)
12.28 (312)	16000	-12	-1	-2	11.10 (282)
12.79 (325)	16000	-12	-1	-2	11.61 (295)
13.27 (337)	16000	-12	-1	-2	12.09 (307)
13.78 (350)	16000	-12	-1	-2	12.60 (320)
14.25 (362)	16000	-12	-1	-2	13.07 (332)
14.76 (375)	16000	-12	-1	-2	13.58 (345)
15.24 (387)	16000	-12	-1	-2	14.06 (357)
15.75 (400)	16000	-12	-1	-2	14.57 (370)
16.22 (412)	16000	-12	-1	-2	15.04 (382)
16.73 (425)	16000	-12	-1	-2	15.55 (395)
17.20 (437)	16000	-12	-1	-2	16.02 (407)
17.72 (450)	16000	-12	-1	-2	16.54 (420)
18.19 (462)	16000	-12	-1	-2	17.01 (432)
18.70 (475)	16000	-12	-1	-2	17.52 (445)
19.17 (487)	16000	-12	-1	-2	17.99 (457)
19.69 (500)	16000	-12	-1	-2	18.50 (470)
20.16 (512)	16000	-12	-1	-2	18.98 (482)
20.67 (525)	16000	-12	-1	-2	19.49 (495)
21.14 (537)	16000	-12	-1	-2	19.96 (507)
21.65 (550)	16000	-12	-1	-2	20.47 (520)
23.62 (600)	16000	-12	-1	-2	22.44 (570)

PDF: igus.com/e-chain-pdfs
Product information: igus.com/e-chains

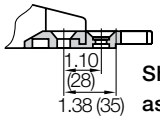
e-chain system® E4 light
Series 1640/R1608
Strain Relief

Tiewrap Plates

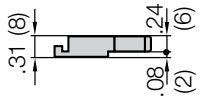
Tiewrap plates as an individual part

Available as an individual component, can be fixed onto a mounting bracket with the use of a profile rail.



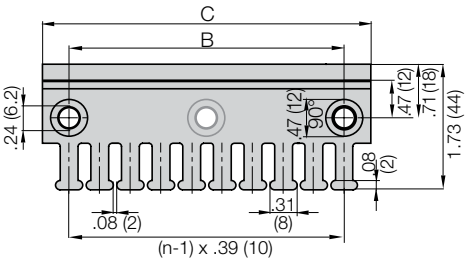


Shown assembled



Single tiewrap plate

Tiewrap Plate	n Number of Teeth	C Overall Width in. (mm)	B Bore Width in. (mm)	Center Bore
3050-ZB	5	1.97 (50)	1.18 (30)	no
3075-ZB	7	2.95 (75)	2.16 (55)	no
3100-ZB	10	3.94 (100)	3.15 (80)	no
3115-ZB	11	4.53 (115)	3.74 (95)	no
3125-ZB	12	4.92 (125)	4.13 (105)	no
3150-ZB	15	5.91 (150)	5.12 (130)	no
3175-ZB	17	6.89 (175)	6.10 (155)	no
3200-ZB	20	7.87 (200)	7.09 (180)	yes
3225-ZB	22	8.86 (225)	8.07 (205)	yes
3250-ZB	25	9.84 (250)	9.06 (230)	yes



For more information please refer to strain relief section of Chapter 10

e-chain system® E4 light
Series 1640/R1608
Guide Trough

Width of Crossbar
1640-**12**-250-0

	B_{Ri}	Installation Part No.
-05	3.50 (89)	*
-06	4.09 (104)	**97-50-225**
-07	4.49 (114)	**97-50-250**
-10	5.47 (139)	**97-50-275**
-11	5.94 (151)	**97-50-275**
-12	6.46 (164)	**97-50-300**
-13	6.93 (176)	**97-50-300**
-15	7.44 (189)	**97-50-325**
-16	7.91 (201)	**97-50-325**
-17	8.43 (214)	**97-50-350**
-18	8.90 (226)	**97-50-350**
-20	9.41 (239)	**97-50-375**
-21	9.88 (251)	**97-50-375**
-22	10.39 (264)	**97-50-400**
-23	10.87 (276)	**97-50-400**
-25	11.38 (289)	**97-50-425**
-26	11.85 (301)	**97-50-425**
-27	12.36 (314)	**97-50-450**
-28	12.83 (326)	**97-50-450**
-30	13.35 (339)	**97-50-475**
-31	13.82 (351)	**97-50-475**
-32	14.33 (364)	**97-50-500**
-33	14.80 (376)	**97-50-500**
-35	15.31 (389)	**97-50-525**
-36	15.79 (401)	**97-50-525**
-37	16.30 (414)	**97-50-550**
-38	16.77 (426)	**97-50-550**
-40	17.28 (439)	**97-50-575**
-41	17.76 (451)	**97-50-575**
-42	18.27 (464)	**97-50-600**
-43	18.74 (476)	**97-50-600**
-45	19.25 (489)	**97-50-625**
-46	19.72 (501)	**97-50-625**
-47	20.24 (514)	**97-50-650**
-48	20.71 (526)	**97-50-650**
-50	21.22 (539)	**97-50-675**
-51	21.69 (551)	**97-50-675**
-52	22.20 (564)	**97-50-700**
-53	22.68 (576)	**97-50-700**
-55	23.19 (589)	**97-50-725**
-60	25.16 (639)	**97-50-775**

Standard length profile rail

Guide troughs are used with applications where the upper run of the e-chain® glides on the lower run. If using igus® steel guide troughs, the following components are required:

- Full travel length of guide trough
  Part No. 97-30
- 1/2 travel length glide bars
  Part No. 93-01
- Installation sets as end connectors
  Part No. 97-50-XX

-XX indicates the length of the profile rails on which the guide trough is mounted. The values and part numbers are specified in the table on the left. The standard length of the trough components and glide bars is 6.56 ft (2 m). The overall length of the guide trough directly correlates to the length of travel.

Example:
Length of travel 164 ft (50 m)
Center-mounted

Required guide troughs:
164 ft (50 m) guide trough, 82 ft. (25 m) glide bar

= 25 sections of 6.56 ft (2 m) guide trough
Part No. 97-30

= 13 sections of 6.56 ft (2 m) glide bar
Part No. 93-01

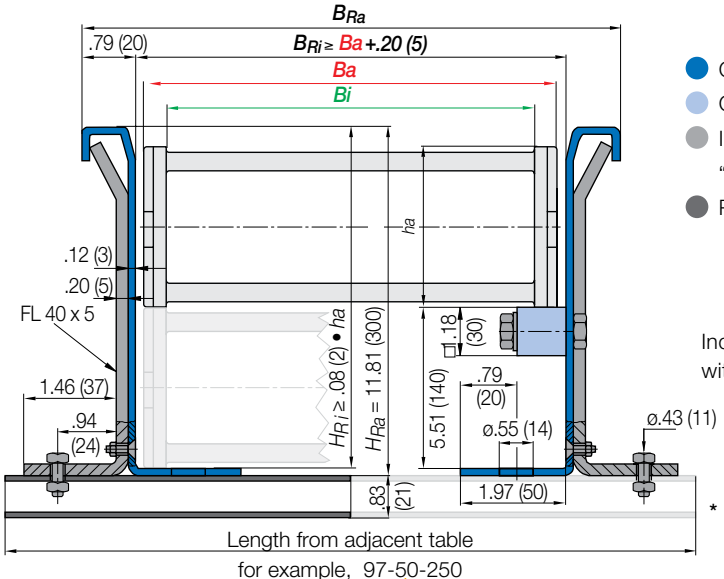
Required number of installation set:
= Number of guide trough components + 1
= 25 + 1 = 26
Part No. of the installation sets **97-50-XXX**
Example:
97-50-400 for 15.75 (400 mm) long profile rail



Left: Guide trough with glide bars
Right: Guide troughs without glide bars



Installation sets as section connectors



- Guide trough
- Glide bars
- Installation set "Basic"
- Profile rail

Individual attachment without profile rail

* Specialized guide trough available upon request

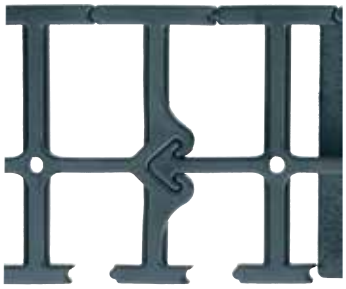
PDF: igus.com/e-chain-pdfs
Product information: igus.com/e-chains





igus®
System T3
E3
E6-1
E6

T3



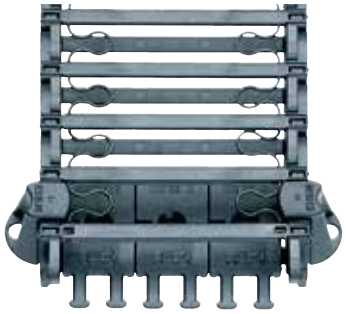
System T3 - Highly flexible, low vibration band chain without pin and bore connection

- For short strokes with extreme demands in low noise and dynamics
- For high speed and high accelerations
- Very low weight
- Hardly any abrasion
- Cost efficient, 3-piece e-chain®

System T3 ➤



E3



System E3 - Elastic, dampening connector strip replaces pins and bores

- Extremely low noise e-chain® for small spaces with modular 3-piece link design
- 3 sizes available
- Inner heights: .39” (10 mm), .59” (15 mm), .87” (22 mm)

System E3 ➤



E6-1



System E6-1 - Connector replaces pins and bores

- Low noise - from a noise level of 32 dB(A)
- 30% Lighter than the System E6
- 4 sizes available
- Inner heights: 1.14” (29 mm), 1.38” (35mm), 1.57” (40 mm), 2.05” (52 mm)

System E6 ➤



E6



System E6 - Connector replaces pins and bores

- Extremely low noise e-chain® with high stability and tensile strength
- Modular 6-piece link design
- 5 sizes available
- 3 types available (e-chain®, E-Tube, Light version
- Inner heights: 1.14” (29 mm), 1.57” (40 mm), 2.05” (52 mm), 2.44” (62 mm), 3.15” (80 mm)

System E6 ➤



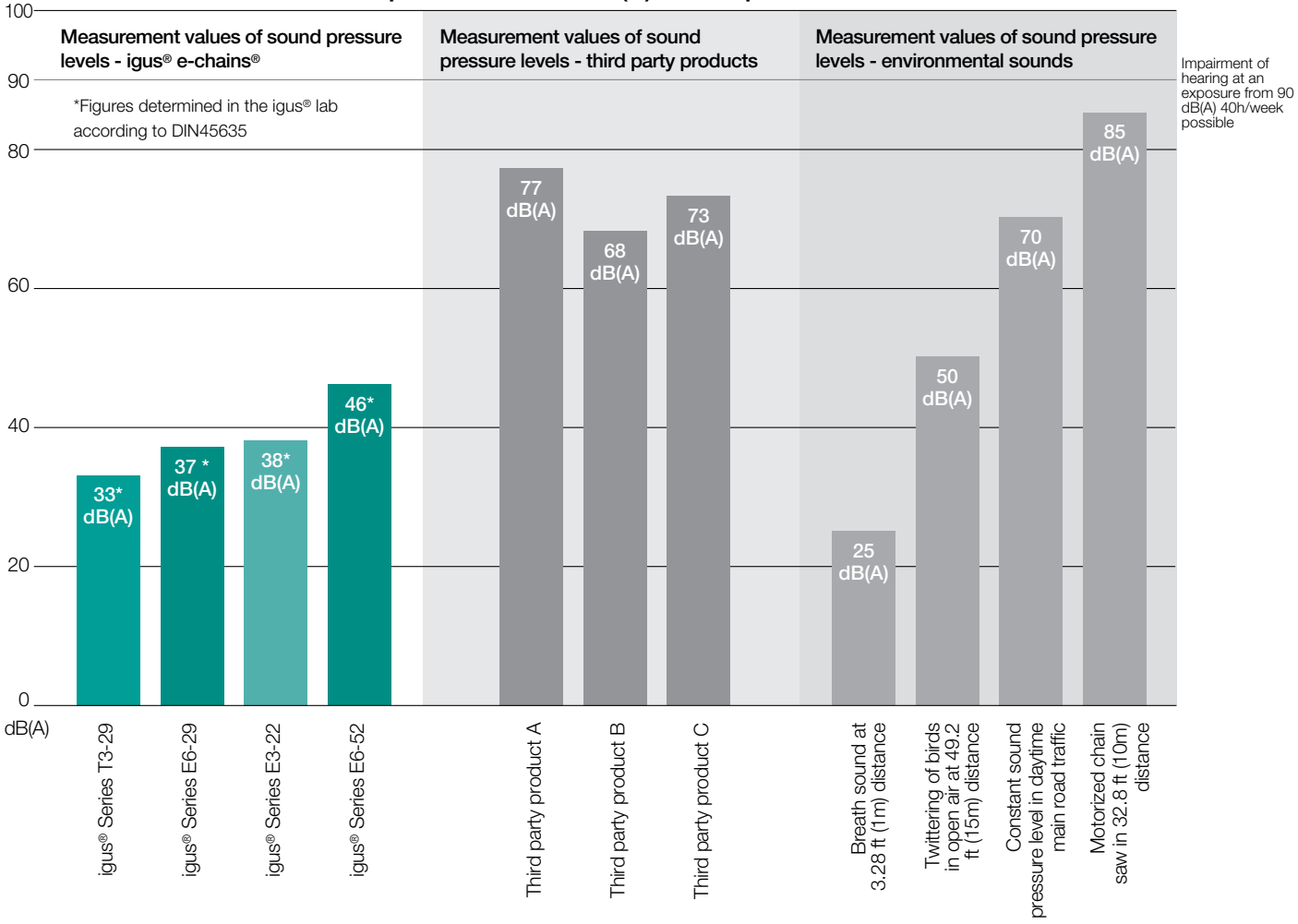
e-chain system® T3, E3, E6-1 and E6

The extremely low noise igus® e-chain® - System E3, System E6 and System T3

The e-chain® of the E3, E6 and T3 Series have extremely good low noise and vibration performance. The special, abrasion-resistant spring elements replace the conventional pin and bore connection of the chain links enabling the low noise and low vibration operation of the e-chain®. Due to the special fastening system, these e-chains® have minimal wear and abrasions and are therefore suitable for cleanroom applications.

Another advantage of the connector is that in the application of an electrically conductive material it can guarantee constant conductivity value. The e-chain® Series E3, E6 and T3 offer an extensive accessories package and are available in many sizes off the shelf.

Measurement values of sound pressure levels dB(A) in comparison



Results of measurement

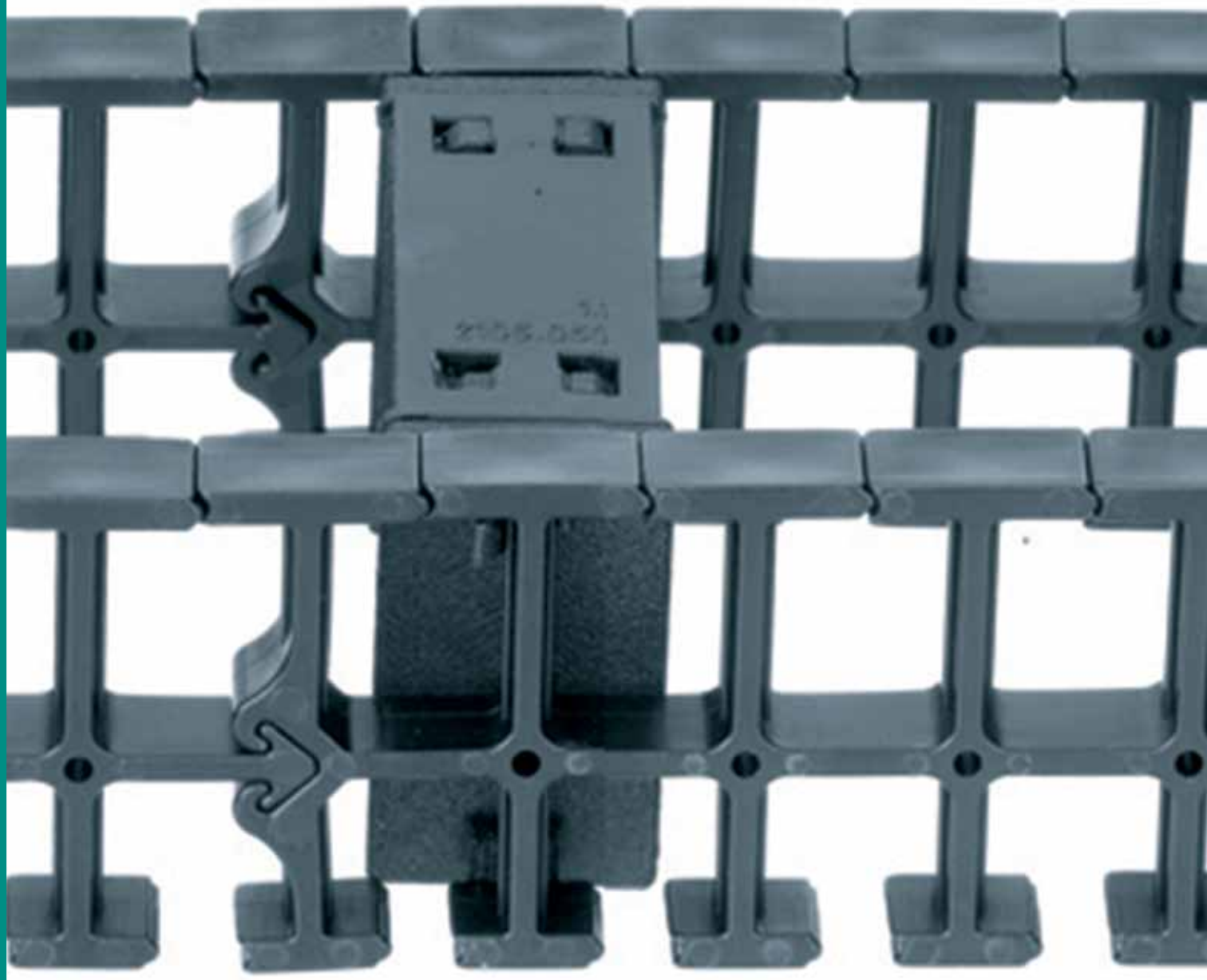
Particle generation measurement:
For a total of 100 minutes, the air around the moving test object is analyzed for particles.
Result: NO particles larger ≥ 0.2 µm were measured.

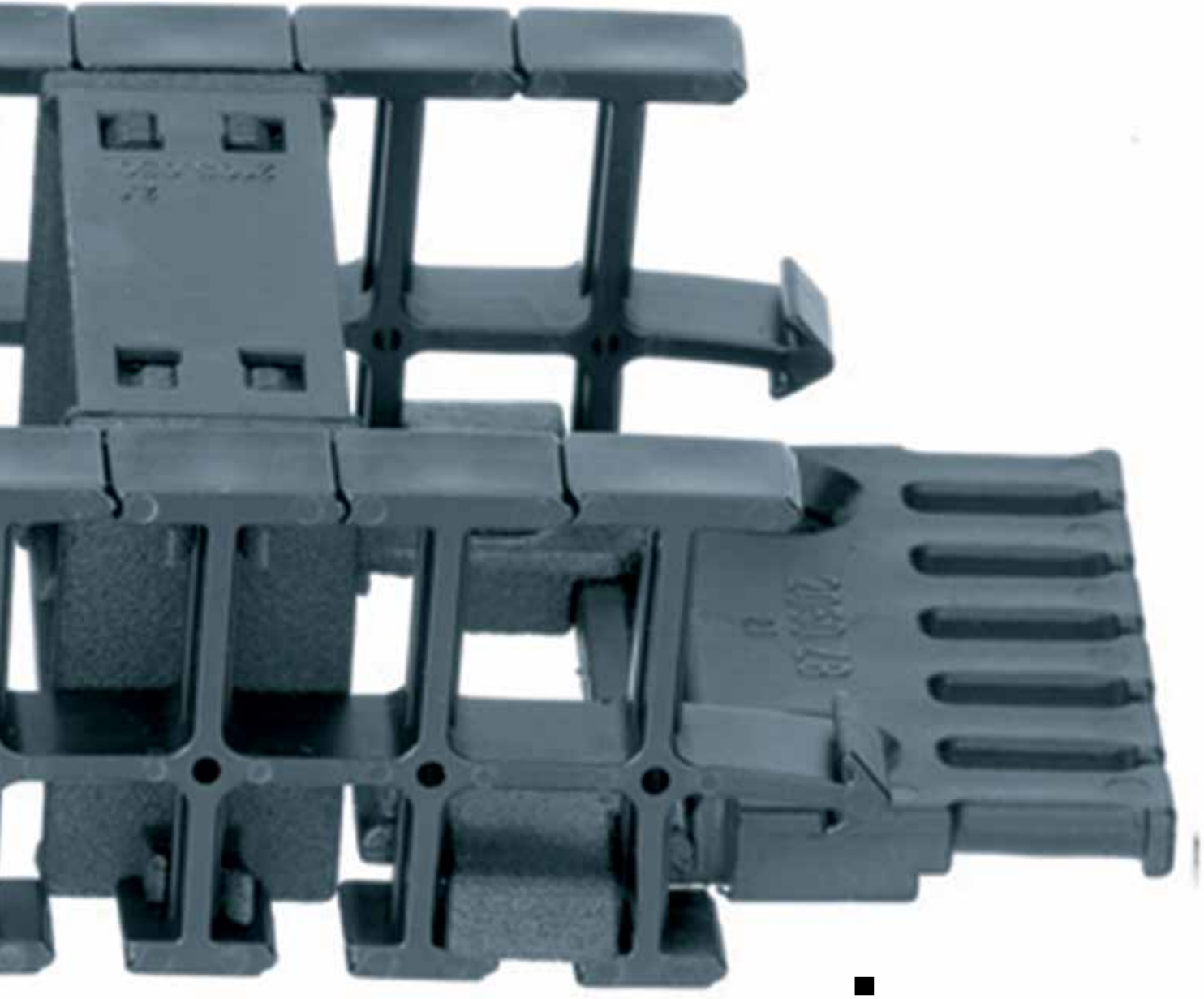
Result according to DIN EN ISO 14644-1	e-chain® Series	Report No.	Speed ft/s (m/s)
ISO Class 1	E3-15-040-075-0	IG0704-400	1.64 / 3.28 / 6.56 (0.5 / 1.0 / 2.0)
ISO Class 1	E6-29-060-150-CR	IG0704-400	1.64 / 3.28 / 6.56 (0.5 / 1.0 / 2.0)
ISO Class 1	E61-29-050-075-0	IG1303-640-1	1.64 / 3.28 / 6.56 (0.5 / 1.0 / 2.0)
ISO Class 2	T3-29-050-038-0	IG1303-640-1	1.64 / 3.28 / 6.56 (0.5 / 1.0 / 2.0)
ISO Class 3	E6-29-060-150-0	IG0704-400	1.64 / 6.56 (0.5 / 2.0)

Fraunhofer TESTED® DEVICE IPA igus GmbH Energy chain E61.29.50.075.0.CR Report No. IG 1303-640

e-chain systems® E6-1, E3, E6.29.CR certified according to **DIN EN ISO 14644-1 Class 1**, by the Fraunhofer IPA Institute.







igus®
System T3
Highly flexible & low-vibration

System T3 - Highly flexible, low vibration band chain

The T3-System combines low-noise operation, low sound level, simple installation and economy. The side plates that can be plugged into each other replace the conventional pin and bore connection and prevent relative movements between the joints, giving an almost complete freedom from wear. By the unique geometrical shape of the T-band, hardly any polygon effect is generated in operation. The T-band operates in a very smooth arc giving extremely low vibration and noise. In order to reduce the manufacturing and installation costs, the T-band is mounted in a length of 8 chain links. Due to its low mass, the igus® T-band, combined with high speeds and accelerations, is suitable for applications with low fill weights and short strokes.

Typical industries and applications

- Printer and plotter
- Cleanroom applications
- Production and processing of semiconductors
- Optics
- Automatic insertion machines
- Measuring technology



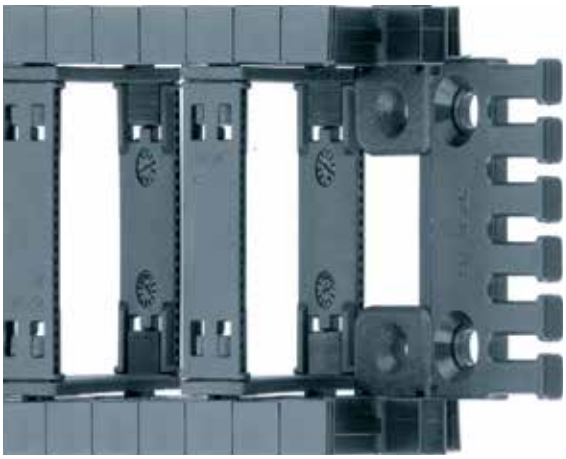
igus® tests at 3.28 ft (1 m) measuring distance: = 33 dB(A) for T3-29-050-038-0 at v = 3.28 ft/s (1 m/s and 26.5 dB(A) basic sound level

Clean-Room Cleanroom test upon request

T3 system on the Z-axis in the positioning system. It has very low vibration and is quiet.



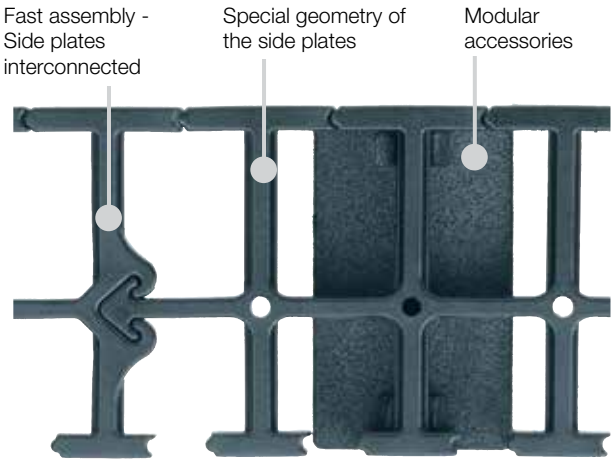
Testing facility at the igus® laboratory System T3 - ideal for high accelerations and short strokes



igus® System T3 T band chain - Inner height 1.14” (29 mm)

Next Page ➤ Find selection table and assembly instructions

e-chain system® T3
Selection Guide



T3: e-chain® band for highly dynamic applications

In the development of the 3-piece, T-shaped band chain “T3”, the main focus was on minimum operational noise with lowest cost. This is achieved by the side-plate band consisting of 8 chain links in one piece, as well as the use of existing components of the popular E6 range. Due to the short pitch of the links, the curve section of the e-chain remains fairly round. The omission of a pin and bore connection means the T3 band chain features extremely low abrasion and wear and hence is good for cleanroom applications.

- Extremely low noise and low vibration
- Low-priced e-chain® for simple applications
- For high speeds and accelerations
- Very low weight
- Hardly any abrasion
- For short strokes
- Accessories: Separators, integrated strain relief, mounting brackets
- You can find more technical data about the material, chemical resistance, temperatures ➤ **Design, Section 1**

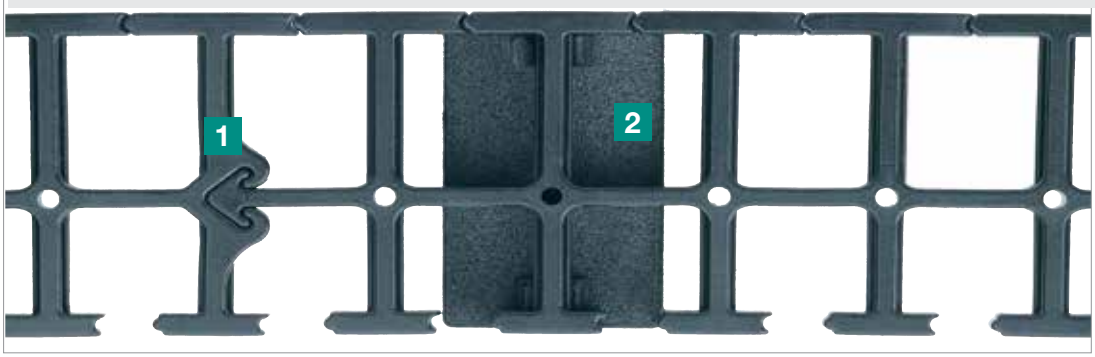
Series	Inner height *hi* in. (mm)	Inner width *Bi* in. (mm)	Outer width *Ba* in. (mm)	Outer height *ha* in. (mm)	Bending radius *R* in. (mm)
T3-29	1.14 (29)	1.18-5.51 (30-140)	2.17-6.50 (55-165)	1.38 (35)	1.50 (038)

Available from stock. Orders ship as early as today.*

*On average 90% of orders ship the same day..

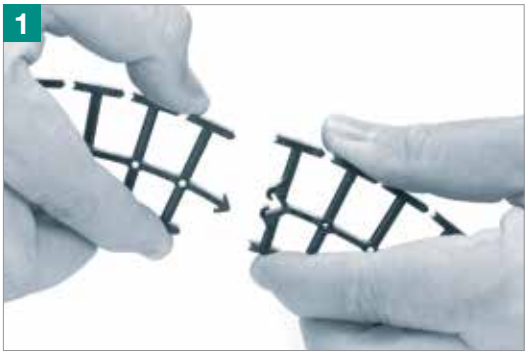
e-chain system® T3
Assembly Instructions

System T3 - 3-piece e-chain®

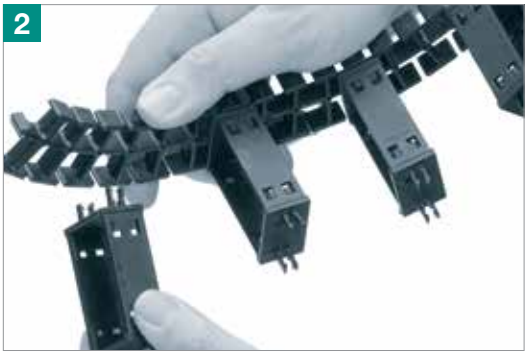


The abbreviation “T3” stands for a T-shaped E band, which consists of three basic elements:
❶ 2 side-plate bands (left/right) ❷ Separator element including separators

System T3 - Assembling



Side plates to be plugged into each other



Clip-on “interior separation clips”



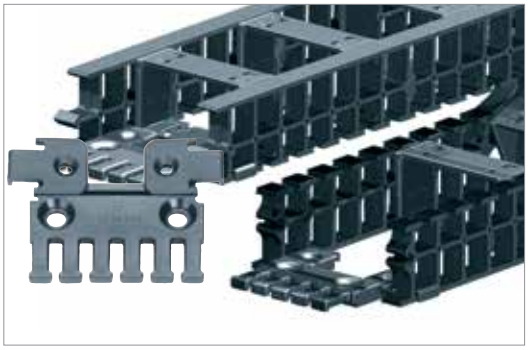


System T3 enables quick installation times. The side plates can be simply plugged in

System T3 - Interior Separation and Strain Relief



Separators for dividing the chain cross section
from the proven and tested E6 range (E6-29)



Universal strain relief through optional mounting angle.
You can attach the e-chain® at the fixed end, if necessary

e-chain system® T3
Series T3-29

Price Index

Series T3-29

Special Features / Options

Extremely low noise
Test results upon request

Cleanroom test upon request

Assembly Tips



Fast assembly due to side link strip

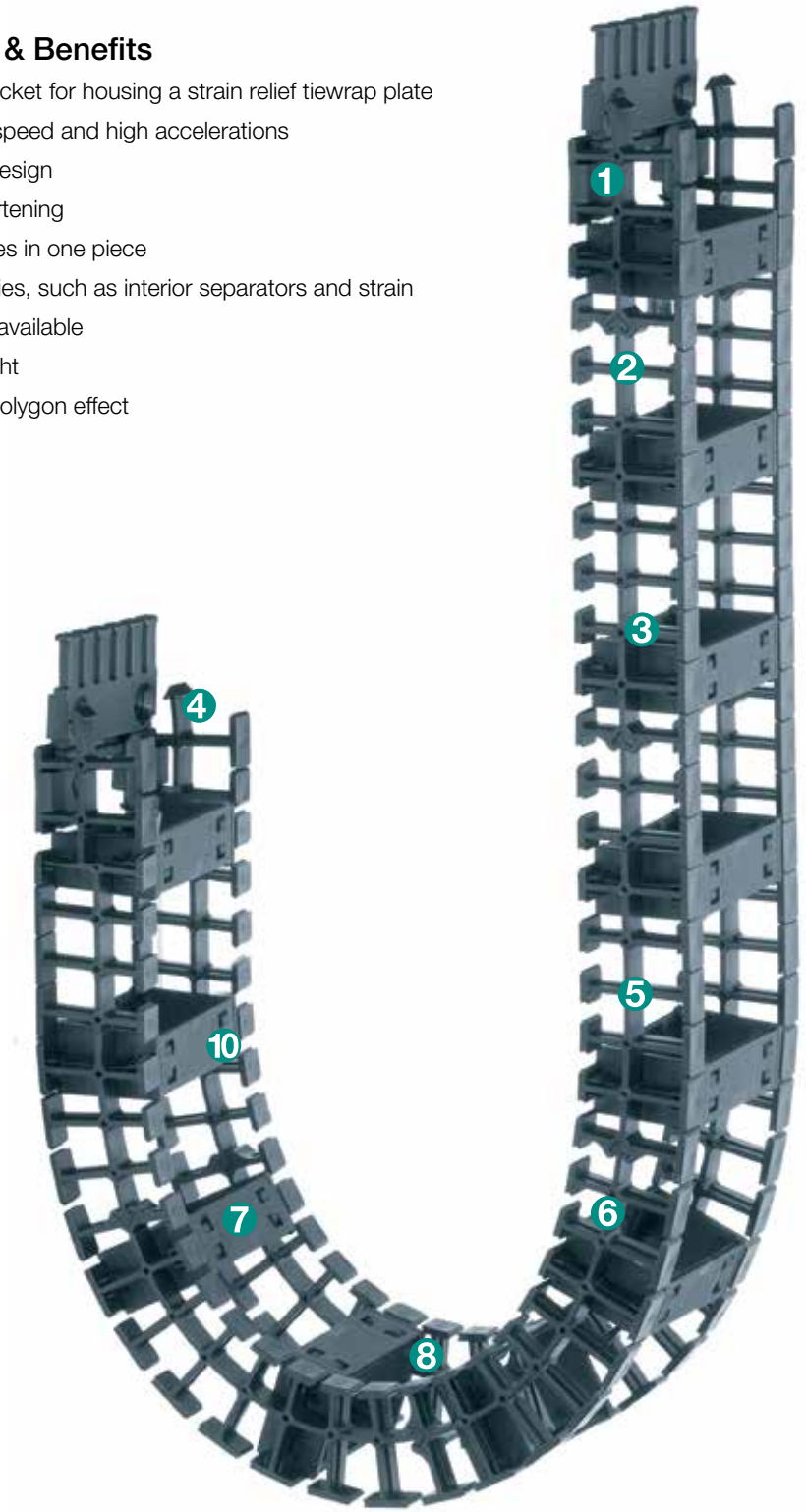
Usage Guidelines

- At very high speeds and/or accelerations
- If a very light e-chain® is required
- If a particularly low-cost e-chain® is required
- For small bending radii and small spaces
- If easy filling and assembly is required
- Minimal abrasion (e.g. cleanroom applications)

- When an e-chain® is required for more fill weight
  ➤ **Series E6-29**
- When an enclosed e-chain® is required for low noise operation
  ➤ **Series R6-29**

Features & Benefits

1. Angle bracket for housing a strain relief tiewrap plate
2. For high speed and high accelerations
3. 3-piece design
4. Easy shortening
5. Side plates in one piece
6. Accessories, such as interior separators and strain relief are available
7. Low weight
8. Minimal polygon effect



Order Example: Complete e-chain®

Please indicate chain length or number of links. Example:

3.28 ft (1 m) **T3-29-050-038-0**	**e-chain®**
With 2 separators **29-1-1** assembled every 2nd link	**Interior Separation**
1 Set **T3-29-050-12**	**Mounting Bracket**

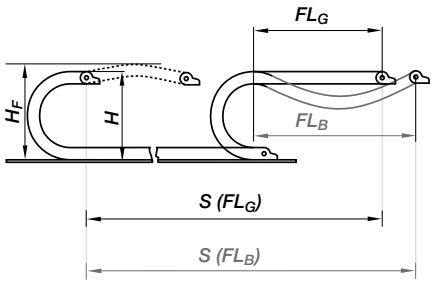
e-chain system® T3
Series T3-29
Installation Dimensions

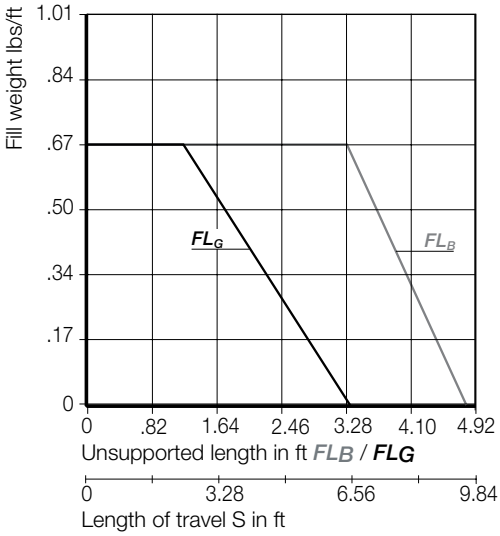
Short travel, unsupported length

● FL_B = unsupported with permitted sag

● FL_G = unsupported with straight upper run

Further information ➤ Design, Chapter 1



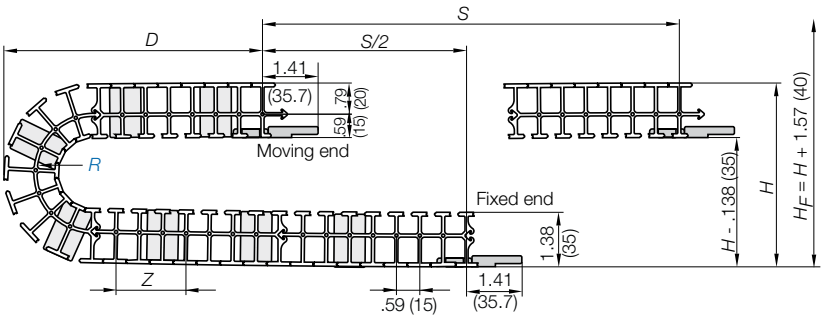


Short Travels - Unsupported

Unsupported e-chains® feature positive camber over short travels. This must be accounted for when specifying the clearance height. Please refer to **Installation dimensions** for further details.

Legend

S = Length of travel
R = Bending radius
H = Nominal clearance height
D = Overlength e-chain® radius in final position
K = π • R + *safety buffer*
H_F = Required clearance height



Pitch per link: = .59" (15 mm)
Links per ft (m): = 20 (67)
For center mount applications:
Chain length = $_{S}/_{2}$ + K

The required clearance height: H_F = **H + 1.57 in. (40 mm)** (with 0.67 lbs/ft (1.0 kg/m) fill weight.
Please consult igus® if space is particularly restricted.

R	**1.50 (038)**
H	8.50 (216)
D	4.57 (111)
K	8.27 (210)

Speed / acceleration FL_G	max. 65.6 ft/s (20 m/s) / max. 656 ft/s² (200 m/s²)
Speed / acceleration FL_B	max. 9.84 ft/s (3 m/s) / max. 19.69 ft/s² (6 m/s²)
Gliding speed / acceleration (maximum)	upon request
Permitted temperature	-40°F (-40°C) up to +158°F (+70° C)
Flammability Class	VDE 0304 IIC UL94 HB

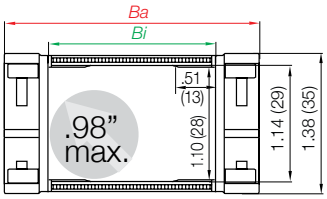
Technical Data

Details of material properties
➤ **Design, Chapter 1**

PDF: igus.com/e-chain-pdfs
Product information: igus.com/e-chains

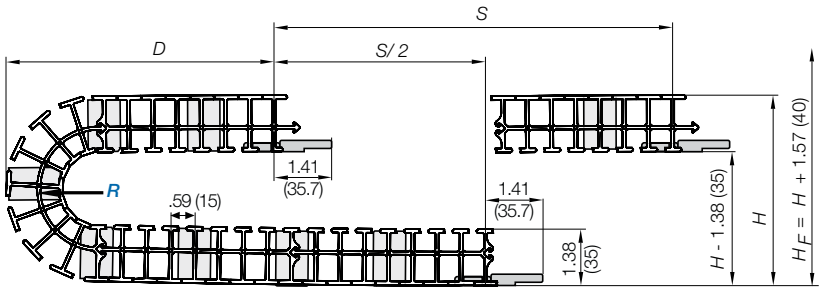
e-chain system® T3
Series T3-29
Installation Dimensions

Series T3-29 - e-chain® with crossbars every other link









Part Number Structure

T3-29-100-038-0

- Color - Black
- Bending radius
- Width
- Series

Supplement part number with required radius. Example: T3-29-100-038-0
Pitch: .59 in. (15 mm) per link links/ft (m) = 20 (67)

Part Number	Bi in. (mm)	Ba in. (mm)	Weight lbs/ft (kg/m)
T3-29-030-□-0	1.18 (30)	2.16 (55)	≈ 0.27 (0.40)
T3-29-040-□-0	1.57 (40)	2.56 (65)	≈ 0.28 (0.42)
T3-29-050-□-0	1.97 (50)	2.95 (75)	≈ 0.30 (0.44)
T3-29-060-□-0	2.36 (60)	3.35 (85)	≈ 0.31 (0.46)
T3-29-070-□-0	2.76 (70)	3.74 (95)	≈ 0.32 (0.48)
T3-29-080-□-0	3.15 (80)	4.13 (105)	≈ 0.34 (0.50)
T3-29-090-□-0	3.54 (90)	4.53 (115)	≈ 0.34 (0.51)
T3-29-100-□-0	3.94 (100)	4.92 (125)	≈ 0.36 (0.53)
T3-29-110-□-0	4.33 (110)	5.31 (135)	≈ 0.37 (0.55)
T3-29-120-□-0	4.72 (120)	5.71 (145)	≈ 0.38 (0.57)
T3-29-140-□-0	5.51 (140)	6.50 (165)	≈ 0.40 (0.59)

Choose from the radii below for all of the above sizes
Radius (mm) Example: T3-29-100-038-0

038	
R	1.50 (038)
H	8.50 (216)
D	4.57 (111)
K	8.27 (210)

Interior separation elements

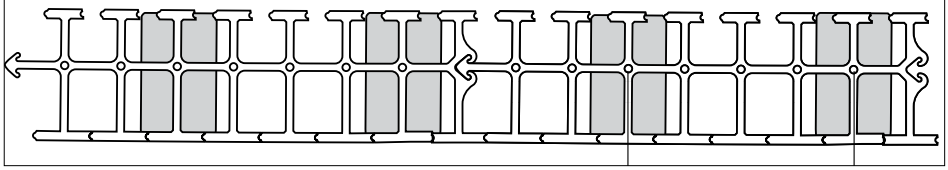
Distance "Z" for the interior separation elements of the T3 e-chain®

Note: The first and last chain links should not have interior separation elements! As a standard, crossbars are mounted on every 4th chain link!

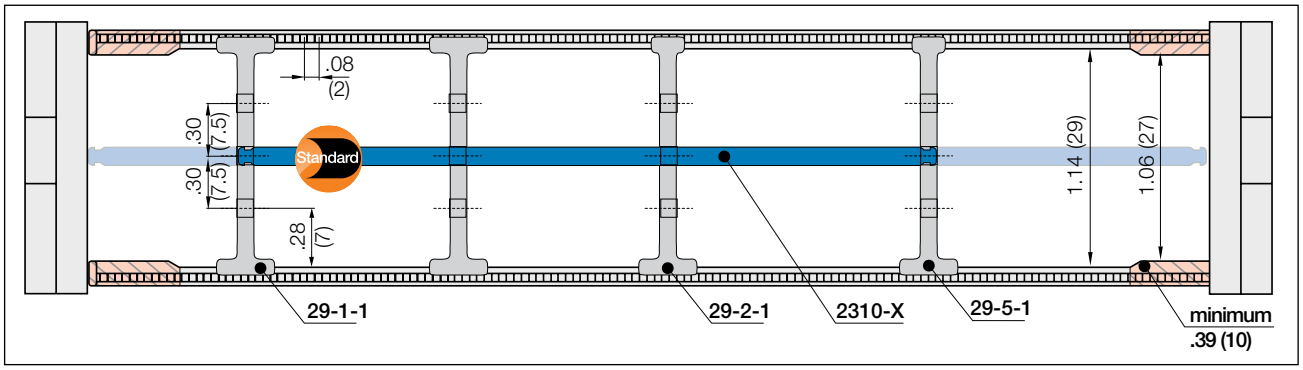
Part No. T3-29-100-038-0

For other distances, e.g. every 6th chain link, change the part number as follows:

Part No. T3-29-100-038-Z6-0

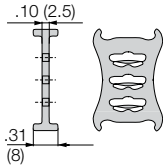


e-chain system® T3
Series T3-29
Interior Separation - New Generation



Note: Please maintain a lateral spacing of .39" (10 mm) between the separators and the side links.
In the standard configuration separators are assembled every 2nd e-chain® link



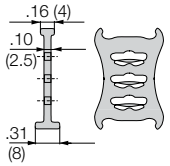


Separator, wide base

Unassembled	**Part No. 29-1**
Assembled	**Part No. 29-1-1**

- **Standard separator 29-1 for all applications**
  Separator with wide base for maximum locking strength and safe standing in e-chains®.



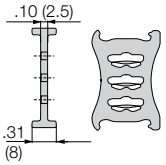


Separator, narrow head

Unassembled	**Part No. 29-2**
Assembled	**Part No. 29-2-1**

- **Separator 29-2**
  For even faster installation
  Firm hold to one side with a wide base, narrow on opposed side for easy cable assembly (slight grip)





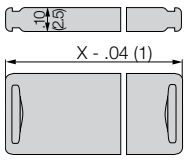
Separator, narrow base

Unassembled	**Part No. 29-5**
Assembled	**Part No. 29-5-1**

- **Notch separator 29-5**
  Notch separator for exact positioning in e-chains®. Recommended for side mounted applications

Lockable full-width shelves - for the standard interior separation





Full width shelf, lockable

Unassembled	**Part No. 2300-X**
Assembled	**Part No. 2310-X**

- **Full width shelf, lockable**
  Full-width shelf locks safely into the separators on both ends, fixed width possible. Separators can be moved freely over the shelf in horizontal direction. Shelves can be arranged at 3 different heights.

Width X in. (mm)	Part No. Unassembled	Part No. Assembled	Width X in. (mm)	Part No. Unassembled	Part No. Assembled	Width X in. (mm)	Part No. Unassembled	Part No. Assembled
0.59 (015)	**2300-015**	**2310-015**	2.36 (060)	**2300-060**	**2310-060**	3.43 (087)	**2300-807**	**2310-087**
0.98 (025)	**2300-025**	**2310-025**	2.44 (062)	**2300-062**	**2310-062**	3.54 (090)	**2300-090**	**2310-090**
1.18 (030)	**2300-030**	**2310-030**	2.56 (065)	**2300-065**	**2310-065**	3.94 (100)	**2300-100**	**2310-100**
1.50 (038)	**2300-038**	**2310-038**	2.76 (070)	**2300-070**	**2310-070**	4.06 (103)	**2300-103**	**2310-103**
1.57 (040)	**2300-040**	**2310-040**	2.95 (075)	**2300-075**	**2310-075**	4.33 (110)	**2300-110**	**2310-110**
1.97 (050)	**2300-050**	**2310-050**	3.03 (077)	**2300-077**	**2310-077**	4.72 (120)	**2300-120**	**2310-120**
2.24 (057)	**2300-057**	**2310-057**	3.15 (080)	**2300-080**	**2310-080**	4.92 (125)	**2300-125**	**2310-125**

Separator with integrated strain relief



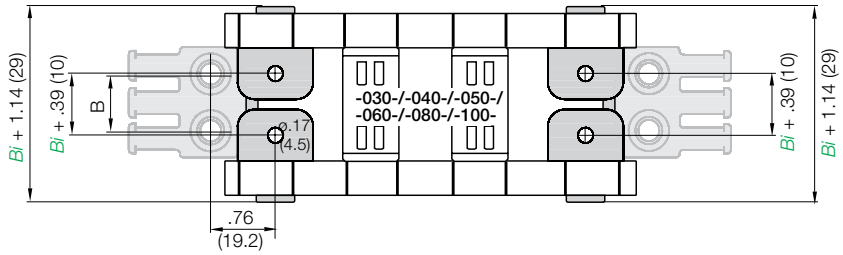
Strain relief separator Part No. E6-29-02-Z can be integrated into the mounting bracket and can be placed there at any point of the e-chain®. It combines strain relief and interior separation, it can be installed on the first or last e-chain® link and is easy to assemble without any screws.
For more information ➤ **Chapter 10, Strain Relief**

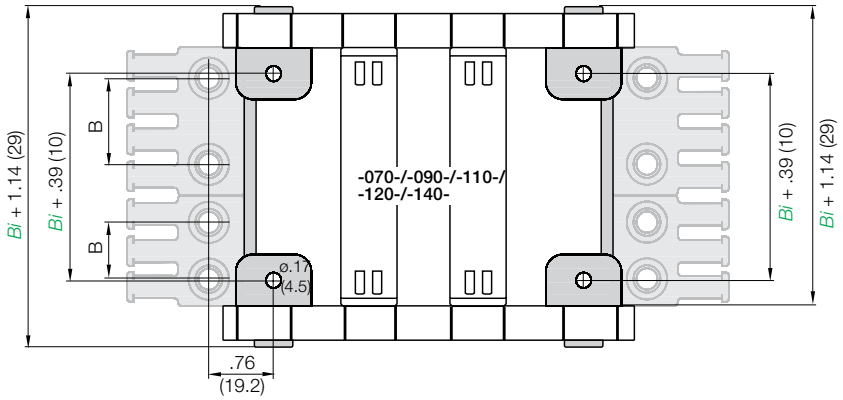
PDF: igus.com/e-chain-pdfs
Product information: igus.com/e-chains

e-chain system® T3
Series T3-29
Mounting Angle

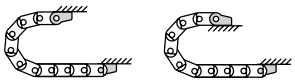
Moving end
T3-29...2

Fixed end
T3-29...1

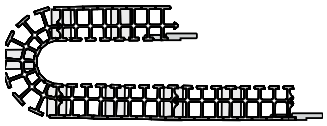


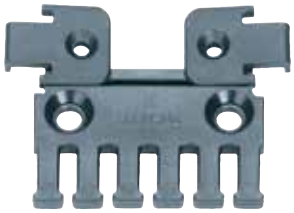






Possible installation configurations -





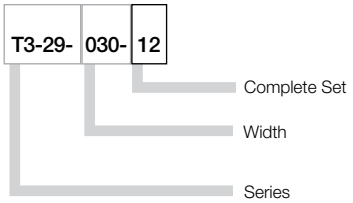
Mounting angle with strain relief



Mounting angle, single

For Series	Part No. Full Set with tiewrap plate	Part No. Full Set without tiewrap plate	*Bi* in. (mm)	Dimension in. (mm)	Number of teeth
T3-29-030	**T3-29-030-12PZ**	**T3-29-030-12**	1.18 (30)	.59 (15)	3
T3-29-040	**T3-29-040-12PZ**	**T3-29-040-12**	1.57 (40)	.79 (20)	4
T3-29-050	**T3-29-050-12PZ**	**T3-29-050-12**	1.97 (50)	1.18 (30)	5
T3-29-060	**T3-29-060-12PZ**	**T3-29-060-12**	2.36 (60)	1.57 (40)	6
T3-29-070	**T3-29-070-12PZ**	**T3-29-070-12**	2.76 (70)	1.38 (15+20)	7
T3-29-080	**T3-29-080-12PZ**	**T3-29-080-12**	3.15 (80)	2.36 (60)	8
T3-29-090	**T3-29-090-12PZ**	**T3-29-090-12**	3.54 (90)	1.97 (20+30)	9
T3-29-100	**T3-29-100-12PZ**	**T3-29-100-12**	3.94 (100)	3.15 (80)	10
T3-29-110	**T3-29-110-12PZ**	**T3-29-110-12**	4.33 (110)	2.75 (30+40)	11
T3-29-120	**T3-29-120-12PZ**	**T3-29-120-12**	4.72 (120)	3.14 (40+40)	12
T3-29-140	**T3-29-140-12PZ**	**T3-29-140-12**	5.51(140)	3.93 (60+40)	14

Part Number Structure

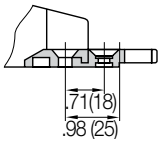


Full set, for both ends:
T3-29- 030- 12 Full set, **both fixed and moving end**
Single-part order:
T3-29 - 030- 1 Mounting bracket **fixed end**
T3-29 - 030- 2 Mounting bracket **moving end**

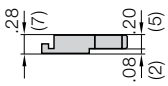
e-chain system® T3
Series T3-29
Strain Relief, Additional installation options

Strain Relief

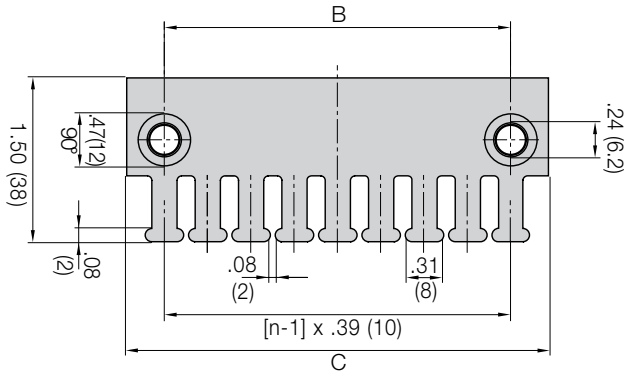




Shown assembled



Single tiewrap plate



igus® chainfix tiewrap plate as individual part

Tiewrap Plates	n Number of Teeth	Dimension C	Dimension B	
2020-ZB	3	1.18 (30)	.59 (15)	
2030-ZB	4	1.57 (40)	.79 (20)	
2040-ZB	5	1.97 (50)	1.18 (30)	
2050-ZB	6	2.36 (60)	1.57 (40)	
2070-ZB	8	3.15 (80)	2.36 (60)	
2090-ZB	9	3.54 (90)	2.76 (70)	Use (2030-ZB + 2040-ZB)
2100-ZB	10	3.94 (100)	3.15 (80)	
2125-ZB	12	4.72 (120)	3.94 (100)	Use (2050-ZB + 2050-ZB)

● Also available:

Separator with integrated strain relief for use in the first or last chain link

(Part No. E6-29-02-Z)

➤ Strain Relief, Chapter 10



T3 e-chains® and modules for circular movement

T3 e-chains® for reverse bending radii (RBR)

Part No. T3-29-050-38/55, T3-29-050-38-75, T3-29-050-38-100, T3-29-050-38-150

- Several reverse bending radii available in 55, 75, 100, and 150
- Quiet
- Low wear
- Several mounting positions
- Complete line of interior separation for Series T3-29

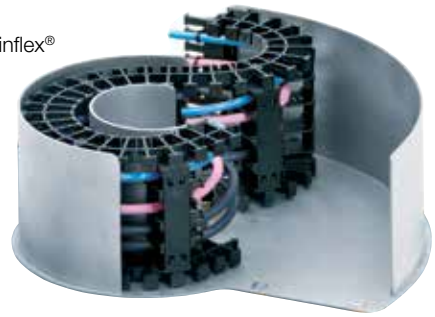


T3 RBR modules for reverse bending radii

Consists of 4 elements: T3 RBR e-chain®, guiding system, chainflex® motion cables, iglide® PRT slewing ring bearing

Part No. T3-29-070-038/055

- Compact guiding module
- Able to turn in inner and outer radius
- For high speeds
- Quiet
- Compact dimensions
- Several mounting positions
- Delivery upon request



E3.00.020
E3.00.020



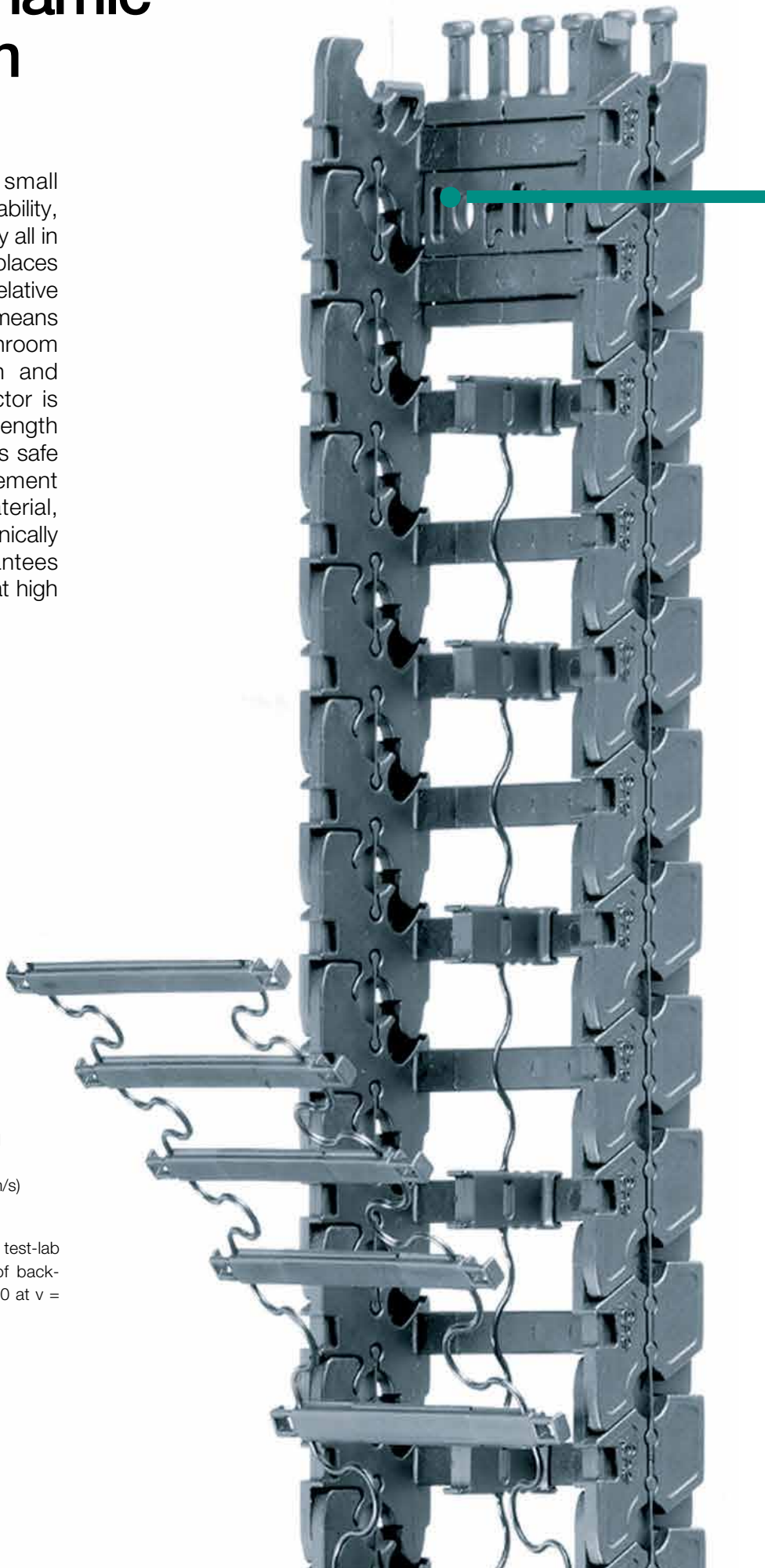
igus®
System E3
Highly dynamic & cleanroom compatible

E3 - Highly dynamic and cleanroom compatible

The igus® System E3 combines small pitches, smooth running, low noise, stability, easy assembly and economic efficiency all in one. The spring connector element replaces the pin and bore design and avoids relative movements between the joints. This means virtually no wear or abrasion for cleanroom applications. To reduce production and assembling costs, the spring connector is not mounted individually, but on a length of ten chain links. Another E3 option is safe performance. A modified spring element made of electrically conductive material, which connects the chain links mechanically and electrically, permanently guarantees constant electrical conductivity, even at high bending stress and in any position.

Typical industries and applications

- Semi-conductor manufacturing and handling
- Pick and place robots
- Optics
- Materials handling technology
- Measuring technology
- Printers and plotters
- Cleanroom environments
- General mechanical engineering



Fraunhofer IPA TESTED® DEVICE igus GmbH Energy chain / Cable systems Report No. IG 0704-400

IPA Qualification Certificate - Report IG0704-400:
ISO Class 1, according to Norm DIN EN ISO 14644-1
for System E3, Series E3-15-040-075-0 at
v = 1.64 ft/s (0.5 m/s), 3.28 ft/s (1 m/s), 6.56 ft/s (2 m/s)

38 dB(A) - Value determined at the igus® test-lab acc. to DIN 45635, with consideration of background noises, for Series E3-22-060-044-0 at v = 5.91 ft/s (1.8 m/s)

iF-Design Award 2005

Special equipment: Electrically conductive ESD/ATEX version upon request

Long-term tests in our acoustics laboratory at a speed of 5.91 ft/s (1.8 m/s) and an acceleration of 9.84 ft/s² (3 m/s²) showed reductions of 19-20 dB(A) compared to conventional e-chains®.



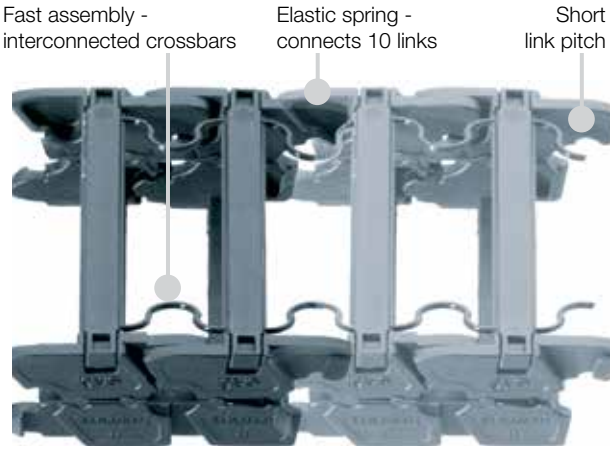
Light-weight and super-silent in small spaces - System E3



During long-term tests the System E3 with the spring band connector easily passes 15 million cycles at a bending radius of 1.73” (44 mm) and an acceleration of 4 g

Next Page ➤ Find selection table and assembly instructions

e-chain system® E3
Selection Guide



E3 = e-chains® with 3 different elements in one link:

- U-shaped link body
- Spring element
- Interconnected crossbars

E3: System for highly dynamic applications

Cycle times in automation get shorter, while demands for low noise and low vibration levels are increasing. For the broad range of small size e-chain® applications, igus® now introduces the System E3, that fully meets those requirements:

- Extremely low-noise operation - max. 38 dB(A)
- Elastic, dampening connector strip replaces pins and bores
- Modular 3-piece link design
- Cost effective cross bar, separator and connector modules
- Fast and easy cable access due to zipper opening mechanism
- Good unsupported strength due to solid, interlocking side links
- Easy lengthening and shortening
- Also suits flat cables
- Accessories: Separators, integrated strain relief, mounting brackets
- You can find more technical data about the material, chemical resistance, temperatures ➤ **Design, Chapter 1**

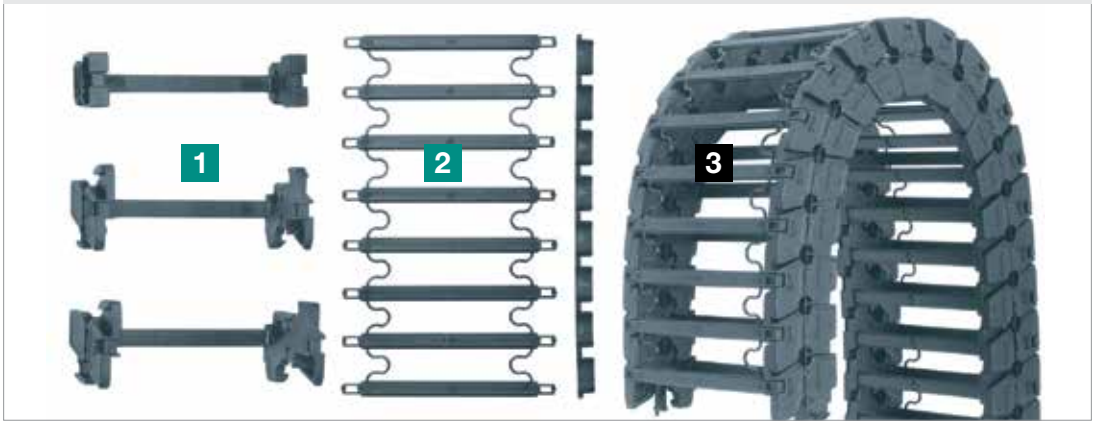
Series	Inner height *hi* in.	(mm)	Inner width *Bi* in.	(mm)	Outer width *Ba* in.	(mm)	Outer height *ha* in.	(mm)	Bending radius *R* in.	(mm)
E3-10	.39	(10)	.79-2.36	(20-60)	1.26-2.83	(32-72)	.59	(15)	.59-1.89	(15-48)
E3-15	.59	(15)	.79-2.36	(20-60)	1.26-2.83	(32-72)	.79	(20)	1.26-2.95	(32-75)
E3-22	.87	(22)	.79-2.36	(20-60)	1.26-2.83	(32-72)	1.06	(27)	1.75-2.95	(44-75)

Available from stock. Orders ship as early as today.*

*On average 90% of orders ship the same day..

e-chain system® E3
Assembly Instructions

System E3 - 3-piece e-chain®



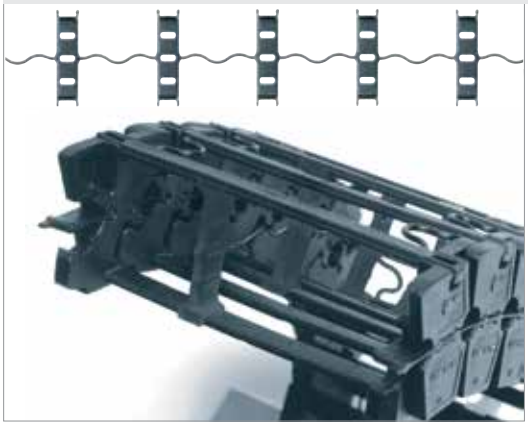
The abbreviation “E3” stands for an e-chain® consisting of three basic elements:
❶ e-chain® link body ❷ Interconnected crossbars ❸ Separator module

System E3 - Opening and Closing



Interconnected crossbars for quick and easy installation - This e-chain system®
allows faster assembling times. Opening and closing the e-chain® is made easy by Interconnected crossbars

System E3 - Interior Separation and Strain Relief



Vertical separators on a band divide carrier space -
Five separators on one thread are simultaneously
mounted on the crossbars



The universal strain relief can be individually matched
to the chain width. You can fix the e-chain® on the
fixed end with brackets (option)

e-chain system® E3
Series E3-10

.39

Price Index

Series E3-10

Special Features / Options

*Noise test values: max. 38dB(A) - Values determined at the igus® test lab according to DIN 45635 (v = 5.91 ft/s

IPA Classification: Report IG0704-400: ISO Class 1, according to standard DIN EN ISO 14644-1 for E3, Series E3-15-040-075-0 (at v = 1.64 ft/s, 3.28 ft/s, 6.56 ft/s)

Special equipment: Electrically conductive ESD/ATEX version upon request

Assembly Tips



Rapid assembly time with interconnected crossbars

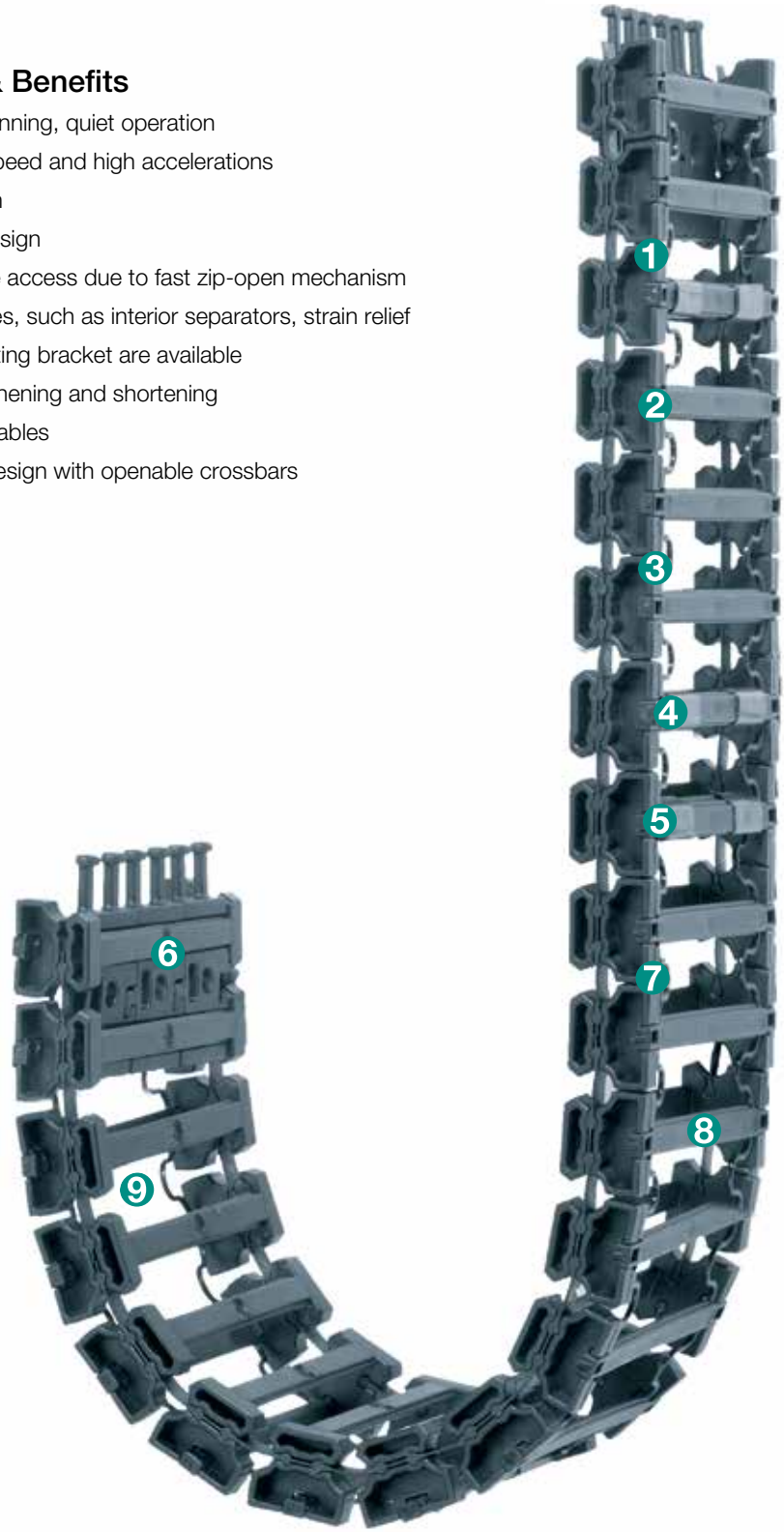
Usage Guidelines

- If a low noise, vibration-free version is required
- For very high speeds and/or accelerations (theoretically up to 100G or 3,281 ft/s (1000 m/s)
- Hard-wearing e-chain® (more than 50 million cycles with minimal abrasion)
- If a very light e-chain® is required (up to 40% lighter than comparable E2 e-chain®
- For the use of flat cables
- For small bending radii and small spaces
- If easy filling and assembly is required
- Minimal abrasion (e.g. cleanroom applications)

- If a particularly low-cost snap-open solution is required
  ➤ **Series E06/Z06 E-Z Chain**
- If a simple, non snap-open e-chain® is required
  ➤ **Series 05 E2 micro**

Features & Benefits

1. Smooth running, quiet operation
2. For high speed and high accelerations
3. Small pitch
4. 3-piece design
5. Easy cable access due to fast zip-open mechanism
6. Accessories, such as interior separators, strain relief
6. and mounting bracket are available
7. Easy lengthening and shortening
8. Suits flat cables
9. Modular design with openable crossbars



Order Example: Complete e-chain®

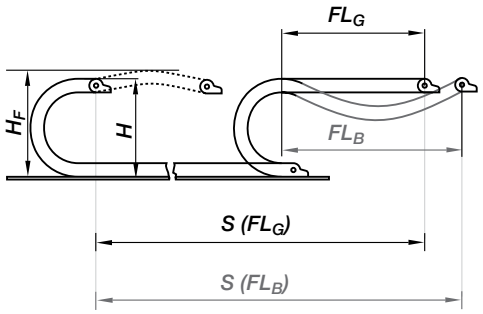
Please indicate chain length or number of links. Example:

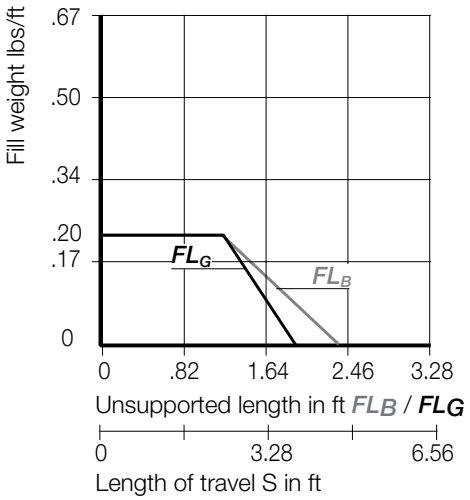
3.28 ft (1 m) **E3-10-060-015-0**	**e-chain®**
With 2 separators **E3-10-11** assembled every 2nd link	**Interior Separation**
1 Set **E3-10-060-12**	**Mounting Bracket**

Short travel, unsupported length

- FL_B = unsupported with permitted sag
- FL_G = unsupported with straight upper run

Further information ➤ Design, Chapter 1



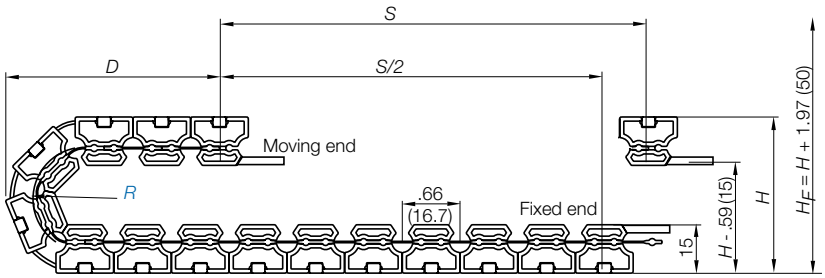


Short Travels - Unsupported

Unsupported e-chains® feature positive camber over short travels. This must be accounted for when specifying the clearance height. Please refer to **Installation dimensions** for further details.

Legend

S = Length of travel
R = Bending radius
H = Nominal clearance height
D = Overlength e-chain® radius in final position
K = π • R + *safety buffer*
H_F = Required clearance height



Pitch per link: = .66" (16.7 mm)
Links per ft (m): = 18.29 (60)
For center mount applications:
Chain length = $_{S}/_{2}$ + K

The required clearance height: ***H_F = H* + 1.97 in. (50 mm)** (with 0.7 lbs/ft (0.1 kg/m) fill weight.
Please consult igus® if space is particularly restricted.

R	.59 (015)	1.10 (028)	1.50 (038)	1.89 (048)
H	2.36 (60)	3.39 (86)	4.17 (106)	4.96 (126)
D	1.97 (50)	2.48 (63)	2.87 (73)	3.27 (83)
K	3.35 (85)	4.92 (125)	6.10 (155)	7.28 (185)

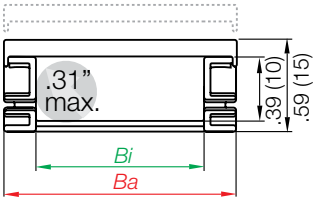
Speed / acceleration FL_G	max. 65.6 ft/s (20 m/s) / max. 656 ft/s² (200 m/s²)
Speed / acceleration FL_B	max. 9.84 ft/s (3 m/s) / max. 19.69 ft/s² (6 m/s²)
Gliding speed / acceleration (maximum)	upon request
Permitted temperature	-40°F (-40°C) up to +158°F (+70° C)
Flammability Class	VDE 0304 IIC UL94 HB

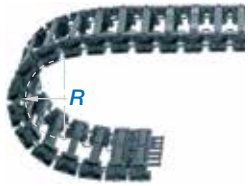
Technical Data

Details of material properties
➤ **Design, Chapter 1**

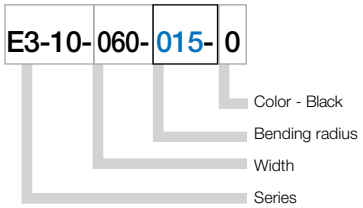
PDF: igus.com/e-chain-pdfs
Product information: igus.com/e-chains

Series E3-10 - Snap-open along the outer radius

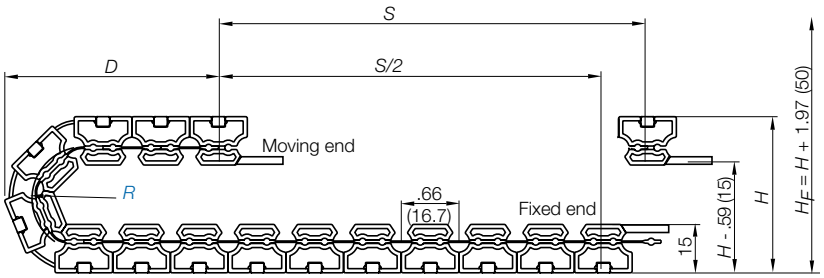




Part Number Structure







Supplement part number with required radius. Example: E3-10-060-[015]-0
Pitch: .66 in. (16.7 mm) per link links/ft (m) = 18.29 (60)

Part Number	Bi in. (mm)	Ba in. (mm)	Weight lbs/ft (kg/m)
E3-10-020-[ ]-0	.79 (20)	1.26 (32)	≈ 0.08 (0.12)
E3-10-040-[ ]-0	1.57 (40)	2.05 (52)	≈ 0.10 (0.15)
E3-10-060-[ ]-0	2.36 (60)	2.83 (72)	≈ 0.13 (0.20)

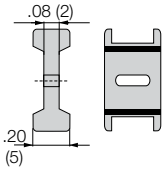
Choose from the radii below for all of the above sizes
Radius (mm) Example: E3-10-060-[015]-0

	015	028	038	048
R	.59 (015)	1.10 (028)	1.50 (038)	1.89 (048)
H	2.36 (60)	3.39 (86)	4.17 (106)	4.96 (126)
D	1.97 (50)	2.48 (63)	2.87 (73)	3.27 (83)
K	3.35 (85)	4.92 (125)	6.10 (155)	7.28 (185)

NOTE: E3-10-020-038, E3-10-020-048, E3-10-040-028, E3-10-060-028 and E3-10-060-048 are available upon request

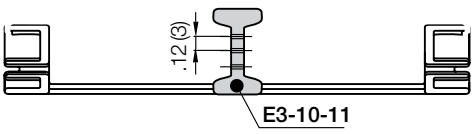
Interior Separation





Separator, narrow head

Unassembled	**Part No. E3-10-01**
Assembled	**Part No. E3-10-11**

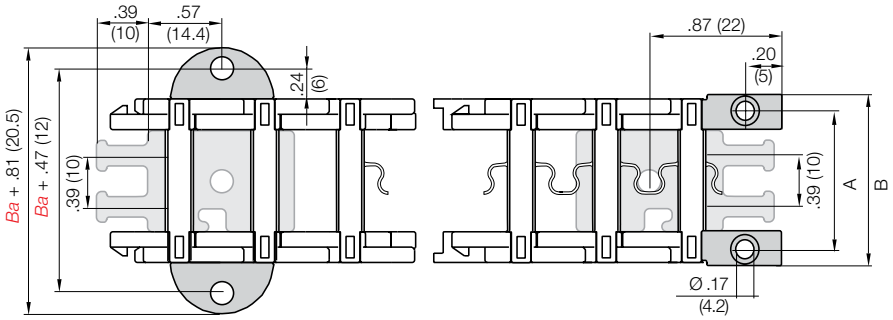


- **Separator 45-2**
  Vertical separators are used if a vertical subdivision of the e-chain® interior is required.

e-chain system® E3
Series E3-10
KMA Mounting Bracket, Mounting Angle, Plastic

Fixed end
E3-10-...-2

Moving end
E3-10-...-1

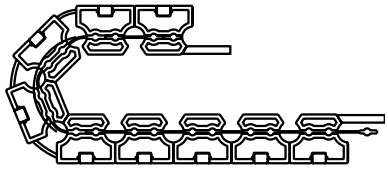


View Mounting angle

View KMA mounting bracket



E3-100-XXX-12 - Space-saving KMA mounting brackets



For Series	KMA Mounting bracket	Dimension A in. (mm)	Dimension B in. (mm)	Part No. Full Set strain relief both sides + 2 mounting angles	Part No. strain relief both sides	Part No. mounting angle* (single part)
E3-10-020	**E3-100-020-12**	1.10 (28)	1.42 (36)	**E3-10-020-12**	**E3-020-12**	**E3-10-00**
E3-10-040	**E3-100-040-12**	1.89 (48)	2.20 (56)	**E3-10-040-12**	**E3-040-12**	**E3-10-00**
E3-10-060	**E3-100-060-12**	2.68 (68)	2.99 (76)	**E3-10-060-12**	**E3-060-12**	**E3-10-00**

*Note: If the mounting brackets are used, two links each side must be added to the e-chain® length calculation, because the first to links are fixed by the mounting brackets.

E3-10-XXX-12

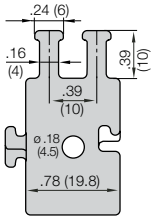


E3 with strain relief for both sides and mounting angles

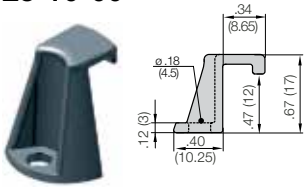
E3-00-020



Strain relief for both sides as single parts



E3-10-00



Mounting angle as single part

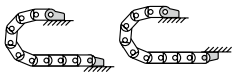
Full set, for both ends:

E3-10- 060- 12 Full set, **both fixed and moving end**

Single-part order:

E3-10 - 060- 1 Mounting bracket **moving end**

E3-10 - 060- 2 Mounting bracket **fixed end**



Possible installation configurations -

PDF: igus.com/e-chain-pdfs
Product information: igus.com/e-chains

e-chain system® E3
Series E3-15

.59

Price Index

Series E3-15

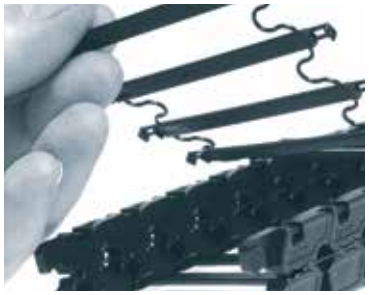
Special Features / Options

*Noise test values: max. 38dB(A) - Values determined at the igus® test lab according to DIN 45635 (v = 5.91 ft/s

IPA Classification: Report IG0704-400: ISO Class 1, according to standard DIN EN ISO 14644-1 for E3, Series E3-15-040-075-0 (at v = 1.64 ft/s, 3.28 ft/s, 6.56 ft/s)

Special equipment: Electrically conductive ESD/ATEX version upon request

Assembly Tips



Rapid assembly time with interconnected crossbars

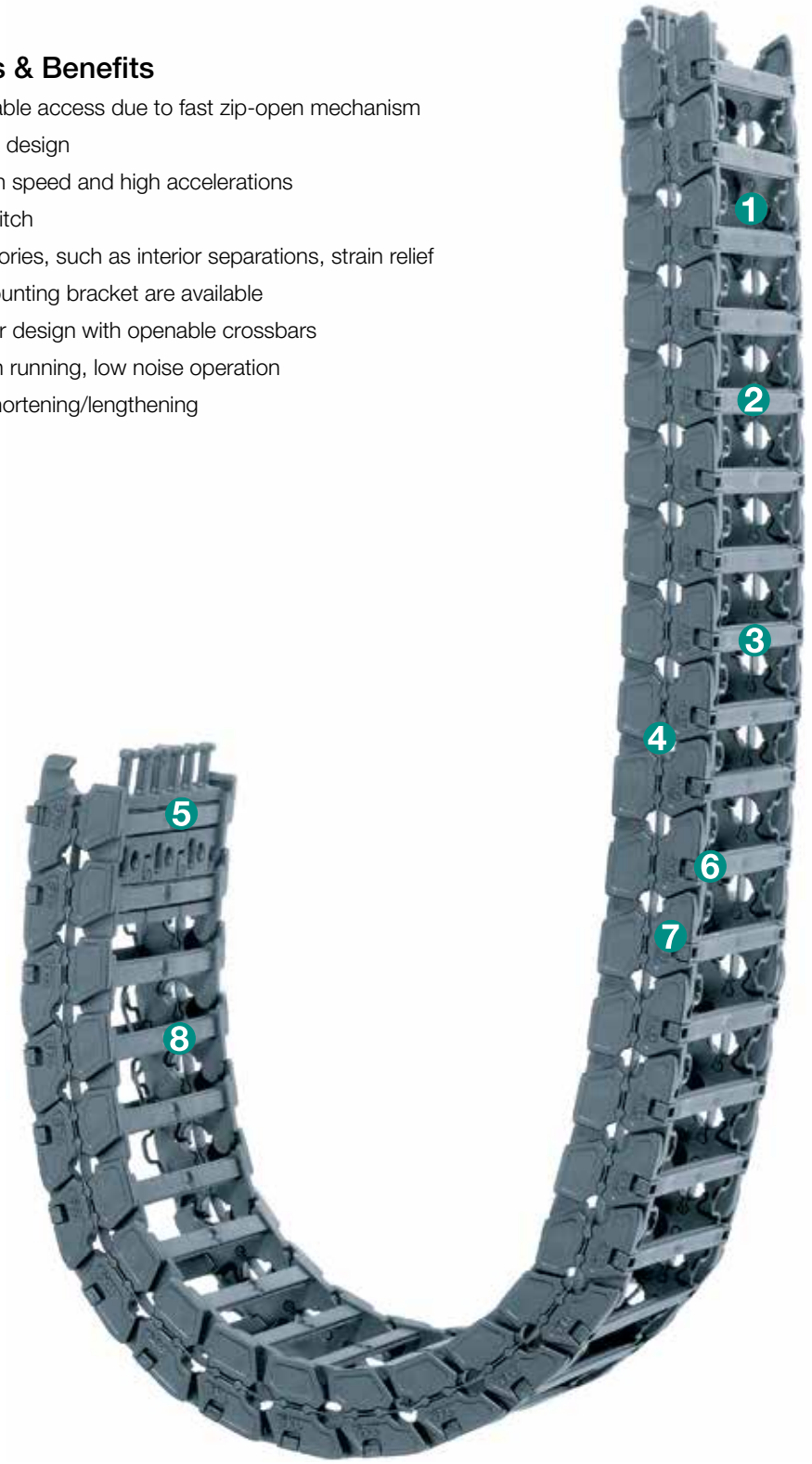
Usage Guidelines

- If a low noise, vibration-free version is required
- For very high speeds and/or accelerations (theoretically up to 100G or 3,281 ft/s (1000 m/s)
- Hard-wearing e-chain® (more than 50 million cycles with minimal abrasion)
- If a very light e-chain® is required (up to 40% lighter than comparable E2 e-chain®
- For small bending radii and small spaces
- If easy filling and assembly is required
- Minimal abrasion (e.g. cleanroom applications)

- If a particularly low-cost snap-open solution is required
  ➤ **Series E08/Z08 E-Z Chain**
- If a simple, non snap-open e-chain® is required
  ➤ **Series 08 E2 Micro**

Features & Benefits

1. Easy cable access due to fast zip-open mechanism
2. 3-piece design
3. For high speed and high accelerations
4. Small pitch
5. Accessories, such as interior separations, strain relief and mounting bracket are available
6. Modular design with openable crossbars
7. Smooth running, low noise operation
8. Easy shortening/lengthening



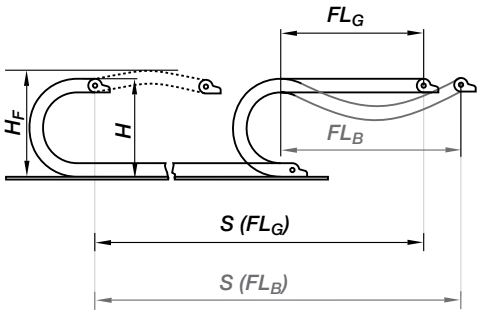
Order Example: Complete e-chain®

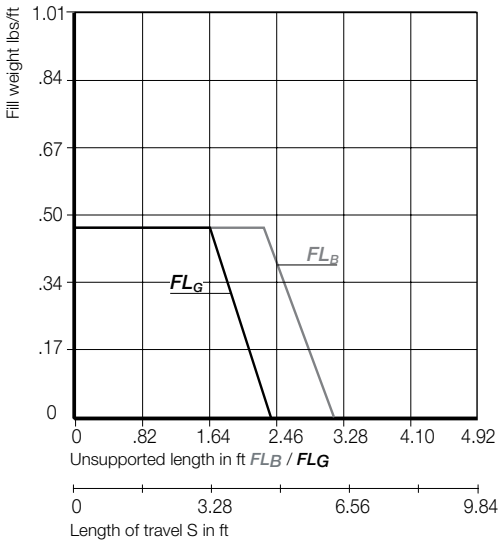
Please indicate chain length or number of links. Example:

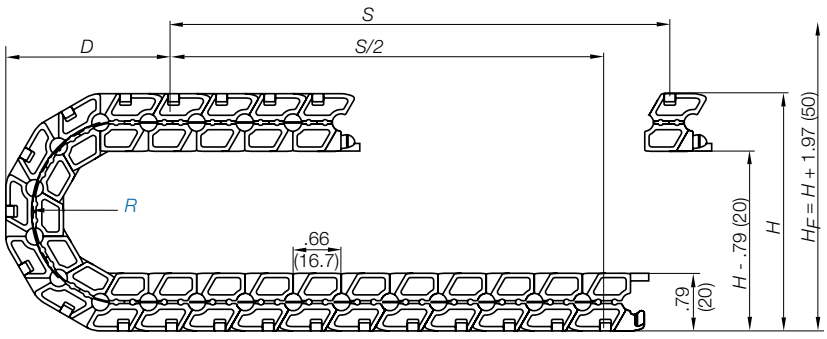
3.28 ft (1 m) **E3-15-060-032-0**	**e-chain®**
With 2 separators **E3-15-11** assembled every 2nd link	**Interior Separation**
1 Set **E3-15-060-12**	**Mounting Bracket**

Short travel, unsupported length

● FL_B = unsupported with permitted sag
● FL_G = unsupported with straight upper run
Further information ➤ Design, Chapter 1







Pitch per link: = .66" (16.7 mm)
Links per ft (m): = 18.29 (60)
For center mount applications:
Chain length = $S/2 + K$

The required clearance height: ***HF = H* + 1.97 in. (50 mm)** (with 0.13 lbs/ft (0.2 kg/m) fill weight.
Please consult igus® if space is particularly restricted.

R	1.26 (032)	1.50 (038)	1.89 (048)	2.95 (075)
H	3.90 (99)	4.37 (111)	5.16 (131)	7.28 (185)
D	2.64 (67)	2.87 (73)	3.27 (83)	4.33 (110)
K	5.31 (135)	6.10 (155)	7.28 (185)	10.63 (270)

Short Travels - Unsupported

Unsupported e-chains® feature positive camber over short travels. This must be accounted for when specifying the clearance height. Please refer to **Installation dimensions** for further details.

Legend

S = Length of travel
R = Bending radius
H = Nominal clearance height
D = Overlength e-chain® radius in final position
K = π • R + *safety buffer*
H_F = Required clearance height

Speed / acceleration FL_G	max. 65.6 ft/s (20 m/s) / max. 656 ft/s² (200 m/s²)
Speed / acceleration FL_B	max. 9.84 ft/s (3 m/s) / max. 19.69 ft/s² (6 m/s²)
Gliding speed / acceleration (maximum)	upon request
Permitted temperature	-40°F (-40°C) up to +158°F (+70° C)
Flammability Class	VDE 0304 IIC UL94 HB

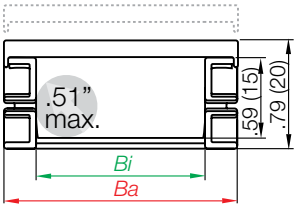
Technical Data

Details of material properties
➤ **Design, Chapter 1**

PDF: igus.com/e-chain-pdfs
Product information: igus.com/e-chains

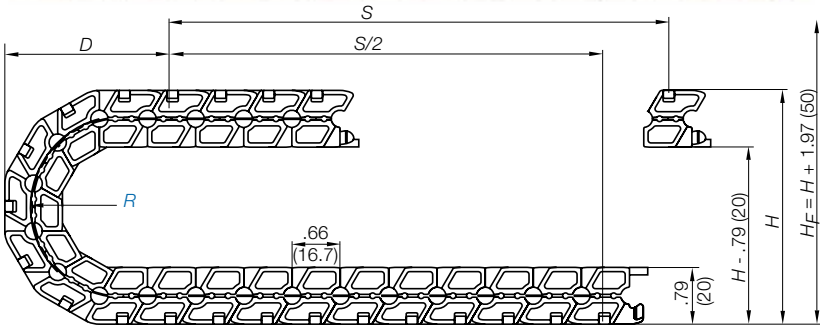
e-chain system® E3
Series E3-15
Interior Separation

Series E3-15 - Snap-open along the outer radius









Part Number Structure

E3-15- 060- 032- 0

- Color - Black
- Bending radius
- Width
- Series

Supplement part number with required radius. Example: E3-15-060- 032 -0
Pitch: .66 in. (16.7 mm) per link links/ft (m) = 18.29 (60)

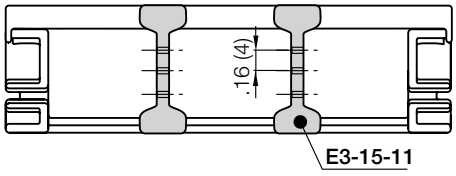
Part Number	Bi in. (mm)	Ba in. (mm)	Weight lbs/ft (kg/m)
E3-15-020- ☐ -0*	.79 (20)	1.26 (32)	≈ 0.15 (0.22)
E3-15-040- ☐ -0	1.57 (40)	2.05 (52)	≈ 0.17 (0.25)
E3-15-060- ☐ -0	2.36 (60)	2.83 (72)	≈ 0.22 (0.32)

Choose from the radii below for all of the above sizes
Radius (mm) Example: E3-15-060- 032 -0

	032	038	048	075
R	1.26 (032)	1.50 (038)	1.89 (048)	2.95 (075)
H	3.90 (99)	4.37 (111)	5.16 (131)	7.28 (185)
D	2.64 (67)	2.87 (73)	3.27 (83)	4.33 (110)
K	5.31 (135)	6.10 (155)	7.28 (185)	10.63 (270)

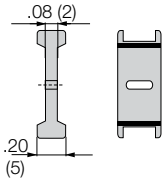
*Radii 038 and 075 are not available for the E3-15-020
NOTE: E3-15-020-048 is available upon request

Interior Separation



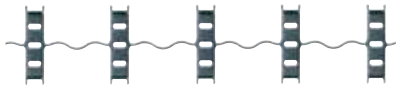
E3-15-11





Slotted separator for e-chains®

Unassembled	Part No. E3-15-01
Assembled	Part No. E3-15-11



Separator, narrow base

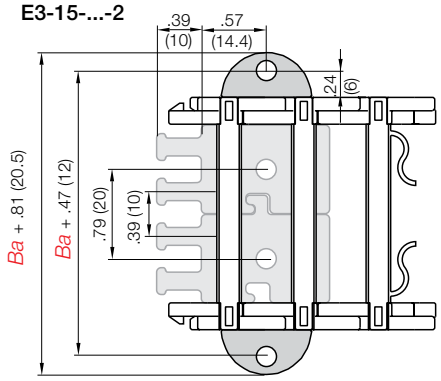
Unassembled	Part No. E3-15-01-10
Assembled	Part No. E3-15-11-10

- **Separator E3-15-01**
  Vertical separators are used if a vertical subdivision of the e-chain® interior is required.

- **Slotted separator on a strip E3-15-01-10**
  Five vertical separators connected on one strip span ten e-chain® links and are mounted on the opening crossbars. This creates separate chambers, protecting the cables. The dimensions are the same as the E3-22-01 slotted separator

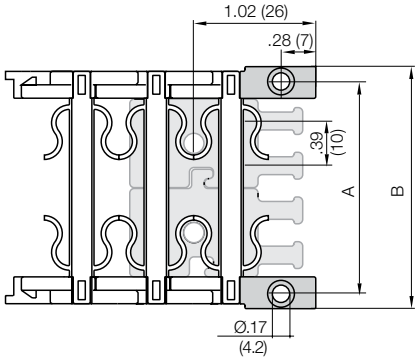
e-chain system® E3
Series E3-15
KMA Mounting Bracket, Mounting Angle, Plastic

Fixed end
E3-15-...-2



View Mounting angle

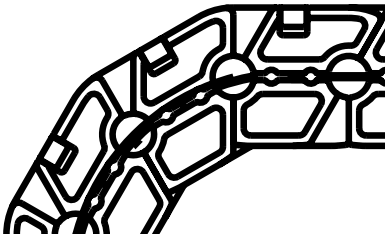
Moving end
E3-15-...-1



View KMA mounting bracket



E3-150-XXX-12 - Space-saving KMA mounting brackets



For Series	KMA Mounting bracket	Dimension A in. (mm)	Dimension B in. (mm)	Part No. Full Set strain relief both sides + 2 mounting angles	Part No. strain relief both sides	Part No. mounting angle* (single part)
E3-15-020	**E3-150-020-12**	.10 (28)	1.42 (36)	**E3-15-020-12**	**E3-020-12**	**E3-15-00**
E3-15-040	**E3-150-040-12**	1.89 (48)	2.20 (56)	**E3-15-040-12**	**E3-040-12**	**E3-15-00**
E3-15-060	**E3-150-060-12**	2.68 (68)	2.99 (76)	**E3-15-060-12**	**E3-060-12**	**E3-15-00**

*Note: If the mounting brackets are used, two links each side must be added to the e-chain® length calculation, because the first to links are fixed by the mounting brackets.

E3-15-XXX-12

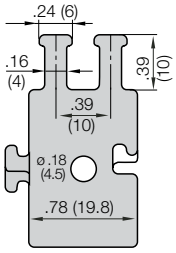


E3 with strain relief for both sides and mounting angles

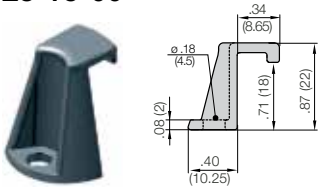
E3-00-020



Strain relief for both sides as single parts



E3-15-00



Mounting angle as single part

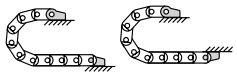
Full set, for both ends:

E3-15- | 020- | 12 | Full set, **both fixed and moving end**

Single-part order:

E3-15 - | 020- | 1 | Mounting bracket **moving end**

E3-15 - | 020- | 2 | Mounting bracket **fixed end**



Possible installation configurations -

PDF: igus.com/e-chain-pdfs
Product information: igus.com/e-chains

e-chain system® E3
Series E3-22

.87

Price Index

Series E3-22

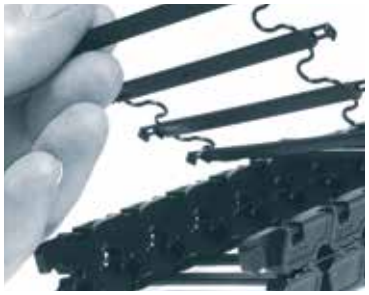
Special Features / Options

*Noise test values: max. 38dB(A) - Values determined at the igus® test lab according to DIN 45635 (v = 5.91 ft/s

IPA Classification: Report IG0704-400: ISO Class 1, according to standard DIN EN ISO 14644-1 for E3, Series E3-15-040-075-0 (at v = 1.64 ft/s, 3.28 ft/s, 6.56 ft/s)

Special equipment: Electrically conductive ESD/ATEX version upon request

Assembly Tips



Rapid assembly time with interconnected crossbars

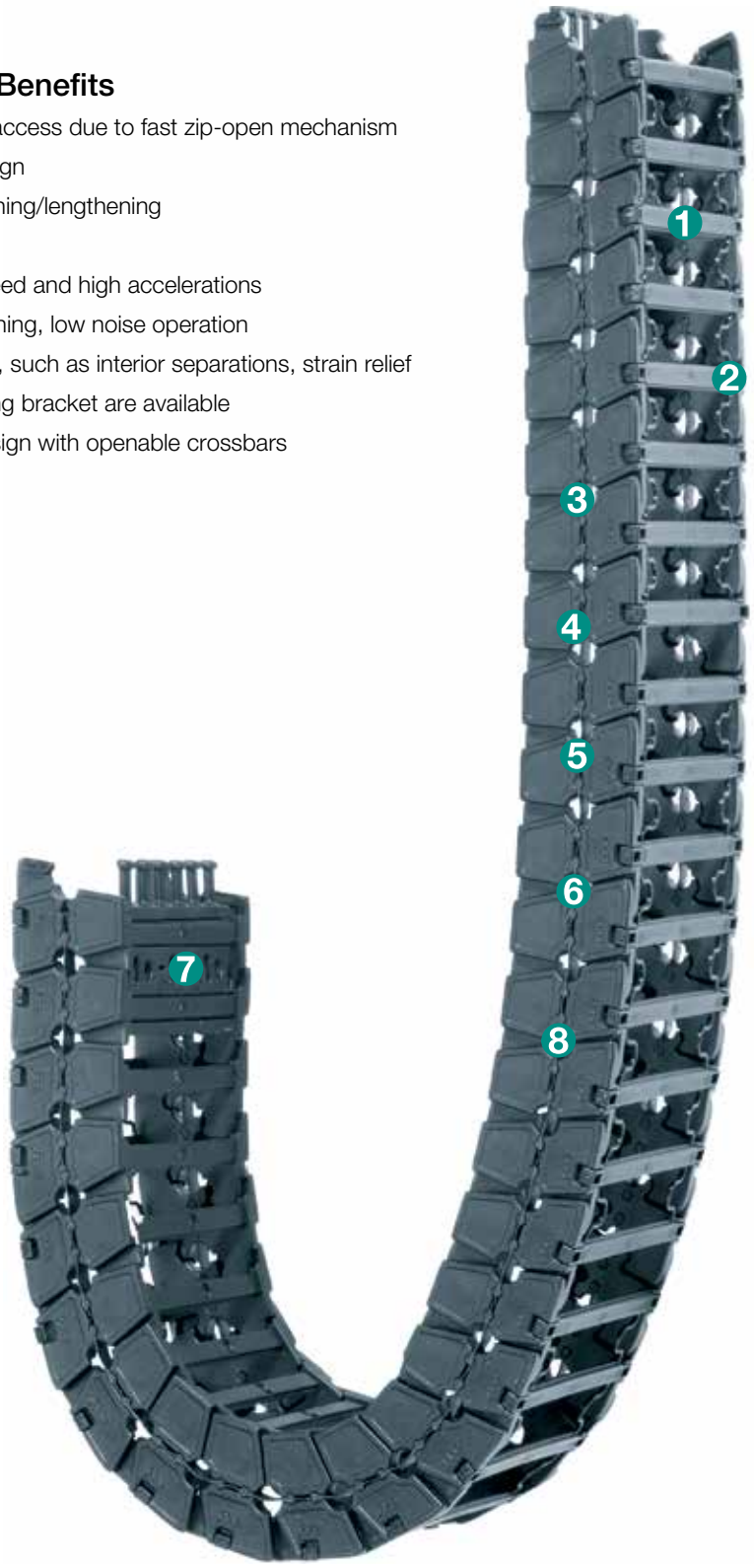
Usage Guidelines

- If a low noise, vibration-free version is required
- For very high speeds and/or accelerations (theoretically up to 100G or 3,281 ft/s (1000 m/s)
- Hard-wearing e-chain® (more than 50 million cycles with minimal abrasion)
- If a very light e-chain® is required (up to 40% lighter than comparable E2 e-chain®
- For small bending radii and small spaces
- If easy filling and assembly is required
- Minimal abrasion (e.g. cleanroom applications)

- If a particularly low-cost snap-open solution is required
  ➤ **Series E14/Z14 E-Z Chain**
- If a simple, non snap-open e-chain® is required
  ➤ **Series 1400/1450/1500 E2 Medium**

Features & Benefits

1. Easy cable access due to fast zip-open mechanism
2. 3-piece design
3. Easy shortening/lengthening
4. Small pitch
5. For high speed and high accelerations
5. Smooth running, low noise operation
7. Accessories, such as interior separations, strain relief and mounting bracket are available
8. Modular design with openable crossbars



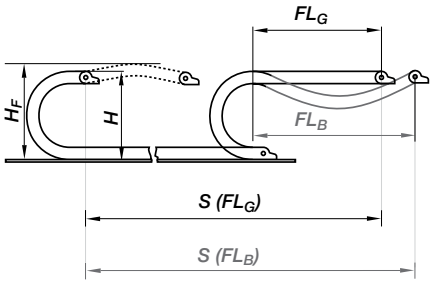
Order Example: Complete e-chain®

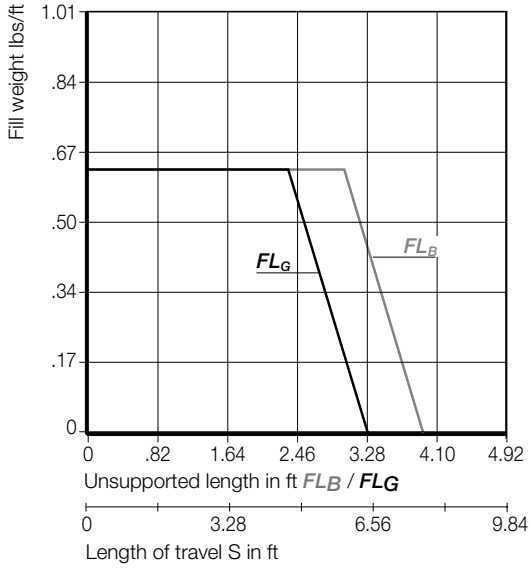
Please indicate chain length or number of links. Example:

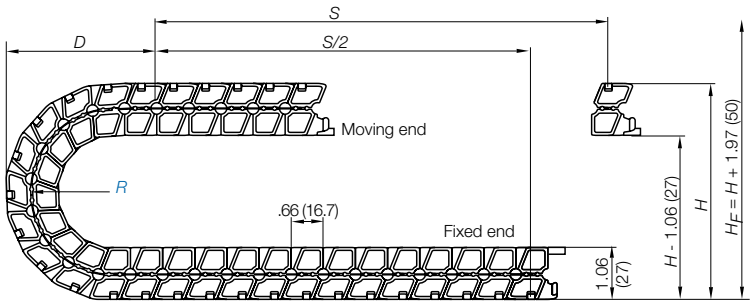
3.28 ft (1 m) **E3-22-060-044-0**	**e-chain®**
With 2 separators **E2-22-11** assembled every 2nd link	**Interior Separation**
1 Set **E3-22-060-12**	**Mounting Bracket**

Short travel, unsupported length

● FL_B = unsupported with permitted sag
● FL_G = unsupported with straight upper run
Further information ➤ Design, Chapter 1







The required clearance height: $H_F = H$ + **1.97 in. (50 mm)** (with 0.20 lbs/ft (0.3 kg/m) fill weight. Please consult igus® if space is particularly restricted.

R	1.73 (044)	1.97 (050)	2.95 (075)
H	5.28 (134)	5.75 (146)	6.93 (176)
D	3.23 (82)	3.15 (80)	4.13 (105)
K	6.89 (175)	7.68 (195)	10.63 (270)

Pitch per link: = .66" (16.7 mm)
Links per ft (m): = 18.29 (60)
For center mount applications:
Chain length = $_{S}/_{2}$ + K

Short Travels - Unsupported

Unsupported e-chains® feature positive camber over short travels. This must be accounted for when specifying the clearance height. Please refer to **Installation dimensions** for further details.

Legend

S = Length of travel
R = Bending radius
H = Nominal clearance height
D = Overlength e-chain® radius in final position
K = π • R + *safety buffer*
H_F = Required clearance height

Speed / acceleration FL_G	max. 65.6 ft/s (20 m/s) / max. 656 ft/s² (200 m/s²)
Speed / acceleration FL_B	max. 9.84 ft/s (3 m/s) / max. 19.69 ft/s² (6 m/s²)
Gliding speed / acceleration (maximum)	upon request
Permitted temperature	-40°F (-40°C) up to +158°F (+70° C)
Flammability Class	VDE 0304 IIC UL94 HB

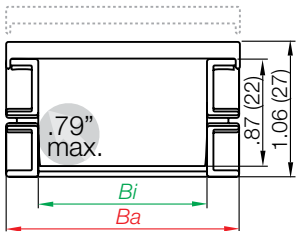
Technical Data

Details of material properties
➤ **Design, Chapter 1**

PDF: igus.com/e-chain-pdfs
Product information: igus.com/e-chains

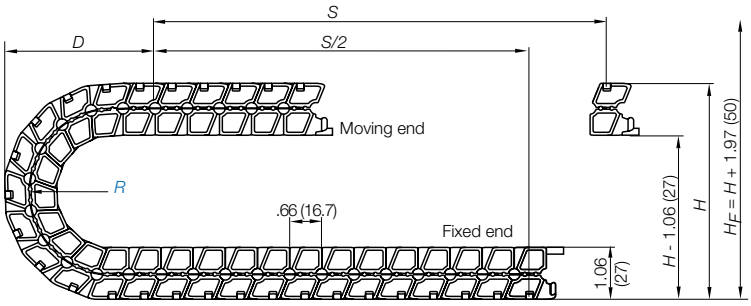
e-chain system® E3
Series E3-22
Installation Dimensions, Interior Separation

Series E3-22 - Snap-open along the outer radius









Part Number Structure

E3-22- 060- 044- 0

- Color - Black
- Bending radius
- Width
- Series

Supplement part number with required radius. Example: E3-22-060-[044]-0
Pitch: .66 in. (16.7 mm) per link links/ft (m) = 18.29 (60)

Part Number	*Bi* in. (mm)	*Ba* in. (mm)	Weight lbs/ft (kg/m)
E3-22-020-[ ]-0	.79 (20)	1.26 (32)	≈ 0.20 (0.30)
E3-22-040-[ ]-0	1.57 (40)	2.05 (52)	≈ 0.22 (0.32)
E3-22-060-[ ]-0	2.36 (60)	2.83 (72)	≈ 0.28 (0.41)

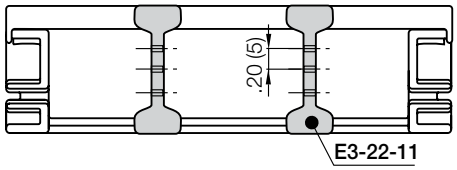
Choose from the radii below for all of the above sizes
Radius (mm) Example: E3-22-060-[044]-0

	044	050*	075
R	1.73 (044)	1.97 (050)	2.95 (075)
H	5.28 (134)	5.75 (146)	6.93 (176)
D	3.23 (82)	3.15 (80)	4.13 (105)
K	6.89 (175)	7.68 (195)	10.63 (270)

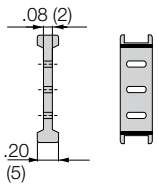
* Radius 050 is not available for the E3-22-060

Interior Separation









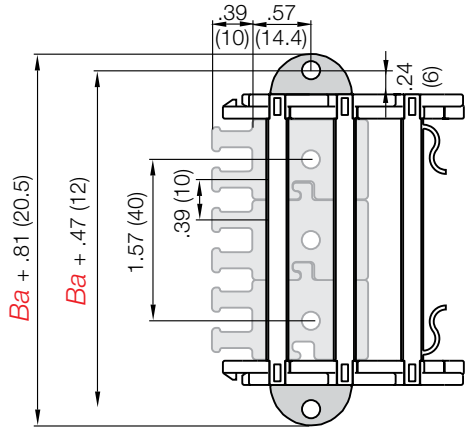
Slotted separator for e-chains®

Unassembled	**Part No. E3-22-01**
Assembled	**Part No. E3-22-11**

- **Slotted separator E3-22-01**
  Vertical separators are used if a vertical subdivision of the e-chain® interior is required.

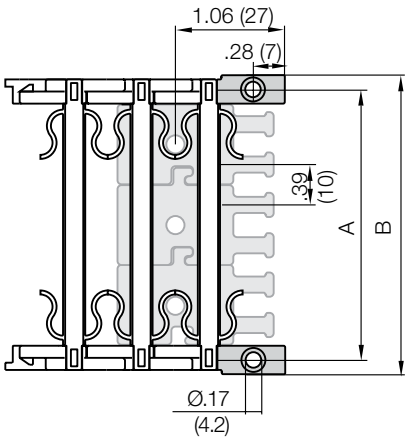
e-chain system® E3
Series E3-22
KMA Mounting Bracket, Mounting Angle, Plastic

Fixed end
E3-22-...-2



View mounting angle

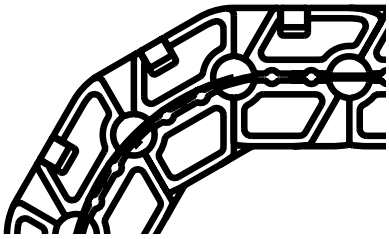
Moving end
E3-22-...-1



View KMA mounting bracket



E3-220-XXX-12 - Space-saving KMA mounting brackets



For Series	KMA Mounting bracket	Dimension A in. (mm)	Dimension B in. (mm)	Part No. Full Set strain relief both sides + 2 mounting angles	Part No. strain relief both sides	Part No. mounting angle (single part)
E3-22-020	**E3-220-020-12**	.10 (28)	1.42 (36)	**E3-22-020-12**	**E3-020-12**	**E3-22-00**
E3-22-040	**E3-220-040-12**	1.89 (48)	2.20 (56)	**E3-22-040-12**	**E3-040-12**	**E3-22-00**
E3-22-060	**E3-220-060-12**	2.68 (68)	2.99 (76)	**E3-22-060-12**	**E3-060-12**	**E3-22-00**

*Note: If the mounting brackets are used, two links each side must be added to the e-chain® length calculation, because the first to links are fixed by the mounting brackets.

E3-22-XXX-12

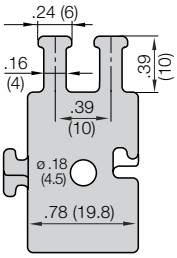


E3 with strain relief for both sides and mounting angles

E3-00-020

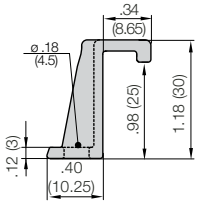


Strain relief for both sides as single parts



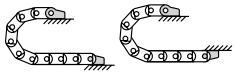
E3-22-00





Mounting angle as single part

Full set, for both ends:
E3-22- 060- 12 Full set, **both fixed and moving end**
Single-part order:
E3-22 - 060- 1 Mounting bracket **moving end**
E3-22 - 060- 2 Mounting bracket **fixed end**



Possible installation configurations -

PDF: igus.com/e-chain-pdfs
Product information: igus.com/e-chains





igus®

System E6-1

More dynamics, smoother running, easier to open, 2nd generation

The E6-1 series is an advancement of the E6 series. While having all its advantages, like the stability and cleanroom suitability, it is even lighter, faster and quieter. In addition, its accessibility to the interior and the assembly and handling have been improved.

- Crossbars can be opened on both sides and removable along the inner and outer radius
- Option without camber NC by turning the inner link
- Extremely quiet through small pitch and brake in the stop-dog system
- Extremely low vibration
- Low-abrasion link system (no pin/hole connection)
- Virtually no polygon effect, thereby “smooth rolling” operation
- Faster lengthening and shortening through optimized connection design
- Smooth and obstacle free interior design for a long lifetime for cables and hoses
- Weight savings approx. 30% compared to the System E6
- Cost-effective



System E6-1
Extremely low noise

System E6
6-piece link-design

Clean-Room

IPA Qualification Certificate - Report IG 1303-640-1:
ISO Class 1, according to DIN EN ISO 14644-1 for System E6-1, Series E61-29-50-075-0 and E61-29-50-075-0-CR
at v = 1.64 ft/s (0.5 m/s), 3.28 ft/s (1 m/s), 6.56 ft/s (2 m/s)

e-chain system® E6-1
Selection Table

Series	Inner height *hi*		Inner width *Bi*		Outer width *Ba*		Outer height *ha*		Bend radius *R*		Unsupported length	
	in.	(mm)	in.	(mm)	in.	(mm)	in.	(mm)	in.	(mm)	≤ ft.	≤ (m)
												
E61-29	1.14	(29)	1.18-5.51	(30-140)	1.73-6.06	(44-154)	1.38	(35)	2.17-5.91	(055-150)	5.74	(≈ 1.75)

E6-1 e-chains®
openable along inner and outer radius, from both sides



E6-1 e-chains®
crossbars removable along the inner and outer radius

EF61-29	1.14	(29)	1.18-5.51	(30-140)	1.73-6.06	(44-154)	1.38	(35)	2.17-5.91	(055-150)	5.74	(≈ 1.75)
E61-35	1.38	(35)	1.18-5.51	(30-140)	1.81-6.14	(46-156)	1.65	(42)	2.17-5.91	(055-150)	6.23	(≈ 1.90)
E61-40	1.57	(40)	1.57-11.81	(40-300)	2.20-12.44	(56-316)	2.13	(54)	2.48-7.87	(063-200)	8.20	(≈ 2.50)
E61-52	2.05	(52)	1.57-11.81	(40-300)	2.52-12.76	(64-324)	2.56	(65)	2.95-5.91	(075-150)	9.84	(≈ 3.00)
E61-62	2.44	(62)	1.97-15.75	(50-400)	3.22-17.01	(82-432)	3.31	(84)	4.53	(115)	13.12	(≈ 4.00)
E61-80	3.15	(80)	1.97-15.75	(50-600)	3.07-24.72	(78-628)	4.25	(108)	5.91	(150)	17.23	(≈ 5.25)

Available from stock. Orders ship as early as today.*

*On average 90% of orders ship the same day..

Cost-effective - Series EF61-29

- Series EF61-29 - 1.14" (29mm) inner height
- Available at an even lower price without the pivoting function of the crossbars
- Crossbars removable from both sides
- Otherwise, technically the same as the E61-29 series.

More information ▶ www.igus.com

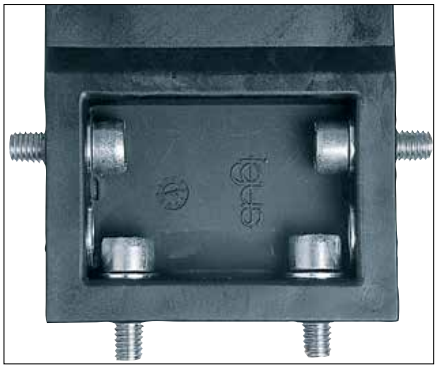




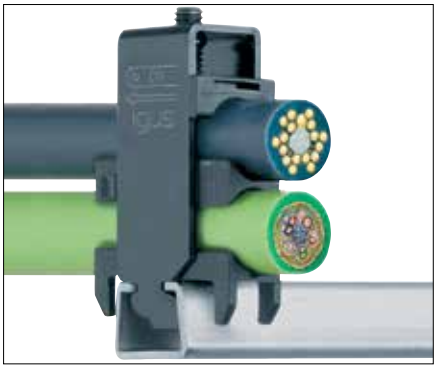
New generation interior separation - even more cable-friendly



Snap-open mechanism, Series E61-29 choice of snap-open on left or right



KMA mounting brackets with attachment options on all sides



Strain relief clamps, tiewrap plates, nuggets and plug-in clips ►**Section 10**



Pivoting and locking KMA mounting brackets are available



Support tray tool kit. For support of the lower run ►**Section 9**

E6-1 for cleanrooms

Cleanroom qualification of E6-1 e-chains®

By using a special material, the already low abrasion of the e-chain® can be reduced even further. In many applications where cumbersome special solutions are required, a simple standard e-chain® can be used instead. IPA tests confirm that standard igus® e-chains® meet cleanroom requirements. "Tested and certified as very good!" e-chains® for cleanroom applications demand very high wear resistance of moving parts in order to meet the normal requirements for such a sensitive environment.



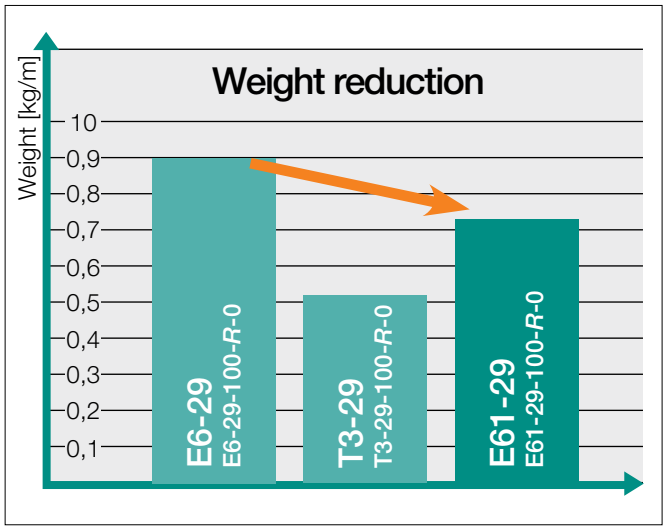
IPA Qualification Certificate[2] - Report IG 1303-640-1:
ISO Class 1, according to DIN EN ISO 14644-1 for system E6-1, series E61-29-50-075-0 and E61-29-50-075-0-CR at v = 0.5m/s, 1m/s, 2m/s

e-chain system® E6-1
Advantages

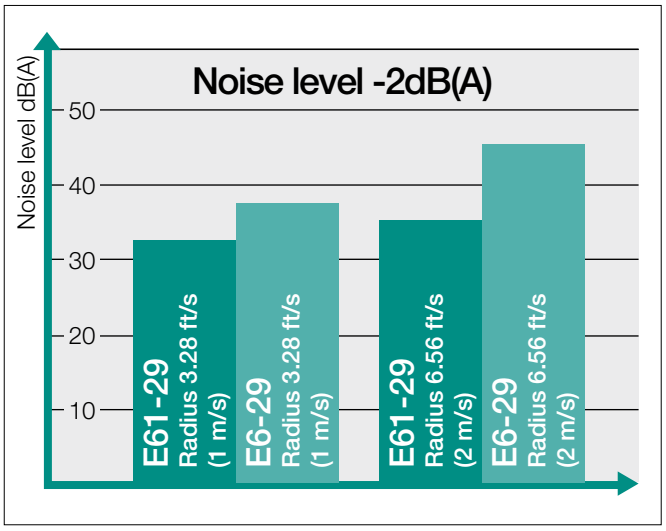


The fact that the interior of the new E6-1 has been designed to be extremely cable-friendly underlines its suitability for cleanrooms by increasing the service life of cables and hoses even more. The crossbars are very smooth and rounded as is the transition from e-chain® link to crossbar, and all markings have been moved outside of the e-chain® cross section.

System E6-1 internal tests in the igus® lab



The E6-1 generation can take up higher accelerations, due to a weight reduction, making it a highly dynamic yet still extremely quiet e-chain®



Series E61-29 tests in the igus® test lab show noise levels, which are 2 dB(A) below the already class-leading noise-levels of the igus® E6-29 series

e-chain system® E6-1
Series EF61-29 / E61-29

Price Index

Series E61-29

Special Features / Options

Extremely low noise
Test results upon request

IPA Certificate: Class 1, according to standard DIN EN ISO 14644-1 for the E6 system
(Series E6-29-060-150-0-CR, (v = 1.64 ft/s, a = 3.28 ft/s²)

Assembly Tips



snap-open mechanism

Other Installation Methods

Vertical, hanging ≤ 82 ft (25 m)
Vertical, standing ≤ 6.56 ft (2 m)
Side-mounted, unsupported = upon request
Unsupported length of upper run ≤ 11.48 ft (3.5 m)

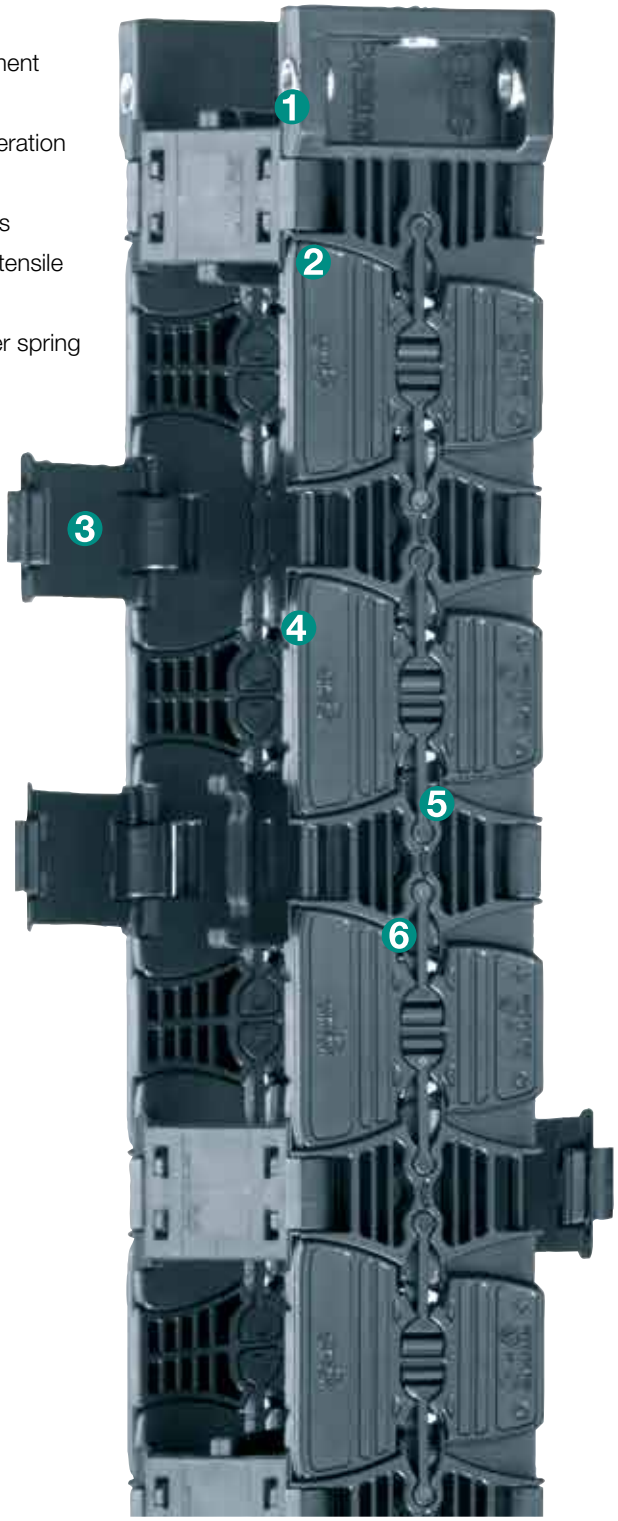
Usage Guidelines

- If a low-noise version is required
- For very high speeds and/or accelerations
- If large stresses and thrust forces are present
- For small bending radii
- If less vibration is required
- Minimal abrasion, suitable for cleanrooms

- For side-mounted applications
  ➤ **Series E2/000**
- For RBR (reverse bending radii)
  ➤ **Series E2/000**
- For high additional loads
  ➤ **Series E2/000**
- For very dirty environments
  ➤ **Series R6**

Features & Benefits

1. KMA mounting brackets with attachment points on all sides
2. Small pitch for low-noise, smooth operation
3. Crossbars open on either side
4. For high speed and high accelerations
5. Minimum vibration, high stability and tensile strength
6. No pin and bore connection - polymer spring



Order Example: Complete e-chain®

Please indicate chain length or number of links. Example:

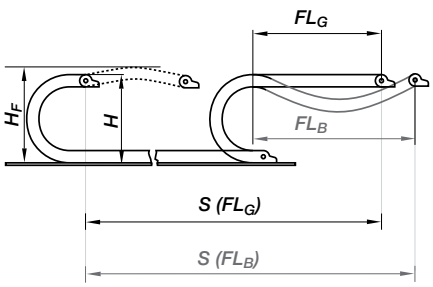
3.28 ft (1 m) **E61-29-100-075-0**	**e-chain®**
With 2 separators **29-1-1** assembled every 2nd link	**Interior Separation**
1 Set **E61-290-100-12**	**Mounting Bracket**

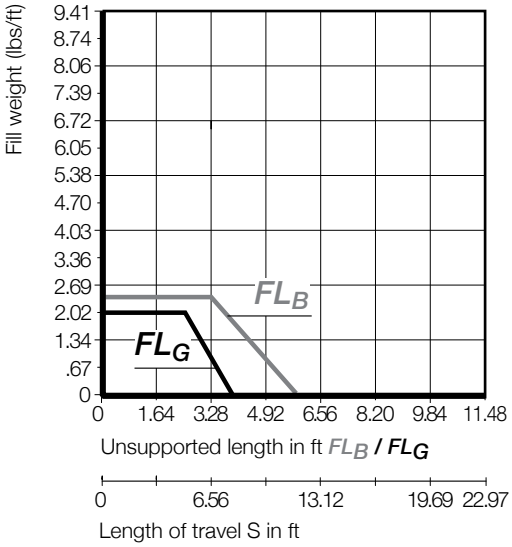
e-chain system® E6-1
Series EF61-29 / E61-29
Installation Dimensions

Short travel, unsupported length

- FL_B = unsupported with permitted sag
- FL_G = unsupported with straight upper run

Further information ➤ Design, Chapter 1



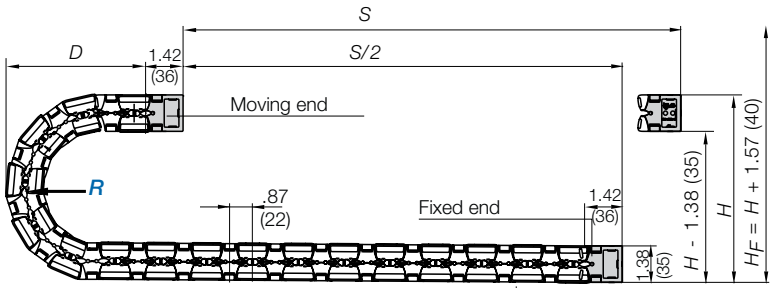


Short Travels - Unsupported

Unsupported e-chains® feature positive camber over short travels. This must be accounted for when specifying the clearance height. Please refer to **Installation dimensions** for further details.

Legend

S = Length of travel
R = Bending radius
H = Nominal clearance height
D = Overlength e-chain® radius in final position
K = π • R + *safety buffer*
H_F = Required clearance height



Pitch per link: = .87" (22 mm)
Links per ft (m): = 13.79 (46)
For center mount applications:
Chain length = $\frac{S}{2}$ + K

The required clearance height: $H_F = H + 1.57$ **in. (40 mm)** (with 1.34 lbs/ft (2.0 kg/m) fill weight.
Please consult igus® if space is particularly restricted.

R	2.17 (055)	2.95 (075)	3.94 (100)	4.92 (125)	5.91 (150)
H	6.89 (175)	8.46 (215)	10.43 (265)	12.40 (315)	14.37 (365)
D	4.15 (105.5)	4.94 (125.5)	5.93 (150.5)	6.91 (175.5)	7.89 (200.5)
K	8.66 (220)	11.02 (280)	14.17 (360)	17.32 (440)	20.47 (520)

Speed / acceleration FL_G	max. 65.6 ft/s (20 m/s) / max. 656 ft/s² (200 m/s²)
Speed / acceleration FL_B	max. 9.84 ft/s (3 m/s) / max. 19.69 ft/s² (6 m/s²)
Gliding speed / acceleration (maximum)	upon request
Permitted temperature, igumid G	upon request
Flammability Class	VDE 0304 IIC UL94 HB

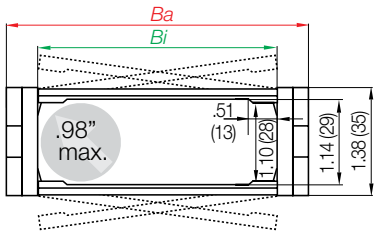
Technical Data

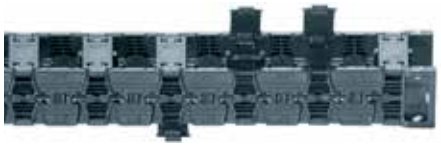
Details of material properties
➤ Design, Chapter 1

PDF: igus.com/e-chain-pdfs
Product information: igus.com/e-chains

e-chain system® E6-1
Series EF61-29 / E61-29

Series EF61-29 - e-chain® - crossbars removable along the inner and outer radius
Series E61-29 - e-chain® - crossbars openable along the inner and outer radius, from both sides

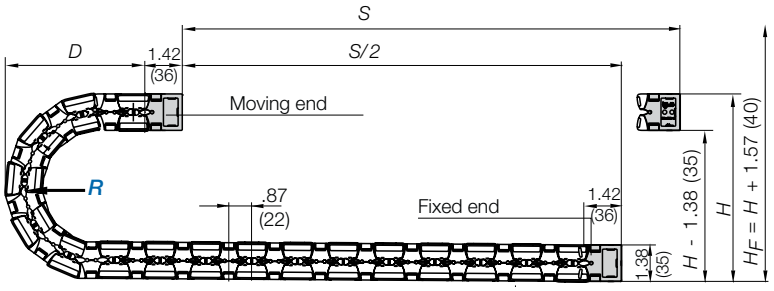




Part Number Structure

E61-29-	100-	100-	0

- 100 (3rd): Color - Black
- 100 (2nd): Bending radius
- 100 (1st): Width
- E61-29: Series



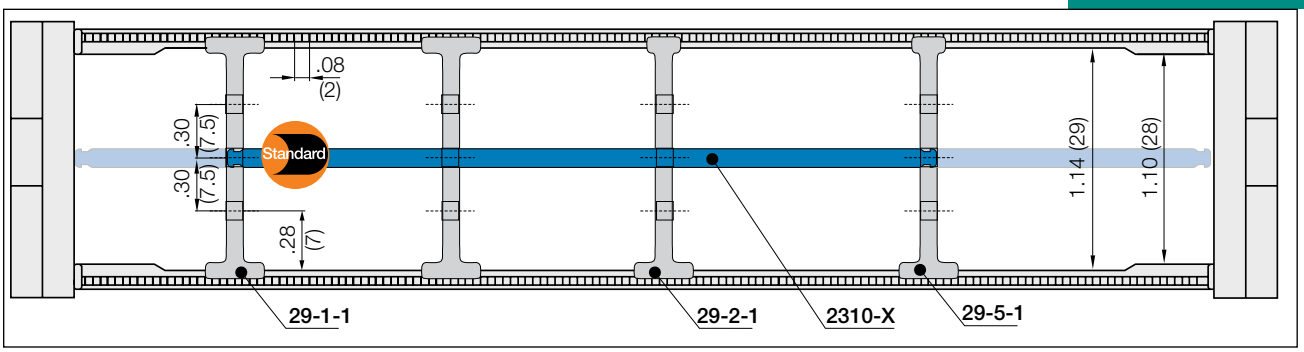
Supplement part number with required radius. Example: E61-29-100-[100]-0
Pitch: .87 in. (22 mm) per link links/ft (m) = 13.79 (46)

Part Number removable crossbars	Part Number openable from both sides	Bi in. (mm)	Ba in. (mm)	Weight lbs/ft (kg/m)
EF61-29-030[ ]-0	E61-29-030-[ ]-0	1.18 (30)	1.73 (44)	≈ 0.37 (0.558)
EF61-29-040[ ]-0	E61-29-040-[ ]-0	1.57 (40)	2.13 (54)	≈ 0.39 (0.583)
EF61-29-050[ ]-0	E61-29-050-[ ]-0	1.97 (50)	2.52 (64)	≈ 0.41 (0.608)
EF61-29-060[ ]-0	E61-29-060-[ ]-0	2.36 (60)	2.91 (74)	≈ 0.43 (0.633)
EF61-29-070[ ]-0	E61-29-070-[ ]-0	2.76 (70)	3.31 (84)	≈ 0.44 (0.657)
EF61-29-080[ ]-0	E61-29-080-[ ]-0	3.15 (80)	3.70 (94)	≈ 0.46 (0.682)
EF61-29-090[ ]-0	E61-29-090-[ ]-0	3.54 (90)	4.09 (104)	≈ 0.48 (0.707)
EF61-29-100[ ]-0	E61-29-100-[ ]-0	3.94 (100)	4.49 (114)	≈ 0.49 (0.732)
EF61-29-110[ ]-0	E61-29-110-[ ]-0	4.33 (110)	4.88 (124)	≈ 0.51 (0.757)
EF61-29-120[ ]-0	E61-29-120-[ ]-0	4.72 (120)	5.27 (134)	≈ 0.53 (0.782)
EF61-29-140[ ]-0	E61-29-140-[ ]-0	5.51 (140)	6.06 (154)	≈ 0.54 (0.807)

Choose from the radii below for all of the above sizes
Radius (mm) Example: E61-29-100-[100]-0

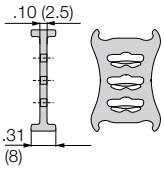
	055	075	100	125	150
R	2.17 (055)	2.95 (075)	3.94 (100)	4.92 (125)	5.91 (150)
H	6.89 (175)	8.46 (215)	10.43 (265)	12.40 (315)	14.37 (365)
D	4.15 (105.5)	4.94 (125.5)	5.93 (150.5)	6.91 (175.5)	7.89 (200.5)
K	8.66 (220)	11.02 (280)	14.17 (360)	17.32 (440)	20.47 (520)

e-chain system® E6-1
Series EF61-29 / E61-29
Interior Separation



Note: Please maintain a lateral spacing of .51" (13 mm) between the separators and the side links. In the standard configuration separators are assembled every 2nd e-chain® link



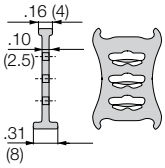


Separator, wide base

Unassembled	**Part No. 29-1**
Assembled	**Part No. 29-1-1**

- **Standard separator 29-1 for all applications**
  Separator with wide base for maximum locking strength and safe standing in e-chains®.



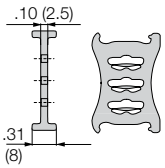


Separator, narrow head

Unassembled	**Part No. 29-2**
Assembled	**Part No. 29-2-1**

- **Separator 29-2**
  For even faster installation
  Firm hold to one side with a wide base, narrow on opposed side for easy cable assembly (slight grip)





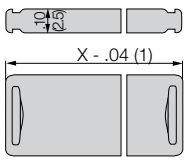
Notch separator, for notch crossbar

Unassembled	**Part No. 29-5**
Assembled	**Part No. 29-5-1**

- **Separator 29-5**
  Locks safely in .08 (2 mm) increments
  For exact positioning in e-chains®. Recommended for side-mounted applications.

Lockable full-width shelves - for the standard interior separation





Full width shelf, lockable

Unassembled	**Part No. 2300-X**
Assembled	**Part No. 2310-X**

- **Full width shelf, lockable**
  Shelf locks safely into separators on both ends, fixed width possible. Separators can be moved freely over the shelf in horizontal direction. Can be arranged at 3 different heights.

Width X in. (mm)	Part No. Unassembled	Part No. Assembled	Width X in. (mm)	Part No. Unassembled	Part No. Assembled	Width X in. (mm)	Part No. Unassembled	Part No. Assembled
0.59 (015)	**2300-015**	**2310-015**	2.36 (060)	**2300-060**	**2310-060**	3.43 (087)	**2300-087**	**2310-087**
0.98 (025)	**2300-025**	**2310-025**	2.44 (062)	**2300-062**	**2310-062**	3.54 (090)	**2300-090**	**2310-090**
1.18 (030)	**2300-030**	**2310-030**	2.56 (065)	**2300-065**	**2310-065**	3.94 (100)	**2300-100**	**2310-100**
1.50 (038)	**2300-038**	**2310-038**	2.76 (070)	**2300-070**	**2310-070**	4.06 (103)	**2300-103**	**2310-103**
1.57 (040)	**2300-040**	**2310-040**	2.95 (075)	**2300-075**	**2310-075**	4.33 (110)	**2300-110**	**2310-110**
1.97 (050)	**2300-050**	**2310-050**	3.03 (077)	**2300-077**	**2310-077**	4.72 (120)	**2300-120**	**2310-120**
2.24 (057)	**2300-057**	**2310-057**	3.15 (080)	**2300-080**	**2310-080**	4.92 (125)	**2300-125**	**2310-125**

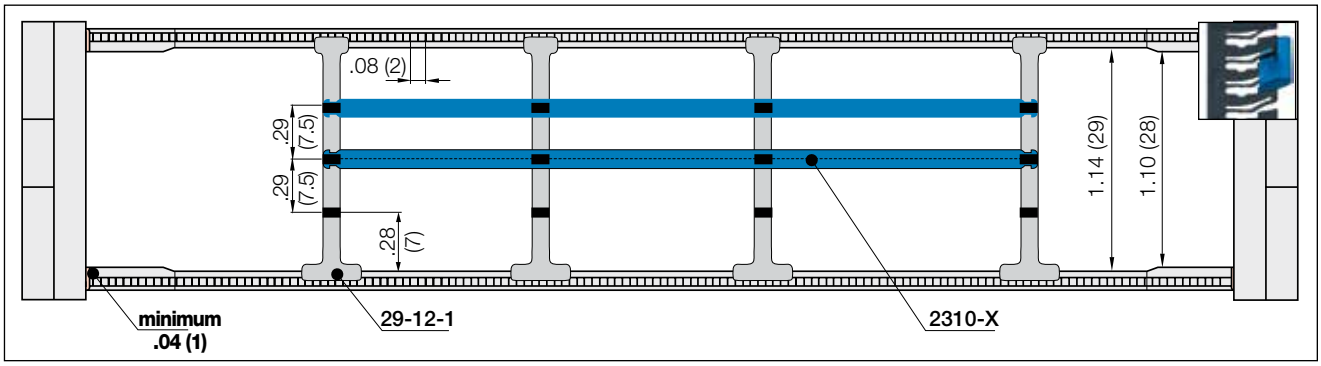
Separator with integrated strain relief



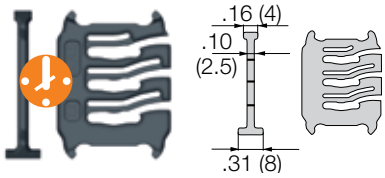
Strain relief separator Part No. E6-29-02-Z can be integrated into the mounting bracket and can be placed at any point of the e-chain®. It combines strain relief and interior separation, it can be installed on the first or last e-chain® link and is easy to assemble without any screws.
For more information ➤ **Chapter 10, Strain Relief**

PDF: igus.com/e-chain-pdfs
Product information: igus.com/e-chains

e-chain system® E6-1
Series EF61-29 / E61-29
Interior Separation



Note: Please maintain a lateral spacing of .04" (1 mm) between the separators and the side links. In the standard configuration separators are assembled every 2nd e-chain® link



Lean separator

Unassembled	**Part No. 29-12**
Assembled	**Part No. 29-12-1**

- **Lean separators**
  New design allows extremely fast fitting of shelves in several layers, which significantly reduces assembly time. Enables extremely fast replacement of individual cables in a very full e-chain®.



- **Lean separator design - several layers of cables fitted quickly, save up to 50%* assembly time**
  (*Lean separator vs. standard separator - measured on a 13.12 ft. (4m) long e-chain® fitted with 12 cables in the igus® harnessing factory)

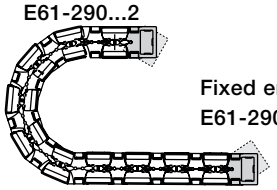


Cleanroom suitable E6-1 series as harnessed readychain® system for a semiconnductor industry

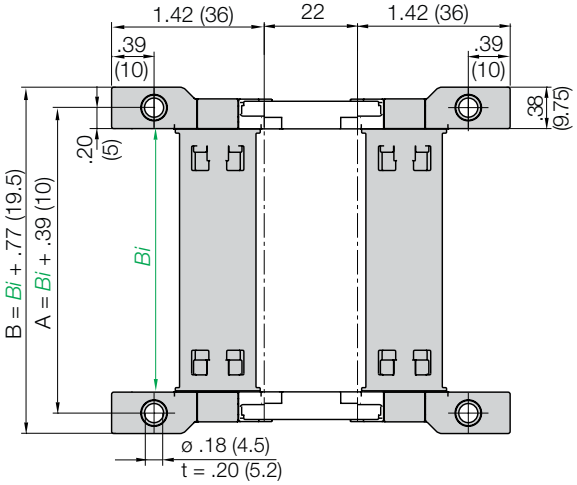
e-chain system® E6-1
Series EF61-29 / E61-29
Mounting Brackets - KMA / Strain Relief

KMA - Pivoting

- Bolted connection outside of the chain cross-section
- Recommended for unsupported applications (for gliding applications please contact igus®)
- Confined installation conditions
- Attachment capability on all sides







Part Number Structure

E61-290-	030-	12

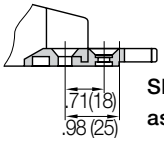
- 12 → Complete Set
- 030 → Width
- E61-290- → Mounting brackets for selected chain type

Due to the design of the E6-1 mounting brackets, chain length must be an odd number of links.

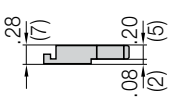
Width Index	Part No. Full Set	A in.	A (mm)	B in.	B (mm)	*Bi* in.	*Bi* (mm)
.030	**E61-290-030-12**	1.57	(40)	1.95	(49.5)	1.18	(30)
.040	**E61-290-040-12**	1.97	(50)	2.34	(59.5)	1.57	(40)
.050	**E61-290-050-12**	2.36	(60)	2.74	(69.5)	1.97	(50)
.060	**E61-290-060-12**	2.76	(70)	3.13	(79.5)	2.36	(60)
.070	**E61-290-070-12**	3.15	(80)	3.52	(89.5)	2.76	(70)
.080	**E61-290-080-12**	3.54	(90)	3.92	(99.5)	3.15	(80)
.090	**E61-290-090-12**	3.94	(100)	4.31	(109.5)	3.54	(90)
.100	**E61-290-100-12**	4.33	(110)	4.70	(119.5)	3.94	(100)
.110	**E61-290-110-12**	4.72	(120)	5.10	(129.5)	4.33	(110)
.120	**E61-290-120-12**	5.12	(130)	5.49	(139.5)	4.72	(120)
.140	**E61-290-140-12**	5.91	(150)	5.89	(419.5)	5.51	(140)

Tiewrap Plates





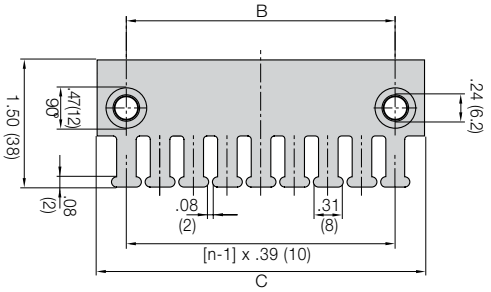
Shown assembled



Single tiewrap plate

Tiewrap plates as an individual part

Tiewrap Plates	n Number of Teeth	Dimension C	Dimension B
2020-ZB	3	1.18 (30)	.59 (15)
2030-ZB	4	1.57 (40)	.79 (20)
2040-ZB	5	1.97 (50)	1.18 (30)
2050-ZB	6	2.36 (60)	1.57 (40)
2070-ZB	8	3.15 (80)	2.36 (60)
2090-ZB	9	3.54 (90)	2.76 (70)
2100-ZB	10	3.94 (100)	3.15 (80)
2120-ZB	12	4.72 (120)	3.94 (100)



If used with KMA brackets with profile rail please add “KMA” to the end of the part number.
Example: 2020-ZBKMA

Other strain relief elements
➤ **Strain Relief, Chapter 10**

PDF: igus.com/e-chain-pdfs
Product information: igus.com/e-chains

e-chain system® E6-1
Series E61-35

Price Index

Series E61-35

Special Features / Options

Extremely low noise
Test results upon request

Assembly Tips



Snap-open mechanism

Other Installation Methods

Vertical, hanging ≤ 98.4 ft (30 m)
Vertical, standing ≤ 6.56 ft (2 m)
Side-mounted, unsupported = upon request
Unsupported length of upper run ≤ 12.47 ft (3.8 m)

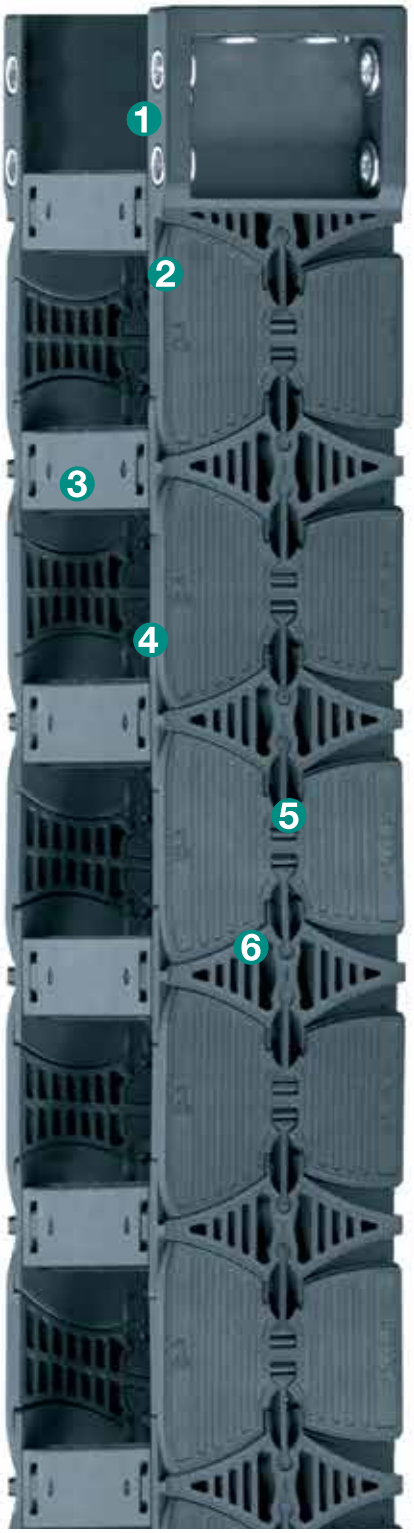
Usage Guidelines

- If a low-noise version is required
- For very high speeds and/or accelerations
- If large stresses and thrust forces are present
- For small bending radii
- If less vibration is required
- Minimal abrasion, suitable for cleanrooms

- For side-mounted applications
  ➤ **Series E2/000**
- For RBR (reverse bending radii)
  ➤ **Series E2/000**
- For high additional loads
  ➤ **Series E2/000**
- For very dirty environments
  ➤ **Series R6**

Features & Benefits

1. KMA mounting brackets with attachment points on all sides
2. Small pitch for low-noise, smooth operation
3. Crossbars open on either side
4. For high speed and high accelerations
5. Minimum vibration, high stability and tensile strength
6. No pin and bore connection - polymer spring



Order Example: Complete e-chain®

Please indicate chain length or number of links. Example:

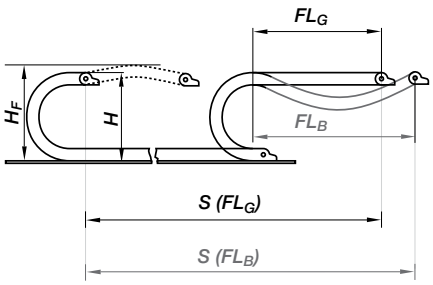
3.28 ft (1 m) **E61-35-100-075-0**	**e-chain®**
With 2 separators **E6-35-1-1** assembled every 2nd link	**Interior Separation**
1 Set **E61-350-100-12**	**Mounting Bracket**

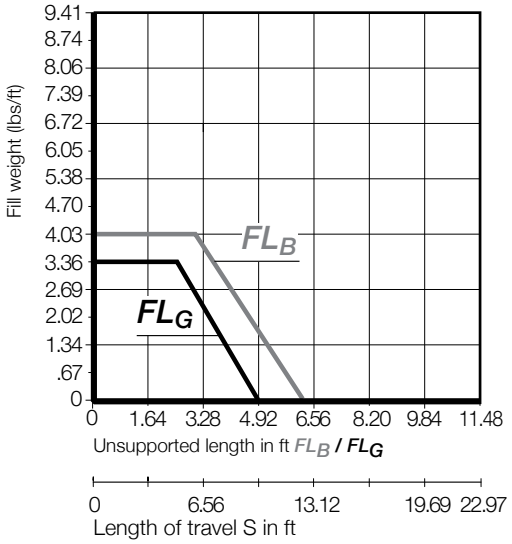
e-chain system® E6-1
Series E61-35
Installation Dimensions

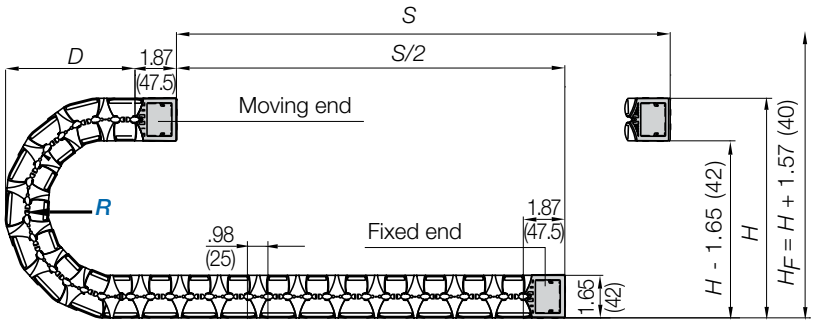
Short travel, unsupported length

- FL_B = unsupported with permitted sag
- FL_G = unsupported with straight upper run

Further information ➤ Design, Chapter 1







Pitch per link: = .98" (25 mm)
Links per ft (m): = 12 (40)
For center mount applications:
Chain length = $S/2 + K$

The required clearance height: $H_F = H + 1.57$ in. (40 mm) (with 1.34 lbs/ft (2.0 kg/m) fill weight.
Please consult igus® if space is particularly restricted.

R	2.17 (055)	2.95 (075)	3.94 (100)	4.92 (125)	5.91 (150)
H	7.56 (192)	9.13 (232)	11.10 (282)	13.10 (332)	15.04 (382)
D	4.47 (113.5)	5.26 (133.5)	6.24 (158.5)	7.22 (183.5)	8.21 (208.5)
K	8.86 (225)	11.42 (290)	14.37 (365)	17.52 (445)	20.67 (525)

If a gliding application is required for a long travel, please consult igus®.

Short Travels - Unsupported

Unsupported e-chains® feature positive camber over short travels. This must be accounted for when specifying the clearance height. Please refer to **Installation dimensions** for further details.

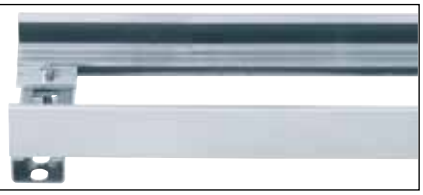
Legend

S = Length of travel
R = Bending radius
H = Nominal clearance height
D = Overlength e-chain® radius in final position
K = π • R + *safety buffer*
H_F = Required clearance height

Aluminum support tray

- Corrosion-resistant and seawater-resistant aluminum rails with adjustable width
- Noise-reducing glide strip integrated as standard
- Easy installation and connection of the e-chain®
- Open design - dirt and debris fall through

More information ➤ Chapter 9



Speed / acceleration FL_G	max. 65.6 ft/s (20 m/s) / max. 656 ft/s² (200 m/s²)
Speed / acceleration FL_B	max. 9.84 ft/s (3 m/s) / max. 19.69 ft/s² (6 m/s²)
Gliding speed / acceleration (maximum)	upon request
Permitted temperature, igumid G	upon request
Flammability Class	VDE 0304 IIC UL94 HB

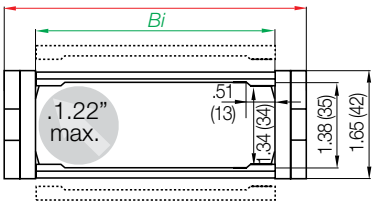
Technical Data

Details of material properties
➤ **Design, Chapter 1**

PDF: igus.com/e-chain-pdfs
Product information: igus.com/e-chains

e-chain system® E6-1
Series E61-35

Series E61-35 - e-chain® - crossbars removable along the inner and outer radius

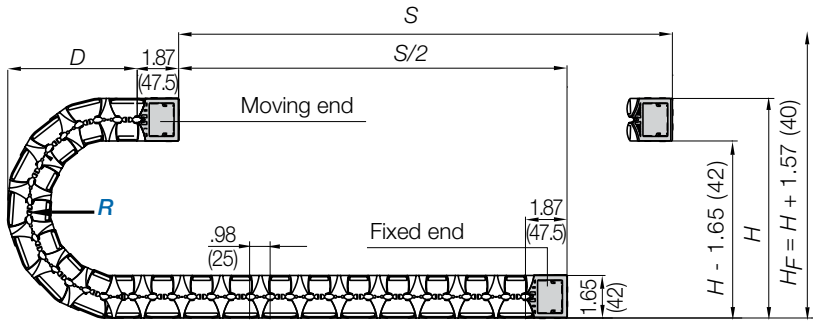




Part Number Structure

E61-35-100-100-0

- Color - Black
- Bending radius
- Width
- Series



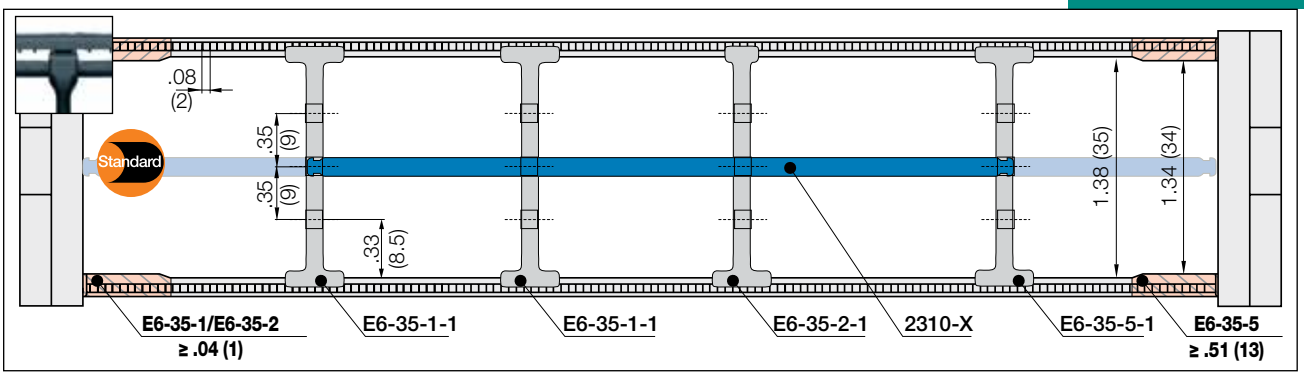
Supplement part number with required radius. Example: E61-35-100-100-0
Pitch: .98 in. (25 mm) per link links/ft (m) = 12 (40)

Part Number	Bi in. (mm)	Ba in. (mm)	Weight lbs/ft (kg/m)
E61-35-030-□-0	1.18 (30)	1.81 (46)	≈ 0.439 (0.653)
E61-35-040-□-0	1.57 (40)	2.20 (56)	≈ 0.454 (0.675)
E61-35-050-□-0	1.97 (50)	2.60 (66)	≈ 0.468 (0.696)
E61-35-060-□-0	2.36 (60)	2.99 (76)	≈ 0.482 (0.718)
E61-35-070-□-0	2.76 (70)	3.39 (86)	≈ 0.497 (0.739)
E61-35-080-□-0	3.15 (80)	3.78 (96)	≈ 0.511 (0.761)
E61-35-090-□-0	3.54 (90)	4.17 (106)	≈ 0.526 (0.783)
E61-35-100-□-0	3.94 (100)	4.57 (116)	≈ 0.540 (0.804)
E61-35-110-□-0	4.33 (110)	4.96 (126)	≈ 0.555 (0.826)
E61-35-120-□-0	4.72 (120)	5.35 (136)	≈ 0.570 (0.848)
E61-35-140-□-0	5.51 (140)	6.14 (156)	≈ 0.599 (0.891)

Choose from the radii below for all of the above sizes
Radius (mm) Example: E61-35-100-100-0

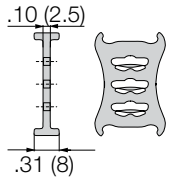
	055	075	100	125	150
R	2.17 (055)	2.95 (075)	3.94 (100)	4.92 (125)	5.91 (150)
H	7.56 (192)	9.13 (232)	11.10 (282)	13.10 (332)	15.04 (382)
D	4.47 (113.5)	5.26 (133.5)	6.24 (158.5)	7.22 (183.5)	8.21 (208.5)
K	8.86 (225)	11.42 (290)	14.37 (365)	17.52 (445)	20.67 (525)

e-chain system® E6-1
Series E61-35
Interior Separation



Note: Please maintain a lateral spacing of .51" (13 mm) between the separators and the side links. In the standard configuration separators are assembled every 2nd e-chain® link



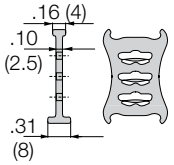


Separator, wide base

Unassembled	**Part No. E6-35-1**
Assembled	**Part No. E6-35-1-1**

- **Standard separator E6-35-1 for all applications**
  Separator with wide base for maximum locking strength and safe standing in e-chains®.



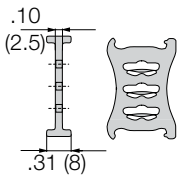


Separator, narrow head

Unassembled	**Part No. E6-35-2**
Assembled	**Part No. E6-35-2-1**

- **Separator E6-35-2**
  For even faster installation
  Firm hold to one side with a wide base, narrow on opposed side for easy cable assembly (slight grip)





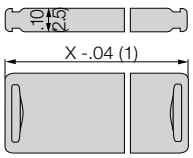
Notch separator, for notch crossbar

Unassembled	**Part No. E6-35-5**
Assembled	**Part No. E6-35-5-1**

- **Separator E6-35-5**
  Locks safely in .08 (2 mm) increments
  For exact positioning in e-chains®. Recommended for side-mounted applications.

Lockable full-width shelves - for the standard interior separation





Full width shelf, lockable

Unassembled	**Part No. 2300-X**
Assembled	**Part No. 2310-X**

- **Full width shelf, lockable**
  Shelf locks safely into separators on both ends, fixed width possible. Separators can be moved freely over the shelf in horizontal direction. Can be arranged at 3 different heights.

Width X in. (mm)	Part No. Unassembled	Part No. Assembled	Width X in. (mm)	Part No. Unassembled	Part No. Assembled	Width X in. (mm)	Part No. Unassembled	Part No. Assembled
0.59 (015)	**2300-015**	**2310-015**	2.36 (060)	**2300-060**	**2310-060**	3.43 (087)	**2300-087**	**2310-087**
0.98 (025)	**2300-025**	**2310-025**	2.44 (062)	**2300-062**	**2310-062**	3.54 (090)	**2300-090**	**2310-090**
1.18 (030)	**2300-030**	**2310-030**	2.56 (065)	**2300-065**	**2310-065**	3.94 (100)	**2300-100**	**2310-100**
1.50 (038)	**2300-038**	**2310-038**	2.76 (070)	**2300-070**	**2310-070**	4.06 (103)	**2300-103**	**2310-103**
1.57 (040)	**2300-040**	**2310-040**	2.95 (075)	**2300-075**	**2310-075**	4.33 (110)	**2300-110**	**2310-110**
1.97 (050)	**2300-050**	**2310-050**	3.03 (077)	**2300-077**	**2310-077**	4.72 (120)	**2300-120**	**2310-120**
2.24 (057)	**2300-057**	**2310-057**	3.15 (080)	**2300-080**	**2310-080**	4.92 (125)	**2300-125**	**2310-125**

Separator with integrated strain relief



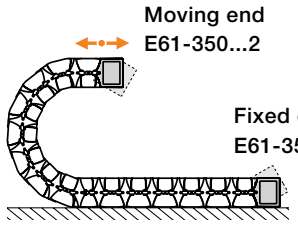
Strain relief separator Part No. E6-35-02-Z can be integrated into the mounting bracket and can be placed at any point of the e-chain®. It combines strain relief and interior separation, it can be installed on the first or last e-chain® link and is easy to assemble without any screws.
For more information ➤ **Chapter 10, Strain Relief**

PDF: igus.com/e-chain-pdfs
Product information: igus.com/e-chains

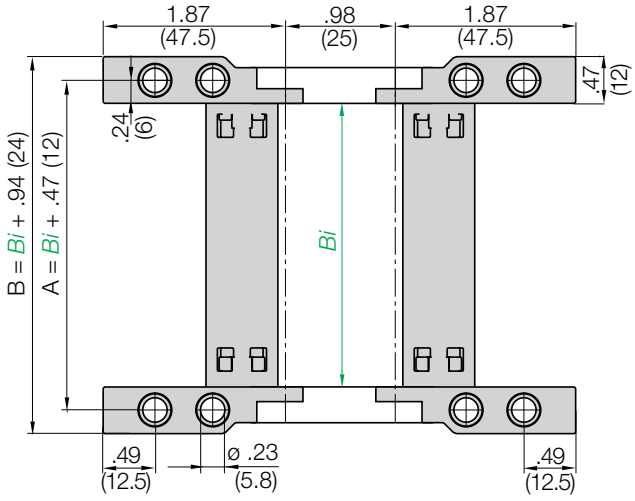
e-chain system® E6-1
Series E61-35
Mounting Brackets - KMA / Strain Relief

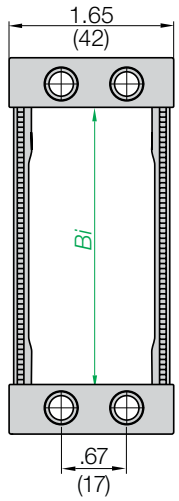
KMA - Pivoting

- Bolted connection outside of the chain cross-section
- Recommended for unsupported applications (for gliding applications please contact igus®)
- Confined installation conditions
- Attachment capability on all sides









Part Number Structure

E61-350-	030-	12

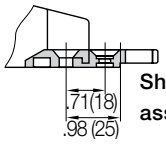
- 12 – Complete Set
- 030 – Width
- E61-350- – Mounting brackets for selected chain type

Due to the design of the E6-1 mounting brackets, chain length must be an odd number of links.

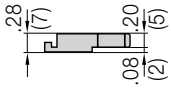
Width Index	Part No. Full Set	A in.	A (mm)	B in.	B (mm)	*Bi* in.	*Bi* (mm)
.030	**E61-350-030-12**	1.57	(40)	1.95	(49.5)	1.18	(30)
.040	**E61-350-040-12**	1.97	(50)	2.34	(59.5)	1.57	(40)
.050	**E61-350-050-12**	2.36	(60)	2.74	(69.5)	1.97	(50)
.060	**E61-350-060-12**	2.76	(70)	3.13	(79.5)	2.36	(60)
.070	**E61-350-070-12**	3.15	(80)	3.52	(89.5)	2.76	(70)
.080	**E61-350-080-12**	3.54	(90)	3.92	(99.5)	3.15	(80)
.090	**E61-350-090-12**	3.94	(100)	4.31	(109.5)	3.54	(90)
.100	**E61-350-100-12**	4.33	(110)	4.70	(119.5)	3.94	(100)
.110	**E61-350-110-12**	4.72	(120)	5.10	(129.5)	4.33	(110)
.120	**E61-350-120-12**	5.12	(130)	5.49	(139.5)	4.72	(120)
.140	**E61-350-140-12**	5.91	(150)	5.89	(419.5)	5.51	(140)

Tiewrap Plates





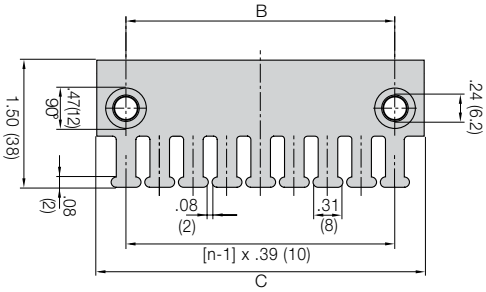
Shown assembled



Single tiewrap plate

Tiewrap plates as an individual part

Tiewrap Plates	n Number of Teeth	Dimension C	Dimension B
2020-ZB	3	1.18 (30)	.59 (15)
2030-ZB	4	1.57 (40)	.79 (20)
2040-ZB	5	1.97 (50)	1.18 (30)
2050-ZB	6	2.36 (60)	1.57 (40)
2070-ZB	8	3.15 (80)	2.36 (60)
2090-ZB	9	3.54 (90)	2.76 (70)
2100-ZB	10	3.94 (100)	3.15 (80)
2120-ZB	12	4.72 (120)	3.94 (100)



If used with KMA brackets with profile rail please add “KMA” to the end of the part number.
Example: 2020-ZBKMA

Other strain relief elements
➤ Strain Relief, Chapter 10

PDF: igus.com/e-chain-pdfs
Product information: igus.com/e-chains











e-chain system® E6-1
Series E61-40

1.57

Price Index

Series E61-40

Special Features / Options

Extremely low noise
Test results upon request

Assembly Tips



snap-open mechanism

Other Installation Methods

Vertical, hanging ≤ 98.4 ft (30 m)
Vertical, standing ≤ 6.56 ft (2 m)
Side-mounted, unsupported = upon request
Unsupported length of upper run ≤ 16.4 ft (5 m)

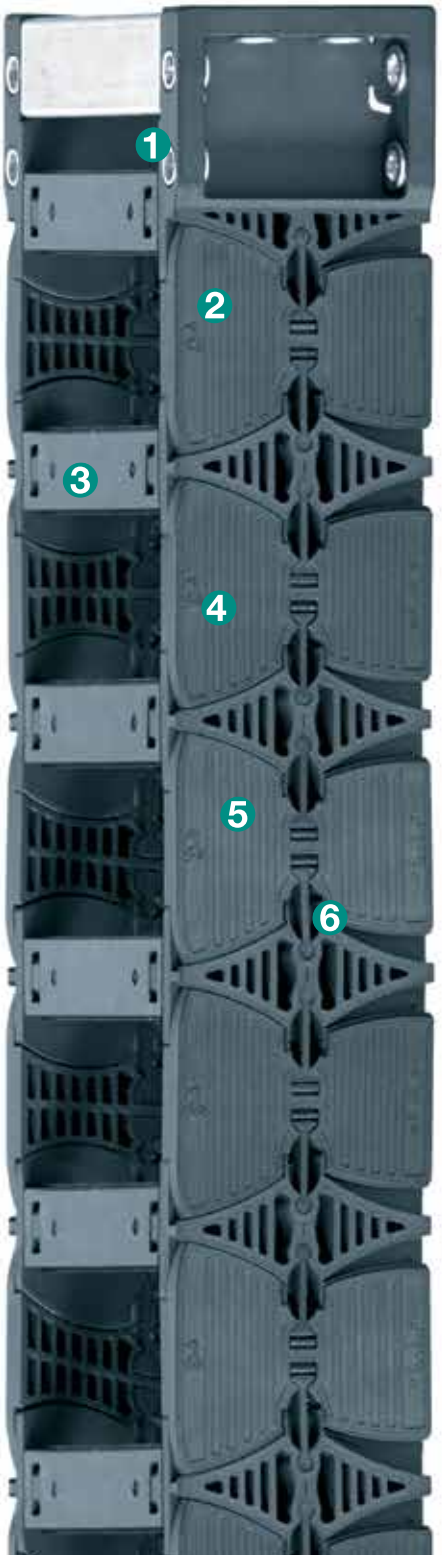
Usage Guidelines

- If a low-noise version is required
- For very high speeds and/or accelerations
- If large stresses and thrust forces are present
- For small bending radii
- If less vibration is required
- Minimal abrasion, suitable for cleanrooms

- For side-mounted applications
  ➤ **Series E2/000**
- For RBR (reverse bending radii)
  ➤ **Series E2/000**
- For high additional loads
  ➤ **Series E2/000**
- For very dirty environments
  ➤ **Series R6**

Features & Benefits

1. KMA mounting brackets with attachment points on all sides
2. Small pitch for low-noise, smooth operation
3. Crossbars open on either side
4. For high speed and high accelerations
5. Minimum vibration, high stability and tensile strength
6. No pin and bore connection - polymer spring



Order Example: Complete e-chain®

Please indicate chain length or number of links. Example:

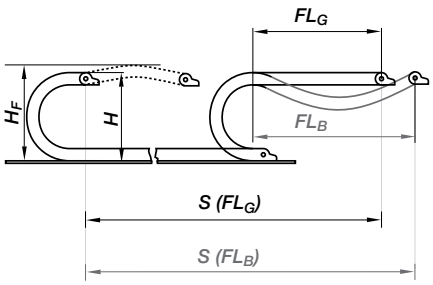
3.28 ft (1 m) **E61-40-100-075-0**	**e-chain®**
With 2 separators **E6-40-1-1** assembled every 2nd link	**Interior Separation**
1 Set **E61-400-100-12**	**Mounting Bracket**

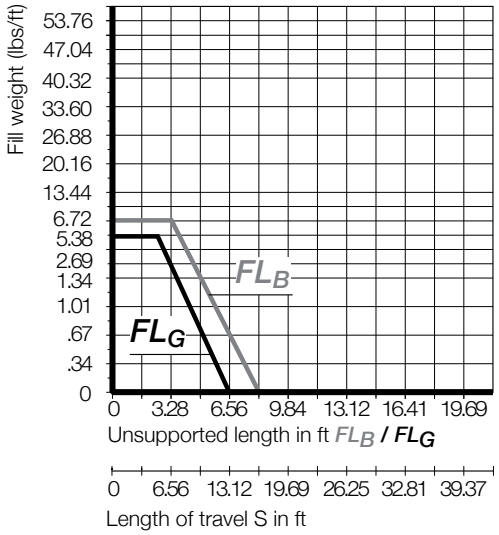
e-chain system® E6-1
Series E61-40
Installation Dimensions

Short travel, unsupported length

- FL_B = unsupported with permitted sag
- FL_G = unsupported with straight upper run

Further information ➤ Design, Chapter 1



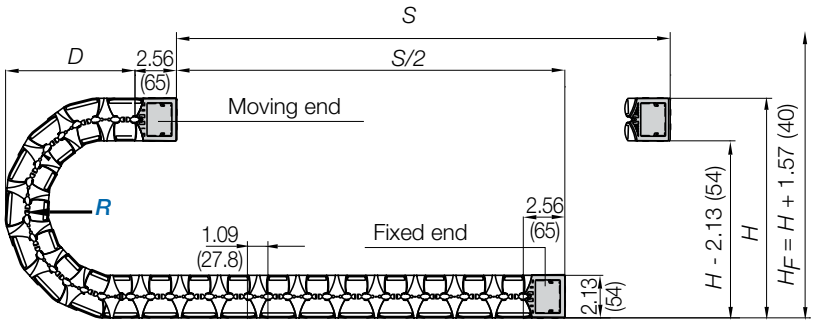


Short Travels - Unsupported

Unsupported e-chains® feature positive camber over short travels. This must be accounted for when specifying the clearance height. Please refer to **Installation dimensions** for further details.

Legend

S = Length of travel
R = Bending radius
H = Nominal clearance height
D = Overlength e-chain® radius in final position
K = π • R + *safety buffer*
H_F = Required clearance height



Pitch per link: = 1.09" (27.8 mm)
Links per ft (m): = 11 (36)
For center mount applications:
Chain length = $^{S}/_{2}$ + K

The required clearance height: ***HF* = *H* + 1.57 in. (40 mm)** (with 1.34 lbs/ft (2.0 kg/m) fill weight. Please consult igus® if space is particularly restricted.

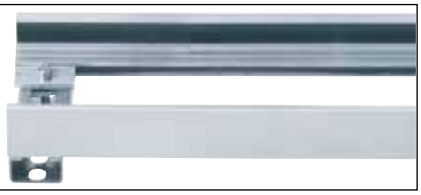
R	2.48 (063)	2.95 (075)	3.94 (100)	4.92 (125)	5.91 (150)	7.87 (200)
H	8.66 (220)	9.61 (244)	11.57 (294)	13.54 (344)	15.51 (394)	19.45 (494)
D	5.20 (132)	5.67 (144)	6.65 (169)	7.64 (194)	8.62 (219)	10.59 (269)
K	10.04 (255)	11.61 (295)	14.57 (370)	17.72 (450)	2.09 (530)	26.97 (685)

If a gliding application is required for a long travel, please consult igus®.

Aluminum support tray

- Corrosion-resistant and seawater-resistant aluminum rails with adjustable width
- Noise-reducing glide strip integrated as standard
- Easy installation and connection of the e-chain®
- Open design - dirt and debris fall through

More information ➤ Chapter 9



Speed / acceleration FL_G	max. 65.6 ft/s (20 m/s) / max. 656 ft/s² (200 m/s²)
Speed / acceleration FL_B	max. 9.84 ft/s (3 m/s) / max. 19.69 ft/s² (6 m/s²)
Gliding speed / acceleration (maximum)	upon request
Permitted temperature, igumid G	upon request
Flammability Class	VDE 0304 IIC UL94 HB

Technical Data

Details of material properties
➤ Design, Chapter 1

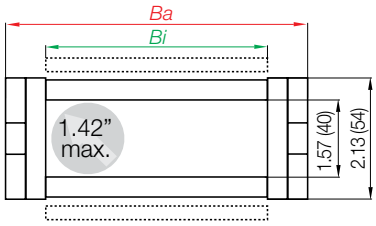
PDF: igus.com/e-chain-pdfs
Product information: igus.com/e-chains

igus® e-chain system®

Telephone 1-800-521-2747

Internet: igus.com
email: sales@igus.com
QuickSpec: igus.com/quickspec

Series E61-40 - e-chain® - crossbars removable along the inner and outer radius

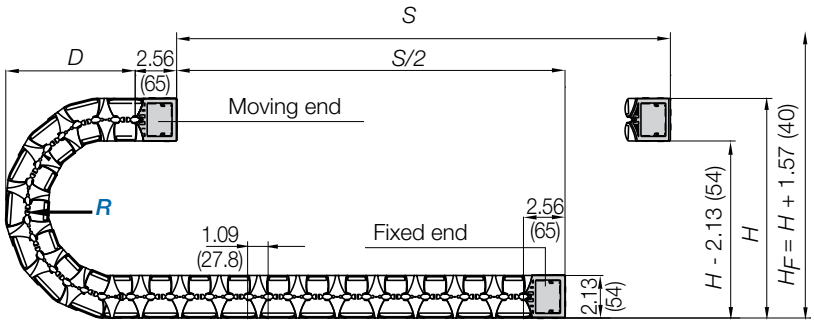




Part Number Structure

E61-40- 100- 100- 0

- Color - Black
- Bending radius
- Width
- Series



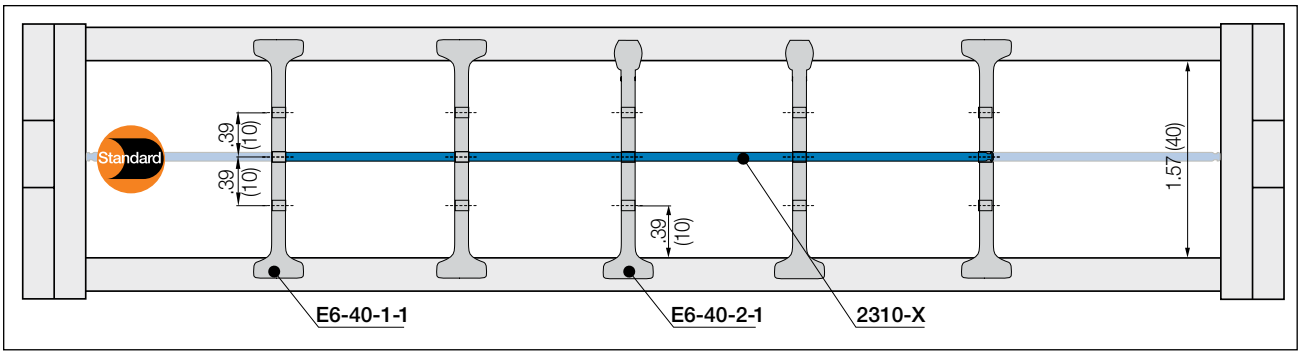
Supplement part number with required radius. Example: E61-40-100-[100]-0
Pitch: 1.09 in. (27.8 mm) per link links/ft (m) = 11 (36)

Part Number	Bi in. (mm)	Ba in. (mm)	Weight lbs/ft (kg/m)
E61-40-040-[ ]-0	1.57 (40)	2.20 (56)	≈ 0.613 (0.913)
E61-40-050-[ ]-0	1.97 (50)	2.60 (66)	≈ 0.638 (0.950)
E61-40-052-[ ]-0	2.05 (52)	2.68 (68)	≈ 0.643 (0.957)
E61-40-062-[ ]-0	2.44 (62)	3.07 (78)	≈ 0.668 (0.994)
E61-40-070-[ ]-0	2.76 (70)	3.39 (86)	≈ 0.687 (1.023)
E61-40-075-[ ]-0	2.95 (75)	3.58 (91)	≈ 0.700 (1.042)
E61-40-087-[ ]-0	3.43 (87)	4.06 (103)	≈ 0.716 (1.066)
E61-40-100-[ ]-0	3.94 (100)	4.57 (116)	≈ 0.762 (1.134)
E61-40-125-[ ]-0	4.92 (125)	5.55 (141)	≈ 0.824 (1.226)
E61-40-150-[ ]-0	5.91 (150)	6.54 (166)	≈ 0.886 (1.318)
E61-40-175-[ ]-0	6.89 (175)	7.52 (191)	≈ 0.947 (1.410)
E61-40-200-[ ]-0	7.87 (200)	8.50 (216)	≈ 1.009 (1.502)
E61-40-225-[ ]-0	8.86 (225)	9.49 (241)	≈ 1.072 (1.595)
E61-40-250-[ ]-0	9.84 (250)	10.47 (266)	≈ 1.134 (1.687)
E61-40-275-[ ]-0	10.83 (275)	11.46 (291)	≈ 1.195 (1.779)
E61-40-300-[ ]-0	11.81 (300)	12.44 (316)	≈ 1.257 (1.871)

Choose from the radii below for all of the above sizes
Radius (mm) Example: E61-40-100-[100]-0

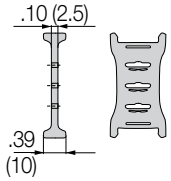
	063	075	100	125	150	150
R	2.48 (063)	2.95 (075)	3.94 (100)	4.92 (125)	5.91 (150)	7.87 (200)
H	8.66 (220)	9.61 (244)	11.57 (294)	13.54 (344)	15.51 (394)	19.45 (494)
D	5.20 (132)	5.67 (144)	6.65 (169)	7.64 (194)	8.62 (219)	10.59 (269)
K	10.04 (255)	11.61 (295)	14.57 (370)	17.72 (450)	2.09 (530)	26.97 (685)

e-chain system® E6-1
Series E61-40
Interior Separation



Note: Please maintain a lateral spacing of .51" (13 mm) between the separators and the side links. In the standard configuration separators are assembled every 2nd e-chain® link



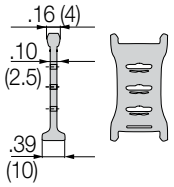


Separator, wide base

Unassembled	**Part No. E6-40-1**
Assembled	**Part No. E6-40-1-1**

- **Standard separator E6-40-1 for all applications**
  Separator with wide base for maximum locking strength and safe standing in e-chains®.





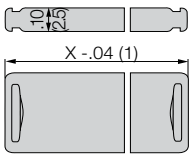
Separator, narrow head

Unassembled	**Part No. E6-40-2**
Assembled	**Part No. E6-40-2-1**

- **Separator E6-40-2**
  For even faster installation
  Firm hold to one side with a wide base, narrow on opposed side for easy cable assembly (slight grip)

Lockable full-width shelves - for the standard interior separation





Full width shelf, lockable

Unassembled	**Part No. 2300-X**
Assembled	**Part No. 2310-X**

- **Full width shelf, lockable**
  Shelf locks safely into separators on both ends, fixed width possible. Separators can be moved freely over the shelf in horizontal direction. Can be arranged at 3 different heights.

Width X in. (mm)	Part No. Unassembled	Part No. Assembled	Width X in. (mm)	Part No. Unassembled	Part No. Assembled	Width X in. (mm)	Part No. Unassembled	Part No. Assembled
0.59 (015)	**2300-015**	**2310-015**	2.36 (060)	**2300-060**	**2310-060**	3.43 (087)	**2300-087**	**2310-087**
0.98 (025)	**2300-025**	**2310-025**	2.44 (062)	**2300-062**	**2310-062**	3.54 (090)	**2300-090**	**2310-090**
1.18 (030)	**2300-030**	**2310-030**	2.56 (065)	**2300-065**	**2310-065**	3.94 (100)	**2300-100**	**2310-100**
1.50 (038)	**2300-038**	**2310-038**	2.76 (070)	**2300-070**	**2310-070**	4.06 (103)	**2300-103**	**2310-103**
1.57 (040)	**2300-040**	**2310-040**	2.95 (075)	**2300-075**	**2310-075**	4.33 (110)	**2300-110**	**2310-110**
1.97 (050)	**2300-050**	**2310-050**	3.03 (077)	**2300-077**	**2310-077**	4.72 (120)	**2300-120**	**2310-120**
2.24 (057)	**2300-057**	**2310-057**	3.15 (080)	**2300-080**	**2310-080**	4.92 (125)	**2300-125**	**2310-125**

Separator with integrated strain relief



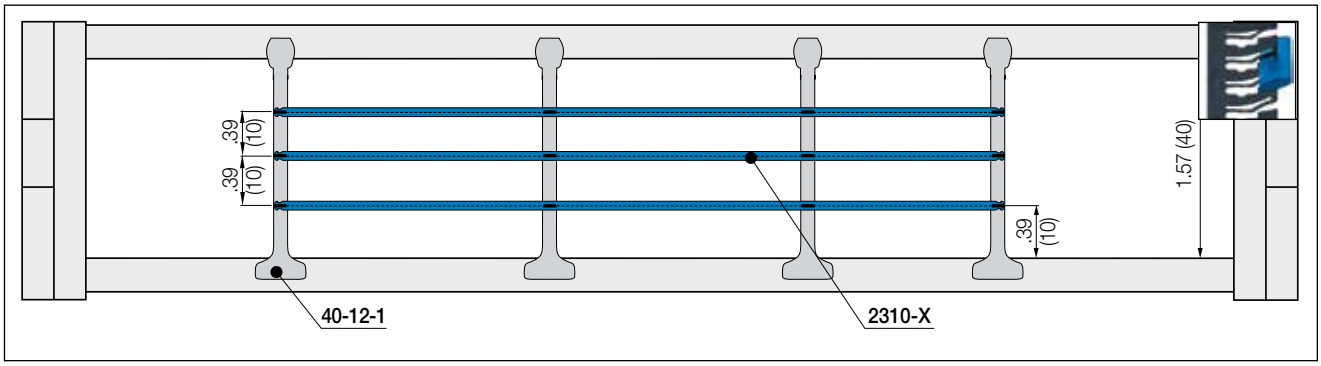
Strain relief separator Part No. E6-40-02-Z can be integrated into the mounting bracket and can be placed at any point of the e-chain®. It combines strain relief and interior separation, it can be installed on the first or last e-chain® link and is easy to assemble without any screws.
For more information ➤ **Chapter 10, Strain Relief**

PDF: igus.com/e-chain-pdfs
Product information: igus.com/e-chains

e-chain system® E6-1
Series E61-40
Interior Separation

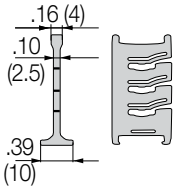
Telephone 1-800-521-2747

Internet: igus.com
email: sales@igus.com
QuickSpec: igus.com/quickspec



Note: No lateral gap to side links is necessary.
In the standard configuration separators are assembled every 2nd e-chain® link





Lean separator

Unassembled	**Part No. 40-12**
Assembled	**Part No. 40-12-1**

- **Lean separators**
  New design allows extremely fast fitting of shelves in several layers, which significantly reduces assembly time. Enables extremely fast replacement of individual cables in a very full e-chain®.



- **Lean separator design - several layers of cables fitted quickly, save up to 50%* assembly time**
  (*Lean separator vs. standard separator - measured on a 13.12 ft (4m) long e-chain® fitted with 12 cables in the igus® harnessing factory)

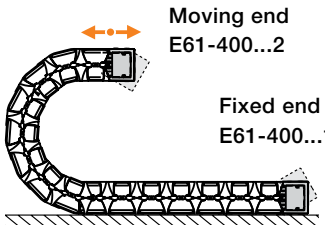


Very small bend radii are possible with chainflex® CF98 control cable in this E6-1 readychain® system. It offers smooth operation and is suitable for cleanrooms

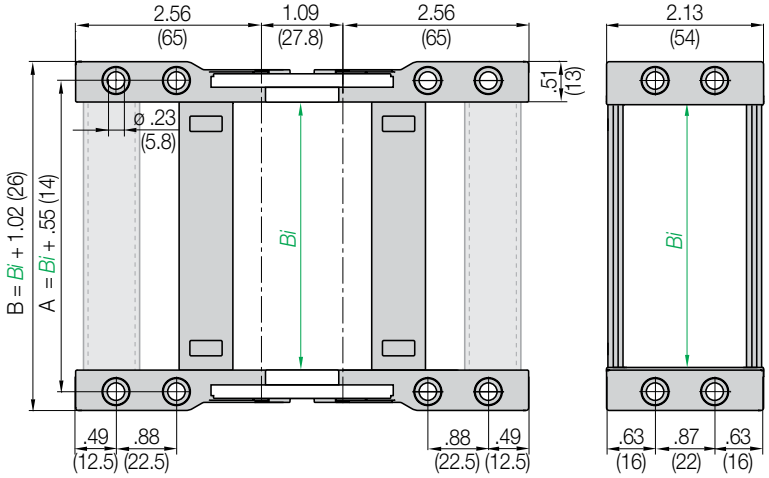
e-chain system® E6-1
Series E61-40
Mounting Brackets - KMA

KMA - Pivoting

- Bolted connection outside of the chain cross-section
- Recommended for unsupported applications (for gliding applications please contact igus®)
- Confined installation conditions
- Attachment capability on all sides







Part Number Structure

E61-400-	100-	12	P

- P: With profile rail
- 12: Complete Set
- 100: Width
- E61-400: Mounting brackets for selected chain type

Due to the design of the E6-1 mounting brackets, chain length must be an odd number of links.

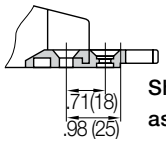
For Series	Part No. Full Set Without Profile Rail	Part No. Full Set With Profile Rail	Dimension A in.	(mm)	Dimension B in.	(mm)	*Bi* in.	(mm)
.040	**E61-400-040-12**	**E61-400-040-12P**	2.13	(54)	2.60	(66)	1.57	(40)
.050	**E61-400-050-12**	**E61-400-050-12P**	2.52	(64)	2.99	(76)	1.97	(50)
.052	**E61-400-052-12**	**E61-400-052-12P**	2.66	(66)	3.07	(78)	2.05	(52)
.062	**E61-400-062-12**	**E61-400-062-12P**	2.99	(76)	3.46	(88)	2.44	(62)
.070	**E61-400-070-12**	**E61-400-070-12P**	3.31	(84)	3.78	(96)	2.76	(70)
.075	**E61-400-075-12**	**E61-400-075-12P**	3.50	(89)	3.98	(101)	2.95	(75)
.087	**E61-400-087-12**	**E61-400-087-12P**	3.98	(101)	4.45	(113)	3.42	(87)
.100	**E61-400-100-12**	**E61-400-100-12P**	4.49	(114)	4.96	(126)	3.94	(100)
.125	**E61-400-125-12**	**E61-400-125-12P**	5.47	(139)	5.94	(151)	4.92	(125)
.150	**E61-400-150-12**	**E61-400-150-12P**	6.46	(164)	6.93	(176)	5.91	(150)
.175	**E61-400-175-12**	**E61-400-175-12P**	7.44	(189)	7.91	(201)	6.89	(175)
.200	**E61-400-200-12**	**E61-400-200-12P**	8.43	(214)	8.90	(226)	7.87	(200)
.225	**E61-400-225-12**	**E61-400-225-12P**	9.41	(239)	9.88	(251)	8.86	(225)
.250	**E61-400-250-12**	**E61-400-250-12P**	10.39	(264)	10.87	(276)	9.84	(250)
.275	**E61-400-275-12**	**E61-400-275-12P**	11.38	(289)	11.85	(301)	10.83	(275)
.300	**E61-400-300-12**	**E61-400-300-12P**	12.36	(314)	12.83	(326)	11.81	(300)

PDF: igus.com/e-chain-pdfs
Product information: igus.com/e-chains

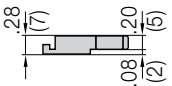
e-chain system® E6-1
Series E61-40
Strain Relief

Tiewrap Plates





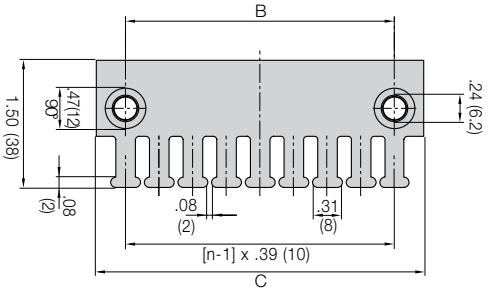
Shown assembled



Single tiewrap plate

Tiewrap plates as an individual part

Tiewrap Plates	n Number of Teeth	Dimension C	Dimension B
2020-ZB	3	1.18 (30)	.59 (15)
2030-ZB	4	1.57 (40)	.79 (20)
2040-ZB	5	1.97 (50)	1.18 (30)
2050-ZB	6	2.36 (60)	1.57 (40)
2070-ZB	8	3.15 (80)	2.36 (60)
2090-ZB	9	3.54 (90)	2.76 (70)
2100-ZB	10	3.94 (100)	3.15 (80)
2120-ZB	12	4.72 (120)	3.94 (100)



If used with KMA brackets with profile rail please add “KMA” to the end of the part number.
Example: 2020-ZBKMA

Other strain relief elements
➤ **Strain Relief, Chapter 10**

PDF: igus.com/e-chain-pdfs
Product information: igus.com/e-chains











e-chain system® E6-1
Series E61-52

Price Index

Series E61-52

Special Features / Options

Extremely low noise
Test results upon request

Assembly Tips



snap-open mechanism

Other Installation Methods

Vertical, hanging ≤ 164 ft (50 m)
Vertical, standing ≤ 6.56 ft (2 m)
Side-mounted, unsupported = upon request
Unsupported length of upper run ≤ 19.69 ft (6 m)

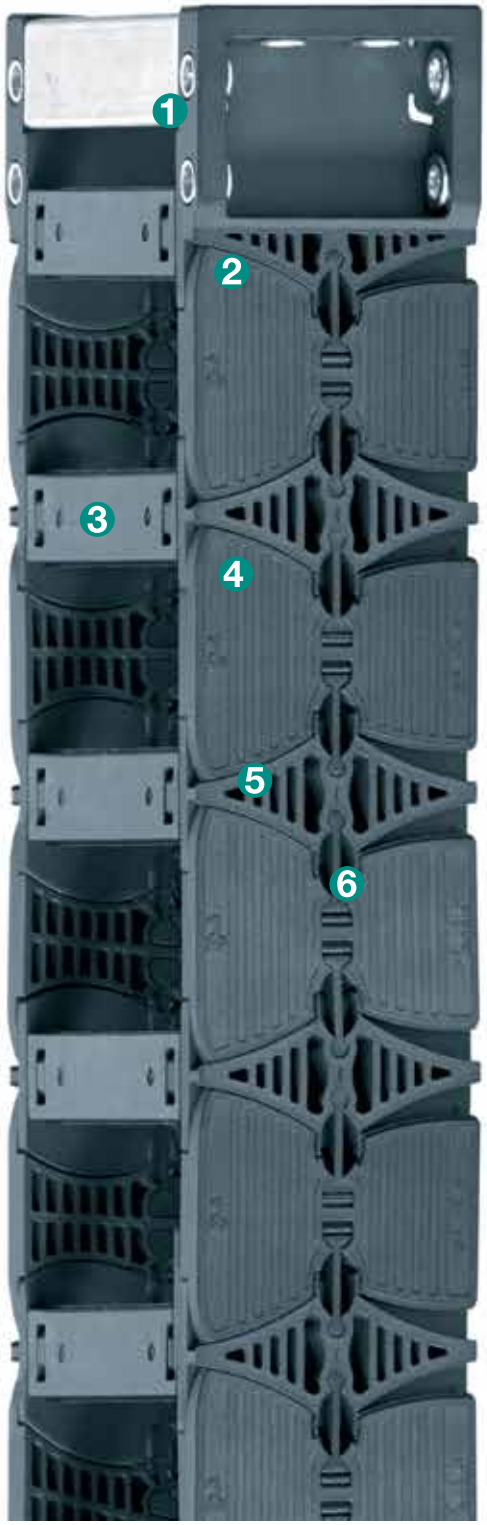
Usage Guidelines

- If a low-noise version is required
- For very high speeds and/or accelerations
- If large stresses and thrust forces are present
- For small bending radii
- If less vibration is required
- Minimal abrasion, suitable for cleanrooms

- For side-mounted applications
  ➤ **Series E2/000**
- For RBR (reverse bending radii)
  ➤ **Series E2/000**
- For high additional loads
  ➤ **Series E2/000**
- For very dirty environments
  ➤ **Series R6**

Features & Benefits

1. KMA mounting brackets with attachment points on all sides
2. Small pitch for low-noise, smooth operation
3. Crossbars open on either side
4. For high speed and high accelerations
5. Minimum vibration, high stability and tensile strength
6. No pin and bore connection - polymer spring



Order Example: Complete e-chain®

Please indicate chain length or number of links. Example:

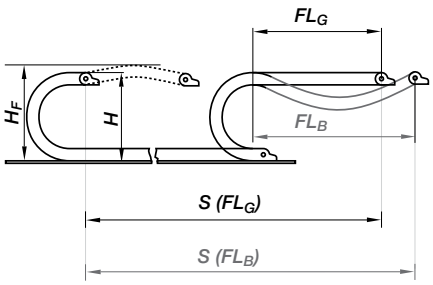
3.28 ft (1 m) **E61-52-100-075-0**	**e-chain®**
With 2 separators **E6-52-1-1** assembled every 2nd link	**Interior Separation**
1 Set **E61-520-100-12**	**Mounting Bracket**

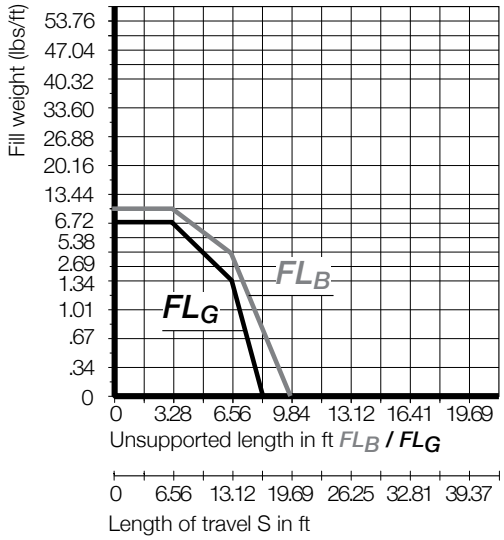
e-chain system® E6-1
Series E61-52
Installation Dimensions

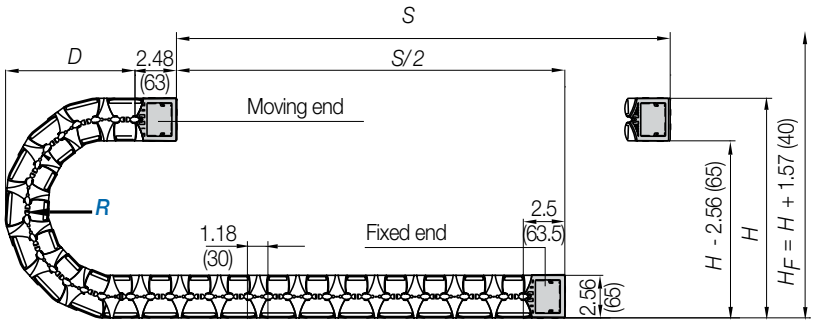
Short travel, unsupported length

- FL_B = unsupported with permitted sag
- FL_G = unsupported with straight upper run

Further information ➤ Design, Chapter 1







Pitch per link: = 1.18" (30 mm)
Links per ft (m): = 10 (34)
For center mount applications:
Chain length = $_{-}^{S}/_{2} + K$

The required clearance height: ***HF = H* + 1.57 in. (40 mm)** (with 1.34 lbs/ft (2.0 kg/m) fill weight.
Please consult igus® if space is particularly restricted.

R	2.95 (075)	3.94 (100)	4.92 (125)	5.91 (150)
H	10.43 (265)	12.40 (315)	14.37 (365)	16.34 (415)
D	6.02 (153)	7.01 (178)	7.99 (203)	8.98 (228)
K	11.81 (300)	14.76 (375)	17.91 (455)	21.06 (535)

If a gliding application is required for a long travel, please consult igus®.

Steel support tray for support of lower run

- Simple one-piece support trays for the lower run
- To your requirements and specifications
- 4 options available

More information ➤ Chapter 9



Speed / acceleration FL_G	max. 65.6 ft/s (20 m/s) / max. 656 ft/s² (200 m/s²)
Speed / acceleration FL_B	max. 9.84 ft/s (3 m/s) / max. 19.69 ft/s² (6 m/s²)
Gliding speed / acceleration (maximum)	upon request
Permitted temperature, igumid G	upon request
Flammability Class	VDE 0304 IIC UL94 HB

Short Travels - Unsupported

Unsupported e-chains® feature positive camber over short travels. This must be accounted for when specifying the clearance height. Please refer to **Installation dimensions** for further details.

Legend

S = Length of travel
R = Bending radius
H = Nominal clearance height
D = Overlength e-chain® radius in final position
K = π • R + *safety buffer*
HF = Required clearance height

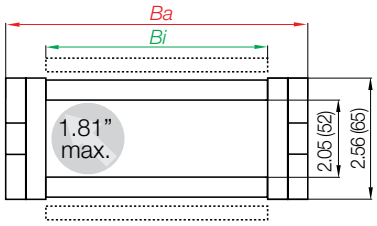
Technical Data

Details of material properties
➤ Design, Chapter 1

PDF: igus.com/e-chain-pdfs
Product information: igus.com/e-chains

e-chain system® E6-1
Series E61-52

Series E61-52 - e-chain® - crossbars removable along the inner and outer radius

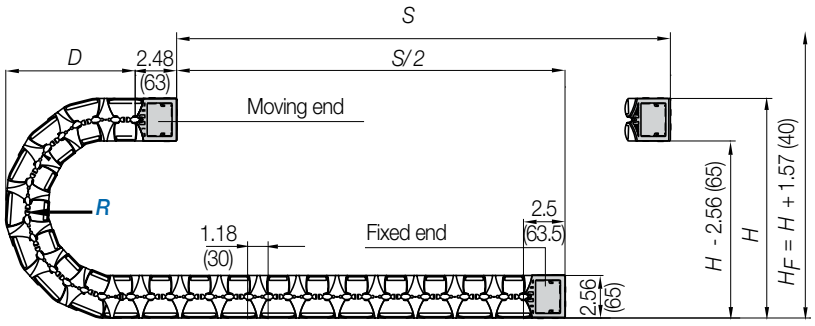




Part Number Structure

E61-52-100-100-0

- Color - Black
- Bending radius
- Width
- Series



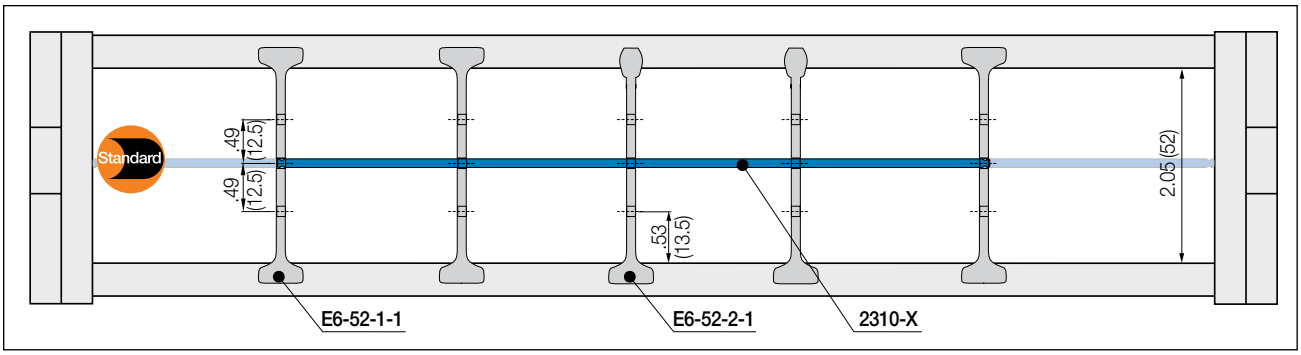
Supplement part number with required radius. Example: E61-52-100-100-0
Pitch: 1.18 in. (30 mm) per link links/ft (m) = 10 (34)

Part Number	Bi in. (mm)	Ba in. (mm)	Weight lbs/ft (kg/m)
E61-52-040-□-0	1.57 (40)	2.52 (64)	≈ 1.128 (1.679)
E61-52-050-□-0	1.97 (50)	2.91 (74)	≈ 1.158 (1.724)
E61-52-052-□-0	2.05 (52)	2.99 (76)	≈ 1.165 (1.733)
E61-52-062-□-0	2.44 (62)	3.41 (86.5)	≈ 1.196 (1.780)
E61-52-070-□-0	2.76 (70)	3.70 (94)	≈ 1.219 (1.814)
E61-52-075-□-0	2.95 (75)	3.90 (99)	≈ 1.234 (1.836)
E61-52-087-□-0	3.43 (87)	4.39 (111.5)	≈ 1.271 (1.892)
E61-52-100-□-0	3.94 (100)	4.88 (124)	≈ 1.309 (1.948)
E61-52-125-□-0	4.92 (125)	5.87 (149)	≈ 1.384 (2.060)
E61-52-150-□-0	5.91 (150)	6.85 (174)	≈ 1.460 (2.172)
E61-52-175-□-0	6.89 (175)	7.83 (199)	≈ 1.534 (2.283)
E61-52-200-□-0	7.87 (200)	8.81 (224)	≈ 1.609 (2.395)
E61-52-225-□-0	8.86 (225)	9.80 (249)	≈ 1.685 (2.507)
E61-52-250-□-0	9.84 (250)	10.79 (274)	≈ 1.760 (2.619)
E61-52-275-□-0	10.83 (275)	11.77 (299)	≈ 1.835 (2.731)
E61-52-300-□-0	11.81 (300)	12.76 (324)	≈ 1.910 (2.843)

Choose from the radii below for all of the above sizes
Radius (mm) Example: E61-52-100-100-0

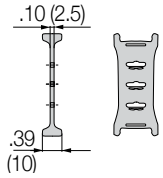
	075	100	125	150
R	2.95 (075)	3.94 (100)	4.92 (125)	5.91 (150)
H	10.43 (265)	12.40 (315)	14.37 (365)	16.34 (415)
D	6.02 (153)	7.01 (178)	7.99 (203)	8.98 (228)
K	11.81 (300)	14.76 (375)	17.91 (455)	21.06 (535)

e-chain system® E6-1
Series E61-52
Interior Separation



Note: Please maintain a lateral spacing of .51" (13 mm) between the separators and the side links. In the standard configuration separators are assembled every 2nd e-chain® link



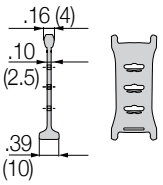


Separator, wide base

Unassembled	**Part No. E6-52-1**
Assembled	**Part No. E6-52-1-1**

- **Standard separator E6-52-1 for all applications**
  Separator with wide base for maximum locking strength and safe standing in e-chains®.





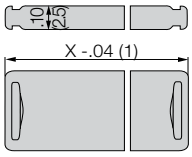
Separator, narrow head

Unassembled	**Part No. E6-52-2**
Assembled	**Part No. E6-52-2-1**

- **Separator E6-52-2**
  For even faster installation
  Firm hold to one side with a wide base, narrow on opposed side for easy cable assembly (slight grip)

Lockable full-width shelves - for the standard interior separation





Full width shelf, lockable

Unassembled	**Part No. 2300-X**
Assembled	**Part No. 2310-X**

- **Full width shelf, lockable**
  Shelf locks safely into separators on both ends, fixed width possible. Separators can be moved freely over the shelf in horizontal direction. Can be arranged at 3 different heights.

Width X in. (mm)	Part No. Unassembled	Part No. Assembled	Width X in. (mm)	Part No. Unassembled	Part No. Assembled	Width X in. (mm)	Part No. Unassembled	Part No. Assembled
0.59 (015)	**2300-015**	**2310-015**	2.36 (060)	**2300-060**	**2310-060**	3.43 (087)	**2300-087**	**2310-087**
0.98 (025)	**2300-025**	**2310-025**	2.44 (062)	**2300-062**	**2310-062**	3.54 (090)	**2300-090**	**2310-090**
1.18 (030)	**2300-030**	**2310-030**	2.56 (065)	**2300-065**	**2310-065**	3.94 (100)	**2300-100**	**2310-100**
1.50 (038)	**2300-038**	**2310-038**	2.76 (070)	**2300-070**	**2310-070**	4.06 (103)	**2300-103**	**2310-103**
1.57 (040)	**2300-040**	**2310-040**	2.95 (075)	**2300-075**	**2310-075**	4.33 (110)	**2300-110**	**2310-110**
1.97 (050)	**2300-050**	**2310-050**	3.03 (077)	**2300-077**	**2310-077**	4.72 (120)	**2300-120**	**2310-120**
2.24 (057)	**2300-057**	**2310-057**	3.15 (080)	**2300-080**	**2310-080**	4.92 (125)	**2300-125**	**2310-125**

PDF: igus.com/e-chain-pdfs
Product information: igus.com/e-chains

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12
16.28.01.055
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igus®

System E6

E6 - 6-piece e-chains®- Extremely low-noise, minimum vibrations

The E6 Series offers numerous advantages in addition to long life cycles. It provides extremely quiet, low-vibration operation. It minimizes the polygon effect which can occur during the rolling motion of an e-chain®. The ultra-low noise levels have been confirmed in a recent report by the Rheinland Technical Inspection Agency. Our extensive delivery program offers the right chain size for any application; a wide range of interior separators are also available. The same applies to the mounting brackets. .

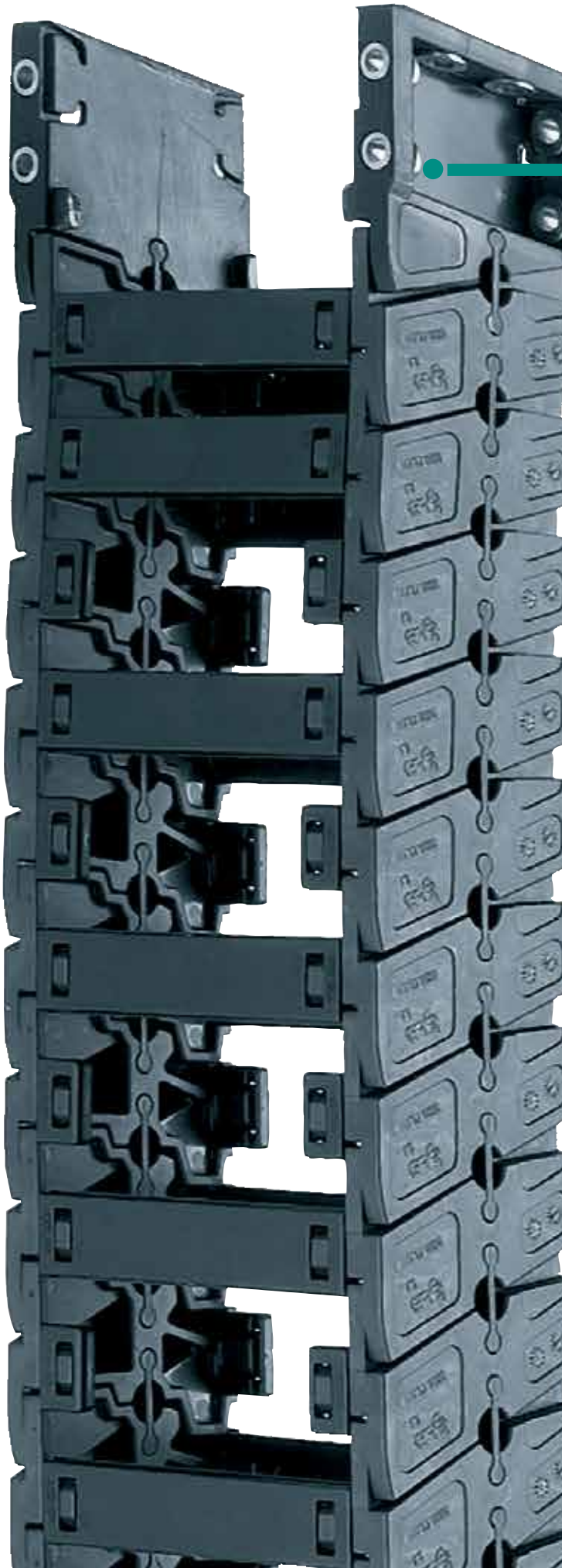
Typical industries and applications

- Cleanroom
- Printing machines
- Handling & robot
- Machine Tools
- Measuring machines
- Semiconductor industries
- Medical industries
- Electronic industries
- General machinery

System E6 - Extremely low noise - TÜV certified

System E6 - 6-piece link-design

LEVEL 1 absorption confirmed by IPA-Fraunhofer-Institut according to SEMI E78-0998 for the E6 standard material. Continuously constant conductance value as there are no pin-bore connection (no air gaps).





A linear drive provides for highly dynamic feed of PCBs. This system is twice as fast as handling units with a toothed-belt drive; designed to withstand high dynamic loads, the E6 e-chains® ensure a supply of power, coolant and control data with ultra-low noise and vibration

Selected noise tests - External noise corrected measurement values

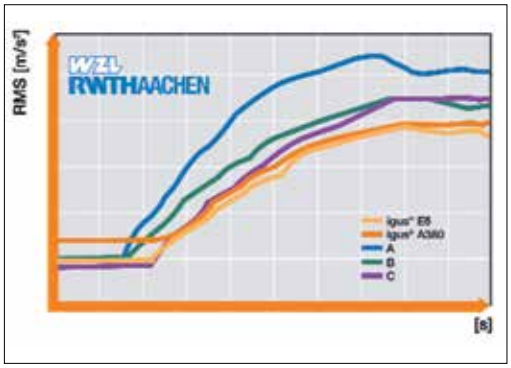
e-chain® Series	Averaging of the corrected sound pressure levels	Test method
igus® Series E6-29*	**≈ 37 dB(A)**	unsupported v = 3.28 ft/s (1.0 m/s)
igus® Series E6-52*	**≈ 41 dB(A)**	unsupported, side mounted v = 1.64 ft/s (0.5 m/s)
igus® Series E6-52	**≈ 46 dB(A)**	unsupported v = 6.56 ft/s (2.0 m/s)
Chain 1 Third-party product	≈ 77 dB(A)	unsupported v = 6.56 ft/s (2.0 m/s)
Chain 2 Third-party product	≈ 68 dB(A)	unsupported v = 6.56 ft/s (2.0 m/s)
Chain 3 Third-party product	≈ 73 dB(A)	unsupported v = 6.56 ft/s (2.0 m/s)

Source: TÜV Rheinland *Source: igus® laboratory



Noise level ≤ 46 dB(A)

A measurement conducted by the Rhineland Technical Inspection Authority (TÜV Rheinland) in May 2002 indicates a value of ≤ 46 dB(A) at 6.56 ft/s (2 m/s) and with an unsupported length of 4..92 ft (1.5 m) with **Series E6-52-100-100-0**, and all this with at least 10 dB(A) sound pressure level generated by external noise. **We have received an official noise certificate from the Rhineland Technical Inspection Authority (TÜV Rheinland Berlin Brandenburg) and we are happy to provide you with a copy upon request.**



Study of the Laboratory of Machine Tools and Production Engineering (WZL) of the RWTH Aachen on “Vibration tests in energy supply chains”.
Result: The E6 energy supply system of the company of igus® GmbH, Cologne, is characterized by extreme low vibration and smooth running.

e-chain system® E6
Selection Guide

Crossbars every 2nd link
for almost all applications - Standard



Series	Inner height *hi* in.	(mm)	Inner width *Bi* in.	(mm)	Outer width *Ba* in.	(mm)	Outer height *ha* in.	(mm)	Bending radius *R* in.	(mm)
E6-29	1.14	(29)	1.18-5.51	(30-140)	1.81-5.35	(46-136)	1.38	(35)	2.17-5.91	(55-150)
E6-35	1.38	(35)	1.18-5.51	(30-140)	1.97-6.30	(50-160)	1.65	(42)	2.17-5.91	(55-100)
E6-40	1.57	(40)	1.57-11.81	(40-300)	2.36-12.60	(60-320)	2.12	(54)	2.48-7.87	(63-200)
E6-52	2.05	(52)	1.57-11.81	(40-300)	2.52-12.76	(64-324)	2.56	(65)	2.95-9.84	(75-250)
E6-62	2.44	(62)	1.97-15.75	(50-400)	3.39-17.17	(86-436)	3.31	(84)	4.53-13.78	(115-350)
E6-80L	3.15	(80)	3.53-21.65	(87-550)	4.53-22.76	(115-578)	4.25	(108)	5.91-11.81	(150-300)
E6-80	3.15	(80)	1.97-23.62	(50-600)	3.94-25.59	(100-650)	4.25	(108)	5.91-17.72	(150-450)

E-Tubes
fully enclosed, for complete cable protection



Series	Inner height *hi* in.	(mm)	Inner width *Bi* in.	(mm)	Outer width *Ba* in.	(mm)	Outer height *ha* in.	(mm)	Bending radius *R* in.	(mm)
R6-29	1.10	(28)	1.18-4.72	(30-120)	1.81-5.35	(46-136)	1.38	(35)	2.17-5.91	(55-150)
R6-40	1.57	(40)	2.44-2.95	(62-75)	3.23-3.74	(82-95)	2.12	(54)	2.48-7.87	(63-200)
R6-52	2.05	(52)	1.97-6.89	(50-175)	2.91-7.83	(74-199)	2.56	(65)	2.95-9.84	(75-250)

Cleanroom qualification of E6 e-chains®



By eliminating the pin/bore connection, the unsupported E6 has very low abrasion and is suitable for cleanrooms

In many applications where cumbersome special solutions are used, a simple standard e-chain® can be used instead. A comprehensive test program was devised and performed for both gliding use and unsupported use. For many applications, the e-chains® in special materials are practically abrasion-free. Detailed tests results are available upon request. IPA tests confirm that standard igus® e-chains® meet cleanroom requirements. “Tested and certified as very good!” In cleanrooms a very high resistance to wear of moving parts is required. Therefore, e-chains® must be very resistant to wear In order to meet the standard requirements for such a sensitive environment.

Fraunhofer IPA TESTED® DEVICE igus GmbH Energy chain / Cable systems Report No. IG 0704-400

IPA classification - Report IG0704-400:

- Special material “cleanroom” - **Class 1 according to standard DIN EN ISO 14644-1** - Note: None of the classes corresponding to the DIN EN ISO 14644-1 Class 1 is included in the US standard at v =(0.5 m/s), a = (1.0 m/s²) - Series E6-29-060-150-0-CR
- Standard material - **Class 3 according to standard DIN EN ISO 14644-1** (according to US Fed. Stand. 209E, Class 1) at v = (0.5 m/s), a = (1.0 m/s²) Series E6-29-060-150-0 and v= 1m/s, a = 2m/s² Series E6-29-050-055-0 with inserted cables CF34-15-04, CF9-05-12, CF11-02-01-02-PBA-LC-D

Available from stock. Orders ship as early as today.*

*On average 90% of orders ship the same day..

e-chain system® E6
Assembly Instructions

System E6 e-chains® - Assembling



Position side links ...



... gently twist and snap in



Gently insert connector by using a hammer



Position crossbars.
Push down and snap in

E-Tubes - Assembling Lids



Insert lid ...



... push down and snap in

E-Tubes - Separating Lids



Lever with screwdriver ...



... and remove lids by hand

System E6 e-chains® - Separating



Lever crossbars with screwdriver



Tap gently to remove connectors



Twist and ...



... separate side links

e-chain system® E6
Series E6-29

Price Index

Series E6-29

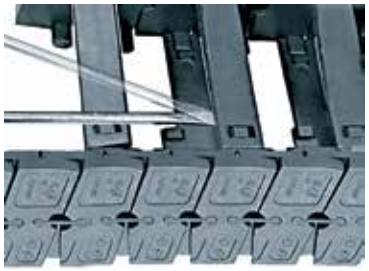
Special Features / Options

Extremely low noise
Test results upon request

IPA Certificate: Class 1, according to standard DIN EN ISO 14644-1 for the E6 system (Series E6-29-060-150-0-CR, (v = 1.64 ft/s, a = 3.28 ft/s²)

LEVEL 1 absorption confirmed by IPA-Fraunhofer-Institute according to SEMI E78-0998 for the E6 standard material

Assembly Tips



To close, push and click shut

Other Installation Methods

Vertical, hanging ≤ 98.4 ft (30 m)
Vertical, standing ≤ 6.56 ft (2 m)
Side-mounted, unsupp. = possible to a limited extent
Unsupported length of upper run upon request

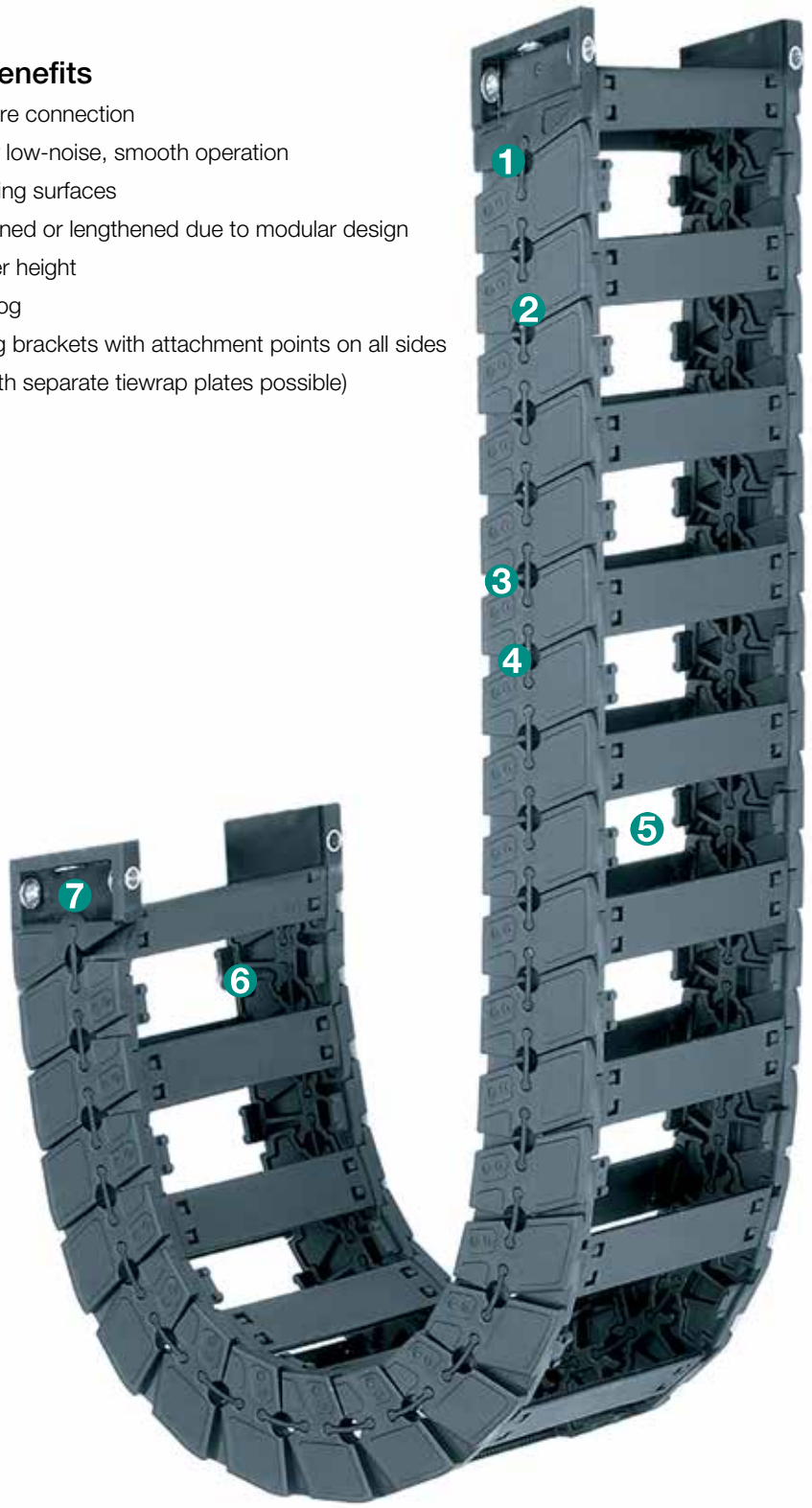
Usage Guidelines

- If a low-noise version is required
- For very high speeds and/or accelerations
- If large stresses and thrust forces are present
- For small bending radii
- If less vibration is required
- Minimal abrasion, suitable for cleanrooms

- For side-mounted applications
  ➤ **Series 2400/2500 E2/000**
- For RBR (reverse bending radii)
  ➤ **Series 2400/2500 E2/000**
- For high additional loads
  ➤ **Series 2400/2500 E2/000**
- For very dirty environments
  ➤ **Series R6-29**

Features & Benefits

1. No pin and bore connection
2. Small pitch for low-noise, smooth operation
3. Very large gliding surfaces
4. Can be shortened or lengthened due to modular design
5. Increased inner height
6. Interior stop dog
7. KMA mounting brackets with attachment points on all sides (strain relief with separate tiewrap plates possible)



Order Example: Complete e-chain®

Please indicate chain length or number of links. Example:

6.56 ft (2 m) **E6-29-100-075-0**	**e-chain®**
With 2 separators **E6-29-11** assembled every 2nd link	**Interior Separation**
1 Set **E6-290-100-12**	**Mounting Bracket**

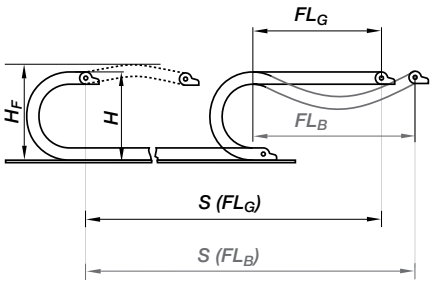
e-chain system® E6
Series E6-29
Installation Dimensions

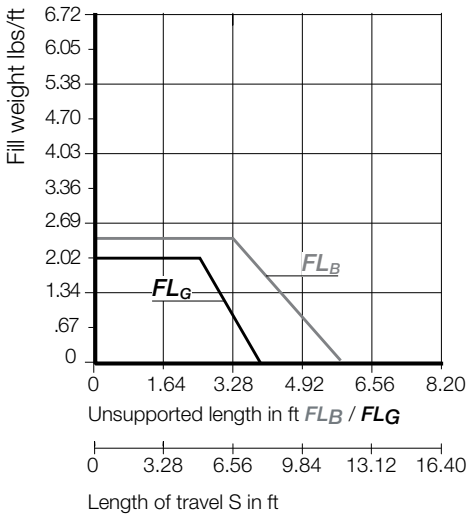
Short travel, unsupported length

● FL_B = unsupported with permitted sag

● FL_G = unsupported with straight upper run

Further information ➤ Design, Chapter 1



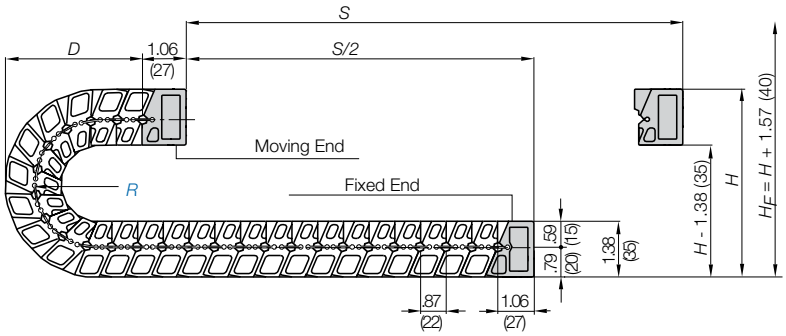


Short Travels - Unsupported

Unsupported e-chains® feature positive camber over short travels. This must be accounted for when specifying the clearance height. Please refer to **Installation dimensions** for further details.

Legend

S = Length of travel
R = Bending radius
H = Nominal clearance height
D = Overlength e-chain® radius in final position
K = π • R + *safety buffer*
H_F = Required clearance height



Pitch per link: = .87" (22 mm)
Links per ft (m): = 13.79 (46)
For center mount applications:
Chain length = $^{S}/_{2}$ + K

The required clearance height: ***H_F = H* + 1.57 in. (40 mm)** (with 1.34 lbs/ft (2.0 kg/m) fill weight.
Please consult igus® if space is particularly restricted.

R	2.17 (055)	2.95 (075)	3.94 (100)	5.91 (150)
H	7.09 (180)	8.66 (220)	10.63 (270)	14.57 (370)
D	4.25 (108)	5.04 (128)	6.02 (153)	7.99 (203)
K	8.66 (220)	11.02 (280)	14.17 (360)	20.47 (520)

Speed / acceleration FL_G	max. 65.6 ft/s (20 m/s) / max. 656 ft/s² (200 m/s²)
Speed / acceleration FL_B	max. 9.84 ft/s (3 m/s) / max. 19.69 ft/s² (6 m/s²)
Gliding speed / acceleration (maximum)	upon request
Permitted temperature	-40°F (-40°C) up to +158°F (+70° C)
Flammability Class	VDE 0304 IIC UL94 HB

Technical Data

Details of material properties
➤ **Design, Chapter 1**

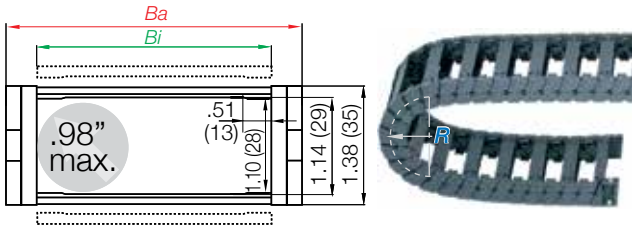
PDF: igus.com/e-chain-pdfs
Product information: igus.com/e-chains

igus® e-chain system®

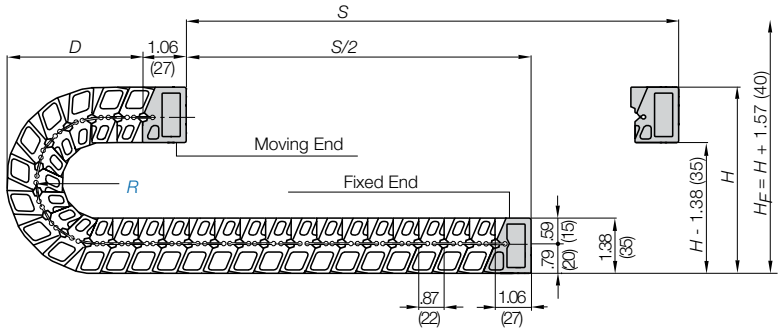
Telephone 1-800-521-2747

Internet: igus.com
email: sales@igus.com
QuickSpec: igus.com/quickspec

Series E6-29 - e-chain® with crossbars every link







Part Number Structure

E6-29-100-100-0

- Color - Black
- Bending radius
- Width
- Series

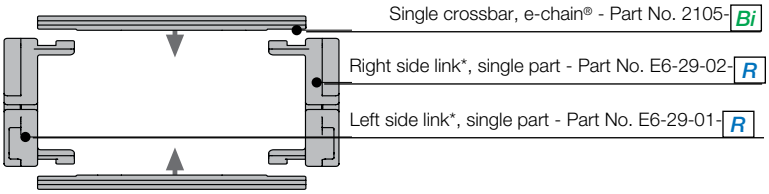
Supplement part number with required radius. Example: E6-29-100-100-0
Pitch: .87 in. (22 mm) per link links/ft (m) = 13.79 (46)

Part Number	Bi in. (mm)	Ba in. (mm)	Weight lbs/ft (kg/m)
E6-29-030-□-0	1.18 (30)	1.81 (46)	≈ 0.49 (0.73)
E6-29-040-□-0	1.57 (40)	2.20 (56)	≈ 0.50 (0.75)
E6-29-050-□-0	1.97 (50)	2.60 (66)	≈ 0.52 (0.78)
E6-29-060-□-0	2.36 (60)	2.99 (76)	≈ 0.54 (0.80)
E6-29-070-□-0	2.76 (70)	3.39 (86)	≈ 0.56 (0.83)
E6-29-080-□-0	3.15 (80)	3.78 (96)	≈ 0.57 (0.85)
E6-29-090-□-0	3.54 (90)	4.17 (106)	≈ 0.59 (0.88)
E6-29-100-□-0	3.94 (100)	4.57 (116)	≈ 0.60 (0.90)
E6-29-110-□-0	4.33 (110)	4.96 (126)	≈ 0.62 (0.93)
E6-29-120-□-0	4.72 (120)	5.35 (136)	≈ 0.64 (0.95)
E6-29-140-□-0	5.51 (140)	6.14 (156)	≈ 0.67 (1.00)

Choose from the radii below for all of the above sizes
Radius (mm) Example: E6-29-100-100-0

	055	075	100	150
R	2.17 (055)	2.95 (075)	3.94 (100)	5.91 (150)
H	7.09 (180)	8.66 (220)	10.63 (270)	14.57 (370)
D	4.25 (108)	5.04 (128)	6.02 (153)	7.99 (203)
K	8.66 (220)	11.02 (280)	14.17 (360)	20.47 (520)

e-chain® as separate parts, links and side plates

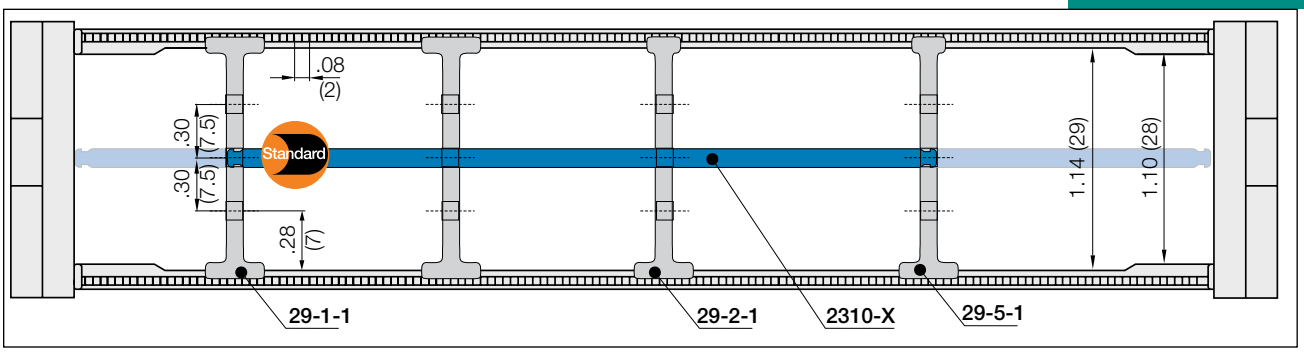


*View from the fixed point of the e-chain®/E-Tube



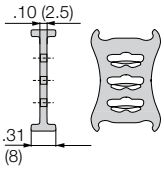
Polymer spring as single part - Part No. E6-29-140

e-chain system® E6
Series E6-29
Interior Separation - New Generation



Note: Please maintain a lateral spacing of .51" (13 mm) between the separators and the side links. In the standard configuration separators are assembled every 2nd e-chain® link



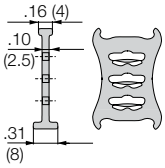


Separator, wide base

Unassembled	**Part No. 29-1**
Assembled	**Part No. 29-1-1**

- **Standard separator 29-1 for all applications**
  Separator with wide base for maximum locking strength and safe standing in e-chains®.



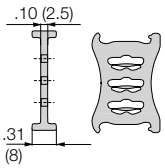


Separator, narrow head

Unassembled	**Part No. 29-2**
Assembled	**Part No. 29-2-1**

- **Separator 29-2**
  For even faster installation
  is used when vertical and horizontal separation is required. Due to its slot, it allows basic vertical/horizontal shelving arrangements.





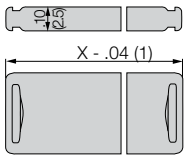
Notch separator, for notch crossbar

Unassembled	**Part No. 29-5**
Assembled	**Part No. 29-5-1**

- **Separator 29-5**
  Locks safely in .08 (2 mm) increments
  For exact positioning in e-chains®. Recommended for side-mounted applications.

Lockable full-width shelves - for the standard interior separation





Full width shelf, lockable

Unassembled	**Part No. 2300-X**
Assembled	**Part No. 2310-X**

- **Full width shelf, lockable**
  is used when vertical and horizontal separation is required. Due to its slot, it allows basic vertical/horizontal shelving arrangements.

Width X in. (mm)	Part No. Unassembled	Part No. Assembled	Width X in. (mm)	Part No. Unassembled	Part No. Assembled	Width X in. (mm)	Part No. Unassembled	Part No. Assembled
0.59 (015)	**2300-15**	**2310-15**	2.36 (060)	**2300-60**	**2310-60**	3.43 (087)	**2300-87**	**2310-87**
0.98 (025)	**2300-25**	**2310-25**	2.44 (062)	**2300-62**	**2310-62**	3.54 (090)	**2300-90**	**2310-90**
1.18 (030)	**2300-30**	**2310-30**	2.56 (065)	**2300-65**	**2310-65**	3.94 (100)	**2300-100**	**2310-100**
1.50 (038)	**2300-38**	**2310-38**	2.76 (070)	**2300-70**	**2310-70**	4.06 (103)	**2300-103**	**2310-103**
1.57 (040)	**2300-40**	**2310-40**	2.95 (075)	**2300-75**	**2310-75**	4.33 (110)	**2300-110**	**2310-110**
1.97 (050)	**2300-50**	**2310-50**	3.03 (077)	**2300-77**	**2310-77**	4.72 (120)	**2300-120**	**2310-120**
2.24 (057)	**2300-57**	**2310-57**	3.15 (080)	**2300-80**	**2310-80**	4.92 (125)	**2300-125**	**2310-125**

Separator with integrated strain relief



Strain relief separator Part No. E6-29-02-Z can be integrated into the mounting bracket and can be placed there at any point of the e-chain®. It combines strain relief and interior separation, it can be installed on the first or last e-chain® link and is easy to assemble without any screws.
For more information ➤ **Chapter 10, Strain Relief**

PDF: igus.com/e-chain-pdfs
Product information: igus.com/e-chains

Telephone 1-800-521-2747

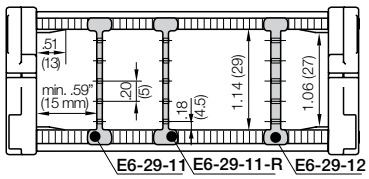
Internet: igus.com
email: sales@igus.com
QuickSpec: igus.com/quickspec

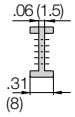
e-chain system® E6
Series E6-29
Interior Separation - Previous Generation

Vertical separators

Vertical separators are used if a vertical subdivision of the e-chain® interior is re-quired. By standard, vertical separators are assembled every other e-chain® link.

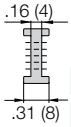






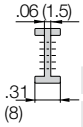
Vertical Separator	
Unassembled	**E6-29-01**
Assembled	**E6-29-11**

- **Slotted vertical separator E6-29-01**
  This separator is used for general subdivision of e-chains®. Can be used in combination with full-width shelf 111-X



Vertical Separator	
Unassembled	**E6-29-02**
Assembled	**E6-29-12**

- **Vertical separator E6-29-02**
  For use with side plate E6-29-13, full-width shelf 221-X and shelf 2210-X



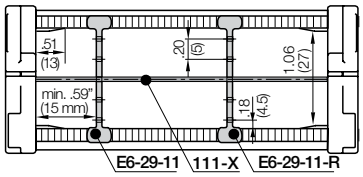
Vertical Separator	
Unassembled	**E6-29-01R**
Assembled	**E6-29-11R**

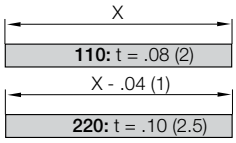
- **Locking separator E6-29-01R**
  Can be locked onto crossbars in .08" (2mm) increments. For side-mounted applications use with full-width shelf 111-X

Full-width shelf

For applications involving many thin cables with similar or identical diameters.
Full-width shelf **111-X** can be used with vertical separator **E6-29-11** and locking separator **E6-29-11-R.**
Full-width shelf **221-X** can be used with vertical separator **E6-29-12**, side plate **E6-29-13**







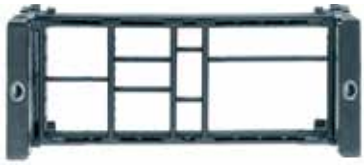
Shelves 110-X/220-XX
Shelves can be inserted at 5 different heights in .20" (5mm) increments

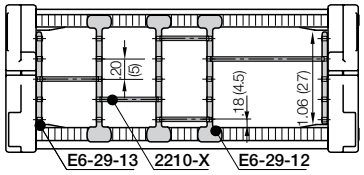
Width X in. (mm)	Part No. Unassembled 110-X	220-X	Part No. Assembled 111-X	221-X
1.18 (030)	**110-30**	**220-30**	**111-30**	**221-30**
1.57 (040)	**110-40**	**220-40**	**111-40**	**221-40**
1.97 (050)	**110-50**	**220-50**	**111-50**	**221-50**
2.36 (060)	**110-60**	**220-60**	**111-60**	**221-60**
2.76 (070)	**110-70**	**220-70**	**111-70**	**221-70**

Width X in. (mm)	Part No. Unassembled 110-X	220-X	Part No. Assembled 111-X	221-X
3.15 (080)	**110-80**	**220-80**	**111-80**	**221-80**
3.54 (090)	**110-90**	**220-90**	**111-90**	**221-90**
3.94 (100)	**110-100**	**220-100**	**111-100**	**221-100**
4.33 (110)	**110-110**	**220-110**	**111-110**	**221-110**
4.72 (120)	**110-120**	**220-120**	**111-120**	**221-120**

Shelves

These components form the basic pattern of a shelf system.
Shelves of various widths can be arranged at 5 different heights in .20" (5mm) increments

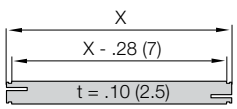


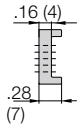


Shelves 2200-XX
Shelf 2210-X can be used with **vertical separator E6-29-12** and **side plate E6-29-13**

Width X in. (mm)	Part No. Unassembled 2200-XX	Part No. Assembled 2210-XX
.71 (18)	**2200-18**	**2210-18**
.91 (23)	**2200-23**	**2210-23**
1.10 (28)	**2200-28**	**2210-28**
1.30 (33)	**2200-33**	**2210-33**
1.50 (38)	**2200-38**	**2210-38**
1.69 (43)	**2200-43**	**2210-43**

Width X in. (mm)	Part No. Unassembled 2200-XX	Part No. Assembled 2210-XX
1.89 (48)	**2200-48**	**2210-48**
2.28 (58)	**2200-58**	**2210-58**
2.68 (68)	**2200-68**	**2210-68**
2.87 (73)	**2200-73**	**2210-73**
3.46 (88)	**2200-88**	**2210-88**
3.90 (99)	**2200-99**	**2210-99**





Slotted Separator	
Unassembled	**E6-29-03**
Assembled	**E6-29-13**

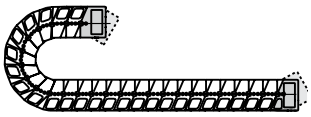
- **Side plate, slotted**
  This separator is used for general subdivision of e-chains®.

e-chain system® E6
Series E6-29
Mounting Brackets - KMA / Strain Relief

KMA - Pivoting

- Bolted connection outside of the chain cross-section
- Recommended for unsupported applications (for gliding applications please contact igus®)
- Confined installation conditions
- Attachment capability on all sides

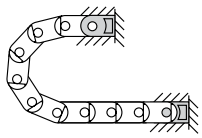
Moving end
E6-290...2



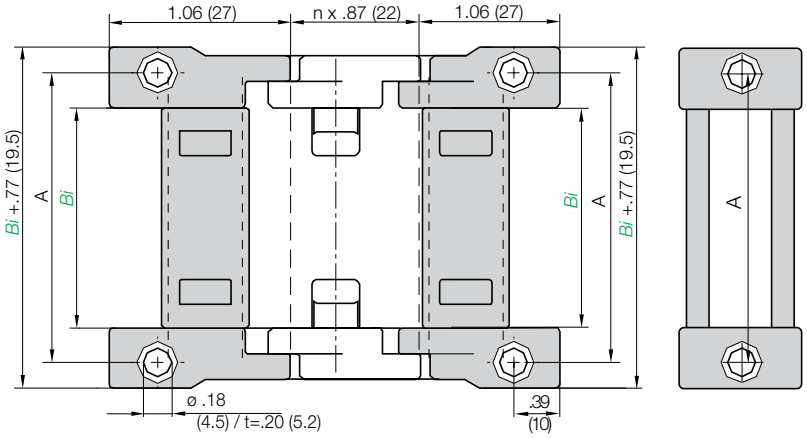
Fixed end
E6-290...1







Possible installation configurations -



Part Number Structure

E6-290-	030-	12

- 12 – Complete Set
- 030 – Width
- E6-290 – Mounting brackets for selected chain type

Full set, for both ends:

E6-290- 030- 12 Full set, **both fixed and moving end**

Single-part order:

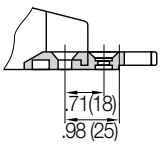
E6-290 - 030- 1 Mounting bracket **fixed end**

E6-290 - 030- 2 Mounting bracket **moving end**

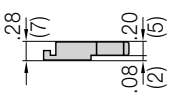
For Series	Part No. Full Set	Dimension A in.	(mm)	For Series	Part No. Full Set	Dimension A in.	(mm)
E6-29-030	**E6-290-030-12**	1.57	(40)	E6-29-090	**E6-290-090-12**	3.94	(100)
E6-29-040	**E6-290-040-12**	1.97	(50)	E6-29-100	**E6-290-100-12**	4.33	(110)
E6-29-050	**E6-290-050-12**	2.36	(60)	E6-29-110	**E6-290-110-12**	4.72	(120)
E6-29-060	**E6-290-060-12**	2.76	(70)	E6-29-120	**E6-290-120-12**	5.12	(130)
E6-29-070	**E6-290-070-12**	3.15	(80)	E6-29-140	**E6-290-140-12**	5.91	(150)
E6-29-080	**E6-290-080-12**	3.54	(90)				

Tiewrap Plates





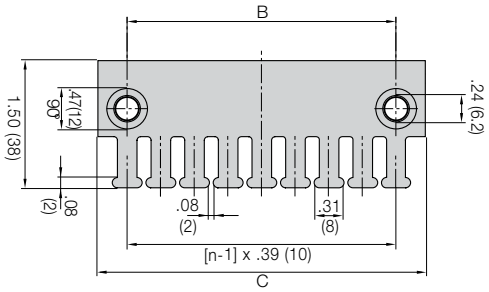
Shown assembled



Single tiewrap plate

Tiewrap plates as an individual part

Tiewrap Plates	n Number of Teeth	Dimension C	Dimension B
2020-ZB	3	1.18 (30)	.59 (15)
2030-ZB	4	1.57 (40)	.79 (20)
2040-ZB	5	1.97 (50)	1.18 (30)
2050-ZB	6	2.36 (60)	1.57 (40)
2070-ZB	8	3.15 (80)	2.36 (60)
2090-ZB	9	3.54 (90)	2.76 (70)
2100-ZB	10	3.94 (100)	3.15 (80)
2120-ZB	12	4.72 (120)	3.94 (100)



If used with KMA brackets with profile rail please add "KMA" to the end of the part number.
Example: 2020-ZBKMA

Other strain relief elements
➤ Strain Relief, Chapter 10

PDF: igus.com/e-chain-pdfs
Product information: igus.com/e-chains

e-chain system® E6
Series R6-29

1.10

Price Index

Series R6-29

Special Features / Options

Extremely low noise
Test results upon request

IPA Certificate: Class 1, according to standard DIN EN ISO 14644-1 for the E6 system (Series E6-29-060-150-0-CR, (v = 1.64 ft/s, a = 3.28 ft/s²)

LEVEL 1 absorption confirmed by IPA-Fraunhofer-Institute according to SEMI E78-0998 for the E6 standard material

Assembly Tips



Lever and remove lids

Other Installation Methods

Vertical, hanging ≤ 98.4 ft (30 m)
Vertical, standing ≤ 6.56 ft (2 m)
Side-mounted, unsupp. = possible to a limited extent
Unsupported length of upper run upon request

Usage Guidelines

- If a low-noise version is required
- For very high speeds and/or accelerations
- Protection against dirt and chips
- For small bending radii
- If less vibration is required
- Minimal abrasion, suitable for cleanrooms

- For side-mounted applications
  ➤ **Series 2480 E2 Tubes**
- For RBR (reverse bending radii)
  ➤ **Series 2480 E2 Tubes**
- For high additional loads
  ➤ **Series 2480 E2 Tubes**

Features & Benefits

1. Fully enclosed E-Tube
2. No pin and bore connection
3. Interior stop dog
4. Very large gliding surfaces
5. KMA mounting brackets with attachment points on all sides (strain relief with separate tiewrap plates possible)
6. Can be shortened or lengthened due to modular design
7. Small pitch for low-noise, smooth operation



Order Example: Complete e-chain®

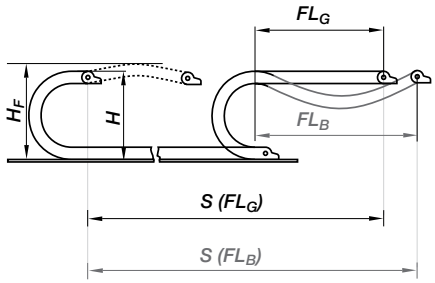
Please indicate chain length or number of links. Example:

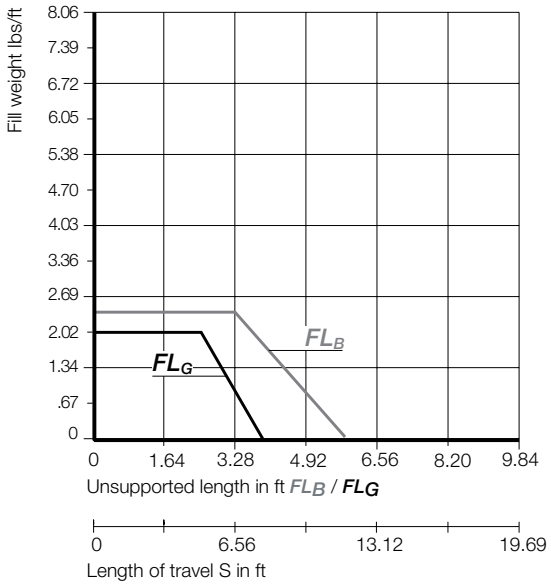
6.56 ft (2 m) **R6-29-080-100-0**	**E-Tube**
With 2 separators **R6-29-11** assembled every 2nd link	**Interior Separation**
1 Set **R6-290-080-12**	**Mounting Bracket**

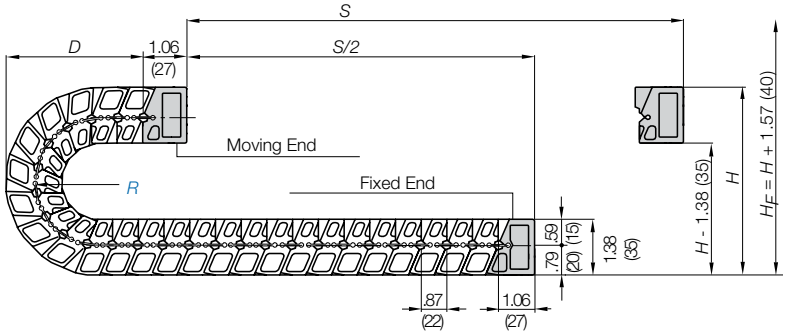
e-chain system® E6
Series R6-29
Installation Dimensions

Short travel, unsupported length

● FL_B = unsupported with permitted sag
● FL_G = unsupported with straight upper run
Further information ➤ Design, Chapter 1







Pitch per link: = .87" (22 mm)
Links per ft (m): = 13.79 (46)
For center mount applications:
Chain length = $_{S}/_{2}$ + K

The required clearance height: H_F = **H + 1.57 in. (40 mm)** (with 1.34 lbs/ft (2.0 kg/m) fill weight.
Please consult igus® if space is particularly restricted.

R	2.17 (055)	2.95 (075)	3.94 (100)	5.91 (150)
H	7.09 (180)	8.66 (220)	10.63 (270)	14.57 (370)
D	4.25 (108)	5.04 (128)	6.02 (153)	7.99 (203)
K	8.66 (220)	11.02 (280)	14.17 (360)	20.47 (520)

Short Travels - Unsupported

Unsupported e-chains® feature positive camber over short travels. This must be accounted for when specifying the clearance height. Please refer to **Installation dimensions** for further details.

Legend

S = Length of travel
R = Bending radius
H = Nominal clearance height
D = Overlength e-chain® radius in final position
K = π • R + *safety buffer*
H_F = Required clearance height

Speed / acceleration FL_G	max. 65.6 ft/s (20 m/s) / max. 656 ft/s² (200 m/s²)
Speed / acceleration FL_B	max. 9.84 ft/s (3 m/s) / max. 19.69 ft/s² (6 m/s²)
Gliding speed / acceleration (maximum)	upon request
Permitted temperature	-40°F (-40°C) up to +158°F (+70° C)
Flammability Class	VDE 0304 IIC UL94 HB

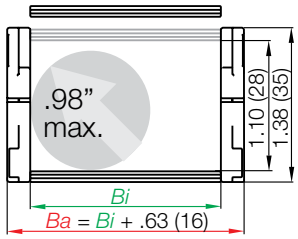
Technical Data

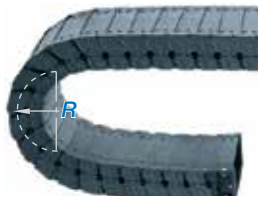
Details of material properties
➤ **Design, Chapter 1**

PDF: igus.com/e-chain-pdfs
Product information: igus.com/e-chains

e-chain system® E6
Series R6-29
Interior Separation

Series R6-29 - E-Tube, removable lids along the inner and outer radius



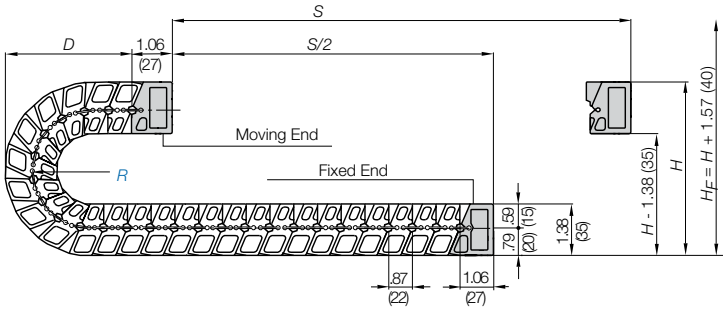




Part Number Structure

R6-29- 080- 100- 0

- 100 – Color - Black
- 080 – Bending radius
- R6-29 – Width
- 0 – Series



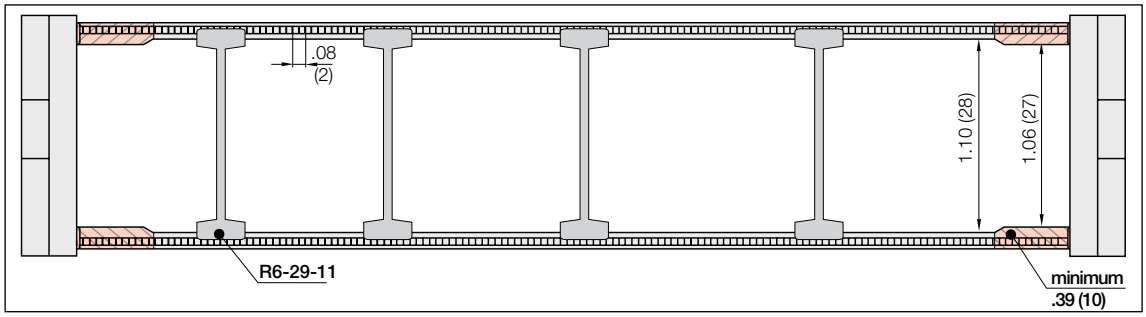
Supplement part number with required radius.
Example: R6-29-080-100-0
Pitch: .87 in. (22 mm) per link links/ft (m) = 13.79 (46)

Part Number	Bi in. (mm)	Ba in. (mm)	Weight lbs/ft (kg/m)
R6-29-030- ☐ -0	1.18 (30)	1.81 (46)	≈ 0.54 (0.80)
R6-29-040- ☐ -0	1.57 (40)	2.20 (56)	≈ 0.57 (0.85)
R6-29-050- ☐ -0	1.97 (50)	2.60 (66)	≈ 0.60 (0.89)
R6-29-060- ☐ -0	2.36 (60)	2.99 (76)	≈ 0.63 (0.94)
R6-29-080- ☐ -0	3.15 (80)	3.78 (96)	≈ 0.69 (1.03)
R6-29-110- ☐ -0	4.33 (110)	4.96 (126)	≈ 0.79 (1.18)
R6-29-120- ☐ -0	4.72 (120)	5.35 (136)	≈ 0.82 (1.22)

Choose from the radii below for all of the above sizes
Radius (mm) Example: R6-29-080-100-0

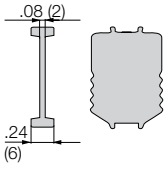
	055	075	100	150
R	2.17 (055)	2.95 (075)	3.94 (100)	5.91 (150)
H	7.09 (180)	8.66 (220)	10.63 (270)	14.57 (370)
D	4.25 (108)	5.04 (128)	6.02 (153)	7.99 (203)
K	8.66 (220)	11.02 (280)	14.17 (360)	20.47 (520)

Vertical separators



Note: Please maintain a lateral spacing of .39" (10 mm) between the separators and the side links. In the standard configuration separators are assembled every 2nd e-chain® link





Separator for E-Tubes

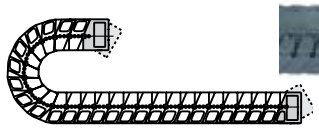
Unassembled	**Part No. R6-29-01**
Assembled	**Part No. R6-29-11**

- **Vertical separator R6-29-01**
  This separator is used for general subdivision of E-Tubes. Separator snaps onto either the bottom of the carrier or the lid. Stays attached to that side. Opposite side can be removed.

Option 1: KMA - Pivoting

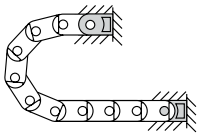
- Bolted connection outside of the chain cross-section
- Recommended for unsupported applications (for gliding applications please contact igus®)
- Confined installation conditions
- Attachment capability on all sides

Moving end
R6-290...2



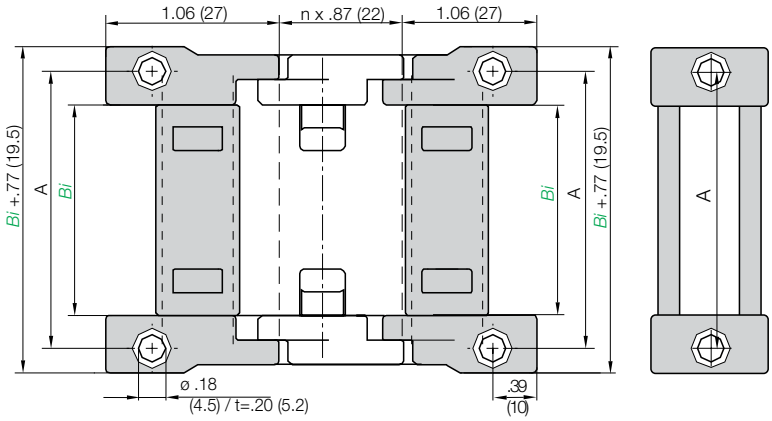






Possible installation configurations -

Fixed end
R6-290...1



Part Number Structure

R6-290-	030-	12

12 = Complete Set
030 = Width
R6-290 = Mounting brackets for selected chain type

For Series	Part No. Full Set	Dimension A in.	(mm)
R6-290-030	**R6-290-030-12**	1.57	(40)
R6-290-040	**R6-290-040-12**	1.97	(50)
R6-290-050	**R6-290-050-12**	2.36	(60)
R6-290-060	**R6-290-060-12**	2.76	(70)
R6-290-080	**R6-290-080-12**	3.54	(90)
R6-290-110	**R6-290-110-12**	4.72	(120)
R6-290-120	**R6-290-120-12**	5.12	(130)

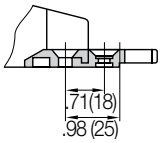
Full set, for both ends:
R6-290- 030- 12 Full set, **both fixed and moving end**
Single-part order:
R6-290 - 025- 1 Mounting bracket **fixed end**
R6-290 - 025- 2 Mounting bracket **moving end**

Tiewrap Plates

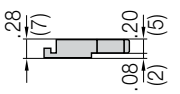
Option 1:
Tiewrap plates as an individual part

Available as an individual component, can be fixed onto a mounting bracket with the use of a profile rail.



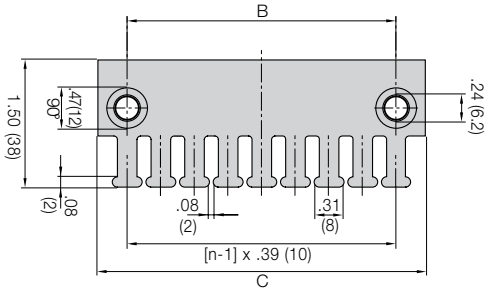


Shown assembled



Single tiewrap plate

Tiewrap Plates	n Number of Teeth	Dimension C	Dimension B
2020-ZB	3	1.18 (30)	.59 (15)
2030-ZB	4	1.57 (40)	.79 (20)
2040-ZB	5	1.97 (50)	1.18 (30)
2050-ZB	6	2.36 (60)	1.57 (40)
2070-ZB	8	3.15 (80)	2.36 (60)
2090-ZB	9	3.54 (90)	2.76 (70)
2100-ZB	10	3.94 (100)	3.15 (80)
2120-ZB	12	4.72 (120)	3.94 (100)



If used with KMA brackets with profile rail please add "KMA" to the end of the part number.
Example: 2020-ZBKMA

Other strain relief elements
➤ **Strain Relief, Chapter 10**

PDF: igus.com/e-chain-pdfs
Product information: igus.com/e-chains

e-chain system® E6
Series E6-35

1.38

Price Index

Series E6-35

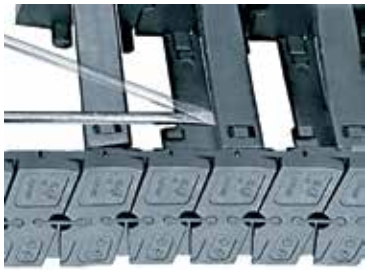
Special Features / Options

Extremely low noise
Test results upon request

IPA Certificate: Class 1, according to standard DIN EN ISO 14644-1 for the E6 system
(Series E6-29-060-150-0-CR, (v = 1.64 ft/s, a = 3.28 ft/s²)

LEVEL 1 absorption confirmed by IPA-Fraunhofer-Institute according to SEMI E78-0998 for the E6 standard material

Assembly Tips



To close, push and click shut

Other Installation Methods

Vertical, hanging ≤ 98.4 ft (30 m)
Vertical, standing ≤ 6.56 ft (2 m)
Side-mounted, unsupp. = possible to a limited extent
Unsupported length of upper run upon request

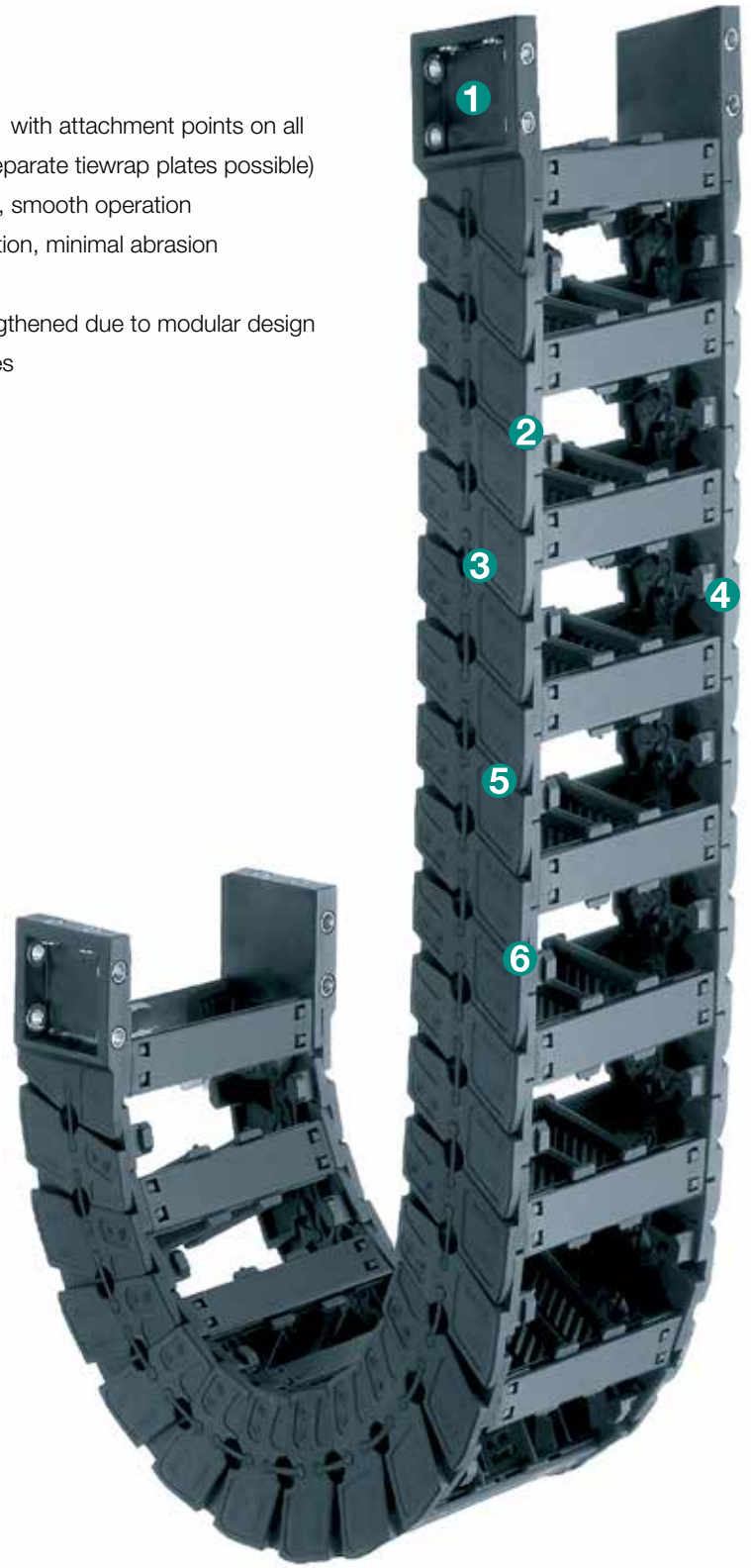
Usage Guidelines

- If a low-noise version is required
- For very high speeds and/or accelerations
- If large stresses and thrust forces are present
- For small bending radii
- If less vibration is required
- Minimal abrasion, suitable for cleanrooms

- If a fully enclosed tube is required
  ➤ **Series 2680 E2/000**
- For side mounted applications
  ➤ **Series E4-32 E4-1**
- For RBR (Reverse Bending Radius)
  ➤ **Series E4-32 E4-1**
- For high additional loads
  ➤ **Series E4-32 E4-1**
- For dirty environments
  ➤ **Series E4-32 E4-1**

Features & Benefits

1. KMA mounting brackets with attachment points on all sides (strain relief with separate tiewrap plates possible)
2. Small pitch for low-noise, smooth operation
3. No pin and bore connection, minimal abrasion
4. Interior stop dog
5. Can be shortened or lengthened due to modular design
6. Very large gliding surfaces



Order Example: Complete e-chain®

Please indicate chain length or number of links. Example:

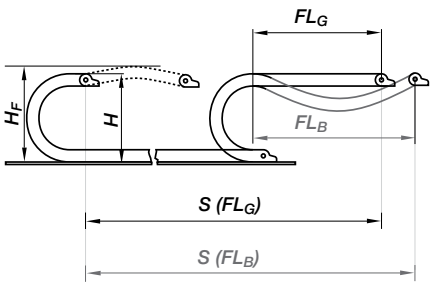
6.56 ft (2 m) **E6-35-100-055-0**	**e-chain®**
With 2 separators **E6-35-11** assembled every 2nd link	**Interior Separation**
1 Set **E6-350-100-12**	**Mounting Bracket**

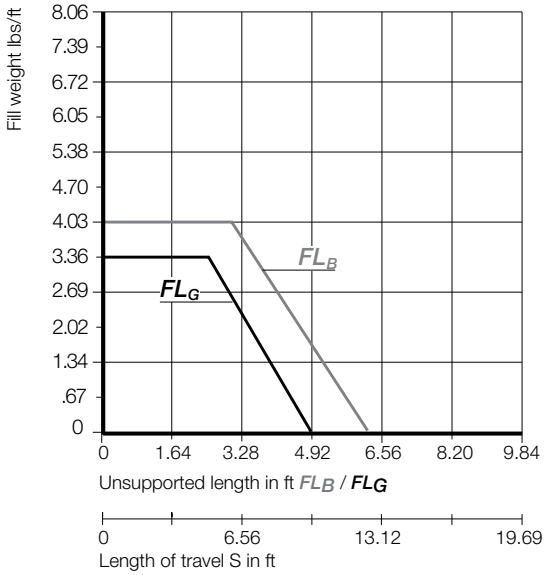
e-chain system® E6
Series E6-35
Installation Dimensions

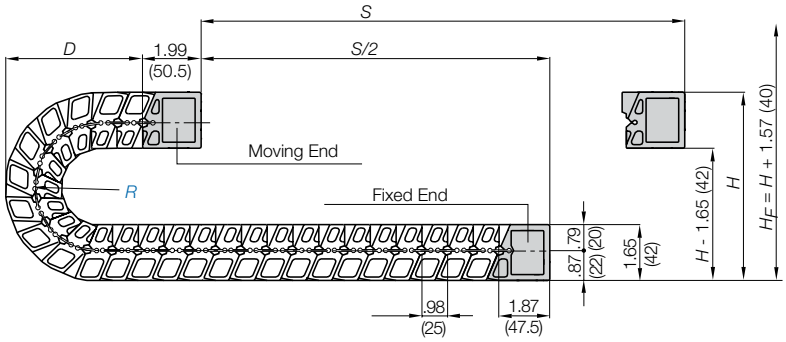
Short travel, unsupported length

● FL_B = unsupported with permitted sag
● FL_G = unsupported with straight upper run

Further information ➤ Design, Chapter 1







Pitch per link: = .98" (25 mm)
Links per ft (m): = 12.19 (40)
For center mount applications:
Chain length = $^{S}/_{2} + K$

The required clearance height: $H_F = H + 1.57$ **in. (40 mm)** (with 1.34 lbs/ft (2.0 kg/m) fill weight.
Please consult igus® if space is particularly restricted.

R	2.17 (055)	2.95 (075)	3.94 (100)	5.91 (150)
H	7.44 (189)	9.01 (229)	10.98 (279)	14.92 (379)
D	4.53 (115)	5.31 (135)	6.30 (160)	8.27 (210)
K	8.86 (225)	11.42 (290)	14.37 (365)	20.67 (525)

Short Travels - Unsupported

Unsupported e-chains® feature positive camber over short travels. This must be accounted for when specifying the clearance height. Please refer to **Installation dimensions** for further details.

Legend

S = Length of travel
R = Bending radius
H = Nominal clearance height
D = Overlength e-chain® radius in final position
K = π • *R* + *safety buffer*
H_F = Required clearance height

Speed / acceleration FL_G	max. 65.6 ft/s (20 m/s) / max. 656 ft/s² (200 m/s²)
Speed / acceleration FL_B	max. 9.84 ft/s (3 m/s) / max. 19.69 ft/s² (6 m/s²)
Gliding speed / acceleration (maximum)	upon request
Permitted temperature	-40°F (-40°C) up to +158°F (+70° C)
Flammability Class	VDE 0304 IIC UL94 HB

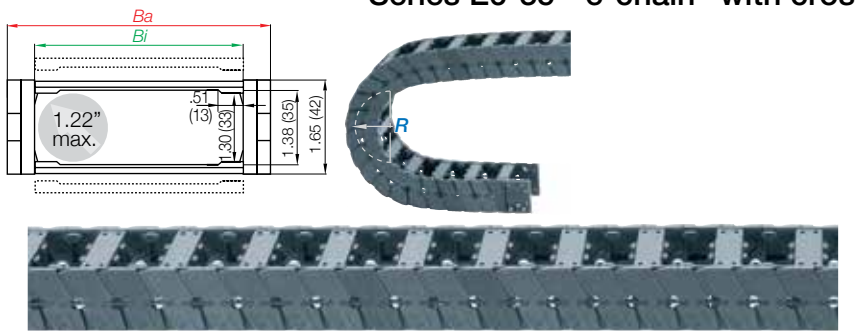
Technical Data

Details of material properties
➤ Design, Chapter 1

PDF: igus.com/e-chain-pdfs
Product information: igus.com/e-chains

e-chain system® E6
Series E6-35

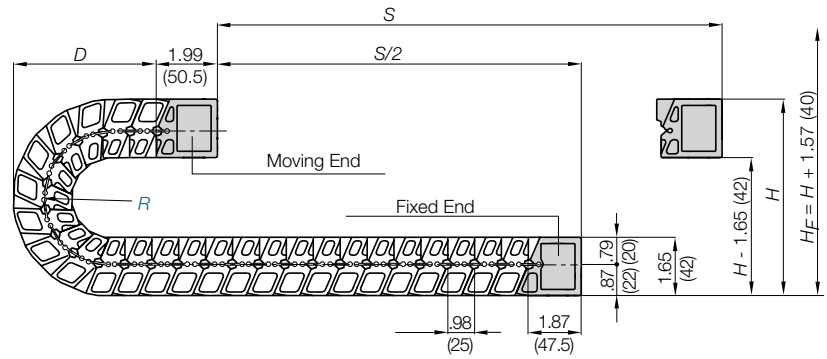
Series E6-35 - e-chain® with crossbars every other link



Part Number Structure

E6-35-100-055-0

- Color - Black
- Bending radius
- Width
- Series



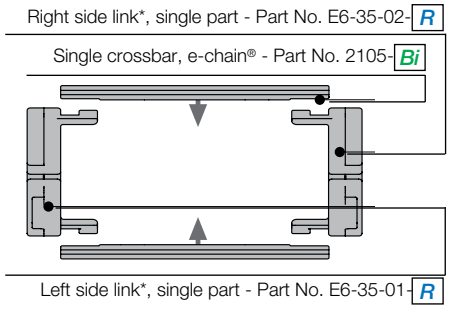
Supplement part number with required radius.
Example: E6-35-100-055-0
Pitch: .98 in. (25 mm) per link links/ft (m) = 12.19 (40)

Part Number	Bi in. (mm)	Ba in. (mm)	Weight lbs/ft (kg/m)
E6-35-030-☐-0	1.18 (30)	1.97 (50)	≈ 0.59 (0.88)
E6-35-040-☐-0	1.57 (40)	2.36 (60)	≈ 0.54 (0.90)
E6-35-050-☐-0	1.97 (50)	2.76 (70)	≈ 0.90 (0.92)
E6-35-060-☐-0	2.36 (60)	3.15 (80)	≈ 0.63 (0.94)
E6-35-070-☐-0	2.76 (70)	3.54 (90)	≈ 0.65 (0.96)
E6-35-080-☐-0	3.15 (80)	3.94 (100)	≈ 0.66 (0.99)
E6-35-090-☐-0	3.54 (90)	4.33 (110)	≈ 0.68 (1.01)
E6-35-100-☐-0	3.94 (100)	4.72 (120)	≈ 0.69 (1.03)
E6-35-110-☐-0	4.33 (110)	5.12 (130)	≈ 0.76 (1.05)
E6-35-120-☐-0	4.72 (120)	5.51 (140)	≈ 0.72 (1.07)
E6-35-140-☐-0	5.51 (140)	6.30 (160)	≈ 0.75 (1.11)

Choose from the radii below for all of the above sizes
Radius (mm) Example: E6-35-100-055-0

	055	075	100	150
R	2.17 (055)	2.95 (075)	3.94 (100)	5.91 (150)
H	7.44 (189)	9.01 (229)	10.98 (279)	14.92 (379)
D	4.53 (115)	5.31 (135)	6.30 (160)	8.27 (210)
K	8.86 (225)	11.42 (290)	14.37 (365)	20.67 (525)

e-chain® as separate parts, links and side plates

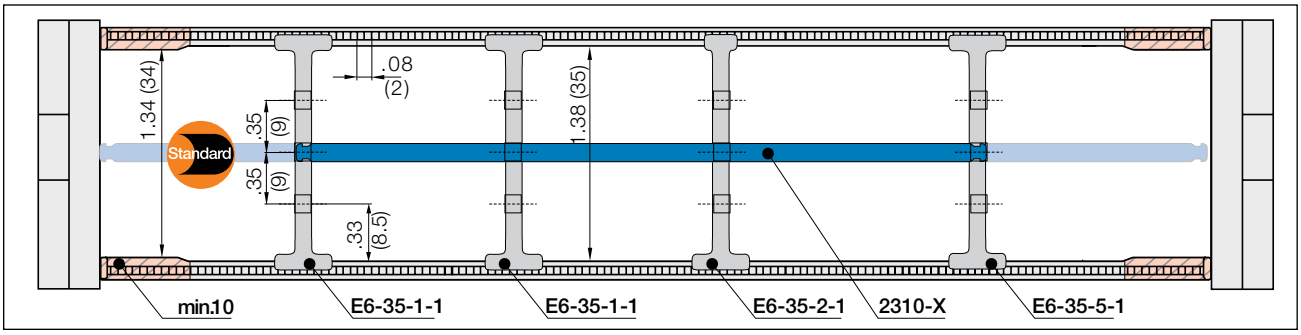




Polymer spring as single part -
Part No. E6-35-150

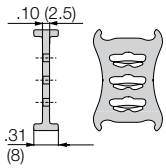
*View from the fixed point of the e-chain®/E-Tube

e-chain system® E6
Series E6-35
Interior Separation - New Generation



Note: Please maintain a lateral spacing of .39" (10 mm) between the separators and the side links. In the standard configuration separators are assembled every 2nd e-chain® link



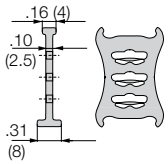


Separator, wide base

Unassembled	**Part No. E6-35-1**
Assembled	**Part No. E6-35-1-1**

- **Standard separator E6-35-1 for all applications**
  Separator with wide base for maximum locking strength and safe standing in e-chains®.





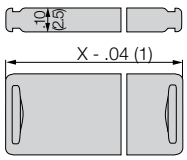
Separator, narrow head

Unassembled	**Part No. E6-35-2**
Assembled	**Part No. E6-35-2-1**

- **Separator E6-35-2 For even faster installation**
  Firmly holds to one side with a wide base, narrow on opposite side for easy cable assembly (slight grip).

Lockable full-width shelves - for the standard interior separation





Full width shelf, lockable

Unassembled	**Part No. 2300-X**
Assembled	**Part No. 2310-X**

- **Full width shelf, lockable**
  Shelf locks safely into separators on both ends, fixed width possible. Separators can be moved freely over the shelf horizontally. Can be arranged at three different heights.

Width X in. (mm)	Part No. Unassembled	Part No. Assembled	Width X in. (mm)	Part No. Unassembled	Part No. Assembled	Width X in. (mm)	Part No. Unassembled	Part No. Assembled
0.59 (015)	**2300-15**	**2310-15**	2.36 (060)	**2300-60**	**2310-60**	3.43 (087)	**2300-87**	**2310-87**
0.98 (025)	**2300-25**	**2310-25**	2.44 (062)	**2300-62**	**2310-62**	3.54 (090)	**2300-90**	**2310-90**
1.18 (030)	**2300-30**	**2310-30**	2.56 (065)	**2300-65**	**2310-65**	3.94 (100)	**2300-100**	**2310-100**
1.50 (038)	**2300-38**	**2310-38**	2.76 (070)	**2300-70**	**2310-70**	4.06 (103)	**2300-103**	**2310-103**
1.57 (040)	**2300-40**	**2310-40**	2.95 (075)	**2300-75**	**2310-75**	4.33 (110)	**2300-110**	**2310-110**
1.97 (050)	**2300-50**	**2310-50**	3.03 (077)	**2300-77**	**2310-77**	4.72 (120)	**2300-120**	**2310-120**
2.24 (057)	**2300-57**	**2310-57**	3.15 (080)	**2300-80**	**2310-80**	4.92 (125)	**2300-125**	**2310-125**

Separator with integrated strain relief

Strain relief separator Part No. E6-35-02-Z can be integrated into the mounting bracket and can be placed there at any point of the e-chain®. It combines strain relief and interior separation, it can be installed on the first or last e-chain® link and is easy to assemble without any screws.
For more information ➤ **Chapter 10, Strain Relief**



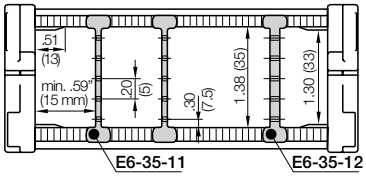
PDF: igus.com/e-chain-pdfs
Product information: igus.com/e-chains

e-chain system® E6
Series E6-35
Interior Separation - Previous Generation

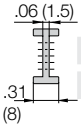
Vertical separators

Vertical separators are used if a vertical subdivision of the e-chain® interior is required. By standard, vertical separators are assembled every other e-chain® link.





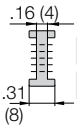
- **Slotted vertical separator E6-35-01**
  This separator is used for general subdivision of e-chains®. Can be used in combination with full-width shelf 111-X.



Vertical Separator, Slotted

Unassembled	**Part No. E6-35-01**
Assembled	**Part No. E6-35-11**

- **Vertical separator E6-35-02**
  For use with side plate E6-35-13, full-width shelf 221-X and shelf 2210-X



Vertical Separator

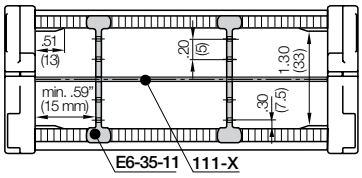
Unassembled	**Part No. E6-35-02**
Assembled	**Part No. E6-35-12**

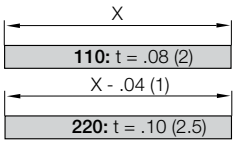
Full-width shelf

For applications involving many thin cables with similar or identical diameters.
Full-width shelf **111-X** can be used with vertical separator **E6-35-11**
Full-width shelf **221-X** can be used with vertical separator **E6-35-12**

Shelves 110-X/220-XX
Shelves can be inserted at 5 different heights in .20" (5mm) increments







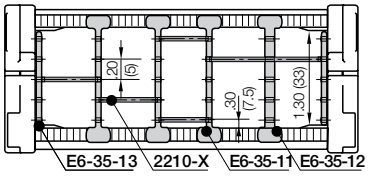
Width X in. (mm)	Part No. Unassembled 110-X	220-X	Part No. Assembled 111-X	221-X
1.18 (030)	**110-30**	**220-30**	**111-30**	**221-30**
1.57 (040)	**110-40**	**220-40**	**111-40**	**221-40**
1.97 (050)	**110-50**	**220-50**	**111-50**	**221-50**
2.36 (060)	**110-60**	**220-60**	**111-60**	**221-60**
2.76 (070)	**110-70**	**220-70**	**111-70**	**221-70**

Width X in. (mm)	Part No. Unassembled 110-X	220-X	Part No. Assembled 111-X	221-X
3.15 (080)	**110-80**	**220-80**	**111-80**	**221-80**
3.54 (090)	**110-90**	**220-90**	**111-90**	**221-90**
3.94 (100)	**110-100**	**220-100**	**111-100**	**221-100**
4.33 (110)	**110-110**	**220-110**	**111-110**	**221-110**
4.72 (120)	**110-120**	**220-120**	**111-120**	**221-120**

Shelves

These components form the basic pattern of a shelf system.
Shelves of various widths can be arranged at 5 different heights in .20" (5mm) increments



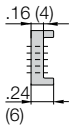


Shelves 2200-XX
Shelf 2210-X can be used with **vertical separator E6-35-12** and **side plate E6-35-13**

Width X in. (mm)	Part No. Unassembled	Part No. Assembled
.71 (18)	**2200-18**	**2210-18**
.91 (23)	**2200-23**	**2210-23**
1.10 (28)	**2200-28**	**2210-28**
1.30 (33)	**2200-33**	**2210-33**
1.50 (38)	**2200-38**	**2210-38**
1.69 (43)	**2200-43**	**2210-43**

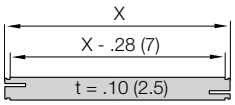
Width X in. (mm)	Part No. Unassembled	Part No. Assembled
1.89 (48)	**2200-48**	**2210-48**
2.28 (58)	**2200-58**	**2210-58**
2.68 (68)	**2200-68**	**2210-68**
2.87 (73)	**2200-73**	**2210-73**
3.46 (88)	**2200-88**	**2210-88**
3.90 (99)	**2200-99**	**2210-99**

- **Side plate**
  This separator is used for general subdivision of e-chains®.



Side Plate

Unassembled	**Part No. E6-35-03**
Assembled	**Part No. E6-35-13**



e-chain system® E6
Series E6-35
Mounting Bracket - KMA / Strain Relief

KMA - Pivoting

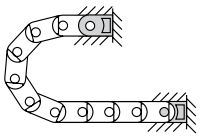
- Bolted connection outside of the chain cross-section
- Recommended for unsupported applications (for gliding applications please contact igus®)
- Confined installation conditions
- Attachment capability on all sides

Moving end
E6-350...2



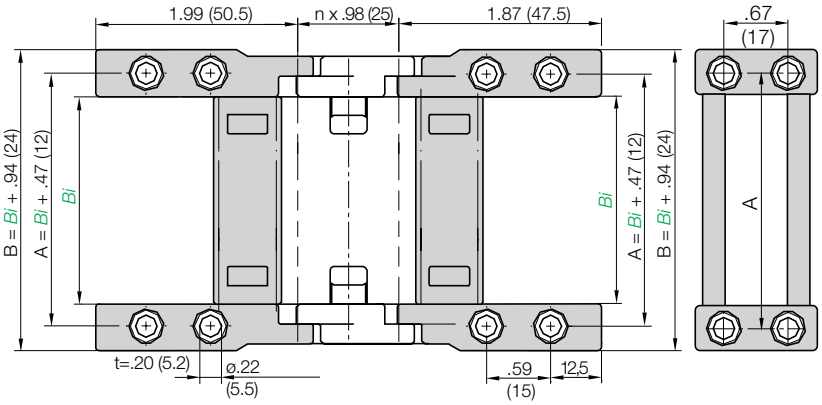




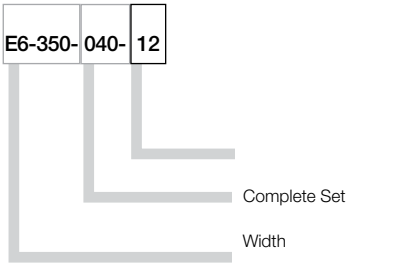


Possible installation configurations -

Fixed end
E6-350...1



Part Number Structure

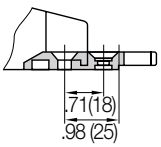


For Series	Part No. Full Set	Dimension B in.	(mm)	Dimension A in.	(mm)	Bi (mm)
E6-35-030	**E6-350-030-12**	2.13	(54)	1.65	(42)	30
E6-35-040	**E6-350-040-12**	2.52	(64)	2.05	(52)	40
E6-35-050	**E6-350-050-12**	2.91	(74)	2.44	(62)	50
E6-35-060	**E6-350-060-12**	3.31	(84)	2.83	(72)	60
E6-35-070	**E6-350-070-12**	3.70	(94)	3.23	(82)	70
E6-35-080	**E6-350-080-12**	4.09	(104)	3.62	(92)	80
E6-35-090	**E6-350-090-12**	4.49	(114)	4.02	(102)	90
E6-35-100	**E6-350-100-12**	4.88	(124)	4.41	(112)	100
E6-35-110	**E6-350-110-12**	5.28	(134)	4.80	(122)	110
E6-35-120	**E6-350-120-12**	5.67	(144)	5.20	(132)	120
E6-35-140	**E6-350-140-12**	6.46	(164)	5.98	(152)	140

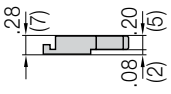
Full set, for both ends:
E6-350- 040- 12 Full set, **both fixed and moving end**
Single-part order:
E6-350 - 040- 1 Mounting bracket **fixed end**
E6-350 - 040- 2 Mounting bracket **moving end**

Tiewrap Plates





Shown assembled

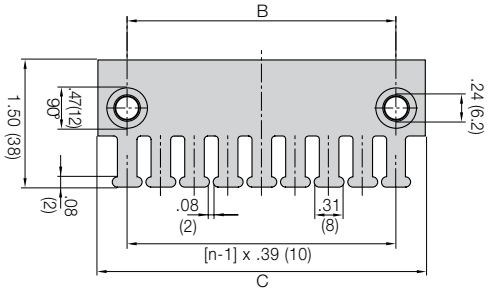


Single tiewrap plate

Tiewrap plates as an individual part

Available as an individual component, can be fixed onto a mounting bracket with the use of a profile rail.

Tiewrap Plates	n Number of Teeth	Dimension C	Dimension B
2020-ZB	3	1.18 (30)	.59 (15)
2030-ZB	4	1.57 (40)	.79 (20)
2040-ZB	5	1.97 (50)	1.18 (30)
2050-ZB	6	2.36 (60)	1.57 (40)
2070-ZB	8	3.15 (80)	2.36 (60)
2090-ZB	9	3.54 (90)	2.76 (70)
2100-ZB	10	3.94 (100)	3.15 (80)
2120-ZB	12	4.72 (120)	3.94 (100)



If used with KMA brackets with profile rail please add "KMA" to the end of the part number.
Example: 2020-ZBKMA

Other strain relief elements
➤ Strain Relief, Chapter 10

PDF: igus.com/e-chain-pdfs
Product information: igus.com/e-chains

e-chain system® E6
Series E6-40

1.57

Price Index

Series E6-40

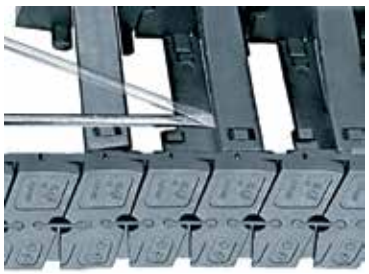
Special Options Available

Extremely low noise
Test results upon request

IPA Certificate: Class 1, according to standard DIN EN ISO 14644-1 for the E6 system (Series E6-29-060-150-0-CR, (v = 1.64 ft/s, a = 3.28 ft/s²)

LEVEL 1 absorption confirmed by IPA-Fraunhofer-Institute according to SEMI E78-0998 for the E6 standard material

Assembly Tips



To close, push and click shut

Other Installation Methods

Vertical, hanging ≤ 98.4 ft (30 m)
Vertical, standing ≤ 6.56 ft (2 m)
Side-mounted, unsupp. = possible to a limited extent
Unsupported length of upper run upon request

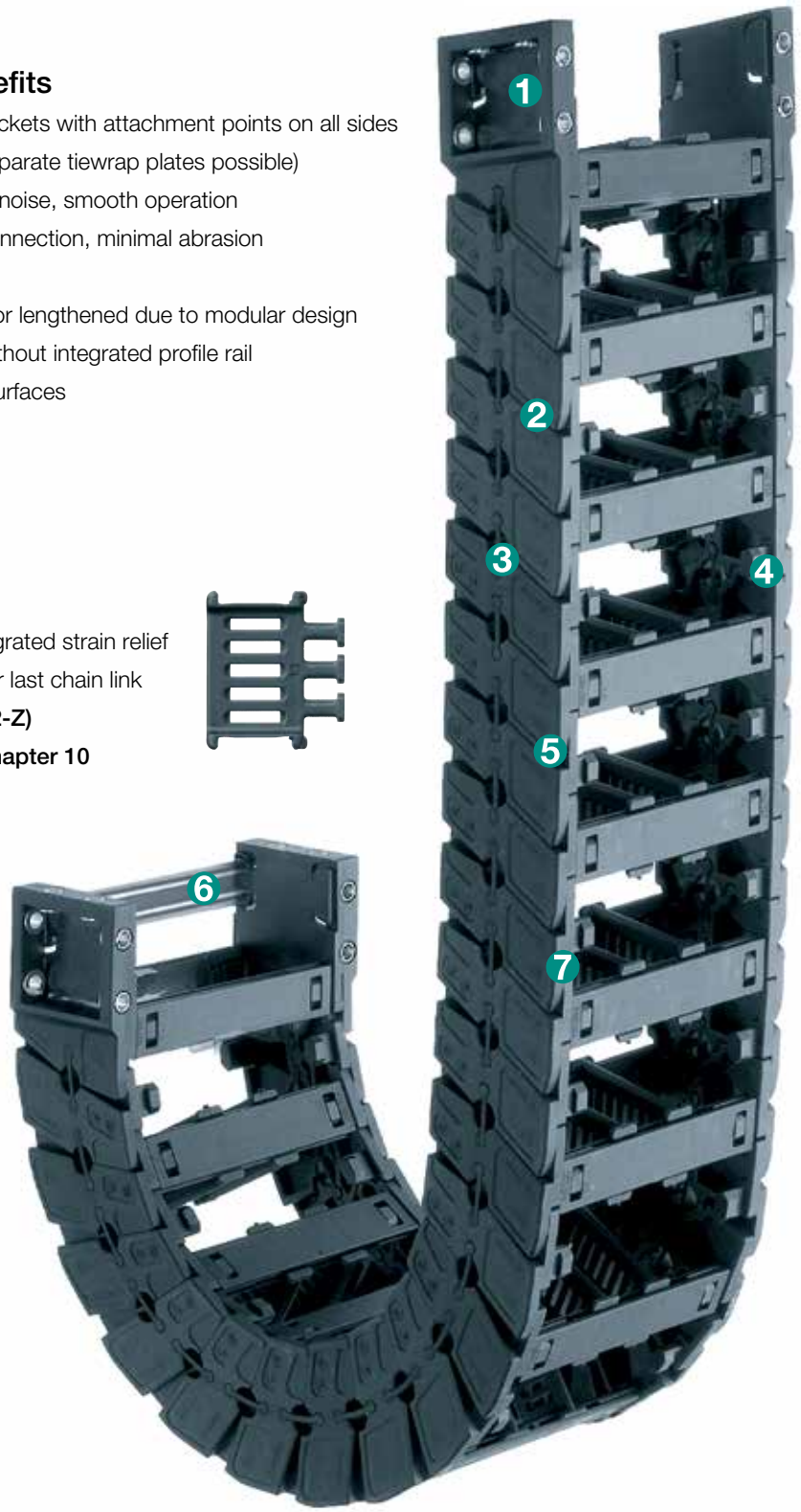
Usage Guidelines

- If a low-noise version is required
- For very high speeds and/or accelerations
- If large stresses and thrust forces are present
- For small bending radii
- If less vibration is required
- Minimal abrasion, suitable for cleanrooms

- For side mounted applications
  ➤ **Series E4-32 E4-1**
- For RBR (Reverse Bending Radius)
  ➤ **Series E4-32 E4-1**
- For high additional loads
  ➤ **Series E4-32 E4-1**
- For dirty environments
  ➤ **Series E4-32 E4-1**

Features & Benefits

1. KMA mounting brackets with attachment points on all sides (strain relief with separate tiewrap plates possible)
2. Small pitch for low-noise, smooth operation
3. No pin and bore connection, minimal abrasion
4. Interior stop dog
5. Can be shortened or lengthened due to modular design
6. Available with or without integrated profile rail
7. Very large gliding surfaces



Also available:
Separator with integrated strain relief for use in the first or last chain link
(Part No. E6-40-02-Z)
➤ **Strain Relief, Chapter 10**

Order Example: Complete e-chain®

Please indicate chain length or number of links. Example:

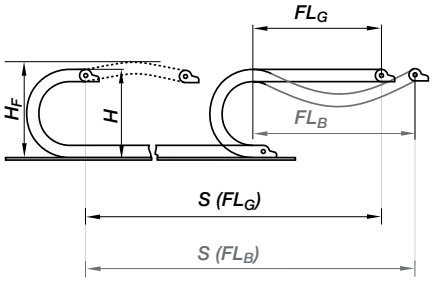
6.56 ft (2 m) **E6-40-100-075-0**	**e-chain®**
With 2 separators **28222** assembled every 2nd link	**Interior Separation**
1 Set **E6-400-100-12**	**Mounting Bracket**

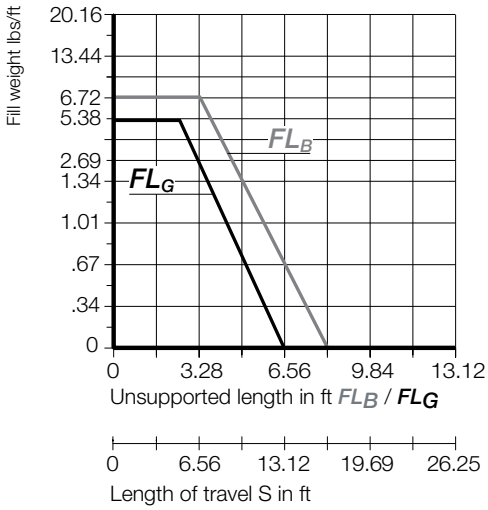
e-chain system® E6
Series E6-40
Installation Dimensions

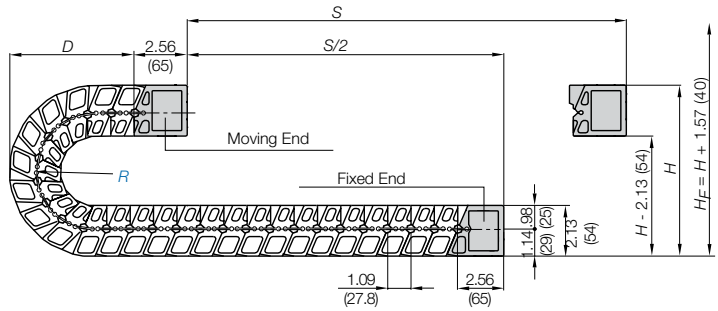
Short travel, unsupported length

- FL_B = unsupported with permitted sag
- FL_G = unsupported with straight upper run

Further information ➤ Design, Chapter 1







Pitch per link: = 1.09" (27.8 mm)
Links per ft (m): = 10.97 (36)
For center mount applications:
Chain length = $\frac{S}{2} + K$

The required clearance height: $H_F = H$ **+ 1.57 in. (40 mm)** (with 1.34 lbs/ft (2.0 kg/m) fill weight.
Please consult igus® if space is particularly restricted.

R	2.48 (063)	2.95 (075)	3.94 (100)	4.92 (125)	5.91 (150)	7.87 (200)
H	8.82 (224)	9.76 (248)	11.73 (298)	13.71 (348)	15.67 (398)	19.61 (498)
D	5.28 (134)	5.75 (146)	6.73 (171)	7.72 (196)	8.70 (221)	10.67 (271)
K	10.04 (255)	11.61 (295)	14.57 (370)	17.72 (450)	20.87 (530)	26.97 (685)

Short Travels - Unsupported

Unsupported e-chains® feature positive camber over short travels. This must be accounted for when specifying the clearance height. Please refer to **Installation dimensions** for further details.

Legend

S = Length of travel
R = Bending radius
H = Nominal clearance height
D = Overlength e-chain® radius in final position
$K = \pi \bullet R +$ *safety buffer*
H_F = Required clearance height
H_{RI} = Trough inner height
H_2 = *Mounting height
D_2 = Overlength - long travels, gliding
K_2 = *Add-on

*If the mounting bracket location is set lower

Speed / acceleration FL_G	max. 65.6 ft/s (20 m/s) / max. 656 ft/s² (200 m/s²)
Speed / acceleration FL_B	max. 9.84 ft/s (3 m/s) / max. 19.69 ft/s² (6 m/s²)
Gliding speed / acceleration (maximum)	upon request
Permitted temperature	-40°F (-40°C) up to +158°F (+70° C)
Flammability Class	VDE 0304 IIC UL94 HB

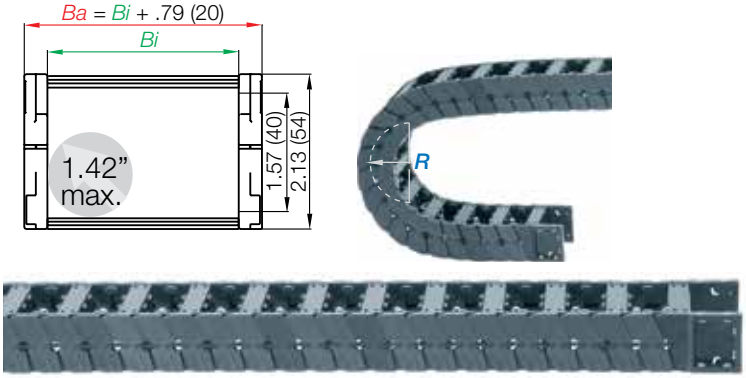
Technical Data

Details of material properties
➤ **Design, Chapter 1**

PDF: igus.com/e-chain-pdfs
Product information: igus.com/e-chains

e-chain system® E6
Series E6-40

Series E6-40 - e-chain® with crossbars every other link

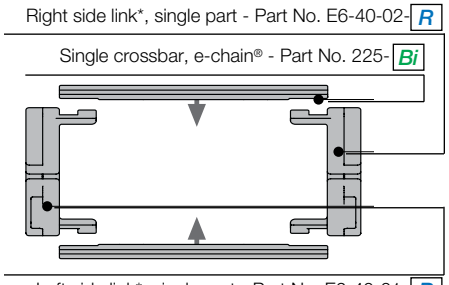


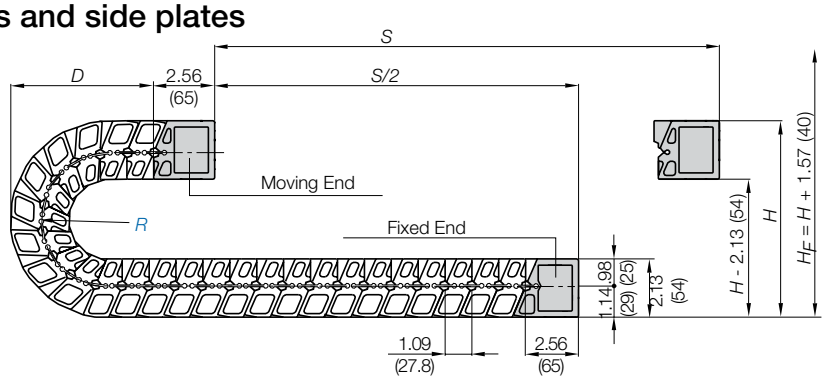
Part Number Structure

E6-40-100-100-0

- Color - Black
- Bending radius
- Width
- Series

e-chain® as separate parts, links and side plates







Polymer spring as single part - Part No. E6-40-177

*View from the fixed point of the e-chain®/E-Tube

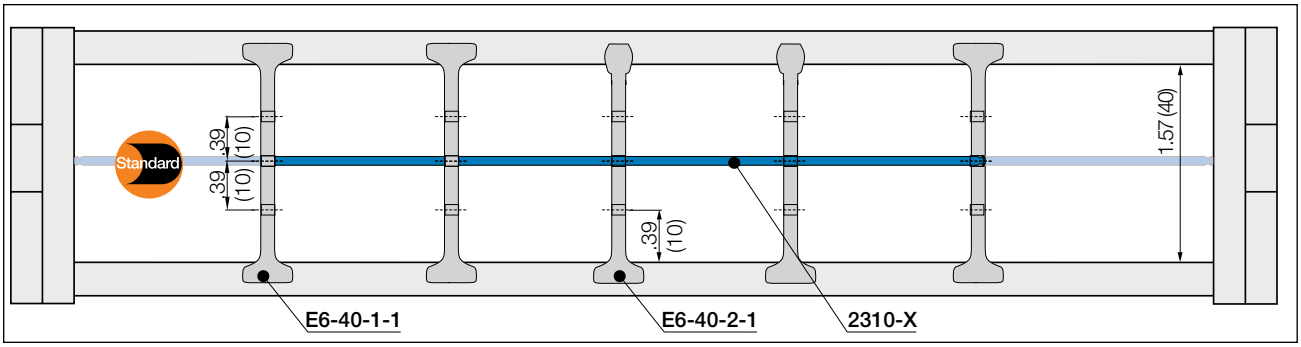
Supplement part number with required radius. Example: E6-40-100-100-0
Pitch: 1.09 in. (27.8 mm) per link links/ft (m) = 10.97 (36)

Part Number	Bi in. (mm)	Ba in. (mm)	Weight lbs/ft (kg/m)
E6-40-040-□-0	1.57 (40)	2.36 (60)	≈ 0.87 (1.29)
E6-40-050-□-0	1.97 (50)	2.76 (70)	≈ 0.89 (1.33)
E6-40-052-□-0	2.05 (52)	2.83 (72)	≈ 0.90 (1.34)
E6-40-062-□-0	2.44 (62)	3.23 (82)	≈ 0.93 (1.38)
E6-40-070-□-0	2.76 (70)	3.54 (90)	≈ 0.95 (1.41)
E6-40-075-□-0	2.95 (75)	3.74 (95)	≈ 0.96 (1.43)
E6-40-087-□-0	3.42 (87)	4.21 (107)	≈ 0.99 (1.48)
E6-40-100-□-0	3.94 (100)	4.72 (120)	≈ 1.02 (1.53)
E6-40-125-□-0	4.92 (125)	5.71 (145)	≈ 1.10 (1.63)
E6-40-150-□-0	5.91 (150)	6.69 (170)	≈ 1.16 (1.73)
E6-40-175-□-0	6.89 (175)	7.68 (195)	≈ 1.23 (1.83)
E6-40-200-□-0	7.87 (200)	8.66 (220)	≈ 2.50 (1.93)
E6-40-225-□-0	8.86 (225)	9.65 (245)	≈ 1.36 (2.02)
E6-40-250-□-0	9.84 (250)	10.63 (270)	≈ 1.42 (2.12)
E6-40-275-□-0	10.83 (275)	11.61 (295)	≈ 1.49 (2.22)
E6-40-300-□-0	11.81 (300)	12.60 (320)	≈ 1.56 (2.32)

Choose from the radii below for all of the above sizes
***Radius* (mm) Example: E6-40-100-100-0**

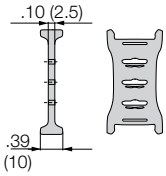
	063	075	100	125	150	200
R	2.48 (063)	2.95 (075)	3.94 (100)	4.92 (125)	5.91 (150)	7.87 (200)
H	8.82 (224)	9.76 (248)	11.73 (298)	13.71 (348)	15.67 (398)	19.61 (498)
D	5.28 (134)	5.75 (146)	6.73 (171)	7.72 (196)	8.70 (221)	10.67 (271)
K	10.04 (255)	11.61 (295)	14.57 (370)	17.72 (450)	20.87 (530)	26.97 (685)

e-chain system® E6
Series E6-40
Interior Separation - New Generation



No lateral spacing between the separators and the side links is necessary.
In the standard configuration separators are assembled every 2nd e-chain® link



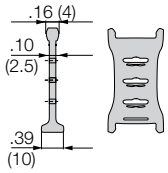


Separator, wide base

Unassembled	**Part No. E6-40-1**
Assembled	**Part No. E6-40-1-1**

- **Standard separator E6-40-1 for all applications**
  Separator with wide base for maximum locking strength and safe standing in e-chains®.





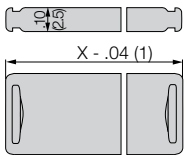
Separator, narrow head

Unassembled	**Part No. E6-40-2**
Assembled	**Part No. E6-40-2-1**

- **Separator E6-40-2**
  For even faster installation
  Firmly holds to one side with a wide base, narrow on opposite side for easy cable assembly (slight grip).

Lockable full-width shelves - for the standard interior separation





Full width shelf, lockable

Unassembled	**Part No. 2300-X**
Assembled	**Part No. 2310-X**

- **Full width shelf, lockable**
  Shelf locks safely into separators on both ends, fixed width possible. Separators can be moved freely over the shelf horizontally. Can be arranged at three different heights.

Width X in. (mm)	Part No. Unassembled	Part No. Assembled	Width X in. (mm)	Part No. Unassembled	Part No. Assembled	Width X in. (mm)	Part No. Unassembled	Part No. Assembled
0.59 (015)	**2300-15**	**2310-15**	2.36 (060)	**2300-60**	**2310-60**	3.43 (087)	**2300-87**	**2310-87**
0.98 (025)	**2300-25**	**2310-25**	2.44 (062)	**2300-62**	**2310-62**	3.54 (090)	**2300-90**	**2310-90**
1.18 (030)	**2300-30**	**2310-30**	2.56 (065)	**2300-65**	**2310-65**	3.94 (100)	**2300-100**	**2310-100**
1.50 (038)	**2300-38**	**2310-38**	2.76 (070)	**2300-70**	**2310-70**	4.06 (103)	**2300-103**	**2310-103**
1.57 (040)	**2300-40**	**2310-40**	2.95 (075)	**2300-75**	**2310-75**	4.33 (110)	**2300-110**	**2310-110**
1.97 (050)	**2300-50**	**2310-50**	3.03 (077)	**2300-77**	**2310-77**	4.72 (120)	**2300-120**	**2310-120**
2.24 (057)	**2300-57**	**2310-57**	3.15 (080)	**2300-80**	**2310-80**	4.92 (125)	**2300-125**	**2310-125**

Separator with integrated strain relief



Strain relief separator Part No. E6-40-02-Z can be integrated into the mounting bracket and can be placed there at any point of the e-chain®. It combines strain relief and interior separation, it can be installed on the first or last e-chain® link and is easy to assemble without any screws.
For more information ➤ **Chapter 10, Strain Relief**

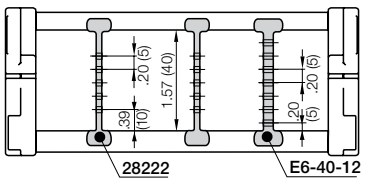
PDF: igus.com/e-chain-pdfs
Product information: igus.com/e-chains

e-chain system® E6
Series E6-40
Interior Separation - Previous Generation

Vertical separators

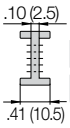
Vertical separators are used if a vertical subdivision of the e-chain® interior is required. By standard, vertical separators are assembled every other e-chain® link.





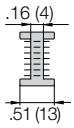
- **Slotted vertical separator**
  This separator is used for general subdivision of e-chains®. Can be used in combination with full-width shelf 221-X.

- **Locking vertical separator**
  For use with shelf 2210-X



Vertical Separator, Slotted

Unassembled	**Part No. 28221**
Assembled	**Part No. 28222**



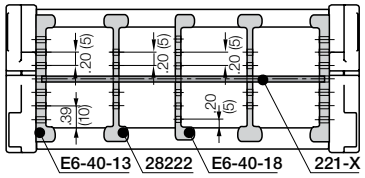
Locking Vertical Separator

Unassembled	**Part No. E6-40-02**
Assembled	**Part No. E6-40-12**

Full-width shelf

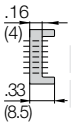
For applications involving many thin cables with similar or identical diameters.
Full-width shelf **221-X** can be used with vertical separator **28222, side plate E6-40-13 and asymmetrical separator E6-40-18**





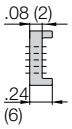
- **Side plate**
  This separator is used for general subdivision of e-chains®.

- **Asymmetrical separator**
  This separator is used for general subdivision of e-chains®.



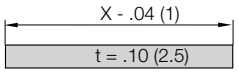
Side Plate

Unassembled	**Part No. E6-40-03**
Assembled	**Part No. E6-40-13**



Asymmetrical Separator

Unassembled	**Part No. E6-40-08**
Assembled	**Part No. E6-40-18**



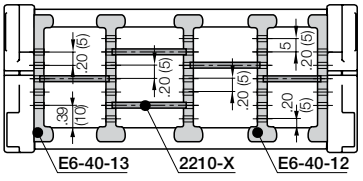
Shelves 220-XX
Shelves can be inserted at 5 different heights in .20" (5mm) increments

Width X in. (mm)	Part No. Unassembled	Part No. Assembled	Width X in. (mm)	Part No. Unassembled	Part No. Assembled
1.57 (040)	**220-40**	**221-40**	3.94 (100)	**220-100**	**221-100**
1.97 (050)	**220-50**	**221-50**	4.92 (125)	**220-125**	**221-125**
2.44 (062)	**220-62**	**221-62**	5.91 (150)	**220-150**	**221-150**
2.76 (070)	**220-70**	**221-70**	6.89 (175)	**220-175**	**221-175**
2.95 (075)	**220-75**	**221-75**	7.87 (200)	**220-200**	**221-200**
3.43 (087)	**220-87**	**221-87**			

Shelves

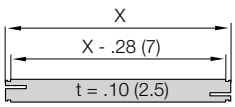
These components form the basic pattern of a shelf system.
Shelves of various widths can be arranged at 7 different heights in .20" (5mm) increments





Shelves 2200-XX
Shelf 2210-X can be used with **locking vertical separator E6-40-12** and **side plate E6-40-13**

Width X in. (mm)	Part No. Unassembled	Part No. Assembled	Width X in. (mm)	Part No. Unassembled	Part No. Assembled
.71 (18)	**2200-18**	**2210-18**	2.28 (58)	**2200-58**	**2210-58**
.91 (23)	**2200-23**	**2210-23**	2.28 (63)	**2200-65**	**2210-65**
1.10 (28)	**2200-28**	**2210-28**	2.68 (68)	**2200-68**	**2210-68**
1.30 (33)	**2200-33**	**2210-33**	2.87 (73)	**2200-73**	**2210-73**
1.50 (38)	**2200-38**	**2210-38**	3.46 (88)	**2200-88**	**2210-88**
1.69 (43)	**2200-43**	**2210-43**	3.90 (99)	**2200-99**	**2210-99**
1.89 (48)	**2200-48**	**2210-48**			



e-chain system® E6
Series E6-40
Mounting Bracket - KMA

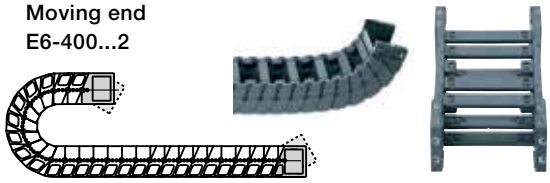
Option 1: KMA - Pivoting

- Option - profile rail with integrated strain relief chainfix clip or tiewrap plates
- Profile rail can be mounted in the inner or outer radius of the e-chain®
- Bolted connection outside of the chain cross-section
- Recommended for unsupported applications (for gliding applications please contact igus®)
- Confined installation conditions
- Attachment capability on all sides

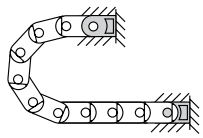


Adapters for gliding applications available upon request

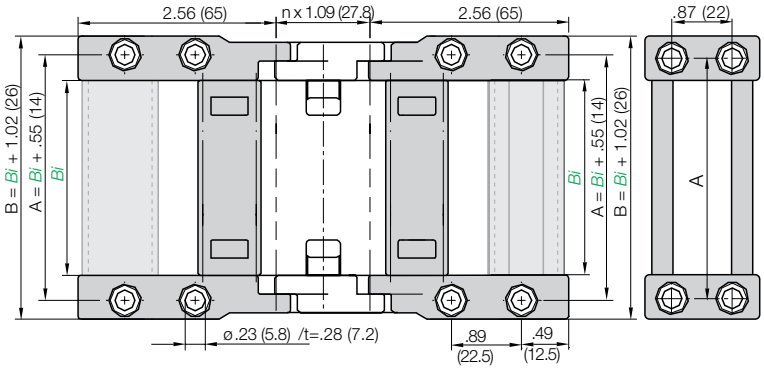
Moving end
E6-400...2



Fixed end
E6-400...1

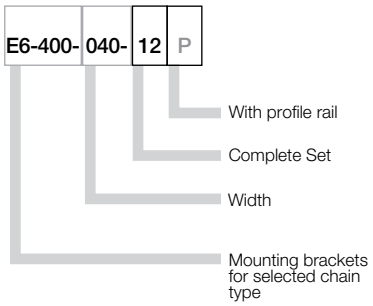


Possible installation configurations -



For Series	Part No. Full Set Without Profile Rail	Part No. Full Set With Profile Rail	Dimension A in.	(mm)	Dimension B in.	(mm)
E6-40-040	**E6-400-040-12**	**E6-400-040-12P**	2.13	(54)	2.60	(66)
E6-40-050	**E6-400-050-12**	**E6-400-050-12P**	2.52	(64)	2.99	(76)
E6-40-052	**E6-400-052-12**	**E6-400-052-12P**	2.66	(66)	3.07	(78)
E6-40-062	**E6-400-062-12**	**E6-400-062-12P**	2.99	(76)	3.46	(88)
E6-40-070	**E6-400-070-12**	**E6-400-070-12P**	3.31	(84)	3.78	(96)
E6-40-075	**E6-400-075-12**	**E6-400-075-12P**	3.50	(89)	3.98	(101)
E6-40-087	**E6-400-087-12**	**E6-400-087-12P**	3.98	(101)	4.45	(113)
E6-40-100	**E6-400-100-12**	**E6-400-100-12P**	4.49	(114)	4.96	(126)
E6-40-125	**E6-400-125-12**	**E6-400-125-12P**	5.47	(139)	5.94	(151)
E6-40-150	**E6-400-150-12**	**E6-400-150-12P**	6.46	(164)	6.93	(176)
E6-40-175	**E6-400-175-12**	**E6-400-175-12P**	7.44	(189)	7.91	(201)
E6-40-200	**E6-400-200-12**	**E6-400-200-12P**	8.43	(214)	8.90	(226)
E6-40-225	**E6-400-225-12**	**E6-400-225-12P**	9.41	(239)	9.88	(251)
E6-40-250	**E6-400-250-12**	**E6-400-250-12P**	10.39	(264)	10.87	(276)
E6-40-275	**E6-400-275-12**	**E6-400-275-12P**	11.38	(289)	11.85	(301)
E6-40-300	**E6-400-300-12**	**E6-400-300-12P**	12.36	(314)	12.83	(326)

Part Number Structure

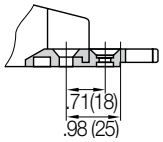


Full set, for both ends:
E6-400- 040- 12 Full set, **both fixed and moving end**

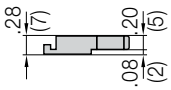
Single-part order:
E6-400 - 040- 1
Mounting bracket **fixed end**
E6-400 - 040- 2
Mounting bracket **moving end**

Tiewrap Plates





Shown assembled

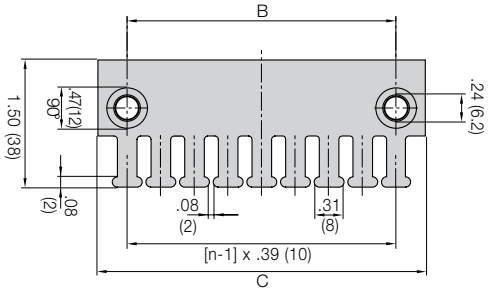


Single tiewrap plate

Option 1:
Tiewrap plates as an individual part

Available as an individual component, can be fixed onto a mounting bracket with the use of a profile rail.

Tiewrap Plates	n Number of Teeth	Dimension C	Dimension B
2020-ZB	3	1.18 (30)	.59 (15)
2030-ZB	4	1.57 (40)	.79 (20)
2040-ZB	5	1.97 (50)	1.18 (30)
2050-ZB	6	2.36 (60)	1.57 (40)
2070-ZB	8	3.15 (80)	2.36 (60)
2090-ZB	9	3.54 (90)	2.76 (70)
2100-ZB	10	3.94 (100)	3.15 (80)
2120-ZB	12	4.72 (120)	3.94 (100)



If used with KMA brackets with profile rail please add "KMA" to the end of the part number.
Example: 2020-ZBKMA

Other strain relief elements
➤ **Strain Relief, Chapter 10**

PDF: igus.com/e-chain-pdfs
Product information: igus.com/e-chains

e-chain system® E6
Series R6-40

1.57

Price Index

Series R6-40

Special Features / Options

Extremely low noise
Test results upon request

IPA Certificate: Class 1, according to standard DIN EN ISO 14644-1 for the E6 system (Series E6-29-060-150-0-CR, (v = 1.64 ft/s, a = 3.28 ft/s²)

LEVEL 1 absorption confirmed by IPA-Fraunhofer-Institute according to SEMI E78-0998 for the E6 standard material

Assembly Tips



Lever and remove lids

Other Installation Methods

Vertical, hanging ≤ 98.4 ft (30 m)
Vertical, standing ≤ 6.56 ft (2 m)
Side-mounted, unsupp. = possible to a limited extent
Unsupported length of upper run upon request

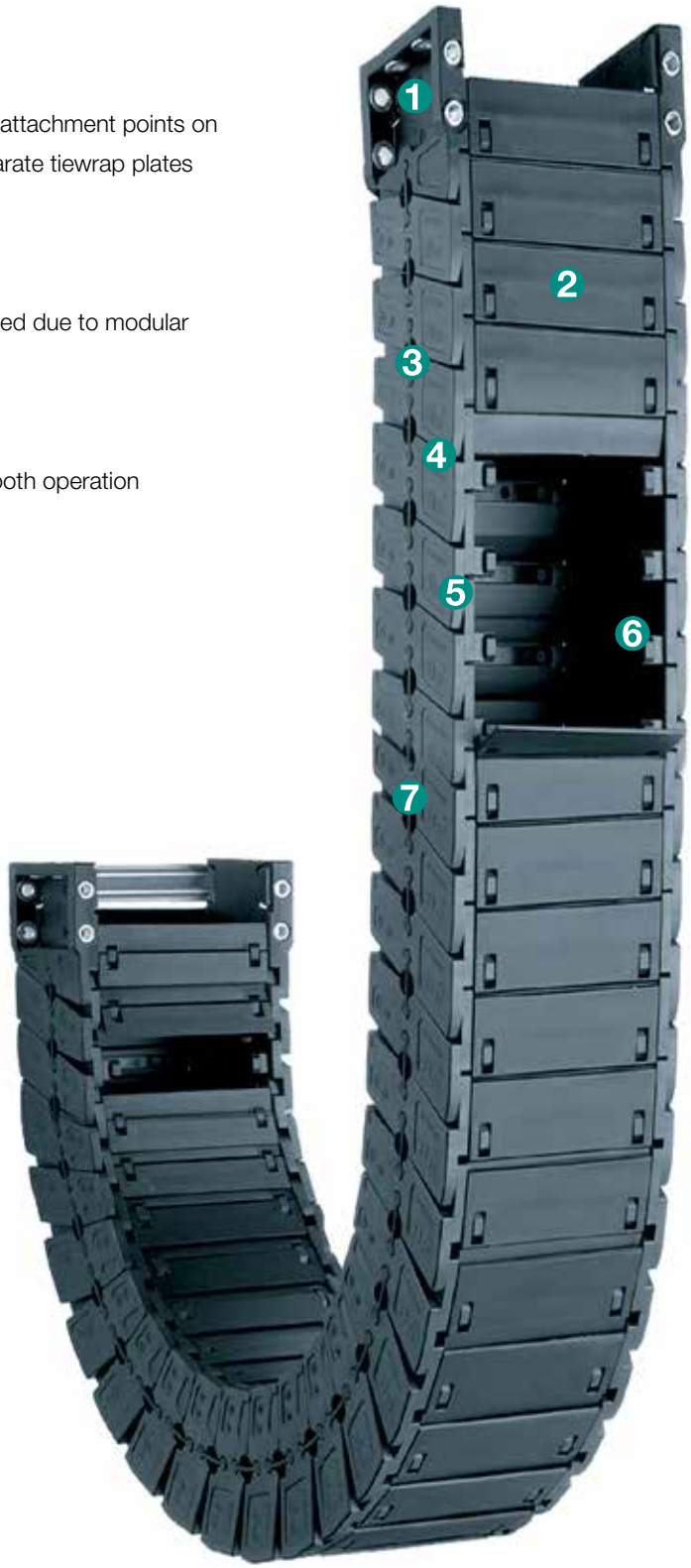
Usage Guidelines

- If a low-noise version is required
- For very high speeds and/or accelerations
- If large stresses and thrust forces are present
- Protection against hot chips
- For small bending radii
- If less vibration is required
- Minimal abrasion, suitable for cleanrooms

- For side mounted applications
  ➤ **Series R4-32 E4-1**

Features & Benefits

1. KMA mounting brackets with attachment points on all sides (strain relief with separate tiewrap plates possible)
2. Fully enclosed E-Tube
3. No pin and bore connection
4. Can be shortened or lengthened due to modular design
5. Very large gliding surfaces
6. Interior stop dog
7. Small pitch for low-noise, smooth operation



Order Example: Complete e-chain®

Please indicate chain length or number of links. Example:

6.56 ft (2 m) **R6-40-062-075-0**	**e-chain®**
With 2 separators **R6-40-11** assembled every 2nd link	**Interior Separation**
1 Set **R6-400-062-12**	**Mounting Bracket**

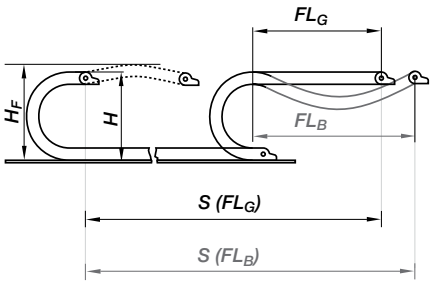
e-chain system® E6
Series R6-40
Installation Dimensions

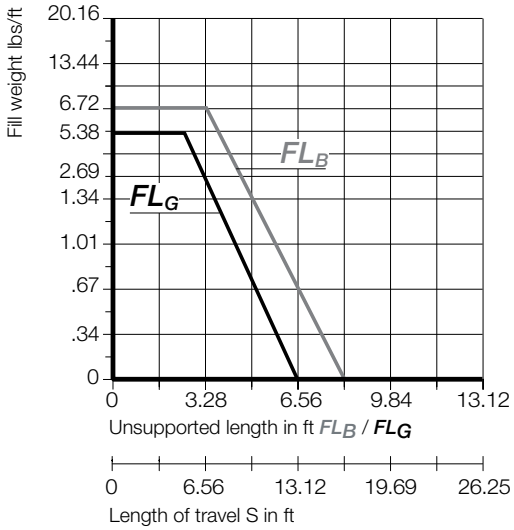
Short travel, unsupported length

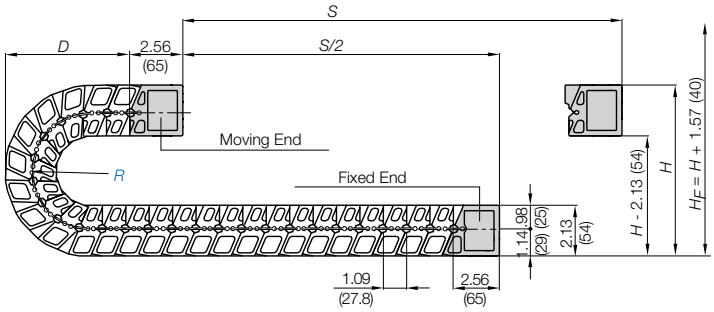
● FL_B = unsupported with permitted sag

● FL_G = unsupported with straight upper run

Further information ➤ Design, Chapter 1







Pitch per link: = 1.09" (27.8 mm)
Links per ft (m): = 10.97 (36)
For center mount applications:
Chain length = $\frac{S}{2} + K$

The required clearance height: $H_F = H + 1.57$ **in. (40 mm)** (with 1.34 lbs/ft (2.0 kg/m) fill weight.
Please consult igus® if space is particularly restricted.

R	2.48 (063)	2.95 (075)	3.94 (100)	4.92 (125)	5.91 (150)	7.87 (200)
H	8.82 (224)	9.76 (248)	11.73 (298)	13.71 (348)	15.67 (398)	19.61 (498)
D	5.28 (134)	5.75 (146)	6.73 (171)	7.72 (196)	8.70 (221)	10.67 (271)
K	10.04 (255)	11.61 (295)	13.50 (343)	16.65 (423)	20.87 (530)	26.97 (685)

Short Travels - Unsupported

Unsupported e-chains® feature positive camber over short travels. This must be accounted for when specifying the clearance height. Please refer to **Installation dimensions** for further details.

Legend

S = Length of travel
R = Bending radius
H = Nominal clearance height
D = Overlength e-chain® radius in final position
K = π • *R* + *safety buffer*
H_F = Required clearance height
H_{RI} = Trough inner height
H_2 = *Mounting height
D_2 = Overlength - long travels, gliding
K_2 = *Add-on

*If the mounting bracket location is set lower

Speed / acceleration FL_G	max. 65.6 ft/s (20 m/s) / max. 656 ft/s² (200 m/s²)
Speed / acceleration FL_B	max. 9.84 ft/s (3 m/s) / max. 19.69 ft/s² (6 m/s²)
Gliding speed / acceleration (maximum)	upon request
Permitted temperature	-40°F (-40°C) up to +158°F (+70° C)
Flammability Class	VDE 0304 IIC UL94 HB

Technical Data

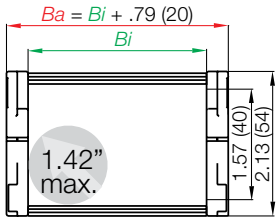
Details of material properties
➤ Design, Chapter 1

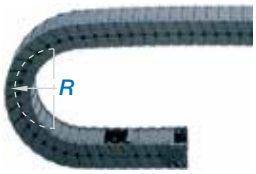
PDF: igus.com/e-chain-pdfs
Product information: igus.com/e-chains

igus®

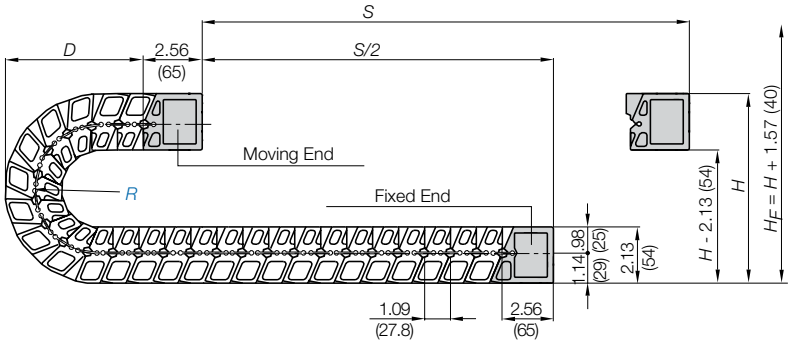
e-chain system® E6
Series R6-40

Series R6-40 - E-Tube, removable lids along the inner and outer radius









Part Number Structure

R6-40-	062-	100-	0
			Color - Black
		Bending radius	
	Width		
Series			

Supplement part number with required radius. Example: R6-40-062-[100]-0
Pitch: 1.09 in. (27.8 mm) per link links/ft (m) = 10.97 (36)

Part Number	*Bi* in. (mm)	*Ba* in. (mm)	Weight lbs/ft (kg/m)
R6-40-062-[ ]-0	2.44 (62)	3.23 (82)	≈ 1.07 (1.59)
R6-40-075-[ ]-0	2.95 (75)	3.74 (95)	≈ 1.11 (1.65)

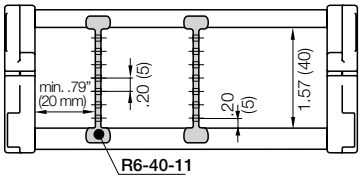
Choose from the radii below for all of the above sizes
***Radius* (mm)** **Example: R6-40-062-[100]-0**

	063	075	100	125	150	200
R	2.48 (063)	2.95 (075)	3.94 (100)	4.92 (125)	5.91 (150)	7.87 (200)
H	8.82 (224)	9.76 (248)	11.73 (298)	13.71 (348)	15.67 (398)	19.61 (498)
D	5.28 (134)	5.75 (146)	6.73 (171)	7.72 (196)	8.70 (221)	10.67 (271)
K	10.04 (255)	11.61 (295)	13.50 (343)	16.65 (423)	20.87 (530)	26.97 (685)

Vertical separators

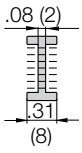
Vertical separators are used if a vertical subdivision of the e-chain® interior is required. By standard, vertical separators are assembled every other E-Tube link.







Vertical separator R6-40-01



Vertical Separator

Unassembled	**Part No. R6-40-01**
Assembled	**Part No. R6-40-11**

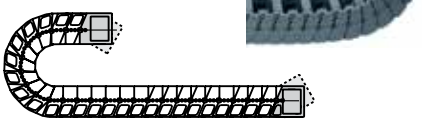
- **Vertical separator R6-40-01**
  This separator is used for general subdivision of E-Tubes.
- Separator snaps onto either the bottom of the carrier or the lid. Stays attached to that side. Opposite side can be removed.

e-chain system® E6
Series R6-40
Mounting Bracket - KMA / Strain Relief

KMA - Pivoting

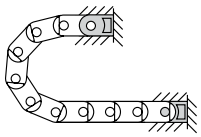
- Option - profile rail with integrated strain relief chainfix clip or tiewrap plates
- Profile rail can be mounted in the inner or outer radius of the e-chain®
- Bolted connection outside of the chain cross-section
- Recommended for unsupported applications (for gliding applications please contact igus®)
- Confined installation conditions
- Attachment capability on all sides

Moving end
R6-400...2



Fixed end
R6-400...1

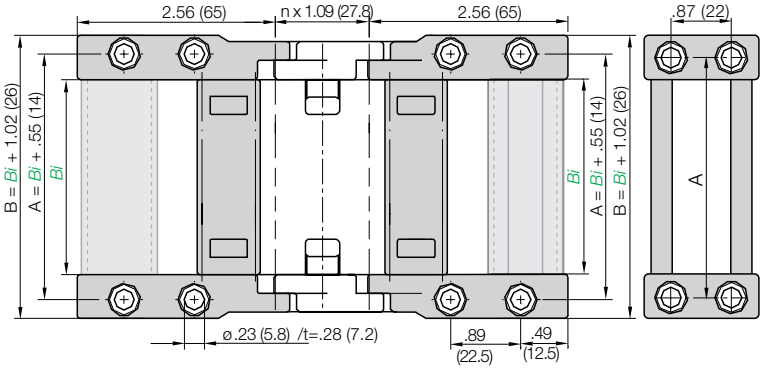




Possible installation configurations -



Adapters for gliding applications available upon request

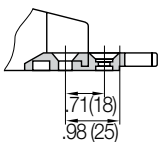


For Series	Part No. Full Set Without Profile Rail	Part No. Full Set With Profile Rail	Dimension A in.	(mm)	Dimension B in.	(mm)
R6-40-062	**R6-400-062-12**	**R6-400-062-12P**	2.99	(76)	3.46	(88)
R6-40-075	R6-400-075-12	R6-400-075-12P	3.50	(89)	3.98	(101)

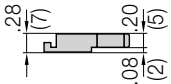
Full set, for both ends:
R6-400- 062- 12 Full set, **both fixed and moving end**
Single-part order:
R6-400 - 062- 1 Mounting bracket **fixed end**
R6-400 - 062- 2 Mounting bracket **moving end**

Tiewrap Plates





Shown assembled

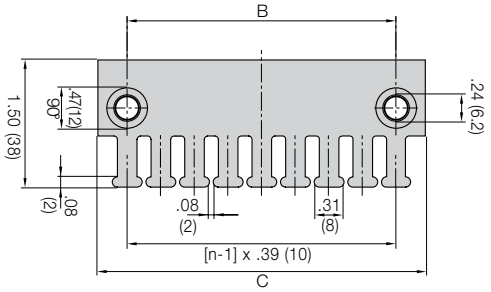


Single tiewrap plate

Tiewrap plates as an individual part

Available as an individual component, can be fixed onto a mounting bracket with the use of a profile rail.

Tiewrap Plates	n Number of Teeth	Dimension C	Dimension B
2020-ZB	3	1.18 (30)	.59 (15)
2030-ZB	4	1.57 (40)	.79 (20)
2040-ZB	5	1.97 (50)	1.18 (30)
2050-ZB	6	2.36 (60)	1.57 (40)
2070-ZB	8	3.15 (80)	2.36 (60)
2090-ZB	9	3.54 (90)	2.76 (70)
2100-ZB	10	3.94 (100)	3.15 (80)
2120-ZB	12	4.72 (120)	3.94 (100)



If used with KMA brackets with profile rail please add "KMA" to the end of the part number.
Example: 2020-ZBKMA

Other strain relief elements
➤ **Strain Relief, Chapter 10**

PDF: igus.com/e-chain-pdfs
Product information: igus.com/e-chains

e-chain system® E6
Series E6-52

Price Index

Series E6-52

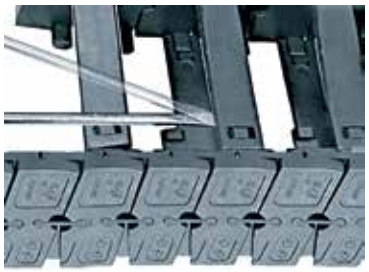
Special Features / Options

Extremely low noise
Test results upon request

IPA Certificate: Class 1, according to standard DIN EN ISO 14644-1 for the E6 system (Series E6-29-060-150-0-CR, (v = 1.64 ft/s, a = 3.28 ft/s²)

LEVEL 1 absorption confirmed by IPA-Fraunhofer-Institute according to SEMI E78-0998 for the E6 standard material

Assembly Tips



To close, push and click shut

Other Installation Methods

Vertical, hanging ≤ 164 ft (50 m)
Vertical, standing ≤ 6.56 ft (2 m)
Side-mounted, unsupp. = possible to a limited extent
Unsupported length of upper run upon request

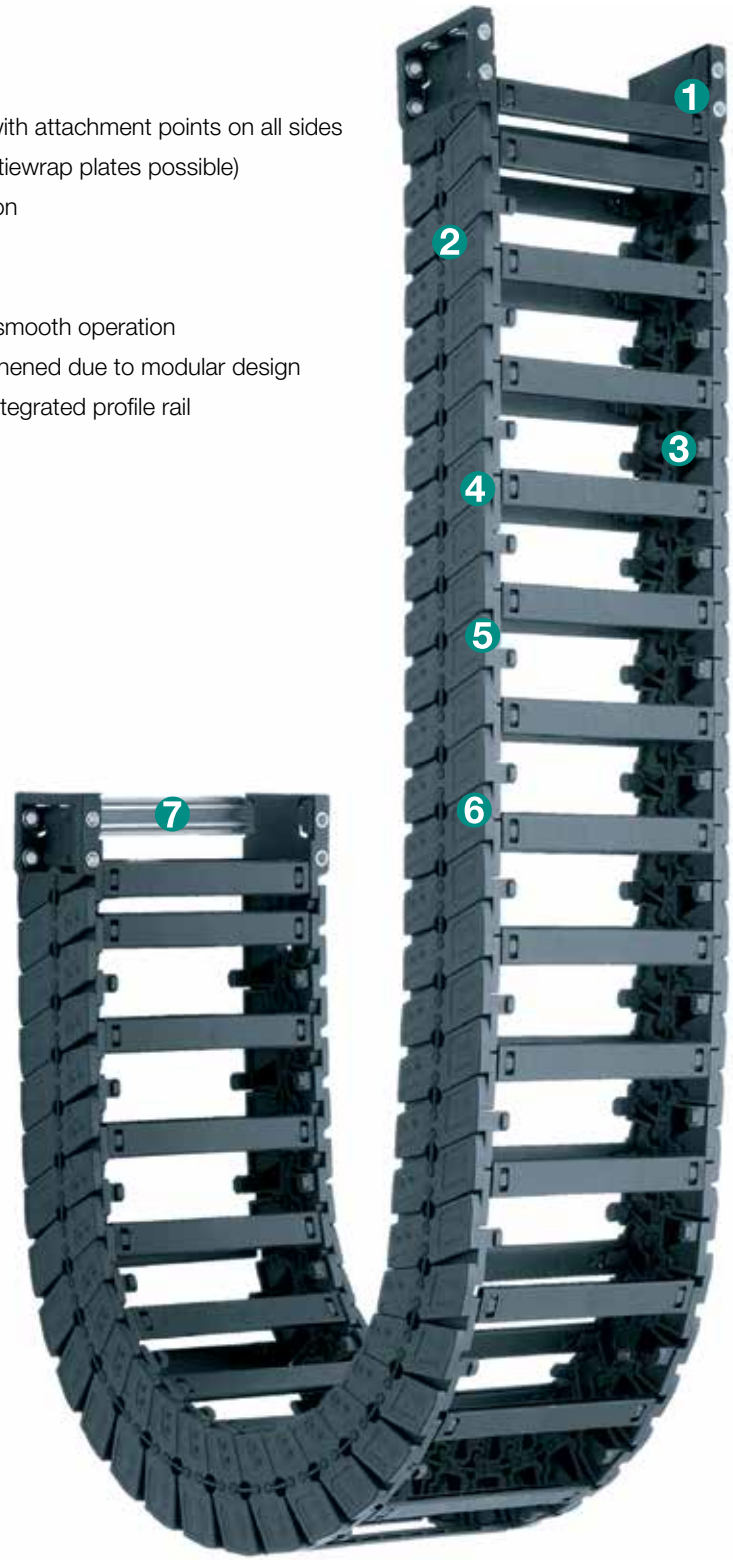
Usage Guidelines

- If a low-noise version is required
- For very high speeds and/or accelerations
- If large stresses and thrust forces are present
- For small bending radii
- If less vibration is required
- Minimal abrasion, suitable for cleanrooms

- For side mounted applications
  ➤ **Series E4-56 E4-1**
- For RBR (Reverse Bending Radius)
  ➤ **Series E4-56 E4-1**
- For high additional loads
  ➤ **Series E4-56 E4-1**
- For dirty environments
  ➤ **Series E4-56 E4-1**

Features & Benefits

1. KMA mounting brackets with attachment points on all sides (strain relief with separate tiewrap plates possible)
2. No pin and bore connection
3. Interior stop dog
4. Very large gliding surfaces
5. Small pitch for low-noise, smooth operation
6. Can be shortened or lengthened due to modular design
7. Available with or without integrated profile rail



Order Example: Complete e-chain®

Please indicate chain length or number of links. Example:

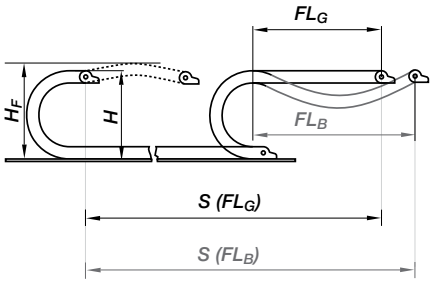
6.56 ft (2 m) **E6-52-100-175-0**	**e-chain®**
With 2 separators **38222** assembled every 2nd link	**Interior Separation**
1 Set **E6-520-100-12**	**Mounting Bracket**

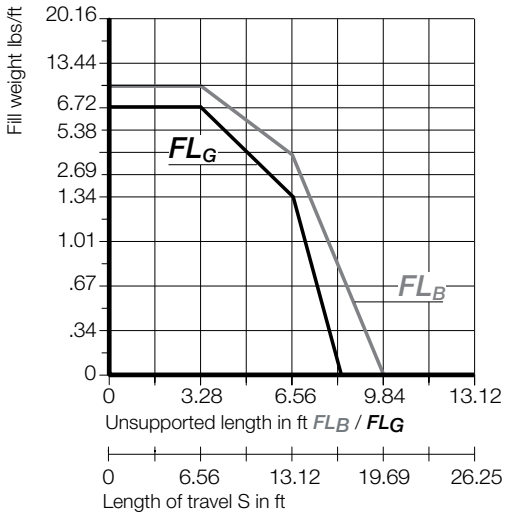
e-chain system® E6
Series E6-52
Installation Dimensions

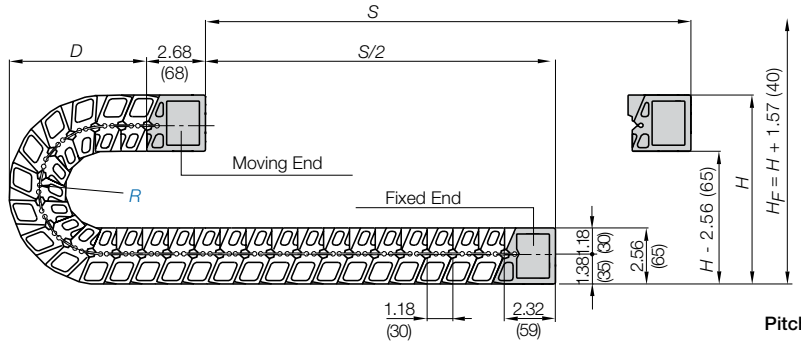
Short travel, unsupported length

- ● FL_B = unsupported with permitted sag
- ● FL_G = unsupported with straight upper run

Further information ➤ Design, Chapter 1







The required clearance height: ***HF = H + 1.57 in. (40 mm)*** (with 1.34 lbs/ft (2.0 kg/m) fill weight. Please consult igus® if space is particularly restricted.

R	2.95 (075)	3.94 (100)	5.91 (150)	7.87 (200)	9.84 (250)
H	10.63 (270)	12.60 (320)	16.54 (420)	20.47 (520)	24.41 (620)
D	6.10 (155)	7.09 (180)	9.06 (230)	11.02 (280)	12.99 (330)
K	11.81 (300)	14.76 (375)	21.06 (535)	27.17 (690)	33.46 (850)

Pitch per link: = 1.18" (30 mm)
Links per ft (m): = 10.17 (34)
For center mount applications:
Chain length = $\frac{S}{2} + K$

Short Travels - Unsupported

Unsupported e-chains® feature positive camber over short travels. This must be accounted for when specifying the clearance height. Please refer to **Installation dimensions** for further details.

Legend

S = Length of travel
R = Bending radius
H = Nominal clearance height
D = Overlength e-chain® radius in final position
K = π • *R* + *safety buffer*
H_F = Required clearance height
H_{RI} = Trough inner height
H_2 = *Mounting height
D_2 = Overlength - long travels, gliding
K_2 = *Add-on

*If the mounting bracket location is set lower

Speed / acceleration FL_G	max. 65.6 ft/s (20 m/s) / max. 656 ft/s² (200 m/s²)
Speed / acceleration FL_B	max. 9.84 ft/s (3 m/s) / max. 19.69 ft/s² (6 m/s²)
Gliding speed / acceleration (maximum)	upon request
Permitted temperature	-40°F (-40°C) up to +158°F (+70° C)
Flammability Class	VDE 0304 IIC UL94 HB

Technical Data

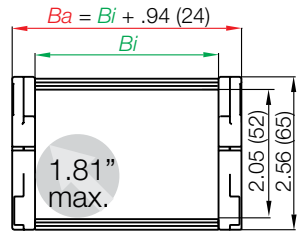
Details of material properties
➤ Design, Chapter 1

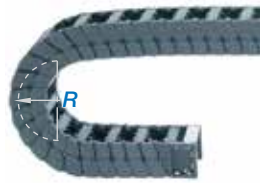
PDF: igus.com/e-chain-pdfs
Product information: igus.com/e-chains

igus®

e-chain system® E6
Series E6-52

Series E6-52 - e-chain® with crossbars every other link





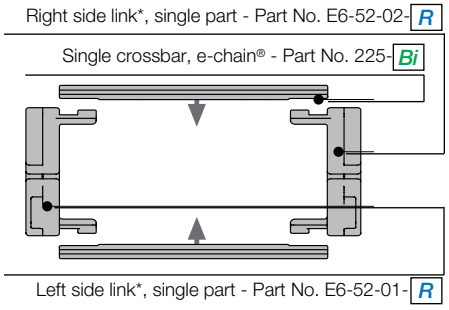


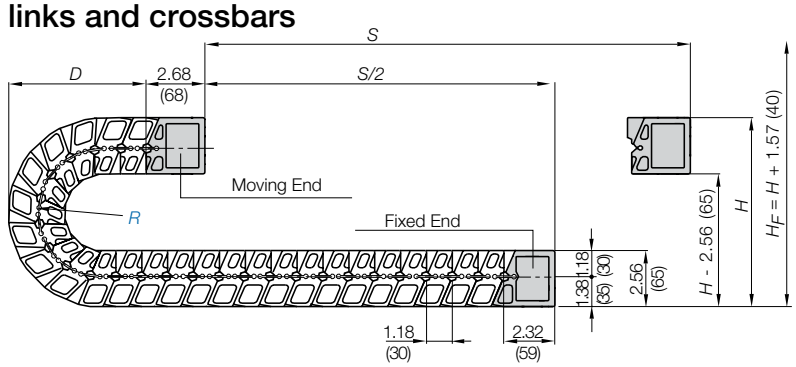
Part Number Structure

E6-52-100-075-0

- Color - Black
- Bending radius
- Width
- Series

e-chain® as separate parts, side links and crossbars







Polymer spring as single part - Part No. E6-52-195

*View from the fixed point of the e-chain®/E-Tube

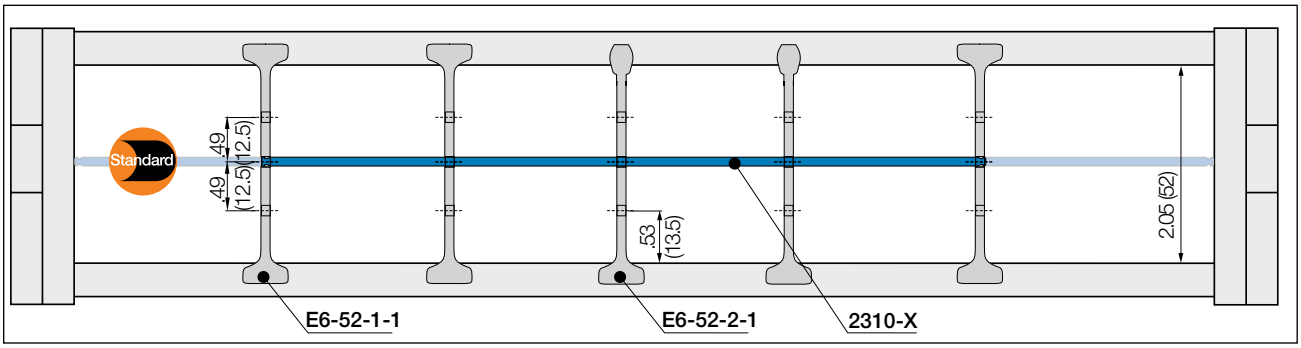
Supplement part number with required radius. Example: E6-52-100-075-0
Pitch: 1.18 in. (30 mm) per link links/ft (m) = 10.36 (34)

Part Number	*Bi* in. (mm)	*Ba* in. (mm)	Weight lbs/ft (kg/m)
E6-52-040-□-0	1.57 (40)	2.51 (64)	≈1.18 (1.76)
E6-52-050-□-0	1.97 (50)	2.91 (74)	≈1.21 (1.80)
E6-52-052-□-0	2.05 (52)	2.60 (66)	≈1.22 (1.81)
E6-52-062-□-0	2.44 (62)	3.39 (86)	≈1.24 (1.84)
E6-52-070-□-0	2.76 (70)	3.70 (94)	≈1.26 (1.87)
E6-52-075-□-0	2.95 (75)	3.90 (99)	≈1.27 (1.89)
E6-52-087-□-0	3.42 (87)	4.37 (111)	≈1.30 (1.94)
E6-52-100-□-0	3.94 (100)	4.88 (124)	≈1.33 (1.98)
E6-52-125-□-0	4.92 (125)	5.87 (149)	≈1.39 (2.07)
E6-52-150-□-0	5.91 (150)	6.85 (174)	≈1.46 (2.17)
E6-52-175-□-0	6.89 (175)	7.83 (199)	≈1.52 (2.26)
E6-52-200-□-0	7.87 (200)	8.82 (224)	≈1.59 (2.36)
E6-52-225-□-0	8.86 (225)	9.80 (249)	≈1.65 (2.45)
E6-52-250-□-0	9.84 (250)	10.79 (274)	≈1.71 (2.54)
E6-52-275-□-0	10.83 (275)	11.77 (299)	≈1.77 (2.64)
E6-52-300-□-0	11.81 (300)	12.76 (324)	≈1.83 (2.73)

Choose from the radii below for all of the above sizes
***Radius* (mm)Example: E6-52-100-075-0**

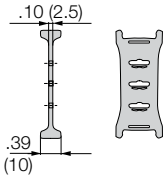
	075	100	150	200	250
R	2.95 (075)	3.94 (100)	5.91 (150)	7.87 (200)	9.84 (250)
H	10.63 (270)	12.60 (320)	16.54 (420)	20.47 (520)	24.41 (620)
D	6.10 (155)	7.09 (180)	9.06 (230)	11.02 (280)	12.99 (330)
K	11.81 (300)	14.76 (375)	21.06 (535)	27.17 (690)	33.46 (850)

e-chain system® E6
Series E6-52
Interior Separation - New Generation



No lateral spacing between the separators and the side links is necessary.
In the standard configuration separators are assembled every 2nd e-chain® link



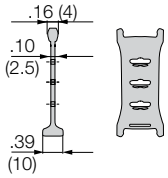


Separator, wide base

Unassembled	**Part No. E6-52-1**
Assembled	**Part No. E6-52-1-1**

- **Standard separator E6-52-1 for all applications**
  Separator with wide base for maximum locking strength and safe standing in e-chains®.





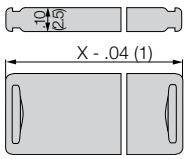
Separator, narrow head

Unassembled	**Part No. E6-52-2**
Assembled	**Part No. E6-52-2-1**

- **Separator E6-52-2**
  For even faster installation
  Firmly holds to one side with a wide base, narrow on opposite side for easy cable assembly (slight grip).

Lockable full-width shelves - for the standard interior separation





Full width shelf, lockable

Unassembled	**Part No. 2300-X**
Assembled	**Part No. 2310-X**

- **Full width shelf, lockable**
  Shelf locks safely into separators on both ends, fixed width possible. Separators can be moved freely over the shelf horizontally. Can be arranged at three different heights.

Width X in. (mm)	Part No. Unassembled	Part No. Assembled	Width X in. (mm)	Part No. Unassembled	Part No. Assembled	Width X in. (mm)	Part No. Unassembled	Part No. Assembled
0.59 (015)	**2300-15**	**2310-15**	2.36 (060)	**2300-60**	**2310-60**	3.43 (087)	**2300-87**	**2310-87**
0.98 (025)	**2300-25**	**2310-25**	2.44 (062)	**2300-62**	**2310-62**	3.54 (090)	**2300-90**	**2310-90**
1.18 (030)	**2300-30**	**2310-30**	2.56 (065)	**2300-65**	**2310-65**	3.94 (100)	**2300-100**	**2310-100**
1.50 (038)	**2300-38**	**2310-38**	2.76 (070)	**2300-70**	**2310-70**	4.06 (103)	**2300-103**	**2310-103**
1.57 (040)	**2300-40**	**2310-40**	2.95 (075)	**2300-75**	**2310-75**	4.33 (110)	**2300-110**	**2310-110**
1.97 (050)	**2300-50**	**2310-50**	3.03 (077)	**2300-77**	**2310-77**	4.72 (120)	**2300-120**	**2310-120**
2.24 (057)	**2300-57**	**2310-57**	3.15 (080)	**2300-80**	**2310-80**	4.92 (125)	**2300-125**	**2310-125**

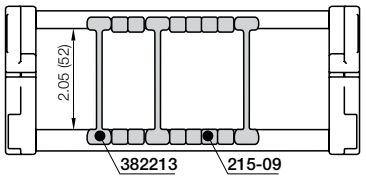
PDF: igus.com/e-chain-pdfs
Product information: igus.com/e-chains

e-chain system® E6
Series E6-52
Interior Separation Previous Generation

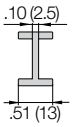
Vertical separators and spacers

Vertical separators are used if a vertical subdivision of the e-chain® interior is required. By standard, vertical separators are assembled every other e-chain® link.





- **Vertical separator**
  This separator is used for general subdivision of e-chains®.



Vertical Separator

Unassembled	**Part No. 382212**
Assembled	**Part No. 382213**

- **Spacer**
  Used when a broad distance needs to be maintained between the separators. Generally used in side-mounted applications



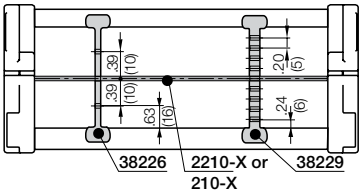
Spacer

Unassembled	**Part No. 205-09**
Assembled	**Part No. 215-09**

Full-width shelf

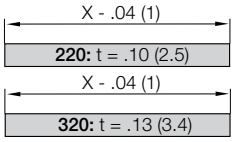
For applications involving many thin cables with similar or identical diameters. Slotted separator **38226** and **38229** can be used in combination with full-width shelf **321-X**. Locking vertical separator **382215** can also be used with full-width shelf **221-X**.



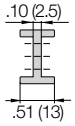


Width X in. (mm)	Part No. Unassembled 220-X	Part No. Unassembled 320-X	Part No. Assembled 221-X	Part No. Assembled 321-X
1.57 (040)	220-40	320-40	221-40	321-40
1.97 (050)	220-50	320-50	221-50	321-50
2.44 (062)	220-62	320-62	221-62	321-62
2.76 (070)	220-70	320-70	221-70	321-70
2.95 (075)	220-75	320-75	221-75	321-75
3.43 (087)	220-87	320-87	221-87	321-87
3.94 (100)	220-100	320-100	221-100	321-100
4.92 (125)	220-125	320-125	221-125	321-125
5.91 (150)	220-150	320-150	221-150	321-150
6.89 (175)	220-175	320-175	221-175	321-175
7.87 (200)	220-200	320-200	221-200	321-200

Shelves 220-X/320-XX
Shelves can be inserted at 9 different heights in .20" (5mm) increments



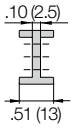
- **Vertical separator, slotted**
  This separator is used for general sub-division of e-chains®. Can be used in combination with full-width shelf 321-X.



Vertical Separator, slotted

Unassembled	**Part No. 38225**
Assembled	**Part No. 38226**

- **Locking vertical separator**
  This separator is used for general subdivision of e-chains®.



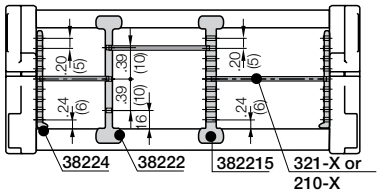
Locking Vertical Separator

Unassembled	**Part No. 38228**
Assembled	**Part No. 38229**

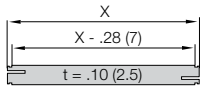
Shelves

These components form the basic pattern of a shelf system. Shelves of various widths can be arranged at 9 different heights in .20" (5mm) increments





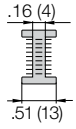
Shelves 2200-XX
Shelf 2210-X can be used with **vertical separator 38222, locking separator 382215** and **side plate 38224.**
Locking vertical separator **382215** can also be used with full-width shelf **221-X.**



Width X in. (mm)	Part No. Unassembled	Part No. Assembled
.71 (18)	2200-18	2210-18
.91 (23)	2200-23	2210-23
1.10 (28)	2200-28	2210-28
1.30 (33)	2200-33	2210-33
1.50 (38)	2200-38	2210-38
1.69 (43)	2200-43	2210-43
1.89 (48)	2200-48	2210-48

Width X in. (mm)	Part No. Unassembled	Part No. Assembled
2.28 (58)	2200-58	2210-58
2.28 (63)	2200-65	2210-65
2.68 (68)	2200-68	2210-68
2.87 (73)	2200-73	2210-73
3.46 (88)	2200-88	2210-88
3.90 (99)	2200-99	2210-99

- **Locking vertical separator**
  This separator is used when higher retention force is needed.



Locking Vertical Separator

Unassembled	**Part No. 382214**
Assembled	**Part No. 382215**

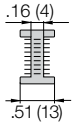
- **Side plate**
  This separator is used for general subdivision of e-chains®.



Side Plate

Unassembled	**Part No. 38223**
Assembled	**Part No. 38224**

- **Vertical separator, slotted**
  Can be used in combination with full-width shelf 321-X.



Vertical Separator, Slotted

Unassembled	**Part No. 38221**
Assembled	**Part No. 38222**

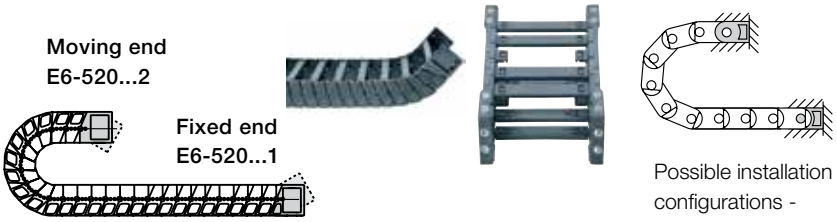
e-chain system® E6
Series E6-52
Mounting Brackets - KMA / Strain Relief

Option 1: KMA - Pivoting

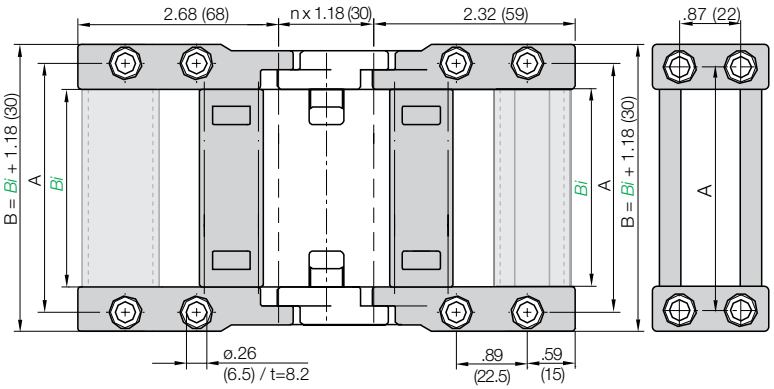
- Option - profile rail with integrated strain relief chainfix clip or tiewrap plates
- Profile rail can be mounted in the inner or outer radius of the e-chain®
- Bolted connection outside of the chain cross-section
- Recommended for unsupported applications (for gliding applications please contact igus®)
- Confined installation conditions
- Attachment capability on all sides



Adapters for gliding applications available upon request

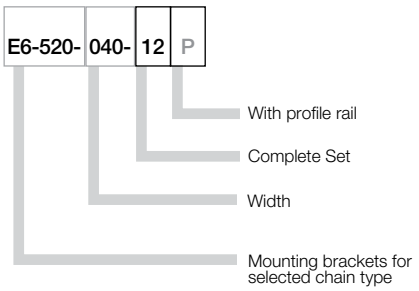


Possible installation configurations -



For Series	Part No. Full Set Without Profile Rail	Part No. Full Set With Profile Rail	Dimension A in.	(mm)	Dimension B in.	(mm)
E6-52-040	**E6-520-040-12**	**E6-520-040-12P**	2.20	(56)	2.76	(70)
E6-52-050	**E6-520-050-12**	**E6-520-050-12P**	2.60	(66)	3.15	(80)
E6-52-052	**E6-520-052-12**	**E6-520-052-12P**	2.68	(68)	3.23	(82)
E6-52-062	**E6-520-062-12**	**E6-520-062-12P**	3.07	(78)	3.62	(92)
E6-52-070	**E6-520-070-12**	**E6-520-070-12P**	3.39	(86)	3.94	(100)
E6-52-075	**E6-520-075-12**	**E6-520-075-12P**	3.58	(91)	4.13	(105)
E6-52-087	**E6-520-087-12**	**E6-520-087-12P**	4.06	(103)	4.61	(117)
E6-52-100	**E6-520-100-12**	**E6-520-100-12P**	4.57	(116)	5.12	(130)
E6-52-125	**E6-520-125-12**	**E6-520-125-12P**	5.55	(141)	6.10	(155)
E6-52-150	**E6-520-150-12**	**E6-520-150-12P**	6.54	(166)	7.09	(180)
E6-52-175	**E6-520-175-12**	**E6-520-175-12P**	7.52	(191)	8.07	(205)
E6-52-200	**E6-520-200-12**	**E6-520-200-12P**	8.50	(216)	9.06	(230)
E6-52-225	**E6-520-225-12**	**E6-520-225-12P**	9.49	(241)	10.04	(255)
E6-52-250	**E6-520-250-12**	**E6-520-250-12P**	10.47	(266)	11.02	(280)
E6-52-275	**E6-520-275-12**	**E6-520-275-12P**	11.46	(291)	11.81	(300)
E6-52-300	**E6-520-300-12**	**E6-520-300-12P**	12.44	(316)	12.99	(330)

Part Number Structure

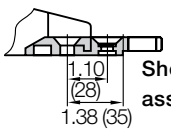


Full set, for both ends:
E6-520- 040- 12 Full set, **both fixed and moving end**

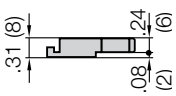
Single-part order:
E6-520 - 040- 1
Mounting bracket **fixed end**
E6-520 - 040- 2
Mounting bracket **moving end**

Tiewrap Plates





Shown assembled

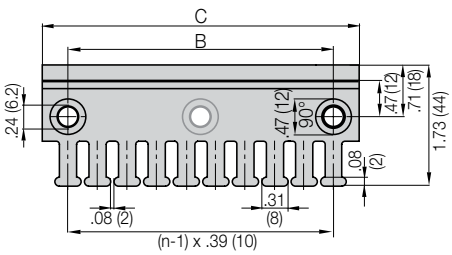


Single tiewrap plate

Option 1:
Tiewrap plates as an individual part

Available as an individual component, can be fixed onto a mounting bracket with the use of a profile rail.

Tiewrap Plate	n Number of Teeth	C Overall Width in. (mm)	B Bore Width in. (mm)	Center Bore
3050-ZB	5	1.97 (50)	1.18 (30)	no
3075-ZB	7	2.95 (75)	2.16 (55)	no
3100-ZB	10	3.94 (100)	3.15 (80)	no
3115-ZB	11	4.53 (115)	3.74 (95)	no
3125-ZB	12	4.92 (125)	4.13 (105)	no
3150-ZB	15	5.91 (150)	5.12 (130)	no
3175-ZB	17	6.89 (175)	6.10 (155)	no
3200-ZB	20	7.87 (200)	7.09 (180)	yes
3225-ZB	22	8.86 (225)	8.07 (205)	yes
3250-ZB	25	9.84 (250)	9.06 (230)	yes



If used with KMA brackets with profile rail please add “KMA” to the end of the part number.
Example: 3050-ZBKMA

Other strain relief elements
➤ **Strain Relief, Chapter 10**

PDF: igus.com/e-chain-pdfs
Product information: igus.com/e-chains

e-chain system® E6
Series R6-52

Price Index

Series R6-52

Special Features / Options

Extremely low noise
Test results upon request

IPA Certificate: Class 1, according to standard DIN EN ISO 14644-1 for the E6 system (Series E6-29-060-150-0-CR, (v = 1.64 ft/s, a = 3.28 ft/s²)

LEVEL 1 absorption confirmed by IPA-Fraunhofer-Institute according to SEMI E78-0998 for the E6 standard material

Assembly Tips



Lever and remove lids

Other Installation Methods

Vertical, hanging ≤ 164 ft (50 m)
Vertical, standing ≤ 6.56 ft (2 m)
Side-mounted, unsupp. = possible to a limited extent
Unsupported length of upper run upon request

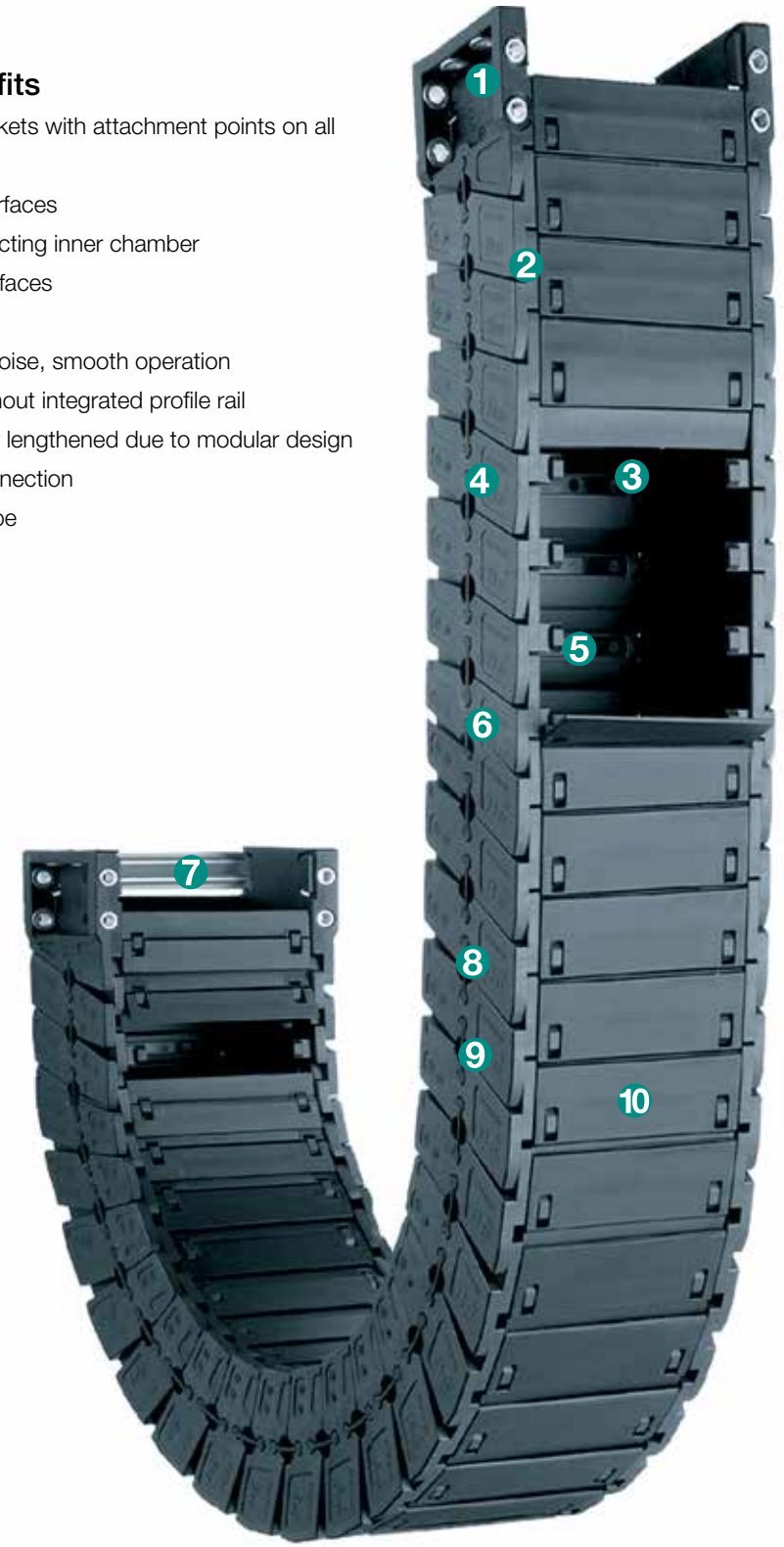
Usage Guidelines

- If a low-noise version is required
- For very high speeds and/or accelerations
- If large stresses and thrust forces are present
- Protection against dirt and chips
- For small bending radii
- If less vibration is required
- Minimal abrasion, suitable for cleanrooms

- For side mounted applications
  ➤ **Series R4-56 E4-1**

Features & Benefits

1. KMA mounting brackets with attachment points on all sides
2. Very large gliding surfaces
3. Smooth, cable protecting inner chamber
4. Continuous glide surfaces
5. Interior stop dog
6. Small pitch for low-noise, smooth operation
7. Available with or without integrated profile rail
8. Can be shortened or lengthened due to modular design
9. No pin and bore connection
10. Fully enclosed E-Tube



Order Example: Complete e-chain®

Please indicate chain length or number of links. Example:

6.56 ft (2 m) **R6-52-100-075-0**	e-chain®
With 2 separators **R6-52-11** assembled every 2nd link	Interior Separation
1 Set **R6-520-100-12**	Mounting Bracket

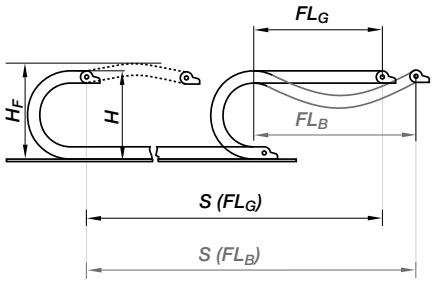
e-chain system® E6
Series R6-52
Installation Dimensions

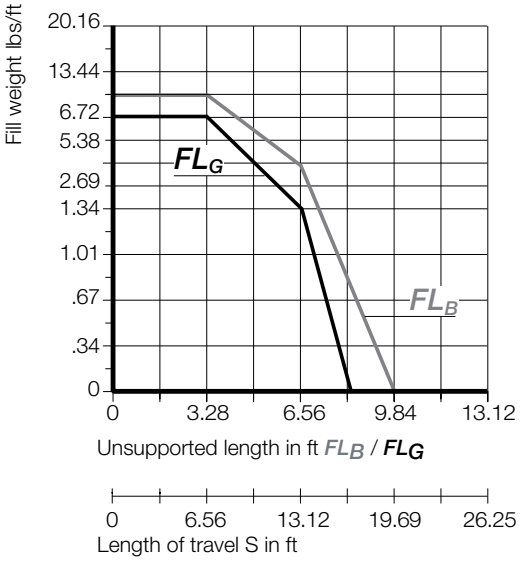
Short travel, unsupported length

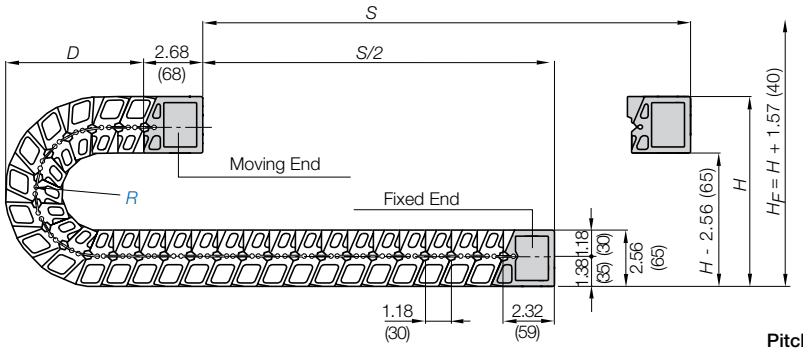
● FL_B = unsupported with permitted sag

● FL_G = unsupported with straight upper run

Further information ➤ Design, Chapter 1







The required clearance height: $H_F = H + 1.57$ in. (40 mm) (with 1.34 lbs/ft (2.0 kg/m) fill weight. Please consult igus® if space is particularly restricted.

R	2.95 (075)	3.94 (100)	5.91 (150)	7.87 (200)	9.84 (250)
H	10.63 (270)	12.60 (320)	16.54 (420)	20.47 (520)	24.41 (620)
D	6.10 (155)	7.09 (180)	9.06 (230)	11.02 (280)	12.99 (330)
K	11.81 (300)	14.76 (375)	21.06 (535)	27.17 (690)	33.46 (850)

Pitch per link: = 1.18" (30 mm)

Links per ft (m): = 10.17 (34)

For center mount applications:

Chain length = $\frac{S}{2} + K$

Short Travels - Unsupported

Unsupported e-chains® feature positive camber over short travels. This must be accounted for when specifying the clearance height. Please refer to **Installation dimensions** for further details.

Legend

S = Length of travel

R = Bending radius

H = Nominal clearance height

D = Overlength e-chain® radius in final position

K = π • *R* + *safety buffer*

H_F = Required clearance height

H_{RI} = Trough inner height

H_2 = *Mounting height

D_2 = Overlength - long travels, gliding

K_2 = *Add-on

*If the mounting bracket location is set lower

Speed / acceleration FL_G	max. 65.6 ft/s (20 m/s) / max. 656 ft/s² (200 m/s²)
Speed / acceleration FL_B	max. 9.84 ft/s (3 m/s) / max. 19.69 ft/s² (6 m/s²)
Gliding speed / acceleration (maximum)	upon request
Permitted temperature	-40°F (-40°C) up to +158°F (+70° C)
Flammability Class	VDE 0304 IIC UL94 HB

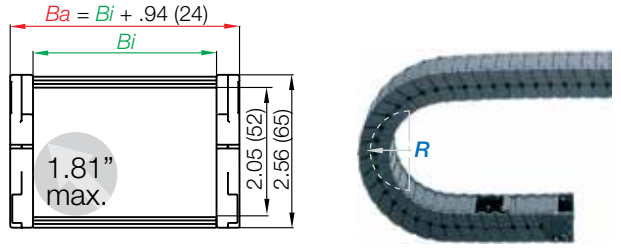
Technical Data

Details of material properties

➤ Design, Chapter 1

PDF: igus.com/e-chain-pdfs
Product information: igus.com/e-chains

Series R6-52 - e-chain® with lids

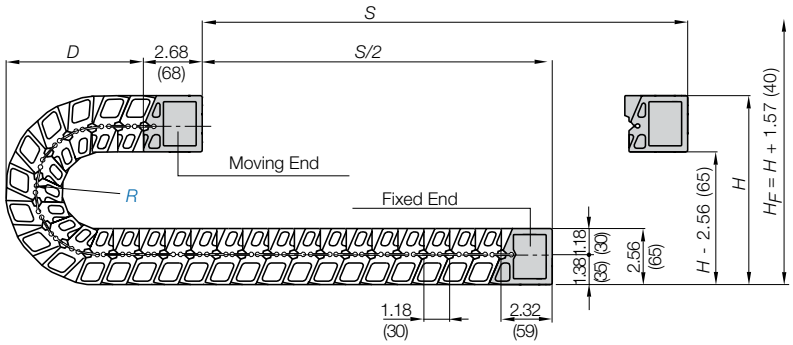




Part Number Structure

R6-52- 100- 075- 0

- 075 — Color - Black
- 100 — Bending radius
- 075 — Width
- R6-52 — Series



Supplement part number with required radius. Example: R6-52-100-075-0

Pitch: 1.18 in. (30 mm) per link links/ft (m) = 10.36 (34)

Part Number	*Bi* in. (mm)	*Ba* in. (mm)	Weight lbs/ft (kg/m)
R6-52-050- ☐ -0	1.97 (50)	2.91 (74)	≈1.27 (1.89)
R6-52-075- ☐ -0	2.95 (75)	3.90 (99)	≈1.42 (2.12)
R6-52-100- ☐ -0	3.94 (100)	4.88 (124)	≈1.58 (2.35)
R6-52-125- ☐ -0	4.92 (125)	5.87 (149)	≈1.73 (2.57)
R6-52-150- ☐ -0	5.91 (150)	6.85 (174)	≈1.88 (2.80)
R6-52-175- ☐ -0	6.89 (175)	7.83 (199)	≈2.04 (3.03)

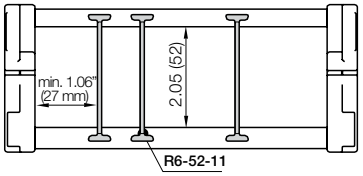
Choose from the radii below for all of the above sizes
Radius (mm) Example: R6-52-100-075-0

	075	100	150	200	250
R	2.95 (075)	3.94 (100)	5.91 (150)	7.87 (200)	9.84 (250)
H	10.63 (270)	12.60 (320)	16.54 (420)	20.47 (520)	24.41 (620)
D	6.10 (155)	7.09 (180)	9.06 (230)	11.02 (280)	12.99 (330)
K	11.81 (300)	14.76 (375)	21.06 (535)	27.17 (690)	33.46 (850)

Option 1: Vertical separators

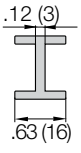
Vertical separators are used if a vertical subdivision of the e-chain® interior is required. By standard, vertical separators are assembled every other e-chain® link.







Vertical separator R6-52-01



Vertical Separator

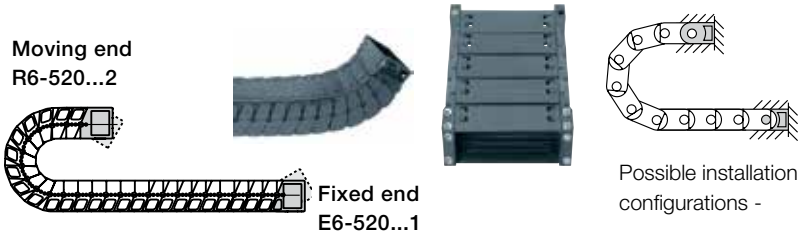
Unassembled	**Part No. R6-52-01**
Assembled	**Part No. R6-52-11**

- **Vertical separator R6-52-01**
  This separator is used for general subdivision of E-Tubes.
- Separator snaps onto either the bottom of the carrier or the lid. Stays attached to that side. Opposite side can be removed.

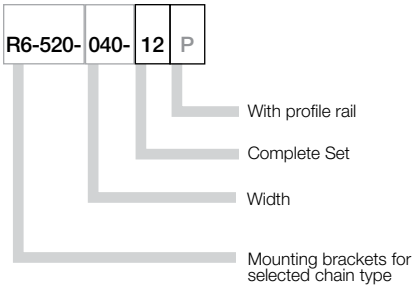
e-chain system® E6
Series R6-52
Mounting Bracket

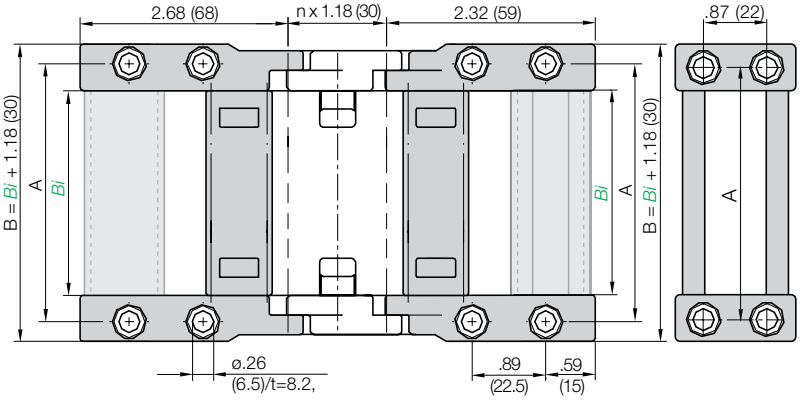
Option 1: KMA - Pivoting

- Option - profile rail with integrated strain relief chainfix clip or tiewrap plates
- Profile rail can be mounted in the inner or outer radius of the e-chain®
- Bolted connection outside of the chain cross-section
- Recommended for unsupported applications (for gliding applications please contact igus®)
- Confined installation conditions
- Attachment capability on all sides



Part Number Structure





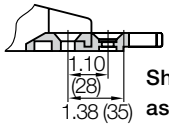
For Series	Part No. Full Set Without Profile Rail	Part No. Full Set With Profile Rail	Dimension A in.	(mm)	Dimension B in.	(mm)
R6-52-050	**R6-520-050-12**	**R6-520-050-12P**	2.60	(66)	3.15	(80)
R6-52-075	**R6-520-075-12**	**R6-520-075-12P**	3.58	(91)	4.13	(105)
R6-52-100	**R6-520-100-12**	**R6-520-100-12P**	4.57	(116)	5.12	(130)
R6-52-125	**R6-520-125-12**	**R6-520-125-12P**	5.55	(141)	6.10	(155)
R6-52-150	**R6-520-150-12**	**R6-520-150-12P**	6.54	(166)	7.09	(180)
R6-52-175	**R6-520-175-12**	**R6-520-175-12P**	7.52	(191)	8.07	(205)

Full set, for both ends:
R6-520- 040- 12 Full set, **both fixed and moving end**

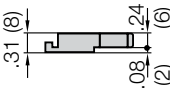
Single-part order:
R6-520 - 040- 1
Mounting bracket **fixed end**
R6-520 - 040- 2
Mounting bracket **moving end**

Tiewrap Plates





Shown assembled

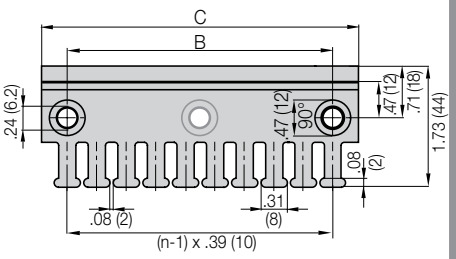


Single tiewrap plate

Option 1:
Tiewrap plates as an individual part

Available as an individual component, can be fixed onto a mounting bracket with the use of a profile rail.

Tiewrap Plate	n Number of Teeth	C Overall Width in. (mm)	B Bore Width in. (mm)	Center Bore
3050-ZB	5	1.97 (50)	1.18 (30)	no
3075-ZB	7	2.95 (75)	2.16 (55)	no
3100-ZB	10	3.94 (100)	3.15 (80)	no
3115-ZB	11	4.53 (115)	3.74 (95)	no
3125-ZB	12	4.92 (125)	4.13 (105)	no
3150-ZB	15	5.91 (150)	5.12 (130)	no
3175-ZB	17	6.89 (175)	6.10 (155)	no
3200-ZB	20	7.87 (200)	7.09 (180)	yes
3225-ZB	22	8.86 (225)	8.07 (205)	yes
3250-ZB	25	9.84 (250)	9.06 (230)	yes



If used with KMA brackets with profile rail please add “KMA” to the end of the part number.
Example: 3050-ZBKMA

Other strain relief elements
➤ **Strain Relief, Chapter 10**

PDF: igus.com/e-chain-pdfs
Product information: igus.com/e-chains

e-chain system® E6
Series E6-62

2.44

Price Index

Series E6-62

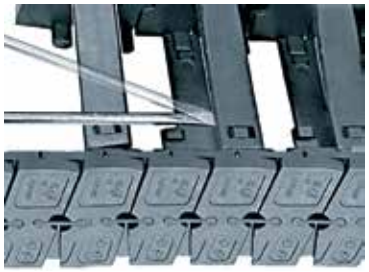
Special Features / Options

Extremely low noise
Test results upon request

IPA Certificate: Class 1, according to standard DIN EN ISO 14644-1 for the E6 system (Series E6-29-060-150-0-CR, (v = 1.64 ft/s, a = 3.28 ft/s²)

LEVEL 1 absorption confirmed by IPA-Fraunhofer-Institute according to SEMI E78-0998 for the E6 standard material

Assembly Tips



To close, push and click shut

Other Installation Methods

Vertical, hanging ≤ 196.8 ft (60 m)
Vertical, standing ≤ 9.84 ft (3 m)
Side-mounted, unsupp. = possible to a limited extent
Unsupported length of upper run upon request

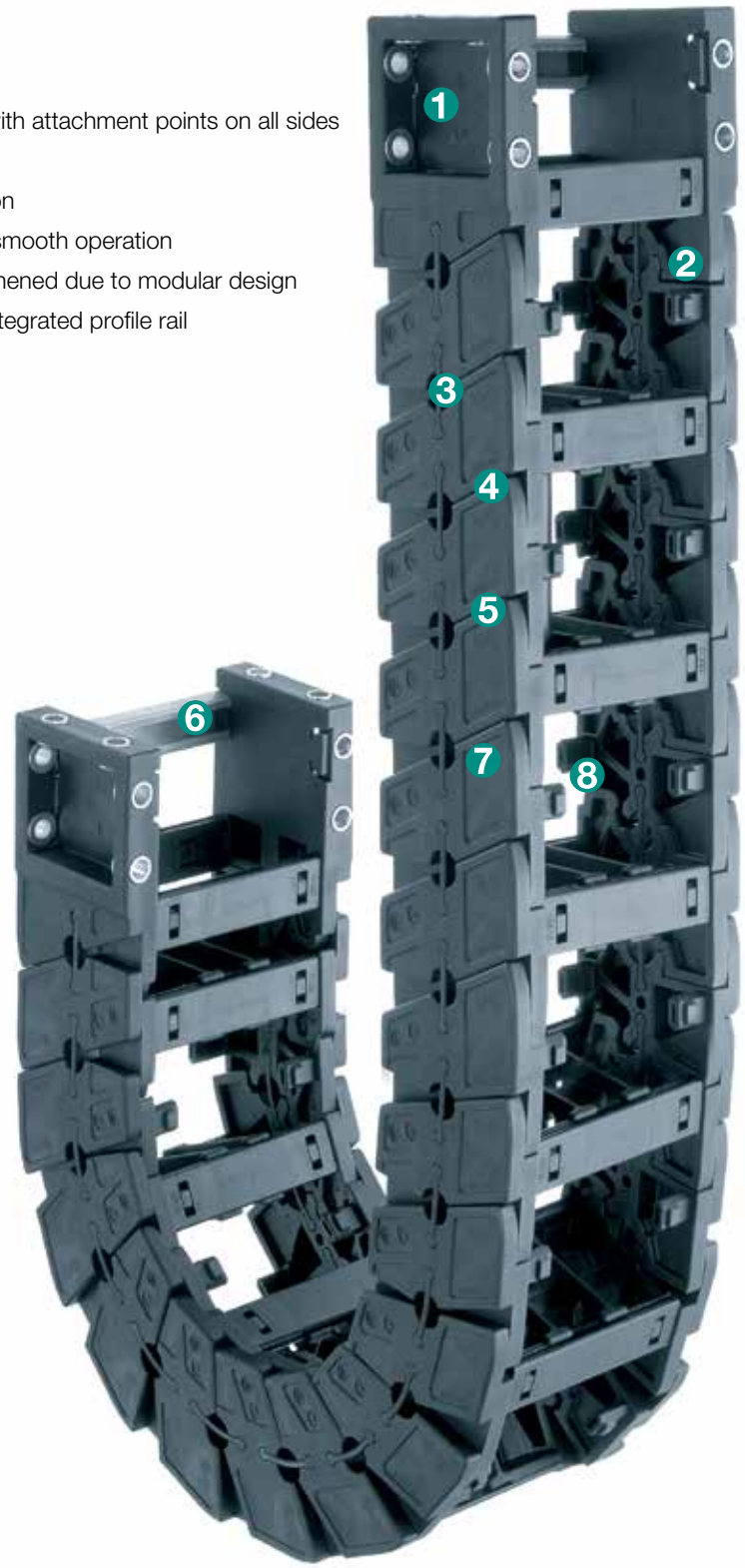
Usage Guidelines

- If a low-noise version is required
- For very high speeds and/or accelerations
- If large stresses and thrust forces are present
- For small bending radii
- If less vibration is required
- Minimal abrasion, suitable for cleanrooms

- For side mounted applications
  ➤ **Series E4-56 E4-1**
- For RBR (Reverse Bending Radius)
  ➤ **Series E4-56 E4-1**
- For high additional loads
  ➤ **Series E4-56 E4-1**
- For dirty environments
  ➤ **Series E4-56 E4-1**

Features & Benefits

1. KMA mounting brackets with attachment points on all sides
2. Interior stop dog
3. No pin and bore connection
4. Small pitch for low-noise, smooth operation
5. Can be shortened or lengthened due to modular design
6. Available with or without integrated profile rail
7. Very large gliding surfaces
8. Increased inner height



Order Example: Complete e-chain®

Please indicate chain length or number of links. Example:

6.56 ft (2 m) **E6-62-10-200-0**	**e-chain®**
With 2 separators **E6-62-11** assembled every 2nd link	**Interior Separation**
1 Set **E6-620-10-12P**	**Mounting Bracket**

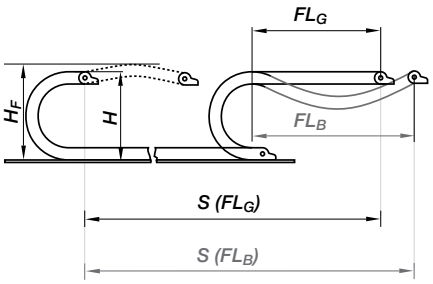
e-chain system® E6
Series E6-62
Installation Dimensions

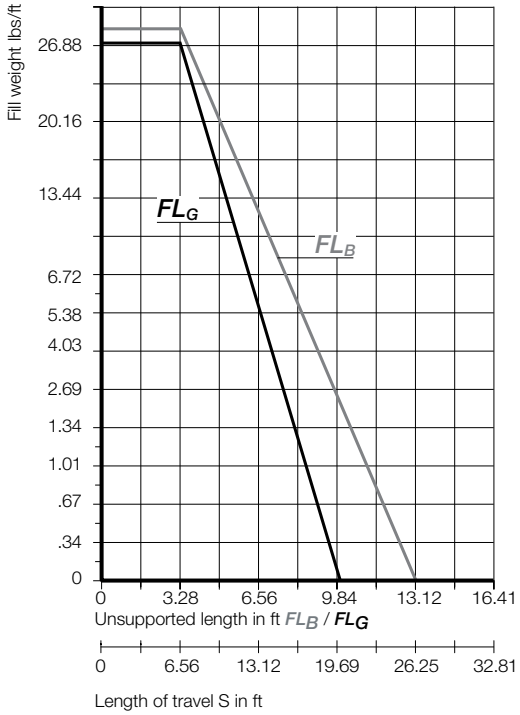
Short travel, unsupported length

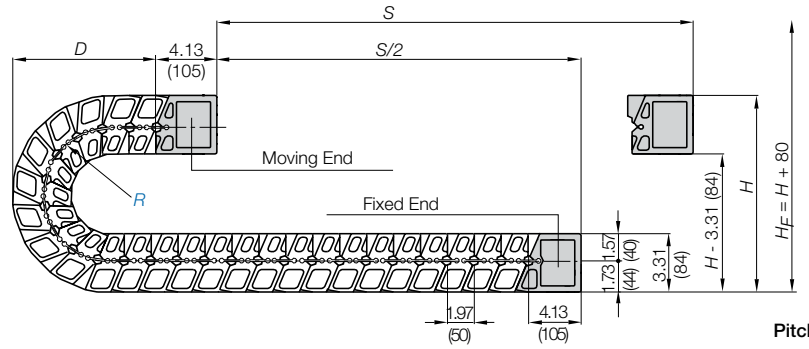
● FL_B = unsupported with permitted sag

● FL_G = unsupported with straight upper run

Further information ➤ Design, Chapter 1







The required clearance height: $H_F = H + 3.15$ in. (80 mm) (with 1.34 lbs/ft (2.0 kg/m) fill weight. Please consult igus® if space is particularly restricted.

R	4.53 (115)	5.91 (150)	7.87 (200)	9.84 (250)	11.81 (300)	13.78 (350)
H	15.28 (388)	18.03 (458)	21.97 (558)	25.91 (658)	29.84 (758)	33.78 (858)
D	9.21 (234)	10.59 (269)	12.56 (319)	14.53 (369)	16.50 (419)	18.46 (469)
K	18.31 (465)	22.64 (575)	28.74 (730)	35.04 (890)	41.14 (1045)	47.24 (1200)

Pitch per link: = 1.97" (50 mm)
Links per ft (m): = 6.1 (20)
For center mount applications:
Chain length = $_S/_2 + K$

Short Travels - Unsupported

Unsupported e-chains® feature positive camber over short travels. This must be accounted for when specifying the clearance height. Please refer to **Installation dimensions** for further details.

Legend

S = Length of travel
R = Bending radius
H = Nominal clearance height
D = Overlength e-chain® radius in final position
K = π • *R* + *safety buffer*
H_F = Required clearance height
H_{RI} = Trough inner height
H_2 = *Mounting height
D_2 = Overlength - long travels, gliding
K_2 = *Add-on

*If the mounting bracket location is set lower

Speed / acceleration FL_G	max. 65.6 ft/s (20 m/s) / max. 656 ft/s² (200 m/s²)
Speed / acceleration FL_B	max. 9.84 ft/s (3 m/s) / max. 19.69 ft/s² (6 m/s²)
Gliding speed / acceleration (maximum)	upon request
Permitted temperature	-40°F (-40°C) up to +158°F (+70° C)
Flammability Class	VDE 0304 IIC UL94 HB

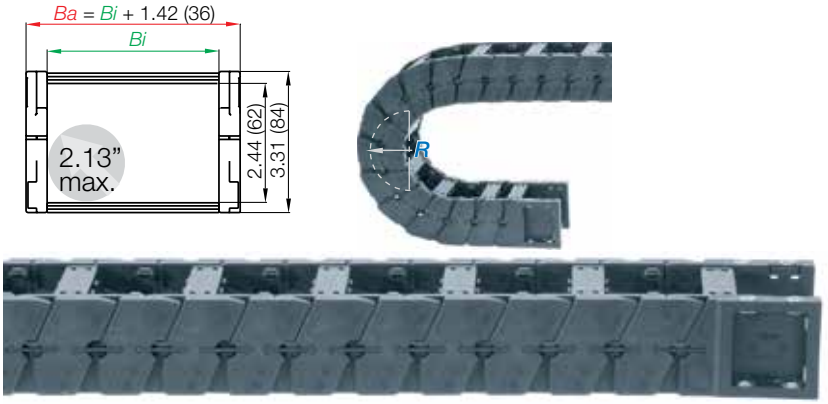
Technical Data

Details of material properties
➤ Design, Chapter 1

PDF: igus.com/e-chain-pdfs
Product information: igus.com/e-chains

e-chain system® E6
Series E6-62

Series E6-62 - e-chain® with crossbars every other link

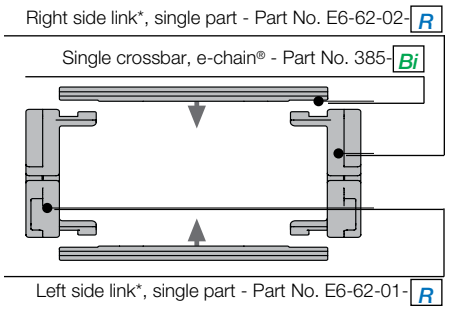


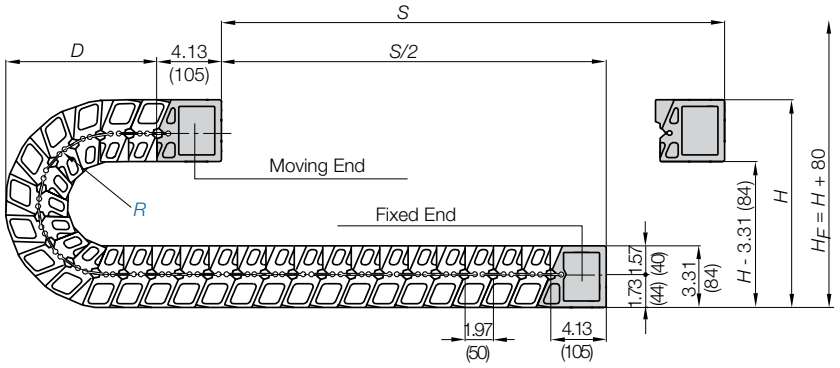
Part Number Structure

E6-62-	10-	200-	0

- 0 – Color - Black
- 200 – Bending radius
- 10 – Width
- E6-62 – Series

e-chain® as separate parts, links and side plates





*View from the fixed point of the e-chain®/E-Tube



Polymer spring as single part - Part No. E6-62-340

Supplement part number with required radius. Example: E6-62-10-200-0
Pitch: 1.97 in. (50 mm) per link links/ft (m) = 6.1 (20)

Part Number	*Bi* in. (mm)	*Ba* in. (mm)	Weight lbs/ft (kg/m)
E6-62-05-[ ]-0	1.97 (50)	3.39 (86)	≈ 2.16 (3.22)
E6-62-06-[ ]-0	2.67 (68)	4.09 (104)	≈ 2.20 (3.28)
E6-62-07-[ ]-0	2.95 (75)	4.37 (111)	≈ 2.22 (3.31)
E6-62-087-[ ]-0	3.43 (87)	4.84 (123)	≈ 2.25 (3.35)
E6-62-097-[ ]-0	3.82 (97)	5.24 (133)	≈ 2.27 (3.38)
E6-62-10-[ ]-0	3.94 (100)	5.35 (136)	≈ 2.28 (3.39)
E6-62-11-[ ]-0	4.25 (108)	5.67 (144)	≈ 2.30 (3.42)
E6-62-112-[ ]-0	4.41 (112)	5.83 (148)	≈ 2.30 (3.43)
E6-62-12-[ ]-0	4.92 (125)	6.34 (161)	≈ 2.34 (3.48)
E6-62-137-[ ]-0	5.39 (137)	6.81 (173)	≈ 2.37 (3.52)
E6-62-15-[ ]-0	5.91 (150)	7.32 (186)	≈ 2.40 (3.57)
E6-62-162-[ ]-0	6.38 (162)	7.80 (198)	≈ 2.43 (3.61)
E6-62-17-[ ]-0	6.61 (168)	8.03 (204)	≈ 2.44 (3.63)
E6-62-18-[ ]-0	6.89 (175)	8.31 (211)	≈ 2.45 (3.65)
E6-62-187-[ ]-0	7.36 (187)	8.78 (223)	≈ 2.48 (3.69)
E6-62-20-[ ]-0	7.87 (200)	9.29 (236)	≈ 2.51 (3.74)
E6-62-212-[ ]-0	8.35 (212)	9.76 (248)	≈ 2.54 (3.78)
E6-62-23-[ ]-0	8.86 (225)	10.28 (261)	≈ 2.57 (3.83)
E6-62-237-[ ]-0	9.33 (237)	10.75 (273)	≈ 2.60 (3.87)
E6-62-25-[ ]-0	9.84 (250)	11.26 (286)	≈ 2.63 (3.91)
E6-62-262-[ ]-0	10.31 (262)	11.73 (298)	≈ 2.65 (3.95)
E6-62-28-[ ]-0	10.83 (275)	12.24 (311)	≈ 2.69 (4.00)
E6-62-29-[ ]-0	11.30 (287)	12.72 (323)	≈ 2.71 (4.04)
E6-62-30-[ ]-0	11.81 (300)	13.23 (336)	≈ 2.75 (4.09)
E6-62-312-[ ]-0	12.28 (312)	13.70 (348)	≈ 2.78 (4.13)
E6-62-325-[ ]-0	12.80 (325)	14.21 (361)	≈ 2.80 (4.17)
E6-62-337-[ ]-0	13.27 (337)	14.69 (373)	≈ 2.83 (4.21)
E6-62-350-[ ]-0	13.78 (350)	15.20 (386)	≈ 2.86 (4.26)
E6-62-362-[ ]-0	14.25 (362)	15.67 (398)	≈ 2.89 (4.30)
E6-62-375-[ ]-0	14.76 (375)	16.18 (411)	≈ 2.92 (4.35)
E6-62-387-[ ]-0	15.24 (387)	16.65 (423)	≈ 2.95 (4.39)
E6-62-400-[ ]-0	15.75 (400)	17.16 (436)	≈ 2.98 (4.43)

Choose from the radii below for all of the above sizes
Radius (mm) Example: E6-62-10-200-0

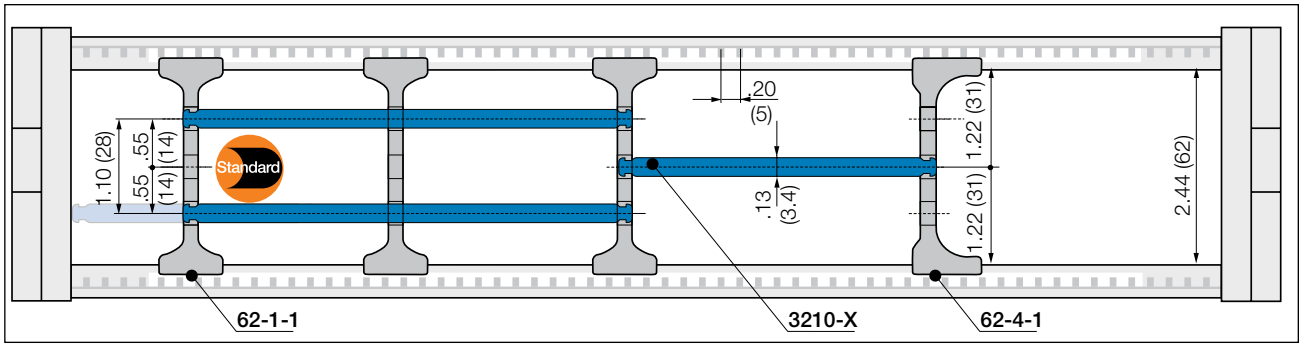
	115	150	200	250	300	350
R	4.53 (115)	5.91 (150)	7.87 (200)	9.84 (250)	11.81 (300)	13.78 (350)
H	15.28 (388)	18.03 (458)	21.97 (558)	25.91 (658)	29.84 (758)	33.78 (858)
D	9.21 (234)	10.59 (269)	12.56 (319)	14.53 (369)	16.50 (419)	18.46 (469)
K	18.31 (465)	22.64 (575)	28.74 (730)	35.04 (890)	41.14 (1045)	47.24 (1200)

PDF: igus.com/e-chain-pdfs
Product information: igus.com/e-chains

e-chain system® E6
Series E6-62
Interior Separation - New Generation

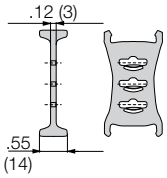
Telephone 1-800-521-2747

Internet: igus.com
email: sales@igus.com
QuickSpec: igus.com/quickspec



No lateral spacing between the separators and the side links is necessary.
In the standard configuration separators are assembled every 2nd e-chain® link



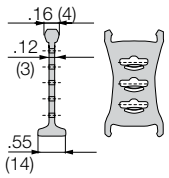


Separator, wide base

Unassembled	**Part No. 62-1**
Assembled	**Part No. 62-1-1**

- **Standard separator 62-1 for all applications**
  Separator with wide base for maximum locking strength and safe standing in e-chains®.



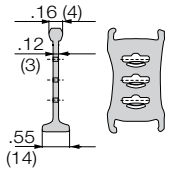


Separator for QuickLock crossbar

Unassembled	**Part No. 62-2**
Assembled	**Part No. 62-2-1**

- **Separator 62-2**
  For even faster installation
  Separator for QuickLock crossbar 385-X-Q. Firmly holds to one side with a wide base, narrow on opposite side for easy cable assembly (slight grip).





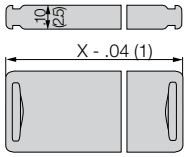
Notch separator for Notch crossbar

Unassembled	**Part No. 62-5**
Assembled	**Part No. 62-5-1**

- **Separator 62-5**
  Locks safely in .20" (5mm) increments
  Notch separator for exact positioning in e-chains®. Recommended for side mounted applications.

Lockable full-width shelves - for the standard interior separation





Full width shelf, lockable

Unassembled	**Part No. 3200-X**
Assembled	**Part No. 3210-X**

- **Full width shelf, lockable**
  Shelf locks safely into separators on both ends, fixed width possible. Separators can be moved freely over the shelf horizontally. Can be arranged at three different heights.

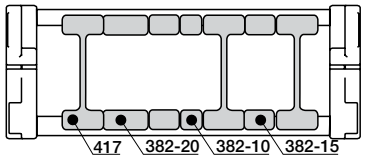
Width X in. (mm)	Part No. Unassembled	Part No. Assembled	Width X in. (mm)	Part No. Unassembled	Part No. Assembled
1.97 (050)	**3200-50**	**3210-50**	5.91 (150)	**3200-150**	**3210-150**
2.95 (075)	**3200-75**	**3210-75**	6.89 (175)	**3200-175**	**3210-175**
3.94 (100)	**3200-100**	**3210-100**	7.87 (200)	**3200-200**	**3210-200**
4.53 (115)	**3200-115**	**3210-115**	8.86 (225)	**3200-225**	**3210-225**
4.92 (125)	**3200-125**	**3210-125**	9.84 (250)	**3200-250**	**3210-250**

e-chain system® E6
Series E6-62
Interior Separation - Previous Generation

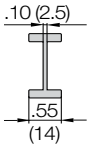
Option 1: Vertical separators and spacers

Vertical separators are used if a vertical subdivision of the e-chain® interior is required. By standard, vertical separators are assembled every other e-chain® link.





- **Vertical separator**
  This separator is used for general subdivision of e-chains®.



Vertical Separator	
Unassembled	**Part No. 407**
Assembled	**Part No. 417**

Spacer*

*For side-mounted applications



Unassembled	**Part No. 381-XX**
Assembled	**Part No. 382-XX**

XX = width of the spacer

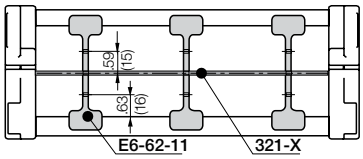
Spacers available in the following sizes:

Part No. Unassembled	Part No. Assembled	in.	(mm)
381 -10	**382 -10**	.39”	(10)
381 -15	**382 -15**	.59”	(15)
381 -20	**382 -20**	.79”	(20)

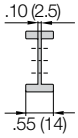
Option 2: Full-width shelf

For applications involving many thin cables with similar or identical diameters. Vertical separator **E6-62-11** can be used in combination with full-width shelf **321-X**.

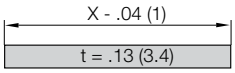




- **Vertical separator, slotted**
  This separator is used for general sub-division of e-chains®.



Vertical Separator	
Unassembled	**Part No. E6-62-01**
Assembled	**Part No. E6-62-11**

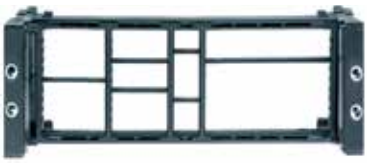


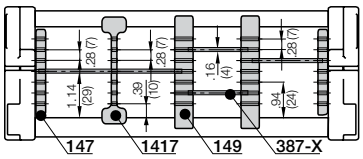
Width X in.	(mm)	Part No. Unassem.	Part No. Assem.
1.97	(050)	**320-50**	**321-50**
2.68	(068)	**320-68**	**321-68**
2.95	(075)	**320-75**	**321-75**
3.43	(087)	**320-87**	**321-87**
3.94	(100)	**320-100**	**321-100**
4.25	(108)	**320-108**	**321-108**
4.41	(112)	**320-112**	**321-112**
4.92	(125)	**320-125**	**321-125**
5.39	(137)	**320-137**	**321-137**
5.91	(150)	**320-150**	**321-150**

Width X in.	(mm)	Part No. Unassem.	Part No. Assem.
6.38	(162)	**320-162**	**321-162**
6.61	(168)	**320-168**	**321-168**
2.95	(175)	**320-175**	**321-175**
7.36	(187)	**320-187**	**321-187**
7.87	(200)	**320-200**	**321-200**
8.35	(212)	**320-212**	**321-212**
8.86	(225)	**320-225**	**321-225**
9.33	(237)	**320-237**	**321-237**
9.84	(250)	**320-250**	**321-250**

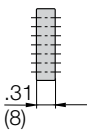
Option 3: Shelves

These components form the basic pattern of a shelf system. Shelves of various widths can be arranged at 7 different heights in .28” (7mm) increments





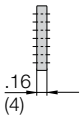
- **Vertical separator**
  This separator is used when higher retention force is needed.



Vertical Separator	
Unassembled	**Part No. 148**
Assembled	**Part No. 149**

Width X in.	(mm)	Part No. Unassembled	Part No. Assembled
.71	(18)	**386-18**	**387-18**
.91	(23)	**386-23**	**387-23**
.98	(25)	**386-25**	**387-25**
1.10	(28)	**386-28**	**387-28**
1.30	(33)	**386-33**	**387-33**
1.69	(43)	**386-43**	**387-43**
1.97	(50)	**386-50**	**387-50**
2.13	(54)	**386-54**	**387-54**
2.44	(62)	**386-62**	**387-62**

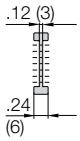
- **Side plate**
  This separator is used for general subdivision of e-chains®.



Side Plate	
Unassembled	**Part No. 146**
Assembled	**Part No. 147**

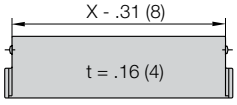
Width X in.	(mm)	Part No. Unassembled	Part No. Assembled
2.95	(75)	**386-75**	**387-75**
3.43	(87)	**386-87**	**387-87**
3.94	(100)	**386-100**	**387-100**
4.25	(108)	**386-108**	**387-108**
4.92	(125)	**386-125**	**387-125**
5.91	(150)	**386-150**	**387-150**
6.89	(175)	**386-175**	**387-175**
7.87	(200)	**386-200**	**387-200**
8.19	(208)	**386-208**	**387-208**

- **Vertical separator , slotted**
  This separator is used for general subdivision of e-chains®.



Vertical Separator, Slotted	
Unassembled	**Part No. 1407**
Assembled	**Part No. 1417**

Shelves 387-XX
Shelf 387-XX can be used with **vertical separator 149** and **side plate 147**

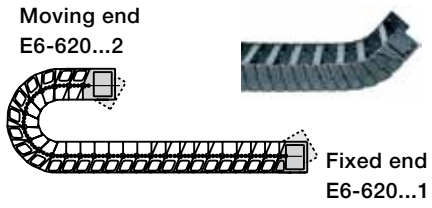


PDF: igus.com/e-chain-pdfs
Product information: igus.com/e-chains

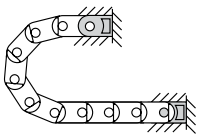
e-chain system® E6
Series E6-62
Mounting Brackets - KMA

Option 1: KMA - Pivoting

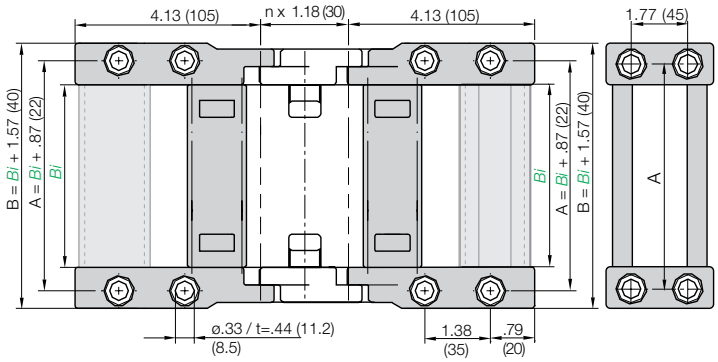
- Option - profile rail with integrated strain relief chainfix clip or tiewrap plates
- Profile rail can be mounted in the inner or outer radius of the e-chain®
- Bolted connection outside of the chain cross-section
- Recommended for unsupported applications (for gliding applications please contact igus®)
- Confined installation conditions
- Attachment capability on all sides





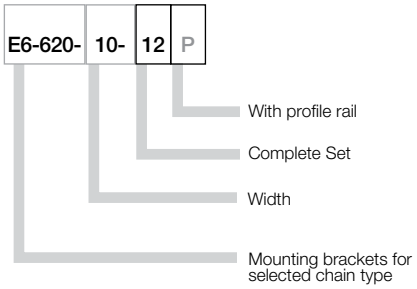


Possible installation configurations -



For Series	Part No. Full Set Without Profile Rail	Part No. Full Set With Profile Rail	Bi in.	Bi (mm)
E6-62-05	**E6-620-05-12**	**E6-620-05-12P**	1.97	(50)
E6-62-06	**E6-620-06-12**	**E6-620-06-12P**	2.67	(68)
E6-62-07	**E6-620-07-12**	**E6-620-07-12P**	2.95	(75)
E6-62-087	**E6-620-087-12**	**E6-620-087-12P**	3.43	(87)
E6-62-097	**E6-620-097-12**	**E6-620-097-12P**	3.82	(97)
E6-62-10	**E6-620-10-12**	**E6-620-10-12P**	3.94	(100)
E6-62-11	**E6-620-11-12**	**E6-620-11-12P**	4.25	(108)
E6-62-112	**E6-620-112-12**	**E6-620-112-12P**	4.41	(112)
E6-62-12	**E6-620-12-12**	**E6-620-12-12P**	4.92	(125)
E6-62-137	**E6-620-137-12**	**E6-620-137-12P**	5.39	(137)
E6-62-15	**E6-620-15-12**	**E6-620-15-12P**	5.91	(150)
E6-62-162	**E6-620-162-12**	**E6-620-162-12P**	6.38	(162)
E6-62-17	**E6-620-17-12**	**E6-620-17-12P**	6.61	(168)
E6-62-18	**E6-620-18-12**	**E6-620-18-12P**	6.89	(175)
E6-62-187	**E6-620-187-12**	**E6-620-187-12P**	7.36	(187)
E6-62-20	**E6-620-20-12**	**E6-620-20-12P**	7.87	(200)
E6-62-212	**E6-620-212-12**	**E6-620-212-12P**	8.35	(212)
E6-62-23	**E6-620-23-12**	**E6-620-23-12P**	8.86	(225)
E6-62-237	**E6-620-237-12**	**E6-620-237-12P**	9.33	(237)
E6-62-25	**E6-620-25-12**	**E6-620-25-12P**	9.84	(250)
E6-62-262	**E6-620-262-12**	**E6-620-262-12P**	10.31	(262)
E6-62-28	**E6-620-28-12**	**E6-620-28-12P**	10.83	(275)
E6-62-29	**E6-620-29-12**	**E6-620-29-12P**	11.30	(287)
E6-62-30	**E6-620-30-12**	**E6-620-30-12P**	11.81	(300)
E6-62-312	**E6-620-312-12**	**E6-620-312-12P**	12.28	(312)
E6-62-325	**E6-620-325-12**	**E6-620-325-12P**	12.80	(325)
E6-62-337	**E6-620-337-12**	**E6-620-337-12P**	13.27	(337)
E6-62-350	**E6-620-350-12**	**E6-620-350-12P**	13.78	(350)
E6-62-362	**E6-620-362-12**	**E6-620-362-12P**	14.25	(362)
E6-62-375	**E6-620-375-12**	**E6-620-375-12P**	14.76	(375)
E6-62-387	**E6-620-387-12**	**E6-620-387-12P**	15.24	(387)
E6-62-400	**E6-620-400-12**	**E6-620-400-12P**	15.75	(400)

Part Number Structure



Full set, for both ends:
E6-620- | 10- | 12 Full set, **both fixed and moving end**

Single-part order:
E6-620 - | 10- | 1
Mounting bracket **fixed end**

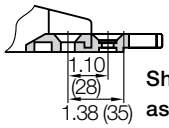
E6-620 - | 10- | 2
Mounting bracket **moving end**



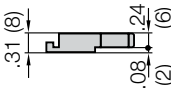
Adapters for gliding applications available upon request

Tiewrap Plates





Shown assembled

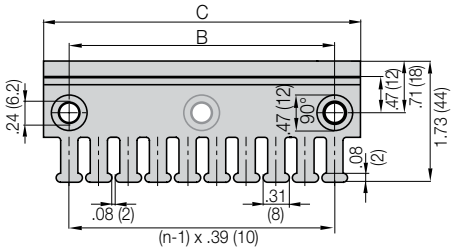


Single tiewrap plate

Option 1:
Tiewrap plates as an individual part

Available as an individual component, can be fixed onto a mounting bracket with the use of a profile rail.

Tiewrap Plate	n Number of Teeth	C Overall Width in. (mm)	B Bore Width in. (mm)	Center Bore
3050-ZB	5	1.97 (50)	1.18 (30)	no
3075-ZB	7	2.95 (75)	2.16 (55)	no
3100-ZB	10	3.94 (100)	3.15 (80)	no
3115-ZB	11	4.53 (115)	3.74 (95)	no
3125-ZB	12	4.92 (125)	4.13 (105)	no
3150-ZB	15	5.91 (150)	5.12 (130)	no
3175-ZB	17	6.89 (175)	6.10 (155)	no
3200-ZB	20	7.87 (200)	7.09 (180)	yes
3225-ZB	22	8.86 (225)	8.07 (205)	yes
3250-ZB	25	9.84 (250)	9.06 (230)	yes



If used with KMA brackets with profile rail please add “KMA” to the end of the part number.
Example: 3050-ZBKMA

Other strain relief elements
➤ **Strain Relief, Chapter 10**

PDF: igus.com/e-chain-pdfs
Product information: igus.com/e-chains

e-chain system® E6
Series E6-80

Price Index

Series E6-80

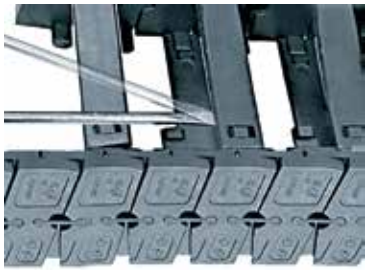
Special Features / Options

Extremely low noise
Test results upon request

IPA Certificate: Class 1, according to standard DIN EN ISO 14644-1 for the E6 system (Series E6-29-060-150-0-CR, (v = 1.64 ft/s, a = 3.28 ft/s²)

LEVEL 1 absorption confirmed by IPA-Fraunhofer-Institute according to SEMI E78-0998 for the E6 standard material

Assembly Tips



To close, push and click shut

Other Installation Methods

Vertical, hanging ≤ 196.9 ft (60 m)
Vertical, standing ≤ 13.12 ft (4 m)
Side-mounted, unsupp. = possible to a limited extent
Unsupported length of upper run upon request

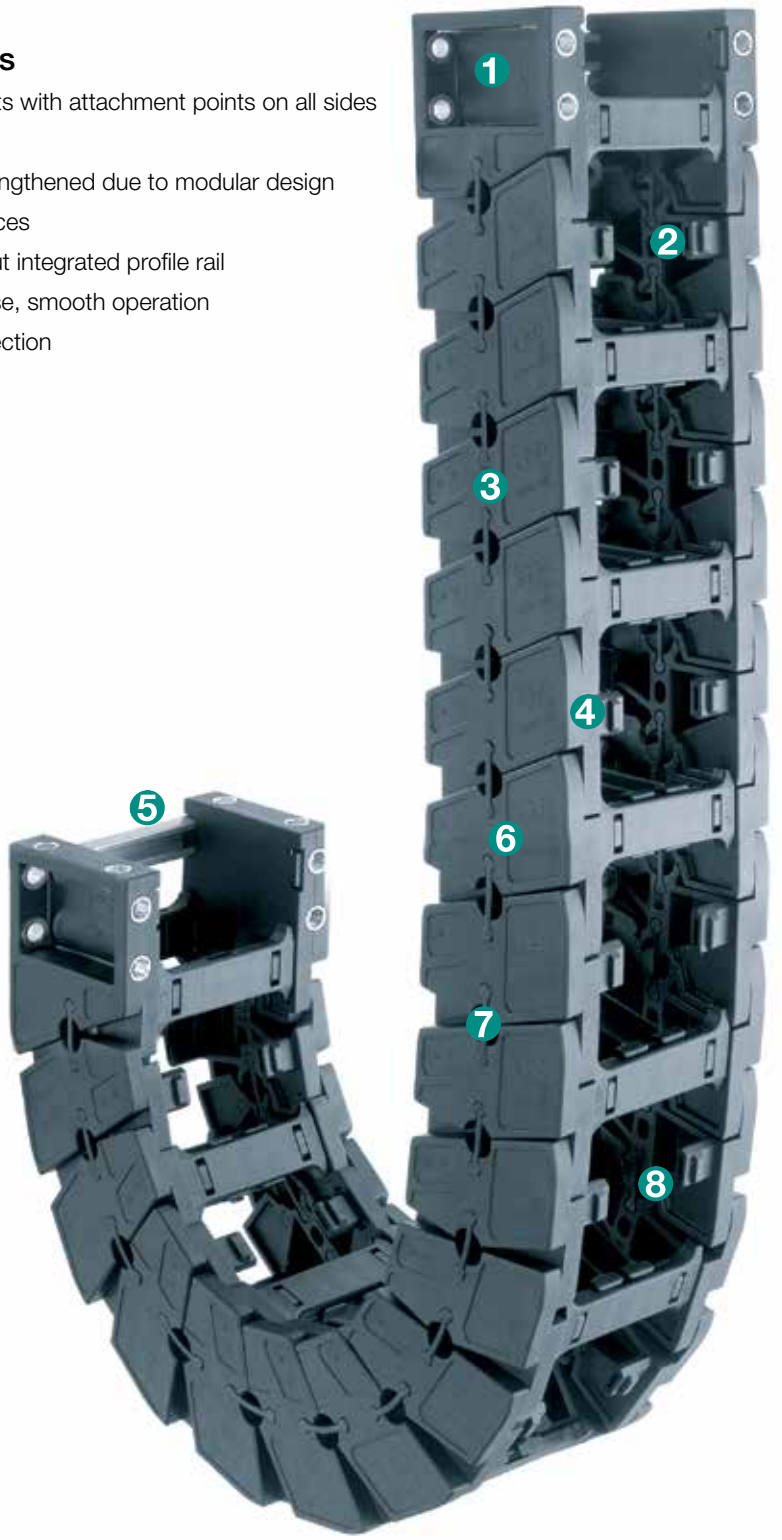
Usage Guidelines

- If a low-noise version is required
- For very high speeds and/or accelerations
- If large stresses and thrust forces are present
- For small bending radii
- If less vibration is required
- Minimal abrasion, suitable for cleanrooms

- For side mounted applications
  ➤ **Series E4-80 E4-1**
- For RBR (Reverse Bending Radius)
  ➤ **Series E4-80 E4-1**
- For high additional loads
  ➤ **Series E4-80 E4-1**

Features & Benefits

1. KMA mounting brackets with attachment points on all sides
2. Increased inner height
3. Can be shortened or lengthened due to modular design
4. Very large gliding surfaces
5. Available with or without integrated profile rail
6. Small pitch for low-noise, smooth operation
7. No pin and bore connection
8. Interior stop dog



Order Example: Complete e-chain®

Please indicate chain length or number of links. Example:

16.4 ft (5 m) **E6-80-10-200-0**	**e-chain®**
With 2 separators **511** assembled every 2nd link	**Interior Separation**
1 Set **E6-800-10-12**	**Mounting Bracket**

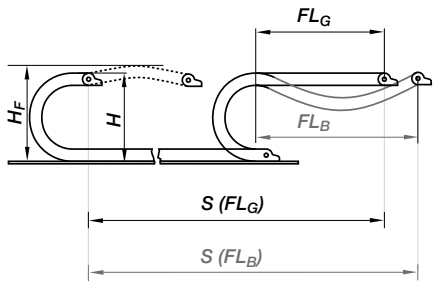
e-chain system® E6
Series E6-80
Installation Dimensions

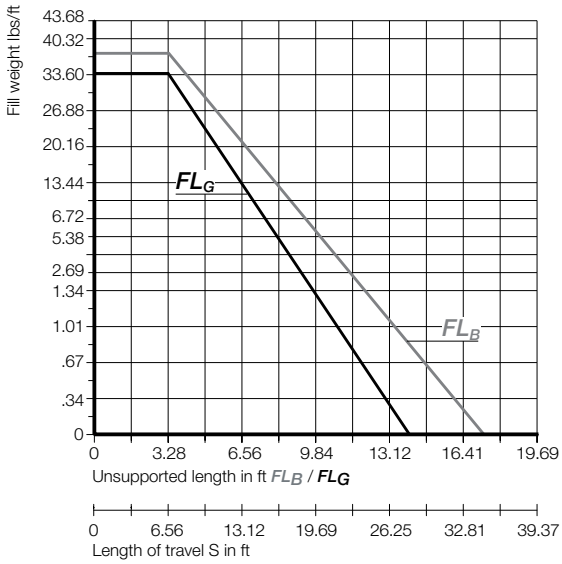
Short travel, unsupported length

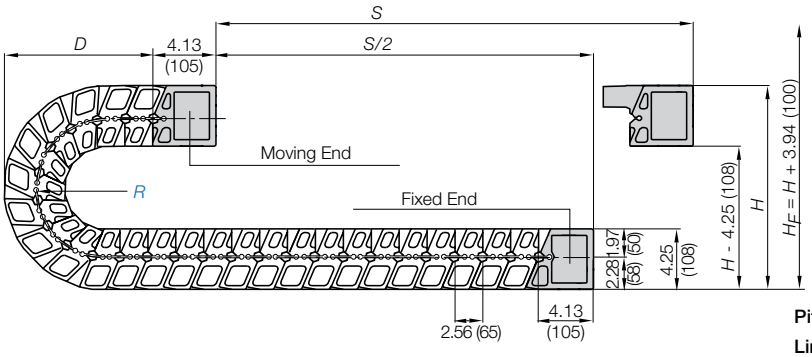
● FL_B = unsupported with permitted sag

● FL_G = unsupported with straight upper run

Further information ➤ Design, Chapter 1







The required clearance height: $H_F = H + 3.94$ **in. (100 mm)** (with 3.36 lbs/ft (5.0 kg/m) fill weight. Please consult igus® if space is particularly restricted.

Pitch per link: = 2.56" (65 mm)

Links per ft (m): = 4.68 (16)

Chain length: = $\frac{S}{2} + K$

R	5.91 (150)	7.87 (200)	9.84 (250)	11.81 (300)	13.78 (350)	15.75 (400)	17.71 (450)
H*	20.31 (516)	24.25 (616)	28.19 (716)	32.13 (816)	36.06 (916)	40.00 (1016)	43.94 (1116)
D	12.05 (306)	14.02 (356)	15.98 (406)	17.95 (456)	19.92 (506)	21.89 (556)	23.86 (606)
K	23.82 (605)	29.92 (760)	36.22 (920)	42.32 (1075)	48.43 (1230)	54.72 (1390)	60.83 (1545)

Short Travels - Unsupported

Unsupported e-chains® feature positive camber over short travels. This must be accounted for when specifying the clearance height. Please refer to **Installation dimensions** for further details.

Legend

S = Length of travel
R = Bending radius
H = Nominal clearance height
D = Overlength e-chain® radius in final position
K = π • *R* + *safety buffer*
H_F = Required clearance height
H_{RI} = Trough inner height
H_2 = *Mounting height
D_2 = Overlength - long travels, gliding
K_2 = *Add-on

*If the mounting bracket location is set lower

Speed / acceleration FL_G	max. 65.6 ft/s (20 m/s) / max. 656 ft/s² (200 m/s²)
Speed / acceleration FL_B	max. 9.84 ft/s (3 m/s) / max. 19.69 ft/s² (6 m/s²)
Gliding speed / acceleration (maximum)	upon request
Permitted temperature	-40°F (-40°C) up to +158°F (+70° C)
Flammability Class	VDE 0304 IIC UL94 HB

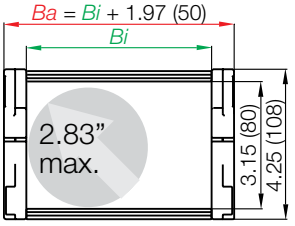
Technical Data

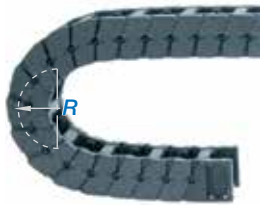
Details of material properties
➤ Design, Chapter 1

PDF: igus.com/e-chain-pdfs
Product information: igus.com/e-chains

e-chain system® E6
Series E6-80

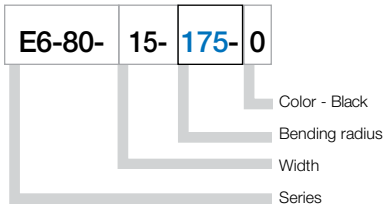
Series E6-80 - e-chain® with crossbars every other link



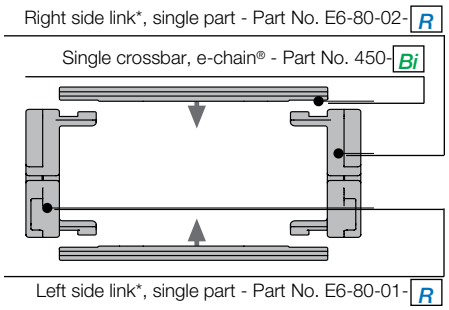


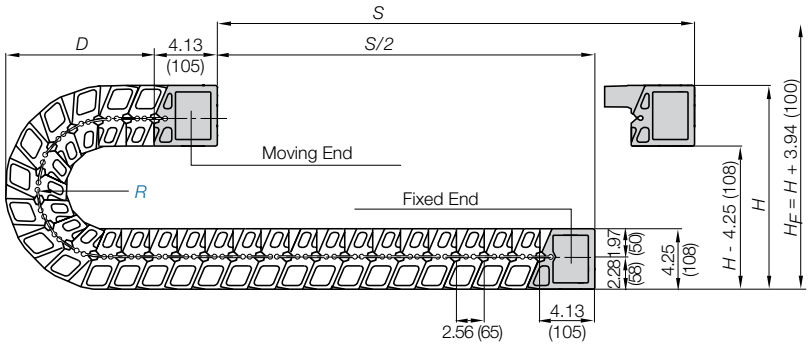


Part Number Structure



e-chain® as separate parts, side links and crossbars





*View from the fixed point of the e-chain®/E-Tube



Polymer spring as single part - Part No. E6-80-350

Supplement part number with required radius. Example: E6-80-10-200-0
Pitch: 2.56 in. (65 mm) per link links/ft (m) = 4.68 (16)

Part Number	*Bi* in. (mm)	*Ba* in. (mm)	Weight lbs/ft (kg/m)
E6-80-05-[ ]-0	1.97 (50)	3.94 (100)	≈3.50 (5.21)
E6-80-06-[ ]-0	2.56 (65)	4.53 (115)	≈3.55 (5.28)
E6-80-07-[ ]-0	2.95 (75)	4.92 (125)	≈3.58 (5.33)
E6-80-08-[ ]-0	3.43 (87)	5.91 (137)	≈3.62 (5.38)
E6-80-10-[ ]-0	3.94 (100)	5.91 (150)	≈3.66 (5.45)
E6-80-11-[ ]-0	4.41 (112)	6.38 (162)	≈3.70 (5.50)
E6-80-12-[ ]-0	4.92 (125)	6.89 (175)	≈3.74 (5.57)
E6-80-13-[ ]-0	5.39 (137)	7.36 (187)	≈3.78 (5.62)
E6-80-15-[ ]-0	5.91 (150)	7.87 (200)	≈3.82 (5.68)
E6-80-16-[ ]-0	6.38 (162)	8.35 (212)	≈3.86 (5.74)
E6-80-17-[ ]-0	6.89 (175)	8.86 (225)	≈3.90 (5.80)
E6-80-18-[ ]-0	7.36 (187)	9.33 (237)	≈3.94 (5.86)
E6-80-20-[ ]-0	7.87 (200)	9.84 (250)	≈3.98 (5.92)
E6-80-21-[ ]-0	8.35 (212)	10.31 (262)	≈4.02 (5.98)
E6-80-22-[ ]-0	8.86 (225)	10.83 (275)	≈4.06 (6.04)
E6-80-23-[ ]-0	9.33 (237)	11.30 (287)	≈4.10 (6.10)
E6-80-25-[ ]-0	9.84 (250)	11.81 (300)	≈4.14 (6.16)
E6-80-26-[ ]-0	10.31 (262)	12.28 (312)	≈4.17 (6.21)
E6-80-27-[ ]-0	10.83 (275)	12.80 (325)	≈4.22 (6.28)
E6-80-28-[ ]-0	11.30 (287)	13.27 (337)	≈4.25 (6.33)
E6-80-30-[ ]-0	11.81 (300)	13.78 (350)	≈4.29 (6.39)
E6-80-31-[ ]-0	12.28 (312)	14.25 (362)	≈4.33 (6.45)
E6-80-32-[ ]-0	12.80 (325)	14.76 (375)	≈4.37 (6.51)
E6-80-33-[ ]-0	13.27 (337)	15.24 (387)	≈4.41 (6.57)
E6-80-35-[ ]-0	13.78 (350)	15.75 (400)	≈4.46 (6.63)
E6-80-36-[ ]-0	14.25 (362)	16.22 (412)	≈4.50 (6.69)
E6-80-37-[ ]-0	14.76 (375)	16.73 (425)	≈4.54 (6.75)
E6-80-38-[ ]-0	15.24 (387)	17.20 (437)	≈4.57 (6.80)
E6-80-40-[ ]-0	15.75 (400)	17.72 (450)	≈4.62 (6.88)
E6-80-41-[ ]-0	16.22 (412)	18.19 (462)	≈4.65 (6.92)
E6-80-42-[ ]-0	16.73 (425)	18.70 (475)	≈4.70 (6.99)
E6-80-43-[ ]-0	17.20 (437)	19.17 (487)	≈4.73 (7.04)
E6-80-45-[ ]-0	17.72 (450)	19.69 (500)	≈4.77 (7.10)
E6-80-46-[ ]-0	18.19 (462)	20.16 (512)	≈4.81 (7.16)
E6-80-47-[ ]-0	18.70 (475)	20.67 (525)	≈4.85 (7.22)
E6-80-48-[ ]-0	19.17 (487)	21.14 (537)	≈4.89 (7.28)
E6-80-50-[ ]-0	19.69 (500)	21.65 (550)	≈4.93 (7.34)
E6-80-51-[ ]-0	20.16 (512)	22.13 (562)	≈4.97 (7.40)
E6-80-52-[ ]-0	20.67 (525)	22.64 (575)	≈5.01 (7.46)
E6-80-53-[ ]-0	21.14 (537)	23.11 (587)	≈5.05 (7.52)
E6-80-55-[ ]-0	21.65 (550)	23.62 (600)	≈5.09 (7.58)
E6-80-60-[ ]-0	23.62 (600)	25.59 (650)	≈5.25 (7.81)

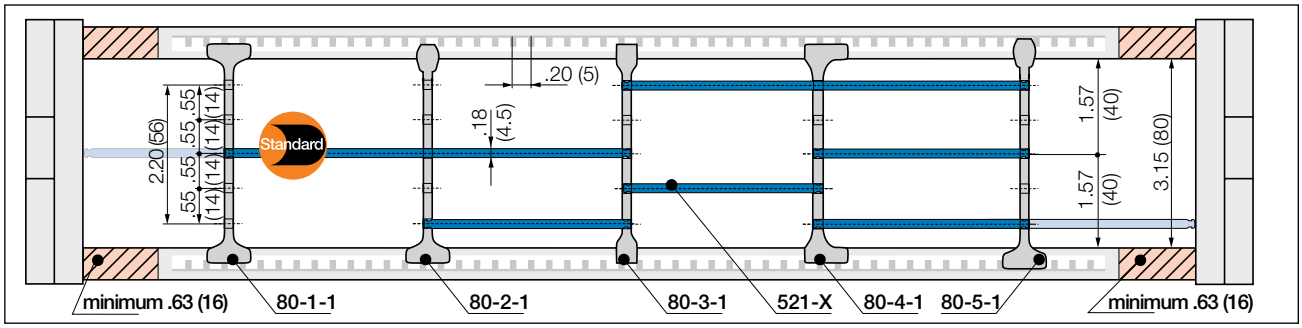
Choose from the radii below for all of the above sizes
Radius (mm) Example: E6-80-10-200-0

	150	200	250	300	350	400	450
R	5.91 (150)	7.87 (200)	9.84 (250)	11.81 (300)	13.78 (350)	15.75 (400)	17.71 (450)
H*	20.31 (516)	24.25 (616)	28.19 (716)	32.13 (816)	36.06 (916)	40.00 (1016)	43.94 (1116)
D	12.05 (306)	14.02 (356)	15.98 (406)	17.95 (456)	19.92 (506)	21.89 (556)	23.86 (606)
K	23.82 (605)	29.92 (760)	36.22 (920)	42.32 (1075)	48.43 (1230)	54.72 (1390)	60.82 (1545)

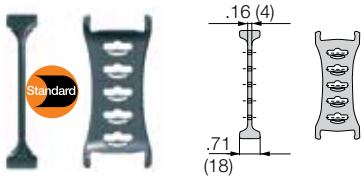
PDF: igus.com/e-chain-pdfs
Product information: igus.com/e-chains

e-chain system® E6
Series E6-80
Interior Separation - New Generation

igus® e-chain system®
Telephone 1-800-521-2747
Internet: igus.com
email: sales@igus.com
QuickSpec: igus.com/quickspec



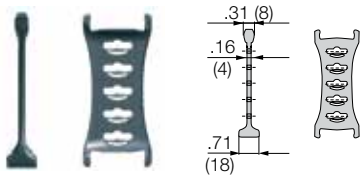
Note: Please maintain a lateral spacing of .63" (16 mm) between the separators and the side links.
In the standard configuration separators are assembled every 2nd e-chain® link



Separator, wide base

Unassembled	**Part No. 80-1**
Assembled	**Part No. 80-1-1**

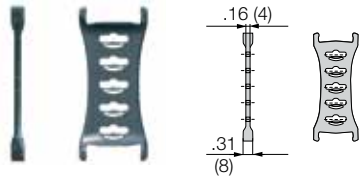
- **Standard separator 80-1**
  for all applications
  Separator with wide base for maximum locking strength and safe standing in e-chains®.



Separator for QuickLock crossbar

Unassembled	**Part No. 80-2**
Assembled	**Part No. 80-2-1**

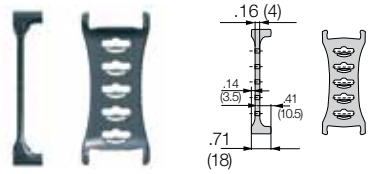
- **Separator 80-2**
  For even faster installation
  Separator for QuickLock crossbar 385-X-Q. Firmly holds to one side with a wide base, narrow on opposite side for easy cable assembly (slight grip).



Separator, narrow base

Unassembled	**Part No. 80-3**
Assembled	**Part No. 80-3-1**

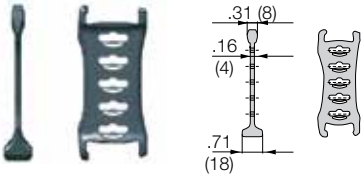
- **Separator 80-3**
  For many thin cables
  Separator with a narrow base for a large number of thin cables side by side. Save space in e-chains®.



Separator, asymmetrical

Unassembled	**Part No. 80-4**
Assembled	**Part No. 80-4-1**

- **Separator 80-4**
  For side-mounted applications
  Asymmetrical separator, for defined distance. No additional spacers necessary.

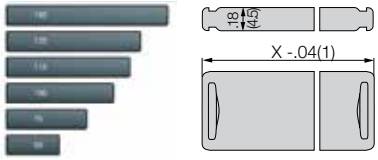


Notch separator for Notch crossbar

Unassembled	**Part No. 80-5**
Assembled	**Part No. 80-5-1**

- **Separator 80-5**
  Locks safely in .20" (5mm) increments
  Notch separator for exact positioning in e-chains®. Recommended for side mounted applications.

Lockable full-width shelves - for the standard interior separation



Full width shelf, lockable

Unassembled	**Part No. 520-X**
Assembled	**Part No. 521-X**

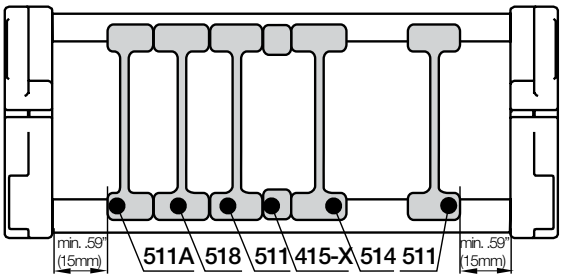
- **Full width shelf, lockable**
  Shelf locks safely into separators on both ends, fixed width possible. Separators can be moved freely over the shelf horizontally. Can be arranged at three different heights.

Width X in. (mm)	Part No. Unassembled	Part No. Assembled	Width X in. (mm)	Part No. Unassembled	Part No. Assembled	Width X in. (mm)	Part No. Unassembled	Part No. Assembled
1.97 (050)	**520-050**	**521-050**	5.91 (150)	**520-150**	**521-150**	11.81 (300)	**520-300**	**521-300**
2.55 (065)	**520-065**	**521-065**	6.89 (175)	**520-175**	**521-175**	13.78 (350)	**520-350**	**521-350**
2.95 (075)	**520-075**	**521-075**	7.87 (200)	**520-200**	**521-200**	14.76 (375)	**520-375**	**521-375**
3.94 (100)	**520-100**	**521-100**	8.86 (225)	**520-225**	**521-225**	15.24 (387)	**520-387**	**521-387**
4.92 (125)	**520-125**	**521-125**	9.84 (250)	**520-250**	**521-250**	17.72 (450)	**520-450**	**521-450**



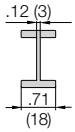
Option 1: Vertical separators and spacers

Vertical separators are used if a vertical subdivision of the e-chain® interior is required. By standard, vertical separators are assembled every other e-chain® link.
NOTE: Observe a lateral spacing of at least 1.30 in. (33mm) for E-Tubes and .63 in. (16mm) for e-chain®. There is no minimum spacing needed for side plates





Vertical separator 501

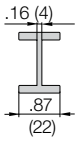


Vertical separator	
Unassembled	**Part No. 501**
Assembled	**Part No. 511**

- **Standard separator 501**
  This separator offers safe stability due to its wide base design, also when used with thick cables or hoses.



Locking separator 504

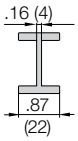


Locking separator	
Unassembled	**Part No. 504**
Assembled	**Part No. 514**

- **Locking separator 504**
  This separator features increased retention force for applications exposed to very high humidity and extreme loads. If locking separators are used, the e-chain® is more difficult to open.



Locking separator 508

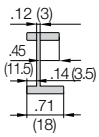


Locking separator	
Unassembled	**Part No. 508**
Assembled	**Part No. 518**

- **Locking separator 508**
  This separator is used for applications that are exposed to extremely high humidity. The clamp at the side serves to uniformly align the separators. In order to avoid destroying the separators when opening the e-chain®, make sure all separators are identically aligned.



Asymmetric separator 501A



Asymmetrical separator	
Unassembled	**Part No. 501A**
Assembled	**Part No. 511A**

- **Asymmetrical separator 501A**
  This separator features an (18mm) base. It can be used in combinations between spacers of different widths and vertical separators in side mounted applications.



Spacers 405-XX



Spacer	
Unassembled	**Part No. 405-XX**
Assembled	**Part No. 415-XX**

XX = width of the spacer

- **NOTE ON SPACERS**
  Vertical separators are adjustable, but can be fixed in position by means of a spacer. Spacers are most often necessary for side mounted applications. The available inner height is reduced by .08" (2mm) **per spacer** (for example if one spacer is placed on either side of the separator, the overall inner height is reduced by .16" (4mm). To avoid this, place the spacers on the **outside** of the opening crossbar **(not for long travels)**.



Spacers available in the following sizes:

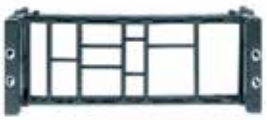
Part No. Unassembled	Part No. Assembled	in.	(mm)
405 -10	**415 -10**	.39"	(10)
405 -15	**415 -15**	.59"	(15)
405 -20	**415 -20**	79"	(20)
405 -30	**415 -30**	1.18"	(30)
405 -40	**415 -40**	1.57"	(40)

PDF: igus.com/e-chain-pdfs
Product information: igus.com/e-chains

e-chain system® E6
Series E6-80
Interior Separation - Previous Generation

Telephone 1-800-521-2747

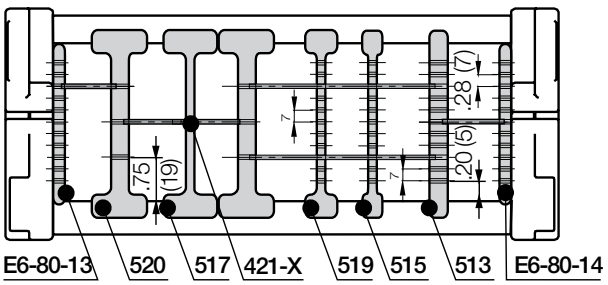
Internet: igus.com
email: sales@igus.com
QuickSpec: igus.com/quickspec



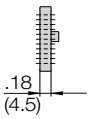
Option 2: Shelves

e-chains® and E-Tubes can be subdivided both vertically and horizontally using the various interior separation elements.

➤ **Design, Chapter 1** for layout recommendations.



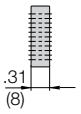
- **Side plates E6-80-03/E6-80-04**
  This component is used to form the basic pattern of a shelf system.



Side plate (left)	
Unassembled	**Part No. E6-80-03**
Assembled	**Part No. E6-80-13**
Side plate (right)	
Unassembled	**Part No. E6-80-04**
Assembled	**Part No. E6-80-14**

Side plate
E6-80-03 (left)
E6-80-04 (right)

- **Vertical separator 503**
  This component is used to form the basic pattern of a shelf system.

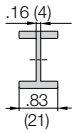


Vertical separator	
Unassembled	**Part No. 503**
Assembled	**Part No. 513**

Vertical separator
503



- **Locking separator, slotted 507**
  This separator features increased retention force for applications exposed to very high humidity and extreme loads. The extra retention force is achieved by asymmetric claws for the crossbar. Take care to ensure proper alignment.

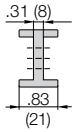


Locking separator, slotted	
Unassembled	**Part No. 507**
Assembled	**Part No. 517**

Locking separator, slotted
507



- **Locking vertical separator 510**
  This separator is slotted and able to be combined with shelves.

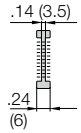


Locking vertical separator	
Unassembled	**Part No. 510**
Assembled	**Part No. 520**

Locking vertical separator
510

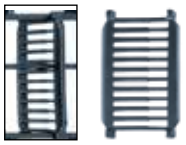


- **Slotted separators 505**
  These are used for very complex subdivisions. However, they cannot be retrofitted into an existing separation system without removing the shelves first.

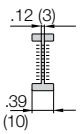


Slotted separators, closed	
Unassembled	**Part No. 505**
Assembled	**Part No. 515**

Closed slotted separator
505

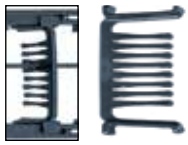


- **Slotted separator 509**
  This separator can be retrofitted into an existing interior separation system without removing the shelves, as long as these shelves fit into any of the 7 middle slots



Slotted separators, open	
Unassembled	**Part No. 509**
Assembled	**Part No. 519**

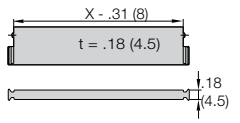
Open slotted separator
509



Shelves 420-XX

These components form the basic pattern of a shelf system. Shelves of various widths can be arranged at 11 different heights in .28" (7mm) increments

Width X in.(mm)	Usable Width in.	Part No. Unassembled	Part No. Assembled	Width X in. (mm)	Usable Width in. (mm)	Part No. Unassembled	Part No. Assembled
.71 (18)	.39 (10)	**420-18**	**421-18**	2.95 (75)	2.64 (67)	**420-75**	**421-75**
.91 (23)	.59 (15)	**420-23**	**421-23**	3.46 (88)	3.15 (80)	**420-88**	**421-88**
.98 (25)	.67 (17)	**420-25**	**421-25**	3.94 (100)	3.62 (92)	**420-100**	**421-100**
1.10 (28)	.79 (20)	**420-28**	**421-28**	4.92 (125)	4.61 (117)	**420-125**	**421-125**
1.30 (33)	.98 (25)	**420-33**	**421-33**	5.91 (150)	5.59 (142)	**420-150**	**421-150**
1.69 (43)	1.38 (35)	**420-43**	**421-43**	6.89 (175)	6.57 (167)	**420-175**	**421-175**
1.97 (50)	1.65 (42)	**420-50**	**421-50**	7.36 (187)	7.05 (179)	**420-187**	**421-187**
2.44 (62)	2.13 (54)	**420-62**	**421-62**	7.87 (200)	7.56 (192)	**420-200**	**421-200**



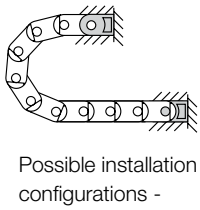


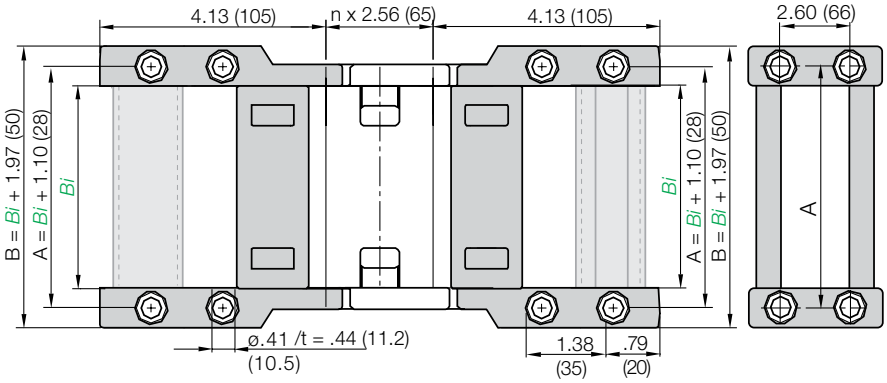
e-chain system® E6
Series E6-80
Mounting Brackets - KMA

Option 1: KMA - Pivoting

- Option - profile rail with integrated strain relief chainfix clip or tiewrap plates
- Profile rail can be mounted in the inner or outer radius of the e-chain®
- Bolted connection outside of the chain cross-section
- Recommended for unsupported applications
- Confined installation conditions
- Attachment capability on all sides




Possible installation configurations -



Part Number Structure

E6-800-	05-	12	P

- P: With profile rail
- 12: Complete Set
- 05-: Width
- E6-800-: Mounting brackets for selected chain type

Full set, for both ends:
E6-800- 05- 12 Full set, **both fixed and moving end**

Single-part order:
E6-800- 05- 1 Mounting bracket **fixed end**
E6-800- 05- 2 Mounting bracket **moving end**



Adapters for gliding applications available upon request

For Series	Part No. Full Set W/O Profile Rail	Part No. Full Set With Profile Rail	*Bi* in.	*Bi* (mm)
E6-80-05	**E6-800-05-12**	**E6-800-05-12P**	1.97	(50)
E6-80-06	**E6-800-06-12**	**E6-800-06-12P**	2.56	(65)
E6-80-07	**E6-800-07-12**	**E6-800-07-12P**	2.95	(75)
E6-80-08	**E6-800-08-12**	**E6-800-08-12P**	3.43	(87)
E6-80-10	**E6-800-10-12**	**E6-800-10-12P**	3.94	(100)
E6-80-11	**E6-800-11-12**	**E6-800-11-12P**	4.41	(112)
E6-80-12	**E6-800-12-12**	**E6-800-12-12P**	4.92	(125)
E6-80-13	**E6-800-13-12**	**E6-800-13-12P**	5.39	(137)
E6-80-15	**E6-800-15-12**	**E6-800-15-12P**	5.91	(150)
E6-80-16	**E6-800-16-12**	**E6-800-16-12P**	6.38	(162)
E6-80-17	**E6-800-17-12**	**E6-800-17-12P**	6.89	(175)
E6-80-18	**E6-800-18-12**	**E6-800-18-12P**	7.36	(187)
E6-80-20	**E6-800-20-12**	**E6-800-20-12P**	7.87	(200)
E6-80-21	**E6-800-21-12**	**E6-800-21-12P**	8.35	(212)
E6-80-22	**E6-800-22-12**	**E6-800-22-12P**	8.86	(225)
E6-80-23	**E6-800-23-12**	**E6-800-23-12P**	9.33	(237)
E6-80-25	**E6-800-25-12**	**E6-800-25-12P**	9.84	(250)
E6-80-26	**E6-800-26-12**	**E6-800-26-12P**	10.31	(262)
E6-80-27	**E6-800-27-12**	**E6-800-27-12P**	10.83	(275)
E6-80-28	**E6-800-28-12**	**E6-800-28-12P**	11.30	(287)
E6-80-30	**E6-800-30-12**	**E6-800-30-12P**	11.81	(300)

For Series	Part No. Full Set W/O Profile Rail	Part No. Full Set With Profile Rail	*Bi* in.	*Bi* (mm)
E6-80-31	**E6-800-31-12**	**E6-800-31-12P**	12.28	(312)
E6-80-32	**E6-800-32-12**	**E6-800-32-12P**	12.80	(325)
E6-80-33	**E6-800-33-12**	**E6-800-33-12P**	13.27	(337)
E6-80-35	**E6-800-35-12**	**E6-800-35-12P**	13.78	(350)
E6-80-36	**E6-800-36-12**	**E6-800-36-12P**	14.25	(362)
E6-80-37	**E6-800-37-12**	**E6-800-37-12P**	14.76	(375)
E6-80-38	**E6-800-38-12**	**E6-800-38-12P**	15.24	(387)
E6-80-40	**E6-800-40-12**	**E6-800-40-12P**	15.75	(400)
E6-80-41	**E6-800-41-12**	**E6-800-41-12P**	16.72	(412)
E6-80-42	**E6-800-42-12**	**E6-800-42-12P**	16.73	(425)
E6-80-43	**E6-800-43-12**	**E6-800-43-12P**	17.20	(437)
E6-80-45	**E6-800-45-12**	**E6-800-45-12P**	17.72	(450)
E6-80-46	**E6-800-46-12**	**E6-800-46-12P**	18.19	(462)
E6-80-47	**E6-800-47-12**	**E6-800-47-12P**	18.70	(475)
E6-80-48	**E6-800-48-12**	**E6-800-48-12P**	19.17	(487)
E6-80-50	**E6-800-50-12**	**E6-800-50-12P**	19.69	(500)
E6-80-51	**E6-800-51-12**	**E6-800-51-12P**	20.16	(512)
E6-80-52	**E6-800-52-12**	**E6-800-52-12P**	20.67	(525)
E6-80-53	**E6-800-53-12**	**E6-800-53-12P**	21.14	(537)
E6-80-55	**E6-800-55-12**	**E6-800-55-12P**	21.65	(550)
E6-80-60	**E6-800-60-12**	**E6-800-60-12P**	25.59	(600)

PDF: igus.com/e-chain-pdfs
Product information: igus.com/e-chains

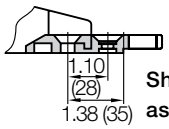
e-chain system® E6
Series E6-80
Strain Relief

Telephone 1-800-521-2747

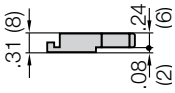
Internet: igus.com
email: sales@igus.com
QuickSpec: igus.com/quickspec

Tiewrap Plates





Shown assembled

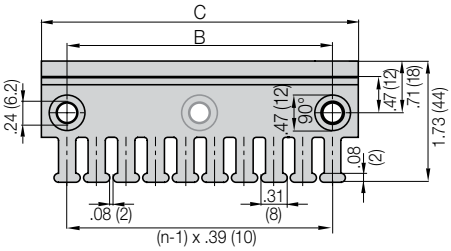


Single tiewrap plate

Option 1:
Tiewrap plates as an individual part

Available as an individual component, can be fixed onto a mounting bracket with the use of a profile rail.

Tiewrap Plate	n Number of Teeth	C Overall Width in. (mm)	B Bore Width in. (mm)	Center Bore
3050-ZB	5	1.97 (50)	1.18 (30)	no
3075-ZB	7	2.95 (75)	2.16 (55)	no
3100-ZB	10	3.94 (100)	3.15 (80)	no
3115-ZB	11	4.53 (115)	3.74 (95)	no
3125-ZB	12	4.92 (125)	4.13 (105)	no
3150-ZB	15	5.91 (150)	5.12 (130)	no
3175-ZB	17	6.89 (175)	6.10 (155)	no
3200-ZB	20	7.87 (200)	7.09 (180)	yes
3225-ZB	22	8.86 (225)	8.07 (205)	yes
3250-ZB	25	9.84 (250)	9.06 (230)	yes



If used with KMA brackets with profile rail please add “KMA” to the end of the part number.
Example: 3050-ZBKMA

Other strain relief elements
➤ **Strain Relief, Chapter 10**

PDF: igus.com/e-chain-pdfs
Product information: igus.com/e-chains









e-chain system® E6
Series E6-80L

Price Index

Series E6-80L

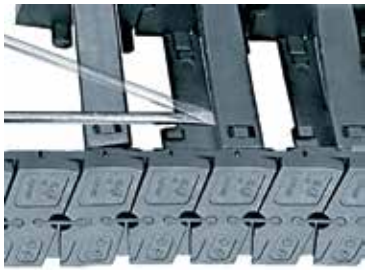
Special Features / Options

Extremely low noise
Test results upon request

IPA Certificate: Class 1, according to standard DIN EN ISO 14644-1 for the E6 system (Series E6-29-060-150-0-CR, (v = 1.64 ft/s, a = 3.28 ft/s²)

LEVEL 1 absorption confirmed by IPA-Fraunhofer-Institute according to SEMI E78-0998 for the E6 standard material

Assembly Tips



To close, push and click shut

Other Installation Methods

Vertical, hanging ≤ 196.8 ft (60 m)
Vertical, standing ≤ 13.12 ft (4 m)
Side-mounted, unsupp. = possible to a limited extent
Unsupported length of upper run upon request

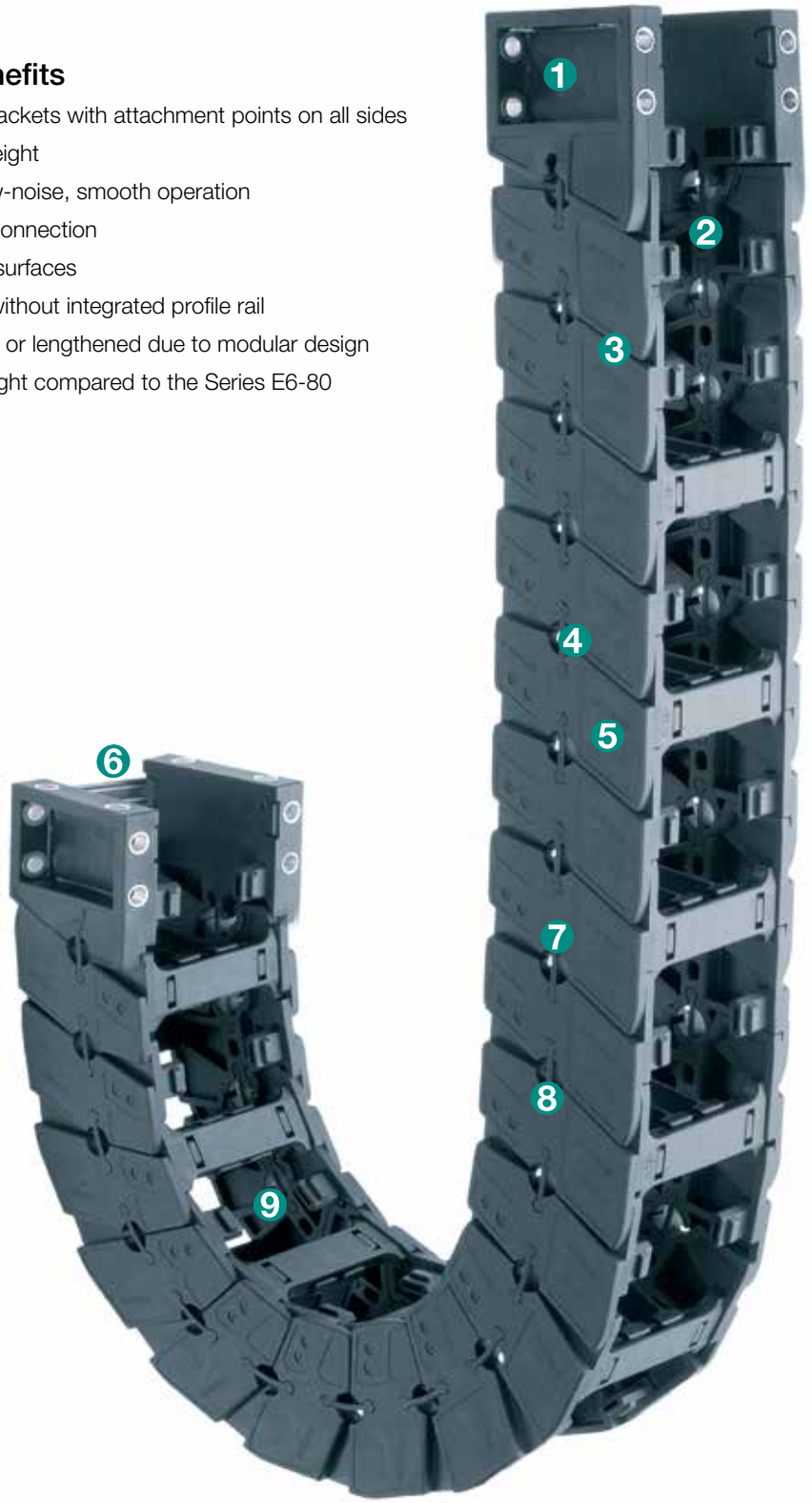
Usage Guidelines

- If a low-noise version is required
- For very high speeds and/or accelerations
- If large stresses and thrust forces are present
- For small bending radii
- If less vibration is required
- Minimal abrasion, suitable for cleanrooms

- For side mounted applications
  ➤ **Series 15050 E4/Light**
- For RBR (Reverse Bending Radius)
  ➤ **Series 15050 E4/Light**
- For high additional loads
  ➤ **Series 15050 E4/Light**

Features & Benefits

1. KMA mounting brackets with attachment points on all sides
2. Increased inner height
3. Small pitch for low-noise, smooth operation
4. No pin and bore connection
5. Continuous glide surfaces
6. Available with or without integrated profile rail
7. Can be shortened or lengthened due to modular design
8. 45% lighter in weight compared to the Series E6-80
9. Interior stop dog



Order Example: Complete e-chain®

Please indicate chain length or number of links. Example:

16.4 ft (5 m) **E6-80L-15-175-0**	**e-chain®**
With 2 separators **511** assembled every 2nd link	**Interior Separation**
1 Set **E6-800L-15-12**	**Mounting Bracket**

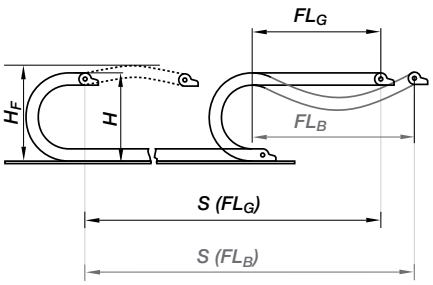
e-chain system® E6
Series E6-80L
Installation Dimensions

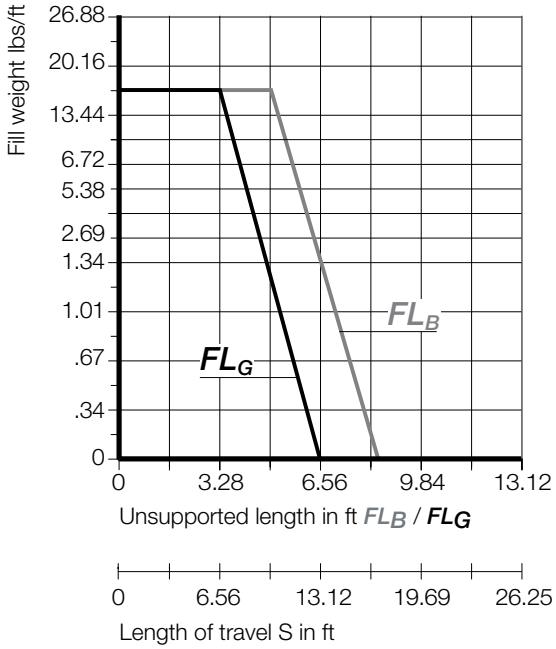
Short travel, unsupported length

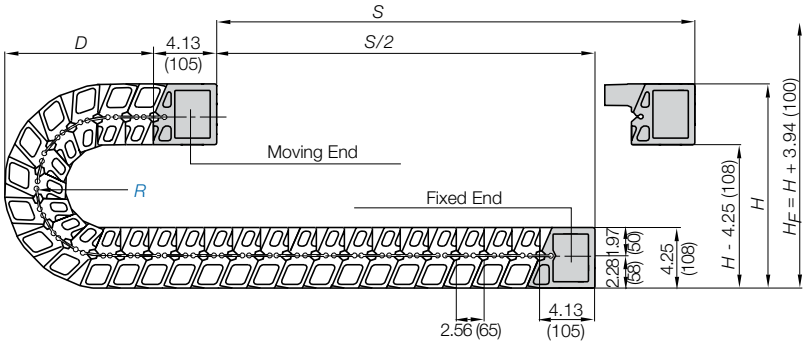
● FL_B = unsupported with permitted sag

● FL_G = unsupported with straight upper run

Further information ➤ Design, Chapter 1







The required clearance height: $H_F = H + 3.94$ **in. (100 mm)** (with 3.36 lbs/ft (5.0 kg/m) fill weight. Please consult igus® if space is particularly restricted.

R	5.91 (150)	6.89 (175)	7.87 (200)	9.84 (250)	11.81 (300)
H*	20.31 (516)	22.28 (566)	24.25 (616)	28.19 (716)	32.13 (816)
D	12.05 (306)	13.03 (331)	14.02 (356)	15.98 (406)	17.95 (456)
K	23.82 (605)	26.77 (680)	29.92 (760)	36.02 (915)	42.32 (1075)

Pitch per link: = 2.56" (65 mm)
Links per ft (m): = 4.68 (16)
For center mount applications:
Chain length = $_{S}/_{2}$ + K

Speed / acceleration FL_G	max. 65.6 ft/s (20 m/s) / max. 656 ft/s² (200 m/s²)
Speed / acceleration FL_B	max. 9.84 ft/s (3 m/s) / max. 19.69 ft/s² (6 m/s²)
Gliding speed / acceleration (maximum)	upon request
Permitted temperature	-40°F (-40°C) up to +158°F (+70° C)
Flammability Class	VDE 0304 IIC UL94 HB

Technical Data

Details of material properties
➤ **Design, Chapter 1**

Short Travels - Unsupported

Unsupported e-chains® feature positive camber over short travels. This must be accounted for when specifying the clearance height. Please refer to **Installation dimensions** for further details.

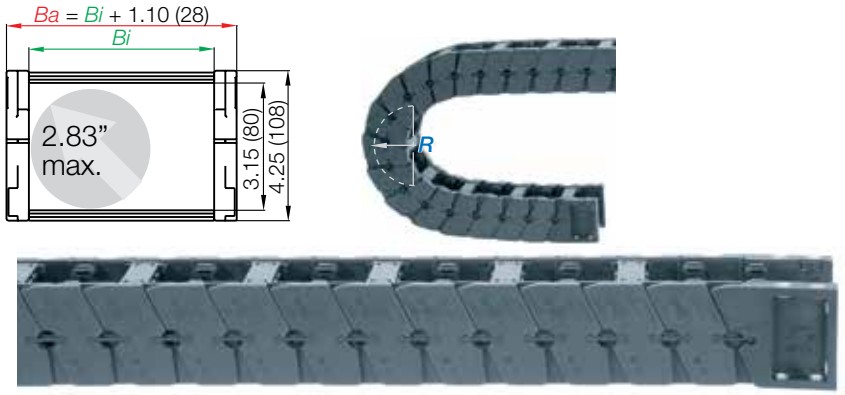
Legend

S = Length of travel
R = Bending radius
H = Nominal clearance height
D = Overlength e-chain® radius in final position
K = π • *R* + *safety buffer*
H_F = Required clearance height

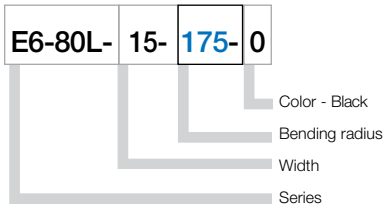
PDF: igus.com/e-chain-pdfs
Product information: igus.com/e-chains

e-chain system® E6
Series E6-80L

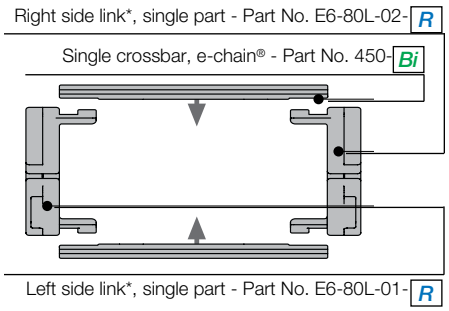
Series E6-80L - e-chain® with crossbars every other link

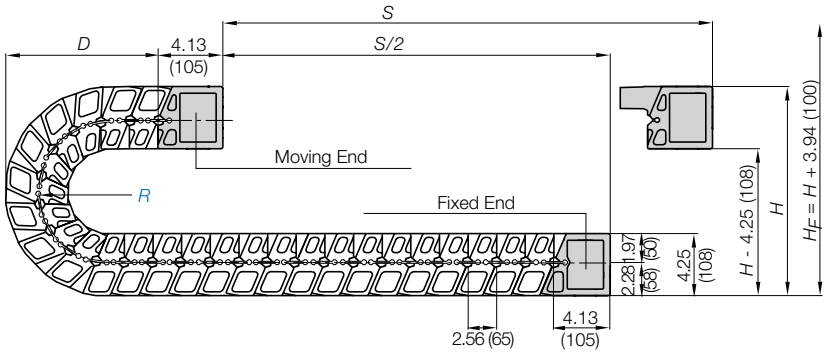


Part Number Structure



e-chain® as separate parts, side links and crossbars





*View from the fixed point of the e-chain®/E-Tube



Polymer spring as single part - Part No. E6-80-350

e-chain system® E6
Series E6-80L

Supplement part number with required radius. Example: E6-80L-15-[175]-0
Pitch: 2.56 in. (65 mm) per link links/ft (m) = 4.68 (16)

Part Number	*Bi* in. (mm)	*Ba* in. (mm)	Weight lbs/ft (kg/m)
E6-80L-08-[ ]-0	3.43 (87)	4.53 (115)	≈ 2.20 (3.28)
E6-80L-10-[ ]-0	3.94 (100)	5.04 (128)	≈ 2.24 (3.33)
E6-80L-11-[ ]-0	4.41 (112)	5.51 (140)	≈ 2.26 (3.38)
E6-80L-12-[ ]-0	4.92 (125)	6.02 (153)	≈ 2.30 (3.43)
E6-80L-13-[ ]-0	5.39 (137)	6.50 (165)	≈ 2.35 (3.49)
E6-80L-15-[ ]-0	5.91 (150)	7.01 (178)	≈ 2.39 (3.55)
E6-80L-16-[ ]-0	6.38 (162)	7.48 (190)	≈ 2.43 (3.61)
E6-80L-17-[ ]-0	6.89 (175)	7.99 (203)	≈ 2.47 (3.67)
E6-80L-18-[ ]-0	7.36 (187)	8.46 (215)	≈ 2.51 (3.73)
E6-80L-20-[ ]-0	7.87 (200)	8.98 (228)	≈ 2.55 (3.79)
E6-80L-21-[ ]-0	8.35 (212)	9.45 (240)	≈ 2.59 (3.85)
E6-80L-22-[ ]-0	8.86 (225)	9.96 (253)	≈ 2.63 (3.91)
E6-80L-23-[ ]-0	9.33 (237)	10.43 (265)	≈ 2.67 (3.97)
E6-80L-25-[ ]-0	9.84 (250)	10.94 (278)	≈ 2.70 (4.02)
E6-80L-26-[ ]-0	10.31 (262)	11.42 (290)	≈ 2.75 (4.09)
E6-80L-27-[ ]-0	10.83 (275)	11.93 (303)	≈ 2.78 (4.14)
E6-80L-28-[ ]-0	11.30 (287)	12.40 (315)	≈ 2.82 (4.20)
E6-80L-30-[ ]-0	11.81 (300)	12.91 (328)	≈ 2.86 (4.26)
E6-80L-31-[ ]-0	12.28 (312)	13.39 (340)	≈ 2.90 (4.32)
E6-80L-32-[ ]-0	12.80 (325)	13.90 (353)	≈ 2.94 (4.38)
E6-80L-33-[ ]-0	13.27 (337)	14.37 (365)	≈ 2.98 (4.44)
E6-80L-35-[ ]-0	13.78 (350)	14.88 (378)	≈ 3.02 (4.50)
E6-80L-36-[ ]-0	14.25 (362)	15.35 (390)	≈ 3.06 (4.56)
E6-80L-37-[ ]-0	14.76 (375)	15.87 (403)	≈ 3.10 (4.62)
E6-80L-38-[ ]-0	15.24 (387)	16.34 (415)	≈ 3.14 (4.68)
E6-80L-40-[ ]-0	15.75 (400)	16.85 (428)	≈ 3.19 (4.74)
E6-80L-41-[ ]-0	16.22 (412)	17.32 (440)	≈ 3.23 (4.80)
E6-80L-42-[ ]-0	16.73 (425)	17.83 (453)	≈ 3.26 (4.85)
E6-80L-43-[ ]-0	17.20 (437)	18.31 (465)	≈ 3.31 (4.92)
E6-80L-45-[ ]-0	17.72 (450)	18.82 (478)	≈ 3.38 (5.03)
E6-80L-46-[ ]-0	18.19 (462)	19.29 (490)	≈ 3.42 (5.09)
E6-80L-47-[ ]-0	18.70 (475)	19.80 (503)	≈ 3.46 (5.15)
E6-80L-48-[ ]-0	19.17 (487)	20.28 (515)	≈ 3.50 (5.21)
E6-80L-50-[ ]-0	19.69 (500)	20.79 (528)	≈ 3.54 (5.27)
E6-80L-51-[ ]-0	20.16 (512)	21.26 (540)	≈ 3.58 (5.33)
E6-80L-52-[ ]-0	20.67 (525)	21.77 (553)	≈ 3.62 (5.39)
E6-80L-53-[ ]-0	21.14 (537)	22.24 (565)	≈ 3.66 (5.45)
E6-80L-55-[ ]-0	21.65 (550)	22.76 (578)	≈ 3.70 (5.51)

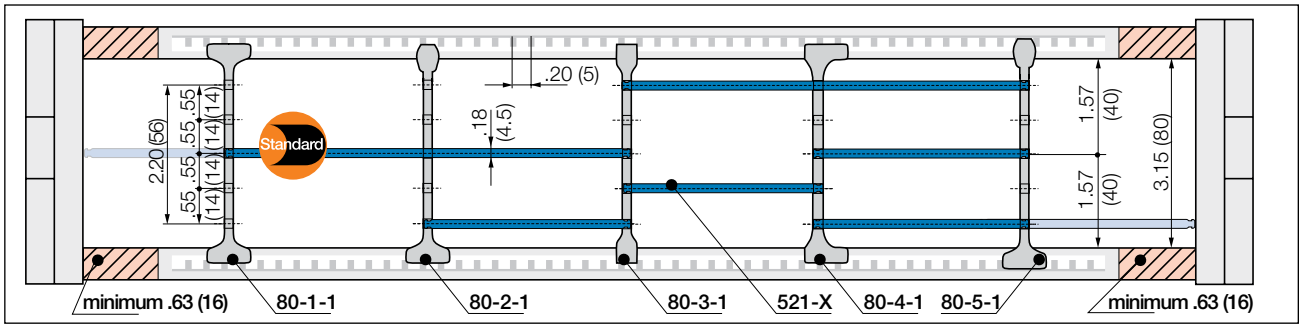
Choose from the radii below for all of the above sizes
Radius (mm) Example: E6-80L-15-[175]-0

	150	175	200	250	300
R	5.91 (150)	6.89 (175)	7.87 (200)	9.84 (250)	11.81 (300)
H*	20.31 (516)	22.28 (566)	24.25 (616)	28.19 (716)	32.13 (816)
D	12.05 (306)	13.03 (331)	14.02 (356)	15.98 (406)	17.95 (456)
K	23.82 (605)	26.77 (680)	29.92 (760)	36.02 (915)	42.32 (1075)

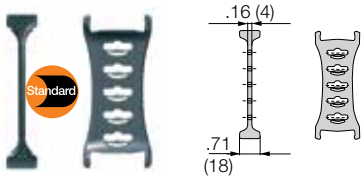
PDF: igus.com/e-chain-pdfs
Product information: igus.com/e-chains

e-chain system® E6
Series E6-80L
Interior Separation - New Generation

igus® e-chain system®
Telephone 1-800-521-2747
Internet: igus.com
email: sales@igus.com
QuickSpec: igus.com/quickspec



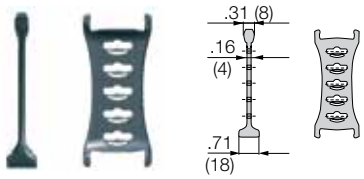
Note: Please maintain a lateral spacing of .63" (16 mm) between the separators and the side links.
In the standard configuration separators are assembled every 2nd e-chain® link



Separator, wide base

Unassembled	**Part No. 80-1**
Assembled	**Part No. 80-1-1**

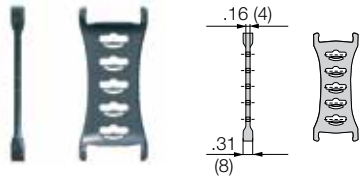
- **Standard separator 80-1**
  for all applications
  Separator with wide base for maximum locking strength and safe standing in e-chains®.



Separator for QuickLock crossbar

Unassembled	**Part No. 80-2**
Assembled	**Part No. 80-2-1**

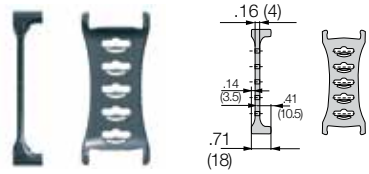
- **Separator 80-2**
  For even faster installation
  Separator for QuickLock crossbar 385-X-Q. Firmly holds to one side with a wide base, narrow on opposite side for easy cable assembly (slight grip).



Separator, narrow base

Unassembled	**Part No. 80-3**
Assembled	**Part No. 80-3-1**

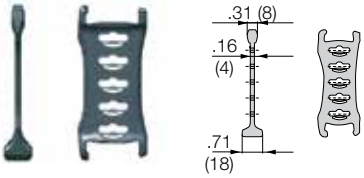
- **Separator 80-3**
  For many thin cables
  Separator with a narrow base for a large number of thin cables side by side. Save space in e-chains®.



Separator, asymmetrical

Unassembled	**Part No. 80-4**
Assembled	**Part No. 80-4-1**

- **Separator 80-4**
  For side-mounted applications
  Asymmetrical separator, for defined distance. No additional spacers necessary.

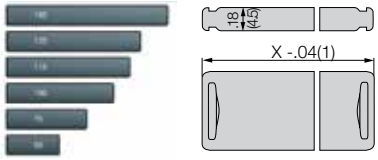


Notch separator for Notch crossbar

Unassembled	**Part No. 80-5**
Assembled	**Part No. 80-5-1**

- **Separator 80-5**
  Locks safely in .20" (5mm) increments
  Notch separator for exact positioning in e-chains®. Recommended for side mounted applications.

Lockable full-width shelves - for the standard interior separation



Full width shelf, lockable

Unassembled	**Part No. 520-X**
Assembled	**Part No. 521-X**

- **Full width shelf, lockable**
  Shelf locks safely into separators on both ends, fixed width possible. Separators can be moved freely over the shelf horizontally. Can be arranged at three different heights.

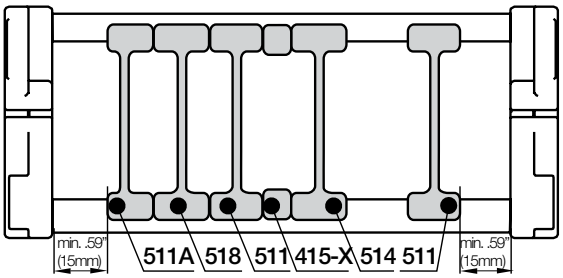
Width X in. (mm)	Part No. Unassembled	Part No. Assembled	Width X in. (mm)	Part No. Unassembled	Part No. Assembled	Width X in. (mm)	Part No. Unassembled	Part No. Assembled
1.97 (050)	**520-050**	**521-050**	5.91 (150)	**520-150**	**521-150**	11.81 (300)	**520-300**	**521-300**
2.55 (065)	**520-065**	**521-065**	6.89 (175)	**520-175**	**521-175**	13.78 (350)	**520-350**	**521-350**
2.95 (075)	**520-075**	**521-075**	7.87 (200)	**520-200**	**521-200**	14.76 (375)	**520-375**	**521-375**
3.94 (100)	**520-100**	**521-100**	8.86 (225)	**520-225**	**521-225**	15.24 (387)	**520-387**	**521-387**
4.92 (125)	**520-125**	**521-125**	9.84 (250)	**520-250**	**521-250**	17.72 (450)	**520-450**	**521-450**



Option 1: Vertical separators and spacers

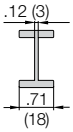
Vertical separators are used if a vertical subdivision of the e-chain® interior is required. By standard, vertical separators are assembled every other e-chain® link.

NOTE: Observe a lateral spacing of at least 1.30 in. (33mm) for E-Tubes and .63 in. (16mm) for e-chain®. There is no minimum spacing needed for side plates





Vertical separator 501

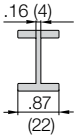


Vertical separator	
Unassembled	**Part No. 501**
Assembled	**Part No. 511**

- **Standard separator 501**
  This separator offers safe stability due to its wide base design, also when used with thick cables or hoses.



Locking separator 504

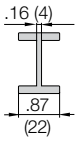


Locking separator	
Unassembled	**Part No. 504**
Assembled	**Part No. 514**

- **Locking separator 504**
  This separator features increased retention force for applications exposed to very high humidity and extreme loads. If locking separators are used, the e-chain® is more difficult to open.



Locking separator 508

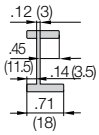


Locking separator	
Unassembled	**Part No. 508**
Assembled	**Part No. 518**

- **Locking separator 508**
  This separator is used for applications that are exposed to extremely high humidity. The clamp at the side serves to uniformly align the separators. In order to avoid destroying the separators when opening the e-chain®, make sure all separators are identically aligned.



Asymmetric separator 501A



Asymmetrical separator	
Unassembled	**Part No. 501A**
Assembled	**Part No. 511A**

- **Asymmetrical separator 501A**
  This separator features an (18mm) base. It can be used in combinations between spacers of different widths and vertical separators in side mounted applications.



Spacers 405-XX



Spacer	
Unassembled	**Part No. 405-XX**
Assembled	**Part No. 415-XX**

XX = width of the spacer

- **NOTE ON SPACERS**
  Vertical separators are adjustable, but can be fixed in position by means of a spacer. Spacers are most often necessary for side mounted applications. The available inner height is reduced by .08" (2mm) **per spacer** (for example if one spacer is placed on either side of the separator, the overall inner height is reduced by .16" (4mm). To avoid this, place the spacers on the **outside** of the opening crossbar **(not for long travels)**.



Spacers available in the following sizes:

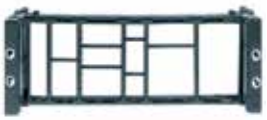
Part No. Unassembled	Part No. Assembled	in.	(mm)
405 -10	**415 -10**	.39"	(10)
405 -15	**415 -15**	.59"	(15)
405 -20	**415 -20**	79"	(20)
405 -30	**415 -30**	1.18"	(30)
405 -40	**415 -40**	1.57"	(40)

PDF: igus.com/e-chain-pdfs
Product information: igus.com/e-chains

e-chain system® E6
Series E6-80L
Interior Separation - Previous Generation

Telephone 1-800-521-2747

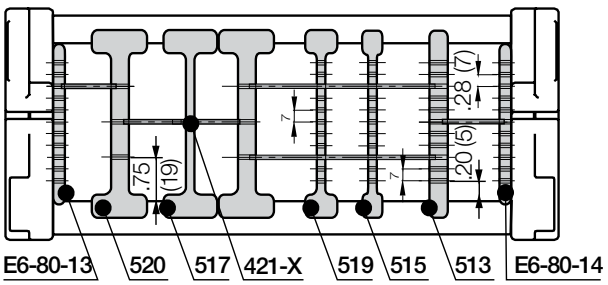
Internet: igus.com
email: sales@igus.com
QuickSpec: igus.com/quickspec



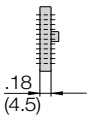
Option 2: Shelves

e-chains® and E-Tubes can be subdivided both vertically and horizontally using the various interior separation elements.

➤ **Design, Chapter 1** for layout recommendations.



- **Side plates E6-80-03/E6-80-04**
  This component is used to form the basic pattern of a shelf system.



Side plate (left)

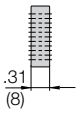
Unassembled	**Part No. E6-80-03**
Assembled	**Part No. E6-80-13**

Side plate (right)

Unassembled	**Part No. E6-80-04**
Assembled	**Part No. E6-80-14**

Side plate
E6-80-03 (left)
E6-80-04 (right)

- **Vertical separator 503**
  This component is used to form the basic pattern of a shelf system.



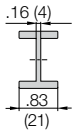
Vertical separator

Unassembled	**Part No. 503**
Assembled	**Part No. 513**

Vertical separator
503



- **Locking separator, slotted 507**
  This separator features increased retention force for applications exposed to very high humidity and extreme loads. The extra retention force is achieved by asymmetric claws for the crossbar. Take care to ensure proper alignment.



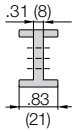
Locking separator, slotted

Unassembled	**Part No. 507**
Assembled	**Part No. 517**

Locking separator,
slotted
507



- **Locking vertical separator 510**
  This separator is slotted and able to be combined with shelves.



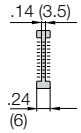
Locking vertical separator

Unassembled	**Part No. 510**
Assembled	**Part No. 520**

Locking vertical
separator
510



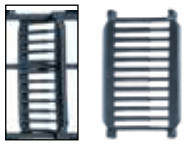
- **Slotted separators 505**
  These are used for very complex subdivisions. However, they cannot be retrofitted into an existing separation system without removing the shelves first.



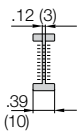
Slotted separators, closed

Unassembled	**Part No. 505**
Assembled	**Part No. 515**

Closed slotted
separator
505



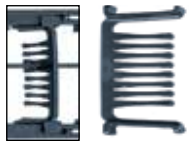
- **Slotted separator 509**
  This separator can be retrofitted into an existing interior separation system without removing the shelves, as long as these shelves fit into any of the 7 middle slots



Slotted separators, open

Unassembled	**Part No. 509**
Assembled	**Part No. 519**

Open slotted
separator
509

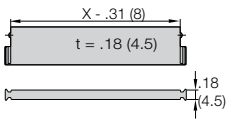


Shelves 420-XX

These components form the basic pattern of a shelf system. Shelves of various widths can be arranged at 11 different heights in .28" (7mm) increments

Width X in.	(mm)	Usable Width in.	(mm)	Part No. Unassembled	Part No. Assembled
.71	(18)	.39	(10)	**420-18**	**421-18**
.91	(23)	.59	(15)	**420-23**	**421-23**
.98	(25)	.67	(17)	**420-25**	**421-25**
1.10	(28)	.79	(20)	**420-28**	**421-28**
1.30	(33)	.98	(25)	**420-33**	**421-33**
1.69	(43)	1.38	(35)	**420-43**	**421-43**
1.97	(50)	1.65	(42)	**420-50**	**421-50**
2.44	(62)	2.13	(54)	**420-62**	**421-62**

Width X in.	(mm)	Usable Width in.	(mm)	Part No. Unassembled	Part No. Assembled
2.95	(75)	2.64	(67)	**420-75**	**421-75**
3.46	(88)	3.15	(80)	**420-88**	**421-88**
3.94	(100)	3.62	(92)	**420-100**	**421-100**
4.92	(125)	4.61	(117)	**420-125**	**421-125**
5.91	(150)	5.59	(142)	**420-150**	**421-150**
6.89	(175)	6.57	(167)	**420-175**	**421-175**
7.36	(187)	7.05	(179)	**420-187**	**421-187**
7.87	(200)	7.56	(192)	**420-200**	**421-200**





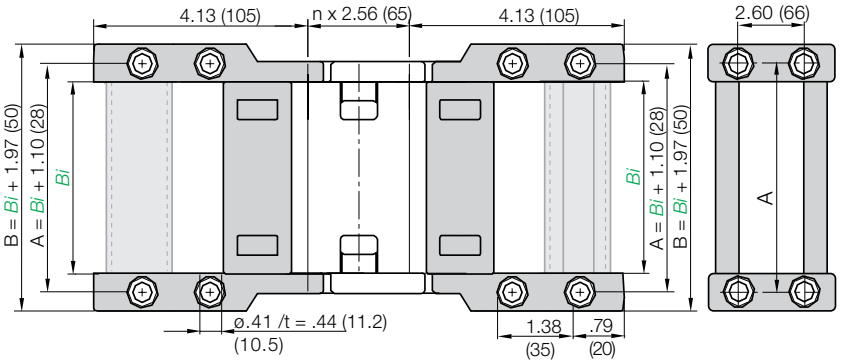
e-chain system® E6
Series E6-80L
Mounting Brackets - KMA

Option 1: KMA - Pivoting

- Option - profile rail with integrated strain relief chainfix clip or tiewrap plates
- Profile rail can be mounted in the inner or outer radius of the e-chain®
- Bolted connection outside of the chain cross-section
- Recommended for unsupported applications
- Confined installation conditions
- Attachment capability on all sides



Possible installation configurations -



Part Number Structure

E6-800L- | 10- | 12 | P

- With profile rail
- Complete Set
- Width
- Mounting brackets for selected chain type

Full set, for both ends:
E6-800L- 10- 12 Full set, **both fixed and moving end**

Single-part order:
E6-800L- 10- 1
Mounting bracket **fixed end**

E6-800L- 10- 2
Mounting bracket **moving end**

For Series	Part No. Full Set W/O Profile Rail	Part No. Full Set With Profile Rail	*Bi* in.	*Bi* (mm)
E6-80L-08	**E6-800L-08-12**	**E6-800L-08-12P**	3.43	(87)
E6-80L-10	**E6-800L-10-12**	**E6-800L-10-12P**	3.94	(100)
E6-80L-11	**E6-800L-11-12**	**E6-800L-11-12P**	4.41	(112)
E6-80L-12	**E6-800L-12-12**	**E6-800L-12-12P**	4.92	(125)
E6-80L-13	**E6-800L-13-12**	**E6-800L-13-12P**	5.39	(137)
E6-80L-15	**E6-800L-15-12**	**E6-800L-15-12P**	5.91	(150)
E6-80L-16	**E6-800L-16-12**	**E6-800L-16-12P**	6.38	(162)
E6-80L-17	**E6-800L-18-12**	**E6-800L-18-12P**	6.89	(175)
E6-80L-18	**E6-800L-18-12**	**E6-800L-18-12P**	7.36	(187)
E6-80L-20	**E6-800L-20-12**	**E6-800L-20-12P**	7.87	(200)
E6-80L-21	**E6-800L-21-12**	**E6-800L-21-12P**	8.35	(212)
E6-80L-22	**E6-800L-23-12**	**E6-800L-23-12P**	8.86	(225)
E6-80L-23	**E6-800L-23-12**	**E6-800L-23-12P**	9.33	(237)
E6-80L-25	**E6-800L-25-12**	**E6-800L-25-12P**	9.84	(250)
E6-80L-26	**E6-800L-26-12**	**E6-800L-26-12P**	10.31	(262)
E6-80L-27	**E6-800L-28-12**	**E6-800L-28-12P**	10.83	(275)
E6-80L-28	**E6-800L-29-12**	**E6-800L-29-12P**	11.30	(287)
E6-80L-30	**E6-800L-30-12**	**E6-800L-30-12P**	11.81	(300)
E6-80L-31	**E6-800L-31-12**	**E6-800L-31-12P**	12.28	(312)

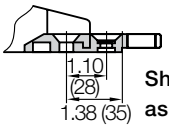
For Series	Part No. Full Set W/O Profile Rail	Part No. Full Set With Profile Rail	*Bi* in.	*Bi* (mm)
E6-80L-32	**E6-800L-32-12**	**E6-800L-32-12P**	12.80	(325)
E6-80L-33	**E6-800L-33-12**	**E6-800L-33-12P**	13.27	(337)
E6-80L-35	**E6-800L-35-12**	**E6-800L-35-12P**	13.78	(350)
E6-80L-36	**E6-800L-36-12**	**E6-800L-36-12P**	14.25	(362)
E6-80L-37	**E6-800L-37-12**	**E6-800L-37-12P**	14.76	(375)
E6-80L-38	**E6-800L-38-12**	**E6-800L-38-12P**	15.24	(387)
E6-80L-40	**E6-800L-40-12**	**E6-800L-40-12P**	15.75	(400)
E6-80L-41	**E6-800L-41-12**	**E6-800L-41-12P**	16.72	(412)
E6-80L-42	**E6-800L-42-12**	**E6-800L-42-12P**	16.73	(425)
E6-80L-43	**E6-800L-43-12**	**E6-800L-43-12P**	17.20	(437)
E6-80L-45	**E6-800L-45-12**	**E6-800L-45-12P**	17.72	(450)
E6-80L-46	**E6-800L-46-12**	**E6-800L-46-12P**	18.19	(462)
E6-80L-47	**E6-800L-47-12**	**E6-800L-47-12P**	18.70	(475)
E6-80L-48	**E6-800L-48-12**	**E6-800L-48-12P**	19.17	(487)
E6-80L-50	**E6-800L-50-12**	**E6-800L-50-12P**	19.69	(500)
E6-80L-51	**E6-800L-51-12**	**E6-800L-51-12P**	20.16	(512)
E6-80L-52	**E6-800L-52-12**	**E6-800L-52-12P**	20.67	(525)
E6-80L-53	**E6-800L-53-12**	**E6-800L-53-12P**	21.14	(537)
E6-80L-55	**E6-800L-55-12**	**E6-800L-55-12P**	21.65	(550)

PDF: igus.com/e-chain-pdfs
Product information: igus.com/e-chains

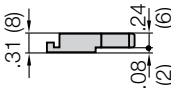
e-chain system® E6
Series E6-80L
Strain Relief

Tiewrap Plates





Shown assembled

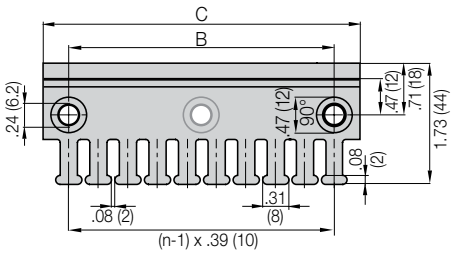


Single tiewrap plate

Option 1:
Tiewrap plates as an individual part

Available as an individual component, can be fixed onto a mounting bracket with the use of a profile rail.

Tiewrap Plate	n Number of Teeth	C Overall Width in. (mm)	B Bore Width in. (mm)	Center Bore
3050-ZB	5	1.97 (50)	1.18 (30)	no
3075-ZB	7	2.95 (75)	2.16 (55)	no
3100-ZB	10	3.94 (100)	3.15 (80)	no
3115-ZB	11	4.53 (115)	3.74 (95)	no
3125-ZB	12	4.92 (125)	4.13 (105)	no
3150-ZB	15	5.91 (150)	5.12 (130)	no
3175-ZB	17	6.89 (175)	6.10 (155)	no
3200-ZB	20	7.87 (200)	7.09 (180)	yes
3225-ZB	22	8.86 (225)	8.07 (205)	yes
3250-ZB	25	9.84 (250)	9.06 (230)	yes



If used with KMA brackets with profile rail please add “KMA” to the end of the part number.
Example: 3050-ZBKMA

Other strain relief elements
➤ **Strain Relief, Chapter 10**

PDF: igus.com/e-chain-pdfs
Product information: igus.com/e-chains













e-skin

Novel energy supply system for cleanrooms

- Hose consisting of an upper and lower shell that form a complete enclosure when connected together
- Easy filling with “zipper” function
- Special design allows unsupported lengths
- Less installation space required
- Cable-friendly with defined minimum bend radius
- Available with interior separation
- Prevents unintentional sideways movement
- Simple maintenance and inspection of the cables inside
- Protection against dust and water ingress
- Suitable for cleanrooms according to **IPA ISO class 1**

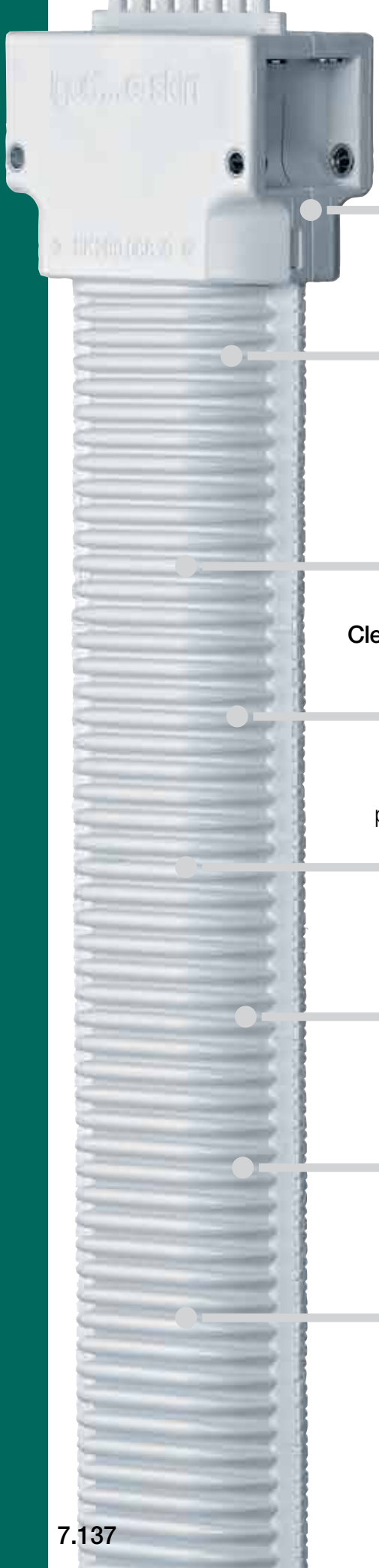


When to use another e-chain® series:

- For longer unsupported lengths
  - ▶ **E3**
  - ▶ **E6.1**

  For higher speeds
  - ▶ **E3,**
  - ▶ **E6.1**

  For high exposure to dirt
  - ▶ **RX e-tubes**



Attachment from any side: KMA mounting brackets with strain relief

Two-piece corrugated tube: upper and lower shell

Reclosable opening mechanism option: easy filling with "zipper" function

Cleanroom ISO Class 1: virtually no wear or abrasion

Fully enclosed: protection against dust and water ingress

Space-saving: less installation space required

Cable-friendly: with defined minimum bend radius

Strong: prevents unintentional sideways movement

Novel energy supply system for cleanrooms - e-skin®

e-skin® is a hose consisting of an upper and lower shell that form a complete enclosure when connected together. The simple and reclosable opening mechanism enables easy maintenance and inspection of the cables inside. e-skin® has many advantages over conventional corrugated tubes.

- Special design allows unsupported lengths
- Openable, quick assembly
- Available with interior separation
- Less installation space required
- Protection against dust and water ingress

Typical industries and applications

● Cleanroom ● Pick & Place ● Printers ● Any machine that uses corrugated hoses



Easy filling, can be opened and closed like a zipper

IPA Qualification Certificate2) - Report IG 1504-755:
e-skin® ***RBR*** (prototype) tested at
v = 1.64 ft/s (0.5m/s), 3.28 ft/s (1m/s), 6.56 ft/s (2m/s) and
a = 3.28 ft/s² (1m/s²), 6.56 ft/s² (2m/s²), 13.12 ft/s² (4m/s²)

e-skin® - Selection table

Series	Inner height *hi*	Inner width *Bi*	Outer width *Ba*	Outer height *ha*	Bend radius *R min*[1)]
	in. (min)	in. (min)	in. (min)	in. (min)	in. (min)
					
SK28	1.10 (28)	2.68 (68)	3.74 (95)	1.57 (40)	2.17 (055)
SK40	1.50 (38)	3.35 (85)	4.65 (118)	2.24 (57)	3.94 (100)

e-skin® -
oval design
Can be opened and closed like a zipper

[1)] Note: The minimum bend radius is determined by the bottom of the e-skin® tube!

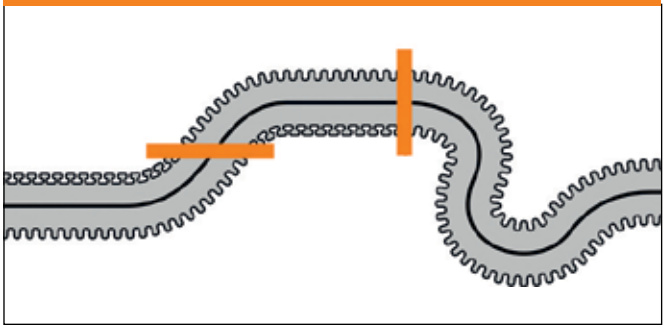
Available from stock. Orders ship as early as today.*
*On average 90% of orders ship the same day..



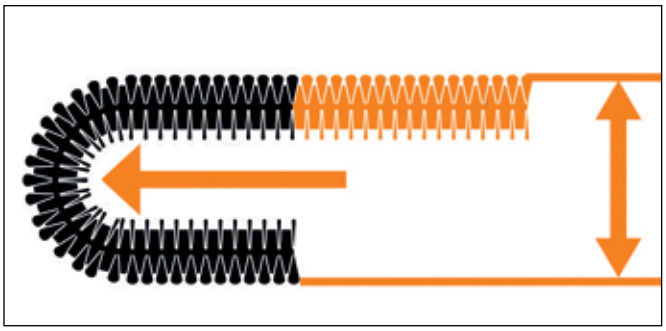
With the e-skin®, igus® offers a modular corrugated tube with a self-supporting function for energy supply in the smallest possible space. The product is certified in accordance with IPA ISO Class 1 and can be used in cleanrooms. e-skin® provides systems with data, media and energy without generating airborne particles through friction which could contaminate the room.
The corrugated tube is made up of abrasion-resistant plastic and its separable upper and lower shells can be easily put together by a "zipper" to a fully enclosed tube. This simultaneously guarantees cleanroom suitability as well as offering quick filling with cables.

e-chain system® e-skin® - Comparison
e-skin® vs. conventional corrugated tubes

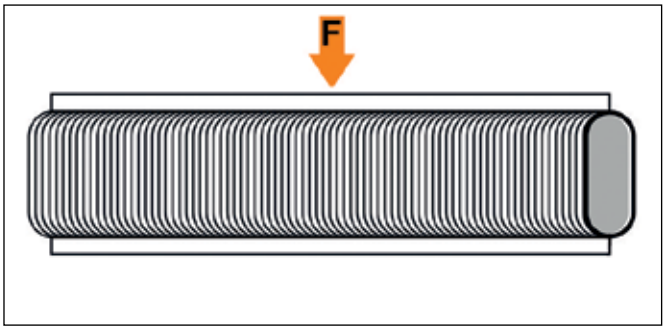
igus® e-skin®



e-skin® consists of two shells (upper and lower). The shells can be configured in order to define movement

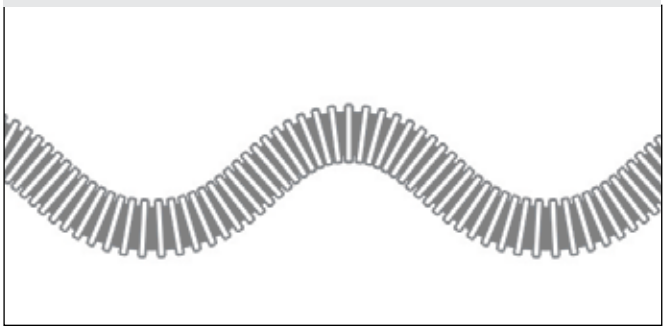


e-skin® is suitable for short unsupported lengths

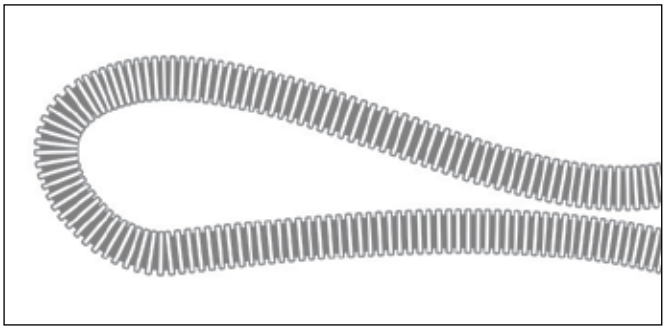


Lateral stability thanks to an oval geometry of the e-skin®

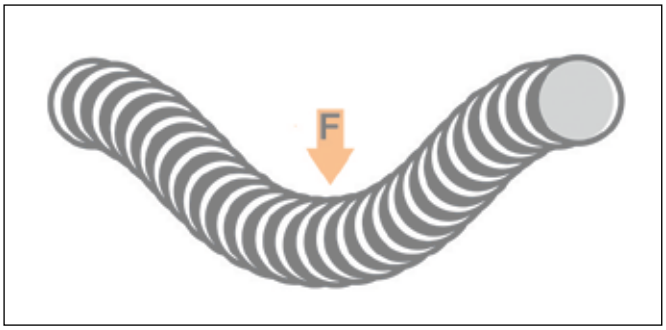
Conventional corrugated tubes



Corrugated tubes have the same bend radius along their entire length

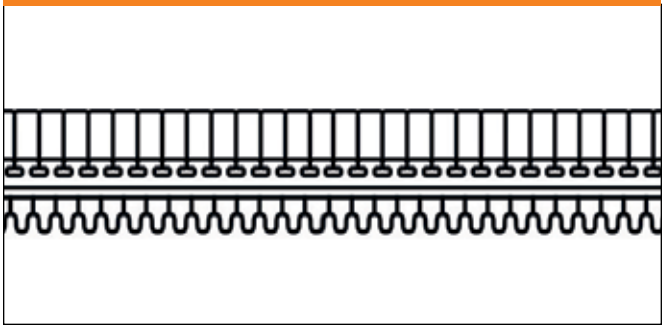
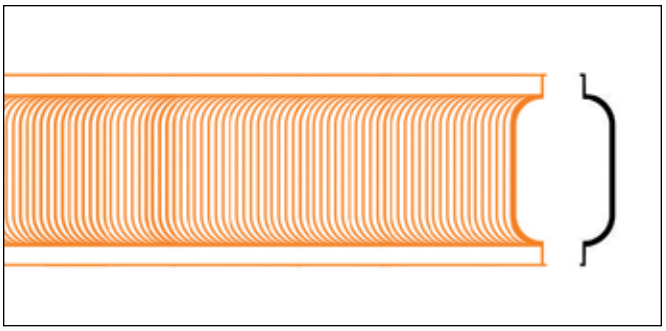
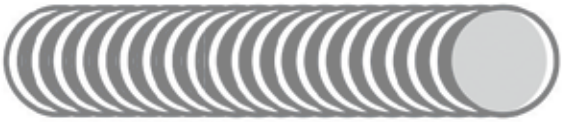
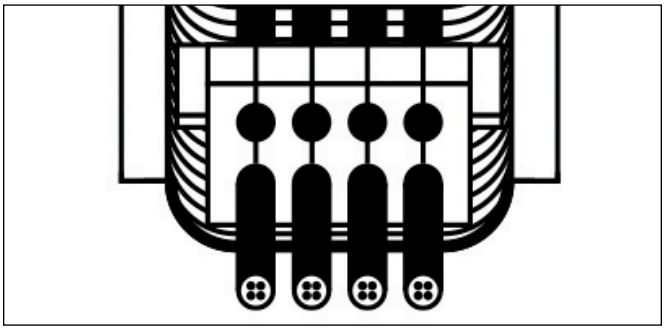
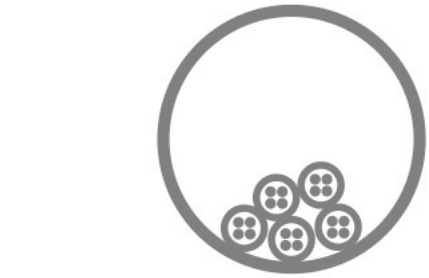


Corrugated tubes cannot be used for unsupported applications



Very little, if any stability in respect of forces acting on the sides

e-chain system® e-skin® - Comparison
e-skin® vs. conventional corrugated tubes

igus® e-skin®	Conventional corrugated tubes
	
e-skin® supports itself	Corrugated tubes have very little any inherent rigidity. e-rib solves this ➤ **Chapter 2**
	
e-skin® is openable, easy to fill	Corrugated tubes (for dynamic applications) cannot be opened
	
e-skin® can be fitted with interior separation	The interior of corrugated tubes cannot be divided into sections

e-chain system® e-skin®
Series SK28

Price Index

Series SK28

Special Options Available

Clean-Room — Especially suitable for cleanroom environments

Assembly Tips



Option: Easy filling, can be opened and closed like a zipper

Other Installation Methods

- Vertical, hanging - upon request
- Vertical, standing - upon request
- Side-mounted, unsupp. - upon request

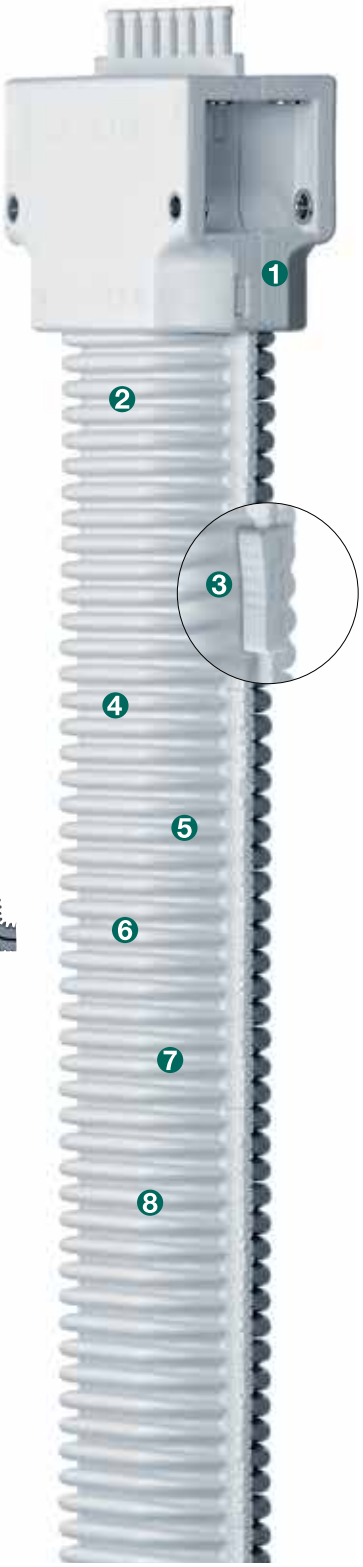
Usage Guidelines

- When easy filling is required
- When less installation space required
- When protection against dust and water egress is necessary
- When cleanroon ISO Class 1 is required

- For longer unsupported lengths
  - ➤ **Series E3**
  - ➤ **Series E6.1**
- For higher speeds
  - ➤ **Series E3**
  - ➤ **Series E6.1**
- For high exposure to dirt
  - ➤ **Series RX tubes**

Features & Benefits

1. Attachment from any side: KMA mounting brackets with strain relief
2. Two-piece corrugated tube: upper and lower shell
3. Reclosable opening mechanism option: easy filling with zipper function
4. Cleanroom ISO Class 1: virtually no wear or abrasion
5. Fully enclosed: protection against dust and water egress
6. Space saving: less installation space required
7. Cable friendly: with defined minimum bend radius
8. Strong: prevents unintentional sideways movement
9. Also available with Reverse Bend Radius “RBR”



Order Example: Complete e-chain®

Please indicate chain length or number of links. Example:

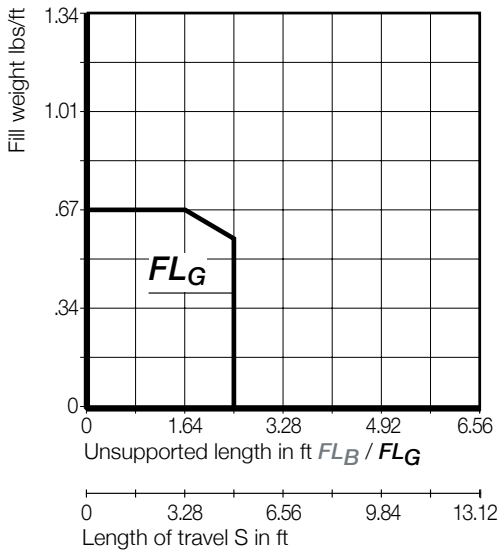
3.28 ft (1000 mm) **SK28.068.02.1** (specify in mm)	**e-chain®**
SK28.1.1.01 fitted every 112 mm	**Interior Separation**
1 Set KMA with tiewrap plates **SK280.068.12.1**	**Mounting Bracket**

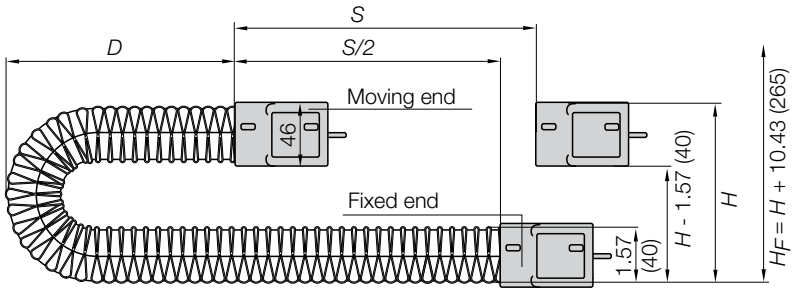
e-chain system® e-skin®
Series SK28
Installation Dimensions

Short travel, unsupported length

● FL_G = unsupported with straight upper run

Further information ➤ Design, Chapter 1





Chain length = $L_K = {}^{S}/_{2} + K$

The required clearance height: ***H_F* = *H* + 10.43 in. (265 mm)** (with .50 lbs/ft (0.75 kg/m) fill weight.
Please consult igus® if space is particularly restricted.

*R min**	2.16 (055)
H	9.84 (250)
D	6.30 (160)
K	15.71 (399)

***NOTE: The minimum bend radius is determined by the bottom of the e-skin® tube!**
No bend radius is specified in the part number since it depends on travel and fill weight. The smallest specified radius below is the minimum to guarantee the service life of the cables. In most applications, however, the radius remains larger because the shape of the tube defines this.

Short Travels - Unsupported

Unsupported e-chains® feature positive camber over short travels. This must be accounted for when specifying the clearance height. Please refer to **Installation dimensions** for further details.

Legend

S = Length of travel
R = Bending radius
H = Nominal clearance height
D = Overlength e-chain® radius in final position
K = π • *R* + *safety buffer*
H_F = Required clearance height

Speed / acceleration FL_G	max. 32.8 ft/s (10 m/s) / max. 246 ft/s² (75 m/s²)
Speed / acceleration FL_B	upon request
Material, e-chain® - permitted temperature	igumid SK / +50°F (+10°C) up to +122°F (+50° C)
Material, mounting bracket - permitted temperature	igumid NB / +50°F (+10°C) up to +122°F (+50° C)
Flammability Class, igumid G	UL94 HB

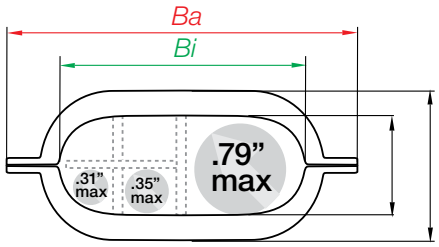
Technical Data

Details of material properties
➤ Chapter 1

PDF: igus.com/e-chain-pdfs
Product information: igus.com/e-chains

e-chain system® e-skin®
Series SK28
Product Range - Interior Separation

Series SK28 - Oval design - Can be opened and closed like a zipper





Part Number Structure

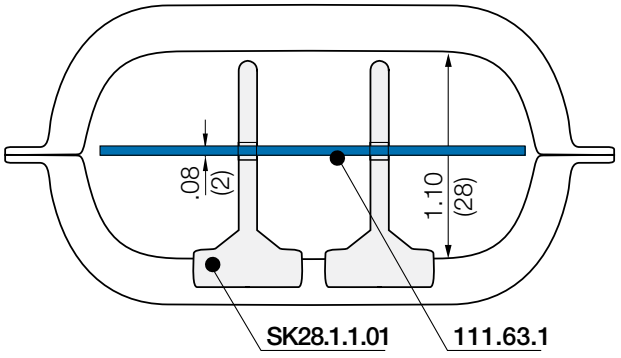
SK 28. 068. 02. 1

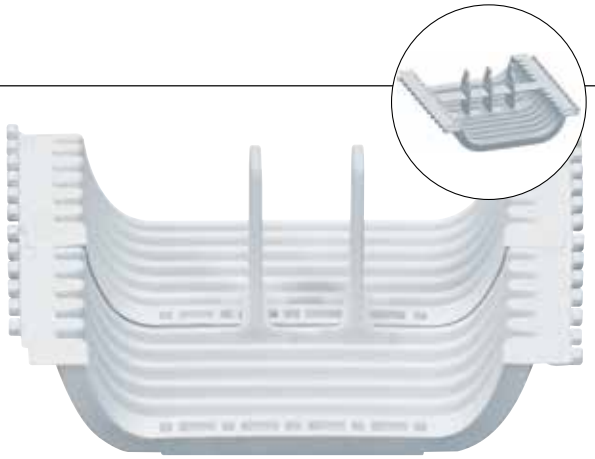
- Color - White
- Version
- Width index
- Inner height
- Series

Part No.	Bi	Ba	hi	ha	R bend radii	SK28
e-chain®	in. (mm)	in. (mm)	in. (mm)	in. (mm)	(mm)	lbs/ft (kg/m)
SK28.068.02.1	2.68 (68)	3.74 (95)	1.10 (28)	1.57 (40)	2.16 (055)	≈ 0.362 (0.54)

*Note: The minimum bend radius is determined by the bottom of the e-skin® tube!

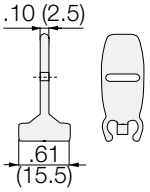
Series SK28 - Interior Separation





e-skin separators should be fitted every 112mm onto the connection points!





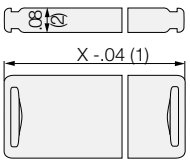
Separator, narrow head

Unassembled	**Part No. SK28.1.01**
Assembled	**Part No. SK28.1.1.01**

- **Vertical separator**
  The interior separation system for the igus® e-skin® consists of individual separators and full-width shelves, which can be fitted in a variety of ways.

Full-width shelves - for the standard interior separation

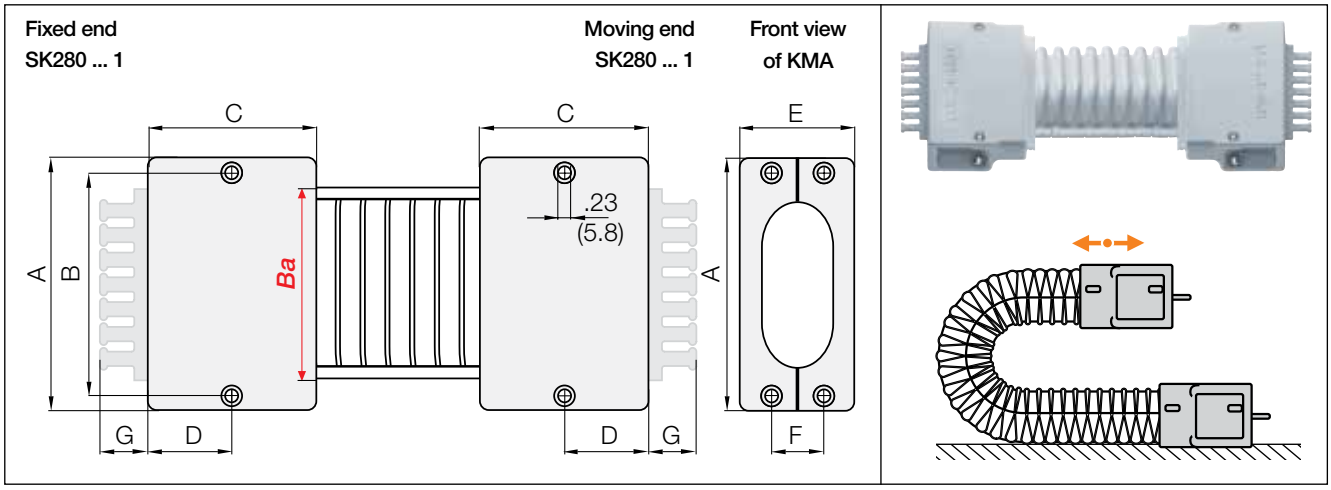




Full width shelf

Unassembled	**Part No. 110.63.1**
Assembled	**Part No. 111.63.1**

- **Full width shelf**
  is used in applications with many small cables with similar diameters.



KMA | Recommended for unsupported, vertical hanging, standing applications

Width index		Part No. full set **without tiewrap plates**	Part No. full set **with tiewrap plates**	A in. (mm)	B in. (mm)	C in. (mm)	D in. (mm)	E in. (mm)	F in. (mm)	G in. (mm)	Number of teeth
068.	▶	SK280.068.12.1	SK280.068.12ZB.1	4.09 (104)	3.62 (92)	2.68 (68)	1.38 (35)	1.81 (46)	.83 (21)	.71(18)	7

(KMA = polymer metal mounting bracket)



Absolutely dust-free environment for printed-circuit-board production using the abrasion-resistant e-skin® from igus®

PDF: igus.com/e-chain-pdfs
Product information: igus.com/e-chains

e-chain system® e-skin®
Series SK40

1.50

Price Index

Series SK40

Special Options Available

Clean-Room — Especially suitable for cleanroom environments

Assembly Tips



Option: Easy filling, can be opened and closed like a zipper

Other Installation Methods

- Vertical, hanging - upon request
- Vertical, standing - upon request
- Side-mounted, unsupp. - upon request

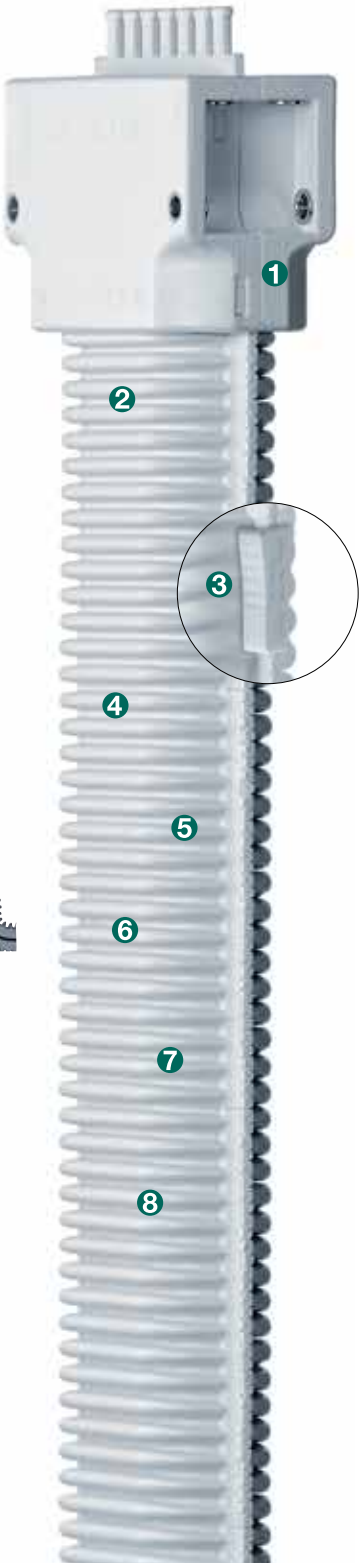
Usage Guidelines

- When easy filling is required
- When less installation space required
- When protection against dust and water egress is necessary
- When cleanroon ISO Class 1 is required

- For longer unsupported lengths
  - ➤ **Series E3**
  - ➤ **Series E6.1**
- For higher speeds
  - ➤ **Series E3**
  - ➤ **Series E6.1**
- For high exposure to dirt
  - ➤ **Series RX tubes**

Features & Benefits

1. Attachment from any side: KMA mounting brackets with strain relief
2. Two-piece corrugated tube: upper and lower shell
3. Reclosable opening mechanism option: easy filling with zipper function
4. Cleanroom ISO Class 1: virtually no wear or abrasion
5. Fully enclosed: protection against dust and water egress
6. Space saving: less installation space required
7. Cable friendly: with defined minimum bend radius
8. Strong: prevents unintentional sideways movement
9. Also available with Reverse Bend Radius “RBR”



Order Example: Complete e-chain®

Please indicate chain length or number of links. Example:

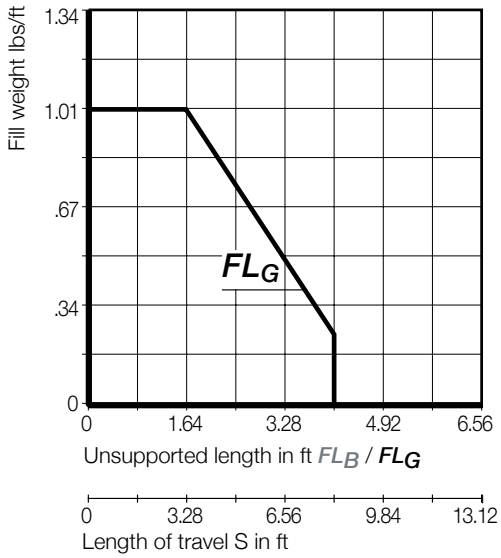
3.28 ft (1000 mm) **SK40.085.02.1** (specify in mm)	**e-chain®**
SK40.1.1.01 fitted every 112 mm	**Interior Separation**
1 Set KMA with tiewrap plates **SK400.085.12.1**	**Mounting Bracket**

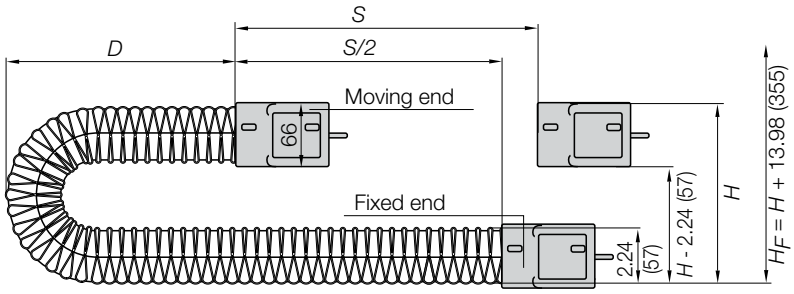
e-chain system® e-skin®
Series SK40
Installation Dimensions

Short travel, unsupported length

● FL_G = unsupported with straight upper run

Further information ➤ Design, Chapter 1





Chain length = $L_K = {}^{S}/_{2} + K$

The required clearance height: ***H_F = H* + 13.98 in. (355 mm)** (with .50 lbs/ft (0.75 kg/m) fill weight.
Please consult igus® if space is particularly restricted.

*R min**	3.94 (100)
H	13.78 (350)
D	11.81 (300)
K	27.28 (693)

***NOTE: The minimum bend radius is determined by the bottom of the e-skin® tube!**
No bend radius is specified in the part number since it depends on travel and fill weight. The smallest specified radius below is the minimum to guarantee the service life of the cables. In most applications, however, the radius remains larger because the shape of the tube defines this.

Short Travels - Unsupported

Unsupported e-chains® feature positive camber over short travels. This must be accounted for when specifying the clearance height. Please refer to **Installation dimensions** for further details.

Legend

S = Length of travel
R = Bending radius
H = Nominal clearance height
D = Overlength e-chain® radius in final position
K = π • *R* + *safety buffer*
H_F = Required clearance height

Speed / acceleration FL_G	max. 32.8 ft/s (10 m/s) / max. 246 ft/s² (75 m/s²)
Speed / acceleration FL_B	upon request
Material, e-chain® - permitted temperature	igumid SK / +50°F (+10°C) up to +122°F (+50° C)
Material, mounting bracket - permitted temperature	igumid NB / +50°F (+10°C) up to +122°F (+50° C)
Flammability Class, igumid G	UL94 HB

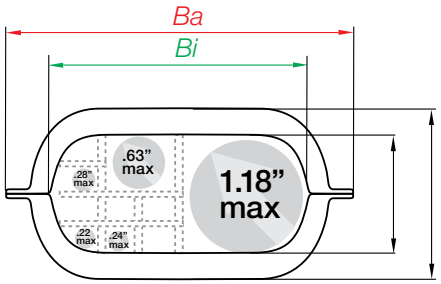
Technical Data

Details of material properties
➤ Chapter 1

PDF: igus.com/e-chain-pdfs
Product information: igus.com/e-chains

e-chain system® e-skin®
Series SK40
Product Range - Interior Separation

Series SK40 - Oval design - Can be opened and closed like a zipper





Part Number Structure

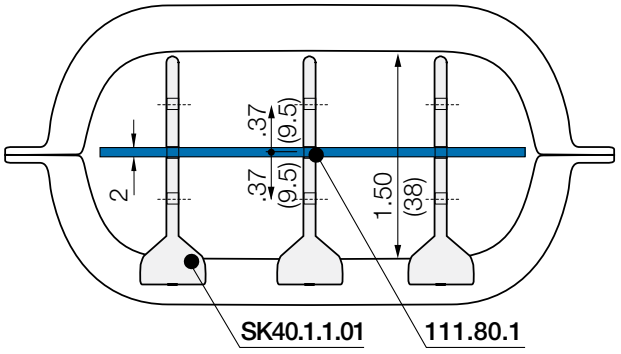
SK 40. 085. 02. 1

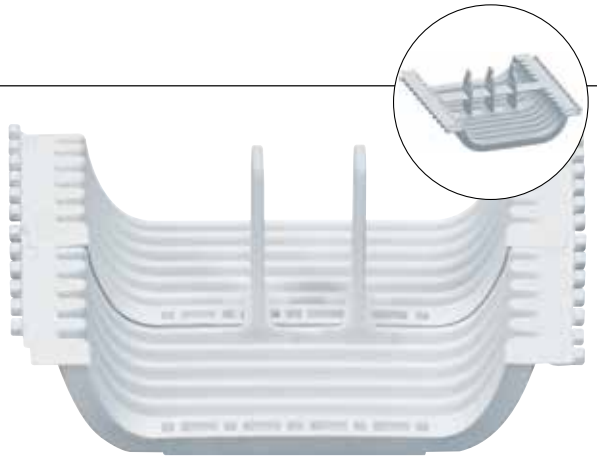
- Color - White
- Version
- Width index
- Inner height
- Series

Part No.	Bi	Ba	hi	ha	R bend radii	SK40
e-chain®	in. (mm)	in. (mm)	in. (mm)	in. (mm)	(mm)	lbs/ft (kg/m)
SK40.085.02.1	3.35 (85)	4.65 (118)	1.50 (38)	2.24 (57)	3.94 (100)	≈ 0.773 (1.15)

*Note: The minimum bend radius is determined by the bottom of the e-skin® tube!

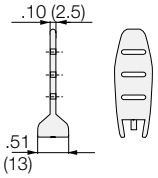
Series SK40 - Interior Separation





e-skin separators should be fitted every 112mm onto the connection points!





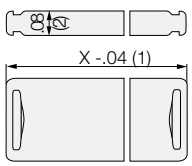
Separator, narrow head

Unassembled	Part No. SK40.1.01
Assembled	Part No. SK40.1.1.01

- **Vertical separator**
  The interior separation system for the igus® e-skin® consists of individual separators and full-width shelves, which can be fitted in a variety of ways.

Full-width shelves - for the standard interior separation



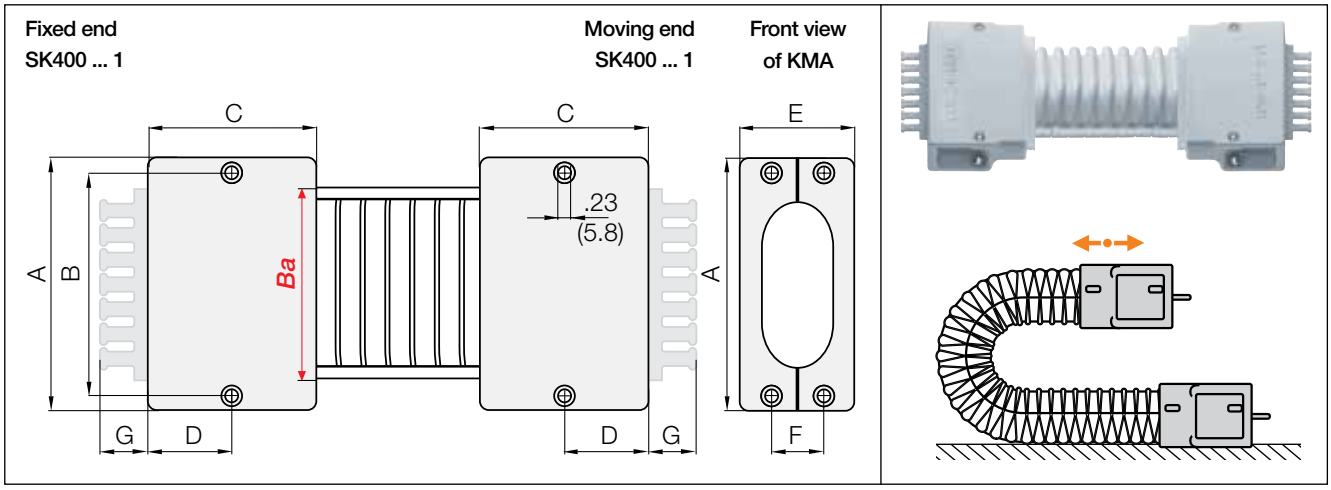


Full width shelf

Unassembled	Part No. 110.80.1
Assembled	Part No. 111.80.1

- **Full width shelf**
  is used in applications with many small cables with similar diameters.

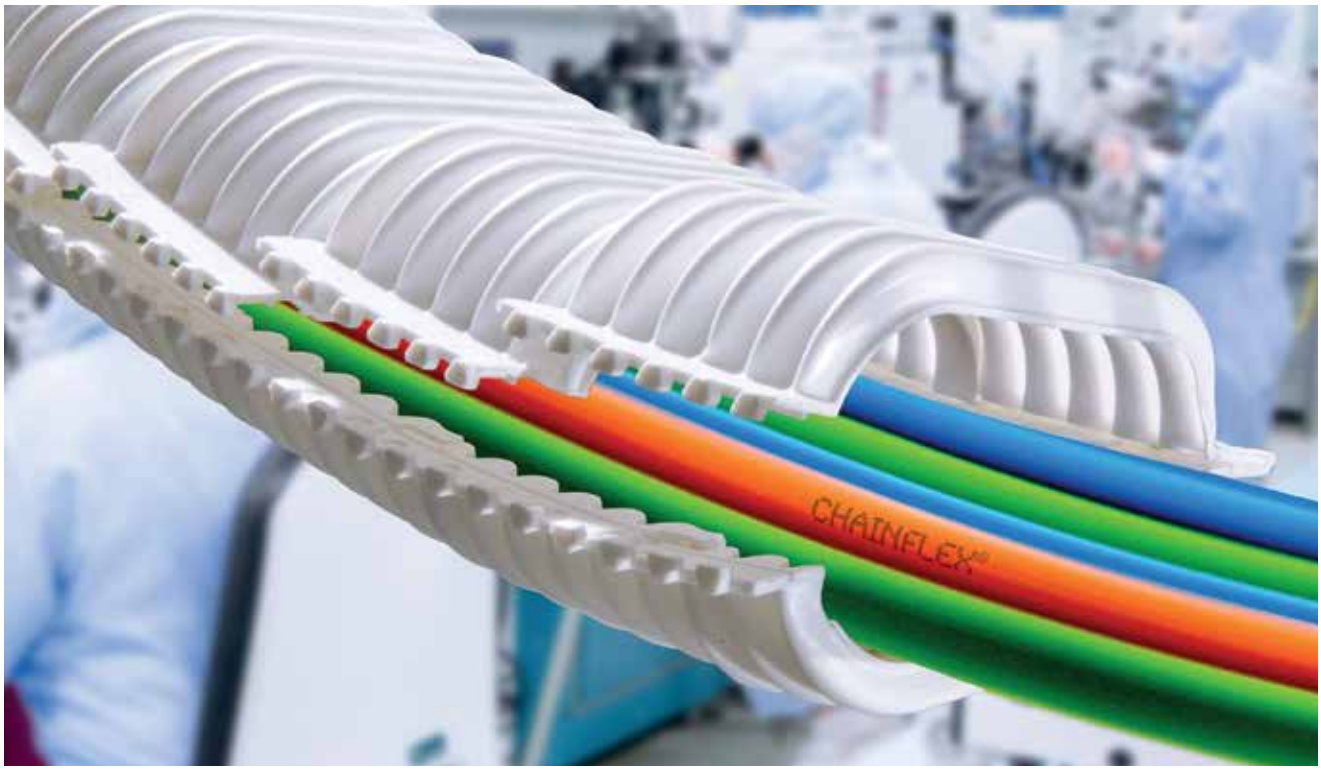
e-chain system® e-skin®
Series SK40
Mounting Brackets



KMA | Recommended for unsupported, vertical hanging, standing applications

Width index	Part No. full set **with tiewrap plates**	Part No. full set **without tiewrap plates**	A in. (mm)	B in. (mm)	C in. (mm)	D in. (mm)	E in. (mm)	F in. (mm)	G in. (mm)	Number of teeth
085.	SK400.085.12.1	SK400.085.12ZB.1	4.92 (125)	4.45 (113)	2.68 (68)	1.38 (35)	2.60 (66)	1.61 (41)	.71 (18)	10

(KMA = polymer metal mounting bracket)



The igus® e-skin® e-chain® can be used for short unsupported lengths in cleanrooms

PDF: igus.com/e-chain-pdfs
Product information: igus.com/e-chains



TH3

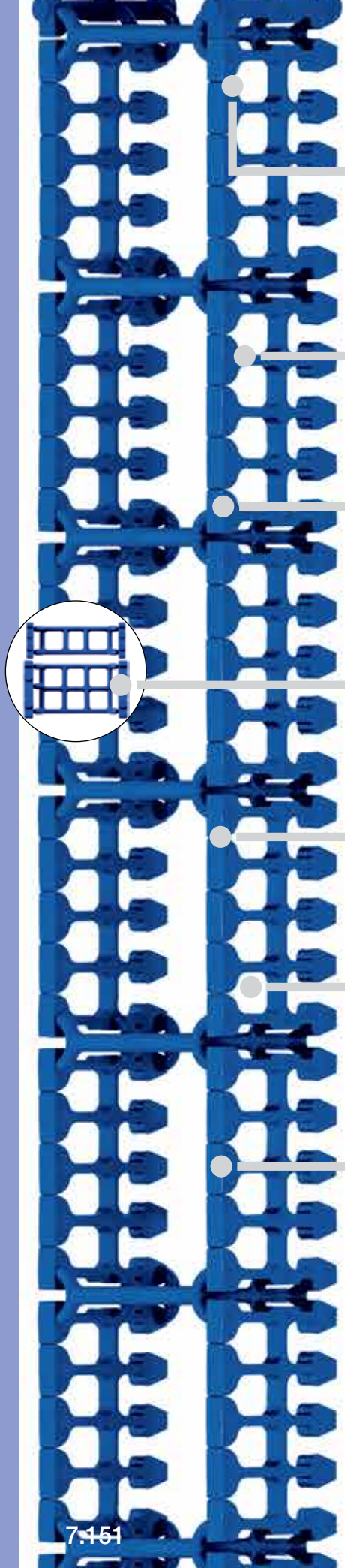
The first e-chain® designed according to hygienic principles

Advantages of the TH3 system:

- The first e-chain® designed according to hygienic principles
- Easy to clean due to open design
- FDA- and EU-compliant materials - blue material, typical for plastic parts in the food industry (consists of igumid TH NB for the side parts and igumid TH G for the frames and mounting brackets)
- Good resistance to aggressive cleaning agents and chemicals
- Rounded edges mean that there are no dead spaces or resulting germ formation
- No material on material rubbing
- No bolted connections
- Operating temperature -40°F / +158°F
- reddot award winner 2017

When to use another igus® e-chain® series:

- When hygienic design does not matter but cleanroom capability is required
  ► **T3**
- When Cleanroom ISO Class 1 is required
  ►**E6.1**



The first e-chain® designed according to hygienic principles - TH3

The igus® TH3 e-chain® is the world's first plastic e-chain® developed according to "Hygienic Design Guidelines". The open design of the e-chain® is very easy to clean and, thanks to rounded corners and the absence of bolted connections, dead spaces and the resulting germ formation are avoided. The blue material, which is typical of plastic parts in the food industry, is also highly resistant to aggressive cleaning agents and chemicals. The e-chain® is suitable for applications with the highest hygienic requirements for safe cable and hose guidance.

- Choice of 2 inner heights and 4 inner widths
- Interior separation segments separate the cables and hoses from each other to provide enough clearance for easy cleaning
- For plastic parts in the food industry, the blue material is FDA-compliant
- reddot award winner 2017

Typical industries and applications

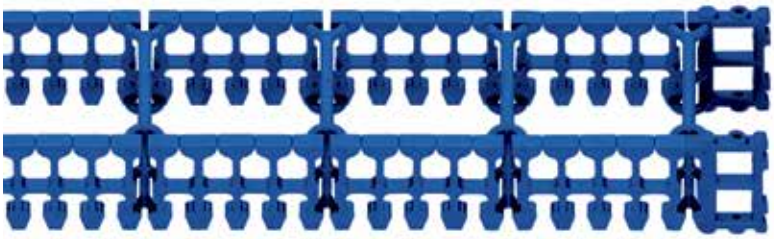
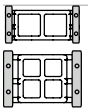
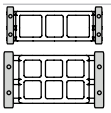
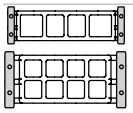
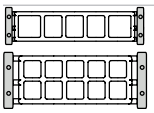
● Packaging machines ● Food and beverage/ filling machines ● Wherever hygiene requirements are very high and cables and hoses have to be guided safely and securely

reddot award 2017
winner

FDA

The material of the igus® hygienic design e-chain® is FDA and EU regulation-compliant

TH3 - Selection table

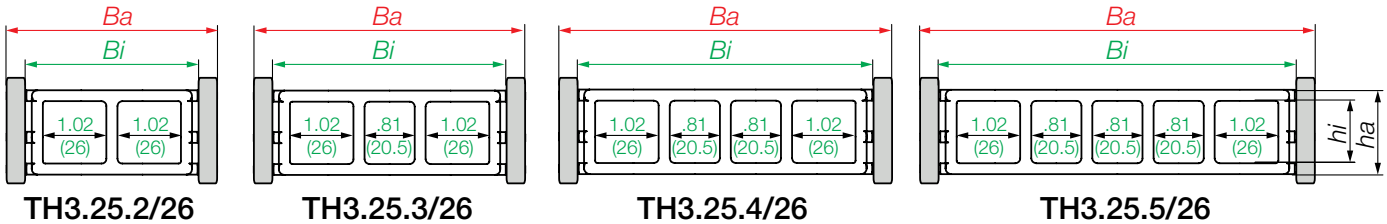
Segment design	Series	Inner height *hi* in. (mm)	Inner width *Bi* in. (mm)	Outer width *Ba* in. (mm)	Outer height *ha* in. (mm)	Bend radius *R* in. (mm)	Unsupported length ≤ ft (m)
							
		System TH3 - hygienic design e-chain® 3-piece, hygienic design consisting of two side parts and an interior separation segment					
2-segment 	**TH3.25.2/26**	1.00 (25.5)	2.76 (70)	3.39 (86)	1.38 (35)	**2.76 (070)**	3.94 (1.2)
	TH3.45.2/20	2 x .79 (20)	2.76 (70)	3.54 (90)	2.24 (57)	**3.54 (090)**	4.59 (1.4)
3-segment 	**TH3.25.3/26**	1.00 (25.5)	3.74 (95)	4.37 (111)	1.38 (35)	**2.76 (070)**	3.94 (1.2)
	TH3.45.3/20	2 x .79 (20)	3.74 (95)	4.53 (115)	2.24 (57)	**3.54 (090)**	4.59 (1.4)
4-segment 	TH3.25.4/26*	1.00 (25.5)	4.72 (120)	5.35 (136)	1.38 (35)	**2.76 (070)**	3.94 (1.2)
	TH3.45.4/20*	2 x .79 (20)	4.72 (120)	5.51 (140)	2.24 (57)	**3.54 (090)**	4.59 (1.4)
5-segment 	TH3.25.5/26*	1.00 (25.5)	5.71 (145)	6.34 (161)	35 1.38 (35)	**2.76 (070)**	3.94 (1.2)
	TH3.45.5/20	2 x .79 (20)	5.71 (145)	6.50 (165)	2.24 (57)	**3.54 (090)**	4.59 (1.4)

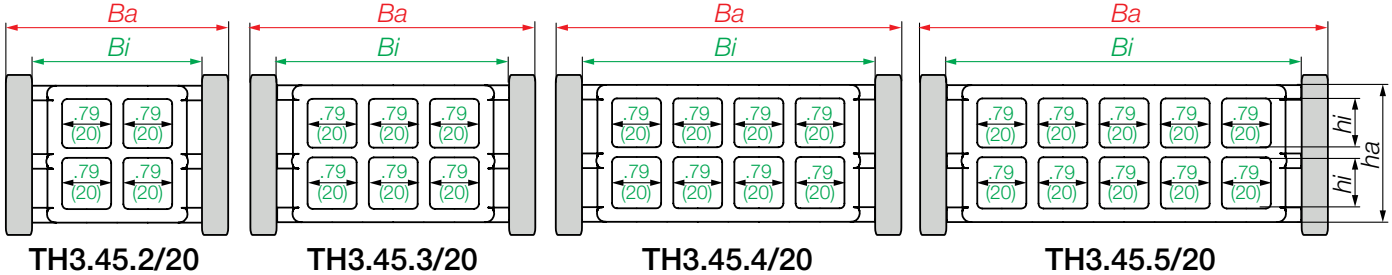
*Width available upon request. Please consult igus® for delivery time.

Available from stock. Ready to ship in 24 - 48 hrs.*

*The delivery times indicated correspond to the average time until the ordered goods are dispatched.

Size overview - Interior separation segments





e-chain system® TH3
Series TH3.25

1.00

Price Index

Series TH3.25

Special Options Available

Clean-Room — Especially suitable for clean-room environments

EX — ESD classification: Electrically conductive ESD version upon request

Assembly Tips



Side segments of the e-chain® are connected using the interior separation segments

Other Installation Methods

Vertical, hanging ≤ 19.68 ft (6 m)

Vertical, standing ≤ 5.91 ft (1.8 m)

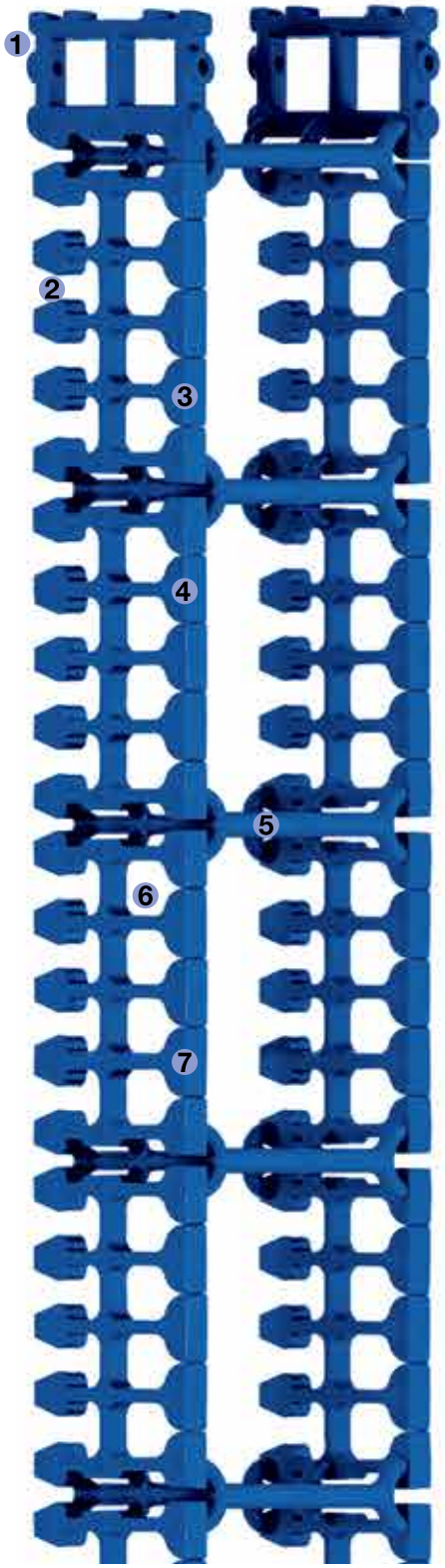
Usage Guidelines

- When an FDA/EU compliant material is required
- If an easy to clean open design is needed
- If good resistance to aggressive cleaning agents and chemicals is required

- When a hygienic design is not required
  ➤ **Series T3**
- When cleanroom ISO Class 1 is required
  ➤ **Series E6.1**

Features & Benefits

1. Attachment from any side: polymer mounting brackets
2. Easy to clean: open design for effective and easy cleaning
3. Hygienic design principle: FDA-compliant materials
4. Cable friendly due to smooth rounded contours
5. 4 different widths for interior separation
6. No dead spaces. Large gaps - no material overlaps
7. Food industry material - resistant to detergents and chemicals



Order Example: Complete e-chain®

Please indicate chain length or number of links. Example:

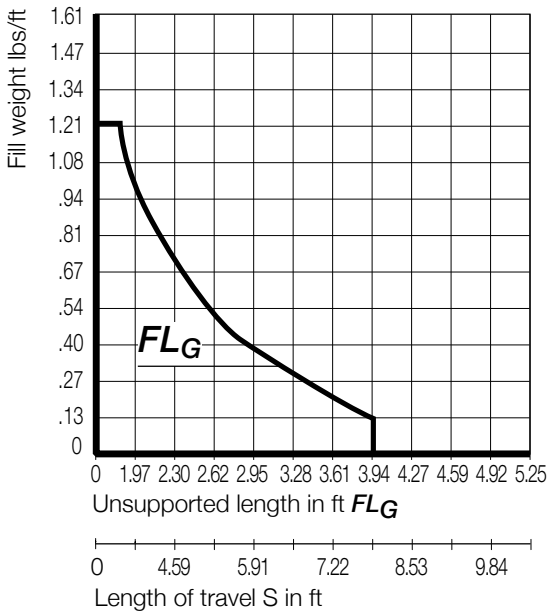
3.28 ft (1 m) **TH3.25.3/26.070.8**	**e-chain®**
The interior separation segments connect the side parts of the e-chain® and are included in the part number of the e-chain®	**Interior Separation**
1 Set **TH3.250.3/26.12.8**	**Mounting Bracket**

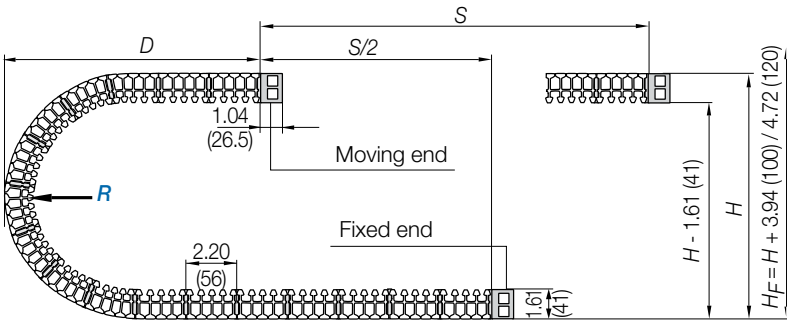
e-chain system® TH3
Series TH3.25
Installation Dimensions

Short travel, unsupported length

- **FL_G = unsupported with straight upper run**

Further information ➤ Design, Chapter 1





Pitch per link: = 2.20" (56 mm)
Links per ft (m): = 5.45 (18)
For center mount applications:
Chain length = $\frac{S}{2}$ + K

The required clearance height: ***H_F* = *H* + 3.94 in. (100 mm) and accordingly H = 4.72 in. (120mm)** (with .27 lbs/ft (0.4 kg/m) fill weight.
Please consult igus® if space is particularly restricted.

R	**2.76 (070)**
H	7.09 (180)
D	4.33 (110)
K	9.45 (240)

Short Travels - Unsupported

Unsupported e-chains® feature positive camber over short travels. This must be accounted for when specifying the clearance height. Please refer to **Installation dimensions** for further details.

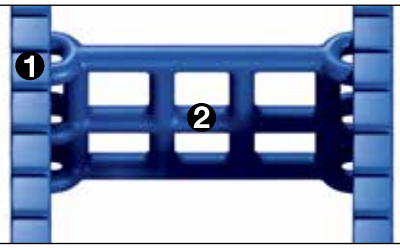
Legend

S = Length of travel
R = Bending radius
H = Nominal clearance height
D = Overlength e-chain® radius in final position
K = π • *R* + *safety buffer*
H_F = Required clearance height
H_{in} = Trough inner height
H_2 = *Mounting height
D_3 = Overlength - long travels, gliding
K_2 = *Add-on

*If the mounting bracket location is set lower

TH3 - 3-piece hygienic design e-chain®

- The TH3 e-chain® consists of 3 parts, the two side parts ❶ and one interior separation segment ❷
- The interior separation segments connect the side parts of the e-chain®
- The segments are available in 4 different widths



Speed / acceleration FL_G	upon request
Gliding speed / acceleration (maximum)	max. 32.8 ft/s (10 m/s) / max. 164 ft/s² (50 m/s²)
Material - side part	igumid TH NB / -40°F (-40°C) up to +158°F (+70° C)
Material - Mounting bracket	igumid TH G / -40°F (-40°C) up to +158°F (+70° C)
Material - interior separation segment	igumid TH G / -40°F (-40°C) up to +158°F (+70° C)
Flammability Class, igumid TH NB	VDE 0304 IIC UL94 HB
Flammability Class, igumid TH G	VDE 0304 IIC UL94 HB

Technical Data

Details of material properties
➤ **Chapter 1**

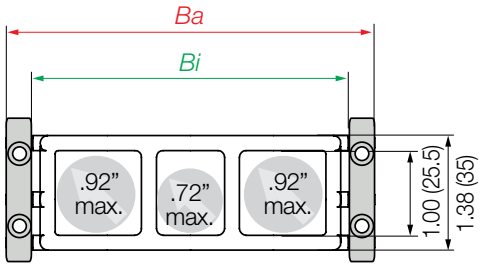
PDF: igus.com/e-chain-pdfs
Product information: igus.com/e-chains

e-chain system® TH3
Series TH3.25
Product Range

Telephone 1-800-521-2747

Internet: igus.com
email: sales@igus.com
QuickSpec: igus.com/quickspec

Series TH3.25 - Three-piece, hygienic design

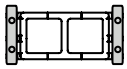
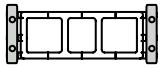
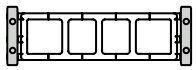
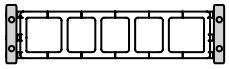




Part Number Structure

TH3. 25. 3/26. 070. 8

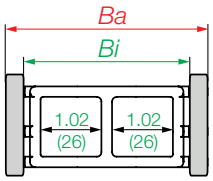
- Color - Blue
- Bending radius
- Interior separation segment
- Inner height
- Series

Segment design	Part No. e-chain®	Chamber width (mm)	*Bi* in. (mm)	*Ba* in. (mm)	*R* bend radii in. (mm)	TH3.25 lbs/ft (kg/m)
2-segment 	TH3.25.2/26.*R*.8	26/26	2.76 (70)	3.39 (86)	2.76 (070)	≈ 0.302 (0.45)
3-segment 	TH3.25.3/26.*R*.8	26/20.5/26	3.74 (95)	4.37 (111)	2.76 (070)	≈ 0.316 (0.47)
4-segment 	TH3.25.4/26.*R*.8*	26/20.5/20.5/26	4.72 (120)	5.35 (136)	2.76 (070)	≈ 0.336 (0.50)
5-segment 	TH3.25.5/26.*R*.8*	26/20.5/20.5/20.5/26	5.71 (145)	6.34 (161)	2.76 (070)	≈ 0.363 (0.54)

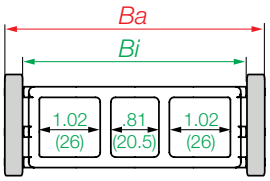
*Width available upon request. Please consult igus® for delivery time.

Complete Part No. with required radius (*R*). Example: **TH3.25.3/26.070.8**

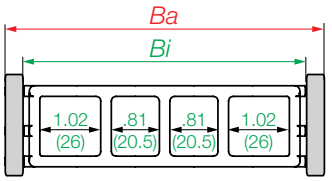
Series TH3.25 - Interior separation segments - Size overview



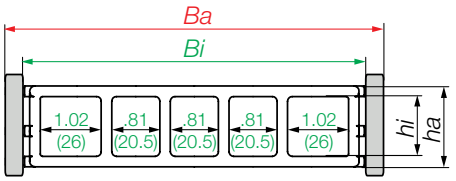
TH3.25.2/26



TH3.25.3/26

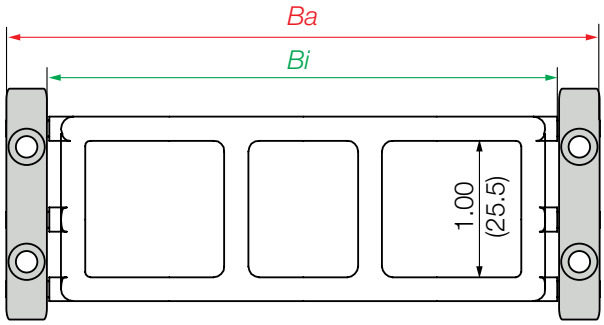


TH3.25.4/26



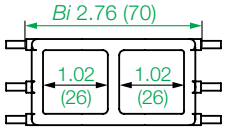
TH3.25.5/26

e-chain system® TH3
Series TH3.25
Interior Separation

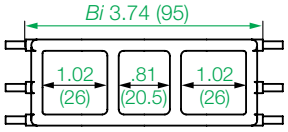




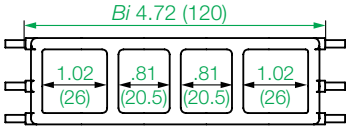
The TH3 interior separation segments are mounted on every 5th link of the e-chain®!
The diagrams show a TH3.25 interior separation segment with 3 chambers and fitted mounting bracket



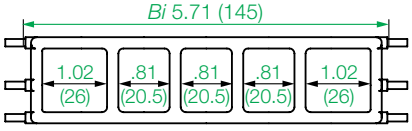
Interior separation segment with 2 chambers



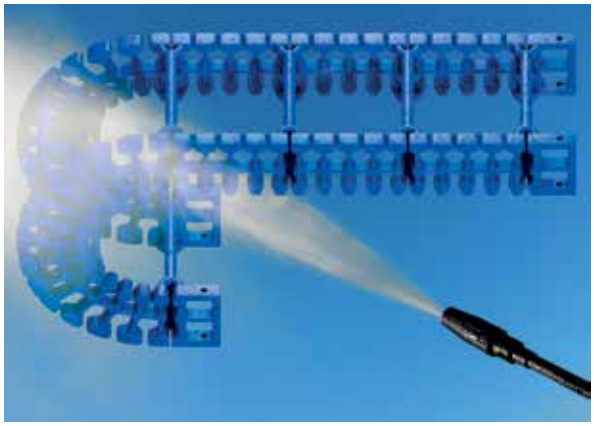
Interior separation segment with 3 chambers



Interior separation segment with 4 chambers



Interior separation segment with 5 chambers

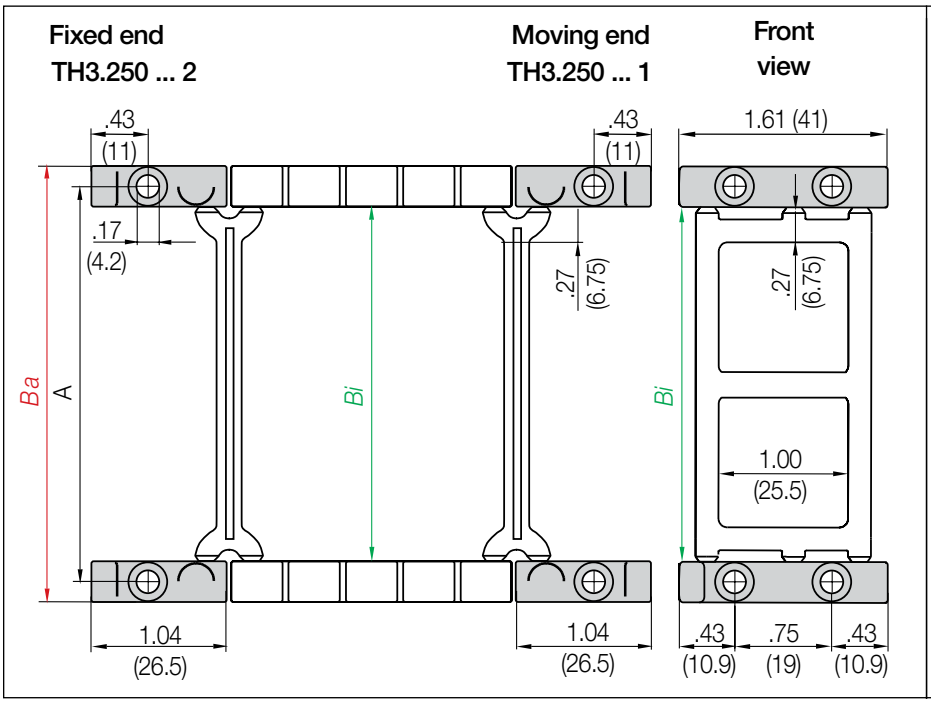


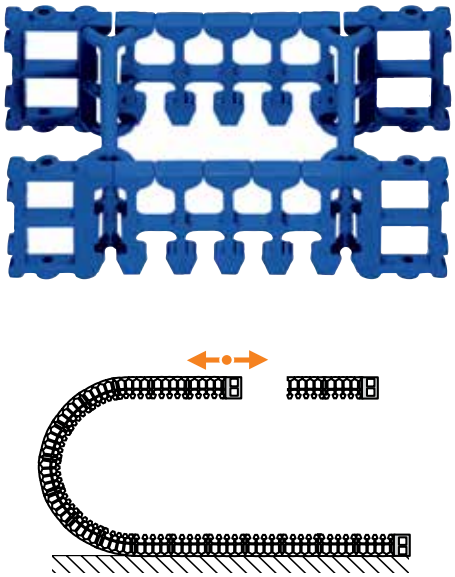
System TH3 - the open design allows effective and easy cleaning

PDF: igus.com/e-chain-pdfs
Product information: igus.com/e-chains

e-chain system® TH3
Series TH3.25
Mounting Bracket - For unsupported applications

FDA-compliant mounting brackets, locking - Attachment from any side

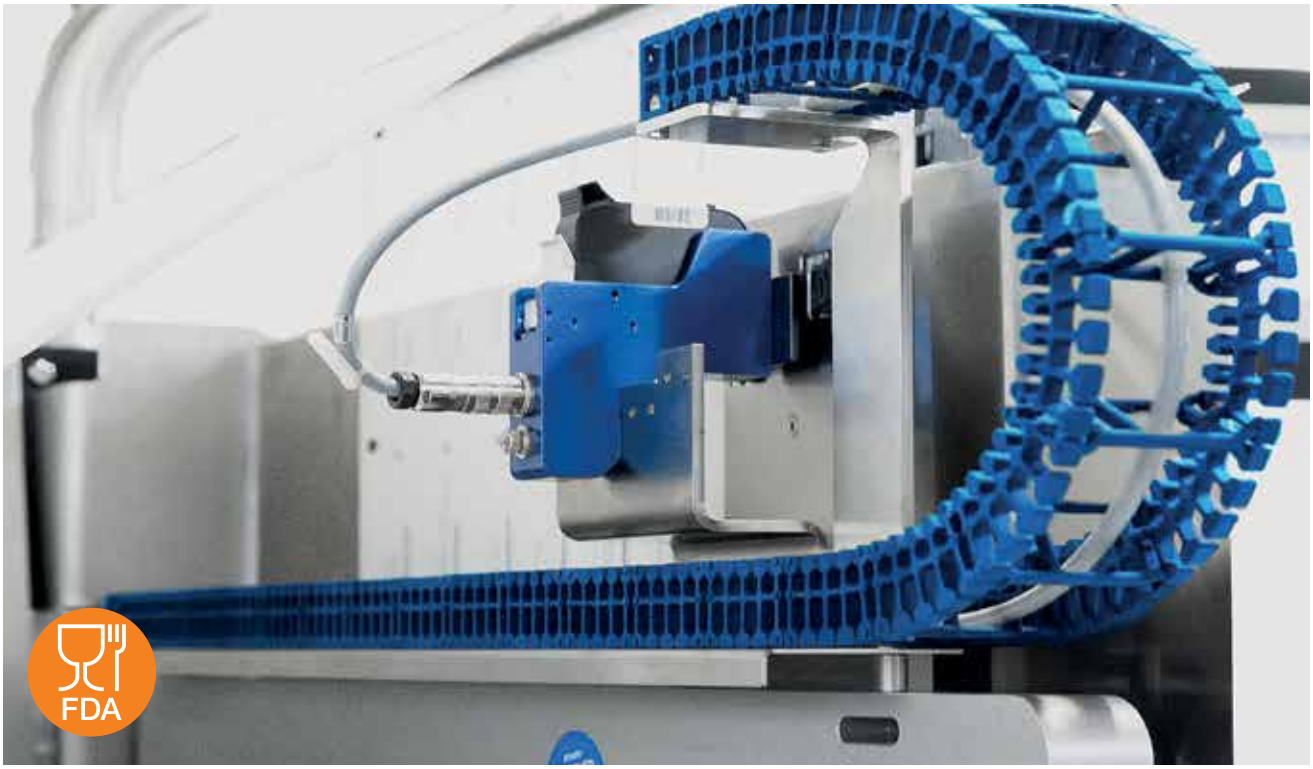




FDA-compliant mounting brackets, locking

Width index		Part No. full set **locking**	A in. (mm)	*Bi* in. (mm)	*Ba* in. (mm)
2/26	▶	**TH3.250.2/26.12.8**	3.05 (77.5)	2.76 (70)	3.39 (86)
3/26	▶	**TH3.250.3/26.12.8**	4.04 (102.5)	3.74 (95)	4.37 (111)
4/26	▶	TH3.250.4/26.12.8*	5.02 (127.5)	4.72 (120)	5.35 (136)
5/26	▶	TH3.250.5/26.12.8*	6.00 (152.5)	5.71 (145)	6.34 (161)

*Width available upon request. Please consult igus® for delivery time.



The TH3 e-chain® is the world's first plastic e-chain® developed according to "Hygienic Design Guidelines" (04/2018)

e-chain system® TH3
Series TH3.45

20
20

Price Index

Series TH3.45

Special Options Available

Clean-Room — Especially suitable for clean-room environments

EX — ESD classification: Electrically conductive ESD version upon request

Assembly Tips



Side segments of the e-chain® are connected using the interior separation segments

Other Installation Methods

Vertical, hanging ≤ 19.68 ft (6 m)

Vertical, standing ≤ 6.56 ft (2 m)

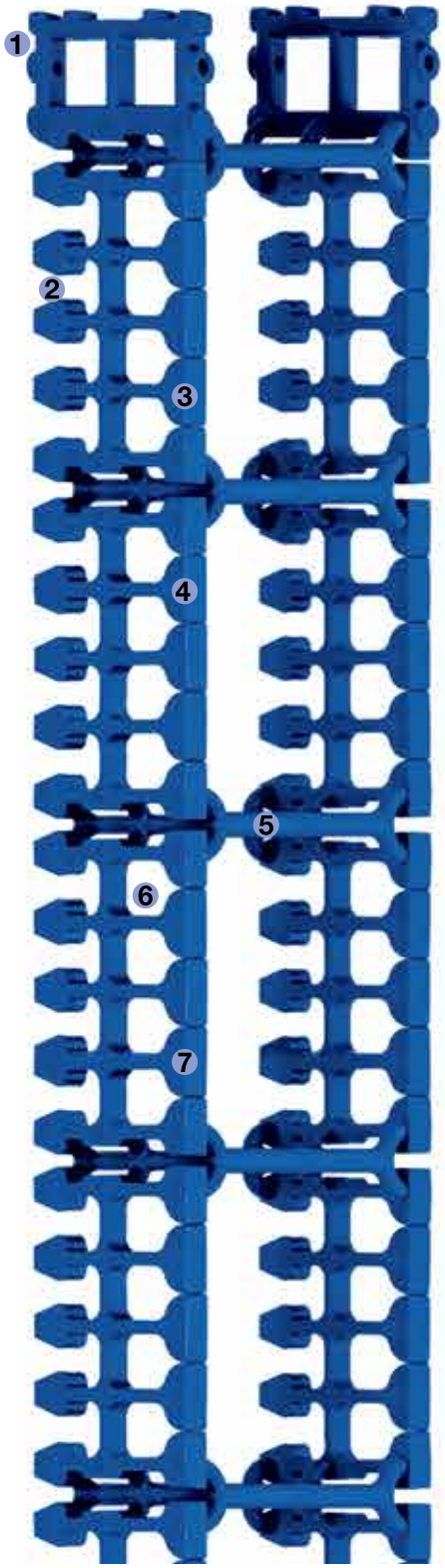
Usage Guidelines

- When an FDA/EU compliant material is required
- If an easy to clean open design is needed
- If good resistance to aggressive cleaning agents and chemicals is required

- When a hygienic design is not required
  ➤ **Series T3**
- When cleanroom ISO Class 1 is required
  ➤ **Series E6.1**

Features & Benefits

1. Attachment from any side: polymer mounting brackets
2. Easy to clean: open design for effective and easy cleaning
3. Hygienic design principle: FDA-compliant materials
4. Cable friendly due to smooth rounded contours
5. 4 different widths for interior separation
6. No dead spaces. Large gaps - no material overlaps
7. Food industry material - resistant to detergents and chemicals



Order Example: Complete e-chain®

Please indicate chain length or number of links. Example:

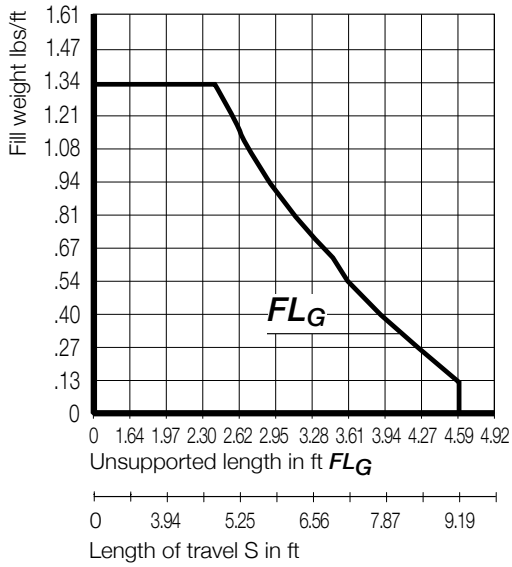
3.28 ft (1 m) **TH3.45.3/20.090.8**	**e-chain®**
The interior separation segments connect the side parts of the e-chain® and are included in the part number of the e-chain®	**Interior Separation**
1 Set **TH3.450.3/20.12.8**	**Mounting Bracket**

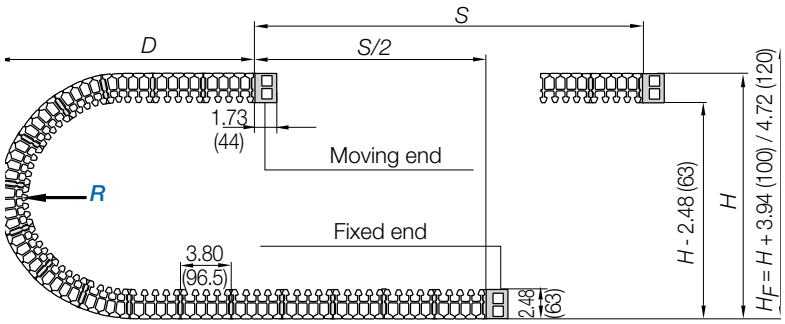
e-chain system® TH3
Series TH3.45
Installation Dimensions

Short travel, unsupported length

- **FL_G = unsupported with straight upper run**

Further information ➤ Design, Chapter 1





Pitch per link: = 3.80" (96.5 mm)
Links per ft (m): = 3.16 (11)
For center mount applications:
Chain length = $_{S}/_{2}$ + K

The required clearance height: ***H_F* = *H* + 3.94 in. (100 mm) and accordingly H = 4.72 in. (120mm)** (with .67 lbs/ft (1.0 kg/m) fill weight. Please consult igus® if space is particularly restricted.

R	**3.54 (090)**
H	9.84 (250)
D	4.72 (120)
K	13.31 (338)

Short Travels - Unsupported

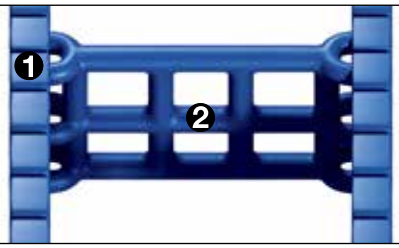
Unsupported e-chains® feature positive camber over short travels. This must be accounted for when specifying the clearance height. Please refer to **Installation dimensions** for further details.

Legend

S = Length of travel
R = Bending radius
H = Nominal clearance height
D = Overlength e-chain® radius in final position
K = π • *R* + *safety buffer*
H_F = Required clearance height

TH3 - 3-piece hygienic design e-chain®

- The TH3 e-chain® consists of 3 parts, the two side parts ❶ and one interior separation segment ❷
- The interior separation segments connect the side parts of the e-chain®
- The segments are available in 4 different widths



Speed / acceleration FL_G	upon request
Gliding speed / acceleration (maximum)	max. 32.8 ft/s (10 m/s) / max. 164 ft/s² (50 m/s²)
Material - side part	igumid TH NB / -40°F (-40°C) up to +158°F (+70° C)
Material - Mounting bracket	igumid TH G / -40°F (-40°C) up to +158°F (+70° C)
Material - interior separation segment	igumid TH G / -40°F (-40°C) up to +158°F (+70° C)
Flammability Class, igumid TH NB	VDE 0304 IIC UL94 HB
Flammability Class, igumid TH G	VDE 0304 IIC UL94 HB

Technical Data

Details of material properties
➤ **Chapter 1**

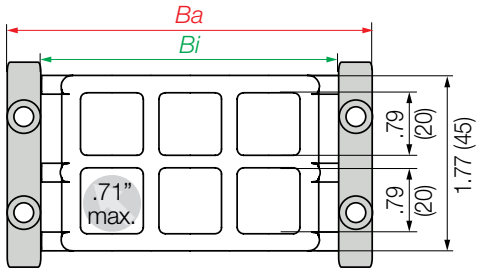
PDF: igus.com/e-chain-pdfs
Product information: igus.com/e-chains

e-chain system® TH3
Series TH3.45
Product Range

Telephone 1-800-521-2747

Internet: igus.com
email: sales@igus.com
QuickSpec: igus.com/quickspec

Series TH3.45 - Three-piece, hygienic design

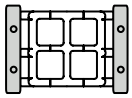
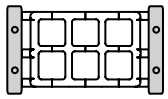
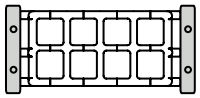
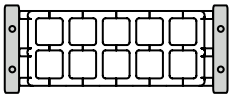




Part Number Structure

TH3. 45. 3/20. 090. 8

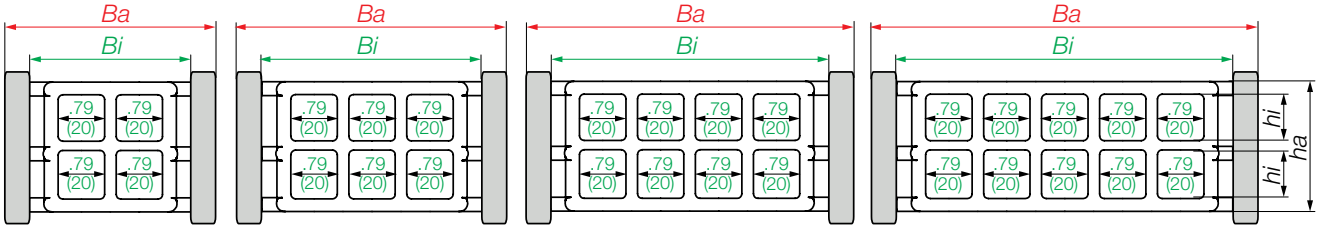
- Color - Blue
- Bending radius
- Interior separation segment
- Inner height
- Series

Segment design	Part No. e-chain®	Chamber width (mm)	Bi in. (mm)	Ba in. (mm)	R bend radii in. (mm)	TH3.45 lbs/ft (kg/m)
2-segment 	TH3.45.2/20.R.8	20/20	2.76 (70)	3.54 (90)	3.54 (090)	≈ 0.551 (0.82)
3-segment 	TH3.45.3/20.R.8	20/20/20	3.74 (95)	4.53 (115)	3.54 (090)	≈ 0.585 (0.87)
4-segment 	TH3.45.4/20.R.8*	20/20/20/20	4.72 (120)	5.51 (140)	3.54 (090)	≈ 0.618 (0.92)
5-segment 	TH3.45.5/20.R.8*	20/20/20/20/20	5.71 (145)	6.50 (165)	3.54 (090)	≈ 0.659 (0.98)

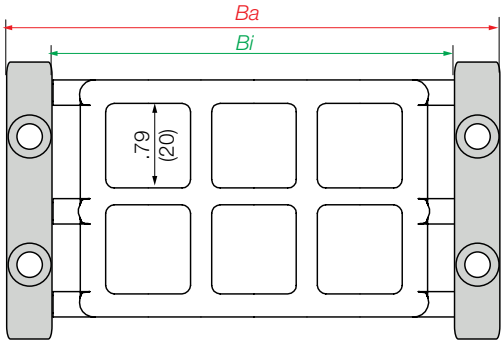
*Width available upon request. Please consult igus® for delivery time.

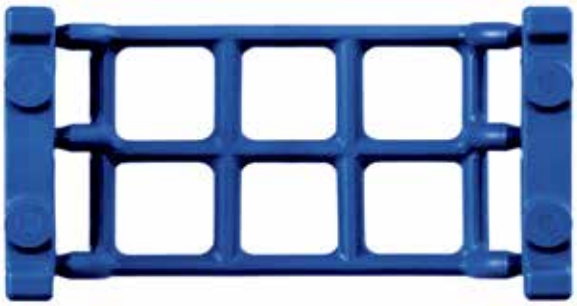
Complete Part No. with required radius (R). Example: TH3.45.3/20.090.8

Series TH3.45 - Interior separation segments - Size overview

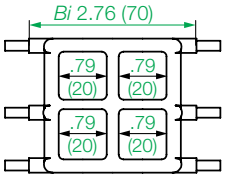


e-chain system® TH3
Series TH3.45
Interior Separation

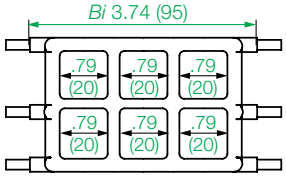




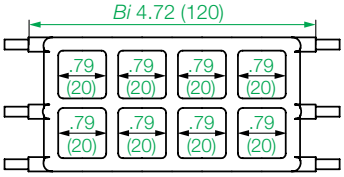
The TH3 interior separation segments are mounted on every 5th link of the e-chain®!
The diagrams show a TH3.45 interior separation segment with 3 chambers and fitted mounting bracket



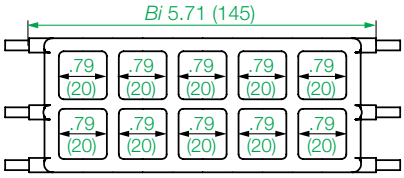
Interior separation segment with 2 x 2 chambers



Interior separation segment with 2 x 3 chambers



Interior separation segment with 2 x 4 chambers



Interior separation segment with 2 x 5 chambers

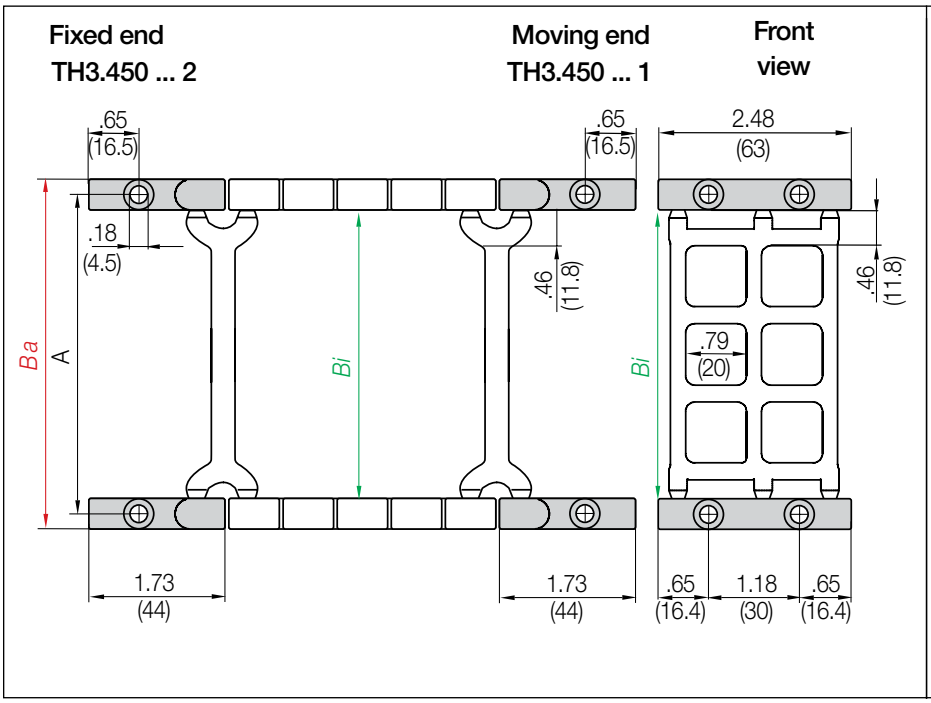


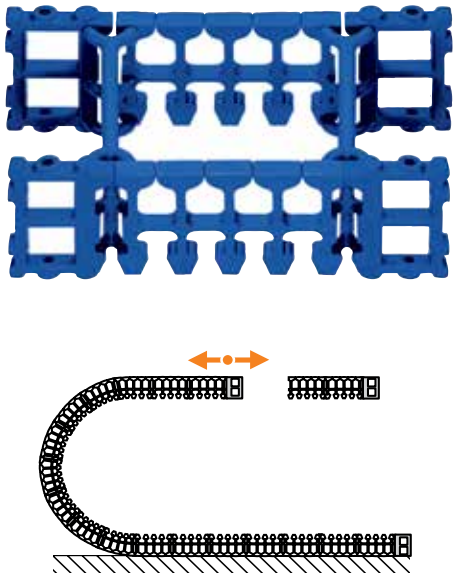
The TH3 series is suitable for applications with the highest hygienic requirements for safe cable and hose guidance

PDF: igus.com/e-chain-pdfs
Product information: igus.com/e-chains

e-chain system® TH3
Series TH3.45
Mounting Bracket - For unsupported applications

FDA-compliant mounting brackets, locking - Attachment from any side





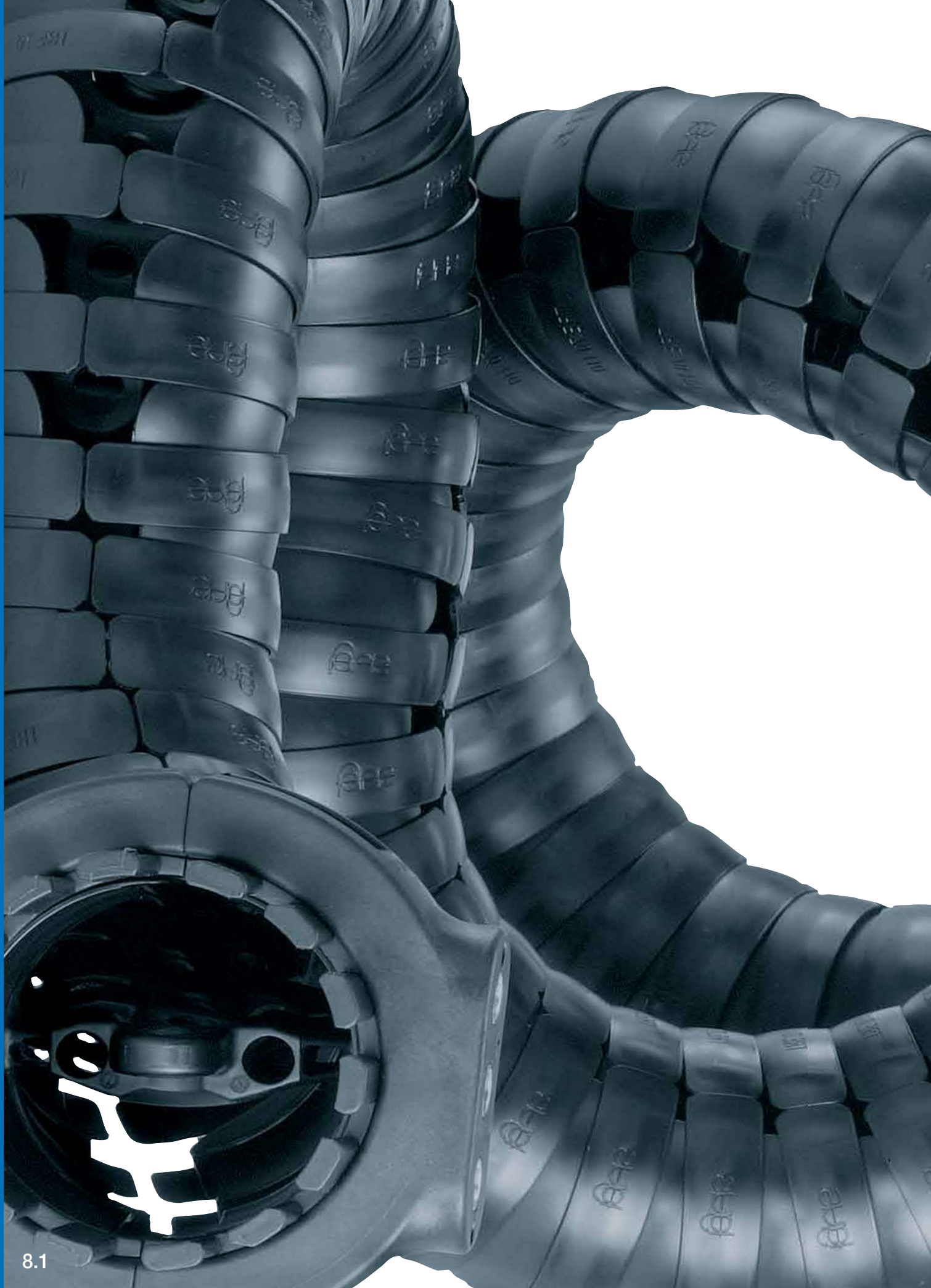
FDA-compliant mounting brackets, locking

Width index		Part No. full set **locking**	A in. (mm)	*Bi* in. (mm)	*Ba* in. (mm)
2/20	▶	**TH3.450.2/20.12.8**	3.15 (80)	2.76 (70)	3.54 (90)
3/20	▶	**TH3.450.3/20.12.8**	4.13 (105)	3.74 (95)	4.53 (115)
4/20	▶	TH3.450.4/20.12.8*	5.12 (130)	4.72 (120)	5.51 (140)
5/20	▶	TH3.450.5/20.12.8*	6.10 (155)	5.71 (145)	6.50 (165)

*Width available upon request. Please consult igus® for delivery time.

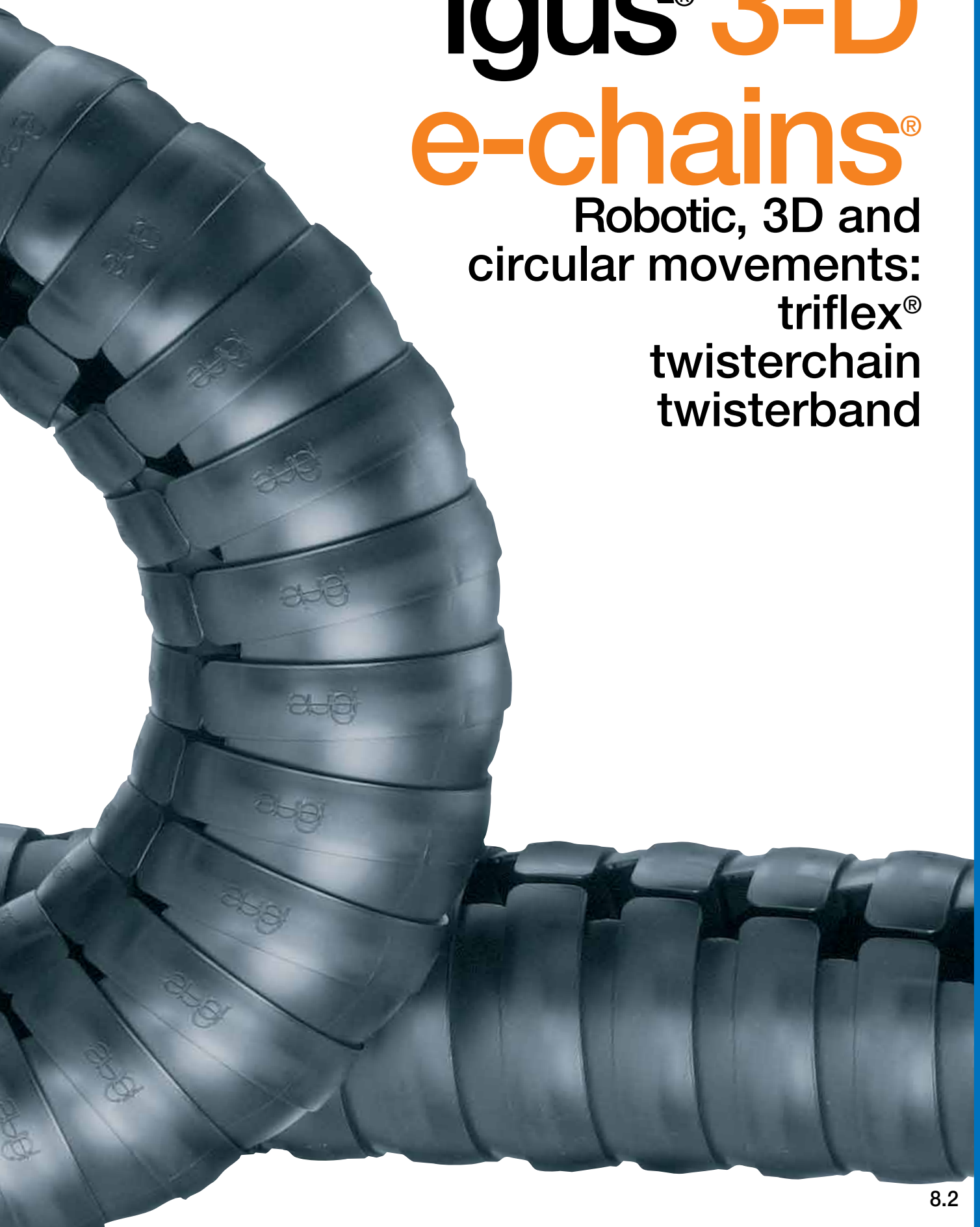


The TH3 e-chain® is the world's first plastic e-chain® developed according to "Hygienic Design Guidelines" (04/2018)



igus® 3-D e-chains®

Robotic, 3D and circular movements: triflex® twisterchain twisterband





triflex® R - 3D-robotic e-chains®

- The first choice for multi-axis-robots
- **TRC version** - closed design with smooth and robust exterior
- **TRCF version** - closed design with snap-open mechanism
- **TRE version** - “easy” design, easy to fill from outside
- **TRL version** - light weight, cost-efficient and very easy to fill, for non robotic applications
- **TRLF version** - light weight, snap-open mechanism
- Torsion approximately ± 10° per link possible
- High torsional stability (TRC/TRE)
- Easy shortening and lengthening
- Small bending radius, small pitch



E-Z triflex® - easy filling

- Easy filling from two sides and complex movements
- For reparations or supplements of existing triflex® Systems
- For simple robotic- and 3D-applications
- Fast cable assembly with “easy” design
- Where rectangular shapes fit better
- Combination of different bending radii and movement directions possible
- Shortening and lengthening anywhere
- 3D e-chain® for non robotic applications



triflex® - enclosed version

- 3-axis motions in machinery of all kinds (combined circle- and stroke-movements)
- Completely enclosed - protection against dirt and chips
- For simple 3D-applications
- High tensile strength
- Where rectangular shapes fit better
- Modular, robust
- Combinations of varying bending radii and moving axes possible
- 3D e-chain® for non robotic applications
- Connecting, separating possible at every link

twisterchain® and twisterband e-chains® for Circular and Spiral Movements



twisterchain® circular and spiral e-chains®

- e-chains® for circular and spiral movements up to 360° available from stock
- Tough, quiet and high dynamics. suitable for high fill weights
- Rotary speeds up to 3.28 ft/s (1 m/s) and more
- Modular interior separation
- Smooth cable-friendly interior
- Openable from both sides - crossbars removable along the inner and outer radius



twisterband - rotary motions

- Rotary motions in a small spaces
- 4 sizes available
- Rotary movements up to 7000°
  (Installation position, vertical: up to 3.000°, horizontal 7.000° and more possible)
- Rotary speeds up to 360°/s possible
- Compact, modular and lightweight
- Ribbons can be shortened easily
- Minimum installation space
- Can be used in various installation positions
- Cost-effective





triflex® R

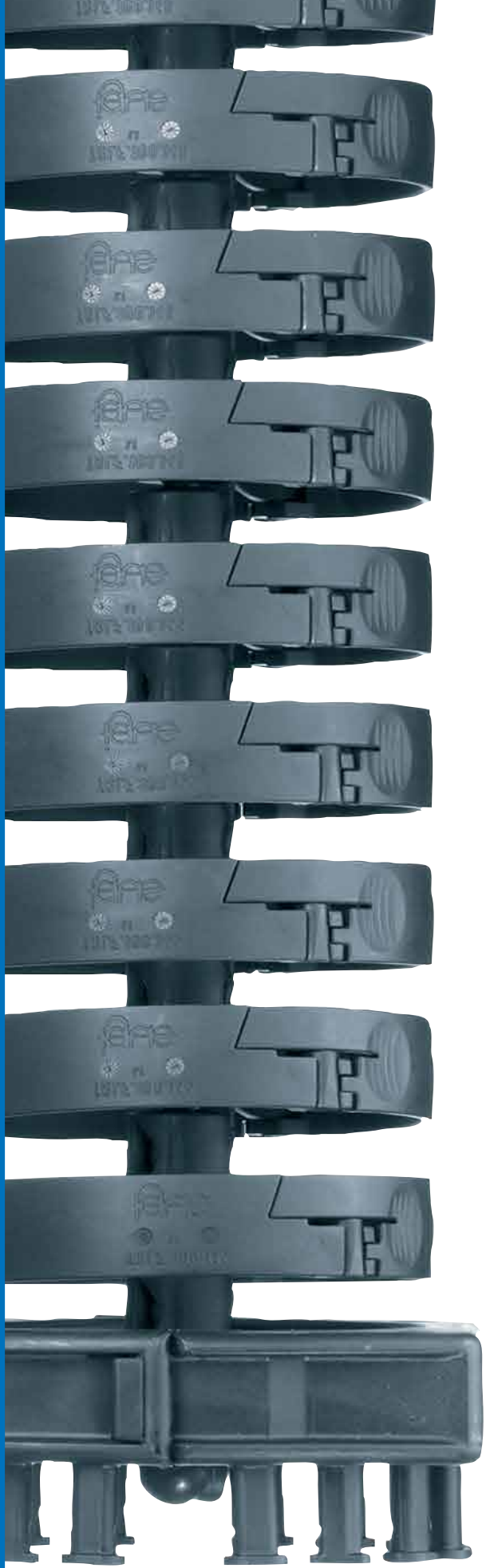
For multi-axis movements and robots

triflex® R advantages:

- For the most demanding multi-axis applications on industrial robots
- Defined torsion stop-dog
- Defined minimum bend radius
- Easy to lengthen and shorten
- Small bend radius and short pitch
- Fillable from the outside

When to use another 3D e-chain® series:

- For circular movements with high loads
  - ▶ **twisterchain system**



For multi-axis movements and robots - triflex® R

triflex® R (R for “round”) is the third generation of multi-axis e-chains®. The key design characteristics of igus® triflex® R have made this product very successful in the robot industry.

- Defined torsion stop-dog on each e-chain® link
- Defined minimum bend radius
- High tensile strength ball and socket joint
- Compact retraction system options to prevent loop formation
- Fiber-rod option for partial directional control and reinforcement
- No extra support elements required e.g. steel cables, spring suspensions etc.
- Wide range of accessories

The triflex® R product family is available in 5 versions from stock:

- TRC - closed design with a smooth and robust exterior
- TRCF - closed design with snap-open mechanism
- TRE - “easy” design, simply press the cables in
- TRL - lightweight, also features “easy design”
- TRLF - Light version with snap lock mechanism

Typical industries and applications

- Robotics/Automation
- Machine tools
- Handling machines - 6-axis
- Packaging machines
- General mechanical engineering, etc.

Assembly video available online at
▶ www.igus.com/triflexR_assembly

Available from stock. Orders ship as early as today.*
*On average 90% of orders ship the same day..

triflex® R - Features - Accessories



The defined torsion stop ensures an even distribution of the torsional load across the entire length



A tough, bend radius stop-dog actively prevents cables and hoses from kinking



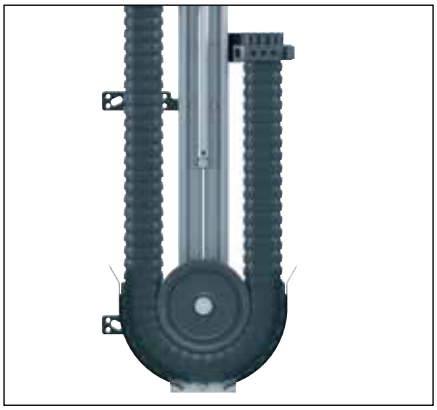
Interior separation: two or three chamber design for a reliable cable guidance



Openable - series TRCF and TRLF have snap lock mechanism for easy filling



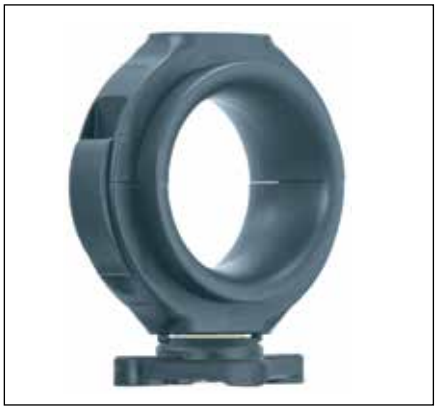
Tensile strength is absorbed directly by the e-chain® - no additional supports are necessary



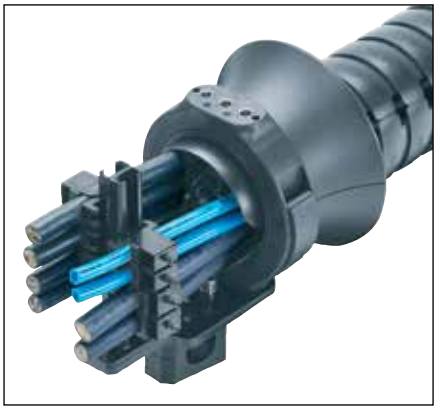
5 retraction system options available to prevent formation of loops in the robot's working area



Standard and light mounting brackets available with or without integrated strain relief. Some versions available in ESD material, from stock



Mounting brackets options with gliding feed-through and swivel bearing. Bearing with a maintenance-free igubal® ball and socket joint



Various heavy duty and compact connections and quick-change units are available

Series TRC - Electrically conductive ESD e-chains® - several series available from stock

UL94-V2 classification

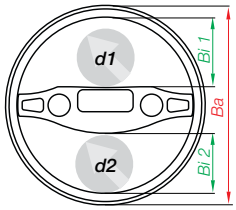
IF product design awards
2004 for igus® series TRC
2007 for igus® series TRL
2013 for igus® series TRLF

triflex® R - Selection Guide

Series	Inner height				max. cable ø				Outer width		Bend radius		Pitch		Links	
	Bi 1		Bi 2		d1		d2		Ba		R					
	in.	(mm)	in.	(mm)	in.	(mm)	in.	(mm)	in.	(mm)	in.	(mm)	in.	(mm)	per ft	per m



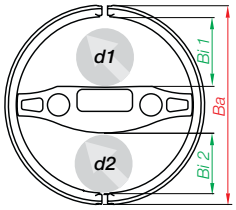
Series TRC - closed design
chip protection, smooth outer contour



TRC-30	.47	(12)	.39	(10)	.39	(10)	.31	(8)	1.36	(34.5)	1.97	(50)	.44	(11.3)	27.27	(89)
TRC-40	.59	(15)	.51	(13)	.51	(13)	.43	(11)	1.69	(43)	2.28	(58)	.55	(13.9)	21.82	(72)
TRC-50	.74	(18.8)	.64	(16.2)	.65	(16.5)	.55	(14)	2.13	(54)	3.15	(80)	.69	(17.4)	17.39	(58)
TRC-60	.88	(22.5)	.77	(19.5)	.81	(20.5)	.69	(17.5)	2.56	(65)	3.43	(87)	.80	(20.4)	15.00	(49)
TRC-70	1.10	(28)	.94	(24)	1.02	(26)	.87	(22)	3.19	(81)	4.33	(110)	1.01	(25.6)	11.88	(39)
TRC-85	1.30	(33)	1.10	(28)	1.22	(31)	1.02	(26)	3.72	(94.5)	5.31	(135)	1.20	(30.6)	10.00	(33)
TRC-100	1.48	(37.5)	1.28	(32.5)	1.40	(35.5)	1.20	(30.5)	4.25	(108)	5.71	(145)	1.36	(34.5)	8.82	(29)
TRC-125[2]	1.70	(43.3)	1.70	(43.3)	1.61	(41)	1.61	(41)	5.31	(135)	7.17	(182)	1.76	(44.6)	6.82	(23)



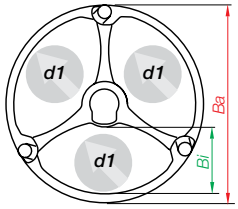
Series TRE - “easy” design
very easy to fill, cables are simply pushed in



TRE-30	.47	(12)	.39	(10)	.39[1]	(10)[1]	.31[1]	(8)[1]	1.36	(34.5)	1.97	(50)	.44	(11.3)	27.27	(89)
TRE-40	.59	(15)	.51	(13)	.51[1]	(13)[1]	.43[1]	(11)[1]	1.69	(43)	2.28	(58)	.55	(13.9)	21.82	(72)
TRE-50	.74	(18.8)	.64	(16.2)	.65[1]	(16.5)[1]	.55[1]	(14)[1]	2.13	(54)	3.15	(80)	.69	(17.4)	17.39	(58)
TRE-60	.88	(22.5)	.77	(19.5)	.81[1]	(20.5)[1]	.69[1]	(17.5)[1]	2.56	(65)	3.43	(87)	.80	(20.4)	15.00	(49)
TRE-70	1.10	(28)	.94	(24)	1.02[1]	(26)[1]	.87[1]	(22)[1]	3.19	(81)	4.33	(110)	1.01	(25.6)	11.88	(39)
TRE-85	1.30	(33)	1.10	(28)	1.22[1]	(31)[1]	1.02[1]	(26)[1]	3.72	(94.5)	5.31	(135)	1.20	(30.6)	10.00	(33)
TRE-100	1.48	(37.5)	1.28	(32.5)	1.40[1]	(35.5)[1]	1.20[1]	(30.5)[1]	4.25	(108)	5.71	(145)	1.36	(34.5)	8.82	(29)
TRE-125[2]	1.70	(43.3)	1.70	(43.3)	1.61[1]	(41)[1]	1.61[1]	(41)[1]	5.31	(135)	7.17	(182)	1.76	(44.6)	6.82	(23)



Series TRCF - closed design with snap lock mechanism
chip protection, smooth outer contour



TRCF-65	.88	(22.3)			.79	(20)			2.76	(70.2)	3.94	(100)	.91	(23.1)	13.19	(44)
TRCF-65[4]	.88	(22.3)			.79	(20)			2.76	(70.2)	7.87	(200)	.91	(23.1)	13.19	(44)
TRCF-85	1.18	(30)	—	—	1.10	(28)	—	—	3.72	(94.5)	5.31	(135)	1.20	(30.6)	10.00	(33)
TRCF-85[4]	1.18	(30)			1.10	(28)			3.72	(94.5)	9.45	(240)	1.20	(30.6)	10.00	(33)
TRCF-100	1.35	(34.3)	—	—	1.27	(32.3)	—	—	4.25	(108)	5.71	(145)	1.35	(34.4)	8.89	(29)

1) For quick and easy fitting or removal of cables using the "easy" design, we recommend a maximum cable diameter of 70% of the specified value

2) Max. cable diameter Ø 1.61” (41mm). Max. cable diameter changes to Ø 1.42” (36 mm), if lengthening or shortening an already populated triflex® R

3) TRL 30 with 2-chamber design

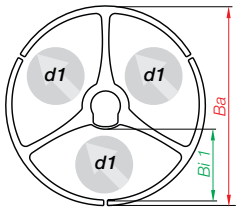
4) Special size with increased bend radius and special range of accessories

Series	Inner height				max. cable ø				Outer width		Bending radii		Pitch		Links	
	Bi 1		Bi 2		d1		d2		Ba		R					
	in.	(mm)	in.	(mm)	in.	(mm)	in.	(mm)	in.	(mm)	in.	(mm)	in.	(mm)	per ft	per m



Series TRL - the “light” version with “easy” design

easy to fill and cost effective

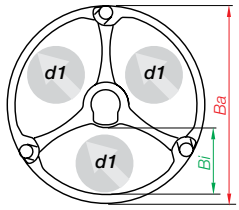


TRL-30[3)]	.47	(12)	.39	(10)	.39	(10*)	.31	(8*)	1.36	(34.5)	1.97	(50)	.44	(11.3)	27.27	(89)
TRL-40	.59	(15)		–	.51	(13*)		–	1.69	(43)	2.28	(58)	.55	(13.9)	21.82	(72)
TRL-60	.91	(23)		–	.81	(20.5*)		–	2.56	(65)	3.43	(87)	.80	(20.4)	15.00	(49)
TRL-70	1.10	(28)		–	1.02	(26*)		–	3.19	(81)	4.33	(110)	1.01	(25.6)	11.88	(39)
TRL-100	1.50	(38)		–	1.40	(35.5*)		–	4.25	(108)	5.31	(145)	1.36	(34.5)	8.82	(29)



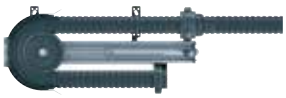
Series TRLF - the “light” version with snap lock mechanism

lightweight and cost effective



TRLF-65	.96	(24.4)	–	–	.87	(22)	–	–	2.76	(70.2)	3.94	(100)	.91	(23.1)	13.19	(44)
TRLF-85	1.29	(32.8)	–	–	1.18	(30)	–	–	3.72	(94.5)	5.31	(135)	1.20	(30.6)	10.00	(33)
TRLF-100	1.48	(37.5)	–	–	1.40	(35.5)	–	–	4.25	(108)	5.71	(145)	1.35	(34.4)	8.89	(29)
TRLF-125	1.84	(46.8)			1.75	(44.5)			5.31	(135)	7.17	(182)	1.74	(44.1)	6.90	(23)

triflex® R - Retraction system overview

Series	System	For triflex® R e-chains®	For ø Index in.	(mm)
	**RSE linear -** retraction system	TRC·TRE·TRCF	1.57 - 4.92	(40 - 100)
	**RS - modular** retraction system	TRC·TRE	1.57 - 3.94	(40 - 100)
	**RSP - pneumatic** retraction system	TRC·TRE·TRCF	2.36 - 4.92	(60 - 125)
	**RSE Wheel-** retraction system	TRC·TRE	1.57 - 1.97	(40 - 50)
	**RSEL linear-** retraction system	TRC·TRE·TRCF	2.76 - 3.35	(70-85)

Technical data

Speed / acceleration	upon request
Material - permitted temperature, igumid G (TRLF/TRCF)	**-40°F / +248°F (-40°C / +120°C)**
Material - permitted temperature, igumid NB (TRC/TRE/TRL)	**-40°F / +176°F (-40°C / +80°C)**
Flammability class, igumid G (TRLF/TRCF)	**VDE 0304 IIC UL94-HB**
Flammability class, igumid NB (TRC/TRE/TRL)	**VDE 0304 IIC UL94-V2**

Reduce installation times with easy-to-use disassembly tools



Easy-to-use disassembly tools for triflex® TRE (B version) and TRCF. Easy disassembly at any point along the e-chain®, even when full.

More information

▶ www.igus.com/triflex_B_disassemblytool

Assembly video available online at

▶ www.igus.com/triflexR_assembly

For series TRE-B	Part No. disassembly tool
TRE-40-B	MAT0050175
TRE-50-B	MAT0051190
TRE-60-B / TRE-70-B	MAT0051135
TRE-85-B	MAT0050170
TRE-100-B	MAT0050172

For series TRCF	Part No. disassembly tool
TRCF-65	MAT0051135
TRCF-85	MAT0050170
TRCF-100	MAT0050172



igus® triflex® R TRLF - light version, easily openable by hand or with a screwdriver



igus® triflex® R TRCF - closed version, openable with a screwdriver



triflex® RS for a low profile retraction system.. Integrated fiber rods generate the directed pretension so that loops do not form in the working area



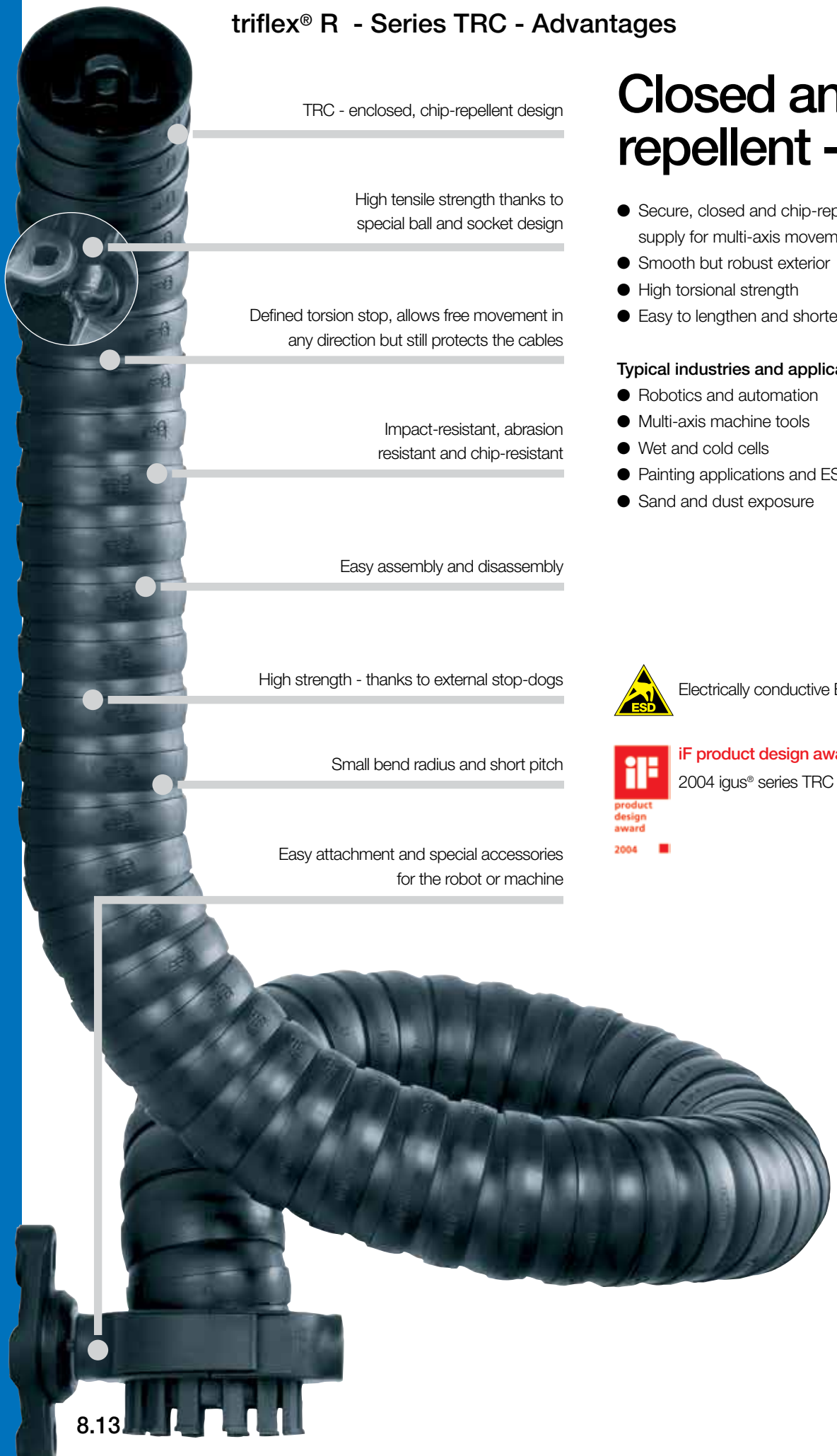
Pneumatic retraction system triflex® RSP - prevents loop formation on the robot



triflex® TR-RSE-40-L or R, cost-effective and lightweight retraction system with guide roller, for small robots



TR-RSE linear retraction system for triflex® R, sizes 40-125



Closed and chip-repellent - TRC

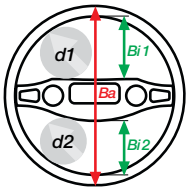
- Secure, closed and chip-repellent energy supply for multi-axis movements
- Smooth but robust exterior
- High torsional strength
- Easy to lengthen and shorten

Typical industries and applications

- Robotics and automation
- Multi-axis machine tools
- Wet and cold cells
- Painting applications and ESD
- Sand and dust exposure

Electrically conductive ESD e-chains® -

iF product design award
2004 igus® series TRC



triflex® R - Series TRC - Product Range

Robotic applications, closed, chip repellent



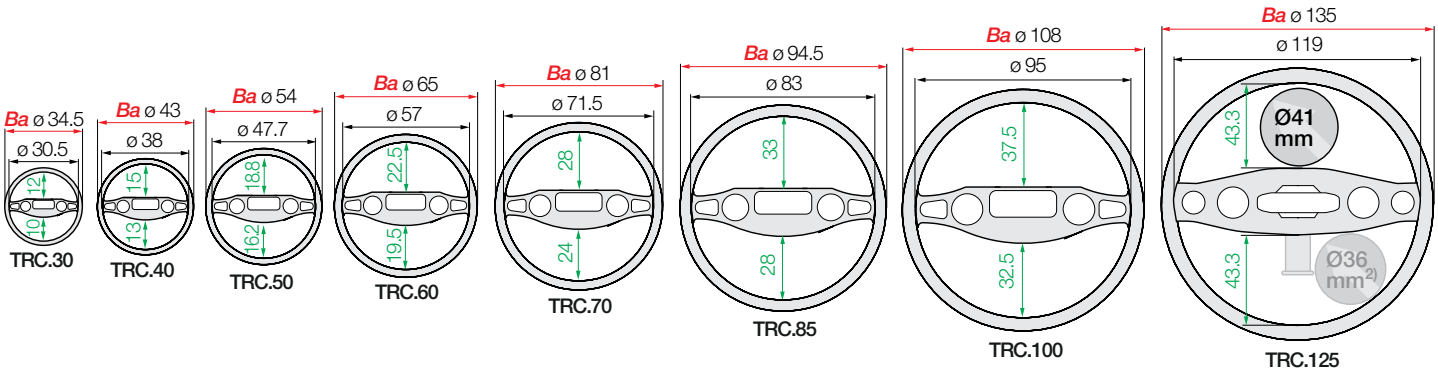
e-tubes - Series TRC - Totally enclosed, non-openable

Series	Inner height				Max. cable ø				Outer width		Bend radius		Pitch		Links		Weight	
	Bi 1		*Bi 2*		*d1*		*d2*		*Ba*		*R*							
	in.	(mm)	in.	(mm)	in.	(mm)	in.	(mm)	in.	(mm)	in.	(mm)	in.	(mm)	per ft.	per m	lbs/ft	(kg/m)
TRC-30-050-0	.47	(12)	.39	(10)	.39	(10)	.31	(8)	1.36	(34.5)	1.97	(50)	.44	(11.3)	27.27	(89)	≈ 0.18	≈ 0.27
TRC-40-058-0[1)]	.59	(15)	.51	(13)	.51	(13)	.43	(11)	1.69	(43)	2.28	(58)	.55	(13.9)	21.82	(72)	≈ 0.25	≈ 0.37
TRC-50-080-0	.74	(18.8)	.64	(16.2)	.65	(16.5)	.55	(14)	2.13	(54)	3.15	(80)	.69	(17.4)	17.39	(58)	≈ 0.40	≈ 0.59
TRC-60-087-0[1)]	.88	(22.5)	.77	(19.5)	.81	(20.5)	.69	(17.5)	2.56	(65)	3.43	(87)	.80	(20.4)	15.00	(49)	≈ 0.57	≈ 0.85
TRC-70-110-0[1)]	1.10	(28)	.94	(24)	1.02	(26)	.87	(22)	3.19	(81)	4.33	(110)	1.01	(25.6)	11.88	(39)	≈ 0.89	≈ 1.32
TRC-85-135-0	1.30	(33)	1.10	(28)	1.22	(31)	1.02	(26)	3.72	(94.5)	5.31	(135)	1.20	(30.6)	10.00	(33)	≈ 1.18	≈ 1.75
TRC-100-145-0	1.48	(37.5)	1.28	(32.5)	1.40	(35.5)	1.20	(30.5)	4.25	(108)	5.71	(145)	1.36	(34.5)	8.82	(29)	≈ 1.60	≈ 2.38
TRC-125-182-0	1.70	(43.3)	1.70	(43.3)	1.61	(41)	1.61	(41)[2)]	5.31	(135)	7.17	(182)	1.76	(44.6)	6.82	(23)	≈ 3.16	≈ 4.70

1) ⚠ Available as ESD version from stock

2) TRE 125 max. cable diameter Ø 1.61" (41mm). Max. cable diameter changes to Ø 1.42" (36mm) when an already populated e-chain needs to be shortened or lengthened

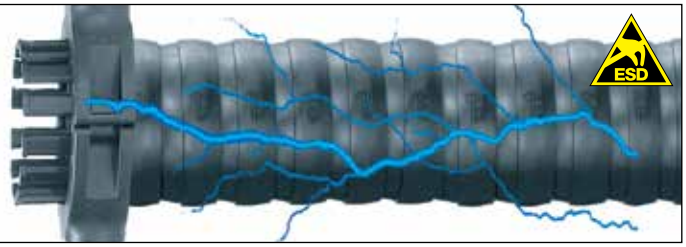
Installation dimensions

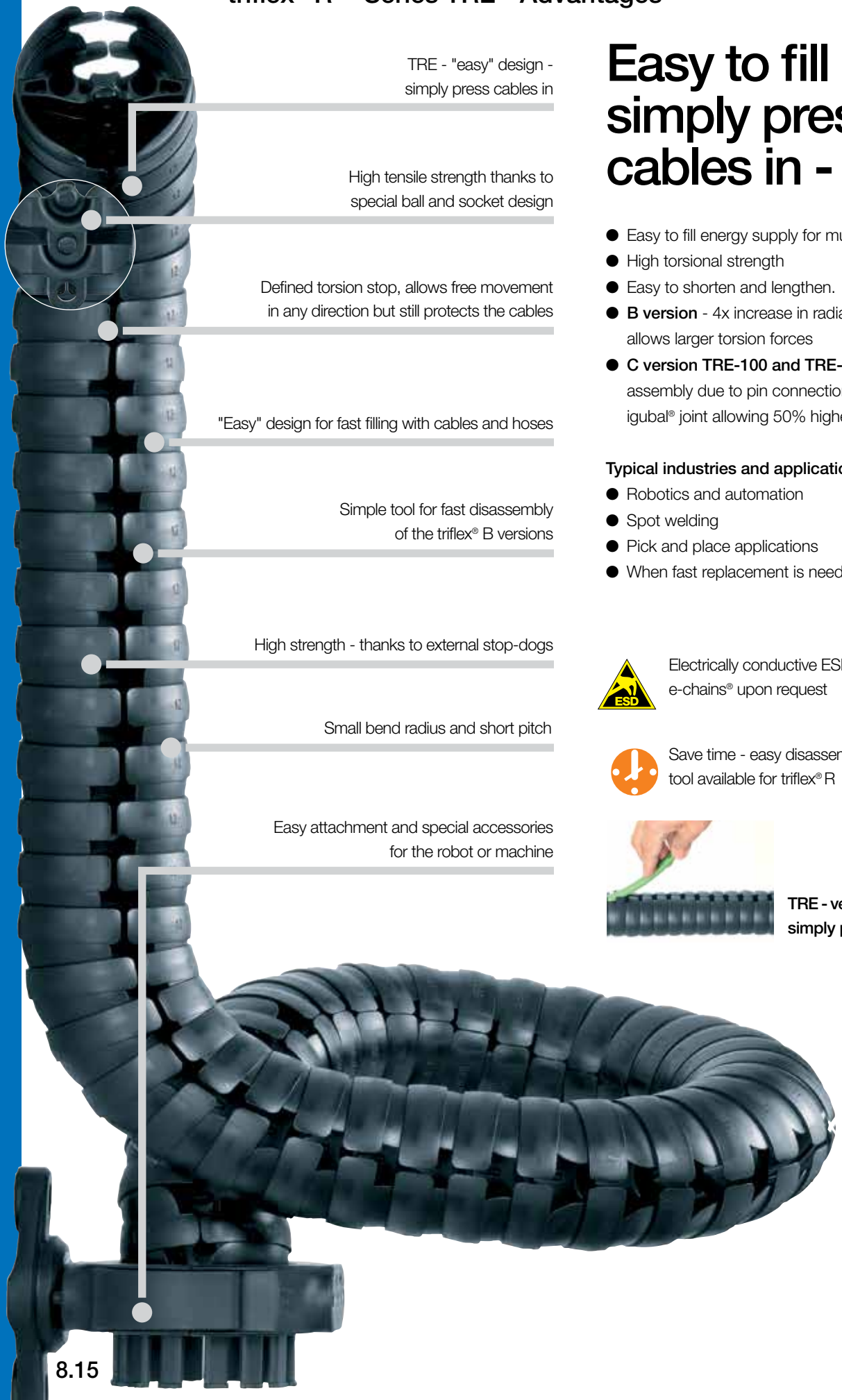


ESD - many sizes

- Standardized product made from igumid ESD
- ESD material tested with over 10 million cycles for the toughest requirements
- Short delivery times including mounting brackets and interior separation; 24hrs, from stock

More information ▶ www.igus.com/esd





Easy to fill - simply press cables in - TRE

- Easy to fill energy supply for multi-axis movements
- High torsional strength
- Easy to shorten and lengthen.
- **B version** - 4x increase in radial stability, allows larger torsion forces
- **C version TRE-100 and TRE-125** - fast assembly due to pin connection and spherical igubal® joint allowing 50% higher tensile forces

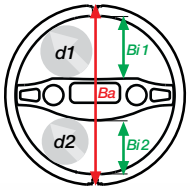
Typical industries and applications

- Robotics and automation
- Spot welding
- Pick and place applications
- When fast replacement is needed

Electrically conductive ESD e-chains® upon request

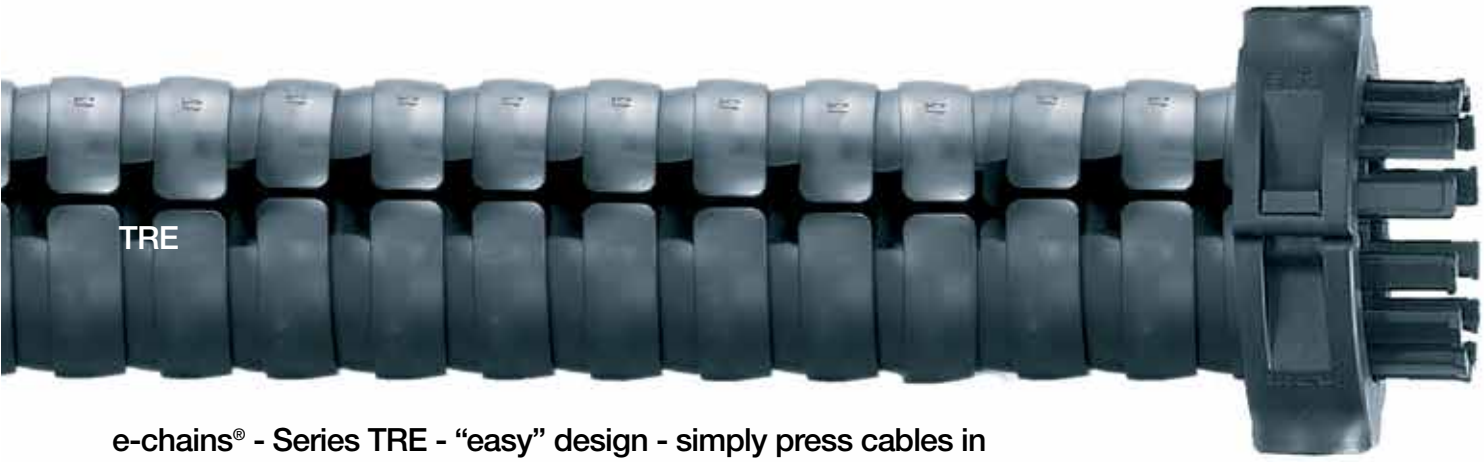
Save time - easy disassembly tool available for triflex® R

TRE - very easy to fill, cables are simply pushed in



triflex® R - Series TRE - Product Range

Robotic applications, easy filling



e-chains® - Series TRE - “easy” design - simply press cables in

Series	Inner height				Max. cable ø				Outer width		Bend radius		Pitch		Links		Weight	
	Bi 1		*Bi 2*		*d1*[2]		*d2*[2]		*Ba*		*R*							
	in.	(mm)	in.	(mm)	in.	(mm)	in.	(mm)	in.	(mm)	in.	(mm)	in.	(mm)	per ft.	per m	lbs/ft	(kg/m)
TRE-30-050-0	.47	(12)	.39	(10)	.39	(10*)	.31	(8*)	1.36	(34.5)	1.97	(50)	.44	(11.3)	27.27	(89)	≈ 0.18	≈ (0.27)
TRE-40-058-0-B	.59	(15)	.51	(13)	.51	(13*)	.43	(11*)	1.69	(43)	2.28	(58)	.55	(13.9)	21.82	(72)	≈ 0.25	≈ (0.37)
TRE-50-087-0-B	.74	(18.8)	.64	(16.2)	.65	(16.5)	.55	(14)	2.13	(54)	3.15	(80)	.69	(17.4)	17.39	(58)	≈ 0.38	≈ (0.56)
TRE-60-087-0-B	.88	(22.5)	.77	(19.5)	.81	(20.5)	.69	(17.5)	2.56	(65)	3.43	(87)	.80	(20.4)	15.00	(49)	≈ 0.57	≈ (0.85)
TRE-70-110-B	1.10	(28)	.94	(24)	1.02	(26)	.87	(22)	3.19	(81)	4.33	(110)	1.01	(25.6)	11.88	(39)	≈ 0.89	≈ (1.32)
TRE-85-135-B	1.30	(33)	1.10	(28)	1.22	(31)	1.02	(26)	3.72	(94.5)	5.31	(135)	1.20	(30.6)	10.00	(33)	≈ 1.18	≈ (1.75)
TRE-100-145-B/C[1]	1.48	(37.5)	1.28	(32.5)	1.40	(35.5)	1.20	(30.5)	4.25	(108)	5.71	(145)	1.36	(34.5)	8.82	(29)	≈ 1.60	≈ (2.38)
TRE-125-182-0	1.70	(43.3)	1.70	(43.3)	1.61	(41)	1.61	(41)[3]	5.31	(135)	7.17	(182)	1.76	(44.6)	6.82	(23)	≈ 3.16	≈ (4.70)

B-Series = 4-x higher torsion forces **C-Series** = quick assembly, 50% higher forces

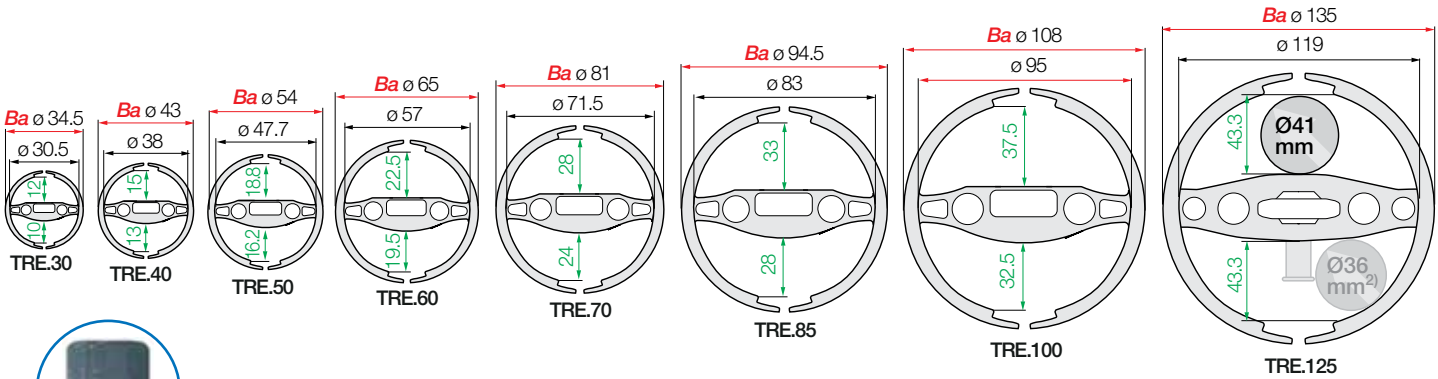
1) Available as **C-Version** Part No. **TRE-100-145-0-C**

2) For quick and easy fitting or removal of cables using the "easy" design, we recommend a maximum cable diameter of 70% of the specified value

3) TRE 125: max. cable diameter Ø 1.61”(41mm). Max. cable diameter changes to Ø 1.42” (36mm) when an already populated e-chain needs to be shortened or lengthened

TRE-LOCK

Installation dimensions





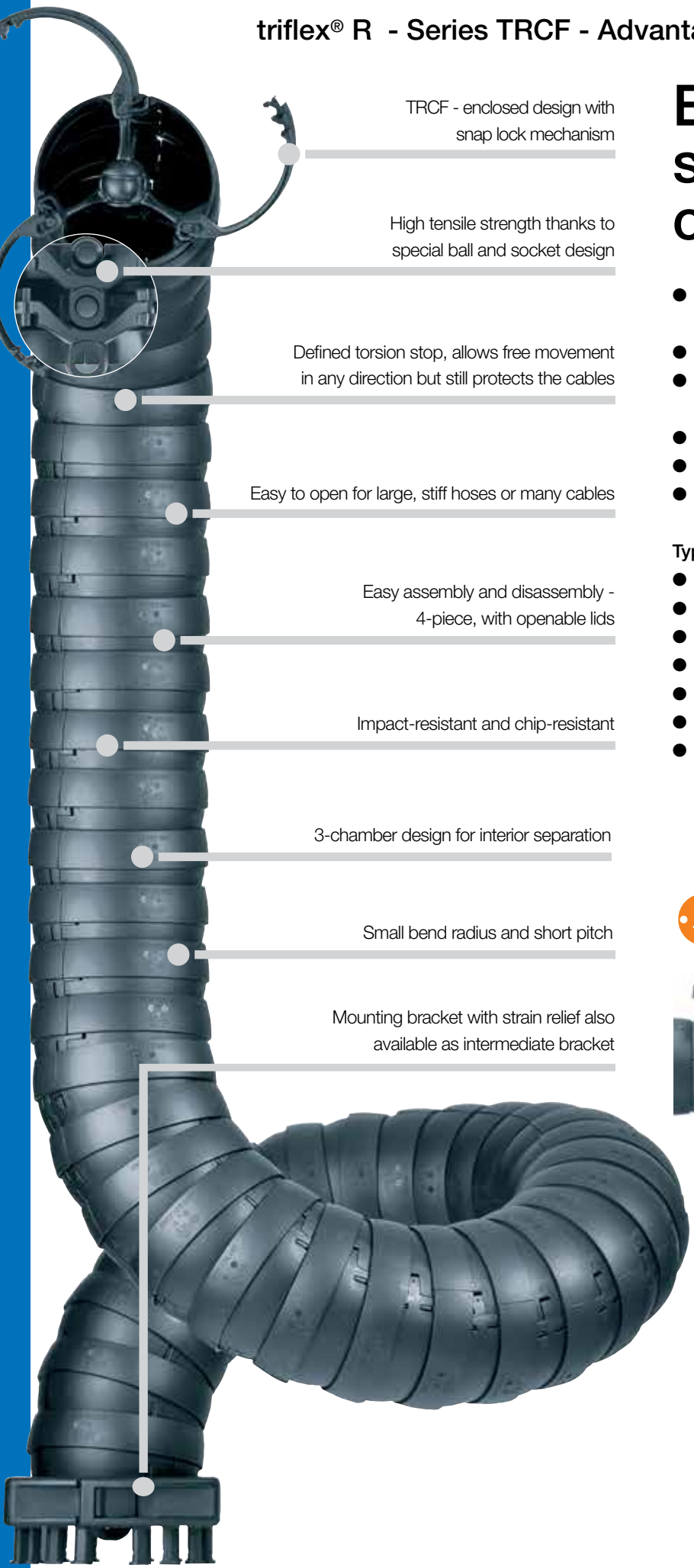
TRE-LOCK clips

Clips for a secure fit in the mounting bracket. Supplied with every mounting bracket. Please use the Part No. on the right for reordering individual parts

Part No. as an individual part	Size	
	in.	(mm)
TRE.40.LOCK	1.18/1.57	(30/40)
TRE.50.LOCK	1.97	(50)
TRE.60.LOCK	2.36	(60)

Part No. as an individual part	Size	
	in.	(mm)
TRE.70.LOCK	2.75/3.35	(70/85)
TRE.100.LOCK	3.94	(100)
TRE.125.LOCK	4.92	(125)

triflex® R - Series TRCF - Advantages



Easy to fill - simply press cables in - TRCF

- Snap lock mechanism for fast opening to insert large cables or hoses
- Snap lock mechanism openable with a screwdriver
- Defined minimum bend radius and torsion stop-dog for optimum cable protection
- Enclosed version, for use with dirt and chip exposure
- 3 chamber design for ideal cable distribution and separation
- Easy to lengthen and shorten

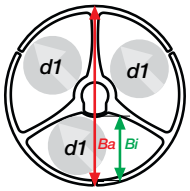
Typical industries and applications

- Robotics and automation
- Painting applications
- Large hydraulic hoses
- Screw and rivet feeds
- Tool changer applications
- Laser welding applications
- Screw and rivet applications

Save time - easy disassembly tool available for triflex® R



Flip open, insert cable, and close snap lock mechanism - then ready to run!



triflex® R - Series TRCF - Product Range
Closed design, chip-resistant, quick filling

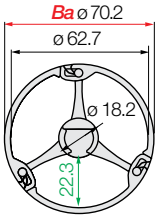


e-tubes - Series TRCF - Fully enclosed design, with snap lock mechanism

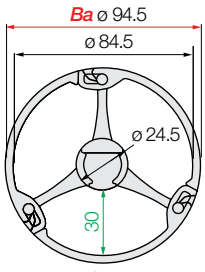
Series	Inner height Bi 1		max. cable ø d1		Outer width Ba		Bending radii R		Pitch		Links		Weight	
	in.	(mm)	in.	(mm)	in.	(mm)	in.	(mm)	in.	(mm)	per ft.	per m	in.	(mm)
TRCF-65-100-0	0.88	(22.3)	.79	(20)	2.76	(70.2)	3.94	(100)	0.91	(23.1)	13.19	(44)	≈ 0.74	≈ (1.10)
TRCF-65-200-0	0.88	(22.3)	.79	(20)	2.76	(70.2)	7.87	(200)	0.91	(23.1)	13.19	(44)	≈ 0.74	≈ (1.10)
TRCF-85-135-0	1.18	(30)	1.10	(28)	3.72	(94.5)	5.31	(135)	1.20	(30.6)	10.00	(33)	≈ 1.41	≈ (2.10)
TRCF-85-240-0[1)]	1.18	(30)	1.10	(28)	3.72	(94.5)	9.45	(240)	1.20	(30.6)	10.00	(33)	≈ 1.41	≈ (2.10)
TRCF-100-145-0	1.35	(34.3)	1.27	(32.3)	4.25	(108)	5.71	(145)	1.36	(34.5)	8.82	(29)	≈ 1.81	≈ (2.70)

1) Special size Part No. TRCF-85-240-0 with 240 degree bend radius and a range of accessories

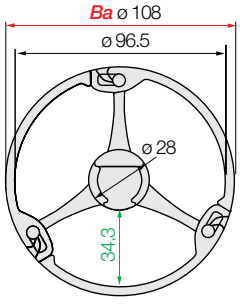
Installation dimensions



TRCF.65



TRCF.85



TRCF.100



Snap lock mechanism for fast opening, video online
▶ **www.igus.com/TRCF**

Special sizes TRCF-65-200-0 and TRCF-85-240-0

- For secure guidance of fiber optic laser welding cables
- The large bend radius *R* 7.87" and 9.45" (200mm and 240mm) increases the service life of the fiber optic laser welding cable by preventing kinking

More information ▶ www.igus.com/TRCF





TRL - light and cost-effective with "easy" design

High tensile strength thanks to special ball and socket design

Defined torsion stop, allows free movement in any direction but still protects the cables

"Easy" design for fast filling with cables and hoses

Easy assembly and disassembly

Extremely lightweight due to one-piece design

Small bend radius and short pitch

Mounting bracket with strain relief also available as intermediate bracket

Lightweight and cost-effective - TRL

- Very easy to fill
- Multi-axis e-chain® for simple applications
- Easy to lengthen and shorten

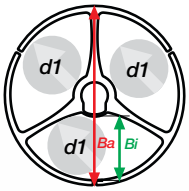
Typical industries and applications

- Robot axes 1-3
- Non-robotic applications
- Bundling cables for operator controls
- Filament feeds on 3D printers
- Office applications

iF product design award

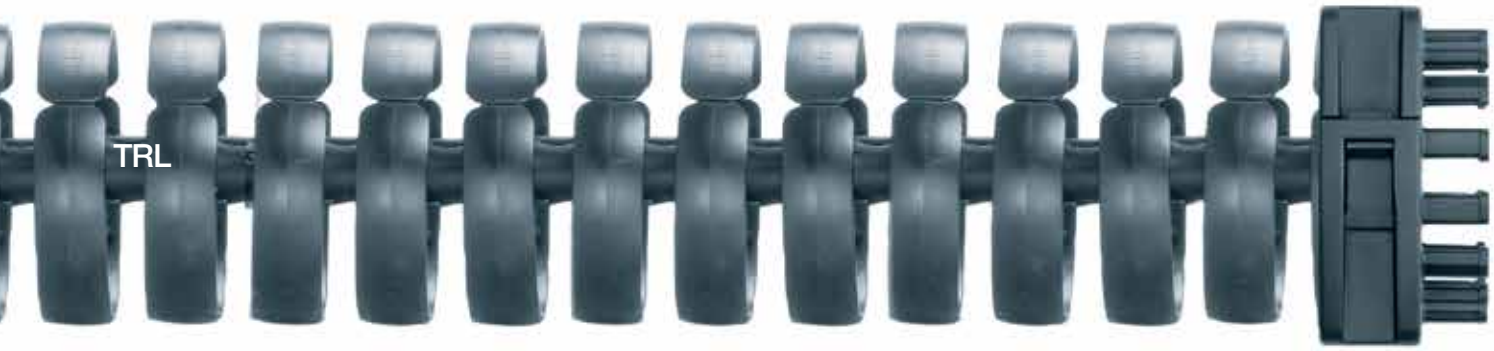
2007 igus® series TRL





triflex® R - Series TRL - Product Range

Robotic applications, light and cost-effective

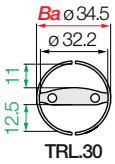


e-chains® - TRL series - Light version with "easy" design - simply press cables in

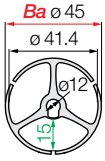
Series	Inner height				max. cable ø				Outer width		Bend radiius		Pitch		Links		Weight	
	Bi 1		*Bi 2*		*d1*[2]		*d2*[2]		*Ba*		*R*							
	in.	(mm)	in.	(mm)	in.	(mm)	in.	(mm)	in.	(mm)	in.	(mm)	in.	(mm)	per ft.	per m	lbs/ft	kg/m
TRL-30-050-0[1]	.47	(12)	.43	(11)	.39	(10)	.31	(8)	1.36	(34.5)	1.97	(50)	.44	(11.3)	27.27	(89)	≈ 0.18	≈ 0.27
TRL-40-058-0	.59	(15)	–		.51	(13)	–		1.77	(45)	2.28	(58)	.55	(13.9)	21.82	(72)	≈ 0.25	≈ 0.37
TRL-60-087-0	.91	(23)	–		.81	(20.5)	–		2.56	(65)	3.43	(87)	.80	(20.4)	15.00	(49)	≈ 0.57	≈ 0.85
TRL-70-110-0	1.10	(28)	–		1.02	(26)	–		3.19	(81)	4.33	(110)	1.01	(25.6)	11.88	(39)	≈ 0.89	≈ 1.32
TRL-100-145-0	1.50	(38)	–		1.40	(35.5)	–		4.25	(108)	5.71	(145)	1.36	(34.5)	8.82	(29)	≈ 1.60	≈ 2.38

1) Only available with 2-chamber design
2) For quick and easy fitting or removal of cables using the "easy" design, we recommend a maximum cable diameter of 70% of the specified value

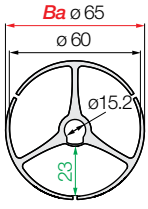
Installation dimensions



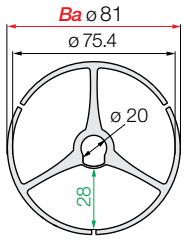
TRL.30



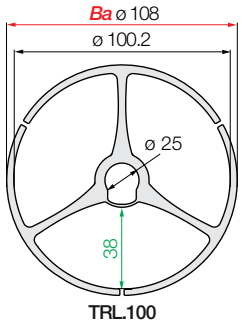
TRL.40



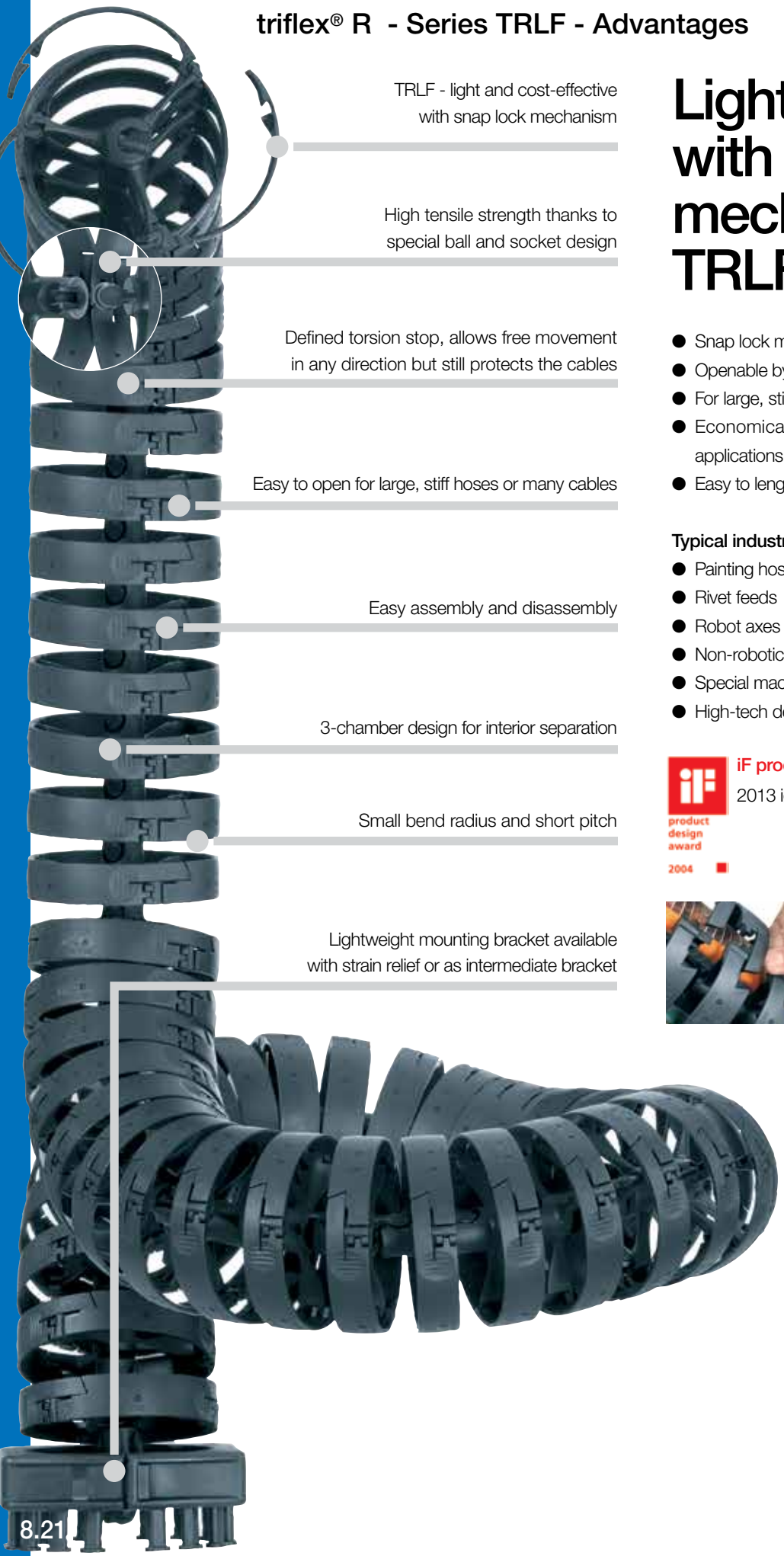
TRL.60



TRL.70



TRL.100



Lightweight with snap lock mechanism - TRLF

- Snap lock mechanism for fast opening
- Openable by hand or with a screwdriver
- For large, stiff hoses or many cables
- Economical multi-axis e-chain® for less demanding applications
- Easy to lengthen and shorten

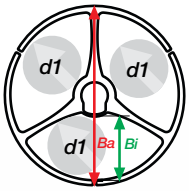
Typical industries and applications

- Painting hoses
- Rivet feeds
- Robot axes 1-3
- Non-robotic applications
- Special machine construction
- High-tech design

iF product design award
2013 igus® series TRLF



Flip open, insert cable, and close snap lock mechanism - then ready to run!



triflex® R - Series TRLF - Product Range

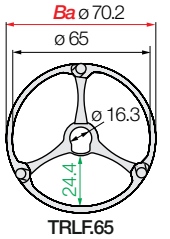
Quick filling with larger hoses and cables



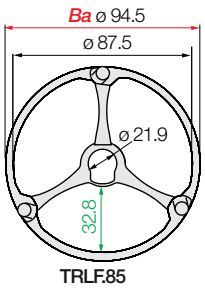
e-chains® - TRLF series - Light version with snap lock mechanism

Series	Inner height		max. cable ø		Outer width		Bend radiius		Pitch		Links		Weight	
	Bi 1		*d1*		*Ba*		*R*							
	in.	(mm)	in.	(mm)	in.	(mm)	in.	(mm)	in.	(mm)	per ft.	per m	lbs/ft	kg/m
TRLF-65-100-0	.96	(24.4)	.87	(22)	2.76	(70.2)	3.94	(100)	.91	(23.1)	13.2	(44)	≈ 0.53	≈ 0.79
TRLF-85-135-0	1.29	(32.8)	1.18	(30)	3.72	(94.5)	5.31	(135)	1.20	(30.6)	10.0	(33)	≈ 0.97	≈ 1.45
TRLF-100-145-0	1.48	(37.5)	1.40	(35.5)	4.25	(108)	5.71	(145)	1.36	(34.5)	8.8	(29)	≈ 1.28	≈ 1.90
TRLF-125-182-0	1.84	(46.8)	1.75	(44.5)	5.31	(135)	7.17	(182)	1.74	(44.1)	6.9	(23)	≈ 2.78	≈ 4.13

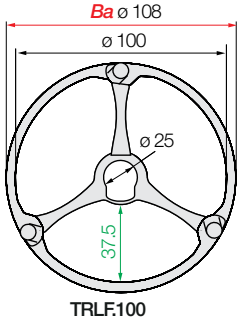
Installation dimensions



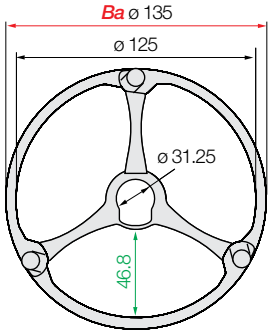
TRLF.65



TRLF.85



TRLF.100



TRLF.125

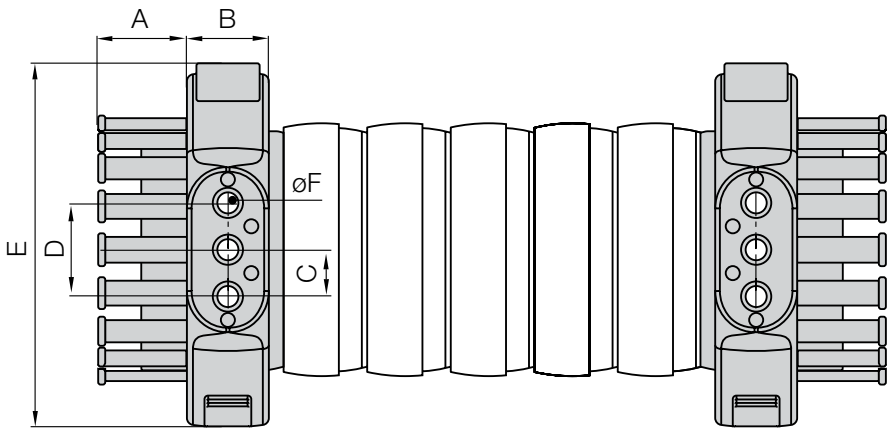


Snap lock mechanism for fast opening, video online

▶ **www.igus.com/TRLF**

triflex® R - Accessories
For Series TRC / TRE / TRCF / TRL / TRLF
Standard mounting brackets - **With strain relief**

With integrated strain relief tiewrap plates
TR.40.01 / TR.100.01





- Recommended for TRC/TRE/TRCF, also compatible with TRL/TRLF
- Standard fixation onto the robot or machine, with strain relief

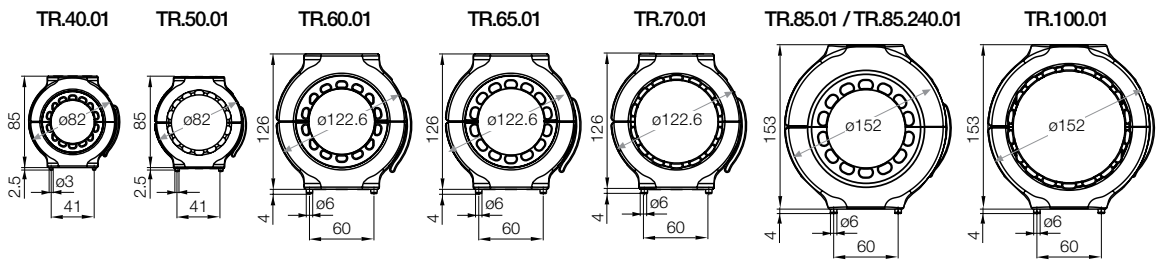
Standard mounting brackets - With strain relief



TR.40.01 – TR.100.01

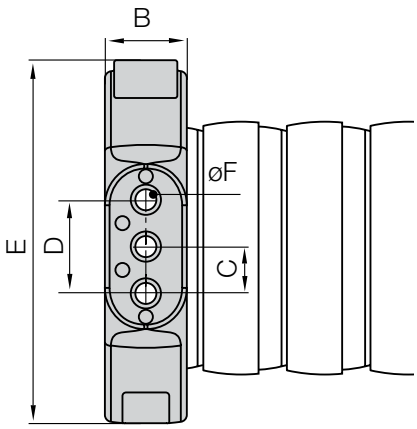
ø Index	Part No. **with** strain relief	A in.	A (mm)	B in.	B (mm)	C in.	C (mm)	D in.	D (mm)	E in.	E (mm)	F in.	F (mm)
30.	▶ Alternative: light mounting bracket	–		–		–		–		–		–	
40.	▶ **TR.40.01**.M6 [1) 2)]	.70	(17.8)	.83	(21)	.53	(13.5)	1.06	(27)	3.33	(84.5)	.26	(6.5)
50.	▶ **TR.50.01**.M6 [1)]	.83	(21)	.83	(21)	.53	(13.5)	1.06	(27)	3.33	(84.5)	.26	(6.5)
60.	▶ **TR.60.01**.M8 [1) 2)]	.98	(25)	1.26	(32)	.79	(20)	1.57	(40)	4.96	(126)	.35	(9)
65.	▶ **TR.65.01**.M8 [5)]	.98	(25)	1.26	(32)	.79	(20)	1.57	(40)	4.96	(126)	.35	(9)
70.	▶ **TR.70.01**.M8 [1) 2)]	.98	(25)	1.26	(32)	.79	(20)	1.57	(40)	4.96	(126)	.35	(9)
85.	▶ **TR.85.01**.M8 [1)]	1.50	(38)	1.38	(35)	.79	(20)	1.57	(40)	6.10	(155)	.35	(9)
85. *(R 240)*	▶ **TR.85.240.01**.M8 [1)]	1.50	(38)	1.38	(35)	.79	(20)	1.57	(40)	6.10	(155)	.35	(9)
100.	▶ **TR.100.01**.M8 [1)]	1.50	(38)	1.38	(35)	.79	(20)	1.57	(40)	6.10	(155)	.35	(9)
125.	▶ Alternative: standard mounting bracket without strain relief												

Strain relief is for use on the fixed end and/or moving end.
Standard: through holes in Ø F - 1) option: with threaded bushings, steel, M6/M8
2) ⚠ Available as ESD version from stock
5) Available for delivery upon request. Please consult igus® for delivery time.

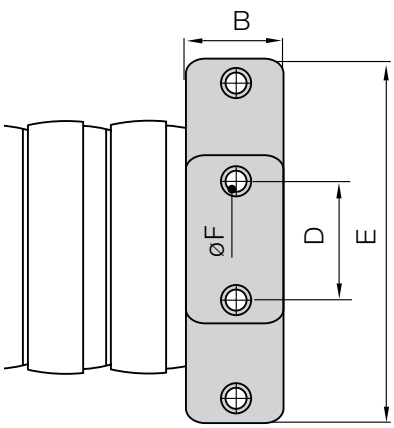


triflex® R - Accessories
For Series TRC / TRE / TRCF / TRL / TRLF
Standard mounting brackets - **Without strain relief**

Without strain relief, only for TR.40.02 / TR.100.02



Without strain relief, only for TR.125.02





- Recommended for TRC/TRE/TRCF, also compatible with TRL/TRLF
- Standard fixation onto the machine/ robot, without strain relief
- Can also serve as intermediate bracket

Standard mounting brackets - Without strain relief



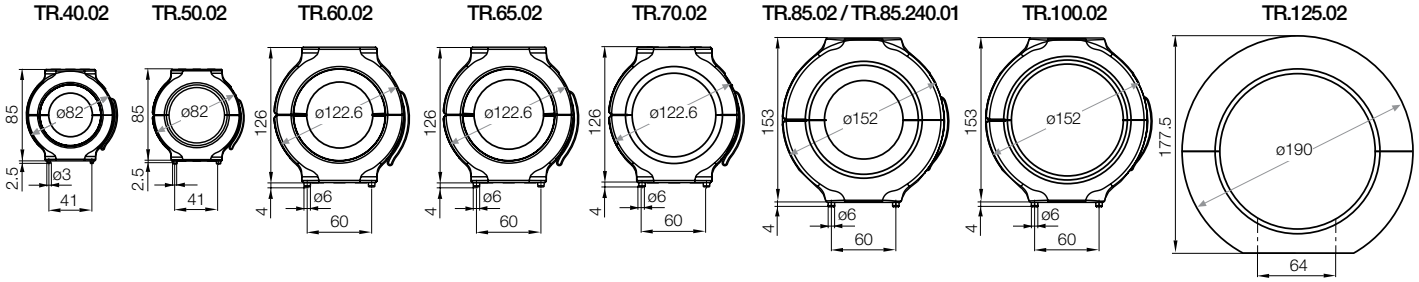
TR.40.02 – TR.100.02



TR.125.02

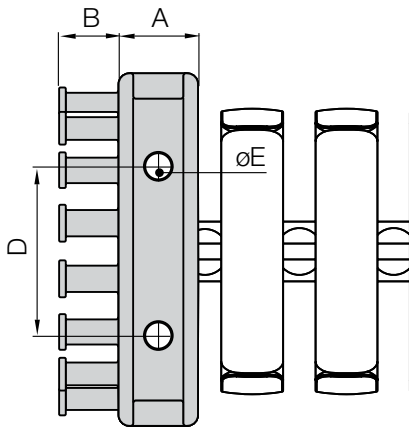
ø Index	Part No. **without** strain relief or as intermediate bracket	A in.	A (mm)	B in.	B (mm)	C in.	C (mm)	D in.	D (mm)	E in.	E (mm)	F in.	F (mm)
30.	▶ Alternative: light mounting bracket	–		–		–		–		–		–	
40.	▶ **TR.40.02**.M6 [1]	–		.83	(21)	.53	(13.5)	1.06	(27)	3.33	(84.5)	.26	(6.5)
50.	▶ **TR.50.02**.M6 [1]	–		.83	(21)	.53	(13.5)	1.06	(27)	3.33	(84.5)	.26	(6.5)
60.	▶ **TR.60.02**.M8 [1]	–		1.26	(32)	.79	(20)	1.57	(40)	4.96	(126)	.35	(9)
65.	▶ **TR.65.02**.M8 [1]	–		1.26	(32)	.79	(20)	1.57	(40)	4.96	(126)	.35	(9)
70.	▶ **TR.70.02**.M8 [1]	–		1.26	(32)	.79	(20)	1.57	(40)	4.96	(126)	.35	(9)
85.	▶ **TR.85.02**.M8 [1]	–		1.38	(35)	.79	(20)	1.57	(40)	6.10	(155)	.35	(9)
85. *(R 240)*	▶ **TR.85.240.02**.M8 [1]	–		1.38	(35)	.79	(20)	1.57	(40)	6.10	(155)	.35	(9)
100.	▶ **TR.100.02**.M8 [1]	—		1.38	(35)	.79	(20)	1.57	(40)	6.10	(155)	.35	(9)
125.	▶ Alternative: standard mounting bracket without strain relief												

Standard: through holes in Ø F - 1) option: with threaded bushings, steel, M6/M8
2) ⚠ Available as ESD version from stock

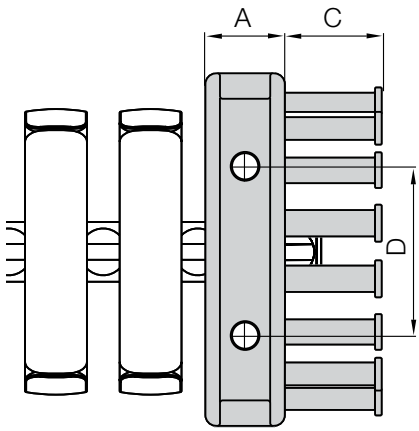


triflex® R - Accessories
For Series TRC / TRE / TRCF / TRL / TRLF
Light mounting brackets - **With strain relief**

Short strain relief
TL.30.01.Z1 / TL.100.01.Z1



Long strain relief
TL.40.01.Z2 / TL.100.01.Z2





- Recommended for TRL/TRLF, also compatible with TRC/TRE/TRCF
- Light fixation onto the machine/ robot, with strain relief
- Options with long or short strain relief

Standard Light mounting brackets - With strain relief



TL.30.01.Z1 to TL.100.01.Z1

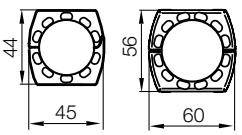


TL.40.01.Z2 to TL.100.01.Z2

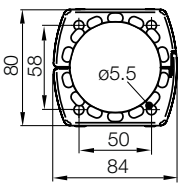
ø Index	Part No. **with** short strain relief	Part No. **with** long strain relief	A in.	A (mm)	B in.	B (mm)	C in.	C (mm)	D in.	D (mm)	E in.	E (mm)
30.	**TL.30.01.Z1**	–	.51	(13)	.49	(12.5)		–	.94	(24)	.18	4.5
40.	**TL.40.01.Z1** 1)	**TL.40.01.Z2**	.55	(14)	.49	(12.5)	.79	(20)	1.42	(36)	.23	(5.8)
50.	Alternative: standard mounting bracket			–		–		–		–		–
60.	**TL.60.01.Z1** 1)	**TL.60.01.Z2**	.79	(20)	.67	(17)	1.06	(27)	1.89	(48)	.23	(5.8)
65.	**TL.65.01.Z1** 1)	–	1.06	(27)	.53	(13.5)	–	–	2.52	(64)	.26	(6.5)
70.	**TL.70.01.Z1** 1)	**TL.70.01.Z2**	1.06	(27)	.69	(17.5)	1.08	(27.5)	2.52	(64)	.26	(6.5)
85.	**TL.85.01.Z1**	–	1.18	(30)	1.04	(26.5)		–	2.52	(64)	.26	(6.5)
85. *(R 240)*	Alternative: standard mounting bracket			–		–		–		–		–
100.	**TL.100.01.Z** 1)	**TL.100.01.Z2**	1.18	(30)	.88	(22.5)	1.67	(42.5)	2.52	(64)	.26	(6.5)
125.	Alternative: standard mounting bracket			–		–		–		–		–

1) For moving end (ball) suitable only for series TRL/TRLF

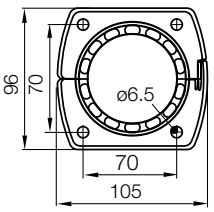
TL.30.01.Z1 **TL.40.01.Z1** **TL.40.01.Z2**



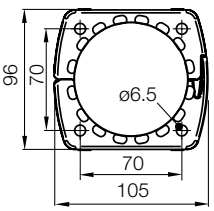
TL.60.01.Z1 **TL.60.01.Z2**



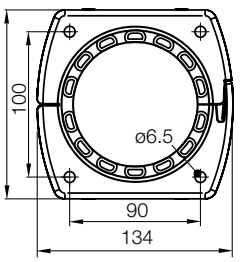
TL.65.01.Z1



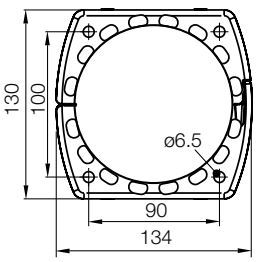
TL.70.01.Z1 **TL.70.01.Z2**



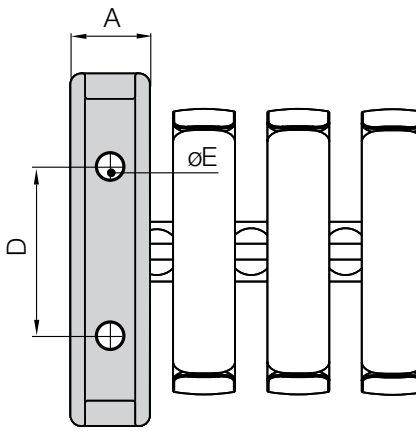
TL.85.01.Z1



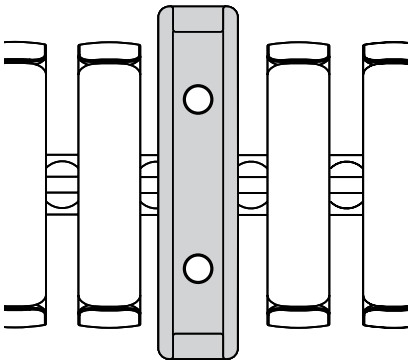
TL.100.01.Z1 **TL.100.01.Z2**



Without strain relief
TL.30.01.Z0 / TL.100.01.Z0



Intermediate bracket
TL.30.01.Z0 / TL.100.01.Z0





- Recommended for TRL/TRLF, also compatible with TRC/TRE/TRCF
- Light fixation onto the machine/ robot, without strain relief
- Can also serve as intermediate bracket

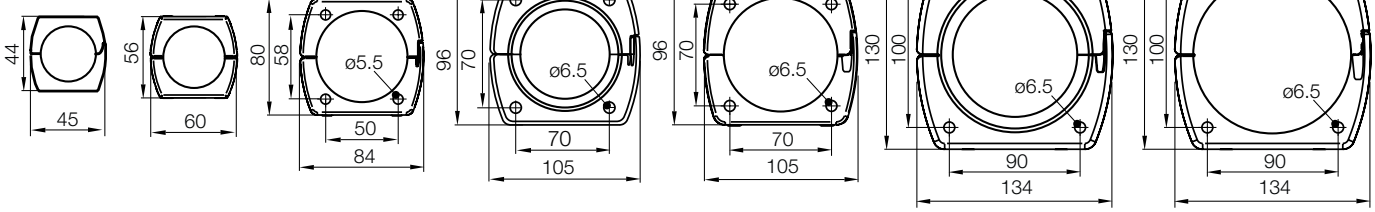
Light mounting brackets - Without strain relief



TL.30.01.Z0 to TL.100.01.Z0

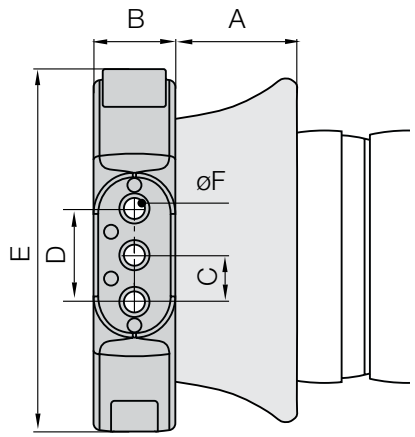
ø Index	Part No. **without** strain relief or as intermediate bracket	A in.	A (mm)	B in.	B (mm)	C in.	C (mm)	D in.	D (mm)	E in.	E (mm)
30.	▶ **TL.30.01.Z0**	.51	(13)	–		–		.94	(24)	.18	4.5
40.	▶ **TL.40.01.Z0**	.55	(14)	–		–		1.42	(36)	.23	(5.8)
60.	▶ **TL.60.01.Z0**	.79	(20)	–		–		1.89	(48)	.23	(5.8)
65.	▶ **TL.65.01.Z0**	1.06	(27)	–		–		2.52	(64)	.26	(6.5)
70.	▶ **TL.70.01.Z0**	1.06	(27)	–		–		2.52	(64)	.26	(6.5)
85.	▶ **TL.85.01.Z0**	1.18	(30)	–		–		2.52	(64)	.26	(6.5)
85. *(R 240)*	▶ **TL.85.240.01.Z0**	–		–		–		–		–	
100.	▶ **TL.100.01.Z0**	1.18	(30)	–		–		2.52	(64)	.26	(6.5)
125.	▶ Alternative: standard mounting bracket	–		–		–		–		–	

TL.30.01.Z0 **TL.40.01.Z0** **TL.60.01.Z0** **TL.65.01.Z0** **TL.70.01.Z0** **TL.85.01.Z0** **TL.100.01.Z0**

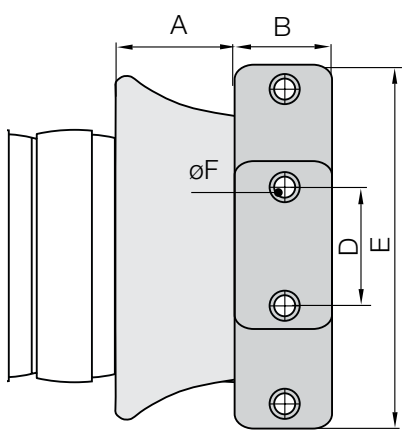


triflex® R - Accessories
For Series TRC / TRE / TRCF / TRL / TRLF
Mounting brackets - With radius support

Mounting bracket
with radius support, only for
TR.40.09 to TR.100.09



Mounting bracket
with radius support, only for
TR.125.09





- The triflex® R radius support for triflex® R energy supply at the most highly stressed points (axis 6)
- Provides higher operational reliability for robotic applications

Mounting brackets - With radius support - For TRC·TRE·TRCF·TRL·TRLF



TR.40.09 to TR.100.09

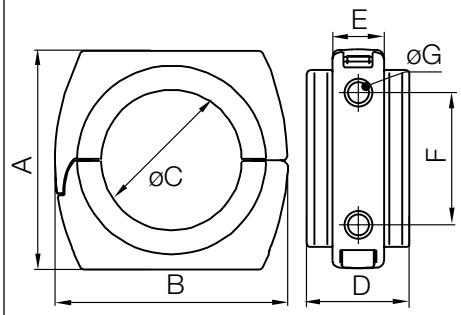


TR.125.09

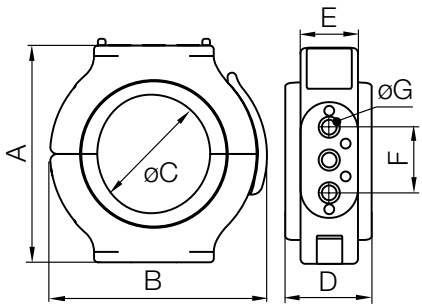
ø Index		Part No. **with** short strain relief	A in.	A (mm)	B in.	B (mm)	C in.	C (mm)	D in.	D (mm)	E in.	E (mm)	F in.	F (mm)
30.	▶	–	–		–		–		–		–		–	
40.	▶	**TR.40.09.**M6 ¹⁾	1.10	(28)	.83	(21)	.53	(13.5)	1.06	(27)	3.33	(84.5)	.26	(6.5)
50.	▶	**TR.50.09.**M6 ¹⁾	1.50	(38)	.83	(21)	.53	(13.5)	1.06	(27)	3.33	(84.5)	.26	(6.5)
60.	▶	**TR.60.09.**M8 ¹⁾	1.50	(38)	1.26	(32)	.79	(20)	1.57	(40)	4.96	(126)	.35	(9)
65.	▶	**TR.65.09.**M8 ¹⁾	1.77	(45)	1.26	(32)	.79	(20)	1.57	(40)	4.96	(126)	.35	(9)
70.	▶	**TR.70.09.**M8 ¹⁾	1.69	(43)	1.26	(32)	.79	(20)	1.57	(40)	4.96	(126)	.35	(9)
85.	▶	**TR.85.09.**M8 ¹⁾	1.93	(49)	1.38	(35)	.79	(20)	1.57	(40)	6.10	(155)	.35	(9)
85. *(R 240)*	▶	–	–		–		–		–		–		–	
100.	▶	**TR.100.09.**M8 ¹⁾	2.64	(67)	1.38	(35)	.79	(20)	1.57	(40)	6.10	(155)	.35	(9)
125.	▶	**TR.125.09.**M8 ¹⁾	2.83	(72)	1.57	(40)	–		2.52	(64)	7.48	(190)	.35	(9)

Standard: through holes in Ø F - 1) option: with threaded bushings, steel, M6/M8

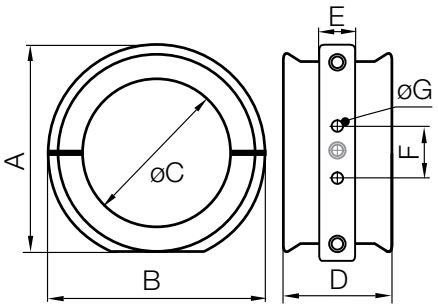
Mounting bracket
with gliding feed-through, only for
TL.30.05



Mounting bracket
with gliding feed-through, only for
TR.40.05 and TR.60.85.05



Mounting bracket
with gliding feed-through, only for
TR.50.05 and TR.100.05 to TR.125.05



- The gliding feed-through enables easy guidance of the e-chain® and can also be used as an additional guide
- Gliding feed-through with swivel bearing also available



Gliding feed-through - For TRC·TRE·TRCF·TRL·TRLF



TL.30.05



TR.40.05 and TR.60.05 to TR.85.05



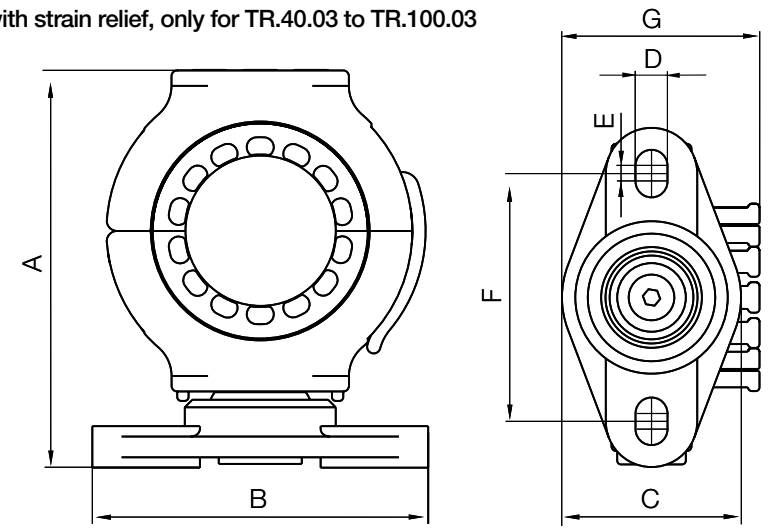
TR.50.05 and TR.100.05 to TR.125.05

ø Index	Part No. **with** short strain relief	A in.	A (mm)	B in.	B (mm)	C in.	C (mm)	D in.	D (mm)	E in.	E (mm)	F in.	F (mm)	G in.	G (mm)
30.	**TL.30.05**	2.20	(56)	2.36	(60)	1.42	(36)	1.10	(28)	.55	(14)	1.42	(36)	.23	(5.8)
40.	**TR.40.05.**M6 1)	3.35	(85)	3.33	(84.5)	1.81	(46)	1.26	(32)	.83	(21)	1.06	(27)	.26	(6.5)
50.	**TR.50.05.**M6 1)	3.78	(96)	4.02	(102)	2.28	(58)	2.64	(67)	.83	(21)	1.06	(27)	.26	(6.5)
60.	**TR.60.05.**M8 1)	4.96	(126)	4.96	(126)	2.76	(70)	1.97	(50)	1.26	(32)	1.57	(40)	.35	(9)
65. *(R 200)*	**TR.65.05.**M8 1)	4.96	(126)	4.96	(126)	2.95	(75)	2.95	(75)	1.26	(32)	1.57	(40)	.35	(9)
70.	**TR.70.05.**M8 1)	6.02	(153)	6.10	(155)	3.39	(86)	2.76	(70)	1.38	(35)	1.57	(40)	.35	(9)
85.	**TR.85.05.**M8 1)	6.02	(153)	6.10	(155)	3.94	(100)	3.31	(84)	1.38	(35)	1.57	(40)	.35	(9)
85. *(R 240)*	**TR.85.05.**M8 1)	6.02	(153)	6.10	(155)	3.94	(100)	3.31	(84)	1.38	(35)	1.57	(40)	.35	(9)
100.	**TR.100.05.**M8 1) *	6.40	(162.5)	6.67	(169.5)	4.53	(115)	3.35	(85)	1.10	(28)	1.57	(40)	.33	(8.5)
125.	**TR.125.05.**M8 1)	7.05	(179)	7.48	(190)	5.59	(142)	3.31	(84)	1.57	(40)	2.52	(64)	.35	(9)

TR.100.05 with 3 holes
Standard: through holes in Ø G
1) option: with insert nuts, steel, M6/M8

triflex® R - Accessories
For Series TRC / TRE / TRCF / TRL / TRLF
Swivel bearing mounting brackets - **With strain relief**

Mounting bracket
with strain relief, only for TR.40.03 to TR.100.03





- Standard mounting bracket with strain relief and maintenance-free igubal® spherical bearing
- Pivoting mounting for extreme rotating and reverse bending movements
- For TRC·TRE·TRCF·TRL·TRLF

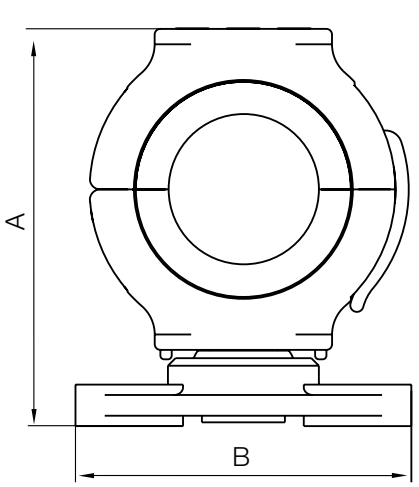
Swivel bearing mounting brackets - With strain relief - For TRC·TRE·TRCF·TRL·TRLF

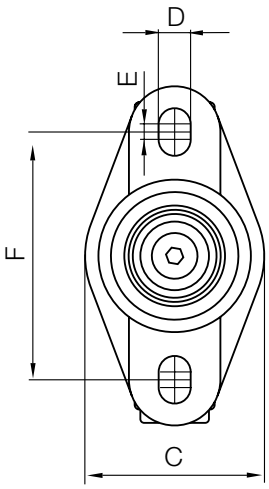


TR.40.03 / TR.100.03

ø Index	Part No. **with** strain relief	A in.	A (mm)	B in.	B (mm)	C in.	C (mm)	D in.	D (mm)	E in.	E (mm)	F in.	F (mm)	G in.	G (mm)
30.		–		–		–		–		–		–		–	
40.	**TR.40.03**	4.13	(105)	3.50	(89)	1.85	(47)	.33	(8.4)	.16	(4.1)	2.56	(65)	2.04	(51.8)
50.	**TR.50.03**	4.13	(105)	3.50	(89)	1.85	(47)	.33	(8.4)	.16	(4.1)	2.56	(65)	2.17	(55)
60.	**TR.60.03**	5.98	(152)	4.65	(118)	2.56	(65)	.41	(10.5)	.22	(5.5)	3.44	(87.5)	2.89	(73.5)
65.	**TR.65.03**	5.98	(152)	4.65	(118)	2.56	(65)	.41	(10.5)	.22	(5.5)	3.44	(87.5)	2.89	(73.5)
70.	**TR.70.03**	5.98	(152)	4.65	(118)	2.56	(65)	.41	(10.5)	.22	(5.5)	3.44	(87.5)	2.89	(73.5)
85.	**TR.85.03**	7.05	(179)	4.65	(118)	2.56	(65)	.41	(10.5)	.22	(5.5)	3.44	(87.5)	3.46	(88)
85. *(R 240)*	**TR.85.240.03**	7.05	(179)	4.65	(118)	2.56	(65)	.41	(10.5)	.22	(5.5)	3.44	(87.5)	3.46	(88)
100.	**TR.100.03**	7.05	(179)	4.65	(118)	2.56	(65)	.41	(10.5)	.22	(5.5)	3.44	(87.5)	3.46	(88)
125.		–		–		–		–		–		–		–	

Mounting bracket
without strain relief, only for TR.40.04 to TR.100.04







- Standard mounting bracket without strain relief and maintenance-free igubal® spherical bearing
- Pivoting mounting for extreme rotating and reverse bending movements
- For TRC·TRE·TRCF·TRL·TRLF

Swivel bearing mounting brackets - Without strain relief - For TRC·TRE·TRCF·TRL·TRLF

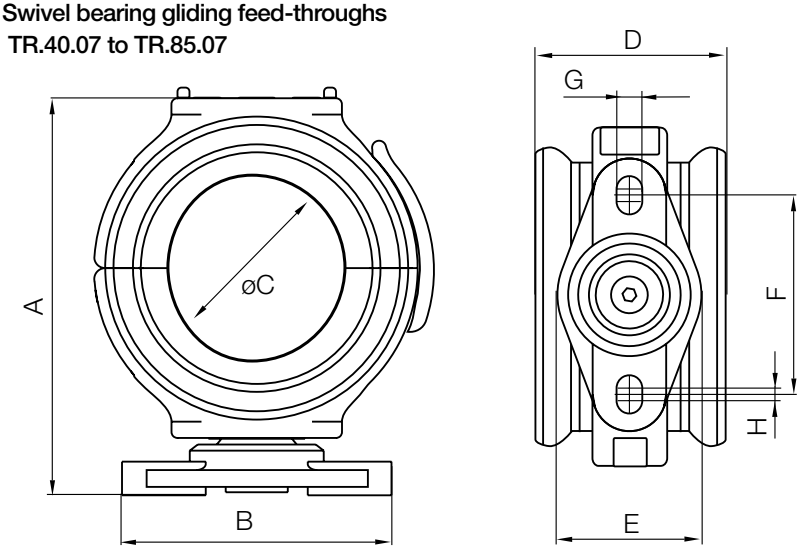


TR.40.04 / TR.100.04

ø Index	Part No. without strain relief	A in.	A (mm)	B in.	B (mm)	C in.	C (mm)	D in.	D (mm)	E in.	E (mm)	F in.	F (mm)	G in.	G (mm)
30.		–		–		–		–		–		–		–	
40.	**TR.40.04**	4.13	(105)	3.50	(89)	1.85	(47)	.33	(8.4)	.16	(4.1)	2.56	(65)	–	
50.	**TR.50.04**	4.13	(105)	3.50	(89)	1.85	(47)	.33	(8.4)	.16	(4.1)	2.56	(65)	–	
60.	**TR.60.04**	5.98	(152)	4.65	(118)	2.56	(65)	.41	(10.5)	.22	(5.5)	3.44	(87.5)	–	
65.	**TR.65.04**	5.98	(152)	4.65	(118)	2.56	(65)	.41	(10.5)	.22	(5.5)	3.44	(87.5)	–	
70.	**TR.70.04**	5.98	(152)	4.65	(118)	2.56	(65)	.41	(10.5)	.22	(5.5)	3.44	(87.5)	–	
85.	**TR.85.04**	7.05	(179)	4.65	(118)	2.56	(65)	.41	(10.5)	.22	(5.5)	3.44	(87.5)	–	
85. *(R 240)*	**TR.85.240.04**	7.05	(179)	4.65	(118)	2.56	(65)	.41	(10.5)	.22	(5.5)	3.44	(87.5)	–	
100.	**TR.100.04**	7.05	(179)	4.65	(118)	2.56	(65)	.41	(10.5)	.22	(5.5)	3.44	(87.5)	–	
125.		–		–		–		–		–		–		–	

triflex® R - Accessories
For Series TRC / TRE / TRCF
Swivel bearing gliding feed-throughs

Swivel bearing gliding feed-throughs
TR.40.07 to TR.85.07





- Gliding feed-through with swivel bearing
- For TRC·TRE·TRCF e-chains®
- Pivoting mounting with maintenance-free igubal® spherical bearings

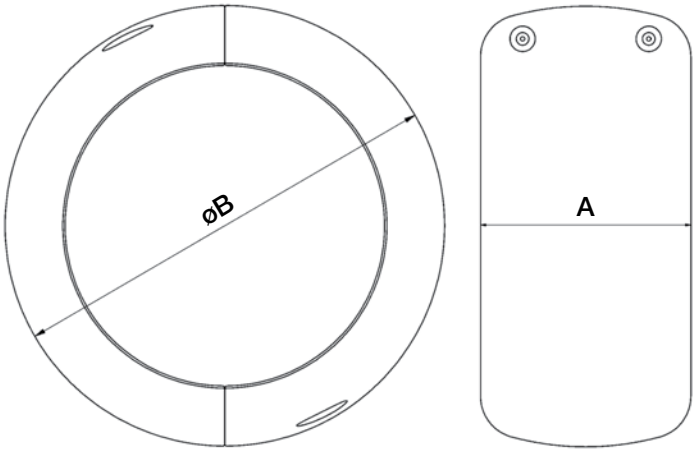
Swivel bearing gliding feed-throughs - For TRC·TRE·TRCF



TR.40.07 to TR.100.07

ø Index	Part No. **with** swivel bearing	A in.	A (mm)	B in.	B (mm)	C in.	C (mm)	D in.	D (mm)	E in.	E (mm)	F in.	F (mm)	G in.	G (mm)
30.		–		–		–		–		–		–		–	
40.	**TR.40.07**	4.25	(108)	3.50	(89)	1.81	(46)	1.26	(32)	1.85	(47)	2.56	(65)	.33	(8.4)
50.	**TR.50.07**	4.69	(119)	3.50	(89)	2.28	(58)	2.64	(67)	1.85	(47)	2.56	(65)	.33	(8.4)
60.	**TR.60.07**	6.14	(156)	4.65	(118)	2.76	(70)	1.97	(50)	2.56	(65)	3.44	(87.5)	.41	(10.5)
60.	**TR.65.07**	6.14	(156)	4.65	(118)	2.95	(75)	2.95	(75)	2.56	(65)	3.44	(87.5)	.41	(10.5)
70.	**TR.70.07**	7.20	(183)	4.65	(118)	3.39	(86)	2.76	(70)	2.56	(65)	3.44	(87.5)	.41	(10.5)
85.	**TR.85.07**	7.20	(183)	4.65	(118)	3.94	(100)	3.31	(84)	2.56	(65)	3.44	(87.5)	.41	(10.5)
85. *(R 240)*	**TR.85.07**	7.20	(183)	4.65	(118)	3.94	(100)	3.31	(84)	2.56	(65)	3.44	(87.5)	.41	(10.5)
100.	–	–		–		–		–		–		–		–	
125.	–	–		–		–		–		–		–		–	

Protector
TR.XX.10 to TR.XX.30





- Optional protectors can be fitted at contact points
- For extreme operations and long service life
- Easy gliding over edges
- Damping, light, freely positionable
- Easy to fit and quick replacement
- Protector with quick-release fastener also available

Protectors - For TRC·TRE·TRCF



TR.40.10 to TR.125.10



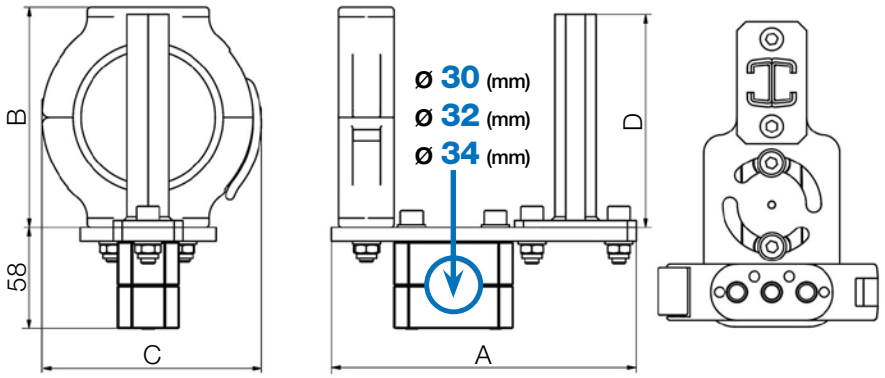
TR.40.30 to TR.100.30

ø Index	Part No. **with** screw connection	Part No. **with** quick release	A in.	A (mm)	B in.	B (mm)
30.	▶	–	–		–	
40.	▶ **TR.40.10**	**TR.40.30**[2]	1.06	(27)	2.17	(55)
50.	▶ **TR.50.10**	TR.50.30[1]	1.34	(34)	2.72	(69)
60.	▶ **TR.60.10**	**TR.60.30**[2]	1.57	(40)	3.15	(80)
65.	▶ **TR.65.10**	TR.65.30[1]	1.73	(44)	3.46	(88)
70.	▶ **TR.70.10**	**TR.70.30**	1.97	(50)	4.02	(102)
85.	▶ **TR.85.10**	**TR.85.30**	2.32	(59)	4.65	(118)
85. *(R 240)*	▶ **TR.85.240.10**	TR.85.240.30[1]	2.48	(63)	4.72	(120)
100.	▶ **TR.100.10**	**TR.100.30**	2.64	(67)	5.24	(133)
125.	▶ **TR.125.10**	–	3.23	(82)	6.69	(170)

1) Available upon request. Delivery time upon request
2) TR-40-30, TR-60-30 without an additional locking clip

triflex® R - Accessories
For Series TRC / TRE / TRCF
Heavy duty connections for axis 6

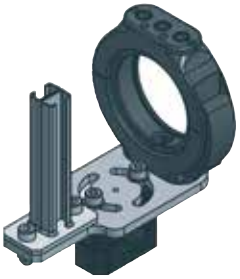
Heavy duty connections - Standard
TR.60.20.XX to TR.125.20.XX





- Heavy duty connection - standard
- For cables with large cross section
- For heavy hydraulic hoses
- Double C-profile for CFX clamps
- igus® chainfix clamps must be ordered separately

Heavy duty connections - For TRC·TRE·TRCF

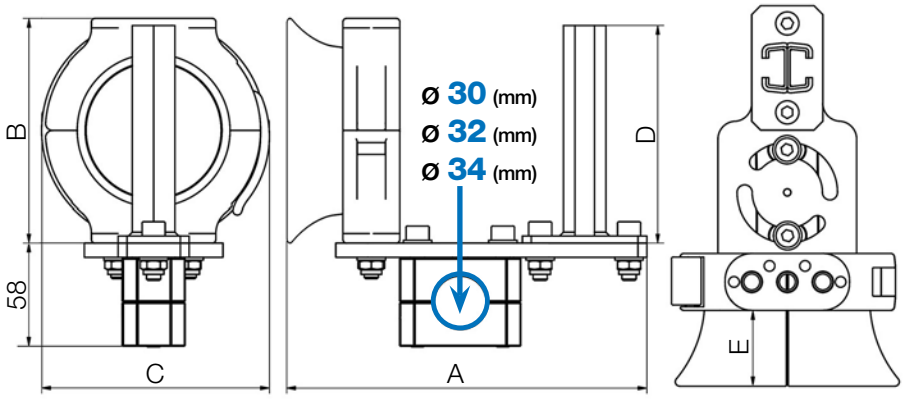


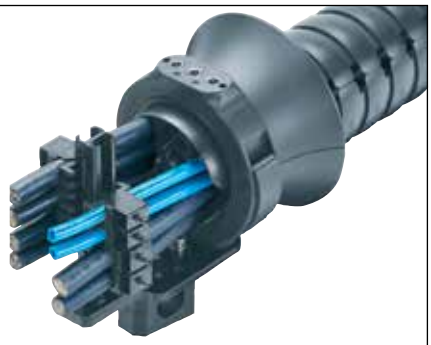
TR.60.20.XX to TR.125.20.XX

ø Index	Part No. standard	Clamp diameter ø (mm)	A in.	A (mm)	B in.	B (mm)	C in.	C (mm)	D in.	D (mm)
30.	–	–	–		–		–		–	
40.	–	–	–		–		–		–	
50.	–	–	–		–		–		–	
60.	**TR.60.20.**	| 30 | 32 | 34 |	6.89	(175)	4.96	(126)	4.96	(126)	4.80	(122)
65.	**TR.65.20.**	| 30 | 32 | 34 |	6.89	(175)	4.96	(126)	4.96	(126)	4.80	(122)
70.	**TR.70.20.**	| 30 | 32 | 34 |	6.89	(175)	4.96	(126)	4.96	(126)	4.80	(122)
85.	**TR.85.20.**	| 30 | 32 | 34 |	6.89	(175)	6.02	(153)	6.10	(155)	5.87	(149)
85. *(R 240)*	**TR.85.240.20.**	| 30 | 32 | 34 |	6.89	(175)	6.02	(153)	6.10	(155)	5.87	(149)
100.	**TR.100.20.**	| 30 | 32 | 34 |	6.89	(175)	6.02	(153)	6.10	(155)	5.87	(149)
125.	**TR.125.20.**	| 30 | 32 | 34 |	7.09	(180)	7.48	(190)	7.48	(190)	6.89	(175)

Standard clamp for axis 6: ø (30mm) 1.18”
Part No. with desired diameter for the axis 6 clamp | **30** | **32** | **34** | e.g. **TR.100.20.30**

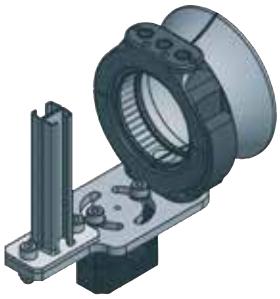
Heavy duty connections - With radius support
TR.60.23.XX to TR.125.23.XX





- With radius support
- For cables with large cross section
- For heavy hydraulic hoses
- Double C-profile for CFX clamps
- igus® chainfix clamps must be ordered separately. Protector with quick-release fastener also available

Heavy duty connections - With radius support - For TRC·TRE·TRCF



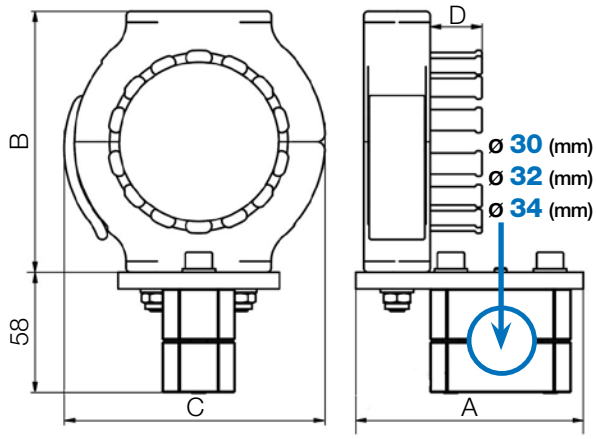
TR.60.23.XX to TR.125.23.XX

ø Index	Part No. **with** radius support	Clamp diameter ø (mm)	A in.	A (mm)	B in.	B (mm)	C in.	C (mm)	D in.	D (mm)	E in.	E (mm)
30.	▶ –	–	–		–		–		–		–	
40.	▶ –	–	–		–		–		–		–	
50.	▶ –	–	–		–		–		–		–	
60.	▶ **TR.60.23.**	| 30 | 32 | 34 |	8.23	(209)	4.96	(126)	5.12	(130)	4.80	(122)	1.50	(38)
65.	▶ **TR.65.23.**	| 30 | 32 | 34 |	8.43	(214)	4.96	(126)	5.12	(130)	4.80	(122)	1.77	(45)
70.	▶ **TR.70.23.**	| 30 | 32 | 34 |	8.43	(214)	4.96	(126)	5.12	(130)	4.80	(122)	1.69	(43)
85.	▶ **TR.85.23.**	| 30 | 32 | 34 |	8.74	(222)	6.10	(155)	6.10	(155)	5.87	(149)	1.93	(49)
85. *(R 240)*	▶ –	–	–		–		–		–		–	
100.	▶ **TR.100.23.**	| 30 | 32 | 34 |	9.45	(240)	6.10	(155)	6.10	(155)	5.87	(149)	2.64	(67)
125.	▶ **TR.125.23.**	| 30 | 32 | 34 |	9.92	(252)	7.48	(190)	7.48	(190)	6.89	(175)	2.83	(72)

Standard clamp for axis 6: ø (30mm) 1.18”
Part No. with desired diameter for the axis 6 clamp | **30** | **32** | **34** | e.g. **TR.100.20.30**

triflex® R - Accessories
For Series TRC / TRE / TRCF
Compact connections for clamp axis 6 - **With** strain relief

Compact connection - **With** strain relief
TR.40.21.01.XX to TR.100.21.01.XX





- With integrated strain relief tiewrap plates
- Safe and simple securing of the cables with cable ties
- Various adjustment options

Compact connections - With strain relief - For TRC-TRE-TRCF

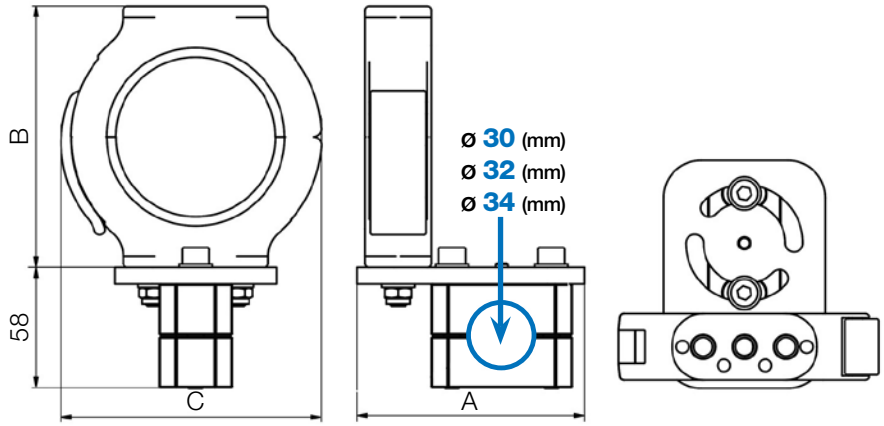


TR.40.21.01.XX to TR.100.21.01.XX

ø Index	Part No. **with** strain relief	Clamp diameter ø (mm)	A in.	A (mm)	B in.	B (mm)	C in.	C (mm)	D in.	D (mm)
30.	▶ –	–	–		–		–		–	
40.	▶ **TR.40.21.01.**	| 30 | 32 | 34 |	4.33	(110)	3.35	(85)	3.33	(84.5)	.70	(17.8)
50.	▶ **TR.50.21.01.**	| 30 | 32 | 34 |	4.33	(110)	3.35	(85)	3.33	(84.5)	.83	(21)
60.	▶ **TR.60.21.01.**	| 30 | 32 | 34 |	4.33	(110)	4.96	(126)	4.96	(126)	.98	(25)
70.	▶ **TR.70.21.01.**	| 30 | 32 | 34 |	4.33	(110)	4.96	(126)	4.96	(126)	.98	(25)
85.	▶ **TR.85.21.01.**	| 30 | 32 | 34 |	4.33	(110)	6.02	(153)	6.10	(155)	1.50	(38)
85. *(R 240)*	▶ **TR.85.240.21.01.**	| 30 | 32 | 34 |	4.33	(110)	6.02	(153)	6.10	(155)	1.50	(38)
100.	▶ **TR.100.21.01.**	| 30 | 32 | 34 |	4.33	(110)	6.02	(153)	6.10	(155)	1.50	(38)
125.	▶ –	–	–		–		–		–	

Standard clamp for axis 6: ø (30mm) 1.18”
Part No. with desired diameter for the axis 6 clamp | **30** | **32** | **34** | e.g. **TR.100.21.30**

Compact connection - **Without** strain relief
TR.40.21.02.XX to TR.100.21.02.XX





- Without strain relief
- Space-saving
- Various adjustment options

Compact connections - Without strain relief - For TRC-TRE-TRCF



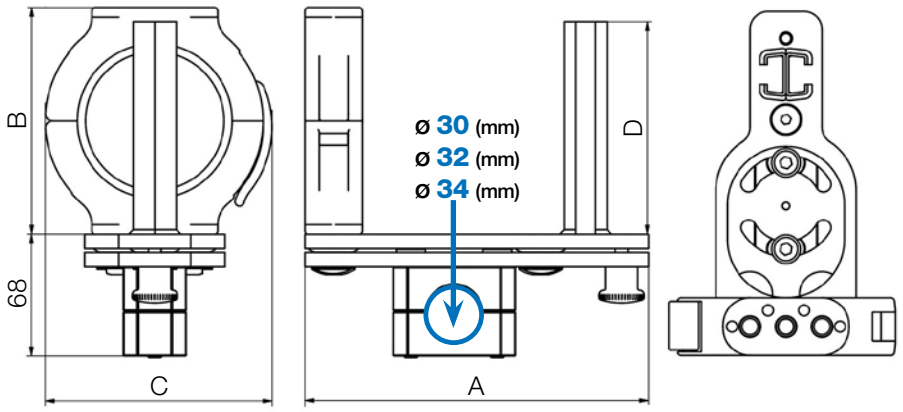
TR.40.21.02.XX to TR.100.21.02.XX

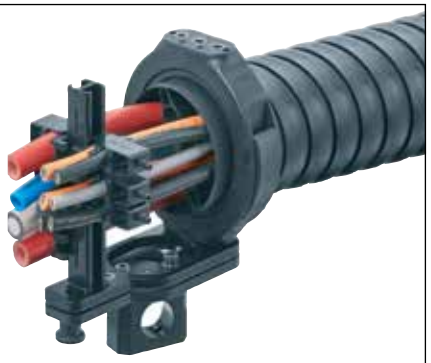
ø Index	Part No. **without** strain relief	Clamp diameter ø (mm)	A in.	A (mm)	B in.	B (mm)	C in.	C (mm)
30.	–	–		–		–		–
40.	**TR.40.21.02.**	| 30 | 32 | 34 |	4.33	(110)	3.35	(85)	3.33	(84.5)
50.	**TR.50.21.02.**	| 30 | 32 | 34 |	4.33	(110)	3.35	(85)	3.33	(84.5)
60.	**TR.60.21.02.**	| 30 | 32 | 34 |	4.33	(110)	4.96	(126)	4.96	(126)
65.	**TR.65.21.02.**	| 30 | 32 | 34 |	4.33	(110)	4.96	(126)	4.96	(126)
70.	**TR.70.21.02.**	| 30 | 32 | 34 |	4.33	(110)	6.02	(153)	6.10	(155)
85.	**TR.85.21.02.**	| 30 | 32 | 34 |	4.33	(110)	6.02	(153)	6.10	(155)
85. *(R 240)*	**TR.85.240.21.02.**	| 30 | 32 | 34 |	4.33	(110)	6.02	(153)	6.10	(155)
100.	**TR.100.21.02.**	| 30 | 32 | 34 |	9.45	(240)	6.10	(155)	6.10	(155)
125.	–	–		–		–		–

Standard clamp for axis 6: ø (30mm) 1.18”
Part No. with desired diameter for the axis 6 clamp | **30** | **32** | **34** | e.g. **TR.100.21.02.30**

triflex® R - Accessories
For Series TRC / TRE / TRCF / TRL / TRLF
Quick exchange kit for clamp axis 6

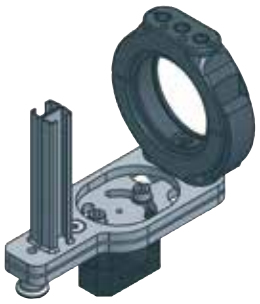
Quick exchange kit
TR.60.22.XX to TR.100.22.XX





- Exchange in seconds
- No repeat alignment required
- Exchange the triflex® R unit incl. cables without tools
- Option available with strain relief

Quick exchange kit - For TRC-TRE-TRCF



TR.60.22.XX to TR.100.22.XX

ø Index	Part No. quick change unit	Clamp diameter ø (mm)	A in.	A (mm)	B in.	B (mm)	C in.	C (mm)	D in.	D (mm)
30.	–	–	–		–		–		–	
40.	–	–	–		–		–		–	
50.	–	–	–		–		–		–	
60.	**TR.60.22.**	| 30 | 32 | 34 |	7.52	(191)	4.96	(126)	4.96	(126)	4.96	(126)
65.	**TR.65.22.**	| 30 | 32 | 34 |	7.52	(191)	4.96	(126)	4.96	(126)	4.96	(126)
70.	**TR.70.22.**	| 30 | 32 | 34 |	7.52	(191)	4.96	(126)	4.96	(126)	4.96	(126)
85.	**TR.85.22.**	| 30 | 32 | 34 |	7.52	(191)	6.02	(153)	6.10	(155)	6.02	(153)
85. *(R 240)*	**TR.85.240.22.**	| 30 | 32 | 34 |	7.52	(191)	6.02	(153)	6.10	(155)	6.02	(153)
100.	**TR.100.22.**	| 30 | 32 | 34 |	7.52	(191)	6.02	(153)	6.10	(155)	6.02	(153)
125.	–	–	–		–		–		–	

Standard clamp for axis 6: ø (30mm) 1.18”
Part No. with desired diameter for the axis 6 clamp | **30** | **32** | **34** | e.g. **TR.100.22-30**

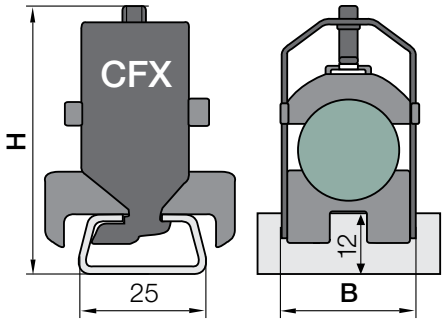
chainfix - Single clamp including bottom saddles



- For use with heavy-duty connection **TR.XX.20** / **TR.XX.23** and quick release unit **TR.XX.22**
- Reliably absorbs tensile forces even for larger cable diameters
- Specifically recommended for solid welding cables and rigid hydraulic hoses
- Space- and time-saving assembly onto the profile rail
- Simple assembly with hex head set screw
- High strength for dynamic applications with improved stacker elements
- Built-in ribs on the stacker elements give secure grip on the cables
- Steel (material galvanized steel) or stainless steel (material 1.4301/AISI 304) available

Part No. steel	Part No. stainless steel*	≤ ø		B+2		H	
		in.	(mm)	in.	(mm)	in.	(mm)
CFX12-1	**CFX12-1-E**	.24 - .47	06 - 12	.63	16	1.57	40
CFX14-1	**CFX14-1-E**	.47 - .55	12 - 14	.71	18	1.97	50
CFX16-1	**CFX16-1-E**	.55 - .63	14 - 16	.79	20	2.05	52
CFX18-1	**CFX18-1-E**	.63 - .71	16 - 18	.87	22	2.13	54
CFX20-1	**CFX20-1-E**	.71 - .79	18 - 20	.94	24	2.20	56
CFX22-1	**CFX22-1-E**	.79 - .87	20 - 22	1.02	26	2.28	58
CFX26-1	**CFX26-1-E**	.87 - 1.02	22 - 26	1.18	30	2.64	67
CFX30-1	**CFX30-1-E**	1.02 - 1.18	26 - 30	1.34	34	2.80	71
CFX34-1	**CFX34-1-E**	1.18 - 1.34	30 - 34	1.50	38	2.95	75

*Stainless steel material: 1.4301/AISI 304





Individual strain relief for every cable offers security and easy replacement

Telephone 1-800-521-2747

Internet: igus.com
email: sales@igus.com
QuickSpec: igus.com/quickspec

triflex® R - Accessories
For Series TRC / TRE / TRL
COBOT Cable Management Kits and Accessories



Cable management systems for Cobots

Secure mounting brackets combined with superior triflex® cable management for all collaborative robots

Now, you can quickly attach or retrofit your cobot's cable management system in just a few simple steps using our plastic mounting brackets with hook and loop attachment straps. The adjustable straps fit around virtually any cobot manufacturer's arm. Each kit includes a length of triflex® R TRE cable carrier, designed for superior cable management and protection. The triflex® R TRE is designed with two easy access chambers to keep cables protected and features high tensile strength due to the ball-and-socket design. The triflex® R TRE has a small bend radius and short pitch as well as a defined torsion stop which allows for multi-axis movement in any direction.

Benefits:

- For various robot arm diameters, universal applications
- Compact, smooth design
- Silicone-free, suitable for the automotive industry
- Assembled and retrofitted in just a few steps
- Low-cost addition to cobot accessories product range



Cobot kit with hook and loop brackets





TR.COB.VEL.30 / TR.COB.VEL.40

Cost-effective mounting with hook-and-loop on both the robot and the cable carrier sides

Included in the kit:

- 1 triflex® cable carrier (approx. 6 ft.)
- 4 one-meter hook-and-loop lengths
- 4 Plastic bases
- 1 strain relief bracket
- 1 set of lock clips
- 1 set of screws
- 1 triflex® assembly tool

Cobot kit with light plastic brackets





TR.COB.LT.30 / TR.COB.LT.40

Lightweight plastic brackets for securing the cable carrier

Included in the kit:

- 1 triflex® cable carrier (approx. 6 ft.)
- 4 one-meter hook-and-loop lengths
- 4 Plastic bases
- 4 light brackets (screws included)
- 1 strain relief bracket
- 1 set of lock clips
- 1 triflex® assembly tool

triflex® R - Accessories
For Series TRC / TRE / TRL
COBOT Cable Management Kits and Accessories

Cobot kit with protected plastic brackets brackets





TR.COB.PRO.40

Plastic brackets with rounded edges for increased safety

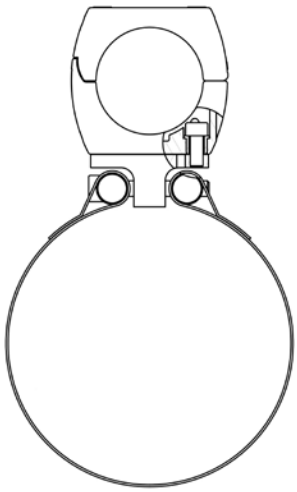
Included in the kit:

- 1 triflex® cable carrier (approx. 6 ft.)
- 4 one-meter hook-and-loop lengths
- 4 Plastic bases
- 4 protector brackets (screws included)
- 1 strain relief bracket
- 1 set of lock clips
- 1 triflex® assembly tool

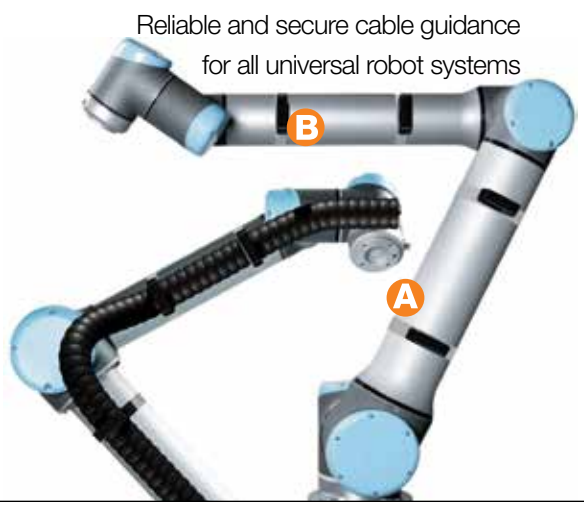
Cobot kit accessories

Part. No.		Description	Availability		
			30mm	40mm	50mm
TR.COB.01.00.0		Plastic Base with hook and loop adjustable strap	●	●	●
TR.COB.LT.30		Plastic Base with hook and loop adjustable strap and light mounting bracket	●	–	–
TR.COB.LT.40			–	●	–
TR.COB.PRO.40		Plastic Base with hook and loop adjustable strap and protector bracket	–	●	–

Universal robot kits with metal clamp brackets







Universal Robot Kits using igus® metal brackets

igus part number	For UR-robot system	Triflex size
TR.UR3.TRE.30	UR3/UR3e	TRE.30
TR.UR3.TRE.40B	UR3/UR3e	TRE.40B
TR.UR3.TRC.30	UR3/UR3e	TRC.30
TR.UR3.TRC.40	UR3/UR3e	TRC.40
TR.UR5.TRE.30	UR5/UR5e	TRE.30
TR.UR5.TRE.40B	UR5/UR5e	TRE.40B

igus part number	For UR-robot system	Triflex size
TR.UR5.TRC.30	UR5/UR5e	TRC.30
TR.UR5.TRC.40	UR5/UR5e	TRC.40
TR.UR10.TRE.30	UR10/UR10e/UR16e	TRE.30
TR.UR10.TRE.40B	UR10/UR10e/UR16e	TRE.40B
TR.UR10.TRC.30	UR10/UR10e/UR16e	TRC.30
TR.UR10.TRC.40	UR10/UR10e/UR16e	TRC.40

Metal brackets - suitable for TRC-30 / TRE-30 / TRL-30 e-chains®

Part No. **without** strain relief	Part No. **with** strain relief	For UR-robot system	ø in.	ø (mm)	Position
TR.911.965.054.Z0	**TR.911.965.054.Z1**	UR3/UR3e	2.13	(054)	**B**
TR.911.965.066.Z0	**TR.911.965.066.Z1**	UR3/UR3e	2.60	(066)	**A**
TR.911.965.075.Z0	**TR.911.965.075.Z1**	UR5/UR5e	2.95	(075)	**B**
TR.911.965.086.Z0	**TR.911.965.086.Z1**	UR5/UR5e	3.39	(086)	**A**
TR.911.965.086.Z0	**TR.911.965.086.Z1**	UR10/UR10e/UR16e	3.39	(086)	**B**
TR.911.965.108.Z0	**TR.911.965.108.Z1**	UR10/UR10e/UR16e	4.25	(108)	**A**

Metal brackets - suitable for TRC-40 / TRE-40 / TRL-40 e-chains®

Part No. **without** strain relief	Part No. **with** strain relief	For UR-robot system	ø in.	ø (mm)	Position
TR.911.966.054.Z0	**TR.911.966.054.Z1**	UR3/UR3e	2.13	(054)	**B**
TR.911.966.066.Z0	**TR.911.966.066.Z1**	UR3/UR3e	2.60	(066)	**A**
TR.911.966.075.Z0	**TR.911.966.075.Z1**	UR5/UR5e	2.95	(075)	**B**
TR.911.966.086.Z0	**TR.911.966.086.Z1**	UR5/UR5e	3.39	(086)	**A**
TR.911.966.086.Z0	**TR.911.966.086.Z1**	UR10/UR10e/UR16e	3.39	(086)	**B**
TR.911.966.108.Z0	**TR.911.966.108.Z1**	UR10/UR10e/UR16e	4.25	(108)	**A**

triflex® R - Accessories
For Series TRC / TRE / TRCF / TRL / TRLF
Protective jackets

Standard protective jacket



● Base support: fabric ● Plastic coated ● Easy to replace with Velcro fastenings ● Elastic sealing strips ● Standard lengths available from stock ● For paint or sealing applications ● PVC material ● Polyester coated fabrics

ø Index		Part No. jacket	Standard lengths[2] XXXX (mm)
30.	▶	–	–
40.	▶	**TR.40.14.**	| **500** | **1000** | **1500** | **2000** |
50.	▶	**TR.50.14.**	| **500** | **1000** | **1500** | **2000** |
60.	▶	**TR.60.14.**	| **500** | **1000** | **1500** | **2000** |
65.	▶	**TR.65.14.**	| **500** | **1000** | **1500** | **2000** |
70.	▶	**TR.70.14.**	| **500** | **1000** | **1500** | **2000** |
85.	▶	**TR.85.14.**	| **500** | **1000** | **1500** | **2000** |
100.	▶	**TR.100.14.**	| **500** | **1000** | **1500** | **2000** |
125.	▶	**TR.125.14.**	| **500** | **1000** | **1500** | **2000** |

2) Special lengths upon request

Part No. with the desired standard value for the length **XXXX**
Example: **TR.60.14.500**

Heat shield protective jacket



Made from heat resistant, wear-resistant Kevlar ● Short-term protection against welding and metal spatter, temperatures up to 540°C ● High abrasion resistance ● Sealed design ● For tough environments ● Easy to replace or retrofit with zipper closure ● Velcro straps at each end ● Tough design Silicone-free ● Asbestos-free Standard lengths from stock

ø Index		Part No. jacket	Standard lengths[2] XXXX (mm)
30.	▶	–	–
40.	▶	**TR.40.18.**	| **500** | **1000** | **1500** | **2000** |
50.	▶	**TR.50.18.**	| **500** | **1000** | **1500** | **2000** |
60.	▶	**TR.60.18.**	| **500** | **1000** | **1500** | **2000** |
65.	▶	**TR.65.18.**	| **500** | **1000** | **1500** | **2000** |
70.	▶	**TR.70.18.**	| **500** | **1000** | **1500** | **2000** |
85.	▶	**TR.85.18.**	| **500** | **1000** | **1500** | **2000** |
100.	▶	**TR.100.18.**	| **500** | **1000** | **1500** | **2000** |
125.	▶	**TR.125.18.**	| **500** | **1000** | **1500** | **2000** |

2) Special lengths upon request

Part No. with the desired standard value for the length **XXXX**
Example: **TR.60.18.500**

Wear resistant protective jacket



● Extremely high abrasion resistance ● Black leather ● For use in temperatures from -40°F to +212°F (-40°C to +100°C) ● Very Flexible ● Easy to exchange or retrofit ● Silicone-free ● Asbestos-free ● Standard lengths from stock

ø Index		Part No. jacket	Standard lengths[2] XXXX (mm)
30.	▶	–	–
40.	▶	**TR.40.19.**	| **500** | **1000** | **1500** | **2000** |
50.	▶	**TR.50.19.**	| **500** | **1000** | **1500** | **2000** |
60.	▶	**TR.60.19.**	| **500** | **1000** | **1500** | **2000** |
65.	▶	**TR.65.19.**	| **500** | **1000** | **1500** | **2000** |
70.	▶	**TR.70.19.**	| **500** | **1000** | **1500** | **2000** |
85.	▶	**TR.85.19.**	| **500** | **1000** | **1500** | **2000** |
100.	▶	**TR.100.19.**	| **500** | **1000** | **1500** | **2000** |
125.	▶	**TR.125.19.**	| **500** | **1000** | **1500** | **2000** |

2) Special lengths upon request

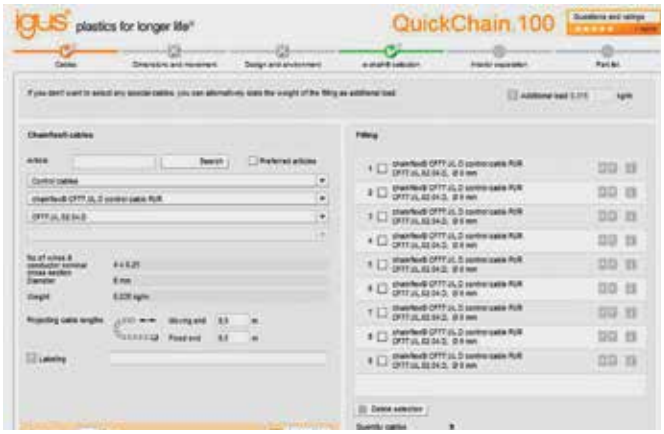
Part No. with the desired standard value for the length **XXXX**
Example: **TR.60.19.500**

triflex® R interior separation - configure e-chains® easily

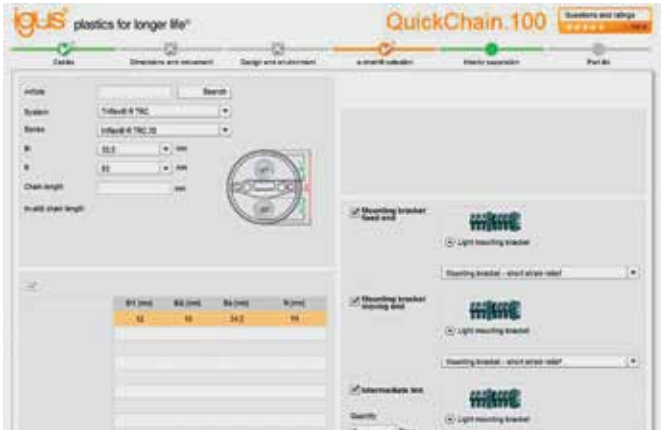
Quick and easy creation of interior separation layouts for triflex® R. After selecting the cables, they can be dragged & dropped into the e-chain® layout. The interior separation configurator creates a parts list of the e-chain® and the cables contained in the configuration. The configurations can be saved and reloaded. The entire configuration can be transferred to the shopping cart with a click.

- Quick and easy interior separation configurator
- Accounts for maximum filling rules for cables and hoses
- Creation of parts lists
- Easy inquiry and ordering

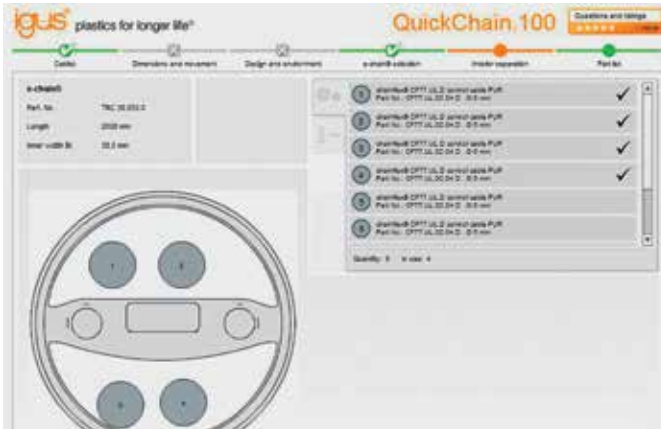
More information and interior separation configurator
▶ www.igus.com/triflexR-IA



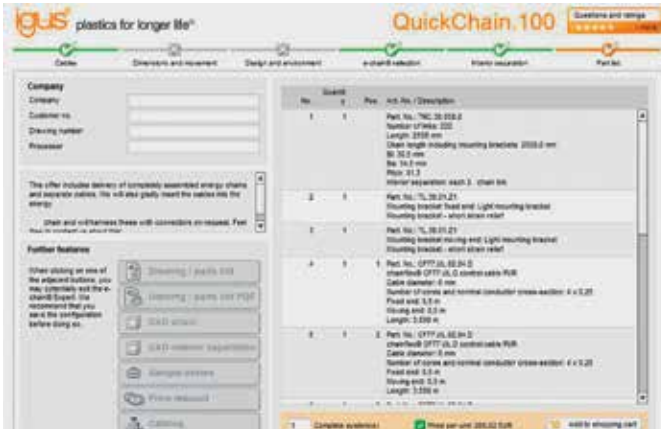
1. Select cables, hoses and lengths



2. Select e-chain® and size



3. Fill the e-chain® with cables and hoses



4. Result: parts list, price and drawings

triflex® R - readychain® dress-packs

Customized system consisting of the triflex® R, chainflex® and connectors

- Eliminate storage costs for cables, e-chains® and plugs
- Shorten turnaround times by half, minimize your machine downtime
- Reduce the number of suppliers and orders by 75%

More information ▶ www.igus.com/readychain

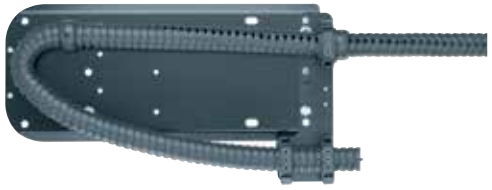


triflex® R - Retraction System
System overview and advantages



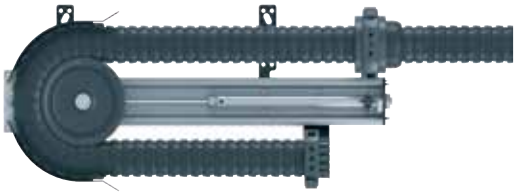
RSE linear
retraction system

Advantages:
- Special linear guide avoids small bend radii
- Simple, linear retraction without loops, fiber-rods or guide rollers
- Up to 19.29” (490mm) retraction length possible
- Space-saving
- Maintenance-free igus® drylin® W linear unit
- For series TRC·TRE·TRCF* with ø-index 1.57-3.94” (40-100mm)



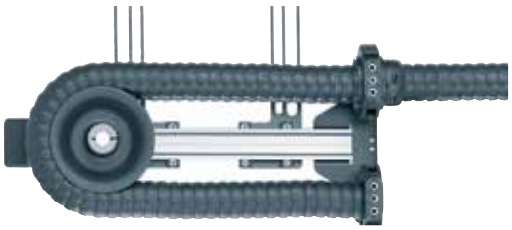
RS modular
retraction system

Advantages:
- For use with adverse environmental influences
- Retraction force provided by integrated fiber-rods
- For robots with a load capacity from approximately 22.05 lbs (10kg)
- Up to 26.38” (670mm) retraction length possible
- If a linear guide system is not needed
- For series TRC·TRE with ø-index 1.57-3.94” (40-100mm)



RSP pneumatic
retraction system

Advantages:
- Standard pneumatic components
- Sensor based monitoring possible
- For applications with a high fill weight
- Constant force over the complete travel
- For robots with a load capacity from approximately 110.2 lbs (50kg)
- Up to 30.71” (780mm) retraction length possible
- For series TRC·TRE·TRCF with a ø-index of 2.36-4.92” (60-125mm)



RSE wheel
retraction system

Advantages:
- For small robots, very light
- Up to 19.69” (500mm) retraction length possible
- For highly dynamic movements
- Cost-effective
- Maintenance-free igus® drylin® W linear unit
- For series TRC·TRE with ø-index 1.57-1.97” (40-50mm)



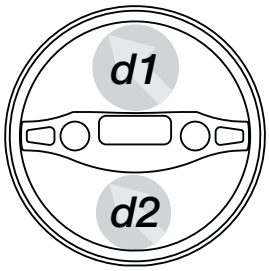
RSEL linear,
retraction system

Advantages:
- Linear guidance even for highly dynamic applications
- For robots with high and medium payloads
- Up to 14.96” (380mm) retraction length possible
- Cost-effective
- For series TRC·TRE·TRCF with a ø-index of 2.76-3.35” (70-85mm)

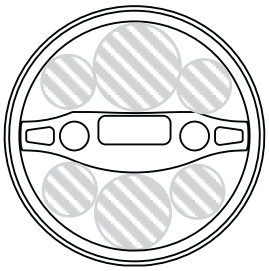
Choosing the right e-chain® size and retraction system

If you want to select a suitable retraction system yourself, please ensure that you observe the maximum cable diameter and usage data.

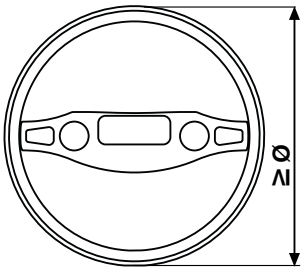
1 The largest cable diameter ø ...



2 ... and max. usable e-chain® cross section area ...



3 ... determine the necessary Ø index of the triflex® R ...



4 ... select from 4 retraction systems options:

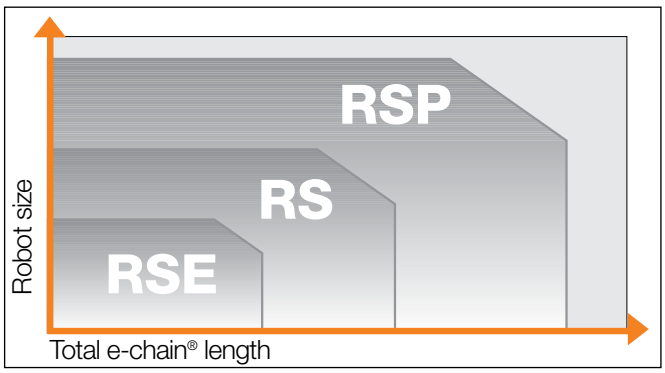


Max. cable Ø				Coverage of the entire area		Minimum Ø-index triflex® R	Retraction system				
1. chamber *d1*		2. chamber *d2*					RSE linear	RS	RSP	RSE wheel	RSEL linear
in.	(mm)	in.	(mm)	in²	(mm²)						
–	–	–	–		–	30-	–	–	–	–	–
< 0.59	< 15	< 0.51	< 13	< 0.775	< 500	40-	●	●	–	●	–
< 0.74	< 18.8	< 0.64	< 16.2	< 1.163	< 750	50-	●	–	–	●	–
< 0.89	< 22.5	< 0.77	< 19.5	< 1.550	< 1000	60-	●	●	●	–	–
< 0.88	< 22.3	< 0.88	< 22.3	< 61.5	< 1562	65-	●	–	●	–	–
< 1.10	< 28	< 0.94	< 24	< 2.713	< 1750	70-	●	●	●	–	●
< 1.30	< 33	< 1.10	< 28	< 3.875	< 2500	85-	●	●	●	–	●
< 1.48	< 37.5	< 1.28	< 32.5	< 4.650	< 3000	100-	●	●	●	–	–
< 1.69	< 43	< 1.69	< 43	< 6.975	< 4500	125-	–	–	●	–	–

● Available – Not Available

Interior separation configurator - quick and easy creation of interior layouts for triflex® R.
More information ▶ www.igus.com/triflexR-IA

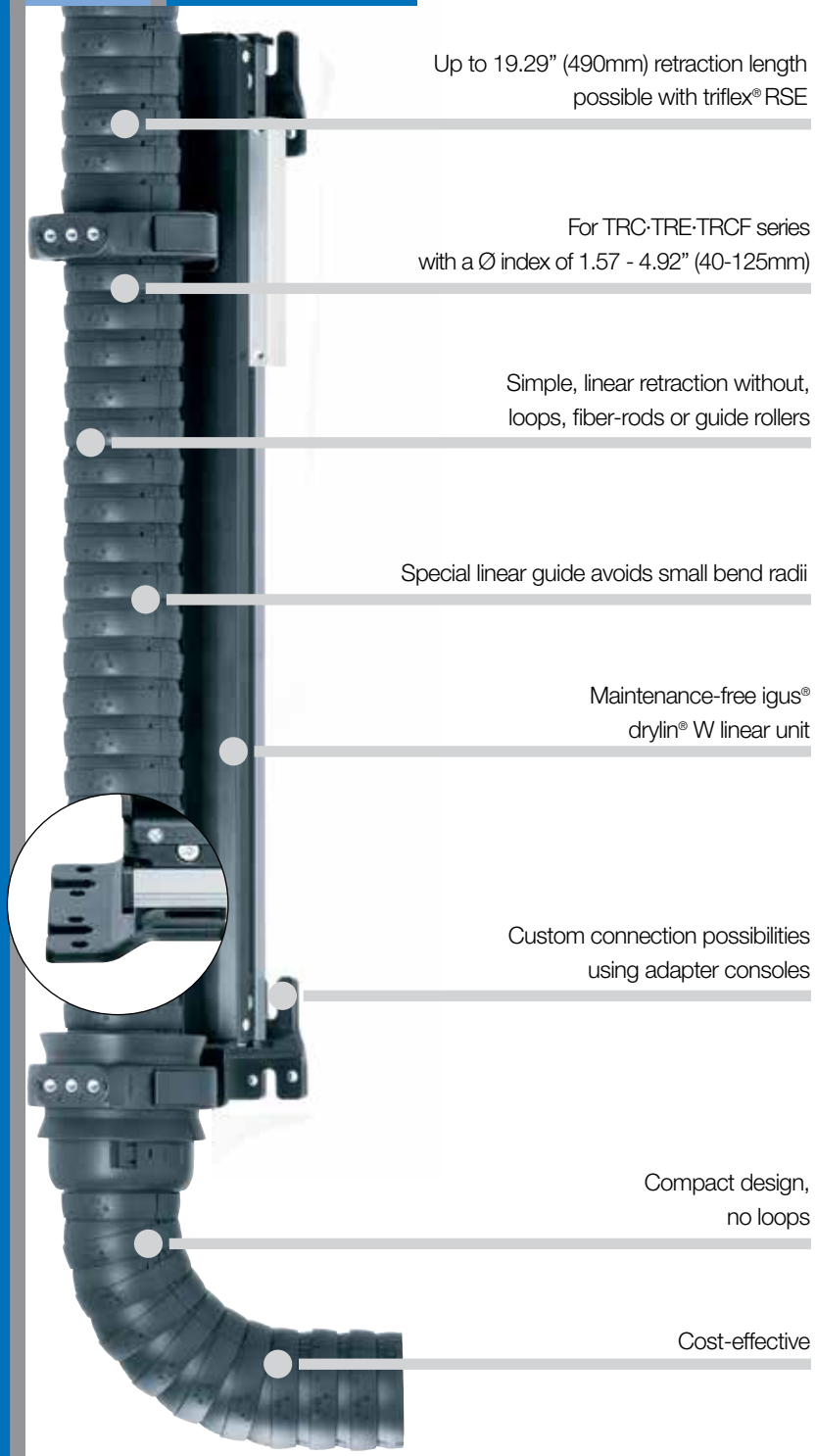
Selection tool for triflex® R retraction systems



For series	RSE linear ø Index	RS ø Index	RSP ø Index	RSE Wheel ø Index	RSEL linear ø Index
TRC	40 - 100	40 - 100	60 - 125	40 - 50	70 - 85
TRE	40 - 100	40 - 100	60 - 125	40 - 50	70 - 85
TRCF	65 - 100	–	65 - 100	–	–
TRL*	–	–	–	–	–
TRLF*	–	–	–	–	–

* Retraction systems not available for this series

triflex® R - RSE linear
For Series TRC / TRE / TRCF
Linear retraction system - Advantages



triflex® RSE linear retraction system

The more complex the automated production technology, the greater the requirements placed on the energy supply system. It is increasingly the case that not only electric power and fluids have to be supplied to production robots; but also laser cables and supply hoses for rivets, pins and screws. As these often cannot function with small bend radii, the new triflex® RSE relies on very easy linear retraction without loops and spring rods or deflection rollers. The purpose of the triflex® RSE retraction system is to hold the e-chain® as closely as possible to the robot arm in order to prevent the e-chain® from intruding upon or blocking the robot’s movements.

- Simple, linear retraction without bends, fiber-rods or guide rollers
- For series TRC·TRE·TRCF with a ø-index of 1.57 - 4.92” (40-125mm)
- Special linear guide avoids small bend radii
- Up to 19.29” (490mm) retraction length possible
- Cost-effective
- Maintenance-free igus® drylin® W linear unit

Optional accessories - RSE linear, cost-effective linear retraction system



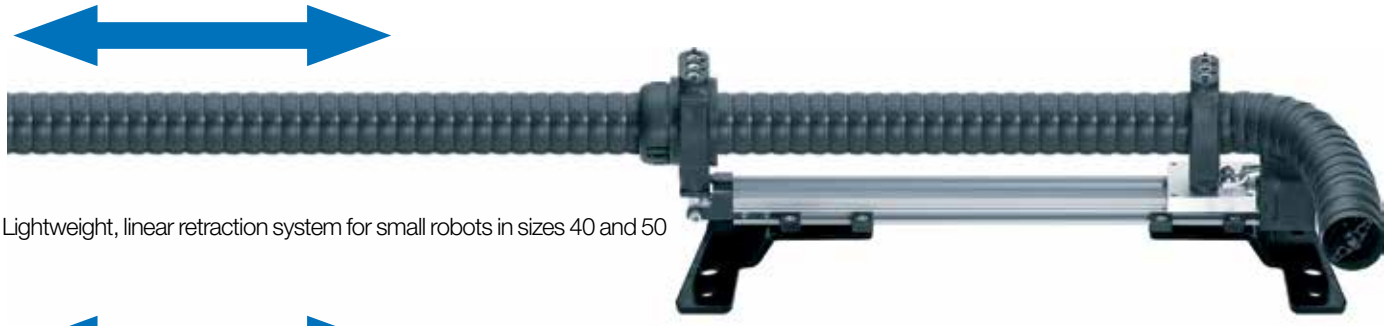
Adapter brackets for customized mounting options



Clamps - axis 6 - for triflex® R mounting bracket



igus® TR.RSE system on test robot



Lightweight, linear retraction system for small robots in sizes 40 and 50

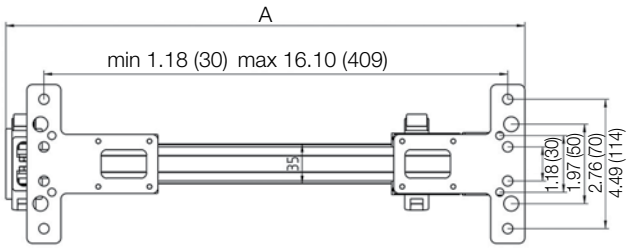


Linear TR.RSE retraction system for sizes 2.36 - 3.94” (60-100) with attachment brackets for a wide variety of robot models

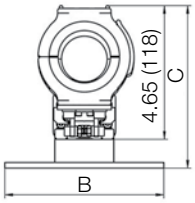
triflex® R - RSE linear - Technical data
For Series TRC / TRE / TRCF

Dimensions - RSE linear retraction system

Diagram shows triflex® RSE index: 1.57 - 1.97" (40 - 50)



TR.RSE.40 - TR.RSE.50



TR.RSE.60 - TR.RSE.100

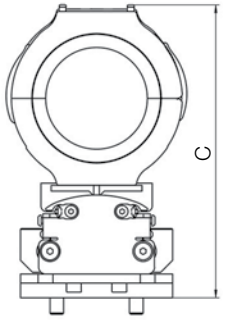
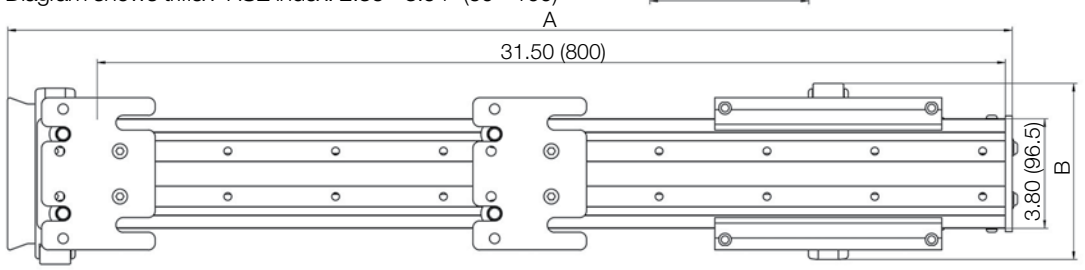
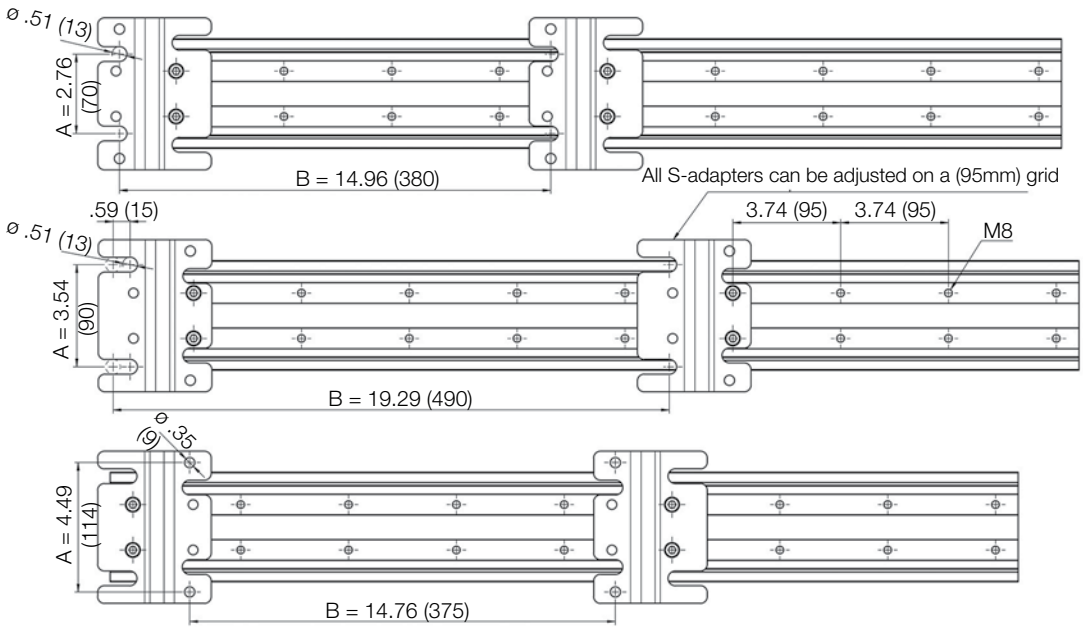


Diagram shows triflex® RSE index: 2.36 - 3.94" (60 - 100)



Possible installation positions for TR.RS.60 - TR.RS.100 | RSE linear



Installation position 01

Installation position 02

Installation position 03

Installation position 01

A		B		Thread size
in.	(mm)	in.	(mm)	
2.76	(70)	7.48	(190)	M12
2.76	(70)	11.22	(285)	M12
2.76	(70)	14.96	(380)	M12
2.76	(70)	18.70	(475)	M12
2.76	(70)	22.44	(570)	M12
2.76	(70)	26.18	(665)	M12
2.76	(70)	29.92	(760)	M12

Installation position 02

A		B		Thread size
in.	(mm)	in.	(mm)	
3.54	(90)	6.89 - 8.07	(175 - 205)	M12
3.54	(90)	10.63 - 11.81	(270 - 300)	M12
3.54	(90)	14.37 - 15.55	(365 - 395)	M12
3.54	(90)	18.11 - 19.29	(460 - 490)	M12
3.54	(90)	21.85 - 23.03	(555 - 585)	M12
3.54	(90)	25.59 - 26.77	(650 - 680)	M12
3.54	(90)	29.33 - 30.51	(745 - 775)	M12

Installation position 03

A		B		Thread size
in.	(mm)	in.	(mm)	
4.49	(114)	7.28	(185)	M8
4.49	(114)	11.02	(280)	M8
4.49	(114)	14.76	(375)	M8
4.49	(114)	18.50	(470)	M8
4.49	(114)	22.24	(565)	M8
4.49	(114)	25.98	(660)	M8

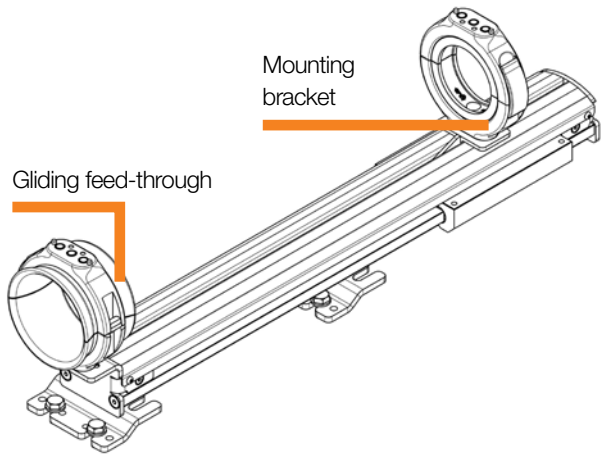
ø Index	Part No. RSE linear	Retraction length[1] ≤ in.	≤ (mm)	A in.	(mm)	B in.	(mm)	C in.	(mm)	Weight lb	(kg)	Part No. RSE support
30.	–		–		–		–		–		–	–
40.	**TR.RSE.40**	11.42	(290)	17.99	(457)	5.51	(140)	5.63	(143)	3.09	(1.4)	–
50.	**TR.RSE.50**	11.42	(290)	18.70	(475)	5.51	(140)	5.94	(151)	3.75	(1.7)	–
60.	**TR.RSE.60**	19.29	(490)	34.17	(868)	5.28	(134)	9.09	(231)	21.83	(9.9)	**TR.914.973.60**
65.	**TR.RSE.65**	19.29	(490)	34.65	(880)	5.28	(134)	9.09	(231)	22.04	(10.0)	**TR.914.973.65**
70.	**TR.RSE.70**	19.29	(490)	34.57	(878)	6.10	(155)	1.02	(258)	22.04	(10.0)	**TR.914.973.70**
85.	**TR.RSE.85**	19.29	(490)	34.84	(885)	6.10	(155)	1.02	(258)	22.04	(10.0)	**TR.914.973.85**
85. (*R 240*)	**TR.RSE.85.240**	19.29	(490)	34.84	(885)	6.10	(155)	1.02	(258)	22.04	(10.0)	–
100.	**TR.RSE.100**	19.29	(490)	34.88	(886)	6.69	(170)	1.04	(264)	22.49	(10.2)	**TR.914.973.100**

1) These are the maximum values. In normal operation a filling of no more than 70% is advised.

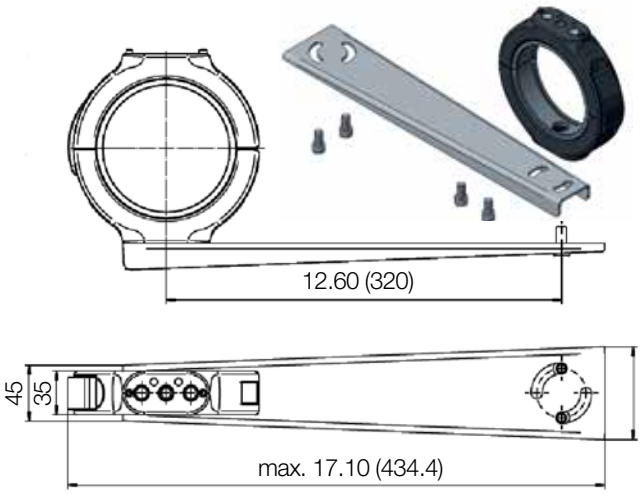
Please order matching triflex® R e-chain® separately. Optional RSE support must be ordered separately.

RSE linear - retraction system

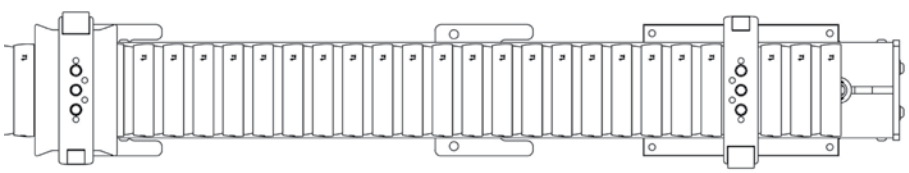
Mounting bracket and gliding feed-through are included.
Please order matching triflex® R e-chain® separately.



Optional - RSE support for the lateral deflection of the triflex® R energy supply







Order key

TR.RSE.XX

- Ø Index
- System
- e-chains® series

triflex® R - RSE linear
For Series TRC / TRE / TRCF
RSE linear retraction system and matching e-chains®

System design | RSE linear and matching e-chain®

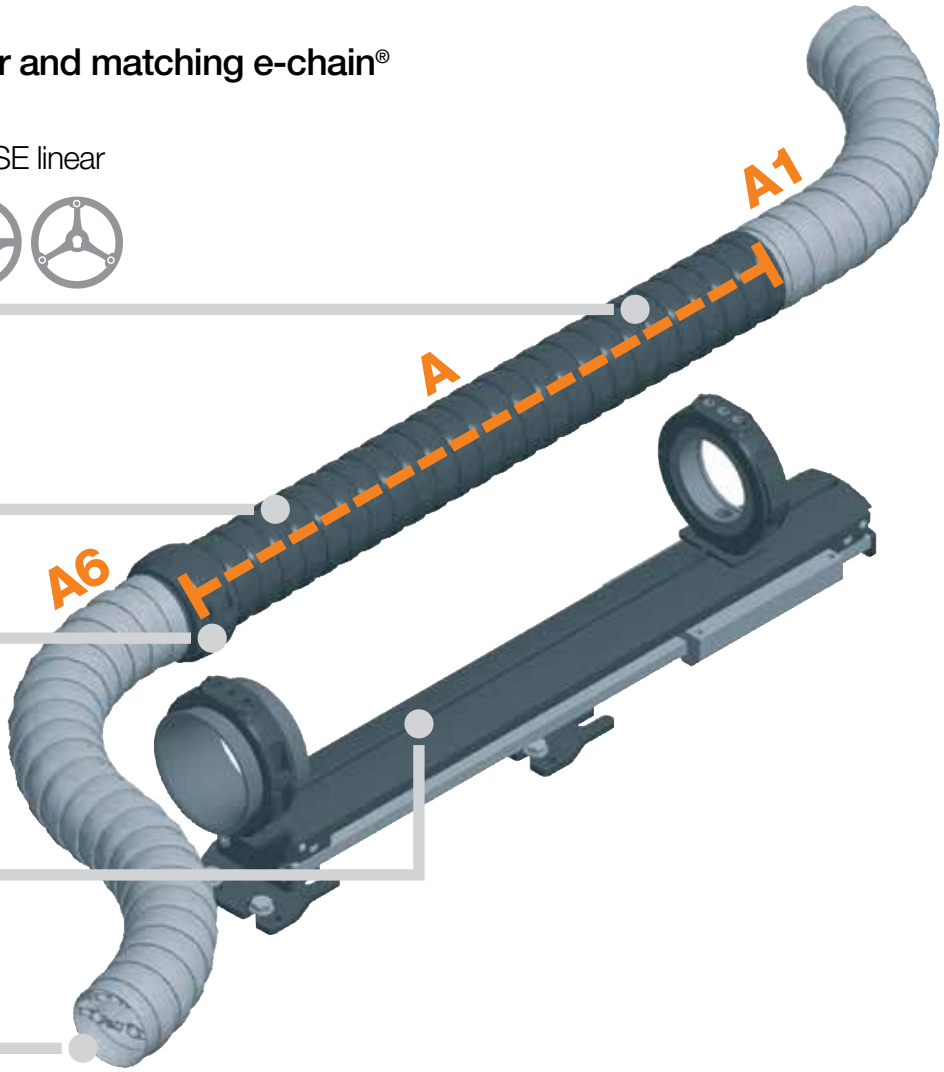
Matching triflex®R e-chain® for RSE linear
TRC .XX.*R*.0
TRE .XX.*R*.0.B
TRCF.XX.*R*.0

Excess length in direction **A1** +
Dimension **A** +
Excess length in direction **A6** =
Total e-chain® length

Limit protector

RSE linear system
(without e-chain®)+
Mounting bracket +
Gliding feed-through =
TR.RSE.XX

IMPORTANT - Ball end of triflex® must run in direction of the end of arm tool



Sample order of a complete TR.RSE linear system, Ø index 1.57” (40), and e-chain® length: 6.56” (2 m)

System	Insert Ø index **XX**	**TR.RSE.XX**
+ e-chain®	Insert Ø index **XX** / Insert bend radius ***R*** / Insert standard length LLLL in meters	**2 m TRC.XX.*R*.0**
+ protector	Protector with quick-lock fastener	**TR.XX.30**
Order text:	**TR.RSE.40. + 2 m TRC.40.058.0 + TR.40.30**	



Order key e-chains®

TRC .XX.*R*.0
TRE .XX.*R*.0.B
TRCF .XX.*R*.0

- Default color black
- ***R*** Bend radius
- Ø Index
- e-chains® series

Product range - Matching e-chains® and protectors for RSE linear

ø Index	Part No. **TRC** enclosed	Part No. **TRE** "easy" design	Part No. **TRCF** with snap lock mechanism	Protector with screw fastener	Protector with quick-lock fastener
30.	–	–	–	–	–
40.	TRC.40.058.0	TRE.40.058.0.B	–	TR.40.10	TR.40.30
50.	TRC.50.080.0	TRE.50.080.0.B	–	TR.50.10	–
60.	TRC.60.087.0	TRE.60.087.0.B	–	TR.60.10	TR.60.30
65.	–	–	TRCF.65.100.0	TR.65.10	–
70.	TRC.70.110.0	TRE.70.110.B	–	TR.70.10	TR.70.30
85.	TRC.85.135.0	TRE.85.135.B	TRCF.85.135.0	TR.85.10	TR.85.30
85. (*R 240*)	–	–	TRCF.85.240.0	TR.85.240.10	–
100.	TRC.100.145.0	TRE.100.145.0.B/C[1)]	TRCF.100.145.0	TR.100.10	TR.100.30

1) Available for B- and C-versions

Please order e-chains® as piece parts and purchase a protector for each one.

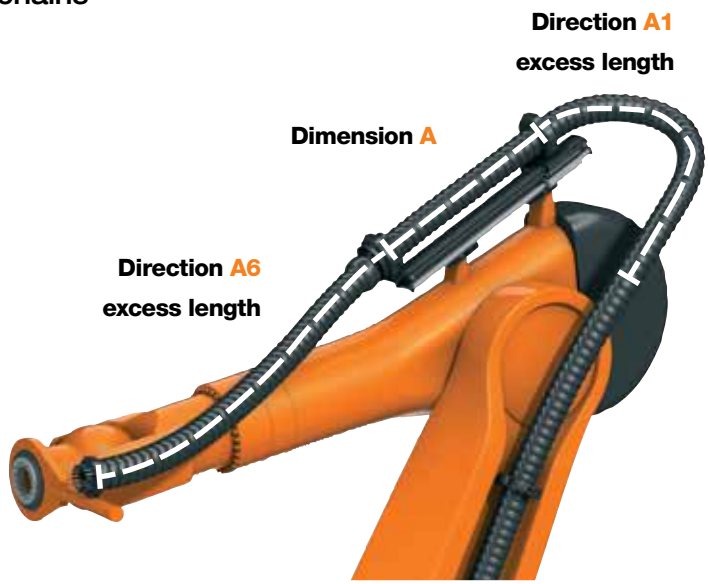
Please order protectors with screw connections or quick release as limit protectors.

To calculate the total chain length, add the desired excess length from axis 1 and axis 6 to dimension A (lower table). Additionally, at least 1 limit protector must be ordered. Please note that all triflex® R e-chains can be lengthened and shortened individually and can be customized to meet the needs of your application.

Calculating the overall chain length - RSE linear e-chains®

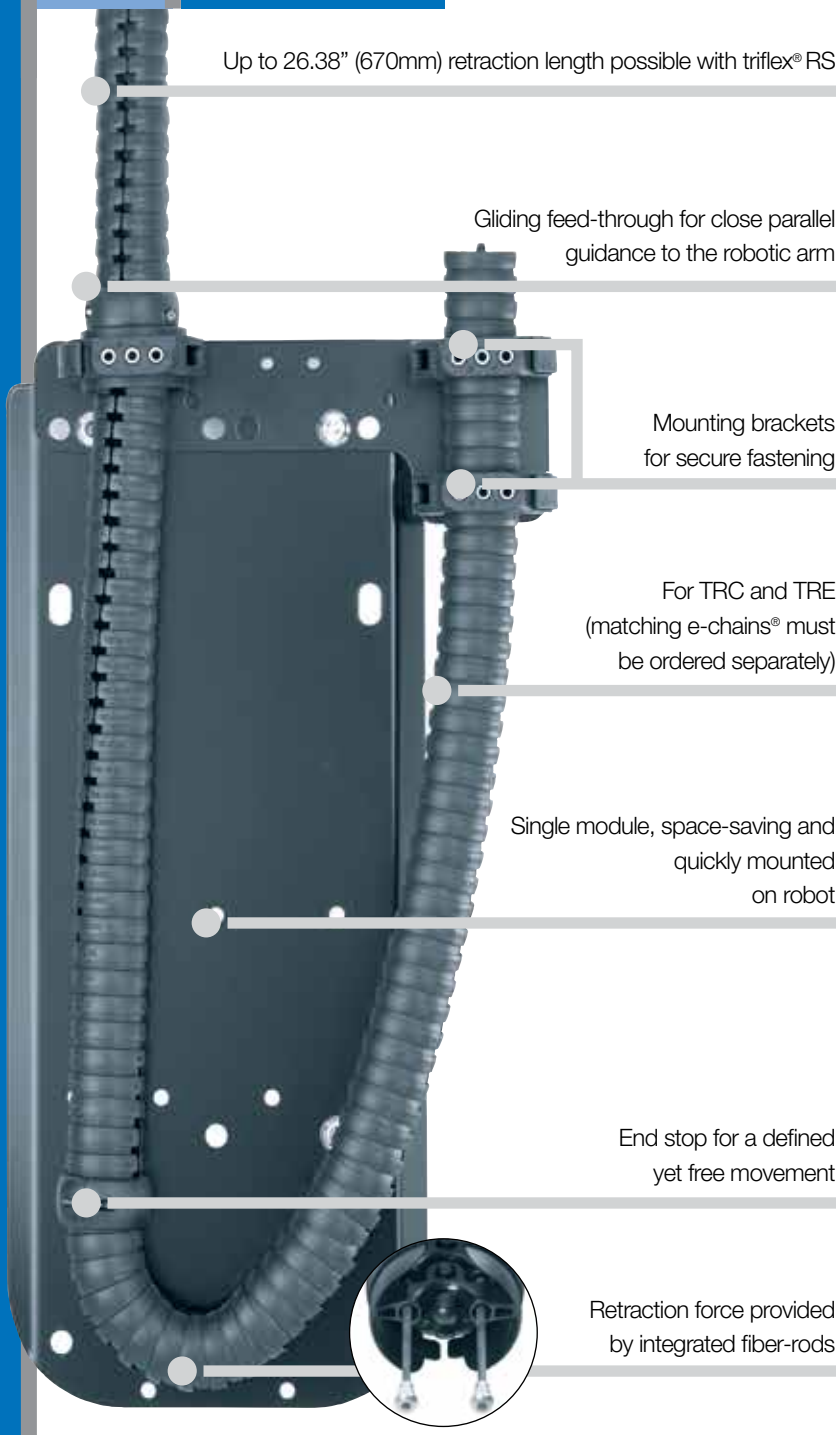
ø Index	Bend radius *R* in.	(mm)	A in.	[mm]
30.	–	–	–	–
40.	2.28	058	15.35	390
50.	3.15	080	15.35	390
60.	3.43	087	29.53	750
65.	3.94	100	29.53	750
70.	4.33	110	29.53	750
85.	5.31	135	29.53	750
85. (*R 240*)	9.45	240	29.53	750
100.	5.71	145	29.53	750
125.	7.17	182	29.53	750

Excess length in direction **A6** + Dimension **A** + excess length in direction **A1** = **total chain length**



triflex® R length calculation for RSE linear

triflex® R - RS
For Series TRC / TRE
Modular retraction system



triflex® RS Modular retraction system

triflex® RS is a retraction system for robots with medium and high load-bearing capacity. The triflex® RS is used as a space-saving guide for the multi-dimensionally moving triflex® R in parallel to the robot arm. Integrated fiber rods generate a directed camber to prevent undesirable loops from forming in the working space of the robot. This permits applications with very tight installation space to be realized as well. triflex® RS provides the option to reliably implement the energy supply system to the tool, without placing stress on the cable, therefore making a key contribution to minimizing downtimes.

- Saves space - low interfering contours, closely routed on the robotic arm
- System solution tested by the tens of thousands
- Universally applicable
- Integrated fiber rods - no external mechanical components such as springs or steel wires needed!

Optional accessories - RS modular retraction system



Cover - for additional installation space and extreme motions



Adjustment unit - accurate adjustment of the assembly position



Adapter brackets for customized mounting options



Clamps - axis 6 - for triflex® R mounting bracket

triflex® R - RS - Application example
For Series TRC / TRE
RS - R(etraction) S(ystem)



triflex® RS for a lean chain guide. The triflex® RS is used as a space-saving guide for the multi-dimensionally moving triflex® R in parallel to the robot arm. Video at ➤ www.igus.com/triflexR



Optional: triflex® RS with cover - creates additional installation space on the robot

Installation height - RS modular retraction system

Fixed end left
TR.RS.40.L

Fixed end right
TR.RS.40.R

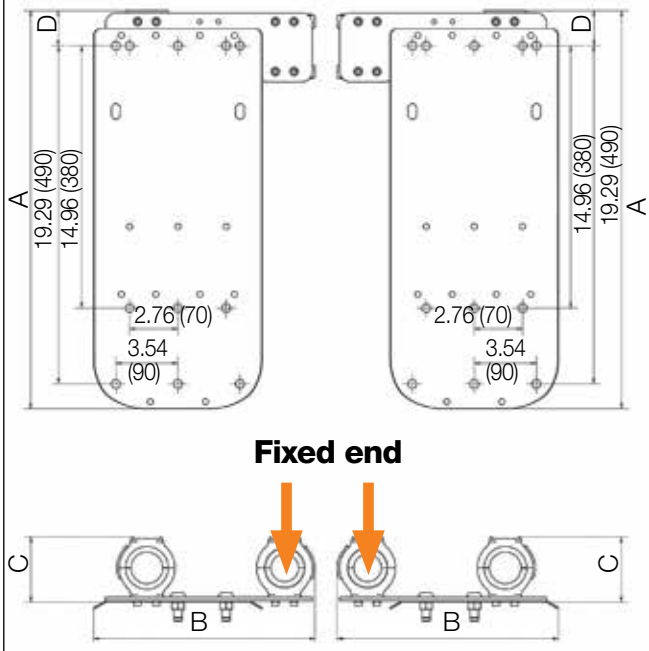


Illustration shows triflex® RS ø index: 40

Fixed end left
TR.RS.XX.L

Fixed end right
TR.RS.XX.R

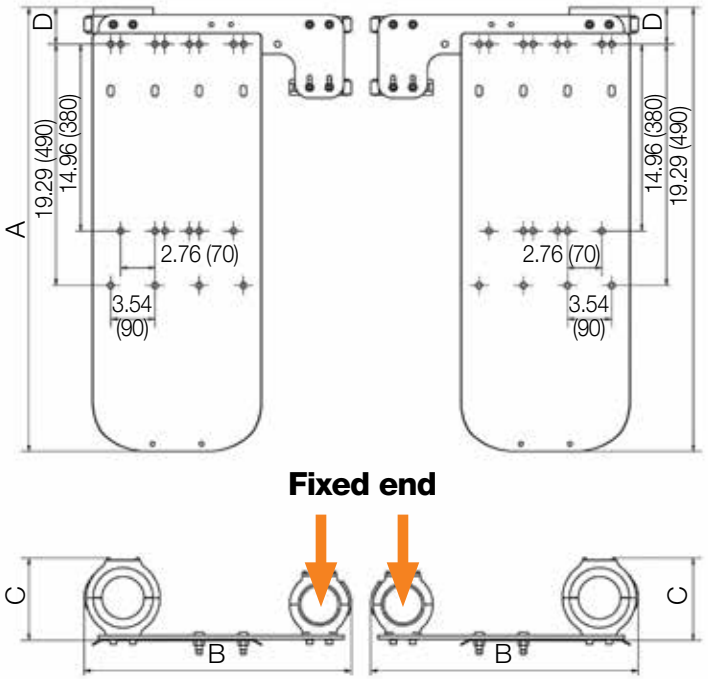
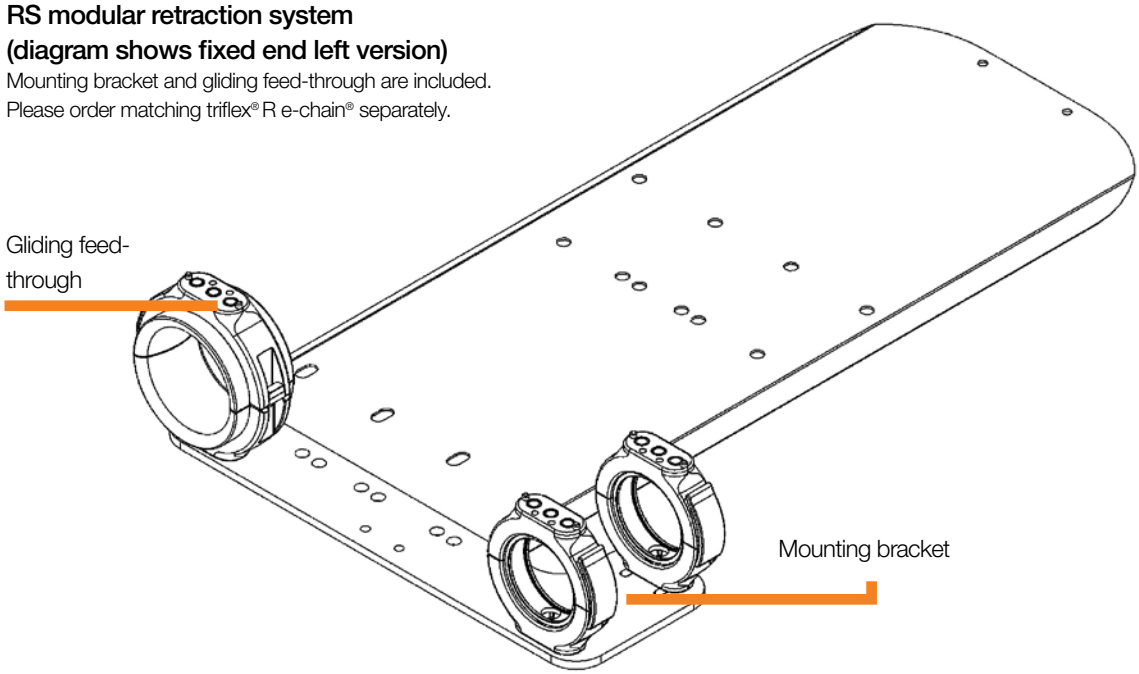


Illustration shows triflex® RS ø index: 60 - 100

RS modular retraction system
(diagram shows fixed end left version)

Mounting bracket and gliding feed-through are included.
Please order matching triflex® R e-chain® separately.



Product range - RS modular retraction system

triflex® RS - Fastening point, **right**			Retraction Length[1]		A		B		C		D		Weight	
Universal module TRS		Part No.												
For Series TRC		For Series TRE	≤ in.	≤ (mm)	in.	(mm)	in.	(mm)	in.	(mm)	in.	(mm)	lb	(kg)
TRC.RS.40.R	▶	TRE.RS.40.R.B	18.11	(460)	24.41	(620)	11.85	(301)	3.74	(95)	2.01	(51)	7.72	(3.5)
TRC.RS.60.R	▶	TRE.RS.60.R.B	21.65	(550)	34.84	(885)	20.79	(528)	5.91	(150)	2.56	(65)	19.18	(8.7)
TRC.RS.70.R	▶	TRE.RS.70.R.B	24.41	(620)	34.84	(885)	21.46	(545)	6.57	(167)	2.56	(65)	20.28	(9.2)
TRC.RS.85.R	▶	TRE.RS.85.R.B	26.38	(670)	34.84	(885)	22.24	(565)	6.57	(167)	2.56	(65)	20.94	(9.5)
TRC.RS.100.R	▶	TRE.RS.100.R.B	22.83	(580)	35.93	(912.5)	24.17	(614)	6.57	(167)	4.25	(108)	25.35	(11.5)

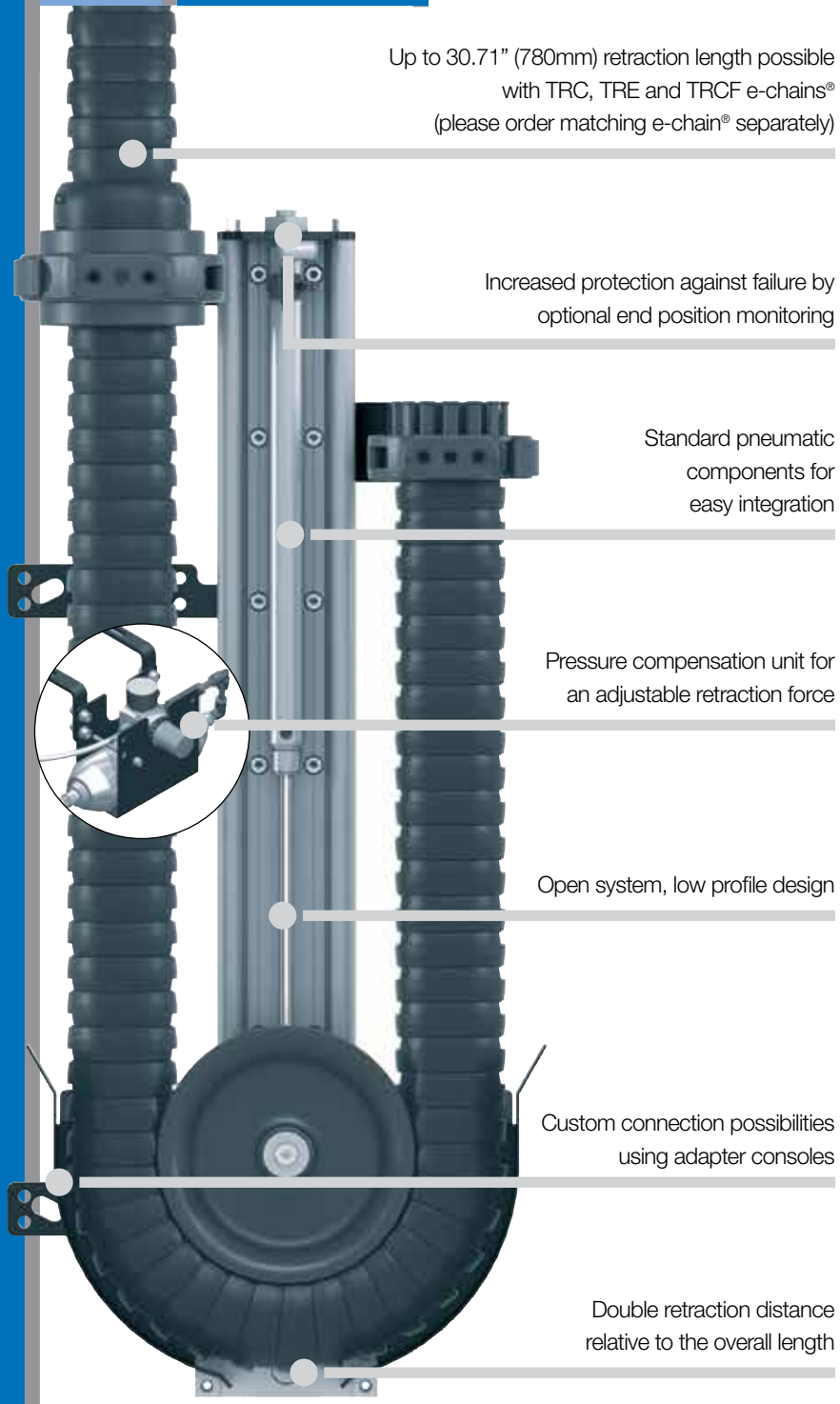
triflex® RS - Fastening point, **left**			Retraction Length[1]		A		B		C		D		Weight	
Universal module		Part No.												
For Series TRC		For Series TRE	≤ in.	≤ (mm)	in.	(mm)	in.	(mm)	in.	(mm)	in.	(mm)	lb	(kg)
TRC.RS.40.L	▶	TRE.RS.40.L.B	18.11	(460)	24.41	(620)	11.85	(301)	3.74	(95)	2.01	(51)	7.72	(3.5)
TRC.RS.60.L	▶	TRE.RS.60.L.B	21.65	(550)	34.84	(885)	20.79	(528)	5.91	(150)	2.56	(65)	19.18	(8.7)
TRC.RS.70.L	▶	TRE.RS.70.L.B	24.41	(620)	34.84	(885)	21.46	(545)	6.57	(167)	2.56	(65)	20.28	(9.2)
TRC.RS.85.L	▶	TRE.RS.85.L.B	26.38	(670)	34.84	(885)	22.24	(565)	6.57	(167)	2.56	(65)	20.94	(9.5)
TRC.RS.100.L	▶	TRE.RS.100.L.B	22.83	(580)	35.93	(912.5)	24.17	(614)	6.57	(167)	4.25	(108)	25.35	(11.5)

Product range - with cover

triflex® RS - Fastening point, **right, with cover**			Retraction Length[1]		A		B		C		D		Weight	
Universal module TRS		Part No.												
For Series TRC		For Series TRE	≤ in.	≤ (mm)	in.	(mm)	in.	(mm)	in.	(mm)	in.	(mm)	lb	(kg)
TRC.RS.40.RC	▶	TRE.RS.40.RC.B	18.11	(460)	24.41	(620)	11.85	(301)	3.74	(95)	2.01	(51)	7.72	(3.5)
TRC.RS.60.RC	▶	TRE.RS.60.RC.B	21.65	(550)	34.84	(885)	20.79	(528)	5.91	(150)	2.56	(65)	19.18	(8.7)
TRC.RS.70.RC	▶	TRE.RS.70.RC	24.41	(620)	34.84	(885)	21.46	(545)	6.57	(167)	2.56	(65)	20.28	(9.2)
TRC.RS.85.RC	▶	TRE.RS.85.RC	26.38	(670)	34.84	(885)	22.24	(565)	6.57	(167)	2.56	(65)	20.94	(9.5)
TRC.RS.100.RC	▶	TRE.RS.100.RCB	22.83	(580)	35.93	(912.5)	24.17	(614)	6.57	(167)	4.25	(108)	25.35	(11.5)

triflex® RS - Fastening point, **left, with cover**			Retraction Length[1]		A		B		C		D		Weight	
Universal module		Part No.												
For Series TRC		For Series TRE	≤ in.	≤ (mm)	in.	(mm)	in.	(mm)	in.	(mm)	in.	(mm)	lb	(kg)
TRC.RS.40.LC	▶	TRE.RS.40.LC.B	18.11	(460)	24.41	(620)	11.85	(301)	3.74	(95)	2.01	(51)	7.72	(3.5)
TRC.RS.60.LC	▶	TRE.RS.60.LC.B	21.65	(550)	34.84	(885)	20.79	(528)	5.91	(150)	2.56	(65)	19.18	(8.7)
TRC.RS.70.LC	▶	TRE.RS.70.LC.B	24.41	(620)	34.84	(885)	21.46	(545)	6.57	(167)	2.56	(65)	20.28	(9.2)
TRC.RS.85.LC	▶	TRE.RS.85.LC	26.38	(670)	34.84	(885)	22.24	(565)	6.57	(167)	2.56	(65)	20.94	(9.5)
TRC.RS.100.LC	▶	TRE.RS.100.LCB	22.83	(580)	35.93	(912.5)	24.17	(614)	6.57	(167)	4.25	(108)	25.35	(11.5)

triflex® R - RSP
For Series TRC / TRE / TRCF
Pneumatic retraction system - advantages



triflex® RSP Pneumatic retraction system

triflex® RSP prevents loops on the robot head, with a continuously adjustable retraction force. Extension lengths of up to 30.71" (780mm) enable a secure guidance of the cables and hoses, even with large arm diameters and very complex movements. The retraction forces can be adjusted using a pneumatic cylinder. Whether light or heavy fill weights, long or short robot arms - with the igus® RSP retraction system the retraction force can be adjusted to the individual application.

- For axis 3-6 on industrial robots
- Larger retraction forces than RS system
- Even larger e-chains® up to Ø 4.92" (125mm) can be guided safely
- Almost constant force over the complete travel, even with heavy fill weights
- The end position can be monitored so damage can be prevented
- Mounting options for numerous robot models and manufacturers with adapter consoles
- Very low energy consumption with integrated air reservoir

Optional accessories - RSP pneumatic retraction system



Adjustment unit - for accurate adjustment of the system position



Adapter consoles - for custom mounting options

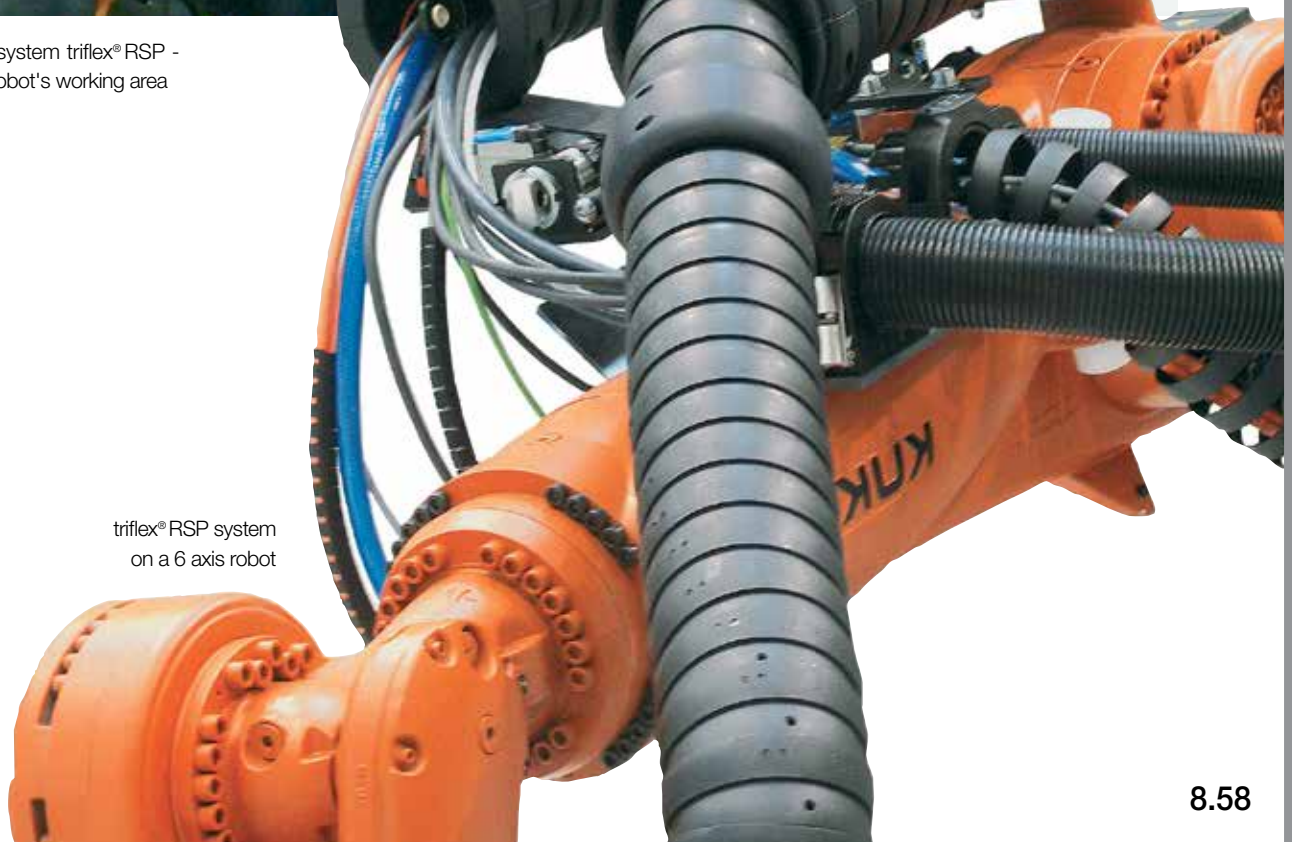


Axis 6 clamp - for triflex®R mounting bracket

triflex® R - RSP - Application example
For Series TRC / TRE / TRCF
RSP - **R**(etraction) **S**(ystem) **P**(neumatic)

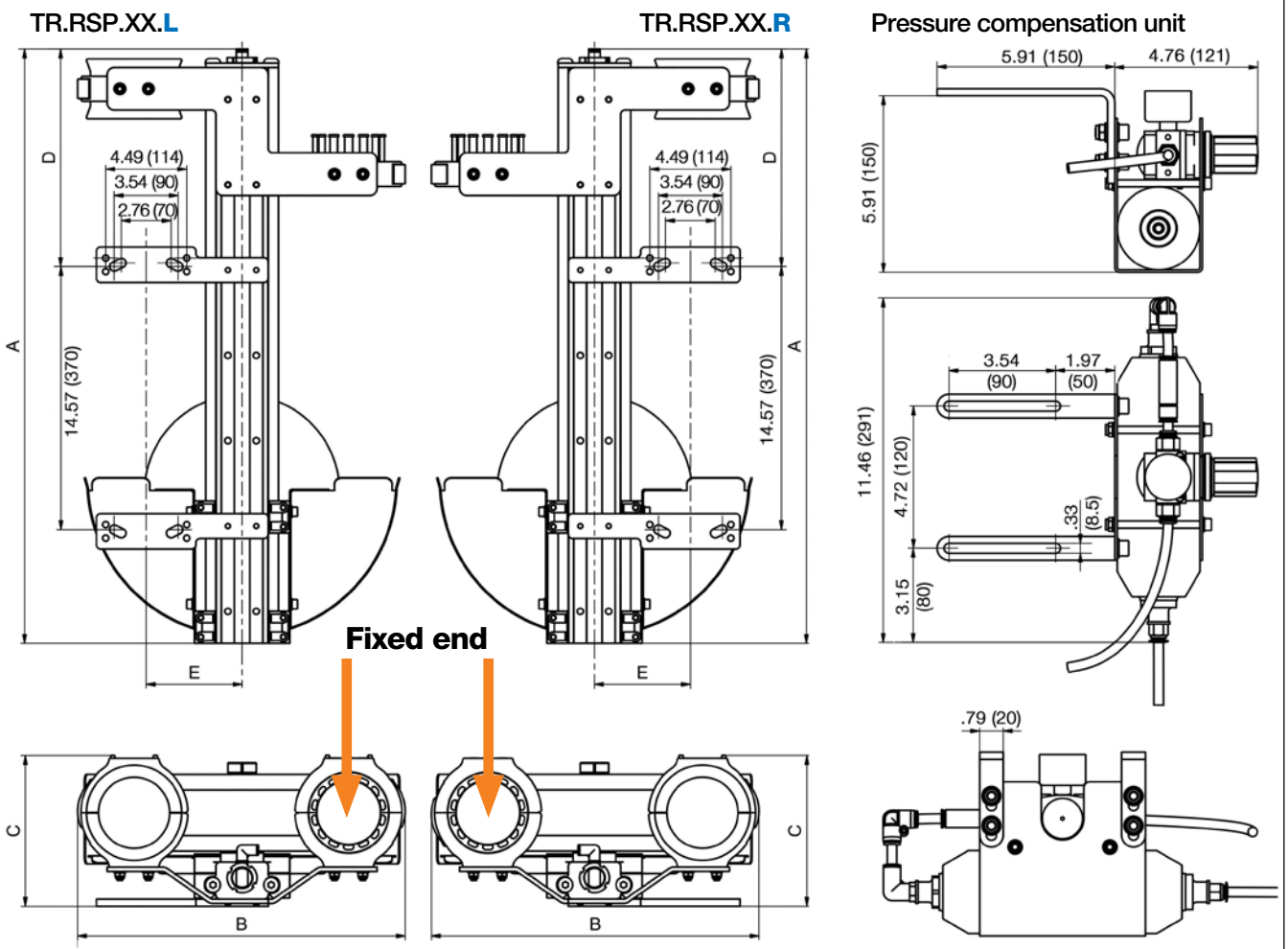


Pneumatic retraction system triflex® RSP - prevents loops in the robot's working area



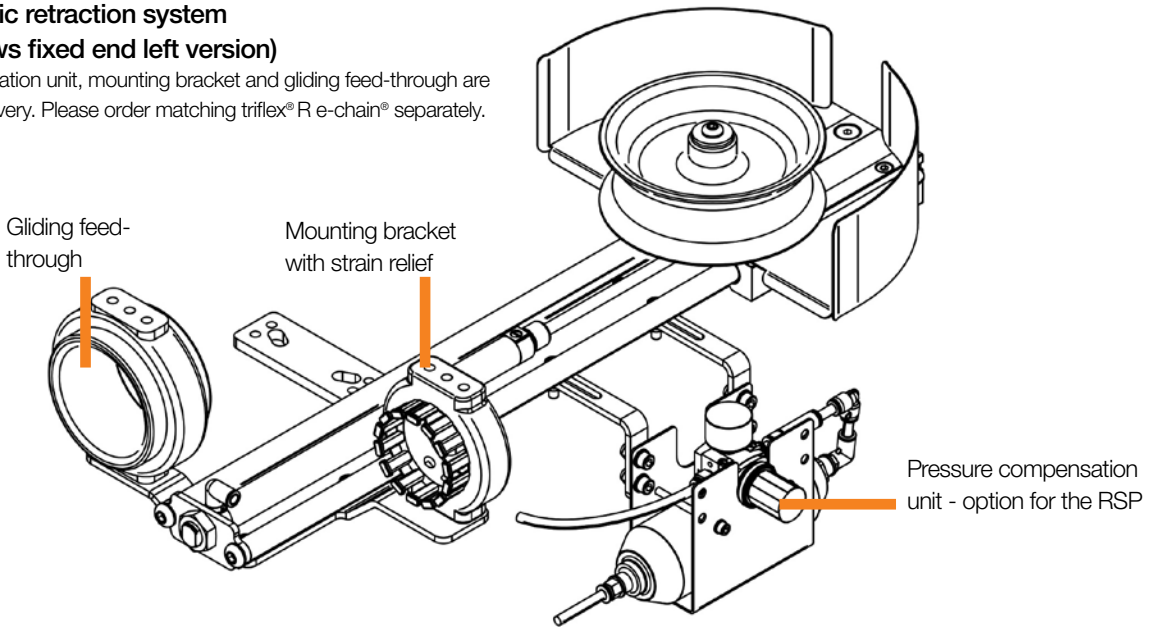
triflex® RSP system on a 6 axis robot

triflex® R - RSP - Technical data
For Series TRC / TRE / TRCF



RSP pneumatic retraction system
(diagram shows fixed end left version)

Pressure compensation unit, mounting bracket and gliding feed-through are included in the delivery. Please order matching triflex® R e-chain® separately.



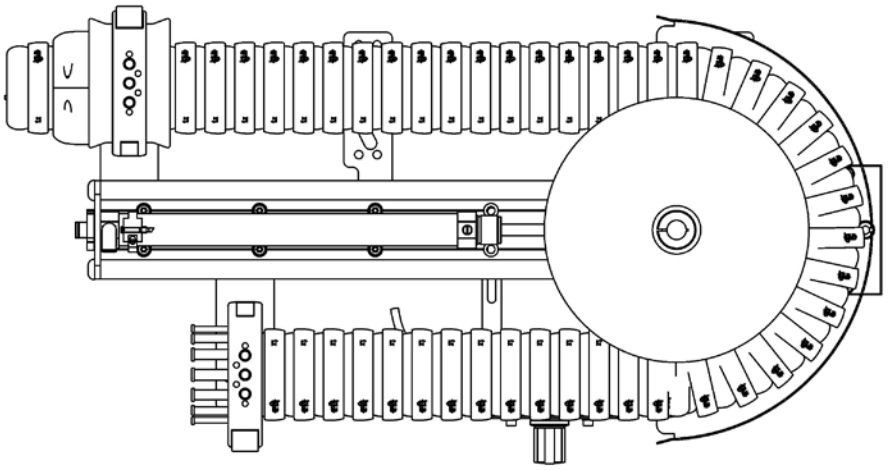
Product range - RSP Pneumatic Retraction System - for TRC TRE

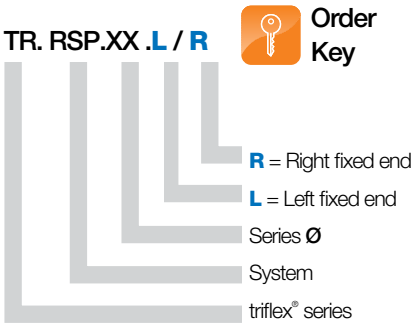
For Series ø	RSP Left fixed point Part. No.	RSP Right fixed point Part. No.	Retract travel maximum in. (mm) [1]	Dimension A in. (mm)	Dimension B in. (mm)	Dimension C in. (mm)	Dimension D in. (mm)	Dimension E in. (mm)	Weight lb. (kg)
.30.	–	–	–	–	–	–	–	–	–
.40.	–	–	–	–	–	–	–	–	–
.50.	–	–	–	–	–	–	–	–	–
.60.	TR.RSP.60.L	TR.RSP.60.R	22.83 (580)	31.18 (792)	15.59 (396)	6.97 (177)	10.91 (277)	5.31 (135)	35.49 (16.1)
.65.	TR.RSP.65.L	TR.RSP.65.R	22.83 (580)	31.18 (792)	15.59 (396)	6.97 (177)	10.91 (277)	5.31 (135)	35.49 (16.1)
.70.	TR.RSP.70.L	TR.RSP.70.R	22.83 (580)	31.18 (792)	15.59 (396)	6.97 (177)	10.91 (277)	5.31 (135)	35.71 (16.2)
.85.	TR.RSP.85.L	TR.RSP.85.R	24.41 (620)	32.91 (836)	18.15 (461)	8.39 (213)	12.05 (306)	5.31 (135)	42.77 (19.4)
.85.*(R240)*	–	–	–	–	–	–	–	–	–
.100.	TR.RSP.100.L	TR.RSP.100.R	24.41 (620)	33.27 (845)	18.39 (467)	8.39 (213)	12.05 (306)	5.31 (135)	42.99 (19.5)
.125.	TR.RSP.125.L	TR.RSP.125.R	30.71 (780)	41.06 (1043)	22.44 (570)	9.65 (245)	15.94 (405)	5.31 (135)	53.13 (24.1)

Pressure compensation unit, mounting bracket, and feed-through guides are included.

Please order matching triflex® e-chain® separately.

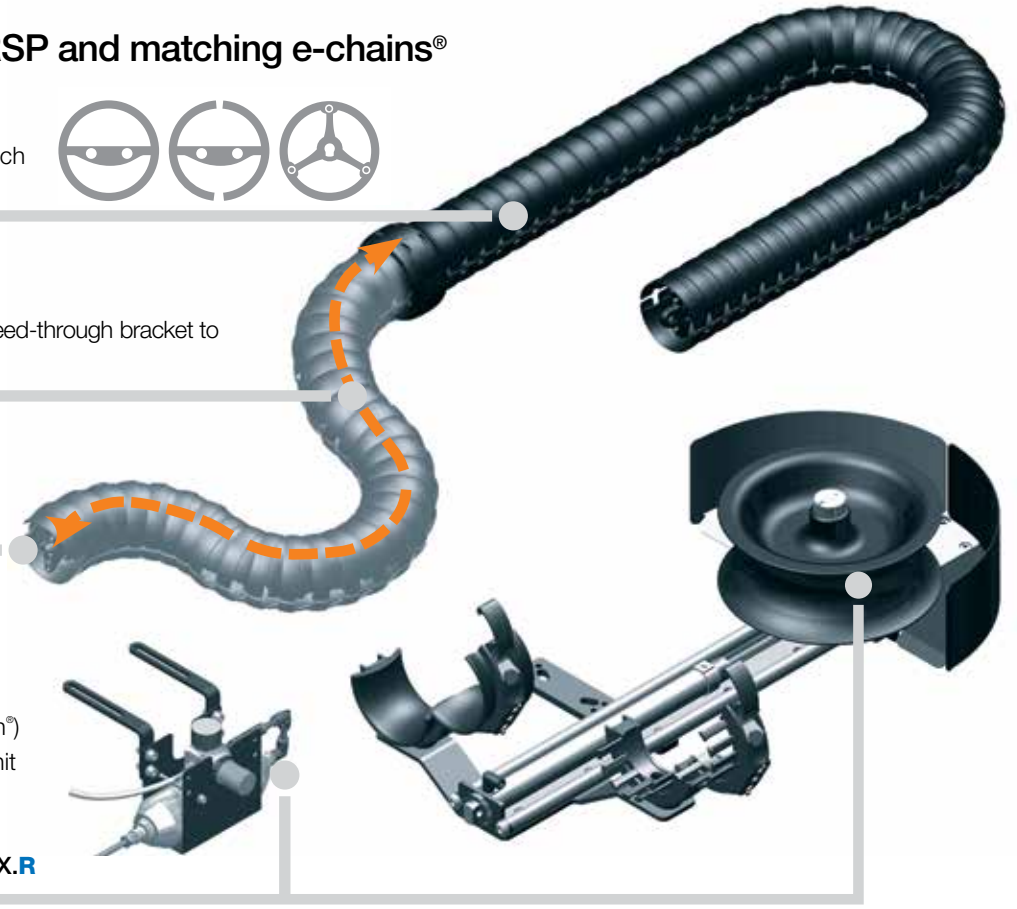
1) These are maximum values. We do not recommend using more than 70% during normal operations to preserve a margin of error.





triflex® R - RSP
For Series TRC / TRE / TRCF
RSP retraction system and matching e-chains®

System design | RSP and matching e-chains®



Standard chain length for each system. See chart below

Additional chain from gliding feed-through bracket to end of arm tool

IMPORTANT - Ball end of triflex® must run in direction of the end of arm tool

RSP system (without e-chain®)
+ pressure compensation unit
+ mounting bracket
+ gliding feed-through =
TR.RSP.XX.L or **TR.RSP.XX.R**

Sample order of a complete TR-RSP system, ø-Index 60, fixed end on the left, and e-chain®

System	Insert Ø index **XX** / select fixed end **-L / -R**	**TR.RSP.60.L**
+ e-chain®	Standard Length TRE-60-080-0-B x 1489mm + Additional Length TRE-60-080-0-B x 1500mm = 2989mm	
+ Protector:		**TR.60.30**

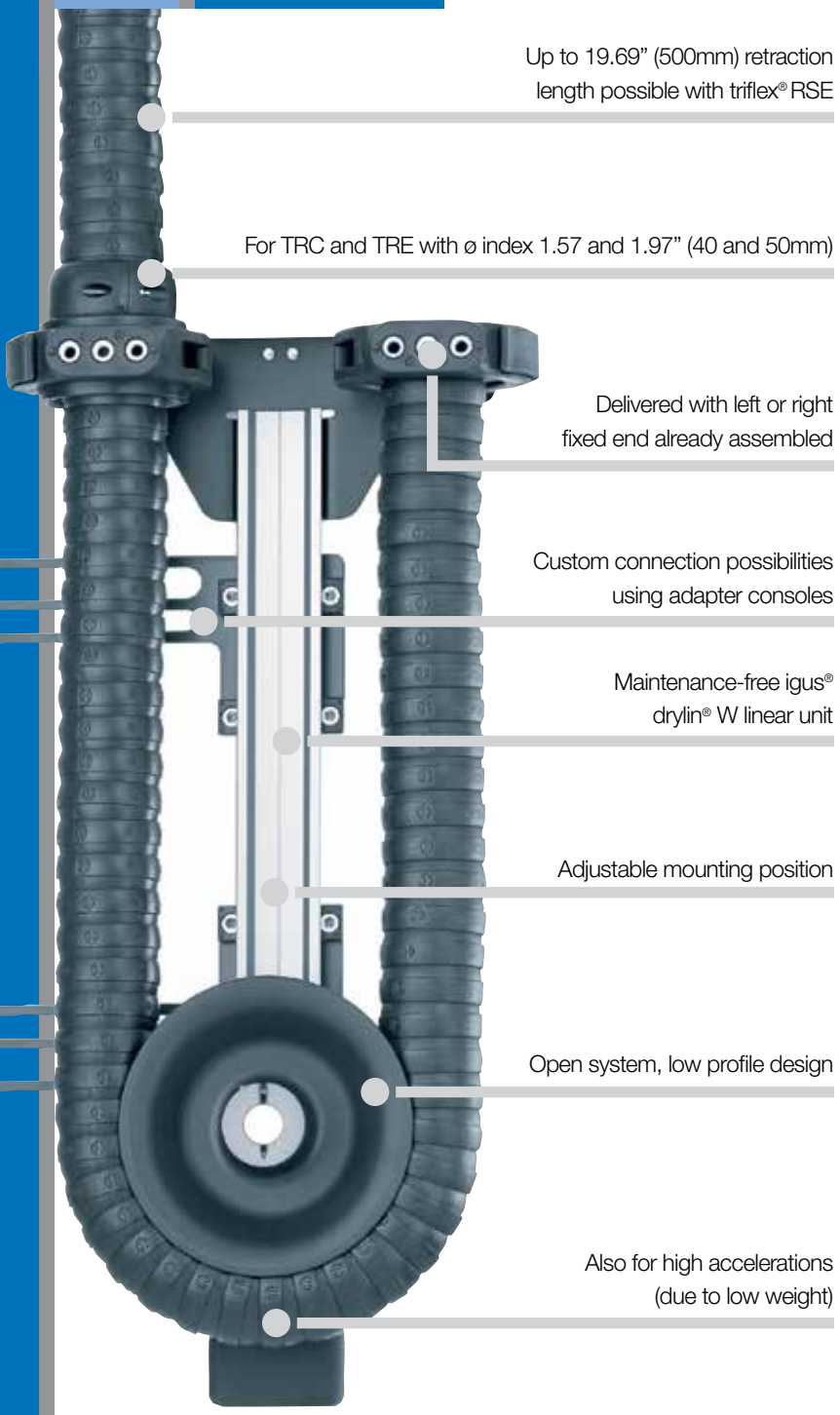
Calculating the overall chain length - RSP e-chains®

ø	Bend radius *R*		e-chain® length*		Number of e-chains® links	Total e-chain® length
	in.	(mm)	in.	(mm)		(mm)
30. ▶	–	–		–	–	–
40. ▶	–	–		–	–	–
50. ▶	–	–		–	–	–
60. ▶	3.43	087	58.62	1489	73	LLLL + 58.62 (1489)
65. ▶	3.94	100	56.38	1432	62	LLLL +56.38 (1432)
70. ▶	4.33	110	58.43	1484	58	LLLL + 58.43 (1484)
85. ▶	5.31	135	63.86	1622	53	LLLL + 63.86 (1622)
85. (*R 240*) ▶	–	–		–	–	–
100. ▶	5.71	145	65.20	1656	48	LLLL + 65.20 (1656)
125. ▶	7.17	182	77.24	1962	44	LLLL + 77.24 (1962)

*Values are related to the e-chain® length within the system

Please add the e-chain® length within the system to the standard length **LLLL** (measured from the gliding feed-through) to get the **overall chain length**

triflex® R - triflex® RSE Wheel
For Series TRC / TRE
Wheel Retraction system - Advantages



triflex® RSE Wheel retraction system

Specially developed for robots with small to medium cable and hose filling, the igus® triflex® RSE retraction system offers a way to prevent loop formation in the workspace of the robot, even in highly dynamic applications.

- For series TRC·TRE sizes 40 and 50mm
- Extremely fast response, even in highly dynamic robot programs
- Low weight, very little reduction in robot handling capacity
- Universal adjustable installation brackets
- Maintenance and lubrication-free igus® drylin® W linear unit
- For maximum degrees of freedom
- For cable diameters up to .74” (18.8mm)

Optional accessories - RSE Wheel Retraction System



Adapter brackets for customized mounting options



Mounting brackets - for installing directly on the tool



Clamps - axis 6 - for triflex® R mounting bracket



Cover - for additional mounting space and complex movements

triflex® R - triflex® RSE Wheel - Application example
For Series TRC / TRE
RSE - **(R)**etraction **(S)**ystem **(E)**lastic



Even in confined space - reliable and defined energy supply system

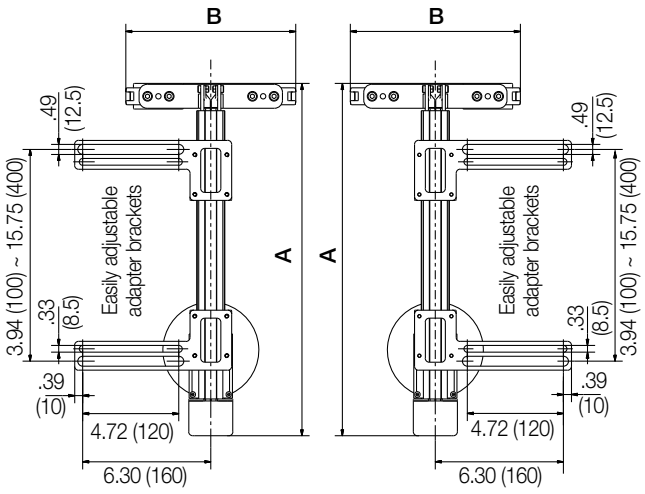


triflex® R is guided closely to the arm with a low profile

triflex® R - RSE Wheel - Technical data
For Series TRC / TRE

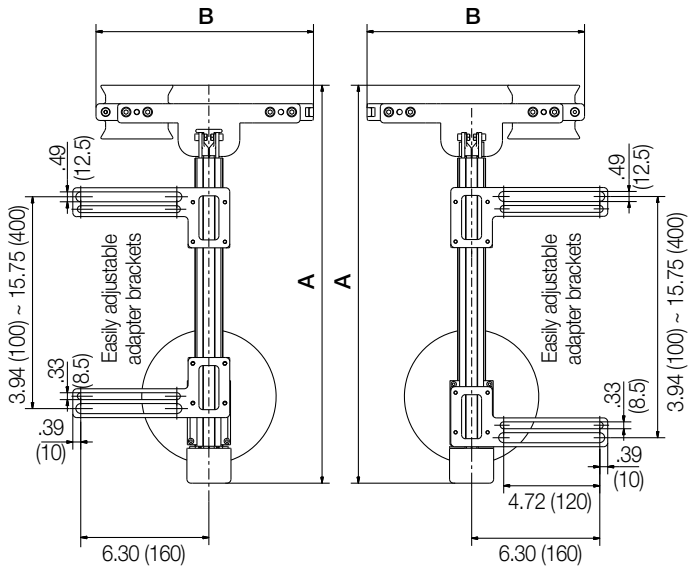
Fixed end left
TR.RSE.02.40.L

Fixed end right
TR.RSE.02.40.R

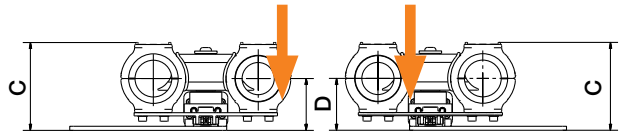


Fixed end left
TR.RSE.50.L

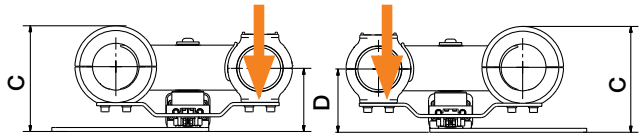
Fixed end right
TR.RSE.50.R



Fixed end

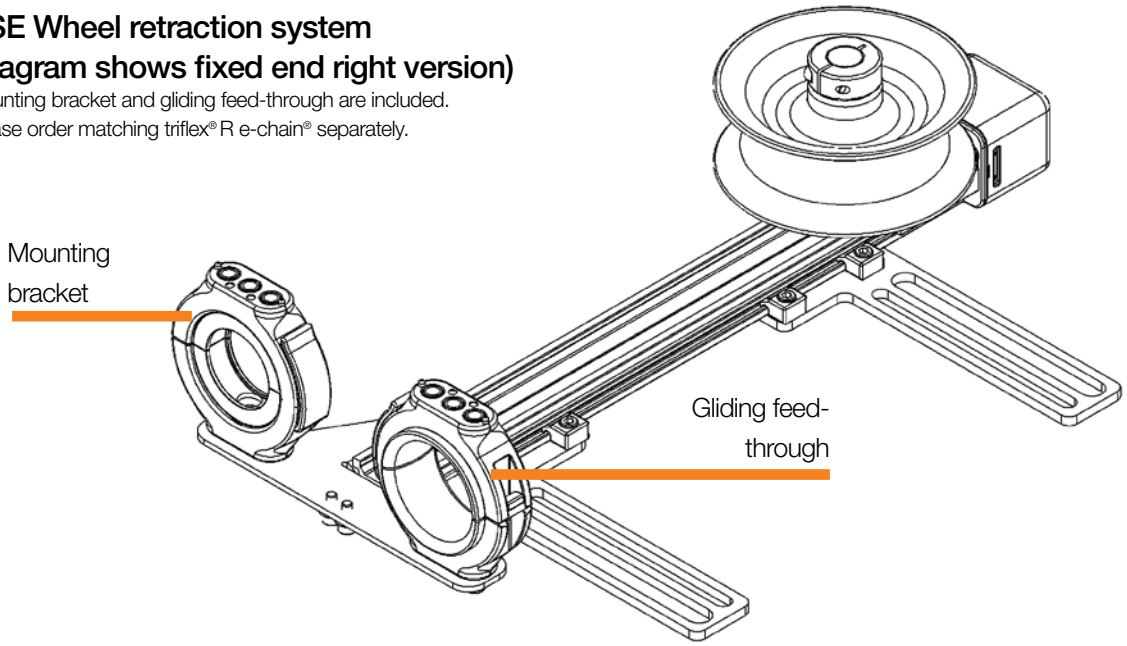


Fixed end



RSE Wheel retraction system
(diagram shows fixed end right version)

Mounting bracket and gliding feed-through are included.
Please order matching triflex® R e-chain® separately.



Product range for RSE

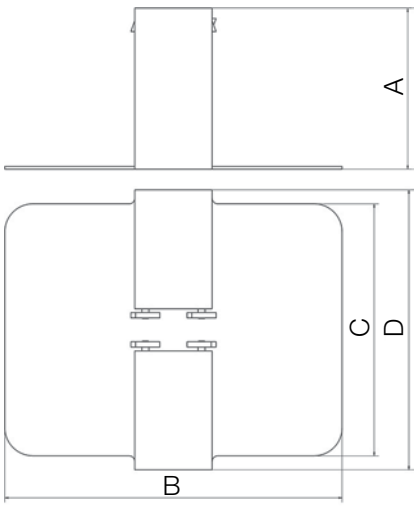
triflex® RSE - Fastening point, **right**			Retraction Length[1]		A		B		C		D		Weight	
ø	Part No. For Series TRC		≤ in.	≤ (mm)	in.	(mm)	in.	(mm)	in.	(mm)	in.	(mm)	lb	(kg)
40.	TR.RSE.40.R	▶	19.69	(500)	17.32	(440)	8.66	(220)	4.33	(110)	2.55	(64.7)	3.53	(1.6)
50.	TR.RSE.50.R	▶	1969	(500)	19.57	(497)	10.83	(275)	5.20	(132)	3.11	(79)	4.63	(2.1)

triflex® RS - Fastening point, **left**			Retraction Length[1]		A		B		C		D		Weight	
ø	Part No. For Series TRC		≤ in.	≤ (mm)	in.	(mm)	in.	(mm)	in.	(mm)	in.	(mm)	lb	(kg)
40.	TR.RSE.40.L	▶	19.69	(500)	17.32	(440)	8.66	(220)	4.33	(110)	2.55	(64.7)	3.53	(1.6)
50.	TR.RSE.50.L	▶	1969	(500)	19.57	(497)	10.83	(275)	5.20	(132)	3.11	(79)	4.63	(2.1)

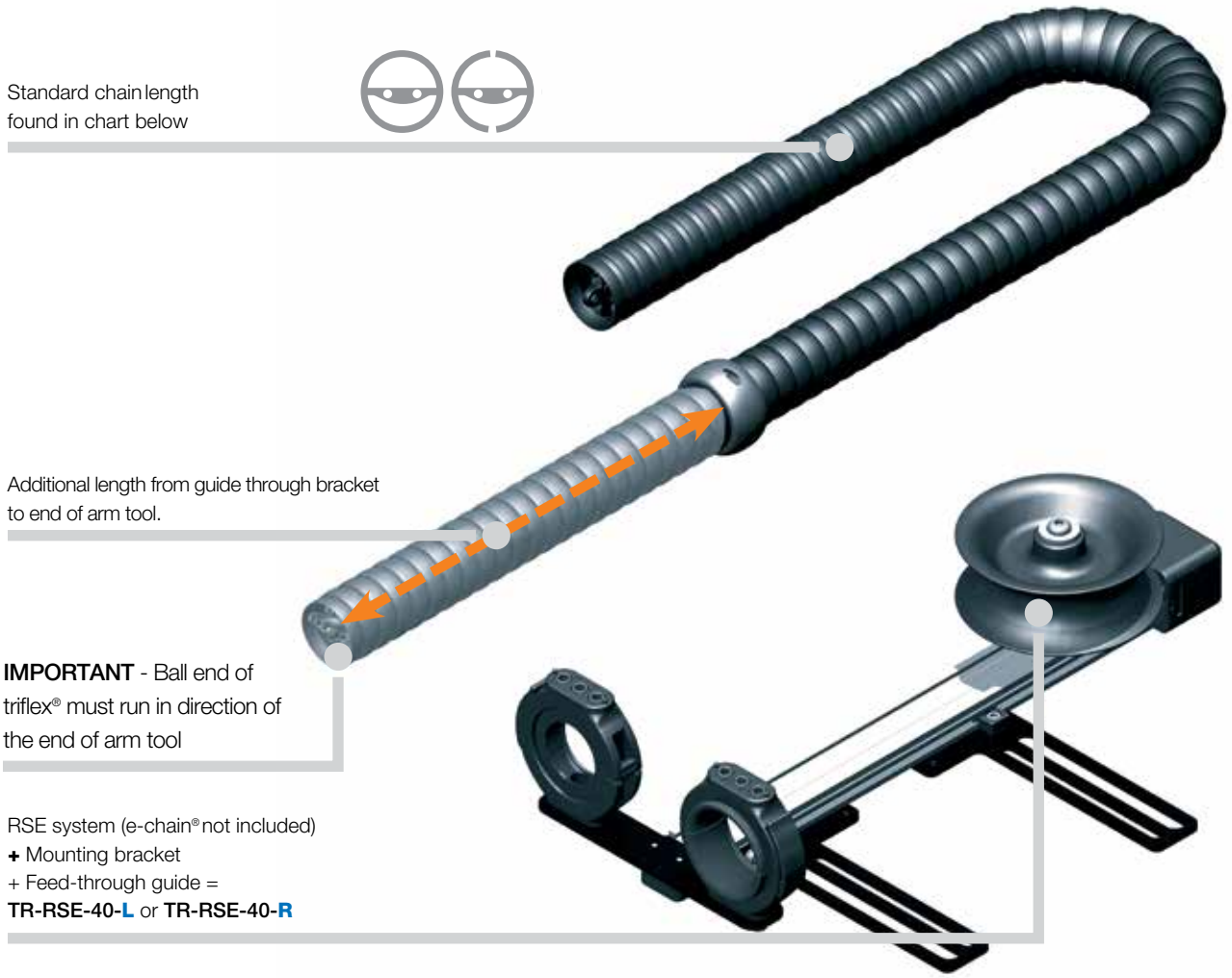
Optional cover			Retraction Length[1]		A		B		C		D		Weight	
ø	Part No. For Series TRC		≤ in.	≤ (mm)	in.	(mm)	in.	(mm)	in.	(mm)	in.	(mm)	lb	(kg)
40.	TR.RSE.40.COVR	▶	19.69	(500)	17.32	(440)	8.66	(220)	4.33	(110)	2.55	(64.7)	3.53	(1.6)
50.	TR.RSE.50.COVR	▶	1969	(500)	19.57	(497)	10.83	(275)	5.20	(132)	3.11	(79)	4.63	(2.1)

1) These are the maximum values. In normal operation a filling of no more than 70% is advised.

Please order matching triflex® R e-chain® separately.



triflex® R - RSE Wheel
For Series TRC / TRE
RSE Wheel retraction system and matching e-chains®



Sample order of a complete TR.RSE system, Ø Index 40, fixed end on the left, including cover and e-chain® (standard length: 500mm)

System	Insert Ø index **XX** / select fixed end **.L / .R**	**TR.RSE.40.L**
+ e-chain®	Standard Length TRE-40-058-0-B x 904mm + Additional Length TRE-40-058-0-B x 1500mm = 2404mm	
+ protector		**TR.40.30**
+ cover:	**Optional**	**TR.RSE.40.COVR**

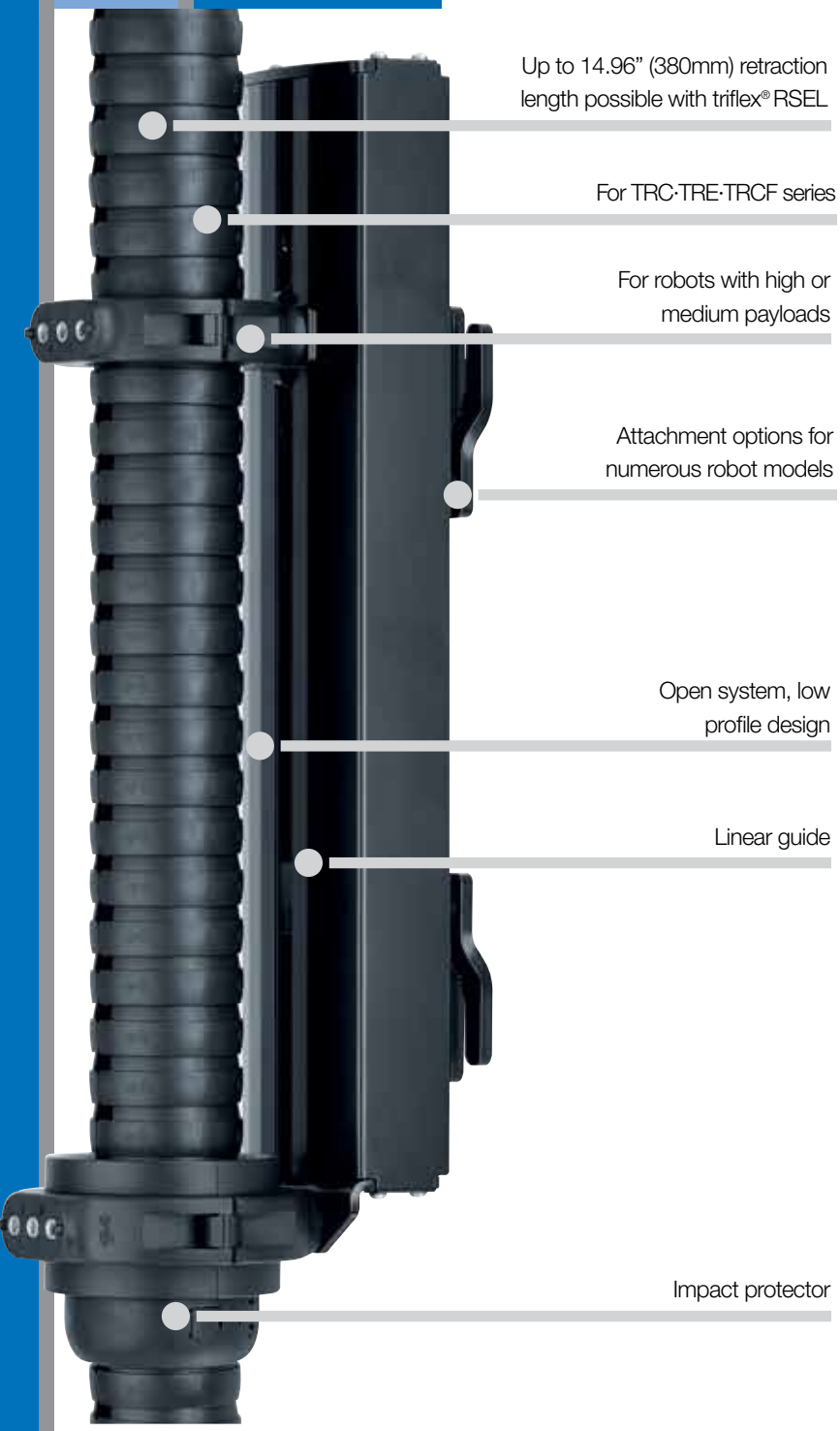
Calculating the overall chain length - RSE e-chains®

ø Index		Bend radius *R* in.	*R* (mm)	e-chain® length* in.	(mm)	Number of e-chains® links	Total e-chain® length (mm)
40.	▶	2.28	(058)	35.59	(904)	65	LLLL + 904
50.	▶	3.15	(080)	41.10	(1044)	60	LLLL + 1044

*Values are related to the e-chain® length within the system

Please add the e-chain® length within the system to the standard length **LLLL** (measured from the gliding feed-through) to get the **overall chain length**

triflex® R - RSEL
For Series TRC / TRE / TRCF
Linear retraction system - Advantages



triflex® RSEL linear retraction system

Avoid looping on the robot head - even more cost-effective and even for corrugated tubes, with the RSEL retraction system. Especially designed for robots with medium to high payload, the igus® triflex® RSEL retraction system offers an option to actively avoid looping in the working area of the robot by keeping the e-chain® as close as possible to the robot arm.

- Cost-optimized retraction system, easy to retrofit
- Due to its standard dimensions and the very compact design, the RSEL retraction system can be mounted directly on the 3rd axis of all common types of robots
- Retraction element with elastomer band
- Prevents the e-chain® from looping or blocking the motion, even in highly dynamic applications
- Short type
- Attachment options for numerous robot models
- For robots with high and medium payloads
- The fixed end of the e-chain® can be freely selected due to the linear design of the RSE retraction system

Optional accessories - RSEL Linear retraction system



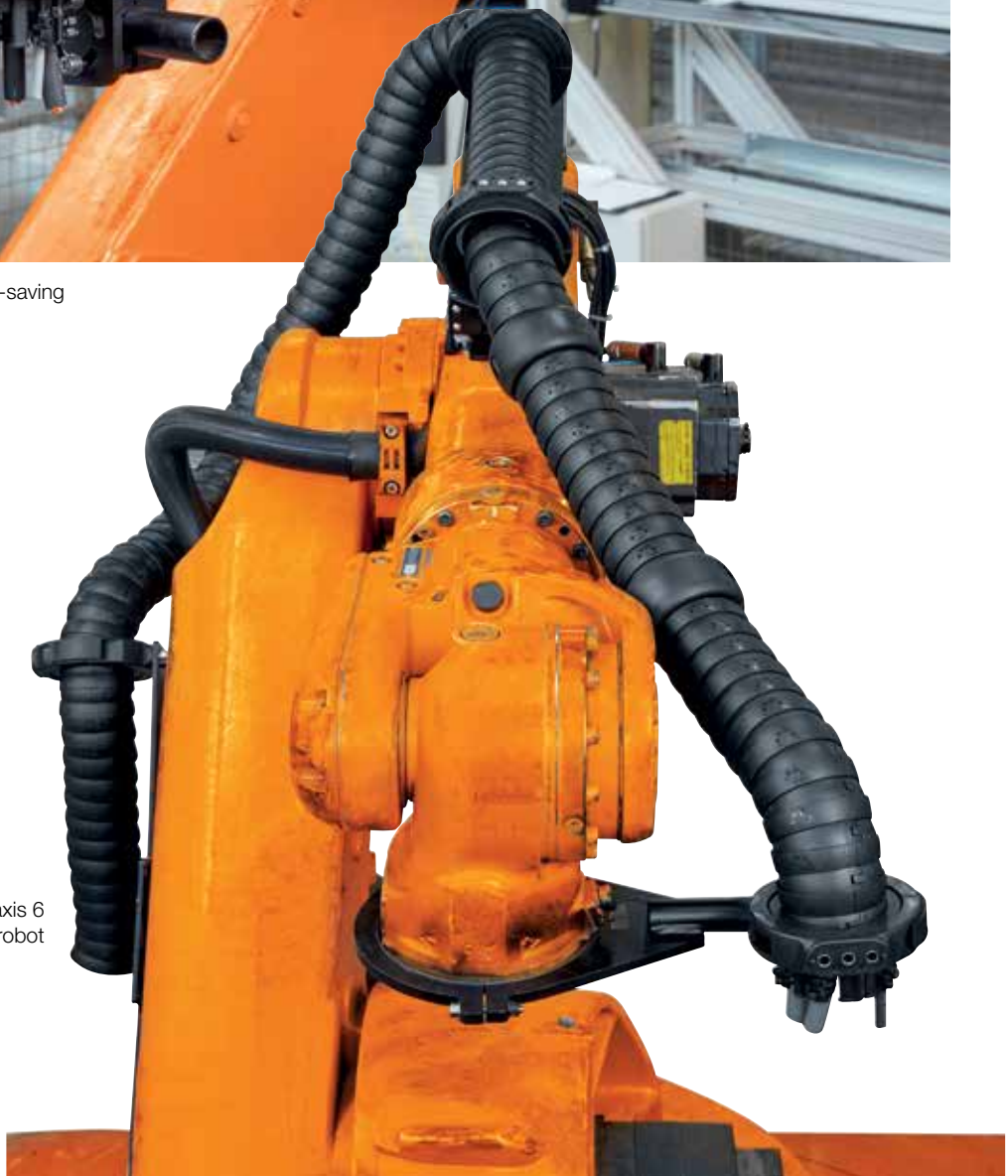
Adapter brackets for customized mounting options



Clamps - axis 6 - for triflex® R mounting bracket



triflex® RSEL - cost-effective and space-saving guidance of the e-chain®

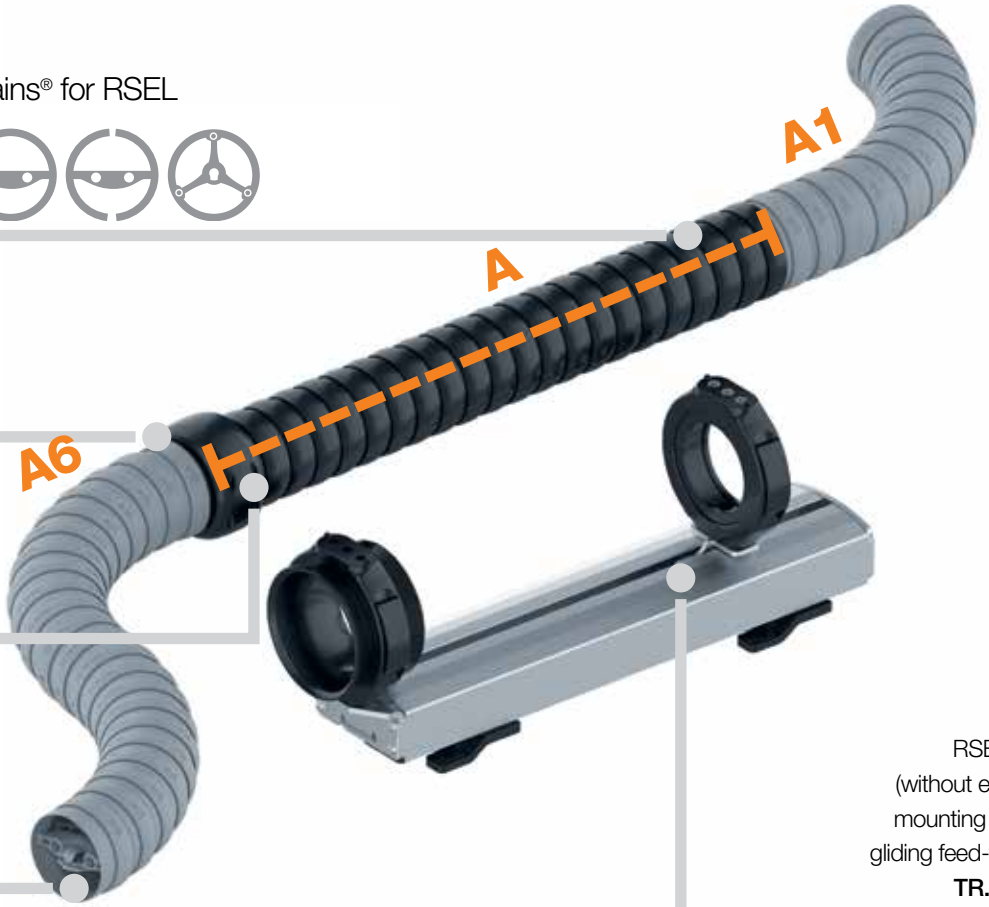


Cable routing from axis 2 to axis 6 on a robot

triflex® R - RSEL
For Series TRC / TRE / TRCF
RSEL linear retraction system and matching e-chains®

Matching triflex® R e-chains® for RSEL
TRC .XX.*R*.0
TRE .XX.*R*.0.B
TRCF.XX.*R*.0





Overall e-chain® length* =
Excess length in direction **A1** +
Dimension **A** +
Excess length in direction **A6**

Limit protector

IMPORTANT - Ball end of triflex® must run in direction of the end of arm tool

RSEL system
(without e-chain®) +
mounting bracket +
gliding feed-through =
TR.RSEL.XX

*For calculation of the overall e-chain® length: Please add the desired excess length in direction **A1** and the excess length in direction **A6** and the dimension **A**.



Complete retraction system RSEL and triflex® R e-chain® TRC series. Mounting bracket and gliding feed-through are included. Please order triflex® R e-chains®, limiting protectors separately!

Sample order of a complete TR.RSEL system, Ø index 85, and e-chain® (length: 2m)

System	Select ø index	**TR.RSEL.85**
+ e-chain®	Insert Ø index / Insert bend radius *R* / Insert standard length in meters	**6.56ft (2m) TRCF.85.135.0**
+ protector	Select protector option / specify ø index	**TR.85.30**
Order text:	**TR.RSEL.85. + 6.56ft (2 m) TRCF.85.135.0 + TR.85.30**	

Order key retraction system

TR.RSEL.85

- Ø index
- Retraction system
- Series

Order key e-chains®

TRC .85.135.0
TRE .85.135.0.B
TRCF.85.135.0

- Default colour black
- *R* Bend radius
- Ø index
- e-chain® series

More optional accessories - RSEL retraction system



Protectors
with screw connections or quick release



Adapter brackets
For custom mounting options



Axis 6 clamp
For triflex® R mounting brackets

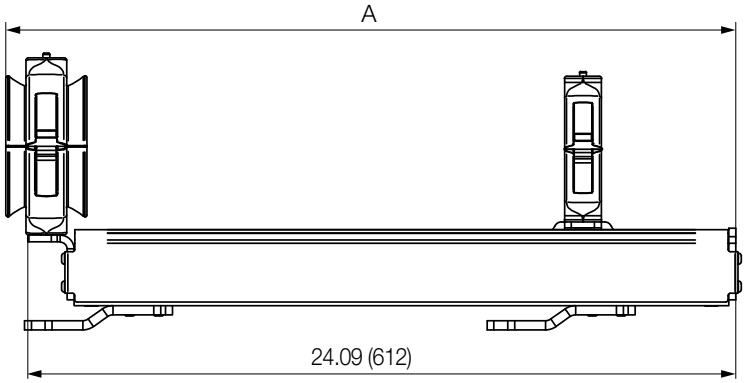
triflex® RSEL
For Series TRC / TRE
Product range and installation dimensions

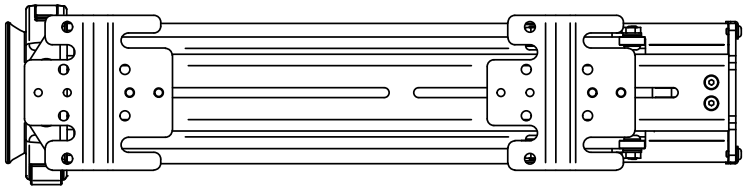


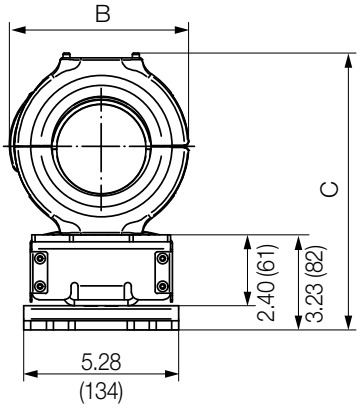
Product range - RSEL retraction system

ø Index	Part Number RSEL	Retraction length[1] ≤ in.	≤ [mm]	A in.	(mm)	B in.	(mm)	C in.	(mm)	Weight lbs	(kg)
70.	▶ **TR.RSEL.70**	14.96	(380)	24.84	(631)	6.10	(155)	10.59	(239)	19.4	(8.8)
85.	▶ **TR.RSEL.85**	14.96	(380)	25.12	(638)	6.10	(155)	9.88	(251)	19.6	(8.9)

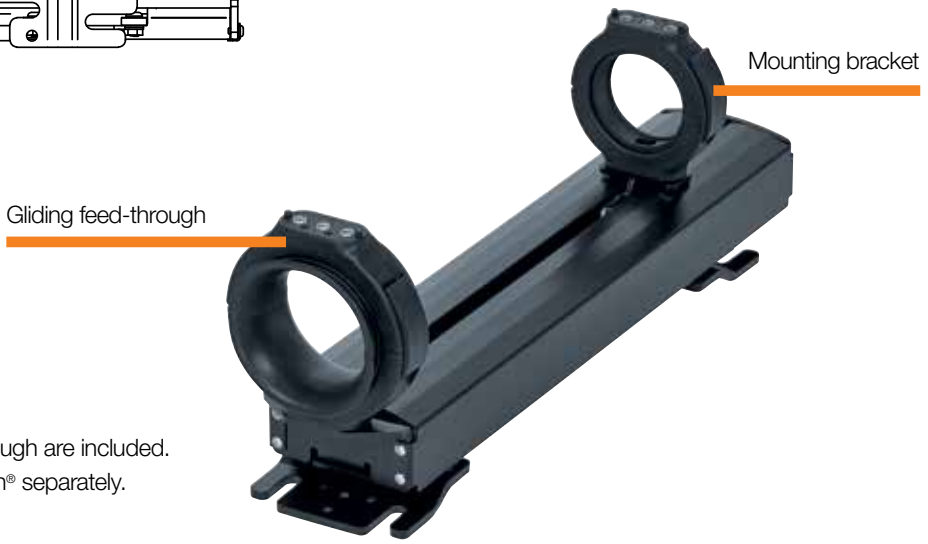
Please order matching triflex® R e-chain® separately. 1) Maximum retraction length







Installation height RSEL
Series TR.RSEL.70 - TR.RSEL.85



RSEL retraction system
Mounting bracket and gliding feed-through are included.
Please order matching triflex® R e-chain® separately.

triflex® RSEL
For Series TRC / TRE
Product range and cable length calculation



Product range - Matching e-chains® for RSEL

ø Index	Part No. **TRC** enclosed	Part No. **TRE** "easy" design	Part No. **TRCF** with snap lock mechanism
70.	▶ TRC.70.110.0	TRE.70.110.B	–
85.	▶ TRC.85.135.0	TRE.85.135.B	TRCF.85.135.0

1) Available for B- and C-versions

Please note that all triflex® R e-chains can be lengthened and shortened individually and can be customized to meet the needs of your application.

Please order e-chains® as piece parts and purchase a protector for each one.

Product range - Matching protectors for RSEL

ø	❶ Part No. protector with screw fastener	❷ Part No. protector with quick-lock fastener	General image protector options
70.	▶ TR.70.10	TR.70.30	
85.	▶ TR.85.10	TR.85.30	

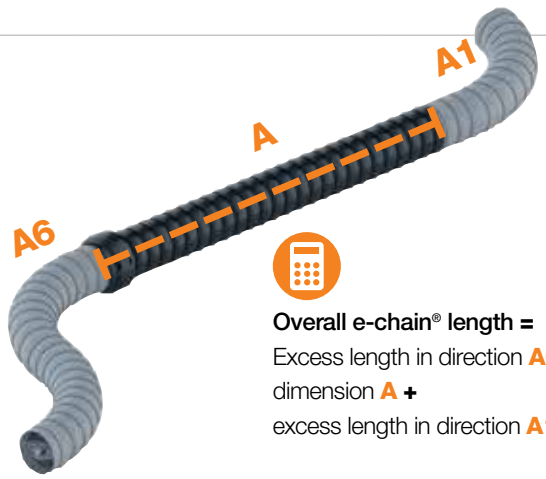


*Available upon request. Please consult igus® for delivery time.

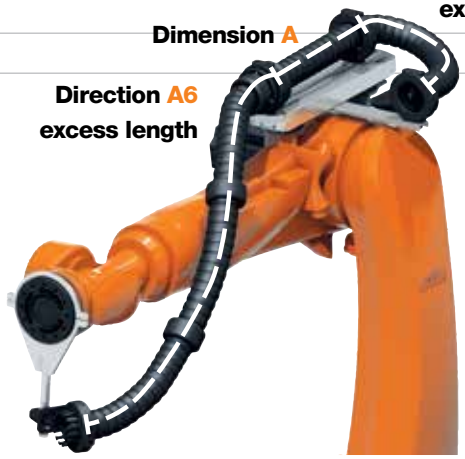
Please order protectors with screw connections or quick release as limit protectors.

More information on protectors page X.XX

ø Index	Bend radius *R* in.	(mm)	Dimension A in.	(mm)	General image overall e-chain® length
70. ▶	4.33	(110)	20.87	(530)	**Direction A1 excess length**
85. ▶	5.31	(135)	20.87	(530)	



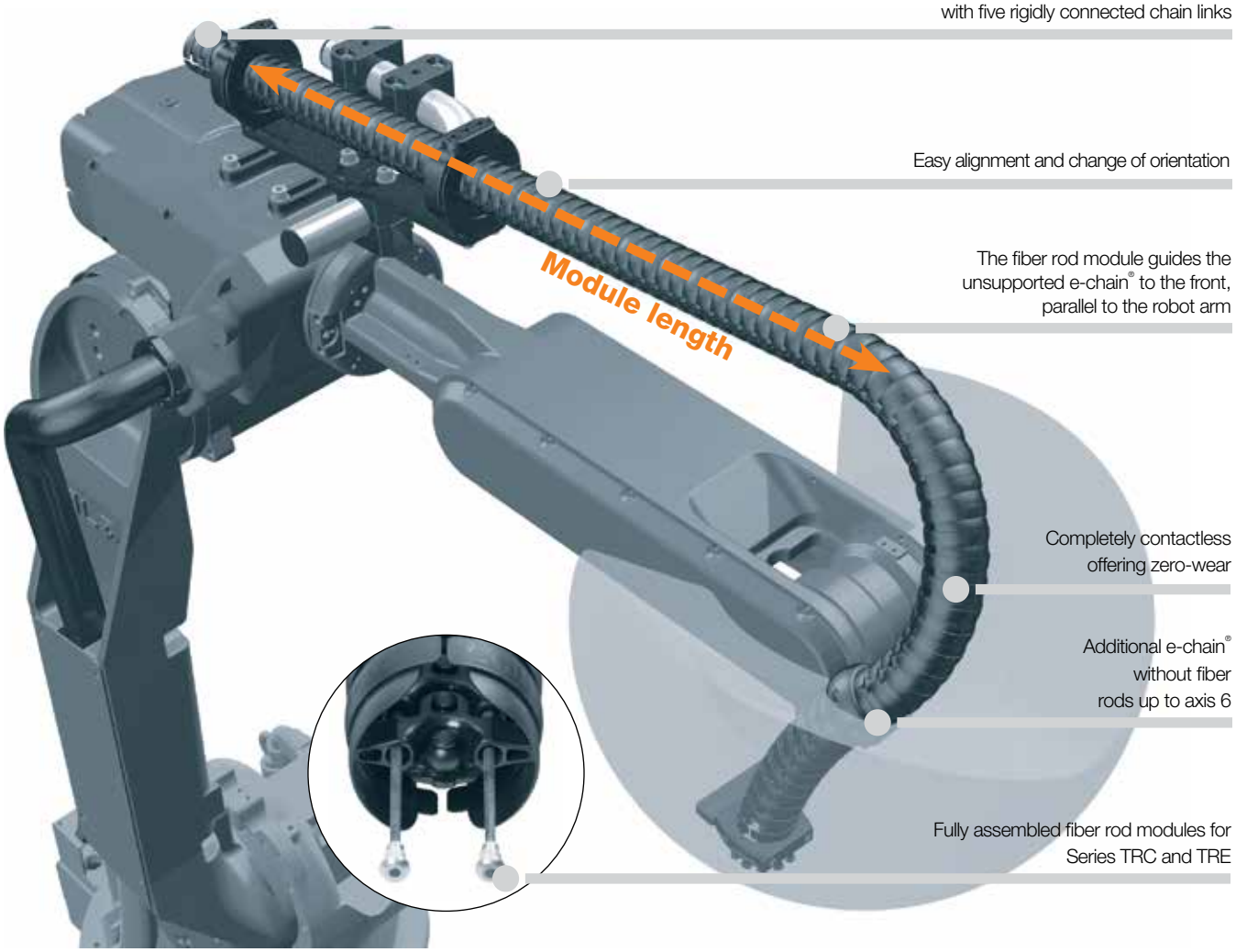
Overall e-chain® length =
Excess length in direction **A6** +
dimension **A** +
excess length in direction **A1**



For calculation of the overall e-chain® length:
Please add the desired excess length in direction **A1** and the excess length in direction **A6** and the dimension **A**. Additionally, at least 1 limit protector must be ordered.

triflex® R - Fiber-rod Module For Series TRC / TRE

Universal mounting kits



Fiber rod modules for a directional camber of the e-chain® - for TRC & TRE

We supply fully assembled fiber rod modules for triflex® R e-chain®, Series TRC and TRE. The integrated fiber rods generate a directional camber of the e-chain®. This system creates a unique choice of combinations for the energy supply system on manual axis of industrial robots. The fiber rod module guides the unsupported e-chain® to the front, parallel to the robot arm. The bending properties of the modules depends on the installation orientation: only the front area is designed for flexible movement (accordingly, align with moving tool during assembly). The five rear chain links are rigidly connected and compensate the relative movement of the integrated fiber rods. A fully contactless and therefore zero-wear energy supply system can be realized, particularly for moderate movements with limited pivot motion of the axis. An additional e-chain® without fiber rods for the hand area needs to be ordered separately.



triflex® R - Product range
For Series TRC / TRE

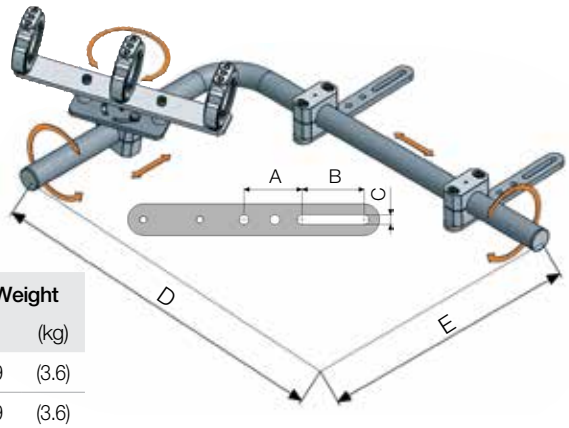
Part. No. fiber rod modules for TRC / TRE		Approx. length ft.	(m)
TRC-40	**TRE-40**		
TRC.F.**40**.1000.1.0	TRE.F.**40**.1000.1.0.B	3.28	1.0
TRC.F.**40**.0900.1.0	TRE.F.**40**.0900.1.0.B	2.95	0.9
TRC.F.**40**.0800.1.0*	TRE.F.**40**.0800.1.0.B*	2.62	0.8
TRC.F.**40**.0700.1.0	TRE.F.**40**.0700.1.0.B	2.30	0.7
TRC.F.**40**.0600.1.0	TRE.F.**40**.0600.1.0.B	1.97	0.6
TRC.F.**40**.0500.1.0	TRE.F.**40**.0500.1.0.B	1.64	0.5
TRC.F.**40**.0400.1.0	TRE.F.**40**.0400.1.0.B	1.31	0.4
TRC-50	**TRE-50**		
TRC.F.**50**.1400.1.0	TRE.F.**50**.1400.1.0.B	4.59	1.4
TRC.F.**50**.1200.1.0	TRE.F.**50**.1200.1.0.B	3.94	1.2
TRC.F.**50**.1000.1.0*	TRE.F.**50**.1000.1.0.B*	3.28	1.0
TRC.F.**50**.0800.1.0	TRE.F.**50**.0800.1.0.B	2.62	0.8
TRC.F.**50**.0600.1.0	TRE.F.**50**.0600.1.0.B	1.97	0.6
TRC.F.**50**.0400.1.0	TRE.F.**05**.0400.1.0.B	1.31	0.4
TRC-60	**TRE-60**		
TRC.F.**60**.1400.1.0	TRE.F.**60**.1400.1.0.B	4.59	1.4
TRC.F.**60**.1200.1.0	TRE.F.**60**.1200.1.0.B	3.94	1.2
TRC.F.**60**.1000.1.0*	TRE.F.**60**.1000.1.0.B*	3.28	1.0
TRC.F.**60**.0800.1.0	TRE.F.**60**.0800.1.0.B	2.62	0.8
TRC.F.**60**.0600.1.0	TRE.F.**60**.0600.1.0.B	1.97	0.6
TRC.F.**60**.0400.1.0	TRE.F.**60**.0400.1.0.B	1.31	0.4
TRC-70	**TRE-70**		
TRC.F.**70**.1800.1.0	TRE.F.**70**.1800.1.0.B	5.91	1.8
TRC.F.**70**.1600.1.0	TRE.F.**70**.1600.1.0.B	5.25	1.6
TRC.F.**70**.1400.1.0	TRE.F.**70**.1400.1.0.B	4.59	1.4
TRC.F.**70**.1200.1.0*	TRE.F.**70**.1200.1.0.B*	3.94	1.2
TRC.F.**70**.1000.1.0	TRE.F.**70**.1000.1.0.B	3.28	1.0
TRC.F.**70**.0800.1.0	TRE.F.**70**.0800.1.0.B	2.62	0.8

Part. No. fiber rod modules for TRC / TRE		Approx. length ft.	(m)
TRC-85	**TRE-85**		
TRC.F.**85**.2000.1.0	TRE.F.**85**.2000.1.0.B	6.56	2.0
TRC.F.**85**.1800.1.0	TRE.F.**85**.1800.1.0.B	5.91	1.8
TRC.F.**85**.1600.1.0	TRE.F.**85**.1600.1.0.B*	5.25	1.6
TRC.F.**85**.1400.1.0*	TRE.F.**85**.1400.1.0.B*	4.59	1.4
TRC.F.**85**.1200.1.0	TRE.F.**85**.1200.1.0.B	3.94	1.2
TRC.F.**85**.1000.1.0	TRE.F.**85**.1000.1.0.B	3.28	1.0
TRC.F.**85**.0800.1.0	TRE.F.**85**.0800.1.0.B	2.62	0.8
TRC-100	**TRE-100**		
TRC.F.**100**.2000.1.0	TRE.F.**100**.2000.1.0.B /.C	6.56	2.0
TRC.F.**100**.1800.1.0	TRE.F.**100**.1800.1.0.B /.C	5.91	1.8
TRC.F.**100**.1600.1.0	TRE.F.**100**.1600.1.0.B /.C	5.25	1.6
TRC.F.**100**.1400.1.0*	TRE.F.**100**.1400.1.0.B /.C*	4.59	1.4
TRC.F.**100**.1200.1.0	TRE.F.**100**.1200.1.0.B /.C	3.94	1.2
TRC.F.**100**.1000.1.0	TRE.F.**100**.1000.1.0.B /.C	3.28	1.0
TRC-125	**TRE-125**		
TRC.F.**125**.2000.1.0	TRE.F.**125**.2000.1.0	6.56	2.0
TRC.F.**125**.1800.1.0*	TRE.F.**125**.1800.1.0*	5.91	1.8
TRC.F.**125**.1600.1.0	TRE.F.**125**.1600.1.0	5.25	1.6
TRC.F.**125**.1400.1.0	TRE.F.**125**.1400.1.0	4.59	1.4
TRC.F.**125**.1200.1.0	TRE.F.**125**.1200.1.0	3.94	1.2
TRC.F.**125**.1000.1.0	TRE.F.**125**.1000.1.0	3.28	1.0

*Maximum recommended length for fiber rod modules
For the C version, please add the index .C

Universal assembly kit - for TRC, TRE

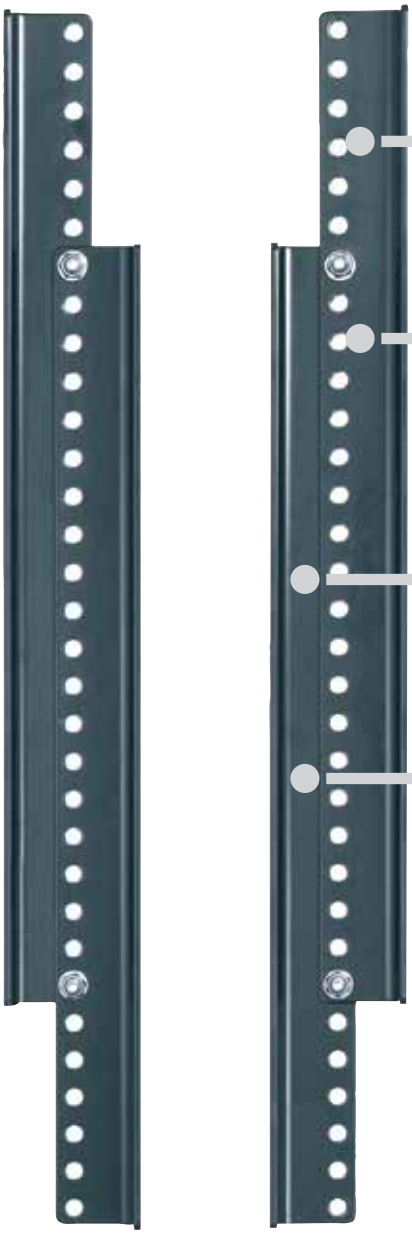
- Stainless steel angle tube with attachment brackets
- Freely positionable
- The energy supply system can be quickly and easily adapted to the new programming sequences of the robot
- With 2 mounting brackets for sizes 40 and 60 - with 3 mounting brackets starting at size 70



Product range - Universal mounting kit

For Series ø	Part No.	A		B		C		D		E		Weight	
		in.	(mm)	in.	(mm)	in.	(mm)	in.	(mm)	in.	(mm)	lb	(kg)
40- ▶	**TR-40-80**	2.91	(74)	1.57	(40)	.33	(8.4)	18.70	(475)	12.80	(325)	7.9	(3.6)
50- ▶	**TR-50-80**	2.91	(74)	1.57	(40)	.33	(8.4)	18.70	(475)	12.80	(325)	7.9	(3.6)
60- ▶	**TR-60-80**	2.91	(74)	1.57	(40)	.33	(8.4)	24.61	(625)	12.80	(325)	10.4	(4.7)
70- ▶	**TR-70-80**	2.95	(75)	3.15	(80)	.50	(12.6)	34.45	(875)	22.64	(575)	13.0	(5.9)
85- ▶	**TR-85-80**	2.95	(75)	3.15	(80)	.50	(12.6)	34.45	(875)	22.64	(575)	13.9	(6.3)
100- ▶	**TR-100-80**	2.95	(75)	3.15	(80)	.50	(12.6)	34.45	(875)	22.64	(575)	13.9	(6.3)
125- ▶	**TR-125-80**	2.95	(75)	3.15	(80)	.50	(12.6)	34.45	(875)	22.64	(575)	18.74	(8.5)

triflex® R - Accessories
triflex® RS & RSP
Adjustment units for retraction systems



Wide adjustment range of ± 250mm

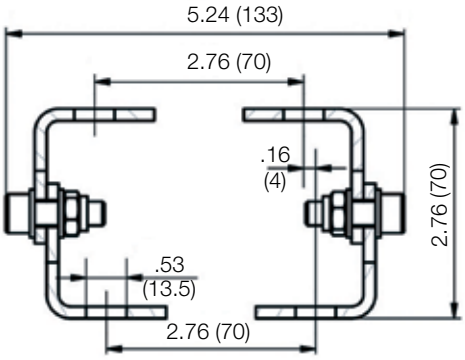
Can be combined with igus® adapter brackets

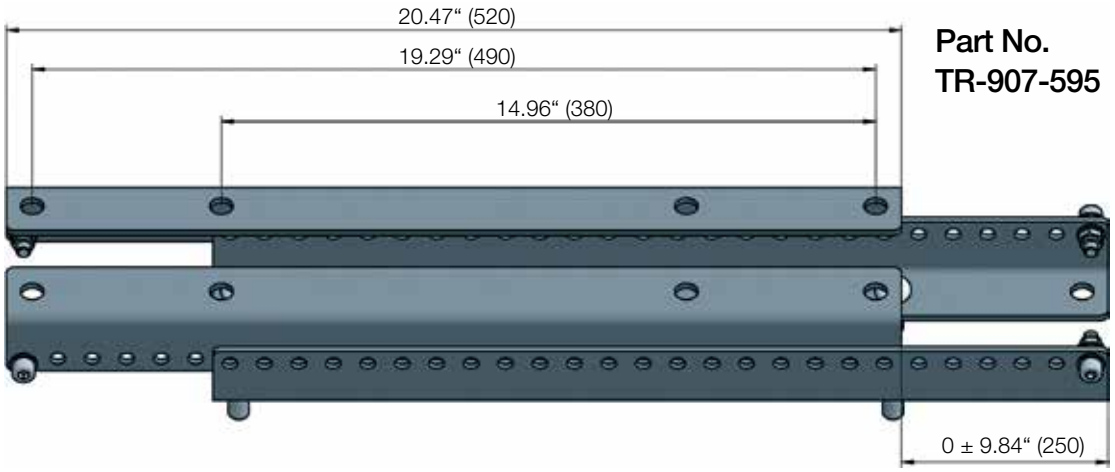
Simplifies alignment for robot cells with restricted space

Part No. TR.907.595
weight: 11 lb.

Adjustment unit for RSP and RS retraction systems

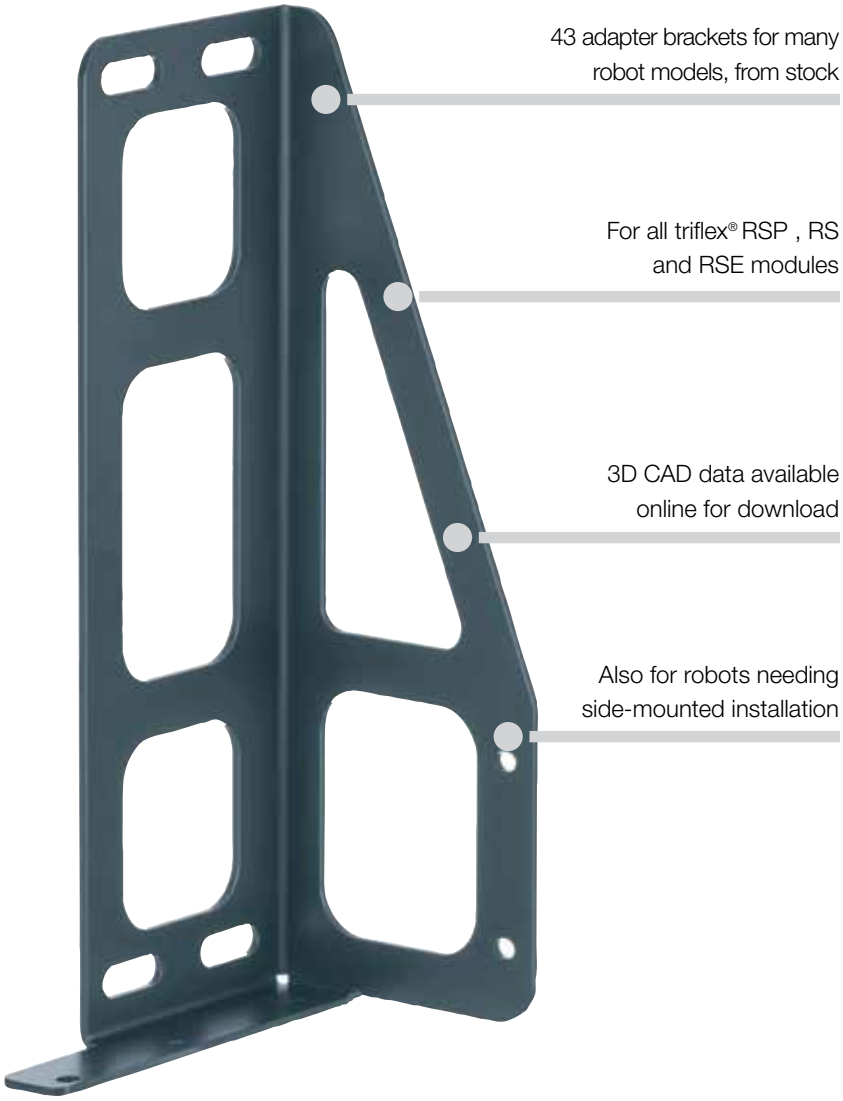
The optionally available adjustment unit is installed between the robot arm and the retraction system, and supports accurate adjustments of the assembly position of our igus® retraction systems on the robot arm. Particularly recommended when various large robots will be equipped with a uniform cable package.





Part No.
TR-907-595

Adjustment unit to easily change the position of the retraction system



Adapter brackets for RSP, RS and RSE retraction systems

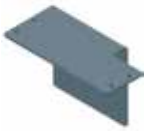
The RS and RSP retraction systems provide all widely used drill patterns for attachment: 380 x 70 mm and 490 x 90 mm (in Ø12.5 mm). We also supply a wide range of manufacturer and model-dependent adapters from stock, in order to adapt to other robot variations. For example, many robot models are equipped from the factory with only side-mounted mounting options - in these cases, our adapter product range also supports simple installation of the retraction systems without additional engineering. **Adapter brackets for many robot models, from stock.**



Application example with RS system on ABB Series 6600

triflex® R - Accessories
triflex® RS & RSP Accessories - Adapter Brackets

Adapter bracket product range - for RSE, RS & RSP

Adapter bracket	Part No.	For manufacturer	Example for robot type	Weight (lb)
	TR-907-347	**ABB**	IRB 6600 IRB 6640 IRB 6650	8.8
	TR-907-468	**ABB**	IRB 6400	21.6
	TR-907-448	**ABB**	IRB 4400	11
	TR-907-381	**ABB**	IRB 2400/10 IRB 2400/16	11.5
	TR-907-905	**ABB**	IRB 6620	6.2
	TR-908-494	**ABB**	IRB 4600 IRB 2600	6.4
	TR-907-374	**Comau**	NH1 130-2.6 NH3 165-2.7 NH3 220-2.7 NJ 110-3.0 NJ 110-2.6 SMART5 NJ 165 3.0	10.4
	TR-907-447	**Comau**	NM 45-2.0 NM 16-3.1	7.5
	TR-908-493	**Comau**	Smart six	4.9
	TR-907-327	**Motomann**	UP 20 UP 50 UP 130 UP 165 ES 165 ES 200 ES 280 HP 20 HP 50 MH6 HP 165	1.9
	TR-909-641	**Motomann**	MH50	4.4

More adapter brackets on request. CAD data online.

From stock for many robot types

Adapter bracket	Part No.	For manufacturer	Example for robot type		Weight (lb)
	TR-911-220	**Fanuc**	M-710iC 50 M-710iC 70		4.4
	TR-908-973	**Fanuc**	M-710iB 45		2.4
	TR-907-270	**Fanuc**	R-2000iB R-2000iA R-1000iA	S 430 S 420	9.9
	TR-907-470-12	**Fanuc**	M-900iA 260L M-900iA 350		15.0
	TR-907-902-12	**Fanuc**	M-900iA 600		19.6
	TR-910-876	**Fanuc**	M900-IB700		10.1
	TR-907-599	**Kuka**	KR5 KR5arc	KR6 KR16	5.5
	TR-908-113	**Kuka**	KR-1000		11.5
	TR-908-014	**Kuka**	KR 60 (HA) KR 30 (HA)		9.5
	TR-907-706	**Reis**	RV30-26 RV10-16 RV20-16 RV60-16	RV60-26 RV60-40 RV60-60 RV130	9.5
	Spacer pin TR-911-223	**Kuka Series**	Series Quantec (4 piece kit)		1.3

More adapter brackets on request. CAD data online.

triflex® R - Accessories
triflex® RS & RSP Accessories
Clamps - for attachment to axis 6



For use with a heavy duty connection, compact connection, and quick release units

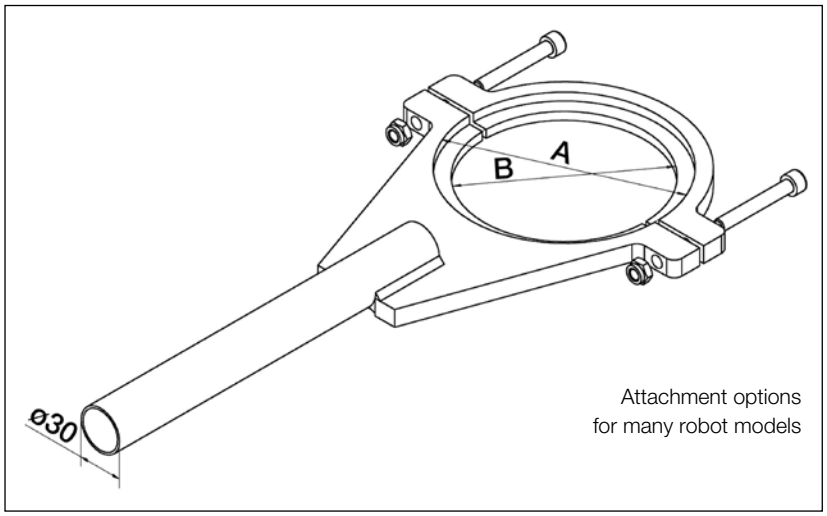
Easy and fast alignment of the fixed end relative to the tool position

Depending on robot design, with or without recess

Clamps for attachment to axis 6

The clamp is used to attach a mounting bracket to axis 6, with a bar (Ø 30mm) for all robots. They are easy and quick to assemble.

- For use with heavy duty connection **TR.XX.20** / **TR.XX.23**
- For use with compact connection **TR.XX.21.01** / **TR.XX.21.02**
- For use with quick exchange unit **TR.XX.22**



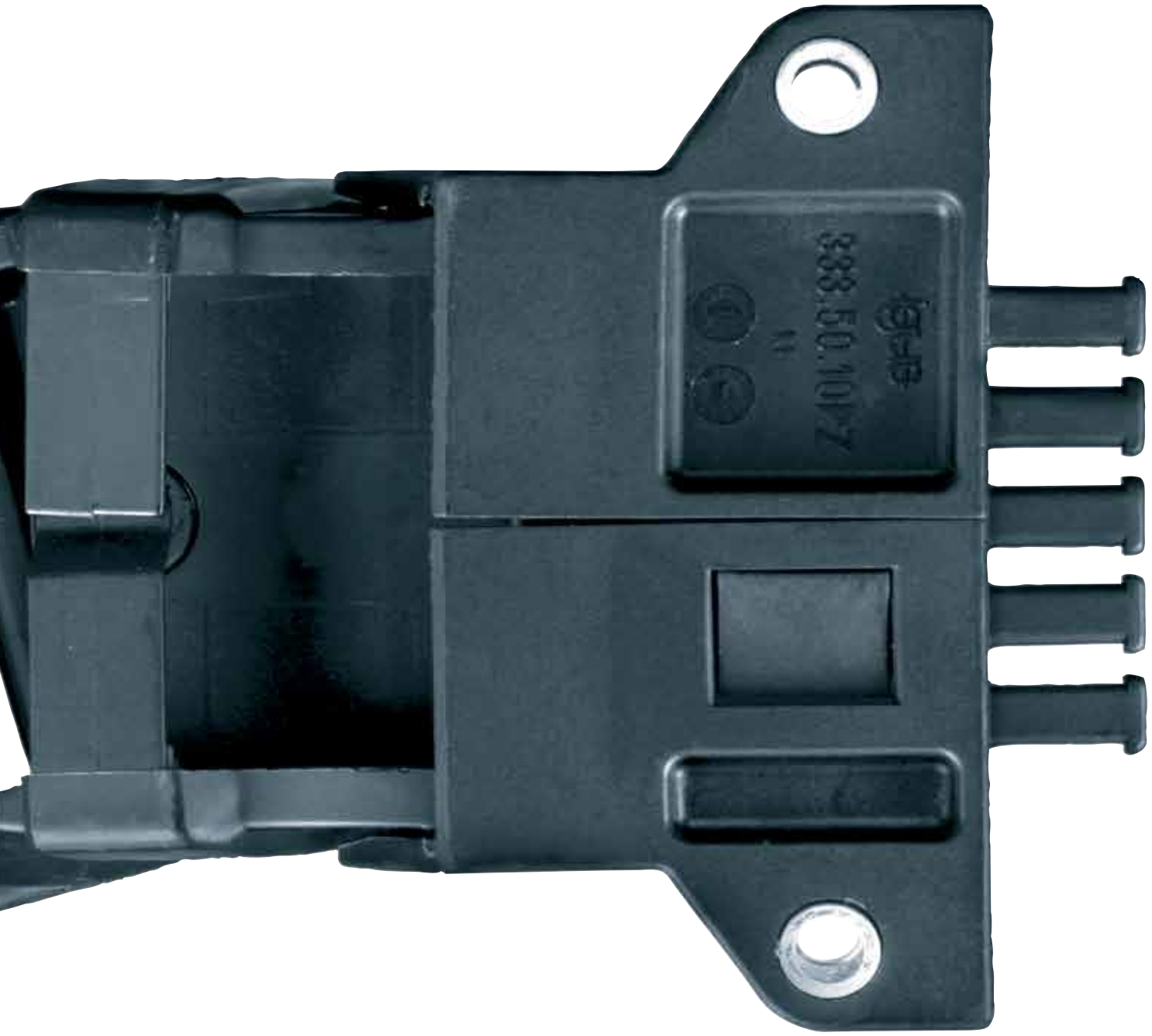
Attachment options for many robot models



Part No.	Example for robot type	Flange	(Dim. A		Dim. B		Weight
			in.	(mm)	in.	(mm)	(lb)
TR-907-857	KUKA KR 30-3 (HA)	yes	5.12	(130)	4.53	(115)	4.2
	KUKA KR 60-3 (HA)	yes	5.12	(130)	4.53	(115)	4.2
	KUKA KR 60 L45-3 (HA)	yes	5.12	(130)	4.53	(115)	4.2
	KUKA KR 60 L30-3 (HA)	yes	5.12	(130)	4.53	(115)	4.2
TR-907-901	KUKA Quantec, large flange	yes	8.07	(205)	7.48	(190)	5.5
	KUKA KR 125/3	yes	8.07	(205)	7.48	(190)	5.5
	KUKA KR 150/3	yes	8.07	(205)	7.48	(190)	5.5
	KUKA KR 200/3	yes	8.07	(205)	7.48	(190)	5.5
	KUKA KR 360/1	yes	8.07	(205)	7.48	(190)	5.5
	KUKA KR 500/1	yes	8.07	(205)	7.48	(190)	5.5
	KUKA KR 150/2 Series 2000	yes	8.07	(205)	7.48	(190)	5.5
	KUKA KR 180/2 Series 2000	yes	8.07	(205)	7.48	(190)	5.5
	KUKA KR 210/2 Series 2000	yes	8.07	(205)	7.48	(190)	5.5
TR-908-115	KUKA KR 1000 Titan	yes	9.84	(250)	9.53	(242)	6.7
TR-907-992	Fanuc R-2000iB	yes	6.50	(165)	6.30	(160)	5.3
	Fanuc R-2000iA	yes	6.50	(165)	6.30	(160)	5.3
	Reis RV 130	yes	6.50	(165)	6.30	(160)	5.3
TR-908-065	Fanuc M-710iC 50	yes	5.12	(130)	4.88	(124)	4.9
	Fanuc M-710iC 70	yes	5.12	(130)	4.88	(124)	4.9
TR-909-387	Motoman UP 50	yes	4.92	(125)	3.94	(100)	4.2
	Motoman HP 50	yes	4.92	(125)	3.94	(100)	4.2
	Motoman MH 50	yes	4.92	(125)	3.94	(100)	4.2
TR-910-544	Reis RV60-60	yes	5.71	(145)	4.92	(125)	4.2
	Reis RV60-40	yes	5.71	(145)	4.92	(125)	4.2
	Fanuc R-1000	yes	5.71	(145)	4.92	(125)	4.2
TR-908-347	Stäubli TX200	yes	5.71	(145)	4.92	(125)	4.2
TR-907-667-125	for custom flange	no	4.92	(125)	= A	= A	4.6
TR-907-667-140	KUKA Quantec small flange	no	5.51	(140)	= A	= A	10.8
TR-907-667-142	Hyundai HX 165	no	5.59	(142)	= A	= A	5.0
TR-907-667-150	Comau NJ 130	no	5.91	(150)	= A	= A	5.3
TR-907-667-160	ABB IRB 6400	no	6.30	(160)	= A	= A	5.4
	Fanuc S420	no	6.30	(160)	= A	= A	5.4
TR-907-667-180	for custom flange	no	7.09	(180)	= A	= A	5.6
TR-907-667-190	Comau NH3	no	7.48	(190)	= A	= A	5.7
TR-907-667-200	KUKA KR 125/1	no	7.87	(200)	= A	= A	6.0
	KUKA KR 150/1	no	7.87	(200)	= A	= A	6.0
	KUKA KR 200/1	no	7.87	(200)	= A	= A	6.0
	ABB IRB 6640	no	7.87	(200)	= A	= A	6.0
	ABB IRB 6620	no	7.87	(200)	= A	= A	6.0
	ABB IRB 6650	no	7.87	(200)	= A	= A	6.0
TR-907-667-220	KUKA KR 360-2	no	8.66	(220)	= A	= A	6.2
	KUKA KR 500-2	no	8.66	(220)	= A	= A	6.2
	KUKA KR 360-3	no	8.66	(220)	= A	= A	6.2
	KUKA KR 500-3	no	8.66	(220)	= A	= A	6.2
TR-907-667-223	ABB IRB 7600-340	no	8.78	(223)	= A	= A	7.7
	ABB IRB 7600-500	no	8.78	(223)	= A	= A	7.7
TR-907-667-250	Fanuc M900iA 350	no	9.84	(250)	= A	= A	7.1
	Fanuc M900iA 260L	no	9.84	(250)	= A	= A	7.1
TR-907-667-275	Fanuc M900iA 200P	no	10.83	(275)	= A	= A	7.5
TR-907-667-315	Fanuc M900iA 600	no	12.40	(315)	= A	= A	7.9
	Fanuc M900iA 400L	no	12.40	(315)	= A	= A	7.9

Other sizes available on request!





igus®
E-Z triflex®

E-Z triflex® - for 2D and 3D movements, easy access to cable from both sides

The triflex® series has been developed to safely guide cables through a 3D movement. With E-Z triflex®, the installation of cables and hoses is easy. Cables can be inserted into the e-chain® from the top or bottom through an opening along the length of the chain. The unique modular design of triflex® enables very complex movements through all three axes.

Typical industries and applications

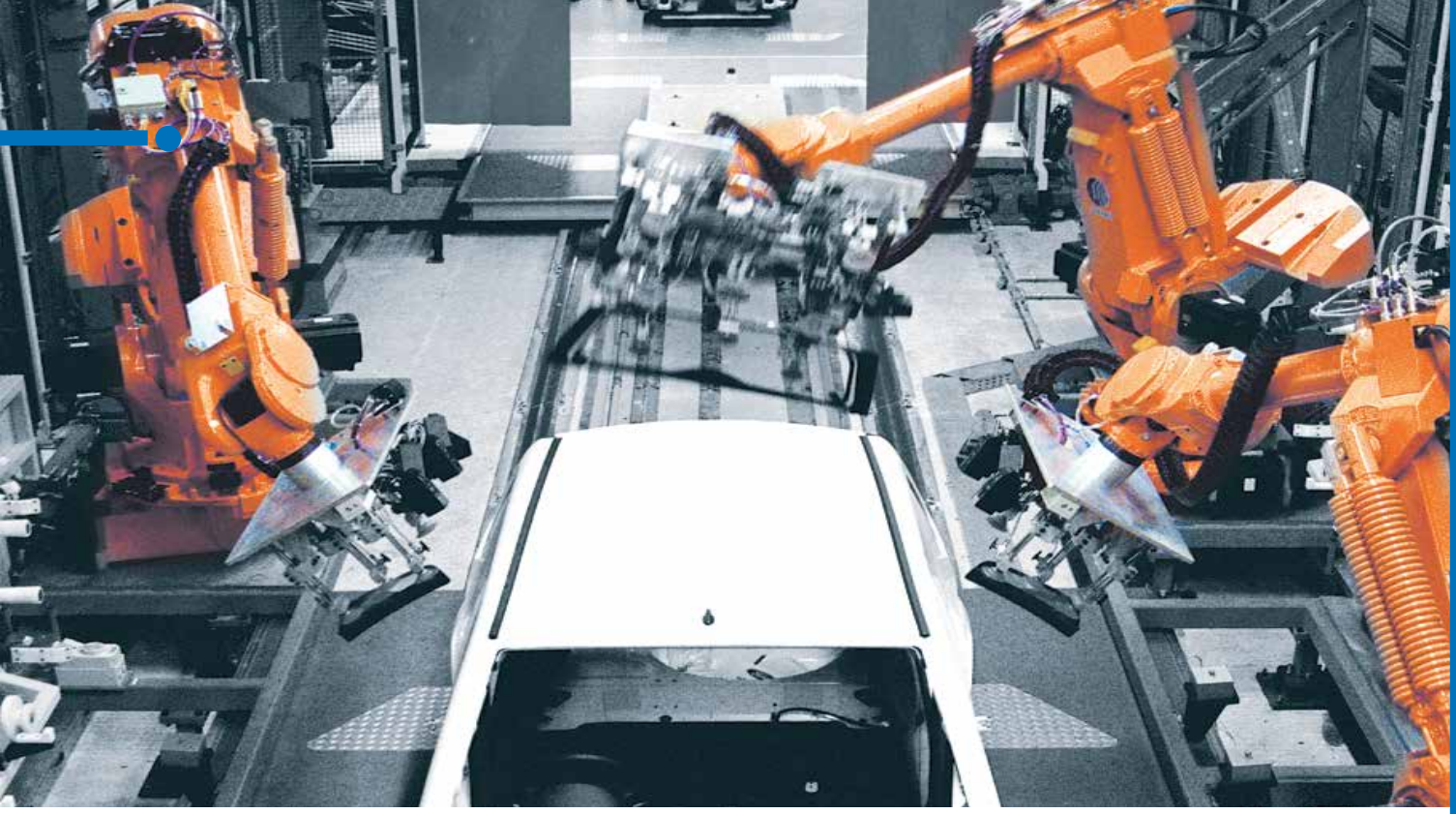
- Machine Tools
- Robots
- Material handling
- Plastics machinery
- Construction machines
- Vehicles
- General machinery
- Medical equipment



iF-Design awards for Easy triflex®-design

Torsional motion possible

UL94-V2 classifications



Robots with igus® E-Z triflex® e-chains® on an assembly line



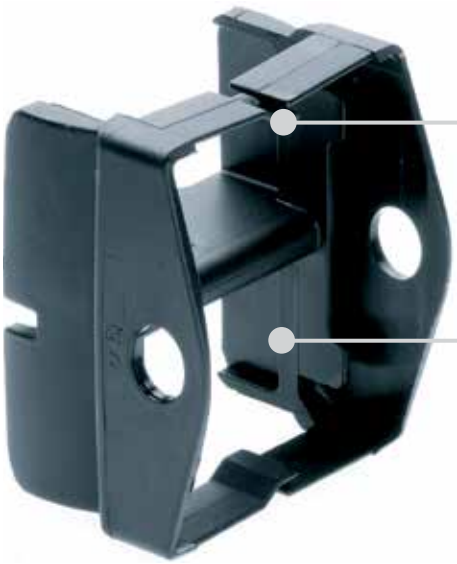
E-Z triflex® e-chains® for multi-dimensional movements on a production line



E-Z triflex® e-chains® also for easy applications - here an aesthetic application

E-Z triflex® - The Solution for Your Office

Dangling lines are risky and unaesthetic. The new solution: E-Z triflex® and triflex® e-chains® with special connector elements for your desk. They offer reliable, movable and elegant protection for lines, are quickly installed and are available in many variations. Naturally they can be installed at any time as retrofits. Simply press the lines from two sides. This is possible at any point desired.



Select this modular e-chain system® for:

- 3-axis motions in all kinds of machinery
- Some robotics applications
- Very fast cable assembly with “E-Z” design
- Simple filling from two sides
- Where rectangular shapes fit better
- Combination of different bending radii and movement directions
- Lengthen and shorten anywhere
- KMA mounting brackets with integrated strain relief
- You can find more technical data about the material, chemical resistance, temperatures ➤ **Design, Chapter 1**

Selection table

Single-axis and double-axis movement:

Series	Inner Height *Bi 1/Bi 2*		Inner Width *Bi 3*		Outer height/Outer Width ☐ *Ba*		Bending Radii *R*	
	in.	(mm)	in.	(mm)	in.	(mm)	in.	(mm)
E331-25	.51	(13)	.98	(25)	1.34	(34)	1.89 - 7.87	(048 - 200)
E331-32	.69	(17.5)	1.26	(32)	1.97	(50)	2.95 - 9.84	(075 - 250)
E331-50	1.02	(26)	1.97	(50)	2.68	(68)	3.94 - 9.84	(100 - 250)
E331-75	1.52	(38.5)	2.95	(75)	3.78	(96)	5.51 - 11.81	(140 - 300)

Single-axis and double-axis movement:

Series	Inner Height *Bi 1/Bi 2*		Inner Width *Bi 3*		Outer height/Outer Width ☐ *Ba*		Bending Radii *R*	
	in.	(mm)	in.	(mm)	in.	(mm)	in.	(mm)
E332-25	.51	(13)	.98	(25)	1.34	(34)	1.89 - 7.87	(048 - 200)
E332-32	.69	(17.5)	1.26	(32)	1.97	(50)	2.95 - 9.84	(075 - 250)
E332-50	1.02	(26)	1.97	(50)	2.68	(68)	3.94 - 9.84	(100 - 250)
E332-75	1.52	(38.5)	2.95	(75)	3.78	(96)	5.51 - 11.81	(140 - 300)

Triple-axis movement

Series	Inner Height *Bi 1/Bi 2*		Inner Width *Bi 3*		Outer height/Outer Width ☐ *Ba*		Bending Radii *R*	
	in.	(mm)	in.	(mm)	in.	(mm)	in.	(mm)
E333-25	.51	(13)	.98	(25)	1.34	(34)	1.89 - 7.87	(048 - 200)
E333-32	.69	(17.5)	1.26	(32)	1.97	(50)	2.95 - 9.84	(075 - 250)
E333-50	1.02	(26)	1.97	(50)	2.68	(68)	3.94 - 9.84	(100 - 250)
E333-75	1.52	(38.5)	2.95	(75)	3.78	(96)	5.51 - 11.81	(140 - 300)

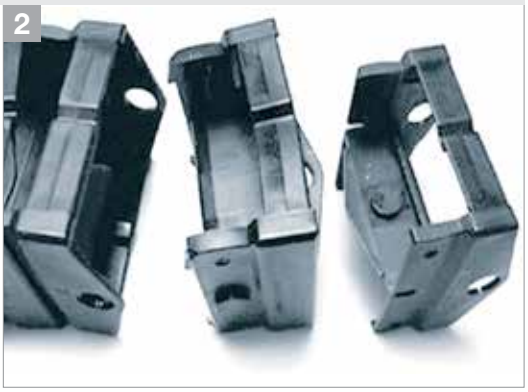
Available from stock. Orders ship as early as today.*

*On average 90% of orders ship the same day..

E-Z triflex® Series - Assembling



Twist and snap in



Shorten and lengthen
at any given point

E-Z triflex® Series - Separating



Lever the E-Z triflex®
side link with screwdriver

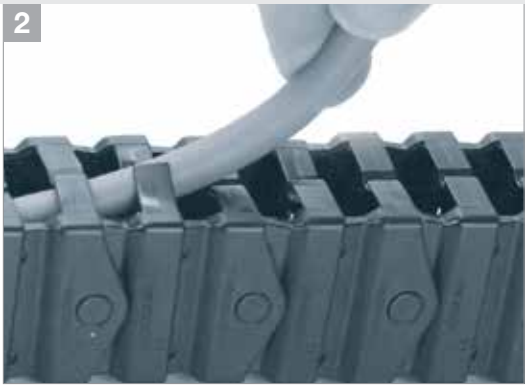


Twist and separate - For Series E333
you have to separate the “middle” pin

E-Z triflex® Series - Filling

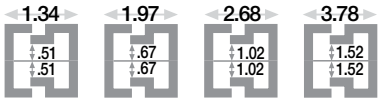


Easy to fill - simply press cables in...



...and easy to take the cables out

e-chain system®
E-Z triflex® Series



Price Index

Flammability Class
VDE 0304 IIC UL94 V2

Torsion motion possible

iF-Design Award Winner

Assembly Tips



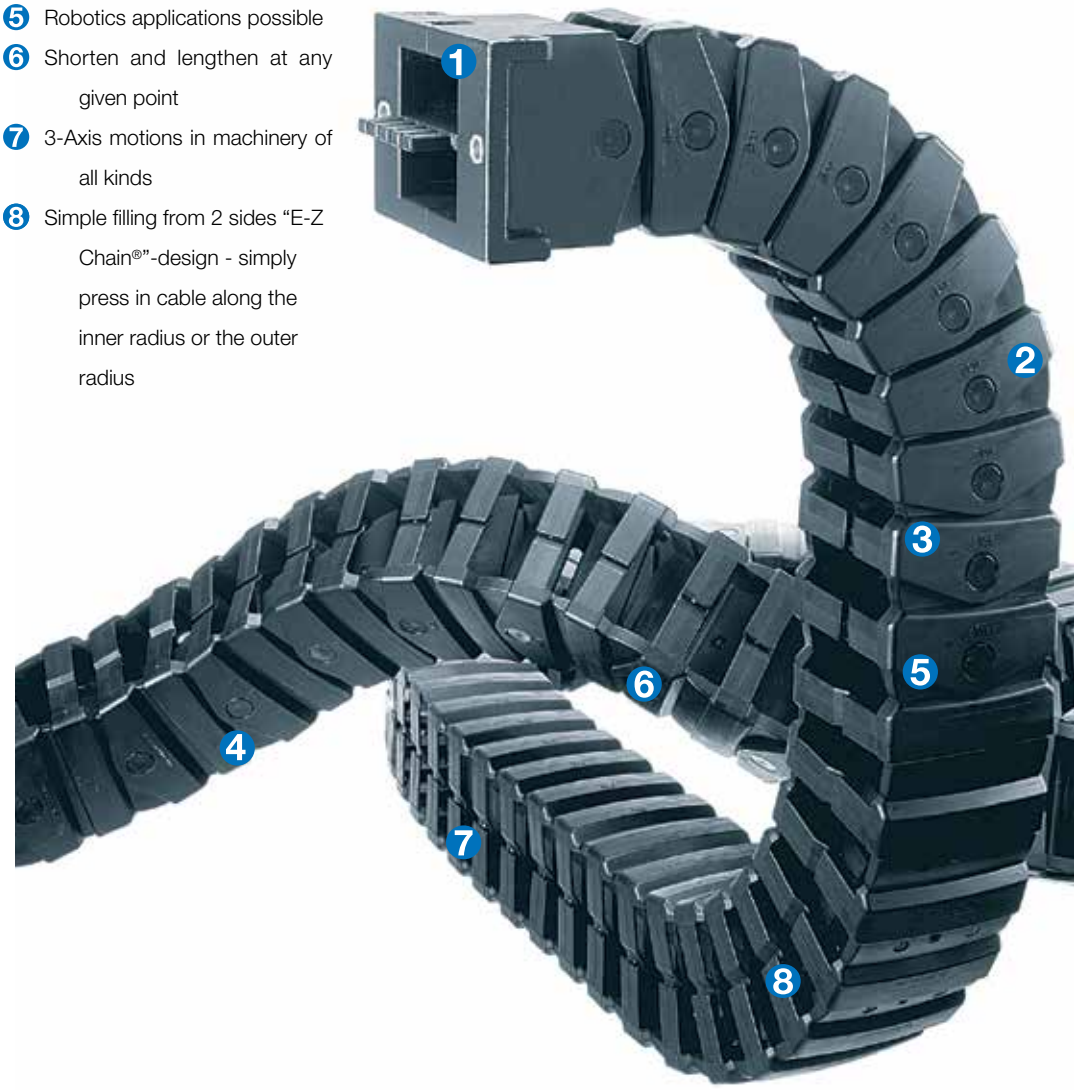
Easy to fill - simply press cables in

- If simple cable installation is required with complex movements
- If simple cable installation from both sides with complex movements is required
- For repair and supplementation of existing triflex® Systems

- For circular movements with high loads
  ➤ twisterchain® System, from **Chapter 8**
- If chip protection is necessary
  ➤ triflex® System, from **Chapter 8**

Features & Benefits

1. KMA split-open mounting bracket with integrated strain relief
2. Patented “push-button-design”
3. iF-Design Award Winner
4. Different bending radii and directions can be combined
5. Robotics applications possible
6. Shorten and lengthen at any given point
7. 3-Axis motions in machinery of all kinds
8. Simple filling from 2 sides “E-Z Chain®”-design - simply press in cable along the inner radius or the outer radius



Order Example: Complete e-chain®

Please indicate chain length or number of links. Example:

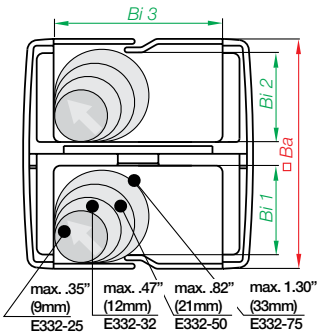
6.56 ft (2 m) **E333-50-100/100-0**	**e-chain®**
1 Set **333-50-12PZ**	**Mounting Bracket**

Technical Data

Material - permitted temperature	igumid NB / -40°F (-40°C) up to +176°F (+80° C)
Flammability Class, igumid NB	VDE 0304 IIC UL94 V2

Details of material properties
➤ **Chapter 1**

Single Axis Movement, Series E331





Part No. structure

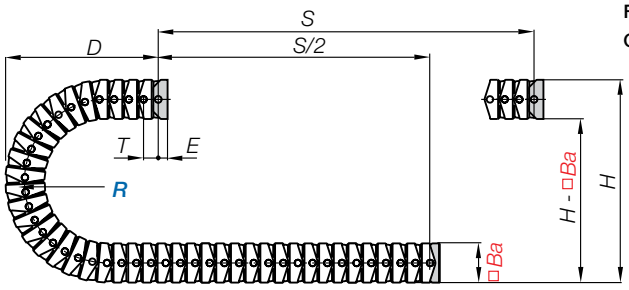
E331-	50-2-	100-	0

- 100 – Color - black
- 50 – Bending radius
- 2 – Width
- E331 – Series

Part No.	Bi 1	Bi 2	Bi 3	□ Ba
E331-25-2-[ ]-0	.51 (13)	.51 (13)	.98 (25)	1.34 (34)
E331-32-2-[ ]-0	.69 (17.5)	.69 (17.5)	1.26 (32)	1.97 (50)
E331-50-2-[ ]-0	1.02 (26)	1.02 (26)	1.97 (50)	2.68 (68)
E331-75-2-[ ]-0	1.52 (38.5)	1.52 (38.5)	2.95 (75)	3.78 (96)

Supplement part number with required radius from below
for example E331-50-2-[100]-0

Installation dimensions for single-axis movement



For center mount applications:
Chain length = $_{S}/_{2}$ + K

Legend

S = Length of travel
R = Bending radius
H = Nominal clearance height
D = Overlength e-chain® radius in final position
K = π • R + *"safety buffer"*

Series E331-25-2-[XXX]-0

R	1.89 (048)	2.95 (075)	3.94 (100)	4.92 (125)	5.91 (150)	6.89 (175)	7.87 (200)
H	5.12 (130)	7.28 (185)	9.25 (235)	11.22 (285)	13.19 (335)	15.15 (385)	17.13 (435)
D	3.74 (95)	4.92 (125)	5.91 (150)	6.89 (175)	7.87 (200)	8.86 (225)	9.84 (250)
K	7.68 (195)	11.02 (280)	14.17 (360)	17.32 (440)	20.28 (515)	23.43 (595)	26.57 (675)

Pitch = .57 (14.5 mm)
Links/ft (m) = 21.03 (69)
Dimensions E = .39 (10 mm)
Ba = 1.34 (34 mm)

Series E331-32-2-[XXX]-0

R	2.95 (075)	3.94 (100)	4.92 (125)	5.91 (150)	7.87 (200)	9.84 (250)
H	7.87 (200)	9.84 (250)	11.81 (300)	13.78 (350)	17.72 (450)	21.65 (550)
D	5.12 (130)	6.10 (155)	7.09 (180)	8.07 (205)	10.04 (255)	12.01 (305)
K	12.01 (305)	15.15 (385)	18.30 (465)	21.46 (545)	27.56 (700)	34.06 (865)

Pitch = .98 (25 mm)
Links/ft (m) = 12.24 (40)
Dimensions E = .79 (20 mm)
Ba = 1.97 (50 mm)

Series E331-50-2-[XXX]-0

R	3.94 (100)	4.92 (125)	5.91 (150)	7.87 (200)	9.84 (250)
H	10.63 (270)	12.60 (320)	14.76 (375)	18.50 (470)	22.44 (570)
D	7.68 (195)	8.66 (220)	9.65 (245)	11.61 (295)	13.58 (345)
K	17.13 (435)	20.47 (520)	23.23 (590)	29.53 (750)	35.83 (910)

Pitch = 1.18 (30 mm)
Links/ft (m) = 10.17 (34)
Dimensions E = .98 (25 mm)
Ba = 2.68 (68 mm)

Series E331-75-2-[XXX]-0

R	5.51 (140)	6.89 (175)	7.87 (200)	9.84 (250)	11.81 (300)
H	14.96 (380)	17.71 (450)	19.69 (500)	23.62 (600)	27.56 (700)
D	9.45 (240)	10.83 (275)	11.81 (300)	13.78 (350)	15.75 (400)
K	21.65 (550)	25.98 (660)	29.13 (740)	35.43 (900)	41.73 (1060)

Pitch = 1.42 (36 mm)
Links/ft (m) = 8.45 (28)
Dimensions E = .98 (25 mm)
Ba = 3.78 (96 mm)

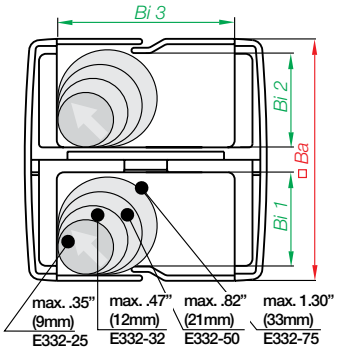
PDF: igus.com/e-chain-pdfs
Product information: igus.com/e-chains

e-chain system®
E-Z triflex® Series - Double Axis Movement

Telephone 1-800-521-2747

Internet: igus.com
email: sales@igus.com
QuickSpec: igus.com/quickspec

Double Axis Movement, Series E332





Part No. structure

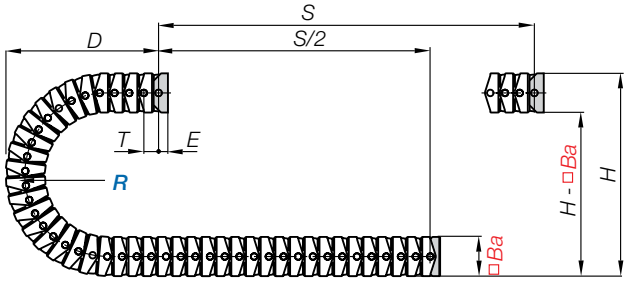
E332-	75-2-	200-	0

- 0 = Color - black
- 200 = Bending radius
- 75 = Width
- E332 = Series

Part No.	Bi 1	Bi 2	Bi 3	□ Ba
E332-25-2- ☐ -0	.51 (13)	.51 (13)	.98 (25)	1.34 (34)
E332-32-2- ☐ -0	.69 (17.5)	.69 (17.5)	1.26 (32)	1.97 (50)
E332-50-2- ☐ -0	1.02 (26)	1.02 (26)	1.97 (50)	2.68 (68)
E332-75-2- ☐ -0	1.52 (38.5)	1.52 (38.5)	2.95 (75)	3.78 (96)

Supplement part number with required radius from below
for example, E332-75-2- 200 -0

Installation dimensions for double-axis movement



For center mount applications:
Chain length = $\frac{S}{2} + K$

Legend

S = Length of travel
R = Bending radius
H = Nominal clearance height
D = Overlength e-chain® radius in final position
K = π • R + *"safety buffer"*

Series E332-25-2- XXX -0

R	1.89 (048)	2.95 (075)	3.94 (100)	4.92 (125)	5.91 (150)	6.89 (175)	7.87 (200)
H	5.12 (130)	7.28 (185)	9.25 (235)	11.22 (285)	13.19 (335)	15.15 (385)	17.13 (435)
D	3.74 (95)	4.92 (125)	5.91 (150)	6.89 (175)	7.87 (200)	8.86 (225)	9.84 (250)
K	7.68 (195)	11.02 (280)	14.17 (360)	17.32 (440)	20.28 (515)	23.43 (595)	26.57 (675)

Pitch = .57 (14.5 mm)
Links/ft (m) = 21.03 (69)
Dimensions E = .39 (10 mm)
Ba = 1.34 (34 mm)

Series E332-32-2- XXX -0

R	2.95 (075)	3.94 (100)	4.92 (125)	5.91 (150)	7.87 (200)	9.84 (250)
H	7.87 (200)	9.84 (250)	11.81 (300)	13.78 (350)	17.72 (450)	21.65 (550)
D	5.12 (130)	6.10 (155)	7.09 (180)	8.07 (205)	10.04 (255)	12.01 (305)
K	12.01 (305)	15.15 (385)	18.30 (465)	21.46 (545)	27.56 (700)	34.06 (865)

Pitch = .98 (25 mm)
Links/ft (m) = 12.24 (40)
Dimensions E = .79 (20 mm)
Ba = 1.97 (50 mm)

Series E332-50-2- XXX -0

R	3.94 (100)	4.92 (125)	5.91 (150)	7.87 (200)	9.84 (250)
H	10.63 (270)	12.60 (320)	14.76 (375)	18.50 (470)	22.44 (570)
D	7.68 (195)	8.66 (220)	9.65 (245)	11.61 (295)	13.58 (345)
K	17.13 (435)	20.47 (520)	23.23 (590)	29.53 (750)	35.83 (910)

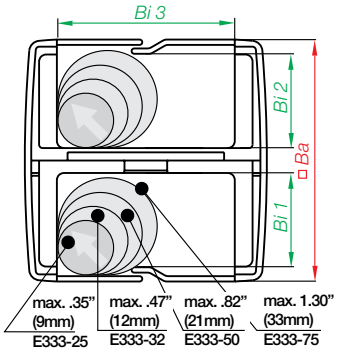
Pitch = 1.18 (30 mm)
Links/ft (m) = 10.17 (34)
Dimensions E = .98 (25 mm)
Ba = 2.68 (68 mm)

Series E332-75-2- XXX -0

R	5.51 (140)	6.89 (175)	7.87 (200)	9.84 (250)	11.81 (300)
H	14.96 (380)	17.71 (450)	19.69 (500)	23.62 (600)	27.56 (700)
D	9.45 (240)	10.83 (275)	11.81 (300)	13.78 (350)	15.75 (400)
K	21.65 (550)	25.98 (660)	29.13 (740)	35.43 (900)	41.73 (1060)

Pitch = 1.42 (36 mm)
Links/ft (m) = 8.45 (28)
Dimensions E = .98 (25 mm)
Ba = 3.78 (96 mm)

Triple Axis Movement, Series E333





Part No. structure

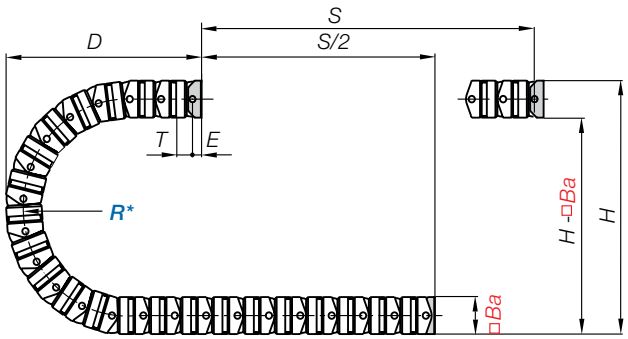
E333-	50-	100-	0

- 100 – Bending radius
- 50 – Width
- E333 – Series
- 0 – Color - black

Part No.	Bi 1	Bi 2	Bi 3	□ Ba
E333-25-□-0	.51 (13)	.51 (13)	.98 (25)	1.34 (34)
E333-32-□-0	.69 (17.5)	.69 (17.5)	1.26 (32)	1.97 (50)
E333-50-□-0	1.02 (26)	1.02 (26)	1.97 (50)	2.68 (68)
E333-75-□-0	1.52 (38.5)	1.52 (38.5)	2.95 (75)	3.78 (96)

Supplement part number with required radius from above
for example, E333-32-100-0

Installation dimensions for triple-axis movement



For center mount applications:
Chain length = $_{S}/_{2}$ + K

* The bending radii are doubled in the case of the **Series E333** e-chain®

Legend

S = Length of travel
R = Bending radius
H = Nominal clearance height
D = Overlength e-chain® radius in final position
K = π • R + *"safety buffer"*

Series E333-25-XXX -0

R	3.78 (096)	5.91 (150)	7.87 (200)	9.84 (250)	11.81 (300)	13.78 (350)	15.75 (400)
H	9.06 (230)	13.19 (335)	17.13 (435)	21.06 (535)	25.00 (635)	28.94 (735)	32.87 (835)
D	5.71 (145)	7.87 (200)	9.84 (250)	11.81 (300)	13.78 (350)	15.75 (400)	17.72 (450)
K	13.78 (350)	20.28 (515)	26.57 (675)	32.68 (830)	38.98 (990)	45.28 (1150)	51.18 (1300)

Pitch = .57 (14.5 mm)
Links/ft (m) = 21.03 (69)
Dimensions E = .39 (10 mm)
Ba = 1.34 (34 mm)

Series E333-32-XXX -0

R	5.91 (150)	7.87 (200)	9.84 (250)	11.81 (300)	15.75 (400)	19.69 (500)
H	13.78 (350)	17.72 (450)	21.65 (550)	25.59 (650)	33.46 (850)	41.33 (1050)
D	8.07 (205)	10.04 (255)	12.01 (305)	13.98 (355)	17.91 (455)	21.85 (555)
K	21.46 (545)	27.56 (700)	33.86 (860)	40.16 (1020)	51.18 (1300)	63.19 (1605)

Pitch = .98 (25 mm)
Links/ft (m) = 12.24 (40)
Dimensions E = .79 (20 mm)
Ba = 1.97 (50 mm)

Series E333-50-XXX -0

R	7.87 (200)	9.84 (250)	11.81 (300)	15.75 (400)	19.69 (500)
H	18.50 (470)	22.44 (570)	26.38 (670)	34.25 (870)	42.13 (1070)
D	11.61 (295)	13.58 (345)	15.55 (395)	19.49 (495)	23.42 (595)
K	29.53 (750)	35.83 (910)	42.13 (1070)	54.33 (1380)	66.54 (1690)

Pitch = 1.18 (30 mm)
Links/ft (m) = 10.17 (34)
Dimensions E = .98 (25 mm)
Ba = 2.68 (68 mm)

Series E333-75-XXX -0

R	11.02 (280)	13.78 (350)	15.75 (400)	19.69 (500)	23.62 (600)
H	25.98 (660)	31.50 (800)	35.43 (900)	43.31 (1100)	51.18 (1300)
D	14.96 (380)	17.72 (450)	19.69 (500)	23.62 (600)	27.56 (700)
K	38.98 (990)	47.64 (1210)	55.12 (1400)	66.93 (1700)	78.74 (2000)

Pitch = 1.42 (36 mm)
Links/ft (m) = 8.45 (28)
Dimensions E = .98 (25 mm)
Ba = 3.78 (96 mm)

PDF: igus.com/e-chain-pdfs
Product information: igus.com/e-chains

igus® e-chain system®

Telephone 1-800-521-2747

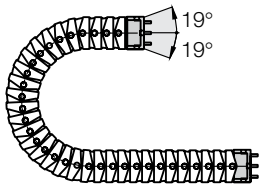
Internet: igus.com
email: sales@igus.com
QuickSpec: igus.com/quickspec

Mounting Brackets

Option 1: KMA

- Corrosion resistant
- Strain relief with tiewrap plate

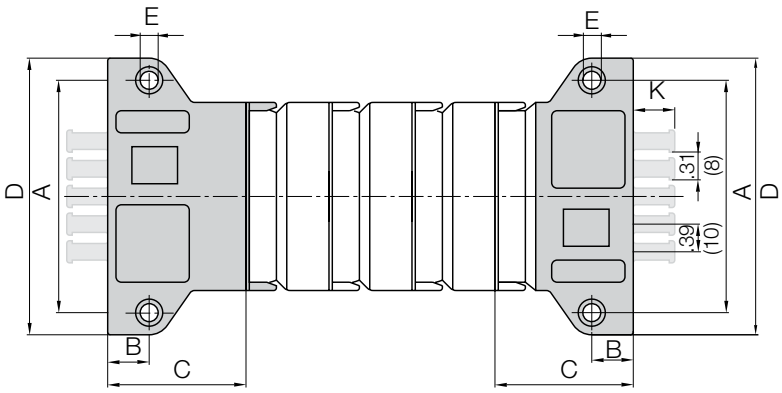




333-50-1PZB
Moving end
with tiewrap plate

333-50-2PZB
Fixed end
(with tiewrap plate **333-50-ZB**)

333-50-1PZ



333-50-2PZB

For high loads we recommend screwing the mounting brackets to the chain. If you have any questions, please give us a call.

Part No. structure

333-32- 12 PZB

- With assembled strain relief tiewrap plates
- **Full set = 12**
- Mounting brackets for selected chain type

Full set, for both ends:
333- 32-12 PZB +tiewrap plate

Single-part order:
333- 32- 1 PZB +tiewrap plate
Mounting bracket **with bore**
333- 32- 2 PZB +tiewrap plate
Mounting bracket **with pin**

Series	Part No. without tie-wrap plate	Part No. with tie-wrap plate	A	B	C	D	E	K	N No. of Teeth
E331-25/E332-25-2/E333-25	333-25-12PZ	333-25-12PZB	1.69 (43)	.28 (7)	.87 (22)	2.04 (52)	.18 (4.5)	–	–
E331-32/E332-32-2/E333-32	333-32-12PZ	333-32-12PZB	2.60 (66)	.59 (15)	1.81 (46)	3.23 (82)	.26 (6.5)	.59 (15)	3
E331-50/E332-50-2/E333-50	333-50-12PZ	333-50-12PZB	3.31 (84)	.59 (15)	1.97 (50)	3.94 (100)	.26 (6.5)	.59 (15)	5
E331-75/E332-75-2/E333-75	333-75-12PZ	333-75-12PZB	4.29 (109)	.59 (15)	2.17 (55)	4.92 (125)	.26 (6.5)	.59 (15)	7

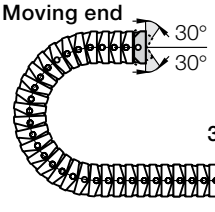
Mounting Brackets

Option 2: flange

- Galvanized steel
- Electrically conductive
- Flush mounting



330-25-1 – 330-75-1
Moving end



330-25-2 – 330-75-2
Fixed end



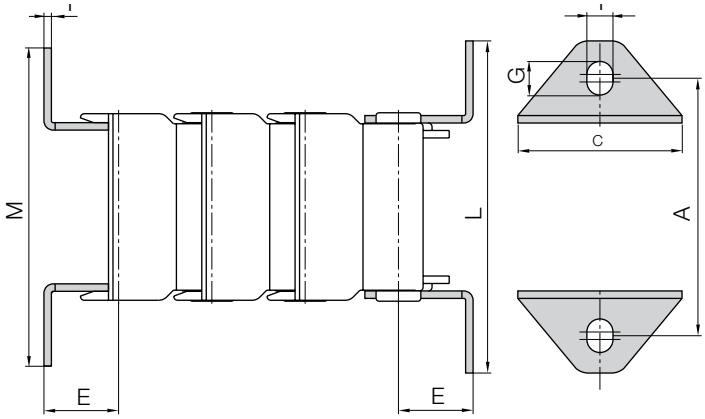
Part No. structure

330-	25-	12

- 12 → Full set = 12
- 25- → Width
- 330- → Mounting brackets for selected chain type

330-25-2 – 330-75-2

330-25-1 – 330-75-1



Full set, 4 parts
2 with pin / 2 with bore:
330- 25- 12
Single-part order:
330- 25- 1
Mounting bracket **with bore**
330- 25- 2
Mounting bracket **with pin**

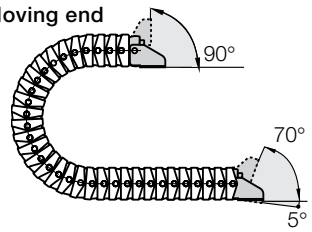
Series	Part No.	A	M	C	L	T	E	F	G
E331-25/E332-25-2 /E333-25	330-25-12	1.73 (44)	2.17 (55)	1.14 (29)	2.17 (55)	.06 (1.5)	.41 (10.5)	.26 (6.5)	.35 (9)
E331-32/E332-32-2 /E333-32	330-32-12	2.60 (66)	3.31 (84)	1.73 (44)	3.46 (88)	.08 (2)	.79 (20)	.28 (7)	.35 (9)
E332-50/E332-50-2 /E333-50	330-50-12	3.31 (84)	4.02 (102)	2.44 (62)	4.17 (106)	.08 (2)	.98 (25)	.28 (7)	.35 (9)
E331-75/E332-75-2 /E333-75	330-75-12	4.29 (109)	5.00 (127)	3.54 (90)	5.16 (131)	.08 (2)	.98 (25)	.28 (7)	.35 (9)

Option 3: angle

- Galvanized steel
- Electrically conductive
- Can be attached to top or bottom of the machine



338-25-1/ 338-75-1
Moving end



338-25-2 / 338-75-2
Fixed end

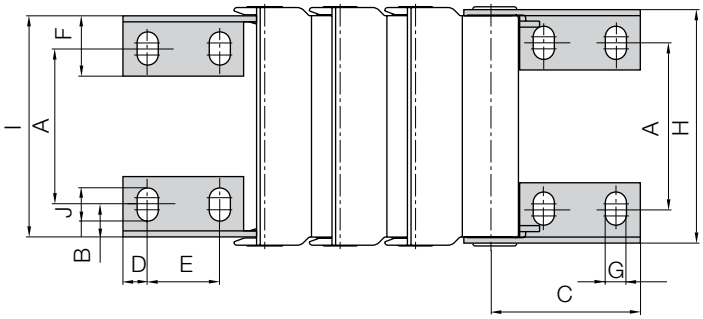
Part No. structure

338-	25-	12

- 12 → Full set = 12
- 25- → Width
- 338- → Mounting brackets for selected chain type

338-25-2 / 338-75-2

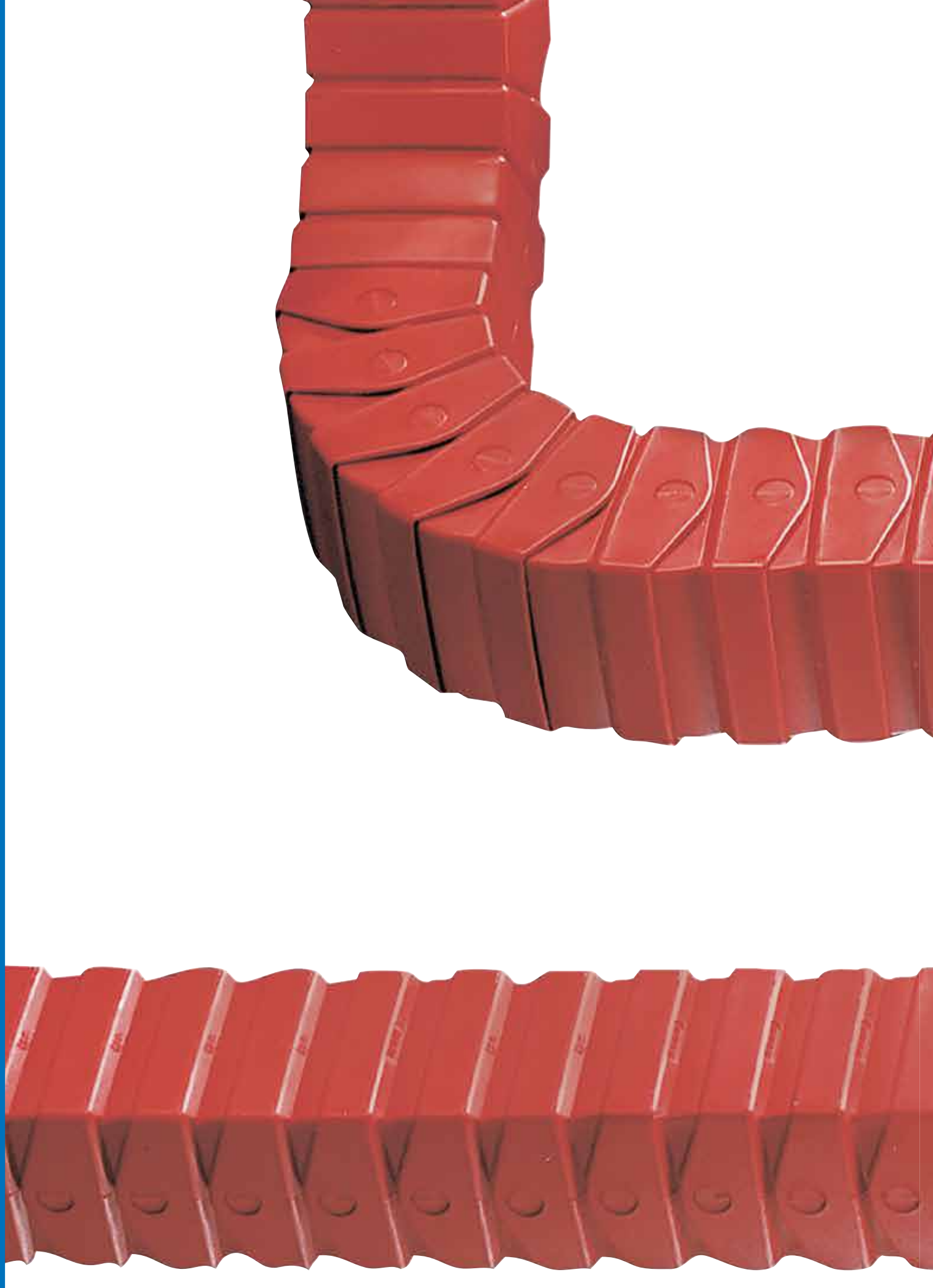
338-25-1 / 338-75-1



Full set, 4 parts
2 with pin / 2 with bore:
338- 25- 12
Single-part order:
338- 25- 1
Mounting bracket **with bore**
338- 25- 2
Mounting bracket **with pin**

Series	Part No.	A	B	C	D	E	F	G	H	I	J
E331-25/E332-25-2/E333-25	338-25-12	.67 (17)	.25 (6.25)	1.10 (28)	.24 (6)	.63 (16)	.55 (14)	.22 (5.5)	1.33 (33.8)	1.22 (31)	.33 (8.5)
E331-25/E332-32-2/E333-32	338-32-12	.94 (24)	.22 (5.5)	1.85 (47)	.31 (8)	.94 (24)	.79 (20)	.28 (7)	1.93 (49)	1.77 (45)	.43 (11)
E331-25/E332-50-2/E333-50	338-50-12	1.65 (42)	.22 (5.5)	3.03 (77)	.47 (12)	1.38 (35)	.94 (24)	.35 (9)	2.64 (67)	2.44 (62)	.59 (15)
E331-25/E332-75-2/E333-75	338-75-12	2.56 (65)	.22 (5.5)	3.03 (77)	.47 (12)	1.38 (35)	.94 (24)	.35 (9)	3.74 (95)	3.54 (90)	.59 (15)

PDF: igus.com/e-chain-pdfs
Product information: igus.com/e-chains



igus®
triflex®



triflex® - fully enclosed, for 2D and 3D applications

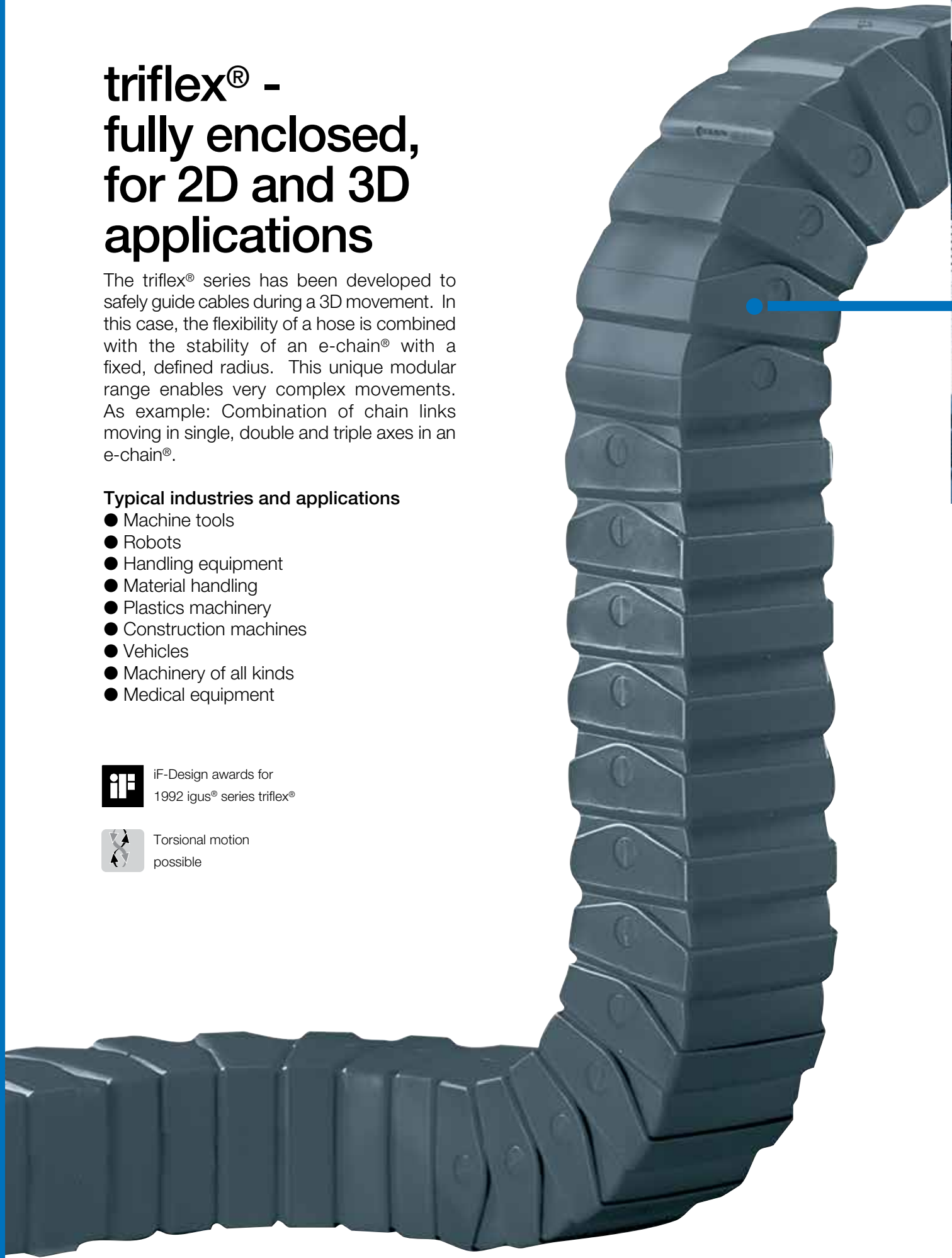
The triflex® series has been developed to safely guide cables during a 3D movement. In this case, the flexibility of a hose is combined with the stability of an e-chain® with a fixed, defined radius. This unique modular range enables very complex movements. As example: Combination of chain links moving in single, double and triple axes in an e-chain®.

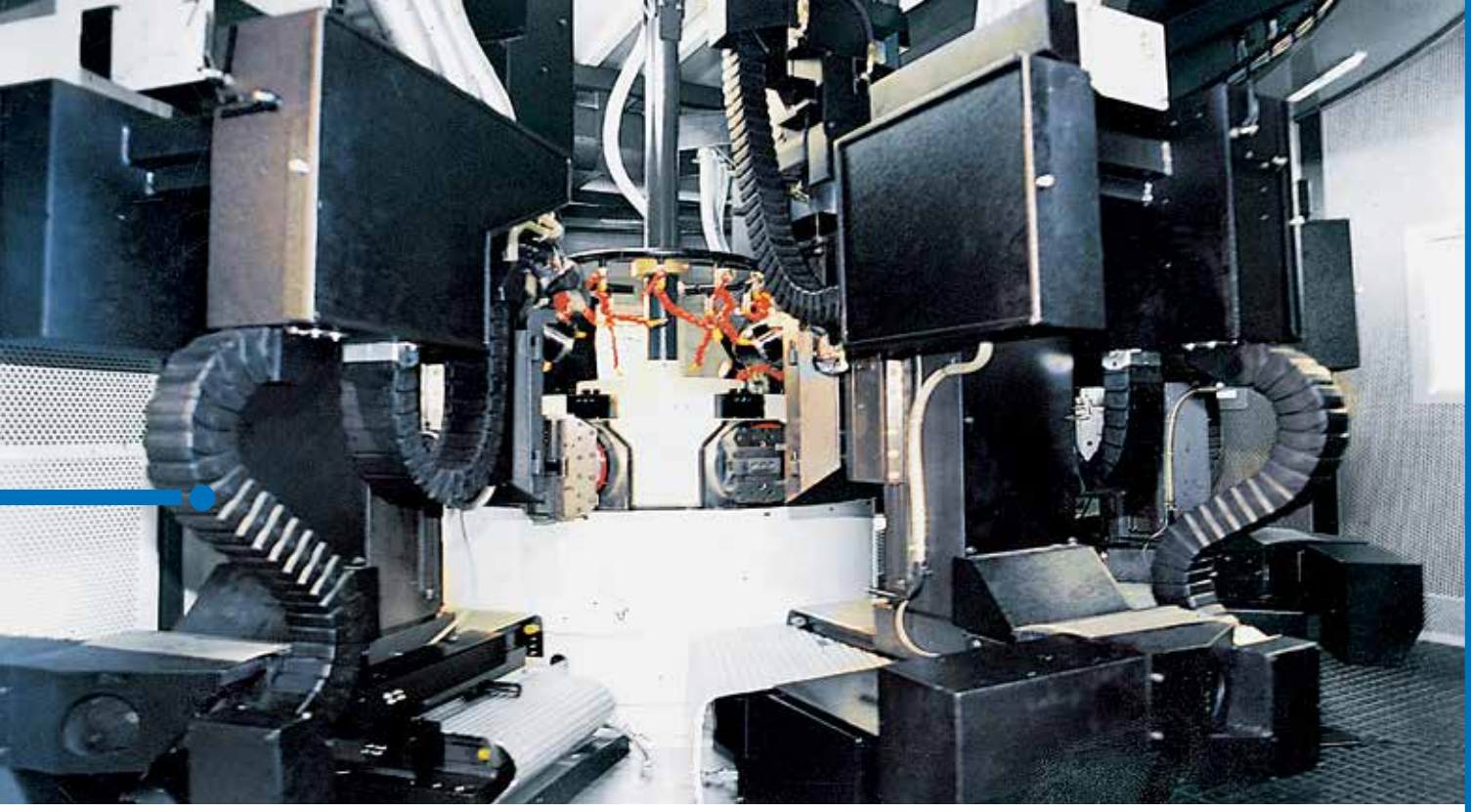
Typical industries and applications

- Machine tools
- Robots
- Handling equipment
- Material handling
- Plastics machinery
- Construction machines
- Vehicles
- Machinery of all kinds
- Medical equipment

iF-Design awards for
1992 igus® series triflex®

Torsional motion
possible





Various triflex® tubes on the inside of a machining center

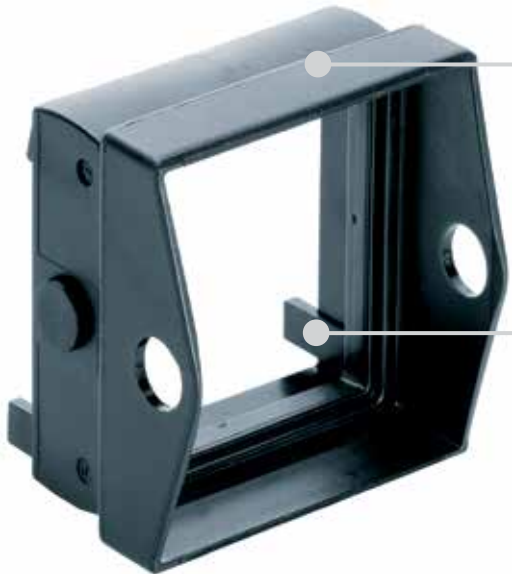


triflex® for 3 movement directions combined
with triflex® for 1 movement direction



triflex® 332 as unsupported link
from machines to control desk

e-chain system®
triflex® Series
Selection Guide



Select this modular, robust, Energy chain system® for:

- 3-axis motions in machinery of all kinds
- Dirty environments
- High tensile strength
- Where rectangular shapes fit better
- Side-mounted unsupported
- Completely enclosed - protection against dirt and chips
- Combinations of varying bending radii and moving axes
- Connecting and separating possible at every link
- Flanged mounting brackets or mounting brackets angle, galvanized steel
- Series 352 and 353 snap-open
- Combination Series 353/333 possible
- Cost-effective design for complex movements
- You can find more technical data about the material, chemical resistance, temperatures ➤ **Design, Chapter 1**

Selection table

Single-axis movement:

Series	Inner height/Inner width ☐ *Bi*		Outer width/Outer height ☐ *Ba*		Bending radii *R*	
	in.	(mm)	in.	(mm)	in.	(mm)
331-16	.63	(16)	1.02	(26)	1.50 - 3.94	(038 - 100)
331-32	1.26	(32)	1.97	(50)	2.95 - 9.84	(075 - 250)
331-50	1.97	(50)	2.68	(68)	3.94 - 9.84	(100 - 250)
331-75	2.95	(75)	3.78	(96)	5.51 - 11.81	(140 - 300)

Double-axis movement:

Series	Inner height/Inner width ☐ *Bi*		Outer width/Outer height ☐ *Ba*		Bending radii *R*	
	in.	(mm)	in.	(mm)	in.	(mm)
332-16	.63	(16)	1.02	(26)	1.50 - 3.94	(038 - 100)
332-32	1.26	(32)	1.97	(50)	2.95 - 9.84	(075 - 250)
332-50	1.97	(50)	2.68	(68)	3.94 - 9.84	(100 - 250)
332-75	2.95	(75)	3.78	(96)	5.51 - 11.81	(140 - 300)

Triple-axis movement:

Series	Inner height/Inner width ☐ *Bi*		Outer width/Outer height ☐ *Ba*		Bending radii *R*	
	in.	(mm)	in.	(mm)	in.	(mm)
333-16	.63	(16)	1.02	(26)	1.50 - 3.94	(038 - 100)
333-32	1.26	(32)	1.97	(50)	2.95 - 9.84	(075 - 250)
333-50	1.97	(50)	2.68	(68)	3.94 - 9.84	(100 - 250)
333-75	2.95	(75)	3.78	(96)	5.51 - 11.81	(140 - 300)

Snap-open Series:

Series	Inner height/Inner width ☐ *Bi*		Outer width/Outer height ☐ *Ba*		Bending radii *R*	
	in.	(mm)	in.	(mm)	in.	(mm)
351-50 Single	1.97	(50)	2.68	(68)	3.94 - 9.84	(100 - 250)
352-50 Double	1.97	(50)	2.68	(68)	3.94 - 9.84	(100 - 250)
353-50 Triple	1.97	(50)	2.68	(68)	3.94 - 9.84	(100 - 250)

Available from stock. Orders ship as early as today.*

*On average 90% of orders ship the same day..

e-chain system®
triflex® Series
Assembly Instructions

triflex® Series - Assembling

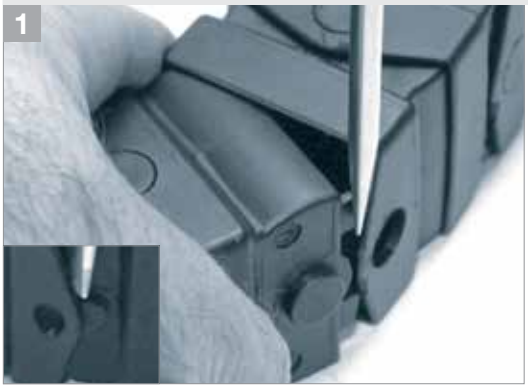


Twist and snap in



Snap in pin “push-button-design”

triflex® Series - Separating



Release side link



Twist and separate

triflex® Series 352 and 353 - Filling



To open Series 352 and Series 353 only - Insert screwdriver into slot on top of lid and push down

e-chain system® triflex® Series
Series 331/332/333
Series 351/352/353 (Snap-Open)

.63 | 1.26 | 1.97 | 2.95 | 1.97

Price Index

Series 332/333 Series 352/353

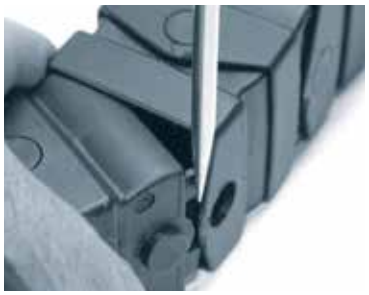
Special Options Available

Flammability Class VDE 0304 IIC UL94 V2

Torsion motion possible

iF-Design Award Winner

Assembly Tips



Release side link, twist and separate



To open Series 352 and Series 353 only - Insert screwdriver into slot on top of lid and push down

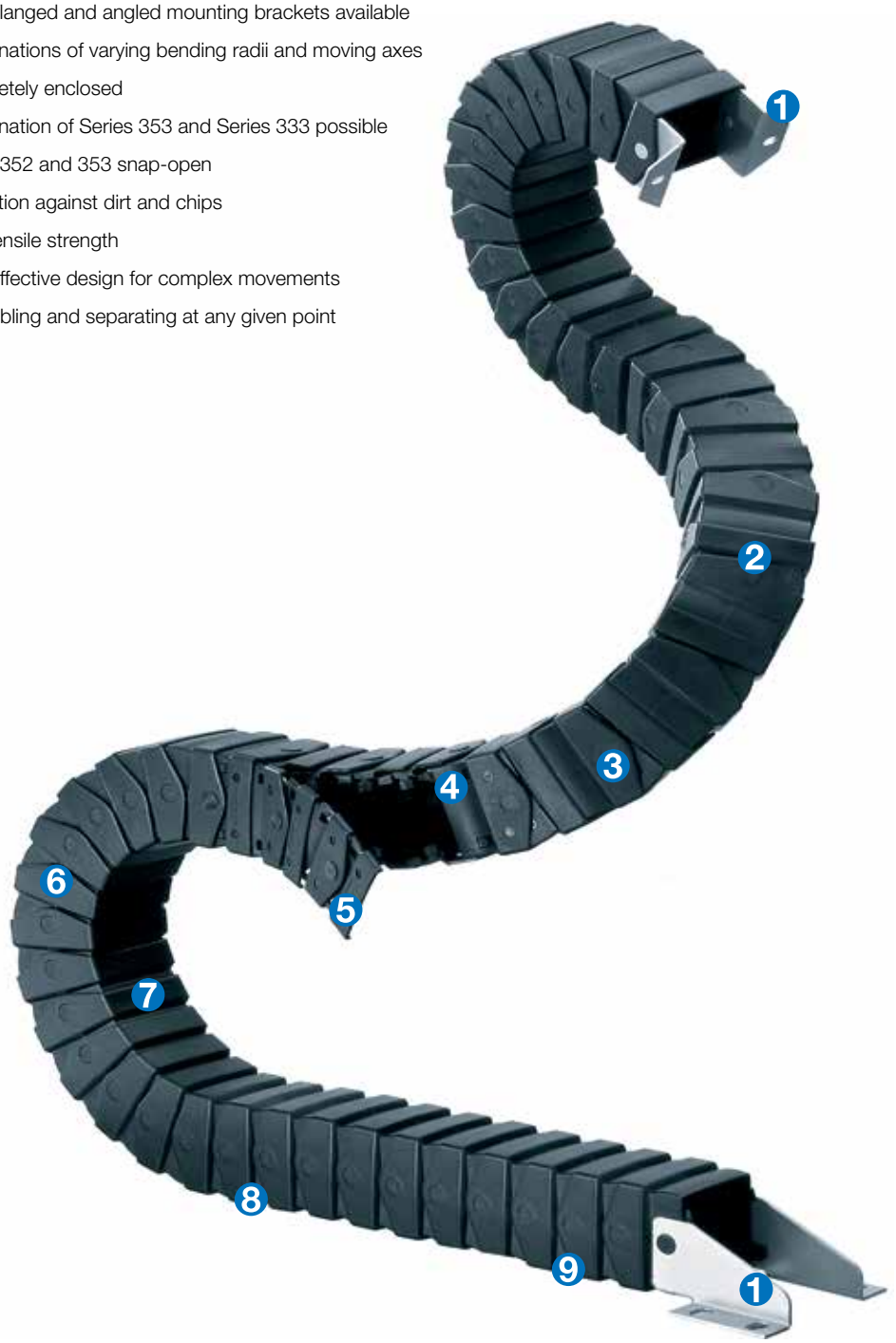
Usage Guidelines

- For applications that move within two or three axes (combined rotary and circular movements)
- If chip protection is required

- If every link must open on both sides
  ➤ TwisterChain® system, **Chapter 8**
- For gliding applications
  ➤ System E4, **Chapter 6**
- For rotary movements only
  ➤ TwisterChain® system, **Chapter 8**

Features & Benefits

1. KMA, flanged and angled mounting brackets available
2. Combinations of varying bending radii and moving axes
3. Completely enclosed
4. Combination of Series 353 and Series 333 possible
5. Series 352 and 353 snap-open
6. Protection against dirt and chips
7. High tensile strength
8. Cost-effective design for complex movements
9. Assembling and separating at any given point

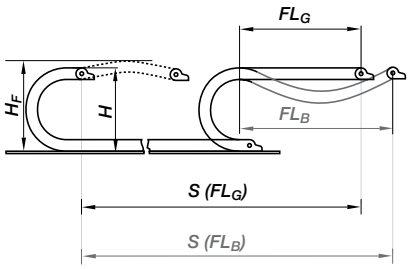


Order Example: Complete e-chain®

Please indicate chain length or number of links. Example:

6.56 ft (2 m) **332-50-100/100-0**	e-chain®
With 2 separators **351** assembled every 2nd link	Interior Separation
1 Set **338-50-12**	Mounting Bracket

e-chain system® triflex® Series
Series 331/332/333
Series 351/352/353 (Snap-Open)



Short travel, unsupported length

● FL_B = unsupported with permitted sag

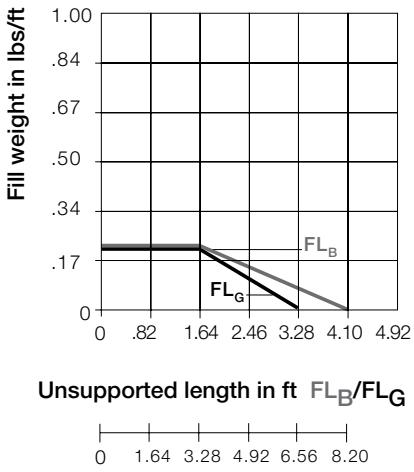
● FL_G = unsupported with straight upper run

Further information ➤ Design, Chapter 1

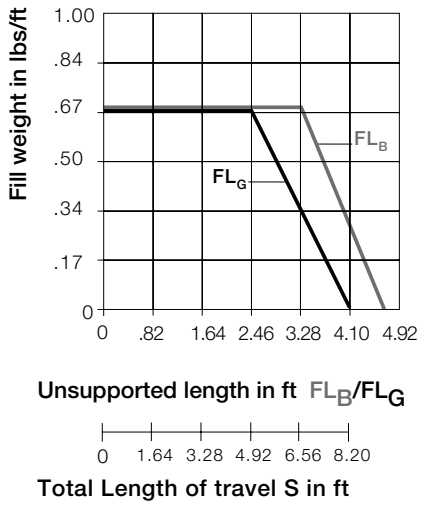
Legend

S = Length of travel
R = Bending radius
H = Nominal clearance height
D = Overlength e-chain® radius in final position
$K = \pi \bullet R +$ *"safety buffer"*
H_F = Required clearance height

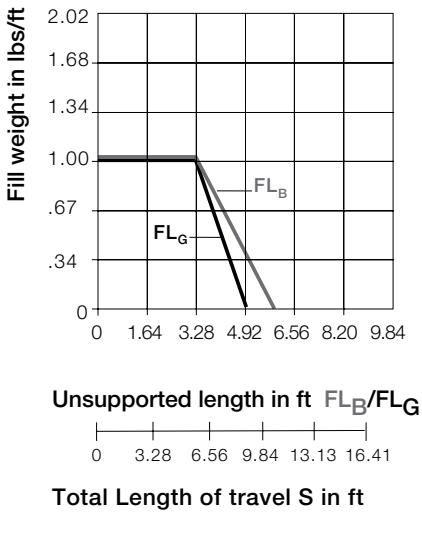
Unsupported length 331/332-16



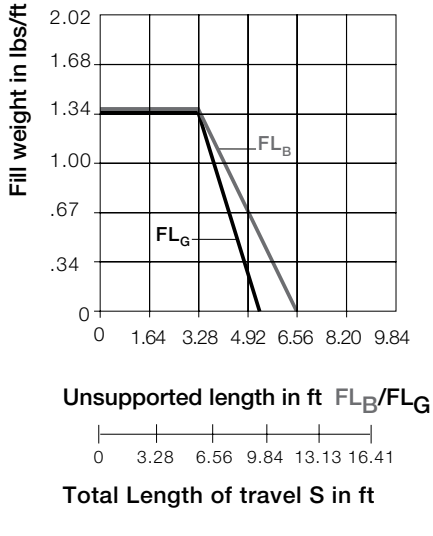
Unsupported length 331/332-32



Unsupported length 331/332-50



Unsupported length 331/332-75



Technical Data

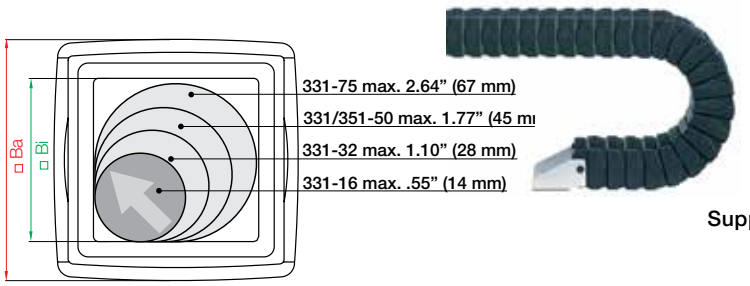
Material - permitted temperature	igumid G / -40°F (-40°C) up to +176°F (+80° C)
Flammability Class, igumid NB	VDE 0304 IIC UL94 V2

Details of material properties
➤ Chapter 1

PDF: igus.com/e-chain-pdfs
Product information: igus.com/e-chains

e-chain system® triflex® Series
Single Axis Movement

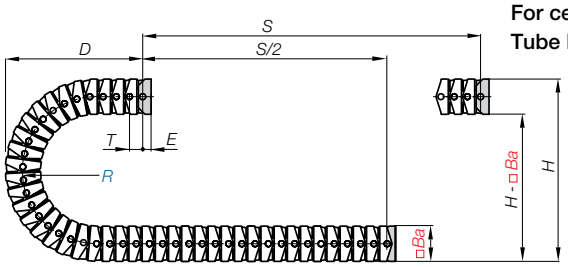
Single Axis Movement, Series 331/351



Part No.	Bi in. (mm)	Ba in. (mm)	Weight lbs/ft (kg/m)
331-16-	.63 (16)	1.02 (26)	≈ 0.22 (.33)
331-32-	1.26 (32)	1.97 (50)	≈ 0.60 (.90)
331-50-	1.97 (50)	2.68 (68)	≈ 0.94 (1.40)
331-75-	2.95 (75)	3.78 (96)	≈ 1.58 (2.35)
Snap-open			
351-50-	1.97 (50)	2.68 (68)	≈ 0.94 (1.40)

Supplement part number with required radius from below.
for example 331-50-100-0

Installation dimensions for single-axis movement



For center mount applications:
Tube length = $^{S}/_{2}$ + K

Part No. structure

332-	50-	100-	0

- 100- Color - black
- 50- Bending radius
- 332- Width
- Series

Series 331-16

R	1.50 (038)	1.89 (048)	2.95 (075)	3.94 (100)
H	4.13 (105)	4.92 (125)	7.09 (180)	9.06 (230)
D	2.76 (70)	3.15 (80)	4.13 (105)	5.12 (130)
K	7.87 (200)	9.06 (230)	12.40 (315)	15.75 (400)

Pitch = .52 (13.3 mm)
Links/ft (m) = 23.08 (76)
Dimensions E = .39 (10 mm)
Ba = 1.02 (26 mm)

Series 331-32

R	2.95 (075)	3.94 (100)	4.92 (125)	5.91 (150)	7.87 (200)	9.84 (250)
H	7.87 (200)	9.84 (250)	11.81 (300)	13.78 (350)	17.72 (450)	21.65 (550)
D	5.12 (130)	6.10 (155)	7.09 (180)	8.07 (205)	10.04 (255)	12.01 (305)
K	12.01 (305)	15.15 (385)	18.30 (465)	21.46 (545)	27.56 (700)	34.06 (865)

Pitch = .98 (25 mm)
Links/ft (m) = 12.24 (40)
Dimensions E = .79 (20 mm)
Ba = 1.97 (50 mm)

Series 331-50

R	3.94 (100)	4.92 (125)	5.91 (150)	7.87 (200)	9.84 (250)
H	10.63 (270)	12.60 (320)	14.76 (375)	18.50 (470)	22.44 (570)
D	7.68 (195)	8.66 (220)	9.65 (245)	11.61 (295)	13.58 (345)
K	17.13 (435)	20.47 (520)	23.23 (590)	29.53 (750)	35.83 (910)

Pitch = 1.18 (30 mm)
Links/ft (m) = 10.17 (34)
Dimensions E = .98 (25 mm)
Ba = 2.68 (68 mm)

Series 331-75

R	5.51 (140)	6.89 (175)	7.87 (200)	9.84 (250)	11.81 (300)
H	14.96 (380)	17.71 (450)	19.69 (500)	23.62 (600)	27.56 (700)
D	9.45 (240)	10.83 (275)	11.81 (300)	13.78 (350)	15.75 (400)
K	21.65 (550)	25.98 (660)	29.13 (740)	35.43 (900)	41.73 (1060)

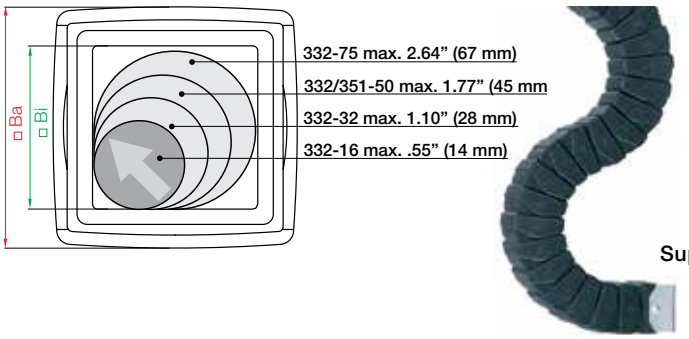
Pitch = 1.42 (36 mm)
Links/ft (m) = 8.45 (28)
Dimensions E = .98 (25 mm)
Ba = 3.78 (96 mm)

Series 351-50 (Snap-Open)

R	3.94 (100)	4.92 (125)	5.91 (150)	7.87 (200)	9.84 (250)
H	10.63 (270)	12.60 (320)	14.76 (375)	18.50 (470)	22.44 (570)
D	7.68 (195)	8.66 (220)	9.65 (245)	11.61 (295)	13.58 (345)
K	17.13 (435)	20.47 (520)	23.23 (590)	29.53 (750)	35.83 (910)

Pitch = 1.18 (30 mm)
Links/ft (m) = 10.17 (34)
Dimensions E = .98 (25 mm)
Ba = 2.68 (68 mm)

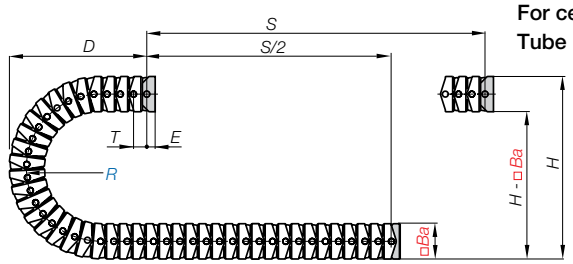
Double Axis Movement, Series 332/352



Part No.	Bi in. (mm)	Ba in. (mm)	Weight lbs/ft (kg/m)
332-16-	.63 (16)	1.02 (26)	≈ 0.22 (.33)
332-32-	1.26 (32)	1.97 (50)	≈ 0.60 (.90)
332-50-	1.97 (50)	2.68 (68)	≈ 0.94 (1.40)
332-75-	2.95 (75)	3.78 (96)	≈ 1.58 (2.35)
Snap-open			
352-50-	1.97 (50)	2.68 (68)	≈ 0.94 (1.40)

Supplement part number with required radius from below
for example, 332-75-2-200-0

Installation dimensions for double-axis movement



For center mount applications:
Tube length = $^{S}/_{2}$ + K

Part No. structure

332-	50-	200/	200-	0

- 0 – Color - black
- 200 – Bending radius
- RBR
- 200 – Bending radius
- 50 – Width
- 332 – Series

Series 332-16

R	1.50 (038)	1.89 (048)	2.95 (075)	3.94 (100)
H	4.13 (105)	4.92 (125)	7.09 (180)	9.06 (230)
D	2.76 (70)	3.15 (80)	4.13 (105)	5.12 (130)
K	7.87 (200)	9.06 (230)	12.40 (315)	15.75 (400)

Pitch = .52 (13.3 mm)
Links/ft (m) = 23.08 (76)
Dimensions E = .39 (10 mm)
Ba = 1.02 (26 mm)

Series 332-32

R	2.95 (075)	3.94 (100)	4.92 (125)	5.91 (150)	7.87 (200)	9.84 (250)
H	7.87 (200)	9.84 (250)	11.81 (300)	13.78 (350)	17.72 (450)	21.65 (550)
D	5.12 (130)	6.10 (155)	7.09 (180)	8.07 (205)	10.04 (255)	12.01 (305)
K	12.01 (305)	15.15 (385)	18.30 (465)	21.46 (545)	27.56 (700)	34.06 (865)

Pitch = .98 (25 mm)
Links/ft (m) = 12.24 (40)
Dimensions E = .79 (20 mm)
Ba = 1.97 (50 mm)

Series 332-50

R	3.94 (100)	4.92 (125)	5.91 (150)	7.87 (200)	9.84 (250)
H	10.63 (270)	12.60 (320)	14.76 (375)	18.50 (470)	22.44 (570)
D	7.68 (195)	8.66 (220)	9.65 (245)	11.61 (295)	13.58 (345)
K	17.13 (435)	20.47 (520)	23.23 (590)	29.53 (750)	35.83 (910)

Pitch = 1.18 (30 mm)
Links/ft (m) = 10.17 (34)
Dimensions E = .98 (25 mm)
Ba = 2.68 (68 mm)

Series 332-75

R	5.51 (140)	6.89 (175)	7.87 (200)	9.84 (250)	11.81 (300)
H	14.96 (380)	17.71 (450)	19.69 (500)	23.62 (600)	27.56 (700)
D	9.45 (240)	10.83 (275)	11.81 (300)	13.78 (350)	15.75 (400)
K	21.65 (550)	25.98 (660)	29.13 (740)	35.43 (900)	41.73 (1060)

Pitch = 1.42 (36 mm)
Links/ft (m) = 8.45 (28)
Dimensions E = .98 (25 mm)
Ba = 3.78 (96 mm)

Series 352-50 (Snap-Open)

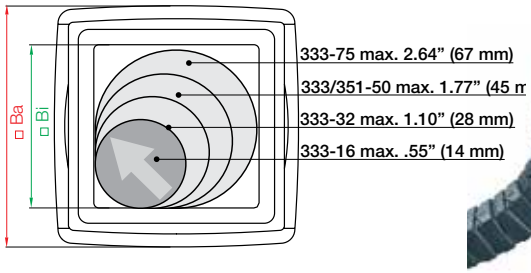
R	3.94 (100)	4.92 (125)	5.91 (150)	7.87 (200)	9.84 (250)
H	14.96 (380)	12.60 (320)	14.76 (375)	18.50 (470)	22.44 (570)
D	9.45 (240)	8.66 (220)	9.65 (245)	11.61 (295)	13.58 (345)
K	21.65 (550)	20.47 (520)	23.23 (590)	29.53 (750)	35.83 (910)

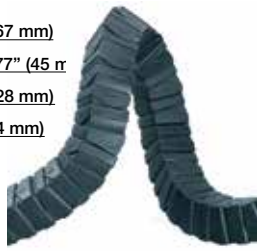
Pitch = 1.18 (30 mm)
Links/ft (m) = 10.17 (34)
Dimensions E = .98 (25 mm)
Ba = 2.68 (68 mm)

PDF: igus.com/e-chain-pdfs
Product information: igus.com/e-chains

e-chain system® triflex® Series
Triple Axis Movement

Triple Axis Movement, Series 333/353 (Snap-Open)

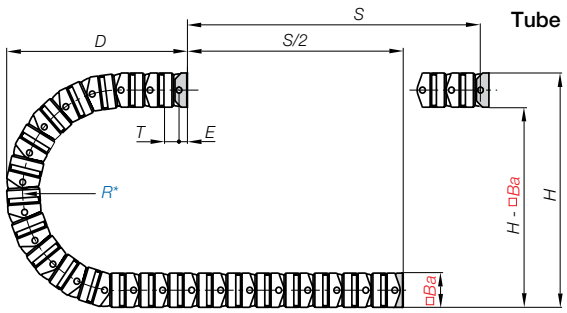




Part No.	Bi in. (mm)	Ba in. (mm)	Weight lbs/ft (kg/m)
333-16-	.63 (16)	1.02 (26)	≈ 0.22 (.33)
333-32-	1.26 (32)	1.97 (50)	≈ 0.60 (.90)
333-50-	1.97 (50)	2.68 (68)	≈ 0.94 (1.40)
333-75-	2.95 (75)	3.78 (96)	≈ 1.58 (2.35)
Snap-open			
353-50-	1.97 (50)	2.68 (68)	≈ 0.94 (1.40)

Supplement part number with required radius from above for example, 333-32-100-0

Installation dimensions for triple-axis movement



For center mount applications:
Tube length = $\frac{S}{2} + K$

Part No. structure

333-	50-	100-	0

- 0 – Color - black
- 100- – Bending radius
- 50- – Width
- 333- – Series

* The bending radii are doubled in the case of the **Series 333** e-chain®

Series 333-16

R	(076)	3.78 (096)	5.91 (150)	7.87 (200)
H	7.09 (180)	8.66 (220)	12.99 (330)	16.93 (430)
D	4.13 (105)	4.92 (125)	7.09 (180)	9.06 (230)
K	12.60 (320)	14.96 (380)	21.65 (550)	27.95 (710)

Pitch = .52 (13.3 mm)
Links/ft (m) = 23.08 (76)
Dimensions E = .39 (10 mm)
Ba = 1.02 (26 mm)

Series 333-32

R	5.91 (150)	7.87 (200)	9.84 (250)	11.81 (300)	15.75 (400)	19.69 (500)
H	13.78 (350)	17.72 (450)	21.65 (550)	25.59 (650)	33.46 (850)	41.33 (1050)
D	8.07 (205)	10.04 (255)	12.01 (305)	13.98 (355)	17.91 (455)	21.85 (555)
K	21.46 (545)	27.56 (700)	33.86 (860)	40.16 (1020)	51.18 (1300)	63.19 (1605)

Pitch = .98 (25 mm)
Links/ft (m) = 12.24 (40)
Dimensions E = .79 (20 mm)
Ba = 1.97 (50 mm)

Series 333-50

R	7.87 (200)	9.84 (250)	11.81 (300)	15.75 (400)	19.69 (500)
H	18.50 (470)	22.44 (570)	26.38 (670)	34.25 (870)	42.13 (1070)
D	11.61 (295)	13.58 (345)	15.55 (395)	19.49 (495)	23.43 (595)
K	29.53 (750)	35.83 (910)	42.13 (1070)	54.33 (1380)	66.54 (1690)

Pitch = 1.18 (30 mm)
Links/ft (m) = 10.17 (34)
Dimensions E = .98 (25 mm)
Ba = 2.68 (68 mm)

Series 333-75

R	11.02 (280)	13.78 (350)	15.75 (400)	19.69 (500)	23.62 (600)
H	25.98 (660)	31.50 (800)	35.43 (900)	43.31 (1100)	51.18 (1300)
D	14.96 (380)	17.72 (450)	19.69 (500)	23.62 (600)	27.56 (700)
K	38.98 (990)	47.64 (1210)	55.12 (1400)	66.93 (1700)	78.74 (2000)

Pitch = 1.42 (36 mm)
Links/ft (m) = 8.45 (28)
Dimensions E = .98 (25 mm)
Ba = 3.78 (96 mm)

Series 353-50 (Snap-Open)

R	7.87 (200)	9.84 (250)	11.81 (300)	15.75 (400)	19.69 (500)
H	18.50 (470)	22.44 (570)	26.38 (670)	34.25 (870)	42.13 (1070)
D	11.61 (295)	13.58 (345)	15.55 (395)	19.49 (495)	23.43 (595)
K	29.53 (750)	35.83 (910)	42.13 (1070)	54.33 (1380)	66.54 (1690)

Pitch = 1.18 (30 mm)
Links/ft (m) = 10.17 (34)
Dimensions E = .98 (25 mm)
Ba = 2.68 (68 mm)

Interior Separation

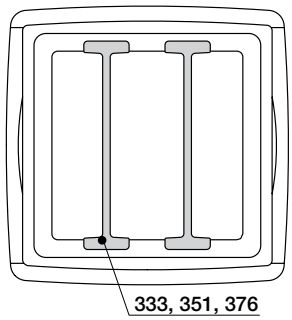
Modular separators are available as interior shelving for the igus® triflex® System. They can be used for both vertical and horizontal sub-division. If the separators are assembled every other link and turned 90°, the tube can be sub-divided into four segments. We recommend ordering the tube pre-assembled, as subsequent assembly of separators is only possible after dismantling the tube. Please note that assembled separators have a different part number than unassembled separators.



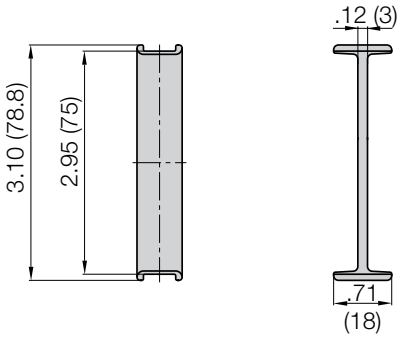
Horizontal sub-division



Vertical sub-division



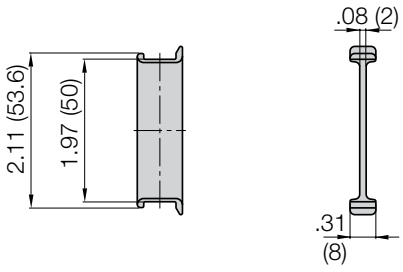
331/332/333-75



Separator

Unassembled	**Part No. 375**
Assembled	**Part No. 376**

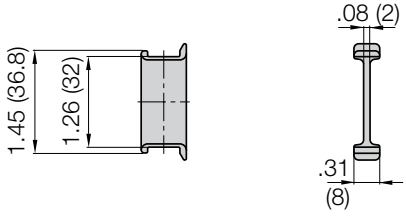
331/332/333-50
351/352/353-50



Separator

Unassembled	**Part No. 350**
Assembled	**Part No. 351**

331/332/333-32



Separator

Unassembled	**Part No. 332**
Assembled	**Part No. 333**

PDF: igus.com/e-chain-pdfs
Product information: igus.com/e-chains

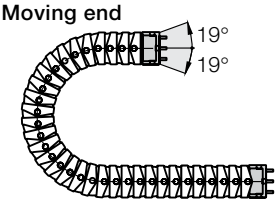
e-chain system® triflex® Series
Mounting Brackets

Standard

Option 1: KMA

- Corrosion resistant
- Strain relief with tiewrap plate

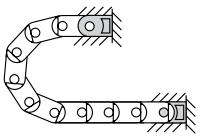
333-50-1PZ
Moving end



333-50-2PZB
Fixed end
(with tiewrap plate 333-50-ZB)

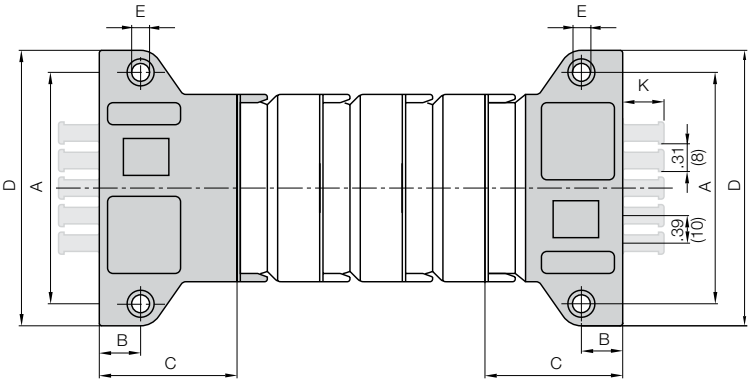






Possible installation configurations -

333...1PZ(B)



333...2PZ(B)

For high loads we recommend screwing the mounting brackets to the chain. If you have any questions, please give us a call.

Part No. structure

333-32-	12-	PZB

- PZB: With assembled strain relief tiewrap plates
- 12: **Full set = 12**
- 333-32-: Mounting brackets for selected chain type

Full set, for both ends:
333-32-12PZB +tiewrap plate

Single-part order:
333-32-1PZB +tiewrap plate
Mounting bracket **with bore**
333-32-2PZB +tiewrap plate
Mounting bracket **with pin**

Series	Part No. Full Set with tiewrap plate	Part No. Full Set without tiewrap plate	A in. (mm)	B in. (mm)	C in. (mm)	D in. (mm)	E in. (mm)	K in. (mm)	N No. of Teeth
331/332/333-32	333-32-12PZB	333-32-12-PZ	2.60 (66)	.59 (15)	1.81 (46)	3.23 (82)	.26 (6.5)	.59 (15)	3
331/332/333-50	333-50-12PZB	333-50-12-PZ	3.31 (84)	.59 (15)	1.97 (50)	3.94 (100)	.26 (6.5)	.59 (15)	5
331/332/333-75	333-75-12PZB	333-75-12-PZ	4.29 (109)	.59 (15)	2.17 (55)	4.92 (125)	.26 (6.5)	.59 (15)	7
Snap-open series									
351/352/353-50	333-50-12PZB	333-50-12-PZ	3.31 (84)	.59 (15)	1.97 (50)	3.94 (100)	.26 (6.5)	.59 (15)	5

Tiewrap plate as individual part

Special tiewrap plates for triflex® e-chains®

- Single-piece for installation inside switch cabinets or machine assembly
- Accessory for igus® e-chain systems®
- Easy to assemble, no need for screws

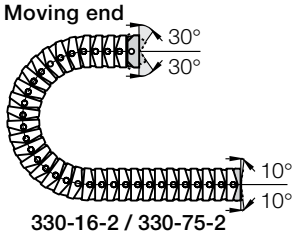
Part No. Tiewrap plate	Width in. (mm)	Number of teeth	For Series	
333-32-ZB	1.57 (40)	3	331/332/333-32	
333-50-ZB	2.28 (58)	5	331/332/333-50	351/352/353-50
333-75-ZB	3.27 (83)	7	331/332/333-75	

e-chain system® triflex® Series
Mounting Brackets

Option 2: pivoting steel flange

- Galvanized steel
- Electrically conductive
- Flush mounting

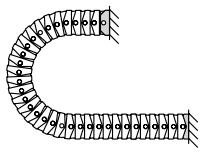
330-16-1 / 330-75-1
Moving end



330-16-2 / 330-75-2
Fixed end



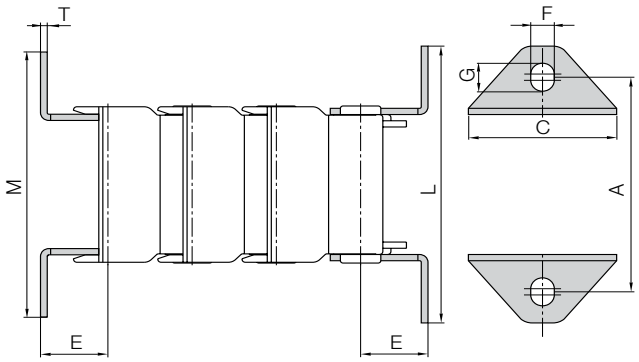




Possible installation configurations -

330-26-2 / 330-75-2

330-16-1 / 330-75-1



Full set, 4 parts
2 with pin / 2 with bore:
330- 32- 12

Single-part order:
330- 32- 1
Mounting bracket **with bore**
330- 32- 2
Mounting bracket **with pin**

Part No. structure

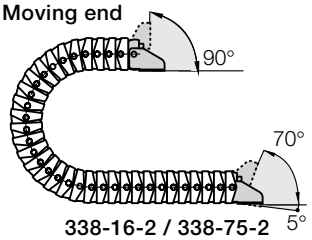
330- 32- 12
- 12 = **Full set**
- 32 = Width
- 330- = Mounting brackets for selected chain type

Series	Part No.	A	M	C	L	T	E	F	G
331/332/333-16	330-16-12	1.38 (35)	2.09 (53)	.83 (21)	2.24 (57)	.04 (1)	.39 (10)	.18 (4.5)	.24 (6)
331/332/333-32	330-32-12	2.60 (66)	3.31 (84)	1.73 (44)	3.46 (88)	.08 (2)	.79 (20)	.28 (7)	.35 (9)
331/332/333-50	330-50-12	3.31 (84)	4.02 (102)	2.44 (62)	4.17 (106)	.08 (2)	.98 (25)	.28 (7)	.35 (9)
331/332/333-75	330-75-12	4.29 (109)	5.00 (127)	3.54 (90)	5.16(131)	.08 (2)	.98 (25)	.28 (7)	.35 (9)

Option 3: angle

- Galvanized steel
- Electrically conductive
- Can be attached to top or bottom of the machine

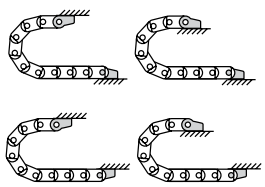
338-16-1/ 338-75-1
Moving end



338-16-2 / 338-75-2
Fixed end



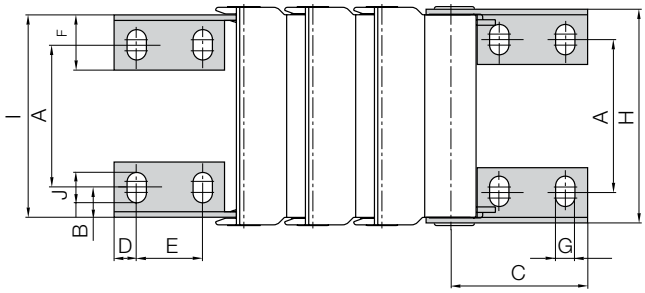




Possible installation configurations -

338-16-2 / 338-75-2

338-16-1 / 338-75-1



Full set, 4 parts
2 with pin / 2 with bore:
338- 32- 12

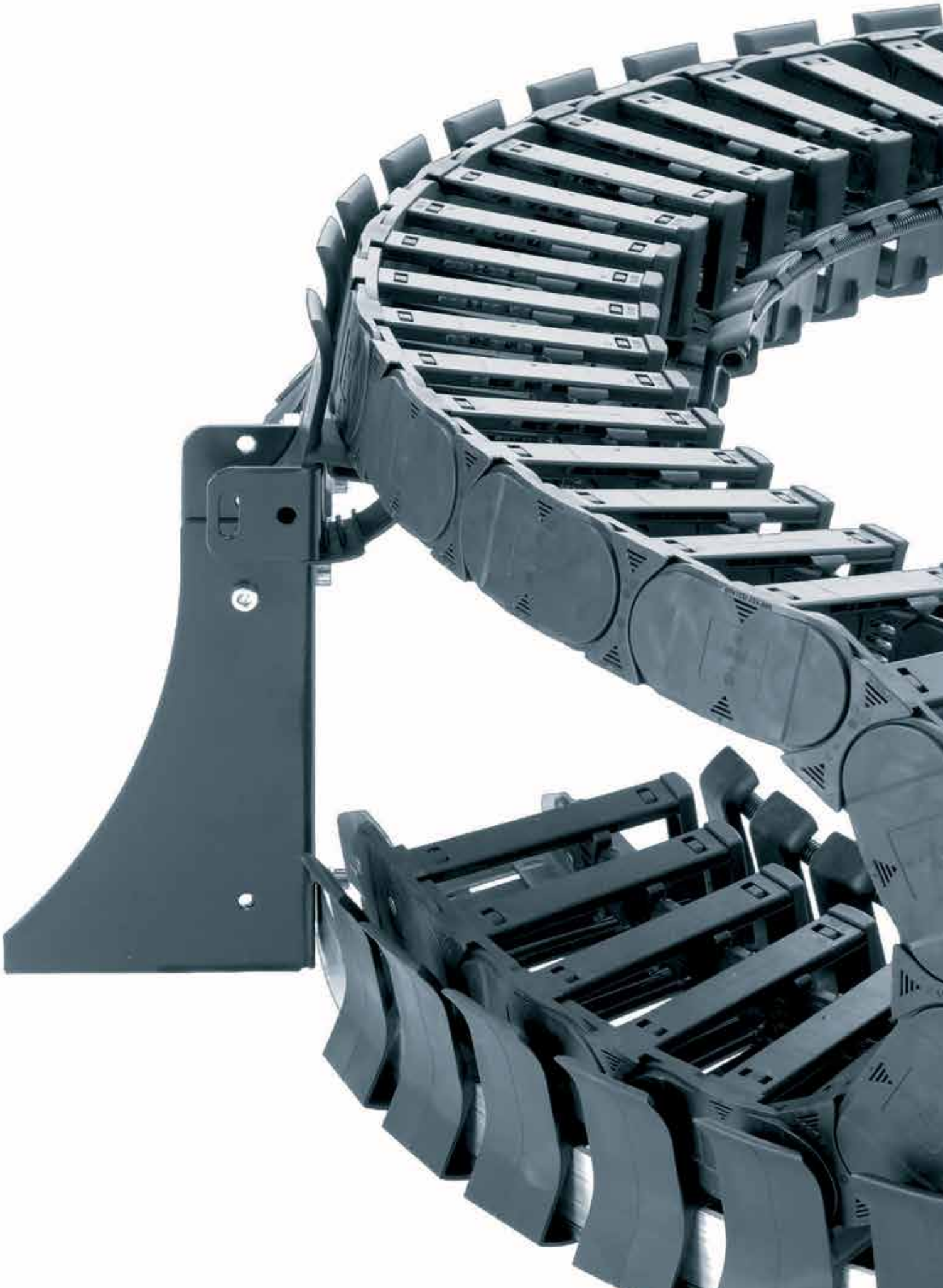
Single-part order:
338- 32- 1
Mounting bracket **with bore**
338- 32- 2
Mounting bracket **with pin**

Part No. structure

338- 32- 12
- 12 = **Full set**
- 32 = Width
- 338- = Mounting brackets for selected chain type

Series	Part No.	A	B	C	D	E	F	G	H	I	J
331/332/333-16	338-16-12	.47 (12)	.12 (3)	.98 (25)	.20 (5)	.39 (10)	.43 (11)	18 (4,5)	.98 (25)	.91 (23)	.24 (6)
331/332/333-32	338-32-12	.94 (24)	.22 (5.5)	1.85 (47)	.31 (8)	.94 (24)	.79 (20)	.28 (7)	1.93 (49)	1.77 (45)	.43 (11)
331/332/333-50	338-50-12	1.65 (42)	.22 (5.5)	3.03 (77)	.47 (12)	1.38 (35)	.94 (24)	.35 (9)	2.64 (67)	2.44 (62)	.59 (15)
331/332/333-75	338-75-12	2.56 (65)	.22 (5.5)	3.03 (77)	.47 (12)	1.38 (35)	.94 (24)	.35 (9)	3.74 (95)	3.54 (90)	.59 (15)
Snap-open											
351/352/353-50	338-50-12	1.65 (42)	.22 (5.5)	3.03 (77)	.47 (12)	1.38 (35)	.94 (24)	.35 (9)	2.64 (67)	2.44 (62)	.59 (15)

PDF: igus.com/e-chain-pdfs
Product information: igus.com/e-chains





twisterchain

Circular and spiral movements

twisterchain advantages:

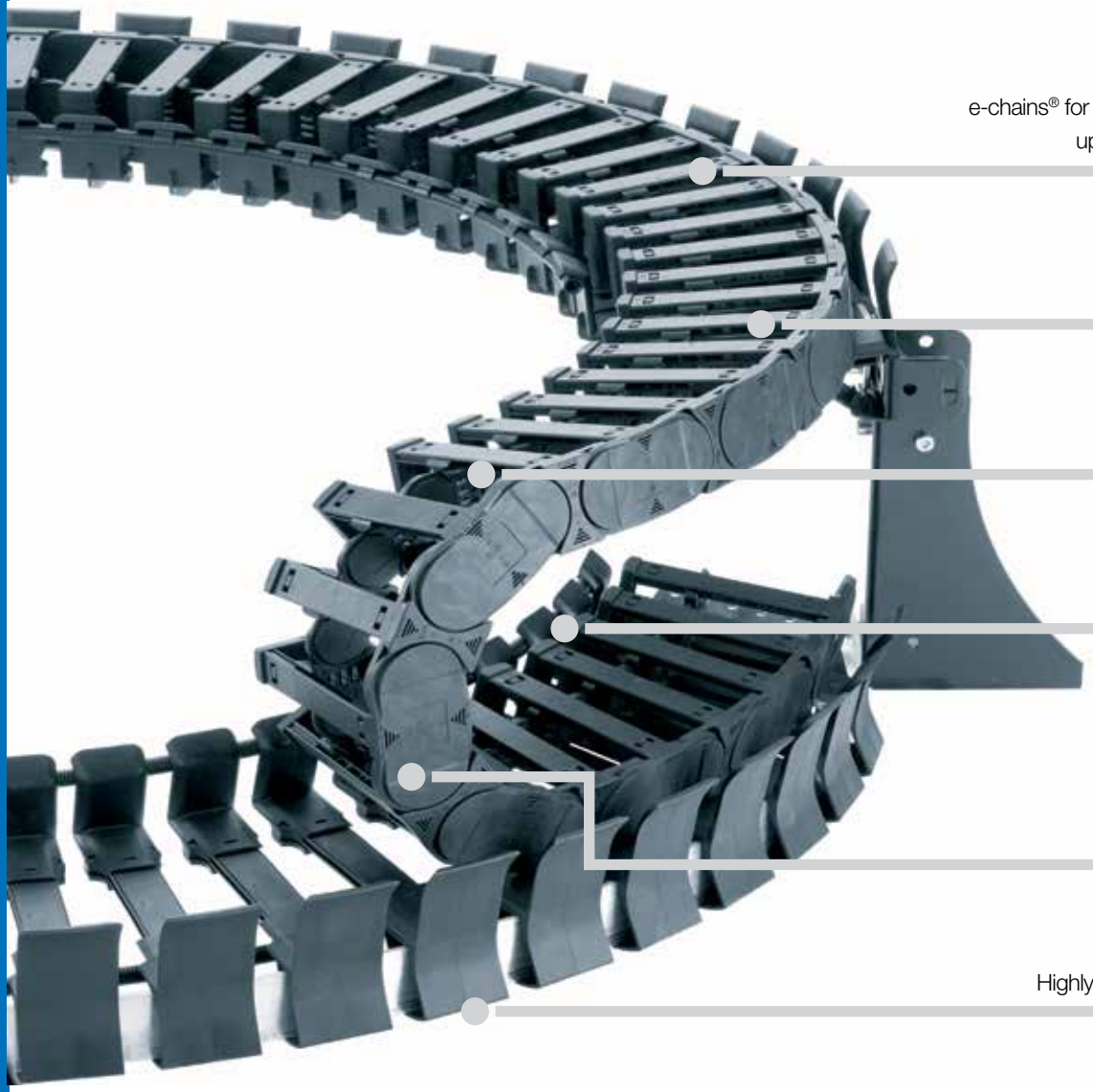
- e-chains® for circular and spiral movements up to 360°* available from stock
- Tough, quiet and high dynamics, suitable for high fill weights
- Rotary speeds up to 1m/s and more
- Modular interior separation
- Smooth cable-friendly interior
- Openable from both sides - crossbars removable along the inner and outer radius

When to use another igus® solution:

- For large rotary movements, igus® ***RBR*** solutions
  ► **Designing**
- In case of rotary movements in the most confined spaces up to 7,000°
  ► **twisterband**
- For angle of rotation >360° please contact us.

*Up to 540° upon request





Strong, quiet and up to 360°* - circular and spiral movements with twisterchain

The igus® twisterchain product line offers an extensive range of products for circular movement and is available in four sizes. Its modular width and radius design ensures it can be used flexibly in applications with rotary and spiral movements up to 360° and more, with high fill weights and where smooth operation is required. twisterchain applications are available with modular guide troughs which offer: e-chain® guidance, reduced e-chain® wear, optimal levels of smooth operation, angle of rotations up to 360°* from stock.

- Strong, high fill weights, smooth running
- Rotary speeds up to 1m/s and more
- e-chains® for circular and spiral movements up to 360°*available from stock
- Cable-friendly, smooth interior
- Crossbars openable along the inner and outer radius
- Successfully tested for over 1 million cycles in the igus® laboratory

*Up to 540° upon request

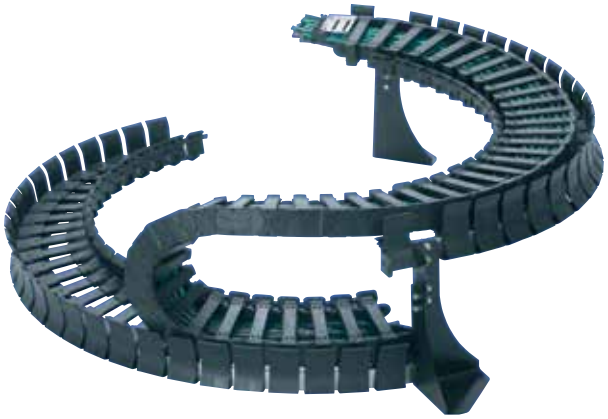
Typical industries and applications

- Robots, Handling machines
- Packaging machines
- Glass machines
- General machinery, etc.

Circular movements up to 540° possible (with special attachments)

UL94-V0 classifications upon request

Series	Inner height *hi*	Inner width *Bi*	Outer width *Ba*	Outer height *ha*	Bend radius *R*	Circular radii *AR*
	in. (mm)	in. (mm)	in. (mm)	in. (mm)	in. (mm)	in. (mm)



twisterchain

For circular movements up to 360° available from stock; for angle of rotation >360° please contact us.
Crossbars removable along the inner and outer radius

2208	1.10 (28)	2.07-4.43 (52.5-112.5)	3.15-5.51 (80-140)	1.65 (42)	2.17-5.91 (055-150)	11.81 (300)
TC32	1.26 (32)	3.44-5.91 (87.5-150)	4.27-6.73 (108.5-171)	2.13 (54)	3.94-9.84 (100-250)	15.75-23.62 (400 - 600)
TC42	1.65 (42)	3.44-7.87 (87.5-200)	4.35-8.78 (110.5-223)	2.52 (64)	3.94-9.84 (100-250)	15.75-33.46 (400 - 850)
TC56	2.20 (56)	4.92-7.87 (125-200)	6.10-9.06 (155-230)	3.31 (84)	5.91-15.75 (150-400)	25.59-33.46 (650 - 850)

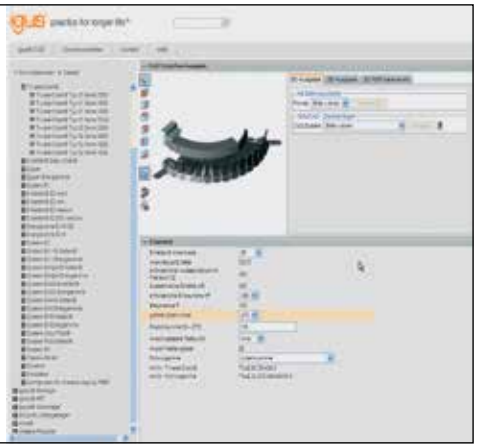
Available from stock. Orders ship as early as today.*

*On average 90% of orders ship the same day..

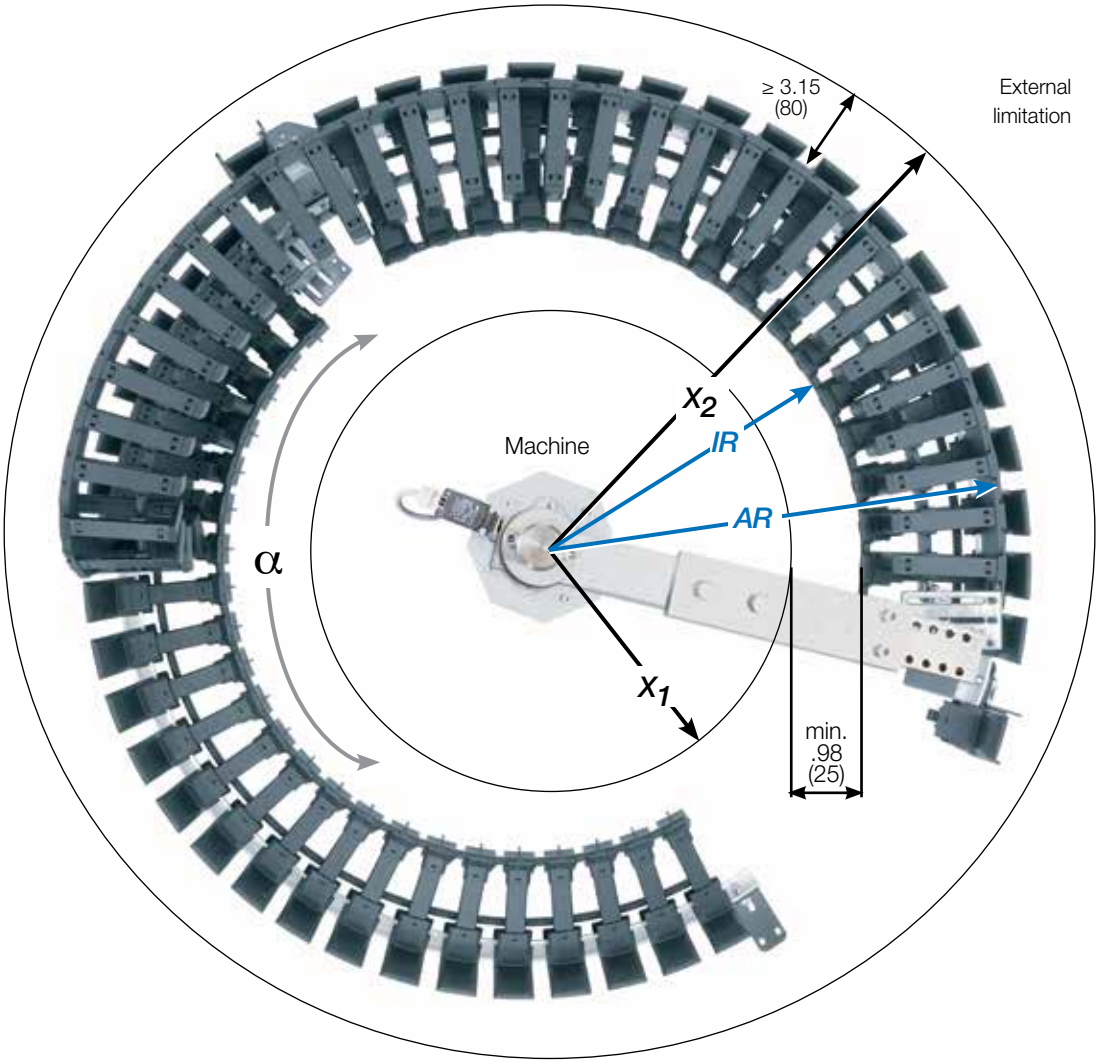
Quickly generate complete twisterchain 3D CAD models

- Get complete 3D models just by inputting the angle of rotation and basic dimensions
- Free positioning of the e-chain® moving end along the travel length
- Optional generation of twisterchain as an individual part or complete with guide trough and base support
- Fast download of the CAD files without registration
- 11 different 3D formats and 8 different 2D formats available

More information ▶ www.igus.com/twister-configurator

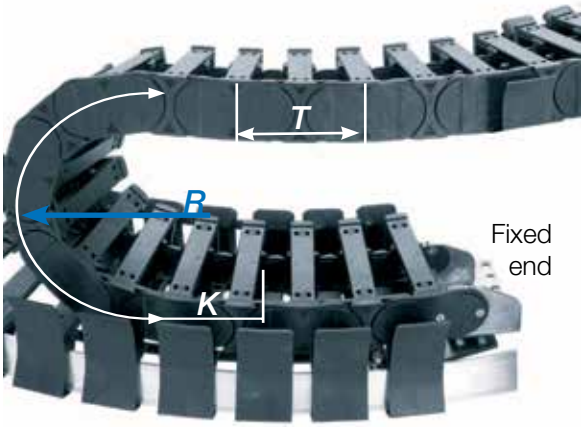


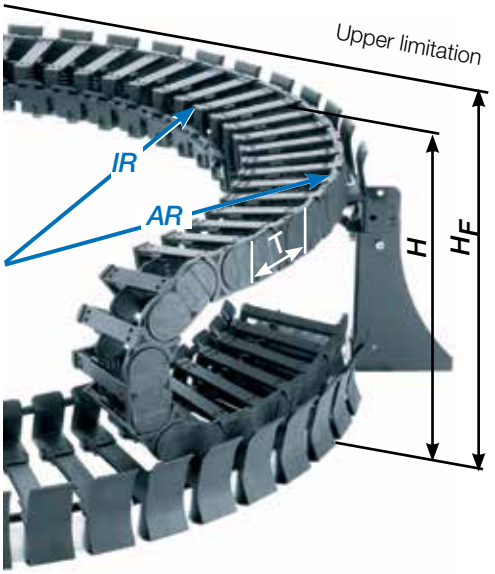
twisterchain
General information



twisterchain definition

In the case of machine elements which both move to the left and to the right following a circular path, the rotation angle can be determined by adding the two angles





AR = Outer radius, e-chain®
IR = Inner radius, e-chain®
R = Bending radius

X_1 = Inner machine construction space
X_2 = Outer radius *AR*, including clearance
T = Pitch
H_F = Height including 1.97" (50 mm) clearance

H = Nominal clearance height
K = Add-on for bending radius
hi = Inner height e-chain®
ha = Outer height e-chain®
α = Rotation angle

Speed / acceleration	max. 3.28 ft/s (1.0 m/s) / max. 6.56 ft/s2 (2.0 m/s2)
Material - permitted temperature	igumid G / -40°F (-40°C) up to +248°F (+120° C)
Flammability class, igumid G	VDE 0304 IIC UL94 HB

Order example | Order key

Order example for complete e-chain® 3.28 ft. (1.0m), color black, with mounting brackets:

e-chain® 3.28 ft. (1m)	Please indicate e-chain® length or number of links: 1m or 11 links	**TC56.12.250/650.0**
+ Mounting brackets	1 set	**TC5600.34.VS.E**
Order text:	**1m TC56.12.250/650.0 + TC5600.34.VS.E**	

Order key

TC56.12.250/650.0

- Series
- Inner height
- Width index (depends on *Bi*)
- Bend radius *R*
- Outer radius *AR*
- Standard color black

TC56.12.250/650.0 =
e-chain® openable along the inner radius, from both sides
Bi 12mm inner width, *R* 250mm bend radius /
AR 650mm outer radius, color black

Series 2208 - Crossbars removable along the inner and outer radius

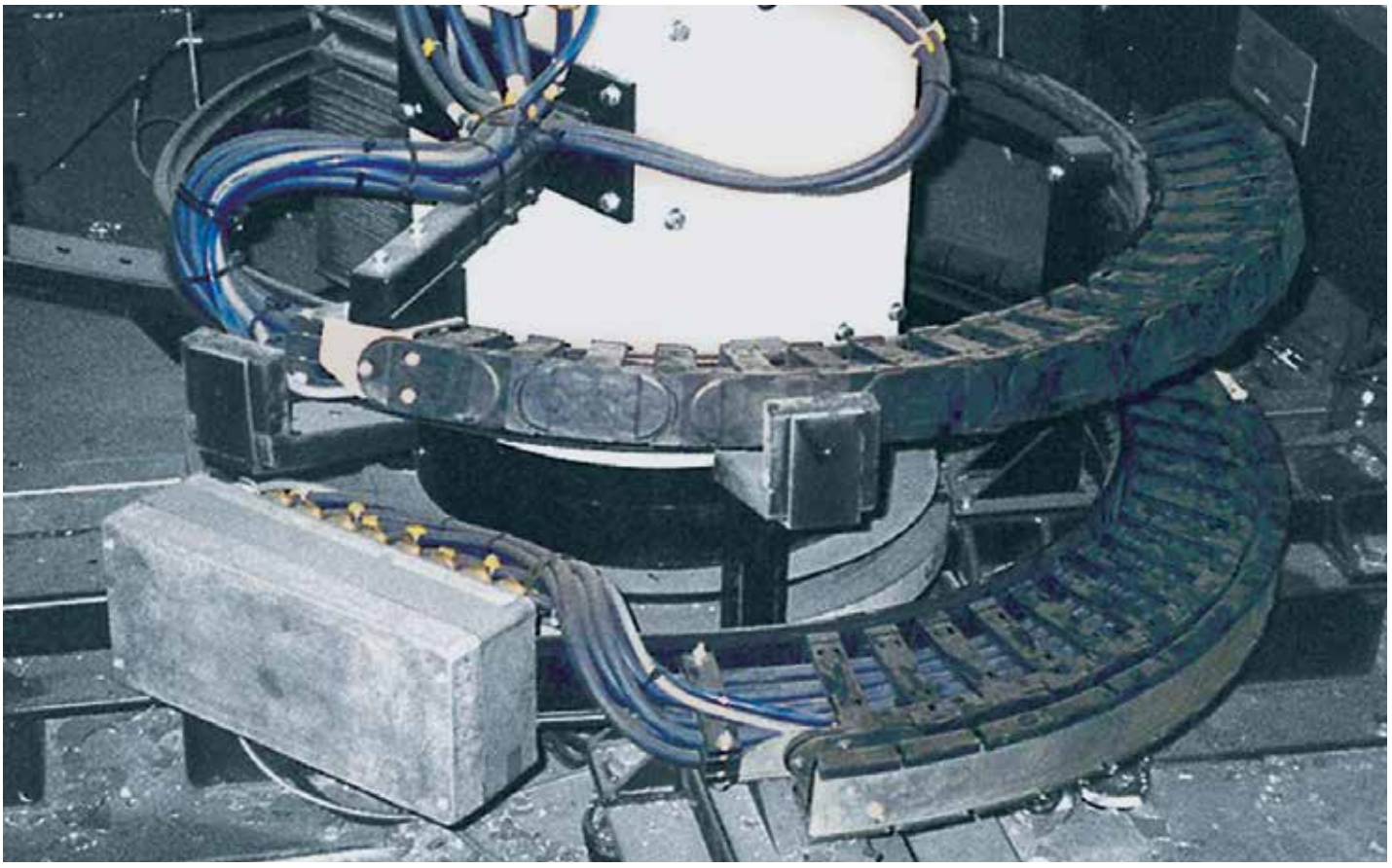
				R Bend radius						
AR	IR	Bi	Ba	2.17 (055)	2.48 (063)	2.95 (075)	3.94 (100)	4.92 (125)	5.91 (150)	Weight
in. (mm)	in. (mm)	in. (mm)	in. (mm)	2208-	2208-	2208-	2208-	2208-	2208-	lbs/ft. (kg/m)
11.81 (300)	8.94 (227)	2.07 (52.5)	3.15 (80)	-052-063/300	-052-063/300	-052-075/300	-052-100/300	-052-125/300	-052-150/300	≈ 0.806 (1.20)
11.81 (300)	8.54 (217)	2.46 (62.5)	3.54 (90)			-062-075/300	-062-100/300	-062-125/300	-062-150/300	≈ 0.833 (1.24)
11.81 (300)	8.07 (205)	2.93 (74.5)	4.02 (102)				-074-100/300	-074-125/300	-074-150/300	≈ 0.867 (1.29)
11.81 (300)	7.56 (192)	3.44 (87.5)	4.53 (115)				-087-100/300	-087-125/300	-087-150/300	≈ 0.907 (1.35)
11.81 (300)	6.57 (167)	4.43 (112.5)	5.51 (140)					-112-125/300	-112-150/300	≈ 0.981 (1.46)

*twisterchain classic (1st generation),

Dimensions in mm

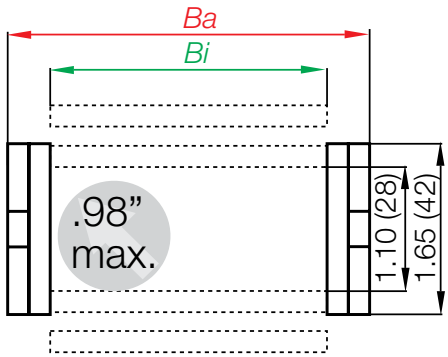
R	2.17 (55)	2.48 (63)	2.95 (75)	3.94 (100)	4.92 (125)	5.91 (150)
K	10.43 (265)	11.42 (290)	12.99 (330)	16.14 (410)	19.09 (485)	22.24 (565)

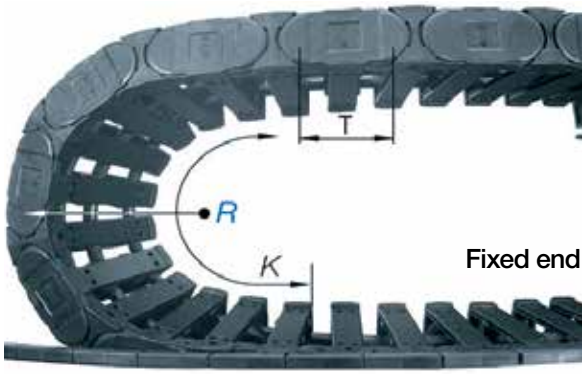
Pitch *T* per link = 1.73" (44mm)
Links per ft. (m) = 6.9 (23)



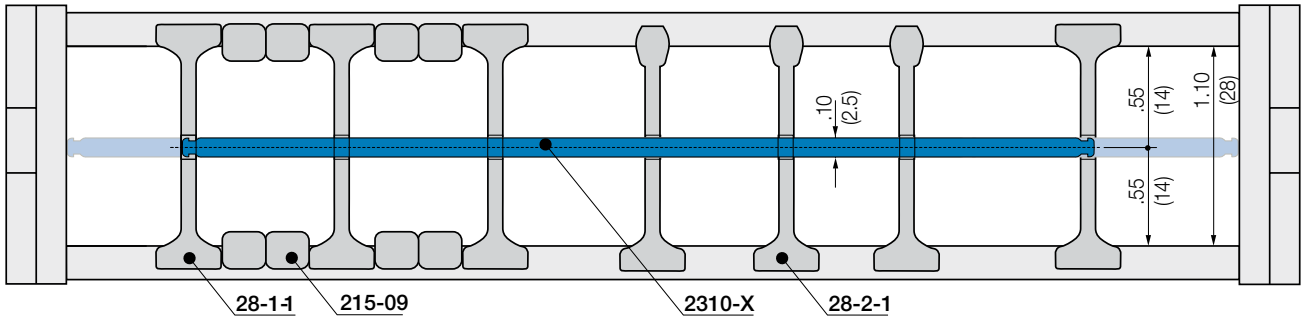
Combined spiral and circular movement - igus® twisterchain classic (1st generation)

Dimensions





Series 2208 | interior separation



For this series the interior separation products for series E4.28 may be used (except side plates)

AR	=	Outer radius of e-chain®	X_1	=	Inner machine limit	*H*	=	Nominal clearance height
IR	=	Inner radius e-chain®	X_2	=	Outer machine limit	*K*	=	Add-on for bend radius
R	=	Bend radius e-chain®	A1	=	Intermediate link position	*T*	=	Pitch

twisterchain - Series TC32
Product range
e-chains® for circular and spiral movements up to 360°

Series TC32 - Snap-open along inner radius from both sides

					R Bend radius						
AR	Bi	Ba	X_2	X_1	3.94 (100)	4.92 (125)	5.91 (150)	6.89 (175)	7.87 (200)	9.84 (250)	Weight
in. (mm)	in. (mm)	in. (mm)	in. (mm)	in. (mm)	TC32-	TC32-	TC32-	TC32-	TC32-	TC32-	lbs/ft (kg/m)
15.75 (400)	3.44 (87.5)	4.27 (108.5)	18.90 (480)	10.63 (270)	087-100/400	087-125/400	087-150/400	087-175/400	087-200/400	087-250/400	≈ 1.22 (1.82)
15.75 (400)	3.94 (100)	4.76 (121)	18.90 (480)	9.84 (250)	–	–	10-150/400	10-175/400	10-200/400	10-250/400	≈ 1.28 (1.90)
15.75 (400)	4.25 (108)	5.08 (129)	18.90 (480)	9.84 (250)	–	–	–	11-175/400	11-200/400	11-250/400	≈ 1.31 (1.95)
15.75 (400)	4.92 (125)	5.75 (146)	18.90 (480)	8.66 (220)	–	–	–	12-175/400	12-200/400	12-250/400	≈ 1.38 (2.05)
15.75 (400)	5.41 (137.5)	6.24 (158.5)	18.90 (480)	8.27 (210)	–	–	–	–	–	137-250/400	≈ 1.43 (2.13)
15.75 (400)	5.91 (150)	6.73 (171)	18.90 (480)	7.87 (200)	–	–	–	–	–	15-250/400	≈ 1.49 (2.21)
19.69 (500)	3.94 (100)	4.76 (121)	22.83 (580)	13.78 (350)	10-100/500	10-125/500	10-150/500	10-175/500	10-200/500	10-250/500	≈ 1.28 (1.90)
19.69 (500)	4.25 (108)	5.08 (129)	22.83 (580)	13.78 (350)	–	11-125/500	11-150/500	11-175/500	11-200/500	11-250/500	≈ 1.31 (1.95)
19.69 (500)	4.92 (125)	5.75 (146)	22.83 (580)	12.60 (320)	–	12-125/500	12-150/500	12-175/500	12-200/500	12-250/500	≈ 1.38 (2.05)
19.69 (500)	5.41 (137.5)	6.24 (158.5)	22.83 (580)	12.20 (310)	–	–	137-150/500	137-175/500	137-200/500	137-250/500	≈ 1.43 (2.13)
19.69 (500)	5.91 (150)	6.73 (171)	22.83 (580)	11.81 (300)	–	–	15-150/500	15-175/500	15-200/500	15-250/500	≈ 1.49 (2.21)
23.62 (600)	4.25 (108)	5.08 (129)	26.77 (680)	17.72 (450)	11-100/600	11-125/600	11-150/600	–	–	–	≈ 1.31 (1.95)
23.62 (600)	4.92 (125)	5.75 (146)	26.77 (680)	16.54 (420)	–	12-125/600	12-150/600	12-175/600	12-200/600	12-250/600	≈ 1.38 (2.05)
23.62 (600)	5.41 (137.5)	6.24 (158.5)	26.77 (680)	16.14 (410)	–	137-125/600	137-150/600	137-175/600	137-200/600	137-250/600	≈ 1.43 (2.13)
23.62 (600)	5.91 (150)	6.73 (171)	26.77 (680)	15.75 (400)	–	–	15-150/600	15-175/600	15-200/600	15-250/600	≈ 1.49 (2.21)

R	3.94 (100)	4.92 (125)	5.91 (150)	6.89 (175)	7.87 (200)	9.84 (250)
H $^{+20}_{0}$	10.00 (254)	11.97 (304)	13.94 (354)	15.91 (404)	17.87 (454)	21.81 (554)
K	18.31 (465)	21.65 (550)	24.41 (620)	27.56 (700)	30.71 (780)	37.01 (940)

Pitch *T* per link = 2.20" (56mm)
Links per ft. (m) = 5.4 (18)

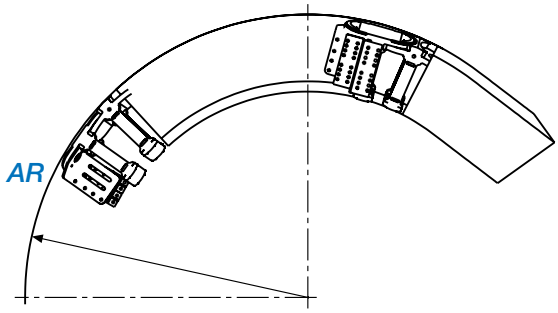


twisterchain 2nd generation from igus® - successfully tested for over 1 million cycles in the igus® laboratory

twisterchain - Series TC32
Installation dimensions

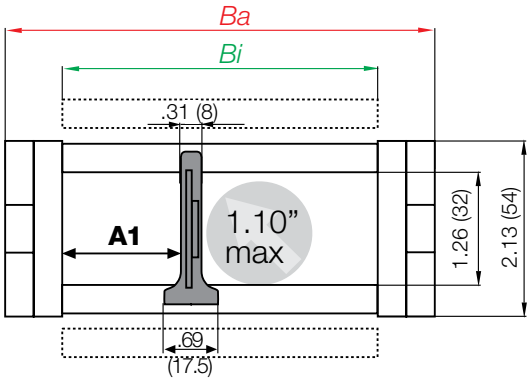
AR	*R* Bend radius 3.94 (100)	4.92 (125)	5.91 (150)	6.89 (175)	7.87 (200)	9.84 (250)
	A1	**A1**	**A1**	**A1**	**A1**	**A1**
in. (mm)	in. (mm)	in. (mm)	in. (mm)	in. (mm)	in. (mm)	in. (mm)
400	2.01 (51)	2.01 (51)	2.05 (52)	2.09 (53)	2.09 (53)	2.28 (58)
500	2.56 (65)	2.56 (65)	2.60 (66)	2.64 (67)	2.72 (69)	2.80 (71)
600	3.11 (79)	3.15 (80)	3.19 (81)	3.19 (81)	3.23 (82)	3.35 (85)

Dimension A1 always with tolerance of ±.10" (2.5 mm) mm)

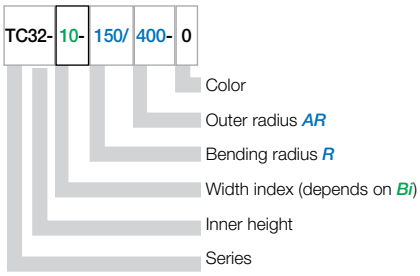


Note: Outer radius *AR* (see drawing) determines dimension A1!

Dimensions

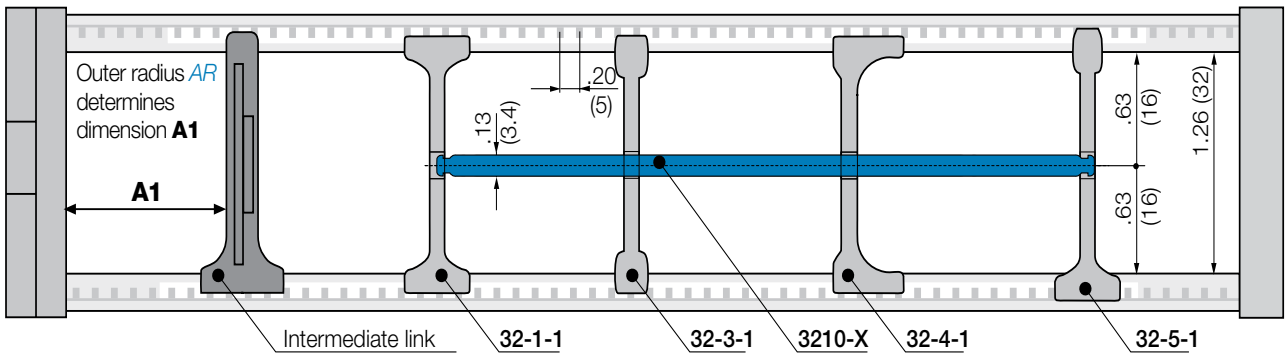


Part No. structure



TC32-10-150/400-0 = e-chain® snap-open along inner radius from both sides
***Bi* 87.5** mm inner width, ***R* 150** mm bending radius / ***AR* 400** mm outer radius, color black

Interior Separation



For this series the interior separation elements of **series E4-32** can be used with the exception of the side plates, **Part No. 286**

AR = Outer radius
R = Bending radius
X_1 = Inner machine construction space
X_2 = Outer radius *AR*, including. clearance
Ba = Outer width
Bi = Inner width
H = Nominal clearance height
K = Add-on for bending radius
A1 = Distance intermediate link
T = Pitch

twisterchain - Series TC42
Series TC42 - Snap-open along inner radius from both sides

					R Bend radius						
AR	Bi	Ba	X_2	X_1	3.94 (100)	4.92 (125)	5.91 (150)	6.89 (175)	7.87 (200)	9.84 (250)	Weight
in. (mm)	in. (mm)	in. (mm)	in. (mm)	in. (mm)	TC42-	TC42-	TC42-	TC42-	TC42-	TC42-	lbs/ft (kg/m)
15.75 (400)	3.44 (87.5)	4.35 (110.5)	18.90 (480)	10.63 (270)	087-100/400	087-125/400	087-150/400	087-175/400	087-200/400	087-250/400	≈ 1.32 (1.97)
15.75 (400)	3.94 (100)	4.84 (123)	18.90 (480)	9.84 (250)	10-100/400	10-125/400	10-150/400	10-175/400	10-200/400	10-250/400	≈ 1.36 (2.03)
15.75 (400)	4.25 (108)	5.16 (131)	18.90 (480)	9.84 (250)	–	11-125/400	11-150/400	11-175/400	11-200/400	11-250/400	≈ 1.39 (2.07)
15.75 (400)	4.92 (125)	5.83 (148)	18.90 (480)	8.66 (220)	–	12-125/400	12-150/400	12-175/400	12-200/400	12-250/400	≈ 1.45 (2.16)
15.75 (400)	5.41 (137.5)	6.32 (160.5)	18.90 (480)	8.27 (210)	–	137-125/400	137-150/400	137-175/400	137-200/400	137-250/400	≈ 1.49 (2.22)
15.75 (400)	5.91 (150)	6.81 (173)	18.90 (480)	7.87 (200)	–	–	–	15-175/400	15-200/400	15-250/400	≈ 1.54 (2.29)
15.75 (400)	6.40 (162.5)	7.30 (185.5)	18.90 (480)	7.48 (190)	–	–	–	–	162-200/400	162-250/400	≈ 1.60 (2.35)
15.75 (400)	6.61 (168)	7.52 (191)	18.90 (480)	7.48 (190)	–	–	–	–	–	17-250/400	≈ 1.60 (2.38)
15.75 (400)	6.89 (175)	7.80 (198)	18.90 (480)	7.09 (180)	–	–	–	–	–	18-250/400	≈ 1.62 (2.41)
19.69 (500)	3.94 (100)	4.84 (123)	22.83 (580)	13.78 (350)	10-100/500	10-125/500	10-150/500	10-175/500	10-200/500	10-250/500	≈ 1.36 (2.03)
19.69 (500)	4.25 (108)	5.16 (131)	22.83 (580)	13.78 (350)	–	11-125/500	11-150/500	11-175/500	11-200/500	11-250/500	≈ 1.39 (2.07)
19.69 (500)	4.92 (125)	5.83 (148)	22.83 (580)	12.60 (320)	–	12-125/500	12-150/500	12-175/500	12-200/500	12-250/500	≈ 1.45 (2.16)
19.69 (500)	5.41 (137.5)	6.32 (160.5)	22.83 (580)	12.20 (310)	–	–	137-150/500	137-175/500	137-200/500	137-250/500	≈ 1.49 (2.22)
19.69 (500)	5.91 (150)	6.81 (173)	22.83 (580)	11.81 (300)	–	–	15-150/500	15-175/500	15-200/500	15-250/500	≈ 1.54 (2.29)
19.69 (500)	6.40 (162.5)	7.30 (185.5)	22.83 (580)	11.42 (290)	–	–	162-150/500	162-175/500	162-200/500	162-250/500	≈ 1.60 (2.35)
19.69 (500)	6.61 (168)	7.52 (191)	22.83 (580)	11.42 (290)	–	–	–	17-175/500	17-200/500	17-250/500	≈ 1.60 (2.38)
19.69 (500)	6.89 (175)	7.80 (198)	22.83 (580)	11.02 (280)	–	–	–	–	18-200/500	18-250/500	≈ 1.62 (2.41)
19.69 (500)	7.38 (187.5)	8.29 (210.5)	22.83 (580)	11.02 (280)	–	–	–	–	187-200/500	187-250/500	≈ 1.67 (2.48)
19.69 (500)	7.87 (200)	8.78 (223)	22.83 (580)	9.84 (250)	–	–	–	–	20-200/500	20-250/500	≈ 1.71 (2.54)
23.62 (600)	4.25 (108)	5.16 (131)	26.77 (680)	17.72 (450)	11-100/600	11-125/600	11-150/600	11-175/600	11-200/600	–	≈ 1.39 (2.07)
23.62 (600)	4.92 (125)	5.83 (148)	26.77 (680)	16.54 (420)	12-100/600	12-125/600	12-150/600	12-175/600	12-200/600	12-250/600	≈ 1.45 (2.16)
23.62 (600)	5.41 (137.5)	6.32 (160.5)	26.77 (680)	16.14 (410)	137-100/600	137-125/600	137-150/600	137-175/600	137-200/600	137-250/600	≈ 1.49 (2.22)
23.62 (600)	5.91 (150)	6.81 (173)	26.77 (680)	15.75 (400)	15-100/600	15-125/600	15-150/600	15-175/600	15-200/600	15-250/600	≈ 1.54 (2.29)
23.62 (600)	6.40 (162.5)	7.30 (185.5)	26.77 (680)	15.35 (390)	–	162-125/600	162-150/600	162-175/600	162-200/600	162-250/600	≈ 1.60 (2.35)
23.62 (600)	6.61 (168)	7.52 (191)	26.77 (680)	15.35 (390)	–	–	17-150/600	17-175/600	17-200/600	17-250/600	≈ 1.60 (2.38)
23.62 (600)	6.89 (175)	7.80 (198)	26.77 (680)	14.96 (380)	–	–	18-150/600	18-175/600	18-200/600	18-250/600	≈ 1.62 (2.41)
23.62 (600)	7.38 (187.5)	8.29 (210.5)	26.77 (680)	14.96 (380)	–	–	187-150/600	187-175/600	187-200/600	187-250/600	≈ 1.67 (2.48)
23.62 (600)	7.87 (200)	8.78 (223)	26.77 (680)	13.78 (350)	–	–	20-150/600	20-175/600	20-200/600	20-250/600	≈ 1.71 (2.54)
25.59 (650)	4.92 (125)	5.83 (148)	28.74 (730)	18.50 (470)	12-100/650	12-125/650	12-150/650	12-175/650	12-200/650	12-250/650	≈ 1.45 (2.16)
25.59 (650)	5.41 (137.5)	6.32 (160.5)	28.74 (730)	18.11 (460)	137-100/650	137-125/650	137-150/650	137-175/650	137-200/650	137-250/650	≈ 1.49 (2.22)
25.59 (650)	5.91 (150)	6.81 (173)	28.74 (730)	17.72 (450)	15-100/650	15-125/650	15-150/650	15-175/650	15-200/650	15-250/650	≈ 1.54 (2.29)
25.59 (650)	6.40 (162.5)	7.30 (185.5)	28.74 (730)	17.32 (440)	–	162-125/650	162-150/650	162-175/650	162-200/650	162-250/650	≈ 1.60 (2.35)
25.59 (650)	6.61 (168)	7.52 (191)	28.74 (730)	16.93 (430)	–	17-125/650	17-150/650	17-175/650	17-200/650	17-250/650	≈ 1.60 (2.38)
25.59 (650)	6.89 (175)	7.80 (198)	28.74 (730)	16.93 (430)	–	–	18-150/650	18-175/650	18-200/650	18-250/650	≈ 1.62 (2.41)
25.59 (650)	7.38 (187.5)	8.29 (210.5)	28.74 (730)	16.54 (420)	–	–	187-150/650	187-175/650	187-200/650	187-250/650	≈ 1.67 (2.48)
25.59 (650)	7.87 (200)	8.78 (223)	28.74 (730)	15.75 (400)	–	–	20-150/650	20-175/650	20-200/650	20-250/650	≈ 1.71 (2.54)
29.52 (750)	5.41 (137.5)	6.32 (160.5)	32.67 (830)	22.05 (560)	137-100/750	137-125/750	137-150/750	137-175/750	137-200/750	137-250/750	≈ 1.49 (2.22)
29.52 (750)	5.91 (150)	6.81 (173)	32.67 (830)	21.65 (550)	15-100/750	15-125/750	15-150/750	15-175/750	15-200/750	15-250/750	≈ 1.54 (2.29)
29.52 (750)	6.40 (162.5)	7.30 (185.5)	32.67 (830)	21.26 (540)	–	162-125/750	162-150/750	162-175/750	162-200/750	162-250/750	≈ 1.60 (2.35)
29.52 (750)	6.61 (168)	7.52 (191)	32.67 (830)	21.26 (540)	–	17-125/750	17-150/750	17-175/750	17-200/750	17-250/750	≈ 1.60 (2.38)
29.52 (750)	6.89 (175)	7.80 (198)	32.67 (830)	20.87 (530)	–	18-125/750	18-150/750	18-175/750	18-200/750	18-250/750	≈ 1.62 (2.41)
29.52 (750)	7.38 (187.5)	8.29 (210.5)	32.67 (830)	20.47 (520)	–	187-125/750	187-150/750	187-175/750	187-200/750	187-250/750	≈ 1.67 (2.48)
29.52 (750)	7.87 (200)	8.78 (223)	32.67 (830)	19.69 (500)	–	20-125/750	20-150/750	20-175/750	20-200/750	20-250/750	≈ 1.71 (2.54)
33.46 (850)	5.91 (150)	6.81 (173)	36.61 (930)	25.59 (650)	15-100/850	15-125/850	15-150/850	15-175/850	15-200/850	15-250/850	≈ 1.54 (2.29)
33.46 (850)	6.40 (162.5)	7.30 (185.5)	36.61 (930)	25.20 (640)	162-100/850	162-125/850	162-150/850	162-175/850	162-200/850	162-250/850	≈ 1.60 (2.35)
33.46 (850)	6.61 (168)	7.52 (191)	36.61 (930)	24.80 (630)	17-100/850	17-125/850	17-150/850	17-175/850	17-200/850	17-250/850	≈ 1.60 (2.38)
33.46 (850)	6.89 (175)	7.80 (198)	36.61 (930)	24.80 (630)	–	18-125/850	18-150/850	18-175/850	18-200/850	18-250/850	≈ 1.62 (2.41)
33.46 (850)	7.38 (187.5)	8.29 (210.5)	36.61 (930)	24.41 (620)	–	187-125/850	187-150/850	187-175/850	187-200/850	187-250/850	≈ 1.67 (2.48)
33.46 (850)	7.87 (200)	8.78 (223)	36.61 (930)	23.62 (600)	–	20-125/850	20-150/850	20-175/850	20-200/850	20-250/850	≈ 1.71 (2.54)

R	3.94 (100)	4.92 (125)	5.91 (150)	6.89 (175)	7.87 (200)	9.84 (250)
H $^{-0}_{+25}$	10.51 (267)	12.48 (317)	14.45 (367)	16.42 (417)	18.39 (467)	22.32 (567)
K	19.69 (500)	25.59 (650)	28.54 (725)	31.50 (800)	34.45 (875)	41.34 (1050)

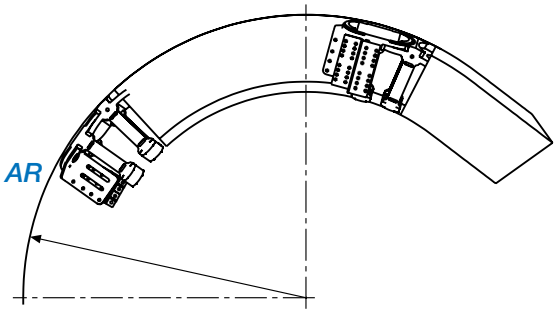
Pitch *T* per link = 2.64" (67mm)

Links per ft. (m) = 4.5 (15)

twisterchain - Series TC42
Installation Dimensions

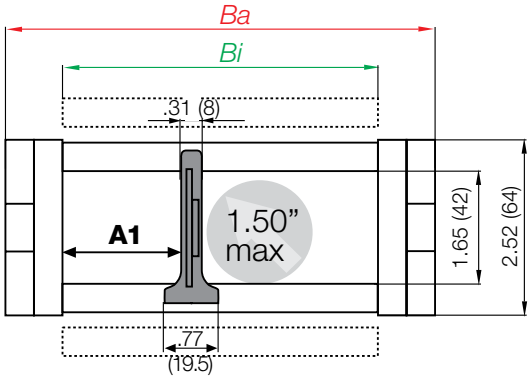
AR	*R* Bend radius 3.94 (100) A1	4.92 (125) A1	5.91 (150) A1	6.89 (175) A1	7.87 (200) A1	9.84 (250) A1
in. (mm)	in. (mm)	in. (mm)	in. (mm)	in. (mm)	in. (mm)	in. (mm)
400	1.93 (49)	1.97 (50)	2.01 (51)	2.09 (53)	2.09 (53)	2.09 (53)
500	2.52 (64)	2.56 (65)	2.60 (66)	2.64 (67)	2.68 (68)	2.80 (71)
600	3.11 (79)	3.11 (79)	3.15 (80)	3.19 (81)	3.23 (82)	3.35 (85)
650	3.39 (86)	3.43 (87)	3.43 (87)	3.46 (88)	3.50 (89)	3.62 (92)
750	3.98 (101)	3.98 (101)	4.02 (102)	4.06 (103)	4.09 (104)	4.17 (106)
850	4.57 (116)	4.57 (116)	4.61 (117)	4.65 (118)	4.65 (118)	4.72 (120)

Dimension A1 always with tolerance of ± .10" (2.5 mm)

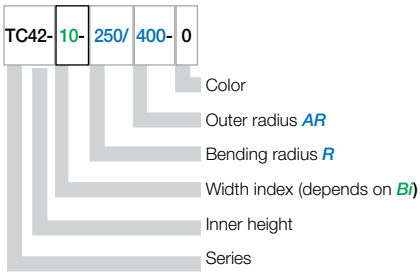


Note: Outer radius *AR* (see drawing) determines dimension A1!

Dimensions

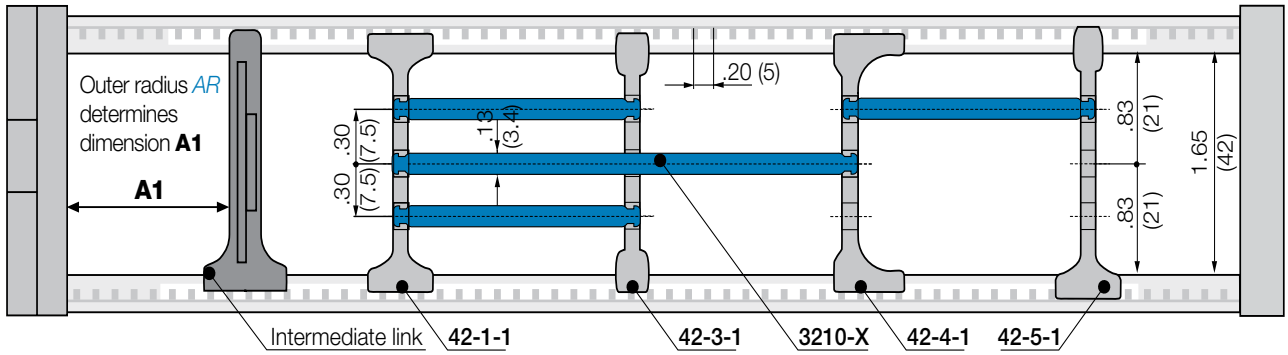


Part No. structure



TC42-10-250/400-0 = e-chain® snap-open along inner radius from both sides
***Bi* 87.5** mm inner width, ***R* 250** mm bending radius / ***AR* 400** mm outer radius, color black

Interior Separation



For this series the interior separation elements of **series E4-42** can be used with the exception of the side plates, **Part No. 386**

AR = Outer radius
R = Bending radius
X_1 = Inner machine construction space
X_2 = Outer radius ***AR***, including. clearance
Ba = Outer width
Bi = Inner width
H = Nominal clearance height
K = Add-on for bending radius
A1 = Distance intermediate link
T = Pitch

twisterchain - Series TC56

Series TC56 - Snap-open along inner radius from both sides

Dimensions

					R Bend radius					
AR	Bi	Ba	X_2	X_1	5.91 (150)	7.87 (200)	9.84 (250)	11.81 (300)	15.75 (400)	Weight
in. (mm)	in. (mm)	in. (mm)	in. (mm)	in. (mm)	TC56-	TC56-	TC56-	TC56-	TC56-	lbs/ft (kg/m)
25.59 (650)	4.92 (125)	6.10 (155)	28.74 (730)	18.50 (470)	12-150/650	12-200/650	12-250/650	12-300/650	–	≈ 2.32 (3.45)
25.59 (650)	5.41 (137.5)	6.61 (168)	28.74 (730)	18.11 (460)	–	13-200/650	13-250/650	13-300/650	13-400/650	≈ 2.38 (3.54)
25.59 (650)	5.91 (150)	7.09 (180)	28.74 (730)	17.72 (450)	–	–	15-250/650	15-300/650	15-400/650	≈ 2.43 (3.62)
25.59 (650)	6.40 (162.5)	7.60 (193)	28.74 (730)	17.32 (440)	–	–	16-250/650	16-300/650	16-400/650	≈ 2.49 (3.70)
25.59 (650)	6.89 (175)	8.07 (205)	28.74 (730)	16.93 (430)	–	–	–	17-300/650	17-400/650	≈ 2.54 (3.78)
25.59 (650)	7.38 (187.5)	8.58 (218)	28.74 (730)	16.54 (420)	–	–	–	18-300/650	18-400/650	≈ 2.60 (3.87)
25.59 (650)	7.87 (200)	9.06 (230)	28.74 (730)	15.75 (400)	–	–	–	–	20-400/650	≈ 2.65 (3.95)
29.53 (750)	5.41 (137.5)	6.61 (168)	32.68 (830)	22.05 (560)	13-150/750	13-200/750	13-250/750	13-300/750	–	≈ 2.38 (3.54)
29.53 (750)	5.91 (150)	7.09 (180)	32.68 (830)	21.65 (550)	–	15-200/750	15-250/750	15-300/750	15-400/750	≈ 2.43 (3.62)
29.53 (750)	6.40 (162.5)	7.60 (193)	32.68 (830)	21.26 (540)	–	16-200/750	16-250/750	16-300/750	16-400/750	≈ 2.49 (3.70)
29.53 (750)	6.89 (175)	8.07 (205)	32.68 (830)	20.87 (530)	–	–	17-250/750	17-300/750	17-400/750	≈ 2.54 (3.78)
29.53 (750)	7.38 (187.5)	8.58 (218)	32.68 (830)	20.47 (520)	–	–	18-250/750	18-300/750	18-400/750	≈ 2.60 (3.87)
29.53 (750)	7.87 (200)	9.06 (230)	32.68 (830)	19.69 (500)	–	–	20-250/750	20-300/750	20-400/750	≈ 2.65 (3.95)
33.46 (850)	5.91 (150)	7.09 (180)	36.61 (930)	25.59 (650)	15-150/850	15-200/850	15-250/850	15-300/850	15-400/850	≈ 2.43 (3.62)
33.46 (850)	6.40 (162.5)	7.60 (193)	36.61 (930)	25.20 (640)	16-150/850	16-200/850	16-250/850	16-300/850	16-400/850	≈ 2.49 (3.70)
33.46 (850)	6.89 (175)	8.07 (205)	36.61 (930)	24.80 (630)	17-150/850	17-200/850	17-250/850	17-300/850	17-400/850	≈ 2.54 (3.78)
33.46 (850)	7.38 (187.5)	8.58 (218)	36.61 (930)	24.41 (620)	–	18-200/850	18-250/850	18-300/850	18-400/850	≈ 2.60 (3.87)
33.46 (850)	7.87 (200)	9.06 (230)	36.61 (930)	23.62 (600)	–	–	20-250/850	20-300/850	20-400/850	≈ 2.65 (3.95))

R	5.91 (150)	7.87 (200)	9.84 (250)	11.81 (300)	15.75 (400)
H $^{-0}_{+25}$	15.12 (384)	19.06 (484)	22.99 (584)	26.93 (684)	34.80 (884)
K	29.53 (750)	35.43 (900)	41.34 (1050)	48.23 (1225)	57.09 (1450)

Pitch *T* per link = 3.58" (91mm)

Links per ft. (m) = 3.4 (11)

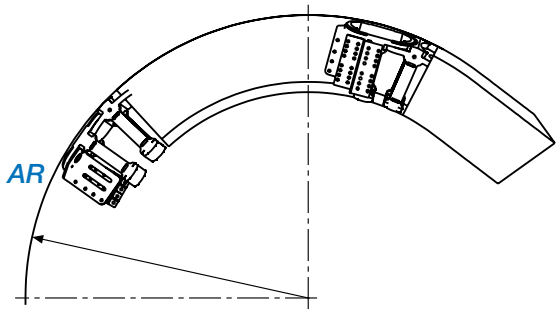


twisterchain in a guide trough type 01 for rotary movement on an articulated robot - long service life and robust: tested successfully for more than 1,000,000 cycles

twisterchain - Series TC56
Installation Dimensions

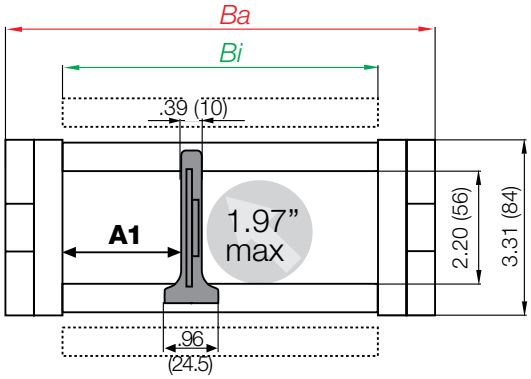
AR	R Bend radius 5.91 (150) A1	7.87 (200) A1	9.84 (250) A1	11.81 (300) A1	15.75 (400) A1
in. (mm)	in. (mm)	in. (mm)	in. (mm)	in. (mm)	in. (mm)
650	3.27 (83)	3.35 (85)	3.46 (88)	3.54 (90)	3.82 (97)
750	3.86 (98)	3.98 (101)	4.02 (102)	4.06 (103)	4.33 (110)
850	4.45 (113)	4.57 (116)	4.61 (117)	4.65 (118)	4.88 (124)

Dimension A1 always with tolerance of ± .10" (2.5 mm)

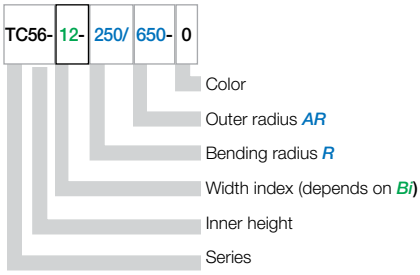


Note: Outer radius *AR* (see drawing) determines dimension A1!

Dimensions

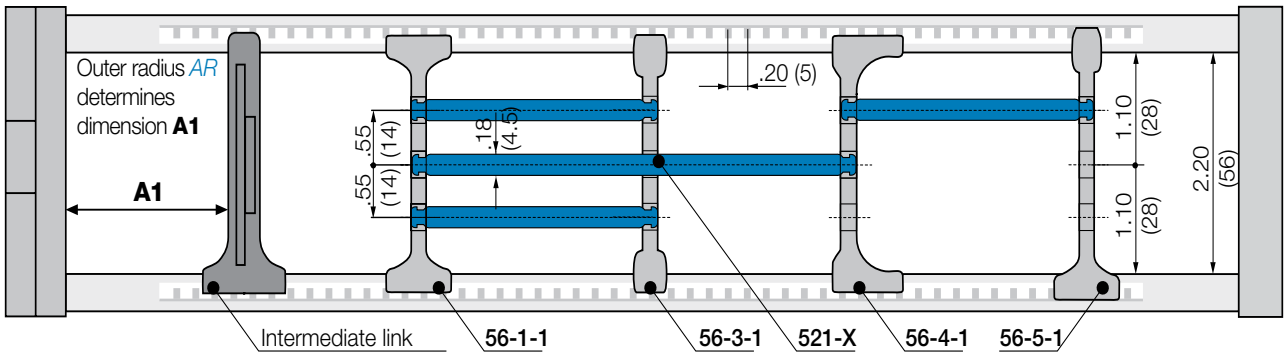


Part No. structure



TC56-12-250/650-0 = e-chain® snap-open along inner radius from both sides
***Bi* 125** mm inner width, ***R* 250** mm bending radius / ***AR* 650** mm outer radius, color black

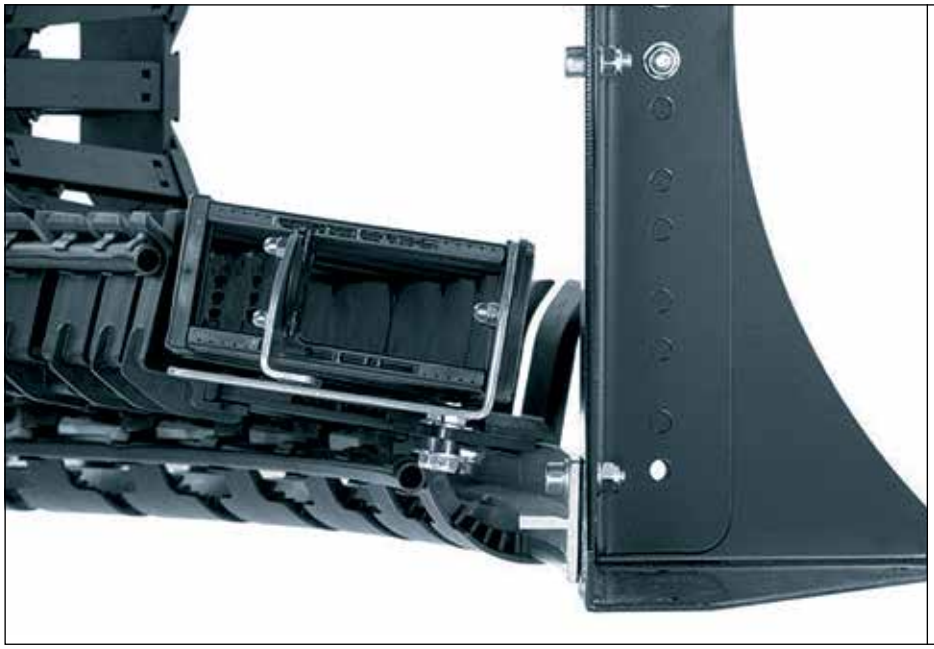
Interior Separation



For this series the interior separation elements of **series E4-56** can be used with the exception of the side plates, **Part No. 402**

AR = Outer radius
R = Bending radius
X1 = Inner machine construction space
X2 = Outer radius ***AR***, including. clearance
Ba = Outer width
Bi = Inner width
H = Nominal clearance height
K = Add-on for bending radius
A1 = Distance intermediate link
T = Pitch

twisterchain - Series TC32, TC42, TC56
Mounting Bracket - Steel





Position 1 Position 2

- One part for all e-chain® widths
- Electrically conductive
- Universal installation
- Material: stainless steel 1.4301

Steel, one-piece design for twisterchain (2nd generation) | Recommended for unsupported and circular applications

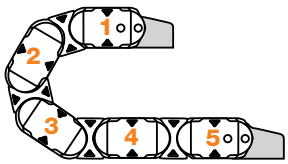
For series	Part No. full set	Part No. position 1	Part No. position 2
TC32 ▶	TC3200-34	TC3200-30	TC3200-40
TC42 ▶	TC4200-34	TC4200-30	TC4200-40
TC56 ▶	TC5600-34	TC5600-30	TC5600-40

The guide trough must be mounted at the fixed point of the twisterchain.

The following bolted connections are permitted:

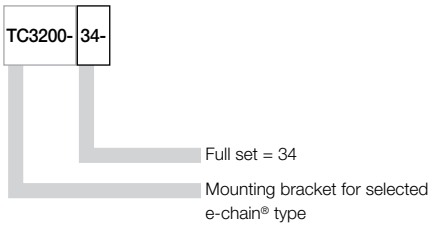
- Bore Hole: 4 x Ø 6.6 - 7 mm
- Mounting only with bolts: 4 x bolts M6

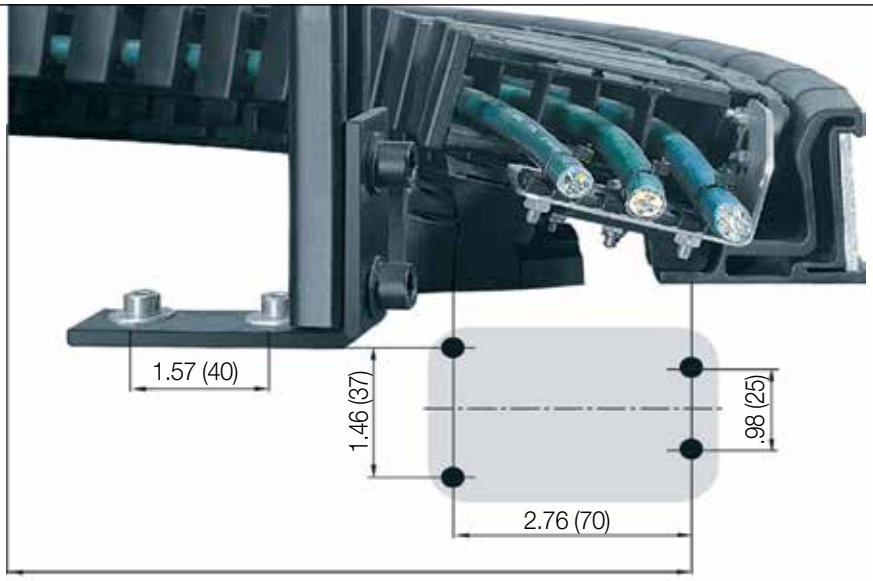
Other connection dimensions for mounting the guide trough Type 01



Note: twisterchain e-chains® must always start and end on an outer side-link. There must always be an odd number of links. At the moving end an outer side link always forms the first e-chain® link
Please note when calculating!

Part No. structure





R_{LK} - distance pivot point / outer mounting holes



Position 1 Position 2

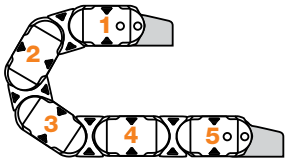
- One part for all e-chain® widths
- Electrically conductive
- Universal installation
- Material: stainless steel 1.4301

Steel, one-piece design for twisterchain (1st generation) | Recommended for unsupported and circular applications

For series		Part No. full set	Part No. position 1	Part No. position 2
2208	▶	22080-34	22080-30	22080-40

The guide trough must be mounted at the fixed point of the twisterchain as shown by the drilling template in the illustration. The following bolted connections are permitted:

- Through-hole: 4 x Ø .26 - .28" (6.6 - 7 mm)
- Mounting only with bolts: 4 x M6 bolts



Note: twisterchain e-chains® must always start and end on an outer side-link. There must always be an odd number of links. At the moving end an outer side link always forms the first e-chain® link
Please note when calculating!

Part No. structure

22080-	34-	E

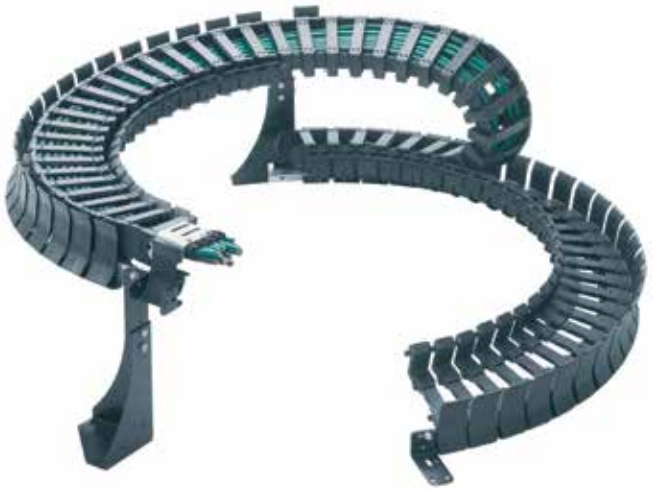
E: Stainless Steel
34: Full set = 34
22080-: Mounting brackets for selected chain type

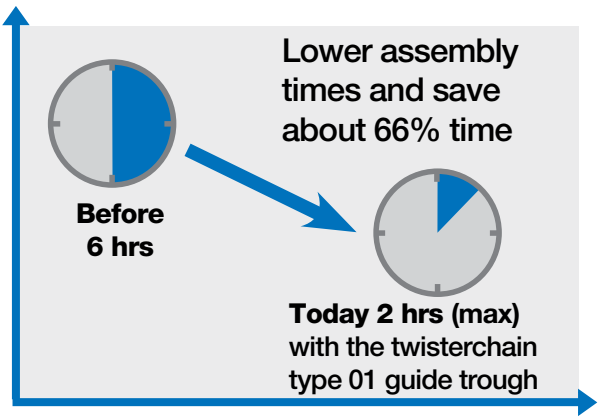
Full set, for both ends
22080-34

Single-part order - Part 1:
22080-3

Single-part order - Part 2:
22080-4

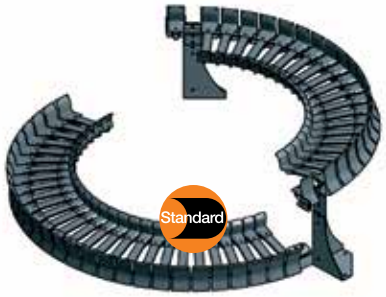
Save installation time and cost - better guidance for circular movement - increase service life!





With the new twisterchain trough type 01, the previously complex adjustment work is clearly minimized. Assembly time is reduced from 6 hours to 2 hours. While reducing noise levels, travel speed and service life can be increased, thanks to an almost all-plastic design. Available for all twisterchain of the new and previous range.

- Suitable for high dynamics, because of the full and all-side guidance of the twisterchain
- Much smoother and quieter motion of the twisterchain in the trough due to continuous guidance of upper run
- Upper run guided in the new polymer trough over the full width
- Preassembled delivery possible
- Easy adjustment and alignment and handling
- Assembly time reduced from 6 hours to 2 hours



9XXX-31 Complete troughs
(**with base support**, height adjustment and attachment angles



9XXX-32 Upper and lower run trough
without base support and height adjustment
Special variant: Customer builds base support



9XXX-30 Lower run trough
with attachment angles
Special option:
Customer builds upper run trough

Product Range - twisterchain Guide Troughs Type 01

For Series	Outer radius *AR* [mm]	Rotation angle from-up to α (°)	Part No. Trough complete	Part No. Trough upper/lower run	Part No. Trough lower run
TC32 / TC42	400	0 - 90°	**9XXXX-31-90-400/*Bi*-*R***	9XXXX-32-90-400/*Bi*-*R*	9XXXX-30-90-750/*Bi*-*R*
		90° - 180°	**9XXXX-31-180-400/*Bi*-*R***	9XXXX-32-180-400/*Bi*-*R*	9XXXX-30-180-400/*Bi*-*R*
		180° - 270°	**9XXXX-31-270-400/*Bi*-*R***	9XXXX-32-270-400/*Bi*-*R*	9XXXX-30-270-400/*Bi*-*R*
		270° - 360°	**9XXXX-31-360-400/*Bi*-*R***	9XXXX-32-360-400/*Bi*-*R*	9XXXX-30-360-400/*Bi*-*R*
	500	0 - 90°	**9XXXX-31-90-500/*Bi*-*R***	9XXXX-32-90-500/*Bi*-*R*	9XXXX-30-90-500/*Bi*-*R*
		90° - 180°	**9XXXX-31-180-500/*Bi*-*R***	9XXXX-32-180-500/*Bi*-*R*	9XXXX-30-180-500/*Bi*-*R*
		180° - 270°	**9XXXX-31-270-500/*Bi*-*R***	9XXXX-32-270-500/*Bi*-*R*	9XXXX-30-270-500/*Bi*-*R*
		270° - 360°	**9XXXX-31-360-500/*Bi*-*R***	9XXXX-32-360-500/*Bi*-*R*	9XXXX-30-360-500/*Bi*-*R*
	600	0 - 90°	**9XXXX-31-90-600/*Bi*-*R***	9XXXX-32-90-600/*Bi*-*R*	9XXXX-30-90-600/*Bi*-*R*
		90° - 180°	**9XXXX-31-180-600/*Bi*-*R***	9XXXX-32-180-600/*Bi*-*R*	9XXXX-30-180-600/*Bi*-*R*
		180° - 270°	**9XXXX-31-270-600/*Bi*-*R***	9XXXX-32-270-600/*Bi*-*R*	9XXXX-30-270-600/*Bi*-*R*
		270° - 360°	**9XXXX-31-360-600/*Bi*-*R***	9XXXX-32-360-600/*Bi*-*R*	9XXXX-30-360-600/*Bi*-*R*
TC56	650	0 - 90°	**9XXXX-31-90-650/*Bi*-*R***	9XXXX-32-90-650/*Bi*-*R*	9XXXX-30-90-650/*Bi*-*R*
		90° - 180°	**9XXXX-31-180-650/*Bi*-*R***	9XXXX-32-180-650/*Bi*-*R*	9XXXX-30-180-650/*Bi*-*R*
		180° - 270°	**9XXXX-31-270-650/*Bi*-*R***	9XXXX-32-270-650/*Bi*-*R*	9XXXX-30-270-650/*Bi*-*R*
		270° - 360°	**9XXXX-31-360-650/*Bi*-*R***	9XXXX-32-360-650/*Bi*-*R*	9XXXX-30-360-650/*Bi*-*R*
	750	0 - 90°	**9XXXX-31-90-750/*Bi*-*R***	9XXXX-32-90-750/*Bi*-*R*	9XXXX-30-90-750/*Bi*-*R*
		90° - 180°	**9XXXX-31-180-750/*Bi*-*R***	9XXXX-32-180-750/*Bi*-*R*	9XXXX-30-180-750/*Bi*-*R*
		180° - 270°	**9XXXX-31-270-750/*Bi*-*R***	9XXXX-32-270-750/*Bi*-*R*	9XXXX-30-270-750/*Bi*-*R*
		270° - 360°	**9XXXX-31-360-750/*Bi*-*R***	9XXXX-32-360-750/*Bi*-*R*	9XXXX-30-360-750/*Bi*-*R*
	850	0 - 90°	**9XXXX-31-90-850/*Bi*-*R***	9XXXX-32-90-850/*Bi*-*R*	9XXXX-30-90-850/*Bi*-*R*
		90° - 180°	**9XXXX-31-180-850/*Bi*-*R***	9XXXX-32-180-850/*Bi*-*R*	9XXXX-30-180-850/*Bi*-*R*
		180° - 270°	**9XXXX-31-270-850/*Bi*-*R***	9XXXX-32-270-850/*Bi*-*R*	9XXXX-30-270-850/*Bi*-*R*
		270° - 360°	**9XXXX-31-360-850/*Bi*-*R***	9XXXX-32-360-850/*Bi*-*R*	9XXXX-30-360-850/*Bi*-*R*

Supplement Part No. **9XXXX** with required series **(TC32, TC42 or TC56)**, ***Bi*** and **bending radius *R*** ➤ **9TC32-31-180-600/12-250**

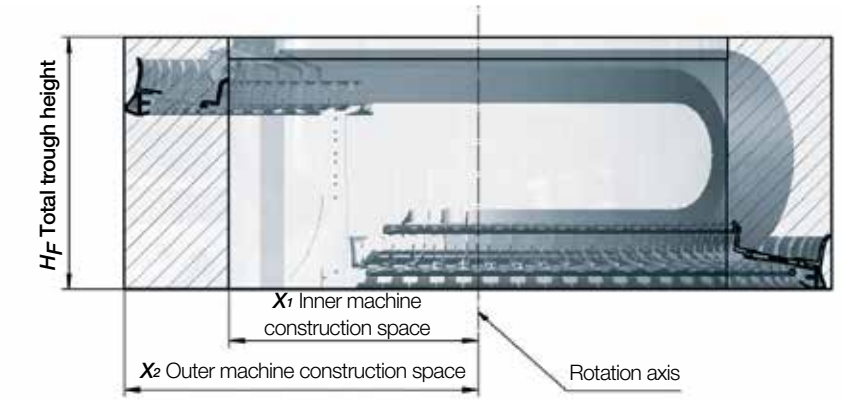
9TC32-31-180-600/12.250

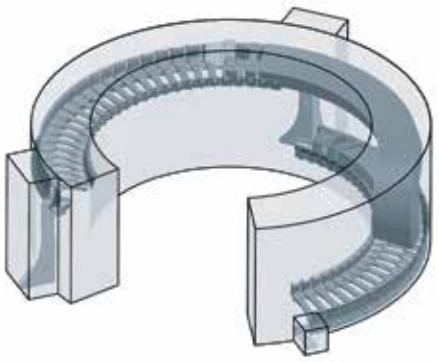
9XXXX-31-180-600/*Bi*. *R*

Order key Guide trough

- *R* - Bending radius, please add appropriate value
- *Bi* - Width index, please add appropriate value
- Outer radius e-chain®
- Rotation angle of application (90°, 180°, 270°, 360°)
- Trough version
- Guide Trough of selected series

twisterchain - Series TC32, TC42, TC56
Guide Trough Dimensions





Minimum required construction space of twisterchain Guide Trough system

Installation Dimensions

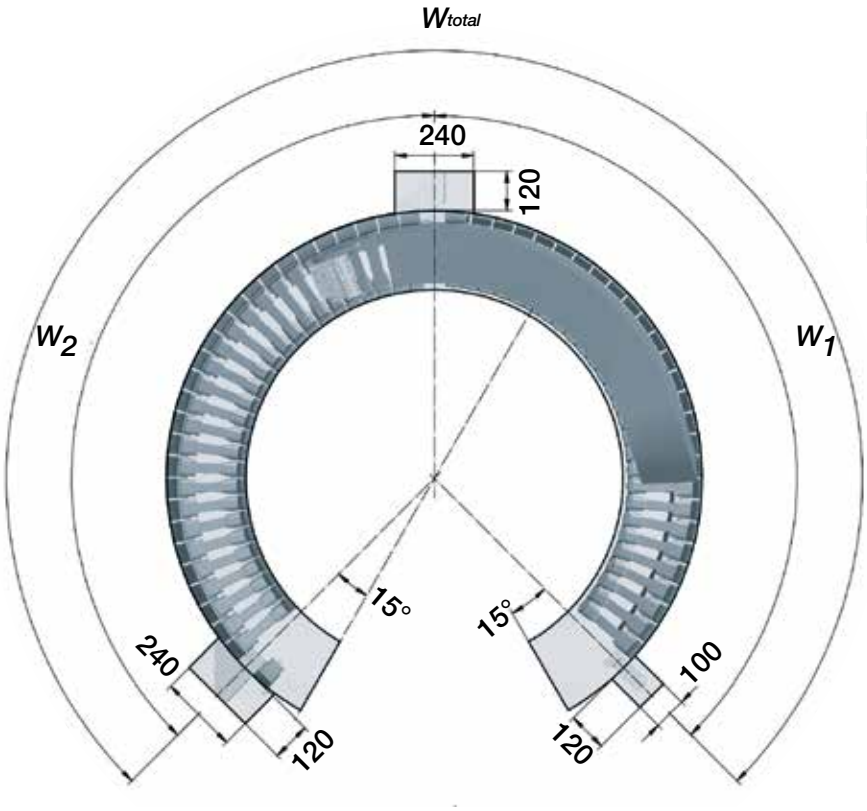
X_1 Inner machine construction space and
X_2 Outer machine construction space of Guide Trough

AR in. (mm)	X_2 mm)	X_1 (mm) depending on *Bi* in. (mm)										
TC32		3.44 (87.5)	3.94 (100)	4.25 (108)	4.92 (125)	5.41 (137.5)	5.91 (150)					
15.75 (400)	**18.90 (480)**	10.63 (270)	9.84 (250)	9.84 (250)	8.66 (220)	8.27 (210)	7.87 (200)					
19.69 (500)	**22.83 (580)**	–	13.78 (350)	13.78 (350)	12.60 (320)	12.20 (310)	11.81 (300)					
23.62 (600)	**26.77 (680)**	–	–	17.72 (450)	16.54 (420)	16.14 (410)	15.75 (400)					
TC42		3.44 (87.5)	3.94 (100)	4.25 (108)	4.92 (125)	5.41 (137.5)	5.91 (150)	162.5	168	175	187.5	200
15.75 (400)	**18.90 (480)**	10.63 (270)	9.84 (250)	9.84 (250)	8.66 (220)	8.27 (210)	7.87 (200)	7.48 (190)	7.48 (190)	7.09 (180)	–	–
19.69 (500)	**22.83 (580)**	–	13.78 (350)	13.78 (350)	12.60 (320)	12.20 (310)	11.81 (300)	11.42 (290)	11.42 (290)	11.02 (280)	11.02 (280)	9.84 (250)
23.62 (600)	**26.77 (680)**	–	–	17.72 (450)	16.54 (420)	16.14 (410)	15.75 (400)	15.35 (390)	15.35 (390)	14.96 (380)	14.96 (380)	13.78 (350)
TC56		–	–	–	125	137.5	150	162.5	–	175	187.5	200
25.59 (650)	**28.74 (730)**	–	–	–	18.50 (470)	18.11 (460)	17.72 (450)	17.32 (440)	–	16.93 (430)	16.54 (420)	15.75 (400)
29.53 (750)	**32.68 (830)**	–	–	–	–	22.05 (560)	21.65 (550)	21.26 (540)	–	20.87 (530)	20.47 (520)	19.69 (500)
33.46 (850)	**36.61 (930)**	–	–	–	–	–	25.59 (650)	25.20 (640)	–	24.80 (630)	24.41 (620)	23.62 (600)

Construction height H_F depending on bending radius of twisterchain Guide Trough

R in. (mm)	3.94 (100)	4.92 (125)	5.91 (150)	6.89 (175)	7.87 (200)	9.84 (250)	11.81 (300)	15.75 (400)
Series	H_F Construction height in. (mm)							
TC32	14.57 (370)	16.54 (420)	18.50 (470)	20.47 (520)	22.44 (570)	26.38 (670)	–	–
TC42	14.96 (380)	16.93 (430)	18.90 (480)	20.87 (530)	22.83 (580)	26.77 (680)	–	–
TC56	–	–	19.69 (500)	–	23.62 (600)	27.56 (700)	31.50 (800)	39.37 (1000)

twisterchain - Series TC32, TC42, TC56
Guide Trough Dimensions



Rotation angle | $W_1 + W_{total}$

W_{total} rotation angle System	W_1 rotation angle of lower run trough
90°	45°
180°	90°
270°	135°
360°	180°

Rotation angle for 360° - W_2 angle of upper run (°) twisterchain Guide Trough

AR (mm)	Series	*R* [mm]	100	125	150	175	200	250	300	400
						W_2 Rotation angle				
400	TC32/TC42		90°	90°	90°	90°	90°	90°	90°	90°
500	TC32/TC42		90°	90°	90°	90°	90°	90°	90°	90°
600	TC32/TC42		135°	135°	135°	135°	90°	90°	90°	90°
650	TC56		135°	135°	135°	135°	90°	90°	90°	90°
750	TC56		135°	135°	135°	135°	135°	135°	90°	90°
850	TC56		135°	135°	135°	135°	135°	135°	135°	135°

AR = Outer radius e-chain®
IR = Inner radius e-chain®
R = Bending radius

X_1 = Inner machine construction space
X_2 = Outer radius *AR*, including clearance
H_F = Total trough height

W_1 = Angle of lower run
W_2 = Angle of upper run
W_{total} = Rotation angle of system

Type 02 guide trough for twisterchain classic (1st generation) series 2208

- Support for the upper run and guidance of twisterchain classic series 2208
- Angle of rotation up to 360° possible, 400° upon request
- The modular design of the guide trough makes it possible to connect a large number of e-chains®, radii, circle and bend radii by using the same trough sections
- If the chain radius changes, the trough can simply be adapted without purchasing a completely new trough
- The specified part number shown below includes the complete trough system



This bottom stanchion (pictured above in red) is required only if the support for the upper run (from a 180° rotation angle) cannot be mounted on the machine.

Product range - Guide trough Type 02 for twisterchain classic (1st generation)

Part No. Series	Outer radius AR	Rotation angle α [°]	Trough assembly Standard	Trough assembly with bottom support	Number of support
2208	11.81" (300 mm)	45 - 100	92208 -4-45-300/ *Bi* - *R*	Not necessary	
		>100 - 180	92208 -4-90-300/ *Bi* - *R*	Not necessary	
		>180 - 270	92208 -4-135-300/ *Bi* - *R**	92208-5-135-300/ *Bi* - *R*	1
		>270 - 360	92208 -4-180-300/ *Bi* - *R***	92208-5-180-300/ *Bi* - *R*	2

Supplement Part No. with required *Bi* and bend radius *R* ➤ 92208-5-180-600/112-150

* These troughs feature **one support** for the upper run, without bottom stanchion (See red portion of above photo)

** These troughs feature **two supports** for the upper run, without bottom stanchion (See red portion of above photo)

Order Example

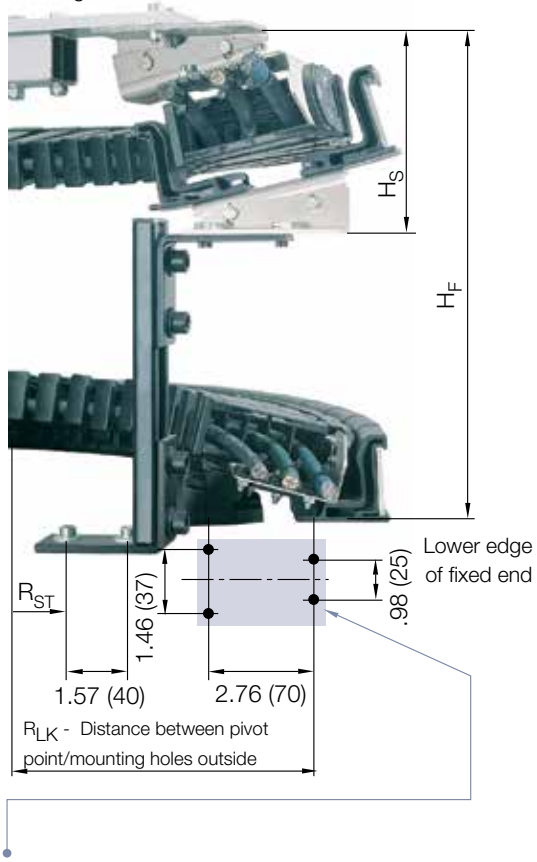
9 2208-	5-	180-	600/	112-	150

Part No. structure - guide trough
94008-5-180-600/06-250

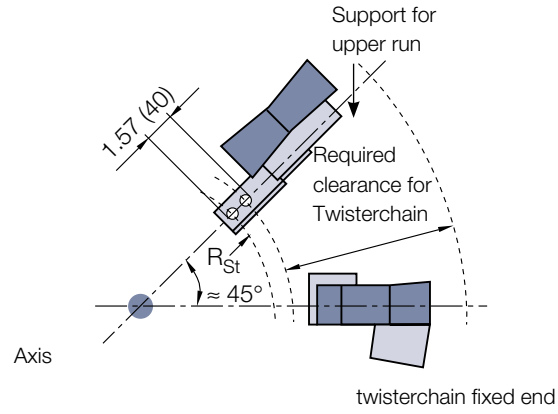
- ***R*** **- Bend radius, please add appropriate value**
- ***Bi*** **- width index, please add appropriate value**
- **Outer radius (AR)**
- **Trough angle (Standard 180°, 135°, 90°, 45°)**
- **Trough version (-5- with and -4- without bottom support)**
- **Selected series 2208**

twisterchain classic - Series 2208 - Accessories
Guide Trough - Type 02 for twisterchain classic (1st Generation)

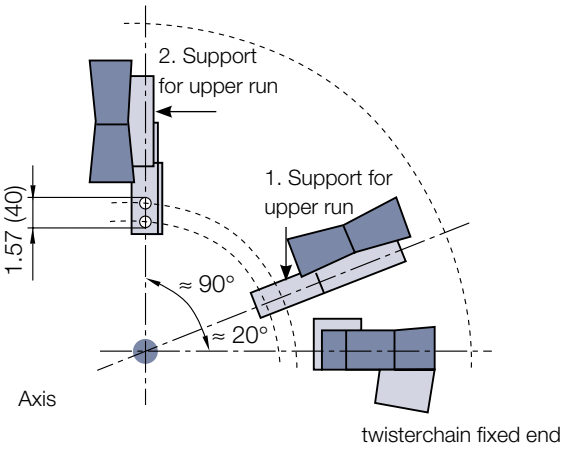
Support for the upper run (from a 180° rotational angle)
Lower edge of the carrier



Mounting position for one support



Mounting position for two supports

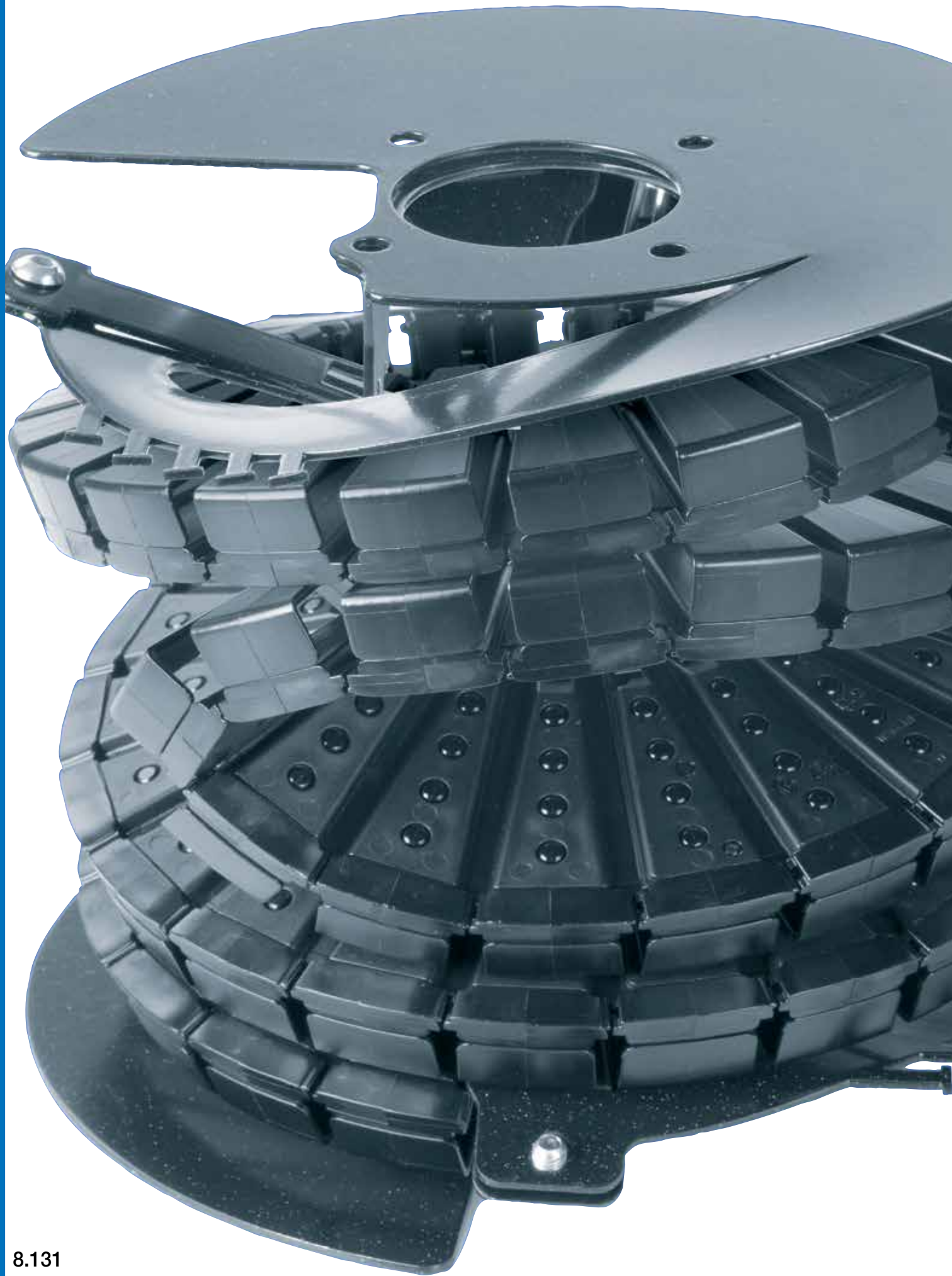


The guide trough must be mounted at the fixed end of the twisterchain, as shown by the drilling template.
The following bolted connections are permitted.

- Through-hole: 4 x Ø .26" - .28" (6.6 - 7 mm)
- Mounting only with bolts: 4 x M6 bolts

Installation dimensions

Series	R_{LK}	H_S	Part No. Guide Trough	R_{ST}	R					
	in. (mm)	in. (mm)		in. (mm)	in. (mm)	2.16 (55)	2.48 (63)	2.95 (75)	3.94 (100)	4.92 (125)	5.91 (150)
					H_F for e-chain Bending Radius						
2208...300	10.43 (265)	5.12 (130)	**92208...300**	5.71 (145)		7.68 (195)	8.31 (211)	9.25 (235)	11.22 (285)	13.19 (335)	15.16 (385)





twisterband

up to 7000° rotary movement in the smallest spaces

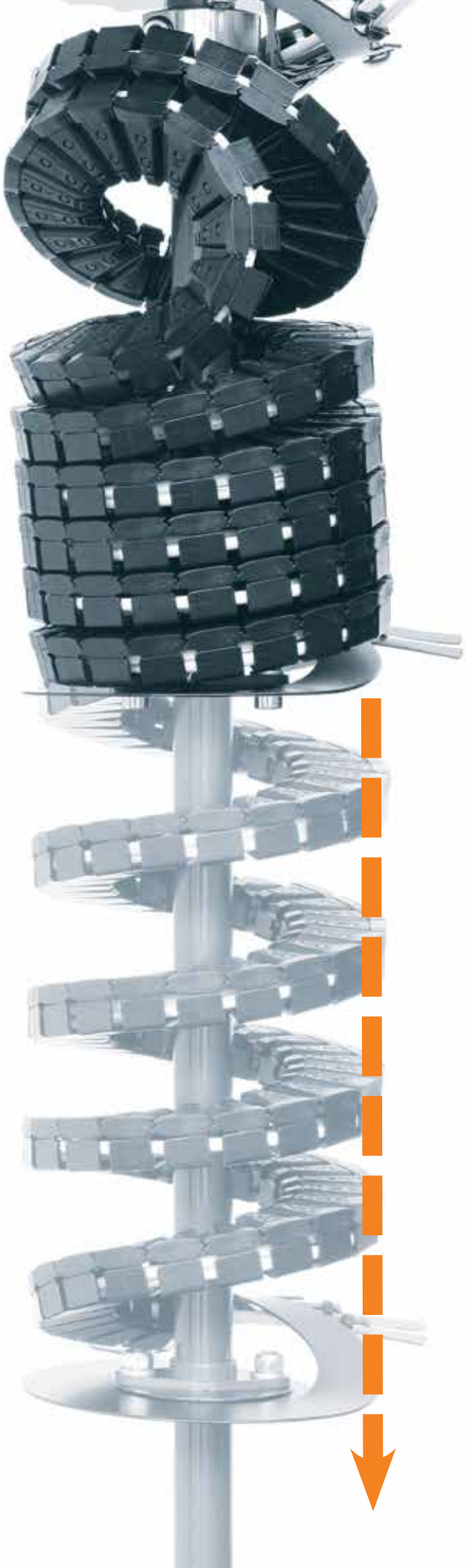
twisterband: compact, modular and cost-effective

twisterband advantages:

- Rotary movements up to 7,000°
- Rotary speeds up to 180°/s possible
- Openable with film hinge or openable "easy" design
- HD version with strong pin and hook connection for an even longer service life
- Compact, modular and lightweight
- Bands can be lengthened and shortened as required
- Minimum installation space, fits very closely around the rotary axis
- Cost-effective and easy to fill

When to use another igus® solution:

- For applications with a high fill weight
  ▶ **twisterchain system**
- For applications with multi-axis movements
  ▶ **triflex® R**
- ***RBR*** versions with a high fill weight
  ▶ **Designing**
- If a lubrication and maintenance-free slewing ring bearing for "endless" rotation is required
  ▶ **iglide® slewing ring bearings, www.igus.com/PRT**
- If shielded cables are necessary
  ▶ **Please contact us**



twisterband - 7000° rotation - Selection table

Series	Inner height *hi* in. (mm)	Inner width *Bi* in. (mm)	ø X_1 in. (mm)	ø X_2 in. (mm)	≥ *R* in. (mm)	≤ *R* in. (mm)	≤ *d1* in. (mm)	Interior separation	Opening principle
 **twisterband** e-chain® links on a strip. Openable with film hinge or openable "easy" design									
TB12.23.9	.35 (9)	**.91 (23)**	1.57 (40)	5.51 (140)	**.94 (024)**	**1.38 (035)**	.28 (7)	–	"easy" design
TB20.44.12	.47 (12)	**1.73 (44)**	1.97 (50)	8.66 (220)	**1.34 (034)**	**2.24 (057)**	.35 (9)	–	"easy" design
TB20.44.18	.71 (18)	**1.73 (44)**	1.97 (50)	8.66 (220)	**1.34 (034)**	**2.24 (057)**	.55 (14)	yes	film-hinge
TB29.27.22	.87 (22)	**1.06 (27)**	7.87 (200)	12.60 (320)	**2.72 (069)**	**3.22 (082)**	.67 (17)	yes	film-hinge
TB30.75.22	.87 (22)	**2.95 (75)**	3.54 (90)	12.99 (330)	**1.73 (044)**	**3.03 (077)**	.67 (17)	yes	film-hinge
 **twisterband HD** e-chain® links with strong pin and hook connection. Openable with film-hinge									
TBHD30.75.22	.87 (22)	**2.95 (75)**	3.54 (90)	12.99 (330)	**1.73 (044)**	**3.03 (077)**	.67 (17)	yes	film-hinge
TBHD42.135.30	1.18 (30)	**5.31 (135)**	3.54 (90)	19.69 (500)	**2.20 (056)**	**4.69 (119)**	.79 (20)	yes	film-hinge

Other sizes available upon request. X_1 =inner machine limit X_2 = outer machine limit

Available from stock. Orders ship as early as today.*

*On average 90% of orders ship the same day..

Bi = Inner width e-chain®
hi = Inner height e-chain®
X_1 = Inner machine limit
X_2 = Outer machine limit
≥ *R* = Minimum bend radius e-chain®
≤ *R* = Max. bend radius e-chain®
d1 = Max. cable diameter
XX = Number of strips

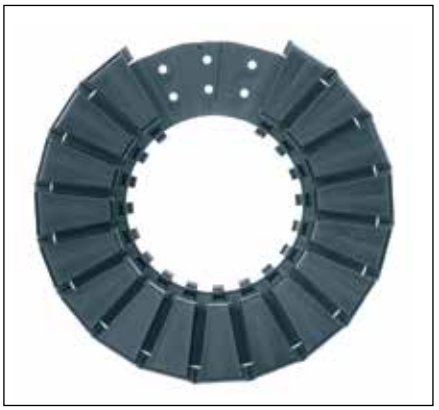
twisterband (7000°) rotation
Features - Accessories



A central shaft must be installed for horizontal orientation angles of rotation above 1,500°



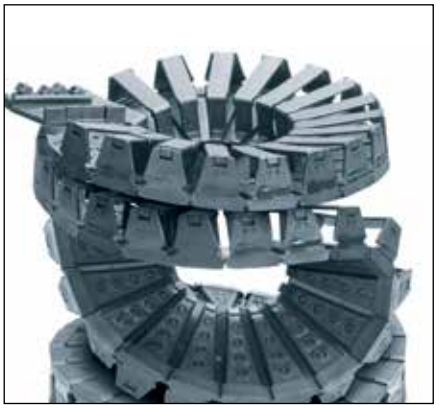
Max. angle of rotation: as a rule of thumb: each segment gives 180° = 360° more rotation



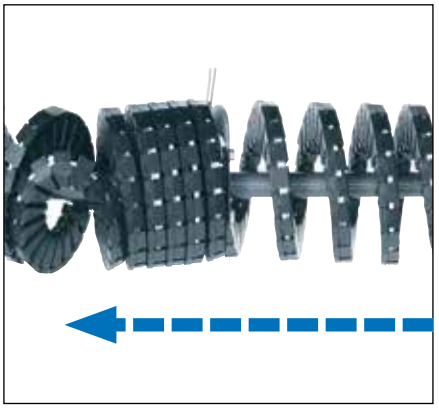
Minimum installation space, fits very closely around the rotary axis



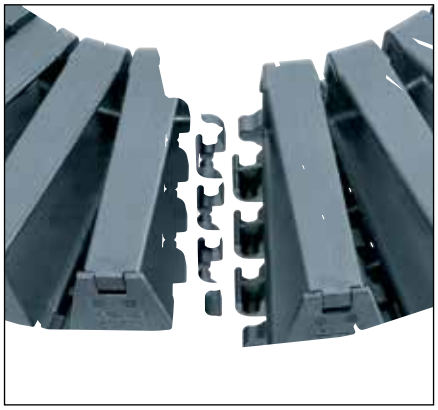
Film hinge: easy access and quick filling with cables and hoses



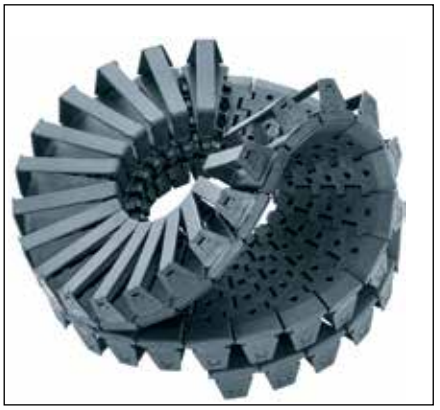
Compact, modular, cost-effective - up to 7,000° rotary movement* in the most confined spaces



Can be reliably used in various installation positions (horizontal: 7,000° and more). Limited length compensation possible



The twisterband HD is an advanced version of the standard twisterband ...



... instead of bands with integral hinges, the twisterband HD version is composed of separate e-chain® links with the pin/hook connecting system ...



... the advantage is a defined radius with higher strength.

iF product design award
2011 igus® twisterband

reddot design award
winner 2011

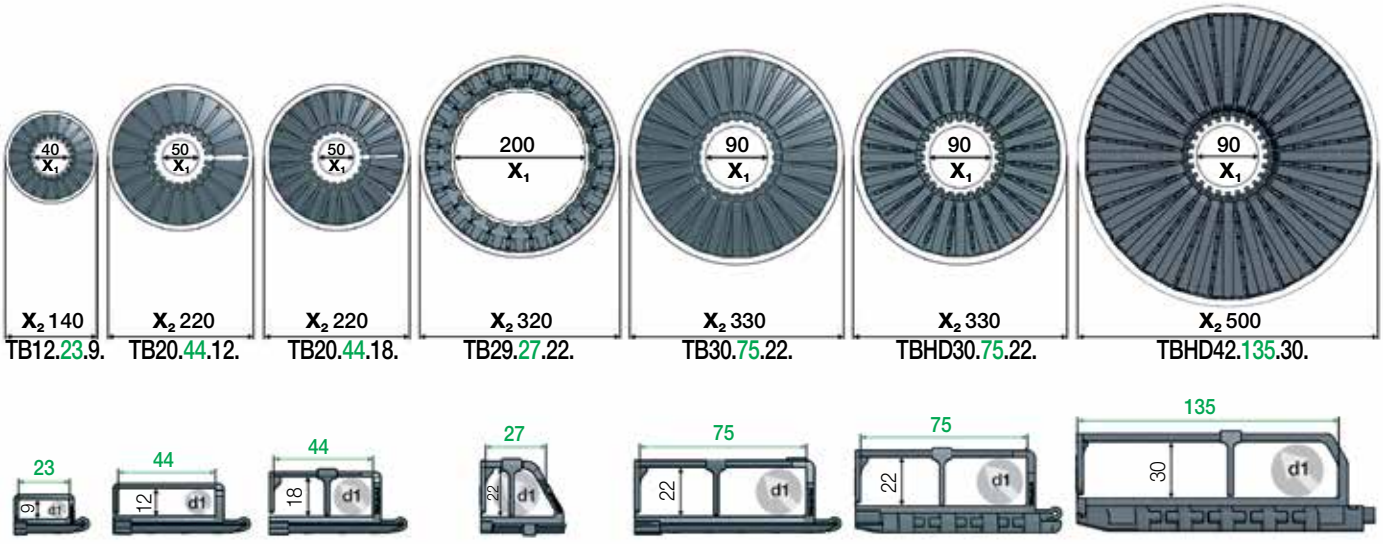
twisterband (7000°) rotation
Technical data - Size overview

Technical data

Speed / acceleration*	**180°/s**
twisterband - material - permitted temperature, igumid TE	**+32°F / +158°F (0°C / +70°C)**
twisterband HD - material - permitted temperature, igumid G	**-40°F / +248°F (-40°C / +120°C)**
Flammability class, igumid G	**VDE 0304 IIC UL94-HB**
Flammability class, igumid TE	**VDE 0304 IIC UL94-HB**

*Speed / acceleration for TB29.27. upon request

Size overview



Bi = Inner width e-chain®
hi = Inner height e-chain®
X_1 = Inner machine limit
X_2 = Outer machine limit
≥ *R* = Minimum bend radius e-chain®
≤ *R* = Max. bend radius e-chain®
d1 = Max. cable diameter
XX = Number of strips

twisterband (7000°) rotation
Advantages



****Ground- and base plates are delivered standard. They are part of the twisterband module!**

Up to 7,000° rotary movement in the smallest spaces - twisterband

With the compact igus® twisterband rotations can be achieved cost-effectively and with low wear and low maintenance, even in a confined space. Energy, data and media are securely guided. Available in 5 sizes.

- Rotary movements up to 7,000°*
- Rotary speeds up to 180°/s possible
- Compact, modular and lightweight
- Bands can be lengthened and shortened as required
- Minimum installation space, fits very closely around the rotary axis
- Can be reliably used in various installation positions (horizontal or vertical)
- Cost-effective
- Easy filling
- Ideal in combination with igus® chainflex® cables for rotary movements in very limited installation spaces

Typical industries and applications

● Cable reels ● Robots (robot arms, axis1/6, SCARA robots) ● Machine tools ● Leisure rides ● Medical equipment ● Radar and telescope equipment ● Aerospace, test, measurement, handling, lifting and installation equipment ● Wind turbines (e.g. blade adjustment) ● Wherever rotary unions are used



twisterband - Openable with film hinge or with "easy" design

Part No. twisterband	hi in. (mm)	Bi1 in. (mm)	X_1 ø in. (mm)	X_2 ø in. (mm)	≥ R in. (mm)	≤ R in. (mm)	≤ d1 in. (mm)	Opening principle
TB12. 23 .9. XX .01.0	.35 (9)	.91 (23)	1.57 (40)	5.51 (140)	.94 (024)	1.38 (035)	.28 (7)	"easy" design
TB20. 44 .12. XX .01.0	.47 (12)	1.73 (44)	1.97 (50)	8.66 (220)	1.34 (034)	2.24 (057)	.35 (9)	"easy" design
TB20. 44 .18. XX .01.0	.71 (18)	1.73 (44)	1.97 (50)	8.66 (220)	1.34 (034)	2.24 (057)	.55 (14)	film-hinge
TB29. 27 .22. XX .01.0*	.87 (22)	1.06 (27)	7.87 (200)	12.60 (320)	2.72 (069)	3.22 (082)	.67 (17)	film-hinge
TB30. 75 .22. XX .01.0	.87 (22)	2.95 (75)	3.54 (90)	12.99 (330)	1.73 (044)	3.03 (077)	.67 (17)	film-hinge

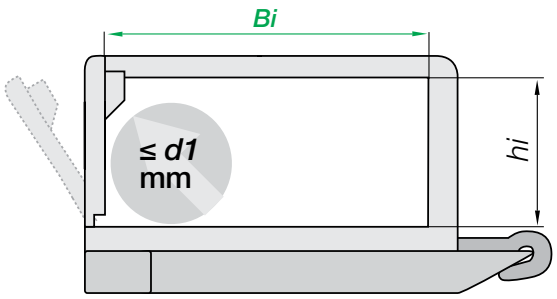
More twisterband sizes upon request! **Note**: Series TB29.27.22. Rotary movement up to max. 720°

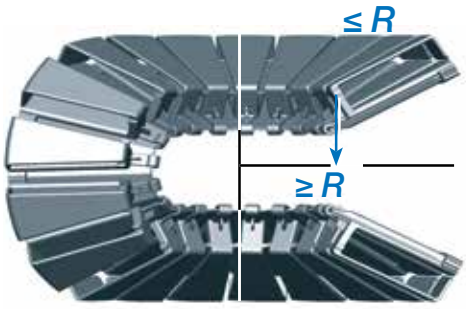
Base plates are delivered as standard as part of the twisterband module!

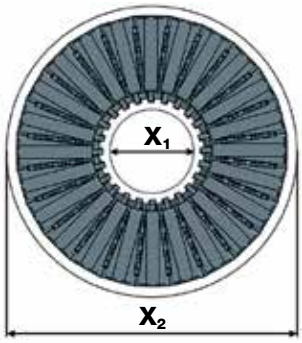
X_1 = ø inner machine installation space X_2 = ø outer machine installation space

Complete Part No. with required number of strips **XX**. Example: **TB20.44.12.6.01.0**

Installation dimensions





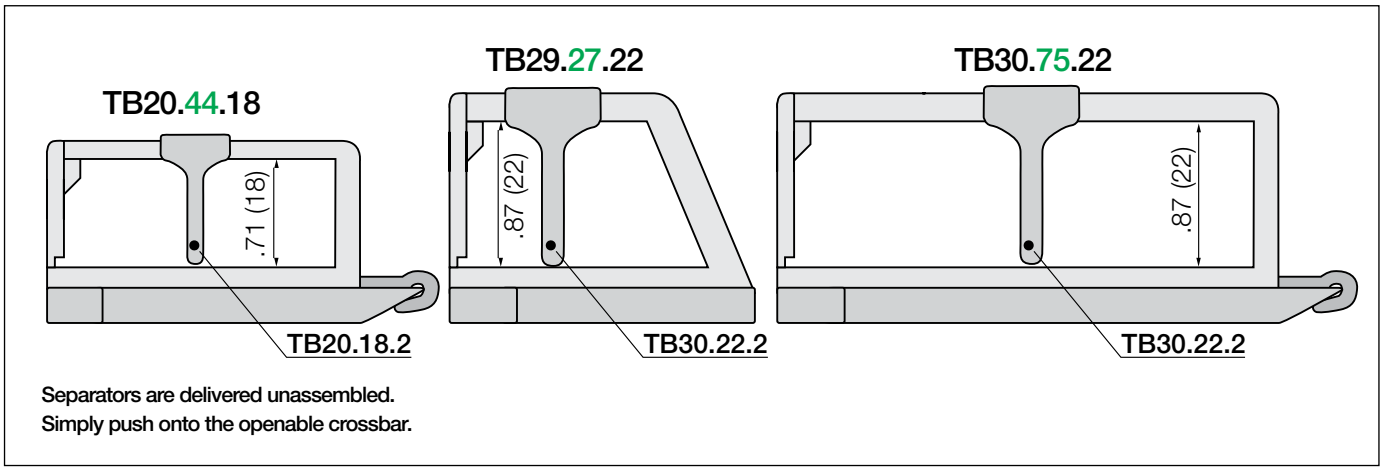


Calculation: number of strips depends on angle of rotation (please always round up number of strips)

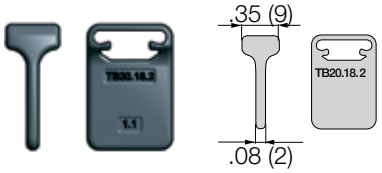
TB12: XX ≈	$\frac{XXXX°}{360}$ + 2 =	Example: XX ≈	$\frac{1200°}{360}$ + 2 =	Result: XX ≈ 6 strips
TB20: XX ≈	$\frac{XXXX°}{340}$ + 2 =	Example: XX ≈	$\frac{1200°}{340}$ + 2 =	Result: XX ≈ 6 strips
TB29: XX ≈	$\frac{XXXX°}{180}$ + 2 =	Example: XX ≈	$\frac{720°}{180}$ + 2 =	Result: XX ≈ 6 strips
TB30: XX ≈	$\frac{XXXX°}{180}$ + 6 =	Example: XX ≈	$\frac{1200°}{180}$ + 6 =	Result: XX ≈ 13 strips

XXXX° = Angle of rotation

twisterband (7000°) rotation
Accessories
Interior separation for twisterband



Separators are delivered unassembled.
Simply push onto the openable crossbar.

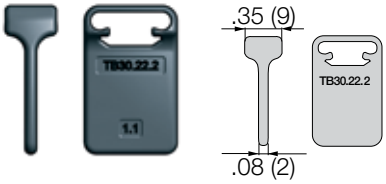


Separator, wide base

Unassembled	**Part No. TB20.18.2**

Separators

To fit, simply open the e-chain®, insert a cable and press the separator onto the crossbar. Then add more cables. The separators provide a clear, cable-friendly interior separation.



Separator, wide base

Unassembled	**Part No. TB30.22.2**



Easy opening and filling of the twisterband with a click or with the "easy" design. Simply press separators on and add more cables. The separators provide a clear, cable-friendly interior separation.

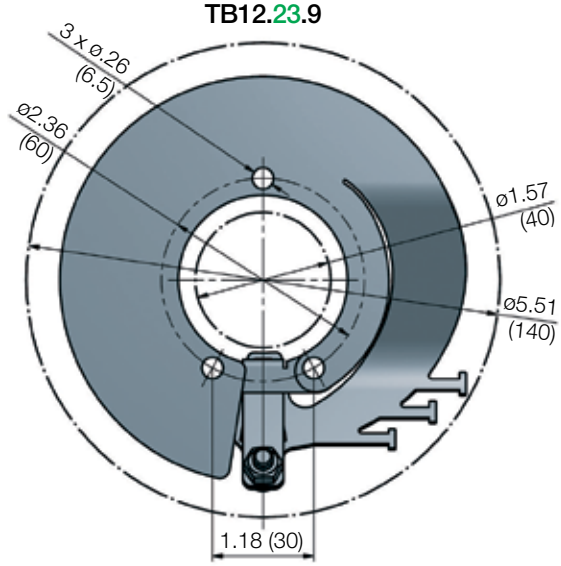


igus® twisterband TB30 for circular movements up to 360°, E2 mini and E2/000 e-chains® are used in this loading and unloading unit

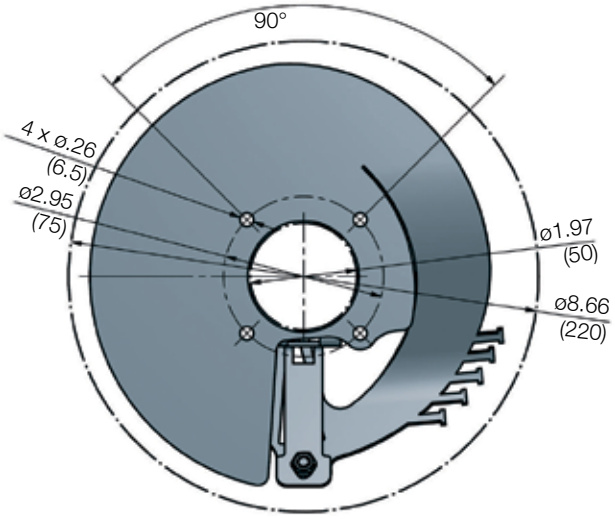
twisterband (7000°) rotation
Accessories
Base plates with strain relief for twisterband

Steel base plate dimensions for twisterband HD (for TB29.27.22 upon request)

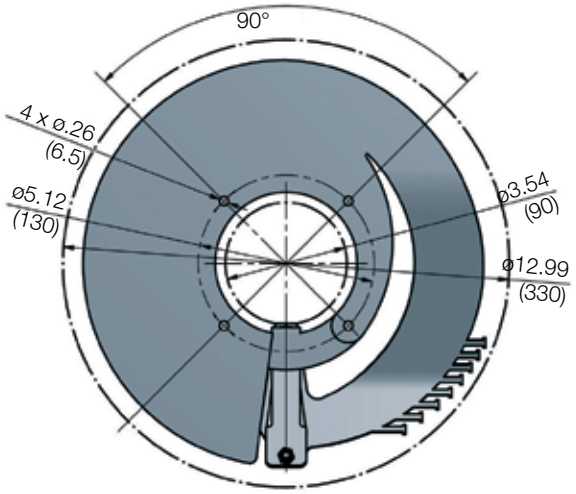
TB12.23.9

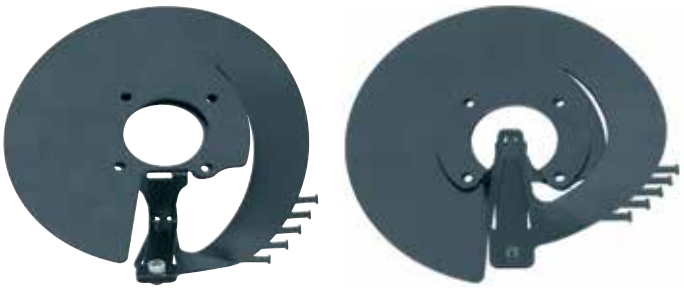


TB20.44.12 / TB20.44.18



TB30.75.22

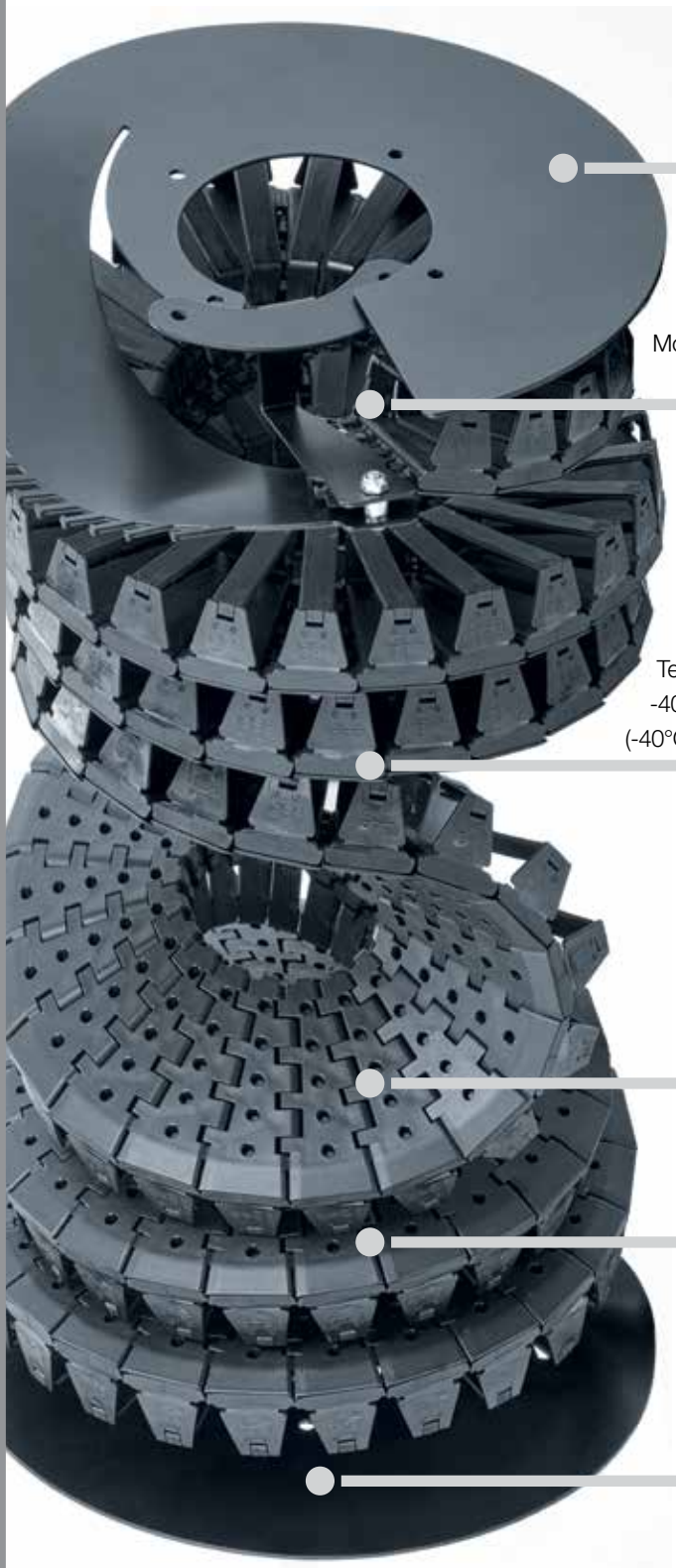




Base plates are delivered as standard as part of the twisterband module



twisterband application of two systems mounted above one another. This space-saving solution allows double filling space with a constant outer diameter of the system



**Base plates are delivered as standard as part of the twisterband module!

Rotary movement in the most confined spaces, now even stronger - twisterband HD

Instead of strips, the twisterband HD has a strong pin/hook connection between the chain links. Longer service life and higher filling are possible.

- Continuous cable guidance in rotational movements
- Strong pin/hook connection for high load and long service life
- For routing of electrical, fiber optic and pneumatic cables in one system
- Stop-dogs for defined bend radius
- Cable-friendly due to defined radius stop
- Max. rotating speed: 180°/s

Typical industries and applications

● Machining heads on machine tools ● Rotary tables ● Axis 6 on robots ● Generally all applications that currently work with slip rings



twisterband - Openable with film hinge

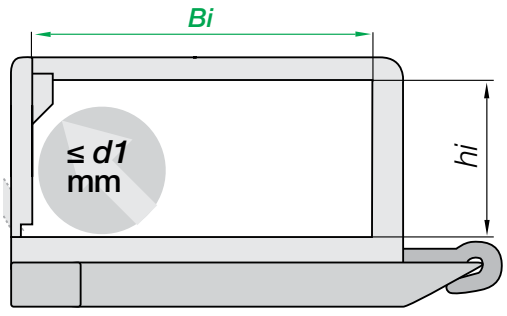
Part No. twisterband	hi in. (mm)	Bi1 in. (mm)	X_1 ø in. (mm)	X_2 ø in. (mm)	≥ R in. (mm)	≤ R in. (mm)	≤ d1 in. (mm)	Opening principle
TBHD30. 75 .22. XXX .01.0	.87 (22)	2.95 (75)	3.54 (90)	12.99 (330)	1.73 (044)	3.03 (077)	.67 (17)	film-hinge
TBHD42. 135 .30. XXX .01.0	1.18 (30)	5.31 (135)	3.54 (90)	19.69 (500)	2.20 (056)	4.69 (119)	.79 (20)	film-hinge

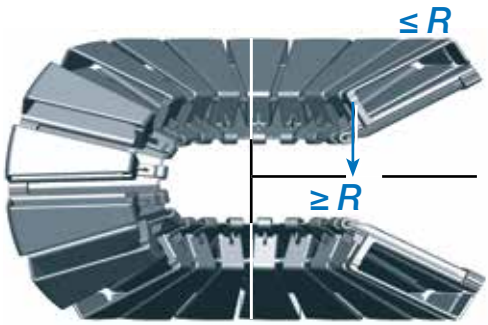
Base plates are delivered as standard as part of the twisterband module!

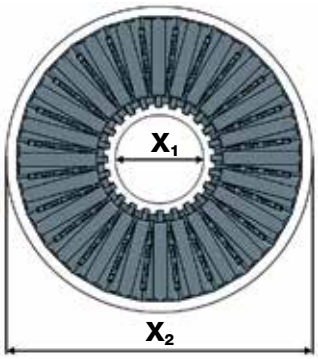
X_1 = ø inner machine installation space X_2 = ø outer machine installation space

Complete Part No. with required number of strips **XXX**. Example: **TBHD30.75.22.180.01.0**

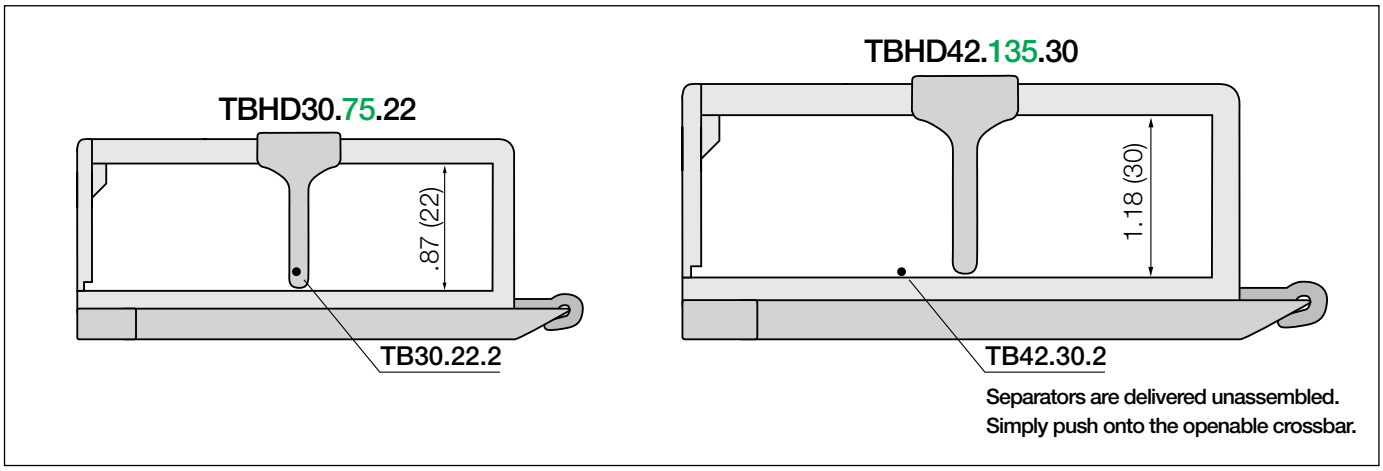
Installation dimensions



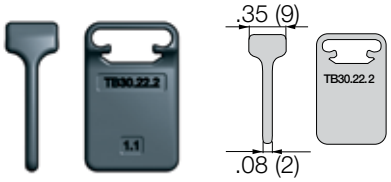




twisterband
Product range - Installation dimensions
Interior separation for twisterband HD



Separators are delivered unassembled.
Simply push onto the openable crossbar.

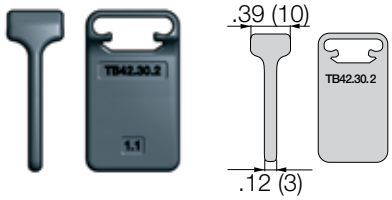


Separator, wide base

Unassembled	**Part No. TB30.22.2**
Assembled	**Part No. TB30.22.2.1**

Separators

To fit, simply open the e-chain®, insert a cable and press the separator onto the crossbar. Then add more cables. The separators provide a clear, cable-friendly interior separation.



Separator, wide base

Unassembled	**Part No. TB42.30.2**



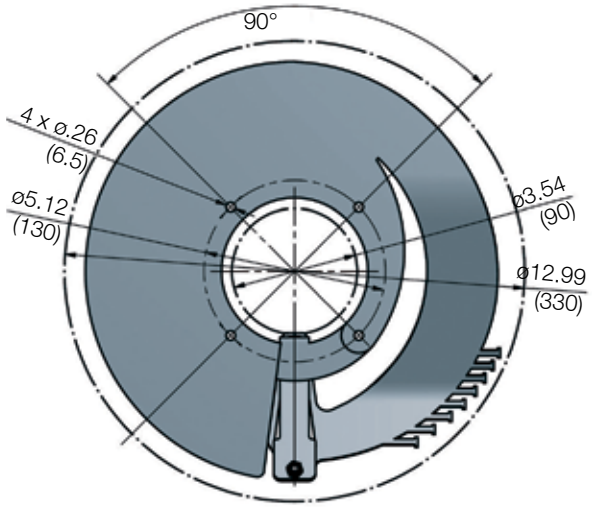
Easy opening and filling of the twisterband with a click or with the "easy" design. Simply press separators on and add more cables. The separators provide a clear, cable-friendly interior separation.



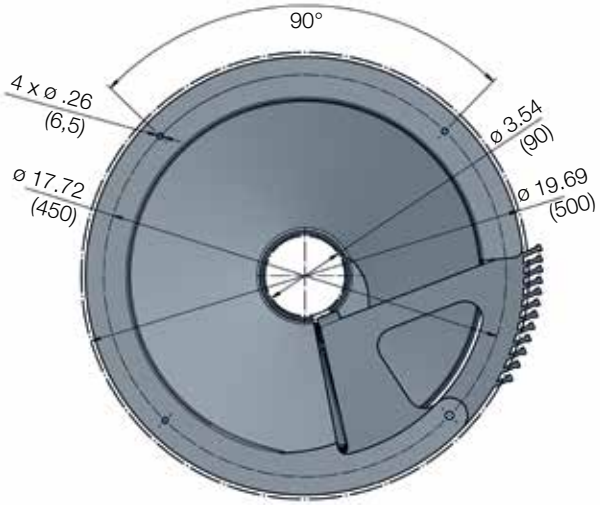
igus® twisterband and other e-chains® in a wood working machine

Steel base plate dimensions for twisterband HD
(for TB29.27.22 upon request)

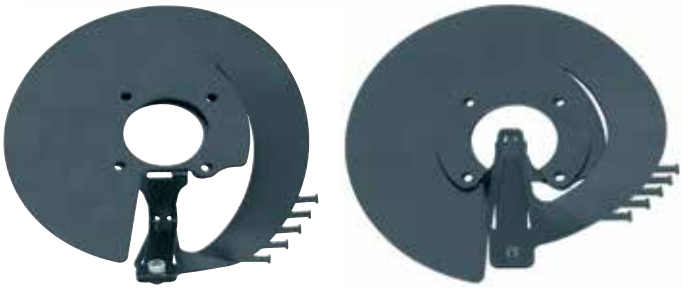
TBHD30.75.22



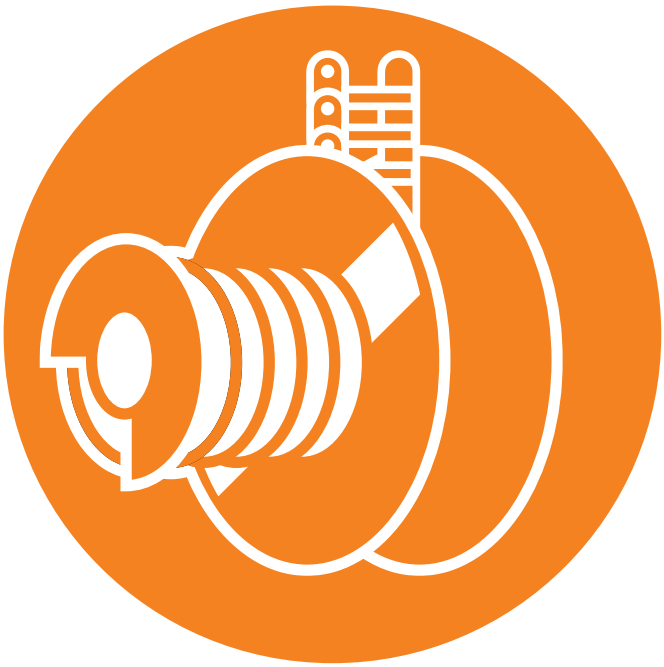
TBHD42.135.30



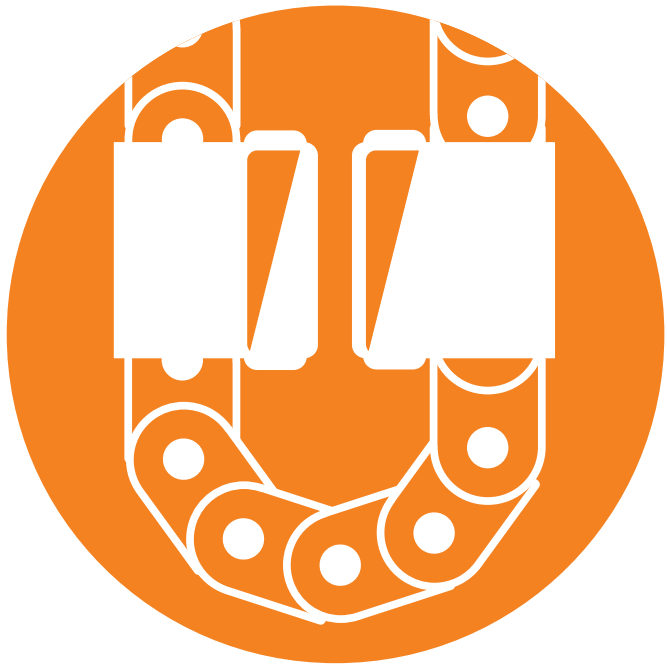




Base plates are delivered as standard as part of the twisterband module!



Solutions for
multi-axis motion



Solutions for
vertical motion

igus®
solutions for:

- Multi-axis motion
- Vertical motion
- Horizontal motion
- Predictive maintenance, condition monitoring and engineered projects

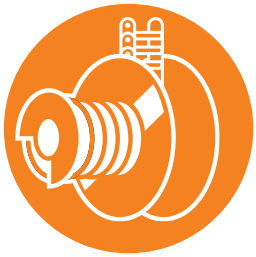


Solutions for
horizontal motion

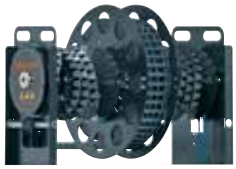


Predictive maintenance,
condition monitoring
and engineered projects

igus® solutions for special applications | Overview



Multi-axis motion



e-spool standard and HD - flexible use

- Telescopic/retractable applications
- Theater, stage and lighting technology
- Space-saving alternative to zig-zag solutions



e-spool compact - space-saving, spring driven

- Retractable applications - linear or rotary
- Small circular movements



e-spool for manual operation - reliable and space-saving

- Robot teach pendants
- Workstations
- Assembly lines



e-spool power - motor driven for long extension lengths

- Theater, stage and lighting technology
- Indoor and outdoors cranes



Vertical motion



liftband - cable guidance up to 13m height with limited installation space

- Theatre and stage technology
- Indoor cranes
- Mobile telescopic antennas



guidelok slimline P - safe vertical guidance

- Storage and retrieval units for high-bay warehouses
- Lifts
- Elevators
- Construction and crane lifts
- Hoists
- Automatic mini-load system



guidelok slimline P.S - lightweight plastic construction, cost-effective

- Storage and retrieval units for high-bay warehouses
- Lifts
- Construction and crane lifts
- Automated car parks
- Ship lifts

More information
▶ **www.igus.eu/glsl-ps**



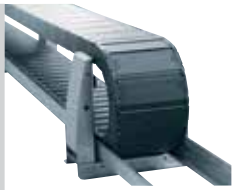
guidelite GLV - lighter, lower noise, simpler and less cost

- Shuttle systems
- High bay warehouse
- Lifts
- Hoists

More information
▶ **www.igus.eu/GLV**

igus® solutions for special applications | Overview

Horizontal motion



guidelok horizontal - upper run guide for long travels

- Machine tools
- Heavy chip environments
- Wherever a gliding application is not recommended



basic flizz® - enclosed solution for long travels

- Wastewater and sewage treatment works (longitudinal scrapers, sand/grease traps)
- Electroplating facilities
- Cranes
- River locks



micro flizz® - safe guidance of energy, data and air

- Storage and retrieval units for high-bay warehouses
- Indoor cranes
- Industrial gates
- Workplace equipment
- Wastewater and sewage treatment plants
- Camera systems
- Sliding doors

Condition monitoring and engineered projects



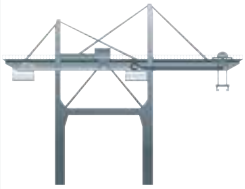
isense smart plastics for predictive maintenance New

- Wherever predictive maintenance is required
- Harbor installations
- Cranes
- Car plants
- Gantries



PPDS - Push/Pull Detection System

- Downtime sensitive plants, such as conveyor systems in power plants
- Waste incineration systems
- Chemical plants
- Cranes



Modular projects - special solutions from stock

- Cranes
- Offshore
- And many other industries


igus e-spool
SP1.400.4000.01.R.0
product
design award
2013



Solutions for multi-axis motion

e-spool

The alternative to cable reeling drums - reduce cable wear and reliably guide different media together in one system

e-spool advantages:

- Energy supply is possible in all directions (horizontal, vertical, diagonal)
- More versatile and flexible to use than cable reeling drums
- Different media (power, data and fluids) can be routed together in one system
- If travels must be kept free
- If the technical system is to be hidden behind false ceilings/floors
- Very well suited for use in theatre and stage technology

When to use another system:

- With very high loads that have to be guided vertically
  ▶ **zig-zag applications,**
- For high dynamics with lateral accelerations
  ▶ **guidelok slimline P**

Special solutions - Movements in all directions
e-spool
Overview - Advantages



The cable reel without a slip ring - igus® e-spool

Route many different cables in very narrow spaces. e-spool uniquely combines two different energy supply systems: one standard e-chain® is guided by one roller and always provides the precisely correct length and tension of the energy supply system through an integrated retaining spring. In the starting position, the e-chain® is rolled up to save space. The twisterband connects the roller with the shaft block, which serves as an interface to the supply side. With twisterband no slip ring is needed. This makes data transmission highly reliable, while enabling a high degree of flexibility at the same time. Different media and cable/hose diameters can be carried side by side in one drum - diameters up to .67" (17mm)

- No tensile load of the cables
- Energy supply in all possible directions (horizontal, vertical, diagonal)
- Space-saving, no "e-chain® junction" - e-chain® rolled into the home position, the paths remain free
- Cables can be retroactively added or changed
- Alternative to zig-zag solutions
- Max. extension and retraction speed: 3.28 ft. (1 m/s)
- Large standard product range and special projects available

Typical industries and applications

- Telescopic/retractable applications
- Theater, stage and lightiing technology
- Space-saving alternative to zig-zag applications

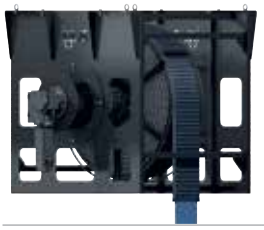
iF product design award
2013 igus® e-spool

product design award 2013

Available from stock. Orders ship as early as today.*

*On average 90% of orders ship the same day..

Special solutions - Movements in all directions
e-spool
Product Range

Part No. with 1 twisterband	Part No. with 2 twisterbands	Travel length ≤ ft. (m)	Drum ø in. (mm)	Cable length ft. (m)
		**e-spool standard** flexible use (Illustration shows e-spool with 1 twisterband)		
SP1-600-	SP2-600-	13.12 (4)	23.62 (600)	28.22 (8.6)
SP1-700-	SP2-700-	22.97 (7)	27.56 (700)	38.39 (11.7)
SP1-850-	SP2-850-	45.93 (14)	33.46 (850)	65.29 (19.9)
		**e-spool HD** flexible use, with increased retraction force (Illustration shows e-spool with 1 twisterband HD)		
SPHD1-600-	SPHD2-600-	13.12 (4)	23.62 (600)	28.22 (8.6)
SPHD1-700-	SPHD2-700-	22.97 (7)	27.56 (700)	38.39 (11.7)
SPHD1-850-	SPHD2-850-	45.93 (14)	33.46 (850)	65.29 (19.9)
		**e-spool compact** compact, space-saving		
SP1-240-	–	6.56 (2)	9.45 (240)	13.12 (4.0)
SP1-400-	–	13.12 (4)	15.75 (400)	21.65 (6.6)
		**e-spool for manual operation** for applications where only one cable or hose is pulled out manually		
SPC1-300-		16.41 (5)	11.81 (300)	10.83 - 27.23 (3.3 - 8.3)
		**e-spool power** motor-driven, for long extension lengths		
e-spool power		1.38 (35)	upon request	upon request

Special solutions - Movements in all directions
e-spool
Technical Data - Order Example

Part number structure

SP1-600-4000-02-R-0

- 1 twisterband
- Drum diameter ø
- Max. extension length
- Extension R / L
- Standard color black

Standard-System with a single twisterband with 23.62" (600 mm) drum diameter, and 157.5" (4000 mm) maximum extension length, extension right

Part number structure

SP2-600-4000-02-R-0

- 2 twisterbands
- Drum diameter ø
- Max. extension length
- Extension R / L
- Standard color black

Standard-System with two twisterbands with 23.62" (600 mm) drum diameter, and 157.5" (4000 mm) maximum extension length, extension right

Part number structure

SPHD1-700-7000-02-L-0

- 1 twisterband -HD
- Drum diameter ø
- Max. extension length
- Extension R / L
- Standard color black

HD-Version with a single twisterband with 27.56" (700 mm) drum diameter, and 275.6" (7000 mm) maximum extension length, extension left

Part number structure

SPHD2-700-7000-02-L-0

- 2 twisterbands -HD
- Drum diameter ø
- Max. extension length
- Extension R / L
- Standard color black

HD-Version with two twisterbands with 27.56" (700 mm) drum diameter, and 275.6" (7000 mm) maximum extension length, extension left

Technical Data

Speed	max. 4.92 ft/s (1.5 m/s)
Acceleration	max. 6.56 ft/s² (2 m/s²)
Lateral speed	max. 3.28 ft/s (1 m/s)
Lateral acceleration (radial / axial)	max. 3.28 ft/s² (1 m/s²) max.0.82 ft/s² (0.25 m/s²)

Details of material properties
➤ **Chapter 1**

Special solutions - Movements in all directions
e-spool
Filling Guidelines

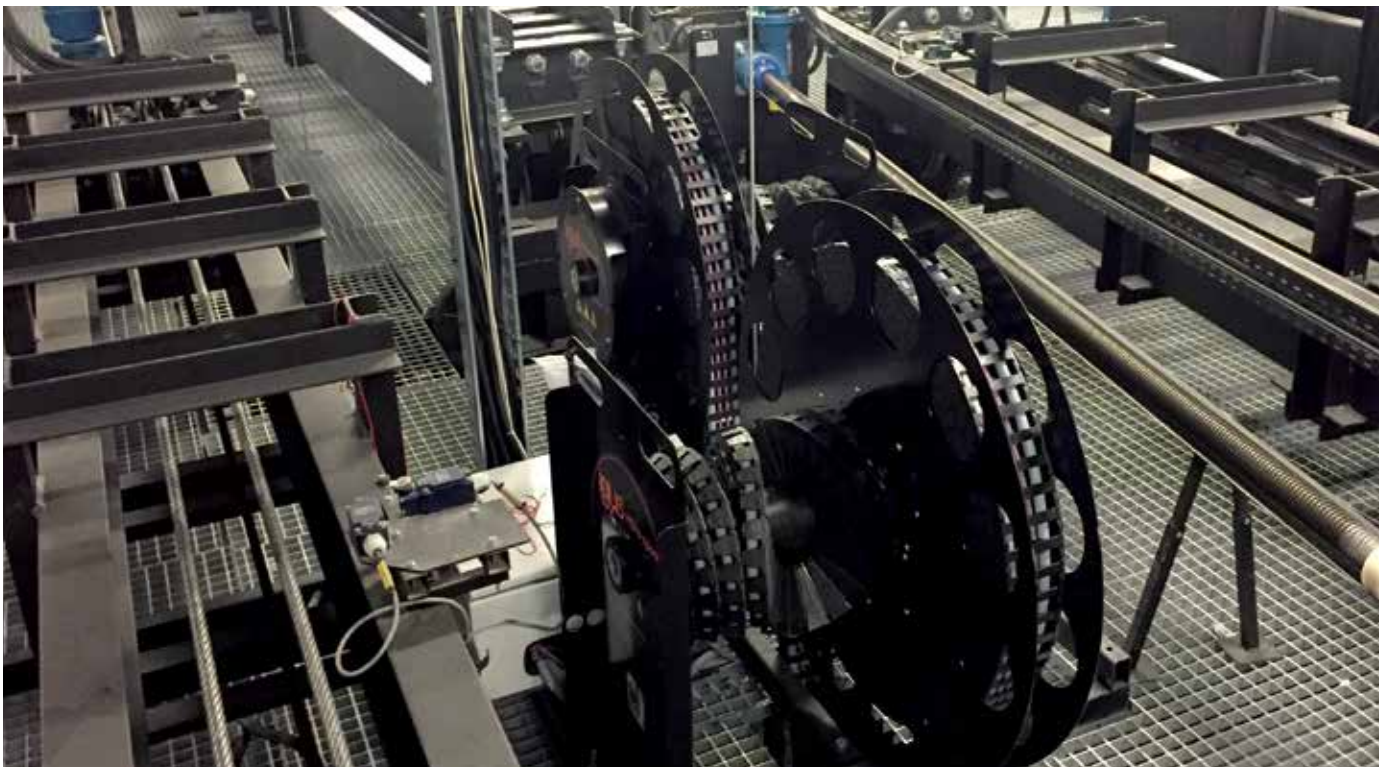
Filling guidelines for the e-spool

In view of the special mechanical stress in an e-spool, we recommend using igus® chainflex® cables. We also recommend that you observe the following filling rules:

1. Only put cables side by side in the linear chain - never stack them!
2. Where possible, cables with a TPE outer jacket should be used for unshielded cables.
3. Shielded cables should be from the CFROBOT range
4. The maximum bend radius of the twisterband must be accounted for
5. Where possible, use separators to protect cables against cross-over and abrasion against other cables. To save space, install the separators alternately in segments positioned one behind the other. Repeat the separators in every 4th segment.
6. Insert cables sorted by diameter and/or bend radius - insert, small ones in the center then increasingly larger ones towards the outside
7. Apply strain relief to both ends of the cable - when using a cable tie for strain relief, please ensure the head of the cable tie is underneath to avoid cable damage
8. Always install cables in the twisterband close to the axis of rotation with space on the outside.
9. Always install cables in the twisterband with a slight gap from the axis of rotation

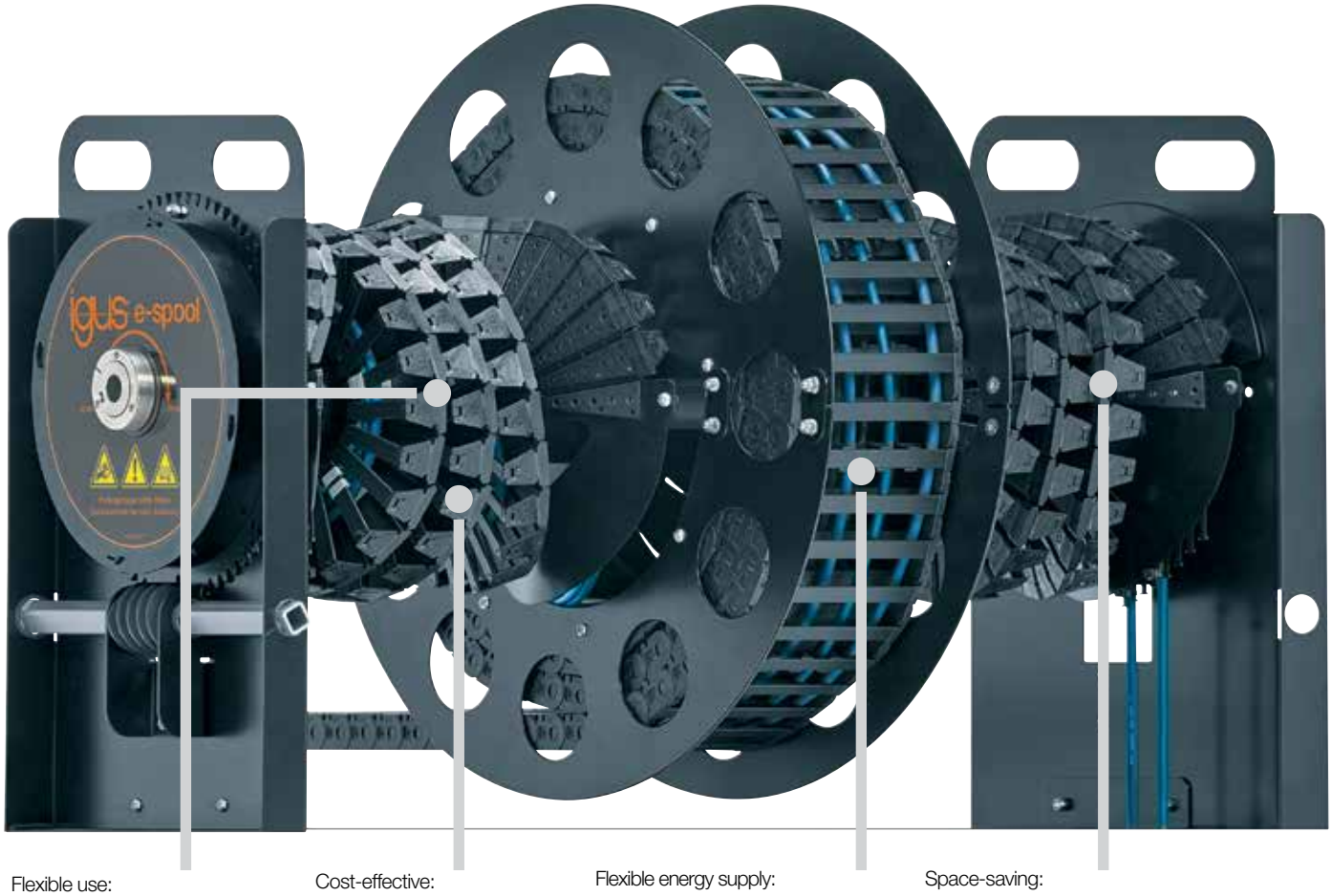
Installation instructions

For applications that move horizontally, a smooth surface is needed for the e-chain® to travel over.



e-spool - the solution for stage and theater technology. Supplying energy, data and fluids without interruption. As shown here, at the Cultural and Congress Centre in Toruń (Poland). A total of ten igus® HD e-spool systems have been installed

Special solutions - Movements in all directions
e-spool - Standard and HD
Overview - Advantages



Flexible use:
Energy supply possible in all directions

Cost-effective:
twisterband enables rotary movement

Flexible energy supply:
guidance of all media in one system

Space-saving:
e-chain® rolled into the home position, the paths remain free

Flexible use - igus®
e-spool standard and HD

With igus® e-spools, cables are wound up in an e-chain® to save space. Various media can be supplied without interruption by the use of the twisterband. Adjustments and extensions of the filling are also possible at any time afterwards.

- Flexible energy supply - guidance of different media in one system
- Flexible use - energy supply in any direction is possible
- Cost-effective - twisterband enables rotary movement
- Space-saving - e-chain® retracts into a compact unit
- No tensile load on the cables
- Cables can be retrospectively added or changed

Typical industries and applications

- Telescopic/retractable applications
- Theater, stage and lighting technology
- Space-saving alternative to zig-zag applications

iF product design award
2013 igus® e-spool

Reduce cable wear and reliably guide different media together

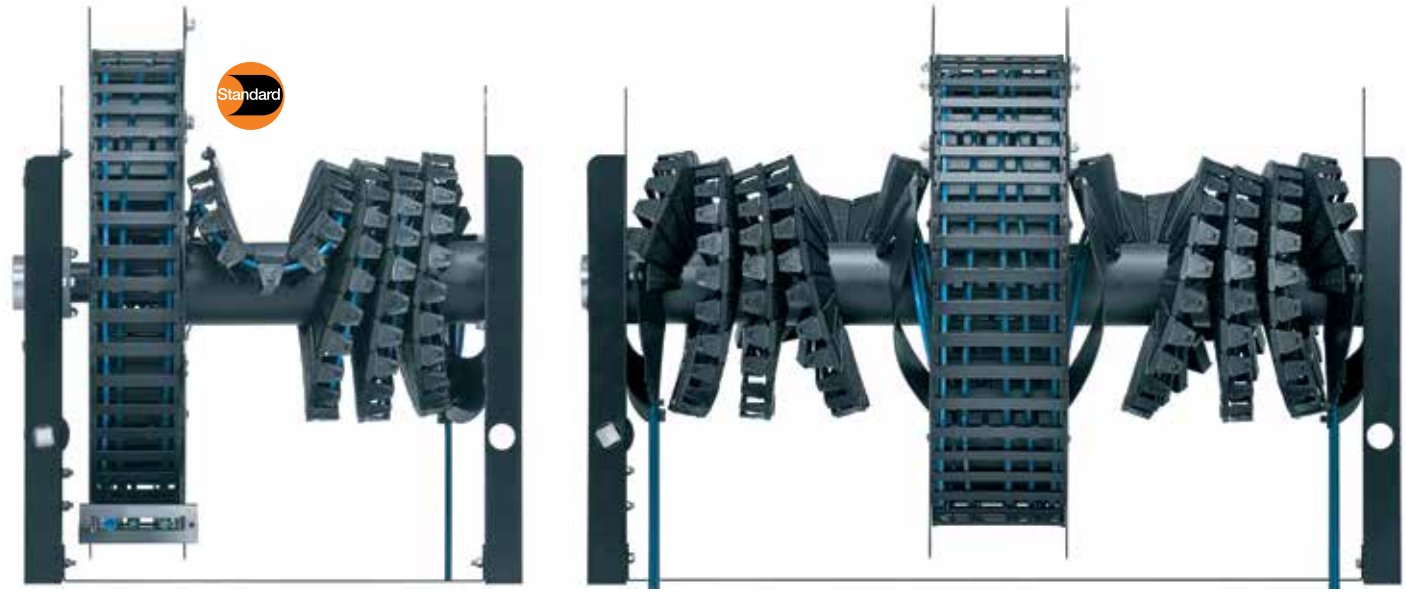


Illustration shows e-spool standard with 1 and 2 twisterbands

e-spool standard - With e-chain® and 1 or 2 twisterbands

Part No. e-spool with **1 twisterband, extension right**	Part No. e-spool with **1 twisterband, extension left**	*Bi* in. (mm)	*hi* in. (mm)	Travel length ≤ ft. (m)	SP1 lbs. (kg)
SP1-600-4000-03-**R**-0	SP1-600-4000-03-**L**-0	2.95 (75)	.83 (21)	13.12 (4)	≈ 72.75 (33.0)
SP1-700-7000-03-**R**-0	SP1-700-7000-03-**L**-0	2.95 (75)	.83 (21)	22.9 (7)	≈ 83.78 (38.0)
SP1-850-14000-03-**R**-0	SP1-850-14000-03-**L**-0	2.95 (75)	.83 (21)	45.9 (14)	≈ 105.84 (48.0)

Maximum cable and hose diameters: .67 (17mm)
The max. bend radii of 1.73 (44mm) in the inner radius and 3.03 (77mm) in the outer radius should be observed.

Part No. e-spool with **2 twisterbands, extension right**	Part No. e-spool with **2 twisterbands, extension left**	*Bi* in. (mm)	*hi* in. (mm)	Travel length ≤ ft. (m)	SP2 lbs. (kg)
SP2-600-4000-03-**R**-0	SP2-600-4000-03-**L**-0	4.92 (125)	.83 (21)	13.12 (4)	≈ 88.20 (40.0)
SP2-700-7000-03-**R**-0	SP2-700-7000-03-**L**-0	4.92 (125)	.83 (21)	22.9 (7)	≈ 99.23 (45.0)
SP2-850-14000-03-**R**-0	SP2-850-14000-03-**L**-0	4.92 (125)	.83 (21)	45.9 (14)	≈ 121.28 (55.0)

Maximum cable and hose diameters: .67 (17mm)
The max. bend radii of 1.73 (44mm) in the inner radius and 3.03 (77mm) in the outer radius should be observed

Note: If the e-chain® extension is upwards, igus® recommends the standard e-spool. If the e-chain® extension is vertical or horizontal, the application should be discussed with your igus® engineer. The HD version with greater retraction force may be required.

Special solutions - Movements in all directions
e-spool HD - SPHD1 • SPHD2
Product Range

Reduce cable wear and reliably guide different media together

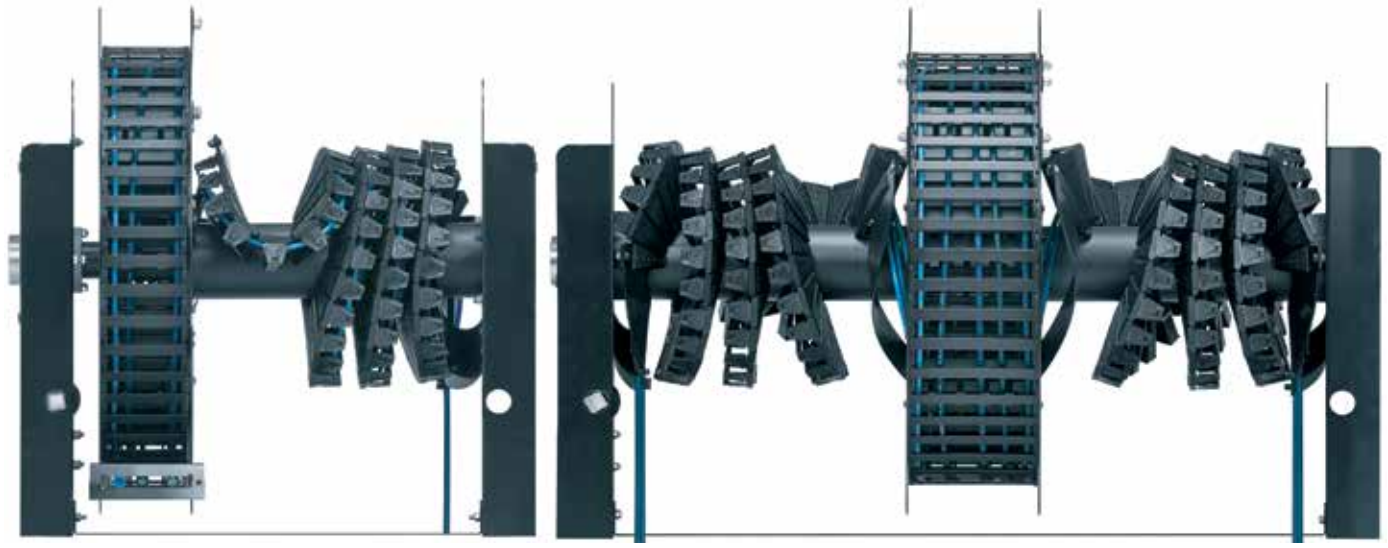


Illustration shows e-spool standard with 1 and 2 twisterbands

e-spool HD - With e-chain® and 1 or 2 twisterbands

Part No. e-spool with **1 twisterband, extension right**	Part No. e-spool with **1 twisterband, extension left**	*Bi* in. (mm)	*hi* in. (mm)	Travel length ≤ ft. (m)	SP1 lbs. (kg)
SPHD1-600-4000-03-**R**-0	SPHD1-600-4000-03-**L**-0	2.95 (75)	.83 (21)	13.12 (4)	≈ 72.75 (33.0)
SPHD1-700-7000-03-**R**-0	SPHD1-700-7000-03-**L**-0	2.95 (75)	.83 (21)	22.9 (7)	≈ 83.78 (38.0)
SPHD1-850-14000-03-**R**-0	SPHD1-850-14000-03-**L**-0	2.95 (75)	.83 (21)	45.9 (14)	≈ 105.84 (48.0)

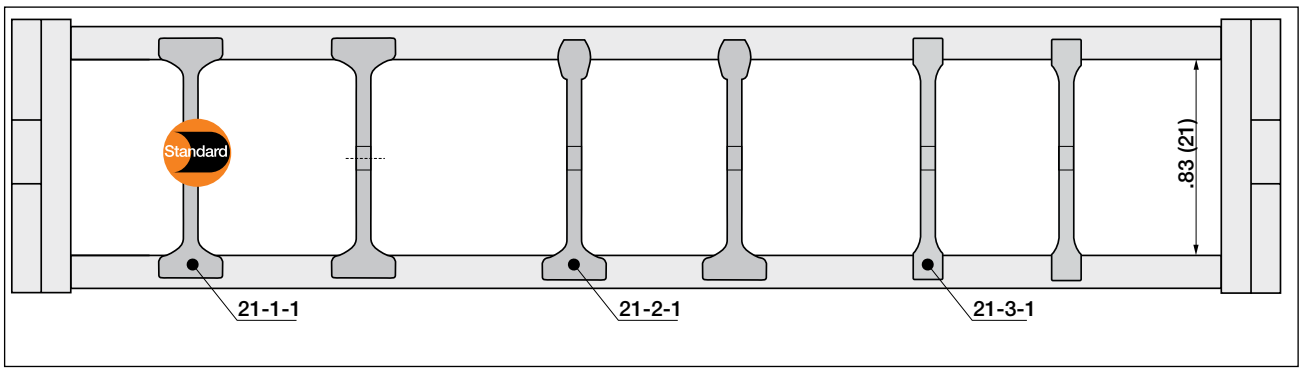
Maximum cable and hose diameters: .67 (17mm)
The max. bend radii of 1.73 (44mm) in the inner radius and 3.03 (77mm) in the outer radius should be observed.

Part No. e-spool with **2 twisterbands, extension right**	Part No. e-spool with **2 twisterbands, extension left**	*Bi* in. (mm)	*hi* in. (mm)	Travel length ≤ ft. (m)	SP2 lbs. (kg)
SPHD2-600-4000-03-**R**-0	SPHD2-600-4000-03-**L**-0	4.92 (125)	.83 (21)	13.12 (4)	≈ 88.20 (40.0)
SPHD2-700-7000-03-**R**-0	SPHD2-700-7000-03-**L**-0	4.92 (125)	.83 (21)	22.9 (7)	≈ 99.23 (45.0)
SPHD2-850-14000-03-**R**-0	SPHD2-850-14000-03-**L**-0	4.92 (125)	.83 (21)	45.9 (14)	≈ 121.28 (55.0)

Maximum cable and hose diameters: .67 (17mm)
The max. bend radii of 1.73 (44mm) in the inner radius and 3.03 (77mm) in the outer radius should be observed

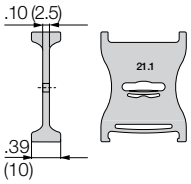
Note: If the e-chain® extension is upwards, igus® recommends the standard e-spool. If the e-chain® extension is vertical or horizontal, the application should be discussed with your igus® engineer. The HD version with greater retraction force may be required.

Special solutions - Movements in all directions
e-spool - Standard and HD
Overview - Advantages



In the standard configuration separators are assembled every 5th e-chain® link
Note: No lateral spacing to side link is necessary



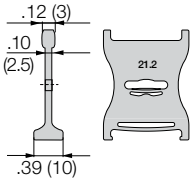


Separator, wide base

Unassembled	**Part No. 21-1**
Assembled	**Part No. 21-1-1**

- **Standard separator 21-1 for all applications**
  Separator with wide base for maximum locking strength and safe standing in e-chains®.



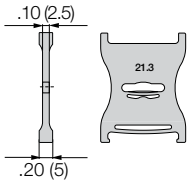


Separator, narrow head

Unassembled	**Part No. 21-2**
Assembled	**Part No. 21-2-1**

- **Separator 21-2 For even faster installation**
  is used when vertical and horizontal separation is required. Due to its slot, it allows basic vertical/horizontal shelving arrangements.





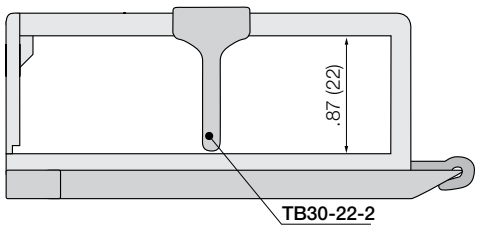
Separator, narrow base

Unassembled	**Part No. 21-3**
Assembled	**Part No. 21-3-1**

- **Separator 21-3 For many thin cables**
  is used when vertical and horizontal separation is required. Due to its slot, it allows basic vertical/horizontal shelving arrangements.



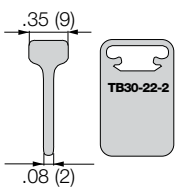
TB30-75-22



twisterband interior separation - separators are delivered unassembled.
Simply pushed onto the openable crossbar. Separators are assembled every 4th e-chain® link.

Separators are delivered unassembled. Simply push them onto the crossbar!



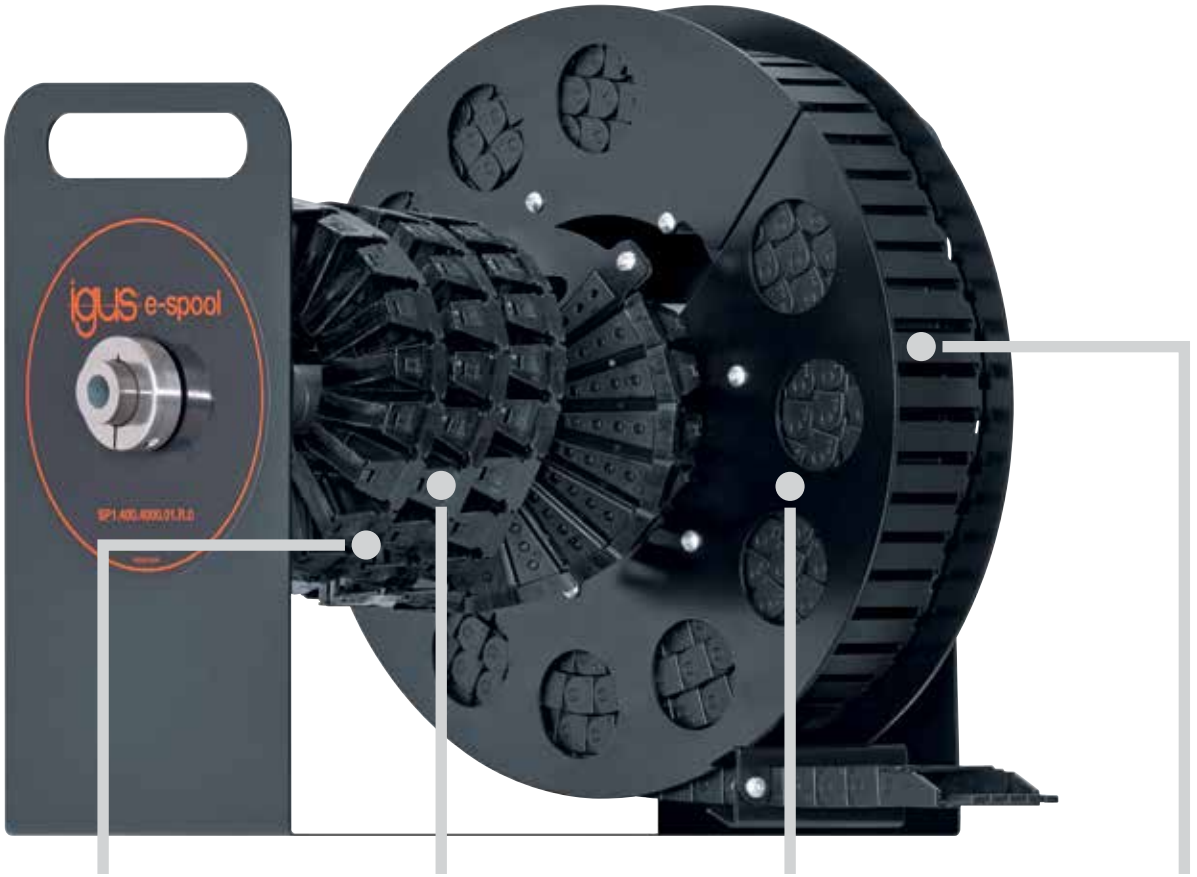


Separator for TB30-75-22

Unassembled	**Part No. TB30-22-2**

- **Separator TB30-75-22 For twisterband**
  Separators - For installation simply open the e-chain®, insert a cable and push the separator onto the crossbar. Then add more cables. The separators provide a clear, cable-friendly interior separation.

Special solutions - Movements in all directions
e-spool Compact - SP1
Advantages



Variable use:
Energy supply in any direction is possible

Cost-effective:
twisterband enables rotary movement

Flexible energy supply:
guidance of different media in one system

Space-saving:
e-chain® retracts into a compact unit

Compact, space saving cable reel without a slip ring - e-spool compact

The compact e-spools for 6.56 ft.(2m) and 13.12 ft. (4m) extension are optimized for small installation spaces with smaller linear chains and twisterbands for a wide range of applications. As with the larger standard and HD systems, the compact e-spool systems enable trouble-free guidance and flexible filling.

- Compact, space-saving cable reel without slip ring
- Different media (power, air data and fluids) can be routed together in one system
- Energy supply in all directions
- Space-saving and virtually "invisible"
- Very lightweight design (SP1-240 series made from aluminium)
- Extension lengths up to 6.56 and 13.12 ft. (2 and 4m)
- Cables can be retrospectively added or changed

Typical industries and applications

- Small circular movements
- Retractable applications - linear or rotary

Route various media in a space-saving and flexible way

e-spool compact - With e-chain® and 1 twisterbands

Part No. e-spool with **1 twisterband, extension right**	Part No. e-spool with **1 twisterband, extension left**	*Bi* in. (mm)	*hi* in. (mm)	Travel length ≤ ft. (m)	SP1 lbs. (kg)	Max Cable/hose diameter in. (mm)
SP1-240-2000-01-**R**-0		2.95 (75)	.83 (21)	13.12 (4)	≈ 72.75 (33.0)	.67 (17)
SP1-400-4000-01-**R**-0		2.95 (75)	.83 (21)	22.9(7)	≈ 83.78 (38.0)	.47 (12)

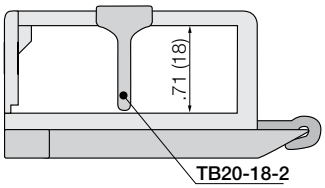
The max. bend radii of .94 (24 mm) in the inner radius and 1.38 (35 mm) in the outer radius should be observed.
The max. bend radii of 1.34 (34 mm) in the inner radius and 2.24 (57 mm) in the outer radius should be observed.

Note: The compact e-spools for 6.56 ft (2 m) and 13.12 ft (4 m) extension are optimized for small installation spaces with smaller linear chains and twisterbands for a wide range of applications. As with the larger standard and HD systems, the compact e-spool systems enable trouble-free guidance and flexible filling.

Special solutions - Movements in all directions
e-spool Compact - SP1
Accessories - Interior Separation

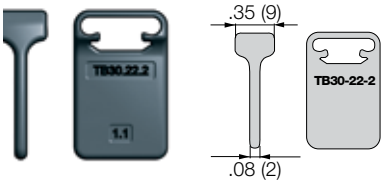


TB20-44-18



twisterband interior separation - separators are delivered unassembled.
Simply pushed onto the openable crossbar. Separators are assembled every 4th e-chain® link.

Separators are delivered unassembled. Simply push them onto the crossbar!



Separator for TB20-44-18

Unassembled	**Part No. TB20-18-2**

- **Separator TB20-44-18**
  For twisterband
  Separators - For installation simply open the e-chain®, insert a cable and push the separator onto the crossbar. Then add more cables. The separators provide a clear, cable-friendly interior separation.



Space-saving solution for a secure vertical movement. igus® e-spool with 11.48 ft. (3,500mm) extension length in this handling unit. Fitted with igus® chainflex® CF9 control and CF30 motor cables as well as CF-Robot torsion cable and CA-PU pneumatic hose

Special solutions - Movements in all directions
e-spool for Manual Operation
Advantages



Flexible use:
Energy supply in any direction is possible

Locking:
inertia locking function

Flexible energy supply:
guidance of a single cable or hose

Space-saving:
retracts neatly when not in use, paths remain free

For applications where only one cable or hose is pulled out manually - e-spool for manual operation

The manually operated e-spool is designed for applications where only one cable or hose is pulled out by hand. The operator pulls out the cable to the required length for a control pendant or tool and can be retracted again after use. To prevent the cable from being under tension all the time, an inertia reel is fitted. In this way, the extension length can be locked. An extension length of up to 5m can be achieved.

- For applications where only one cable or hose is pulled out manually
- Compact, space-saving cable reel without slip ring
- Integrated locking mechanism against "unwanted" reverse winding (very similar to a vacuum cleaner cable)
- Also suitable for media and air hoses
- Handle with mounting option and strain relief

Typical industries and applications

- Robot teach pendants
- Workstations
- Assembly lines

Special solutions - Movements in all directions
e-spool for Manual Operation
Product Range

Part No. e-spool with **1 twisterband, extension right**	*hi* in. (mm)	Travel length ≤ ft. (m)	SP1 (kg)
SPC1-300-5000-01-**R**-0	.71 (18)	16.41 (5)	≈ 27.56 (12.5)

Maximum cable or hose diameter: .47 (12mm)

The max. bend radii of 2.24 (57mm) should be observed.

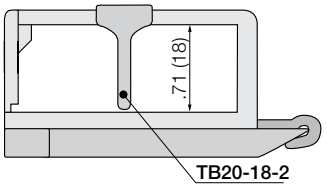


The igus® e-spool in an extendable fan system made by Becker Electric Forklift Service in Erftstadt. Vertically extendable up to 10m. The e-spool supplies the motor with media and energy cables

Special solutions - Movements in all directions
e-spool for Manual Operation
Accessories

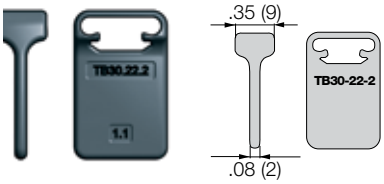


TB20-44-18



twisterband interior separation - separators are delivered unassembled.
Simply pushed onto the openable crossbar. Separators are assembled every 4th e-chain® link.

Separators are delivered unassembled. Simply push them onto the crossbar!



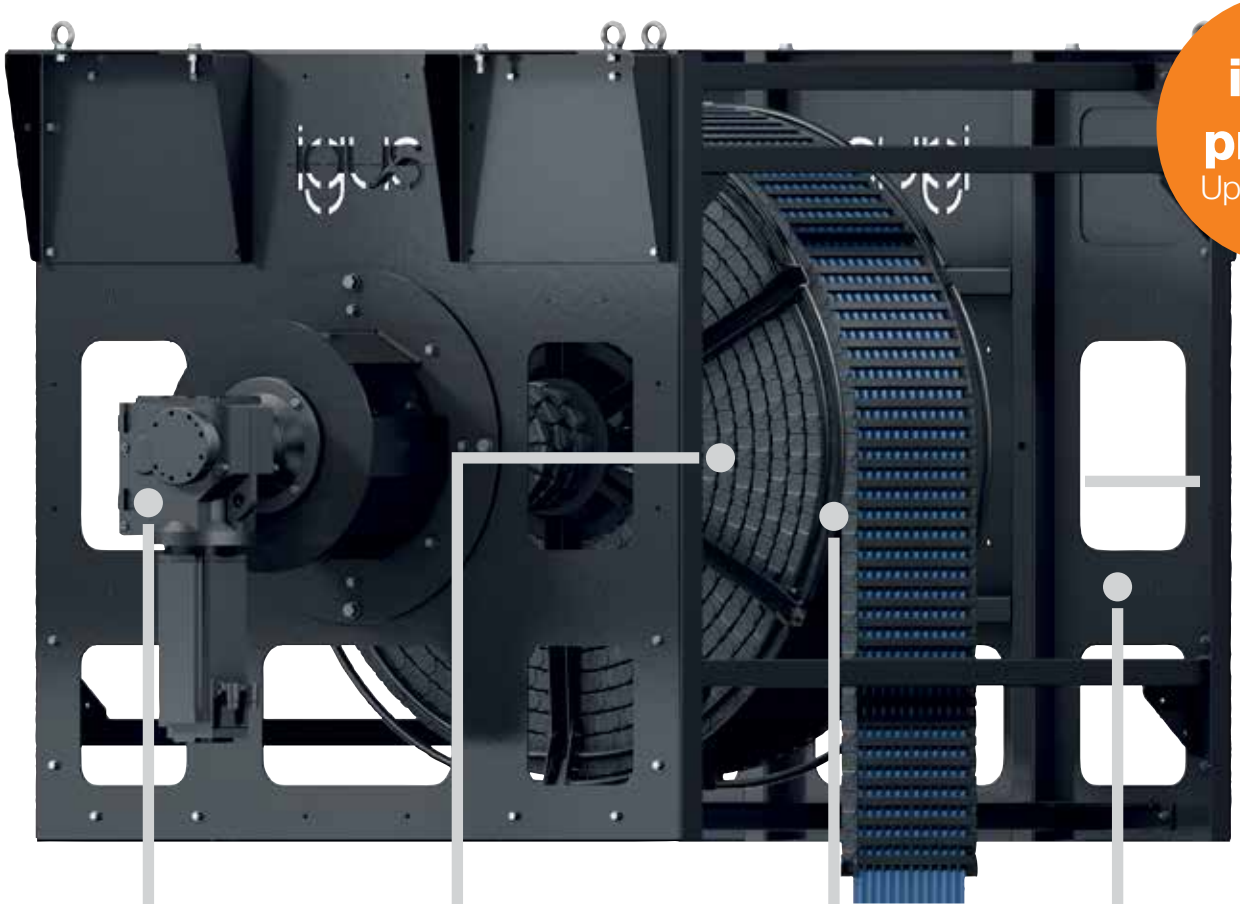
Separator for TB20-44-18

Unassembled	**Part No. TB20-18-2**

- **Separator TB20-44-18**
  For twisterband
  Separators - For installation simply open the e-chain®, insert a cable and push the separator onto the crossbar. Then add more cables. The separators provide a clear, cable-friendly interior separation.



At Liverpool University (UK), e-spools supply power and data to arrays of height-adjustable speakers. End to end cables ensure the best possible transmission reliability and sound quality



igus® project
Upon request

Flexible use:
for extension lengths
up to 114.8 ft. (35 m)

Flexible energy supply:
guidance of different
ledia in one system

Space-saving:
retracts into a compact
unit

Optional control system:
plug & play controller,
developed by igus®

Motor driven for long extension lengths - e-spool power

The e-spool power is a motor-driven e-spool for travels up to 35m. Like all e-spool systems, it can be filled with various cables and hoses and ensures reliable transmission with no breaks or slip rings. An igus® controller, which adapts dynamically to the travel speed, was specially developed for vertically hanging applications in theatres and opera houses and can be ordered as an option.

- Travel distances up to 35m
- Solid tubular steel construction
- Flexible filling with electrical and fibre optic cables, and pneumatic hoses
- Future-proof, additions and upgrades possible
- No tensile load on the cables

Typical industries and applications

- Theater, stage and lighting technology
- Indoor and outdoor cranes





Solutions for vertical motion

liftband

Cable guidance up to 13m height with limited installation space



Advantages of liftband:

- For high vertical applications that need a compact solution
- Modular, silent, space-saving; vertical guidance for energy, data and media
- Max. extension length 13m
- Available in 2 sizes
- Alternative to zig-zag solutions, but lighter and requires less installation space
- Vertical applications implemented with ease

When to use another system:

- With very high loads that have to be guided vertically
  ► **Zig-zag applications**
- For high dynamics with lateral accelerations
  ► **guidelok slimline P**



Extended:
secure cable supply up to 42.65 ft. (13m)

Robust drive plate:
for easy attachment to your application

Safe and strong:
nylon straps for secure guidance and high fill weight

Tough:
even with lateral system movements through "push-button" joint

Light:
lightweight, compact design

Available in 2 sizes:
easy triflex® for easy fitting of cables

Chamfered basket:
for safe operation

Retracted:
safe storage in a solid steel basket

Optimized for space:
compact steel basket for best use of space

Cable guidance up to 42.65 ft. (13m) height with limited installation space - liftband

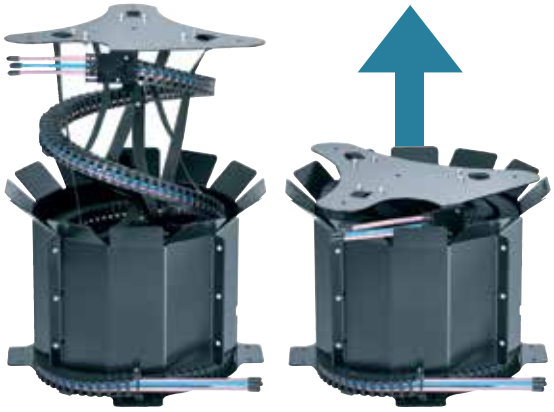
liftband - modular, silent, space-saving - igus® vertical guidance for energy, data and media.
High vertical applications that need a compact solution can be achieved with liftband.

- 2 sizes: inner width .98" (25mm) and 1.26" (32mm)
- 2 bend radii: 6.89" (175mm) and 9.84 (250mm)
- Alternative to zig-zag solutions
- Lighter and smaller installation space
- Vertical applications implemented with ease
- Max. extension length 42.65 ft. (13m)

Typical industries and applications

- Theater and stage technology
- Indoor cranes
- Mobile telescopic antennas

Special solutions - Movements in all directions
liftband
Selection Table - Technical Data

Series	Extension height ft. (m)	Inner height *hi* in. (mm)	Inner width *Bi* in. (mm)	Bend radius ≤ *R* in. (mm)	Cable ≤ ø in. (mm)
					
LB.E332.25 [1]	3.28 - 42.65 (1 - 13)	.08 x .51 (2 x 13)	.98 (25)	6.89 (175)	ø .35 (9)
LB.E332.32 [2]	3.28 - 42.65 (1 - 13)	.08 x .67 (2 x 17)	1.26 (32)	9.84 (250)	ø .47 (12)

liftband -
cable guidance up to .51" (13m) height
with limited installation space

1) Simply press cables up to a diameter of .35" (9mm) into the e-chain®/pull cables up to a diameter of .43" (11mm) into the e-chain®

2) Simply press cables up to a diameter of .47" (12mm) into the e-chain®/pull cables up to a diameter of .59" (15mm) into the e-chain®

liftband - delivery time* 3-5 business days
*The delivery times indicated correspond to the average time until the ordered goods are dispatched.

Speed vertical	max. 3.28 ft/s (1 m/s)
Acceleration	max. 6.56 ft/s² (2 m/s²)
Lateral speed	max. 3.28 ft/s (1 m/s)
Lateral acceleration	max.6.56 ft/s² (2 m/s²)

Technical Data

Details of material properties
➤ **Chapter 1**

Special solutions - Movements in all directions
liftband
Product Range

liftband Series LB-E332-25 - e-chain® with "easy" design - inner width .98" (25 mm)

Part No. liftband	Extension Height ft (m)	Inner Width *Bi* in. (mm)	Inner Height *hi* in. (mm)	Bending Radius Max. *R* in. (mm)	Cable Max. Ø in. (mm)
LB-E332-25-2-175-1-01-0	3.28 (1)	.98 (25)	.08 x .51 (2 x 13)	6.89 (175)	Ø .35 (9)
LB-E332-25-2-175-2-01-0	6.56 (2)	.98 (25)	.08 x .51 (2 x 13)	6.89 (175)	Ø .35 (9)
LB-E332-25-2-175-3-01-0	9.84 (3)	.98 (25)	.08 x .51 (2 x 13)	6.89 (175)	Ø .35 (9)
LB-E332-25-2-175-4-01-0	13.12 (4)	.98 (25)	.08 x .51 (2 x 13)	6.89 (175)	Ø .35 (9)
LB-E332-25-2-175-5-01-0	16.41 (5)	.98 (25)	.08 x .51 (2 x 13)	6.89 (175)	Ø .35 (9)
LB-E332-25-2-175-6-01-0	19.69 (6)	.98 (25)	.08 x .51 (2 x 13)	6.89 (175)	Ø .35 (9)
LB-E332-25-2-175-7-01-0	22.97 (7)	.98 (25)	.08 x .51 (2 x 13)	6.89 (175)	Ø .35 (9)
LB-E332-25-2-175-8-01-0	26.25 (8)	.98 (25)	.08 x .51 (2 x 13)	6.89 (175)	Ø .35 (9)
LB-E332-25-2-175-9-01-0	29.53 (9)	.98 (25)	.08 x .51 (2 x 13)	6.89 (175)	Ø .35 (9)
LB-E332-25-2-175-10-01-0	32.81 (10)	.98 (25)	.08 x .51 (2 x 13)	6.89 (175)	Ø .35 (9)
LB-E332-25-2-175-11-01-0	36.10 (11)	.98 (25)	.08 x .51 (2 x 13)	6.89 (175)	Ø .35 (9)
LB-E332-25-2-175-12-01-0	39.37 (12)	.98 (25)	.08 x .51 (2 x 13)	6.89 (175)	Ø .35 (9)
LB-E332-25-2-175-13-01-0	42.65 (13)	.98 (25)	.08 x .51 (2 x 13)	6.89 (175)	Ø .35 (9)

*Simply press cables up to a diameter of .35" (9 mm) into the e-chain® / pull cables up to .43" (11 mm) into the e-chain®

liftband Series LB-E332-25 - e-chain® with "easy" design - inner width .98" (25 mm)

Part No. liftband	Extension Height ft (m)	Inner Width *Bi* in. (mm)	Inner Height *hi* in. (mm)	Bending Radius Max. *R* in. (mm)	Cable Max. Ø in. (mm)
LB-E332-32-2-250-1-01-0	3.28 (1)	1.26 (32)	.08 x .67 (2 x 17)	9.84 (250)	Ø .47 (12)
LB-E332-32-2-250-2-01-0	6.56 (2)	1.26 (32)	.08 x .67 (2 x 17)	9.84 (250)	Ø .47 (12)
LB-E332-32-2-250-3-01-0	9.84 (3)	1.26 (32)	.08 x .67 (2 x 17)	9.84 (250)	Ø .47 (12)
LB-E332-32-2-250-4-01-0	13.12 (4)	1.26 (32)	.08 x .67 (2 x 17)	9.84 (250)	Ø .47 (12)
LB-E332-32-2-250-5-01-0	16.41 (5)	1.26 (32)	.08 x .67 (2 x 17)	9.84 (250)	Ø .47 (12)
LB-E332-32-2-250-6-01-0	19.69 (6)	1.26 (32)	.08 x .67 (2 x 17)	9.84 (250)	Ø .47 (12)
LB-E332-32-2-250-7-01-0	22.97 (7)	1.26 (32)	.08 x .67 (2 x 17)	9.84 (250)	Ø .47 (12)
LB-E332-32-2-250-8-01-0	26.25 (8)	1.26 (32)	.08 x .67 (2 x 17)	9.84 (250)	Ø .47 (12)
LB-E332-32-2-250-9-01-0	29.53 (9)	1.26 (32)	.08 x .67 (2 x 17)	9.84 (250)	Ø .47 (12)
LB-E332-32-2-250-10-01-0	32.81 (10)	1.26 (32)	.08 x .67 (2 x 17)	9.84 (250)	Ø .47 (12)
LB-E332-32-2-250-11-01-0	36.10 (11)	1.26 (32)	.08 x .67 (2 x 17)	9.84 (250)	Ø .47 (12)
LB-E332-32-2-250-12-01-0	39.37 (12)	1.26 (32)	.08 x .67 (2 x 17)	9.84 (250)	Ø .47 (12)
LB-E332-32-2-250-13-01-0	42.65 (13)	1.26 (32)	.08 x .67 (2 x 17)	9.84 (250)	Ø .47 (12)

*Simply press cables up to a diameter of .47" (12 mm) into the e-chain® / pull cables up to .59" (15 mm) into the e-chain®



liftband test setup in the igus® test lab





Solutions for vertical motion

guidelok slimline P

Safe vertical guidance

Advantages of guidelok slimline P:

- Up to 23 ft/s (7m/s) and 32.8 ft/s² (10m/s²)
- Up to 80% less trough required, saving costs and weight
- For hanging systems up to 164 ft. (50m)
- No swinging of the e-chain®, high reliability due to the lock mechanism and guiding rails
- Faster and easier installation
- Reduced noise
- Easy access for servicing
- Energy, data and all kinds of media can be safely guided

When to use another system:

- With very high loads that have to be guided vertically
  ► **Zig-zag applications**
- For high vertical applications with limited space
  ► **liftband**

Special solutions - Movements in all directions guidelok slimline P Overview - Advantages



Safe guidance:
Also at high travel speeds

Quick assembly:
lightweight glass-fiber reinforced plastic profiles ensure easy and quick installation

Long travels:
Travels up to 164 ft. (50 m) in 4.92 ft. (1.5 m) or 6.56 ft. (2 m) field length possible

No swinging out of the e-chain®:
guidelok safety catches to guide the e-chain® even at high lateral accelerations

Safe vertical guidance - guidelok slimline P

In highly dynamic rack feeder a speed for the horizontal movement exceeding in 23 ft. (7 m/s) is not uncommon. The advanced igus® guidelok slimline P guides e-chains® even at the fastest speeds or accelerations.
NOTE: Systems of this type should be designed with our engineering team. We can provide a quote quickly – please contact us.

- Up to 23 ft. (7 m/s) and 32.8 ft. (10 m/s²)
- Up to 80% less trough required, saving costs and weight
- For hanging systems up to 164 ft. (50 m)
- No swinging of the e-chain®, high reliability due to the lever mechanism and guiding rails
- Faster and easier installation
- Reduced noise
- Easy access for servicing
- Energy and data and all kinds of media are safely

Typical industries and applications

- Storage and retrieval units
- Lifts
- Elevators
- Construction and crane lifts
- Hoists

Special solutions - Movements in all directions
guidelok slimline P
Selection

Series	For e-chains® series	Inner height *hi* in. (mm)	Inner width *Bi* in. (mm)	Bend radius *R* in. (mm)
			**guidelok slimline P -** safe vertical guidance	
GLSL-P-255-10	255	.94 (24)	3.94 (100)	5.91 - 9.84 (150 - 250)
GLSL-P-2700-10	2700	1.38 (35)	3.94 (100)	5.91 - 9.84 (150 - 250)

Special versions with different widths, radii and channel section lengths possible. Please consult igus® for delivery time.

Available from stock. Ready to ship in 24 - 48hrs.*
*The delivery times indicated correspond to the average time until the ordered goods are dispatched.

Find a video online
▶ **www.igus.com/glslp-movie**

Made completely from plastic, cost-effective, light and easy to assemble - guidelok slimline P.S

- Significant savings in costs and weight
- Fast, safe and easy assembly with clip-on guide rails
- Reduced noise
- Easy access for servicing
- Energy, data and all kinds of media can be safely guided
- For hanging systems up to 164 ft. (50m)
- Speed up to 22.97 ft/s (7m/s) and acceleration up to 32.81 ft/s (10m/s^2)
- **More information ▶ www.igus.com/glsl-ps**



Special solutions - Movements in all directions guidelok slimline P Selection

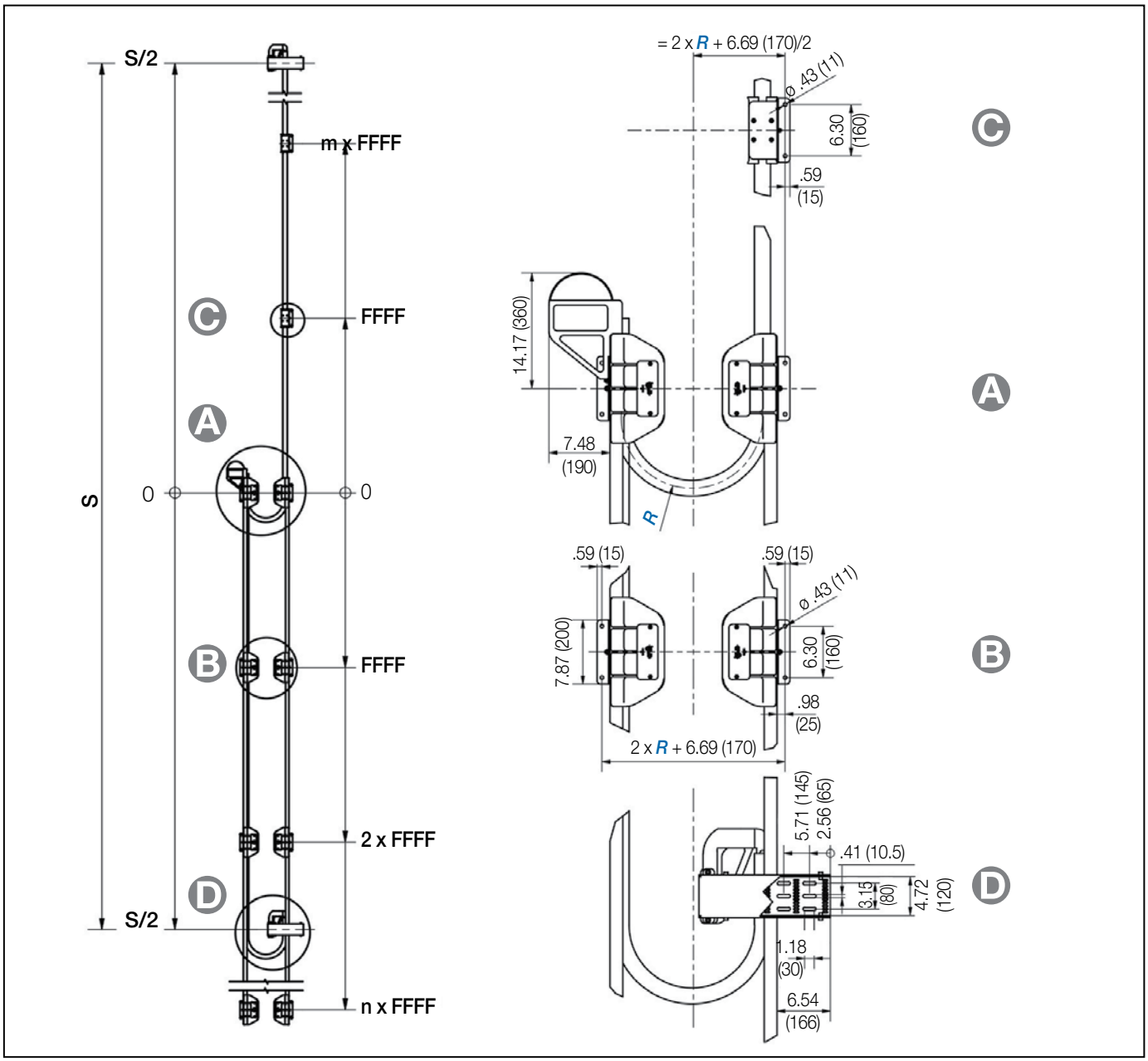
Part No. guidelok P	For series	*Bi* in. (mm)	*R* in. (mm)
GLSL-P-255- 10-*R*-LLLL/FFFF	255	4.06 (103)	150 | 175 | 200 | 225 | 250
GLSL-P-2700-10-*R*-LLLL/FFFF	2700	3.94 (100)	150 | 175 | 200 | – | 250

LLLL = Total length **FFFF** = Channel section length

Special versions with different widths, radii and channel section lengths possible. Please consult igus® for delivery time.

Complete Part No. with required radius (*R*) and required value for total length and channel section length
Example: **GLSL-P-2700-10-150-9000/1500**

Installation dimensions



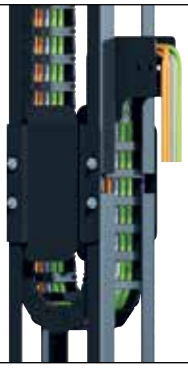


guidelok slimline P in a high-bay warehouse

Cable guidance for vertical applications: lighter, low-noise, easier - lower costs - guidelite GLV - New

- The "guidelite vertical" (GLV) guide trough guides e-chains® and cables for vertical applications such as high bay warehouse safely in one system
- Segmental design and lightweight components reduce weight and noise
- Open design and self-locking screws facilitate easy assembly
- Significant savings in costs and weight when compared with a complete housing
- Easy access for servicing

More information ➤ www.igus.com/GLV



Technical Data

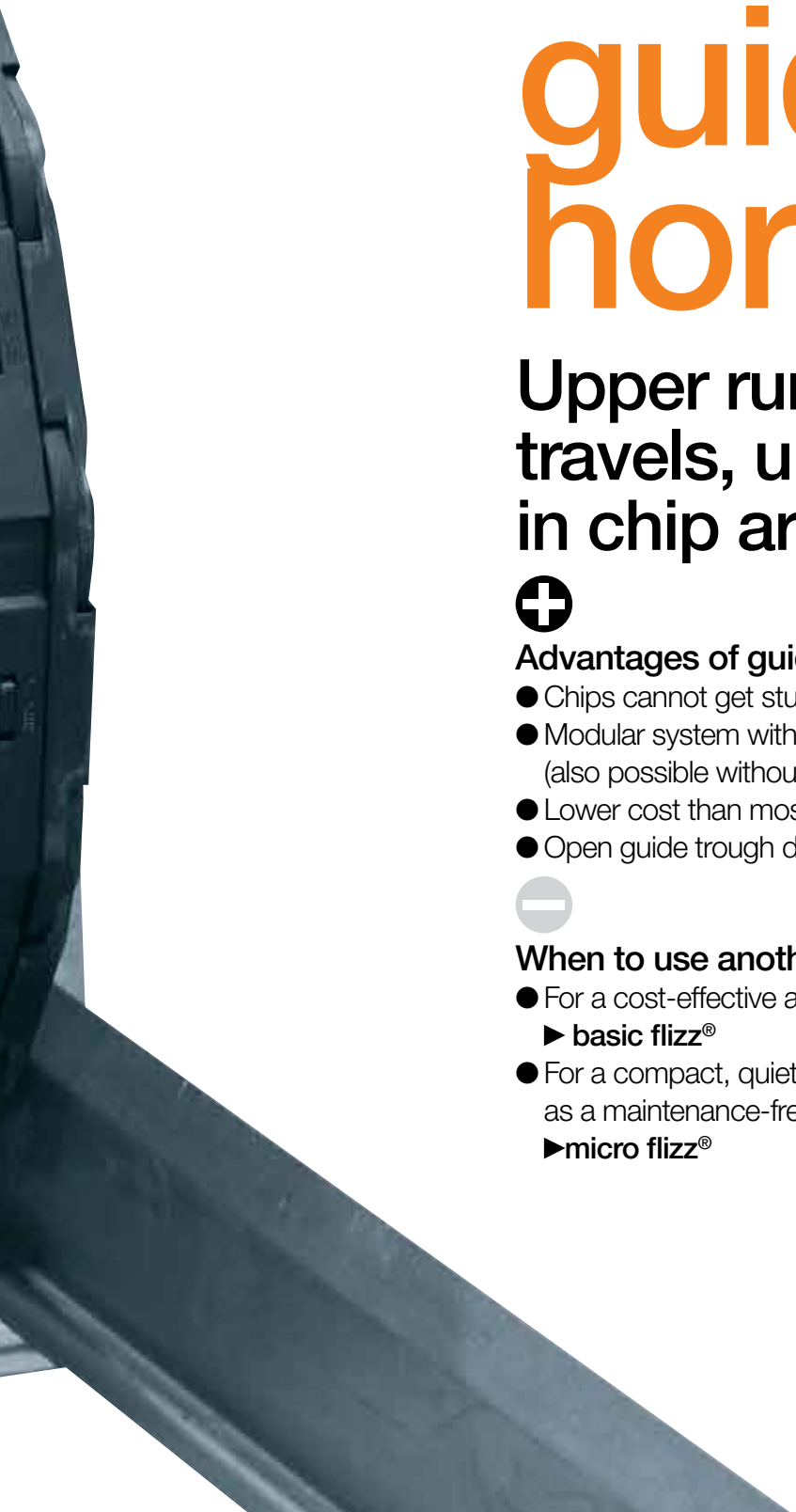
Speed vertical	max. 23 ft/s (7 m/s)
Acceleration	max. 32.8 ft/s² (10 m/s²)

Details of material properties
➤ **Chapter 1**



◀

9.37



Solutions for horizontal motion

guidelok horizontal

Upper run guide for long travels, unsupported in chip areas

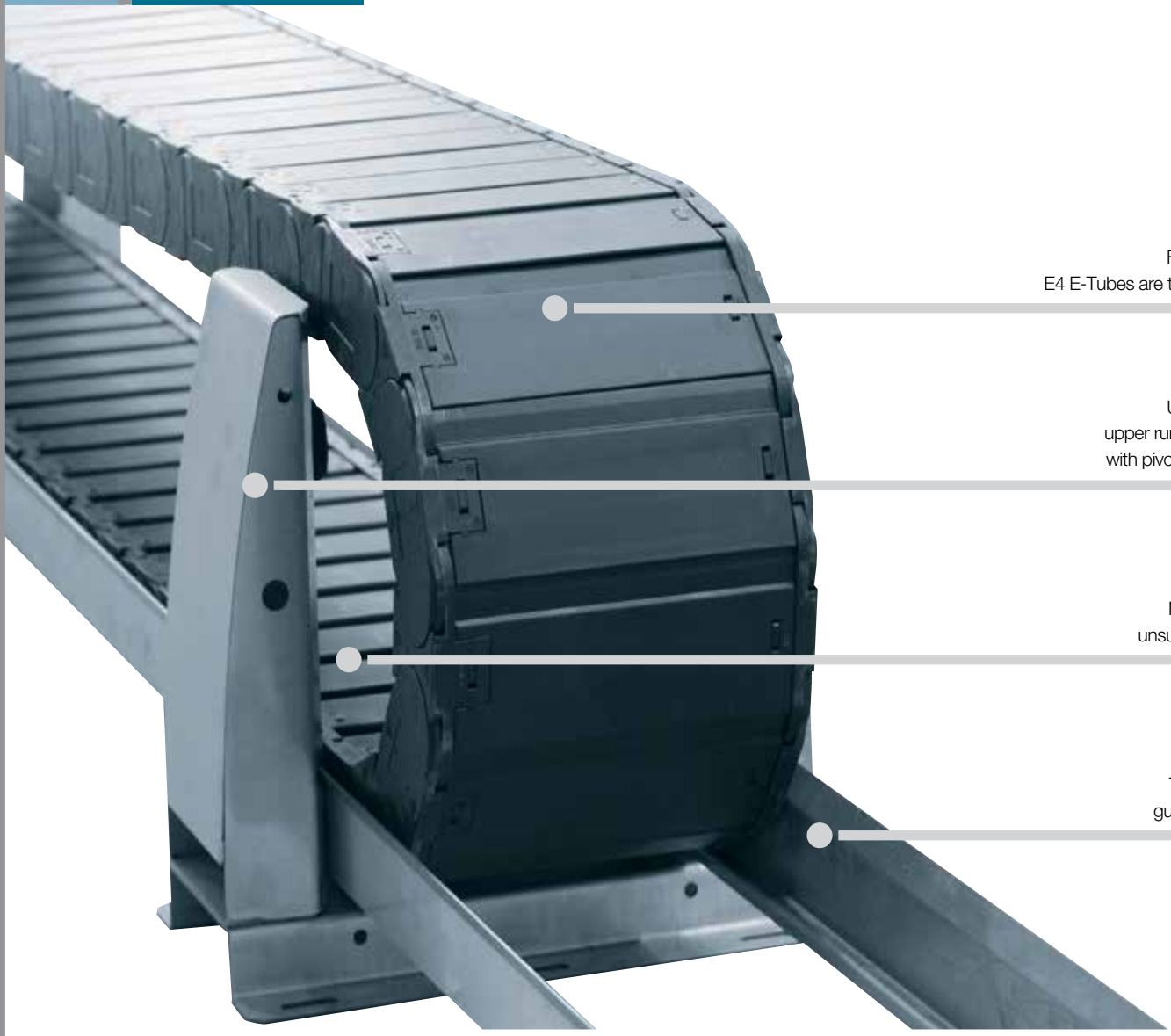
Advantages of guidelok horizontal:

- Chips cannot get stuck between upper and lower run
- Modular system with few parts (also possible without lateral trough)
- Lower cost than most steel chains or gliding systems
- Open guide trough design, chips can fall through

When to use another system:

- For a cost-effective and fully enclosed complete solution
  ▶ **basic flizz®**
- For a compact, quiet and cost-effective complete system as a maintenance-free alternative to a busbar
  ▶**micro flizz®**

More solutions for long travel
guidelok Horizontal - Upper run guide for long travels
Overview



Self-supporting in chip areas - guidelok horizontal

Especially for long travels on machine tools, when the e-chain® has to be gliding, metallic chips are a problem. guidelok horizontal is a cost-effective solution.

- Travels, unsupported up to 164 ft. (50 m) possible
- Chips cannot get stuck between upper and lower run
- Modular system with few parts (also possible without sideways trough)
- Enormous increase of "self-supporting" length of e-chains®
- Lower push-/pull forces (smaller e-chains®, self-supporting and rollers = energy efficient)
- Lower cost than most steel chains or ambitions gliding systems
- Open guide trough design, chips can fall through

Typical industries and applications

- Machine tools
- Applications in chip areas
- Wherever a gliding application is not recommended

More solutions for long travel
guidelok Horizontal - Upper run guide for long travels
Dimensions

Design-principle - horizontal guidelok guides the e-chain® on special spring loaded roller supports that are pushed back by the e-chain® radius, clearing its path



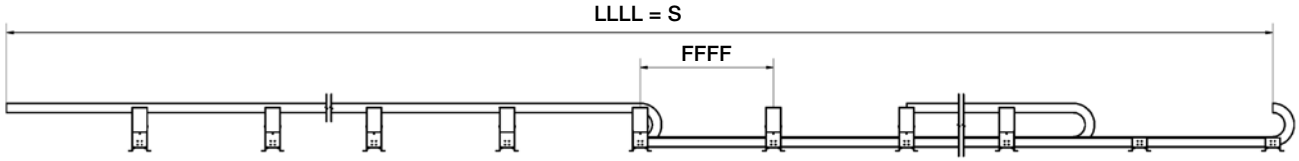
The e-chain® is guided in the trough channel, pushing back the spring loaded roller support with its radius...



...which snaps back out after the e-chain® radius has passed...



...the upper run then lays on the roller support.



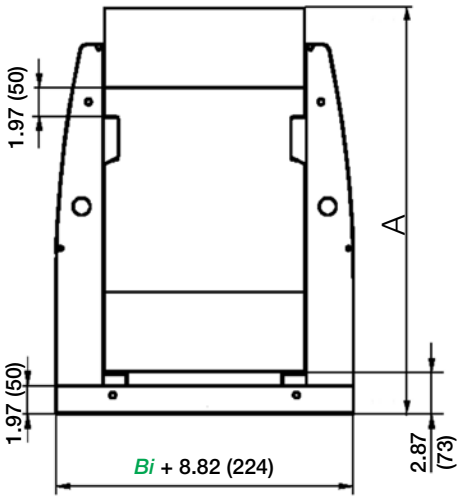
Design sketch - guidelok horizontal

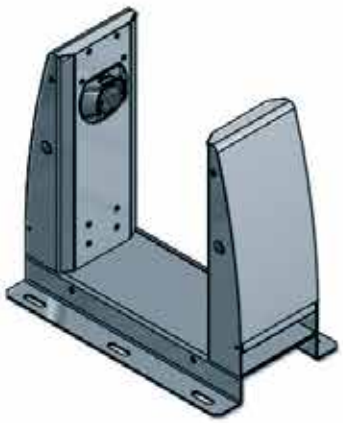
Selection table

For Series	Part Number	*Bi* (mm)	*R* (mm)
E4-56/R4-56	907-645-*Bi*- *R* - LLLL/FFFF	(150 - 600)	150, 175, 200, 250, 300
E4-80/R4-80	907-645-*Bi*- *R* - LLLL/FFFF	(50 - 600)	150, 175, 200, 250, 300
E4-112	907-645-*Bi*- *R* - LLLL/FFFF	(200 - 600)	150, 175, 200, 250, 300
E4-56/R4-56	907-837-*Bi*- *R* - LLLL/FFFF	(50 - 600)	350, 400, 450, 500
E4-80/R4-80	907-837-*Bi*- *R* - LLLL/FFFF	(50 - 600)	350, 400, 450, 500
E4-112	907-837-*Bi*- *R* - LLLL/FFFF	(200 - 600)	350, 400, 450, 500

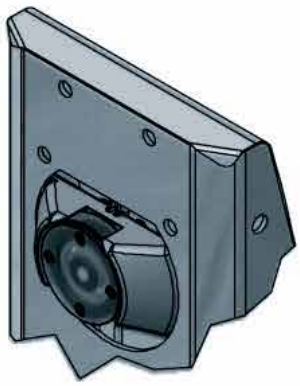
LLLL = Total Length

FFFF = Field Length





Lateral supports with pivoting rollers for the upper run support of the e-chain®







Solutions for horizontal motion

basic flizz®

Cost-effective, enclosed solution for long travels, e.g. wastewater treatment plants

Advantages of basic flizz®:

- Protection against weather and dirt exposure
- Low-maintenance system
- Cost-effective and fully enclosed complete system
- Standardized and modular design
- Easy wall, floor or ceiling mounting options
- Cables or hoses can be easily retrofitted
- Reduce power costs - directly driven by the scraper. No additional drives needed (as is the case on cable reels)

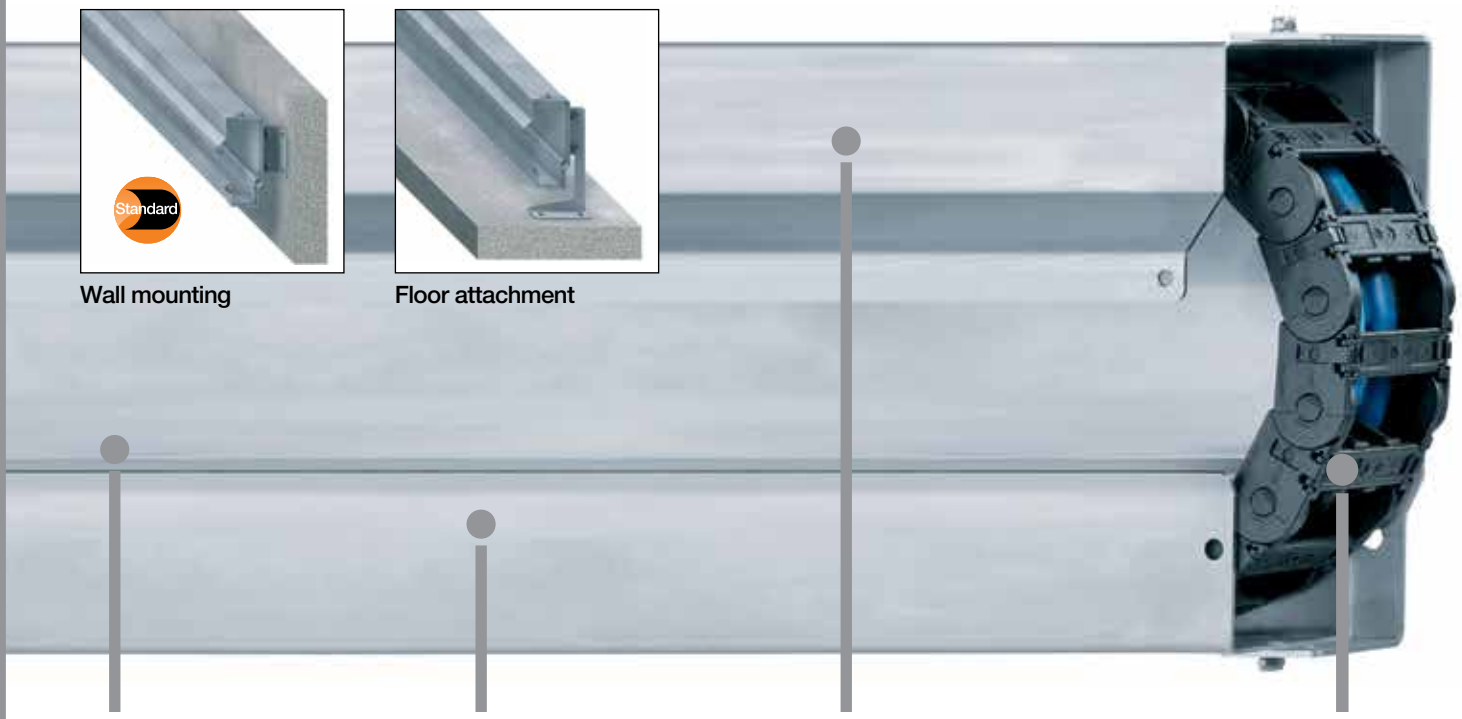
When to use another system:

- For an upper run guide for long travels, unsupported in chip areas
  ► **guidelok horizontal**
- For a compact, quiet and cost-effective complete system as a maintenance-free alternative to a busbar
  ►**micro flizz®**

More solutions for long travel
basic flizz® - Enclosed solution for long travels
Overview

Wall mounting

Floor attachment



Protected:
Weather-resistant, enclosure

Reliable guide:
Guide rail integrated into the profile

Modular design:
Easy assembly, compact construction

Fast assembly: Snap-open along the outer radius

Cost-effective, enclosed solution for long travels - basic flizz®

- Low-maintenance system for travels up to 328 ft. (100 m)
- Other sizes and versions available, up to 200 travel with E2 rol e-chains® and more
- Protection against weather and dirt exposure - Cost-effective and fully enclosed complete solution
- Standardized and modular design
- Easy wall mounting or optionally as floor attachment
- Cable lengths up to 50 % shorter than festooning, low-profile installation and no cable salad
- Cables are always guided with a defined bending radius
  an tension forces will be supported by the e-chain®
- Cables cannot entangle, hang, or tear
- No slip-ring contact (as is the case on motor drums)
- Cables or hoses can be easily retrofitted on demand
- Reduce power costs - directly driven by scraper.
  No additional drives needed (as is the case on motor drums)
- Optionally available moving end arm (e.g. as mechanical connection for scraper trolley -
  we will document the local situation and will provide a tailored solution

Typical industries and applications

- Sludge scrapers
- Longitudinal scrapers
- Sand catchers
- Grease trap
- Waste-water treatment
- Plating facilities
- Cranes
- Plant construction
- Locks

More solutions for long travel
basic flizz® - Enclosed solution for long travels
Dimensions

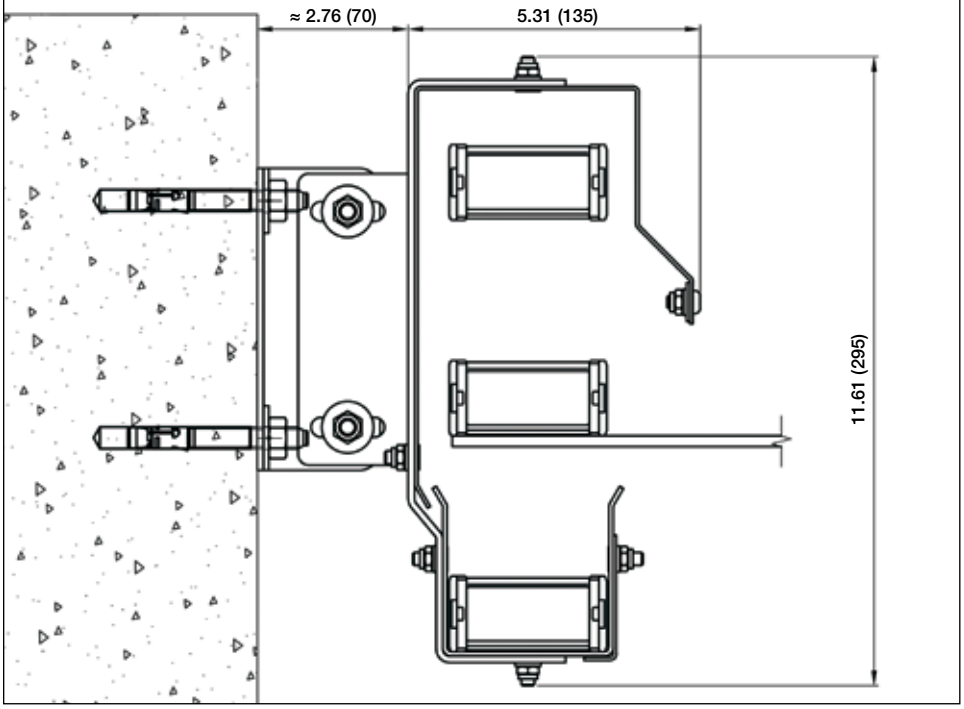
Part Number basic flizz®	Specification	Support gap in. (mm)
IE92-31-75-260-3000-01-E	basic flizz® - With glide bar	118 (3000)
IE92-31-75-260-3000-F-01-E	basic flizz® - Fixed-end module	118 (3000)
IE92-30-75-260-3000-01-E	basic flizz® - Without glide bar	118 (3000)

Standard material stainless steel V2A: material 1.4301 (AISI 304).

Optional: galvanized steel or stainless steel V4A: material 1.4404 (AISI 316L)

More lengths available upon request, please consult igus® for delivery time.

Dimensions





basic flizz® - enclosed
total solution



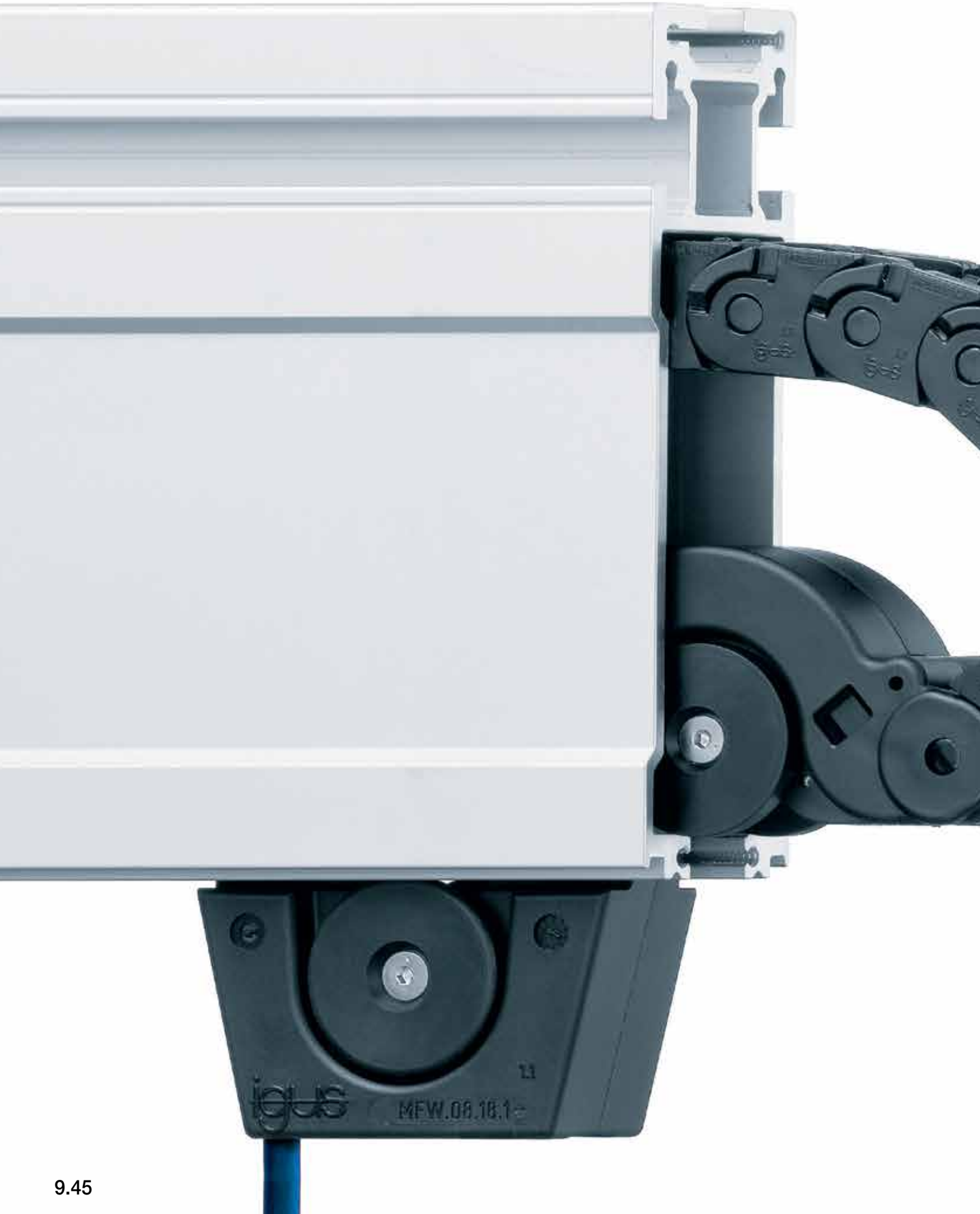
igus® basic flizz® - ideal for
waste-water treatment plants



Cost-effective,
maintenance-free system



Simple assembly (wall-mounted or floor-mounted assembly), standardized, modular construction


igus
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Solutions for horizontal motion

micro flizz®

A system for the safe guidance of energy, data and air

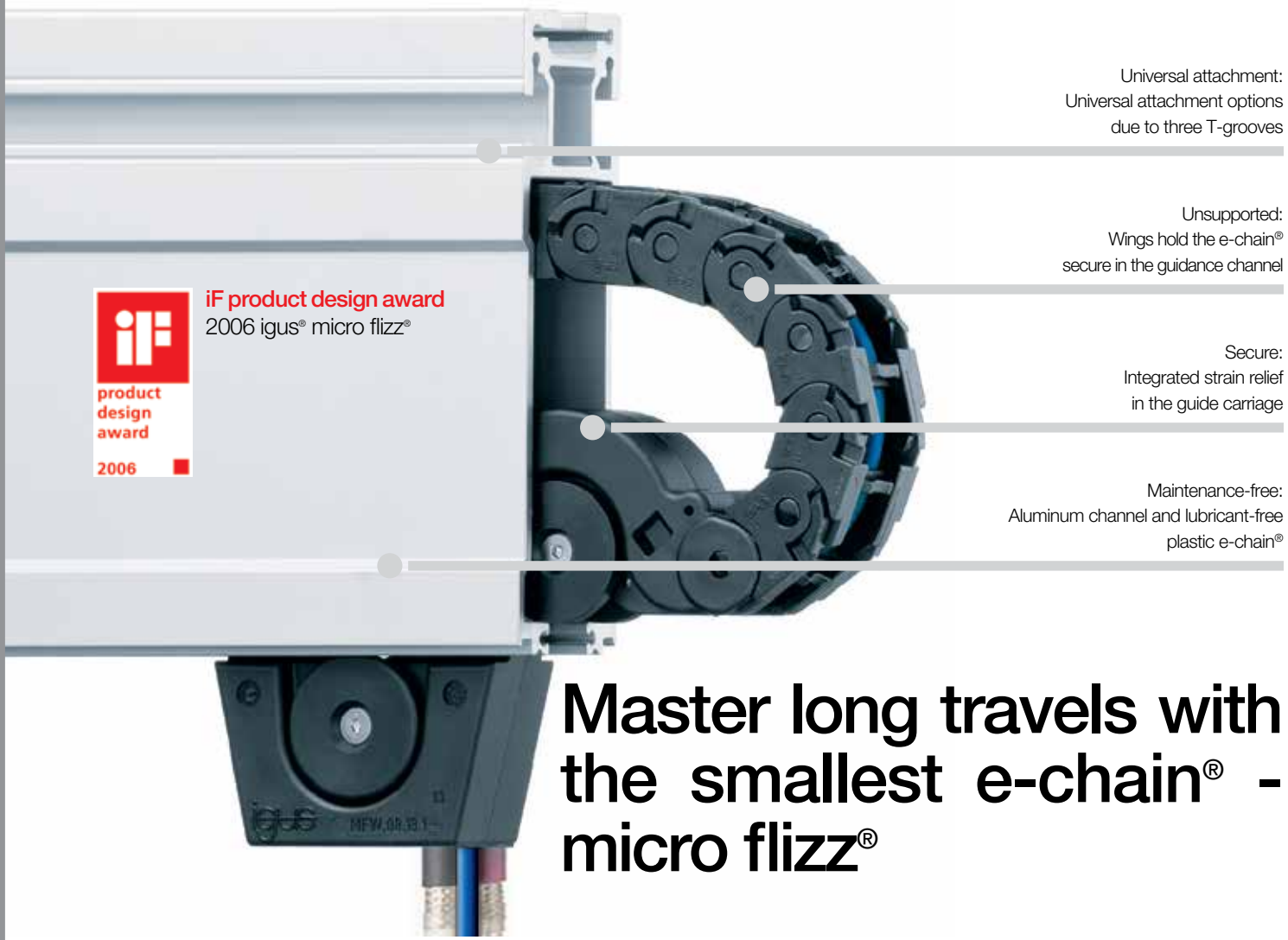
Advantages of micro flizz®:

- Compact, quiet, cost-effective complete system as a maintenance-free alternative to a busbar
- e-chain® is guided in special slots, no gliding
- Smooth running due to ball bearings in the guide carriages
- Fast assembly due to pre-configured, modular system
- Less space required
- Also available as pre-assembled system
- Control option via stationary switch cabinet

When to use another system:

- For an upper run guide for long travels, unsupported in chip areas
  ► **guidelok horizontal**
- For a cost-effective and fully enclosed complete solution
  ► **basic flizz®**

More solutions for long travel micro flizz® - Small e-chains® in aluminum profile Overview



Master long travels with the smallest e-chain® - micro flizz®

Compact system for a secure guidance of power, data and air as a maintenance-free alternative for busbar

- e-chain® is guided in special slot, no sliding against each other
- Control via stationary switch cabinet possible
- Accelerations up to 164 ft/s² (50 m/s²) and speeds up to 19.69 ft. (6 m/s)
- Fast assembly due to pre-configured, modular system
- Less space required
- Available also as pre-assembled
- Smooth running due to ball bearings in the guide carriages
- Also with EX tested e-chain® available (on request)
- 3 sizes available: cable diameters **MF06:** max. Ø .31" (8.0 mm), **MF08:** max. Ø .37" (9.5 mm), **MF10:** max. Ø .63" (16 mm)

Typical industries and applications

- Rack feeder
- Indoor cranes
- Industrial gates
- Working stations
- Sewage treatment plants
- Camera systems
- Sliding doors
- Operator panels
- Measure systems
- Studio equipment
- Conveyor technique

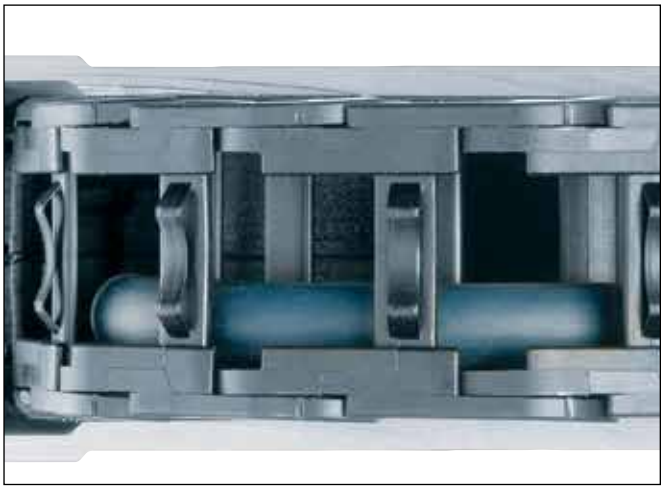
More solutions for long travel
micro flizz® - Small e-chains® in aluminum profile
Overview



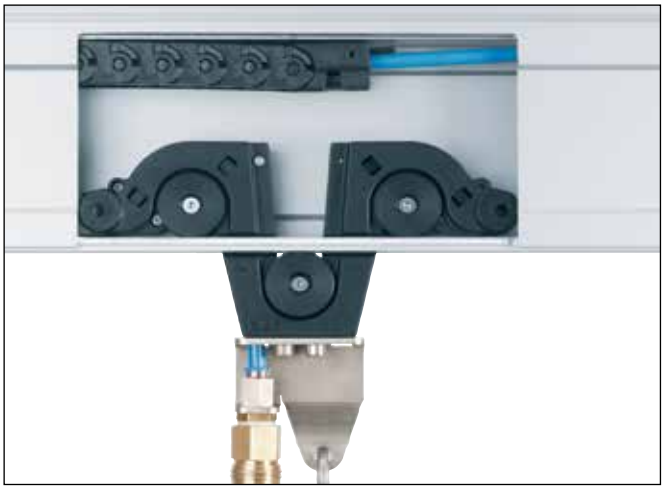
Separated upper and lower run: Running trough the radius, integrated wings fold in



In the extended position, the wings fold out and safely hold the upper run in the elevated position

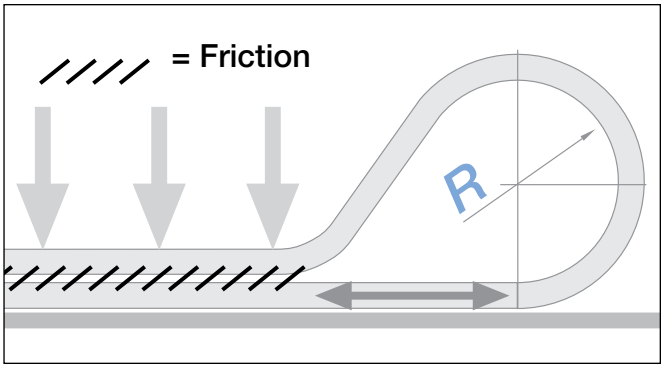


A polymer spring element cushions the motion inside the trough and lower noise

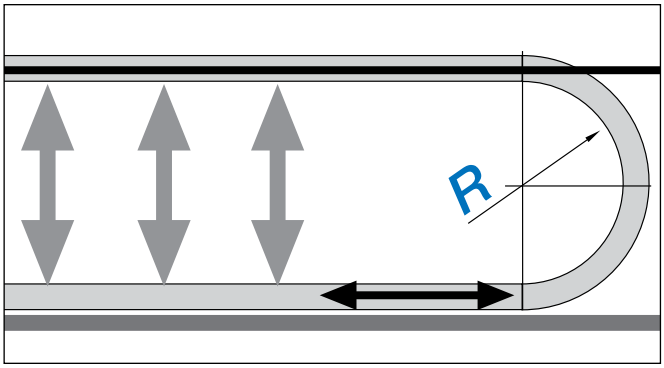


micro flizz® accessory: Connection for compressed air coupling

Special feature: micro flizz® construction



Yesterday: Moving lower run, sliding function.
Long travels need stable e-chains®

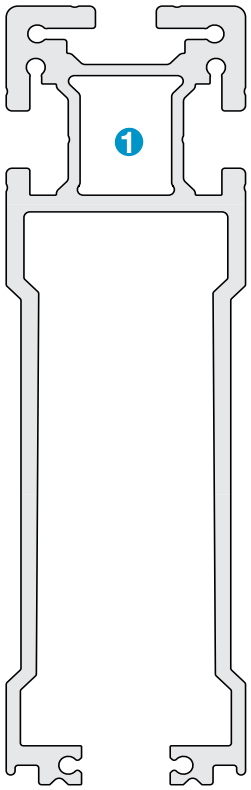


Today: micro flizz® - Small e-chains®, self-guiding in guiding channel - Friction is reduced by factor 3 over the conventional system.

e-chain systems®
micro flizz® - Small e-chains® in aluminum profile

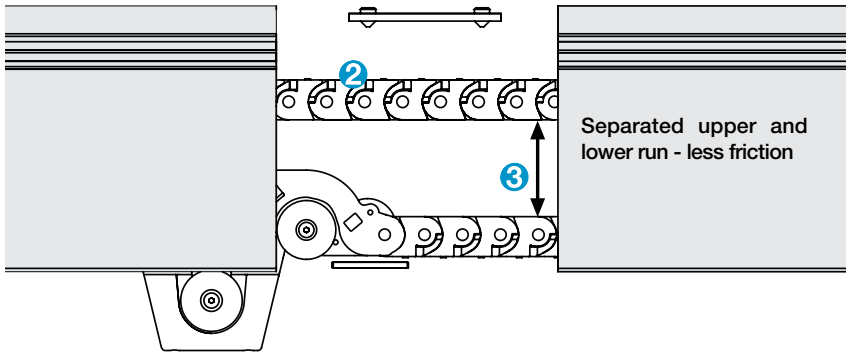
Telephone 1-800-521-2747

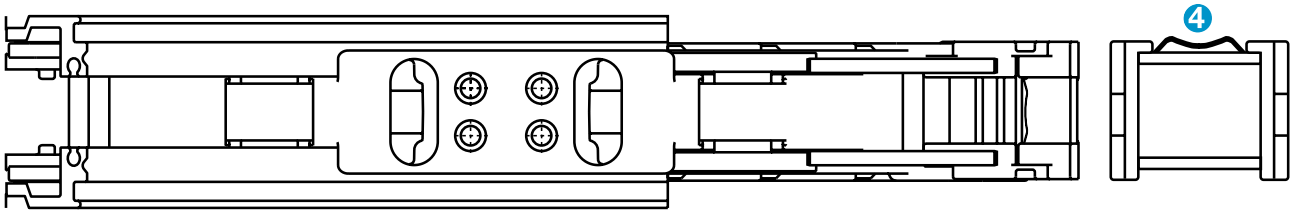
Internet: igus.com
email: sales@igus.com
QuickSpec: igus.com/quickspec



Technical data micro flizz®

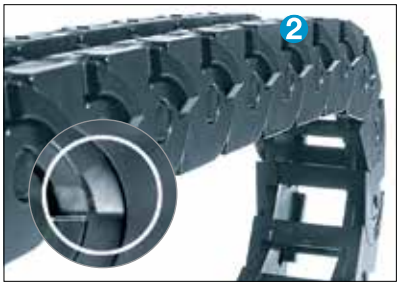
1. Universal attachment options due to three T-grooves
2. Wings hold the e-chain® secure in the guidance channel
3. Separated upper and lower run of the Flizz® e-chain®, thus less friction and reduced push/pull forces
4. Polymer springs for a soft unrolling of the e-chain® in the Flizz® channel effect a substantial noise reduction
5. Opposed e-chains® can be used, that means a double filling or two independent travels are possible
6. Attachment of the e-chain® by roller cart on the moving end, gliding or locking possible
7. Integrated strain relief in the guide carriage for the safe fixing of cables



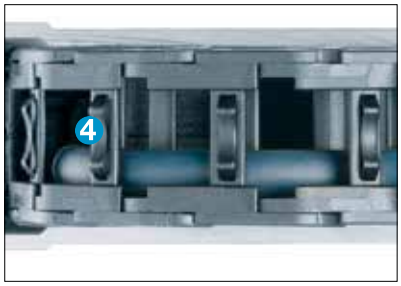




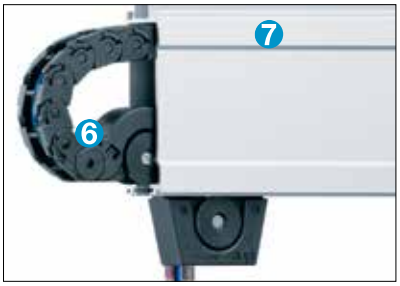
Details micro flizz®



In the extended position, the wings fold out and safely hold the upper run in the elevated position



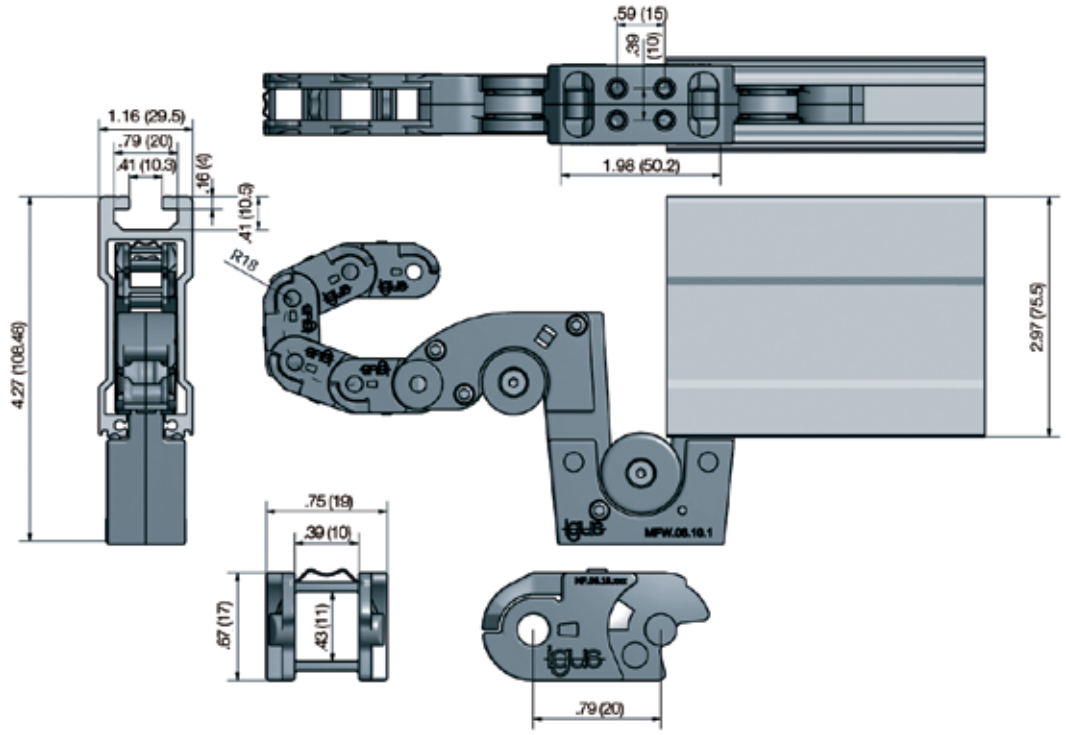
A polymer spring element cushions the motion inside the trough and lower noise



Power, data, pneumatics in confined areas. chainflex® cables are specifically designed for this challenge

e-chain systems®
micro flizz® - Small e-chains® in aluminum profile
Series MF06

micro flizz® Series MF06 - Part No. MF-06-10-018



micro flizz® Series MF06 - Dimensions

Part No.	*Bi*		*Ba*		*hi*		*ha*		*R* Bending radius
	in.	(mm)	in.	(mm)	in.	(mm)	in.	(mm)	(mm)
MF-06-10-018	.39	(10)	.75	(19)	.43	(11)	.67	(17)	018

More dimensions	
Installation height complete system:	108.48 mm
Installation width complete system:	29.5 mm
Recommended length channel pieces:	2.0 m, 3.0 m and 6.0 m - Die-cast aluminum material
Cable diameter max.:	8 mm

MF06

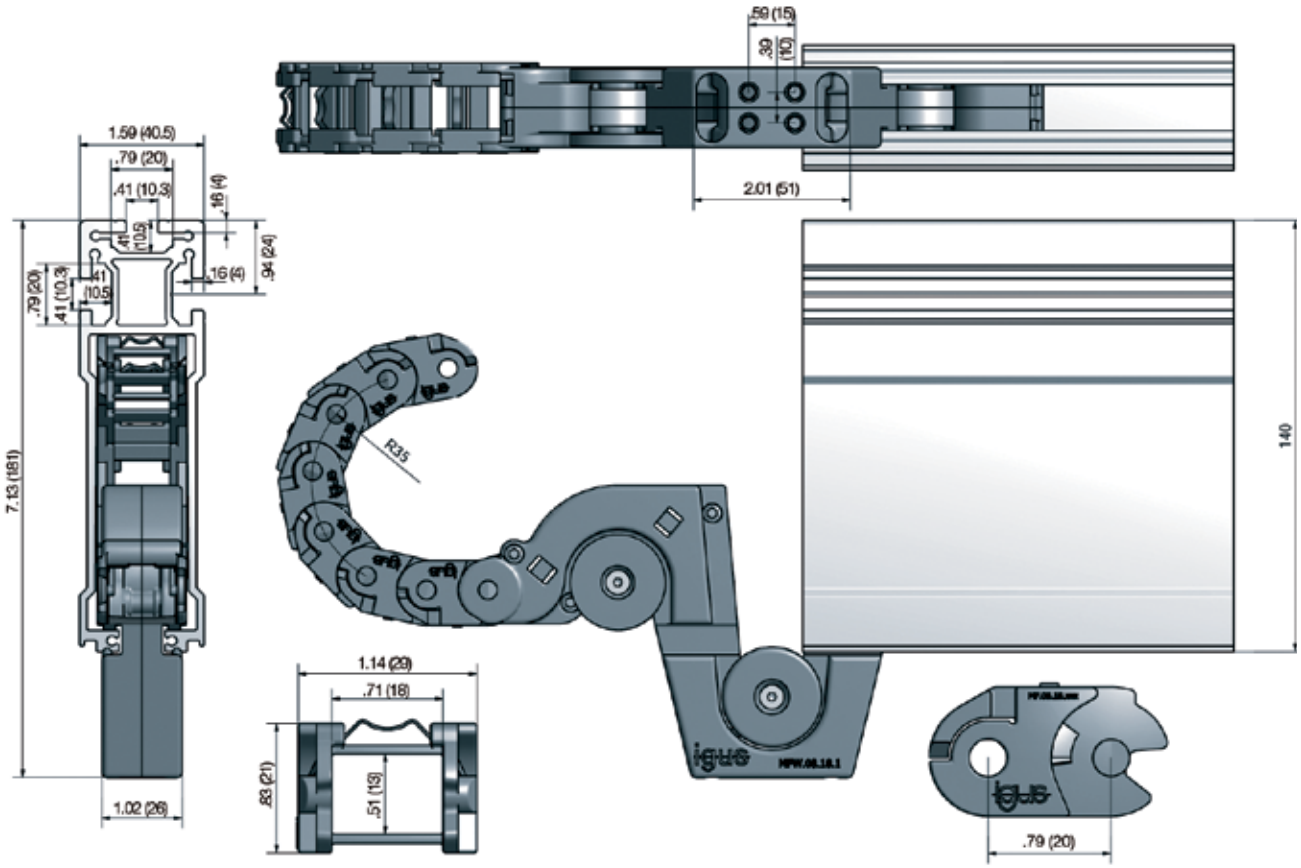


e-chain® viewable for illustration

PDF: igus.com/e-chain-pdfs
Product information: igus.com/e-chains

e-chain systems®
micro flizz® - Small e-chains® in aluminum profile
Series MF08

micro flizz® Series MF08 - Part No. MF-08-18-035



micro flizz® Series MF08 - Dimensions

Part No.	*Bi*		*Ba*		*hi*		*ha*		*R* Bending radius
	in.	(mm)	in.	(mm)	in.	(mm)	in.	(mm)	(mm)
MF-08-18-035	.71	(18)	1.14	(29)	.51	(13)	.83	(21)	035

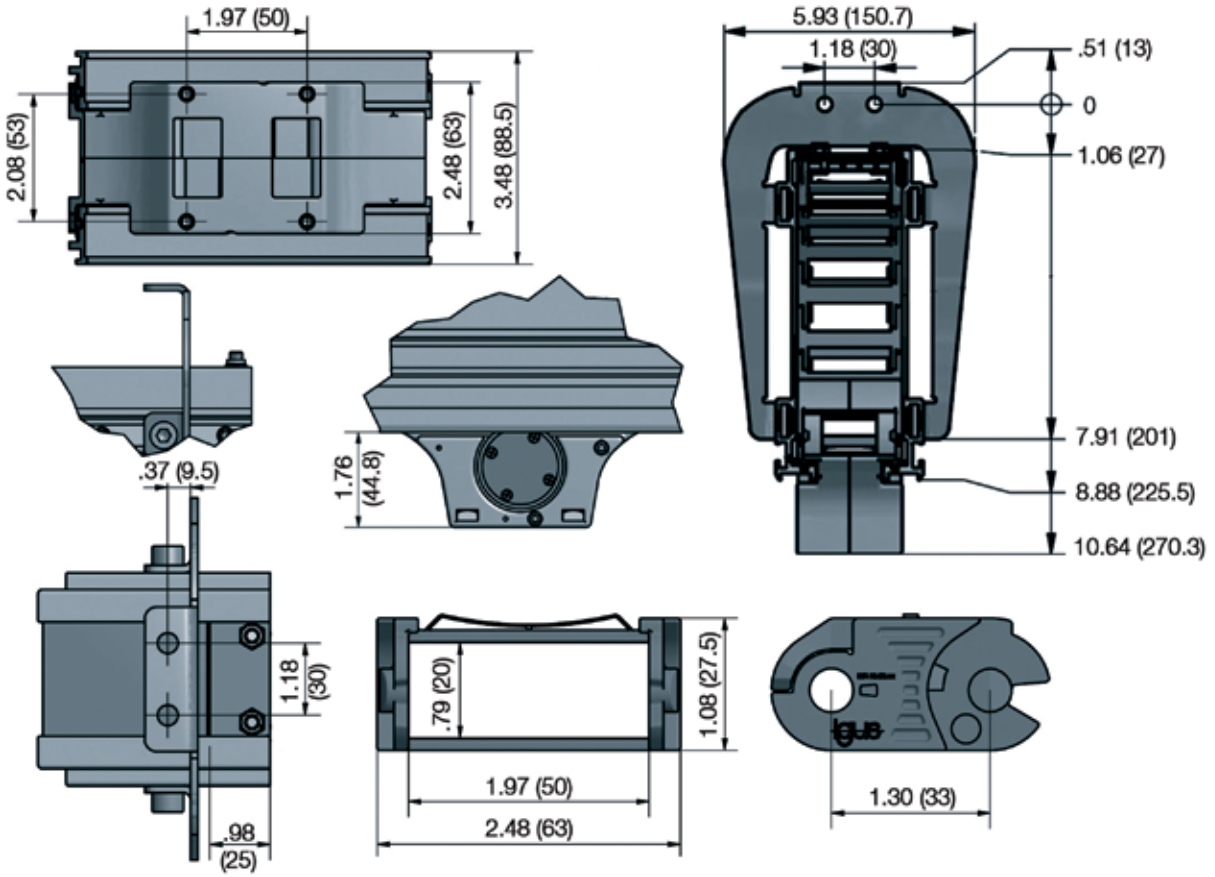
Order example ➤ Page 9.179

More dimensions	
Installation height complete system:	161 mm
Installation width complete system:	40.5 mm
Recommended length channel pieces:	2.0 m, 3.0 m and 6.0 m - Die-cast aluminum material
Cable diameter max.:	9.5 mm



e-chain® viewable for illustration

micro flizz® Series MF10 - Part No. MF-10-50-075



micro flizz® Series MF08 - Dimensions

Part No.	*Bi*		*Ba*		*hi*		*ha*		*R* Bending radius
	in.	(mm)	in.	(mm)	in.	(mm)	in.	(mm)	(mm)
MF-10-50-075	1.97	(50)	2.48	(63)	.79	(20)	1.08	(27.5)	075

Order example ➤ Page 9.179

More dimensions	
Installation height complete system:	275 mm
Installation width complete system:	107.6 mm
Recommended length channel pieces:	2.0 m, 3.0 m and 6.0 m - Die-cast aluminum material
Cable diameter max.:	16 mm



e-chain® viewable for illustration

PDF: igus.com/e-chain-pdfs
Product information: igus.com/e-chains

e-chain systems®
micro flizz® - Small e-chains® in aluminum profile
Order Examples

Telephone 1-800-521-2747

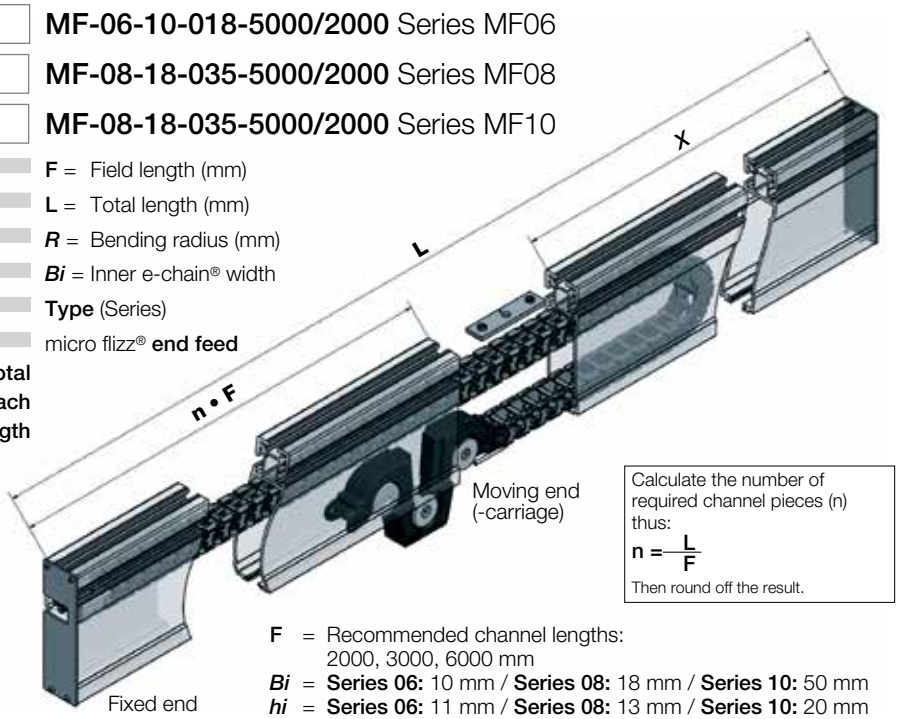
Internet: igus.com
email: sales@igus.com
QuickSpec: igus.com/quickspec

Order example - End feed

MF	06-	10-	018-	L / F	**MF-06-10-018-5000/2000** Series MF06
MF	08-	18-	035-	L / F	**MF-08-18-035-5000/2000** Series MF08
MF	10-	50-	075-	L / F	**MF-08-18-035-5000/2000** Series MF10

F = Field length (mm)
L = Total length (mm)
R = Bending radius (mm)
Bi = Inner e-chain® width
Type (Series)
micro flizz® **end feed**

micro flizz® as end feed option with a total length of 5000 mm, split into 2 channels each 2000 mm and 1 channel with a residual length of 1000 mm



Bi = Inner e-chain® width (mm)
R = Bending radius (mm)
n = Number of channel pieces
S = travel = L - 300 (mm)
F = Field length (mm)
L = Total length (mm)
X = residual length (mm)

Calculate the number of required channel pieces (n) thus:

$$n = \frac{L}{F}$$

Then round off the result.

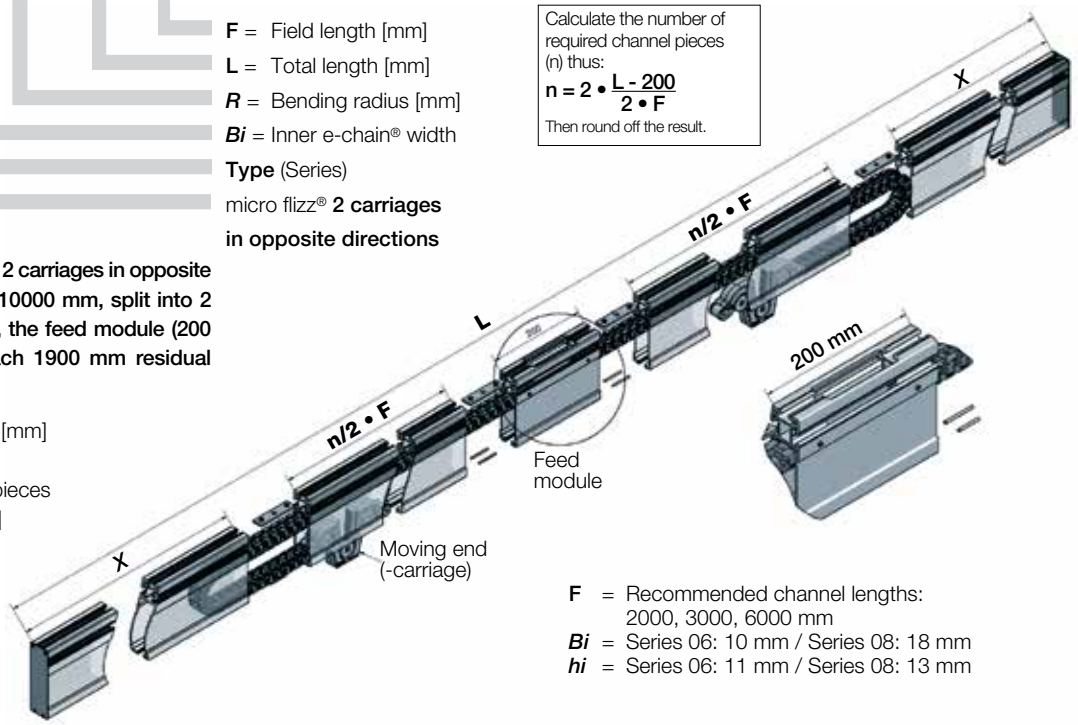
F = Recommended channel lengths: 2000, 3000, 6000 mm
Bi = **Series 06:** 10 mm / **Series 08:** 18 mm / **Series 10:** 50 mm
hi = **Series 06:** 11 mm / **Series 08:** 13 mm / **Series 10:** 20 mm

Order example - 2 carriages in opposite directions

MFG2	06-	10-	018-	L / F	**MFG2-06-10-018-10000/3000** Series MF06
MFG2	08-	18-	035-	L / F	**MFG2-08-18-035-10000/3000** Series MF08
MFG2	10-	50-	075-	L / F	**MFG2-08-18-035-10000/3000** Series MF10

F = Field length [mm]
L = Total length [mm]
R = Bending radius [mm]
Bi = Inner e-chain® width
Type (Series)
micro flizz® **2 carriages in opposite directions**

micro flizz® mounted with 2 carriages in opposite directions - Total length 10000 mm, split into 2 channels each 3000 mm, the feed module (200 mm) and 2 channels each 1900 mm residual length.



Bi = Inner e-chain® width [mm]
R = Bending radius [mm]
n = Number of channel pieces
S = travel = L - 300 [mm]
F = Field length [mm]
L = Total length [mm]
X = residual length [mm]

Calculate the number of required channel pieces (n) thus:

$$n = 2 \bullet \frac{L - 200}{2 \bullet F}$$

Then round off the result.

F = Recommended channel lengths: 2000, 3000, 6000 mm
Bi = Series 06: 10 mm / Series 08: 18 mm
hi = Series 06: 11 mm / Series 08: 13 mm

Highly flexible chainflex® special cables for dynamic applications

chainflex®		Temp.	*v* max. unsupported ft/s	(m/s)	*v* max. gliding ft/s	(m/s)	*a* max. ft/s²	(m/s²)	Number of cores	AWG Range
	CF9	-31°F - +212°F	32.8	(10)	19.7	(6)	328	(100)	2 - 36	24-2
	CF10	-31°F - +212°F	32.8	(10)	16.4	(5)	328	(100)	2 - 25	26-12
	CF98	-31°F - +194°F	32.8	(10)	19.7	(6)	328	(100)	2 - 8	26-22
	CF99	-31°F - +194°F	32.8	(10)	19.7	(6)	328	(100)	2 - 8	26-22

chainflex® cables suitable for micro flizz® are available from stock at igus®!
MF06 - max. cable outer diameter ø 8.0 mm, MF08 - max. cable outer diameter ø 9.5 mm



micro flizz® in an outdoor application with 98.4 ft. (30 m) travel



Safe energy supply under strong dust
and dirt accumulation with igus® micro flizz®



micro flizz® as “energy supplying rail guide”
for a scale to weigh chemicals, etc.



Solutions for predictive maintenance

isense smart plastics



For greater plant availability

- Make maintenance and repair of your machines more efficient and cost-effective with smart plastics
- smart plastics reduce failures
- Intelligent products predict the maintenance date in good time and can be integrated into your processes and systems
- Wherever predictive maintenance is required



e-chain system®
isense - smart plastics
Introduction - Advantages



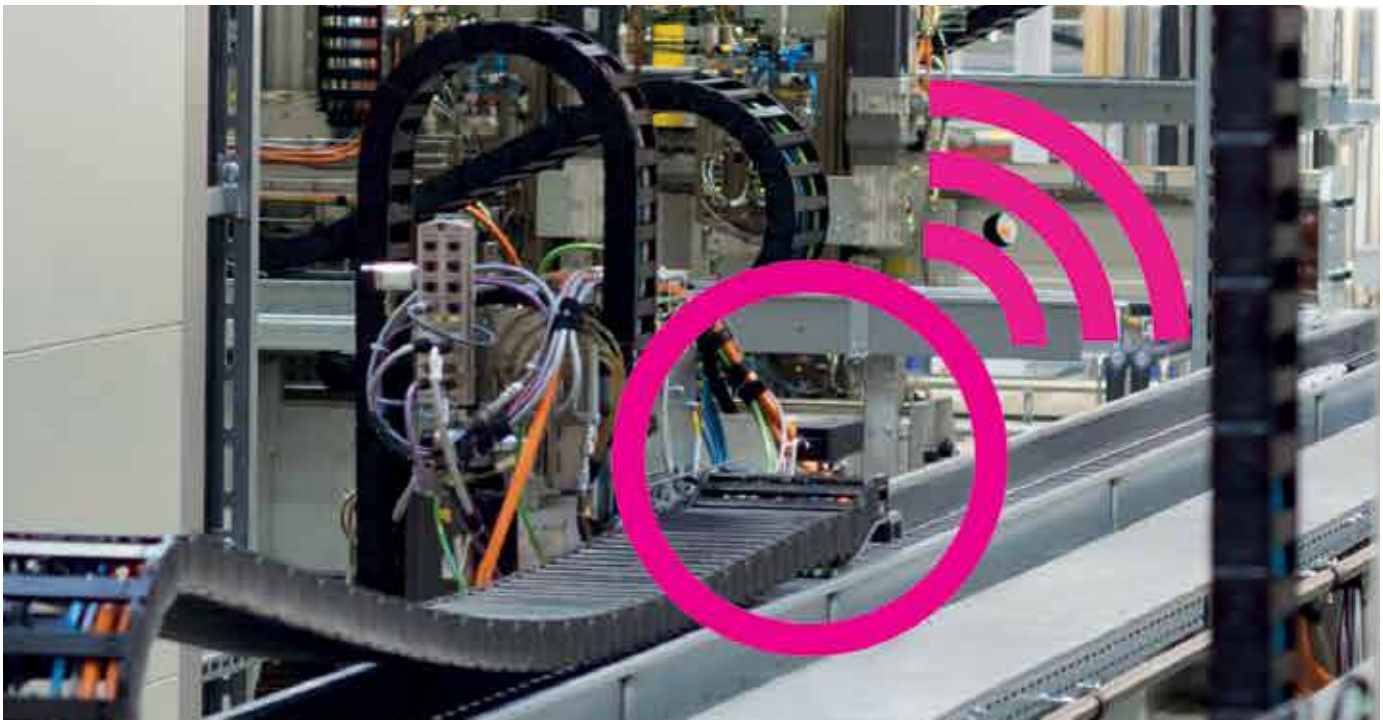
Moving energy made smart - smart plastics make smart factories - igus® isense

As a manufacturer and supplier of plastic components such as energy chains, cables and bearings, igus® is also going through a digital development process and is increasingly orienting its products towards use in smart factories. The aim is to make the maintenance and repair of its plastics more efficient and cost-effective. Thanks to the newly developed igus® isense products, maintenance and repair are not only being focused on more in industrial production; they also benefit from digitization and its advantages.

- Reduce maintenance costs
- Eliminate unplanned downtime
- Increase service life
- Increase equipment efficiency
- Save time - faster detection of faults
- Reduce energy consumption

Typical industries and applications

- Wherever predictive maintenance is required
- Harbor installations
- Cranes
- Car plants
- Gantries



Making maintenance and repair of machines and systems more efficient and cost-effective

Many new sensors and monitoring systems have been developed for the isense product family, making igus® plastic solutions into intelligent products. The result is that igus® components do not simply develop a defect unexpectedly but predict the defect and indicate the need for maintenance in advance. With this new development, igus® has added predictive maintenance - intelligent production meets equally intelligent maintenance.



smart plastics in action - isense EC-B modules from igus® monitor the condition of the chain by means of a polymer wire inside the e-chain® and a sensor unit

e-chain system®
isense - smart plastics
Sensors

igus® isense modules, which use sensors to collect data from energy chains, cables, linear guides or slewing ring bearings, are equipped with an interface and can be easily integrated into a control cabinet. A data logger allows values to be stored on an SD card. The data measured by the various isense modules is then sent wirelessly to the icom module, summarized and processed.

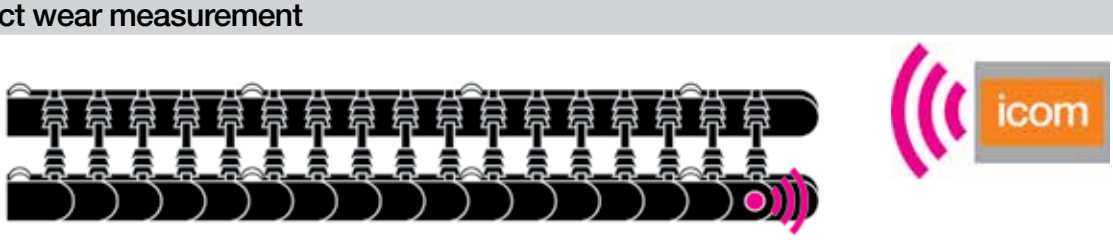
EC-M — e-chain® cycle monitoring / EC-W - e-chain® wear monitoring

Always moving - EC.M sensor / wear detection - EC.W sensor



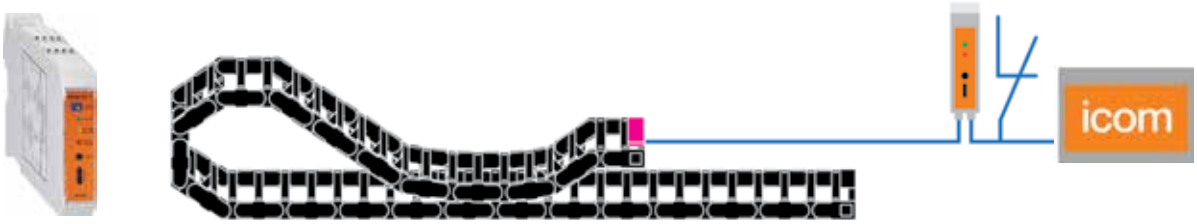
EC-I — integrated

Non-contact wear measurement



EC-P — Push/Pull force monitoring

When forces are critical: EC.P sensor measures push/pull forces



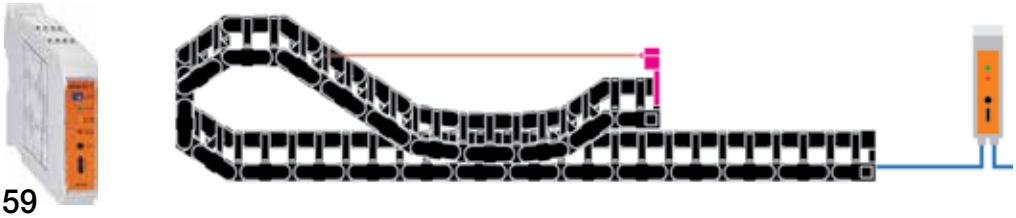
EC-B — e-chains® breakage detection

Detect e-chain® breakages automatically with the EC.B sensor



EC-RC — run control

Monitoring the operating status of the e-chains®, especially in guide troughs



The EC-M sensor is mounted on the moving end of the e-chain® in order to record the application data. It detects values such as acceleration, velocity, temperature and number of cycles, and determines the distances completed as well as the remaining service life of the system.
The EC-W sensor measures the wear on the crossbar, on the pin/bore connection or on the liners depending on the product and sends a signal when the limit is reached.

For rol e-chains®, such as series P4-1, the pin/bore connection is the most mechanically stressed component. Directly integrated in the e-chain® link, the EC-I sensor contactlessly measures the wear in the pin/bore connection for maintenance planning.

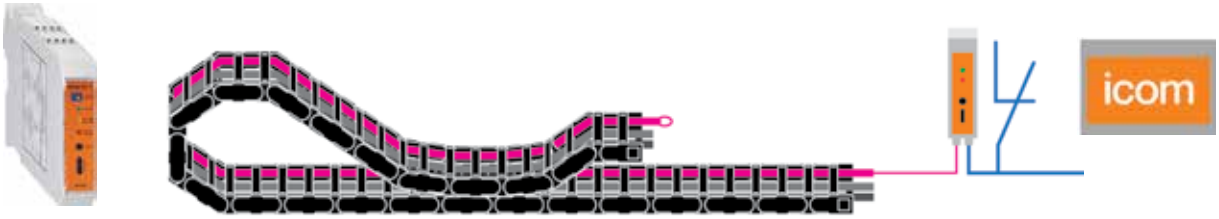
Use of the EC-P sensor saves maintenance personnel from having to inspect long travel distances - information is always available and can automatically be passed on to the isense system.

The EC-B break detection sensor reduces the amount of work of maintenance technicians responsible for looking after crane installations and gantries. The EC-B sensor can detect breakage of a chain link caused by parts or debris falling into the system. In the past, this problem played a part in the failure of a crane, as breakage of an e-chain® link automatically leads to overloading and failure of the opposite side.

Sensors measure and check the position of the e-chain®. In this way, the machine is prevented from continuing to operate if mechanical faults occur; meaning that total loss of the e-chain® or an electrical shutdown due to cable damage are avoided.

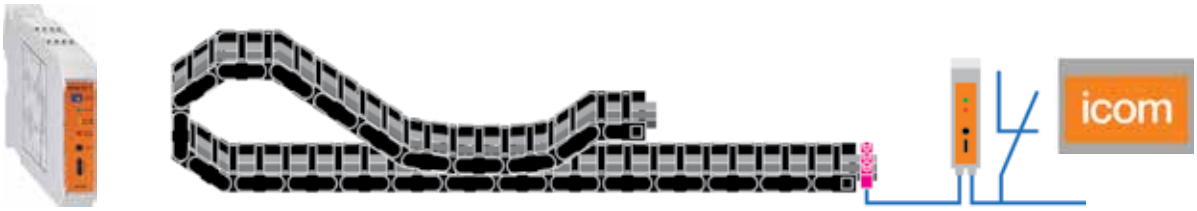
CF-Q — chainflex® cable service life

Detect hidden cable damage early



CF-P — Push/Pull force monitoring

Prolong cable life



DLT-W — drylin® T wear monitoring

Monitor wear status of drylin® linear units



PRT-W — iglide® PRT wear monitoring

Monitor wear status of iglide® slewing ring bearings



icom — data concentrator

Data collection and transmission



The CF-Q sensor indicates changes in the electrical properties; and allows detection of impending cable failure in advance. The engineer then decides what priority the replacement of a cable has and what the consequences of a defect might be.

Tensile forces acting on the cables of an e-chain system® can significantly reduce the service life. The CF-P system measures the forces directly at the strain relief and indicates the need for action.

Used to detect when the wear of a drylin® linear guide has reached a level normally associated with the end of the guide's service life. A plastic element that has an integrated sensor and can be retrofitted, signals the need for replacement in good time.

To determine the wear limit of iglide® slewing ring bearings. Mounted in a milled slot below the sliding elements of the PRT, the PRT-W sensor measures the abrasion and can indicate the required replacement promptly via the icom communication module before a failure.

These sensors become even more useful when linked to the icom module - a data concentrator - that can transfer the measured values to an isense system. How the sensor data can be further processed depends on the respective system chosen. igus® currently offers four different variants.

e-chain system®
isense - smart plastics
Sensors

A choice of four different isense smart plastics concepts makes integration into existing infrastructure seamless

The icom module sends the data gathered by the sensors to a PC or integrates it via a computer into the existing software environment or IT infrastructure. In addition, connection to the igus® Data Centre is possible. By comparing live data with data collected from many existing test applications conducted at the igus® 29,600 ft² test facility using machine learning techniques and AI algorithms, maintenance recommendations can be provided.
Due to the numerous test findings that are fed into the online service life calculators, igus® is able to predict precisely how long an e-chain® will work reliably in a particular application. The isense modules provide live service life updates of the system, improving overall safety. This is because it includes the current ambient conditions of the actual application. Predictive maintenance ensures that repair or replace tasks are planned only when it is really necessary. This saves time and maintenance cost.

isense online



Flexibility	■■■■■
Networking	■■■■□
Safety	■■■■□
Cost	■■□□□

Connected solution

Plan maintenance and service activities efficiently with isense online and only carry out the work that is really necessary. Efficient work prioritization after the alert, and supply of the appropriate replacement part from stock.

isense integration



Flexibility	■■■■□
Networking	■■■■□
Safety	■■■■□
Cost	■■■■□

Early ordering of replacement parts

Thanks to a wide range of options (Profinet, Ethernet, EtherCat, CC-Link IE Field), integration into existing IT infrastructure is possible with trained igus® specialists.

isense stand-alone



Flexibility	■■■□□
Networking	■□□□□
Safety	■■■□□
Cost	■■□□□

Added value for service technicians in specialized production

The isense standalone system lends itself to those businesses that are only concerned about maximizing production uptime.

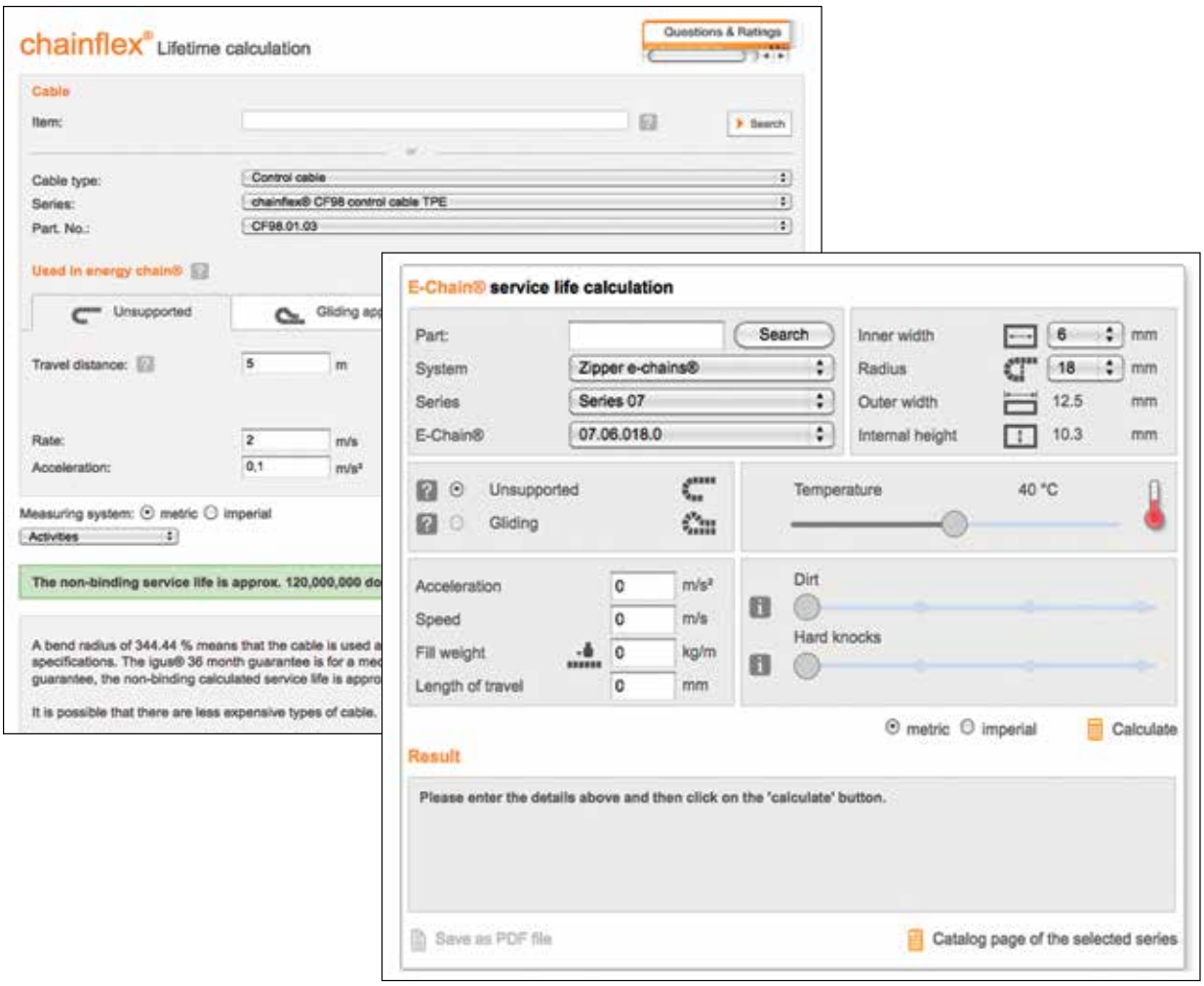
isense offline



Flexibility	■■□□□
Networking	■■□□□
Safety	■■□□□
Cost	■■■■■

Keep track of things at all times in large factories

isense offline is the best solution when the service technician has to monitor a large number of e-chains®, cables and bearings.

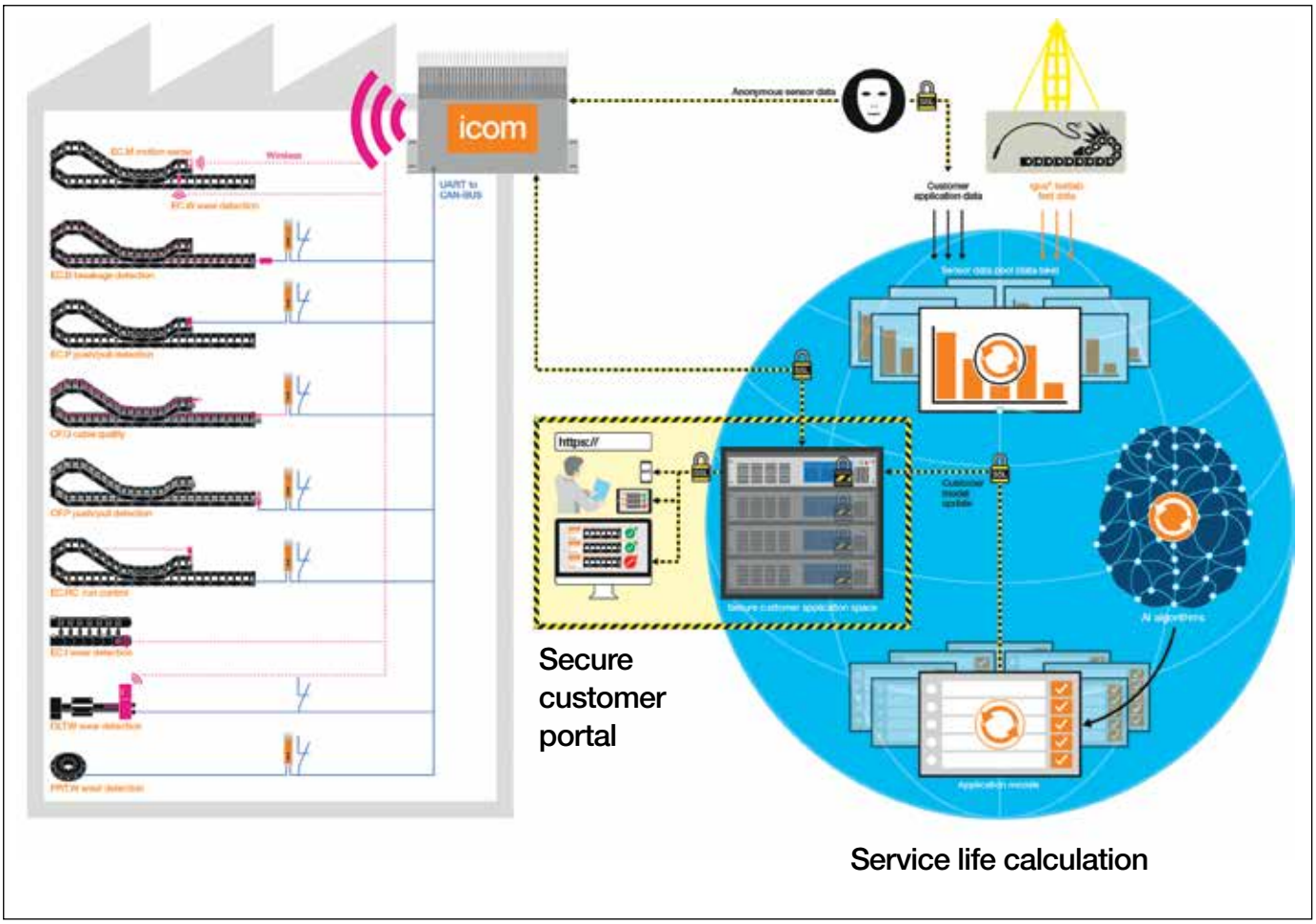


When the isense online system is used, the time shown until the next maintenance is based on the algorithms of the service life calculators for e-chain systems® and chainflex® cables, which have been available on the Internet for many years: The service life calculator combines the results of many thousands of tests and applications in the field into a predicted life in double strokes or kilometers. In the isense system, the starting values are compared with the real application and a constant comparison takes place with the online models based on AI and machine learning algorithms.
Through numerous tests, the results of which are incorporated into the online service life calculator, igus® can predict very accurately how long an e-chain® will reliably work in the respective application.

More information ▶ www.igus.com/lifetime

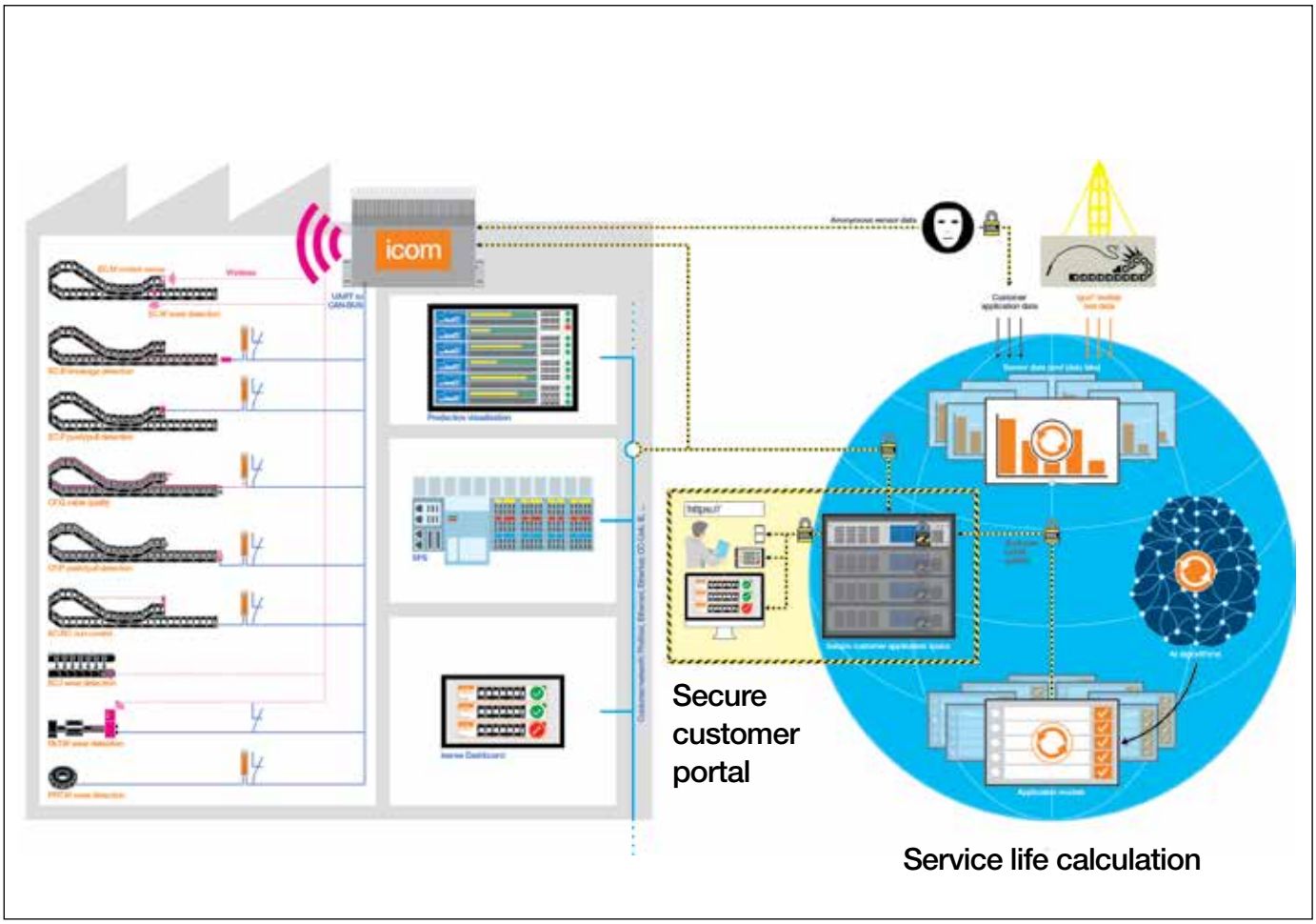


e-chain system®
isense - smart plastics
Sensors



isense online benefits at a glance

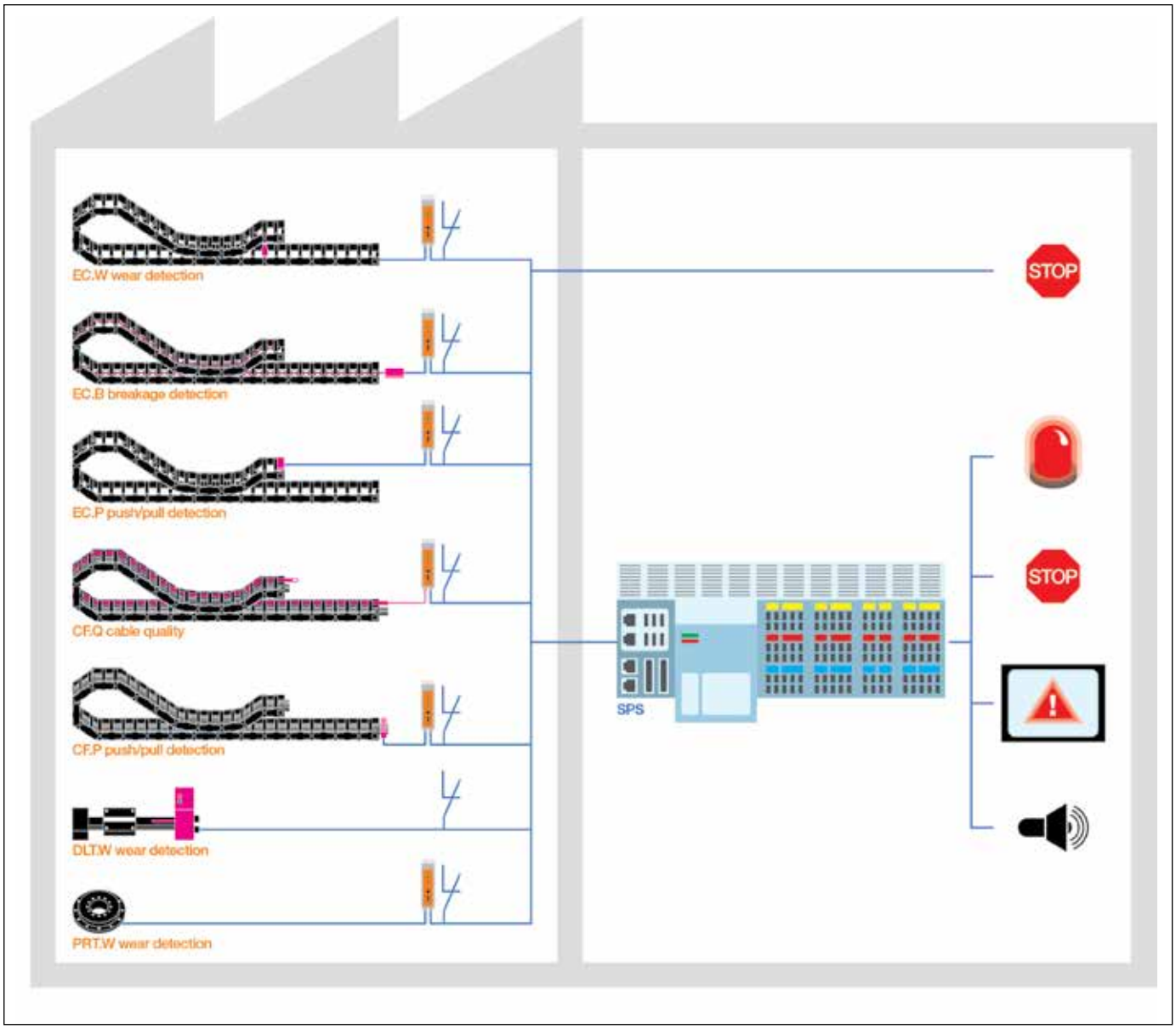
- The best method to plan maintenance and minimize inspection work
- Efficient maintenance organization according to priority and, thanks to integration into the ERP, with appropriate replacement parts from stock provided after the sensor alert
- Predictive and plannable maintenance due to early information on necessary service or replacement
- Data from the igus® laboratory is processed on a server with anonymized customer data and also with open data from other customer applications in order to create a full data model
- Service life predictions from the protected customer area are regularly compared with the data model
- Benefits from all of the test data in the igus® database and keeps learning every day



isense integration benefits at a glance

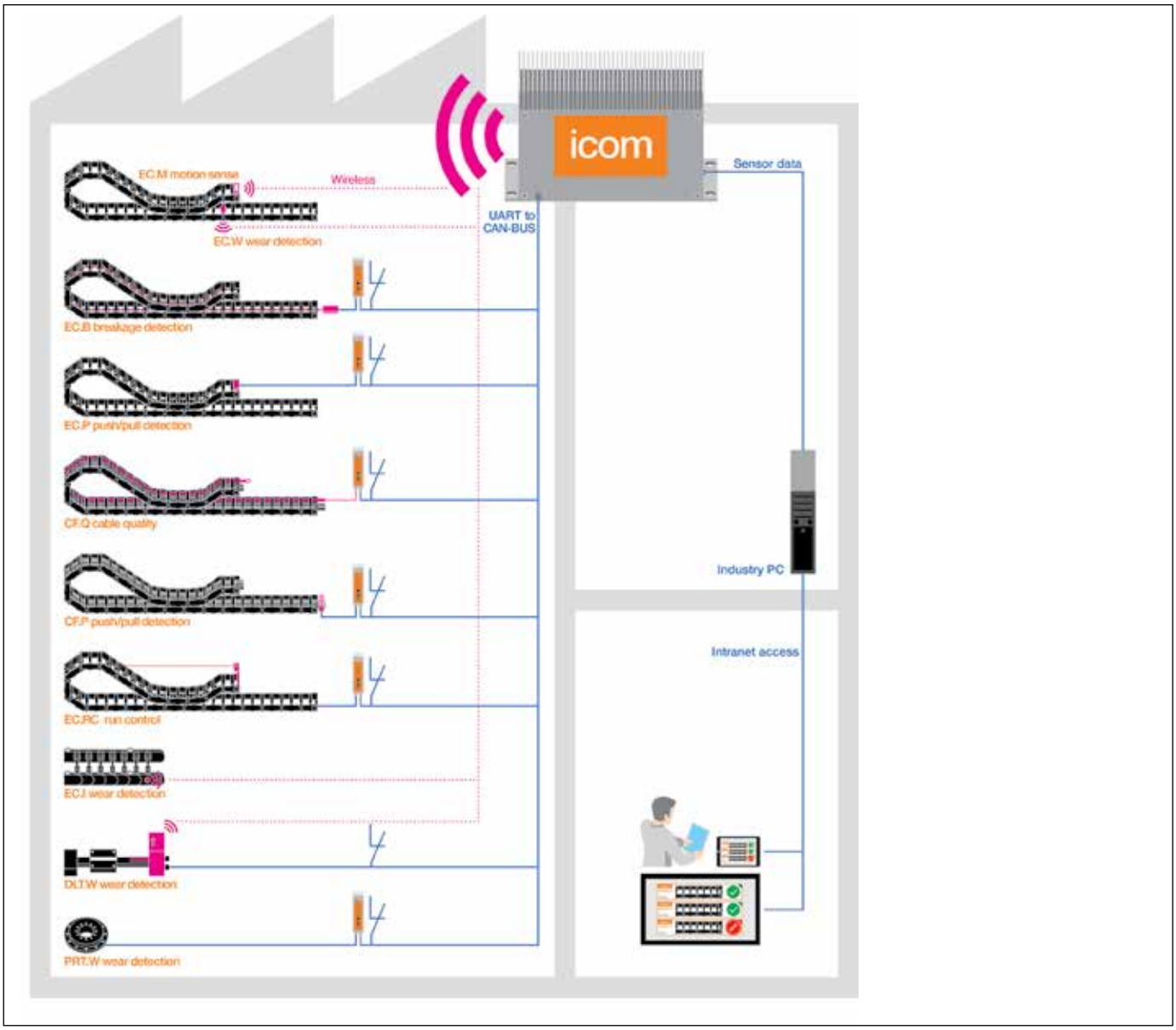
- Wide variety of protocols and standards (Profinet, Ethernet, EtherCat, CC-Link IE Field), OPC-UA, MQTT
- Integration into the existing software environment and the IT infrastructure
- Integration into the customer's production visualization software
- Operating states of different igus® components visible at a click of the mouse
- Ordering of replacement parts via a connected ERP system
- Connection to control software via customer's infrastructure (Ethernet, Profinet, CC-Link IE Field etc.)
- Machine shutdown or acoustic / visual warnings

e-chain system®
isense - smart plastics
Sensors



isense standalone benefits at a glance

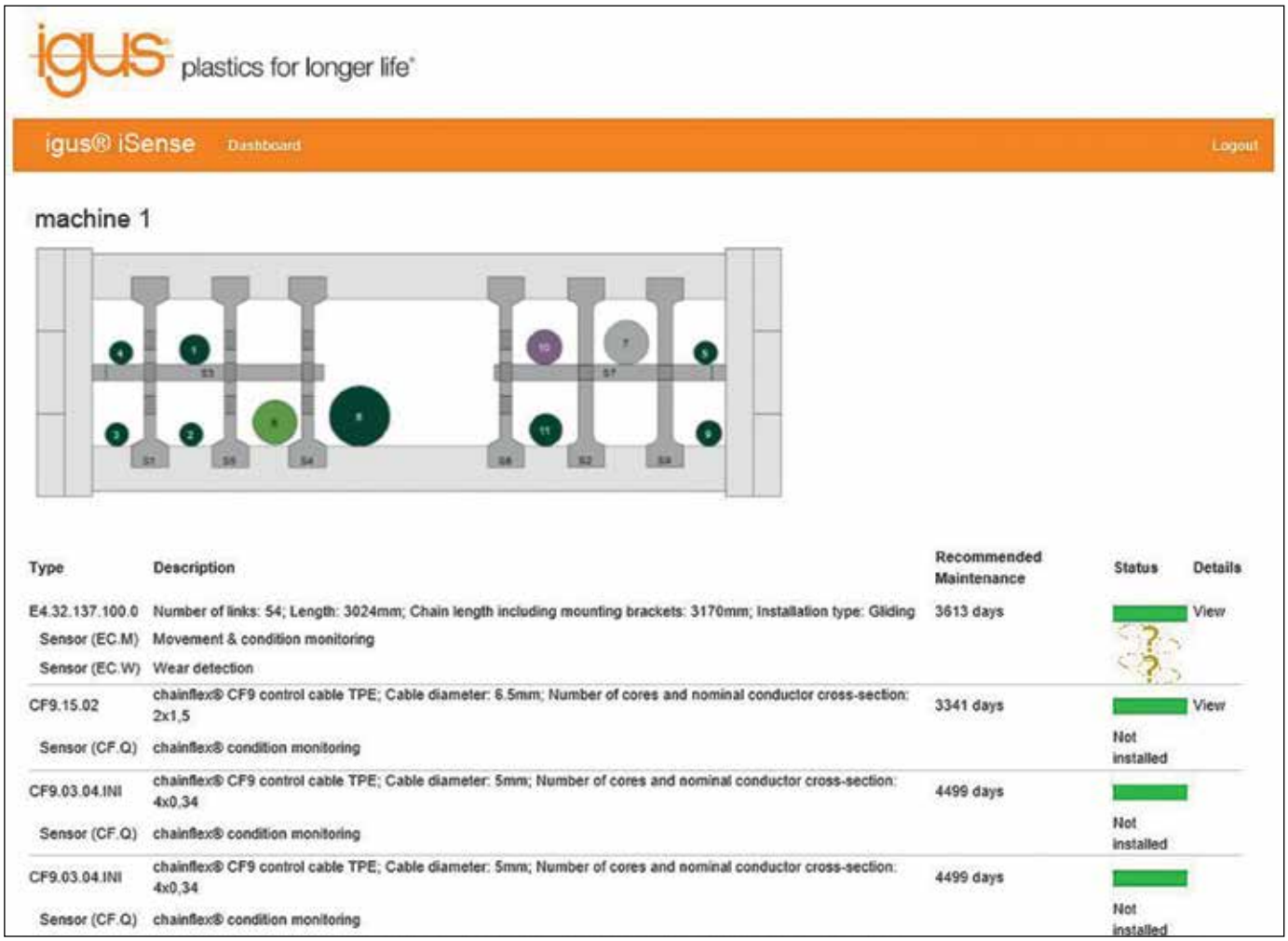
- Easily integrated by a machine programmer
- Sensors (EC.B - break, CF.Q - cable monitoring) on e-chains® and cables gather the measured values
- The machinery can be switched off in two ways: directly by means of the normally closed (NC) contact switch or through evaluation via an I/O interface on the customer's PLC
- The data can be sent to the maintenance team via a serial interface (RS2322/UART) to allow in-house evaluation of the data



isense offline benefits at a glance

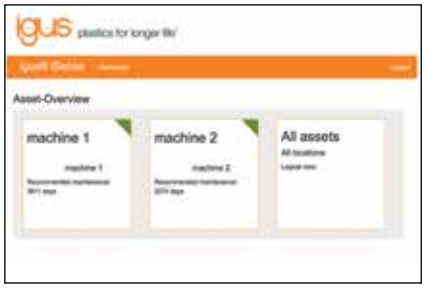
- An additional industrial PC is required to display all messages via the customer's IT infrastructure.
- No connection to the Internet therefore no comparison of the maintenance recommendations with an online database
- Manual update of service life information through comparison with the igus® database is necessary
- Good overview on the Industrial PC: all impending failures in the production environment are displayed
- Ideal for production managers and shift supervisors who are interested in facilitating smooth day-to-day work in component manufacturing or service provision and want to efficiently deploy their maintenance technicians
- Quickly and easily installed lean software solution
- All messages are displayed on an additional industrial PC

e-chain system®
isense - smart plastics
Sensors



Online condition monitoring from anywhere in the world - daily maintenance recommendations

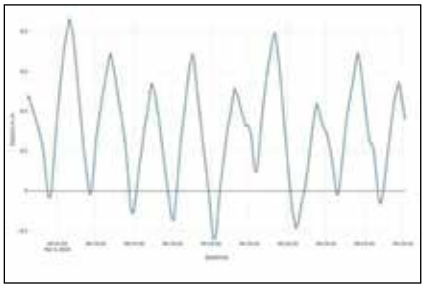
In addition to the maintenance recommendation alerts, all measured sensor values can be displayed with history on a detailed page. In this way, exceptional operating conditions or creeping mechanical changes can be detected early on and corresponding measures initiated in good time.



Control dashboard



History



Each sensor can be called up individually

icom online

	icom data concentrator central unit	IS.ICOM.03.14.0.BETA
	EC-M sensor dynamics & temperature measurement	IS.EC.M.02.15.BETA
	EC-W sensor crossbar type 385, wireless, battery-operated	IS.EC.W.03.385.BETA
	EC-W sensor crossbar type 450, wireless, battery-operated	IS.EC.W.03.450.BETA
	3G modem DIN rail with external antenna	IS.ZB.M.01.15.0

EC-P

	EC-P module push/pull force detection	IS.EC.P.03.01.0
	PPDS diagnostic tool SMD	IS.EC.P.02.15.0
	Load cell for FTA installation 1t	IS.EC.P.Z3.020
	Load cell for FTA installation 2t	IS.EC.P.Z3.021
	Load cell for KMA installation	IS.EC.P.Z3.XX.XX

EC-B

	EC-B module ECS breakage detection	IS.EC.B.03.01.0
	EC-B sensor type .A	IS.EC.B.SU.02.A
	EC-B sensor type .B	IS.EC.B.SU.02.B
	EC-B polymer sensor cable 1.75mm assembled	IS.EC.B.00.Z2.001.1
	EC-B polymer sensor cable 1.75mm roll, to 45m	IS.EC.B.00.Z2.001.0
	EC-B special separator E4.32	IS.EC.B.S.E4.32
	EC-B special separator E4.42	IS.EC.B.S.E4.42
	EC-B special separator E4.56	IS.EC.B.S.E4.56
	EC-B special separator 4040HD	IS.EC.B.S.4040HD
	EC-B special separator E4.32 assembled	IS.EC.B.S.E4.32.1
	EC-B special separator E4.42 assembled	IS.EC.B.S.E4.42.1
	EC-B special separator E4.56 assembled	IS.EC.B.S.E4.56.1
	EC-B special separator 4040HD assembled	IS.EC.B.S.4040HD.1

CF-Q

	CF-Q module for core breakage monitoring BETA version	IS.CF.Q.03.01.0.BETA
	CF-Q temperature sensor	IS.CF.Q.00.008.0


1
4
7
Clear

Solutions for predictive maintenance

PPDS

Push/Pull force monitoring

- Easy installation, non-interchangeable connectors
- Easy programming using the keypad directly at the device
- Compact housing, corrosion-resistant and with EMC protection
- The force limit is programmed in tensile and compression directions
- The plant shuts down when the force is exceeded
- Custom programmable
- Event logging in the data memory
- igus® smart plastics - intelligent products forecast maintenance date in good time



e-chain systems®
PPDS - Condition Monitoring
Overview - Advantages



Floating moving end
now also available for
PPDS basic

PPDS basic:
Reliability
from stock

PPDS analysis unit:
Emergency shut-off or alarm in response to a potential system overload

PPF sensor:
Force is measured directly at the mounting bracket of the e-chain®

Complete package:
Including interface cables

Condition monitoring: Push Pull Force Detection System - PPDS

The PPDS System is an electronic diagnostics tool that performs online monitoring of the displacement forces on the e-chains® in order to avoid system damage and stoppages. Excessive dirt, ice, and snow and foreign objects that fall into the e-chain® can block the system, causing the e-chain® to ascend and break. The PPDS system measures the displacement forces on the e-chain® several times per second, and compares the information with be calculated specification. If a variance occurs the plant can be automatically stopped with the help of the PPDS system.

- 3 PPDS systems are available
- Easy installation by means of non-interchangeable connectors
- Easy programming using the membrane keypad directly at the device
- Compact housing, stable, corrosion resistant, sealed in accordance with IP 65
- The force limit is programmed in tensile and compression direction
- The plant stops when the force is exceeded
- Custom programmable and event logging in the data memory

Typical industries and applications

- Malfunction-sensitive plants, such as conveyor systems in power plants
- Waste incineration systems
- Chemical plants
- Crane building
- Generally with long travel distances that have high fail-safe requirements
- For long travel applications, if tensile and compressive force monitoring is needed

e-chain systems®
PPDS - Condition Monitoring Options
Product Range - Basic / Advanced / Pro

PPDS basic - as safety standard

So far the realization of Condition Monitoring Systems was limited to large-scale projects, e.g. ship-to-shore cranes. PPDS basic now makes this technology available for all standard industrial appliances. The simple force measuring function conducted at the mounting bracket of the e-chain® new also provides an emergency stop function for e-chains® in gliding applications under 328 ft. (100 m) stroke at a reasonable price

- Low-cost system protection
- Emergency Shutdown or alarming in case of system overload
- Space - saving design
- New floating moving end available for PPDS basic.

PPDS advanced - for long gliding applications

The system for very long gliding applications with an igus® floating moving arm (used to compensate lateral movements). The force sensor is integrated in the floating moving arm and works in connection with the PPDS evaluation unit. We recommend to realize the engineering of such a plant by our technicians, please consult igus®.

PPDS pro - for extreme operational reliability requirements

The system for long travels when extreme operational reliability is essential. The PPDS pro analysis unit can analyze force thresholds by position. Here as well, a load cell is installed in the floating moving end. We recommend to realize the engineering of such a plant by our technicians, please consult igus®.



Electronic pull-push force monitor with the igus® PPDS system



PPDS system test facility in the igus® lab

Floating moving end as separate component

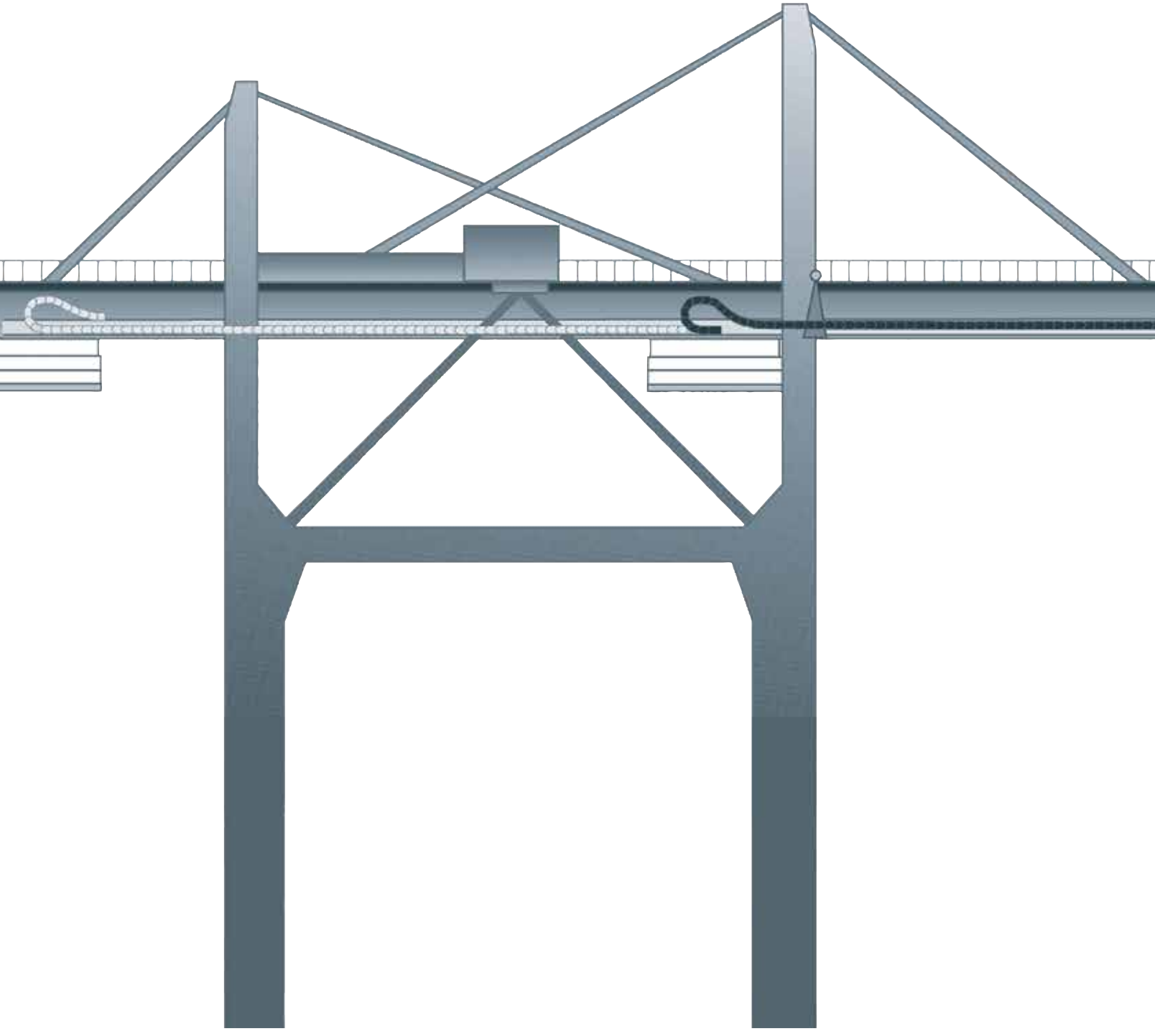
- Compensates parallel errors - compensates lateral offset tolerances between moving end and e-chain system®
  horizontal ± 82 ft. (25 m)
- Easy assembly, small, light, and affordable
- Compatible with PPDS basic
- Max. acceleration: 2 m/s² (speed depends on e-chain® type)

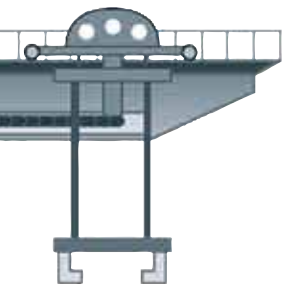


Delivery program

Part No. floating moving end as separate component	For e-chain® Series
FTA-B-01-2500-XX	2500, System E2/000
FTA-B-01-2700-XX	2700, System E2/000
FTA-B-01-3400-XX	2500, System E2/000
FTA-B-01-E4-28-XX	E4.28, System E4-1
FTA-B-01-E4-32-XX	E4.32, System E4-1
FTA-B-01-E4-42-XX	E4.42, System E4-1

More series available upon request, please consult igus® for delivery time.
Supplement Part No. with the required e-chain® width-index.
Example: FTA-B-01-2500-05



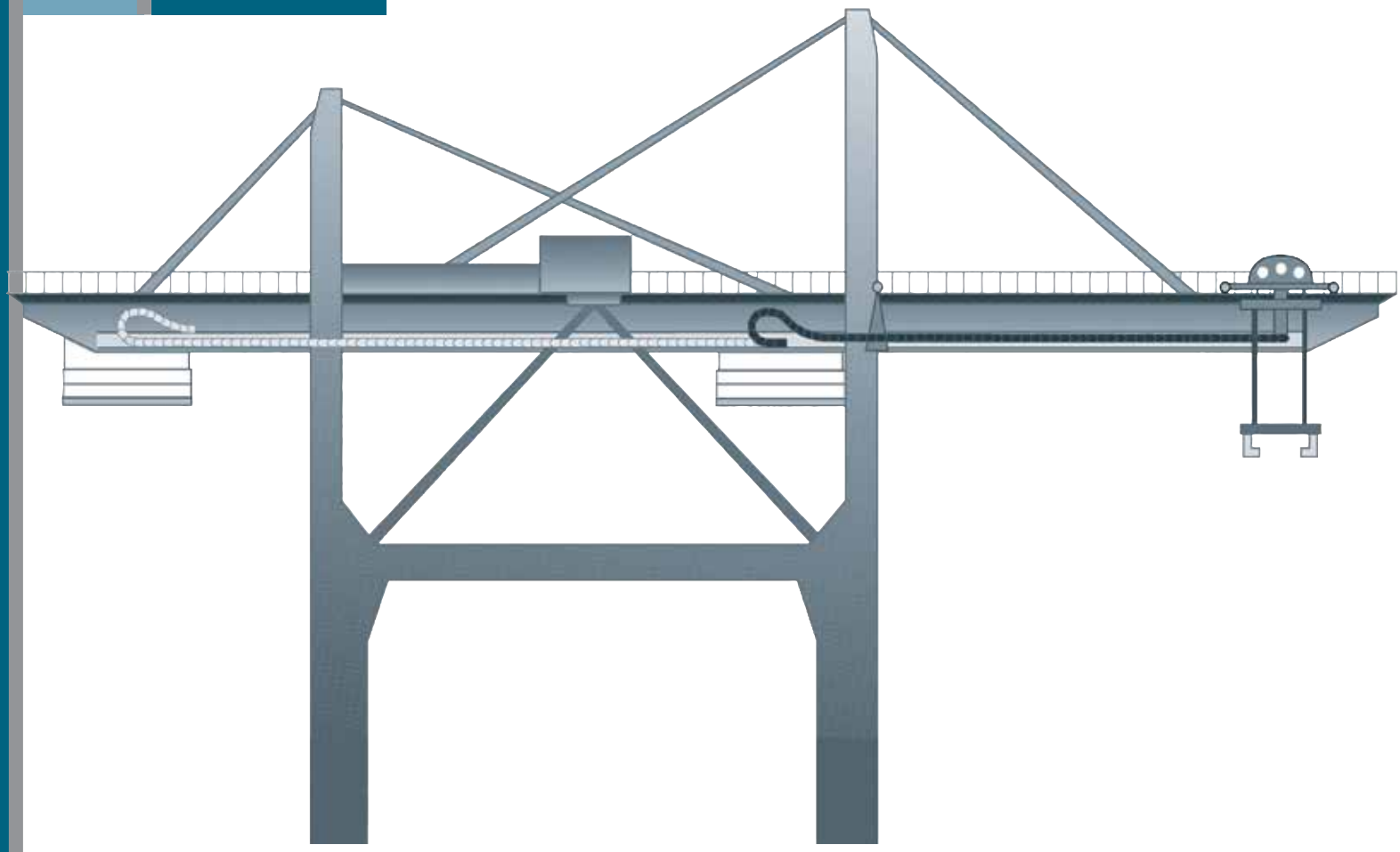


Modular projects

Special solutions from stock

- Faster quotations, faster project planning
- Detailed service manuals and documentation
- Time and cost savings
- Absolute functional reliability
- System guarantee available upon request and depending on the application
- PPDS moving end - electronic Push/Pull Detection System
- Fixed end modules for easy attachment of the e-chain® inside the guide trough, with no drilling required
- Extreme gliding - gliding elements for even longer service life of e-chains® where long travels are involved
- HD trough systems with different installation set designs, matching the respective application and duty levels

e-chain systems®
Modular System for Projects
Advantages



For extremely heavy-duty applications and special solutions from stock

The igus® modular system for projects ...tested and time-proven in numerous projects, have now become available as a modular standard system.

- Faster quotations, faster project planning
- Detailed service manuals and documentation
- Time and cost savings
- Safe function
- System warranty available upon request, for individual applications
- PPDS tow arm with electronic push/pull force monitoring
- Fixed end-modules for easy attachment of the e-chain® inside the guide trough, with no drilling required
- Extreme gliders gliding elements for even longer cycle life of e-chains® on long travels
- HD trough systems with different assembly kit designs, matching the respective application and stress levels

Typical industries and applications

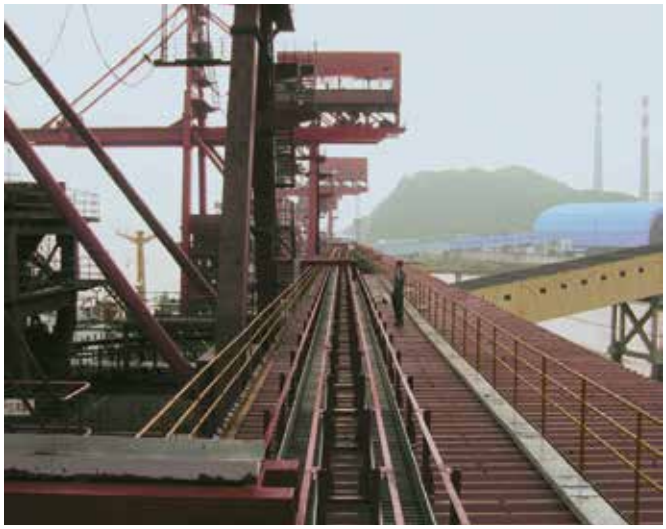
- Cranes
- Offshore
- Cranes, offshore



Long travels with electronics Push/Pull-force monitoring with the igus® PPDS System



igus® supervisors plan projects worldwide



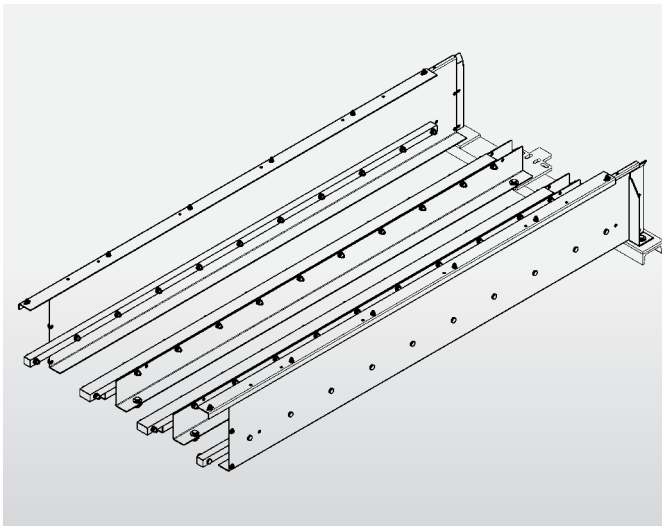
Series 4040R on a coal unloading system - travel 623.4 ft. (190 m), speed 1.64 ft/ s (0.5 m/s), fill weight 5.41 lbs/ft (8.05 kg/m)



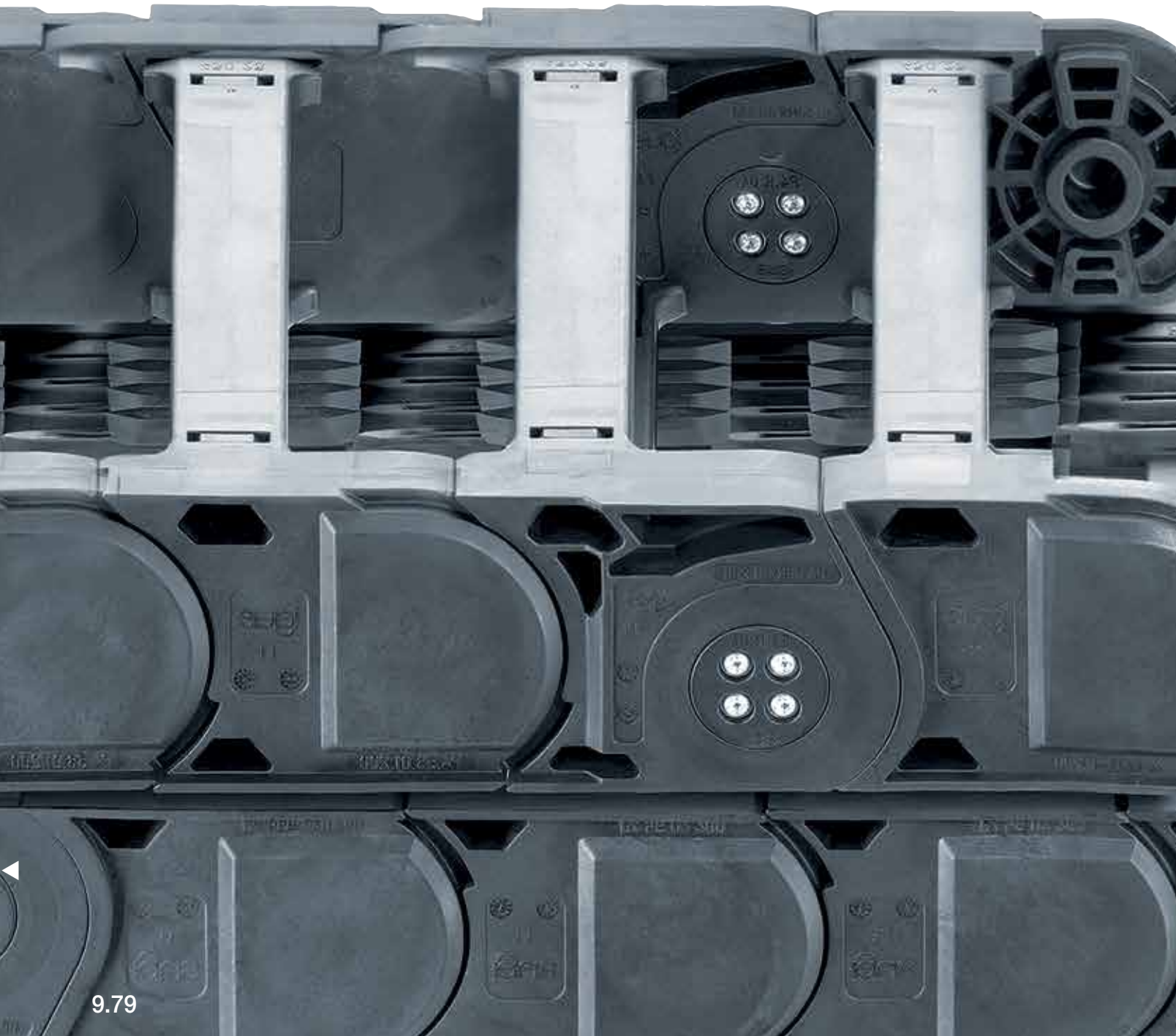
Series 4040HD on (180 m) travel lengths with housing.
-40°F/+104°F (-40°C to +40°C) temperature range and high dirt pollution



Crane system designed by igus®



igus® project planning example, here: guide trough modules

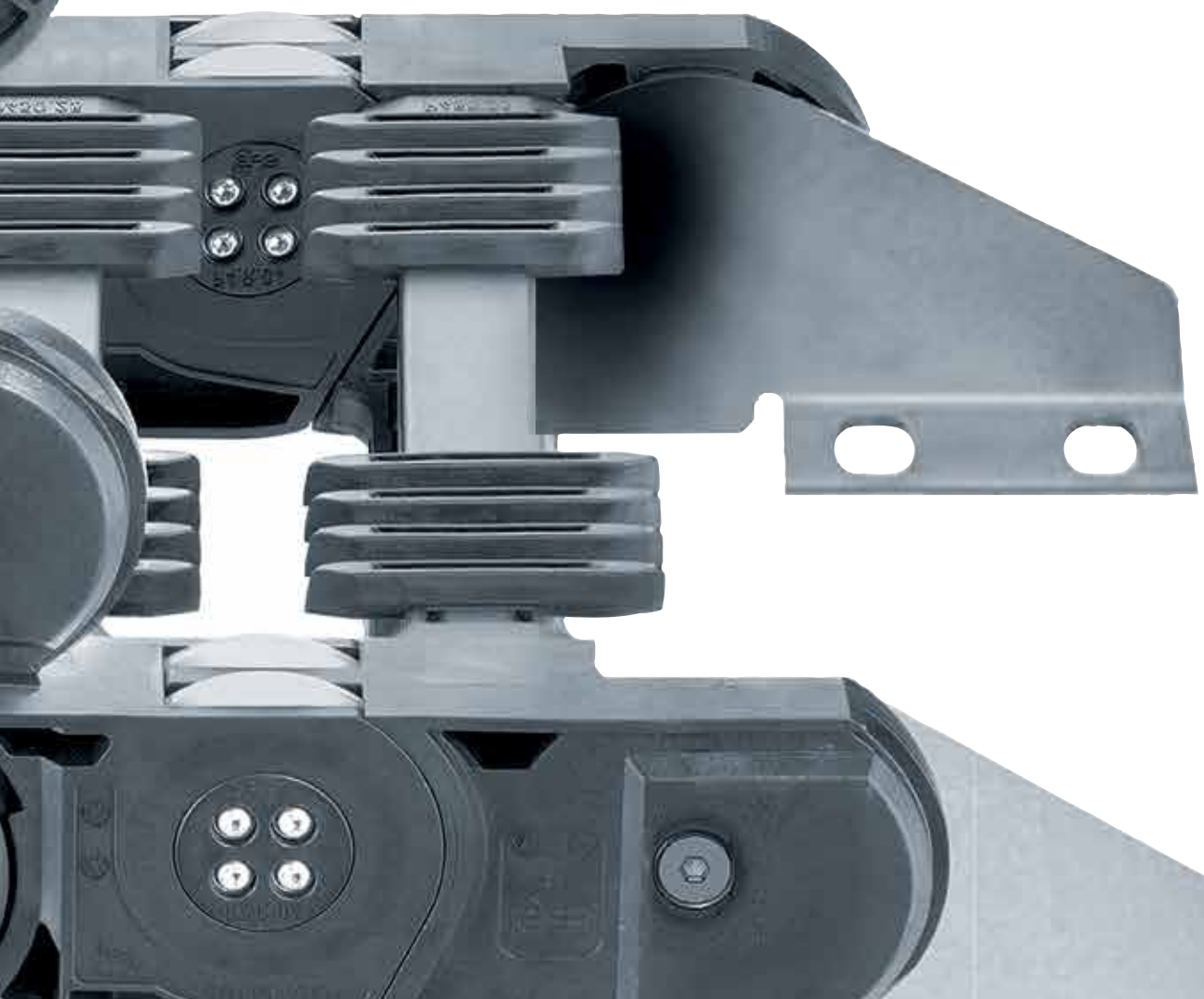


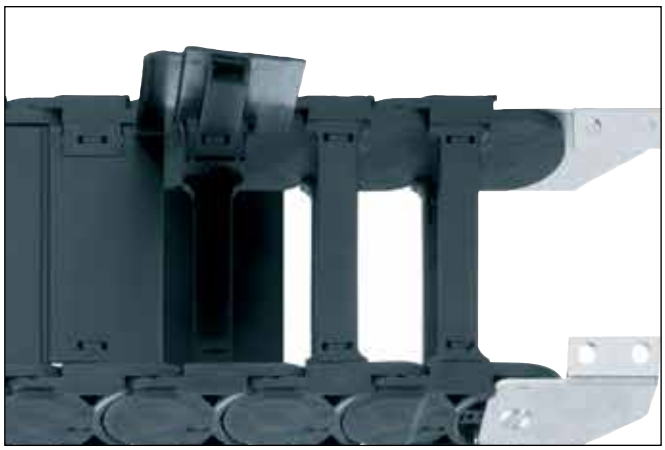
e-chains®
for long travels

E4/4HD - System P4 - rol e-chains® - autoglide

Advantages of igus® e-chains® for long travels

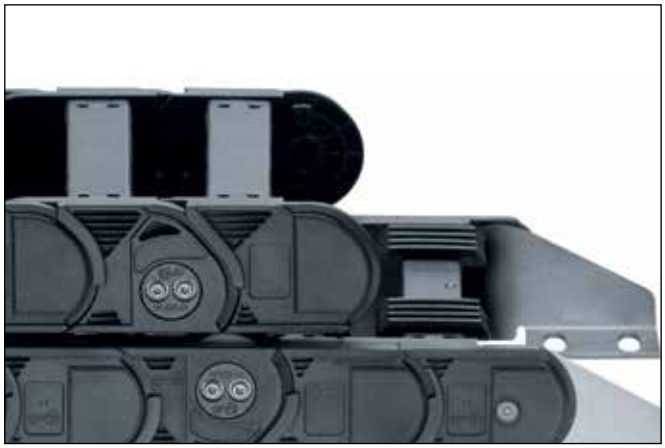
- Travel lengths of 2,625 ft. (800m) and more are possible
- Very space-saving and energy-efficient
- For speeds up to 32.8 ft/s (10m/s)
- For fill weights up to 20.16 lbs/ft. (30kg/m)
- Weather and dirt-resistant
- Suitable chainflex® cables
- Optional Condition Monitoring Systems





Very high fill weights for long travels - E4/4HD "Heavy-Duty"

- For very heavy fill weights and long travels
- Strong, even when used in very dirty or humid environments
- High torsional rigidity
- Long service life
- Recommended for heavy-duty applications



Reduce energy consumption by 57% - P4 profile-rol e-chain®

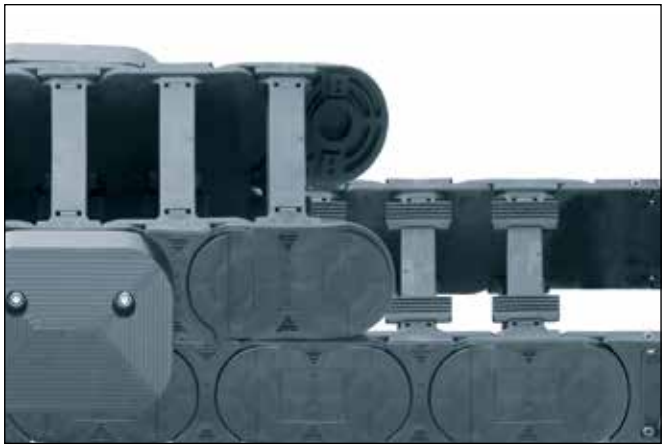
- Safe, low-noise, abrasion-resistant energy supply system for long travels
- Long travels up to 2,625 ft. (800m) and more, high fill weights up to 20.16 lbs/ft.(30kg/m)
- For very long travels and high travel speeds up to 32.8 ft/s (10m/s)
- autoglide crossbars for safe guidance



Rolling instead of gliding, long travels up to 800m - E4/4 rol e-chain®

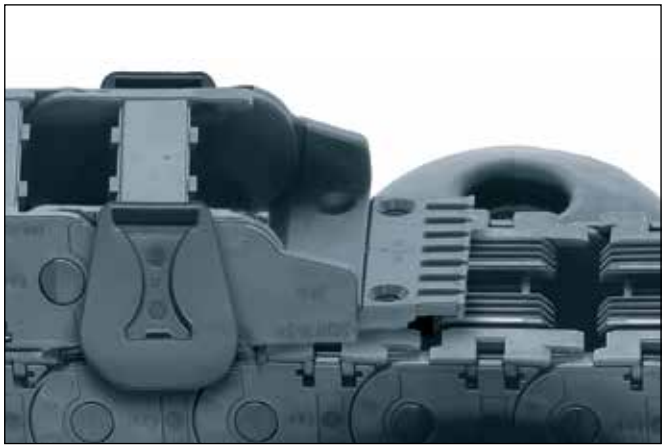
- 75% reduction of drive power needed to move the e-chain®
- Long travels up to 2,625 ft. (800m) with E4/4 rol e-chain®
- Speeds up to 19.69 ft. (6m/s) possible
- Can be used in dirty environments

e-chain system® autoglide
self-guiding e-chain systems®, without the need for guide troughs



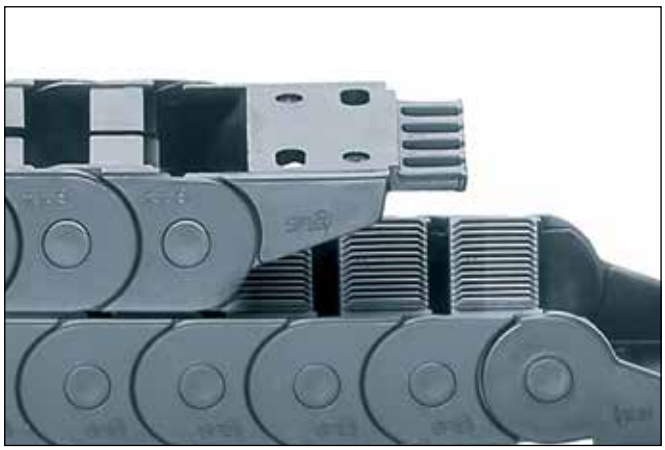
Self-guiding e-chains® for system E4.1 - autoglide version 01

- For the larger E4-1 e-chains®
- Simple guide elements for quick installation
- The autoglide crossbars safely guide the e-chain® replacing the need for a guide trough
- For travels over (32.8 ft. (10m)
- Floor guides can be driven over



Self-guiding e-chains® for system E2/000 - autoglide version 02

- Travel distance up to 229.7 ft. (70m) and speed up to 6.56 ft/s (2.0m/s)
- Very compact, removes troughs forming an obstacle in the working area
- Quick installation for long travels
- Openable along the inner radius
- Clip-on glide wings, secure movement of the e-chain®



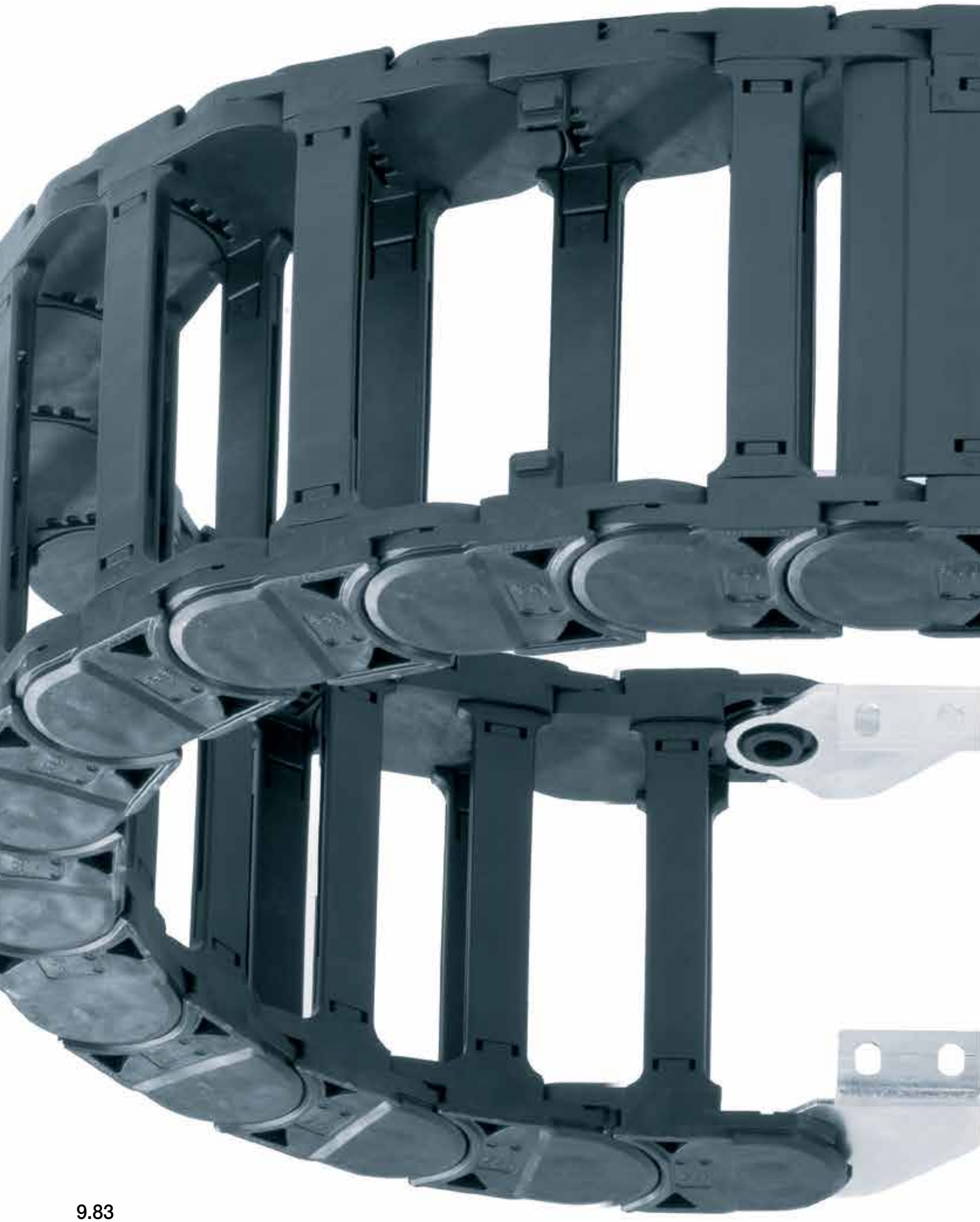
E-Z chain® openable along the outer radius, fitted with molded autoglide grooves along the inner radius - autoglide Version 03

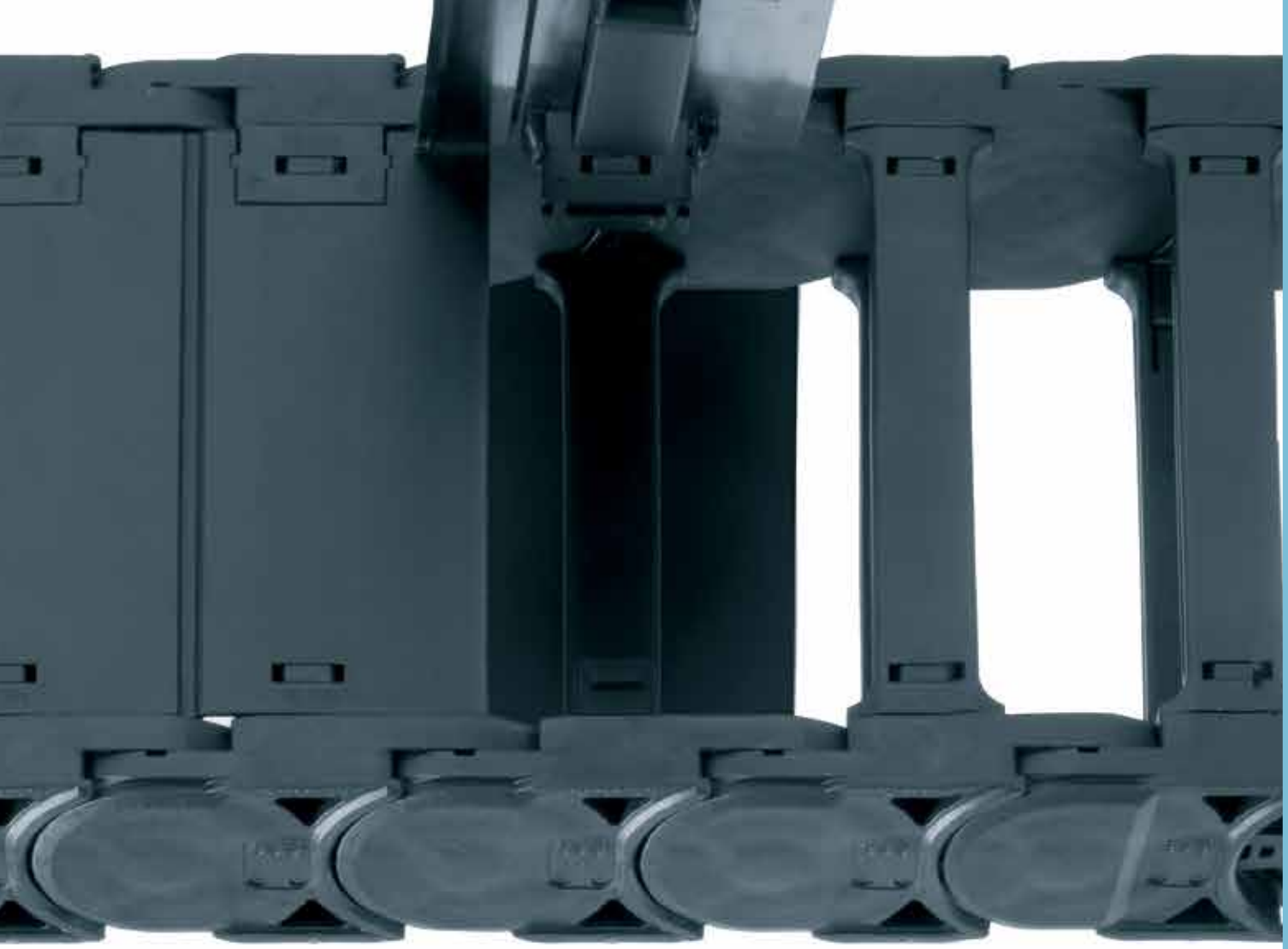
- Doubly cost-effective due to elimination of guide troughs and economical, one-piece e-chain®
- Very quick assembly time - "easy" design
- Small width, quiet operation
- UL94-V2 classification



Special glide shoes provide a safe guiding for the E2/000 - autoglide version 04

- Reliable and precise guidance due to special plastic glide shoes
- Long travels with easier filling
- Provides precise lateral guidance and a smooth gliding of the e-chain®
- e-chains® openable along the outer radius





E4/4HD

Very high fill weights for long travels

E4/4HD advantages:

- For heavy-duty applications
- For very heavy fill weights and long travels
- The E4/4HD offers the required strength for long travels, dirty environments or with high humidity
- The undercut design provides extremely high torsional rigidity
- Extended service life is facilitated by particularly large glide surfaces
- Recommended for heavy-duty applications

When to use another e-chain® series:

- When you want a profile-rol e-chain® with which you can reduce energy consumption by up to 57%
  ► **P4 system**
- When you want a strong E4/4 rol e-chain® requiring 75% less drive power
  ► **E4/4 rol e-chain®**
- When you want a self-guiding e-chain system® without any guide troughs
  ► **autoglide**

E4/4 HD - for extremely high additional fill weights on long travels

The E4/4HD system was designed for the most demanding tasks. It provides the required stability in long travels with high additional weights, heavy pollution or high humidity. The extremely sturdy side plates allow high loads, the stable tongue and groove ensures extremely high torsional stiffness. A longer service life is due to the particularly large glide surfaces.

- For extremely high additional fill weights and long travels
- Ideal for heavy duty applications

Typical industries and applications

- Cranes: RTG, Quay cranes, many more
- Compost plants
- Heavy machinery
- Steel plants
- Shipyards
- Farm machinery
- General machinery



ESD classification: Electrically conductive ESD/ ATEX version upon request

High torsional rigidity

System E4/4 approved with long travel

E-Tubes available as a special design with HT material for hot chips



The maintenance-free Series 4040HD protects the igus® chainflex® motor and signal cables during the lifting and lowering movements of the tidal turbine and also protects them against aggressive ambient conditions. The travel distance amounts to approximately 65.6 ft. (20 m) in vertical direction above and under water.

Crossbars every link
for particularly demanding applications



Series	Inner height *hi*		Inner width *Bi*		Outer width *Ba*		Outer height *ha*		Bending radius *R*	
	in.	(mm)	in.	(mm)	in.	(mm)	in.	(mm)	in.	(mm)
4040HD	2.20	(56)	1.97-23.62	(50-600)	4.09-25.75	(104-654)	3.31	(84)	5.31-15.75	(135-400)
5050HD	3.15	(80)	1.97-23.62	(50-600)	4.33-25.98	(110-660)	4.25	(108)	5.91-19.69	(150-500)

E-Tubes
fully enclosed, excellent cable protection against hot chips



Series	Inner height *hi*		Inner width *Bi*		Outer width *Ba*		Outer height *ha*		Bending radius *R*	
	in.	(mm)	in.	(mm)	in.	(mm)	in.	(mm)	in.	(mm)
R8840HD	2.20	(56)	2.95-18.19	(75-462)	5.08-20.31	(129-516)	3.31	(84)	5.91-15.75	(150-400)
R9850HD	3.15	(80)	2.95-18.19	(75-462)	5.31-20.55	(135-522)	4.25	(108)	5.91-19.69	(150-500)

e-chain system® E4/4
Series 4040HD/R8840HD

2.20” 2.20”

Price Index

Series 4040HD Series R8840HD

Special Features / Options

Side-mounted - unsupported

ESD classification: Electrically conductive ESD/ ATEX version upon request

High torsional rigidity

Assembly Tips



Opening e-chains®: Remove crossbars and clips - Insert screwdriver into the slot, push down, release by lever action



Remove lids/bottoms (E-Tubes) - Insert screwdriver into the slot, release by lever action

Other Installation Methods

Vertical, hanging ≤ 328 ft (100 m)
Vertical, standing ≤ 19.69 ft (6 m)
Side-mounted, unsupp. ≤ 9.84 ft (3 m)
Rotary requires further calculation

Usage Guidelines

- When high torsional forces are expected
- For side-mounted applications
- For long-term operation in very moist environments

- If a quieter version is required
  ➤ **Series E4-56**
- If a simple and low-cost solution is required
  ➤ **Series 14040/R18840**

Features & Benefits

1. Robust steel-mounting brackets
2. Wide, rounded plastic crossbars - cable friendly
3. High tensile stability (20% higher tensile force than Series 4040
4. Very wide glide surface, less wear
5. Closed and open styles can be combine
6. High torsional rigidity
7. Hinged snap-open removable lids along outer radius of Energy Tub
8. High side-mount stability due to undercut
9. Crossbars on e-chains® are removable along both radii
10. Numerous interior separation possibilities





Rol-e-chain® Series 4040RHD/8840RHD available upon request

Order Example: Complete e-chain®

Please indicate chain length or number of links. Example:

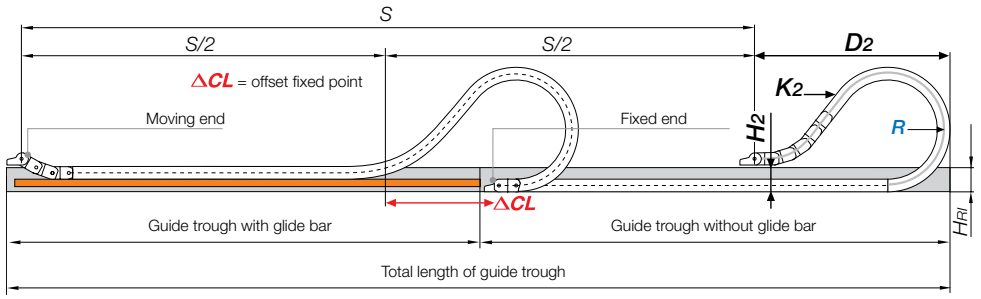
16.4 ft (5 m) **4040HD-30-300-0**	**e-chain®**
With 2 separators **56-1** assembled every 2nd link	**Interior Separation**
1 Set **40400HD-12-E**	**Mounting Bracket**

e-chain system® E4/4
Series 4040HD/R8840HD
Installation Dimensions

For long travels with lowered mounting height

Long travel lengths from 32.8 ft. (10m) to max. 1,148 ft. (350m)

Chain length: $= {}^{S}/_{2} + K_2$



In case of travels between 13 ft. (4m) and 32.8 ft. (10m) we recommend a longer unsupported length.

R	5.31 (135)	5.91 (150)	7.87 (200)	9.84 (250)	11.81 (300)	13.78 (350)	15.75 (400)
H_2	10.47 (266)	10.47 (266)	10.47 (266)	10.47 (266)	10.47 (266)	10.47 (266)	10.47 (266)
D_2	15.35 (390)	17.72 (450)	27.95 (710)	36.22 (920)	46.46 (1180)	56.69 (1440)	60.24 (1530)
K_2	28.66 (728)	32.24 (819)	50.16 (1274)	64.49 (1638)	78.82 (2002)	93.15 (2366)	100.31(2548)
ΔCL	4.88 (124)	6.26 (159)	14.13 (359)	20.04 (509)	27.91 (709)	35.79 (909)	37.76 (959)

Legend

S = Length of travel
H_F = Required clearance height
HRI = Trough inner height
H_2 = *Mounting height
D_2 = Over length - long travels, gliding
K_2 = *Further add-on

*If the mounting bracket location is set lower

Long Travels - Gliding

If the unsupported length is exceeded, the e-chain®/ Tube must glide on itself. This requires a guide trough.

Design, Chapter 1

Speed / acceleration FL_G	max. 6.56 ft/s (20 m/s) / max. 656 ft/s² (200 m/s²)
Speed / acceleration FL_B	max. 9.84 ft/s (3 m/s) / max. 19.69 ft/s² (6 m/s²)
Gliding speed / acceleration (maximum)	max. 32.8 ft/s (10 m/s) / max. 164 ft/s² (50 m/s²)
Material - permitted temperature	igumid G / -40°F (-40°C) up to +248°F (+120° C)
Flammability Class, igumid G	VDE 0304 IIC UL94 HB

Technical Data

Details of material properties

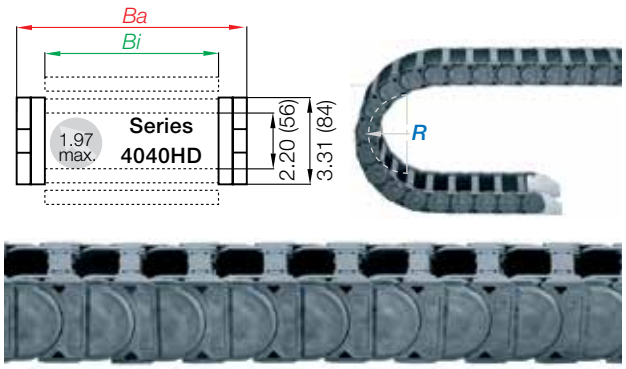
➤ **Chapter 1**

PDF: igus.com/e-chain-pdfs
Product information: igus.com/e-chains

e-chain system® E4/4
Series 4040HD/R8840HD
Product Range

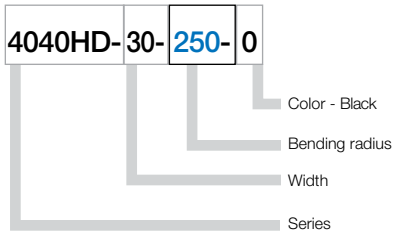
Telephone 1-800-521-2747

Series 4040HD - e-chain® with crossbars every link

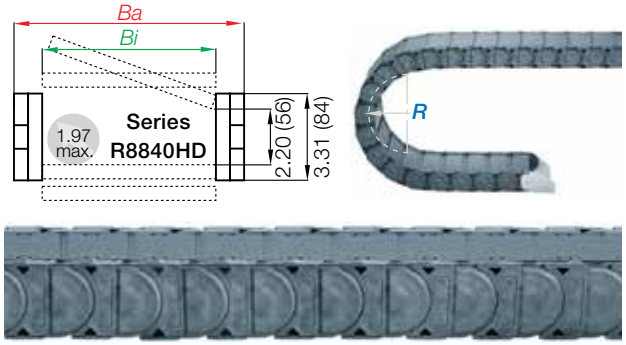


- Crossbars every link
- For use with rigid hydraulic hoses
- For particularly demanding applications
- Can be opened from both sides

Part Number Structure

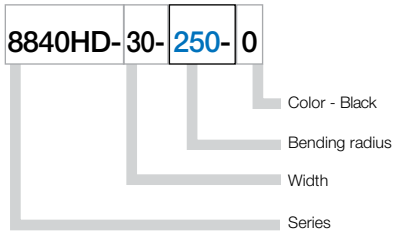


Series R8840HD - fully enclosed E-Tube

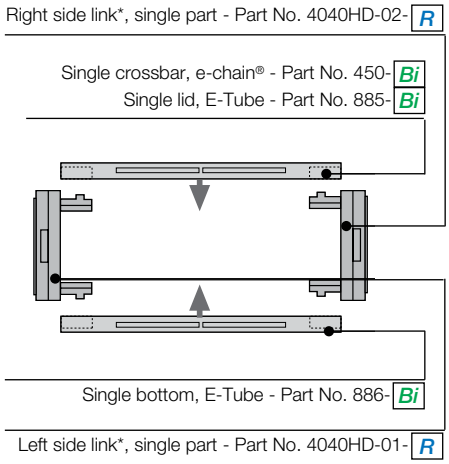


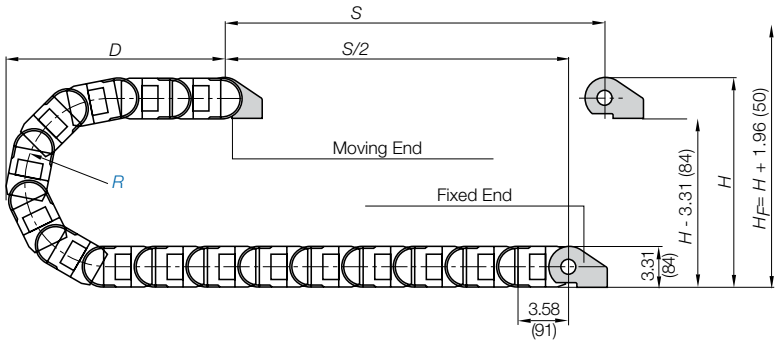
- Fully enclosed
- Excellent cable and hose protection against dirt
- Protection against hot chips up to 1652°F (900°C)
- Lids along inner radius are completely removable
- Lids along the outer radius are single-sided, snap open, hinged on one side as well as completely removable

Part Number Structure



e-chain® as separate parts, links and side plates





*View from the fixed point of the e-chain®/E-Tube

Internet: igus.com
email: sales@igus.com
QuickSpec: igus.com/quickspec

e-chain system® E4/4
Series 4040HD/R8840HD
Product Range

Supplement part number with required radius. Example: 4040HD-30-300 -0
Pitch: 3.58 in. (91mm) per link links/ft (m) = 3.35 (11)

Part Number				Bi	Ba	Weight	
Crossbars Every Link	Tube Version			in. (mm)	in. (mm)	4040R lbs/ft (kg/m)	8840HD lbs/ft (kg/m)
4040HD-05-			-0	1.97 (50)	4.09 (104)	≈ 3.38 (5.03)	–
4040HD-06-			-0	2.56 (65)	4.69 (119)	≈ 3.44 (5.12)	–
4040HD-07-	8840HD-07-		-0*	2.95 (75)	5.08 (129)	≈ 3.49 (5.19)	≈ 3.79 (5.64)
4040HD-08-			-0	3.43 (87)	5.55 (141)	≈ 3.54 (5.27)	–
4040HD-10-	8840HD-10-		-0	3.94 (100)	6.06 (154)	≈ 3.60 (5.36)	≈ 3.98 (5.93)
4040HD-11-			-0	4.41 (112)	6.54 (166)	≈ 3.68 (5.48)	–
4040HD-12-	8840HD-12-		-0	4.92 (125)	7.05 (179)	≈ 3.74 (5.56)	≈ 4.23 (6.29)
4040HD-13-			-0	5.39 (137)	7.52 (191)	≈ 3.82 (5.69)	–
4040HD-15-	8840HD-15-		-0	5.91 (150)	8.03 (204)	≈ 3.85 (5.73)	≈ 4.48 (6.67)
4040HD-16-			-0	6.38 (162)	8.50 (216)	≈ 3.92 (5.84)	–
4040HD-17-	8840HD-17-		-0	6.89 (175)	9.02 (229)	≈ 4.01 (5.97)	≈ 4.69 (6.98)
4040HD-18-			-0	7.36 (187)	9.49 (241)	≈ 4.09 (6.09)	–
4040HD-20-	8840HD-20-		-0	7.87 (200)	10.00 (254)	≈ 4.13 (6.14)	≈ 4.90 (7.29)
4040HD-21-			-0	8.35 (212)	10.47 (266)	≈ 4.17 (6.21)	–
4040HD-22-			-0	8.86 (225)	10.98 (279)	≈ 4.22 (6.28)	–
4040HD-23-			-0	9.33 (237)	11.46 (291)	≈ 4.29 (6.39)	–
4040HD-25-	8840HD-25-		-0	9.84 (250)	11.97 (304)	≈ 4.37 (6.50)	≈ 5.39 (8.02)
4040HD-26-			-0	10.31 (262)	12.44 (316)	≈ 4.43 (6.59)	–
4040HD-27-	8840HD-27		-0	10.83 (275)	12.95 (329)	≈ 4.50 (6.70)	≈ 5.63 (8.38)
4040HD-28-			-0	11.30 (287)	13.43 (341)	≈ 4.54 (6.75)	–
4040HD-30-	8840HD-30-		-0	11.81 (300)	13.94 (354)	≈ 4.64 (6.91)	≈ 5.83 (8.68)
4040HD-31-			-0	12.28 (312)	14.41 (366)	≈ 4.66 (6.94)	–
4040HD-32-			-0	12.79 (325)	14.92 (379)	≈ 4.74 (7.05)	–
4040HD-33-			-0	13.27 (337)	15.39 (391)	≈ 4.82 (7.17)	–
4040HD-35-	8840HD-35-		-0	13.78 (350)	15.91 (404)	≈ 4.95 (7.37)	≈ 6.30 (9.38)
4040HD-36-			-0	14.25 (362)	16.38 (416)	≈ 4.89 (7.28)	–
4040HD-37-			-0	14.76 (375)	16.89 (429)	≈ 4.96 (7.38)	–
4040HD-38-			-0	15.24 (387)	17.36 (441)	≈ 5.03 (7.49)	–
4040HD-40-	8840HD-40-		-0	15.75 (400)	17.87 (454)	≈ 5.21 (7.76)	≈ 6.98 (10.38)
4040HD-41-			-0	16.22 (412)	18.35 (466)	≈ 5.16 (7.68)	–
4040HD-42-			-0	16.73 (425)	18.86 (479)	≈ 5.36 (7.98)	–
4040HD-43-			-0	17.20 (437)	19.33 (491)	≈ 5.25 (7.82)	–
4040HD-45-			-0	17.72 (450)	19.84 (504)	≈ 5.48 (8.15)	–
4040HD-46-	8840HD-46-		-0	18.19 (462)	20.31 (516)	≈ 5.44 (8.10)	≈ 7.29 (10.85)
4040HD-47-			-0	18.70 (475)	20.83 (529)	≈ 5.47 (8.14)	–
4040HD-48-			-0	19.17 (487)	21.30 (541)	≈ 5.64 (8.39)	–
4040HD-50-			-0	19.69 (500)	21.81 (554)	≈ 5.64 (8.40)	–
4040HD-51-			-0	20.16 (512)	22.28 (566)	≈ 5.70 (8.48)	–
4040HD-52-			-0	20.67 (525)	22.80 (579)	≈ 5.76 (8.57)	–
4040HD-53-			-0	21.14 (537)	23.27 (591)	≈ 5.82 (8.66)	–
4040HD-55-			-0	21.65 (550)	23.78 (604)	≈ 6.10 (9.08)	–
4040HD-60-			-0	23.62 (600)	25.75 (654)	≈ 6.26 (9.31)	–

Choose from the radii below for all of the above sizes
Radius (mm) Example: 4040HD-30-300 -0

	135**	150	200	250	300	350	400
R	5.31 (135)	5.91 (150)	7.87 (200)	9.84 (250)	11.81 (300)	13.78 (350)	15.75 (400)
H**-25	13.94 (354)	15.12 (384)	19.06 (484)	22.99 (584)	26.93 (684)	30.87 (784)	34.80 (884)
D	12.36 (314)	12.95 (329)	14.92 (379)	16.88 (429)	18.86 (479)	20.83 (529)	22.79 (579)
K	24.02 (610)	25.79 (655)	32.09 (815)	38.19 (970)	44.29 (1125)	50.59 (1285)	56.69 (1440)

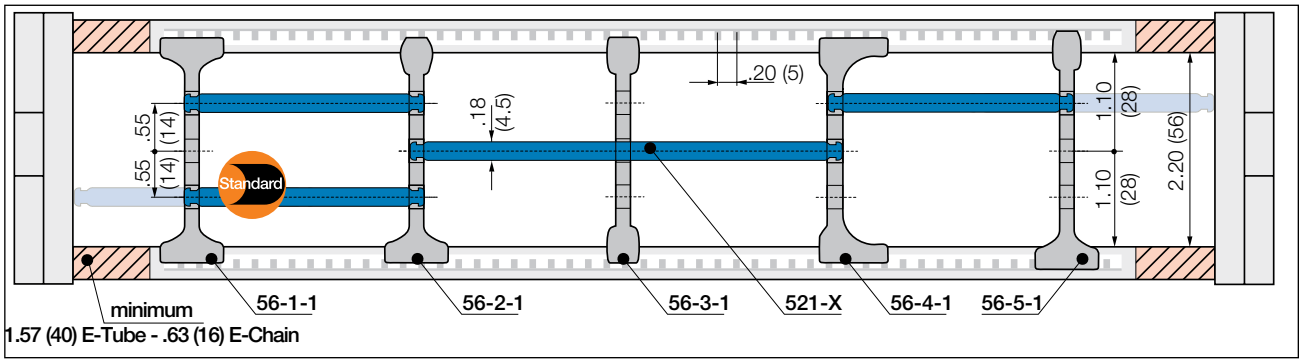
** This radius is not available for the R8840HD Series *Removable lid only, no hinged option

PDF: igus.com/e-chain-pdfs
Product information: igus.com/e-chains

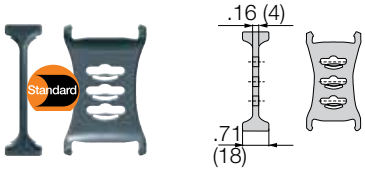
e-chain system® E4/4
Series 4040HD/R8840HD
Interior Separation - New Generation

Telephone 1-800-521-2747

Internet: igus.com
email: sales@igus.com
QuickSpec: igus.com/quickspec



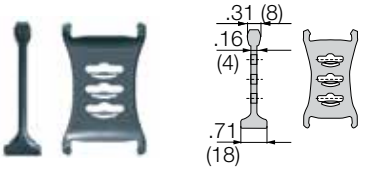
Note Please maintain a lateral spacing of 1.57" (40 mm) for E-Tube and .63" (16 mm) for e-chains® between the separators and the side links. In the standard configuration separators are assembled every 2nd e-chain® link



Separator, wide base

Unassembled	**Part No. 56-1**
Assembled	**Part No. 56-1-1**

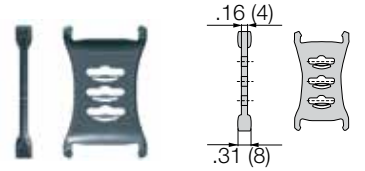
- **Standard separator 56-1 for all applications**
  Separator with wide base for maximum locking strength and safe standing in e-chains®.



Separator, narrow head

Unassembled	**Part No. 56-2**
Assembled	**Part No. 56-2-1**

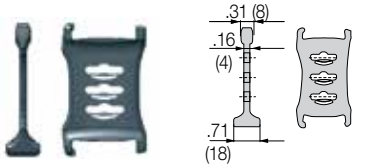
- **Separator 56-2**
  For even faster installation
  is used when vertical and horizontal separation is required. Due to its slot, it allows basic vertical/horizontal shelving arrangements.



Separator, narrow base

Unassembled	**Part No. 56-3**
Assembled	**Part No. 56-3-1**

- **Separator 56-3**
  For many thin cables
  is used when vertical and horizontal separation is required. Due to its slot, it allows basic vertical/horizontal shelving arrangements.

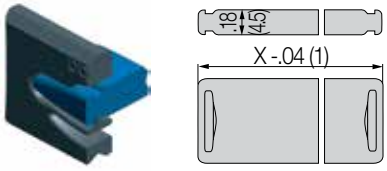


Separator, asymmetrical

Unassembled	**Part No. 56-5**
Assembled	**Part No. 56-5-1**

- **Separator 56-5**
  Locks safely in .30" (7.5 mm) increments
  Notch separator for exact positioning in e-chains®. Recommended for side-mounted applications.

Lockable full-width shelves - for the standard interior separation



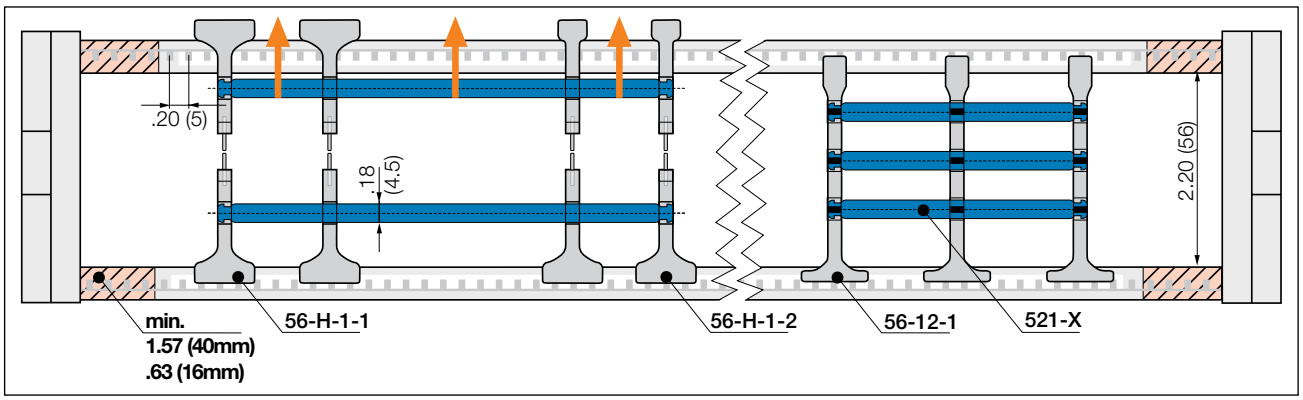
Full width shelf, lockable

Unassembled	**Part No. 520-X**
Assembled	**Part No. 521-X**

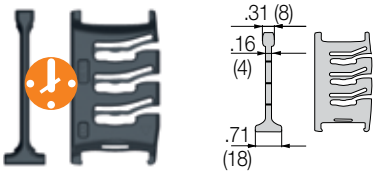
- **Full width shelf, lockable**
  Shelf locks safely into separators on both ends, fixed width possible. Separators can be moved freely over the shelf in horizontal direction. Can be arranged at 3 different heights.

Width X in. (mm)	Part No. Unassembled	Part No. Assembled	Width X in. (mm)	Part No. Unassembled	Part No. Assembled	Width X in. (mm)	Part No. Unassembled	Part No. Assembled
1.97 (050)	**520-050**	**521-050**	5.91 (150)	**520-150**	**521-150**	11.81 (300)	**520-300**	**521-300**
2.56 (065)	**520-065**	**521-065**	6.89 (175)	**520-175**	**521-175**	13.78 (350)	**520-350**	**521-350**
2.95 (075)	**520-075**	**521-075**	7.87 (200)	**520-200**	**521-200**	14.76 (375)	**520-375**	**521-375**
3.94 (100)	**520-100**	**521-100**	8.86 (225)	**520-225**	**521-225**	15.24 (387)	**520-387**	**521-387**
4.92 (125)	**520-125**	**521-125**	9.84 (250)	**520-250**	**521-250**	17.723 (450)	**520-450**	**521-450**

e-chain system® E4/4
Series 4040HD/R8840HD
Interior Separation - New Generation



Note Please maintain a lateral spacing of 1.57" (40 mm) for e-tube and .63" (16 mm) for e-chains® between the separators and the side links. In the standard configuration separators are assembled every 2nd e-chain® link



Lean separator

Unassembled	**Part No. 56-12**
Assembled	**Part No. 56-12-1**

- **Lean separators 56-12**
  New design allows extremely fast fitting of shelves in several layers, which significantly reduces assembly time. Enables extremely fast replacement of individual cables in a very full e-chain®.



- **Lean separator design - several layers of cables fitted quickly, save up to 50%* assembly time**
  (*Lean separator vs. standard separator - measured on a 4m long e-chain® fitted with 12 cables in the igus® harnessing factory)



Notch locking separator

Unassembled	**Part No. 56-6**
Assembled	**Part No. 56-6-1**

- **Notch locking separator for increased holding force**
  Notch locking separators offer higher crossbar opening forces for high humidity and/or large hydraulic hoses. They can be positioned precisely and then locked in position.

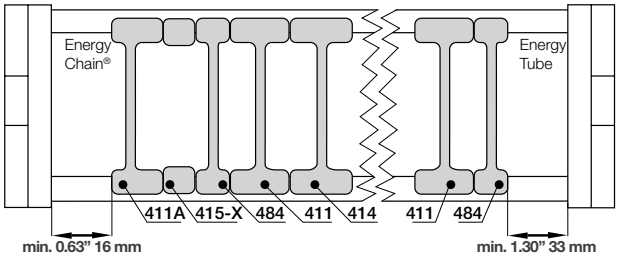
PDF: igus.com/e-chain-pdfs
Product information: igus.com/e-chains

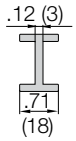
e-chain system® E4/4
Series 4040HD/R8840HD
Interior Separation - Previous Generation



Vertical separators and spacers

Vertical separators are used if a vertical subdivision of the e-chain® interior is required. In standard configuration, a separator is installed every second chain link.
NOTE: Observe a lateral spacing of at least 1.26 in. (32mm) for E-Tubes and .63 in. (16mm) for e-chain®. There is no minimum spacing needed for side plates

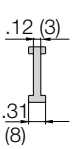


Vertical separator

Unassembled	**Part No. 401**
Assembled	**Part No. 411**

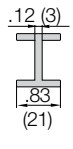
- **Standard separator 401 for e-chains® and E-Tubes**
  This separator offers safe stability due to its wide base design.

Vertical separator

Unassembled	**Part No. 483**
Assembled	**Part No. 484**

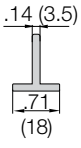
- **Vertical separator 483 for e-chains® and E-Tubes**
  This separator offers a narrow base for applications where a large number of small cables need to be individually separated.

Locking separator (chain only)

Unassembled	**Part No. 404**
Assembled	**Part No. 414**

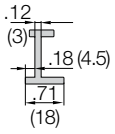
- **Locking separator 404 for e-chains®**
  This separator features increased retention force for applications exposed to very high humidity and extreme loads. The extra retention force is achieved by asymmetric claws for the crossbar. Take care to ensure proper alignment.

Locking separator (tube only)

Unassembled	**Part No. 406**
Assembled	**Part No. 416**

- **Locking separator 406 for E-Tubes**
  It features a single sided, secure fit, and can be placed on the lid or the bottom of the E-Tube. The single side locking design helps to eliminate difficulties in assembling the opposite cover or crossbar

Asymmetrical separator (chain only)

Unassembled	**Part No. 401A**
Assembled	**Part No. 411A**

- **Asymmetrical separator 401A for e-chains®**
  This separator features an .71" (18mm) base. It can be used in combinations between spacers of different widths and vertical separators in side mounted applications.




Spacer (chain only)

Unassembled	**Part No. 405-XX**
Assembled	**Part No. 415-XX**

XX = width of the spacer

- **NOTE ON SPACERS**
  Vertical separators are adjustable, but can be fixed in position by means of a spacer. Spacers are most often necessary for side mounted applications.
  The available inner height is reduced by .08" (2mm) **per spacer** (for example if one spacer is placed on either side of the separator, the overall inner height is reduced by .16" (4mm). To avoid this, place the spacers on the **outside** of the opening crossbar **(not for long travels)**.

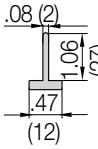
Spacers available in the following sizes:

Part No. Unassembled	Part No. Assembled	in.	(mm)
405 -10	**415 -10**	.39	(10)
405 -15	**415 -15**	.59	(15)
405 -20	**415 -20**	.79	(20)
405 -30	**415 -30**	1.18	(30)
405 -40	**415 -40**	1.57	(40)

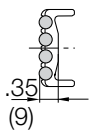
Center crossbar - for applications involving a very large number of thin cables This offers the option of subdividing the e-chain® into upper and lower halves

Rollclip - minimizes abrasion of particularly sensitive hoses or cables. The integrated rollers compensate for relative movement between the chain and the hose or cable.

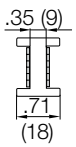
Roller separator - performs a similar function to the Rollclip, but doubles as a separator.



Center crossbar
Unassembled
Part No. 405
Assembled
Part No. 415



Rollclip
Unassembled
Part No. 489-27
Assembled
Part No. 490-27



Center crossbar
Unassembled
Part No. 429
Assembled
Part No. 430

igus®
e-chain system®
Telephone 1-800-521-2747
Internet: igus.com
email: sales@igus.com
QuickSpec: igus.com/quickspec

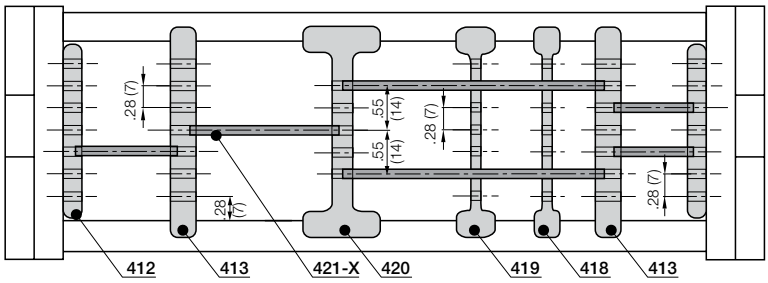
e-chain system® E4/4
Series 4040HD/R8840HD
Interior Separation - Previous Generation



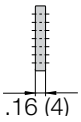
Shelves and separators

e-chains® and E-Tubes can be subdivided both vertically and horizontally using the various interior separation elements.

➤ **Design, Chapter 1** for layout recommendations.





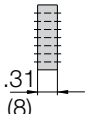


Side plate

Unassembled	**Part No. 402**
Assembled	**Part No. 412**

- **Side plates 402**
  This component is used to form the basic pattern of a shelf system.



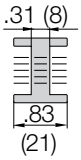


Vertical separator

Unassembled	**Part No. 403**
Assembled	**Part No. 413**

- **Vertical separator 403**
  This component is used to form the basic pattern of a shelf system.

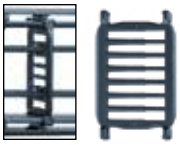


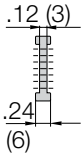


Locking vertical separator

Unassembled	**Part No. 410**
Assembled	**Part No. 420**

- **Locking vertical separator 410**
  This separator is slotted and able to be combined with shelves. For e-chains® only



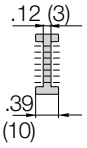


Slotted separators, closed

Unassembled	**Part No. 408**
Assembled	**Part No. 418**

- **Slotted separators 408**
  These are used for very complex subdivisions. However, they cannot be retrofitted into an existing separation system without removing the shelves first.





Slotted separators, open

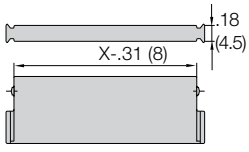
Unassembled	**Part No. 409**
Assembled	**Part No. 419**

- **Slotted separator 409**
  This separator can be retrofitted into an existing interior separation system without removing the shelves, as long as these shelves fit into any of the 3 middle slots

Shelves 420-XX

These components form the basic pattern of a shelf system. Shelves of various widths can be arranged at 7 different heights in .28" (7mm) increments

Width X in. (mm)	Usable Width in. (mm)	Part No. Unassembled	Part No. Assembled	Width X in. (mm)	Usable Width in. (mm)	Part No. Unassembled	Part No. Assembled
.71 (18)	.39 (10)	**420-18**	**421-18**	2.95 (75)	2.64 (67)	**420-75**	**421-75**
.91 (23)	.59 (15)	**420-23**	**421-23**	3.46 (88)	3.15 (80)	**420-88**	**421-88**
.98 (25)	.67 (17)	**420-25**	**421-25**	3.94 (100)	3.62 (92)	**420-100**	**421-100**
1.10 (28)	.79 (20)	**420-28**	**421-28**	4.92 (125)	4.61(117)	**420-125**	**421-125**
1.30 (33)	.98 (25)	**420-33**	**421-33**	5.91 (150)	5.59(142)	**420-150**	**421-150**
1.69 (43)	1.38 (35)	**420-43**	**421-43**	6.89 (175)	6.57(167)	**420-175**	**421-175**
1.97 (50)	1.65 (42)	**420-50**	**421-50**	7.36 (187)	7.05(179)	**420-187**	**421-187**
2.44 (62)	2.13 (54)	**420-62**	**421-62**	7.87 (200)	7.56(192)	**420-200**	**421-200**



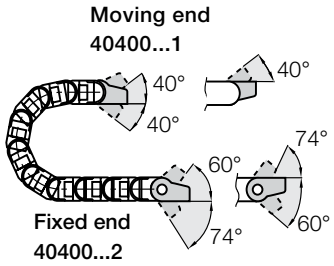


PDF: igus.com/e-chain-pdfs
Product information: igus.com/e-chains

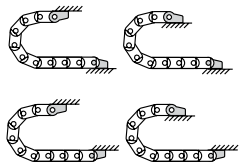
e-chain system® E4/4
Series 4040HD/R8840HD
Mounting Brackets - Stainless Steel

Option 1: pivoting

- For pivoting connections
- One part for all chain widths
- Electrically conductive





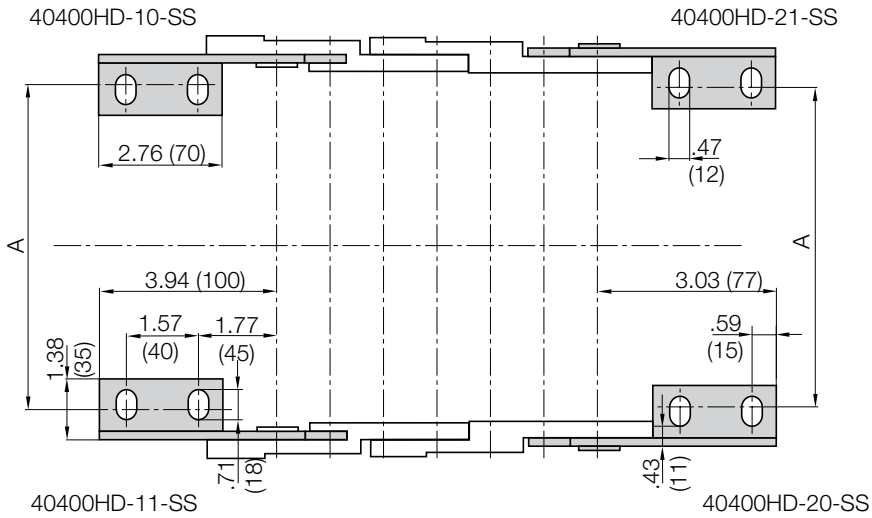


Possible installation configurations -

Part No. Mounting Brackets Full Set
4 parts, 2 with pin, 2 with bore
Series 4040HD or R8840HD
40400HD-12-SS

Part No. Mounting Bracket Moving End
2 parts, 1 left & 1 right with bore
Series 4040HD or R8840HD
40400HD-1-SS

Part No. Mounting Bracket Fixed End
2 parts, 1 left & 1 right with pin
Series 4040HD or R8840HD
40400HD-2-SS



Bracket Mounting dimensions

Width of Chain *Bi*	Part Number	Mounting Brackets Full Set	Moving End Only	Fixed End Only	A in. (mm)
1.97 (50)	40400HD	-12	-1	-2	1.18 (30)
2.56 (65)	40400HD	-12	-1	-2	1.77 (45)
2.95 (75)	40400HD	-12	-1	-2	2.16 (55)
3.43 (87)	40400HD	-12	-1	-2	2.64 (67)
3.94 (100)	40400HD	-12	-1	-2	3.15 (80)
4.41 (112)	40400HD	-12	-1	-2	3.62 (92)
4.92 (125)	40400HD	-12	-1	-2	4.13 (105)
5.39 (137)	40400HD	-12	-1	-2	4.61 (117)
5.91 (150)	40400HD	-12	-1	-2	5.12 (130)
6.38 (162)	40400HD	-12	-1	-2	5.59 (142)
6.89 (175)	40400HD	-12	-1	-2	6.10 (155)
7.36 (187)	40400HD	-12	-1	-2	6.57 (167)
7.87 (200)	40400HD	-12	-1	-2	7.09 (180)
8.35 (212)	40400HD	-12	-1	-2	7.56 (192)
8.86 (225)	40400HD	-12	-1	-2	8.07 (205)
9.33 (237)	40400HD	-12	-1	-2	8.54 (217)
9.84 (250)	40400HD	-12	-1	-2	9.05 (230)
10.31 (262)	40400HD	-12	-1	-2	9.53 (242)
10.83 (275)	40400HD	-12	-1	-2	10.04 (255)
11.30 (287)	40400HD	-12	-1	-2	10.51 (267)
11.81 (300)	40400HD	-12	-1	-2	11.02 (280)

Width of Chain *Bi*	Part Number	Mounting Brackets Full Set	Moving End Only	Fixed End Only	A in. (mm)
12.28 (312)	40400HD	-12	-1	-2	11.49 (292)
12.79 (325)	40400HD	-12	-1	-2	12.00 (305)
13.27 (337)	40400HD	-12	-1	-2	12.48 (317)
13.78 (350)	40400HD	-12	-1	-2	12.99 (330)
14.25 (362)	40400HD	-12	-1	-2	13.46 (342)
14.76 (375)	40400HD	-12	-1	-2	13.97 (355)
15.24 (387)	40400HD	-12	-1	-2	14.45 (367)
15.75 (400)	40400HD	-12	-1	-2	14.96 (380)
16.22 (412)	40400HD	-12	-1	-2	15.43 (392)
16.73 (425)	40400HD	-12	-1	-2	15.94 (405)
17.20 (437)	40400HD	-12	-1	-2	16.42 (417)
17.72 (450)	40400HD	-12	-1	-2	16.93 (430)
18.19 (462)	40400HD	-12	-1	-2	17.40 (442)
18.70 (475)	40400HD	-12	-1	-2	17.91 (455)
19.17 (487)	40400HD	-12	-1	-2	18.39 (467)
19.69 (500)	40400HD	-12	-1	-2	18.90 (480)
20.16 (512)	40400HD	-12	-1	-2	19.37 (492)
20.67 (525)	40400HD	-12	-1	-2	19.88 (505)
21.14 (537)	40400HD	-12	-1	-2	20.35 (517)
21.65 (550)	40400HD	-12	-1	-2	20.87 (530)
23.62 (600)	40400HD	-12	-1	-2	22.83 (580)

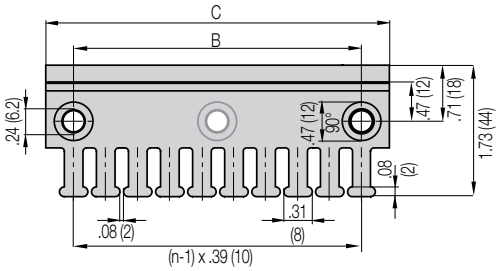
e-chain system® E4/4
Series 4040HD/R8840HD
Strain Relief

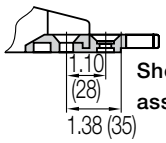
Tiewrap plates as an individual part

Available as an individual component, can be fixed onto a mounting bracket with the use of a profile rail.

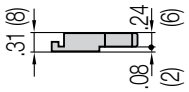


For more information please refer to strain relief section of Chapter 10





Shown assembled



Single tiewrap plate

Tiewrap Plate	n Number of Teeth	C Overall Width in. (mm)	B Bore Width in. (mm)	Center Bore
3050-ZB	5	1.97 (50)	1.18 (30)	no
3075-ZB	7	2.95 (75)	2.16 (55)	no
3100-ZB	10	3.94 (100)	3.15 (80)	no
3115-ZB	11	4.53 (115)	3.74 (95)	no
3125-ZB	12	4.92 (125)	4.13 (105)	no
3150-ZB	15	5.91 (150)	5.12 (130)	no
3175-ZB	17	6.89 (175)	6.10 (155)	no
3200-ZB	20	7.87 (200)	7.09 (180)	yes
3225-ZB	22	8.86 (225)	8.07 (205)	yes
3250-ZB	25	9.84 (250)	9.06 (230)	yes

PDF: igus.com/e-chain-pdfs
Product information: igus.com/e-chains

e-chain system® E4/4
Series 4040HD/R8840HD
Guide Trough

Width of Crossbar
4040HD-**05**-200-0

	B_{Ri}	Installation Part No.
-05	4.29 (109)	*
-06	4.88 (124)	**94-50-225**
-07	5.28 (134)	**94-50-225**
-08	5.75 (146)	**94-50-250**
-10	6.26 (159)	**94-50-250**
-11	6.73 (171)	**94-50-275**
-12	7.24 (184)	**94-50-275**
-13	7.72 (196)	**94-50-300**
-15	8.23 (209)	**94-50-300**
-16	8.70 (221)	**94-50-325**
-17	9.21 (234)	**94-50-325**
-18	9.69 (246)	**94-50-350**
-20	10.20 (259)	**94-50-350**
-21	10.67 (271)	**94-50-375**
-22	11.18 (284)	**94-50-375**
-23	11.65 (296)	**94-50-400**
-25	12.17 (309)	**94-50-400**
-26	12.64 (321)	**94-50-425**
-27	13.15 (334)	**94-50-425**
-28	13.62 (346)	**94-50-450**
-30	14.13 (359)	**94-50-450**
-31	14.61 (371)	**94-50-475**
-32	15.12 (384)	**94-50-475**
-33	15.59 (396)	**94-50-500**
-35	16.10 (409)	**94-50-500**
-36	16.57 (421)	**94-50-525**
-37	17.09 (434)	**94-50-525**
-38	17.56 (446)	**94-50-550**
-40	18.07 (459)	**94-50-550**
-41	18.54 (471)	**94-50-575**
-42	19.06 (484)	**94-50-575**
-43	19.53 (496)	**94-50-600**
-45	20.04 (509)	**94-50-600**
-46	20.51 (521)	**94-50-625**
-47	21.02 (534)	**94-50-625**
-48	21.50 (546)	**94-50-650**
-50	22.01 (559)	**94-50-650**
-51	22.48 (571)	**94-50-675**
-52	22.99 (584)	**94-50-675**
-53	23.46 (596)	**94-50-700**
-55	23.98 (609)	**94-50-700**
-60	25.94 (659)	**94-50-750**

Guide troughs are used with applications where the upper run of the e-chain® glides on the lower run. If using igus® steel guide troughs, the following components are required.

- Full travel length of guide trough
  Part No. 94-30
- 1/2 travel length glide bars
  Part No. 93-01
- Installation sets as end connectors
  Part No. 94-50-XX

.XX indicates the length of the profile rails on which the guide trough is mounted. The values and part numbers are specified in the table on the left. The standard length of the trough components and glide bars is 6.56 ft (2 m). The required overall length of the guide trough directly correlates to the length of travel.

Example:
Length of travel 164 ft (50 m)
Center mounted

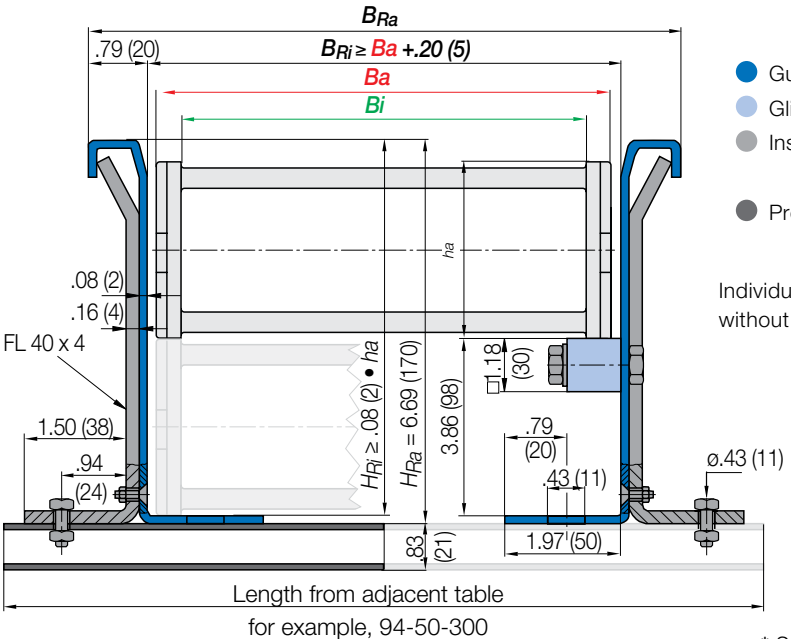
Required guide troughs:
164 ft (50 m) guide trough
82 ft (25 m) glide bars
= 25 sections of 6.56 ft (2 m) guide trough
Part No. 94-30
= 13 sections of 6.56 ft (2 m) glide bars
Part No. 93-01
Required number of installation sets:
= Number of guide trough components + 1
= 25 + 1 = 26
Part number of the installation sets
94-50-XXX
Example:
94-50-400 for 15.75 (400 mm) long profile rail



Left: Guide trough with glide bars
Right: Guide troughs without glide bars



Installation sets as section connectors



Standard length profile rail

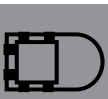
* Specialized guide trough available upon request

For further technical information on guide troughs
➤ **Chapter 9**

PDF: igus.com/e-chain-pdfs
Product information: igus.com/e-chains











e-chain system® E4/4
Series 5050HD/R9850HD

3.15" 3.15"

Price Index

Series 5050HD | Series R9850HD

Special Features / Options

- Side-mounted - unsupported
- ESD classification: Electrically conductive ESD/ ATEX version upon request
- High torsional rigidity

Assembly Tips



Opening e-chains®: Remove crossbars and clips - Insert screwdriver into the slot, push down, release by lever action



Remove lids/bottoms (E-Tubes) - Insert screwdriver into the slot, release by lever action

Other Installation Methods

Vertical, hanging ≤ 394 ft (120 m)
Vertical, standing ≤ 19.69 ft (6 m)
Side-mounted, unsupp. ≤ 9.84 ft (3 m)
Rotary requires further calculation

Usage Guidelines

- When high torsional forces are expected
- For side-mounted applications
- For long-term operation in very moist environments

- When short travels or medium additional loads are involved
  ➤ Series E4-80
- If a simpler low-cost solution is required
  ➤ Series 15050/15150/R19850

Features & Benefits

1. Robust steel-mounting brackets
2. Wide, rounded plastic crossbars - cable friendly
3. Very wide glide surface, less wear
4. High tensile stability (20% higher tensile force than Series 5050
5. Hinged snap-open removable lids along outer radius of E-Tube
6. High torsional rigidity
7. Closed and open styles can be combine
8. Numerous interior separation possibilities
9. High side-mount stability due to undercut
10. Crossbars on e-chains® are removable along both radii



rol e-chain® Series 5050RHD/9850RHD available upon request



Order Example: Complete e-chain®

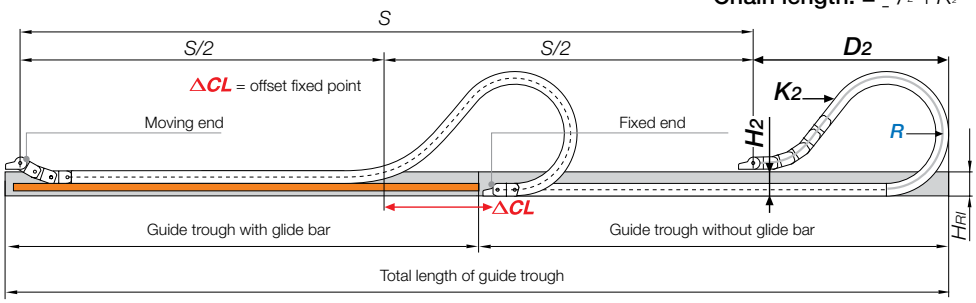
Please indicate chain length or number of links. Example:

16.4 ft (5 m) **5050HD-30-300-0**	**e-chain®**
With 2 separators **80-1** assembled every 2nd link	**Interior Separation**
1 Set **505000HD-12-E**	**Mounting Bracket**

For long travels with lowered mounting height

Long travel lengths from 32.8 ft.(10m) to max. 1,640 ft. (500m)

Chain length: = $^{S}/_{2} + K_2$



In case of travels between 13 ft. (4m) and 32.8 ft. (10m) we recommend a longer unsupported length.

R	5.91 (150)	7.87 (200)	9.84 (250)	11.81 (300)	13.78 (350)	15.75 (400)	19.69 (500)
H_2	9.53 (242)	9.53 (242)	9.53 (242)	9.53 (242)	9.53 (242)	9.53 (242)	9.53 (242)
D_2	21.65 (550)	31.50 (800)	37.40 (950)	47.24 (1200)	61.02 (1550)	66.93 (1700)	85.63 (2175)
K_2	35.83 (910)	50.16 (1274)	64.49 (1638)	78.82 (2002)	97.44 (2475)	107.48 (2730)	136.14 (3458)
ΔCL	8.23 (209)	16.10 (409)	20.04 (509)	27.91 (709)	39.72 (1009)	43.66 (1109)	58.43 (1484)

Legend

S = Length of travel
H_F = Required clearance height
HRI = Trough inner height
H_2 = *Mounting height
D_2 = Over length - long travels, gliding
K_2 = *Further add-on

*If the mounting bracket location is set lower

Long Travels - Gliding

If the unsupported length is exceeded, the e-chain®/Tube must glide on itself. This requires a guide trough.

Design, Chapter 1

Speed / acceleration FL_G	max. 6.56 ft/s (20 m/s) / max. 656 ft/s² (200 m/s²)
Speed / acceleration FL_B	max. 9.84 ft/s (3 m/s) / max. 19.69 ft/s² (6 m/s²)
Gliding speed / acceleration (maximum)	max. 32.8 ft/s (10 m/s) / max. 164 ft/s² (50 m/s²)
Material - permitted temperature	igumid G / -40°F (-40°C) up to +248°F (+120° C)
Flammability Class, igumid G	VDE 0304 IIC UL94 HB

Technical Data

Details of material properties

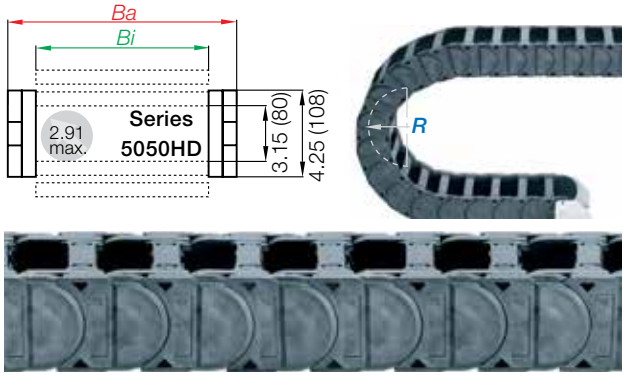
➤ **Chapter 1**

PDF: igus.com/e-chain-pdfs
Product information: igus.com/e-chains

e-chain system® E4/4
Series 5050HD/R9850HD

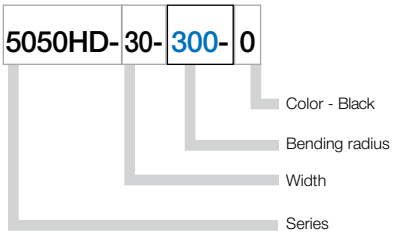
Telephone 1-800-521-2747

Series 5050HD - e-chain® with crossbars every link

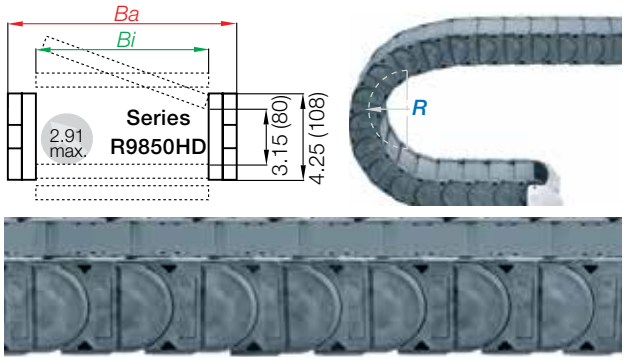


- Crossbars every link
- For use with rigid hydraulic hoses
- For particularly demanding applications
- Can be opened from both sides

Part Number Structure

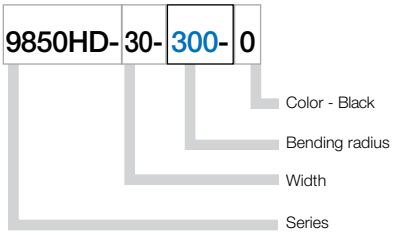


Series R9850HD - fully enclosed E-Tube

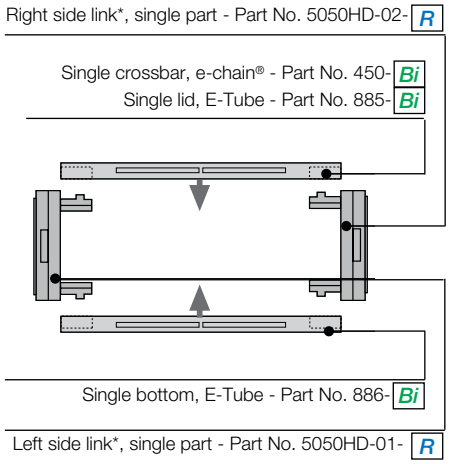


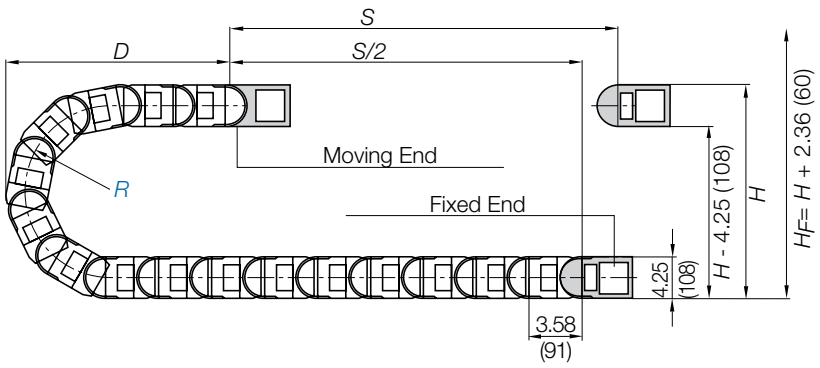
- Fully enclosed
- Excellent cable and hose protection against dirt
- Protection against hot chips up to 1562°F (850°C)
- Lids along inner radius are completely removable
- Lids along the outer radius are single-sided, snap open, hinged on one side as well as completely removable

Part Number Structure



e-chain® as separate parts, links and side plates





*View from the fixed point of the e-chain®/E-Tube

Internet: igus.com
email: sales@igus.com
QuickSpec: igus.com/quickspec

e-chain system® E4/4
Series 5050HD/R9850HD

Supplement part number with required radius. Example: 5050HD-30-300 -0
Pitch: 3.58 in. (91mm) per link links/ft(m) = 3.35 (11)

Part Number. Crossbars Every link	Tube Version		Bi in. (mm)	Ba in. (mm)	5050HD lbs/ft (kg/m)	R9850HD lbs/ft (kg/m)
5050HD-05-		-0	1.97 (50)	4.33 (110)	≈ 4.47 (6.65)	–
5050HD-06-		-0	2.56 (65)	4.92 (125)	≈ 4.53 (6.74)	–
5050HD-07-	9850HD-07-	-0*	2.95 (75)	5.31 (135)	≈ 4.58 (6.81)	≈ 4.87 (7.25)
5050HD-08-		-0	3.43 (87)	5.79 (147)	≈ 4.63 (6.89)	–
5050HD-10-	9850HD-10-	-0	3.94 (100)	6.30 (160)	≈ 4.70 (6.99)	≈ 5.07 (7.55)
5050HD-11-		-0	4.41 (112)	6.77 (172)	≈ 4.77 (7.10)	–
5050HD-12-	9850HD-12-	-0	4.92 (125)	7.28 (185)	≈ 4.82 (7.18)	≈ 5.32 (7.91)
5050HD-13-		-0	5.39 (137)	7.76 (197)	≈ 4.92 (7.32)	–
5050HD-15-	9850HD-15-	-0	5.91 (150)	8.27 (210)	≈ 4.94 (7.35)	≈ 5.57 (8.29)
5050HD-16-		-0	6.38 (162)	8.74 (222)	≈ 5.02 (7.47)	–
5050HD-17-	9850HD-17	-0	6.89 (175)	9.25 (235)	≈ 5.11 (7.60)	≈ 5.78 (8.60)
5050HD-18-		-0	7.36 (187)	9.72 (247)	≈ 5.18 (7.71)	–
5050HD-20-	9850HD-20-	-0	7.87 (200)	10.24 (260)	≈ 5.22 (7.77)	≈ 5.99 (8.91)
5050HD-21-		-0	8.35 (212)	10.71 (272)	≈ 5.27 (7.84)	–
5050HD-22-		-0	8.86 (225)	11.22 (285)	≈ 5.32 (7.91)	–
5050HD-23-		-0	9.33 (237)	11.69 (297)	≈ 5.39 (8.02)	–
5050HD-25-	9850HD-25-	-0	9.84 (250)	12.20 (310)	≈ 5.46 (8.13)	≈ 6.48 (9.64)
5050HD-26-		-0	10.31 (262)	12.68 (322)	≈ 5.52 (8.22)	–
5050HD-27-	9850HD-27	-0	10.83 (275)	13.19 (335)	≈ 5.59 (8.32)	≈ 6.72 (10.00)
5050HD-28-		-0	11.30 (287)	13.66 (347)	≈ 5.63 (8.38)	–
5050HD-30-	9850HD-30-	-0	11.81 (300)	14.17 (360)	≈ 5.73 (8.53)	≈ 6.92 (10.30)
5050HD-31-		-0	12.28 (312)	14.65 (372)	≈ 5.76 (8.57)	–
5050HD-32-		-0	12.79 (325)	15.16 (385)	≈ 5.83 (8.67)	–
5050HD-33-		-0	13.27 (337)	15.63 (397)	≈ 5.91 (8.79)	–
5050HD-35-	9850HD-35-	-0	13.78 (350)	16.14 (410)	≈ 6.04 (8.99)	≈ 7.39 (11.00)
5050HD-36-		-0	14.25 (362)	16.61 (422)	≈ 5.98 (8.90)	–
5050HD-37-		-0	14.76 (375)	17.12 (435)	≈ 6.04 (9.00)	–
5050HD-38-		-0	15.24 (387)	17.60 (447)	≈ 6.12 (9.11)	–
5050HD-40-	9850HD-40-	-0	15.75 (400)	18.11 (460)	≈ 6.30 (9.38)	≈ 8.06 (12.00)
5050HD-41-		-0	16.22 (412)	18.58 (472)	≈ 6.26 (9.31)	–
5050HD-42-		-0	16.73 (425)	19.09 (485)	≈ 6.45 (9.60)	–
5050HD-43-		-0	17.20 (437)	19.57 (497)	≈ 6.34 (9.44)	–
5050HD-45-		-0	17.72 (450)	20.08 (510)	≈ 6.42 (9.55)	–
5050HD-46-	9850HD-46-	-0	18.19 (462)	20.55 (522)	≈ 6.53 (9.72)	≈ 8.38 (12.47)
5050HD-47-		-0	18.70 (475)	21.06 (535)	≈ 6.56 (9.76)	–
5050HD-48-		-0	19.17 (487)	21.54 (547)	≈ 6.73 (10.01)	–
5050HD-50-		-0	19.69 (500)	22.05 (560)	≈ 6.79 (10.11)	–
5050HD-51-		-0	20.16 (512)	22.52 (572)	≈ 6.73 (10.02)	–
5050HD-52-		-0	20.67 (525)	23.03 (585)	≈ 6.85 (10.19)	–
5050HD-53-		-0	21.14 (537)	23.50 (597)	≈ 6.91 (10.29)	–
5050HD-55-		-0	21.65 (550)	24.02 (610)	≈ 7.20 (10.71)	–
5050HD-60-		-0	23.62 (600)	25.98 (660)	≈ 7.35 (10.94)	–

Choose from the radii below for all of the above sizes
Radius (mm) Example: 5050HD-30-300 -0

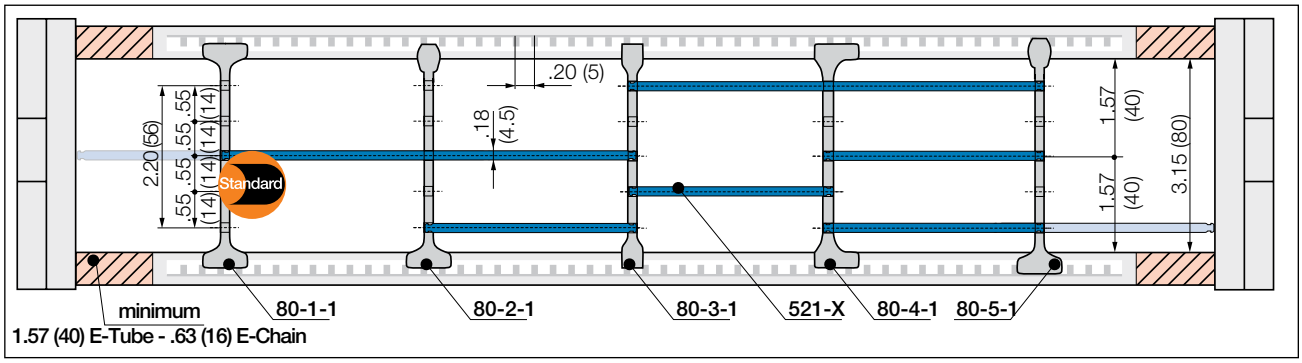
	150	200	250	300	350	400	500
R	5.91 (150)	7.87 (200)	9.84 (250)	11.81 (300)	13.78 (350)	15.75 (400)	19.69 (500)
H**-25	16.06 (408)	20.00 (508)	23.94 (608)	27.87 (708)	31.81 (808)	35.75 (908)	43.62 (1108)
D	13.43 (341)	15.39 (391)	17.36 (441)	19.33 (491)	21.30 (541)	23.27 (591)	27.20 (691)
K	25.79 (655)	32.09 (815)	38.19 (970)	44.29 (1125)	50.59 (1285)	56.69 (1440)	69.09 (1755)

** This radius is not available for the R9850HD Series *Removable lid only, no hinged option

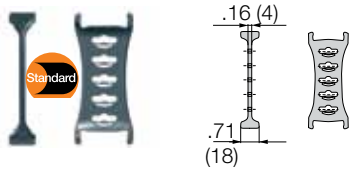
PDF: igus.com/e-chain-pdfs
Product information: igus.com/e-chains

e-chain system® E4/4
Series 5050HD/R9850HD
Interior Separation - New Generation

Telephone 1-800-521-2747



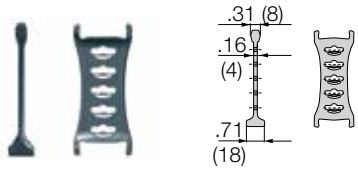
Note Please maintain a lateral spacing of 1.57" (40 mm) for E-Tube and .63" (16 mm) for e-chains® between the separators and the side links. In the standard configuration separators are assembled every 2nd e-chain® link



Separator, wide base

Unassembled	**Part No. 80-1**
Assembled	**Part No. 80-1-1**

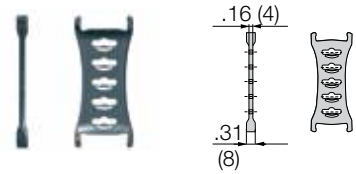
- **Standard separator 80-1 for all applications**
  Separator with wide base for maximum locking strength and safe standing in e-chains®.



Separator, narrow head

Unassembled	**Part No. 80-2**
Assembled	**Part No. 80-2-1**

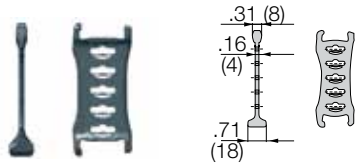
- **Separator 80-2**
  For even faster installation
  is used when vertical and horizontal separation is required. Due to its slot, it allows basic vertical/horizontal shelving arrangements.



Separator, narrow base

Unassembled	**Part No. 80-3**
Assembled	**Part No. 80-3-1**

- **Separator 80-3**
  For many thin cables
  is used when vertical and horizontal separation is required. Due to its slot, it allows basic vertical/horizontal shelving arrangements.

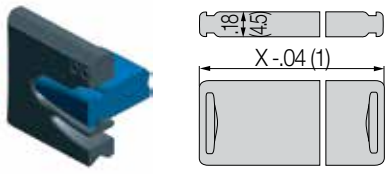


Separator, asymmetrical

Unassembled	**Part No. 80-5**
Assembled	**Part No. 80-5-1**

- **Separator 80-5**
  Locks safely in .30" (7.5 mm) increments
  Notch separator for exact positioning in e-chains®. Recommended for side-mounted applications.

Lockable full-width shelves - for the standard interior separation



Full width shelf, lockable

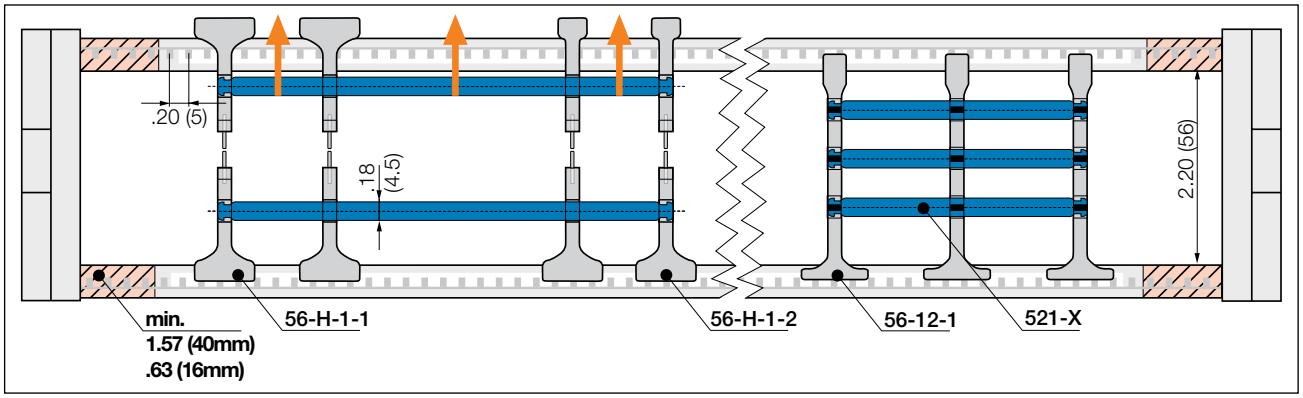
Unassembled	**Part No. 520-X**
Assembled	**Part No. 521-X**

- **Full width shelf, lockable**
  Shelf locks safely into separators on both ends, fixed width possible. Separators can be moved freely over the shelf in horizontal direction. Can be arranged at 5 different heights.

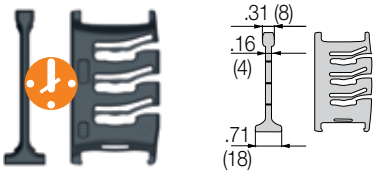
Width X in. (mm)	Part No. Unassembled	Part No. Assembled	Width X in. (mm)	Part No. Unassembled	Part No. Assembled	Width X in. (mm)	Part No. Unassembled	Part No. Assembled
1.97 (050)	**520-050**	**521-050**	5.91 (150)	**520-150**	**521-150**	11.81 (300)	**520-300**	**521-300**
2.56 (065)	**520-065**	**521-065**	6.89 (175)	**520-175**	**521-175**	17.723 (450)	**520-450**	**521-125**
2.95 (075)	**520-075**	**521-075**	7.87 (200)	**520-200**	**521-200**			
3.94 (100)	**520-100**	**521-100**	8.86 (225)	**520-225**	**521-225**			
4.92 (125)	**520-125**	**521-125**	9.84 (250)	**520-250**	**521-250**			

Internet: igus.com
email: sales@igus.com
QuickSpec: igus.com/quickspec

e-chain system® E4/4
Series 5050HD/R9850HD
Interior Separation - Previous Generation



Note Please maintain a lateral spacing of 1.57" (40 mm) for e-tube and .63" (16 mm) for e-chains® between the separators and the side links. In the standard configuration separators are assembled every 2nd e-chain® link



Lean separator

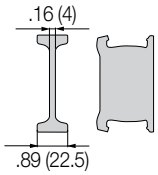
Unassembled	**Part No. 56-12**
Assembled	**Part No. 56-12-1**

- **Lean separators 56-12**
  New design allows extremely fast fitting of shelves in several layers, which significantly reduces assembly time. Enables extremely fast replacement of individual cables in a very full e-chain®.



- **Lean separator design - several layers of cables fitted quickly, save up to 50%* assembly time**
  (*Lean separator vs. standard separator - measured on a 4m long e-chain® fitted with 12 cables in the igus® harnessing factory)





Notch locking separator

Unassembled	**Part No. 56-6**
Assembled	**Part No. 56-6-1**

- **Notch locking separator for increased holding force**
  Notch locking separators offer higher crossbar opening forces for high humidity and/or large hydraulic hoses. They can be positioned precisely and then locked in position.

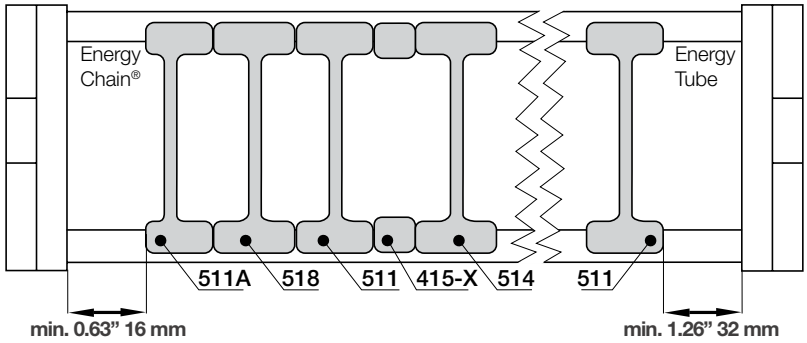
PDF: igus.com/e-chain-pdfs
Product information: igus.com/e-chains

e-chain system® E4/4
Series 5050HD/R9850HD

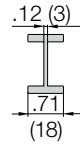


Vertical separators and spacers

Vertical separators are used if a vertical subdivision of the e-chain® interior is required. By standard, vertical separators are assembled every other e-chain® link.
NOTE: Observe a lateral spacing of at least 1.30 in. (33mm) for E-Tubes and .63 in. (16mm) for e-chain®. There is no minimum spacing needed for side plates





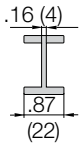


Vertical separator

Unassembled	**Part No. 501**
Assembled	**Part No. 511**

- **Standard separator 501 for e-chains® and E-Tubes**
  This separator offers safe stability due to its wide base design, also when used with thick cables or hoses.



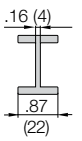


Locking separator (for e-chains®)

Unassembled	**Part No. 504**
Assembled	**Part No. 514**

- **Locking separator 504 for e-chains®**
  This separator features increased retention force for applications exposed to very high humidity and extreme loads. If locking separators are used, the e-chain® is more difficult to open.



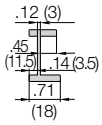


Locking separator (for e-chains®)

Unassembled	**Part No. 508**
Assembled	**Part No. 518**

- **Locking separator 508 for E-Tubes**
  This separator is used for applications that are exposed to extremely high humidity. The clamp at the side serves to uniformly align the separators. In order to avoid destroying the separators when opening the e-chain®, make sure all separators are identically aligned.





Asymmetrical separator (for e-chains®)

Unassembled	**Part No. 501A**
Assembled	**Part No. 511A**

- **Asymmetrical separator 501A for e-chains®**
  This separator is NOT for E-Tubes. It features an (18mm) base and can be used in combinations between spacers of different widths and vertical separators in side mounted applications.





Spacer (for e-chains®)

Unassembled	**Part No. 405-XX**
Assembled	**Part No. 415-XX**

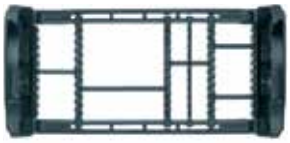
XX = width of the spacer

- **NOTE ON SPACERS**
  Vertical separators are adjustable, but can be fixed in position by means of a spacer. Spacers are most often necessary for side mounted applications.
  The available inner height is reduced by .08" (2mm) **per spacer** (for example if one spacer is placed on either side of the separator, the overall inner height is reduced by .16" (4mm). To avoid this, place the spacers on the **outside** of the opening crossbar **(not for long travels)**.

Spacers available in the following sizes:

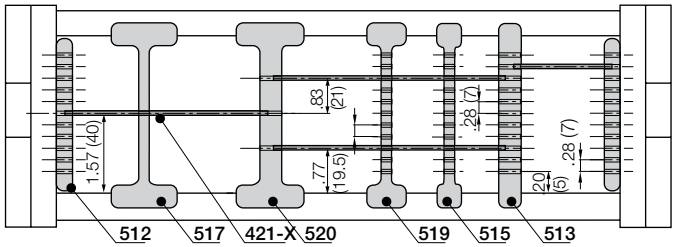
Part No. Unassembled	Part No. Assembled	in.	(mm)	Part No. Unassembled	Part No. Assembled	in.	(mm)
405 -10	**415 -10**	.39"	(10)	**405 -30**	**415 -30**	1.18"	(30)
405 -15	**415 -15**	.59"	(15)	**405 -40**	**415 -40**	1.57"	(40)
405 -20	**415 -20**	79"	(20)				

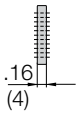




Shelves

e-chains® and E-Tubes can be subdivided both vertically and horizontally using the various interior separation elements.
➤ **Design, Chapter 1** for layout recommendations.

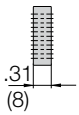


Side plate

Unassembled	**Part No. 502**
Assembled	**Part No. 512**

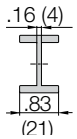
- **Side plates 502**
  This component is used to form the basic pattern of a shelf system.

Vertical separator

Unassembled	**Part No. 503**
Assembled	**Part No. 513**

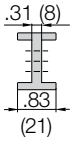
- **Vertical separator 503**
  This component is used to form the basic pattern of a shelf system.

Locking vertical separator

Unassembled	**Part No. 507**
Assembled	**Part No. 517**

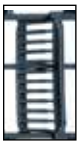
- **Locking vertical separator 507**
  This separator features increased retention force for applications exposed to very high humidity and extreme loads. The extra retention force is achieved by asymmetric claws for the crossbar. Take care to ensure proper alignment.

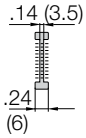



Locking vertical separator

Unassembled	**Part No. 510**
Assembled	**Part No. 520**

- **Locking vertical separator 510**
  This separator is slotted and able to be combined with shelves. For e-chains® only



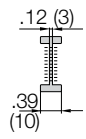


Slotted separators, closed

Unassembled	**Part No. 505**
Assembled	**Part No. 515**

- **Slotted separators 505**
  These are used for very complex subdivisions. However, they cannot be retrofitted into an existing separation system without removing the shelves first.





Slotted separators, open

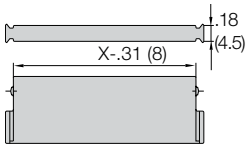
Unassembled	**Part No. 509**
Assembled	**Part No. 519**

- **Slotted separator 509**
  This separator can be retrofitted into an existing interior separation system without removing the shelves, as long as these shelves fit into any of the 7 middle slots

Shelves 420-XX

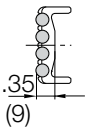
These components form the basic pattern of a shelf system. Shelves of various widths can be arranged at 7 different heights in .28" (7mm) increments

Usable Width X in. (mm)	Part No. Width in. (mm)	Part No. Shelf only	Assembled	Usable Width X in. (mm)	Part No. Width in. (mm)	Part No. Shelf only	Assembled
.71 (18)	.39 (10)	**420-18**	**421-18**	2.95 (75)	2.64 (67)	**420-75**	**421-75**
.91 (23)	.59 (15)	**420-23**	**421-23**	3.46 (88)	3.15 (80)	**420-88**	**421-88**
.98 (25)	.67 (17)	**420-25**	**421-25**	3.94 (100)	3.62 (92)	**420-100**	**421-100**
1.10 (28)	.79 (20)	**420-28**	**421-28**	4.92 (125)	4.61(117)	**420-125**	**421-125**
1.30 (33)	.98 (25)	**420-33**	**421-33**	5.91 (150)	5.59(142)	**420-150**	**421-150**
1.69 (43)	1.38 (35)	**420-43**	**421-43**	6.89 (175)	6.57(167)	**420-175**	**421-175**
1.97 (50)	1.65 (42)	**420-50**	**421-50**	7.36 (187)	7.05(179)	**420-187**	**421-187**
2.44 (62)	2.13 (54)	**420-62**	**421-62**	7.87 (200)	7.56(192)	**420-200**	**421-200**





Rollclip - minimizes abrasion of particularly sensitive hoses or cables in an e-chain®. The integrated rollers compensate for relative movement between the chain and the hose or cable. This reduces the abrasion of the hoses or cables



Rollclip

Unassembled	**Part No. 489-27**
Assembled	**Part No. 490-27**

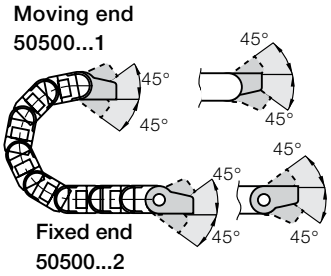


PDF: igus.com/e-chain-pdfs
Product information: igus.com/e-chains

e-chain system® E4/4
Series 5050HD/R9850HD
Mounting Bracket - Stainless Steel

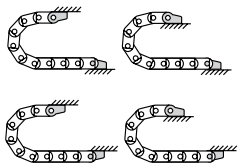
pivoting

- For pivoting connections
- One part for all chain widths
- Electrically conductive







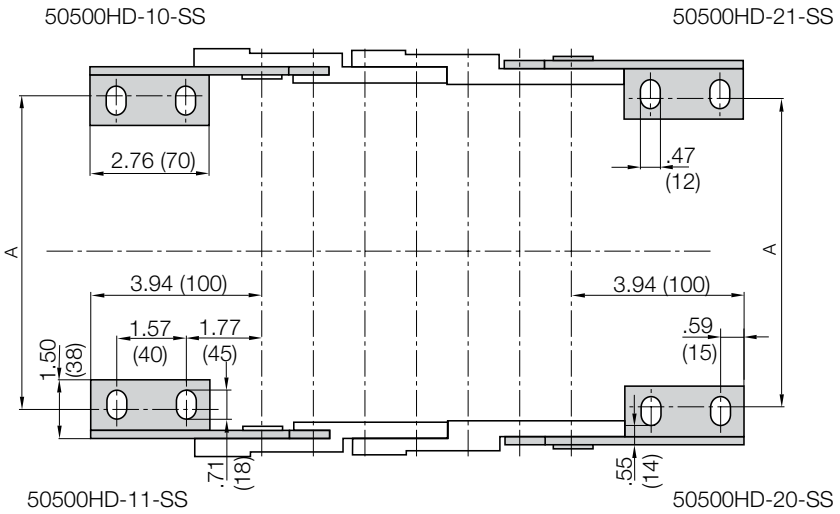


Possible installation configurations -

Part No. Mounting Brackets Full Set
4 parts, 2 with pin, 2 with bore
Series 5050HD or R9850HD:
50500HD-12-SS

Part No. Mounting Bracket Moving End
2 parts, 1 left & 1 right with bore
Series 5050HD or R9850HD:
50500HD-1-SS

Part No. Mounting Bracket Fixed End
2 parts, 1 left & 1 right with pin
Series 5050HD or R9850HD:
50500HD-2-SS



Bracket mounting dimensions

Width of Chain *Bi*	Part Number	Mounting Brackets Full Set	Moving End Only	Fixed End Only	A in. (mm)
1.97 (50)	50500HD	-12	-1	-2	1.18 (30)
2.56 (65)	50500HD	-12	-1	-2	1.77 (45)
2.95 (75)	50500HD	-12	-1	-2	2.16 (55)
3.43 (87)	50500HD	-12	-1	-2	2.64 (67)
3.94 (100)	50500HD	-12	-1	-2	3.15 (80)
4.41 (112)	50500HD	-12	-1	-2	3.62 (92)
4.92 (125)	50500HD	-12	-1	-2	4.13 (105)
5.39 (137)	50500HD	-12	-1	-2	4.61 (117)
5.91 (150)	50500HD	-12	-1	-2	5.12 (130)
6.38 (162)	50500HD	-12	-1	-2	5.59 (142)
6.89 (175)	50500HD	-12	-1	-2	6.10 (155)
7.36 (187)	50500HD	-12	-1	-2	6.57 (167)
7.87 (200)	50500HD	-12	-1	-2	7.09 (180)
8.35 (212)	50500HD	-12	-1	-2	7.56 (192)
8.86 (225)	50500HD	-12	-1	-2	8.07 (205)
9.33 (237)	50500HD	-12	-1	-2	8.54 (217)
9.84 (250)	50500HD	-12	-1	-2	9.05 (230)
10.31 (262)	50500HD	-12	-1	-2	9.53 (242)
10.83 (275)	50500HD	-12	-1	-2	10.04 (255)
11.30 (287)	50500HD	-12	-1	-2	10.51 (267)
11.81 (300)	50500HD	-12	-1	-2	11.02 (280)

Width of Chain *Bi*	Part Number	Mounting Brackets Full Set	Moving End Only	Fixed End Only	A in. (mm)
12.28 (312)	50500HD	-12	-1	-2	11.49 (292)
12.79 (325)	50500HD	-12	-1	-2	12.00 (305)
13.27 (337)	50500HD	-12	-1	-2	12.48 (317)
13.78 (350)	50500HD	-12	-1	-2	12.99 (330)
14.25 (362)	50500HD	-12	-1	-2	13.46 (342)
14.76 (375)	50500HD	-12	-1	-2	13.97 (355)
15.24 (387)	50500HD	-12	-1	-2	14.45 (367)
15.75 (400)	50500HD	-12	-1	-2	14.96 (380)
16.22 (412)	50500HD	-12	-1	-2	15.43 (392)
16.73 (425)	50500HD	-12	-1	-2	15.94 (405)
17.20 (437)	50500HD	-12	-1	-2	16.42 (417)
17.72 (450)	50500HD	-12	-1	-2	16.93 (430)
18.19 (462)	50500HD	-12	-1	-2	17.40 (442)
18.70 (475)	50500HD	-12	-1	-2	17.91 (455)
19.17 (487)	50500HD	-12	-1	-2	18.39 (467)
19.69 (500)	50500HD	-12	-1	-2	18.90 (480)
20.16 (512)	50500HD	-12	-1	-2	19.37 (492)
20.67 (525)	50500HD	-12	-1	-2	19.88 (505)
21.14 (537)	50500HD	-12	-1	-2	20.35 (517)
21.65 (550)	50500HD	-12	-1	-2	20.87 (530)
23.62 (600)	50500HD	-12	-1	-2	22.83 (580)

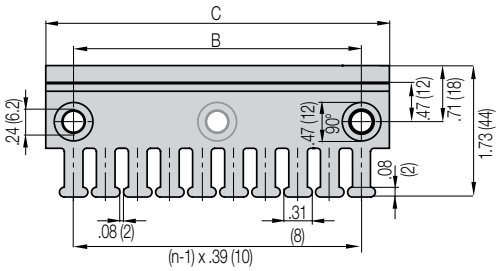
e-chain system® E4/4
Series 5050HD/R9850HD
Strain Relief

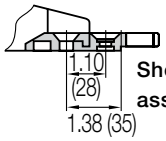
Tiewrap plates as an individual part

Available as an individual component, can be fixed onto a mounting bracket with the use of a profile rail.

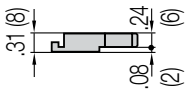


For more information please refer to strain relief section of Chapter 10





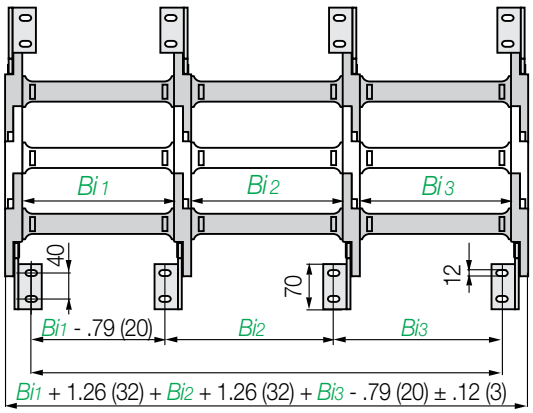
Shown assembled



Single tiewrap plate

Tiewrap Plate	n Number of Teeth	C Overall Width in. (mm)	B Bore Width in. (mm)	Center Bore
3050-ZB	5	1.97 (50)	1.18 (30)	no
3075-ZB	7	2.95 (75)	2.16 (55)	no
3100-ZB	10	3.94 (100)	3.15 (80)	no
3115-ZB	11	4.53 (115)	3.74 (95)	no
3125-ZB	12	4.92 (125)	4.13 (105)	no
3150-ZB	15	5.91 (150)	5.12 (130)	no
3175-ZB	17	6.89 (175)	6.10 (155)	no
3200-ZB	20	7.87 (200)	7.09 (180)	yes
3225-ZB	22	8.86 (225)	8.07 (205)	yes
3250-ZB	25	9.84 (250)	9.06 (230)	yes





Bi1 + 1.26 (32) + Bi2 + 1.26 (32) + Bi3 - .79 (20) ± .12 (3)

1.18 (30) + Bi1 + 1.26 (32) + Bi2 + 1.26 (32) + Bi3 + 1.18 (30) ± .12 (3)

Extension links | For extremely wide e-chains® up to 9.84 ft. (3 m)

- Virtually unlimited side-by-side attachment when high fill weights necessitate extremely wide e-chains® (up to 118" (3,000mm))
- The unsupported length FL_G max. can be increased when high fill weights are required

PDF: igus.com/e-chain-pdfs
Product information: igus.com/e-chains

e-chain system® E4/4
Series 5050HD/R9850HD
Guide Trough

Width of Crossbar
5050HD-**05**-200-0

-XX	B_{Ri}	Installation Part No.
-05	4.13 (105)	96-50-225
-06	4.72 (120)	96-50-250
-07	5.12 (130)	96-50-250
-08	5.59 (142)	96-50-275
-10	6.10 (155)	96-50-275
-11	6.61 (168)	96-50-300
-12	7.09 (180)	96-50-300
-13	7.60 (193)	96-50-325
-15	8.07 (205)	96-50-325
-16	8.58 (218)	96-50-350
-17	9.06 (230)	96-50-350
-18	9.57 (243)	96-50-375
-20	10.04 (255)	96-50-375
-21	10.55 (268)	96-50-400
-22	11.02 (280)	96-50-400
-23	11.54 (293)	96-50-425
-25	12.01 (305)	96-50-425
-26	12.52 (318)	96-50-450
-27	12.99 (330)	96-50-450
-28	13.50 (343)	96-50-475
-30	13.98 (355)	96-50-475
-31	14.49 (368)	96-50-500
-32	14.96 (380)	96-50-500
-33	15.47 (393)	96-50-525
-35	15.94 (405)	96-50-525
-36	16.46 (418)	96-50-550
-37	16.93 (430)	96-50-550
-38	17.44 (443)	96-50-575
-40	17.91 (455)	96-50-575
-41	18.43 (468)	96-50-600
-42	18.90 (480)	96-50-600
-43	19.41 (493)	96-50-625
-45	19.88 (505)	96-50-625
-46	20.39 (518)	96-50-650
-47	20.87 (530)	96-50-650
-48	21.38 (543)	96-50-675
-50	21.85 (555)	96-50-675
-51	22.36 (568)	96-50-700
-52	22.83 (580)	96-50-700
-53	23.35 (593)	96-50-725
-55	23.82 (605)	96-50-725
-60	25.79 (655)	96-50-775

Guide troughs are used with applications where the upper run of the e-chain® glides on the lower run. If using igus® steel guide troughs, the following components are required:

- Full travel length of guide trough
  Part No. 99-30
- 1/2 travel length glide bars
  Part No. 93-01
- Installation sets as end connectors
  Part No. 96-50-XX

-XX indicates the length of the profile rails on which the guide trough is mounted. The values and part numbers are specified in the table on the right. The standard length of the trough components and glide bars is 6.56 ft (2 m). The overall length of the guide trough directly correlates to the length of travel.

Example:
Length of travel 164 ft (50 m)
Center-mounted

Required guide troughs:
164 ft (50 m) guide trough, 82 ft. (25 m) glide bar

= 25 sections of 6.56 ft (2 m) guide trough
Part No. 99-30

= 13 sections of 6.56 ft (2 m) glide bar
Part No. 93-01

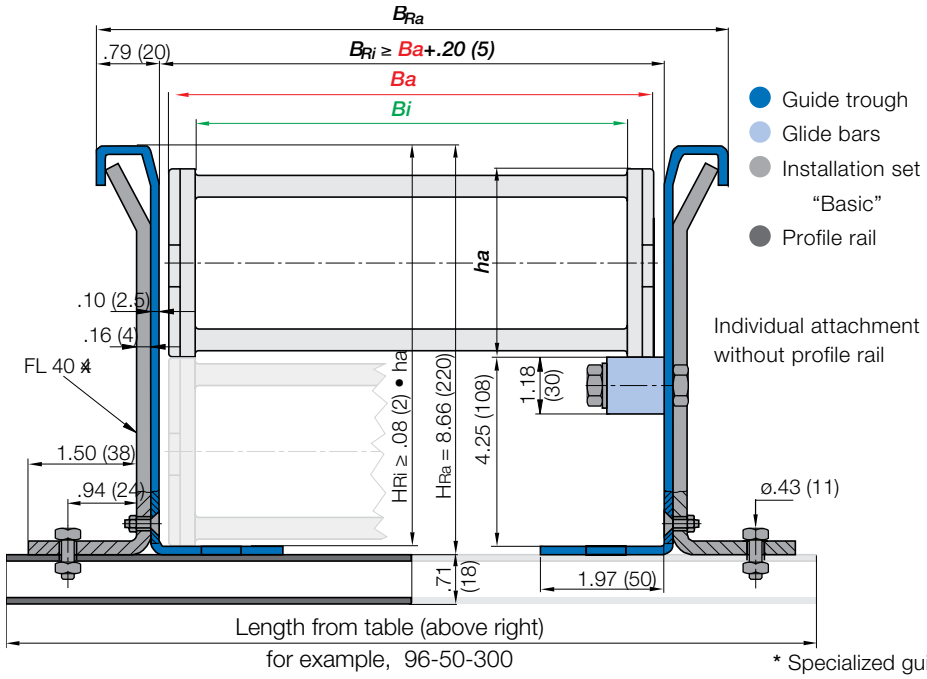
Required number of installation set:
= Number of guide trough components + 1
= 25 + 1 = 26
Part No. of the installation sets **96-50-XXX**
Example: 96-50-400 for 15.75 (400 mm) long profile rail



Left: Guide trough with glide bars Right: Guide troughs without glide bars



Installation sets as section connectors



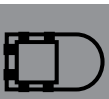
* Specialized guide trough available upon request

Standard length profile rail

For further technical information on guide troughs
➤ **Chapter 9**












igus
P4.42R.04

P4

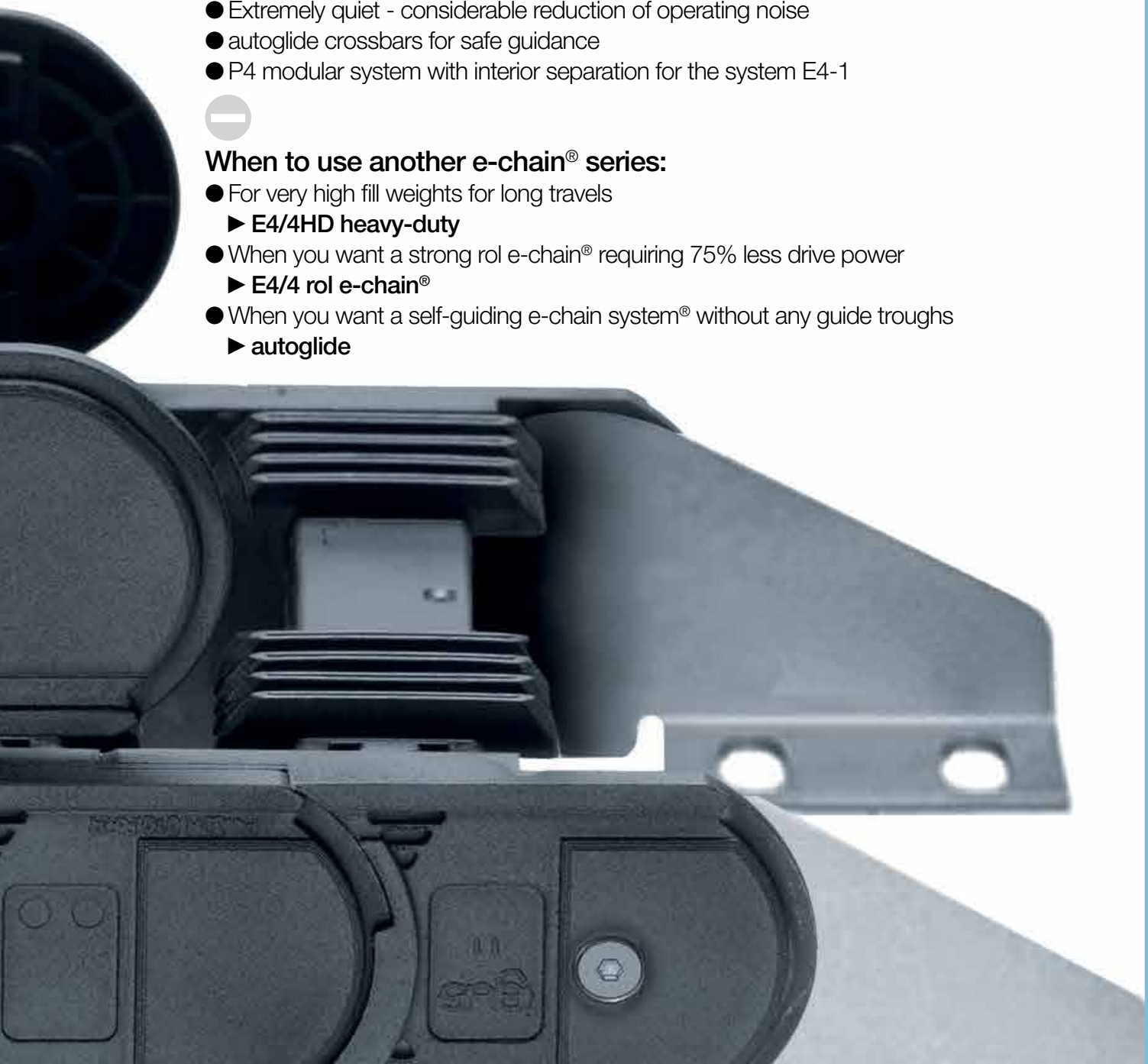
Reduce energy consumption by up to 57% - with profile-rol e-chain®

Advantages of P4:

- Reduce energy consumption by up to 57% - P4 profile-rol e-chain system®
- Safe, low-noise, abrasion-resistant energy supply system for long travels
- Long travels up to 2,625 ft. (800m) and more, high fill weights up to 20.16 lbs/ft. (30kg/m)
- For very long travels and high travel speeds up to 32.8 ft. (10m/s)
- Identical pitch of the e-chain® link with or without roller
- Extremely quiet - considerable reduction of operating noise
- autoglide crossbars for safe guidance
- P4 modular system with interior separation for the system E4-1

When to use another e-chain® series:

- For very high fill weights for long travels
  ► **E4/4HD heavy-duty**
- When you want a strong rol e-chain® requiring 75% less drive power
  ► **E4/4 rol e-chain®**
- When you want a self-guiding e-chain system® without any guide troughs
  ► **autoglide**



Special solutions for long travel
System P4 - Profile rol e-chain®
For very long travels, speed up to 32.8 f/s (10 m/s)

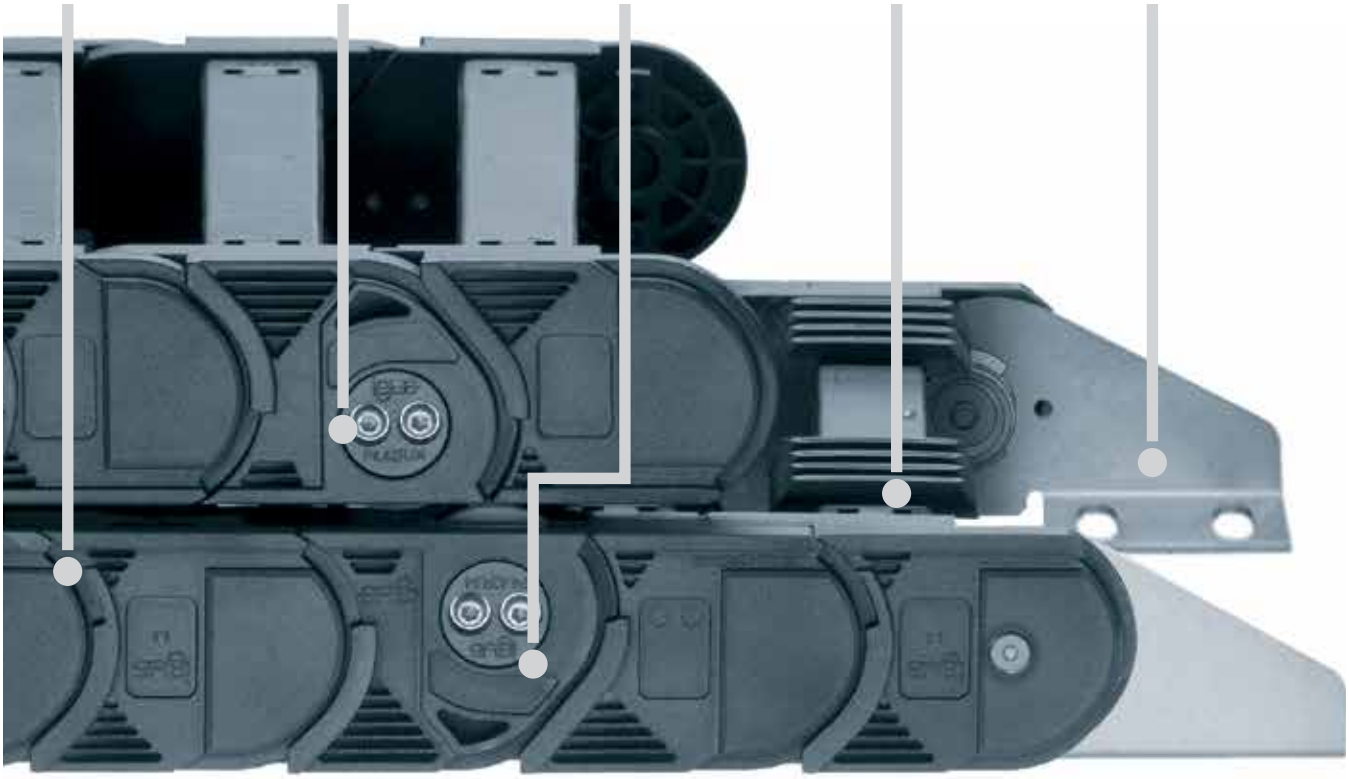
Low vibration:
Offset operation of upper and lower run

Low maintenance:
Tribo-optimized plastic rollers

Low noise:
Special roller- / e-chain® links -design

Secure guidance:
comb style autoglide crossbars

Robust:
Steel mounting brackets



57% less energy consumption - System P4, profile rol e-chain®

Safe, low-noise, abrasion-resistant energy supply system on long travels up to 2,625 ft. (800 m) and more
Standard rol e-chain® has been used in over 1000 installations worldwide. Some industries -cranes, for example - have ever-increasing demands for length of travel, fill weight and speed. **Systems of this type should be designed by our system design engineers. We will be more than willing to submit an offer to you. Please contact us about this.**

- Identical pitch of the chain link with or without roller
- Smooth, low noise operation through identical pitch length for links with and without rollers
- Integrated “captive” roller in the side part
- Long travels(up to 2,625 ft. (800 m), high additional loads up to 20.2 lbs/ ft (30 kg/m)
- For very long travels and high speeds >32.8 ft/s (10 m/s) travel speed
- autoglide crossbars provide for a safe guiding in very long travels
- 4 different inner heights: 1.26” (32mm), 1.65” (42mm), 2.20” (56mm), 3.15” (80 mm) available
- Large modular tool box system with interior separations of the System E4

Typical industries and applications

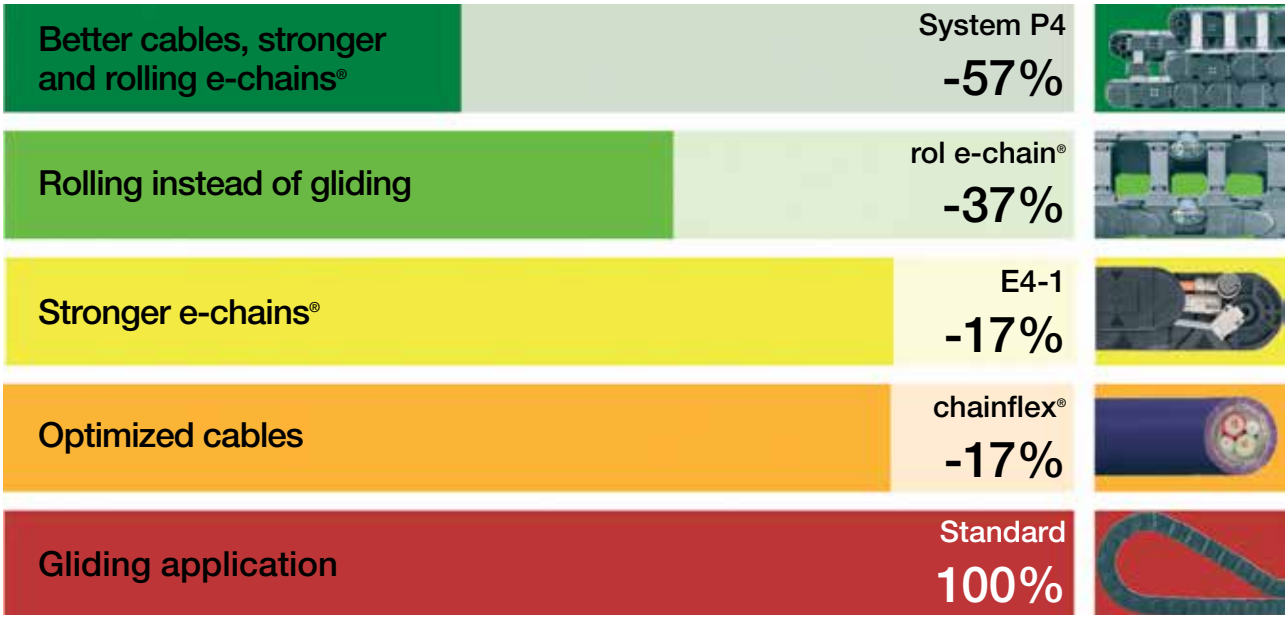
- Cranes
- Warehousing
- Equipment manufacturing
- Gantry robots
- Material handling

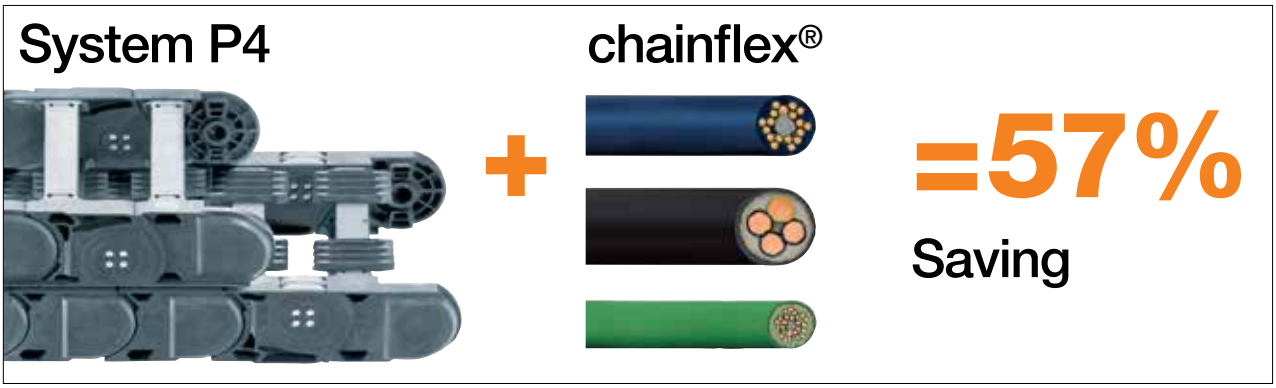
iF product design award
2007 igus® System P4

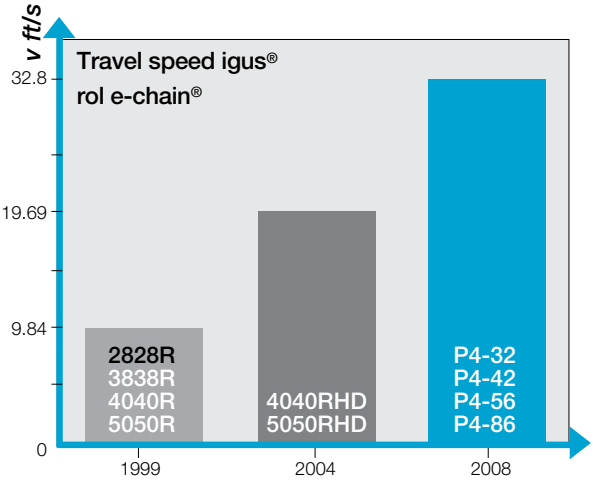
Special solutions for long travel
System P4 - Profile rol e-chain®
Efficiency

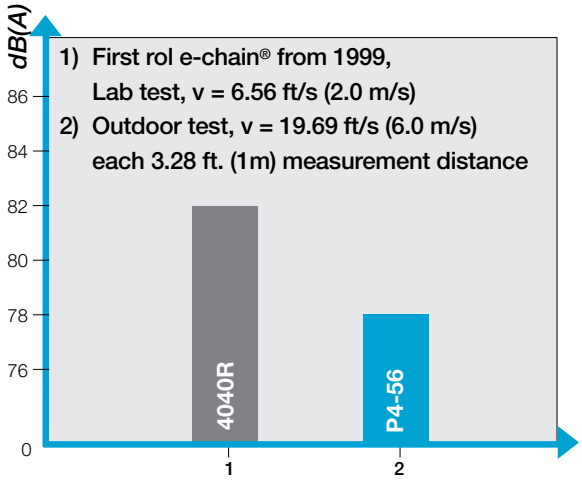
Energy efficient polymer e-chains® and cables reduce consumption by up to 57%

With the right materials and clever design, the energy consumption can be drastically reduced, as now proven by current tests and sample calculations in the e-chain® and cable laboratory at igus®. igus® e-chains® and chainflex® cables reduce the required drive power and extend the application's service life.









Special solutions for long travel
System P4 - Profile rol e-chain®
Selection Table - Technical Data

System P4 - Profile rol e-chain®

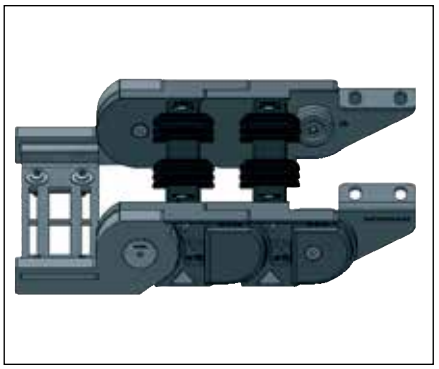
Safe, low noise, abrasion-resistant on long travels



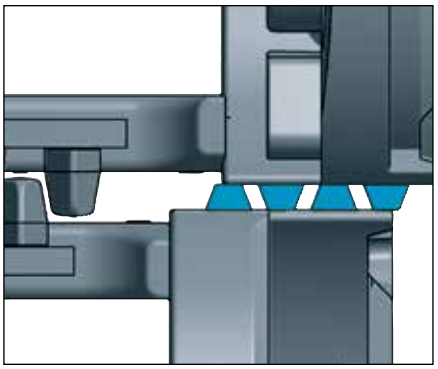
Series	Inner height *hi* in. (mm)	Inner width *Bi* in. (mm)	Outer width *Ba* in. (mm)	Outer height *ha* in. (mm)	Bending radius *R* in. (mm)	Maximum Travel ft. (m)
P4-32	1.26 (32)	3.94-7.87 (100-200)	5.20-9.13 (132-232)	2.13 (54)	5.91-9.84 (150-250)	1,641 (500)
P4-42	1.65 (42)	3.94-7.87 (100-200)	6.06-10.00 (154-254)	2.52 (64)	3.94-13.78 (100-350)	1,969 (600)
P4-56	2.20 (56)	7.36-15.75 (187-400)	10.12-18.50 (257-470)	3.31 (84)	9.84-13.78 (250-350)	2,625 (800)
P4-80	3.15 (80)	7.36-15.75 (187-400)	10.35-18.74 (263-476)	4.25 (108)	9.84-13.78 (250-350)	2,625 (800)



Optimized interior separation program, cables last up to 4 times longer



Robust pivoting mounting brackets available



Offset operation of upper and lower run, resulting in continuous roll-through surface



- Extension link for heavy fill weights
- 2 inner heights available (56, 80 mm)
- 50% higher fill weight possible
- Maximum rigidity
- Divides cross section into compartments (electric/hydraulic)



- Tribo-optimized plastic rollers for all P4 systems
- Wear optimized
- Long cycle life
- Improved rolling
- Lower noise and vibration
- Same pitch for roller links / e-chain® links

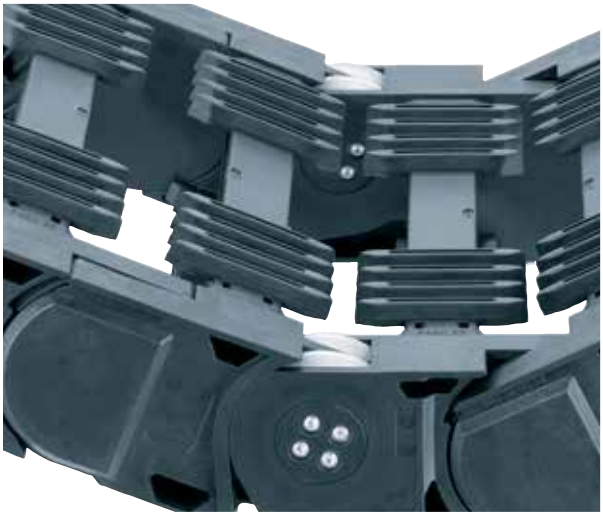


- Aluminum guide trough system
- Special geometry in combination with autoglide cross bars allows for offset upper and lower run
- Strong installation kits for long cycle life
- Aluminum trough segments resist corrosion

Special solutions for long travel
System P4 - Profile rol e-chain®



igus® P4 rol e-chain® in suitable aluminum SuperTrough. High speeds, longest travels, smooth running - thereby longest lifetime



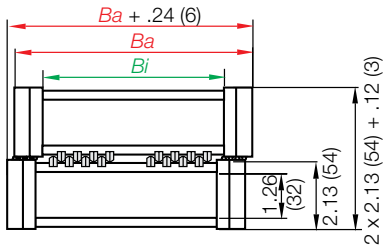
System P4 - Very quiet operation through identical pitch of all chain links. autoglide crossbars offer a safe guidance in very long travels

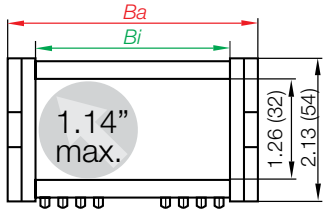
Special solutions for long travel
System P4 - rol e-chain® - Series P4-32
Installation Dimensions

igus® e-chain system®
Telephone 1-800-521-2747
Internet: igus.com
email: sales@igus.com
QuickSpec: igus.com/quickspec

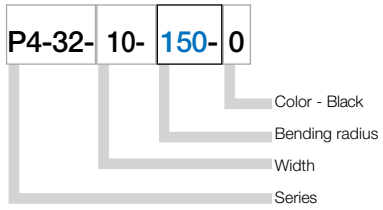
P4-32 - openable along both radii, crossbars every link - comb style autoglide crossbars







Part Number Structure



Part Number	Bi in. (mm)	Ba in. (mm)	Weight lbs/ft (kg/m)
P4-32-10- ☐ -0	3.94 (100)	5.20 (132)	≈ 1.82 (2.71)
P4-32-15- ☐ -0	5.91 (150)	7.17 (182)	≈ 2.04 (3.04)
P4-32-20- ☐ -0	7.87 (200)	9.13 (232)	≈ 2.24 (3.34)

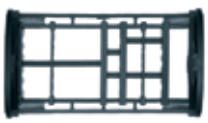
Choose from the radii below for all of the above sizes
Radius (mm) Example: P4-32-20-[150]-0

	150	200	250
R	5.91 (150)	7.87 (200)	9.84 (250)
H_2	4.92 (125)	4.92 (125)	4.92 (125)
D_2	29.92 (760)	39.96 (1015)	55.12 (1400)
K_2	48.50 (1232)	63.94 (1624)	81.57 (2072)

The bending radii [075] [100] [125] [300] are available upon request.
Please contact technical sales for approximate delivery times.

Note: We recommend contacting our technical experts when planning your P4 application.
For distances below 32.8 ft. (10 m) we recommend a self-supporting e-chain®.

Additional Features



Interior separation available
➤ **Series E4-32**

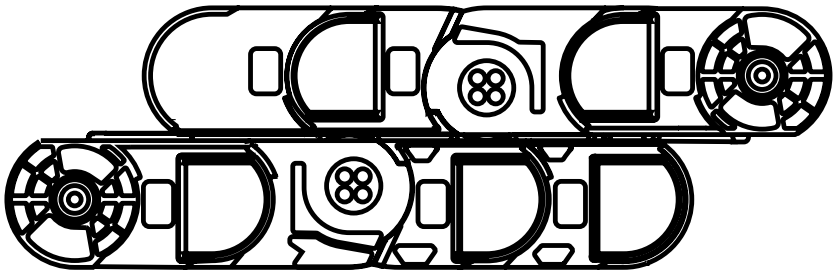


Robust steel mounting brackets available ➤ **Upon request**



Special P4 guide trough system available ➤ **Upon request**

Special solutions for long travel
System P4 - rol e-chain® - Series P4-32
Installation Dimensions



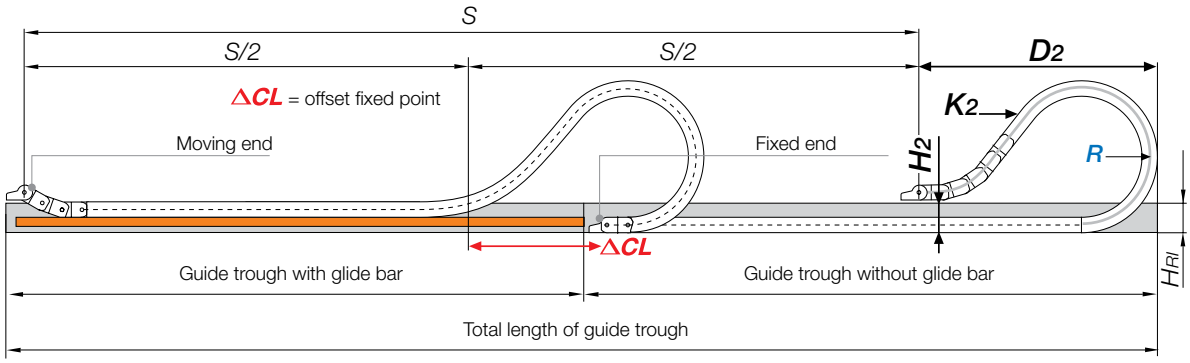
Legend

S = Length of travel
R = Bending radius
H_2 = Mounting height
D_2 = Overlength - long travels, gliding
K_2 = Add-on
H_{RI} = Trough inner height

The required clearance height: ***H_F = H* + 1.57 in. (40 mm)** with 4.03 lbs/ft (6 kg/m) fill weight. Please consult igus® if space is particularly restricted.

Sliding applications

Long travel lengths up to 1,641 ft. (500 m)
In case of travels below 32.8 ft. (10m) we recommend an self-supporting e-chain®.



R	5.91 (150)	7.87 (200)	9.84 (250)
H_2	4.92 (125)	4.92 (125)	4.92 (125)
D_2	29.92 (760)	39.96 (1015)	55.12 (1400)
K_2	48.50 (1232)	63.94 (1624)	81.57 (2072)
ΔCL	14.80 (376)	23.46 (596)	32.87 (835)

Pitch per link: = 2.20" (56 mm)
Links per ft (m): = 5.49 (18)
Chain length: = $_{S}/_{2} + K_2$

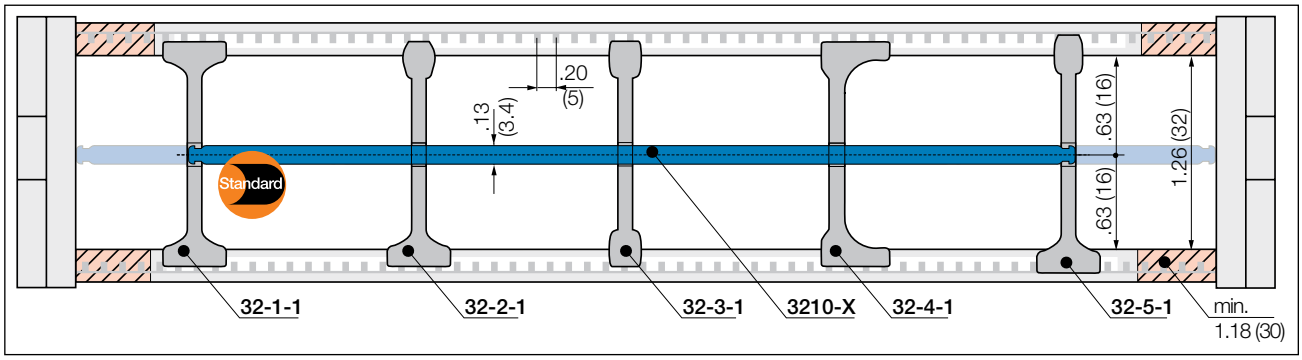
Long travels	from 32.8 ft. (10 m) up to max. 1,641 ft. (500 m)
Speed max. rolling / acceleration max. rolling	max. 32.8 ft/s (10 m/s) / max. 164 ft/s² (50 m/s²)
Fill weight	max. 4.03 lbs/ft. (6 kg/m)
Material - permitted temperature	igumid G / -40°F (-40°C) up to +248°F (+120° C)
Flammability Class, igumid G	VDE 0304 IIC UL94 HB

Technical Data

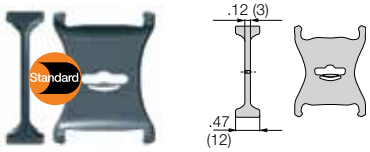
Details of material properties
➤ **Chapter 1**

PDF: igus.com/e-chain-pdfs
Product information: igus.com/e-chains

Special solutions for long travel
System P4 - rol e-chain® - Series P4-32
Installation Dimensions



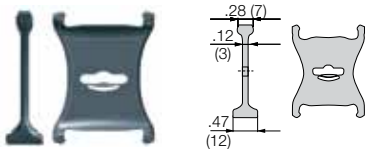
Note E-Tube: Please maintain a lateral spacing of 1.18" (30 mm) between the separators and the side links. In the standard configuration separators are assembled every 2nd e-chain® link



Separator, wide base

Unassembled	**Part No. 32-1**
Assembled	**Part No. 32-1-1**

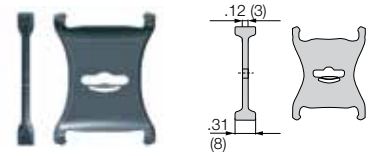
- **Standard separator 32-1 for all applications**
  Separator with wide base for maximum locking strength and safe standing in e-chains®.



Separator, narrow head

Unassembled	**Part No. 32-2**
Assembled	**Part No. 32-2-1**

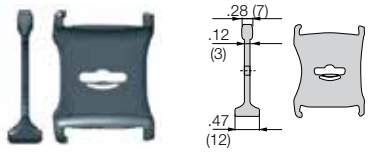
- **Separator 32-2**
  For even faster installation
  is used when vertical and horizontal separation is required. Due to its slot, it allows basic vertical/horizontal shelving arrangements.



Separator, narrow base

Unassembled	**Part No. 32-3**
Assembled	**Part No. 32-3-1**

- **Separator 32-3**
  For many thin cables
  is used when vertical and horizontal separation is required. Due to its slot, it allows basic vertical/horizontal shelving arrangements.

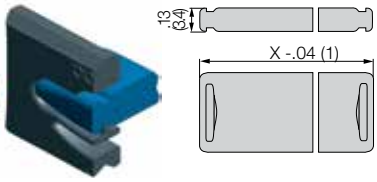


Separator, asymmetrical

Unassembled	**Part No. 32-5**
Assembled	**Part No. 32-5-1**

- **Separator 32-5**
  Locks safely in .20" (5 mm) increments
  Notch separator for exact positioning in e-chains®. Recommended for side-mounted applications.

Lockable full-width shelves - for the standard interior separation



Full width shelf, lockable

Unassembled	**Part No. 3200-X**
Assembled	**Part No. 3210-X**

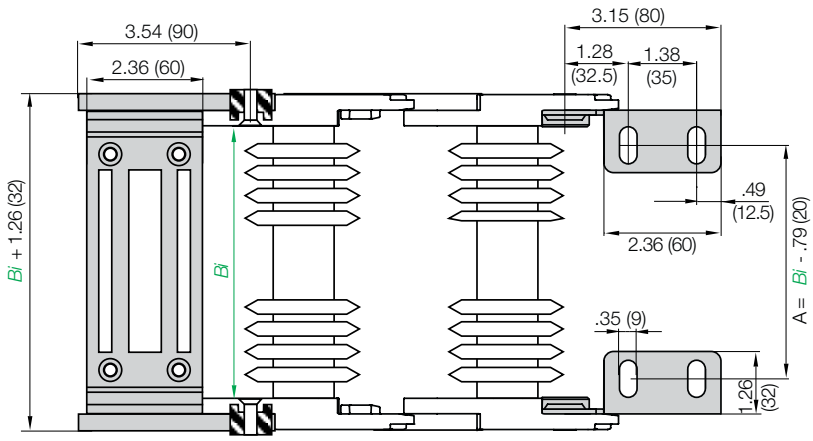
- **Full width shelf, lockable**
  Shelf locks safely into separators on both ends, fixed width possible. Separators can be moved freely over the shelf in horizontal direction. Can be used at one height.

Width X in. (mm)	Part No. Unassembled	Part No. Assembled	Width X in. (mm)	Part No. Unassembled	Part No. Assembled	Width X in. (mm)	Part No. Unassembled	Part No. Assembled
1.97 (050)	**3200-050**	**3210-050**	4.92 (125)	**3200-125**	**3210-125**	8.86 (225)	**3200-225**	**3210-225**
2.95 (075)	**3200-075**	**3210-075**	5.91 (150)	**3200-150**	**3210-150**	9.84 (250)	**3200-250**	**3210-250**
3.94 (100)	**3200-100**	**3210-100**	6.89 (175)	**3200-175**	**3210-175**			
4.53 (115)	**3200-115**	**3210-115**	7.87 (200)	**3200-200**	**3210-200**			

Special solutions for long travel
System P4 - rol e-chain® - Series P4-32
Installation Dimensions

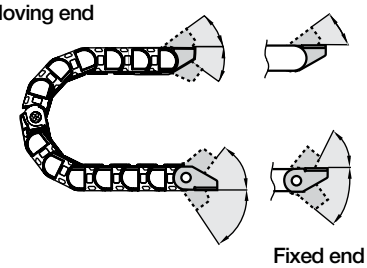
Fixed end
Polymer
P4.32100.5.VS.E45

Moving end
Steel
P4.32100.4.VS.E45





Moving end



Fixed end

Mounting brackets pivoting - Recommended for rolling applications on long travels

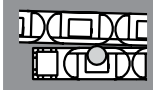
Width Index	Part No. full set for Fixed end and moving end	*Bi* in. (mm)	Dim. A in. (mm)
10- ➤	**P4-32100-54-10-VS-E45**	3.94 (100)	3.15 (80)
15- ➤	**P4-32100-54-15-VS-E45**	5.91 (150)	5.12 (130)
20- ➤	**P4-32100-54-20-VS-E45**	7.87 (200)	7.09 (180)

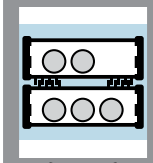
The mounting brackets for P4 e-chains® consist of a steel mounting bracket at the moving end and a polymer mounting bracket at the fixed end. This ensure that the rollers move over a plain surface at the fixed end.

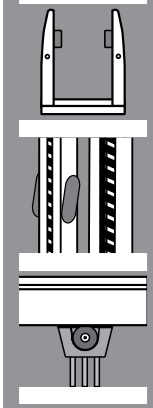
Strain relief, clamps, tiewrap plates, and clip-on solutions are available from stock.

For the complete Chainfix range refer to ➤ Chapter 10

PDF: igus.com/e-chain-pdfs
Product information: igus.com/e-chains



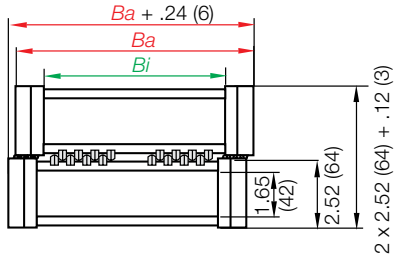


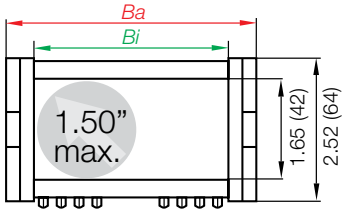


Special solutions for long travel
System P4 - rol e-chain® - Series P4-42
Installation Dimensions

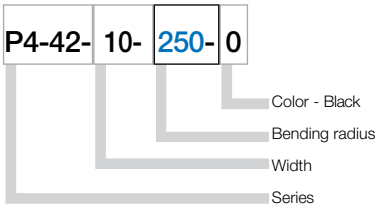
P4-42 - openable along both radii, crossbars every link - comb style autoglide crossbars







Part Number Structure



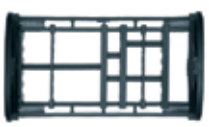
Part Number	Bi in. (mm)	Ba in. (mm)	Weight lbs/ft (kg/m)
P4-42-10- ☐ -0	3.94 (100)	6.06 (154)	≈ 1.82 (2.71)
P4-42-15- ☐ -0	5.91 (150)	8.03 (204)	≈ 2.04 (3.04)
P4-42-20- ☐ -0	7.87 (200)	10.00 (254)	≈ 2.24 (3.34)

Choose from the radii below for all of the above sizes
Radius (mm) Example: P4-42-20-[250]-0

	100	125	150	200	250	300	350
R	3.94 (100)	4.92 (125)	5.91 (150)	7.87 (200)	9.84 (250)	11.81 (300)	13.78 (350)
H_2	5.51 (140)	5.51 (140)	5.51 (140)	5.51 (140)	5.51 (140)	5.51 (140)	5.51 (140)
D_2	20.47 (520)	30.91 (785)	37.01 (940)	50.39 (1280)	63.78 (1620)	77.17 (1960)	89.17 (2265)
K_2	36.61 (930)	47.48 (1206)	55.39 (1407)	73.86 (1876)	92.32 (2345)	110.79 (2814)	126.61 (3216)

Note: We recommend contacting our technical experts when planning your P4 application.
For distances below 32.8 ft. (10 m) we recommend a self-supporting e-chain®.

Additional Features



Interior separation available
➤ **Series E4-42**

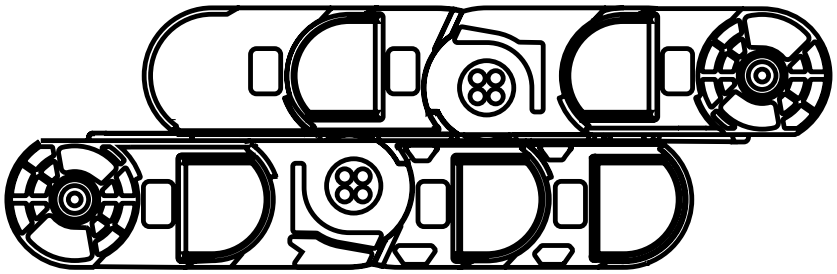


Robust steel mounting brackets available ➤ **Upon request**



Special P4 guide trough system available ➤ **Upon request**

Special solutions for long travel
System P4 - rol e-chain® - Series P4-42
Installation Dimensions



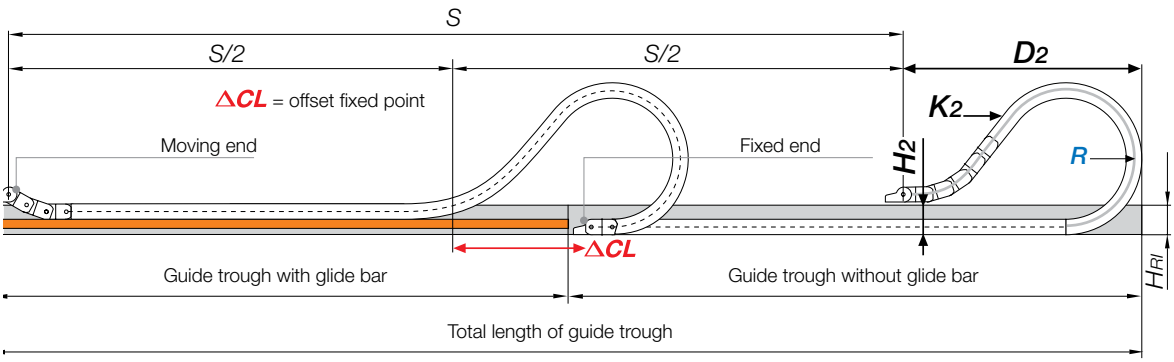
Legend

S = Length of travel
R = Bending radius
H_2 = Mounting height
D_2 = Overlength - long travels, gliding
K_2 = Add-on
H_{RI} = Trough inner height

The required clearance height: ***H_F = H* + 1.57 in. (40 mm)** with 4.70 lbs/ft (7 kg/m) fill weight. Please consult igus® if space is particularly restricted.

Sliding applications

Long travel lengths up to 1,969 ft. (600 m)
In case of travels less than 32.8 ft. (10m) we recommend an self-supporting e-chain®.



Pitch per link: = 2.64" (67 mm)
Links per ft (m): = 4.57 (15)
Chain length: = $S/2 + K_2$

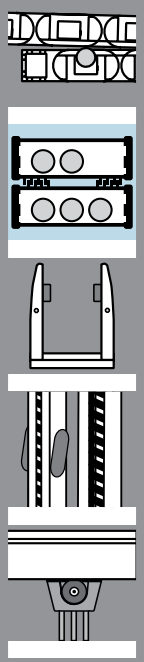
R	3.94 (100)	4.92 (125)	5.91 (150)	7.87 (200)	9.84 (250)	11.81 (300)	13.78 (350)
H_2	5.51 (140)	5.51 (140)	5.51 (140)	5.51 (140)	5.51 (140)	5.51 (140)	5.51 (140)
D_2	20.47 (520)	30.91 (785)	37.01 (940)	50.39 (1280)	63.78 (1620)	77.17 (1960)	89.17 (2265)
K_2	36.61 (930)	47.48 (1206)	55.39 (1407)	73.86 (1876)	92.32 (2345)	110.79 (2814)	126.61 (3216)
ΔCL	7.68 (195)	130.19 (335)	18.50 (470)	30.12 (765)	41.14 (1045)	52.36 (1330)	63.58 (1615)

Technical Data

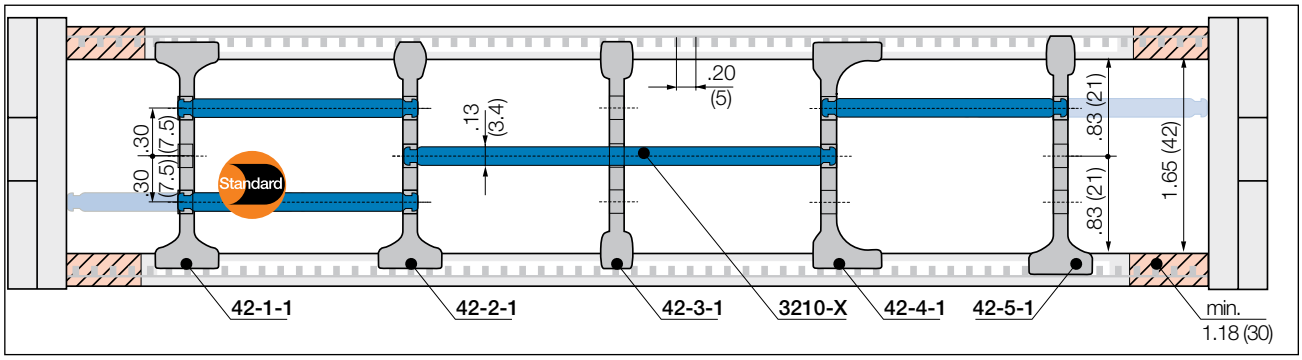
Long travels	from 32.8 ft. (10 m) up to max. 1,969 ft. (600 m)
Speed max. rolling / acceleration max. rolling	max. 32.8 ft/s (10 m/s) / max. 164 ft/s² (50 m/s²)
Fill weight	max. 4.70 lbs/ft. (7 kg/m)
Material - permitted temperature	igumid G / -40°F (-40°C) up to +248°F (+120° C)
Flammability Class, igumid G	VDE 0304 IIC UL94 HB

Details of material properties
➤ **Chapter 1**

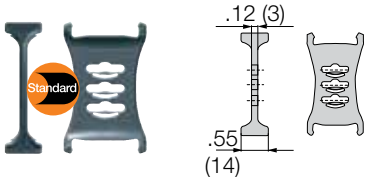
PDF: igus.com/e-chain-pdfs
Product information: igus.com/e-chains



Special solutions for long travel
System P4 - rol e-chain® - Series P4-42
Installation Dimensions



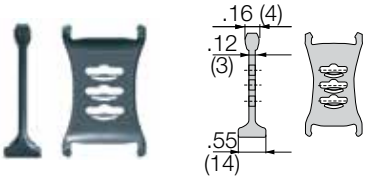
Note E-Tube: Please maintain a lateral spacing of 1.18" (30 mm) between the separators and the side links. In the standard configuration separators are assembled every 2nd e-chain® link



Separator, wide base

Unassembled	**Part No. 42-1**
Assembled	**Part No. 42-1-1**

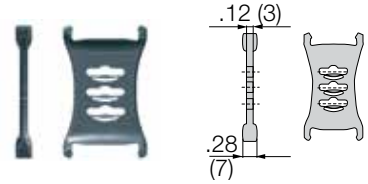
- **Standard separator 42-1 for all applications**
  Separator with wide base for maximum locking strength and safe standing in e-chains®.



Separator, narrow head

Unassembled	**Part No. 42-2**
Assembled	**Part No. 42-2-1**

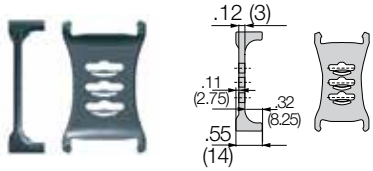
- **Separator 42-2**
  For even faster installation
  is used when vertical and horizontal separation is required. Due to its slot, it allows basic vertical/horizontal shelving arrangements.



Separator, narrow base

Unassembled	**Part No. 42-3**
Assembled	**Part No. 42-3-1**

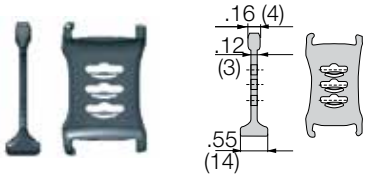
- **Separator 42-3**
  For many thin cables
  is used when vertical and horizontal separation is required. Due to its slot, it allows basic vertical/horizontal shelving arrangements.



Separator, asymmetrical

Unassembled	**Part No. 42-4**
Assembled	**Part No. 42-4-1**

- **Separator 42-4**
  For side mounted applications
  is used when vertical and horizontal separation is required. Due to its slot, it allows basic vertical/horizontal shelving arrangements.

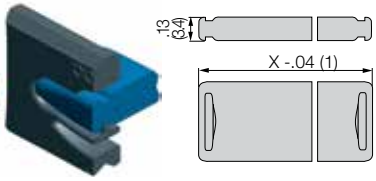


Separator, asymmetrical

Unassembled	**Part No. 42-5**
Assembled	**Part No. 42-5-1**

- **Separator 42-5**
  Locks safely in .30" (7.5 mm) increments
  Notch separator for exact positioning in e-chains®. Recommended for side-mounted applications.

Lockable full-width shelves - for the standard interior separation



Full width shelf, lockable

Unassembled	**Part No. 3200-X**
Assembled	**Part No. 3210-X**

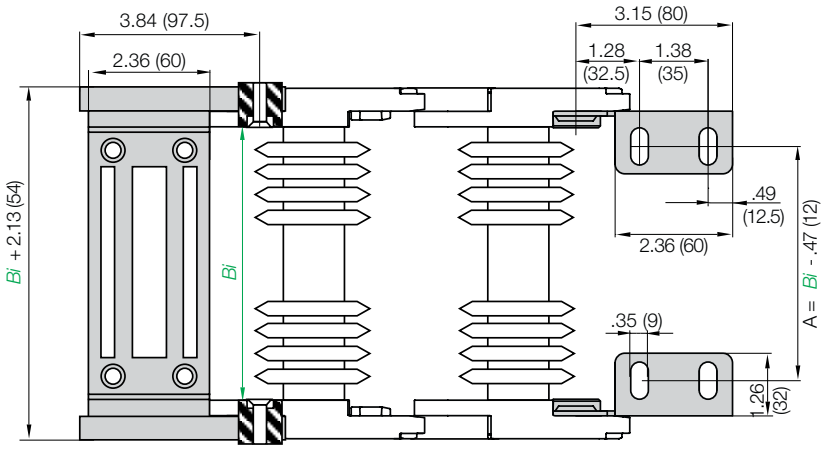
- **Full width shelf, lockable**
  Shelf locks safely into separators on both ends, fixed width possible. Separators can be moved freely over the shelf in horizontal direction. Can be used at one height.

Width X in. (mm)	Part No. Unassembled	Part No. Assembled	Width X in. (mm)	Part No. Unassembled	Part No. Assembled	Width X in. (mm)	Part No. Unassembled	Part No. Assembled
1.97 (050)	**3200-050**	**3210-050**	4.92 (125)	**3200-125**	**3210-125**	8.86 (225)	**3200-225**	**3210-225**
2.95 (075)	**3200-075**	**3210-075**	5.91 (150)	**3200-150**	**3210-150**	9.84 (250)	**3200-250**	**3210-250**
3.94 (100)	**3200-100**	**3210-100**	6.89 (175)	**3200-175**	**3210-175**			
4.53 (115)	**3200-115**	**3210-115**	7.87 (200)	**3200-200**	**3210-200**			

Special solutions for long travel
System P4 - rol e-chain® - Series P4-42
Installation Dimensions

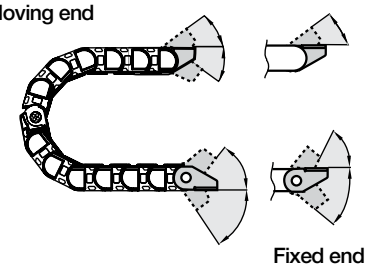
Fixed end
Polymer
P4.42100.5.VS.E45

Moving end
Steel
P4.42100.4.VS.E45





Moving end



Fixed end

Mounting brackets pivoting - Recommended for rolling applications on long travels

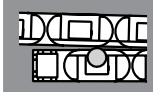
Width Index	Part No. full set for Fixed end and moving end	*Bi* in. (mm)	Dim. A in. (mm)
10- ➤	**P4-42100-54-10-VS-E45**	3.94 (100)	3.15 (80)
15- ➤	**P4-42100-54-15-VS-E45**	5.91 (150)	5.12 (130)
20- ➤	**P4-42100-54-20-VS-E45**	7.87 (200)	7.09 (180)

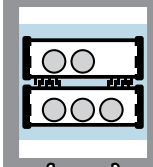
The mounting brackets for P4 e-chains® consist of a steel mounting bracket at the moving end and a polymer mounting bracket at the fixed end. This ensure that the rollers move over a plain surface at the fixed end.

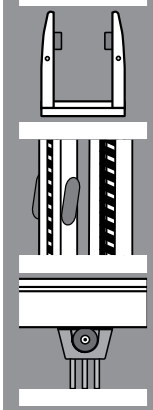
Strain relief, clamps, tiewrap plates, and clip-on solutions are available from stock.

For the complete Chainfix range refer to ➤ Chapter 10

PDF: igus.com/e-chain-pdfs
Product information: igus.com/e-chains



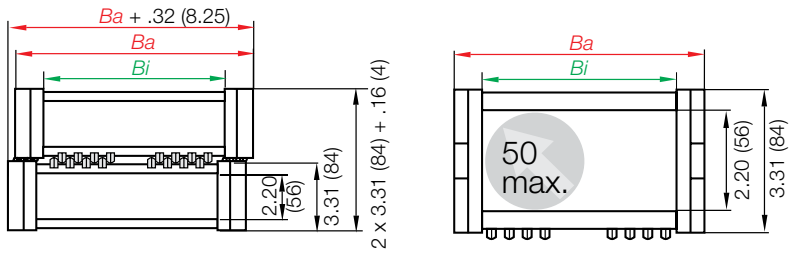




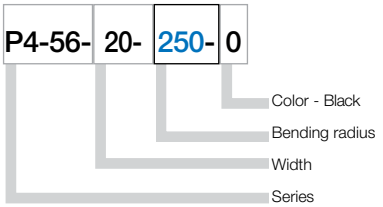
Special solutions for long travel
System P4 - rol e-chain® - Series P4-56
Installation Dimensions

P4-56 - openable along both radii, crossbars every link - comb style autoglide crossbars





Part Number Structure



Part Number			Bi in. (mm)	Ba in. (mm)	Weight lbs/ft (kg/m)
P4-56-18-		-0	7.36 (187)	9.84 (250)	≈ 4.52 (6.72)
P4-56-20-		-0	7.87 (200)	10.63 (270)	≈ 4.72 (7.03)
P4-56-25-		-0	9.84 (250)	12.60 (320)	≈ 4.97 (7.39)
P4-56-30-		-0	11.81 (300)	14.57 (370)	≈ 5.23 (7.79)
P4-56-35-		-0	13.78 (350)	16.54 (420)	≈ 5.45 (8.11)
P4-56-40-		-0	15.75 (400)	18.50 (470)	≈ 5.71 (8.50)

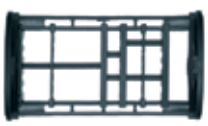
Choose from the radii below for all of the above sizes
Radius (mm) Example: P4-56-20-250-0

	200	250	300	350
R	7.87 (200)	9.84 (250)	11.81 (300)	13.78 (350)
H_2	7.09 (180)	7.09 (180)	7.09 (180)	7.09 (180)
D_2	44.88 (1140)	57.87 (1470)	66.93 (1700)	76.77 (1950)
K_2	71.65 (1820)	89.57 (2275)	103.90 (2639)	118.23 (3003)

The bending radii 150 400 450 500 are available upon request.
Please contact technical sales for approximate delivery times.

Note: We recommend contacting our technical experts when planning your P4 application.
For distances below 32.8 ft. (10 m) we recommend a self-supporting e-chain®.

Additional Features

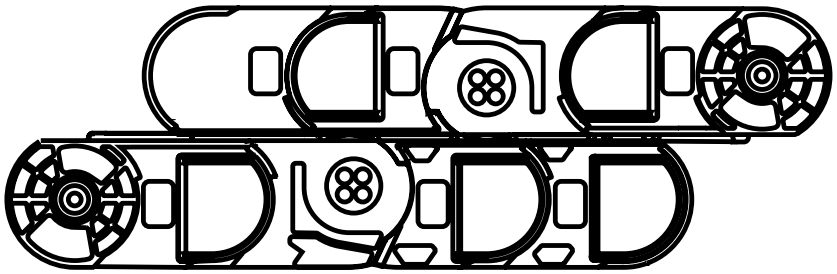

Interior separation available ➤ **Series E4-56**


Robust steel mounting brackets available ➤ **Upon request**


Special P4 guide trough system available ➤ **Upon request**


Extension link for heavy fill weights available ➤ **upon request**

Special solutions for long travel
System P4 - rol e-chain® - Series P4-56
Installation Dimensions



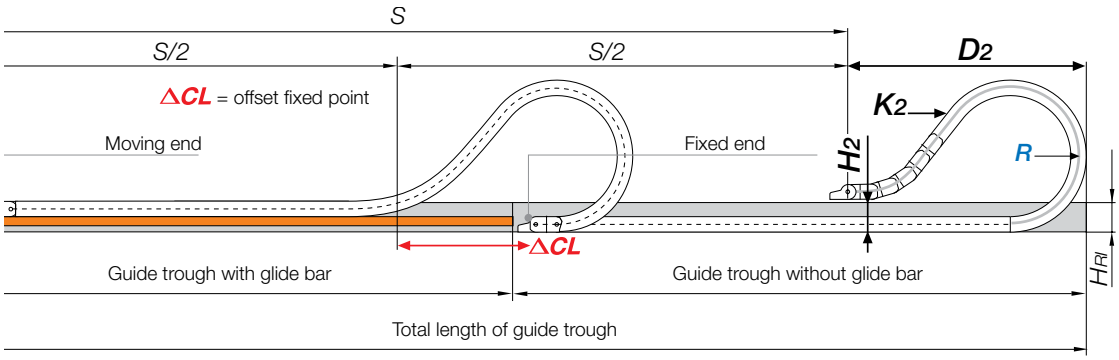
Legend

S = Length of travel
R = Bending radius
H_2 = Mounting height
D_2 = Overlength - long travels, gliding
K_2 = Add-on
H_{Ri} = Trough inner height

The required clearance height: ***H_r = H* + 1.97 in. (50 mm)** with 8.74 lbs/ft (13 kg/m) fill weight. Please consult igus® if space is particularly restricted.

Sliding applications

Long travel lengths up to 2,625 ft. (800 m)
In case of travels less than 32.8 ft. (10m) we recommend an self-supporting e-chain®.



R	7.87 (200)	9.84 (250)	11.81 (300)	13.78 (350)
H_2	7.09 (180)	7.09 (180)	7.09 (180)	7.09 (180)
D_2	44.88 (1140)	57.87 (1470)	66.93 (1700)	76.77 (1950)
K_2	71.65 (1820)	89.57 (2275)	103.90 (2639)	118.23 (3003)
ΔCL	21.65 (550)	31.50 (800)	39.37 (1000)	47.24 (1200)

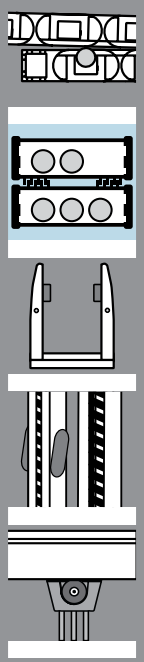
Pitch per link: = 3.58" (91 mm)
Links per ft (m): = 3.35 (11)
Chain length: = $_{S}/_{2} + K_2$

Long travels	from 32.8 ft. (10 m) up to max. 2,625 ft. (800 m)
Speed max. rolling / acceleration max. rolling	max. 32.8 ft/s (10 m/s) / max. 164 ft/s² (50 m/s²)
Fill weight	max. 8.74 lbs/ft. (13 kg/m)
Material - permitted temperature	igumid G / -40°F (-40°C) up to +248°F (+120° C)
Flammability Class, igumid G	VDE 0304 IIC UL94 HB

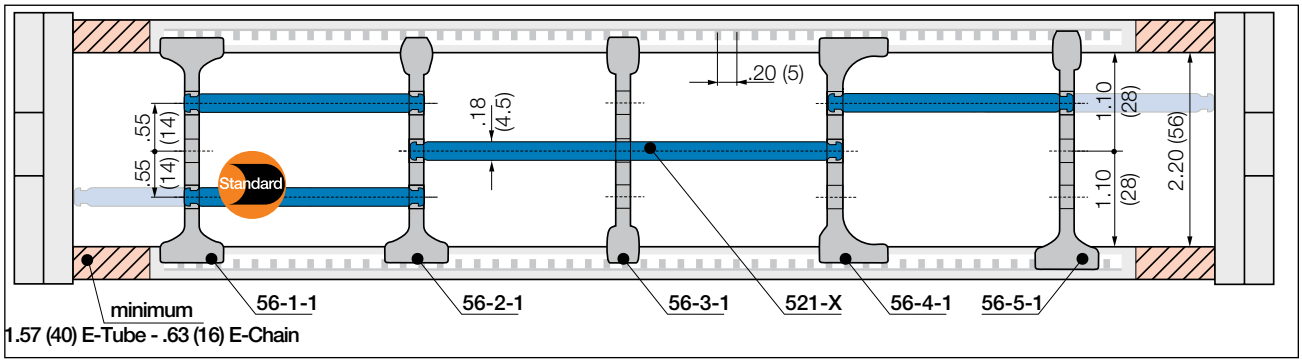
Technical Data

Details of material properties
➤ **Chapter 1**

PDF: igus.com/e-chain-pdfs
Product information: igus.com/e-chains

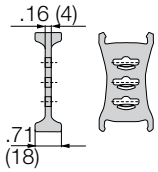


Special solutions for long travel
System P4 - rol e-chain® - Series P4-56
Installation Dimensions



Note Please maintain a lateral spacing of 1.57" (40 mm) for E-Tube and .63" (16 mm) for e-chains® between the separators and the side links. In the standard configuration separators are assembled every 2nd e-chain® link



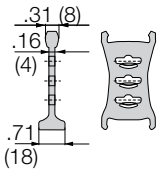


Separator, wide base

Unassembled	**Part No. 56-1**
Assembled	**Part No. 56-1-1**

- **Standard separator 56-1 for all applications**
  Separator with wide base for maximum locking strength and safe standing in e-chains®.



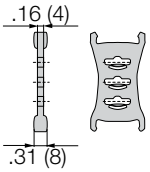


Separator, narrow head

Unassembled	**Part No. 56-2**
Assembled	**Part No. 56-2-1**

- **Separator 56-2**
  For even faster installation
  is used when vertical and horizontal separation is required. Due to its slot, it allows basic vertical/horizontal shelving arrangements.



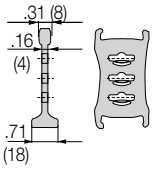


Separator, narrow base

Unassembled	**Part No. 56-3**
Assembled	**Part No. 56-3-1**

- **Separator 56-3**
  For many thin cables
  is used when vertical and horizontal separation is required. Due to its slot, it allows basic vertical/horizontal shelving arrangements.





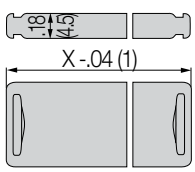
Separator, asymmetrical

Unassembled	**Part No. 56-5**
Assembled	**Part No. 56-5-1**

- **Separator 56-5**
  Locks safely in .30" (7.5 mm) increments
  Notch separator for exact positioning in e-chains®. Recommended for side-mounted applications.

Lockable full-width shelves - for the standard interior separation





Full width shelf, lockable

Unassembled	**Part No. 520-X**
Assembled	**Part No. 521-X**

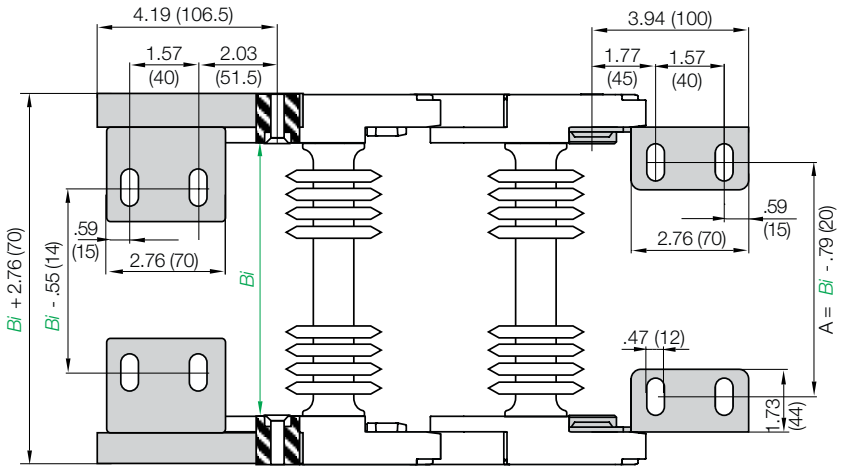
- **Full width shelf, lockable**
  Shelf locks safely into separators on both ends, fixed width possible. Separators can be moved freely over the shelf in horizontal direction. Can be arranged at 3 different heights.

Width X in. (mm)	Part No. Unassembled	Part No. Assembled	Width X in. (mm)	Part No. Unassembled	Part No. Assembled	Width X in. (mm)	Part No. Unassembled	Part No. Assembled
1.97 (050)	**520-050**	**521-050**	5.91 (150)	**520-150**	**521-150**	11.81 (300)	**520-300**	**521-300**
2.56 (065)	**520-065**	**521-065**	6.89 (175)	**520-175**	**521-175**	17.723 (450)	**520-450**	**521-450**
2.95 (075)	**520-075**	**521-075**	7.87 (200)	**520-200**	**521-200**			
3.94 (100)	**520-100**	**521-100**	8.86 (225)	**520-225**	**521-225**			
4.92 (125)	**520-125**	**521-125**	9.84 (250)	**520-250**	**521-250**			

Special solutions for long travel
System P4 - rol e-chain® - Series P4-56
Installation Dimensions

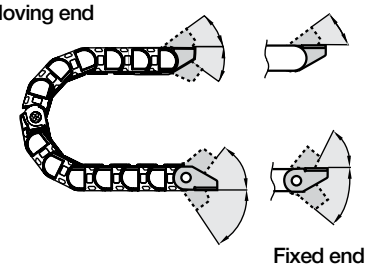
Fixed end
Polymer
P4.56100.5.VS.E45

Moving end
Steel
P4.56100.4.VS.E45





Moving end



Fixed end

Mounting brackets pivoting - Recommended for rolling applications on long travels

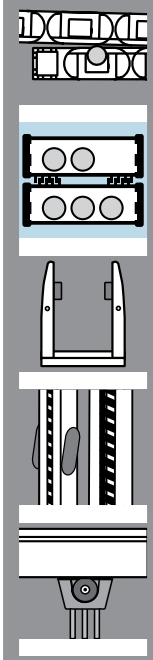
Width Index	Part No. full set for Fixed end and moving end	*Bi* in. (mm)	Dim. A in. (mm)
18- ➤	P4-56100-54-VS-E45	7.09 (180)	6.30 (160)
20- ➤	P4-56100-54-VS-E45	7.87 (200)	7.09 (180)
25- ➤	P4-56100-54-VS-E45	9.84 (250)	9.06 (230)
30- ➤	P4-56100-54-VS-E45	11.81 (300)	11.02 (280)
35- ➤	P4-56100-54-VS-E45	13.78 (350)	12.99 (330)
40- ➤	P4-56100-54-VS-E45	15.75 (400)	14.96 (380)

The mounting brackets for P4 e-chains® consist of a steel mounting bracket at the moving end and a polymer mounting bracket at the fixed end. This ensure that the rollers move over a plain surface at the fixed end.

Strain relief, clamps, tiewrap plates, and clip-on solutions are available from stock.

For the complete Chainfix range refer to ➤ Chapter 10

PDF: igus.com/e-chain-pdfs
Product information: igus.com/e-chains



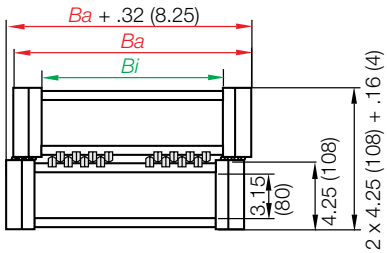
Special solutions for long travel
System P4 - rol e-chain® - Series P4-80
Installation Dimensions

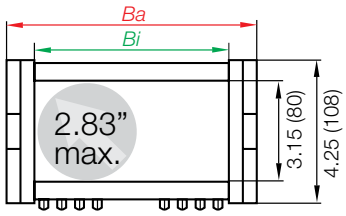
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email: sales@igus.com
QuickSpec: igus.com/quickspec

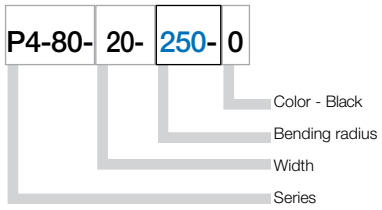
P4-80 - openable along both radii, crossbars every link - comb style autoglide crossbars







Part Number Structure



Part Number	*Bi* in. (mm)	*Ba* in. (mm)	Weight lbs/ft (kg/m)
P4-80-18- ☐ -0	7.36 (187)	10.35 (263)	≈ 5.95 (8.85)
P4-80-20- ☐ -0	7.87 (200)	10.87 (276)	≈ 6.14 (9.13)
P4-80-25- ☐ -0	9.84 (250)	12.83 (326)	≈ 6.36 (9.46)
P4-80-30- ☐ -0	11.81 (300)	14.80 (376)	≈ 6.61 (9.83)
P4-80-35- ☐ -0	13.78 (350)	16.77 (426)	≈ 6.85 (10.19)
P4-80-40- ☐ -0	15.75 (400)	18.74 (476)	≈ 7.03 (10.46)

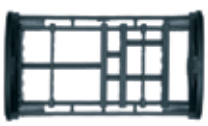
Choose from the radii below for all of the above sizes
Radius (mm) Example: P4-80-20-[250]-0

	250	300	350	500
R	9.84 (250)	11.81 (300)	13.78 (350)	19.68 (500)
H_2	7.09 (180)	7.09 (180)	7.09 (180)	7.09 (180)
D_2	63.39 (1610)	77.72 (1974)	81.10 (2060)	128.94 (3275)
K_2	70.87 (1800)	90.55 (2300)	106.30 (2700)	161.42 (4100)

The bending radii [150] [200] [400] [450] are available upon request.
Please contact technical sales for approximate delivery times.

Note: We recommend contacting our technical experts when planning your P4 application.
For distances below 32.8 ft. (10 m) we recommend a self-supporting e-chain®.

Additional Features



Interior separation available
➤ **Series E4-80**



Robust steel mounting brackets available ➤ **Upon request**

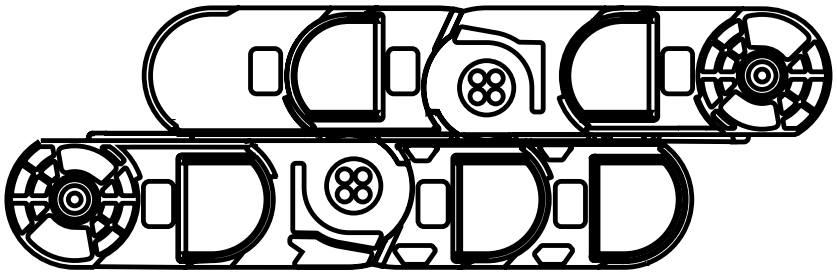


Special P4 guide trough system available ➤ **Upon request**



Extension link for heavy fill weights available ➤ **upon request**

Special solutions for long travel
System P4 - rol e-chain® - Series P4-80
Installation Dimensions



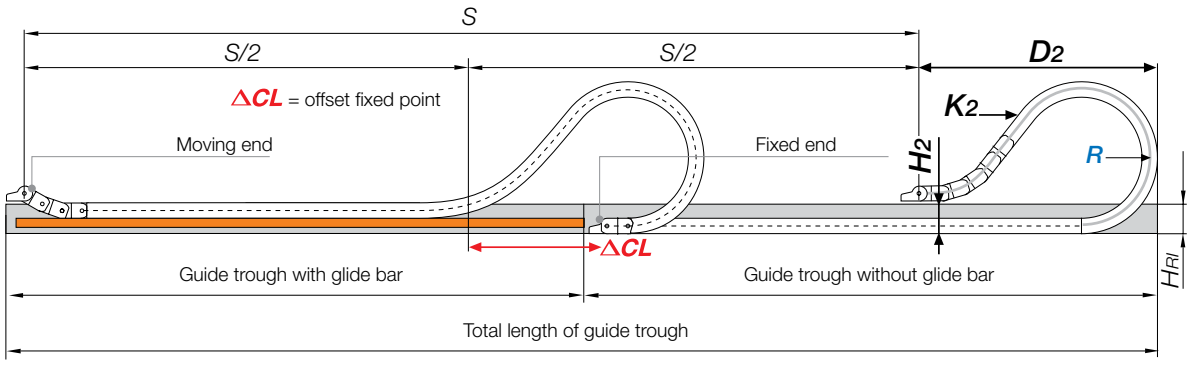
Legend

S = Length of travel
R = Bending radius
H_2 = Mounting height
D_2 = Overlength - long travels, gliding
K_2 = Add-on
H_{Tr} = Trough inner height

The required clearance height: ***H_F = H* + 1.97 in. (50 mm)** with 20.16 lbs/ft (30 kg/m) fill weight. Please consult igus® if space is particularly restricted.

Sliding applications

Long travel lengths up to 2,625 ft. (800 m)
In case of travels less than 32.8 ft. (10m) we recommend an self-supporting e-chain®.



R	9.84 (250)	11.81 (300)	13.78 (350)	19.68 (500)
H_2	7.09 (180)	7.09 (180)	7.09 (180)	7.09 (180)
D_2	63.39 (1610)	77.72 (1974)	81.10 (2060)	128.94 (3275)
K_2	70.87 (1800)	90.55 (2300)	106.30 (2700)	161.42 (4100)
ΔCL	23.62 (600)	31.50 (800)	38.19 (970)	60.24 (1530)

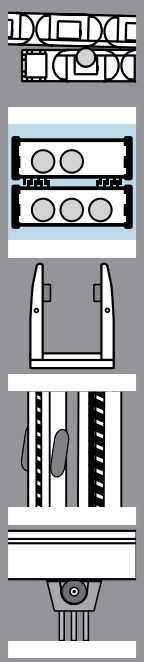
Pitch per link: = 3.94" (100 mm)
Links per ft (m): = 3.05 (10)
Chain length: = $_S/_2 + K_2$

Long travels	from 32.8 ft. (10 m) up to max. 2,625 ft. (600 m)
Speed max. rolling / acceleration max. rolling	max. 32.8 ft/s (10 m/s) / max. 164 ft/s² (50 m/s²)
Fill weight	max. 20.16 lbs/ft. (30 kg/m)
Material - permitted temperature	igumid G / -40°F (-40°C) up to +248°F (+120° C)
Flammability Class, igumid G	VDE 0304 IIC UL94 HB

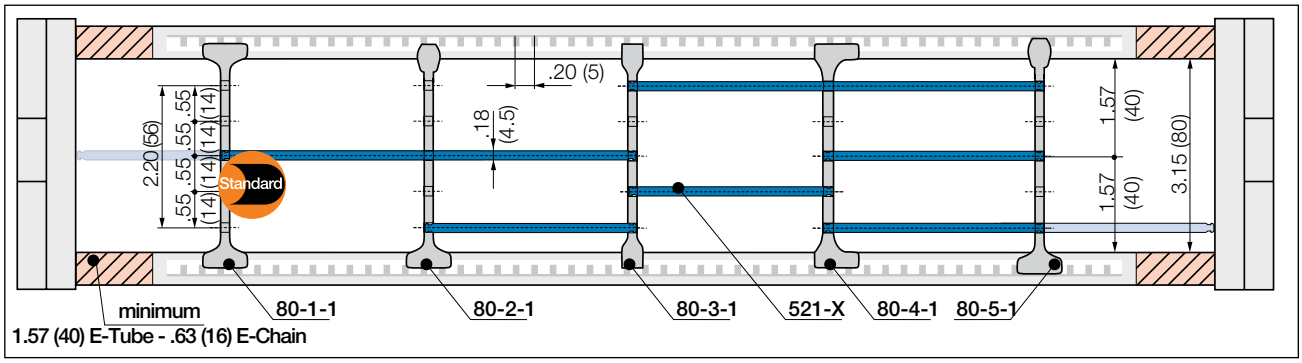
Technical Data

Details of material properties
➤ **Chapter 1**

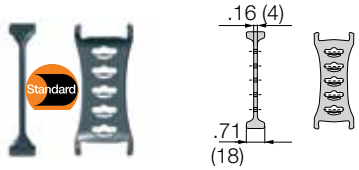
PDF: igus.com/e-chain-pdfs
Product information: igus.com/e-chains



Special solutions for long travel
System P4 - rol e-chain® - Series P4-80
Installation Dimensions



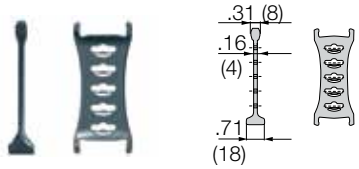
Note Please maintain a lateral spacing of 1.57" (40 mm) for E-Tube and .63" (16 mm) for e-chains® between the separators and the side links. In the standard configuration separators are assembled every 2nd e-chain® link



Separator, wide base

Unassembled	**Part No. 80-1**
Assembled	**Part No. 80-1-1**

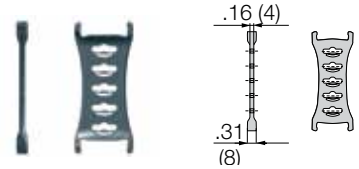
- **Standard separator 80-1 for all applications**
  Separator with wide base for maximum locking strength and safe standing in e-chains®.



Separator, narrow head

Unassembled	**Part No. 80-2**
Assembled	**Part No. 80-2-1**

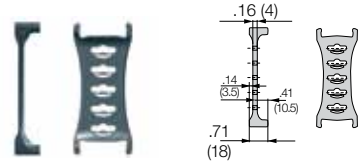
- **Separator 80-2**
  For even faster installation
  is used when vertical and horizontal separation is required. Due to its slot, it allows basic vertical/horizontal shelving arrangements.



Separator, narrow base

Unassembled	**Part No. 80-3**
Assembled	**Part No. 80-3-1**

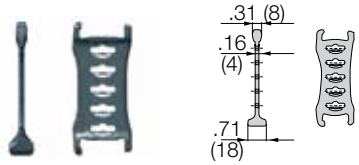
- **Separator 80-3**
  For many thin cables
  is used when vertical and horizontal separation is required. Due to its slot, it allows basic vertical/horizontal shelving arrangements.



Separator, asymmetrical

Unassembled	**Part No. 80-4**
Assembled	**Part No. 80-4-1**

- **Separator 80-4**
  For side mounted applications
  is used when vertical and horizontal separation is required. Due to its slot, it allows basic vertical/horizontal shelving arrangements.



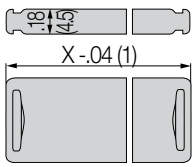
Separator, asymmetrical

Unassembled	**Part No. 80-5**
Assembled	**Part No. 80-5-1**

- **Separator 80-5**
  Locks safely in .30" (7.5 mm) increments
  Notch separator for exact positioning in e-chains®. Recommended for side-mounted applications.

Lockable full-width shelves - for the standard interior separation





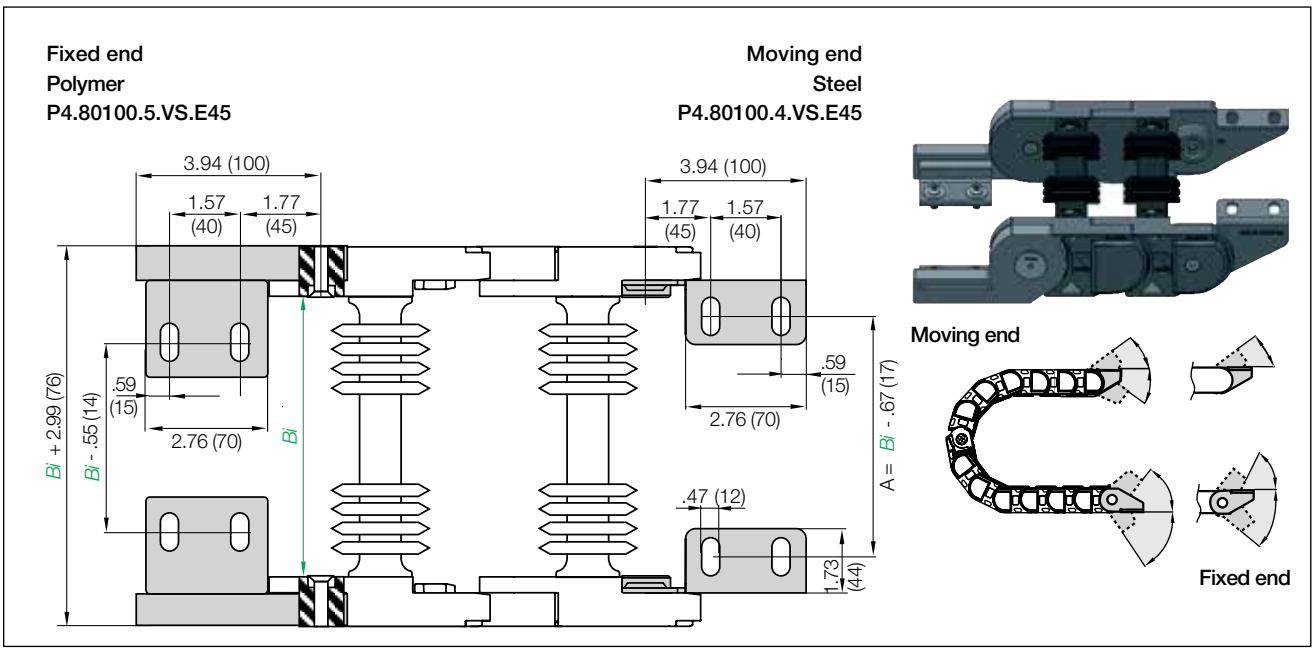
Full width shelf, lockable

Unassembled	**Part No. 520-X**
Assembled	**Part No. 521-X**

- **Full width shelf, lockable**
  Shelf locks safely into separators on both ends, fixed width possible. Separators can be moved freely over the shelf in horizontal direction. Can be arranged at 5 different heights.

Width X in. (mm)	Part No. Unassembled	Part No. Assembled	Width X in. (mm)	Part No. Unassembled	Part No. Assembled	Width X in. (mm)	Part No. Unassembled	Part No. Assembled
1.97 (050)	**520-50**	**521-50**	5.91 (150)	**520-125**	**521-125**	11.81 (300)	**520-125**	**521-125**
2.56 (065)	**520-65**	**521-65**	6.89 (175)	**520-125**	**521-125**	13.78 (350)	**520-125**	**521-125**
2.95 (075)	**520-75**	**521-75**	7.87 (200)	**520-125**	**521-125**	14.76 (375)	**520-125**	**521-125**
3.94 (100)	**520-100**	**521-100**	8.86 (225)	**520-125**	**521-125**	15.24 (387)	**520-125**	**521-125**
4.92 (125)	**520-125**	**521-125**	9.84 (250)	**520-125**	**521-125**	17.723 (450)	**520-125**	**521-125**

Special solutions for long travel
System P4 - rol e-chain® - Series P4-80
Installation Dimensions



Mounting brackets pivoting - Recommended for rolling applications on long travels

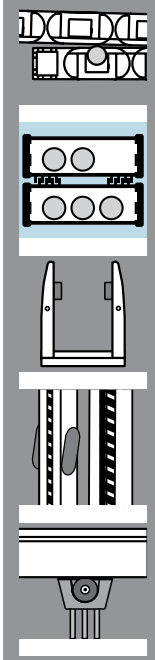
Width Index	Part No. full set for Fixed end and moving end	*Bi* in. (mm)	Dim. A in. (mm)
18- ➤	P4-80100-54-VS-E45	7.09 (180)	6.30 (160)
20- ➤	P4-80100-54-VS-E45	7.87 (200)	7.09 (180)
25- ➤	P4-80100-54-VS-E45	9.84 (250)	9.06 (230)
30- ➤	P4-80100-54-VS-E45	11.81 (300)	11.02 (280)
35- ➤	P4-80100-54-VS-E45	13.78 (350)	12.99 (330)
40- ➤	P4-80100-54-VS-E45	15.75 (400)	14.96 (380)

The mounting brackets for P4 e-chains® consist of a steel mounting bracket at the moving end and a polymer mounting bracket at the fixed end. This ensure that the rollers move over a plain surface at the fixed end.

Strain relief, clamps, tiewrap plates, and clip-on solutions are available from stock.

For the complete Chainfix range refer to ➤ Chapter 10

PDF: igus.com/e-chain-pdfs
Product information: igus.com/e-chains





E4/4
rol e-chain®
Long travels up to 2,625 ft. (800m), rolling instead of gliding

Advantages E4/4 rol e-chain®
- Special solution for long travels
- 75% less drive power, rolling
- Reduction of drive power needed to move the e-chain®
- Long travels up to 2,625 ft. (800m) with E4/4 rol e-chain®
- Speeds up to 19.69 ft/s (6m/s) possible
- Various roller types for optimum application adaption
- Can be used in dirty environments

When to use another e-chain® series:
- For very high fill weights for long travels
  ▶ **E4/4HD heavy-duty**
- When you want a profile-rol e-chain® with which you can reduce energy consumption by up to 57%
  ▶ **P4 system**
- When you want a self-guiding e-chain system® without any guide troughs
  ▶ **autoglide**



Special solutions for long travel
E4/4 rol e-chain®
Rolling instead of gliding

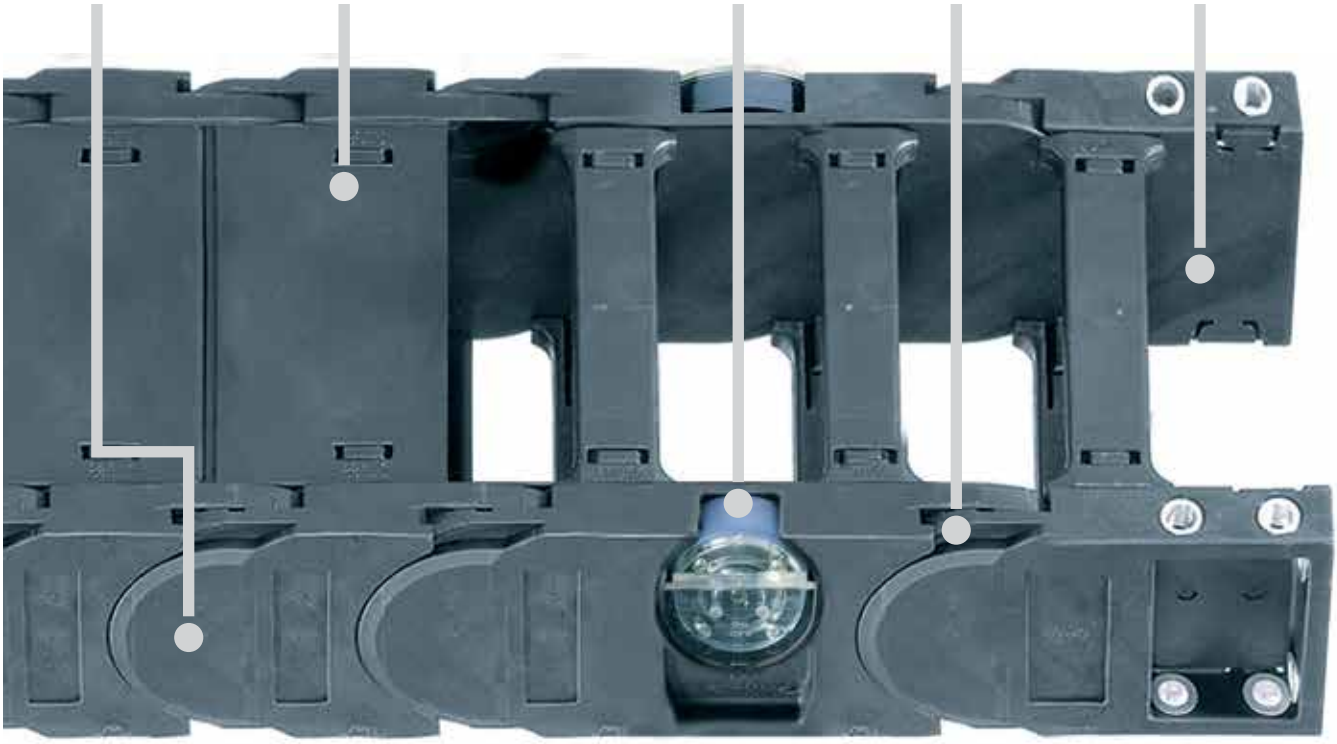
High push/pull forces:
Large bolt connection

Quick to fill:
Lids open on both sides, flip open in the outer radius

Long life:
High-strength rollers, quiet design, stainless steel ball bearings

High stability:
Torsional stiffness through undercut design

Universal:
KMA with attachment points on all sides



Long travels up to 2,625 ft. (800 m), rolling instead of gliding - rol e-chain®

Conventionally designed e-chains® are operated in the glide mode on long travels. The reason for developing the igus® rol e-chain® was the necessity to extend the technical limits of this operating mode. The demands on e-chains® for long travels have increased steadily in recent years. Travels of 2,625 ft. (800 m) also pose new challenges in crane building such as high travel speeds and low noise with extreme cable loads.
Please contact us if you have decided for this product. We'll assist you in the project planning!

- Major reduction in drive power for moving the e-chain®
- Travels up to 2,625 ft. (800 m) possible
- Speeds up to 19.69 ft/s (6 m/s) possible
- Various roller types for optimum application adaption
- Can be used even in dirty environments
- Available as ready-to-fit, made-to-specifications system with system guarantee

Typical industries and applications

- Cranes
- Warehousing
- Equipment manufacturing
- Gantry robots
- Material handling
- Mining
- Construction machinery

Special solutions for long travel
E4/4 rol e-chain®
Selection Table - Technical Data

Series	Inner height *hi* in. (mm)	Inner width *Bi* in. (mm)	Outer width *Ba* in. (mm)	Outer height *ha* in. (mm)	Bending radius *R* in. (mm)	Maximum Travel ft. (m)
					**rol e-chain® - with crossbars every link for the most demanding applications**	
2828R	1.26 (32)	1.97-15.75 (50-400)	2.91-16.69 (74-424)	2.13 (54)	4.92-11.81 (125-300)**	820 (250)
3838R	1.65 (42)	1.97-15.75 (50-400)	3.03-16.81 (77-427)	2.52 (64)	5.91-13.78 (150-350)**	1,082 (330)
4040R	2.20 (56)	1.97-23.62 (50-600)	3.39-25.04 (86-636)	3.31 (84)	7.87-19.69 (200-500)**	1,641 (500)
5050R	3.15 (80)	1.97-23.62 (50-600)	3.94-25.59 (100-650)	4.25 (108)	9.84-19.69 (250-500)**	1,969 (600)
					**rol e-chain® - E-Tubes fully enclosed, excellent cable protection**	
7728R	1.26 (32)	1.97-11.81 (50-300)	2.91-16.69 (74-424)	2.13 (54)	9.84-11.81 (250-300)	820 (250)
7838R	1.65 (42)	1.97-11.81 (50-300)	3.03-16.81 (77-327)	2.52 (64)	4.92-13.78 (200-350)	1,082 (330)
8840R	2.20 (56)	2.95-18.19 (75-462)	4.37-19.65 (111-499)	3.31 (84)	11.81-19.69 (300-500)	1,641 (500)
9850R	3.15 (80)	2.95-18.19 (75-462)	4.92-20.20 (125-513)	4.25 (108)	11.81-39.37 (300-1000)	1,969 (600)
					**rol e-chain® - with crossbars every link, Heavy Duty For very long travels with high additional fill weights**	
4040RHD*	2.20 (56)	1.97-23.62 (50-600)	4.09-25.75 (104-654)	3.31 (84)	7.87-15.75 (200-400)	1,969 (600)
5050RHD*	3.15 (80)	1.97-23.62 (50-600)	4.33-25.98 (110-660)	4.25 (108)	9.84-19.69 (250-500)	2,625 (800)

**Smaller bending radii (only For e-chains®) available upon request, please consult igus® for delivery time.

Special solutions for long travel E4/4 rol e-chain®

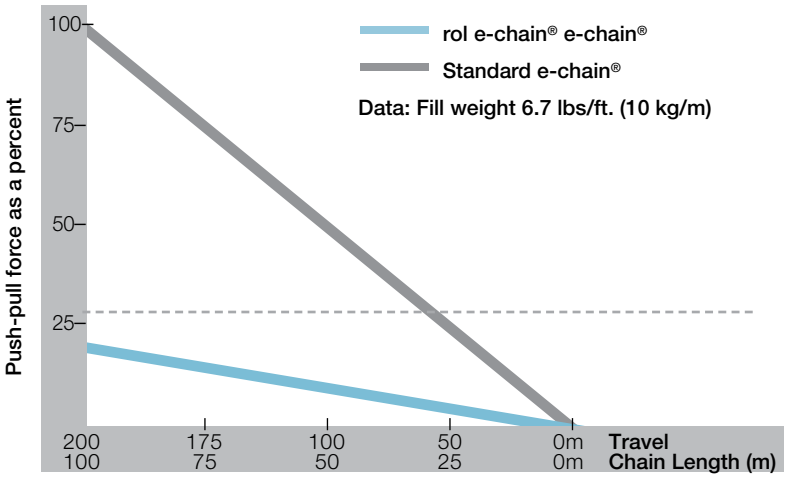
Telephone 1-800-521-2747

Internet: igus.com
email: sales@igus.com
QuickSpec: igus.com/quickspec

Product Range rol e-chain®

Interior heights of 1.26", 1.65", 2.20", and 3.15" (32, 42, 56, and 80 mm) can be supplied from stock. All interior separation and mounting bracket options of the igus® System E4 are available. The standard guide troughs of the various chains from stock can be used. rol e-chains® can be opened on both sides. The rol e-chain® is available as a made-to-spec e-chain systems®. chainflex® cables can be harnessed in rol e-chain to your specifications by igus® specialists and are packaged in an installation-friendly manner. Depending on the rol e-chain length it can be delivered on a drum. If cables from the chainflex® product line are to be used, we will also be happy to provide a guarantee for the entire system. **Systems of this type should be designed by our system design engineers. We will be more than willing to submit an offer to you. Please contact igus®.**

Reduce push/pull forces by over 75% with igus® rol e-chain



The rol e-chain® roller e-chain® compared with a conventional e-chain system®



Shipyard-Crane: 590.5 ft. (180 m) travel, 20.16 lbs/ft (30 kg/m) fill weight: No problems since installation in 2001 with igus® rol e-chain®

Special solutions for long travel E4/4 rol e-chain®



igus® rol e-chain® Series 5050R in a steel plant in india with highly corrosive atmosphere -
Travel = 72 ft. (22 m), v = 3.28 ft/s (1 m/s), a = 3.28 ft/s² (1 m/s²)



Power plant application with igus® rol e-chain® 4040R -
Travel 151 ft. (46 m), Speed 4.92 ft/s (1.5 m/s), Fill weight 3.56 lbs/ft (5.3 kg/m)



Assembled system in a ship unloading crane with igus® 5050RHD - Travel 248 ft. (106 m), Speed 13.12 ft/s (4 m/s), Fill weight 16.8 lbs/ft (25 kg/m)



Series 4040R on a coal unloading system -
Travel 623 ft. (190 m), Speed 1.6 ft/s (0.5 m/s), Fill weight 5.41 lbs/ft (8.05 kg/m)

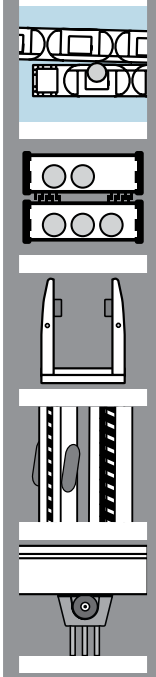


Series 4040R in steel works environment -
Travel 34.5 ft. (10.5 m), Speed 197 ft/min (60 m/min), Fill weight 4.09 lbs/ft (6.084 kg/m)



igus® e-chains® 5050RHD rol e-chain® in an igus® Aluminum SuperTrough = 75% less driving power

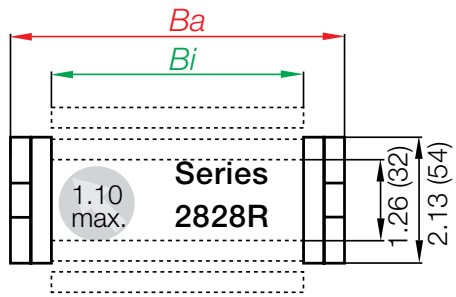
PDF: igus.com/e-chain-pdfs
Product information: igus.com/e-chains



Special solutions for long travel
E4/4 rol e-chain® - Series 2828R/R7728R

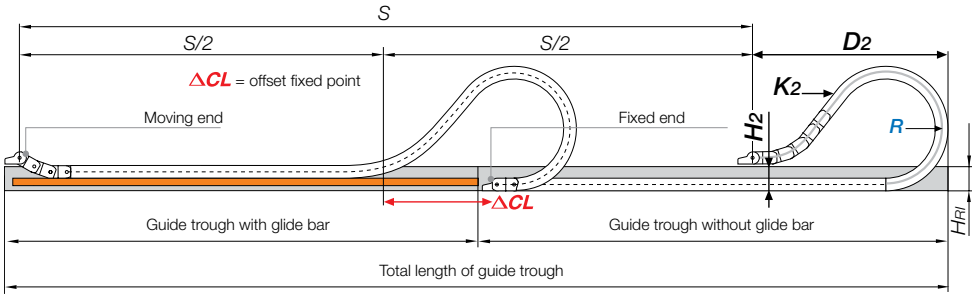


Series 2828R - crossbars every link, openable along both radii
Series 7728R - fully enclosed, hinged, snap-open removable lids



Sliding applications

Long travel lengths up to 820 ft. (250 m) fill weight up to 4.03 lbs/ft (6 kg/m)
In case of travels less than 32.8 ft. (10m) we recommend a self-supporting e-chain®.
NOTE: Systems of this type should be designed by our system design engineers. Please contact igus® for assistance with your application.



Legend

S = Length of travel
R = Bending radius
H_{Ri} = Trough inner height
H_2 = *Mounting height
D_2 = Overlength - long travels, gliding
K_2 = *Add-on

R	4.92 (125**)	5.91 (150)	6.89 (175)	7.87 (200)	8.66 (220)	9.84 (250)	11.81 (300)
H_2 +10	6.54 (166)	6.54 (166)	6.54 (166)	6.54 (166)	6.54 (166)	6.54 (166)	6.54 (166)
D_2 +50	22.64 (575)	27.56 (700)	33.27 (845)	37.80 (960)	40.94 (1040)	50.00 (1270)	60.63 (1540)
K_2	35.28 (896)	41.89 (1064)	50.71 (1288)	57.32 (1456)	63.94 (1624)	74.96 (1904)	90.39 (2296)
ΔCL	10.63 (270)	14.96 (380)	19.29 (490)	23.62 (600)	27.56 (700)	33.07 (840)	41.54 (1055)

Pitch per link: = 2.20" (56 mm)
Links per ft (m): = 5.48 (18)
For center mount applications:
Chain length: = $\frac{S}{2} + K_2$

** This radius not available for E-Tubes

Available Accessories



Optimized, cable-friendly interior separation program



Pivoting KMA mounting bracket with all-sides attachment



Steel mounting brackets, pivoting, robust and electrically conductive



Aluminum SuperTrough, Basic Version

Long travels	from 32.8 ft. (10 m) up to max. 820 ft. (250 m)
Speed max. rolling / acceleration max. rolling	max. 32.8 ft/s (10 m/s) / max. 164 ft/s² (50 m/s²)
Material - permitted temperature	igumid G / -40°F (-40°C) up to +248°F (+120° C)
Flammability Class, igumid G	VDE 0304 IIC UL94 HB

Technical Data

Details of material properties
➤ **Chapter 1**

Special solutions for long travel
E4/4 rol e-chain® - Series 2828R/7728R
Installation Dimensions

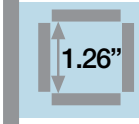
Supplement part number with required radius. Example: 2828R-30-300-0
Pitch: 2.20 in. (56mm) per link links/ft (m) = 5.49 (18)

Part Number					Weight	
Crossbars Every Link	Tube Version		*Bi* in. (mm)	*Ba* in. (mm)	2828R lbs/ft (kg/m)	7728R lbs/ft (kg/m)
2828R-05-	[1]7728R-05-	-0	1.97 (50)	2.91 (74)	≈ 1.16 (1.73)	≈ 1.76 (2.63)
2828R-06-		-0	2.68 (68)	3.62 (92)	≈ 1.20 (1.79)	–
2828R-07-	7728R-07-	-0	2.95 (75)	3.90 (99)	≈ 1.24 (1.84)	≈ 1.84 (2.75)
2828R-087-		-0	3.43 (87)	4.37 (111)	≈ 1.30 (1.93)	–
2828R-097		-0	3.82 (97)	4.72 (120)	≈ 1.34 (1.99)	–
2828R-10-	7728R-10-	-0	3.94 (100)	4.88 (124)	≈ 1.36 (2.02)	≈ 1.90 (2.83)
2828R-11-	7728R-11-	-0	4.25 (108)	5.20 (132)	≈ 1.40 (2.08)	≈ 1.98 (2.94)
2828R-112-		-0	4.41(112)	5.39 (137)	≈ 1.44 (2.15)	–
2828R-12-	7728R-12-	-0	4.92 (125)	5.87 (149)	≈ 1.48 (2.20)	≈ 2.04 (3.03)
2828R-137-		-0	5.39 (137)	6.38 (162)	≈ 1.54 (2.29)	–
2828R-15-	7728R-15-	-0	5.91 (150)	6.85 (174)	≈ 1.60 (2.38)	≈ 2.14 (3.19)
2828R-162-		-0	6.38 (162)	7.36 (187)	≈ 1.64 (2.44)	–
2828R-17-	7728R-17-	-0	6.61 (168)	7.56 (192)	≈ 1.69 (2.51)	≈ 2.28 (3.39)
2828R-18-		-0	6.89 (175)	7.83 (199)	≈ 1.72 (2.56)	–
2828R-187-		-0	7.36 (187)	8.35 (212)	≈ 1.78 (2.65)	–
2828R-20-	7728R-20-	-0	7.87 (200)	8.82 (224)	≈ 1.84 (2.74)	≈ 2.41 (3.59)
2828R-212-		-0	8.35 (212)	9.33 (237)	≈ 1.93 (2.87)	–
2828R-23-		-0	8.86 (225)	9.80 (249)	≈ 1.96 (2.92)	–
2828R-237-		-0	9.33 (237)	10.31 (262)	≈ 2.05 (3.05)	–
2828R-25-	7728R-25-	-0	9.84 (250)	10.79 (274)	≈ 2.08 (3.10)	≈ 2.72 (4.04)
2828R-262-		-0	10.31 (262)	11.26 (286)	≈ 2.14 (3.19)	–
2828R-28		-0	10.83 (275)	11.77 (299)	≈ 2.20 (3.28)	–
2828R-29-		-0	11.30 (287)	12.28 (312)	≈ 2.26 (3.37)	–
2828R-30-	7728R-30-	-0	11.81 (300)	12.76 (324)	≈ 2.33 (3.46)	≈ 2.98 (4.43)
2828R-312-		-0	12.28 (312)	13.27 (337)	≈ 2.41 (3.59)	–
2828R-325-		-0	12.79 (325)	13.74 (349)	≈ 2.47 (3.68)	–
2828R-337-		-0	13.27 (337)	14.25 (362)	≈ 2.53 (3.77)	–
2828R-350-		-0	13.78 (350)	14.72 (374)	≈ 2.59 (3.86)	–
2828R-362-		-0	14.25 (362)	15.24 (387)	≈ 2.65 (3.95)	–
2828R-375-		-0	14.76 (375)	15.71 (399)	≈ 2.72 (4.04)	–
2828R-387-		-0	15.24 (387)	16.22 (412)	≈ 2.76 (4.11)	–
2828R-400		-0	15.75 (400)	16.69 (424)	≈ 2.81 (4.18)	–

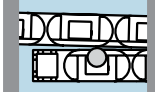
Choose from the radii below for all of the above sizes
Radius (mm) Example: 2828R-30-300-0

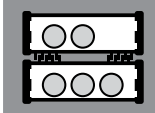
	125**	150	175	200	220	250	300
R	4.92 (125)	5.91 (150)	6.89 (175)	7.87 (200)	8.66 (220)	9.84 (250)	11.81 (300)
H_2 +10	6.54 (166)	6.54 (166)	6.54 (166)	6.54 (166)	6.54 (166)	6.54 (166)	6.54 (166)
D_2 +50	22.64 (575)	27.56 (700)	33.27 (845)	37.80 (960)	40.94 (1040)	50.00 (1270)	60.63 (1540)
K_2	35.28 (896)	41.89 (1064)	50.71 (1288)	57.32 (1456)	63.94 (1624)	74.96 (1904)	90.39 (2296)

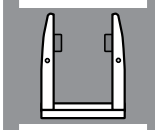
** This radius not available for E-Tubes
[1] Removable lid only, no hinged option

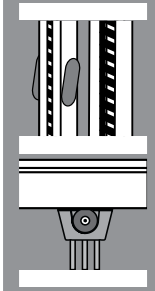


PDF: igus.com/e-chain-pdfs
Product information: igus.com/e-chains

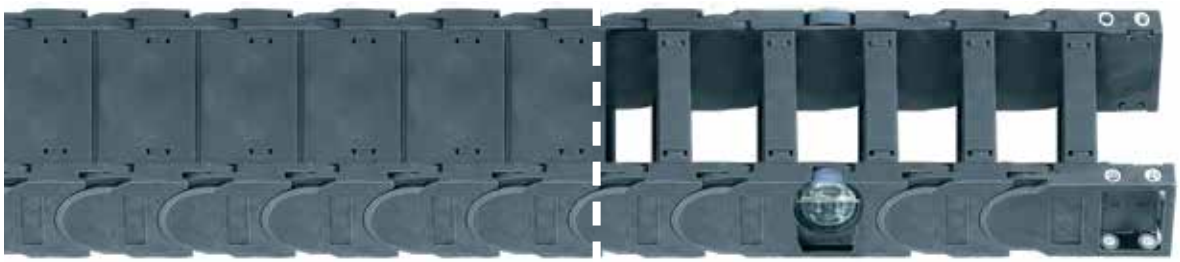




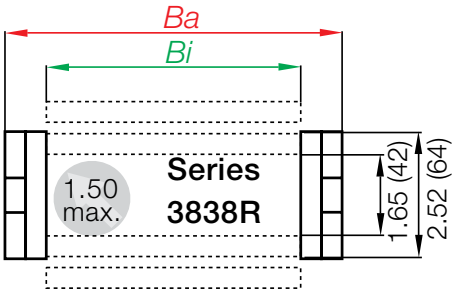




Special solutions for long travel
E4/4 rol e-chain® - Series 3838R/R7838R

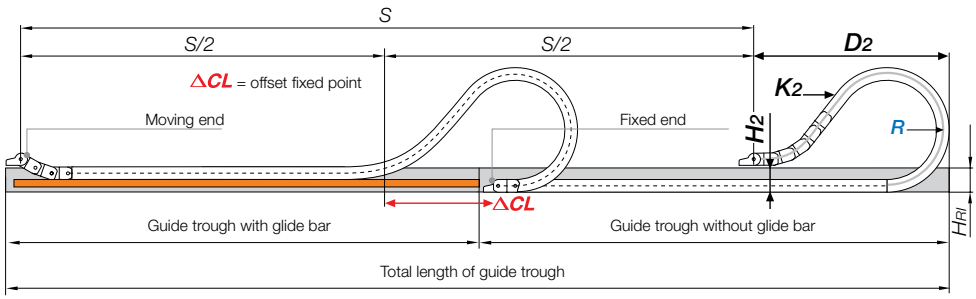


Series 3838R - crossbars every link, openable along both radii
Series 7838R - fully enclosed, hinged, snap-open removable lids



Sliding applications

Long travel lengths up to 1,083 ft. (330 m), Fill weights up to 4.70 lbs/ft (7 kg/m)
In case of travels less than 32.8 ft. (10m) we recommend an self-supporting e-chain®.
NOTE: Systems of this type should be designed by our system design engineers. Please contact igus® for assistance with your application.



Legend

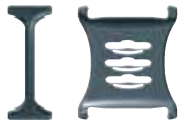
S = Length of travel
R = Bending radius
H_{RI} = Trough inner height
H_2 = *Mounting height
D_2 = Overlength - long travels, gliding
K_2 = *Add-on

R	5.91 (150**)	6.69 (170**)	7.87 (200)	8.46 (215)	9.84 (250)	11.81 (300)	13.78 (350)
H_2 +10	7.32 (186)	7.32 (186)	7.32 (186)	7.32 (186)	7.32 (186)	7.32 (186)	7.32 (186)
D_2 +50	26.77 (680)	32.28 (820)	39.76 (1010)	40.55 (1030)	49.02 (1245)	64.17 (1630)	72.05 (1830)
K_2	42.13 (107)	50.12 (1273)	60.67 (1541)	63.31 (1608)	73.86 (1876)	97.60 (2479)	108.15 (2747)
ΔCL	13.58 (345)	17.91 (455)	24.02 (610)	23.38 (670)	32.48 (825)	42.32 (1075)	50.59 (1285)

Pitch per link: = 2.64" (67 mm)
Links per ft (m): = 4.57 (15)
For center mount applications:
Chain length = $_{S}/_{2}$ + K

** This radius not available for E-Tubes

Available Accessories



Optimized, cable-friendly interior separation program



Pivoting KMA mounting bracket with all-sides attachment



Steel mounting brackets, pivoting, robust and electrically conductive



Aluminum SuperTrough, Basic Version

Long travels	from 32.8 ft. (10 m) up to max. 1,083 ft. (330 m)
Speed max. rolling / acceleration max. rolling	max. 32.8 ft/s (10 m/s) / max. 164 ft/s² (50 m/s²)
Material - permitted temperature	igumid G / -40°F (-40°C) up to +248°F (+120° C)
Flammability Class, igumid G	VDE 0304 IIC UL94 HB

Technical Data

Details of material properties
➤ Chapter 1

Telephone 1-800-521-2747
Internet: igus.com
email: sales@igus.com
QuickSpec: igus.com/quickspec

Special solutions for long travel
E4/4 rol e-chain® - Series 3838R/R7838R
Installation Dimensions

Supplement part number with required radius. Example: 3838R-30-300-0
Pitch: 2.64 in. (67mm) per link, links/ft (m) = 4.57 (15)

Part Number			Bi	Ba	Weight	
Crossbars Every Link	Tube Version		in. (mm)	in. (mm)	3838R lbs/ft (kg/m)	7838R lbs/ft (kg/m)
3838R-05-	[1]7838R-05-	-0	1.97 (50)	3.03 (77)	≈ 1.38 (2.06)	≈ 1.51 (2.25)
3838R-06-		-0	2.68 (68)	3.74 (95)	≈ 1.40 (2.09)	–
3838R-07-	7838R-07-	-0	2.95 (75)	4.02 (102)	≈ 1.42 (2.12)	≈ 1.60 (2.38)
3838R-087-		-0	3.43 (87)	4.53 (115)	≈ 1.47 (2.18)	–
3838R-097-		-0	3.82 (97)	4.84 (123)	≈ 1.50 (2.23)	–
3838R-10-	7838R-10-	-0	3.94 (100)	5.00 (127)	≈ 1.51 (2.25)	≈ 1.75 (2.60)
3838R-11-	7838R-11-	-0	4.25 (108)	5.31 (135)	≈ 1.55 (2.30)	≈ 1.78 (2.65)
3838R-112-		-0	4.41(112)	5.51 (140)	≈ 1.55 (2.30)	–
3838R-12-	7838R-12-	-0	4.92 (125)	5.98 (152)	≈ 1.61 (2.40)	≈ 1.89 (2.81)
3838R-137-		-0	5.39 (137)	6.50 (165)	≈ 1.64 (2.44)	–
3838R-15-	7838R-15-	-0	5.91 (150)	6.97 (177)	≈ 1.70 (2.53)	≈ 2.06 (3.07)
3838R-162-		-0	6.38 (162)	7.48 (190)	≈ 1.71 (2.55)	–
3838R-17-	7838R-17-	-0	6.61 (168)	7.68 (195)	≈ 1.76 (2.62)	≈ 2.18 (3.24)
3838R-18-		-0	6.89 (175)	7.95 (202)	≈ 1.76 (2.62)	–
3838R-187-		-0	7.36 (187)	8.46 (215)	≈ 1.81 (2.69)	–
3838R-20-	7838R-20-	-0	7.87 (200)	8.94 (227)	≈ 1.86 (2.77)	≈ 2.37 (3.53)
3838R-212-		-0	8.35 (212)	9.45 (240)	≈ 1.91 (2.84)	–
3838R-23-		-0	8.86 (225)	9.92 (252)	≈ 1.96 (2.92)	–
3838R-237-		-0	9.33 (237)	10.43 (265)	≈ 1.99 (2.96)	–
3838R-25-	7838R-25-	-0	9.84 (250)	10.91 (277)	≈ 2.05 (3.05)	≈ 2.91 (4.33)
3838R-262-		-0	10.31 (262)	11.42 (290)	≈ 2.06 (3.06)	–
3838R-28		-0	10.83 (275)	11.89 (302)	≈ 2.13 (3.17)	–
3838R-29-		-0	11.30 (287)	12.40 (315)	≈ 2.14 (3.19)	–
3838R-30-	7838R-30-	-0	11.81 (300)	12.87 (327)	≈ 2.23 (3.32)	≈ 3.29 (4.89)
3838R-312-		-0	12.28 (312)	13.39 (340)	≈ 2.24 (3.34)	–
3838R-325-		-0	12.79 (325)	13.86 (352)	≈ 2.29 (3.41)	–
3838R-337-		-0	13.27 (337)	14.37 (365)	≈ 2.33 (3.46)	–
3838R-350-		-0	13.78 (350)	15.41 (377)	≈ 2.47 (3.68)	–
3838R-362-		-0	14.25 (362)	15.36 (390)	≈ 2.51 (3.74)	–
3838R-375-		-0	14.76 (375)	15.83 (402)	≈ 2.55 (3.79)	–
3838R-387-		-0	15.24 (387)	16.34 (415)	≈ 2.59 (3.85)	–
3838R-400		-0	15.75 (400)	16.81 (427)	≈ 2.62 (3.90)	–

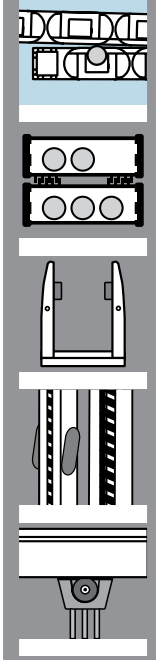
Choose from the radii below for all of the above sizes
Radius (mm) Example: 3838R-30-300-0

	150**	170**	200	215	250	300	350
R	5.91 (150)	6.69 (170)	7.87 (200)	8.46 (215)	9.84 (250)	11.81 (300)	13.78 (350)
H_2 +10	7.32 (186)	7.32 (186)	7.32 (186)	7.32 (186)	7.32 (186)	7.32 (186)	7.32 (186)
D_2 +50	26.77 (680)	32.28 (820)	39.76 (1010)	40.55 (1030)	49.02 (1245)	64.17 (1630)	72.05 (1830)
K_2	42.13 (107)	50.12 (1273)	60.67 (1541)	63.31 (1608)	73.86 (1876)	97.60 (2479)	108.15 (2747)

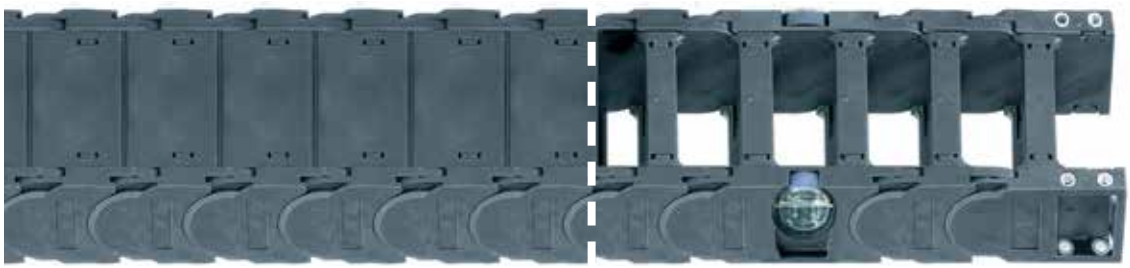
** This radius not available for E-Tubes
[1] Removable lid only, no hinged option

1.65”

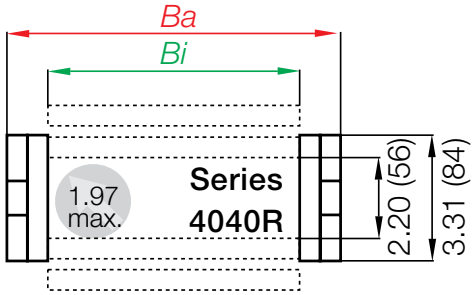
PDF: igus.com/e-chain-pdfs
Product information: igus.com/e-chains



Special solutions for long travel
E4/4 rol e-chain® - Series 4040R/R8840R

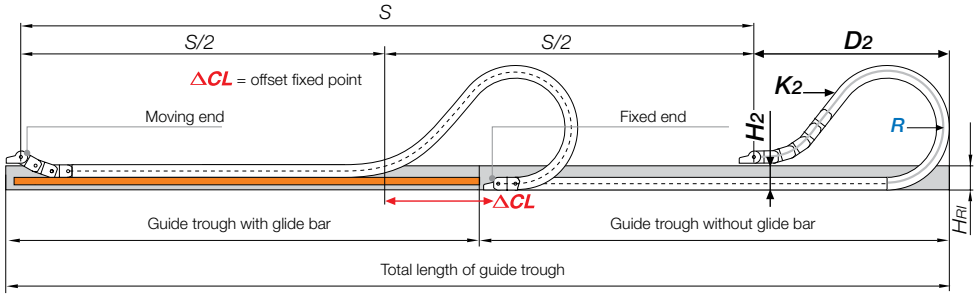


Series 4040R - crossbars every link, openable along both radii
Series 8840R - fully enclosed, hinged, snap-open removable lids



Sliding applications

Long travel lengths up to 1,641 ft. (500 m), Fill weights up to 8.74 lbs/ft (13 kg/m)
In case of travels less than 32.8 ft. (10m) we recommend an self-supporting e-chain®.
NOTE: Systems of this type should be designed by our system design engineers. Please contact igus® for assistance with your application.



Legend

S = Length of travel
R = Bending radius
H_{RI} = Trough inner height
H_2 = *Mounting height
D_2 = Overlength - long travels, gliding
K_2 = *Add-on

R	7.87 (200)	9.84 (250)	11.81 (300)	13.78 (350)	15.75 (400)
H_2 +10	7.09 (180)	7.09 (180)	7.09 (180)	7.09 (180)	7.09 (180)
D_2 +50	48.43 (1230)	53.94 (1370)	62.99 (1600)	72.83 (1850)	81.50 (2070)
K_2	71.65 (1820)	85.98 (2184)	100.31 (2548)	114.65 (2912)	128.98 (3276)
ΔCL	20.67 (525)	27.95 (710)	35.43 (900)	42.91 (1090)	50.20 (1275)

Pitch per link: = 3.58" (91 mm)
Links per ft (m): = 3.35 (11)
For center mount applications:
Chain length = $S/2 + K$

Available Accessories



Optimized, cable-friendly interior separation program



Pivoting KMA mounting bracket with all-sides attachment



Steel mounting brackets, pivoting, robust and electrically conductive



Extension links - for extremely wide e-chains® up to 9.84 ft. (3.0 m)



Aluminum SuperTrough, Basic Version

Long travels	from 32.8 ft. (10 m) up to max. 1,641 ft. (500 m)
Speed max. rolling / acceleration max. rolling	max. 32.8 ft/s (10 m/s) / max. 164 ft/s² (50 m/s²)
Material - permitted temperature	igumid G / -40°F (-40°C) up to +248°F (+120° C)
Flammability Class, igumid G	VDE 0304 IIC UL94 HB

Technical Data

Details of material properties
➤ **Chapter 1**

igus® e-chain system®
Telephone 1-800-521-2747
Internet: igus.com
email: sales@igus.com
QuickSpec: igus.com/quickspec

E4/4 rol e-chain® - Series 4040R/R8840R
Installation Dimensions

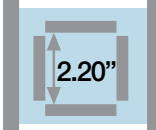
Supplement part number with required radius. Example: 4040R-30-300-0
Pitch: 3.58 in. (91mm) per link links/ft (m) = 3.35 (11)

Part Number			Bi	Ba	Weight	
Crossbars Every Link	Tube Version		in. (mm)	in. (mm)	4040R lbs/ft (kg/m)	8840R lbs/ft (kg/m)
4040R-05-		-0	1.97 (50)	3.39 (86)	≈ 2.45 (3.65)	–
4040R-06-		-0	2.56 (65)	3.98 (101)	≈ 2.47 (3.67)	–
4040R-07-	[1]8840R-07-	-0	2.95 (75)	4.37 (111)	≈ 2.54 (3.78)	≈ 2.85 (4.24)
4040R-08-		-0	3.43 (87)	4.84 (123)	≈ 2.57 (3.83)	–
4040R-10-	8840R-10-	-0	3.94 (100)	5.35 (136)	≈ 2.66 (3.96)	≈ 3.04 (4.52)
4040R-11-		-0	4.41 (112)	5.87 (149)	≈ 2.75 (4.09)	–
4040R-12-	8840R-12-	-0	4.92 (125)	6.34 (161)	≈ 2.80 (4.16)	≈ 3.28 (4.88)
4040R-13-		-0	5.39 (137)	6.85 (174)	≈ 2.88 (4.29)	–
4040R-15-	8840R-15-	-0	5.91 (150)	7.32 (186)	≈ 2.93 (4.36)	≈ 3.57 (5.31)
4040R-16-		-0	6.38 (162)	7.83 (199)	≈ 3.00 (4.47)	–
4040R-17-	8840R-17	-0	6.89 (175)	8.31 (211)	≈ 3.08 (4.58)	≈ 3.74 (5.56)
4040R-18-		-0	7.36 (187)	8.81 (224)	≈ 3.15 (4.69)	–
4040R-20-	8840R-20-	-0	7.87 (200)	9.29 (236)	≈ 3.17 (4.71)	≈ 3.96 (5.89)
4040R-21-		-0	8.35 (212)	9.80 (249)	≈ 3.24 (4.82)	–
4040R-22-		-0	8.86 (225)	10.28 (261)	≈ 3.28 (4.88)	–
4040R-23-		-0	9.33 (237)	10.79 (274)	≈ 3.37 (5.02)	–
4040R-25-	8840R-25-	-0	9.84 (250)	11.26 (286)	≈ 3.43 (5.10)	≈ 4.44 (6.61)
4040R-26-		-0	10.31 (262)	11.77 (299)	≈ 3.49 (5.19)	–
4040R-27-	8840R-27	-0	10.83 (275)	12.24 (311)	≈ 3.56 (5.30)	≈ 4.63 (6.89)
4040R-28-		-0	11.30 (287)	12.76 (324)	≈ 3.58 (5.32)	–
4040R-30-	8840R-30-	-0	11.81 (300)	13.23 (336)	≈ 3.72 (5.54)	≈ 4.89 (7.27)
4040R-31-		-0	12.28 (312)	13.74 (349)	≈ 3.75 (5.58)	–
4040R-32-		-0	12.79 (325)	14.21 (361)	≈ 3.78 (5.63)	–
4040R-33-		-0	13.27 (337)	14.72 (374)	≈ 3.90 (5.81)	–
4040R-35-	8840R-35-	-0	13.78 (350)	15.20 (386)	≈ 4.01 (5.96)	≈ 5.39 (8.02)
4040R-36-		-0	14.25 (362)	15.71 (399)	≈ 4.01 (5.96)	–
4040R-37-		-0	14.76 (375)	16.18 (411)	≈ 4.02 (5.98)	–
4040R-38-		-0	15.24 (387)	16.69 (424)	≈ 4.08 (6.07)	
4040R-40-	8840R-40-	-0	15.75 (400)	17.17 (436)	≈ 4.21 (6.27)	≈ 6.04 (8.98)
4040R-41-		-0	16.22 (412)	17.68 (449)	≈ 4.31 (6.42)	–
4040R-42-		-0	16.73 (425)	18.15 (461)	≈ 4.42 (6.58)	–
4040R-43-		-0	17.20 (437)	18.66 (474)	≈ 4.46 (6.64)	–
4040R-45-		-0	17.72 (450)	19.13 (486)	≈ 4.51 (6.71)	–
4040R-46-	8840R-46-	-0	18.19 (462)	19.65 (499)	≈ 4.52 (6.73)	≈ 6.34 (9.44)
4040R-47-		-0	18.70 (475)	20.12 (511)	≈ 4.61 (6.86)	–
4040R-48-		-0	19.17 (487)	20.63 (524)	≈ 4.63 (6.88)	–
4040R-50-		-0	19.69 (500)	21.10 (536)	≈ 4.70 (7.00)	–
4040R-51-		-0	20.16 (512)	21.61 (549)	≈ 4.72 (7.02)	–
4040R-52-		-0	20.67 (525)	22.09 (561)	≈ 4.74 (7.06)	–
4040R-53-		-0	21.14 (537)	22.60 (574)	≈ 4.85 (7.22)	–
4040R-55-		-0	21.65 (550)	23.07 (586)	≈ 5.17 (7.70)	–
4040R-60-		-0	23.62 (600)	25.04 (636)	≈ 5.31 (7.90)	–

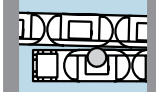
Choose from the radii below for all of the above sizes
Radius (mm) Example: 4040R-30-300-0

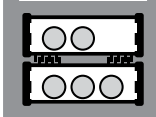
	200**	250**	300	350	400
R	7.87 (200)	9.84 (250)	11.81 (300)	13.78 (350)	15.75 (400)
H_2 +10	7.09 (180)	7.09 (180)	7.09 (180)	7.09 (180)	7.09 (180)
D_2 +50	48.43 (1230)	53.94 (1370)	62.99 (1600)	72.83 (1850)	81.50 (2070)
K_2	71.65 (1820)	85.98 (2184)	100.31 (2548)	114.65 (2912)	128.98 (3276)

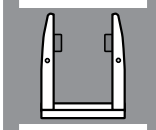
** This radius not available for E-Tubes
[1] Removable lid only, no hinged option

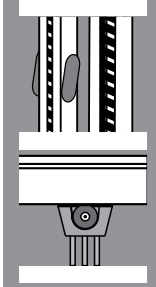


PDF: igus.com/e-chain-pdfs
Product information: igus.com/e-chains





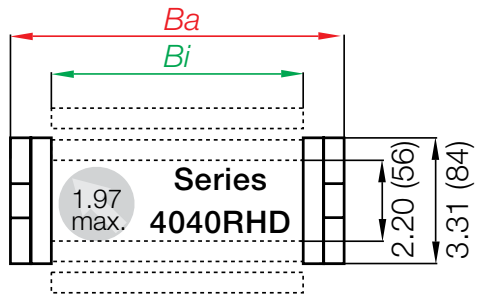




Special solutions for long travel
E4/4 rol e-chain® - Series 4040RHD

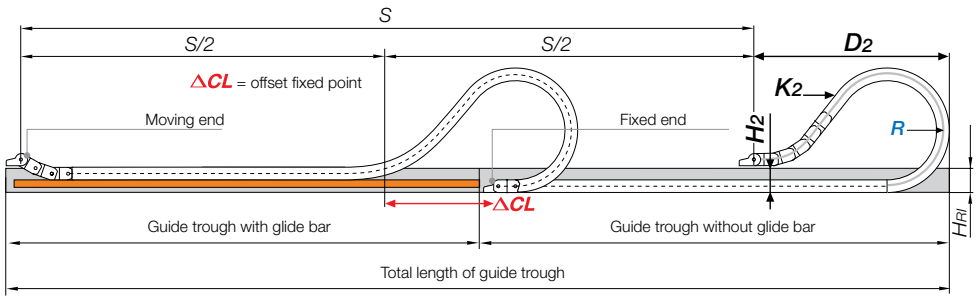


Series 4040RHD - crossbars every link, openable along both radii



Sliding applications

Long travel lengths up to 1,969 ft. (600 m), Fill weights up to 10.75 lbs/ft (16 kg/m)
In case of travels less than 32.8 ft. (10m) we recommend an self-supporting e-chain®.
NOTE: Systems of this type should be designed by our system design engineers. Please contact igus® for assistance with your application.



R	7.87 (200**)	9.84 (250**)	11.81 (300)	13.78 (350)	15.75 (400)
H_2 +10	7.09 (180)	7.09 (180)	7.09 (180)	7.09 (180)	7.09 (180)
D_2 +50	45.08 (1145)	54.72 (1390)	63.78 (1620)	73.62 (1870)	82.48 (2095)
K_2	71.65 (1820)	85.98 (2184)	100.31 (2548)	114.65 (2912)	128.98 (3276)
ΔCL	20.67 (525)	27.95 (710)	35.43 (900)	42.91 (1090)	50.20 (1275)

Pitch per link: = 3.58" (91 mm)
Links per ft (m): = 3.35 (11)
For center mount applications:
Chain length = $\frac{S}{2} + K$

Legend

S = Length of travel
R = Bending radius
H_{RI} = Trough inner height
H_2 = *Mounting height
D_2 = Overlength - long travels, gliding
K_2 = *Add-on

Available Accessories



Optimized, cable-friendly interior separation program



Steel mounting brackets, pivoting, robust and electrically conductive



Aluminum SuperTrough, Basic Version

Long travels	from 32.8 ft. (10 m) up to max. 1,969 ft. (600 m)
Speed max. rolling / acceleration max. rolling	max. 32.8 ft/s (10 m/s) / max. 164 ft/s² (50 m/s²)
Material - permitted temperature	igumid G / -40°F (-40°C) up to +248°F (+120° C)
Flammability Class, igumid G	VDE 0304 IIC UL94 HB

Technical Data

Details of material properties
➤ **Chapter 1**

igus® e-chain system®
Telephone 1-800-521-2747
Internet: igus.com
email: sales@igus.com
QuickSpec: igus.com/quickspec

E4/4 rol e-chain® - Series 4040RHD
Installation Dimensions

Supplement part number with required radius. Example: 4040RHD-30-[300]-0
Pitch: 3.58 in. (91mm) per link links/ft (m) = 3.35 (11)

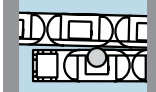
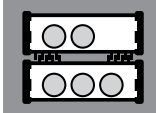
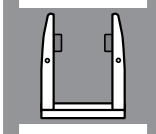
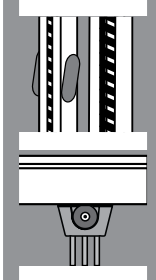
Part Number			*Bi* in. (mm)	*Ba* in. (mm)	Weight lbs/ft (kg/m)
4040RHD-05-	[ ]	-0	1.97 (50)	4.09 (104)	≈ 3.38 (5.03)
4040RHD-06-	[ ]	-0	2.56 (65)	4.69 (119)	≈ 3.44 (5.12)
4040RHD-07-	[ ]	-0	2.95 (75)	5.08 (129)	≈ 3.49 (5.19)
4040RHD-08-	[ ]	-0	3.43 (87)	5.55 (141)	≈ 3.54 (5.27)
4040RHD-10-	[ ]	-0	3.94 (100)	6.06 (154)	≈ 3.60 (5.36)
4040RHD-11-	[ ]	-0	4.41 (112)	6.54 (166)	≈ 3.68 (5.48)
4040RHD-12-	[ ]	-0	4.92 (125)	7.05 (179)	≈ 3.74 (5.56)
4040RHD-13-	[ ]	-0	5.39 (137)	7.52 (191)	≈ 3.82 (5.69)
4040RHD-15-	[ ]	-0	5.91 (150)	8.03 (204)	≈ 3.85 (5.73)
4040RHD-16-	[ ]	-0	6.38 (162)	8.50 (216)	≈ 3.92 (5.84)
4040RHD-17-	[ ]	-0	6.89 (175)	9.02 (229)	≈ 4.01 (5.97)
4040RHD-18-	[ ]	-0	7.36 (187)	9.49 (241)	≈ 4.09 (6.09)
4040RHD-20-	[ ]	-0	7.87 (200)	10.00 (254)	≈ 4.13 (6.14)
4040RHD-21-	[ ]	-0	8.35 (212)	10.47 (266)	≈ 4.17 (6.21)
4040RHD-22-	[ ]	-0	8.86 (225)	10.98 (279)	≈ 4.22 (6.28)
4040RHD-23-	[ ]	-0	9.33 (237)	11.46 (291)	≈ 4.29 (6.39)
4040RHD-25-	[ ]	-0	9.84 (250)	11.97 (304)	≈ 4.37 (6.50)
4040RHD-26-	[ ]	-0	10.31 (262)	12.44 (316)	≈ 4.43 (6.59)
4040RHD-27-	[ ]	-0	10.83 (275)	12.95 (329)	≈ 4.50 (6.70)
4040RHD-28-	[ ]	-0	11.30 (287)	13.43 (341)	≈ 4.54 (6.75)
4040RHD-30-	[ ]	-0	11.81 (300)	13.94 (354)	≈ 4.64 (6.91)
4040RHD-31-	[ ]	-0	12.28 (312)	14.41 (366)	≈ 4.66 (6.94)
4040RHD-32-	[ ]	-0	12.79 (325)	14.92 (379)	≈ 4.74 (7.05)
4040RHD-33-	[ ]	-0	13.27 (337)	15.39 (391)	≈ 4.82 (7.17)
4040RHD-35-	[ ]	-0	13.78 (350)	15.91 (404)	≈ 4.95 (7.37)
4040RHD-36-	[ ]	-0	14.25 (362)	16.38 (416)	≈ 4.96 (7.38)
4040RHD-37-	[ ]	-0	14.76 (375)	16.89 (429)	≈ 4.96 (7.38)
4040RHD-38-	[ ]	-0	15.24 (387)	17.36 (441)	≈ 5.03 (7.49)
4040RHD-40-	[ ]	-0	15.75 (400)	17.87 (454)	≈ 5.21 (7.76)
4040RHD-41-	[ ]	-0	16.22 (412)	18.35 (466)	≈ 5.16 (7.68)
4040RHD-42-	[ ]	-0	16.73 (425)	18.86 (479)	≈ 5.36 (7.98)
4040RHD-43-	[ ]	-0	17.20 (437)	19.33 (491)	≈ 5.25 (7.82)
4040RHD-45-	[ ]	-0	17.72 (450)	19.84 (504)	≈ 5.48 (8.15)
4040RHD-46-	[ ]	-0	18.19 (462)	20.31 (516)	≈ 5.44 (8.10)
4040RHD-47-	[ ]	-0	18.70 (475)	20.83 (529)	≈ 5.47 (8.14)
4040RHD-48-	[ ]	-0	19.17 (487)	21.30 (541)	≈ 5.64 (8.39)
4040RHD-50-	[ ]	-0	19.69 (500)	21.81 (554)	≈ 5.70 (8.48)
4040RHD-51-	[ ]	-0	20.16 (512)	22.28 (566)	≈ 5.64 (8.40)
4040RHD-52-	[ ]	-0	20.67 (525)	22.80 (579)	≈ 5.76 (8.57)
4040RHD-53-	[ ]	-0	21.14 (537)	23.27 (591)	≈ 5.82 (8.66)
4040RHD-55-	[ ]	-0	21.65 (550)	23.78 (604)	≈ 6.10 (9.08)
4040RHD-60-	[ ]	-0	23.62 (600)	25.75 (654)	≈ 6.26 (9.31)

Choose from the radii below for all of the above sizes
Radius (mm) Example: 4040RHD-30-[300]-0

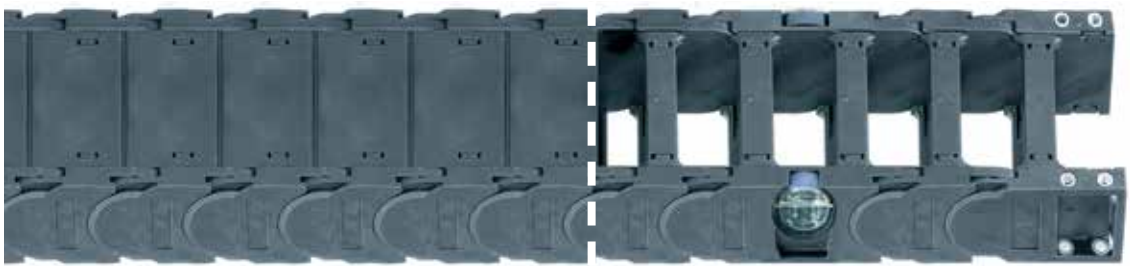
	200	250	300	350	400
R	7.87 (200)	9.84 (250)	11.81 (300)	13.78 (350)	15.75 (400)
H_2	7.09 (180)	7.09 (180)	7.09 (180)	7.09 (180)	7.09 (180)
D_2	45.08 (1145)	54.72 (1390)	63.78 (1620)	73.62 (1870)	82.48 (2095)
K_2	71.65 (1820)	85.98 (2184)	100.31 (2548)	114.65 (2912)	128.98 (3276)



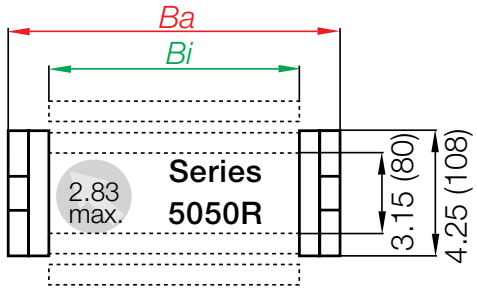
PDF: igus.com/e-chain-pdfs
Product information: igus.com/e-chains

Special solutions for long travel
E4/4 rol e-chain® - Series 5050R/9850R

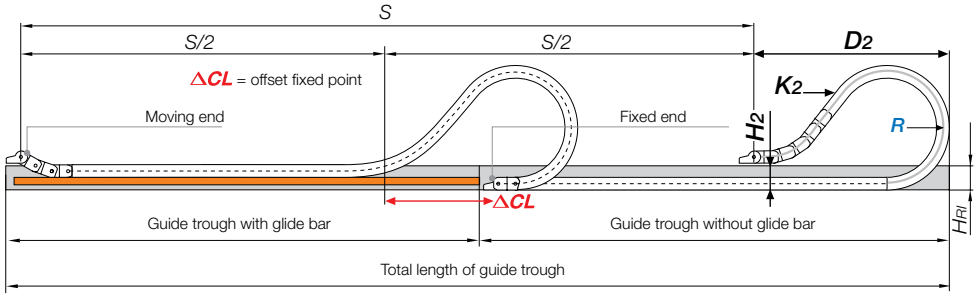


Series 5050R - crossbars every link, openable along both radii
Series 9850R - fully enclosed, hinged, snap-open removable lids



Sliding applications

Long travel lengths up to 1,969 ft. (600 m), Fill weights up to 16.80 lbs/ft (25 kg/m)
In case of travels less than 32.8 ft. (10m) we recommend an self-supporting e-chain®.
NOTE: Systems of this type should be designed by our system design engineers. Please contact igus® for assistance with your application.



Legend

S = Length of travel
R = Bending radius
H_{RI} = Trough inner height
H_2 = *Mounting height
D_2 = Overlength - long travels, gliding
K_2 = *Add-on

R	9.84 (250**)	11.81 (300)	13.78 (350)	15.75 (400)	19.69 (500)
H_2 +10	9.53 (242)	9.53 (242)	9.53 (242)	9.53 (242)	9.53 (242)
D_2 +50	49.21 (1250)	61.02 (1550)	67.72 (1720)	78.35 (1990)	96.85 (2460)
K_2	78.82 (2002)	96.73 (2457)	107.48 (2730)	125.39 (3185)	154.06 (3913)
ΔCL	23.62 (600)	31.50 (800)	38.19 (970)	45.67 (1160)	60.24 (1530)

Pitch per link: = 3.58" (91 mm)
Links per ft (m): = 3.35 (11)
For center mount applications:
Chain length = $S/2 + K$

Available Accessories



Optimized, cable-friendly interior separation program



Pivoting KMA mounting bracket with all-sides attachment



Steel mounting brackets, pivoting, robust and electrically conductive



Extension links - for extremely wide e-chains® up to 9.84 ft. (3.0 m)



Aluminum SuperTrough, Basic Version

Long travels	from 32.8 ft. (10 m) up to max. 1,969 ft. (600 m)
Speed max. rolling / acceleration max. rolling	max. 32.8 ft/s (10 m/s) / max. 164 ft/s² (50 m/s²)
Material - permitted temperature	igumid G / -40°F (-40°C) up to +248°F (+120° C)
Flammability Class, igumid G	VDE 0304 IIC UL94 HB

Technical Data

Details of material properties
➤ **Chapter 1**

Telephone 1-800-521-2747
Internet: igus.com
email: sales@igus.com
QuickSpec: igus.com/quickspec

E4/4 rol e-chain® - Series 5050R/9850R
Installation Dimensions

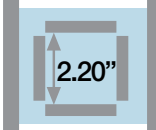
Supplement part number with required radius. Example: 5050R-30-300-0
Pitch: 3.58 in. (91mm) per link links/ft (m) = 3.35 (11)

Part Number			*Bi*	*Ba*	Weight	
Crossbars Every Link	Tube Version		in. (mm)	in. (mm)	5050R lbs/ft (kg/m)	9850R lbs/ft (kg/m)
5050R-05-		-0	1.97 (50)	3.94 (100)	≈ 3.78 (5.62)	–
5050R-06-		-0	2.56 (65)	4.53 (115)	≈ 3.82 (5.68)	–
5050R-07-	[1]9850R-07-	-0	2.95 (75)	4.92 (125)	≈ 3.83 (5.70)	≈ 4.19 (6.24)
5050R-08-		-0	3.43 (87)	5.39 (137)	≈ 3.87 (5.76)	–
5050R-10-	9850R-10-	-0	3.94 (100)	5.91 (150)	≈ 3.89 (5.79)	≈ 4.38 (6.52)
5050R-11-		-0	4.41 (112)	6.42 (163)	≈ 3.93 (5.85)	–
5050R-12-	9850R-12-	-0	4.92 (125)	6.89 (175)	≈ 3.96 (5.89)	≈ 4.63 (6.89)
5050R-13-		-0	5.39 (137)	7.40 (188)	≈ 4.00 (5.95)	–
5050R-15-	9850R-15-	-0	5.91 (150)	7.87 (200)	≈ 4.02 (5.98)	≈ 4.92 (7.32)
5050R-16-		-0	6.38 (162)	8.39 (213)	≈ 4.06 (6.04)	–
5050R-17-	9850R-17	-0	6.89 (175)	8.86 (225)	≈ 4.09 (6.09)	≈ 5.09 (7.58)
5050R-18-		-0	7.36 (187)	9.37 (238)	≈ 4.13 (6.15)	–
5050R-20-	9850R-20-	-0	7.87 (200)	9.84 (250)	≈ 4.14 (6.16)	≈ 5.30 (7.89)
5050R-21-		-0	8.35 (212)	10.35 (263)	≈ 4.18 (6.22)	–
5050R-22-		-0	8.86 (225)	10.83 (275)	≈ 4.20 (6.25)	–
5050R-23-		-0	9.33 (237)	11.34 (288)	≈ 4.24 (6.31)	–
5050R-25-	9850R-25-	-0	9.84 (250)	11.81 (300)	≈ 4.27 (6.36)	≈ 5.79 (8.61)
5050R-26-		-0	10.31 (262)	12.32 (313)	≈ 4.30 (6.40)	–
5050R-27-	9850R-27	-0	10.83 (275)	12.80 (325)	≈ 4.34 (6.46)	≈ 5.93 (8.82)
5050R-28-		-0	11.30 (287)	13.31 (338)	≈ 4.35 (6.47)	–
5050R-30-	9850R-30-	-0	11.81 (300)	13.78 (350)	≈ 4.42 (6.58)	≈ 6.23 (9.27)
5050R-31-		-0	12.28 (312)	14.29 (363)	≈ 443 (6.60)	–
5050R-32-		-0	12.79 (325)	14.76 (375)	≈ 4.45 (6.62)	–
5050R-33-		-0	13.27 (337)	15.28 (388)	≈ 4.51 (6.71)	–
5050R-35-	9850R-35-	-0	13.78 (350)	15.75 (400)	≈ 4.56 (6.79)	≈ 6.73 (10.02)
5050R-36-		-0	14.25 (362)	16.26 (413)	≈ 4.57 (6.80)	–
5050R-37-		-0	14.76 (375)	16.73 (425)	≈ 4.57 (6.80)	–
5050R-38-		-0	15.24 (387)	17.24 (438)	≈ 4.60 (6.84)	–
5050R-40-	9850R-40-	-0	15.75 (400)	17.72 (450)	≈ 4.66 (6.94)	≈ 7.38 (10.98)
5050R-41-		-0	16.22 (412)	18.23 (463)	≈ 4.72 (7.02)	–
5050R-42-		-0	16.73 (425)	18.70 (475)	≈ 4.77 (7.10)	–
5050R-43-		-0	17.20 (437)	19.21 (488)	≈ 4.79 (7.13)	–
5050R-45-		-0	17.72 (450)	19.69 (500)	≈ 4.81 (7.16)	–
5050R-46-	9850R-46-	-0	18.19 (462)	20.20 (513)	≈ 4.82 (7.17)	≈ 7.69 (11.44)
5050R-47-		-0	18.70 (475)	20.67 (525)	≈ 4.87 (7.24)	–
5050R-48-		-0	19.17 (487)	21.99 (538)	≈ 4.88 (7.26)	–
5050R-50-		-0	19.69 (500)	21.65 (550)	≈ 4.91 (7.30)	–
5050R-51-		-0	20.16 (512)	22.16 (563)	≈ 4.92 (7.32)	–
5050R-52-		-0	20.67 (525)	22.64 (575)	≈ 4.93 (7.34)	–
5050R-53-		-0	21.14 (537)	23.15 (588)	≈ 4.98 (7.41)	–
5050R-55-		-0	21.65 (550)	23.62 (600)	≈ 5.15 (7.66)	–
5050R-60-		-0	23.62 (600)	25.59 (650)	≈ 5.21 (7.76)	–

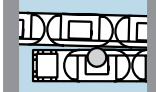
Choose from the radii below for all of the above sizes
Radius (mm) Example: 5050R-30-300-0

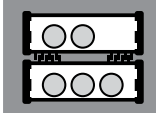
	250**	300	350	400	500
R	9.84 (250)	11.81 (300)	13.78 (350)	15.75 (400)	19.69 (500)
H_2 +10	9.53 (242)	9.53 (242)	9.53 (242)	9.53 (242)	9.53 (242)
D_2 +50	49.21 (1250)	61.02 (1550)	67.72 (1720)	78.35 (1990)	96.85 (2460)
K_2	78.82 (2002)	96.73 (2457)	107.48 (2730)	125.39 (3185)	154.06 (3913)

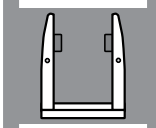
** This radius not available for E-Tubes
[1] Removable lid only, no hinged option

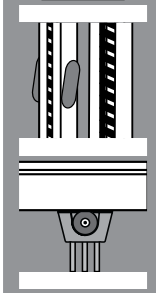


PDF: igus.com/e-chain-pdfs
Product information: igus.com/e-chains

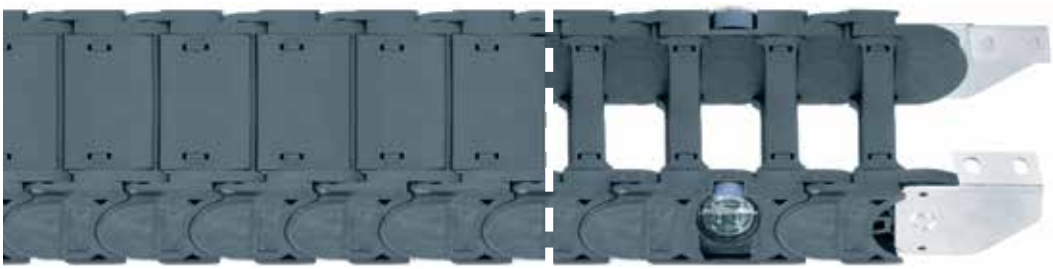




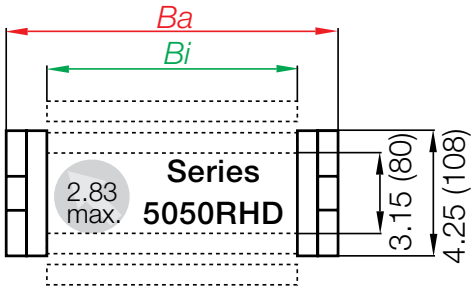




Special solutions for long travel
E4/4 rol e-chain® - Series 5050RHD

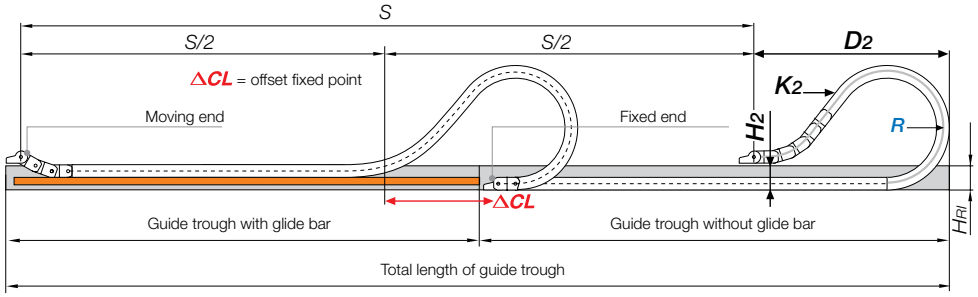


Series 5050RHD - crossbars every link, openable along both radii



Sliding applications

Long travel lengths up to 2,625 ft. (800 m), Fill weights up to 20.16 lbs/ft (30 kg/m)
In case of travels less than 32.8 ft. (10m) we recommend an self-supporting e-chain®.
NOTE: Systems of this type should be designed by our system design engineers. Please contact igus® for assistance with your application.



Legend

S = Length of travel
R = Bending radius
H_{RI} = Trough inner height
H_2 = *Mounting height
D_2 = Overlength - long travels, gliding
K_2 = *Add-on

R	9.84 (250**)	11.81 (300)	13.78 (350)	15.75 (400)	19.69 (500)
H_2 +10	9.53 (242)	9.53 (242)	9.53 (242)	9.53 (242)	9.53 (242)
D_2 +50	50.39 (1280)	61.81 (1570)	68.90 (1750)	79.13 (2010)	97.64 (2480)
K_2	78.82 (2002)	96.73 (2457)	107.48 (2730)	125.39 (3185)	154.06 (3913)
ΔCL	23.62 (600)	31.50 (800)	38.19 (970)	45.67 (1160)	60.24 (1530)

Pitch per link: = 3.58" (91 mm)
Links per ft (m): = 3.35 (11)
For center mount applications:
Chain length = $S/2 + K$

Available Accessories



Optimized, cable-friendly interior separation program



Steel mounting brackets, pivoting, robust and electrically conductive



Extension links - for extremely wide e-chains® up to 9.84 ft. (3.0 m)



Aluminum SuperTrough, Basic Version

Long travels	from 32.8 ft. (10 m) up to max. 2,625 ft. (800 m)
Speed max. rolling / acceleration max. rolling	max. 32.8 ft/s (10 m/s) / max. 164 ft/s² (50 m/s²)
Material - permitted temperature	igumid G / -40°F (-40°C) up to +248°F (+120° C)
Flammability Class, igumid G	VDE 0304 IIC UL94 HB

Technical Data

Details of material properties
➤ Chapter 1

Telephone 1-800-521-2747
igus® e-chain system®
Internet: igus.com
email: sales@igus.com
QuickSpec: igus.com/quickspec

E4/4 rol e-chain® - Series 5050RHD
Installation Dimensions

Supplement part number with required radius. Example: 5050RHD-30-[300]-0
Pitch: 3.58 in. (91mm) per link links/ft (m) = 3.35 (11)

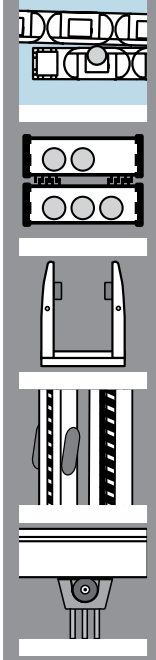
Part Number			*Bi* in. (mm)	*Ba* in. (mm)	Weight lbs/ft (kg/m)
5050RHD-05-		-0	1.97 (50)	4.33 (110)	≈ 4.47 (6.65)
5050RHD-06-		-0	2.56 (65)	4.92 (125)	≈ 4.53 (6.74)
5050RHD-07-		-0	2.95 (75)	5.31 (135)	≈ 4.58 (6.81)
5050RHD-08-		-0	3.43 (87)	5.79 (147)	≈ 4.63 (6.89)
5050RHD-10-		-0	3.94 (100)	6.30 (160)	≈ 4.70 (6.99)
5050RHD-11-		-0	4.41 (112)	6.77 (172)	≈ 4.77 (7.10)
5050RHD-12-		-0	4.92 (125)	7.28 (185)	≈ 4.82 (7.18)
5050RHD-13-		-0	5.39 (137)	7.76 (197)	≈ 4.92 (7.32)
5050RHD-15-		-0	5.91 (150)	8.27 (210)	≈ 4.94 (7.35)
5050RHD-16-		-0	6.38 (162)	8.74 (222)	≈ 5.02 (7.47)
5050RHD-17-		-0	6.89 (175)	9.25 (235)	≈ 5.11 (7.60)
5050RHD-18-		-0	7.36 (187)	9.72 (247)	≈ 5.18 (7.71)
5050RHD-20-		-0	7.87 (200)	10.24 (260)	≈ 5.22 (7.77)
5050RHD-21-		-0	8.35 (212)	10.71 (272)	≈ 5.27 (7.84)
5050RHD-22-		-0	8.86 (225)	11.22 (285)	≈ 5.32 (7.91)
5050RHD-23-		-0	9.33 (237)	11.69 (297)	≈ 5.39 (8.02)
5050RHD-25-		-0	9.84 (250)	12.20 (310)	≈ 5.46 (8.13)
5050RHD-26-		-0	10.31 (262)	12.68 (322)	≈ 5.52 (8.22)
5050RHD-27-		-0	10.83 (275)	13.19 (335)	≈ 5.59 (8.32)
5050RHD-28-		-0	11.30 (287)	13.66 (347)	≈ 5.63 (8.38)
5050RHD-30-		-0	11.81 (300)	14.17 (360)	≈ 5.73 (8.53)
5050RHD-31-		-0	12.28 (312)	14.65 (372)	≈ 5.76 (8.57)
5050RHD-32-		-0	12.79 (325)	15.16 (385)	≈ 5.83 (8.67)
5050RHD-33-		-0	13.27 (337)	15.63 (397)	≈ 5.91 (8.79)
5050RHD-35-		-0	13.78 (350)	16.14 (410)	≈ 6.04 (8.99)
5050RHD-36-		-0	14.25 (362)	16.61 (422)	≈ 5.98 (8.90)
5050RHD-37-		-0	14.76 (375)	17.12 (435)	≈ 6.04 (9.00)
5050RHD-38-		-0	15.24 (387)	17.60 (447)	≈ 6.12 (9.11)
5050RHD-40-		-0	15.75 (400)	18.11 (460)	≈ 6.30 (9.38)
5050RHD-41-		-0	16.22 (412)	18.58 (472)	≈ 6.26 (9.31)
5050RHD-42-		-0	16.73 (425)	19.09 (485)	≈ 6.45 (9.60)
5050RHD-43-		-0	17.20 (437)	19.57 (497)	≈ 6.34 (9.44)
5050RHD-45-		-0	17.72 (450)	20.08 (510)	≈ 6.42 (9.55)
5050RHD-46-		-0	18.19 (462)	20.55 (522)	≈ 6.53 (9.72)
5050RHD-47-		-0	18.70 (475)	21.06 (535)	≈ 6.56 (9.76)
5050RHD-48-		-0	19.17 (487)	21.54 (547)	≈ 6.73 (10.01)
5050RHD-50-		-0	19.69 (500)	22.05 (560)	≈ 6.79 (10.11)
5050RHD-51-		-0	20.16 (512)	22.52 (572)	≈ 6.73 (10.02)
5050RHD-52-		-0	20.67 (525)	23.03 (585)	≈ 6.85 (10.19)
5050RHD-53-		-0	21.14 (537)	23.50 (597)	≈ 6.91 (10.29)
5050RHD-55-		-0	21.65 (550)	24.02 (610)	≈ 7.20 (10.71)
5050RHD-60-		-0	23.62 (600)	25.98 (660)	≈ 7.35 (10.94)

Choose from the radii below for all of the above sizes
Radius (mm) Example: 5050RHD-30-[300]-0

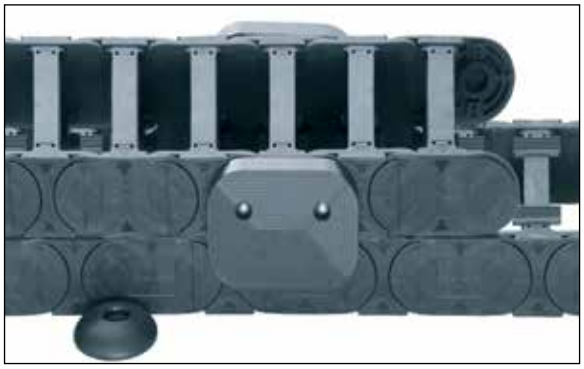
	250	300	350	400	500
R	9.84 (250)	11.81 (300)	13.78 (350)	15.75 (400)	19.69 (500)
H_2 +10	9.53 (242)	9.53 (242)	9.53 (242)	9.53 (242)	9.53 (242)
D_2 +50	49.21 (1250)	61.02 (1550)	67.72 (1720)	78.35 (1990)	96.85 (2460)
K_2	78.82 (2002)	96.73 (2457)	107.48 (2730)	125.39 (3185)	154.06 (3913)

2.20”

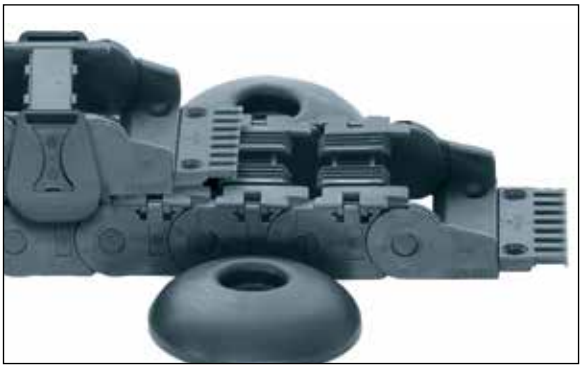
PDF: igus.com/e-chain-pdfs
Product information: igus.com/e-chains



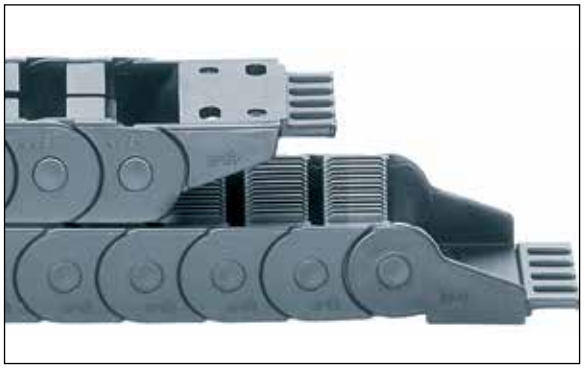
There are 4 options for the igus® autoglide system:



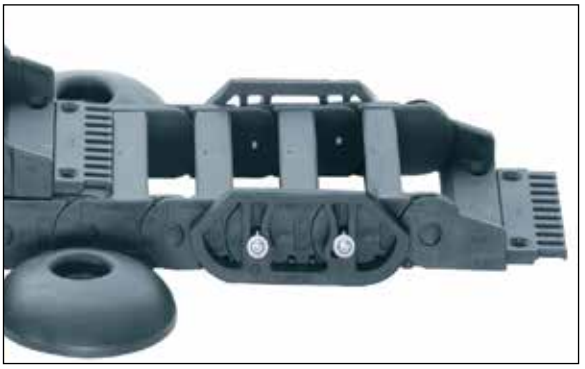
Version 01 - For igus® E4-1 e-chains®
Special crossbars in the inner radius of the e-chain® fitted with molded-on autoglide grooves



Version 02 - For igus® E2/000 e-chains®
Special crossbars with molded-on autoglide grooves. To be opened along the inner radius.



Version 03 - For igus® E-Z Chains
Combination of the easily fillable E-Z Chain and injection-molded autoglide grooves in the inner radius



Version 04 - For Series E2/000 e-chains®
Special plastic autoglide grooves side-mounted on the e-chain® hold the e-chain® "in the track"

Save on long travels, self-guiding e-chains® - autoglide

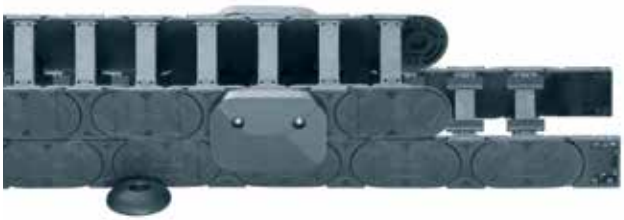
Long travels are always demanding for an e-chain system®. For much of the travel, the e-chain® must run on the lower run or on the glide bars. In addition the e-chain system® needs guides, in order to prevent a sidewards movement. In most cases this is ensured through a guide trough. However, there are also applications where a guide trough is not desired for space reasons, whether this is due to optical considerations or spatial conditions. In order to cater for this possibility, igus® developed the autoglide system in 1995. autoglide is a self-aligning e-chain®, which can eliminate guide troughs for up to 262 ft. (80 m) travel.

- Travels up to 262 ft. (80 m) and travel speeds up to 8.20 ft/s (2.5 m/s)
- Cost-effective solution, guide troughs not required
- Very quick installation times for long travels
- Small installation width, quiet operation

Typical industries and applications

- Industrial vehicles
- Long travels with easier filling
- Simple outdoor applications

Special solutions for long travel autoglide - Self-guiding e-chain systems®
Selection Table - Technical Data



Version 01 autoglide -
Self-guiding e-chains® for system E4-1
Crossbars in the inner radius of the e-chain®
fitted with molded-on autoglide grooves

Series	Inner height *hi* in. (mm)	Inner width *Bi* in. (mm)	Outer width *Ba* in. (mm)	Outer height *ha* in. (mm)	Bending radius *R* in. (mm)	Maximum Travel ft. (m)
E4-32AG	1.26 (32)	4.41-10.31 (112-262)	5.35-11.26 (136-286)	2.13 (54)	3.94-11.81 (100-300)	196.9 (60)
E4-42AG	1.65 (42)	4.41-10.31 (112-262)	5.47-11.38 (139-289)	2.52 (64)	4.92-13.78 (125-350)	229.7 (70)
E4-56AG	2.20 (56)	5.91-9.84 (150-250)	7.24-11.18 (184-284)	3.31 (84)	5.91-19.69 (150-500)	262.5 (80)



Version 02 autoglide -
Self-guiding e-chains® for system E2/000
Crossbars in the inner radius of the e-chain®
fitted with molded-on autoglide grooves

2400AG	.98 (25)	2.24-3.03 (57-77)	2.87-3.66 (73-93)	1.38 (35)	2.95-9.84 (075-250)	131.2 (40)
2600AG	1.38 (35)	1.97-2.95 (50-75)	2.60-3.58 (66-91)	1.97 (50)	2.95-9.84 (075-250)	196.9 (60)
3400AG	1.77 (45)	2.95-3.94 (75-100)	3.74-4.72 (95-120)	2.52 (64)	3.94-11.81 (100-300)	229.7 (70)



Version 03 autoglide -
Easy filling - simply press cables in
E-Z Chain Design in the outer radius, fitted with molded-on
autoglide grooves in the inner radius

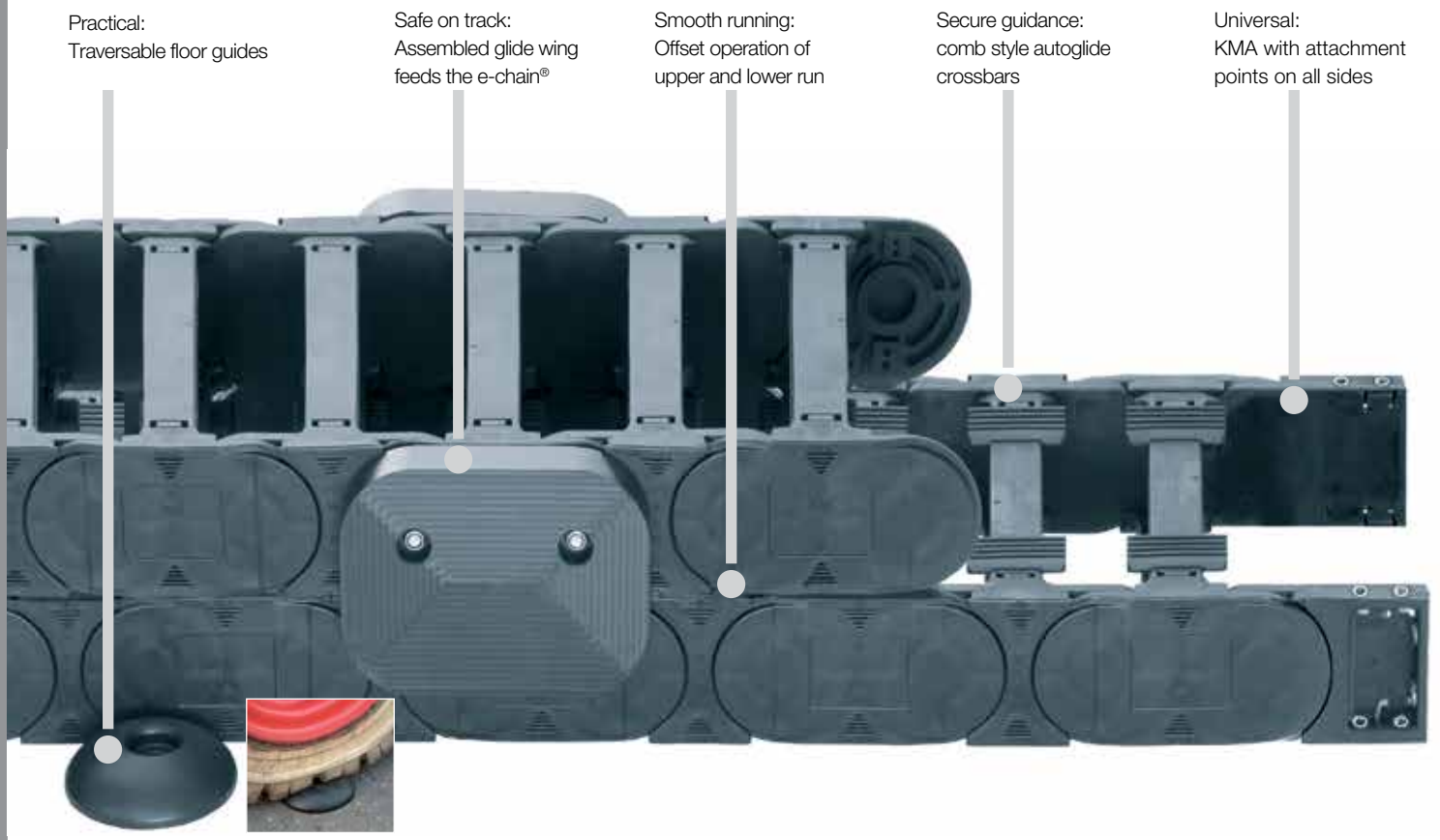
EA16	1.26 (32)	1.89 (48)	2.36 (60)	1.54 (39)	2.56-3.94 (065-100)	65.6 (20)
EA25	.98 (25)	1.97 (50)	2.36 (60)	.99 (25.2)	2.95-3.94 (075-100)	65.6 (20)



Version 04 autoglide -
Special glide elements provide a secure guidance
on E2/000: e-chain®, half and full E-Tubes

2400/2500-AG	.98 (25)	2.24-4.92 (57-125)	2.87-5.55 (73-141)	1.38 (35)	2.17-9.84 (055-250)	65.6 (20)
2600/2700-AG	1.38 (35)	1.97-9.84 (50-250)	2.60-7.64 (66-194)	1.97(50)	2.95-9.84 (075-250)	98.4 (30)

Special solutions for long travel autoglide - Self-guiding e-chain systems® Version 01 - Overview



Self-guiding e-chains® for System E4-1 autoglide Version 01

For the larger e-chains® of the E4-1 system - crossbars in the inner radius of the e-chains® are provided with injection-molded glide shoes. **Glide wings and floor guides -** Simple guide elements for quick installation on the subsurface are available for the autoglide system version 01. The traversable eccentric floor guides are fastened every 6.56 ft.(2 m) on the subsurface. The glide wing fastened on the moving end feeds the e-chains® and holds this securely in the track. The autoglide crossbars safely guide the e-chains® and replace the guide trough.

- Save purchase and installation costs with this system
- Traversable over floor guide for travel distances over 32.8 ft.(10 m).

Note: Only two glide wings **AG-XXX-OF** are required for the safe feeding of the e-chains®. The mounting of the glide wing is done on the outer link of the upper run, which is laid down first on the lower run.

Typical industries and applications

- Industrial vehicles
- Long travels with easier filling
- Simple outdoor applications

Special solutions for long travel
autoglide - Self-guiding e-chain systems®
Version 01 - Technical Data - Order Examples



autoglide with assembled glide wing. Module, containing 3 e-chain® links and 2 glide wings
Part No. E4-32-15-150-0-AG-OF-NC



autoglide self-guiding e-chains®
Part No. E4-32-15-150-0-AG-NC



Glide wing Part No. AG-280-OF and floor guide
Part No. AG-380-BF as single parts

Part number structure
E4-32-15-150-0-AG-**OF**-NC

- Assembly as NC Version
- With assembled glide wing
- autoglide
- Standard color black
- Bending radius ***R***
- Width index
- Series / Type

Order example | Part number structure

Order example for complete e-chain® Series E4-32AG 49.2 ft. (15 m), color black, with mounting brackets and interior separation:

e-chain® 49.2 ft. (15 m)	Please indicate e-chain® length or number of links: 49.2 ft. (15 m) or 287 links	E4-32-15-150-0-AG-NC
e-chain® + glide wing	Module, containing 3 e-chain® links and 2 glide wings	E4-32-15-150-0-AG-OF-NC
+ Floor guides	8 pieces (2 pieces every 6.56 ft. (2 m) from the half of travel)	AG-380-BF

Order text: 49.2 ft. (15 m) E4-32-15-150-0-AG-NC + E4-32-15-150-0-AG-OF-NC + AG-380-BF + Mounting bracket + Interior separation (optional)
Note: We require one glide wing per e-chain® to the left and right at the position where the upper run first meets the lower run.

Long travels	from 32.8 ft. (10 m) up to max. 262 ft. (80 m)
Speed max. gliding / acceleration max. gliding	max. 8.20 ft/s (2.5 m/s) / max. 8.20 ft/s² (2.5 m/s²)
Material - permitted temperature	igumid G / -40°F (-40°C) up to +248°F (+120° C)
Flammability Class, igumid G	VDE 0304 IIC UL94 HB

Technical Data

Details of material properties
➤ **Chapter 1**

Special solutions for long travel
autoglide - Version 01 - Self-guiding e-chain systems®
E4-32AG



Series E4-32AG - openable along both radii, crossbars every link - autoglide crossbars along the inner radius

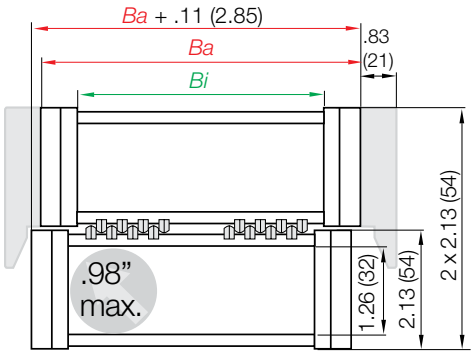
Supplement part number with required radius. Example: E4-32-15-150-0-AG-NC
Pitch: 2.20 in. (56 mm) per link links/ft (m) = 5.49 (18)

Part Number Crossbars Every Link		Bi in. (mm)	Ba in. (mm)	Weight lbs/ft (kg/m)	Glide Wing Single part	Floor Guide Single part
E4-32-112-	-0-AG-NC	4.41 (112)	5.35 (136)	≈ 1.42 (2.106)	AG-380-OF	AG-380-BF
E4-32-12-	-0-AG-NC	4.92 (125)	5.83 (148)	≈ 1.46 (2.176)	AG-380-OF	AG-380-BF
E4-32-15-	-0-AG-NC	5.91 (150)	6.81 (173)	≈ 1.57 (2.343)	AG-380-OF	AG-380-BF
E4-32-17-	-0-AG-NC	6.61 (168)	7.52 (191)	≈ 1.64 (2.444)	AG-380-OF	AG-380-BF
E4-32-20-	-0-AG-NC	7.87 (200)	8.78 (223)	≈ 1.79 (2.657)	AG-380-OF	AG-380-BF
E4-32-262-	-0-AG-NC	10.31 (262)	11.26 (286)	≈ 2.05 (3.050)	AG-380-OF	AG-380-BF

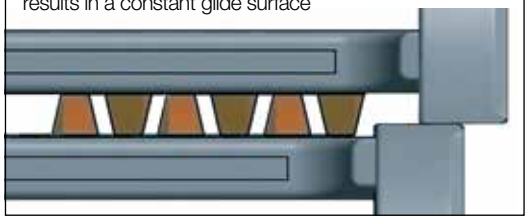
Choose from the radii below for all of the above sizes
Radius (mm)Example: E4-32-15-150-0-AG-NC

	100	125	150	175	200	220	250	300
R	3.94 (100)	4.92 (125)	5.91 (150)	6.89 (175)	7.87 (200)	8.66 (220)	9.84 (250)	11.81 (300)
H_2	6.54 (166)	6.54 (166)	6.54 (166)	6.54 (166)	6.54 (166)	6.54 (166)	6.54 (166)	6.54 (166)
D_2	14.57 (370)	18.50 (470)	19.69 (500)	25.79 (655)	30.31 (770)	35.43 (900)	36.61 (930)	43.31 (1100)
K_3	33.07 (840)	40.71 (1064)	48.50 (1232)	61.73 (1568)	72.76 (1848)	81.57 (2072)	88.19 (2240)	105.83 (2688)

Special solutions for long travel
autoglide - Version 01 - Self-guiding e-chain systems®
E4-32AG - Installation Dimensions

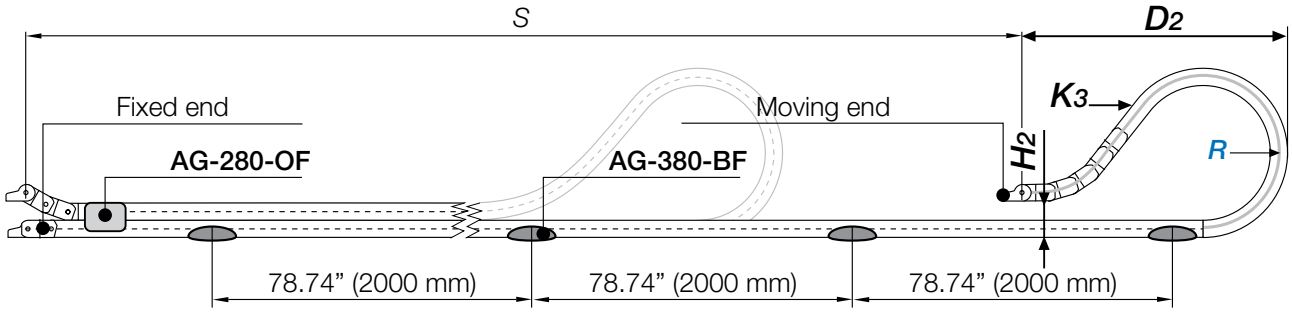


autoglide principle
Offset operation of upper and lower run,
results in a constant glide surface



Gliding applications

Long travel lengths up to 197 ft. (60 m), Fill weights up to 3.36 to 4.70 lbs/ft (5.0 to 7.0 kg/m)
In case of travels less than 32.8 ft. (10m) we recommend an self-supporting e-chain®.
NOTE: Systems of this type should be designed by our system design engineers.
Please contact igus® for assistance with your application.



R	3.94 (100)	4.92 (125)	5.91 (150)	6.89 (175)	7.87 (200)	8.66 (220)	9.84 (250)	11.81 (300)
H_2	6.54 (166)	6.54 (166)	6.54 (166)	6.54 (166)	6.54 (166)	6.54 (166)	6.54 (166)	6.54 (166)
D_2	14.57 (370)	18.50 (470)	19.69 (500)	25.79 (655)	30.31 (770)	35.43 (900)	36.61 (930)	43.31 (1100)
K_3	33.07 (840)	40.71 (1064)	48.50 (1232)	61.73 (1568)	72.76 (1848)	81.57 (2072)	88.19 (2240)	105.83 (2688)

Pitch per link: = 2.20" (56 mm)
Links per ft (m): = 5.49 (18)
For center mount applications:
Chain length = $S + K_3$

Legend
S = Length of travel
R = Bending radius
H_{in} = Trough inner height
H_2 = *Mounting height
D_2 = Overlength - long travels, gliding

Available Accessories

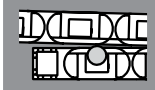
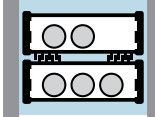
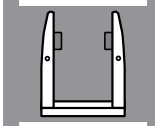
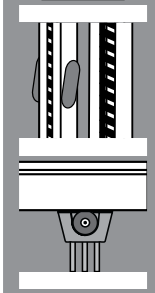


Optimized, cable-friendly interior separation program



Pivoting KMA mounting brackets with attachment points on all sides

PDF: igus.com/e-chain-pdfs
Product information: igus.com/e-chains

Special solutions for long travel
autoglide - Version 01 - Self-guiding e-chain systems®
E4-42AG



Series E4-42AG - openable along both radii, crossbars every link - autoglide crossbars along the inner radius

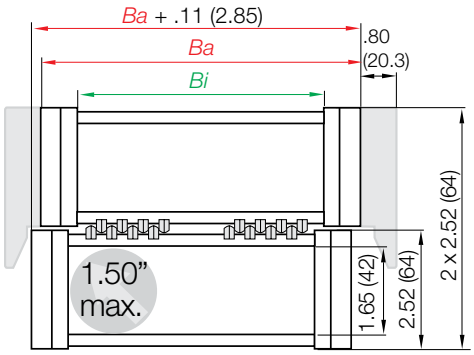
Supplement part number with required radius. Example: E4-42-15-[150]-0-AG-NC
Pitch: 2.64 in. (67 mm) per link links/ft (m) = 4.57 (15)

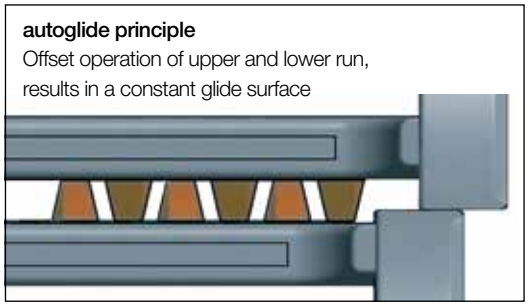
Part Number Crossbars Every Link			*Bi* in. (mm)	*Ba* in. (mm)	Weight lbs/ft (kg/m)	Glide Wing Single part	Floor Guide Single part
E4-42-112-	[ ]	-0-AG-NC	4.41 (112)	5.47 (139)	≈ 1.59 (2.372)	AG-380-OF	AG-380-BF
E4-42-12-	[ ]	-0-AG-NC	4.92 (125)	5.94 (151)	≈ 1.63 (2.430)	AG-380-OF	AG-380-BF
E4-42-15-	[ ]	-0-AG-NC	5.91 (150)	6.93 (176)	≈ 1.73 (2.569)	AG-380-OF	AG-380-BF
E4-42-17-	[ ]	-0-AG-NC	6.61 (168)	7.64 (194)	≈ 1.78 (2.654)	AG-380-OF	AG-380-BF
E4-42-20-	[ ]	-0-AG-NC	7.87 (200)	8.90 (226)	≈ 1.90 (2.831)	AG-380-OF	AG-380-BF
E4-42-262-	[ ]	-0-AG-NC	10.31 (262)	11.38 (289)	≈ 2.12 (3.159)	AG-380-OF	AG-380-BF

Choose from the radii below for all of the above sizes
Radius (mm)Example: E4-42-15-[150]-0-AG-NC

	125	150	160	175	200	250	250	300
R	4.92 (125)	5.91 (150)	6.30 (160)	6.89 (175)	7.87 (200)	9.84 (250)	11.81 (300)	13.78 (350)
H_2	7.32 (186)	7.32 (186)	7.32 (186)	7.32 (186)	7.32 (186)	7.32 (186)	7.32 (186)	7.32 (186)
D_2	18.70 (475)	22.44 (570)	24.53 (623)	26.38 (670)	30.71 (780)	40.55 (1030)	45.28 (1150)	59.06 (1500)
K_3	44.84 (1139)	52.76 (1340)	58.03 (1474)	63.31 (1608)	73.86 (1876)	94.96 (2412)	111.89 (2747)	139.80 (3551)

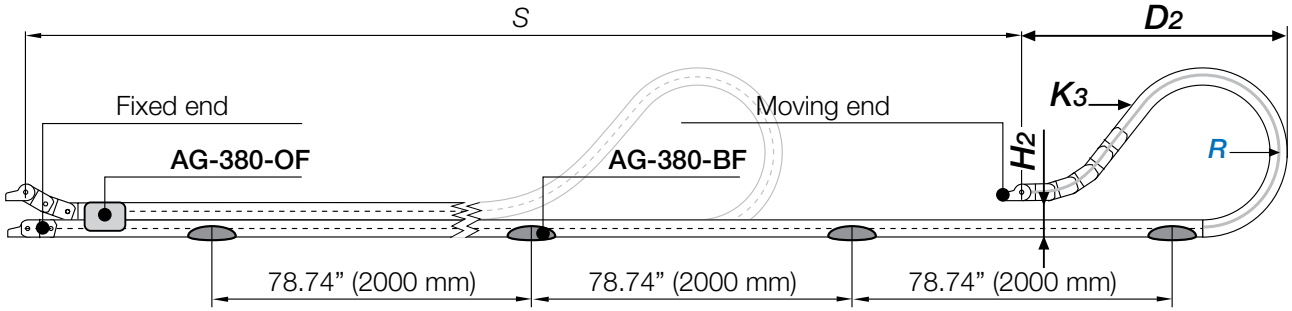
Special solutions for long travel autoglide - Version 01- Self-guiding e-chain systems®
E4-42AG - Installation Dimensions





Gliding applications

Long travel lengths up to 230 ft. (70 m), Fill weights up to 2.69 to 6.45 lbs/ft (4.0 to 9.6 kg/m)
In case of travels less than 32.8 ft. (10m) we recommend an self-supporting e-chain®.
NOTE: Systems of this type should be designed by our system design engineers.
Please contact igus® for assistance with your application.



R	4.92 (125)	5.91 (150)	6.30 (160)	6.89 (175)	7.87 (200)	9.84 (250)	11.81 (300)	13.78 (350)
H_2	7.32 (186)	7.32 (186)	7.32 (186)	7.32 (186)	7.32 (186)	7.32 (186)	7.32 (186)	7.32 (186)
D_2	18.70 (475)	22.44 (570)	24.53 (623)	26.38 (670)	30.71 (780)	40.55 (1030)	45.28 (1150)	59.06 (1500)
K_3	44.84 (1139)	52.76 (1340)	58.03 (1474)	63.31 (1608)	73.86 (1876)	94.96 (2412)	111.89 (2747)	139.80 (3551)

Pitch per link: = 2.64" (67 mm)
Links per ft (m): = 4.57 (15)
For center mount applications:
Chain length = $S + K_3$

Legend

S = Length of travel
R = Bending radius
H_{2} = Trough inner height
H_3 = *Mounting height
D_2 = Overlength - long travels, gliding

Available Accessories

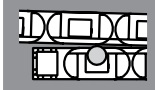
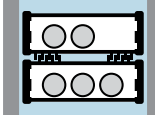
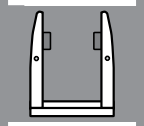
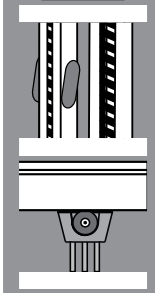


Optimized, cable-friendly interior separation program



Pivoting KMA mounting brackets with attachment points on all sides

PDF: igus.com/e-chain-pdfs
Product information: igus.com/e-chains

Special solutions for long travel
autoglide - Version 01 - Self-guiding e-chain systems®
E4-56AG

Telephone 1-800-521-2747



Series E4-56AG - openable along both radii, crossbars every link - autoglide crossbars along the inner radius

Supplement part number with required radius. Example: E4-56-15-[150]-0-AG-NC
Pitch: 3.58 in. (91 mm) per link links/ft (m) = 3.35 (11)

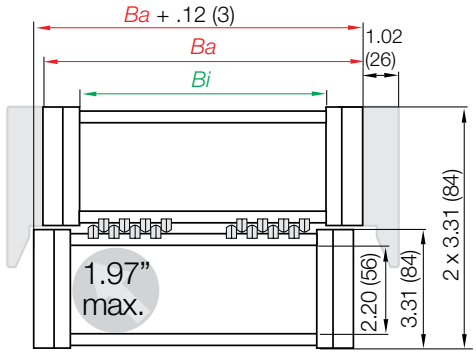
Part Number Crossbars Every Link			*Bi* in. (mm)	*Ba* in. (mm)	Weight lbs/ft (kg/m)	Glide Wing Single part	Floor Guide Single part
E4-56-15-	☐	-0-AG-NC	5.91 (150)	7.24 (184)	≈2.76 (4.109)	AG-400-OF	AG-400-BF
E4-56-21-	☐	-0-AG-NC	8.35 (212)	9.72 (247)	≈3.07 (4.567)	AG-400-OF	AG-400-BF
E4-56-25-	☐	-0-AG-NC	9.84 (250)	11.18 (284)	≈3.29 (4.896)	AG-400-OF	AG-400-BF

Choose from the radii below for all of the above sizes
Radius (mm)Example: E4-56-15-[150]-0-AG-NC

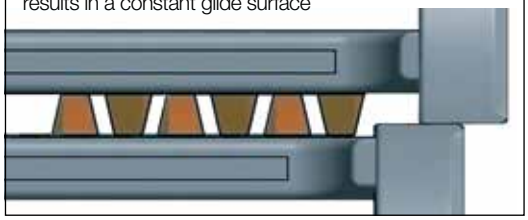
	150	175	200	240	250	300	350	400	450	500
R	5.91 (150)	6.89 (175)	7.87 (200)	9.45 (240)	9.84 (250)	11.81 (300)	13.78 (350)	15.75 (400)	17.72 (450)	19.69 (500)
H_2	10.47 (266)	10.47 (266)	10.47 (266)	10.47 (266)	10.47 (266)	10.47 (266)	10.47 (266)	10.47 (266)	10.47 (266)	10.47 (266)
D_2	17.72 (450)	22.83 (580)	27.95 (710)	35.43 (900)	38.58 (980)	46.46 (1180)	56.69 (1440)	60.24 (1530)	66.93 (1700)	72.83 (1850)
K_3	42.99 (1092)	57.32 (1456)	68.07 (1729)	85.98 (2184)	93.15 (2366)	111.06 (2821)	128.98 (3276)	143.31 (3640)	161.22 (4095)	179.13 (4550)

Internet: igus.com
email: sales@igus.com
QuickSpec: igus.com/quickspec

Special solutions for long travel
autoglide - Version 01 - Self-guiding e-chain systems®
E4-56AG - Installation Dimensions



autoglide principle
Offset operation of upper and lower run,
results in a constant glide surface



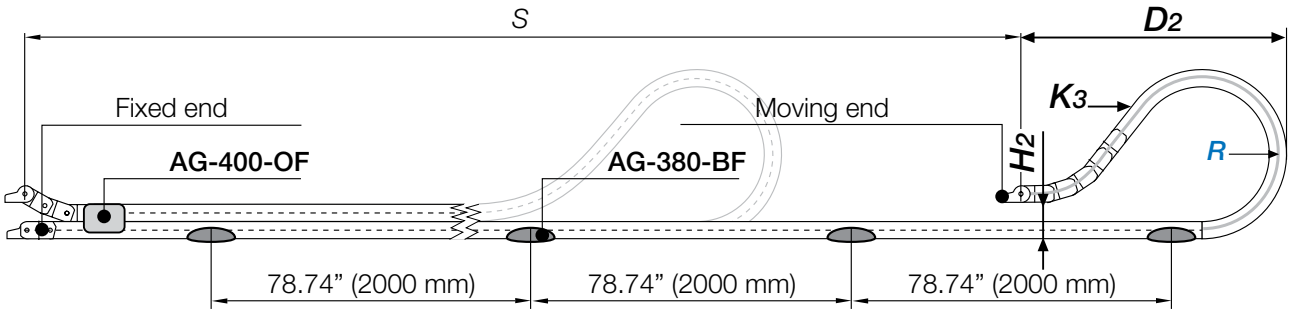
Gliding applications

Long travel lengths up to 262 ft. (80 m), Fill weights up to 4.30 to 8.06 lbs/ft (6.4 to 12.0 kg/m)
In case of travels less than 32.8 ft. (10m) we recommend an self-supporting e-chain®.
NOTE: Systems of this type should be designed by our system design engineers.
Please contact igus® for assistance with your application.

Pitch per link: = 3.58" (91 mm)
Links per ft (m): = 3.35 (11)
For center mount applications:
Chain length = $S + K_3$

Legend

S = Length of travel
R = Bending radius
H_{Ri} = Trough inner height
H_2 = *Mounting height
D_2 = Overlength - long travels, gliding



R	5.91 (150)	6.89 (175)	7.87 (200)	9.45 (240)	9.84 (250)	11.81 (300)	13.78 (350)	15.75 (400)	17.72 (450)	19.69 (500)
H_2	10.47 (266)	10.47 (266)	10.47 (266)	10.47 (266)	10.47 (266)	10.47 (266)	10.47 (266)	10.47 (266)	10.47 (266)	10.47 (266)
D_2	17.72 (450)	22.83 (580)	27.95 (710)	35.43 (900)	38.58 (980)	46.46 (1180)	56.69 (1440)	60.24 (1530)	66.93 (1700)	72.83 (1850)
K_3	42.99 (1092)	57.32 (1456)	68.07 (1729)	85.98 (2184)	93.15 (2366)	111.06 (2821)	128.98 (3276)	143.31 (3640)	161.22 (4095)	179.13 (4550)

Available Accessories

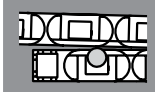
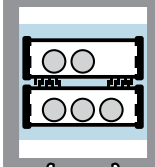


Optimized, cable-friendly interior separation program

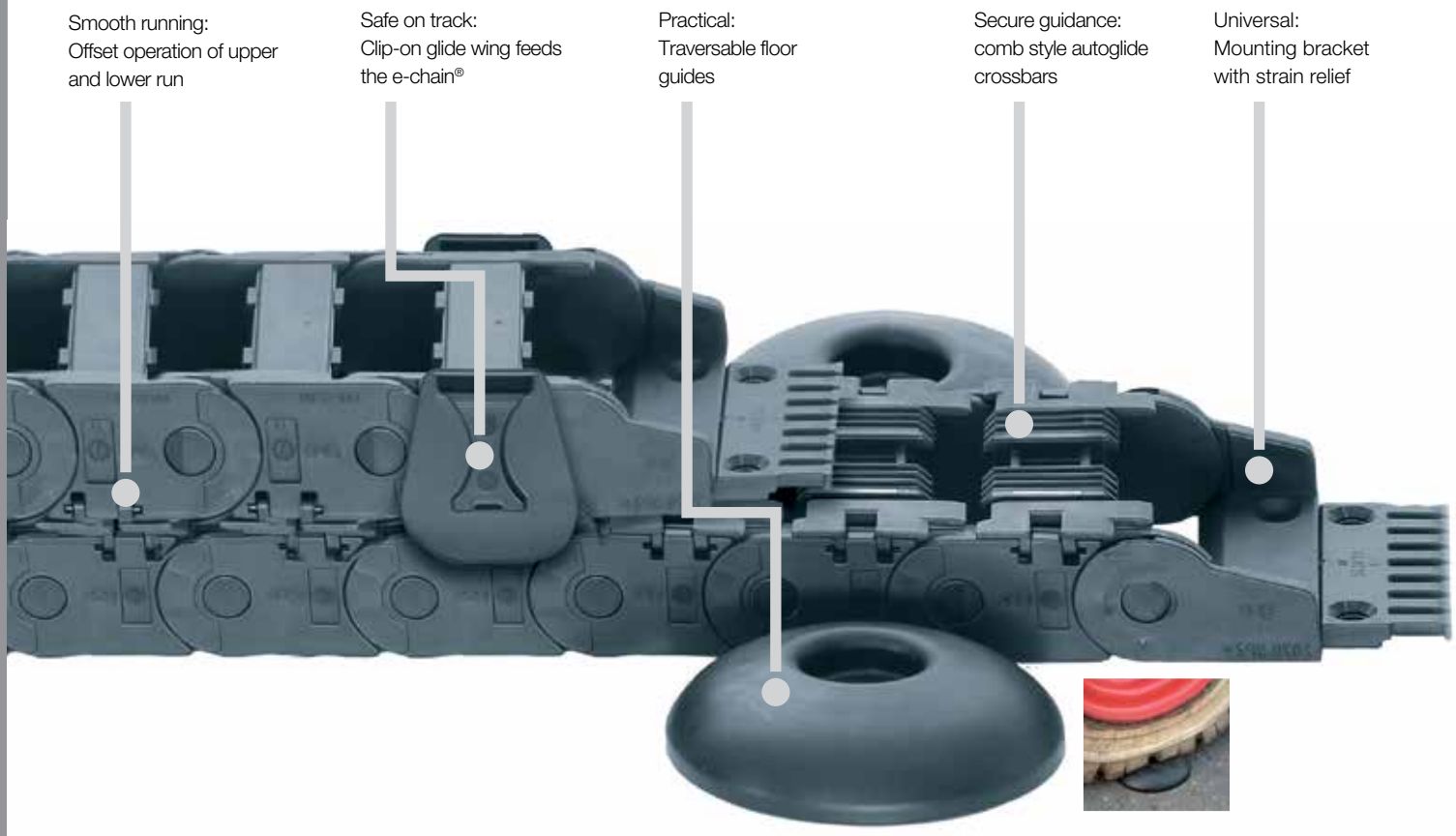


Pivoting KMA mounting brackets with attachment points on all sides

PDF: igus.com/e-chain-pdfs
Product information: igus.com/e-chains


Special solutions for long travel
autoglide - Version 02 - Self-guiding e-chain systems®
Overview



Self-guiding e-chains® for System E2/000 autoglide Version 02

Interfering guide troughs for long travels can be dispensed with when using the autoglide system. Self-guiding e-chains® glide safely on top of each other for up to 230 ft. (70 m). The system has now been extended to the igus® E2/000 and further improved. The autoglide crossbars ensure even longer life. A plug-in glide wing ensures safe e-chain® threading over the first few feet (meters) of travel. The traversable eccentric floor guides are fastened to the subsurface every 6.56 ft. (2 m).

- Travels up to 230 ft. (70 m) without guide trough at speeds up to 6.56 ft/s (2.0 m/s)
- Very compact, no interfering trough in the travel or work area
- Fast installation times for long travels
- Snap-open in the inner radius
- Also for "half tube" fully enclosed in the outer radius
- Clip-on glide wings, safe threading in of the e-chain®
- Drive-over floor guide

Typical industries and applications

- Greenhouses
- Storage and retrieval systems
- Conveyor systems
- Indoor cranes
- Handling
- And many other long travels

Special solutions for long travel
autoglide - Version 02 - Self-guiding e-chain systems®
Technical Data - Order Examples

Part number structure
2400-05AG-100-0

- 2400 – Series / Type
- 05 – Width index
- AG – autoglide
- 100 – Bending radius *R*
- 0 – Standard color black

Order example | Part number structure

Order example for complete e-chain® Series E4-32AG 49.2 ft. (15 m), color black, with mounting brackets and interior separation:

e-chain® 49.2 ft. (15 m)	Please indicate e-chain® length or number of links: 49.2 ft. (15 m) or 347 links	**2400-15AG-100-0**
+ glide wing	2 glide wings are required per e-chain®	**AG-2400-OF**
+ Floor guides	8 pieces (2 pieces every 6.56 ft. (2 m) from the half of travel)	**AG-380-BF**

Order text: 49.2 ft. (15 m) 2400-05AG-100-0 + AG-2400-OF + AG-380-BF + Mounting bracket + Interior separation (optional)
Note: We require one glide wing per e-chain® to the left and right at the position where the upper run first meets the lower run.

Speed max. rolling	max. 6.56 ft/s (2 m/s)
Acceleration max. gliding	max. 3.28 ft/s² (1 m/s²)
Material - permitted temperature	igumid G / -40°F (-40°C) up to +248°F (+120° C)
Flammability Class, igumid G	VDE 0304 IIC UL94 HB

Technical Data

Details of material properties
➤ **Chapter 1**

Special solutions for long travel
autoglide - Version 02 - Self-guiding e-chain systems®
2400AG



Series 2400AG - snap-open along the inner radius - crossbars with molded-on autoglide grooves

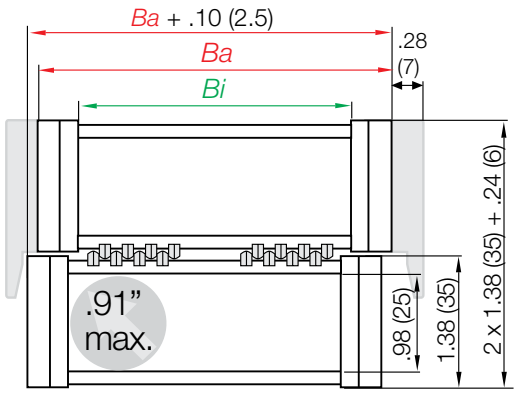
Supplement part number with required radius. Example: 2400-05AG-150-0
Pitch: 1.814 in. (46 mm) per link links/ft (m) = 6.63 (22)

Part Number Crossbars Every Link	*Bi* in. (mm)	*Ba* in. (mm)	Weight lbs/ft (kg/m)	Glide Wing Single part	Floor Guide Single part
2400-05AG-□-0	2.24 (57)	2.87 (73)	≈0.67 (1.00)	AG-2400-OF	AG-380-BF
2400-07AG-□-0	3.03 (77)	3.66 (93)	≈0.74 (1.10)	AG-2400-OF	AG-380-BF

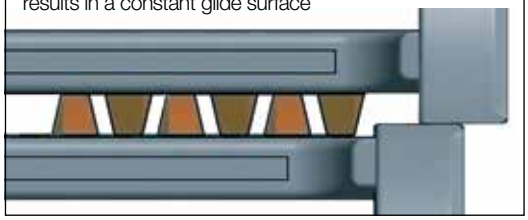
Choose from the radii below for all of the above sizes
Radius (mm) Example: 2400-05AG-150-0

	075	100	125	150	175	200	225	250
R	2.95 (075)	3.94 (100)	4.92 (125)	5.91 (150)	6.89 (175)	7.87 (200)	8.66 (220)	9.84 (250)
H_2	5.91 (150)	3.94 (100)	3.94 (100)	3.94 (100)	3.94 (100)	3.94 (100)	3.94 (100)	3.94 (100)
D_2	6.38 (162)	14.96 (380)	17.32 (440)	23.23 (590)	29.72 (755)	37.40 (950)	40.94 (1040)	44.49 (1130)
K_3	23.54 (598)	36.22 (920)	41.65 (1058)	56.14 (1426)	70.63 (1794)	86.93 (2208)	95.98 (2438)	105.04 (2668)

Special solutions for long travel autoglide - Version 02 - Self-guiding e-chain systems® 2400AG - Installation Dimensions

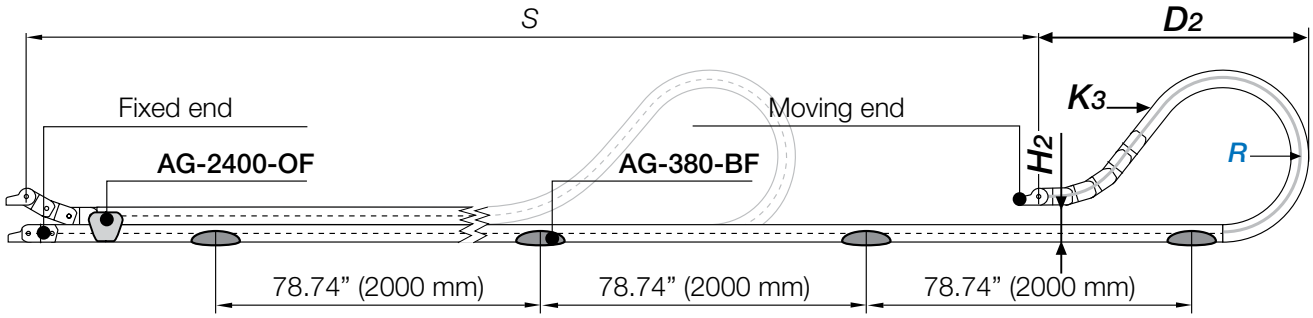


autoglide principle
Offset operation of upper and lower run, results in a constant glide surface



Gliding applications

Long travel lengths up to 131 ft. (40 m), Fill weights up to 1.34 lbs/ft (2.0 kg/m)
In case of travels between 13 ft. (4 m) and 32.8 ft. (10m) we recommend an self-supporting e-chain®.
NOTE: Systems of this type should be designed by our system design engineers.
Please contact igus® for assistance with your application.



R	2.95 (075)	3.94 (100)	4.92 (125)	5.91 (150)	6.89 (175)	7.87 (200)	8.66 (220)	9.84 (250)
H_2	5.91 (150)	3.94 (100)	3.94 (100)	3.94 (100)	3.94 (100)	3.94 (100)	3.94 (100)	3.94 (100)
D_2	6.38 (162)	14.96 (380)	17.32 (440)	23.23 (590)	29.72 (755)	37.40 (950)	40.94 (1040)	44.49 (1130)
K_3	23.54 (598)	36.22 (920)	41.65 (1058)	56.14 (1426)	70.63 (1794)	86.93 (2208)	95.98 (2438)	105.04 (2668)

Legend
S = Length of travel
R = Bending radius
H_{in} = Trough inner height
H_2 = *Mounting height
D_2 = Overlength - long travels, gliding

Pitch per link: = 1.81" (46 mm)
Links per ft (m): = 6.63 (22)
For center mount applications:
Chain length = $S + K_3$

Available Accessories



Optimized, cable-friendly interior separation program



Pivoting mounting brackets for gliding applications



Pivoting KMA mounting brackets with attachment points on all sides

PDF: igus.com/e-chain-pdfs
Product information: igus.com/e-chains

Special solutions for long travel
autoglide - Version 02 - Self-guiding e-chain systems®
2600AG



Series 2600AG - snap-open along the inner radius - crossbars with molded-on autoglide grooves

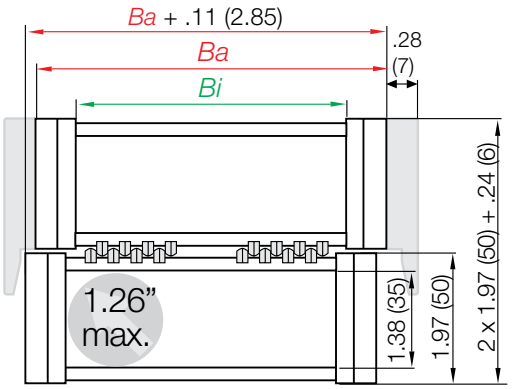
Supplement part number with required radius. Example: 2600-05AG-150-0
Pitch: 2.20 in. (56 mm) per link links/ft (m) = 5.45 (18)

Part Number Crossbars Every Link	*Bi* in. (mm)	*Ba* in. (mm)	Weight lbs/ft (kg/m)	Glide Wing Single part	Floor Guide Single part
2600-05AG-☐-0	1.97 (50)	2.60 (66)	≈ 0.85 (1.27)	AG-2600-OF	AG-380-BF
2600-07AG-☐-0	2.95 (75)	3.58 (91)	≈ 0.94 (1.40)	AG-2600-OF	AG-380-BF

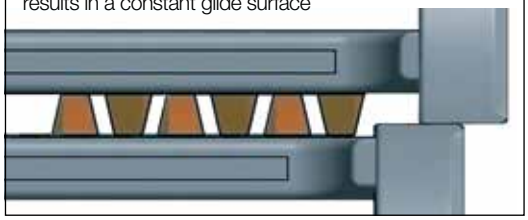
Choose from the radii below for all of the above sizes
Radius (mm) Example: 2600-05AG-150-0

	075	100	125	150	175	200	250
R	2.95 (075)	3.94 (100)	4.92 (125)	5.91 (150)	6.89 (175)	7.87 (200)	9.84 (250)
H_2	5.91 (150)	6.54 (166)	6.54 (166)	6.54 (166)	6.54 (166)	6.54 (166)	6.54 (166)
D_2	5.91 (150)	13.78 (350)	18.70 (475)	19.69 (500)	25.79 (655)	30.31 (770)	37.40 (950)
K_3	24.25 (616)	33.07 (840)	44.09 (1120)	48.50 (1232)	61.73 (1568)	72.76 (1848)	90.39 (2296)

Special solutions for long travel autoglide - Version 02 - Self-guiding e-chain systems® 2600AG - Installation Dimensions

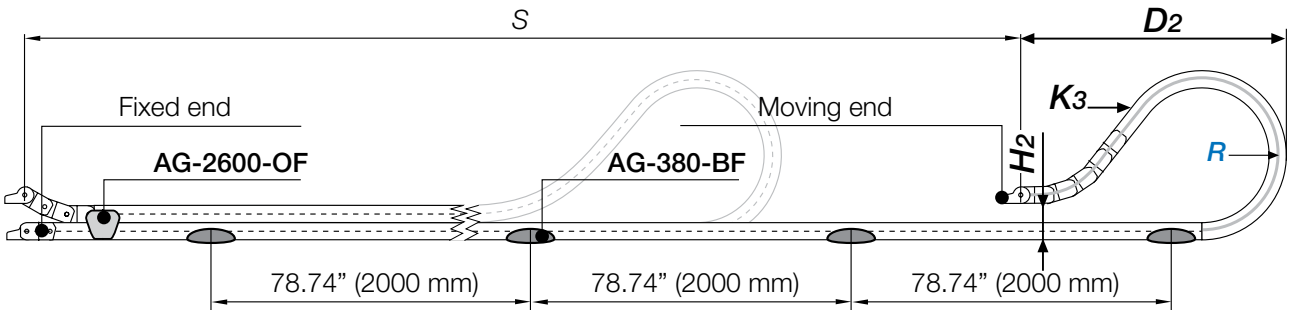


autoglide principle
Offset operation of upper and lower run, results in a constant glide surface



Gliding applications

Long travel lengths up to 197 ft. (60 m), Fill weights up to 1.68 lbs/ft (2.5 kg/m)
In case of travels between 16.4 ft. (5 m) and 32.8 ft. (10m) we recommend an self-supporting e-chain®.
NOTE: Systems of this type should be designed by our system design engineers.
Please contact igus® for assistance with your application.



R	2.95 (075)	3.94 (100)	4.92 (125)	5.91 (150)	6.89 (175)	7.87 (200)	9.84 (250)
H_2	5.91 (150)	6.54 (166)	6.54 (166)	6.54 (166)	6.54 (166)	6.54 (166)	6.54 (166)
D_2	5.91 (150)	13.78 (350)	18.70 (475)	19.69 (500)	25.79 (655)	30.31 (770)	37.40 (950)
K_3	24.25 (616)	33.07 (840)	44.09 (1120)	48.50 (1232)	61.73 (1568)	72.76 (1848)	90.39 (2296)

Legend
S = Length of travel
R = Bending radius
H_{in} = Trough inner height
H_2 = *Mounting height
D_2 = Overlength - long travels, gliding

Pitch per link: = 2.20” (56 mm)
Links per ft (m): = 5.49 (18)
For center mount applications:
Chain length = $S + K_3$

Available Accessories



Optimized, cable-friendly interior separation program



Pivoting mounting brackets for gliding applications



Pivoting KMA mounting brackets with attachment points on all sides

PDF: igus.com/e-chain-pdfs
Product information: igus.com/e-chains

Special solutions for long travel
autoglide - Version 02 - Self-guiding e-chain systems®
3400AG



Series 3400AG - snap-open along the inner radius - crossbars with molded-on autoglide grooves

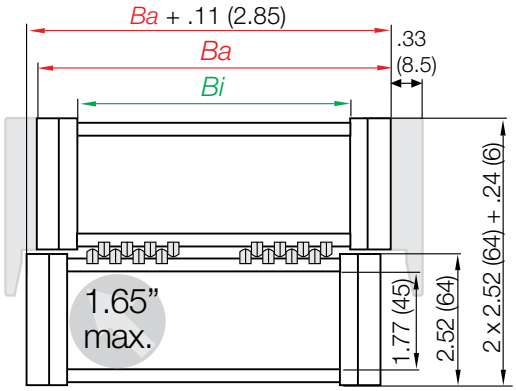
Supplement part number with required radius. Example: 3400-100AG-150-0
Pitch: 2.64 in. (67 mm) per link links/ft (m) = 4.55 (15)

Part Number Crossbars Every Link	*Bi* in. (mm)	*Ba* in. (mm)	Weight lbs/ft (kg/m)	Glide Wing Single part	Floor Guide Single part
3400-05AG-□-0	2.95 (75)	3.74 (95)	≈1.27 (1.89)	AG-3400-OF	AG-380-BF
3400-07AG-□-0	3.94 (100)	4.72 (120)	≈1.37 (2.04)	AG-3400-OF	AG-380-BF

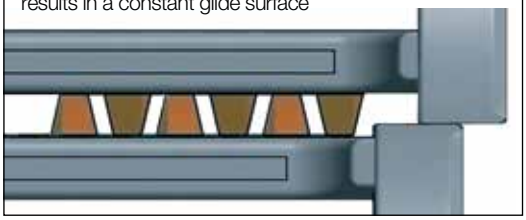
Choose from the radii below for all of the above sizes
Radius (mm) Example: 3400-05AG-150-0

	100	125	150	200	250	300
R	3.94 (100)	4.92 (125)	5.91 (150)	7.87 (200)	9.84 (250)	11.81 (300)
H_2	7.87 (200)	7.32 (186)	7.32 (186)	7.32 (186)	7.32 (186)	7.32 (186)
D_2	9.17 (233)	18.70 (475)	22.44 (570)	30.71 (780)	39.76 (1010)	45.28 (1150)
K_3	34.29 (871)	44.84 (1139)	55.39 (1407)	73.86 (1876)	94.96 (2412)	108.15 (2747)

Special solutions for long travel autoglide - Version 02 - Self-guiding e-chain systems® 3400AG - Installation Dimensions

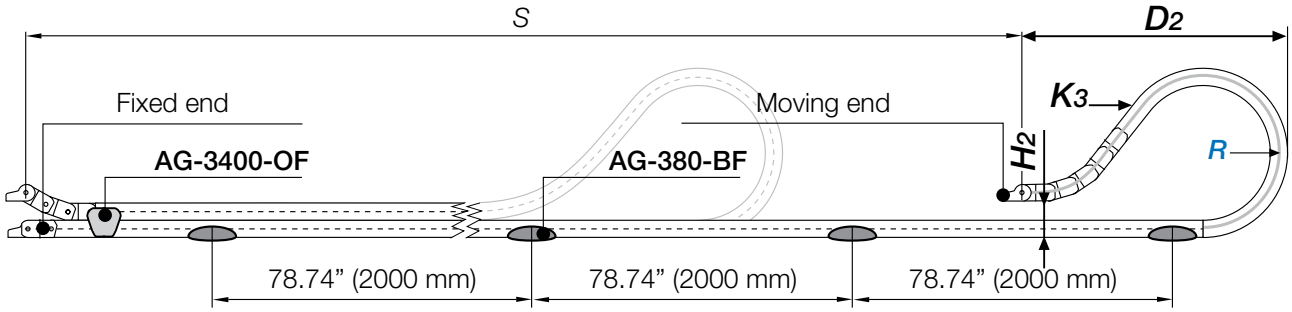


autoglide principle
Offset operation of upper and lower run, results in a constant glide surface



Gliding applications

Long travel lengths up to 230 ft. (70 m), Fill weights up to 3.36 to 5.38 lbs/ft (5.0 to 8.0 kg/m)
In case of travels between 19.7 ft. (6 m) and 32.8 ft. (10m) we recommend an self-supporting e-chain®.
NOTE: Systems of this type should be designed by our system design engineers.
Please contact igus® for assistance with your application.



R	3.94 (100)	4.92 (125)	5.91 (150)	7.87 (200)	9.84 (250)	11.81 (300)
H_2	7.87 (200)	7.32 (186)	7.32 (186)	7.32 (186)	7.32 (186)	7.32 (186)
D_2	9.17 (233)	18.70 (475)	22.44 (570)	30.71 (780)	39.76 (1010)	45.28 (1150)
K_3	34.29 (871)	44.84 (1139)	55.39 (1407)	73.86 (1876)	94.96 (2412)	108.15 (2747)

Legend
S = Length of travel
R = Bending radius
H_{ki} = Trough inner height
H_2 = *Mounting height
D_2 = Overlength - long travels, gliding

Pitch per link: = 2.64" (67 mm)
Links per ft (m): = 4.55 (15)
For center mount applications:
Chain length = $S + K_3$

Available Accessories



Optimized, cable-friendly interior separation program



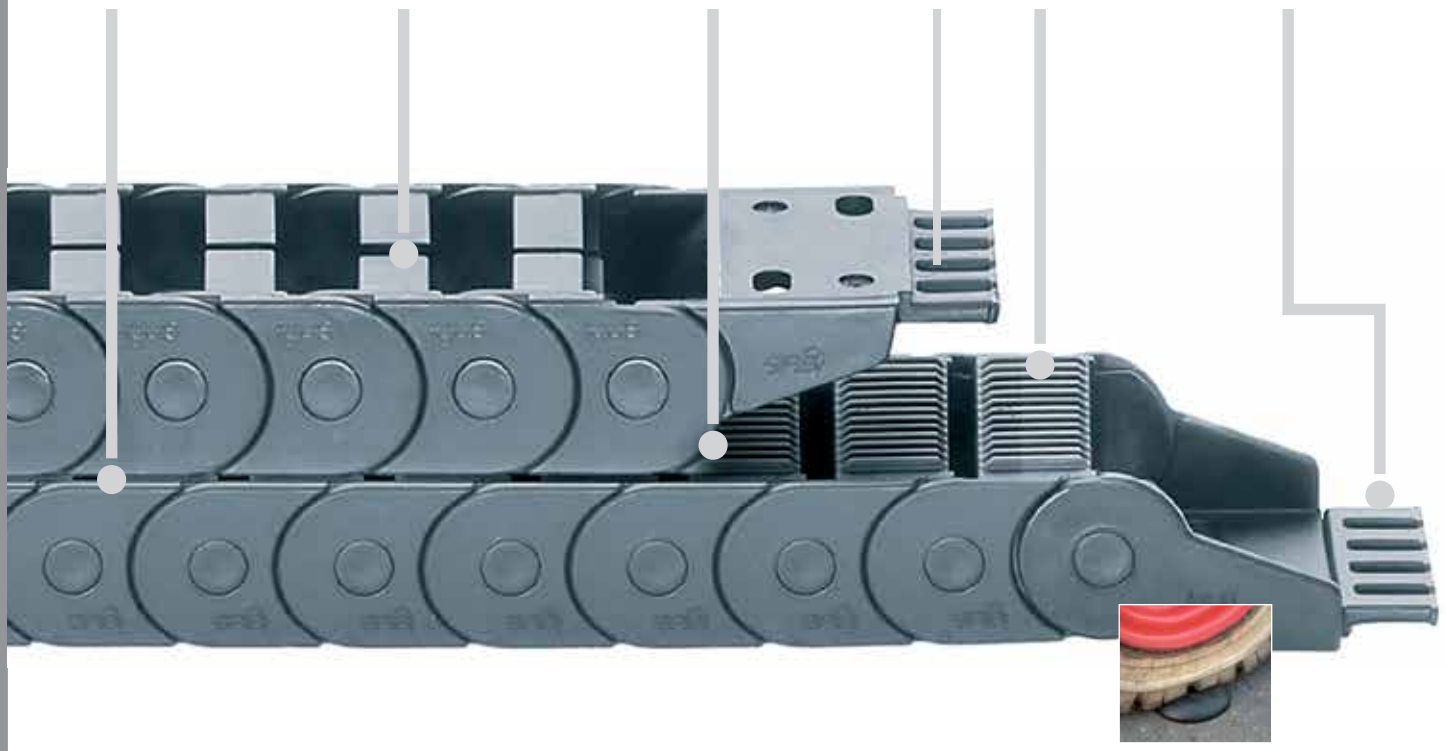
Pivoting mounting brackets for gliding applications



Pivoting KMA mounting brackets with attachment points on all sides

PDF: igus.com/e-chain-pdfs
Product information: igus.com/e-chains

Special solutions for long travel
autoglide - Version 03 - Self-guiding e-chain systems®
Overview



E-Z Chain along the outer radius, injection molded autoglide crossbars along the inner radius - Version 03

Version 03 is the quickly filled and cost-effective E-Z-Chain® with injection-molded autoglide crossbars in the inner radius. The crossbars are molded directly on the e-chain® link and are available in two sizes. The reduced installation time is one of the main features of the e-chains®. The elastic and rugged material igumid NB offers yet more reasons for application: Optimum elasticity, UL94-V2 classification and excellent suitability for cleanrooms. Their one-piece design makes E-Z Chain® attractive especially with regard to price.

- Doubly cost-effective. Elimination of guide troughs and economical, one-piece e-chain®
- Very quick assembly time - "easy"-design even on long travels
- "Easy"-design: Easy to fill - cables and hoses can be inserted without opening
- Single part design
- Small installation width, quiet operation
- UL94-V2 classifications

Typical industries and applications

- Industrial vehicles
- Long travels with easier filling
- Simple outdoor applications

Special solutions for long travel
autoglide - Version 03 - Self-guiding e-chain systems®
Technical Data - Order Examples

Part number structure
EA25-050-100-0-

- Standard color black
- Bending radius *R*
- Width index
- Series / Type



Simply push in the cables in the e-chain with your thumb - and it's ready!
To remove simply pull out the cables from the e-chain®

Speed max. rolling	max. 3.28 ft/s (1 m/s)
Acceleration max. gliding	max. 3.28 ft/s² (1 m/s²)
Material - permitted temperature	igumid NB / -40°F (-40°C) up to +176°F (+80° C)
Flammability Class, igumid NB	VDE 0304 IIC UL94 HB

Technical Data

Details of material properties
➤ **Chapter 1**

Special solutions for long travel
autoglide - Version 03 - Self-guiding e-chain systems®
EA16



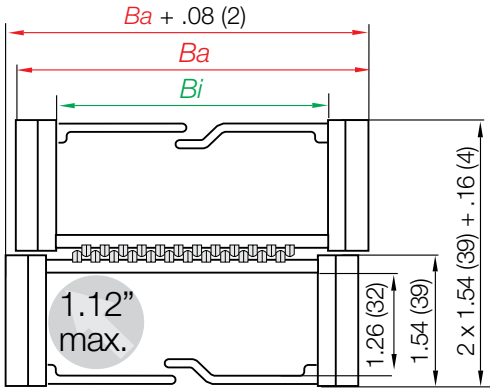
Series EA16 - Simply press cables in (outer radius) - autoglide crossbars (inner radius)

Supplement part number with required radius. Example: EA16-4-065-0
Pitch: 1.20 in. (30.5 mm) per link links/ft (m) = 10.06 (33)

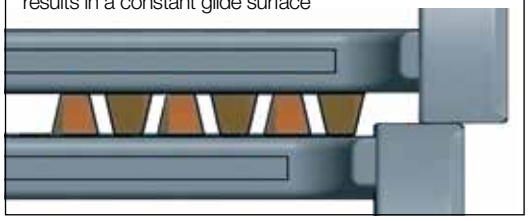
Part Number		*Bi* in. (mm)	*Ba* in. (mm)
EA16-4-	-0	1.89 (48)	2.36 (60)

Choose from the radii below for the above size
Radius (mm) Example: EA16-4-065-0

	065	075	100
R	2.56 (065)	1.89 (075)	3.94 (100)
H_2	3.94 (100)	3.94 (100)	3.94 (100)
D_2	12.80 (325)	13.98 (355)	22.44 (570)
K_3	27.64 (702)	30.04 (763)	49.25 (1251)



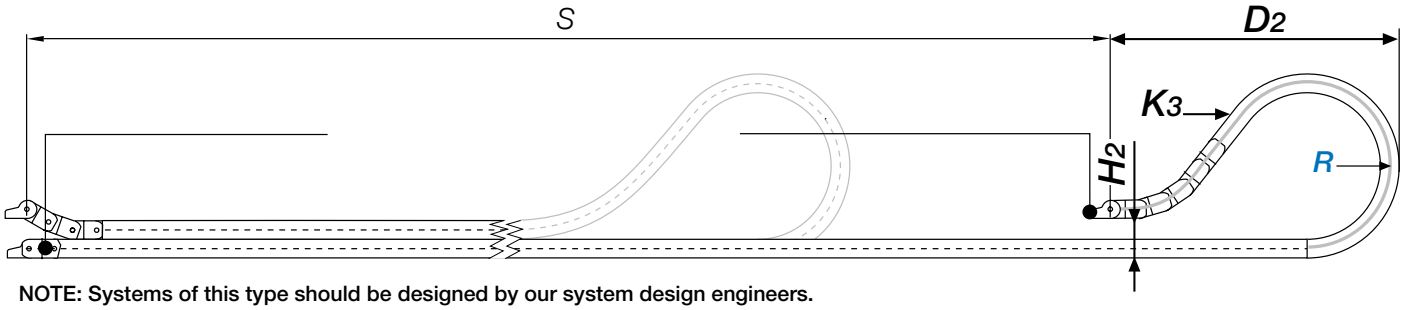
autoglide principle
Offset operation of upper and lower run, results in a constant glide surface



Pitch = 1.20 (30.5 mm)
Links per ft (m) = 10.06 (33)
Chain length = S + K_3

Gliding applications

Long travel lengths up to 65.6 ft. (20 m), Fill weights up to 0.27 lbs/ft (0.4 kg/m)



NOTE: Systems of this type should be designed by our system design engineers.
Please contact igus® for assistance with your application.

R	2.56 (065)	1.89 (075)	3.94 (100)
H_2	3.94 (100)	3.94 (100)	3.94 (100)
D_2	12.80 (325)	13.98 (355)	22.44 (570)
K_3	27.64 (702)	30.04 (763)	49.25 (1251)

Special solutions for long travel
autoglide - Version 03 - Self-guiding e-chain systems®
EA25



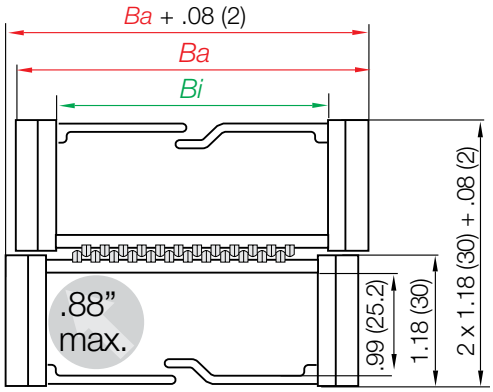
Series EA25 - Simply press cables in (outer radius) - autoglide crossbars (inner radius)

Supplement part number with required radius. Example: EA25-050-100-0
Pitch: .98 in. (25 mm) per link links/ft (m) = 12.24 (40)

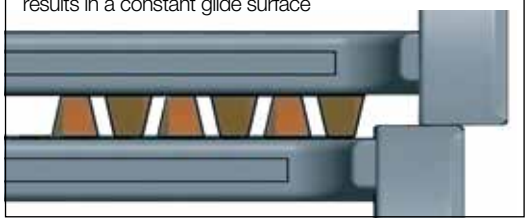
Part Number	*Bi* in. (mm)	*Ba* in. (mm)
EA25-050-□-0	1.97 (50)	2.36 (60)

Choose from the radii below for the above size
Radius (mm) Example: EA25-050-100-0

	075	100
R	1.89 (075)	3.94 (100)
H_2	3.94 (100)	3.94 (100)
D_2	13.00 (330)	13.00 (330)
K_3	29.53 (750)	44.29 (1125)



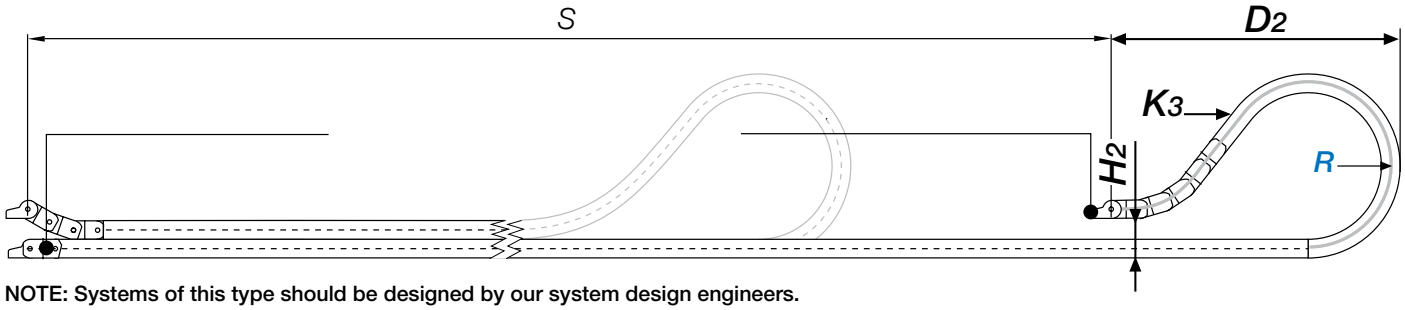
autoglide principle
Offset operation of upper and lower run, results in a constant glide surface



Pitch = .98 (25 mm)
Links per ft (m) = 12.24 (40)
Chain length = S + K_3

Gliding applications

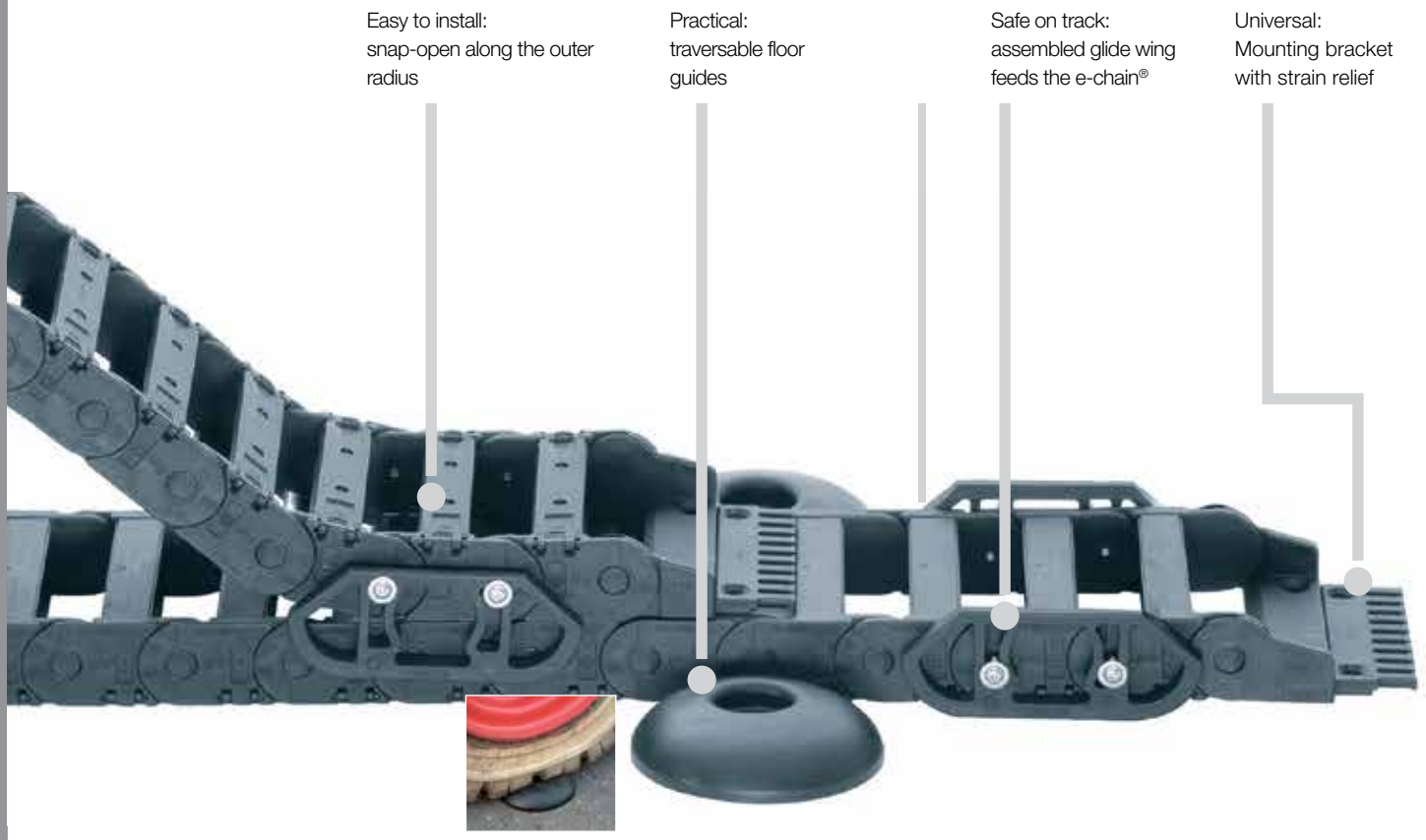
Long travel lengths up to 65.6 ft. (20 m), Fill weights up to 0.27 lbs/ft (0.4 kg/m)



NOTE: Systems of this type should be designed by our system design engineers.
Please contact igus® for assistance with your application.

R	1.89 (075)	3.94 (100)
H_2	3.94 (100)	3.94 (100)
D_2	13.00 (330)	13.00 (330)
K_3	29.53 (750)	44.29 (1125)

Special solutions for long travel
autoglide - Version 04 - Self-guiding e-chain systems®
Overview



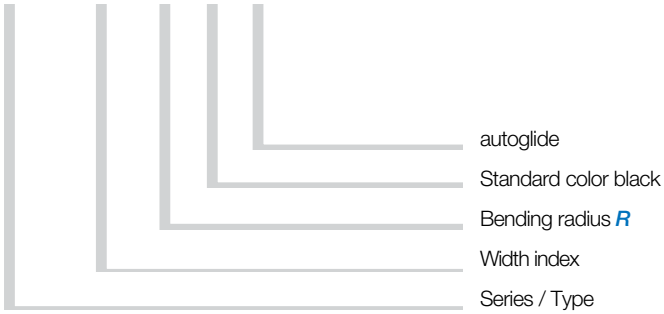
Special glide shoes provide safe guiding of the E2/000 - autoglide - Version 04

In this version, special plastic glide shoes are side-mounted on the e-chain® link every 39.4 to 78.7 inches (1,000 to 2,000 mm). The function of these gliding shoes resembles the leeboard used on sailboats. Some of these glide shoes are conceived in such a way that in contact they pivot upwards and enable the continuation of the travel. Similarly the glide shoes in autoglide go up and down, each according to its position as lower run or upper run of the e-chain®. They provide the precise lateral guidance and a smooth glide of the e-chain®. The glide shoes are assembled every 24th e-chain® link from the moving end. Up to 32.8 ft. (10 m) length without floor guides possible in the series 2400/2450/2480/2500.

Typical industries and applications

- Industrial vehicles
- Long travels with easier filling
- Simple outdoor applications

Part number structure
2500-05-150-0-AG



Order example | Part number structure

Order example for complete e-chain® Series 2500, color black, with mounting brackets and interior separation:

e-chain® 32.8 ft. (10 m)	Please indicate e-chain® length or number of links: 32.8 ft. (10 m) or 249 links (Number of links in the assembly must be deducted	2500-05-150-0
e-chain® + glide wing	Assembly consists of 4 e-chain® links and 2 glide wings	2500-05-1500-AG
+ Floor guides	8 pieces (2 pieces every 6.56 ft. (2 m) from the half of travel)	AG-380-BF

Order text: 249 links 2500-05-150-0 + 10 units 2500-05-150-AG + Mounting bracket + Interior separation (optional)
Note: Lateral glide wings are assembled on every 24th e-chain® link.

Speed max. rolling	max. 1.64 ft/s (0.5 m/s)
Acceleration max. gliding	max. 3.28 ft/s² (1 m/s²)
Material - permitted temperature	igumid G / -40°F (-40°C) up to +248°F (+120° C)
Flammability Class, igumid G	VDE 0304 IIC UL94 HB

Technical Data

Details of material properties
➤ **Chapter 1**

Special solutions for long travel
autoglide - Version 04 - Self-guiding e-chain systems®
2400/2450/2480/2500



Series 2400 shown

Series 2400 - snap-open along the inner radius
Series 2450 - snap-open along the outer radius - standard
Series 2480 - snap-open along the inner radius, enclosed along the outer radius
Series 2500 - snap-open along the inner radius, fully enclosed

Supplement part number with required radius. Example: 2500-05-[150]-0-AG
Pitch: 1.81 in. (46 mm) per link links/ft (m) = 6.63 (22)

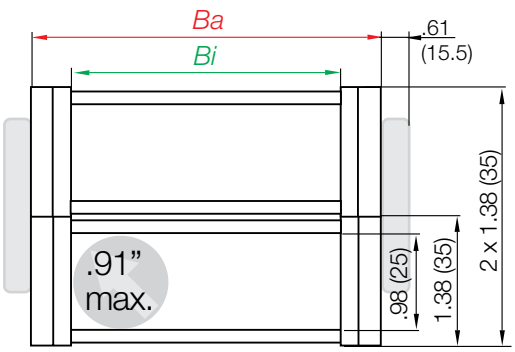
Part Number e-chain® / E-Tube			*Bi* in. (mm)	*Ba* in. (mm)	Floor Guide Single part
2400/2450/2480/2500-05-	[ ]	-0-AG	2.24 (57)	2.87 (73)	AG-380-BF
2400/2450/2480/2500-07-	[ ]	-0-AG	3.03 (77)	3.66 (93)	AG-380-BF
2400/2450/2480/2500-09-	[ ]	-0-AG	3.50 (89)	4.13 (105)	AG-380-BF
2400/2450/2480/2500-10-	[ ]	-0-AG	4.06 (103)	4.69 (119)	AG-380-BF
2400/2450/2480/2500-12-	[ ]	-0-AG	4.92 (125)	5.55 (141)	AG-380-BF

Choose from the radii below for all of the above sizes
Radius (mm) Example: 2500-05-[150]-0-AG

	055*	075	100	125	150	175	200	225	250
R	2.17 (55)	2.95 (75)	3.94 (100)	4.92 (125)	5.91 (150)	6.89 (175)	7.87 (200)	8.86 (225)	9.84 (250)
H_2	4.33 (110)	5.91 (150)	3.94 (100)	3.94 (100)	3.94 (100)	3.94 (100)	3.94 (100)	3.94 (100)	3.94 (100)
D_2^{+25}	5.59 (142)	6.38 (162)	14.96 (380)	17.32 (440)	23.23 (590)	29.72 (755)	37.40 (950)	40.94 (1040)	44.49 (1130)
K_3	19.92 (506)	23.54 (598)	36.22 (920)	41.65 (1058)	56.14 (1426)	70.63 (1794)	86.93 (2208)	95.98 (2438)	105.04 (2668)

*This radius for Series 2450/2480 available upon request. Please consult igus® for delivery times.

Special solutions for long travel autoglide - Version 04 - Self-guiding e-chain systems® 2400/2450/2480/2500 - Installation Dimensions



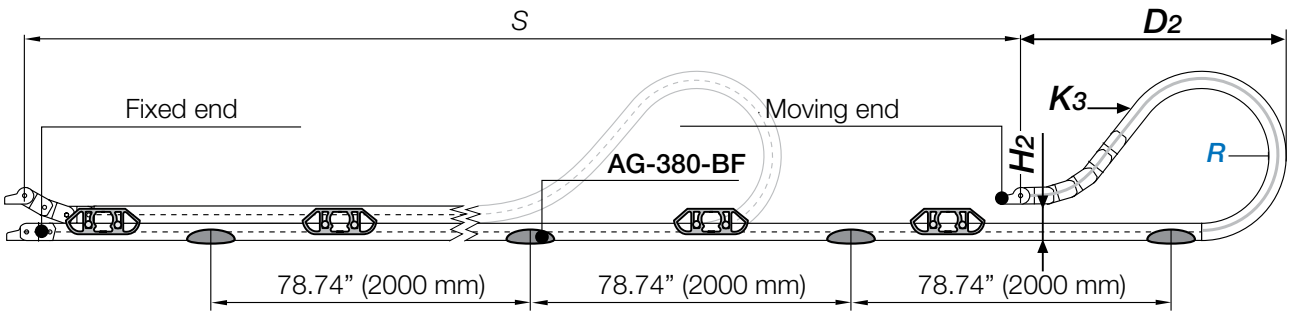
Legend

S = Length of travel
R = Bending radius
H_{in} = Trough inner height
H_2 = *Mounting height
D_2 = Overlength - long travels, gliding

Gliding applications

Long travel lengths up to 65.6 ft. (20 m), Fill weights up to 1.08 lbs/ft (1.6 kg/m)
In case of travels less than 9.84 ft. (3 m) we recommend an self-supporting e-chain®.
Note: Lateral glide wings are assembled on every 24th e-chain® link.

Pitch per link: = 1.81" (46 mm)
Links per ft (m): = 6.63 (22)
For center mount applications:
Chain length = $S + K_3$



R	2.17 (55)	2.95 (75)	3.94 (100)	4.92 (125)	5.91 (150)	6.89 (175)	7.87 (200)	8.86 (225)	9.84 (250)
H_2	4.33 (110)	5.91 (150)	3.94 (100)	3.94 (100)	3.94 (100)	3.94 (100)	3.94 (100)	3.94 (100)	3.94 (100)
D_2^{+25}	5.59 (142)	6.38 (162)	14.96 (380)	17.32 (440)	23.23 (590)	29.72 (755)	37.40 (950)	40.94 (1040)	44.49 (1130)
K_3	19.92 (506)	23.54 (598)	36.22 (920)	41.65 (1058)	56.14 (1426)	70.63 (1794)	86.93 (2208)	95.98 (2438)	105.04 (2668)

***This radius for Series 2450/2480 available upon request. Please consult igus® for delivery times.**

Available Accessories



Optimized, cable-friendly interior separation program



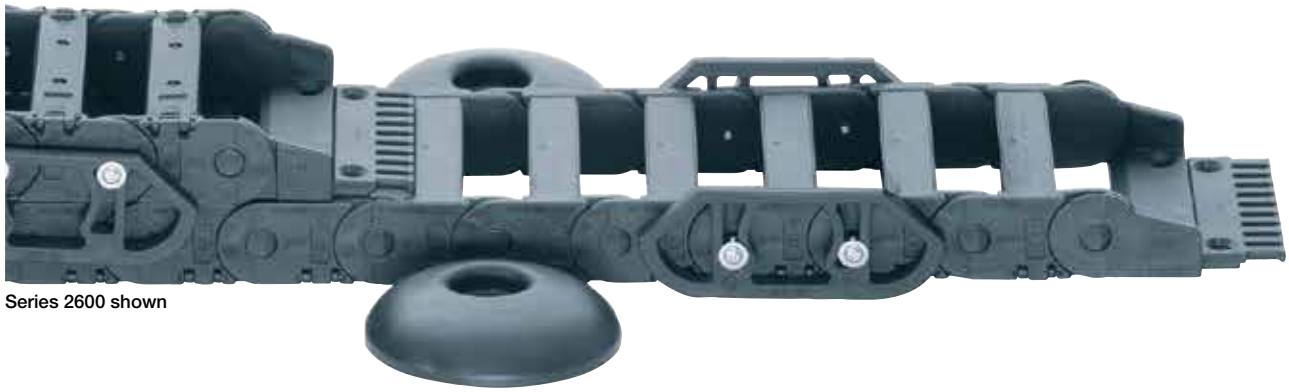
Pivoting mounting brackets for gliding applications



Pivoting KMA mounting brackets with attachment points on all sides

PDF: igus.com/e-chain-pdfs
Product information: igus.com/e-chains

Special solutions for long travel
autoglide - Version 04 - Self-guiding e-chain systems®
2600/2650/2680/2700



Series 2600 shown

Series 2600 - snap-open along the inner radius
Series 2650 - snap-open along the outer radius - standard
Series 2680 - snap-open along the inner radius, enclosed along the outer radius
Series 2700 - snap-open along the inner radius, fully enclosed

Supplement part number with required radius. Example: 2600-05-[150]-0-AG
Pitch: 2.20 in. (56 mm) per link links/ft (m) = 5.45 (18)

Part Number e-chain® / E-Tube		*Bi* in. (mm)	*Ba* in. (mm)	Floor Guide Single part
2600/2650/2680/2700-05-	-0-AG	1.97 (50)	2.60 (66)	AG-380-BF
2600/2650/2680/2700-06-	-0-AG	2.56 (65)	3.19 (81)	AG-380-BF
2600/2650/2680/2700-07-	-0-AG	2.95 (75)	3.58 (91)	AG-380-BF
2600/2650/2680/2700-09-	-0-AG	3.54 (90)	4.17 (106)	AG-380-BF
2600/2650/2680/2700-10-	-0-AG	3.94 (100)	4.57 (116)	AG-380-BF
2600/2650/2680/2700-12-	-0-AG	4.92 (125)	5.55 (141)	AG-380-BF
2600/2650/2680/2700-15-	-0-AG	5.91 (150)	6.54 (166)	AG-380-BF
2600/2650/2680/2700-17-	-0-AG	6.89 (175)	7.64 (194)	AG-380-BF

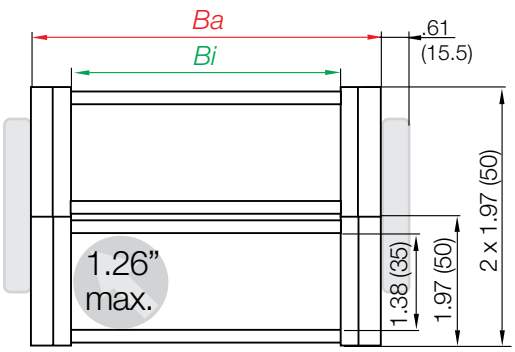
Choose from the radii below for all of the above sizes
Radius (mm) Example: 2600-05-[150]-0-AG

	075*	100	125	150	175	200	250		
R	2.95 (75)	3.94 (100)	4.92 (125)	5.91 (150)	6.89 (175)	7.87 (200)	9.84 (250)		
H_2	5.91 (150)	6.54 (166)	6.54 (166)	6.54 (166)	6.54 (166)	6.54 (166)	6.54 (166)		
D_2^{+25}	5.91 (150)	13.78 (350)	18.70 (475)	19.69 (500)	25.79 (655)	30.31 (770)	37.40 (950)		
K_3	24.33 (616)	33.07 (840)	44.09 (1120)	48.50 (1232)	61.73 (1568)	72.76 (1848)	90.39 (2296)		

*This radius for Series 2650/2680 available upon request. Please consult igus® for delivery times.

Telephone 1-800-521-2747
Internet: igus.com
email: sales@igus.com
QuickSpec: igus.com/quickspec

Special solutions for long travel autoglide - Version 04 - Self-guiding e-chain systems® 2600/2650/2680/2700 - Installation Dimensions



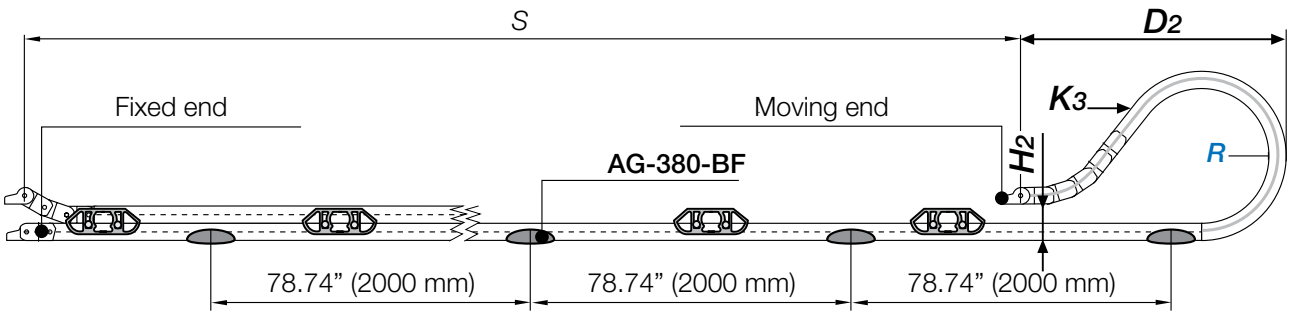
Legend

S = Length of travel
R = Bending radius
H_{in} = Trough inner height
H_2 = *Mounting height
D_2 = Overlength - long travels, gliding

Gliding applications

Long travel lengths up to 98.4 ft. (30 m), Fill weights up to 1.34 lbs/ft (2.0 kg/m)
In case of travels less than 9.84 ft. (3 m) we recommend an self-supporting e-chain®.
Note: Lateral glide wings are assembled on every 24th e-chain® link.

Pitch per link: = 2.20" (56 mm)
Links per ft (m): = 5.45 (18)
For center mount applications:
Chain length = $S + K_3$



R	2.95 (75)	3.94 (100)	4.92 (125)	5.91 (150)	6.89 (175)	7.87 (200)	9.84 (250)
H_2	5.91 (150)	6.54 (166)	6.54 (166)	6.54 (166)	6.54 (166)	6.54 (166)	6.54 (166)
D_2^{+25}	5.91 (150)	13.78 (350)	18.70 (475)	19.69 (500)	25.79 (655)	30.31 (770)	37.40 (950)
K_3	24.33 (616)	33.07 (840)	44.09 (1120)	48.50 (1232)	61.73 (1568)	72.76 (1848)	90.39 (2296)

***This radius for Series 2650/2680 available upon request. Please consult igus® for delivery times.**

Available Accessories



Optimized, cable-friendly interior separation program

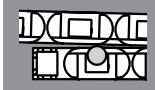
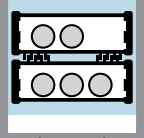
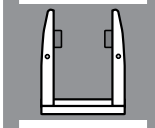
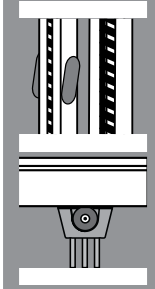


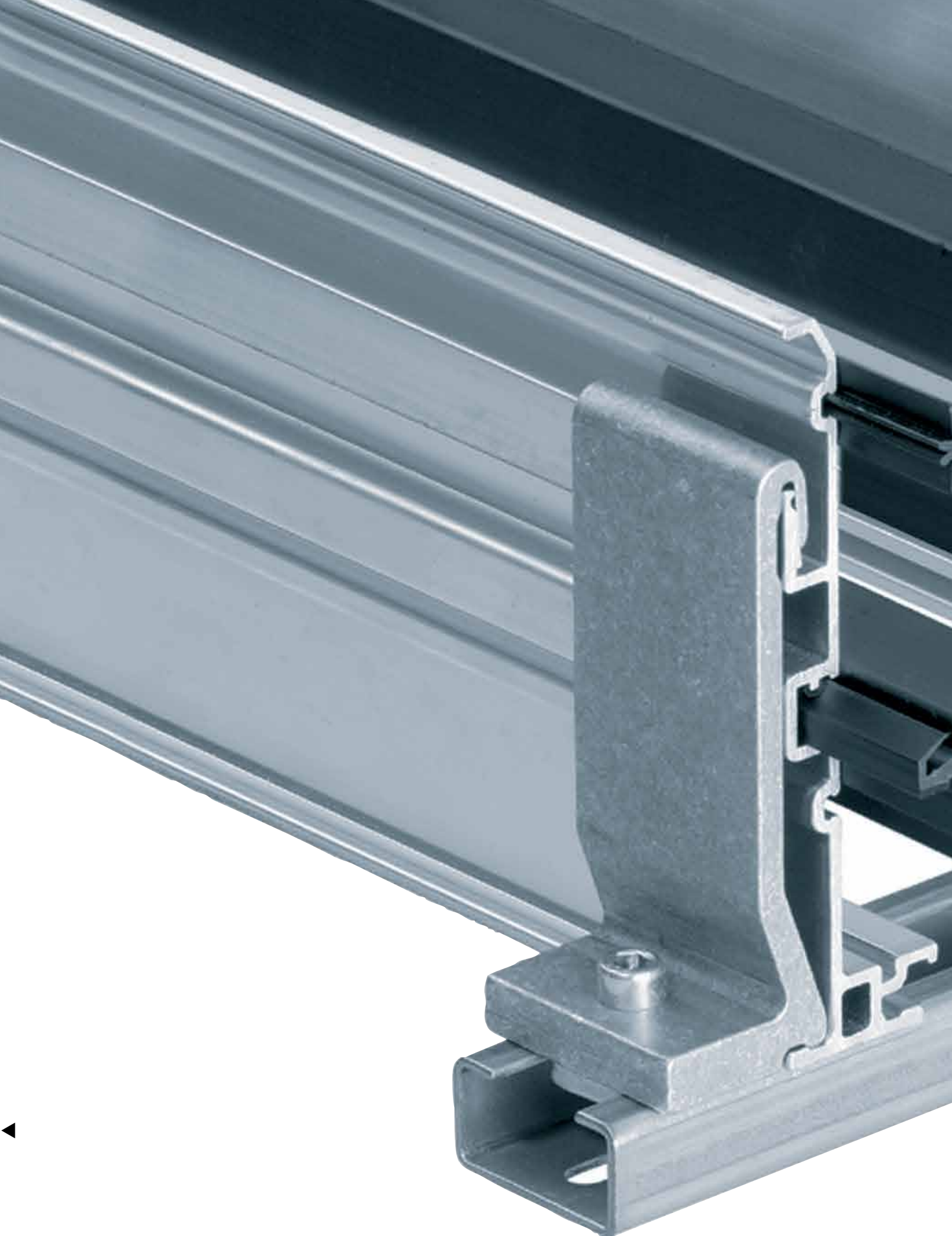
Pivoting mounting brackets for gliding applications

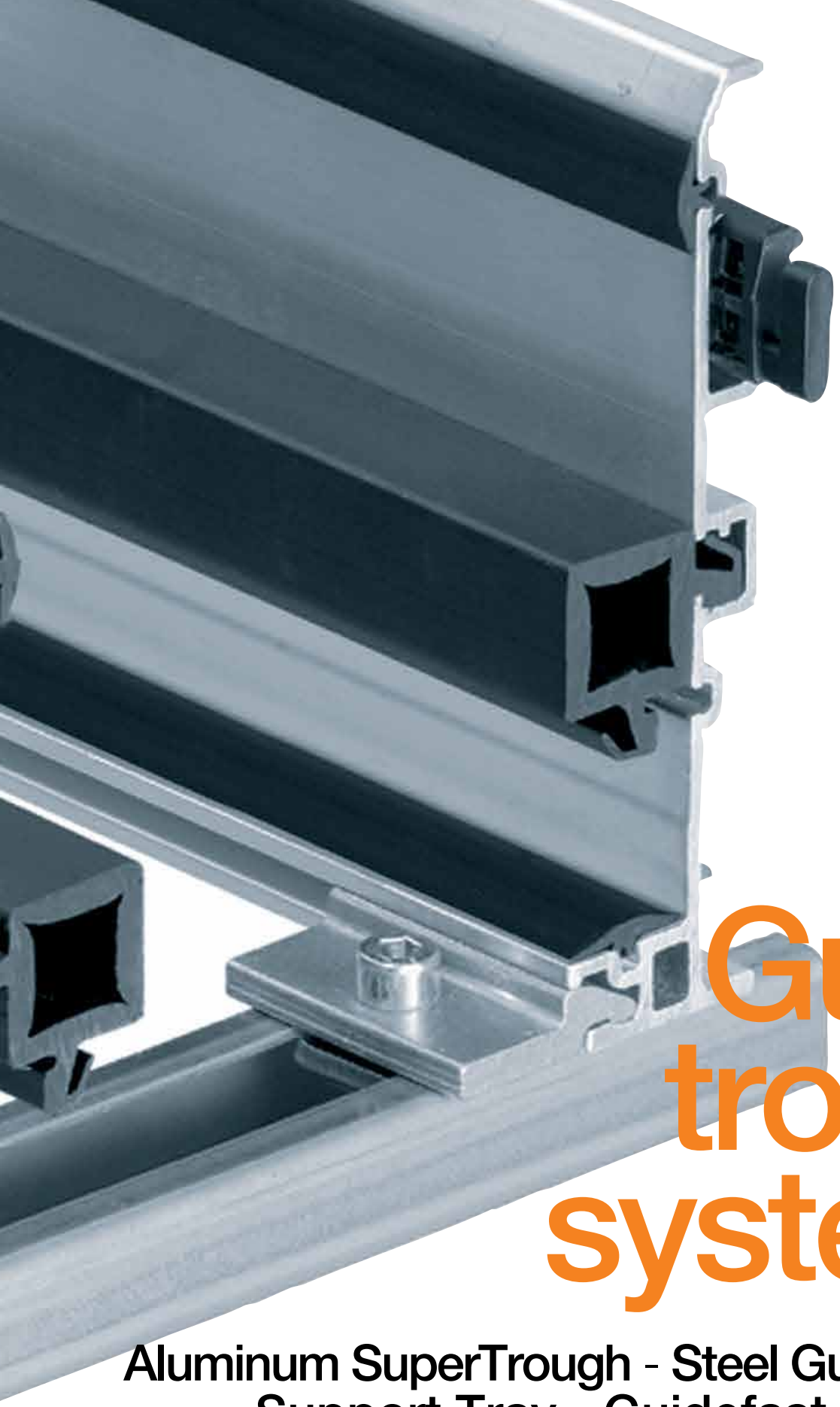


Pivoting KMA mounting brackets with attachment points on all sides

PDF: igus.com/e-chain-pdfs
Product information: igus.com/e-chains

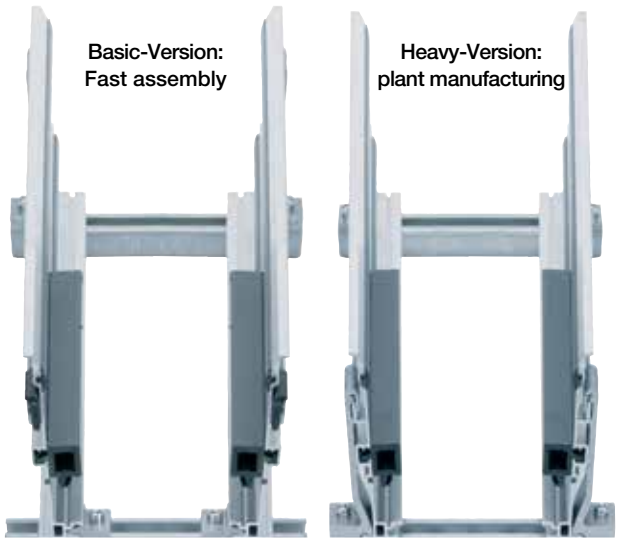




Guide trough systems

Aluminum SuperTrough - Steel Guide Trough Support Tray - Guidefast - Guidelite

Guide Troughs - Aluminum and Steel



Aluminum SuperTrough - The igus® standard guide trough

- Huge program available for almost all igus®
- Very simple, modular assembly
- Side-mounted glide strips for wear protection in high-speed
- Corrosion resistant, seawater resistant aluminum profile
- Flexible assembly - Fastening on substructure independent of profile lengths and butt joints
- Plastic glide bar made of PE
- Bottom clamp can be mounted -inside or outside- directly on the bottom or on the profile rail
- Heavy duty brackets for high load applications (add on item)



Steel guide trough - stable and rugged for heavy duty applications

- Very stable and robust guide trough made of steel for high load applications
- Easy assembly due to installation set for joint and attachment surface connection
- Simple fastening directly on the ground or with profile rails
- Big range, two piece design, adjustable to e-chain® width
- Available in galvanized steel and stainless steel
- Low friction: glide bar made of PE
- Fixed end module, for fast and easy mounting - without drilling (add-on item)

Other Trough Options



For support of the lower run - Support tray tool kit

- Simple one-piece support trays
- Complete system, ready to install
- No more costly self-made designs
- Easy installation onto your machine, on profiles or wall-mount brackets





For crane girders and indoor cranes - Guidefast guide trough

- Save up to 80% installation time
- Fits virtually any standard crane girder
- Simplified installation, permanently installed cable can be fixed at the trough brackets
- With plastic glide bars for center fed applications



Realize long travels up to 492 ft - Guidelite - quick and cost-effective

- Simple one-piece support trays
- Complete system, ready to install
- No more costly self-made designs
- Easy installation onto your machine, on profiles or wall-mount brackets

Guide Trough Systems
An introduction to long travels

Telephone 1-800-521-2747

Internet: igus.com
email: sales@igus.com
QuickSpec: igus.com/quickspec



Various guide trough systems are available



Hundreds of igus® Guide Trough in stock

We are always happy to advise you by telephone or on site. Special solutions provided by igus® often result in significant assembly cost savings.

igus® guide troughs

Guide troughs are used for long travels. They allow for smooth low-friction operation in long travel applications. If the fixed end is installed in the center of the travel (center mounted), the e-chain® glides on itself for half the travel. For the other half we recommend glide bars, which are assembled in the trough and on which the e-chains® glide. igus® guide troughs are available from stock with these highly abrasion resistant polymer glide bars, which perform well with igus® e-chains® regarding noise, abrasion and friction.

Trough type

igus® offers guide troughs made of corrosion-resistant aluminum or steel. The trough type to be used depends on the application conditions and the requirements of the customer.

Glide bars

Glide bars made of igulen are optimally matched to the e-chain® material and achieve the lowest values of friction, noise and wear. Glide bars must be used if the fixed point is in the center of the travel. Refer to pictures below.

Delivery condition

The troughs are supplied in 6.56 ft (2 m) sections. The side parts (left and right) are installed on site at the required distance apart, depending on the width of the chain. The necessary width is shown in the table on the guide trough page of the respective chain chapter. The side parts of the trough can be bolted or welded directly to the attachment surface or connected to the base by means of screwing or welding or by using a special igus® installation set.
Guide trough systems can be ordered various ways: all the individual parts as separate components or completely assembled.

Customer-Supplied Guide Troughs

The dimensional data in this chapter consists of auxiliary dimensions for design and assembly. They apply exclusively to igus guide trough systems.
If the igus® e-chain® customer supplies the trough, all dimensions (including installation dimensions) must be obtained from igus. This is particularly important for one-piece guide troughs. The clearance between the guide trough and e-chain® is crucial and depends on the chain type, length and size, as well as the bending radius and the tolerance of the carrier and the attachment surface.
Since such guide troughs cannot be adjusted according to the application during the assembly process and cannot be readjusted in operation, careful calculation is required throughout this process.



Trough without glide bars:
e-chain® glides on top of itself



Trough with glide bars:
e-chain® glides on glide bars



Center mounted:
1/2 travel with glide bars
1/2 travel without glide bars

Guide Trough Systems
An introduction to long travels

For long travels, the upper run of the igus® e-chain® rests on the lower run. The upper run glides partially on the lower run and partially at the same height on the glide bar. The diagram below shows this. For lateral guidance, a guide trough is necessary. If the stationary mounting bracket and the fixed end of the cables and hoses can be placed in the center, the e-chain® length is calculated as follows: $L_k = {}^{S}/_{2} + K_2$

The shortest e-chain® length is attained by the axial feeder module. The length of the e-chain® then corresponds to about half the travel distance. Depending on the technical data and the selected e-chain® the mounting point of the moving end of the e-chain® must be lowered on some units. In our system analysis for long travels we give exact details for your specific application.

Selection criteria

The following parameters are required for the design of a trough system:
Following parameters are required for the design of a trough system:

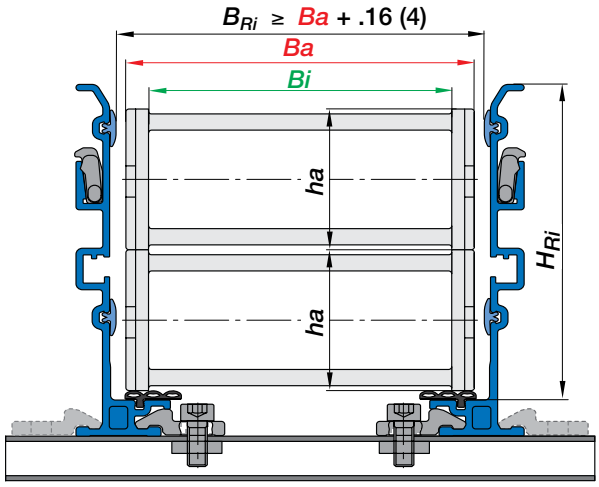
- e-chain® type (Series, width *Bi*, radius *R*)
- Travel and travel speed
- Fill weight
- Acceleration and/or lagging
- Lateral accelerations
- Environmental conditions

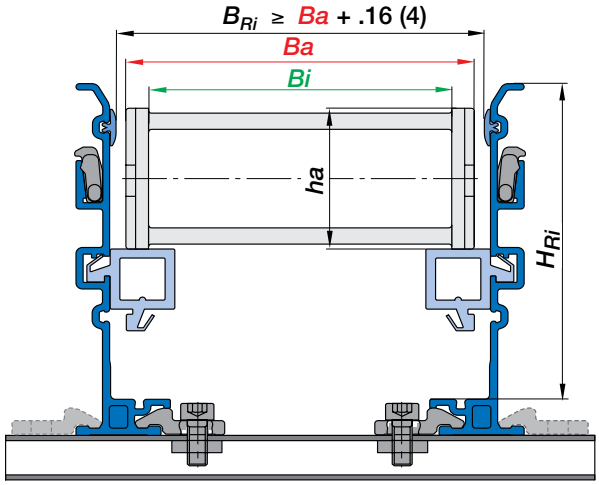
Design and installation of the guide trough

The guide trough is an important element in long travel applications. Usually, the height of the trough must be at least twice that of the e-chain® link height: $H_{Ri} \geq 2 \times ha$. The sides must provide a chamfered opening. The trough inner width is the same as the e-chain® outer width, plus .16" (4 mm) $B_{Ri} = Ba + .16\ (4)$. Along the side of the trough, where the upper run cannot glide on the lower run, glide bars must be installed. We recommend the use of polymer glide bars from igus®. They are optimally matched to the e-chain® material and achieve the lowest values for friction, noise and wear. Guide troughs with and without glide bars can be obtained for almost all igus® e-chains®. **Important: When assembling the trough parts, the following points must be given particular attention:**

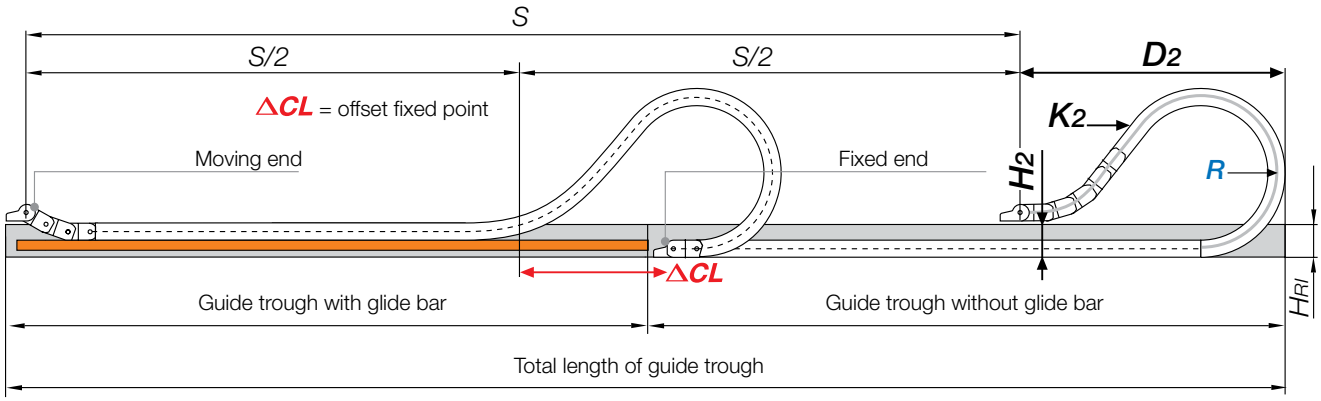
- Properly align all trough parts upon installation
- All screw heads should be flush with the trough
- Smooth leveled transition between the end of the e-chain® and the glide bars
- Solid connection with the glide surface.

These points must be observed when using assembly-friendly igus® guide troughs.





e-chain® length	$L_k = {}^{S}/_{2} + K_2$
Inner trough height	$H_{Ri} \geq 2 \times ha$
Inner width, Aluminum SuperTrough	$B_{Ri} = Ba + .16\ (4)$ (*Ba + 5* Steel guide trough)



- Trough set
- Installation set
- Glide bar
- Profile rail

Ba	= Outer width e-chains®	B_{Ri}	= Inner trough width	H_2	= Mounting height (if the moving end is set lower)
Bi	= Inner width e-chains®	B_{Ra}	= Outer trough width	D_2	= Over length - long travels, gliding
R	= Bending radius	H_{Ri}	= Inner trough height	K_2	= Further add-on (if the moving end is set lower)
ΔCL	= Offset fixed point	H_{Ra}	= Outer trough height	H_F	= Required clearance height
S	= Length of travel	*ha*	= Outer e-chain® height		
S/2	= Half length of travel	L_k	= e-chain® length		

PDF: igus.com/e-chain-pdfs
Product information: igus.com/e-chains

Guide Trough Systems
Profile Rail

Telephone 1-800-521-2747

Internet: igus.com
email: sales@igus.com
QuickSpec: igus.com/quickspec

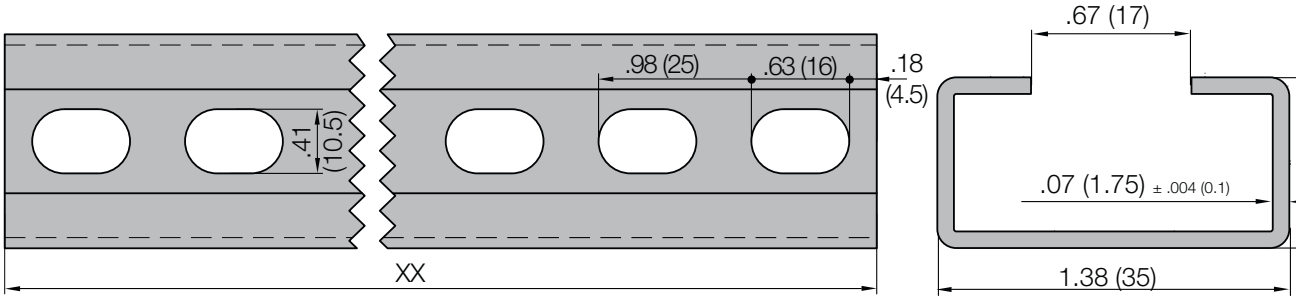
Profile rail Part No. 92-52-XX

- For all igus® Aluminum SuperTrough and Steel guide troughs
- With increased holding power - even for harsh applications
- Standard material: galvanized steel
  Part No. CF-92-52G-XX (XX - length in mm)
- Profile rail available in galvanized steel. Optional:
  Stainless steel material V2A, material 1.4301 (AISI 304).
  For AISI 304 please add index "SS" to the Part No. CF-92-52GSS
- Length tolerances of ±5 mm possible!



Profile rail Part No. CF-92-52G -
With increased holding power also for harsh conditions

Assembly in front of the e-chain® - **CANNOT** be integrated into KMA mounting bracket





Profile rail Part No. CF-92-52G.XX - For all igus® Aluminum SuperTrough and Steel guide troughs



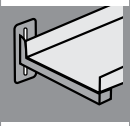


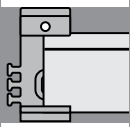


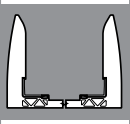


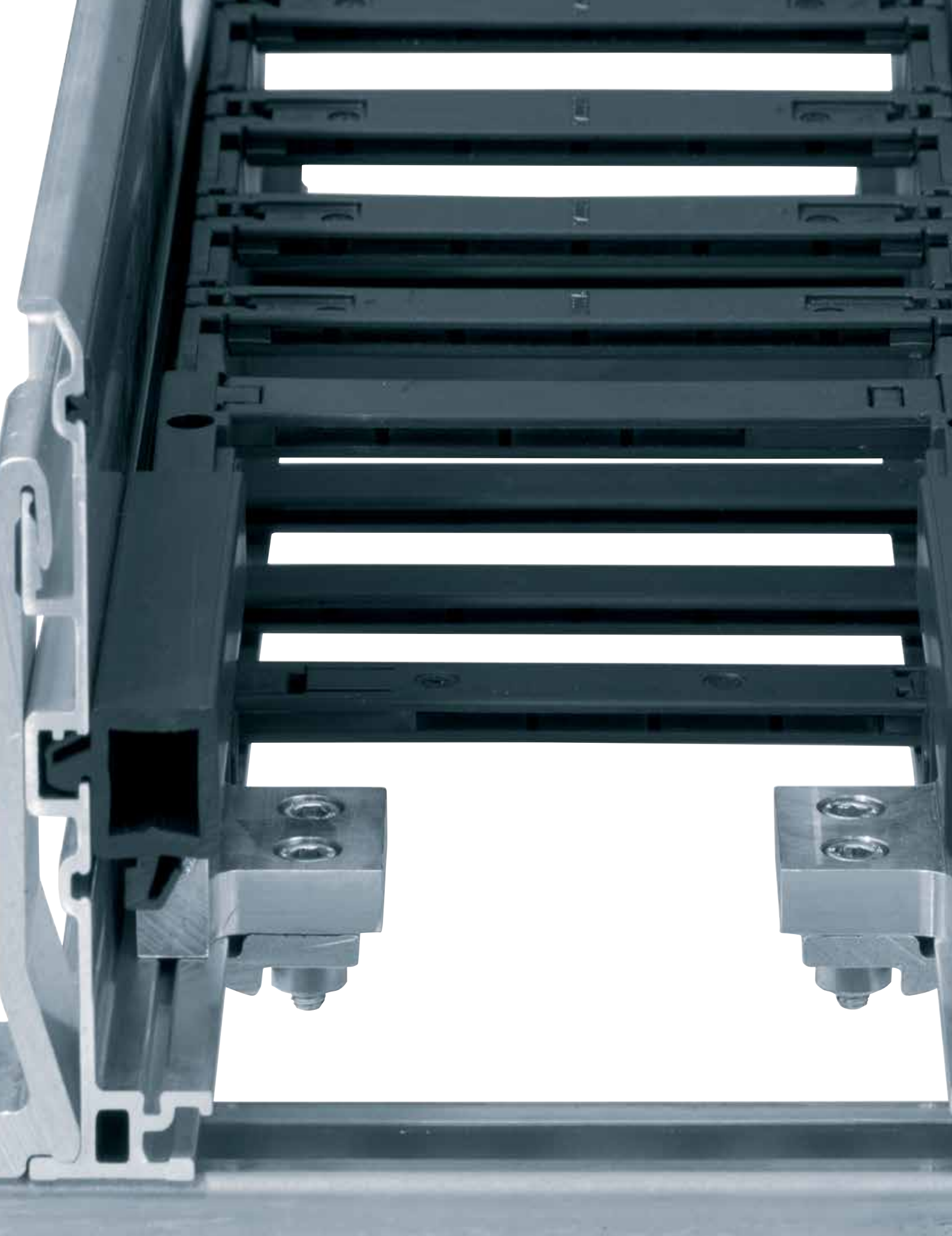


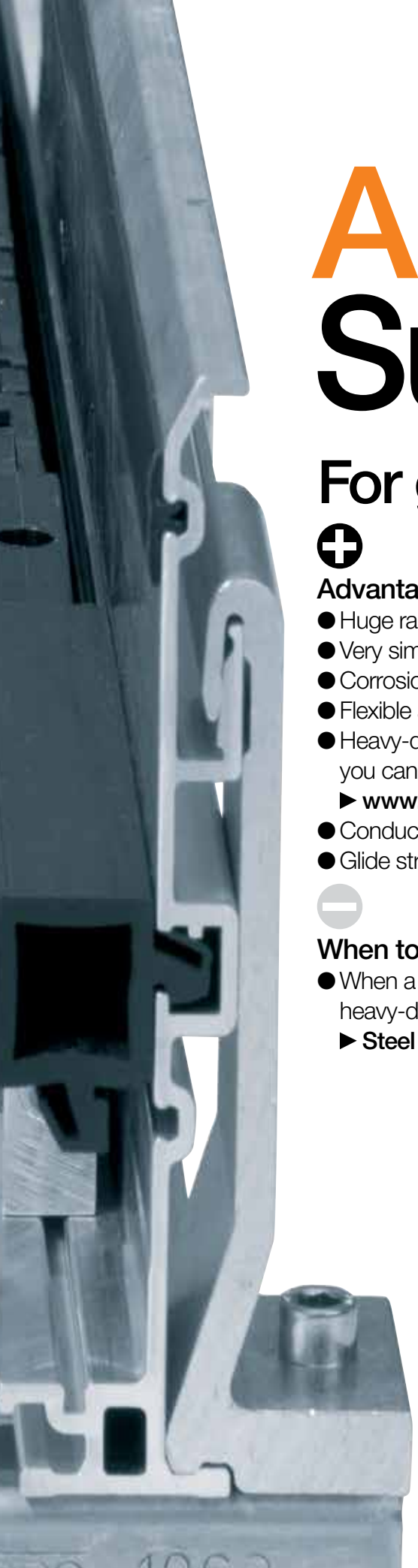
All types of installations are possible. Very long, "green systems" up to 2,018 ft. (615 m) help to reduce energy costs, and are comprised of igus® e-chains®, chainflex® cables and corresponding guide troughs. Mix-and-match components allow for maximum design flexibility, and all igus® e-chains® and chainflex® cables offer extended service lives, even in harsh weather, polluted environments, and dirty, dusty applications











Aluminum SuperTrough

For general use

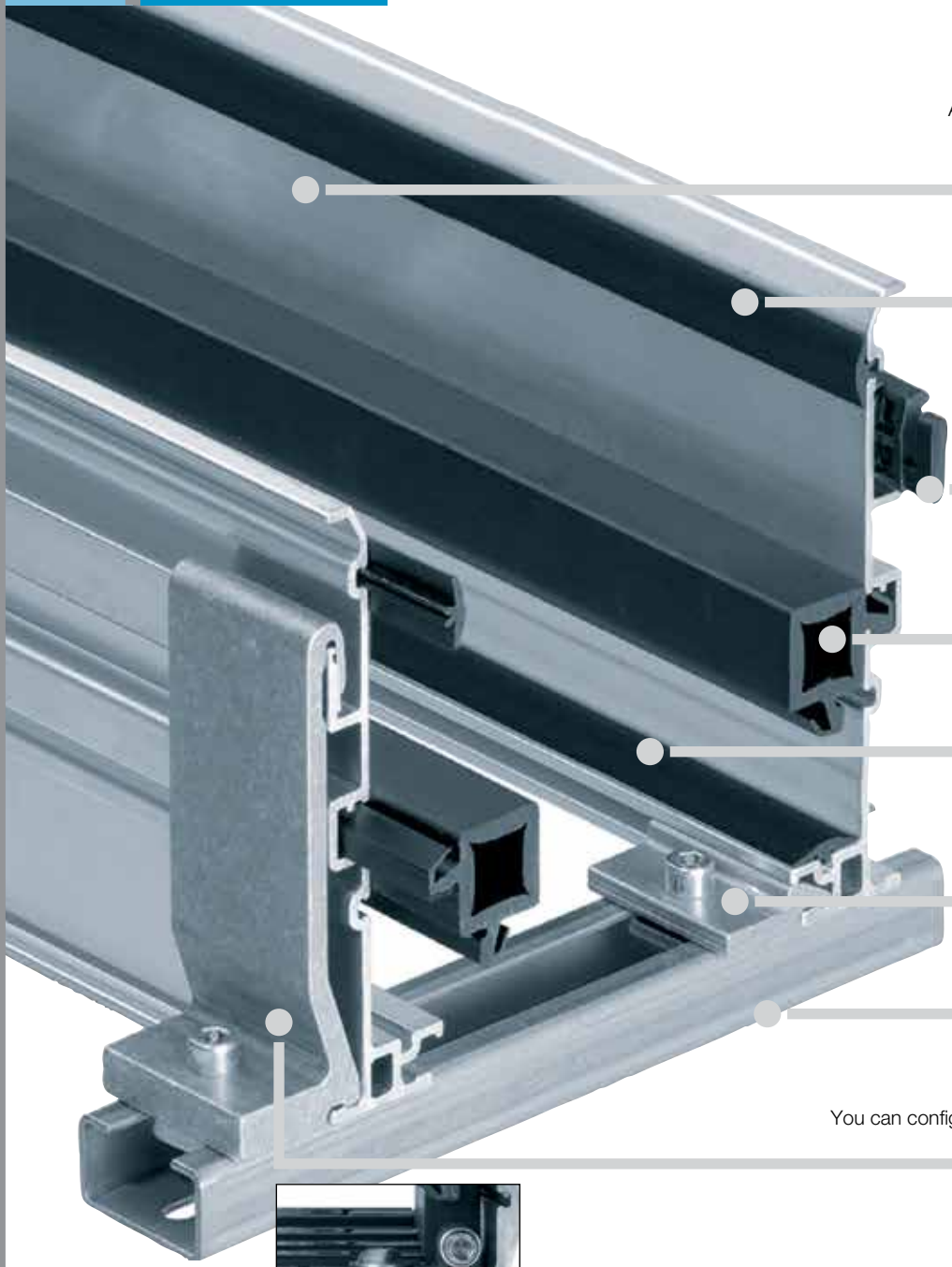
Advantages aluminium SuperTrough

- Huge range available for almost all igus® e-chains®
- Very simple, modular assembly
- Corrosion-resistant, seawater-resistant aluminium profile
- Flexible assembly
- Heavy-duty bracket option for high load applications: you can configure the heavy-duty version online
  ▶ **www.igus.com/alu-guide**
- Conductivity according to DIN EN 61537 - as standard
- Glide strips for wear protection at high-speed

When to use another guide trough:

- When a very tough guide trough made from steel is required for heavy-duty applications
  ▶ **Steel guide troughs**

Guide Trough Systems
Aluminum SuperTrough
Advantages



Huge program:
Aluminum profile (Standard: 6.56 ft. (2 m) section)
available for almost all igus® e-chains®
Seawater resistant and corrosion resistant

Wear-reducing: Glide strip
Protect from wear on the sides

Fast connection:
Interface connector Basic, plastic, easy
assembly, no tools needed

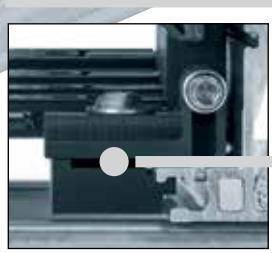
Wear-reducing
Plastic glide bar
Easy click-on assembly

Noise-reducing:
Silencer profile, rubber (add-on item)

Simple fastening: Bottom clamp Basic,
attached inwards or outwards, fast and easy

Simple fastening:
Profile rail, for bottom clamps

high load: Heavy-Duty bracket (add-on item)
You can configure the Heavy-Duty version at our online-catalog
➤ **www.igus.com**



Simple connection:
Fixed end module (add-on item),
for fast and easy mounting - without any drilling

Aluminum SuperTrough

The Aluminum SuperTrough is a modular guide trough system for long travels (gliding application). Aluminum SuperTrough is available in low cost basic versions and can be upgraded for Heavy-Duty applications. This modular usage makes it the igus® recommended standard trough system.

- Very simple, modular assembly
- Corrosion resistant, seawater resistant aluminum profile
- Flexible assembly - Fastening on substructure independent of profile lengths and butt joints
- Misalignment-free installation - No screwing or welding of the profiles required

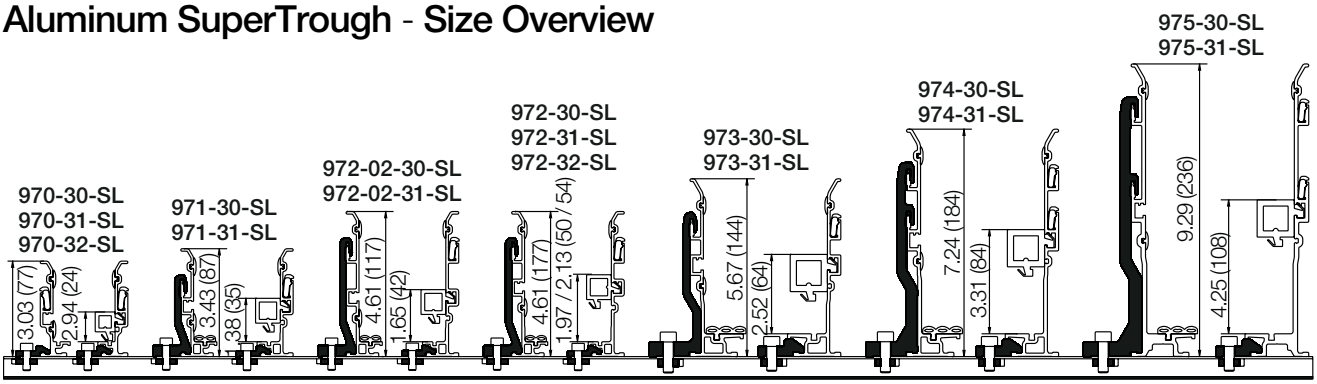
Installation Guide PDF with detailed assembly information ➤ www.igus.com/installation-guide-pdf

Guide Trough Systems
Aluminum SuperTrough
Selection Guide

Series Part No.	Outer trough height H_{Ra} (mm)	Installation set* Part No.	side part material
			
		Basic version, Standard - for general use	
970-30-SL / 970-31-SL	3.03 (77)	960-30	aluminum
970-30-SL / 970-32-SL	3.03 (77)	960-30	aluminum
971-30-SL / 971-31-SL	3.43 (87)	960-30	aluminum
972-02-30-SL / 972-02-31-SL	4.61 (117)	960-30	aluminum
972-30-SL / 972-31-SL	4.61 (117)	960-30	aluminum
972-30-SL / 972-32-SL	4.61 (117)	960-30	aluminum
973-30-SL / 973-31-SL	5.67 (144)	960-50	aluminum
974-30-SL / 974-31-SL	7.24 (184)	960-50	aluminum
975-30-SL / 975-31-SL	9.29 (236)	960-50	aluminum
			
		Heavy Duty version - for rugged plant construction **You can configure the Heavy Duty version online with the respective e-chain® you've chosen**	
971-30-SL / 971-31-SL	3.43 (87)	971-50	aluminum
972-02-30-SL / 972-02-31-SL	4.61 (117)	972-50	aluminum
972-30-SL / 972-31-SL	4.61 (117)	972-50	aluminum
972-30-SL / 972-32-SL	4.61 (117)	972-50	aluminum
973-30-SL / 973-31-SL	5.67 (144)	973-50	aluminum
974-30-SL / 974-31-SL	7.24 (184)	974-50	aluminum
975-30-SL / 975-31-SL	9.29 (236)	975-50	aluminum

*The basic Installation sets are the standard for the Aluminum SuperTroughs. They can be fastened inside or outside and are recommended for most application areas. The basic clamping shoes are made of aluminum. The Heavy-Duty version is differentiated only by the type of the installation set. The part numbers of the channel side plates, slide bars, etc., are the same as the basic model. The Heavy-Duty installation set consists of a rugged aluminum bracket, fastened outside on the guide trough.

Aluminum SuperTrough - Size Overview



PDF: igus.com/e-chain-pdfs
Product information: igus.com/e-chains

AL

ST

Guide Trough Systems
Aluminum SuperTrough - Basic Components

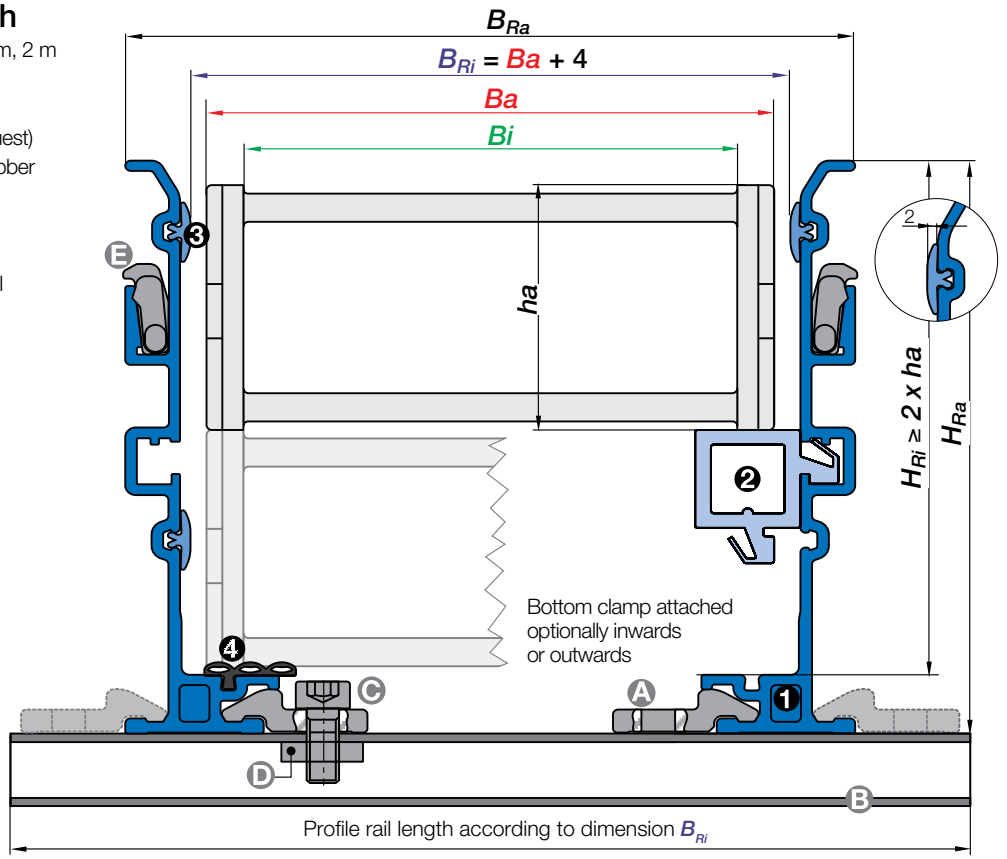
Components, trough

❶ Trough side parts, aluminum, 2 m
❷ Glide bar, plastic, 2 m
❸ Glide strips, plastic, 2 m
(without glide strips on request)
❹ Optional: Silencer profile, rubber

Components, installation set
Ⓐ Bottom clamp, aluminum
Ⓑ Profile rail[1], galvanized steel
Ⓒ Screw
Ⓓ Sliding nut
Ⓔ Interface connector, plastic

Ba = Outer e-chain® width
Bi = Inner e-chain® width
ha = e-chain® outer height
H_{Ri} = Inner trough height
H_{Ra} = Outer trough height
B_{Ri} = Inner trough width
B_{Ra} = Outer trough width

$H_{Ri} \geq 2 \times ha$
$B_{Ri} = Ba + 4$



1) Profile rail also available in stainless steel V2A, material 1.4301 (AISI 304)

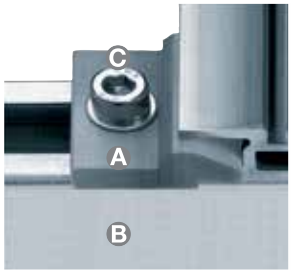
Aluminum SuperTrough | Features



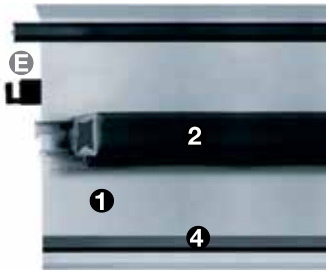
Aluminum SuperTrough - External view Basic



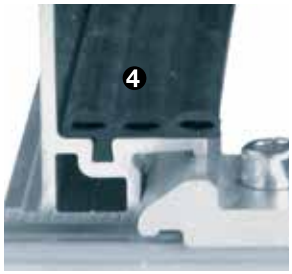
Aluminum SuperTrough - Internal view Basic without and with Glide bar



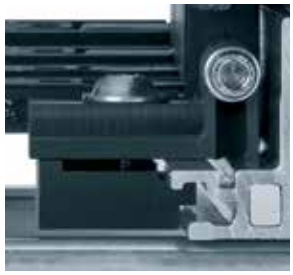
Simple fastening with Basic bottom clamp and profile rail



Wear-reducing with polymer glide bar and glide strip



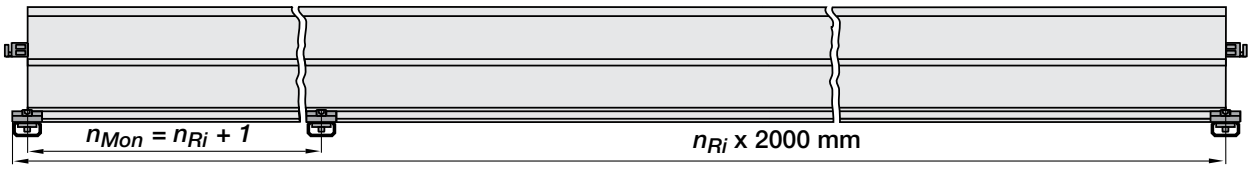
Noise-reducing with silencer profile (add-on item)



Simple connection to the e-chain® with the fixed end module

Aluminum SuperTrough - Configured according to your requirements
Quick and easy assemble the right trough for your application

- Selection of the suitable guide trough according to the e-chain® Series and e-chain® width ***Bi***
- Determine the feeding point of the cables
- Determine travel distance and thus the length of the required guide trough and the number of trough pieces. Standard length of a trough side plate: 78.7" (2000 mm). The length of the guide trough - for axial feeding - is calculated from half the travel length with and half the travel length without the glide bar
- Option: “Sound dampening” with silencer profile
- Number and selection of the assembly kit
  There are two assembly kit options: Basic (standard), Heavy-Duty (for plant construction)
  The quantity of the assembly kit is calculated from the number of the trough pieces + 1 kit:



- The assembly kit matches the igus® profile rail option
- If you have opted for an e-chain® with KMA mounting brackets, we offer you a fixed-end module for the quick and simple fastening of the e-chain® in the trough without holes

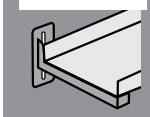
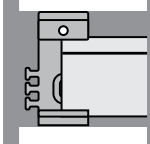
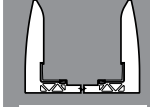
Installation Guide-PDF with detailed assembly information
➤ www.igus.com/installation-guide-pdf

Order example Based on Part No. 973-30-SL / 973-31-SL

Order example: Length of travel 98.4 ft. (30 m) -
Center mounted for Series 3500-100-200-0 with B_{Ri} = 124

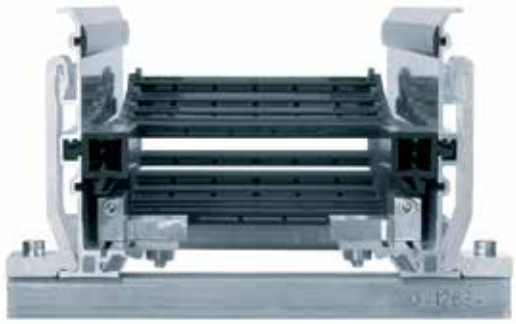
Guide trough set (set of 2 trough side parts, incl. glide strips) **without** glide bar	
Order text: 52.5 ft. (16 m) guide trough without glide bar (8 x 6.56 ft. (2 m) sections)	**Part No. 973-30-SL**
Guide trough set (set of 2 trough side parts, incl. glide strips) **with** glide bar	
Order text: 52.5 ft. (16 m) guide trough with glide bar (8 x 6.56 ft. (2 m) sections)	**Part No. 973-31-SL**
Installation set “Basic” complete **(guide trough-sets + 1)**	
Order text: 17 installation sets “Basic”	**Part No. 960-40-175**
Module for the fixed end	
Order text: 1 set	**Part No. 973-80-5**
Option: For an additional noise dampening with	
silencer profile, please add Index A Example:	**Part No. 973-30-SLA**

Calculation - travel center mounted: Half travel length, rounded down to full 2 m sections = X m guide trough length without glide bars + X m guide trough length with glide bars + installation sets Basic (number of trough pieces + 1)

Guide Trough Systems
Aluminum SuperTrough
Fixed End Module

A quick fix for mounting the stationary end of an e-chain®



Optimized fixed end module

- Lighter more cost-effective than previous metal solutions
- Mounting bracket attachment on the Aluminum SuperTrough without drilling
- Fixed end module is clamped to the trough
- Save installation time
- Minimize errors from drilling your own holes
- Available for many E2, E4 and E6 Series e-chains®
- Stainless and cost-effective



A
Installation - fixed end module



B
Installation - KMA mounting bracket

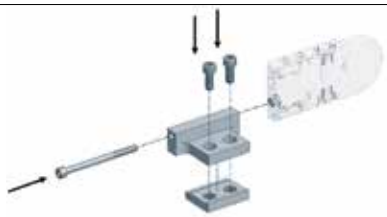
❶ Removing the pre-assembled metal bushings



❷ Insert the threaded bushings



❸ Insert the threaded bushings

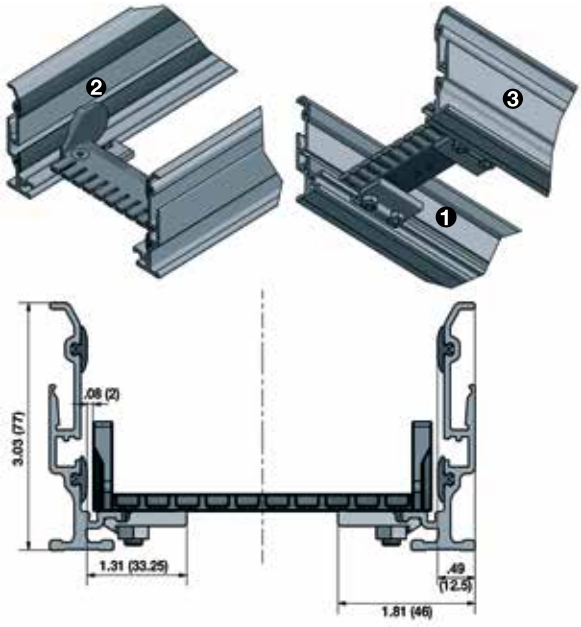


❹ Mounting on KMA mounting bracket



❺ Mounting on Aluminum SuperTrough





Fixed end clamp to attach the e-chain® into the smallest SuperTrough 970-30-SL

For mounting brackets from Series: 10, 15/R15, B15, 1500.
The fixed end clamp enables quick and simple attachment by clamping onto the Aluminum SuperTrough without drilling

- Quick attachment of the e-chain® to the Aluminum SuperTrough
- The mounting point of the e-chain® can be changed quickly
- Minimize errors from drilling your own holes
- Available for many E2, E4 and E6 Series e-chains®
- Stainless and cost-effective

Fixed end clamp design:

❶ Fixed end clamp 970-80
❷ Mounting bracket
❸ Aluminum SuperTrough 970-30-SL

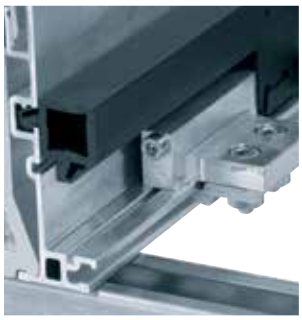
igus® e-chain system®
Telephone 1-800-521-2747
Internet: igus.com
email: sales@igus.com
QuickSpec: igus.com/quickspec

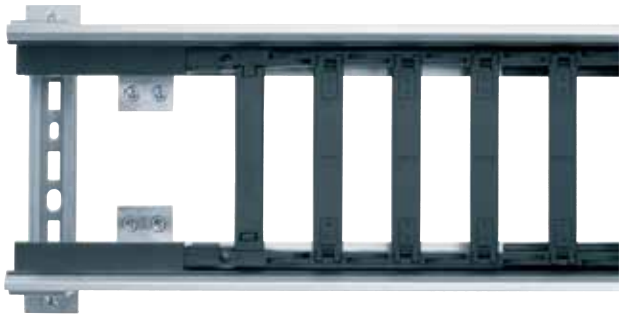
Guide Trough Systems
Aluminum SuperTrough
Fixed End Module

Part No.	For Aluminum SuperTrough	For e-chain® Series	Application including inner width (*Bi*)	Mounting Bracket
970-80[1]	**970-30-SL | 970-31-SL**	10, B15, 15/R15	.050	one-piece
970-80[1]	**970-30-SL | 970-32-SL**	1500	.050	one-piece
971-80-4[1]	**971-30-SL | 971-31-SL**	2500, 255	.07	KMA
972-80-4[1]	**972-02-30-SL | 972-02-31-SL**	E4-28/R4-28, E4-31L/R4-31L	.06	KMA
972-80-4[1]	**972-30-SL | 972-31-SL**	E4-32/H4-32/R4-32, E4-38L/R4-38L	.06	KMA
972-80-4[1]	**972-30-SL | 972-32-SL**	2700, R58	.06	KMA
973-81-5[1]	**973-30-SL | 973-31-SL**	E4-42/H4-42/R4-42, E4-48L/R4-48L	.10	KMA
973-80-5[1]	**973-30-SL | 973-31-SL**	3500, R68	.100	KMA
974-81-5[1]	**974-30-SL | 974-31-SL**	14040/14140/R18840, 14240/14340, E4-64L/R4-64L	.10	KMA
974-80-5[1]	**974-30-SL | 974-31-SL**	E4-56/H4-56/R4-56	.10	KMA
975-80[2]	**975-30-SL | 975-31-SL**	E4-80/H4-80/R4-80	.10	KMA
975-81[2]	**975-30-SL | 975-31-SL**	15050/15150/R19850, 15250/15350	.10	KMA

1) Material: plastic 2) Material: Aluminum AlMg3, seawater resistant
Material screw kits: Standard steel, galvanized. Optional stainless steel: V4A, material 1.4571 (AISI 316Ti)







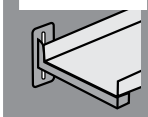
Fixed-end module - Simple fastening of the e-chain® without drilling

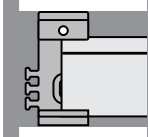


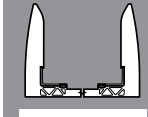


The igus® aluminum SuperTrough has been tested since 2005.
Test “Axis 1”: Speed 4.92 ft/s (1.5 m/s), Travel: 59 ft (18m), Mileage to date: approximately 31,069 miles (50,000 km)

PDF: igus.com/e-chain-pdfs
Product information: igus.com/e-chains





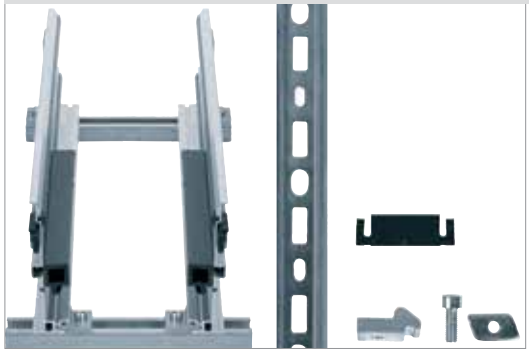


Guide Trough Systems
Aluminum SuperTrough

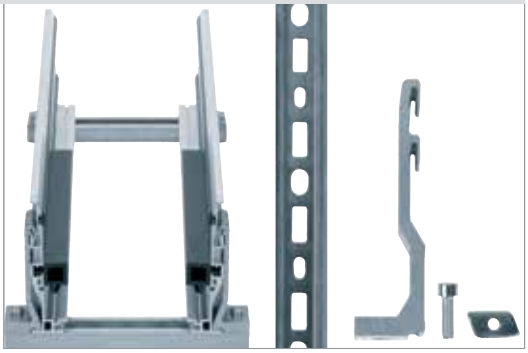
Telephone 1-800-521-2747

Internet: igus.com
email: sales@igus.com
QuickSpec: igus.com/quickspec

Installation Sets | Basic and Heavy Duty



Installation Set Basic



Installation Set Heavy Duty

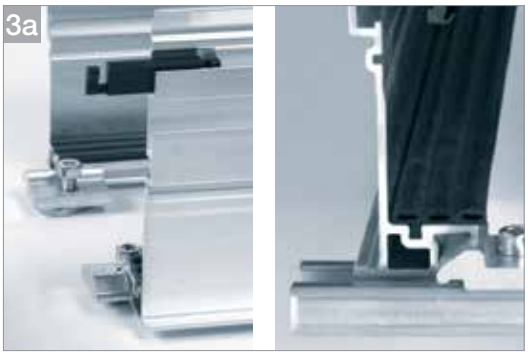
Installation Set | Basic (Standard)

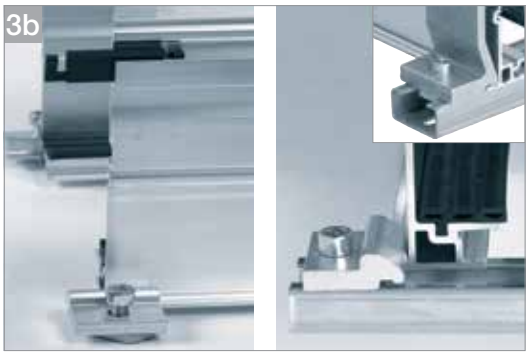


❶ Pre-assemble clamp and screw



❷ Clip in polymer connector on both sides of the designated support





Fasten Basic assembly set inside ❸a or outside ❸b (Please check if the stability of the attachment is adequate). Please note: half the length of the assembly set and connector must protrude out of the trough. The glide nut should be well fastened in the profile rail

Installation Set | Heavy Duty (Alternative)





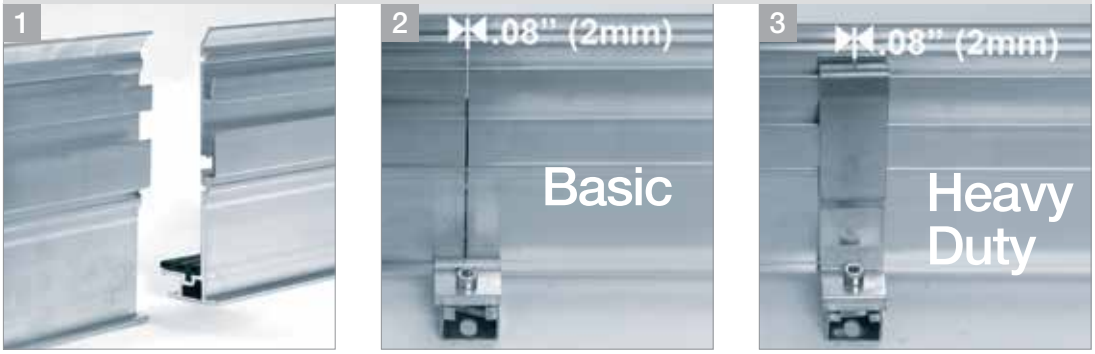
❶ Pre-assemble heavy duty bracket and screw set ❷ Fasten Heavy Duty assembly set outside. Please note: half the length of the assembly set and connector must protrude out of the trough.

Installing the silencer profile (optional)



Cut the rubber profile in accordance to the length of the trough, standard 6.56 ft. (2 m), and press it into the designated groove. (Pictured: although this shows the left hand side, the instructions are the same for the right hand side. To be repeated for each trough section.)

Connecting the trough sections



❶ Join the sides of the trough side parts by pushing them together (min. +.08 (2mm) gap!)
❷ + ❸ The pre-assembled parts join each trough section

Adjusting the tolerance and aligning trough sections

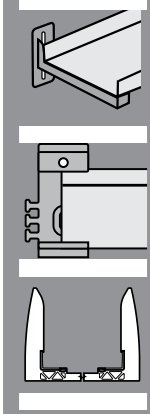


❶ Adjust the necessary minimum “chain/trough” tolerance of .08” (2mm) on both sides. Please note: the inner width B_N of the trough decreases .08” (2mm) per side with the assembled glide strip (pictured)

❷ Test to ensure the e-chain® runs problem free and with low friction in the channel

❸ After adjusting the minimum tolerance and alignment of all trough sections, please tighten all trough connections. Pay attention to the correct installation direction of the sliding nut (see detail)
Starting torque of the assembly set’s fixing bolts: M6: 10 Nm / M8: 23 Nm.

! Please consider health & safety regulations while handling sheet metals.
We recommend using protective Category II gloves to protect against cuts when handling the aluminum profiles.



Guide Trough Systems
Aluminum SuperTrough

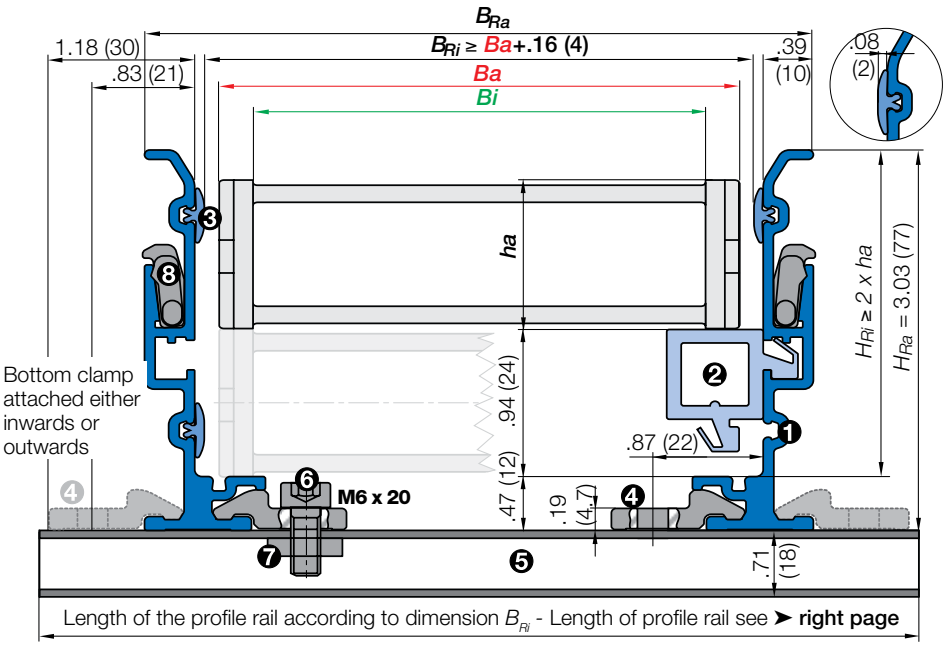
Part No. 970-30-SL and 970-31-SL - Trough Height: 3.03 in. (77 mm)

Aluminum SuperTrough — Basic Version

For the following e-chains®/ E-Tubes

System E2 Series
● 10
● B15
Zipper Series
● 15/R15

Ba	=	Outer e-chain® width
Bi	=	Inner e-chain® width
ha	=	e-chain® outer height
H_{Ri}	=	Inner trough height
H_{Ra}	=	Outer trough height
B_{Ri}	=	Inner trough width ➤ depends on dim. *Ba*
B_{Ra}	=	Outer trough width
n_{Mon}	=	# of installation sets (left/right)
n_{Ri}	=	# of trough set (left/right)
!		$H_{Ri} \geq 2 \bullet ha$ $B_{Ri} \geq Ba + 4$
●	=	Guide trough
●	=	Glide bar
●	=	Installation set “Basic”
●	=	profile rail





● **Components, trough “Basic”:**

❶ Trough side parts, aluminum, 6.56 ft. (2m)
❷ Glide bar, plastic, 6.56 ft. (2m)
❸ Glide strips, plastic, 6.56 ft. (2m) (without glide strips on request)
❹ Bottom clamp, aluminum
❺ profile rail, steel galvanized
❻ Screw M6 x20
❼ Sliding nut M6
❽ Interface connector, plastic

● **Components, installation set “Basic”:**

Basic Version: Components

Complete guide trough sets - description	Part No. (lbs)	Weight
Set of 2 trough side parts, incl. glide strips, without glide bars, 6.56 ft (2 m) sections	**970-30-SL**	9.26 lbs
Set of 2 trough side parts, incl. glide strips, with glide bars, 6.56 ft. (2m) sections	**970-31-SL**	10.8 lbs
1 Installation set **“Basic”** without profile rail	**960-30**	.13 lbs
1 Installation set **“Basic”** with profile rail	**960-30-____**	
Single parts - description		
1 Glide strip, individual, 6.56 ft. (2m) section	**75-01**	.13 lbs
1 Bottom clamp, individual	**75-40**	0.07 lbs
1 Interface connector, individual	**75-60**	
1 Screw M6 x 20, individual	**M6X20SOCKETCAP**	
1 Sliding nut M6, individual	**ZBNUT-LG**	
2 Glide bars, 6.56 ft. (2m) sections	**81-79**	
1 profile rail, individual	**92-52G____**	.60 lbs/ft

Supplement Part No. with the indicated profile rail-length-index.
Example: 960-30-125 profile rail-length-index for your chosen trough inner width B_{Ri}
➤ See table on the right or the respective page for chosen series

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Lengths of profile rail - Basic Version - Bottom Clamp attached either **inwards** or **outwards**

10

e-chain® Width Index	B_{Ri} in. (mm)	Part No. attached inwards	Part No. attached outwards
-015	1.18 (30)	*	**960-30-125**
-025	1.57 (40)	*	**960-30-150**
-038	2.09 (53)	*	**960-30-150**
-050	2.56 (65)	**960-30-125**	**960-30-175**
-5	3.15 (80)	**960-30-125**	**960-30-175**
-6	3.86 (98)	**960-30-150**	**960-30-200**
-7	4.61 (117)	**960-30-175**	**960-30-225**

* upon request

B15

e-chain® Width Index	B_{Ri} in. (mm)	Part No. attached inwards	Part No. attached outwards
-015	1.18 (30)	*	**960-30-125**
-025	1.57 (40)	*	**960-30-150**
-038	2.09 (53)	*	**960-30-150**
-050	2.56 (65)	**960-30-125**	**960-30-175**
-5	3.15 (80)	**960-30-125**	**960-30-175**
-6	3.86 (98)	**960-30-150**	**960-30-200**
-7	4.61 (117)	**960-30-175**	**960-30-225**

* upon request

15

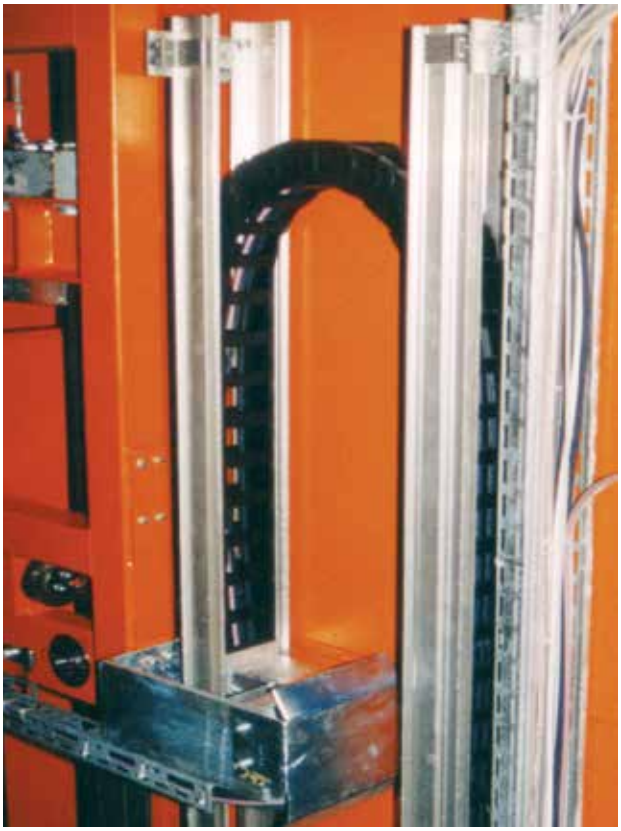
e-chain® Width Index	B_{Ri} in. (mm)	Part No. attached inwards	Part No. attached outwards
-015	1.18 (30)	*	**960-30-125**
-025	1.57 (40)	*	**960-30-150**
-038	2.09 (53)	*	**960-30-150**
-050	2.56 (65)	**960-30-125**	**960-30-175**
-5	3.15 (80)	**960-30-125**	**960-30-175**
-6	3.86 (98)	**960-30-150**	**960-30-200**
-7	4.61 (117)	**960-30-175**	**960-30-225**

* upon request

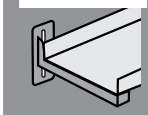
R15

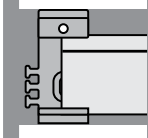
e-chain® Width Index	B_{Ri} in. (mm)	Part No. attached inwards	Part No. attached outwards
-025	1.57 (40)	*	**960-30-150**
-038	2.09 (53)	*	**960-30-150**
-063	3.15 (80)	*	**960-30-175**
-080	3.86 (98)	**960-30-150**	**960-30-200**

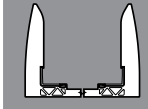
* upon request



e-chain® on the tower of the storage and retrieval unit for high-bay warehouses rolls off from one aluminum guide trough to the opposite one







Guide Trough Systems
Aluminum SuperTrough

Part No. 970-30-SL and 970-32-SL - Trough Height: 3.03 in. (77 mm)

Aluminum SuperTrough — Basic Version

For the following e-chains®/ E-Tubes

System E2 Series
- 1400/1450/1480/1500

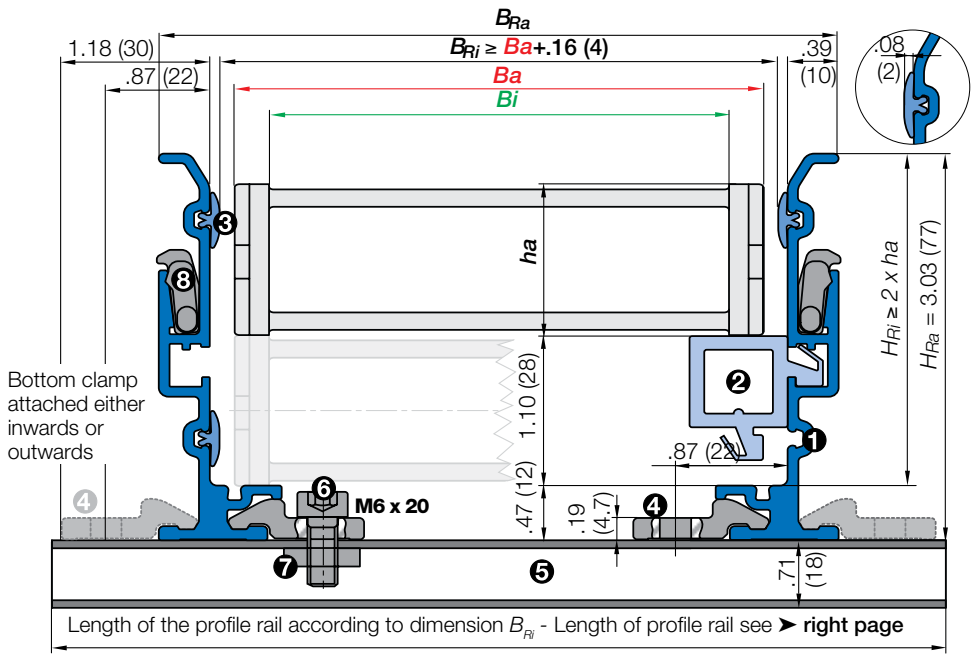
System E4-1 Series
- E4-21

Ba	=	Outer e-chain® width
Bi	=	Inner e-chain® width
ha	=	e-chain® outer height
H_{Ri}	=	Inner trough height
H_{Ra}	=	Outer trough height
B_{Ri}	=	Inner trough width ➤ depends on dim. *Ba*
B_{Ra}	=	Outer trough width
n_{Mon}	=	# of installation sets (left/right)
n_{Ri}	=	# of trough set (left/right)

$H_{Ri} \geq 2 \bullet ha$

$B_{Ri} \geq Ba + 4$

- = Guide trough
- = Glide bar
- = Installation set “Basic”
- = profile rail



● **Components, trough “Basic”:**
❶ Trough side parts, aluminum, 6.56 ft. (2m)
❷ Glide bar, plastic, 6.56 ft. (2m)
❸ Glide strips, plastic, 6.56 ft. (2m) (without glide strips on request)

● **Components, installation set:**
❹ Bottom clamp, aluminum
❺ profile rail, steel galvanized
❻ Screw M6 x20
❼ Sliding nut M6
❽ Interface connector, plastic



Basic Version: Components

Complete guide trough sets - description	Part No.	Weight
Set of 2 trough side parts, incl. glide strips, without glide bars, 6.56 ft (2 m) section	**970-30-SL**	9.26 lbs
Set of 2 trough side parts, incl. glide strips, with glide bars, 6.56 ft. (2m) section	**970-32-SL**	11.02 lbs
1 Installation set **“Basic”** without profile rail	**960-30**	.13 lbs
1 Installation set **“Basic”** with profile rail	**960-30-____**	
Single parts - description		
1 Glide strip, individual, 6.56 ft. (2m) section	**75-01**	.13 lbs
1 Bottom clamp, individual	**75-40**	0.07 lbs
1 Interface connector, individual	**75-60**	
1 Screw M6 x 20, individual	**M6X20SOCKETCAP**	
1 Sliding nut M6, individual	**ZBNUT-LG**	
2 Glide bars, 6.56 ft. (2m) sections	**81-79**	
1 profile rail, individual	**92-52G____**	.60 lbs/ft

Supplement Part No. with the indicated profile rail-length-index.
Example: 960-30-125 profile rail-length-index for your chosen trough inner width B_{Ri}
➤ See table on the right or the respective page for chosen series

Lengths of profile rail - Basic Version - Bottom Clamp attached either **inwards** or **outwards**

1400/1500

e-chain® Width Index	B_{Ri} in. (mm)	Part No. attached inwards	Part No. attached outwards
-015	1.30 (33)	*	**960-30-125**
-020	1.50 (38)	*	**960-30-125**
-025	1.69 (43)	*	**960-30-150**
-038	2.20 (56)	*	**960-30-150**
-050	2.68 (68)	**960-30-125**	**960-30-175**
-068	3.39 (86)	**960-30-150**	**960-30-175**
-080	3.86 (98)	**960-30-150**	**960-30-200**
-100	4.65 (118)	**960-30-175**	**960-30-225**
-125	5.63 (143)	**960-30-200**	**960-30-250**

* upon request

E4-21

e-chain® Width Index	B_{Ri} in. (mm)	Part No. attached inwards	Part No. attached outwards
-030	1.89 (48)	*	**960-30-150**
-040	2.28 (58)	**960-30-125**	**960-30-150**
-050	2.68 (68)	**960-30-125**	**960-30-175**
-060	3.07 (78)	**960-30-125**	**960-30-175**
-070	3.46 (88)	**960-30-150**	**960-30-175**
-080	3.86 (98)	**960-30-150**	**960-30-200**
-100	4.65 (118)	**960-30-175**	**960-30-225**
-120	5.43 (138)	**960-30-200**	**960-30-225**

* upon request

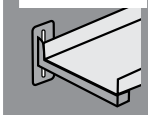


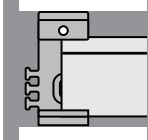
Seawater resistant aluminum SuperTrough in a RTG-crane. Long travel with the E4/4 e-chain system®.

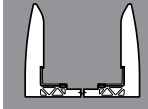
PDF: igus.com/e-chain-pdfs
Product information: igus.com/e-chains

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Guide Trough Systems
Aluminum SuperTrough

Part No. 971-30-SL and 971-31-SL - Trough Height: 3.42 in. (87 mm)

Aluminum SuperTrough — Basic Version

For the following Series

System E2 Series:
- 2480

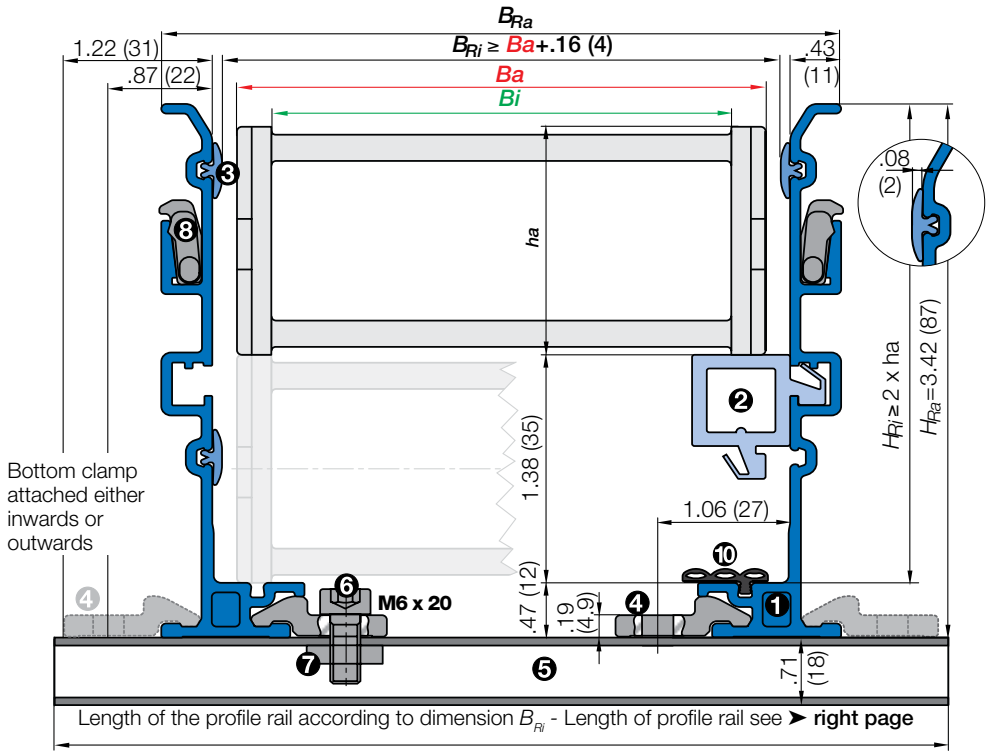
System E2 Tube Series:
- R48

Ba	=	Outer e-chain® width
Bi	=	Inner e-chain® width
ha	=	e-chain® outer height
H_{Ri}	=	Inner trough height
H_{Ra}	=	Outer trough height
B_{Ri}	=	Inner trough width ➤ depends on dim. *Ba*
B_{Ra}	=	Outer trough width
n_{Mon}	=	# of installation sets (left/right)
n_{Ri}	=	# of trough set (left/right)

$H_{Ri} \geq 2 \bullet ha$

$B_{Ri} \geq Ba + 4$

- = Guide trough
- = Glide bar
- = Installation set “Basic”
- = profile rail



- **Components, trough:**

❶ Trough side parts, aluminum, 6.56 ft. (2m)
❷ Glide bar, plastic, 6.56 ft. (2m)
❸ Glide strips, plastic, 6.56 ft. (2m) (without glide strips on request)
❿ Optional: Silencer profile, rubber

- **Components, installation set:**

❹ Bottom clamp, aluminum
❺ profile rail, steel galvanized
❻ Screw M6 x20
❼ Sliding nut M6
❽ Interface connector, plastic

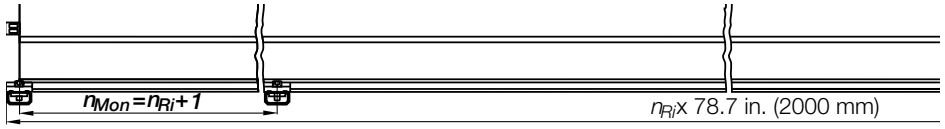


Basic version: Aluminum SuperTrough components

Complete guide trough sets - description	Part No.	Weight
Set of 2 trough side parts, incl. glide strips, without glide bars, 6.56 ft. (2m) section	**971-30-SL**	≈11.02 lbs
Set of 2 trough side parts, incl. glide strips, with glide bars, 6.56 ft. (2m) section	**971-31-SL**	≈ 14.11 lbs
1 Installation set **“Basic”** without profile rail	**960-30**	≈ .13 lbs
1 Installation set **“Basic”** with profile rail	**960-30-____**	
Single parts - description		
1 Glide strip, individual, 6.56 ft. (2m) section	**75-01**	≈ .13 lbs
1 Bottom clamp, individual	**75-40**	≈ .07 lbs
1 Interface connector, individual	**75-60**	
1 Screw M6 x 20, individual	**M6X20SOCKETCAP**	
1 Sliding nut M6, individual	**ZBNUT-LG**	
2 Glide bar, 6.56 ft. (2m) sections	**82-79**	≈
1 profile rail, individual	**92-52G____**	≈ .60 lbs/ft
Silencer profile	**75-76-H**	

Supplement Part No. with the indicated profile rail-length-index.
Example: 960-30-150 profile rail-length-index for your chosen trough inner width B_{Ri}
➤ See table on the right or the respective page for chosen series

Number of installation sets which have to be installed



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Guide Trough Systems
Aluminum SuperTrough

Lengths of profile rail - Basic Version

Bottom Clamp can be attached either **inwards** or **outwards**

2400/2500

e-chain® Width Index	B_{Ri} in. (mm)	Part No. attached inwards	Part No. attached outwards
-02	1.77 (45)	*	**960-30-150**
-03	2.28 (58)	*	**960-30-150**
-05	3.03 (77)	**960-30-125**	**960-30-175**
-07	3.82 (97)	**960-30-150**	**960-30-200**
-09	4.29 (109)	**960-30-175**	**960-30-225**
-10	4.84 (123)	**960-30-175**	**960-30-225**
-12	5.71 (145)	**960-30-200**	**960-30-250**

* upon request

255

e-chain® Width Index	B_{Ri} in. (mm)	Part No. attached inwards	Part No. attached outwards
-03	2.28 (58)	*	**960-30-150**
-05	3.03 (77)	**960-30-125**	**960-30-175**
-07	3.82 (97)	**960-30-150**	**960-30-200**
-10	4.84 (123)	**960-30-175**	**960-30-225**

* upon request

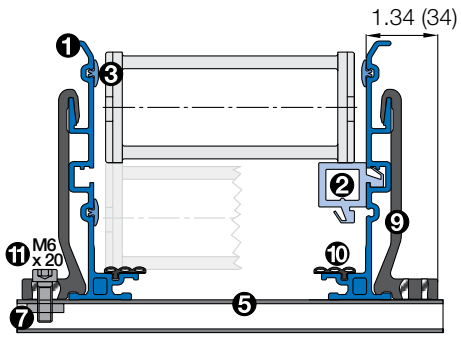
R48

e-chain® Width Index	B_{Ri} in. (mm)	Part No. attached inwards	Part No. attached outwards
-025	1.57 (40)	*	**960-30-150**
-050	2.56 (65)	*	**960-30-175**
-075	3.54 (90)	**960-30-150**	**960-30-200**
-100	4.53 (115)	**960-30-175**	**960-30-225**
-130	5.71 (145)	**960-30-200**	**960-30-250**

* upon request

For the “Heavy Duty” installation set:
Insert Part No. **971-50-____**
instead of **960-30-____**
on the right column “attached outwards”

Heavy Duty Version - Installation Set Part No. 971-50



- **Components, trough “Heavy Duty”:**
- ❶ Trough side parts, aluminum, 6.56 ft. (2m)
- ❷ Glide bar, plastic, 6.56 ft. (2m)
- ❸ Glide strips, plastic 6.56 ft. (2m)
  (without glide strips on request)
- ❿ Optional: Silencer profile, rubber

- **Components, installation set “Heavy Duty”:**
- ❺ profile rail, steel galvanized
- ❼ Sliding nut M6
- ❾ Heavy duty bracket, aluminum
- ⓫ Screw M6 x 20



= Guide trough
= Glide bar
= Installation set “Heavy duty”
= profile rail

Note: Dimensions similar to Basic version!
Exception: Heavy duty bracket, see drawing

PDF: igus.com/e-chain-pdfs
Product information: igus.com/e-chains

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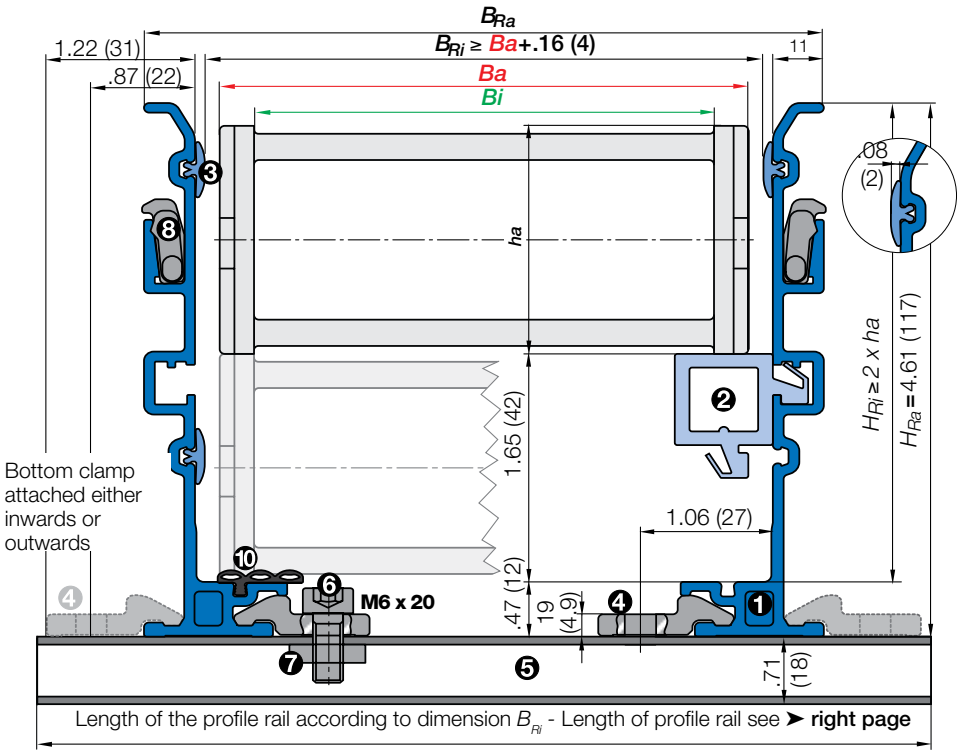
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Guide Trough Systems
Aluminum SuperTrough

Part No. 972-02-30-SL and 972-02-31-SL
Trough Height: 4.61 in. (117 mm)
Aluminum SuperTrough — Basic Version

For the following Series

System E4-1 Series
● E4-28/R4-28
System E4-1 Light Series
● E4-31L



Ba	=	Outer e-chain® width
Bi	=	Inner e-chain® width
ha	=	e-chain® outer height
H_{Ri}	=	Inner trough height
H_{Ra}	=	Outer trough height
B_{Ri}	=	Inner trough width ➤ depends on dim. *Ba*
B_{Ra}	=	Outer trough width
n_{Mon}	=	# of installation sets (left/right)
n_{Ri}	=	# of trough set (left/right)

$H_{Ri} \geq 2 \bullet ha$
$B_{Ri} \geq Ba + 4$

● = Guide trough
● = Glide bar
● = Installation set "Basic"
● = profile rail

● **Components, trough:**
❶ Trough side parts, aluminum, 6.56 ft. (2m)
❷ Glide bar, plastic, 6.56 ft. (2m)
❸ Glide strips, plastic, 6.56 ft. (2m) (without glide strips on request)
❿ Optional: Silencer profile, rubber

● **Components, installation set:**
❹ Bottom clamp, aluminum
❺ profile rail, steel galvanized
❻ Screw M6 x20
❼ Sliding nut M6
❽ Interface connector, plastic

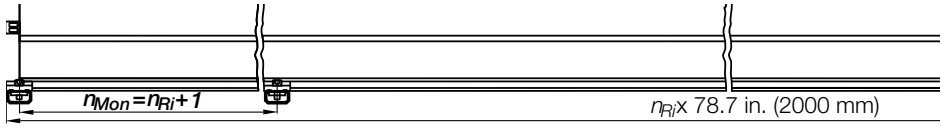


Basic version: Aluminum SuperTrough components

Complete guide trough sets - description	Part No.	Weight
Set of 2 trough side parts, incl. glide strips, without glide bars, 6.56 ft. (2m) section	**972-02-30-SL**	≈ 13.23 lbs
Set of 2 trough side parts, incl. glide strips, with glide bars, 6.56 ft. (2m) section	**972-02-31-SL**	≈ 16.31 lbs
1 Installation set **"Basic"** without profile rail	**960-30**	≈ .13 lbs
1 Installation set **"Basic"** with profile rail	**960-30-____**	
Single parts - description		
1 Glide strip, individual, 6.56 ft. (2m) section	**75-01**	≈ .13 lbs
1 Bottom clamp, individual	**75.40**	≈ .07 lbs
1 Interface connector, individual	**75-60**	
1 Screw M6 x 20, individual	**M6X20SOCKETCAP**	
1 Sliding nut M6, individual	**ZBNUT-LG**	
2 Glide bars, 6.56 ft. (2m) sections	**82-79**	≈
1 profile rail, individual	**92-52G____**	≈ .60 lbs/ft.
Silencer profile	**75-67H**	

Supplement Part No. with the indicated profile rail-length-index.
Example: 960-30-175 profile rail-length-index for your chosen trough inner width B_{Ri}
➤ See table on the right or the respective page for chosen series

Number of installation sets which have to be installed



Guide Trough Systems
Aluminum SuperTrough

Lengths of profile rail - Basic Version
Bottom Clamp can be attached either **inwards** or **outwards**

E4-28/R4-28

e-chain® Width Index	B_{Ri} in. (mm)	Part No. attached inwards	Part No. attached outwards
-040	2.52 (64)	*	**960-30-175**
-050	2.91 (74)	**960-30-125**	**960-30-175**
-062	3.39 (86)	**960-30-150**	**960-30-200**
-070	3.31 (94)	**960-30-150**	**960-30-200**
-075	3.90 (99)	**960-30-175**	**960-30-225**
-087	4.37 (111)	**960-30-175**	**960-30-225**
-100	4.88 (124)	**960-30-200**	**960-30-250**
-125	5.87 (149)	**960-30-200**	**960-30-250**
-150	6.85 (174)	**960-30-200**	**960-30-250**
-175	7.83 (199)	**960-30-225**	**960-30-275**
-200	8.82 (224)	**960-30-225**	**960-30-275**
-225	9.80 (249)	**960-30-250**	**960-30-300**
-250	10.78 (274)	**960-30-250**	**960-30-300**
-275	11.77 (299)	**960-30-250**	**960-30-300**
-300	12.76 (324)	**960-30-275**	**960-30-325**

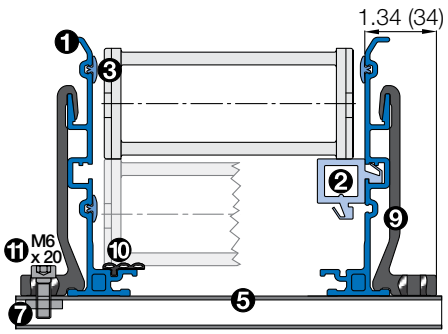
* upon request

E4-31L

e-chain® Width Index	B_{Ri} in. (mm)	Part No. attached inwards	Part No. attached outwards
-040	2.28 (58)	*	**960-30-150**
-050	2.68 (68)	*	**960-30-175**
-062	3.15 (80)	**960-30-150**	**960-30-175**
-075	3.66 (93)	**960-30-150**	**960-30-200**
-087	4.13 (105)	**960-30-175**	**960-30-200**
-100	4.65 (118)	**960-30-175**	**960-30-225**
-112	5.12 (130)	**960-30-200**	**960-30-225**
-125	5.63 (143)	**960-30-200**	**960-30-250**
-150	6.61 (168)	**960-30-225**	**960-30-275**
-162	7.09 (180)	**960-30-250**	**960-30-275**
-175	7.60 (193)	**960-30-250**	**960-30-300**

* upon request

Heavy Duty Version - Installation Set Part No. 972-50



- For the “Heavy Duty” installation set:

Insert Part No. **972-50-____** instead of **960-30-____** on the right column “attached outwards”

- **Components, trough “Heavy Duty”:**

❶ Trough side parts, aluminum, 6.56 ft. (2m)
❷ Glide bar, plastic, 6.56 ft. (2m)
❸ Glide strips, plastic 6.56 ft. (2m)
(without glide strips on request)
❿ Optional: Silencer profile, rubber

- **Components, installation set “Heavy Duty”:**

❺ profile rail, steel galvanized
❼ Sliding nut M6
❾ Heavy duty bracket, aluminum
⓫ Screw M6 x 20



= Guide trough
= Glide bar
= Installation set “Heavy duty”
= profile rail

PDF: igus.com/e-chain-pdfs
Product information: igus.com/e-chains

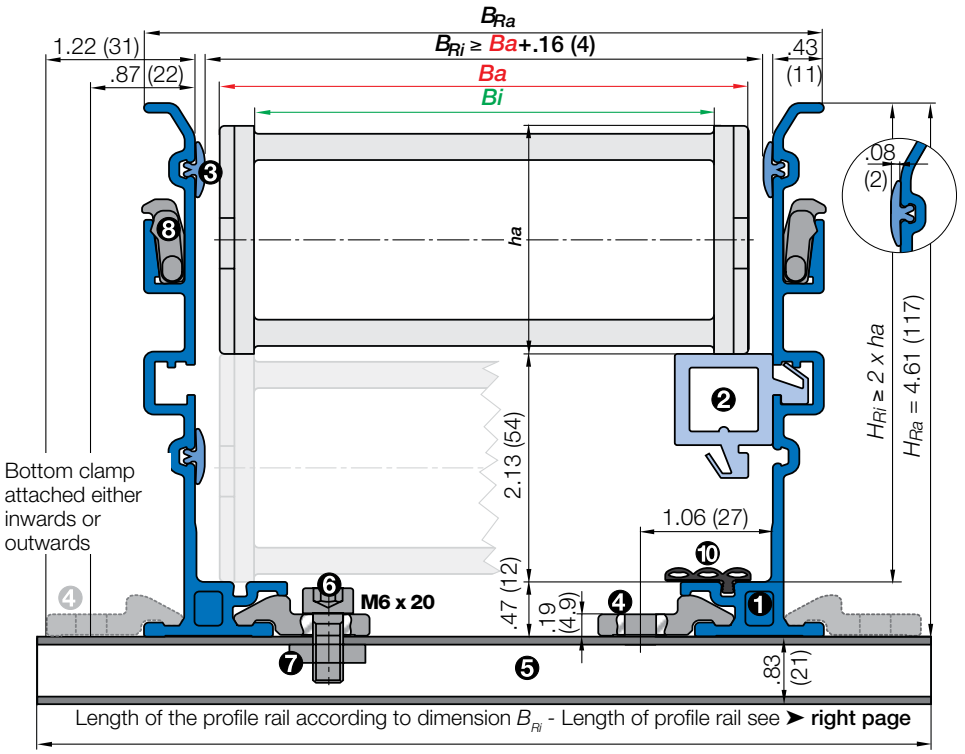
Guide Trough Systems
Aluminum SuperTrough

Part No. 972-30-SL and 972-31-SL Trough Height: 4.61 in. (117 mm)

Aluminum SuperTrough — Basic Version

For the following Series

System E4-1 Series
● E4-32/H4-32/R4-32
System E4-1L Series:
● E4-38L/R4-38L



Ba	=	Outer e-chain® width
Bi	=	Inner e-chain® width
ha	=	e-chain® outer height
H_{Ri}	=	Inner trough height
H_{Ra}	=	Outer trough height
B_{Ri}	=	Inner trough width ➤ depends on dim. *Ba*
B_{Ra}	=	Outer trough width
n_{Mon}	=	# of installation sets (left/right)
n_{Ri}	=	# of trough set (left/right)

$H_{Ri} \geq 2 \bullet ha$

$B_{Ri} \geq Ba + 4$

● = Guide trough
● = Glide bar
● = Installation set "Basic"
● = profile rail

● **Components, trough:**
❶ Trough side parts, aluminum, 6.56 ft. (2m)
❷ Glide bar, plastic, 6.56 ft. (2m)
❸ Glide strips, plastic, 6.56 ft. (2m) (without glide strips on request)
❿ Optional: Silencer profile, rubber

● **Components, installation set:**
❹ Bottom clamp, aluminum
❺ profile rail, steel galvanized
❻ Screw M6 x20
❼ Sliding nut M6
❽ Interface connector, plastic

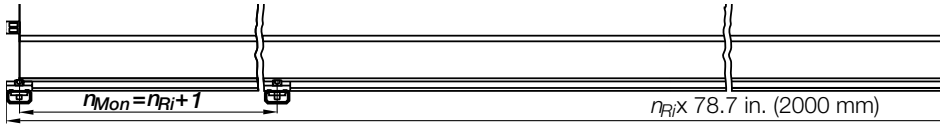


Basic version: Aluminum SuperTrough components

Complete guide trough sets - description	Part No.	Weight
Set of 2 trough side parts, incl. glide strips, without glide bars, 6.56 ft. (2m) section	**972-30-SL**	≈ 13.23 lbs
Set of 2 trough side parts, incl. glide strips, with glide bars, 6.56 ft. (2m) section	**972-31-SL**	≈ 16.31 lbs
1 Installation set **"Basic"** without profile rail	**960-30**	≈ .13 lbs
1 Installation set **"Basic"** with profile rail	**960-30-____**	
Single parts - description		
1 Glide strip, individual, 6.56 ft. (2m) section	**75-01**	≈ .13 lbs
1 Bottom clamp, individual	**75.40**	≈ .07 lbs
1 Interface connector, individual	**75-60**	
1 Screw M6 x 20, individual	**M6X20SOCKETCAP**	
1 Sliding nut M6, individual	**ZBNUT-LG**	
2 Glide bars, 6.56 ft. (2m) sections	**82-79**	≈
1 profile rail, individual	**92-52____**	≈ .60 lbs/ft.
Silencer profile	**75-67H**	

Supplement Part No. with the indicated profile rail-length-index.
Example: 960-30-150 profile rail-length-index for your chosen trough inner width B_{Ri}
➤ See table on the right or the respective page for chosen series

Number of installation sets which have to be installed



Guide Trough Systems
Aluminum SuperTrough

Lengths of profile rail - Basic Version
Bottom Clamp can be attached either **inwards** or **outwards**

E4-32/H4-32/R4-32

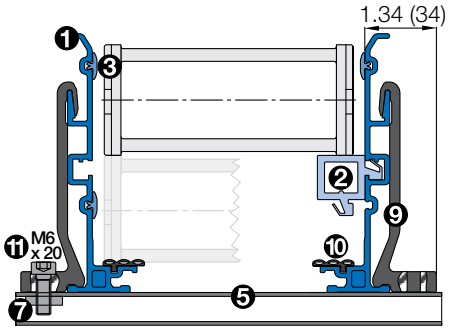
e-chain® Width Index	B_{Ri} in. (mm)	Part No. attached inwards	Part No. attached outwards
-05	3.03 (77)	**960-30-125**	**960-30-175**
-06	3.74 (95)	**960-30-150**	**960-30-200**
-07	4.02 (102)	**960-30-150**	**960-30-200**
-087	4.49 (114)	**960-30-175**	**960-30-225**
-10	5.00 (127)	**960-30-175**	**960-30-225**
-11	5.31 (135)	**960-30-200**	**960-30-250**
-112	5.51 (140)	**960-30-200**	**960-30-250**
-12	5.98 (152)	**960-30-200**	**960-30-250**
-137	6.50 (165)	**960-30-225**	**960-30-275**
-15	6.97 (177)	**960-30-225**	**960-30-275**
-162	7.48 (190)	**960-30-250**	**960-30-300**
-17	7.68 (195)	**960-30-250**	**960-30-300**
-18	7.95 (202)	**960-30-250**	**960-30-300**
-187	8.46 (215)	**960-30-275**	**960-30-325**
-20	8.94 (227)	**960-30-275**	**960-30-325**
-212	9.45 (240)	**960-30-300**	**960-30-350**
-23	9.92 (252)	**960-30-300**	**960-30-350**
-237	10.43 (265)	**960-30-325**	**960-30-375**
-25	10.91 (277)	**960-30-325**	**960-30-375**
-262	11.42 (290)	**960-30-350**	**960-30-400**
-28	11.89 (302)	**960-30-350**	**960-30-400**
-29	12.40 (315)	**960-30-375**	**960-30-425**
-30	12.87 (327)	**960-30-375**	**960-30-425**
-312	13.39 (340)	**960-30-400**	**960-30-450**
-325	13.86 (352)	**960-30-400**	**960-30-450**
-337	14.37 (365)	**960-30-425**	**960-30-475**
-350	14.84 (377)	**960-30-425**	**960-30-475**
-362	15.35 (390)	**960-30-450**	**960-30-500**
-375	15.83 (402)	**960-30-450**	**960-30-500**
-387	16.34 (415)	**960-30-475**	**960-30-525**
-400	16.81 (427)	**960-30-475**	**960-30-525**

E4-38L/R4-38L

e-chain® Width Index	B_{Ri} in. (mm)	Part No. attached inwards	Part No. attached outwards
-050	2.76 (70)	*	**960-30-200**
-062	3.23 (82)	*	**960-30-200**
-075	3.74 (95)	*	**960-30-225**
-087	4.21 (107)	*	**960-30-225**
-100	4.72 (120)	**960-30-175**	**960-30-250**
-105	4.92 (125)	**960-30-175**	**960-30-250**
-112	5.20 (132)	**960-30-200**	**960-30-250**
-125	5.71 (145)	**960-30-200**	**960-30-275**
-137	6.18 (157)	**960-30-225**	**960-30-275**
-150	6.69 (170)	**960-30-225**	**960-30-300**
-162	7.17 (182)	**960-30-250**	**960-30-300**
-175	7.68 (195)	**960-30-250**	**960-30-325**
-187	8.15 (207)	**960-30-275**	**960-30-325**
-200	8.66 (220)	**960-30-275**	**960-30-350**
-212	9.13 (232)	**960-30-300**	**960-30-350**
-225	9.65 (245)	**960-30-300**	**960-30-375**
-237	10.12 (257)	**960-30-325**	**960-30-375**
-250	10.63 (270)	**960-30-325**	**960-30-375**
-262	11.10 (282)	**960-30-325**	**960-30-375**
-300	12.60 (320)	**960-30-375**	**960-30-425**

*upon request

Heavy Duty Version - Installation Set Part No. 972-50



- For the “Heavy Duty” installation set:
Insert Part No. **972-50-____** instead of **960-30-____** on the right column “attached outwards”

- **Components, trough “Heavy Duty”:**

❶ Trough side parts, aluminum, 6.56 ft. (2m)
❷ Glide bar, plastic, 6.56 ft. (2m)
❸ Glide strips, plastic 6.56 ft. (2m)
(without glide strips on request)
❿ Optional: Silencer profile, rubber

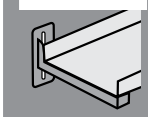
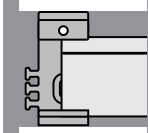
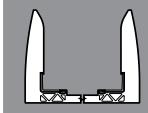
- **Components, installation set “Heavy Duty”:**

❺ profile rail, steel galvanized
❼ Sliding nut M6
❾ Heavy duty bracket, aluminum
⓫ Screw M6 x 20

Note: Dimensions similar to Basic version!
Exception: Heavy duty bracket, see drawing



= Guide trough
= Glide bar
= Installation set “Heavy duty”
= profile rail

Guide Trough Systems
Aluminum SuperTrough

Part No. 972-30-SL and 972-32-SL Trough Height: 4.61 in. (117 mm)

Aluminum SuperTrough — Basic Version

For the following Series

System E2 Series:
- 2700

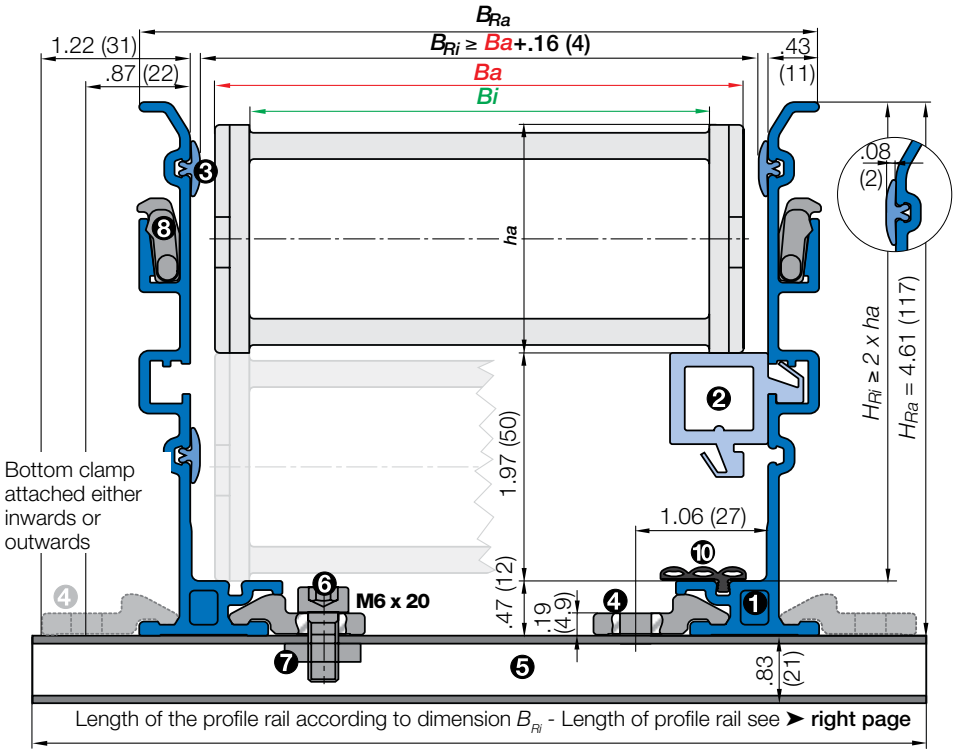
System E2 Tube Series:
- R58

Ba	=	Outer e-chain® width
Bi	=	Inner e-chain® width
ha	=	e-chain® outer height
H_{Ri}	=	Inner trough height
H_{Ra}	=	Outer trough height
B_{Ri}	=	Inner trough width ➤ depends on dim. *Ba*
B_{Ra}	=	Outer trough width
n_{Mon}	=	# of installation sets (left/right)
n_{Ri}	=	# of trough set (left/right)

$H_{Ri} \geq 2 \bullet ha$

$B_{Ri} \geq Ba + 4$

- = Guide trough
- = Glide bar
- = Installation set “Basic”
- = profile rail



- **Components, trough:**
  - ❶ Trough side parts, aluminum, 6.56 ft. (2m)
  - ❷ Glide bar, plastic, 6.56 ft. (2m)
  - ❸ Glide strips, plastic, 6.56 ft. (2m) (without glide strips on request)
  - ❿ Optional: Silencer profile, rubber
- **Components, installation set:**
  - ❹ Bottom clamp, aluminum
  - ❺ profile rail, steel galvanized
  - ❻ Screw M6 x20
  - ❼ Sliding nut M6
  - ❽ Interface connector, plastic

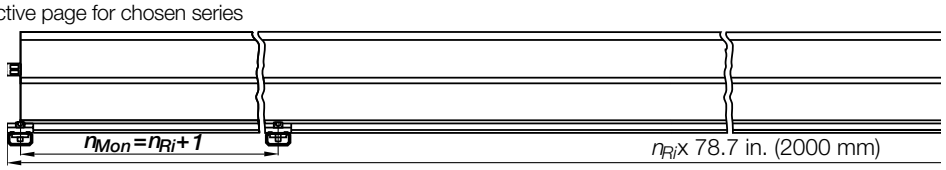


Basic version: Aluminum SuperTrough components

Complete guide trough sets - description	Part No.	Weight
Set of 2 trough side parts, incl. glide strips, without glide bars, 6.56 ft. (2m) section	**972-30-SL**	≈ 13.23 lbs
Set of 2 trough side parts, incl. glide strips, with glide bars, 6.56 ft. (2m) section	**972-32-SL**	≈ 16.31lbs
1 Installation set **“Basic”** without profile rail	**960-30**	≈ .13 lbs
1 Installation set **“Basic”** with profile rail	**960-30-____**	
Single parts - description		
1 Glide strip, individual, 6.56 ft. (2m) section	**75-01**	≈ .13 lbs
1 Bottom clamp, individual	**75-40**	≈ .07 lbs
1 Interface connector, individual	**75-60**	
1 Screw M6 x 20, individual	**M6X20SOCKETCAP**	
1 Sliding nut M6, individual	**ZBNUT-LG**	
2 Glide bars, 6.56 ft. (2m) sections	**82-79**	≈
1 profile rail, individual	**92-52____**	≈ .60 lbs/ft.
Silencer profile	**75-67H**	

Supplement Part No. with the indicated profile rail-length-index.
Example: 960-30-150 profile rail-length-index for your chosen trough inner width B_{Ri}
➤ See table on the right or the respective page for chosen series

Number of installation sets which have to be installed



igus® e-chain system®
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email: sales@igus.com
QuickSpec: igus.com/quickspec

Guide Trough Systems
Aluminum SuperTrough

Lengths of profile rail - Basic Version

Bottom Clamp can be attached either **inwards** or **outwards**

2700

e-chain® Width Index	B_{Ri} in. (mm)	Part No. attached inwards	Part No. attached outwards
-05	2.76 (70)	*	**960-30-175**
-06	3.35 (85)	**960-30-150**	**960-30-200**
-07	3.74 (95)	**960-30-150**	**960-30-200**
-09	4.33 (110)	**960-30-175**	**960-30-225**
-10	4.72 (120)	**960-30-175**	**960-30-225**
-12	5.71 (145)	**960-30-200**	**960-30-250**
-15	6.69 (170)	**960-30-225**	**960-30-275**
-17	7.79 (198)	**960-30-250**	**960-30-300**

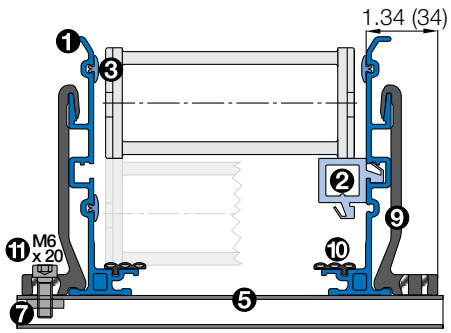
R58

e-chain® Width Index	B_{Ri} in. (mm)	Part No. attached inwards	Part No. attached outwards
-050	2.76 (70)	*	**960-30-175**
-075	3.74 (95)	**960-30-150**	**960-30-200**
-100	4.72 (120)	**960-30-175**	**960-30-225**
-125	5.71 (145)	**960-30-200**	**960-30-250**
-150	6.69 (170)	**960-30-225**	**960-30-275**
-175	7.58 (195)	**960-30-250**	**960-30-300**
-200	8.66 (220)	**960-30-275**	**960-30-325**



Stable guidance without oscillation. Because of the compact design of the aluminum SuperTrough the need for space along the travel path is small.
Travel 105 ft. (32 m) Crane operating speed 262 ft./min. (80 m/min).

Heavy Duty Version - Installation Set Part No. 972-50



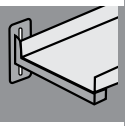
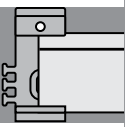
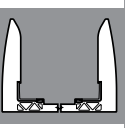
For the “Heavy Duty” installation set:
Insert Part No. **972-50-____** instead of **960-30-____** on the right column “attached outwards”

- **Components, trough “Heavy Duty”:**
- ❶ Trough side parts, aluminum, 6.56 ft. (2m)
- ❷ Glide bar, plastic, 6.56 ft. (2m)
- ❸ Glide strips, plastic 6.56 ft. (2m) (without glide strips on request)
- ❿ Optional: Silencer profile, rubber
- **Components, installation set “Heavy Duty”:**
- ❺ profile rail, steel galvanized
- ❼ Sliding nut M6
- ❾ Heavy duty bracket, aluminum
- ⓫ Screw M6 x 20

Note: Dimensions similar to Basic version!
Exception: Heavy duty bracket, see drawing



= Guide trough
= Glide bar
= Installation set “Heavy duty”
= profile rail

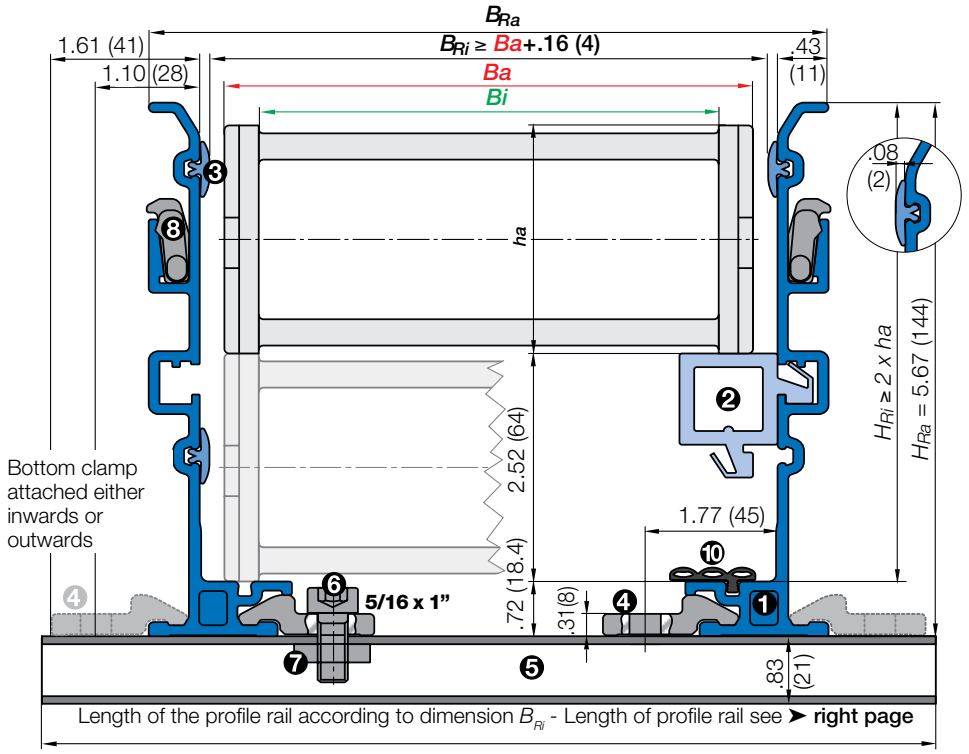
Guide Trough Systems
Aluminum SuperTrough

Part No. 973-30-SL and 973-31-SL Trough Height: 5.67 in. (144 mm)

Aluminum SuperTrough — Basic Version

For the following Series

System E2 Series:
● 3480
System E2 Tube Series:
● R68
System E4-1 Series
● E4-42/H4-42/R4-42
System E4-1L Series:
● E4-48L/R4-48L



Ba	=	Outer e-chain® width
Bi	=	Inner e-chain® width
ha	=	e-chain® outer height
H_{Ri}	=	Inner trough height
H_{Ra}	=	Outer trough height
B_{Ri}	=	Inner trough width ➤ depends on dim. *Ba*
B_{Ra}	=	Outer trough width
n_{Mon}	=	# of installation sets (left/right)
n_{Ri}	=	# of trough set (left/right)

$H_{Ri} \geq 2 \bullet ha$

$B_{Ri} \geq Ba + 4$

● = Guide trough
● = Glide bar
● = Installation set "Basic"
● = profile rail

● **Components, trough:**
❶ Trough side parts, aluminum, 6.56 ft. (2m)
❷ Glide bar, plastic, 6.56 ft. (2m)
❸ Glide strips, plastic, 6.56 ft. (2m) (without glide strips on request)
❿ Optional: Silencer profile, rubber

● **Components, installation set:**
❹ Bottom clamp, aluminum
❺ profile rail, steel galvanized
❻ Screw 5/16 x 1"
❼ Sliding nut 5/16
❽ Interface connector, plastic



Basic version: Aluminum SuperTrough components

Complete guide trough sets - description	Part No.	Weight
Set of 2 trough side parts, incl. glide strips, without glide bars, 6.56 ft. (2m) section	**973-30-SL**	≈ 17.64 lbs
Set of 2 trough side parts, incl. glide strips, with glide bars, 6.56 ft. (2m) section	**973-31-SL**	≈ 23.81 lbs
1 Installation set **"Basic"** without profile rail	**960-40**	≈ .18 lbs
1 Installation set **"Basic"** with profile rail	**960-40-____**	
Single parts - description		
1 Glide strip, individual, 6.56 ft. (2m) section	**75-01**	≈.13 lbs
1 Bottom clamp, individual	**75.50**	≈ .09 lbs
1 Interface connector, individual	**75-60**	
1 Screw 5/16 x 1", individual	**82-55**	
1 Sliding nut 5/16, individual	**82-56**	
2 Glide bars, 6.56 ft. (2m) sections	**83-79**	≈
1 profile rail, individual	**92-52____**	≈ .60 lbs/ft.
Silencer profile	**75-68H**	

Supplement Part No. with the indicated profile rail-length-index.
Example: 960-30-150 profile rail-length-index for your chosen trough inner width B_{Ri}
➤ See table on the right or the respective page for chosen series

Number of installation sets which have to be installed



igus® e-chain system®
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QuickSpec: igus.com/quickspec

Guide Trough Systems
Aluminum SuperTrough

Lengths of profile rail - Basic Version
Bottom Clamp can be attached either **inwards** or **outwards**

3400/3500

e-chain® Width Index	Part No. B_{Ri} in. (mm)	Part No. attached inwards	attached outwards
-050	2.91 (74)	*	960-40-200
-075	3.90 (99)	*	960-40-225
-100	4.88 (124)	960-40-175	960-40-250
-115	5.47 (139)	960-40-200	960-40-275
-125	5.87 (149)	960-40-200	960-40-275
-150	6.85 (174)	960-40-225	960-40-300
-175	7.83 (199)	960-40-250	960-40-325
-200	8.82 (224)	960-40-275	960-40-350
-225	9.80 (249)	960-40-300	960-40-375
-250	10.79 (274)	960-40-325	960-40-400

R68

e-chain® Width Index	Part No. B_{Ri} in. (mm)	Part No. attached inwards	attached outwards
-050	2.83 (72)	*	960-40-200
-075	3.82 (97)	*	960-40-225
-100	4.80 (122)	960-40-175	960-40-250
-115	5.39 (137)	960-40-200	960-40-275
-125	5.79 (147)	960-40-200	960-40-275
-150	6.77 (172)	960-40-225	960-40-300
-175	7.76 (197)	960-40-250	960-40-325
-200	8.74 (222)	960-40-275	960-40-350
-225	9.72 (247)	960-40-300	960-40-375
-250	10.71 (272)	960-40-325	960-40-400

E4-42/H4-42/R4-42

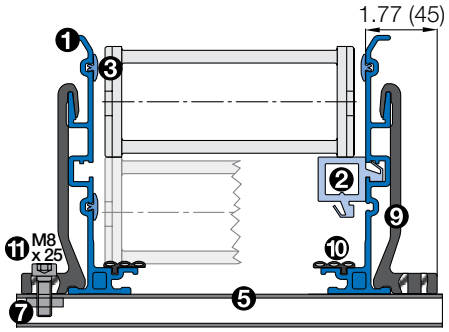
e-chain® Width Index	Part No. B_{Ri} in. (mm)	Part No. attached inwards	attached outwards
-05	3.15 (80)	*	960-40-200
-06	3.86 (98)	*	960-40-225
-07	4.13 (105)	*	960-40-225
-087	4.65 (118)	960-40-175	960-40-250
-10	5.12 (130)	960-40-200	960-40-250
-11	5.43 (138)	960-40-200	960-40-275
-112	5.63 (143)	960-40-200	960-40-275
-12	6.10 (155)	960-40-225	960-40-275
-137	6.61 (168)	960-40-225	960-40-300
-15	7.09 (180)	960-40-250	960-40-300
-162	7.60 (193)	960-40-250	960-40-325
-17	7.80 (198)	960-40-250	960-40-325
-18	8.07 (205)	960-40-275	960-40-325
-187	8.58 (218)	960-40-275	960-40-350
-20	9.06 (230)	960-40-300	960-40-350
-212	9.57 (243)	960-40-300	960-40-375
-23	10.04 (255)	960-40-325	960-40-375
-237	10.55 (268)	960-40-325	960-40-400
-25	11.02 (280)	960-40-350	960-40-400
-262	11.54 (293)	960-40-350	960-40-425
-28	12.01 (305)	960-40-375	960-40-425
-29	12.52 (318)	960-40-375	960-40-450
-30	12.99 (330)	960-40-400	960-40-450
-312	13.50 (343)	960-40-400	960-40-475
-325	13.98 (355)	960-40-425	960-40-475
-337	14.49 (368)	960-40-425	960-40-500
-350	14.96 (380)	960-40-450	960-40-500
-362	15.47 (393)	960-40-450	960-40-525
-375	15.98 (406)	960-40-475	960-40-525
-387	16.46 (418)	960-40-475	960-40-550
-400	16.93 (430)	960-40-500	960-40-550

E4-48L/R4-48L

e-chain® Width Index	Part No. B_{Ri} in. (mm)	Part No. attached inwards	attached outwards
-050	2.91 (74)	*	960-30-200
-062	3.39 (86)	*	960-30-200
-075	3.90 (99)	*	960-30-225
-087	4.37 (111)	960-30-175	960-30-225
-100	4.88 (124)	960-30-175	960-30-250
-105	4.92 (125)	960-30-200	960-30-250
-112	5.35 (136)	960-30-200	960-30-250
-125	5.87 (149)	960-30-225	960-30-275
-137	6.34 (161)	960-30-225	960-30-275
-150	6.85 (174)	960-30-250	960-30-300
-162	7.32 (186)	960-30-250	960-30-300
-175	7.83 (199)	960-30-275	960-30-325
-200	8.82 (224)	960-30-300	960-30-350
-225	9.80 (249)	960-30-325	960-30-375
-237	10.28 (261)	960-30-325	960-30-375
-250	10.79 (274)	960-30-325	960-30-375
-262	11.10 (282)	960-30-325	960-30-375
-275	11.61 (295)	960-30-350	960-30-400
-287	12.09 (307)	960-30-350	960-30-400
-300	12.60 (320)	960-30-375	960-30-425
-312	13.07 (332)	960-30-375	960-30-425
-325	13.58 (345)	960-30-400	960-30-450
-337	14.06 (357)	960-30-400	960-30-450
-350	14.57 (370)	960-30-425	960-30-475
-362	15.04 (382)	960-30-450	960-30-475
-375	15.55 (395)	960-30-450	960-30-500
-387	16.02 (407)	960-30-450	960-30-500
-400	16.54 (420)	960-30-475	960-30-500

*upon request

Heavy Duty Version - Installation Set Part No. 973-50



For the “Heavy Duty” installation set:
Insert Part No. **973-50-____** instead of **960-40-____**
on the right column “attached outwards”

- **Components, trough “Heavy Duty”:**
- ❶ Trough side parts, aluminum, 6.56 ft. (2m)
- ❷ Glide bar, plastic, 6.56 ft. (2m)
- ❸ Glide strips, plastic 6.56 ft. (2m)
  (without glide strips on request)
- ❿ Optional: Silencer profile, rubber
- **Components, installation set “Heavy Duty”:**
- ❺ profile rail, steel galvanized
- ❼ Sliding nut 5/16
- ❾ Heavy duty bracket, aluminum
- ⓫ Screw 5/16 x 1”

Note: Dimensions similar to Basic version!
Exception: Heavy duty bracket, see drawing



= Guide trough
= Glide bar
= Installation set “Heavy duty”
= profile rail

PDF: igus.com/e-chain-pdfs
Product information: igus.com/e-chains

Guide Trough Systems
Aluminum SuperTrough

Part No. 974-30-SL and 974-31-SL Trough Height: 7.24 in. (184 mm)

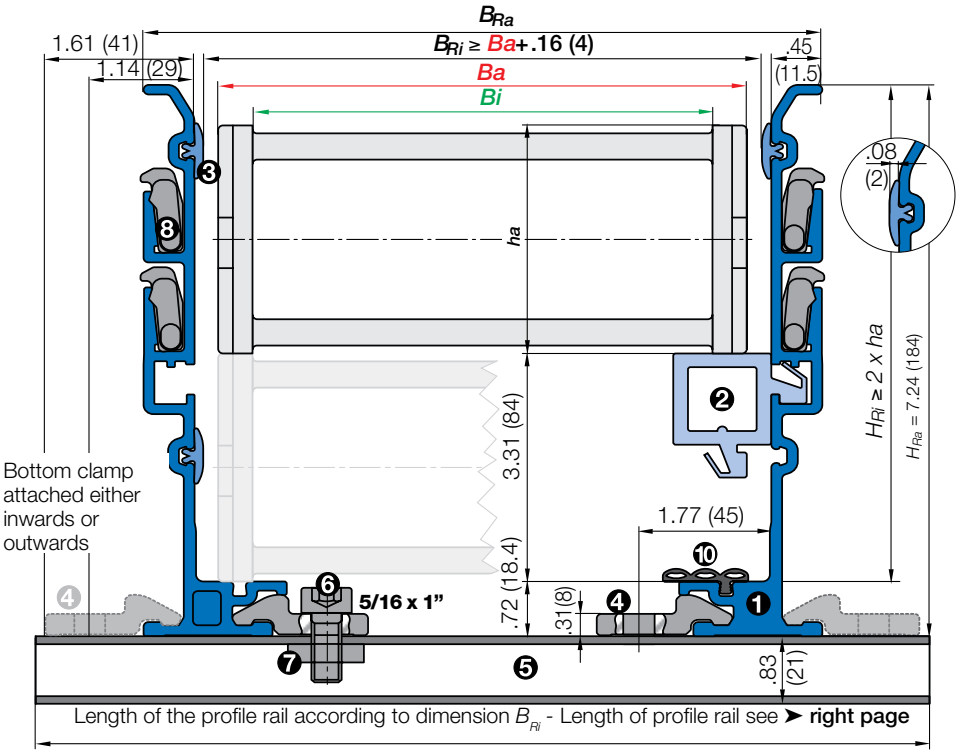
Aluminum SuperTrough — Basic Version

For the following Series

System E4-1 Series
- E4-56/H4-56/R4-56

System E4-1 Light Series
- E4-64L

System E4 Light Series:
- 14040/14140/R18840
- 14240/14340



Ba	=	Outer e-chain® width
Bi	=	Inner e-chain® width
ha	=	e-chain® outer height
H_{Ri}	=	Inner trough height
H_{Ra}	=	Outer trough height
B_{Ri}	=	Inner trough width ➤ depends on dim. *Ba*
B_{Ra}	=	Outer trough width
n_{Mon}	=	# of installation sets (left/right)
n_{Ri}	=	# of trough set (left/right)

$H_{Ri} \geq 2 \bullet ha$
$B_{Ri} \geq Ba + 4$

= Guide trough
= Glide bar
= Installation set "Basic"
= profile rail

- **Components, trough:**
  - ❶ Trough side parts, aluminum, 6.56 ft. (2m)
  - ❷ Glide bar, plastic, 6.56 ft. (2m)
  - ❸ Glide strips, plastic, 6.56 ft. (2m) (without glide strips on request)
  - ❿ Optional: Silencer profile, rubber
- **Components, installation set:**
  - ❹ Bottom clamp, aluminum
  - ❺ profile rail, steel galvanized
  - ❻ Screw 5/16 x 1"
  - ❼ Sliding nut 5/16
  - ❽ Interface connector, plastic

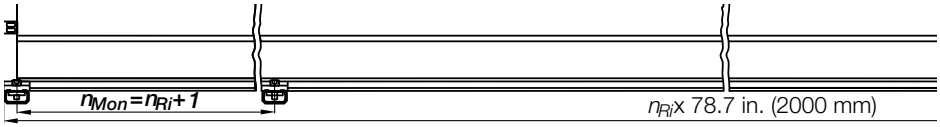


Basic version: Aluminum SuperTrough components

Complete guide trough sets - description	Part No.	Weight
Set of 2 trough side parts, incl. glide strips, without glide bars, 6.56 ft. (2m) section	**974-30-SL**	≈ 22.05 lbs
Set of 2 trough side parts, incl. glide strips, with glide bars, 6.56 ft. (2m) section	**974-31-SL**	≈ 28.22 lbs
1 Installation set **"Basic"** without profile rail	**960-50**	≈ .18 lbs
1 Installation set **"Basic"** with profile rail	**960-50-____**	
Single parts - description		
1 Glide strip, individual, 6.56 ft. (2m) section	**75-01**	≈ .13 lbs
1 Bottom clamp, individual	**75.50**	≈ .09 lbs
1 Interface connector, individual	**75-60**	
1 Screw 5/16 x 1", individual	**82-55**	
1 Sliding nut 5/16, individual	**82-56**	
2 Glide bars, 6.56 ft. (2m) section	**83-79**	≈
1 profile rail, individual	**92-52____**	≈ .60 lbs/ft.
Silencer profile	**75-68H**	

Supplement Part No. with the indicated profile rail-length-index.
Example: 960-30-150 profile rail-length-index for your chosen trough inner width B_{Ri}
➤ See table on the right or the respective page for chosen series

Number of installation sets which have to be installed



Guide Trough Systems
Aluminum SuperTrough

E4-56/H4-56/R4-56

E-Chain® Width Index	B_{Ri} in. (mm)	Part No. attached inwards	Part No. attached outwards
-05	3.46 (88)	*	960-50-225
-06	4.06 (103)	*	960-50-225
-07	4.45 (113)	*	960-50-250
-10	5.43 (138)	960-50-200	960-50-275
-11	5.94 (151)	960-50-200	960-50-275
-12	6.42 (163)	960-50-225	960-50-300
-13	6.93 (176)	960-50-225	960-50-300
-15	7.40 (188)	960-50-250	960-50-325
-16	7.91 (201)	960-50-250	960-50-325
-17	8.39 (213)	960-50-275	960-50-350
-18	8.90 (226)	960-50-275	960-50-350
-20	9.37 (238)	960-50-300	960-50-375
-21-	9.88 (251)	960-50-300	960-50-375
-22	10.35 (263)	960-50-325	960-50-400
-23	10.87 (276)	960-50-325	960-50-400
-25	11.34 (288)	960-50-350	960-50-425
-26	11.85 (301)	960-50-350	960-50-425
-27	12.32 (313)	960-50-375	960-50-450
-28	12.83 (326)	960-50-375	960-50-450
-30	13.31 (338)	960-50-400	960-50-475
-31	13.82 (351)	960-50-400	960-50-475
-32	14.29 (363)	960-50-425	960-50-500
-33	14.80 (376)	960-50-425	960-50-500
-35	15.28 (388)	960-50-450	960-50-525
-36	15.79 (401)	960-50-450	960-50-525
-37	16.26 (413)	960-50-475	960-50-550
-38	16.77 (426)	960-50-475	960-50-550
-40	17.24 (438)	960-50-500	960-50-575
-41	17.76 (451)	960-50-500	960-50-575
-42	18.23 (463)	960-50-525	960-50-600
-43	18.74 (476)	960-50-525	960-50-600
-45	19.21 (488)	960-50-550	960-50-625
-46	19.72 (501)	960-50-550	960-50-625
-47	20.20 (513)	960-50-575	960-50-650
-48	20.71 (526)	960-50-575	960-50-650
-50	21.18 (538)	960-50-600	960-50-675
-51	21.69 (551)	960-50-600	960-50-675
-52	22.17 (563)	960-50-625	960-50-700
-53	22.68 (576)	960-50-625	960-50-700
-55	23.15 (588)	960-50-650	960-50-725
-60	25.12 (638)	960-50-700	960-50-775

14240/14340

E-Chain® Width Index	B_{Ri} in. (mm)	Part No. attached inwards	Part No. attached outwards
-05	3.15 (80)	*	960-50-200
-06	3.86 (98)	*	960-50-225
-07	4.13 (105)	*	960-50-225
-087	4.65 (118)	960-50-175	960-50-250
-10	5.12 (130)	960-50-200	960-50-250
-11	5.43 (138)	960-50-200	960-50-275
-112	5.63 (143)	960-50-200	960-50-275
-12	6.10 (155)	960-50-225	960-50-275
-137	6.61 (168)	960-50-225	960-50-300
-15	7.08 (180)	960-50-250	960-50-300
-162	7.60 (193)	960-50-250	960-50-325
-17	7.79 (198)	960-50-250	960-50-325
-18	8.07 (205)	960-50-275	960-50-325
-187	8.58 (218)	960-50-275	960-50-350
-20	9.05 (230)	960-50-300	960-50-350
-212	9.57 (243)	960-50-300	960-50-375
-23	10.04 (255)	960-50-325	960-50-375
-237	10.55 (268)	960-50-325	960-50-400
-25	11.02 (280)	960-50-350	960-50-400
-262	11.54 (293)	960-50-350	960-50-425
-28	12.01 (305)	960-50-375	960-50-425
-29	12.52 (318)	960-50-375	960-50-450
-30	12.99 (330)	960-50-400	960-50-450
-312	13.50 (343)	960-50-400	960-50-475
-325	13.98 (355)	960-50-425	960-50-475
-337	14.49 (368)	960-50-425	960-50-500
-350	14.96 (380)	960-50-450	960-50-500
-362	15.47 (393)	960-50-450	960-50-525
-375	15.94 (405)	960-50-475	960-50-525
-387	16.46 (418)	960-50-475	960-50-550
-400	16.93 (430)	960-50-500	960-50-550

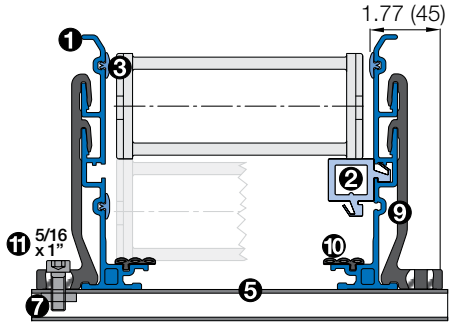
14040/14140/R18840

E-Chain® Width Index	B_{Ri} in. (mm)	Part No. attached inwards	Part No. attached outwards
-05	3.15 (80)	*	960-50-200
-06	3.74 (95)	*	960-50-225
-07	4.13 (105)	*	960-50-225
-10	5.12 (130)	960-50-200	960-50-250
-11	5.63 (143)	960-50-200	960-50-275
-12	6.10 (155)	960-50-225	960-50-275
-13	6.61 (168)	960-50-225	960-50-300
-15	7.09 (180)	960-50-250	960-50-300
-16	7.60 (193)	960-50-250	960-50-325
-17	8.07 (205)	960-50-275	960-50-325
-18	8.58 (218)	960-50-275	960-50-350
-20	9.39 (230)	960-50-300	960-50-350
-21	9.57 (243)	960-50-300	960-50-375
-22	10.04 (255)	960-50-325	960-50-375
-23	10.55 (268)	960-50-325	960-50-400
-25	11.02 (280)	960-50-350	960-50-400
-26	11.53 (293)	960-50-350	960-50-425
-27	12.01(305)	960-50-375	960-50-425
-28	12.52 (318)	960-50-375	960-50-450
-30	12.99 (330)	960-50-400	960-50-450
-31	13.50 (343)	960-50-400	960-50-475
-32	13.98 (355)	960-50-425	960-50-475
-33	14.49 (368)	960-50-425	960-50-500
-35	14.96 (380)	960-50-450	960-50-500
-36	15.47 (393)	960-50-450	960-50-525
-37	15.94 (405)	960-50-475	960-50-525
-38	16.46 (418)	960-50-475	960-50-550
-40	16.93 (430)	960-50-500	960-50-550
-41	17.44 (443)	960-50-500	960-50-575
-42	17.91 (455)	960-50-525	960-50-575
-43	18.43 (468)	960-50-525	960-50-600
-45	18.90 (480)	960-50-550	960-50-600
-46	19.41 (493)	960-50-550	960-50-625
-47	19.88 (505)	960-50-575	960-50-625
-48	20.39 (518)	960-50-575	960-50-650
-50	20.87 (530)	960-50-600	960-50-650
-51	21.38 (543)	960-50-600	960-50-675
-52	21.85 (555)	960-50-625	960-50-675
-53	22.36 (568)	960-50-625	960-50-700
-55	22.83 (580)	960-50-650	960-50-700
-60	24.80 (630)	960-50-700	960-50-750

E4-64L

E-Chain® Width Index	B_{Ri} in. (mm)	Part No. attached inwards	Part No. attached outwards
-087	4.61 (117)	960-50-175	960-50-225
-100	5.12 (130)	960-50-225	960-50-275
-150	7.09 (180)	960-50-275	960-50-325
-200	9.05 (230)	960-50-250	960-50-300

Heavy Duty Version - Installation Set Part No. 974-50



For the “Heavy Duty” installation set:
Insert Part No. **974-50-____** instead of **960-50-____**
on the right column “attached outwards”

- **Components, trough “Heavy Duty”:**

❶ Trough side parts, aluminum, 6.56 ft. (2m)
❷ Glide bar, plastic, 6.56 ft. (2m)
❸ Glide strips, plastic 6.56 ft. (2m)
(without glide strips on request)
❿ Optional: Silencer profile, rubber

- **Components, installation set “Heavy Duty”:**

❺ profile rail, steel galvanized
❼ Sliding nut 5/16
❾ Heavy duty bracket, aluminum
⓫ Screw 5/16 x 1”

Note: Dimensions similar to Basic version!
Exception: Heavy duty bracket, see drawing



= Guide trough
= Glide bar
= Installation set “Heavy duty”
= profile rail

PDF: igus.com/e-chain-pdfs
Product information: igus.com/e-chains

Guide Trough Systems
Aluminum SuperTrough

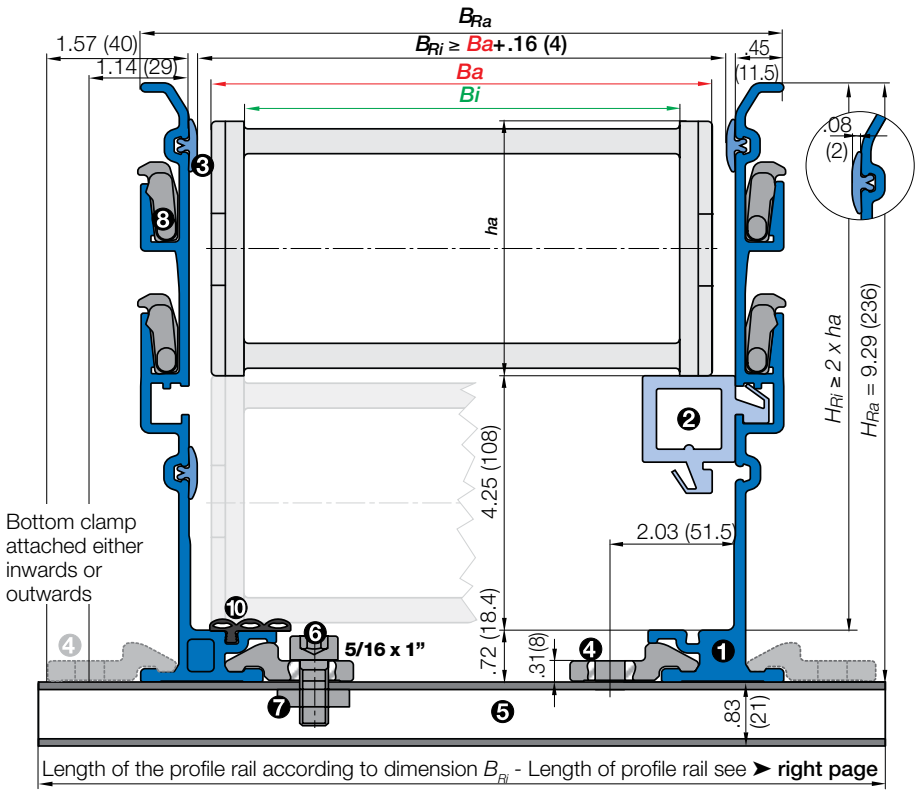
Part No. 975-30-SL and 975-31-SL Trough Height: 9.29 in. (236 mm)

Aluminum SuperTrough — Basic Version

For the following Series

System E4-1 Series
- E4-80/H4-80/R4-80

System E4 Light Series:
- 15050/15150/R19850



Ba	=	Outer e-chain® width
Bi	=	Inner e-chain® width
ha	=	e-chain® outer height
H_{Ri}	=	Inner trough height
H_{Ra}	=	Outer trough height
B_{Ri}	=	Inner trough width ➤ depends on dim. *Ba*
B_{Ra}	=	Outer trough width
n_{Mon}	=	# of installation sets (left/right)
n_{Ri}	=	# of trough set (left/right)

$H_{Ri} \geq 2 \bullet ha$

$B_{Ri} \geq Ba + 4$

- = Guide trough
- = Glide bar
- = Installation set "Basic"
- = profile rail

● Components, trough:
1. Trough side parts, aluminum, 6.56 ft. (2m)
2. Glide bar, plastic, 6.56 ft. (2m)
3. Glide strips, plastic, 6.56 ft. (2m) (without glide strips on request)
10. Optional: Silencer profile, rubber

● Components, installation set:
4. Bottom clamp, aluminum
5. profile rail, steel galvanized
6. Screw 5/16 x 1"
7. Sliding nut 5/16
8. Interface connector, plastic

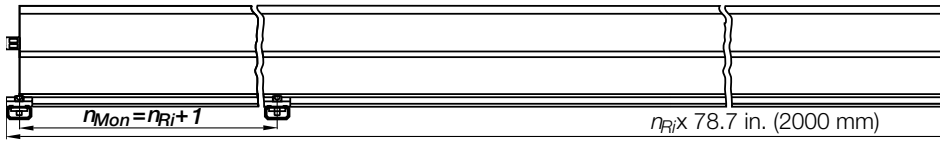


Basic version: Aluminum SuperTrough components

Complete guide trough sets - description	Part No.	Weight
Set of 2 trough side parts, incl. glide strips, without glide bars, 6.56 ft. (2m) section	**975-30-SL**	≈ 30.87 lbs
Set of 2 trough side parts, incl. glide strips, with glide bars, 6.56 ft. (2m) section	**975-31-SL**	≈ 36.60 lbs
1 Installation set **"Basic"** without profile rail	**960-50**	≈ .18 lbs
1 Installation set **"Basic"** with profile rail	**960-50-____**	
Single parts - description		
1 Glide strip, individual, 6.56 ft. (2m) section	**75-01**	≈ .13 lbs
1 Bottom clamp, individual	**75.50**	≈ .09 lbs
1 Interface connector, individual	**75-60**	
1 Screw 5/16 x 1" individual	**82-55**	
1 Sliding nut 5/16, individual	**82-56**	
2 Glide bars, 6.56 ft. (2m) section	**83-79**	≈
1 profile rail, individual	**92-52-____**	≈ .60 lbs/ft.
Silencer profile	**75-68H**	

Supplement Part No. with the indicated profile rail-length-index.
Example: 960-30-150 profile rail-length-index for your chosen trough inner width B_{Ri}
➤ See table on the right or the respective page for chosen series

Number of installation sets which have to be installed



igus® e-chain system®
Telephone 1-800-521-2747
Internet: igus.com
email: sales@igus.com
QuickSpec: igus.com/quickspec

E4-80/H4-80/R4-80

e-chain® Width Index	Part No. B_{Ri} in. (mm)	Part No. attached inwards	attached outwards
-05	4.09 (104)	*	960-50-225
-06	4.68 (119)	*	960-50-250
-07	5.08 (129)	*	960-50-250
-10	6.06 (154)	960-50-225	960-50-275
-11	6.57 (167)	960-50-225	960-50-300
-12	7.05 (179)	960-50-250	960-50-300
-13	7.56 (192)	960-50-250	960-50-325
-15	8.03 (204)	960-50-275	960-50-325
-16	8.54 (217)	960-50-275	960-50-350
-17	9.02 (229)	960-50-300	960-50-350
-18	9.53 (242)	960-50-300	960-50-375
-20	10.00 (254)	960-50-325	960-50-375
-21	10.51 (267)	960-50-325	960-50-400
-22	10.98 (279)	960-50-350	960-50-400
-23	11.50 (292)	960-50-350	960-50-425
-25	11.97 (304)	960-50-375	960-50-425
-26	12.48 (317)	960-50-375	960-50-450
-27	12.95 (329)	960-50-400	960-50-450
-28	13.46 (342)	960-50-400	960-50-475
-30	13.94 (354)	960-50-425	960-50-475
-31	14.45 (367)	960-50-425	960-50-500
-32	14.92 (379)	960-50-450	960-50-500
-33	15.43 (392)	960-50-450	960-50-525
-35	15.91 (404)	960-50-475	960-50-525
-36	16.42 (417)	960-50-475	960-50-550
-37	16.89 (429)	960-50-500	960-50-550
-38	17.40 (442)	960-50-500	960-50-575
-40	17.87 (454)	960-50-525	960-50-575
-41	18.39 (467)	960-50-525	960-50-600
-42	18.86 (479)	960-50-550	960-50-600
-43	19.37 (492)	960-50-550	960-50-625
-45	19.84 (504)	960-50-575	960-50-625
-46	20.35 (517)	960-50-575	960-50-650
-47	20.83 (529)	960-50-600	960-50-650
-48	21.34 (542)	960-50-600	960-50-675
-50	21.81 (554)	960-50-625	960-50-675
-51	22.32 (567)	960-50-625	960-50-700
-52	22.80 (579)	960-50-650	960-50-700
-53	23.31 (592)	960-50-650	960-50-725
-55	24.17 (604)	960-50-675	960-50-725
-60	25.75 (654)	960-50-725	960-50-775

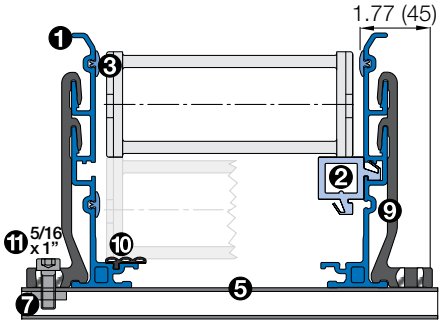
15050/15150/R19850

e-chain® Width Index	Part No. B_{Ri} in. (mm)	Part No. attached inwards	attached outwards
-05	3.31 (84)	*	960-50-200
-07	4.29 (109)	*	960-50-225
-10	5.28 (134)	*	960-50-250
-11	5.75 (146)	960-50-200	960-50-275
-12	6.26 (159)	960-50-225	960-50-275
-13	6.73 (171)	960-50-225	960-50-300
-15	7.24 (184)	960-50-250	960-50-300
-16	7.72 (196)	960-50-250	960-50-325
-17	8.23 (209)	960-50-275	960-50-325
-18	8.70 (221)	960-50-275	960-50-350
-20	9.21 (234)	960-50-300	960-50-350
-21	9.69 (246)	960-50-300	960-50-375
-22	10.20 (259)	960-50-325	960-50-375
-23	10.67 (271)	960-50-325	960-50-400
-25	11.18 (284)	960-50-350	960-50-400
-26	11.65 (296)	960-50-350	960-50-425
-27	12.16 (309)	960-50-375	960-50-425
-28	12.64 (321)	960-50-375	960-50-450
-30	13.15 (334)	960-50-400	960-50-450
-31	13.62 (346)	960-50-400	960-50-475
-32	14.13 (359)	960-50-425	960-50-475
-33	14.61 (371)	960-50-425	960-50-500
-35	15.12 (384)	960-50-450	960-50-500
-36	15.59 (396)	960-50-450	960-50-525
-37	16.10 (409)	960-50-475	960-50-525
-38	16.57 (421)	960-50-475	960-50-550
-40	17.07 (434)	960-50-500	960-50-550
-41	17.56 (446)	960-50-500	960-50-575
-42	18.07 (459)	960-50-525	960-50-575
-43	18.54 (471)	960-50-525	960-50-600
-45	19.06 (484)	960-50-550	960-50-600
-46	19.53 (496)	960-50-550	960-50-625
-47	20.04 (509)	960-50-575	960-50-625
-48	20.51 (521)	960-50-575	960-50-650
-50	21.02 (534)	960-50-600	960-50-650
-51	21.50 (546)	960-50-600	960-50-675
-52	22.01 (559)	960-50-625	960-50-675
-53	22.48 (571)	960-50-625	960-50-700
-55	22.99 (584)	960-50-650	960-50-700
-60	24.96 (634)	960-50-700	960-50-750

15250/15350

e-chain® Width Index	Part No. B_{Ri} in. (mm)	Part No. attached inwards	attached outwards
-05	3.31 (84)	*	960-50-200
-06	4.02 (102)	*	960-50-225
-07	4.29 (109)	*	960-50-225
-087	4.76 (121)	*	960-50-250
-09	5.16 (131)	*	960-50-250
-10	5.28 (134)	*	960-50-250
-11	5.59 (142)	960-50-200	960-50-250
-112	5.79 (147)	960-50-200	960-50-275
-12	6.26 (159)	960-50-225	960-50-275
-137	6.73 (171)	960-50-225	960-50-300
-15	7.24 (184)	960-50-250	960-50-300
-162	7.76 (197)	960-50-250	960-50-325
-17	7.95 (202)	960-50-250	960-50-325
-18	8.23 (209)	960-50-275	960-50-325
-187	8.74 (222)	960-50-275	960-50-350
-20	9.21 (234)	960-50-300	960-50-350
-212	9.72 (247)	960-50-300	960-50-375
-23	10.20 (259)	960-50-325	960-50-375
-237	10.71 (272)	960-50-325	960-50-400
-25	11.18 (284)	960-50-350	960-50-400
-262	11.69 (297)	960-50-350	960-50-425
-28	12.16 (309)	960-50-375	960-50-425
-29	12.68 (322)	960-50-375	960-50-450
-30	13.15 (334)	960-50-400	960-50-450
-312	13.66 (347)	960-50-400	960-50-475
-325	14.13 (359)	960-50-425	960-50-475
-337	14.65 (372)	960-50-425	960-50-500
-350	15.12 (384)	960-50-450	960-50-500
-362	15.63 (397)	960-50-450	960-50-525
-375	16.10 (409)	960-50-475	960-50-525
-387	16.61 (422)	960-50-475	960-50-550
-400	17.09 (434)	960-50-500	960-50-550

Heavy Duty Version - Installation Set Part No. 975-50



For the “Heavy Duty” installation set:
Insert Part No. **975-50-____** instead of **960-50-____** on the right column “attached outwards”

- **Components, trough “Heavy Duty”:**

❶ Trough side parts, aluminum, 6.56 ft. (2m)
❷ Glide bar, plastic, 6.56 ft. (2m)
❸ Glide strips, plastic 6.56 ft. (2m)
(without glide strips on request)
❿ Optional: Silencer profile, rubber

- **Components, installation set “Heavy Duty”:**

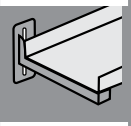
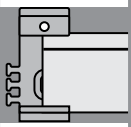
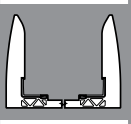
❺ profile rail, steel galvanized
❼ Sliding nut 5/16
❾ Heavy duty bracket, aluminum
⓫ Screw 5/16 x 1”

Note: Dimensions similar to Basic version!
Exception: Heavy duty bracket, see drawing



= Guide trough
= Glide bar
= Installation set “Heavy duty”
= profile rail

PDF: igus.com/e-chain-pdfs
Product information: igus.com/e-chains





Steel guide trough

Very tough for heavy-duty applications

Advantages of the steel guide trough

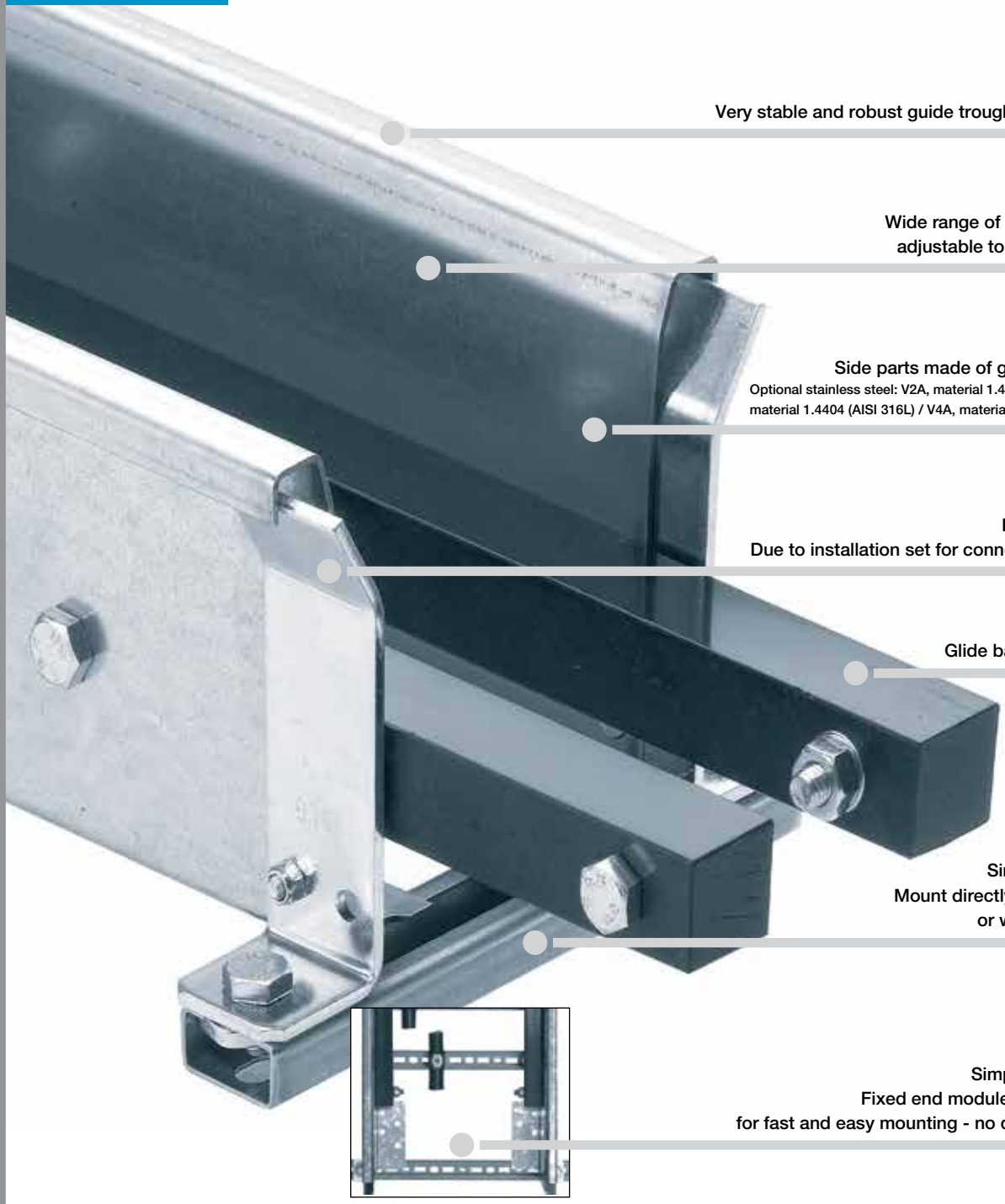
- Very tough guide trough for applications in tough environments
- Easy assembly due to installation set design
- Easy mounting directly to the profile rail
- Large range, 2-piece design, adjustable to e-chain® width
- Available in galvanised steel and stainless steel
- Low friction: Glide bar made of PE
- Fixed end module option, for fast and easy fitting without any drilling
- Conductivity according to DIN EN 61537 - as standard

When to use another guide trough:

- When a corrosion-resistant, seawater-resistant aluminium trough is required,
  ► **Aluminium SuperTroughs**

Guide Trough Systems
Steel Guide Trough

igus® e-chain system®
Telephone 1-800-521-2747
Internet: igus.com
email: sales@igus.com
QuickSpec: igus.com/quickspec



Heavy-Duty:
Very stable and robust guide trough made of steel

Large offering:
Wide range of sizes available, adjustable to e-chain® width

Resistant:
Side parts made of galvanized steel
Optional stainless steel: V2A, material 1.4301 (AISI 304) / V4A, material 1.4404 (AISI 316L) / V4A, material 1.4571 (AISI 316Ti)

Easy assembly:
Due to installation set for connecting sections

Low friction:
Glide bars made of PE

Simple fastening:
Mount directly to the ground or with profile rails

Simple connection:
Fixed end module (add-on item), for fast and easy mounting - no drilling required

Very stable and rugged for Heavy-Duty applications - Steel guide trough

If the igus® installation sets are used, the guide troughs are particularly easy to assemble. All steel guide troughs are constructed according to the same basic principle. On the following pages, you will find information about dimensions, weights and accessories according to the trough size. All sizes use a common profile rail on which the guide parts are assembled. The assembly brackets used vary in height only.

Installation Guide-PDF with detailed assembly information ➤ www.igus.com/installation-guide-pdf

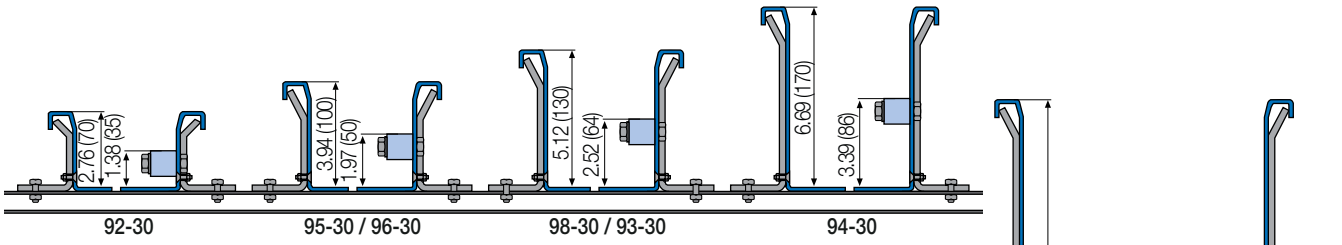
Guide Trough Systems
Steel Guide Trough
Overview - Sizes

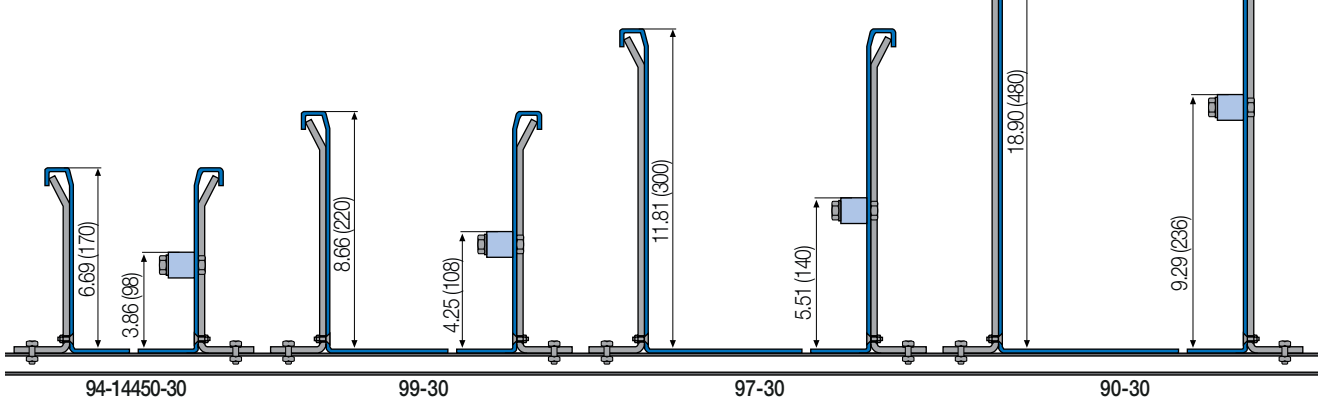


Steel guide troughs

Very stable and rugged for Heavy-Duty applications
Standard in Galvanized Steel
Optional in stainless steel:
V2A, material 1.4301 (AISI 304)
V4A, material 1.4404 (AISI 316L)
V4A, material 1.4571 (AISI 316Ti)

Trough Part No.	For e-chain® Series		Outer trough height	Installation set* Part No.
	E2 Series	E4 Series	H_{Ra} in. (mm)	
92-30	2400/2500		2.76 (70)	**92.50**
	255			
95-30	2600/2700		3.94 (100)	**95.50**
	R58			
96-30		E4-28/R4-28	3.94 (100)	**95.50**
98-30		E4-32/H4-32/R4-32	5.12 (130)	**93.50**
93-30	3400/3500	E4-42/H4-42/R4-42	5.12 (130)	**93.50**
94-30		E4-56/H4-56/R4-56	6.69 (170)	**94-50**
		14040/14140/R18840		
		14240/14340		
94-14550-30		14550/14650/R19050	6.69 (170)	**94-50**
99-30		15050/15150/R19850	8.66 (220)	**96-50**
		15250/15350		
97-30		E4-112/H4-112/R4-112	11.81 (300)	**98.50**
		600/601/R608		
		1640/R1608		
90-30		800, 840	18.90 (480)	**90.50**
One-Piece Steel Trough - Only for series 10, 15 and B15 - Galvanized Steel only				
91-10 - 91-71 [2]			1.89 (48)	–





PDF: igus.com/e-chain-pdfs
Product information: igus.com/e-chains

Guide Trough Systems
Steel Guide Trough - Components

Telephone 1-800-521-2747

Internet: igus.com
email: sales@igus.com
QuickSpec: igus.com/quickspec

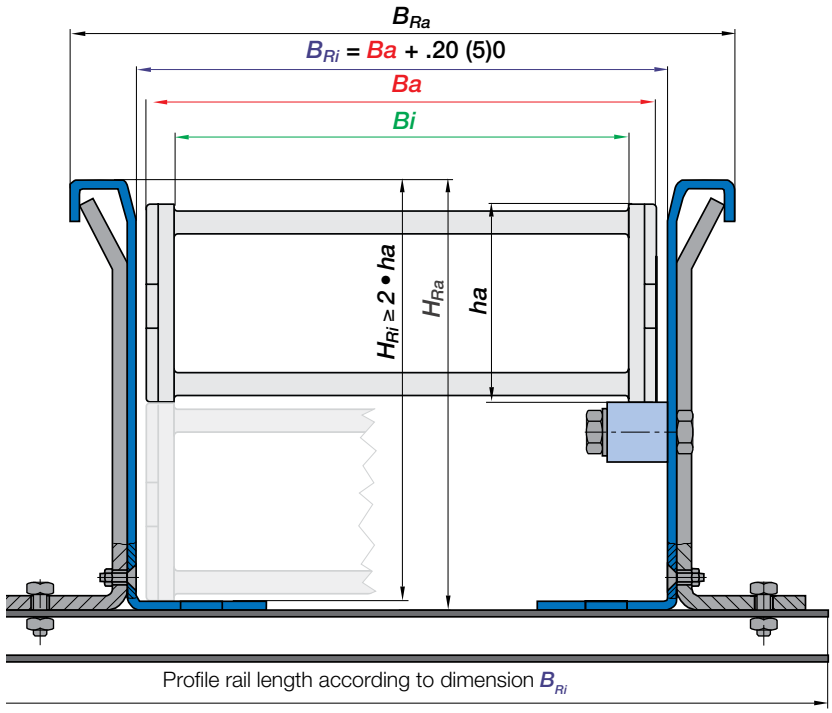
Components

- = Guide trough [1)]
- = Glide bar
- = Installation set
- = Profile rail [2)]

Ba	=	Outer e-chain® width
Bi	=	Inner e-chain® width
ha	=	e-chain® outer height
H_{Ri}	=	Inner trough height
H_{Ra}	=	Outer trough height
B_{Ri}	=	Inner trough width
B_{Ra}	=	Outer trough width
n_{Mon}	=	Number of installation sets (left/right)
n_{Ri}	=	Number of trough sets (left/right)

$H_{Ri} \geq 2 \times ha$

$B_{Ri} = Ba + 5$

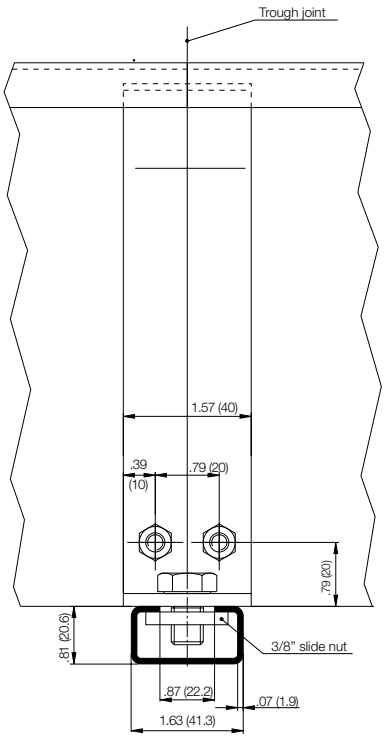


1) Guide trough side parts, galvanized steel. Optional stainless steel: V2A, material 1.4301 (AISI 304) / V4A, material 1.4404 (AISI 316L) / V4A, material 1.4571 (AISI 316Ti)

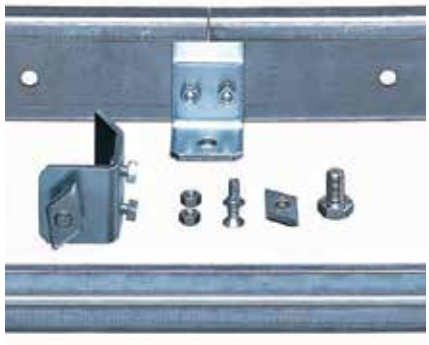
2) Profile rail also available in stainless steel V2A, material 1.4301 (AISI 304)







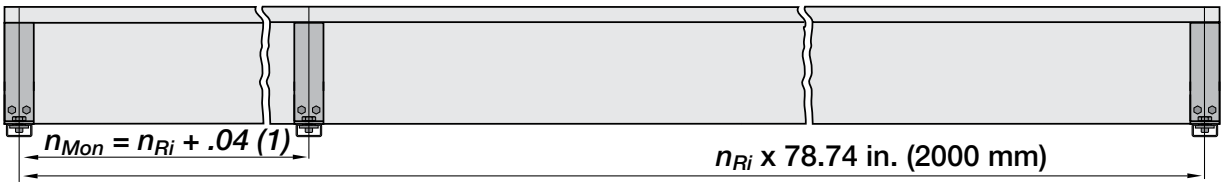
Side view of trough joint. All the dimensions, apart from the height, apply to all sizes.



Installation set for joint and attachment surface connections, secure connection without misalignment and without welding.

Steel Guide Trough - Configured according to your requirements
Quick and easy assemble the right trough for your application

- Selection of the suitable guide trough according to the e-chain® Series and e-chain® width ***Bi***
- Determine the feeding point of the cables
- Determine travel distance and thus the length of the required guide trough and the number of trough pieces. Standard length of a trough side plate: 78.7" (2000 mm). The length of the guide trough - for axial feeding - is calculated from half the travel length with and half the travel length without the glide bar
- Number and selection of the assembly kit
  The quantity of the assembly kit is calculated from the number of the trough pieces + 1 kit:



- The assembly kit matches the igus® profile rail option
- If you have opted for an e-chain® with KMA mounting brackets, we offer you a fixed-end module for the quick and simple fastening of the e-chain® in the trough without holes

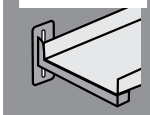
Installation Guide-PDF with detailed assembly information
➤ www.igus.com/installation-guide-pdf

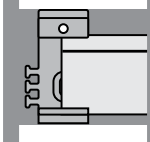
Order example Based on Part No. 94-30

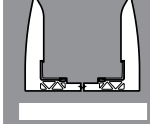
Order example: Length of travel 98.4 ft. (30 m) -
Center mounted for Series E4-56-20-300-0 with B_{Ri} = 239

Guide trough set (set of 2 trough side parts, incl. glide strips) **without** glide bar	
Order text: 52.5 ft. (16 m) guide trough without glide bar (8 x 6.56 ft. (2 m) sections)	**Part No. 94-30**
Guide trough set (set of 2 trough side parts, incl. glide strips) **with** glide bar	
Order text: 52.5 ft. (16 m) guide trough with glide bar (8 x 6.56 ft. (2 m) sections)	**Part No. 94-31**
Installation set “Basic” complete **(guide trough-sets + 1)**	
Order text: 17 installation sets “Basic”	**Part No. 94-50-350**
Module for the fixed end	
Order text: 1 set	**Part No. 94-80-01**

Calculation - travel center mounted: Half travel length, rounded down to full 2 m sections = X m guide trough length without glide bars + X m guide trough length with glide bars + installation sets Basic (number of trough pieces + 1)

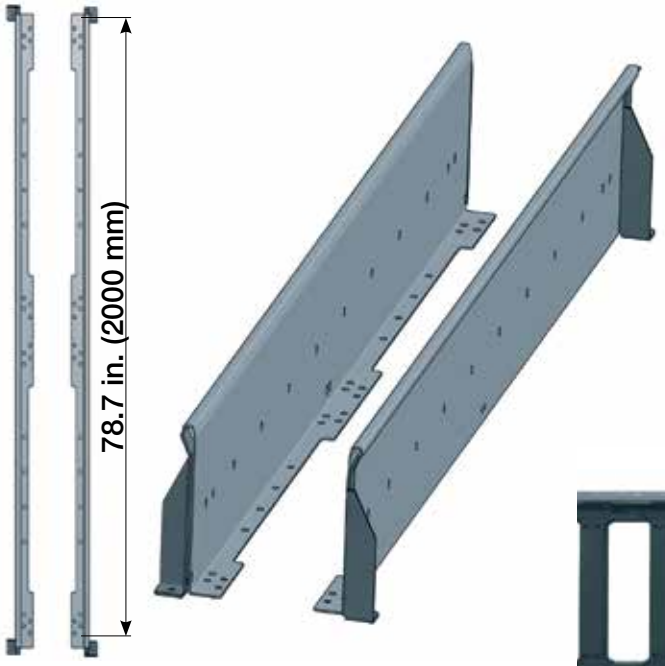






Guide Trough Systems
Steel Guide Trough - Fixed End Module

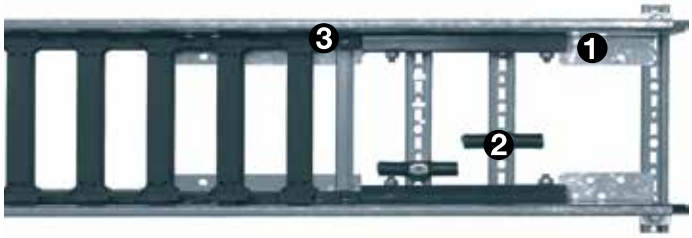
Fixed end module - Quick and simple fastening onto the steel guide trough



Until now, the steel trough had to be modified on site to fit the mounting brackets at the stationary end of the e-chain®. That is now history. With its prefabricated boreholes, the 78.7" (2,000 mm) long kit can be used for middle-feed, end-feed and opposed installation.

❶ Fast fixation of mounting brackets thanks to prefabricated boreholes
❷ Fast installation of profile rail for strain relief
❸ Fast bolting of glide bars

Industries: Power plants, coal conveyors, mining, composting plants, raw material storage, gypsum plants, etc.



Part No.	For Steel Guide Troughs	For e-chain® Series
90-80-01*	90-30 | 90-31	800, 840
92-80-01*	92-30 | 92-31	2500, 255
93-80-01	93-30 | 93-31	3500, R68, E4-42/H4-42/R4-42, E4-48L/R4-48L
94-80-01	94-30 | 94-31	E4-56/H4-56/R4-56, 14040/14140 /R18840, 14240/14340
95-80-01*	95-30 | 95-31	2700
96-80-01	96-30 | 96-31	E4-80/H4-80/R4-80, 15050/5150/R19850
97-80-01	97-30 | 97-31	E4-32/H4-32/R4-32, E4-38L/R4-38L
98-80-01	98-30 | 98-31	E4-112/H4-112/R4-112, 1640/R1608
99-80-01	99-30 | 99-31	E4-28/R4-28
94-14550-80-01*	94-14550-30 | 94-14550-31	14550/14650/R19050

*Available upon request, please consult igus® for delivery time!



Fxed end module - length 78.7 in. (2000 mm)

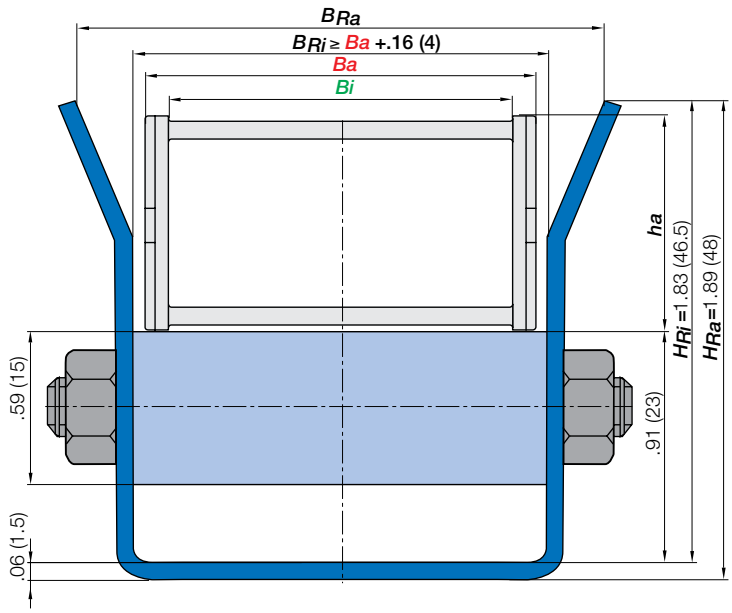
Guide Trough Systems
Steel Guide Troughs - One-Piece - U-Shaped
Special solutions for Series 10, 15 and B15

One-piece guide troughs made of steel are available for the following Energy Chains®: Series 10, 15 and B15. These guide troughs are available from stock for outer chain widths up to 2.36 in. (60 mm). For wider e-chains® and Tubes, special solutions are possible with short lead times.
No installation sets are required for these trough sizes since the guide troughs consist of a one-piece U-profile. The joint connection with this type of guide trough is specified individually for every application.

For the following Series

System E2 Series:
- 10
- B15

System Zipper Series:
- 15



Ba = Outer e-chain® width
Bi = Inner e-chain® width
ha = e-chain® outer height
H_{Ri} = Inner trough height
H_{Ra} = Outer trough height
B_{Ri} = Inner trough width
B_{Ra} = Outer trough width



Dimensions Guide troughs 91-10 — 91-71

For Series	Part No.	B_{Ra} in.	B_{Ra} (mm)	B_{Ri} in.	B_{Ri} (mm)	Weight lbs/ft	Weight (kg/m)
10-015/15-015/B15-015							
Trough **without** glide bar 6.56 ft. (2m section)	**91-10**	1.59	(40.5)	1.18	(30)	1.01	(1.50)
Glide bar 6.56 ft. (2m section)	**91-11**	1.59	(40.5)	1.18	(30)	.30	(.45)
10-025/15-025/B15-025							
Trough **without** glide bar 6.56 ft. (2m section)	**91-20**	1.99	(50.5)	1.57	(40)	1.11	(1.65)
Glide bar 6.56 ft. (2m section)	**91-21**	1.99	(50.5)	1.57	(40)	.38	(.57)
10-038/15-038/B15-038							
Trough **without** glide bar 6.56 ft. (2m section)	**91-30**	2.46	(62.5)	2.05	(52)	1.21	(1.80)
Glide bar 6.56 ft. (2m section)	**91-31**	2.46	(62.5)	2.05	(52)	.46	(.68)
10-050/15-050/B15-050							
Trough **without** glide bar 6.56 ft. (2m section)	**91-40**	2.85	(72.5)	2.44	(62)	1.28	(1.90)
Glide bar 6.56 ft. (2m section)	**91-41**	2.85	(72.5)	2.44	(62)	.61	(.91)
10-5/15-5/B15-5							
Trough **without** glide bar 6.56 ft. (2m section)	**91-50**	3.60	(91.5)	3.19	(81)	1.52	(2.26)
Glide bar 6.56 ft. (2m section)	**91-51**	3.60	(91.5)	3.19	(81)	.84	(1.25)
10-6/15-6/B15-6							
Trough **without** glide bar 6.56 ft. (2m section)	**91-60**	4.27	(108.5)	3.86	(98)	1.83	(2.72)
Glide bar 6.56 ft. (2m section)	**91-61**	4.27	(108.5)	3.86	(98)	.91	(1.35)
10-7/15-7/B15-7							
Trough **without** glide bar 6.56 ft. (2m section)	**91-70**	5.06	(128.5)	4.65	(118)	2.13	(3.17)
Glide bar 6.56 ft. (2m section)	**91-71**	5.06	(128.5)	4.65	(118)	1.14	(1.70)

Trough material in general: St 1203 galvanized

PDF: igus.com/e-chain-pdfs
Product information: igus.com/e-chains

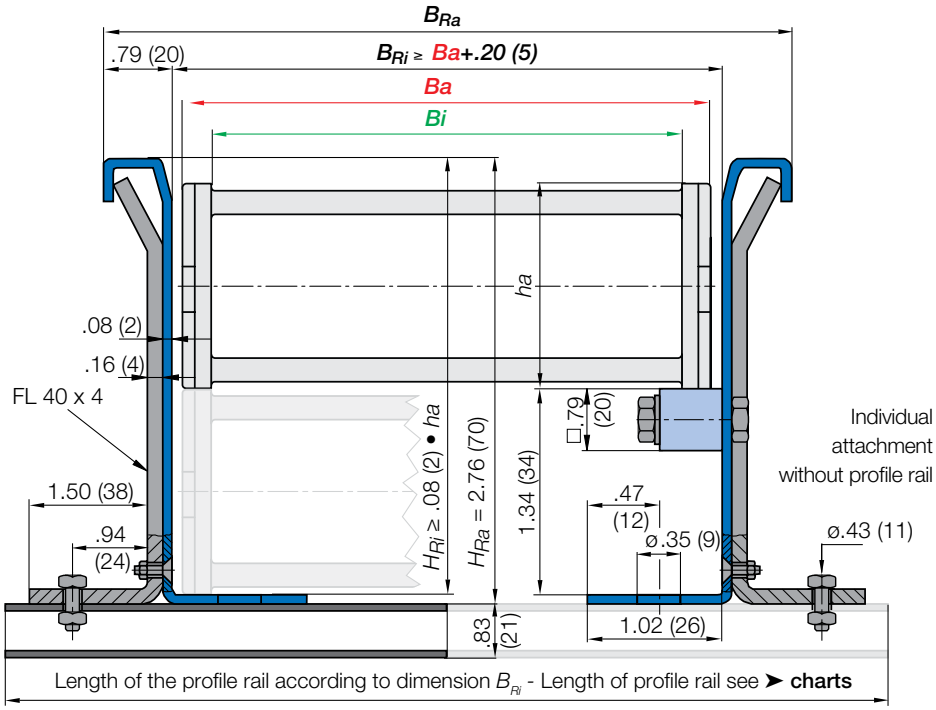
Guide Trough Systems
Steel Guide Troughs

Part No. **92-30** - Trough Height: 2.76 in. (70 mm)

For the following Series

System E2/000 Series:
● 2400/2500
● 255
System E2 Tube Series:
● R48

Ba	=	Outer e-chain® width
Bi	=	Inner e-chain® width
ha	=	e-chain® outer height
H_{Ri}	=	Inner trough height
H_{Ra}	=	Outer trough height
B_{Ri}	=	Inner trough width ➤ depends on dim. *Ba*
B_{Ra}	=	Outer trough width
n_{Mon}	=	# of installation sets (left/right)
n_{Ri}	=	# of trough set (left/right)
!		$H_{Ri} \geq 2 \bullet ha$ $B_{Ri} \geq Ba + 5$
●	=	Guide trough
●	=	Glide bar
●	=	Installation set “Basic”
●	=	profile rail



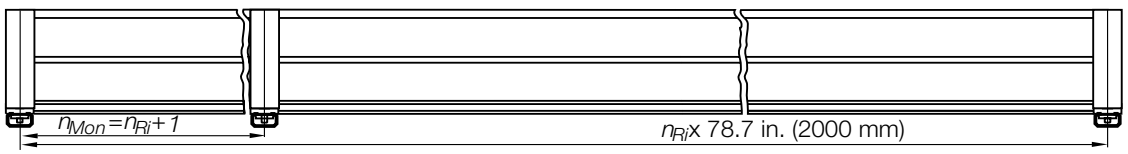
Steel Guide Trough components - Sets and single parts

Complete guide trough sets - description	Part No.	Weight lbs
Set of 2 trough side parts **without** glide bars, each 6.56 ft. (2m)	**92-30**	**19.85**
1 Installation set “Basic” **with** profile rail	**92-50-____**	
1 Installation set “Basic” **without** profile rail	**92-50**	**.84**
1 Glide bar set with hardware, each 6.56 ft. (2m) + 22 bolts	**92-01**	**4.52**

Single parts - description		
1 profile rail, individual	**92-52-____**	**.60 lbs/ft.**
1 Clamping brackets, 2 pcs	**92-51**	**.31**
4 Flat-head screws M6 x 20	**92-53**	
4 Lock nuts M6	**92-55**	
2 3/8 Slide nuts	**92-56**	
2 Hex-head bolts 3/8 x 3/4	**92-57**	
Glide bar hardware only, 22 pcs.	**92-21**	**1.21**

Supplement Part No. with the indicated profile rail-length-index. **Example: 92-50-175**
profile rail-length-index for your chosen trough inner width B_{Ri} ➤ **opposite page**

Design sketch: Number of installation sets which have to be installed



Part No. Installation set: Steel Guide Trough with profile rail (depending on the width)

2400/2500

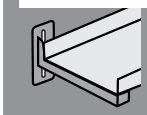
Width Index	B_{Ri} in. (mm)	Part No. Installation set
-02	1.81 (46)	*
-03	2.32 (59)	92-50-175
-05	3.07 (78)	92-50-200
-07	3.86 (98)	92-50-225
-09	4.33 (110)	92-50-225
-10	4.88 (124)	92-50-250
-12	5.75 (146)	92-50-275

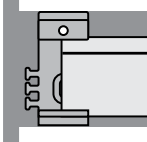
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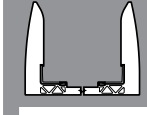
Width Index	B_{Ri} in. (mm)	Part No. Installation set
-03	2.32 (59)	92-50-175
-05	3.07 (78)	92-50-200
-07	3.86 (98)	92-50-225
-10	4.88 (124)	92-50-250



igus® steel guide trough used in a robotics application







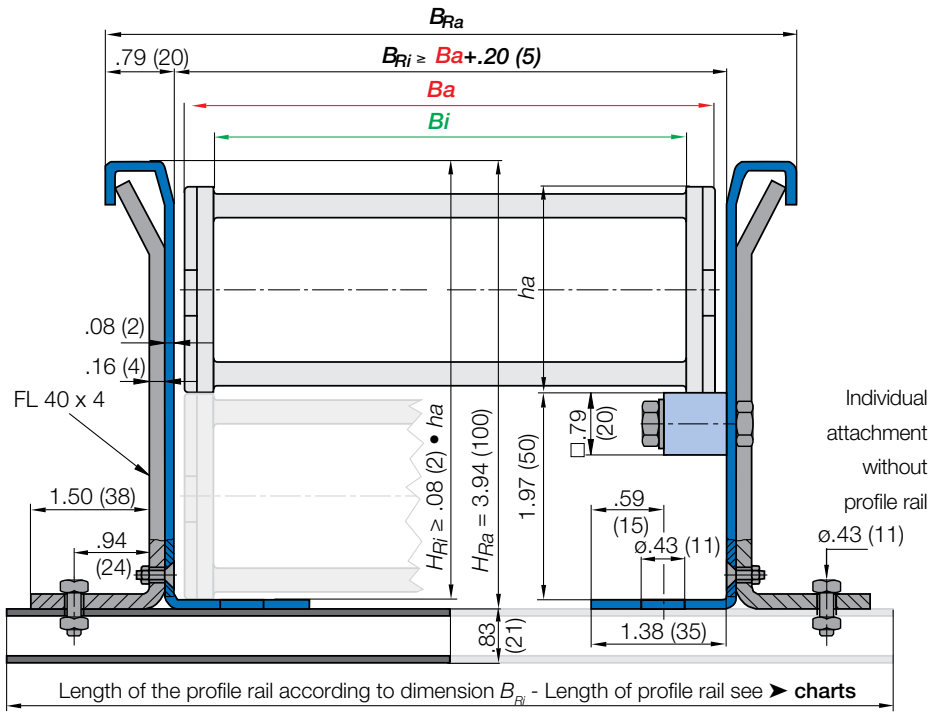
Guide Trough Systems
Steel Guide Troughs

For the following Series

System E2/000 Series:
- 2600/2700

System E2 Tube Series:
- R58

Part No. **95-30** - Trough Height: 3.94 in. (100 mm)



Ba	=	Outer e-chain® width
Bi	=	Inner e-chain® width
ha	=	e-chain® outer height
H_{Ri}	=	Inner trough height
H_{Ra}	=	Outer trough height
B_{Ri}	=	Inner trough width ➤ depends on dim. *Ba*
B_{Ra}	=	Outer trough width
n_{Mon}	=	# of installation sets (left/right)
n_{Ri}	=	# of trough set (left/right)

! $H_{Ri} \geq 2 \bullet ha$
$B_{Ri} \geq Ba + 5$

● = Guide trough
● = Glide bar
● = Installation set “Basic”
● = profile rail

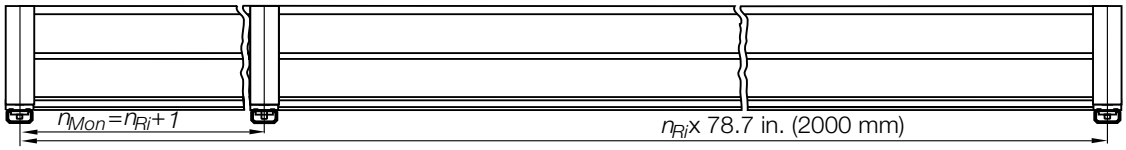
Steel Guide Trough components - Sets and single parts

Complete guide trough sets - description	Part No.	Weight lbs
Set of 2 trough side parts **without** glide bars, each 6.56 ft. (2m)	**95-30**	**23.81**
1 Installation set “Basic” **with** profile rail	**95-50-____**	
1 Installation set “Basic” **without** profile rail	**95-50**	**1.01**
1 Glide bar set with hardware, each 6.56 ft. (2m) + 22 bolts	**92-01**	**4.52**

Single parts - description		
1 profile rail, individual	**92-52-____**	**.60 lbs/ft**
1 Clamping brackets, 2 pcs	**95-51**	**.40**
4 Flat-head screws M6 x 20	**92-53**	
4 Lock nuts M6	**92-55**	
2 3/8 Slide nuts	**92-56**	
2 Hex-head bolts 3/8 x 3/4	**92-57**	
Glide bar hardware only, 22 pcs	**92-21**	**1.21**

Supplement Part No. with the indicated profile rail-length-index. **Example: 95-50-175**
profile rail-length-index for your chosen trough inner width B_{Ri} ➤ **opposite page**

Design sketch: Number of installation sets which have to be installed

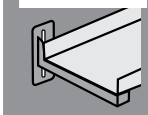


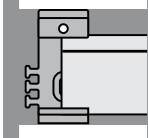
Part No. Installation set: Steel Guide Trough with profile rail (depending on the width)

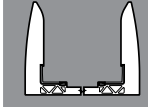
2600/2700				R58			
Width Index	B_{Ri} in.	(mm)	Part No. Installation set	Width Index	B_{Ri} in.	(mm)	Part No. Installation set
-05	2.80	(71)	95-50-200	-050	2.80	(71)	95-50-200
-06	3.39	(86)	95-50-200	-075	3.78	(96)	95-50-225
-07	3.78	(96)	95-50-225	-100	4.76	(121)	95-50-250
-09	4.37	(111)	95-50-225	-125	5.75	(146)	95-50-275
-10	4.76	(121)	95-50-250	-150	6.73	(171)	95-50-300
-12	5.75	(146)	95-50-275	-175	7.72	(196)	95-50-325
-15	6.73	(171)	95-50-300	-200	8.70	(221)	95-50-350
-17	7.83	(199)	95-50-300				



igus® steel guide trough used in a shelf conveyor application, Series E2/000 and chainflex® cables







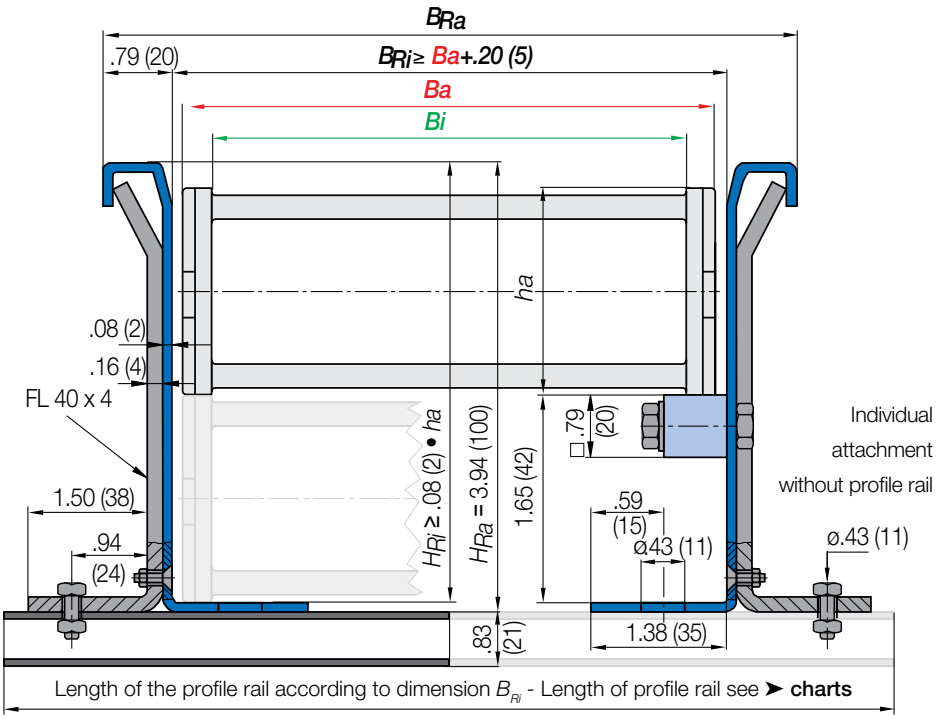
Guide Trough Systems
Steel Guide Troughs

For the following Series

System E4-1 Series
- E4-28/R4-28

System E4-1 Light Series
- E4-31L/R4-31L

Part No. **96-30** - Trough Height: 3.94 in. (100 mm)



Ba	=	Outer e-chain® width
Bi	=	Inner e-chain® width
ha	=	e-chain® outer height
H_{Ri}	=	Inner trough height
H_{Ra}	=	Outer trough height
B_{Ri}	=	Inner trough width ➤ depends on dim. *Ba*
B_{Ra}	=	Outer trough width
n_{Mon}	=	# of installation sets (left/right)
n_{Ri}	=	# of trough set (left/right)

$H_{Ri} \geq 2 \bullet ha$
$B_{Ri} \geq Ba + 5$

- = Guide trough
- = Glide bar
- = Installation set “Basic”
- = profile rail

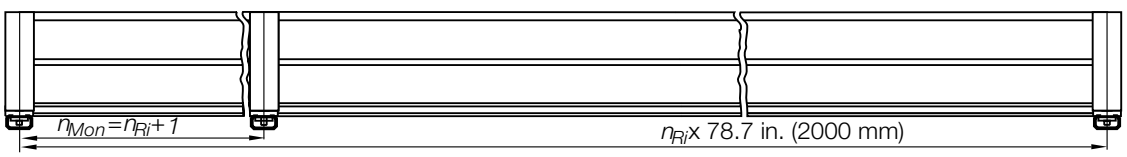
Steel Guide Trough components - Sets and single parts

Complete guide trough sets - description	Part No.	Weight lbs
Set of 2 trough side parts **without** glide bars, each 6.56 ft. (2m)	**96-30**	**23.81**
1 Installation set “Basic” **with** profile rail	**95-50-___**	
1 Installation set “Basic” **without** profile rail	**96-50**	**1.01**
1 Glide bar set with hardware, each 6.56 ft. (2m) + 22 bolts	**92-01**	**4.52**

Single parts - description		
1 profile rail, individual	**92-52-___**	**.60 lbs/ft**
1 Clamping brackets, 2 pcs	**95-51**	**.40**
4 Flat-head screws M6 x 20	**92-53**	
4 Lock nuts M6	**92-55**	
2 3/8 Slide nuts	**92-56**	
2 Hex-head bolts 3/8 x 3/4	**92-57**	
Glide bar hardware only, 22 pcs	**92-21**	**1.21**

Supplement Part No. with the indicated profile rail-length-index. **Example: 95-50-175**
profile rail-length-index for your chosen trough inner width B_{Ri} ➤ **opposite page**

Design sketch: Number of installation sets which have to be installed



Part No. Installation set: Steel Guide Trough with profile rail (depending on the width)

E4-28/R4-28

Width Index	B_{Ri} in.	(mm)	Part No. Installation set
-040	2.56	(65)	*
-050	2.95	(75)	95-50-200
-062	3.43	(87)	95-50-200
-070	3.74	(95)	95-50-200
-075	3.94	(100)	95-50-225
-100	4.92	(125)	95-50-250
-125	5.91	(150)	95-50-275
-150	6.89	(175)	95-50-300
-175	7.87	(200)	95-50-325
-200	8.86	(225)	95-50-350
-225	9.84	(250)	95-50-375
-250	10.83	(275)	95-50-400
-275	11.81	(300)	95-50-425
-300	12.80	(325)	95-50-450

*upon request

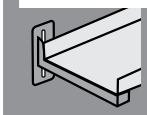
E4-31L/R4-31L

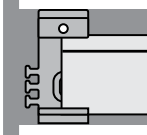
Width Index	B_{Ri} in.	(mm)	Part No. Installation set
-040	2.32	(59)	*
-050	2.72	(69)	*
-062	3.19	(81)	95-50-200
-075	3.70	(94)	95-50-200
-087	4.17	(106)	95-50-225
-100	4.69	(119)	95-50-225
-112	5.16	(131)	95-50-250
-125	5.67	(144)	95-50-250
-150	6.65	(169)	95-50-275
-162	7.13	(181)	95-50-300
-175	7.64	(194)	95-50-300

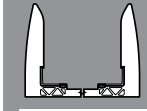
*upon request



Lightweight and high stability: igus® e-chain® tames stiff hydraulic hoses







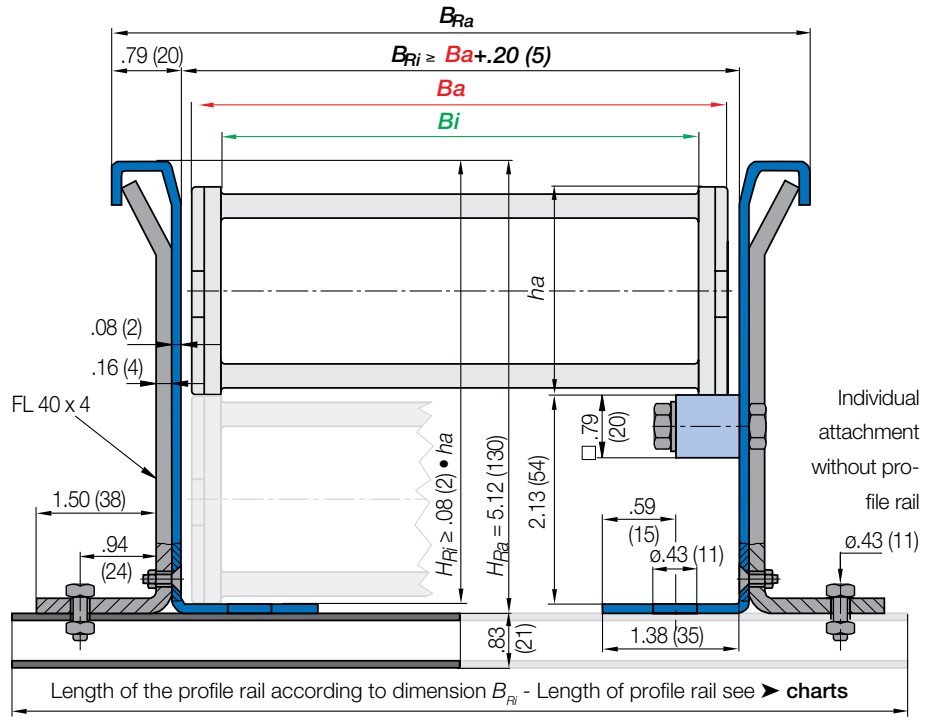
Guide Trough Systems
Steel Guide Troughs

For the following Series

System E4-1 Series
- E4-32/H4-320/R4-32

System E4-1 Light Series:
- E4-38L/R4-38L

Part No. 98-30 - Trough Height: 5.12 in. (130 mm)



Ba	=	Outer e-chain® width
Bi	=	Inner e-chain® width
ha	=	e-chain® outer height
H_{Ri}	=	Inner trough height
H_{Ra}	=	Outer trough height
B_{Ri}	=	Inner trough width ➤ depends on dim. *Ba*
B_{Ra}	=	Outer trough width
n_{Mon}	=	# of installation sets (left/right)
n_{Ri}	=	# of trough set (left/right)

$H_{Ri} \geq 2 \bullet ha$
$B_{Ri} \geq Ba + 5$

- = Guide trough
- = Glide bar
- = Installation set “Basic”
- = profile rail

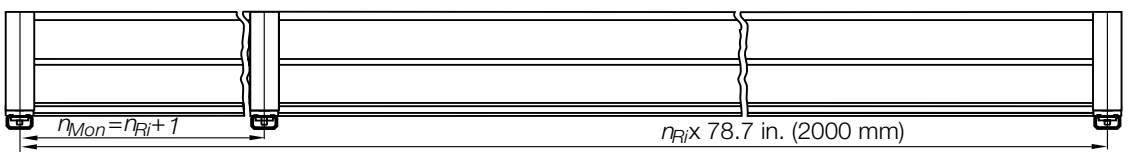
Steel Guide Trough components - Sets and single parts

Complete guide trough sets - description	Part No.	Weight lbs
Set of 2 trough side parts **without** glide bars, each 6.56 ft. (2m)	**98-30**	**28.22**
1 Installation set “Basic” **with** profile rail	**93-50-____**	
1 Installation set “Basic” **without** profile rail	**93-50**	**1.19**
1 Glide bar set with hardware, each 6.56 ft. (2m) + 22 bolts	**92-01**	**4.52**

Single parts - description		
1 profile rail, individual	**92-52-____**	**.60 lbs/ft**
1 Clamping brackets, 2 pcs	**93-51**	**.49**
4 Flat-head screws M6 x 20	**92-53**	
4 Lock nuts M6	**92-55**	
2 3/8 Slide nuts	**92-56**	
2 Hex-head bolts 3/8 x 3/4	**92-57**	
Glide bar hardware only, 22 pcs	**93-21**	**1.21**

Supplement Part No. with the indicated profile rail-length-index. **Example: 93-50-175**
profile rail-length-index for your chosen trough inner width B_{Ri} ➤ **opposite page**

Design sketch: Number of installation sets which have to be installed



Part No. Installation set: Steel Guide Trough with profile rail (depending on the width)

E4-32/H4-32/R4-32

Width Index	B_{Ri} in.	(mm)	Part No. Installation set
-05	3.15	(78)	93-50-200
-06	3.86	(96)	93-50-225
-07	4.13	(103)	93-50-225
-087	4.61	(115)	93-50-225
-10	5.12	(128)	93-50-250
-11	5.43	(136)	93-50-250
-112	5.59	(141)	93-50-250
-12	6.10	(153)	93-50-275
-137	6.57	(166)	93-50-275
-15	7.09	(178)	93-50-300
-162	7.56	(191)	93-50-300
-17	7.80	(196)	93-50-325
-18	8.07	(203)	93-50-325
-187	8.54	(216)	93-50-325
-20	9.06	(228)	93-50-350
-212	9.53	(241)	93-50-350
-23	10.04	(253)	93-50-375
-237	10.51	(266)	93-50-375
-25	11.02	(278)	93-50-400
-262	11.50	(291)	93-50-400
-28	12.01	(303)	93-50-425
-29	12.48	(316)	93-50-425
-30	12.99	(328)	93-50-450
-312	13.46	(341)	93-50-450
-325	13.98	(353)	93-50-475
-337	14.45	(366)	93-50-475
-350	14.96	(378)	93-50-500
-362	15.43	(391)	93-50-500
-375	15.94	(403)	93-50-525
-387	16.42	(416)	93-50-525
-400	16.93	(428)	93-50-550

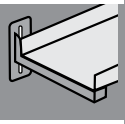
E4-38L/R4-38L

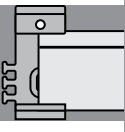
Width Index	B_{Ri} in.	(mm)	Part No. Installation set
-050	2.80	(71)	93-50-200
-062	3.27	(83)	93-50-200
-075	3.78	(96)	93-50-225
-087	4.25	(108)	93-50-225
-100	4.76	(121)	93-50-250
-105	4.96	(126)	93-50-250
-112	5.24	(133)	93-50-250
-125	5.75	(146)	93-50-275
-137	6.22	(158)	93-50-275
-150	6.73	(171)	93-50-300
-162	7.21	(183)	93-50-300
-175	7.72	(196)	93-50-325
-187	8.19	(208)	93-50-325
-200	8.70	(221)	93-50-350
-212	9.17	(233)	93-50-350
-225	9.69	(246)	93-50-375
-237	10.16	(258)	93-50-375
-250	10.67	(271)	93-50-400
-262	11.14	(283)	93-50-400
-300	12.64	(321)	93-50-450

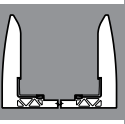




igus® System E4 with extension link at a ship loader for the coal unloading.
Travel 344.5 ft.(105 m), speed 787 ft/min (240 m/min), load 35.6 lbs/ft (53 kg/m)





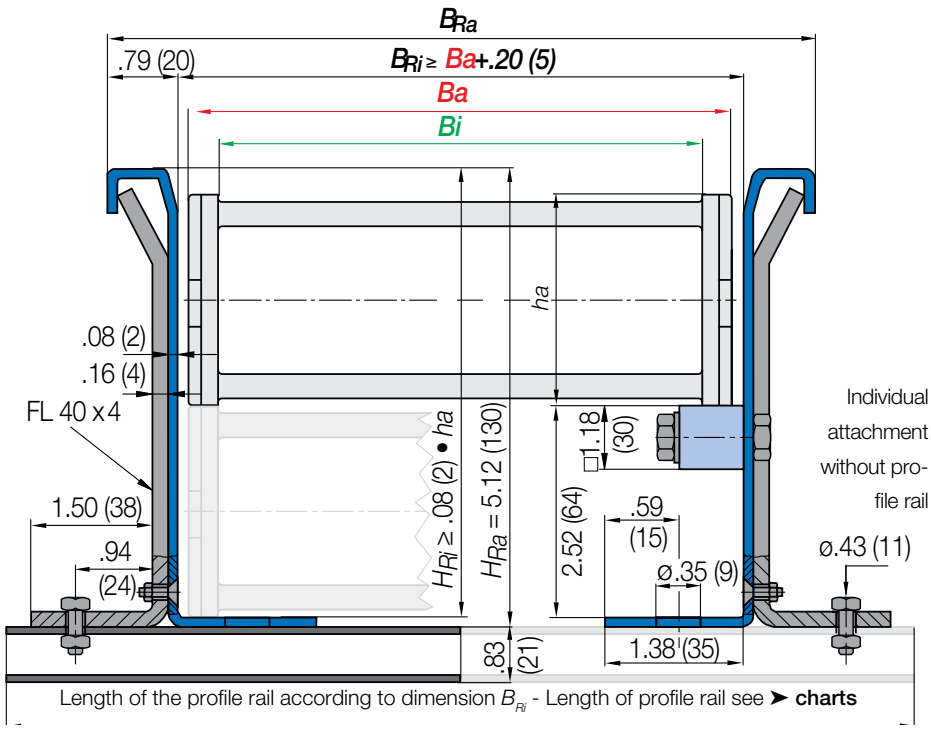


Guide Trough Systems
Steel Guide Troughs

For the following Series

System E2/000 Series:
● 3400/3500
System E2 Tube Series:
● R68
System E4-1 Series
● E4-42/H4-42/R4-42
System E4-1 Light Series:
● E4-48L/R4-48L

Part No. **93-30** - Trough Height: 5.12 in. (130 mm)



Length of the profile rail according to dimension B_{Ri} - Length of profile rail see ➤ **charts**

Ba	=	Outer e-chain® width
Bi	=	Inner e-chain® width
ha	=	e-chain® outer height
H_{Ri}	=	Inner trough height
H_{Ra}	=	Outer trough height
B_{Ri}	=	Inner trough width ➤ depends on dim. *Ba*
B_{Ra}	=	Outer trough width
n_{Mon}	=	# of installation sets (left/right)
n_{Ri}	=	# of trough set (left/right)

$H_{Ri} \geq 2 \bullet ha$
$B_{Ri} \geq Ba + 5$

● = Guide trough
● = Glide bar
● = Installation set “Basic”
● = profile rail

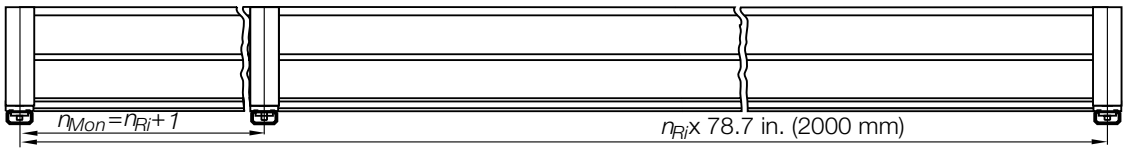
Steel Guide Trough components - Sets and single parts

Complete guide trough sets - description	Part No.	Weight lbs
Set of 2 trough side parts **without** glide bars, each 6.56 ft. (2m)	**93-30**	**28.22**
1 Installation set “Basic” **with** profile rail	**93-50-____**	
1 Installation set “Basic” **without** profile rail	**93-50**	**1.19**
1 Glide bar set with hardware, each 6.56 ft. (2m) + 22 bolts	**93-01**	**9.95**

Single parts - description		
1 profile rail, individual	**92-52-____**	**.60 lbs/ft.**
1 Clamping brackets, 2 pcs	**93-51**	**.49**
4 Flat-head screws M6 x 20	**92-53**	
4 Lock nuts M6	**92-55**	
2 3/8 Slide nuts	**92-56**	
2 Hex-head bolts 3/8 x 3/4	**92-57**	
Glide bar hardware only, 22 pcs	**93-21**	**2.67**

Supplement Part No. with the indicated profile rail-length-index. **Example: 93-50-175**
profile rail-length-index for your chosen trough inner width B_{Ri} ➤ **opposite page**

Design sketch: Number of installation sets which have to be installed



Part No. Installation set: Steel Guide Trough with profile rail (depending on the width)

3400/3500

Width Index	B_{Ri} in. (mm)	Part No. Installation set
-075	3.94 (100)	93-50-225
-115	5.51 (140)	93-50-250
-175	7.87 (200)	93-50-300

R68

Width Index	B_{Ri} in. (mm)	Part No. Installation set
-050	2.87 (73)	93-50-200
-075	3.86 (98)	93-50-225
-100	4.84 (123)	93-50-250
-115	5.43 (138)	93-50-250
-125	5.83 (148)	93-50-275
-150	6.81 (173)	93-50-300
-175	7.80 (198)	93-50-325
-200	8.78 (223)	93-50-350
-225	9.76 (248)	93-50-375
-250	10.75 (273)	93-50-400

E4-42/H4-42/R4-42

Width Index	B_{Ri} in. (mm)	Part No. Installation set
-05	3.19 (81)	93-50-200
-06	3.90 (99)	93-50-225
-07	4.17 (106)	93-50-225
-087	4.69 (119)	93-50-250
-10	5.16 (131)	93-50-250
-11	5.47 (139)	93-50-250
-112	5.67 (144)	93-50-275
-12	6.14 (156)	93-50-275
-137	6.65 (169)	93-50-300
-15	7.12 (181)	93-50-300
-162	7.64 (194)	93-50-325
-17	7.83 (199)	93-50-325
-18	8.11 (206)	93-50-325
-187	8.62 (219)	93-50-350
-20	9.09 (231)	93-50-350
-212	9.61 (244)	93-50-375
-23	10.08 (256)	93-50-375
-237	10.59 (269)	93-50-400
-25	11.06 (281)	93-50-400
-262	11.57 (294)	93-50-425
-28	12.05 (306)	93-50-425
-29	12.56 (319)	93-50-450
-30	13.03 (331)	93-50-450
-312	13.54 (344)	93-50-475
-325	14.01 (356)	93-50-475
-337	14.52 (369)	93-50-500
-350	15.00 (381)	93-50-500
-362	15.51 (394)	93-50-525
-375	16.02 (407)	93-50-525
-387	16.50 (419)	93-50-550
-400	16.97 (431)	93-50-550

E4-48L/R4-48L

Width Index	B_{Ri} in. (mm)	Part No. Installation set
-050	2.95 (75)	93-50-200
-062	3.43 (87)	93-50-200
-075	3.94 (100)	93-50-225
-087	4.41 (112)	93-50-225
-100	4.92 (125)	93-50-250
-105	5.11 (130)	93-50-250
-112	5.39 (137)	93-50-250
-125	5.91 (150)	93-50-275
-137	6.38 (162)	93-50-275
-150	6.89 (175)	93-50-300
-162	7.36 (187)	93-50-300
-175	7.87 (200)	93-50-325
-200	8.86 (225)	93-50-350
-225	9.84 (250)	93-50-375
-237	10.31 (262)	93-50-375
-250	10.83 (275)	93-50-400
-262	11.30 (287)	93-50-400
-300	12.80 (325)	93-50-450

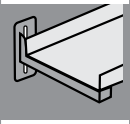


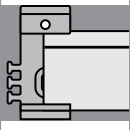
Travel up to 639.7 ft. (195 m) with the igus® System E4, safely guided in an igus® steel trough

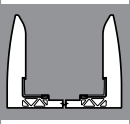
PDF: igus.com/e-chain-pdfs
Product information: igus.com/e-chains

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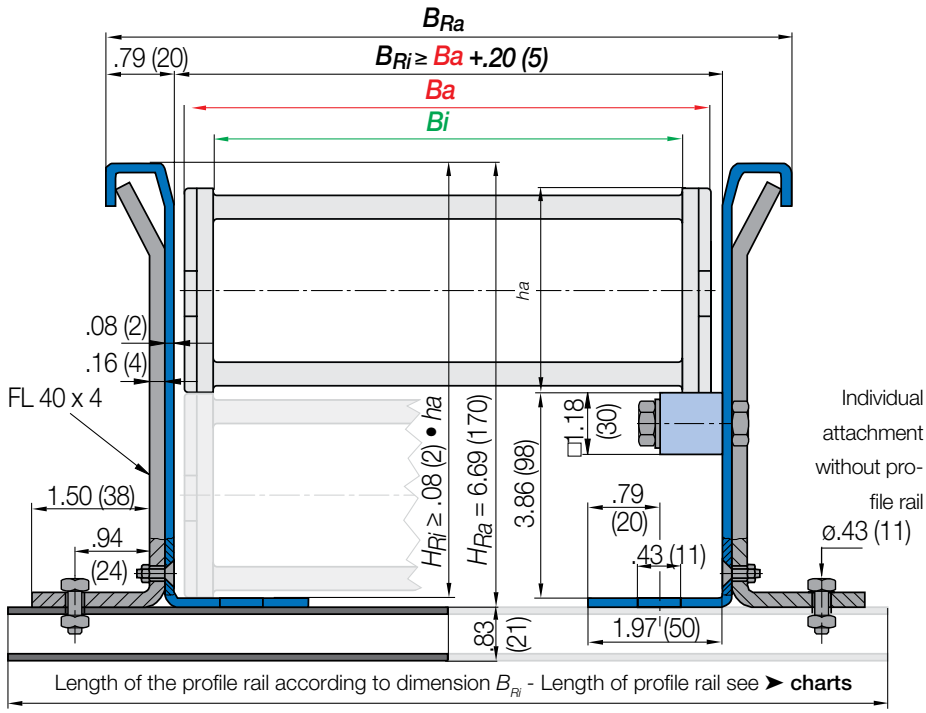


Guide Trough Systems
Steel Guide Troughs

For the following Series

System E4-1 Series
● E4-56/H4-56/R4-56
System E4-1 Light Series
● E4-64L/R4-64L
System E4 Light Series:
● 14040/14140/R18840
● 14240/14340

Part No. **94-30** - Trough Height: 6.69 in. (170 mm)



Ba	=	Outer e-chain® width
Bi	=	Inner e-chain® width
ha	=	e-chain® outer height
H_{Ri}	=	Inner trough height
H_{Ra}	=	Outer trough height
B_{Ri}	=	Inner trough width ➤ depends on dim. *Ba*
B_{Ra}	=	Outer trough width
n_{Mon}	=	# of installation sets (left/right)
n_{Ri}	=	# of trough set (left/right)

$H_{Ri} \geq 2 \bullet ha$
$B_{Ri} \geq Ba + 5$

● = Guide trough
● = Glide bar
● = Installation set “Basic”
● = profile rail

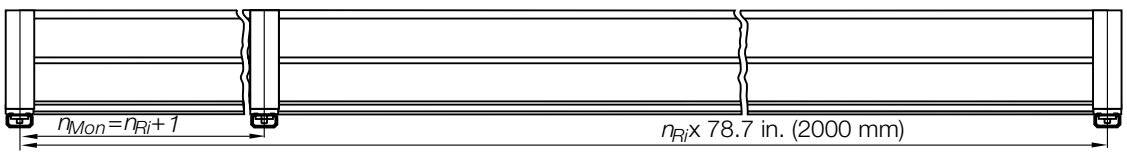
Steel Guide Trough components - Sets and single parts

Complete guide trough sets - description	Part No.	Weight lbs
Set of 2 trough side parts **without** glide bars, each 6.56 ft. (2m)	**94-30**	**37.04**
1 Installation set “Basic” **with** profile rail	**94-50-____**	
1 Installation set “Basic” **without** profile rail	**94-50**	**1.41**
1 Glide bar set with hardware, each 6.56 ft. (2m) + 22 bolts	**93-01**	**4.30**

Single parts - description		
1 profile rail, individual	**92-52-____**	**.60 lbs/ft**
1 Clamping brackets, 2 pcs	**94-51**	**.60**
4 Flat-head screws M6 x 20	**92-53**	
4 Lock nuts M6	**92-55**	
2 3/8 Slide nuts	**92-56**	
2 Hex-head bolts 3/8 x 3/4	**92-57**	
Glide bar hardware only, 22 pcs	**93-21**	**2.65**

Supplement Part No. with the indicated profile rail-length-index. **Example: 94-50-175**
profile rail-length-index for your chosen trough inner width B_{Ri} ➤ **opposite page**

Design sketch: Number of installation sets which have to be installed



Part No. Installation set: Steel Guide Trough with profile rail (depending on the width)

E4-56/H4-56/R4-56

Width Index	B_{Ri} in. (mm)	Part No. Installation set
-05	3.50 (89)	*
-06	4.23 (104)	94-50-225
-07	4.49 (114)	94-50-225
-08	4.76 (121)	94-50-225
-10	5.47 (139)	94-50-250
-11	5.98 (152)	94-50-275
-12	6.46 (164)	94-50-275
-13	6.97 (177)	94-50-300
-15	7.44 (189)	94-50-300
-16	7.95 (202)	94-50-325
-17	8.42 (214)	94-50-325
-18	8.94 (227)	94-50-350
-20	9.41 (239)	94-50-350
-21	9.92 (252)	94-50-375
-22	10.39 (264)	94-50-375
-23	10.91 (277)	94-50-400
-25	11.38 (289)	94-50-400
-26	11.89 (302)	94-50-425
-27	12.36 (314)	94-50-425
-28	12.87 (327)	94-50-450
-30	13.35 (339)	94-50-450
-31	13.86 (352)	94-50-475
-32	14.33 (364)	94-50-475
-33	14.84 (377)	94-50-500
-35	15.31 (389)	94-50-500
-36	15.82 (402)	94-50-525
-37	16.30 (414)	94-50-525
-38	16.81 (427)	94-50-550
-40	17.28 (439)	94-50-550
-41	17.79 (452)	94-50-575
-42	18.27 (464)	94-50-575
-43	18.78 (477)	94-50-600
-45	19.25 (489)	94-50-600
-46	19.76 (502)	94-50-625
-47	20.24 (514)	94-50-625
-48	20.75 (527)	94-50-650
-50	21.22 (539)	94-50-650
-51	21.73 (552)	94-50-675
-52	22.20 (564)	94-50-675
-53	22.72 (577)	94-50-700
-55	23.19 (589)	94-50-700
-60	25.28 (639)	94-50-750

14040/14140/R18840

Width Index	B_{Ri} in. (mm)	Part No. Installation set
-05	3.19 (81)	*
-06	3.78 (96)	*
-07	4.17 (106)	94-50-225
-10	5.16 (131)	94-50-250
-11	5.63 (143)	94-50-275
-12	6.14 (156)	94-50-275
-13	6.61 (168)	94-50-300
-15	7.13 (181)	94-50-300
-16	7.60 (193)	94-50-325
-17	8.11 (206)	94-50-325
-18	8.58 (218)	94-50-350
-20	9.09 (231)	94-50-350
-21	9.57 (243)	94-50-375
-22	10.08 (256)	94-50-375
-23	10.55 (268)	94-50-400
-25	11.06 (281)	94-50-400
-26	11.54 (293)	94-50-425
-27	12.05 (306)	94-50-425
-28	12.52 (318)	94-50-450
-30	13.03 (331)	94-50-450
-31	13.50 (343)	94-50-475
-32	14.02 (356)	94-50-475
-33	14.49 (368)	94-50-500
-35	15.00 (381)	94-50-500
-36	15.47 (393)	94-50-525
-37	15.98 (406)	94-50-525
-38	16.46 (418)	94-50-550
-40	16.97 (431)	94-50-550
-41	17.44 (443)	94-50-575
-42	17.95 (456)	94-50-575
-43	18.43 (468)	94-50-600
-45	18.94 (481)	94-50-600
-46	19.41 (493)	94-50-625
-47	19.92 (506)	94-50-625
-48	20.59 (518)	94-50-650
-50	20.91 (531)	94-50-650
-51	21.38 (543)	94-50-675
-52	21.89 (556)	94-50-675
-53	22.36 (568)	94-50-700
-55	22.87 (581)	94-50-700
-60	24.84 (631)	94-50-750

14240/14340

Width Index	B_{Ri} in. (mm)	Part No. Installation set
-05	3.19 (81)	*
-06	3.90 (99)	*
-07	4.17 (106)	94-50-225
-087	4.65 (118)	94-50-250
-10	5.16 (131)	94-50-250
-11	5.47 (139)	94-50-250
-112	5.63 (143)	94-50-275
-12	6.14 (156)	94-50-275
-137	6.61 (168)	94-50-300
-15	7.12 (181)	94-50-300
-162	7.60 (193)	94-50-325
-17	7.83 (199)	94-50-325
-18	8.11 (206)	94-50-325
-187	8.58 (218)	94-50-350
-20	9.09 (231)	94-50-350
-212	9.57 (243)	94-50-375
-23	10.08 (256)	94-50-375
-237	10.55 (268)	94-50-400
-25	11.06 (281)	94-50-400
-262	11.54 (293)	94-50-425
-28	12.05 (306)	94-50-425
-29	12.52 (318)	94-50-450
-30	13.03 (331)	94-50-450
-312	13.50 (343)	94-50-475
-325	14.02 (356)	94-50-475
-337	14.49 (368)	94-50-500
-350	15.00 (381)	94-50-500
-362	15.47 (393)	94-50-525
-375	15.98 (406)	94-50-525
-387	16.46 (418)	94-50-550
-400	16.97 (431)	94-50-550

E4-64L/R4-64L

Width Index	B_{Ri} in. (mm)	Part No. Installation set
-087	4.65 (118)	94-50-225
-100	5.16 (131)	94-50-250
-150	7.13 (181)	94-50-300
-200	9.09 (231)	94-50-350

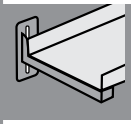


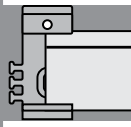
590.5 ft. (180 m) travel, 20.2 lbs/ft (30 kg/m) fill weight.
Two igus® E4 Rol e-chains®

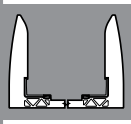
PDF: igus.com/e-chain-pdfs
Product information: igus.com/e-chains

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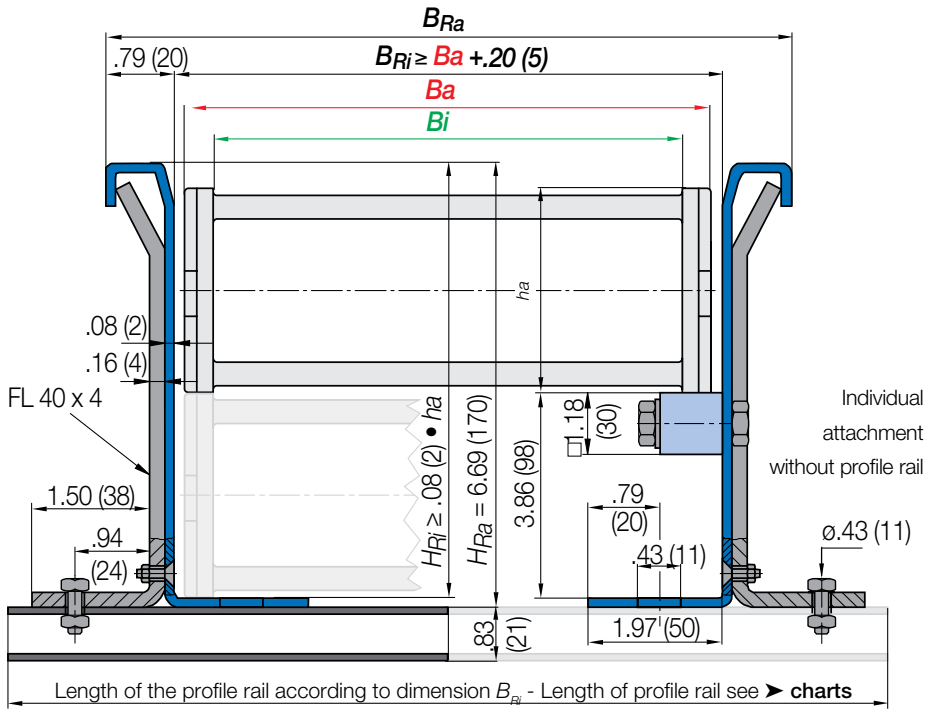
Guide Trough Systems
Steel Guide Troughs

For the following Series

System E4 Light Series:

- 14550/14650/R19050

Part No. **94-14550-30** - Trough Height: 6.69 in. (170 mm)



Ba	=	Outer e-chain® width
Bi	=	Inner e-chain® width
ha	=	e-chain® outer height
H_{Ri}	=	Inner trough height
H_{Ra}	=	Outer trough height
B_{Ri}	=	Inner trough width ➤ depends on dim. *Ba*
B_{Ra}	=	Outer trough width
n_{Mon}	=	# of installation sets (left/right)
n_{Ri}	=	# of trough set (left/right)

$H_{Ri} \geq 2 \bullet ha$
$B_{Ri} \geq Ba + 5$

- = Guide trough
- = Glide bar
- = Installation set “Basic”
- = profile rail

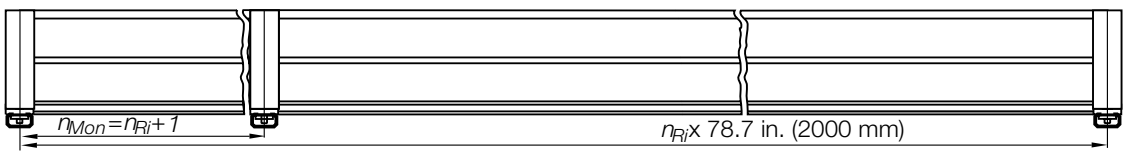
Steel Guide Trough components - Sets and single parts

Complete guide trough sets - description	Part No.	Weight lbs
Set of 2 trough side parts **without** glide bars, each 6.56 ft. (2m)	**94-14550-30**	**37.04**
1 Installation set “Basic” **with** profile rail	**94-50-____**	
1 Installation set “Basic” **without** profile rail	**94-50**	**1.41**
1 Glide bar set with hardware, each 6.56 ft. (2m) + 22 bolts	**93-01**	**4.30**

Single parts - description		
1 profile rail, individual	**92-52-____**	**.60 lbs/ft**
1 Clamping brackets, 2 pcs	**94-51**	**.60**
4 Flat-head screws M6 x 20	**92-53**	
4 Lock nuts M6	**92-55**	
2 3/8 Slide nuts	**92-56**	
2 Hex-head bolts 3/8 x 3/4	**92-57**	
Glide bar hardware only, 22 pcs	**93-21**	**2.65**

Supplement Part No. with the indicated profile rail-length-index. **Example: 94-50-175**
profile rail-length-index for your chosen trough inner width B_{Ri} ➤ **opposite page**

Design sketch: Number of installation sets which have to be installed



Part No. Installation set: Steel Guide Trough with profile rail (depending on the width)

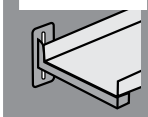
14550/14650/R19050

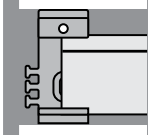
Width Index	B_{Ri} in. (mm)	Part No. Installation set
-05	3.19 (81)	*
-06	3.78 (96)	*
-07	4.17 (106)	94-50-225
-10	5.16 (131)	94-50-250
-11	5.63 (143)	94-50-275
-12	6.14 (156)	94-50-275
-13	6.61 (168)	94-50-300
-15	7.13 (181)	94-50-300
-16	7.60 (193)	94-50-325
-17	8.11 (206)	94-50-325
-18	8.58 (218)	94-50-350
-20	9.09 (231)	94-50-350
-21	9.57 (243)	94-50-375
-22	10.08 (256)	94-50-375
-23	10.55 (268)	94-50-400
-25	11.06 (281)	94-50-400
-26	11.54 (293)	94-50-425
-27	12.05 (306)	94-50-425
-28	12.52 (318)	94-50-450
-30	13.03 (331)	94-50-450
-31	13.50 (343)	94-50-475
-32	14.02 (356)	94-50-475
-33	14.49 (368)	94-50-500
-35	15.00 (381)	94-50-500
-36	15.47 (393)	94-50-525
-37	15.98 (406)	94-50-525
-38	16.46 (418)	94-50-550
-40	16.97 (431)	94-50-550
-41	17.44 (443)	94-50-575
-42	17.95 (456)	94-50-575
-43	18.43 (468)	94-50-600
-45	18.94 (481)	94-50-600
-46	19.41 (493)	94-50-625
-47	19.92 (506)	94-50-625
-48	20.59 (518)	94-50-650
-50	20.91 (531)	94-50-650
-51	21.38 (543)	94-50-675
-52	21.89 (556)	94-50-675
-53	22.36 (568)	94-50-700
-55	22.87 (581)	94-50-700
-60	24.84 (631)	94-50-750

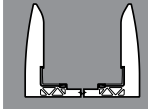


System E4 with extension links, long travel application on board West Navigator (Norway)

PDF: igus.com/e-chain-pdfs
Product information: igus.com/e-chains







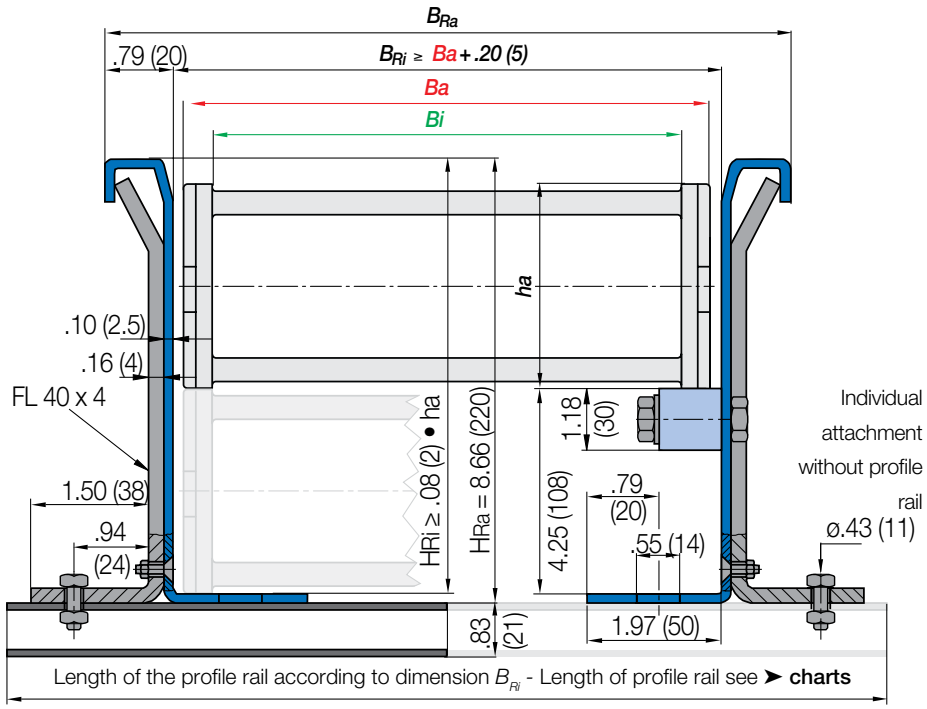
Guide Trough Systems
Steel Guide Troughs

For the following Series

System E4-1 Series
- E4-80/H4-80/R4-80

System E4 Light Series:
- 15050/15150/R19850
- 15250/15350

Part No. **99-30** - Trough Height: 8.66 in. (220 mm)



Ba	=	Outer e-chain® width
Bi	=	Inner e-chain® width
ha	=	e-chain® outer height
H_{Ri}	=	Inner trough height
H_{Ra}	=	Outer trough height
B_{Ri}	=	Inner trough width ➤ depends on dim. *Ba*
B_{Ra}	=	Outer trough width
n_{Mon}	=	# of installation sets (left/right)
n_{Ri}	=	# of trough set (left/right)

$H_{Ri} \geq 2 \bullet ha$
$B_{Ri} \geq Ba + 5$

● = Guide trough
● = Glide bar
● = Installation set “Basic”
● = profile rail

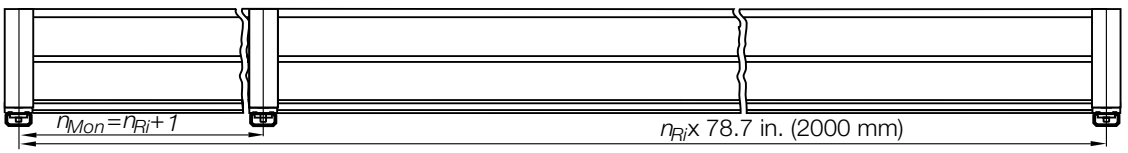
Steel Guide Trough components - Sets and single parts

Complete guide trough sets - description	Part No.	Weight lbs
Set of 2 trough side parts **without** glide bars, each 6.56 ft. (2m)	**99-30**	**43.66**
1 Installation set “Basic” **with** profile rail	**96-50-____**	
1 Installation set “Basic” **without** profile rail	**96-50**	**1.63**
1 Glide bar set with hardware, each 6.56 ft. (2m) + 22 bolts	**93-01**	**9.95**

Single parts - description		
1 profile rail, individual	**92-52-____**	**.60 lbs/ft**
1 Clamping brackets, 2 pcs	**96-51**	**.69**
4 Flat-head screws M6 x 20	**92-53**	
4 Lock nuts M6	**92-55**	
2 3/8 Slide nuts	**92-56**	
2 Hex-head bolts 3/8 x 3/4	**92-57**	
Glide bar hardware only, 22 pcs	**93-21**	**2.67**

Supplement Part No. with the indicated profile rail-length-index. **Example: 96-50-175**
profile rail-length-index for your chosen trough inner width B_{Ri} ➤ **opposite page**

Design sketch: Number of installation sets which have to be installed



Part No. Installation set: Steel Guide Trough with profile rail (depending on the width)

E4-80/H4-80/R4-80

Width Index	B_{Ri} in. (mm)	Part No. Installation set
-05	4.13 (105)	96-50-225
-06	4.72 (120)	96-50-250
-07	5.12 (130)	96-50-250
-10	6.10 (155)	96-50-275
-11	6.61 (168)	96-50-300
-12	7.09 (180)	96-50-300
-13	7.60 (193)	96-50-325
-15	8.07 (205)	96-50-325
-16	8.58 (218)	96-50-350
-17	9.06 (230)	96-50-350
-18	9.57 (243)	96-50-375
-20	10.04 (255)	96-50-375
-21	10.55 (268)	96-50-400
-22	11.02 (280)	96-50-400
-23	11.54 (293)	96-50-425
-25	12.01 (305)	96-50-425
-26	12.52 (318)	96-50-450
-27	12.99 (330)	96-50-450
-28	13.50 (343)	96-50-475
-30	13.98 (355)	96-50-475
-31	14.49 (368)	96-50-500
-32	14.96 (380)	96-50-500
-33	15.47 (393)	96-50-525
-35	15.94 (405)	96-50-525
-36	16.46 (418)	96-50-550
-37	16.93 (430)	96-50-550
-38	17.44 (443)	96-50-575
-40	17.91 (455)	96-50-575
-41	18.43 (468)	96-50-600
-42	18.90 (480)	96-50-600
-43	19.41 (493)	96-50-625
-45	19.88 (505)	96-50-625
-46	20.39 (518)	96-50-650
-47	20.87 (530)	96-50-650
-48	21.38 (543)	96-50-675
-50	21.85 (555)	96-50-675
-51	22.36 (568)	96-50-700
-52	22.83 (580)	96-50-700
-53	23.35 (593)	96-50-725
-55	23.82 (605)	96-50-725
-60	25.79 (655)	96-50-775

15050/15150/R19850

Width Index	B_{Ri} in. (mm)	Part No. Installation set
-05	3.35 (85)	*
-07	4.33 (110)	96-50-225
-10	5.31 (135)	96-50-250
-11	5.83 (148)	96-50-275
-12	6.30 (160)	96-50-275
-13	6.81 (173)	96-50-300
-15	7.28 (185)	96-50-300
-16	7.80 (198)	96-50-325
-17	8.27 (210)	96-50-325
-18	8.78 (223)	96-50-350
-20	9.25 (235)	96-50-350
-21	9.76 (248)	96-50-375
-22	10.24 (260)	96-50-375
-23	10.75 (273)	96-50-400
-25	11.22 (285)	96-50-400
-26	11.73 (298)	96-50-425
-27	12.20 (310)	96-50-425
-28	12.72 (323)	96-50-450
-30	13.19 (335)	96-50-450
-31	13.70 (348)	96-50-475
-32	14.17 (360)	96-50-475
-33	14.69 (373)	96-50-500
-35	15.16 (385)	96-50-500
-36	15.67 (398)	96-50-525
-37	16.14 (410)	96-50-525
-38	16.65 (423)	96-50-550
-40	17.13 (435)	96-50-550
-41	17.63 (448)	96-50-575
-42	18.11 (460)	96-50-575
-43	18.62 (473)	96-50-600
-45	19.09 (485)	96-50-600
-46	19.61 (498)	96-50-625
-47	20.08 (510)	96-50-625
-48	20.59 (523)	96-50-650
-50	21.06 (535)	96-50-650
-51	21.57 (548)	96-50-675
-52	22.04 (560)	96-50-675
-53	22.56 (573)	96-50-700
-55	23.03 (585)	96-50-700
-60	25.00 (635)	96-50-750

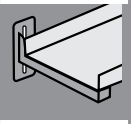
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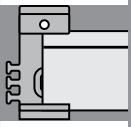
15250/15350

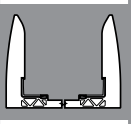
Width Index	B_{Ri} in. (mm)	Part No. Installation set
-05	3.35 (85)	*
-06	4.06 (103)	96-50-225
-07	4.33 (110)	96-50-225
-087	4.80 (122)	96-50-250
-09	5.20 (132)	96-50-250
-10	5.31 (135)	96-50-250
-11	5.63 (143)	96-50-275
-112	5.83 (148)	96-50-275
-12	6.30 (160)	96-50-275
-137	6.77 (172)	96-50-300
-15	7.28 (185)	96-50-300
-162	7.80 (198)	96-50-325
-17	7.99 (203)	96-50-325
-18	8.27 (210)	96-50-325
-187	8.78 (223)	96-50-350
-20	9.25 (235)	96-50-350
-212	9.76 (248)	96-50-375
-23	10.24 (260)	96-50-375
-237	10.75 (273)	96-50-400
-25	11.22 (285)	96-50-400
-262	11.73 (298)	96-50-425
-28	12.20 (310)	96-50-425
-29	12.72 (323)	96-50-450
-30	13.19 (335)	96-50-450
-312	13.70 (348)	96-50-475
-325	14.17 (360)	96-50-475
-337	14.69 (373)	96-50-500
-350	15.16 (385)	96-50-500
-362	15.67 (398)	96-50-525
-375	16.14 (410)	96-50-525
-387	16.65 (423)	96-50-550
-400	17.13 (435)	96-50-550

*upon request

PDF: igus.com/e-chain-pdfs
Product information: igus.com/e-chains







Guide Trough Systems
Steel Guide Troughs

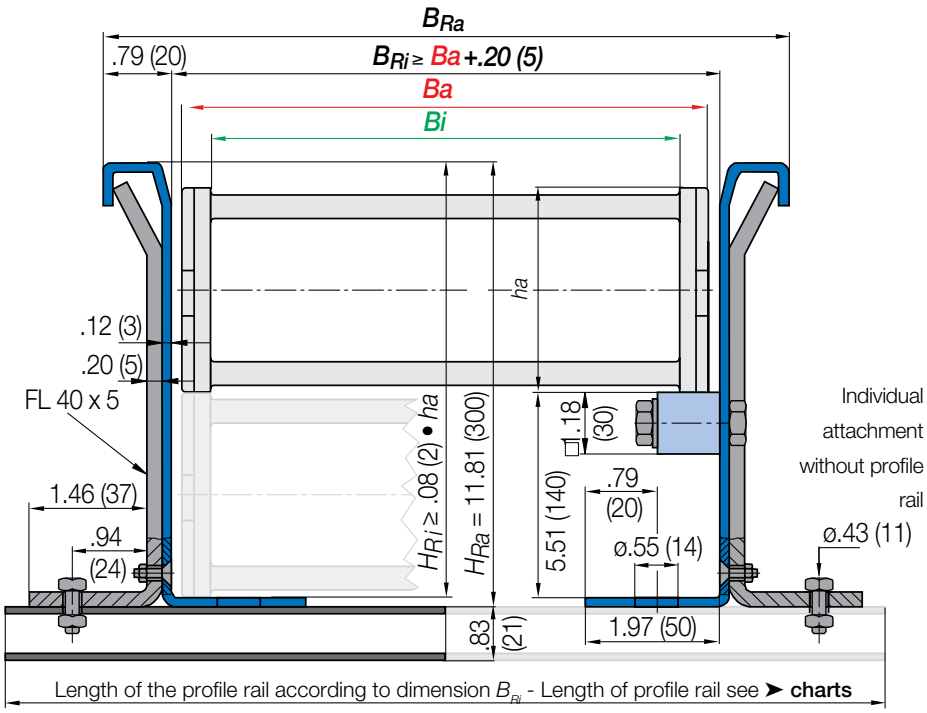
For the following Series

System E4-1 Series:
- E4-112/H4-112/R4-112

System E4 Series:
- 600/601/R608

System E4 Light Series:
- 1640/R1608

Part No. **97-30** - Trough Height: 11.81 in. (300 mm)



Ba	=	Outer e-chain® width
Bi	=	Inner e-chain® width
ha	=	e-chain® outer height
H_{Ri}	=	Inner trough height
H_{Ra}	=	Outer trough height
B_{Ri}	=	Inner trough width ➤ depends on dim. *Ba*
B_{Ra}	=	Outer trough width
n_{Mon}	=	# of installation sets (left/right)
n_{Ri}	=	# of trough set (left/right)

$H_{Ri} \geq 2 \bullet ha$
$B_{Ri} \geq Ba + 5$

= Guide trough
= Glide bar
= Installation set “Basic”
= profile rail

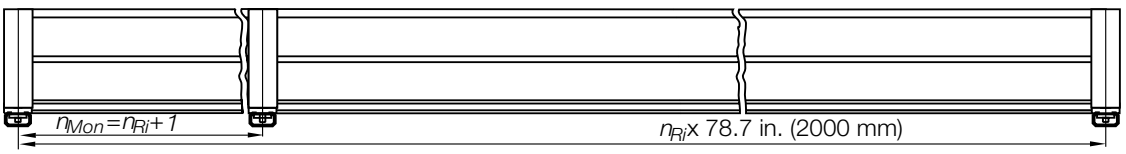
Steel Guide Trough components - Sets and single parts

Complete guide trough sets - description	Part No.	Weight lbs
Set of 2 trough side parts **without** glide bars, each 6.56 ft. (2m)	**97-30**	**60.42**
1 Installation set “Basic” **with** profile rail	**97-50-____**	
1 Installation set “Basic” **without** profile rail	**97-50**	**2.47**
1 Glide bar set with hardware, each 6.56 ft. (2m) + 22 bolts	**93-01**	**9.95**

Single parts - description		
1 profile rail, individual	**92-52-____**	**.60 lbs/ft**
1 Clamping brackets, 2 pcs	**97-51**	**1.12**
4 Flat-head screws M6 x 20	**98-52**	
4 Lock nuts M8	**98-53**	
2 3/8 Slide nuts	**92-56**	
2 Hex-head bolts 3/8 x 3/4	**92-57**	
Glide bar hardware only, 22 pcs	**93-21**	**2.67**

Supplement Part No. with the indicated profile rail-length-index. **Example: 94-50-175**
profile rail-length-index for your chosen trough inner width B_{Ri} ➤ **opposite page**

Design sketch: Number of installation sets which have to be installed



Part No. Installation set: Steel Guide Trough with profile rail (depending on the width)

E4-112/H4-112/R4-112

Width Index	B_{Ri} in. (mm)	Part No. Installation set
-05	4.21 (107)	97-50-225
-06	4.80 (122)	97-50-250
-07	5.20 (132)	97-50-250
-10	6.18 (157)	97-50-275
-11	6.65 (169)	97-50-300
-12	7.17 (182)	97-50-300
-13	7.64 (194)	97-50-325
-15	8.15 (207)	97-50-325
-16	8.62 (219)	97-50-350
-17	9.13 (232)	97-50-350
-18	9.61 (244)	97-50-375
-20	10.12 (257)	97-50-375
-21	10.59 (269)	97-50-400
-22	11.10 (282)	97-50-400
-23	11.57 (294)	97-50-425
-25	12.09 (307)	97-50-425
-26	12.56 (319)	97-50-450
-27	13.07 (332)	97-50-450
-28	13.54 (344)	97-50-475
-30	14.06 (357)	97-50-475
-31	14.53 (369)	97-50-500
-32	15.04 (382)	97-50-500
-33	15.51 (394)	97-50-525
-35	16.02 (407)	97-50-525
-36	16.50 (419)	97-50-550
-37	17.01 (432)	97-50-550
-38	17.48 (444)	97-50-575
-40	17.99 (457)	97-50-575
-41	18.46 (469)	97-50-600
-42	18.98 (482)	97-50-600
-43	19.45 (494)	97-50-625
-45	19.96 (507)	97-50-625
-46	20.43 (519)	97-50-650
-47	20.94 (532)	97-50-650
-48	21.42 (544)	97-50-675
-50	21.93 (557)	97-50-675
-51	22.40 (569)	97-50-700
-52	22.91 (582)	97-50-700
-53	23.39 (594)	97-50-725
-55	23.90 (607)	97-50-725
-60	25.87 (657)	97-50-775

*upon request

600/601/R608

Width Index	B_{Ri} in. (mm)	Part No. Installation set
-20	10.12 (257)	97-50-375
-25	12.09 (307)	97-50-425
-30	14.06 (357)	97-50-475
-32	14.84 (377)	97-50-500
-35	16.02 (407)	97-50-525
-40	17.99 (457)	97-50-575
-45	19.96 (507)	97-50-625
-50	21.93 (557)	97-50-675
-55	23.90 (607)	97-50-725
-60	25.87 (657)	97-50-775

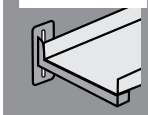
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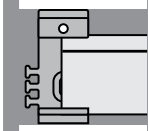
Width Index	B_{Ri} in. (mm)	Part No. Installation set
-05	3.50 (89)	*
-06	4.09 (104)	97-50-225
-07	4.49 (114)	97-50-250
-10	5.47 (139)	97-50-275
-11	5.94 (151)	97-50-275
-12	6.46 (164)	97-50-300
-13	6.93 (176)	97-50-300
-15	7.44 (189)	97-50-325
-16	7.91 (201)	97-50-325
-17	8.43 (214)	97-50-350
-18	8.90 (226)	97-50-350
-20	9.41 (239)	97-50-375
-21	9.88 (251)	97-50-375
-22	10.39 (264)	97-50-400
-23	10.87 (276)	97-50-400
-25	11.38 (289)	97-50-425
-26	11.85 (301)	97-50-425
-27	12.36 (314)	97-50-450
-28	12.83 (326)	97-50-450
-30	13.35 (339)	97-50-475
-31	13.82 (351)	97-50-475
-32	14.33 (364)	97-50-500
-33	14.80 (376)	97-50-500
-35	15.31 (389)	97-50-525
-36	15.79 (401)	97-50-525
-37	16.30 (414)	97-50-550
-38	16.77 (426)	97-50-550
-40	17.28 (439)	97-50-575
-41	17.76 (451)	97-50-575
-42	18.27 (464)	97-50-600
-43	18.74 (476)	97-50-600
-45	19.25 (489)	97-50-625
-46	19.72 (501)	97-50-625
-47	20.24 (514)	97-50-650
-48	20.71 (526)	97-50-650
-50	21.22 (539)	97-50-675
-51	21.69 (551)	97-50-675
-52	22.20 (564)	97-50-700
-53	22.68 (576)	97-50-700
-55	23.19 (589)	97-50-725
-60	25.16 (639)	97-50-775

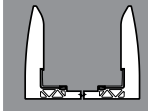
*upon request



Rig skidding application on the Claymore, North Sea





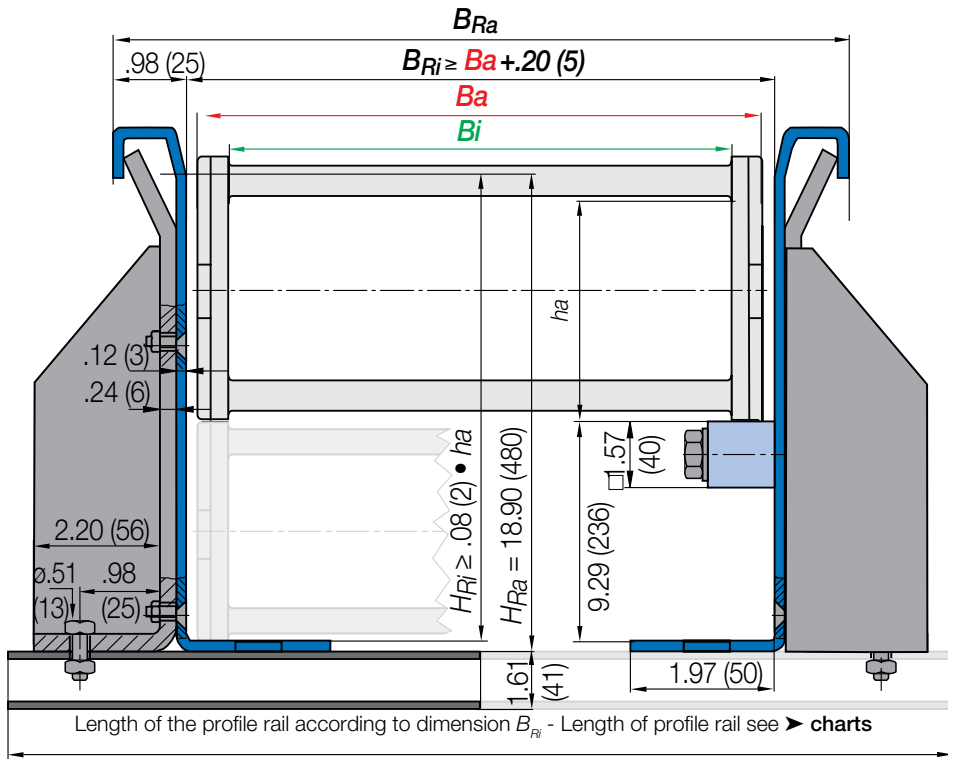


Guide Trough Systems
Steel Guide Troughs

Part No. **90-30** - Trough Height: 18.90 in. (480 mm)

For the following Series

System E4 Series:
● 800
System E4-1 Series
● 840



Ba	=	Outer e-chain® width
Bi	=	Inner e-chain® width
ha	=	e-chain® outer height
H_{Ri}	=	Inner trough height
H_{Ra}	=	Outer trough height
B_{Ri}	=	Inner trough width ➤ depends on dim. *Ba*
B_{Ra}	=	Outer trough width
n_{Mon}	=	# of installation sets (left/right)
n_{Ri}	=	# of trough set (left/right)
!		$H_{Ri} \geq 2 \bullet ha$ $B_{Ri} \geq Ba + 5$
●	=	Guide trough
●	=	Glide bar
●	=	Installation set “Basic”
●	=	profile rail

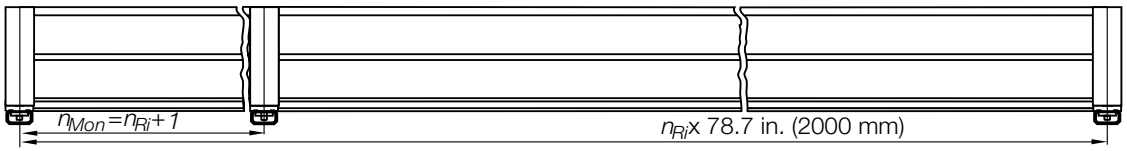
Steel Guide Trough components - Sets and single parts

Complete guide trough sets - description	Part No.	Weight lbs
Set of 2 trough side parts **without** glide bars, each 6.56 ft. (2m)	**90-30**	
1 Installation set “Basic” **with** profile rail	**90-50-____**	
1 Installation set “Basic” **without** profile rail	**90-50**	
1 Glide bar set with hardware, each 6.56 ft. (2m) + 22 bolts	**90-01**	

Single parts - description	
1 profile rail, individual	**Special part**
1 Clamping brackets, 2 pcs	**90-51**
4 Flat-head screws M8 x 25	**92-53**
4 Lock nuts M6	**92-55**
2 3/8 Slide nuts	**92-56**
2 Hex-head bolts 3/8 x 3/4	**92-57**
Glide bar hardware only, 22 pcs.	**92-21**

Supplement Part No. with the indicated profile rail-length-index. **Example: 90-50-200**
profile rail-length-index for your chosen trough inner width B_{Ri} ➤ **opposite page**

Design sketch: Number of installation sets which have to be installed



Part No. Installation set: Steel Guide Trough with profile rail (depending on the width)

800

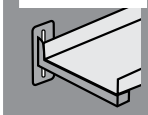
Width Index	B_{Ri} in. (mm)	Part No. Installation set
-20	10.43 (265)	**90-50-450**
-25	12.40 (315)	**90-50-500**
-30	14.37 (365)	**90-50-550**
-32	15.35 (390)	**90-50-575**
-35	16.34 (415)	**90-50-600**
-40	18.31 (465)	**90-50-650**
-45	20.27 (515)	**90-50-700**
-50	22.24 (565)	**90-50-750**
-55	24.21 (615)	**90-50-800**
-60	26.18 (665)	**90-50-850**

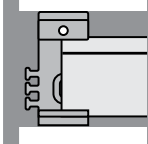
840

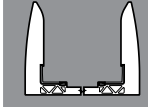
Width Index	B_{Ri} in. (mm)	Part No. Installation set
-13	6.49 (165)	**90-50-350**
-15	7.01 (178)	**90-50-350**
-16	7.48 (190)	**90-50-375**
-17	7.99 (203)	**90-50-375**
-18	8.46 (215)	**90-50-400**
-20	8.98 (228)	**90-50-400**
-21	9.45 (240)	**90-50-425**
-22	9.96 (253)	**90-50-425**
-23	10.43 (265)	**90-50-450**
-25	10.94 (278)	**90-50-450**
-26	11.42 (290)	**90-50-475**
-27	11.93 (303)	**90-50-475**
-28	12.40 (315)	**90-50-500**
-30	12.91 (328)	**90-50-500**
-31	13.39 (340)	**90-50-525**
-32	13.90 (353)	**90-50-525**
-33	14.37 (365)	**90-50-550**
-35	14.88 (378)	**90-50-550**
-36	15.35 (390)	**90-50-575**
-37	15.87 (403)	**90-50-575**
-38	16.34 (415)	**90-50-600**
-40	16.85 (428)	**90-50-600**
-41	17.32 (440)	**90-50-625**
-42	17.83 (453)	**90-50-625**
-43	18.31 (465)	**90-50-650**
-45	18.82 (478)	**90-50-650**
-46	19.29 (490)	**90-50-675**
-47	19.80 (503)	**90-50-675**
-48	20.20 (513)	**90-50-700**
-50	20.79 (528)	**90-50-700**
-51	21.26 (540)	**90-50-725**
-52	21.77 (553)	**90-50-725**
-53	22.24 (565)	**90-50-750**
-55	22.76 (578)	**90-50-750**
-60	26.18 (665)	**90-50-800**

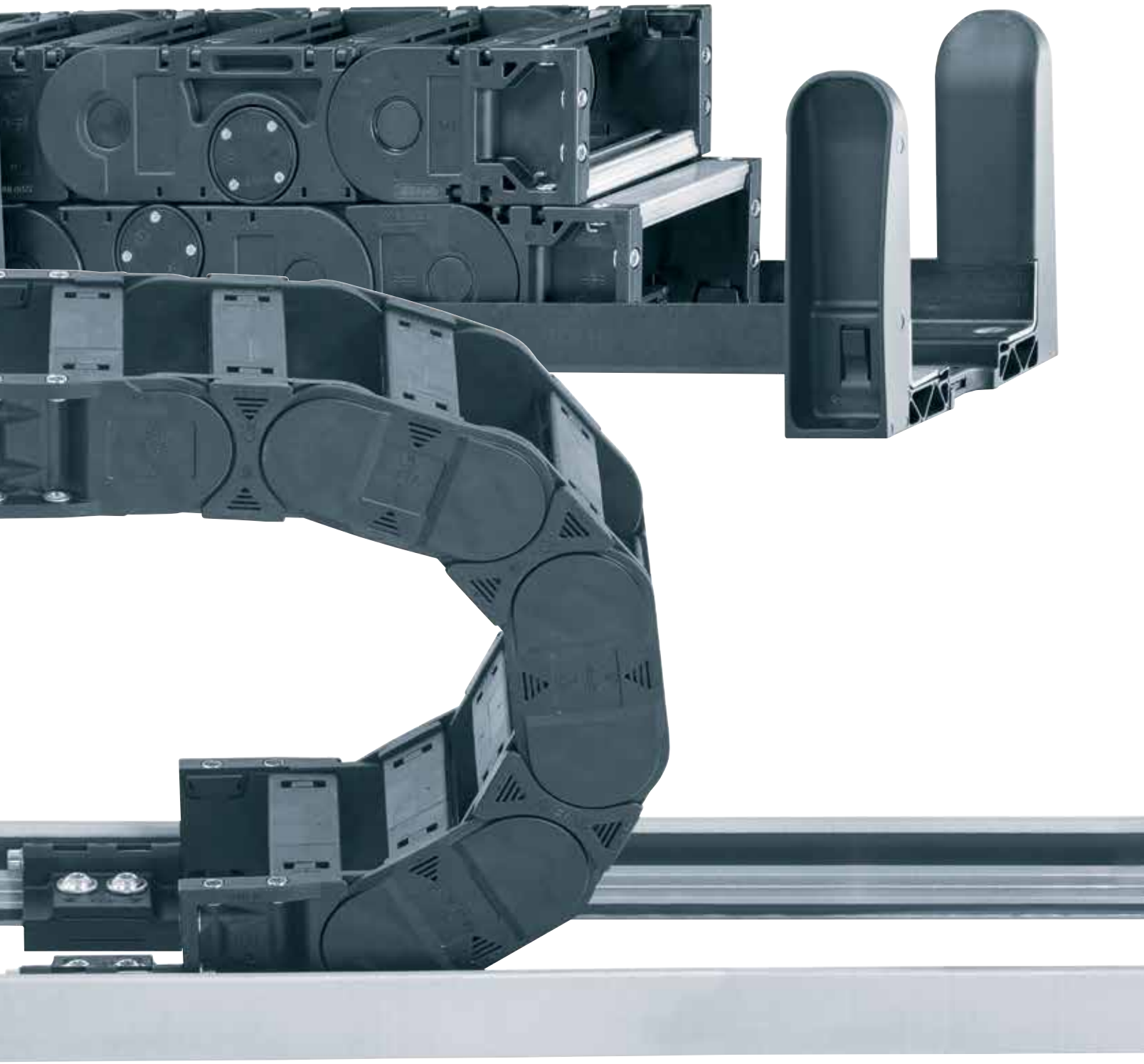


Assembling of an E4 e-chain® Series 800 in an igus® steel guide trough







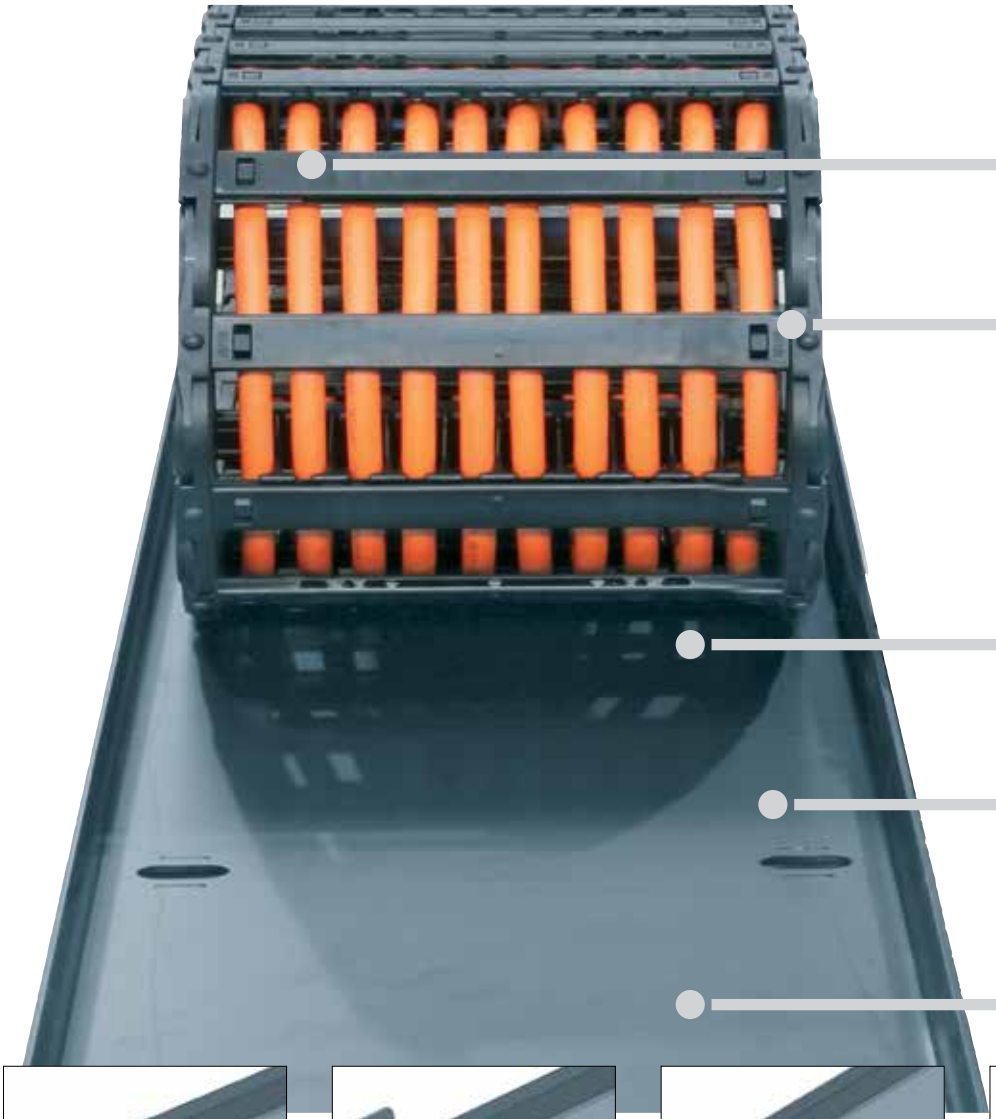


Other guide trough systems

Steel support tray
Aluminum support tray
guidefast
guidelite



Steel Support Tray
Introduction - Advantages



Noise and wear reducing, safe guiding of the lower run of your e-chain® in standard applications

Flexible one-piece solution, for a large selection of igus® E2/000 and E4-1 series e-chains

Simple design - easy mounting to all types of profiles and wall brackets

Complete system with all needed parts as one unit

Lightweight material - available in the color of your choice



Option 01 - with connection-rail



Option 02 - with bracket



Option 03 - without rail (upon request)



Option 04 - customized (upon request)

For support of the lower run - Support tray tool kit

Simple one-piece support trays for the lower e-chain® run, according with your requirements and specification. Your width, height and color - we supply the fitting e-chain®, together with the support tray system. Ready to install onto your machine or application. Save on procurement and design time.

- Complete system, ready to install
- No more costly self-made designs
- Easy installation onto your machine, on profiles or wall-mount brackets
- igus® support tray - in 2 types and 4 options available
- For many widths available from stock, with many mounting possibilities

Steel Support Tray Selection Table



Support Tray - Type 01 for Series:

- 2400/2450/2480/2500
- 2600/2650/2680/2700
- E4-21
- E4-28/R4-28
- E4-31L/R4-31L
- E4-32/H4-32/R4-32
- E4-38L/R4-38L
- E6-29/R6-29
- E6-35
- E6-40/R6-40
- E61-29

Support tray Part No.	Width e-chain®*	Outer trough width B_{Ra} in. (mm)	Inner trough width B_{Ri} in. (mm)	Material
S9-010/011-05-XXXX-0	-05 / -050	3.50 (89)	3.15 (80)	Steel, black
S9-010/011-07-XXXX-0	-07 / -070	4.49 (114)	4.13 (105)	Steel, black
S9-010/011-10-XXXX-0	-10 / -100	5.47 (139)	5.12 (130)	Steel, black
S9-010/011-15-XXXX-0	-15 / -150	7.28 (185)	6.89 (175)	Steel, black

*depends on width-index



Support Tray - Type 02 for Series:

- 3400/3450/3480/3500
- E4-42/H4-42/R4-42
- E4-48L/R4-48L
- E4-56/H4-56/R4-56
- E4-80/H4-80/R4-80
- 14040/14140/R18840
- 14240/14340
- 14550/14650/19050
- 15050/15150/R19850
- 15250/15350
- E6-52/R6-52
- E6-62
- E6-80

Support tray Part No.	Width e-chain®*	Outer trough width B_{Ra} in. (mm)	Inner trough width B_{Ri} in. (mm)	Material
S9-020/021-10-XXXX-0	-10 / -100	6.57 (167)	6.14 (156)	Steel, black
S9-020/021-15-XXXX-0	-15 / -150	8.54 (217)	8.11 (206)	Steel, black
S9-020/021-20-XXXX-0	-20 / -200	10.51 (267)	10.08 (256)	Steel, black
S9-020/021-25-XXXX-0	-25 / -250	12.48 (317)	12.05 (306)	Steel, black

*depends on width-index



Support tray with bracket for easy mounting on your application

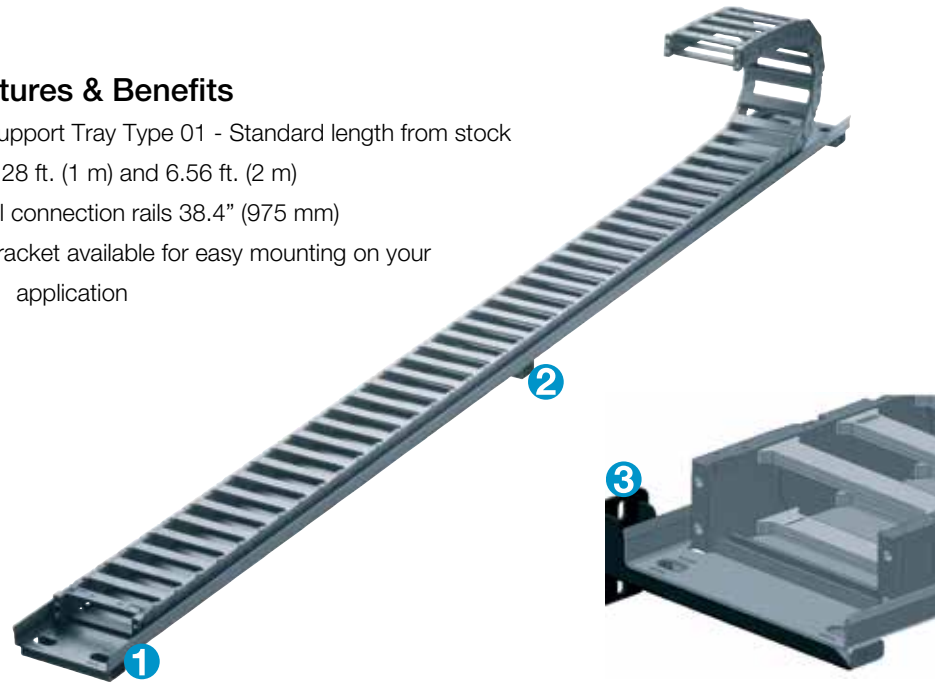
Steel Support Tray
Support Tray Tool Kit - Type 01

For the following Series

System E2/000 Series:
● 2400/2450/2480/2500
● 2600/2650/2680/2700
System E4-1 Series:
● E4-21
● E4-28/R4-28
● E4-32/H4-32/R4-28
System E4-1 Light Series:
● E4-38L/R4-38L
System E6 Series:
● E6-29/R6-29
● E6-35
● E6-40/R6-40

Features & Benefits

1. Support Tray Type 01 - Standard length from stock 3.28 ft. (1 m) and 6.56 ft. (2 m)
2. All connection rails 38.4” (975 mm)
3. Bracket available for easy mounting on your application



Product Range*

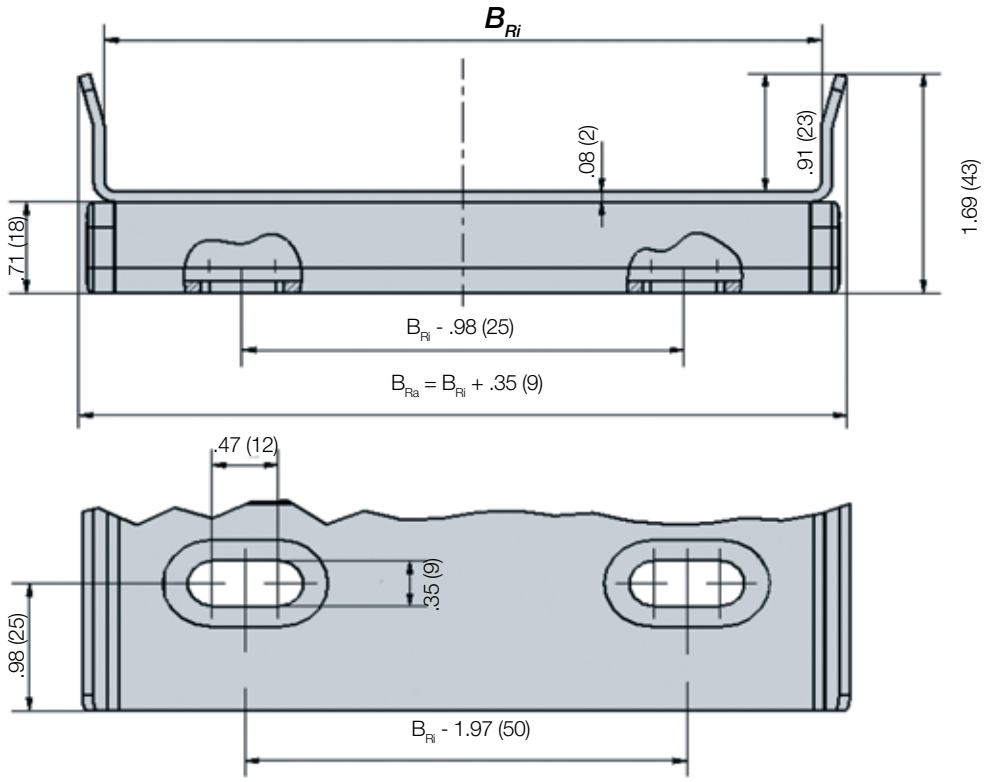
System	Suitable for the following series ▼	Widths-index	B_{Ra} in. (mm)	B_{Ri} in. (mm)	Part No. Support-tray, single	Part No. Support-tray with bracket	Part No. single bracket
E2/000	2400/2450/2480/2500	-05	3.50 (89)	3.15 (80)	S9-010-05-XXXX-0	S9-011-05-XXXX-0	907-724-05
		-07	4.49 (114)	4.13 (105)	S9-010-07-XXXX-0	S9-011-07-XXXX-0	907-724-07
		-10	5.47 (139)	5.12 (130)	S9-010-10-XXXX-0	S9-011-10-XXXX-0	907-724-10
E2/000 E4-1 E4-1 Light	2600/2650/2680/2700 E4-32/H4-32/R4-32 E4-38L/R4-38L	-05	3.50 (89)	3.15 (80)	S9-010-05-XXXX-0	S9-011-05-XXXX-0	907-724-05
		-07	4.49 (114)	(105)	S9-010-07-XXXX-0	S9-011-07-XXXX-0	907-724-07
		-10	5.47 (139)	(130)	S9-010-10-XXXX-0	S9-011-10-XXXX-0	907-724-10
		-15	7.28 (185)	6.89 (175)	S9-010-15-XXXX-0	S9-011-15-XXXX-0	907-724-15
E4-1 E6 E6 E6-1	E4-21 E6-29/R6-29 E6-35 E61-29	-050	3.50 (89)	3.15 (80)	S9-010-05-XXXX-0	S9-011-05-XXXX-0	907-724-05
		-070	4.49 (114)	4.13 (105)	S9-010-07-XXXX-0	S9-011-07-XXXX-0	907-724-07
		-100	5.47 (139)	5.12 (130)	S9-010-10-XXXX-0	S9-011-10-XXXX-0	907-724-10
E4-1 E6	E4-28/R4-28 E6-40/R6-40	-050	3.50 (89)	3.15 (80)	S9-010-05-XXXX-0	S9-011-05-XXXX-0	907-724-05
		-070	4.49 (114)	4.13 (105)	S9-010-07-XXXX-0	S9-011-07-XXXX-0	907-724-07
		-100	5.47 (139)	5.12 (130)	S9-010-10-XXXX-0	S9-011-10-XXXX-0	907-724-10
		-150	7.28 (185)	6.89 (175)	S9-010-15-XXXX-0	S9-011-15-XXXX-0	907-724-15

Please replace XXXX by the standard lengths 1000 or 2000 mm available from stock!

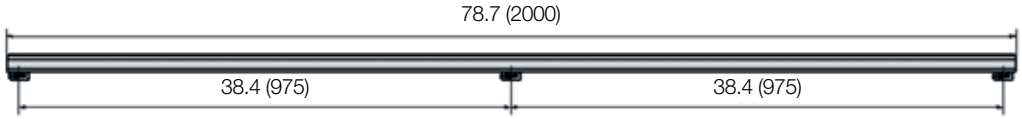
*The lengths and widths mentioned here are available from stock in the standard black color. For other lengths, widths and colors, please contact igus®.

igus® e-chain system®
Telephone 1-800-521-2747
Internet: igus.com
email: sales@igus.com
QuickSpec: igus.com/quickspec

Mounting holes of the trough system



Standard lengths from stock 3.28 ft. and 6.56 ft. (1 m and 2 m) - All connection rails 38.4” (975 mm)



Part No. structure without bracket 39.4” (1000 mm)

S9-	010-	07-	1000-	0

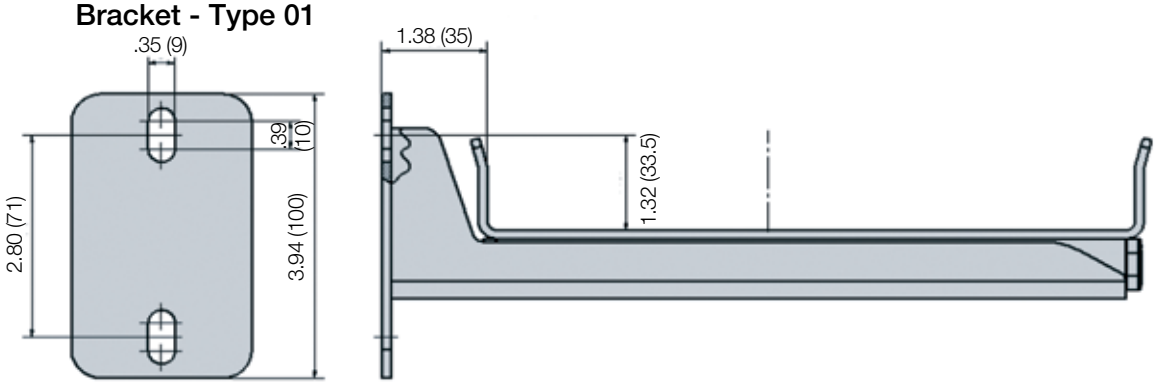
- Color, powdered black
- Length 1000 mm
- e-chain®- width
- without bracket
- Support tray

Part No. structure with bracket 78.7” (2000 mm)

S9-	011-	07-	2000-	0

- Color, powdered black
- Length 2000 mm
- e-chain®- width
- with bracket
- Support tray

Bracket - Type 01



PDF: igus.com/e-chain-pdfs
Product information: igus.com/e-chains

Steel Support Tray
Support Tray Tool Kit - Type 02

For the following Series

System E2/000 Series:
- 3400/3450/3480/3500

System E4-1 Series:
- E4-42/H4-42/R4-42
- E4-56/H4-56/R4-56
- E4-80/H4-80/R4-80

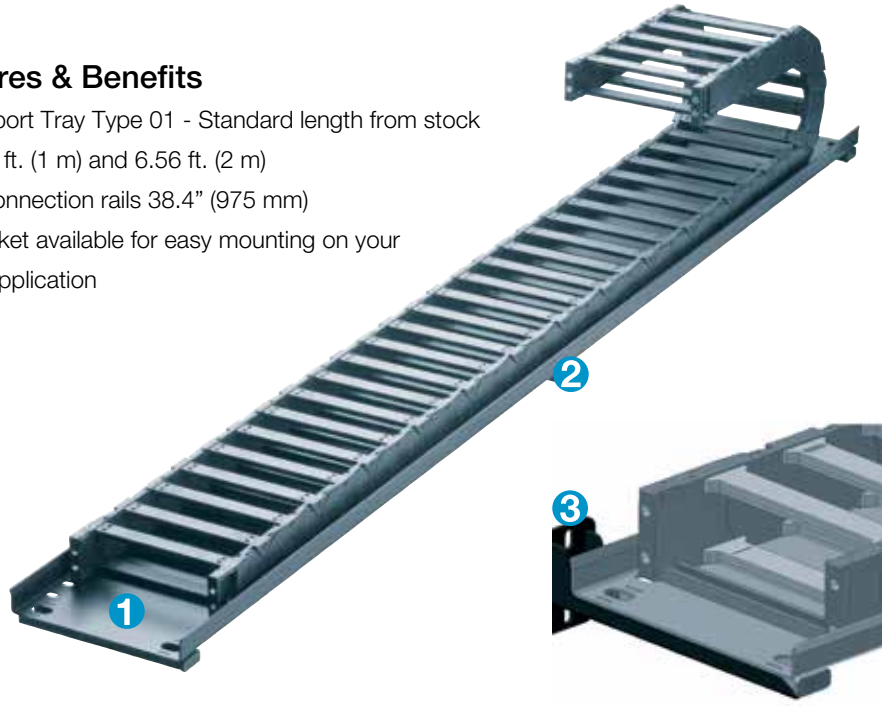
System E4-1 Light Series:
- E4-48L/R4-48L

System E4/Light Series:
- 14040/14140/R18840
- 14240/14340
- 14550/14650/19050
- 15050/15150/R19850
- 15250/15350

System E6 Series:
- E6-52/R6-52
- E6-62
- E6-80

Features & Benefits

1. Support Tray Type 01 - Standard length from stock 3.28 ft. (1 m) and 6.56 ft. (2 m)
2. All connection rails 38.4" (975 mm)
3. Bracket available for easy mounting on your application



Product Range*

System	Suitable for the following series ▼	Widths-index	B_{Ra} in. (mm)	B_{Ri} in. (mm)	Part No. Support-tray, single	Part No. Support-tray with bracket	Part No. single bracket
E4-1	E4-42/H4-42/R4-42 E4-56/H4-56/R4-56 E4-80/H4-80/R4-80	-10	6.57 (167)	6.14 (156)	S9-020-10-XXXX-0	S9-021-10-XXXX-0	907-759-10-0
		-15	8.54 (217)	8.11 (206)	S9-020-15-XXXX-0	S9-021-15-XXXX-0	907-759-15-0
		-20	10.51 (267)	10.08 (256)	S9-020-20-XXXX-0	S9-021-20-XXXX-0	907-759-20-0
		-25	12.48 (317)	12.05 (306)	S9-020-25-XXXX-0	S9-021-25-XXXX-0	907-759-25-0
E4-1 Light E4/light	E4-42/H4-42/R4-42 14040/14140/R18840 14240/14340 14550/14650/19050 15050/15150/R19850						
E6	E6-62, E6-80						
E4/00 E6	3400/3450/3480/3500 E6-52/R6-52	-100	6.57 (167)	6.14 (156)	S9-020-10-XXXX-0	S9-021-10-XXXX-0	907-759-10
		-150	8.54 (217)	8.11 (206)	S9-020-15-XXXX-0	S9-021-15-XXXX-0	907-759-15
		-200	10.51 (267)	10.08 (256)	S9-020-20-XXXX-0	S9-021-20-XXXX-0	907-759-20
		-250	12.48 (317)	12.05 (306)	S9-020-25-XXXX-0	S9-021-25-XXXX-0	907-759-25

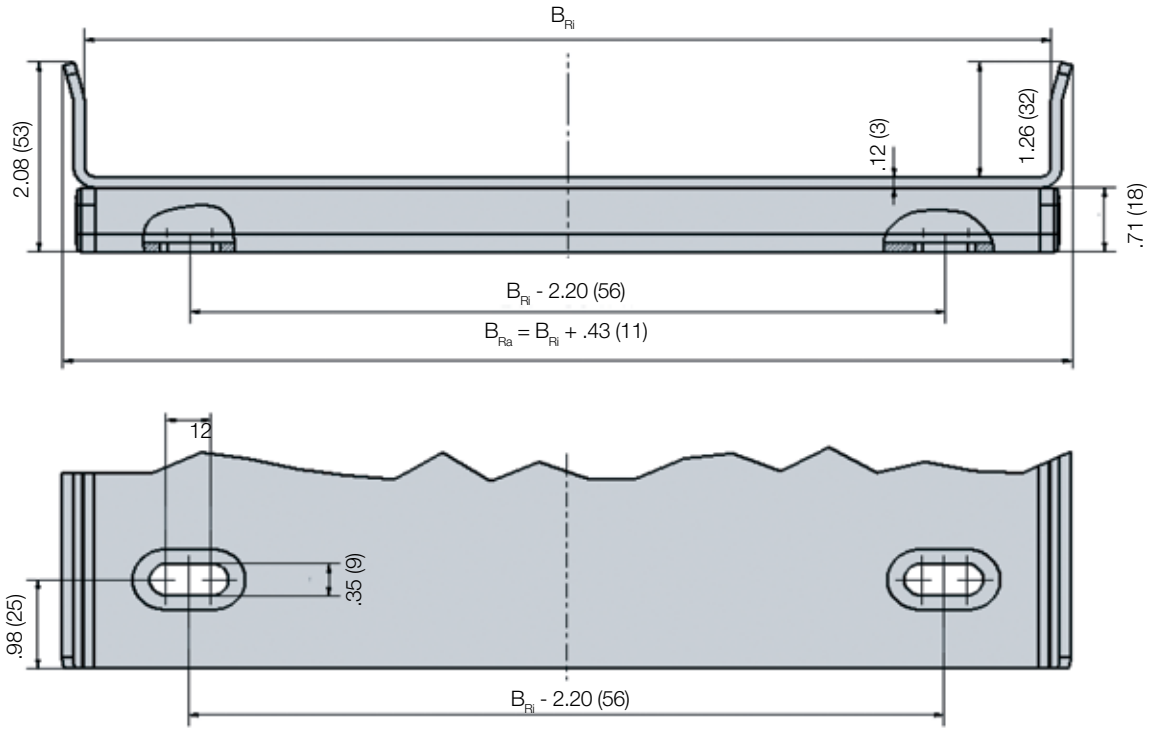
Please replace XXXX by the standard lengths 1000 or 2000 mm available from stock!

*The lengths and widths mentioned here are available from stock in the standard black color. For other lengths, widths and colors, please contact igus®.

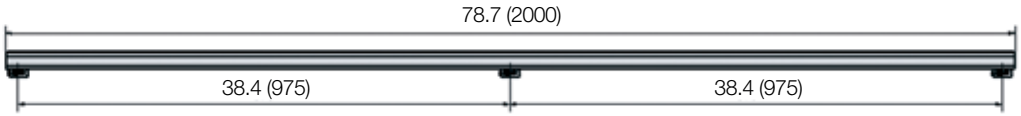


Steel Support Tray
Support Tray Tool Kit - Type 02 - Technical Data

Mounting holes of the trough system



Standard lengths from stock 3.28 ft. and 6.56 ft. (1 m and 2 m) - All connection rails 38.4” (975 mm)



Part No. structure without bracket 39.4” (1000 mm)

S9-	020-	20-	1000-	0

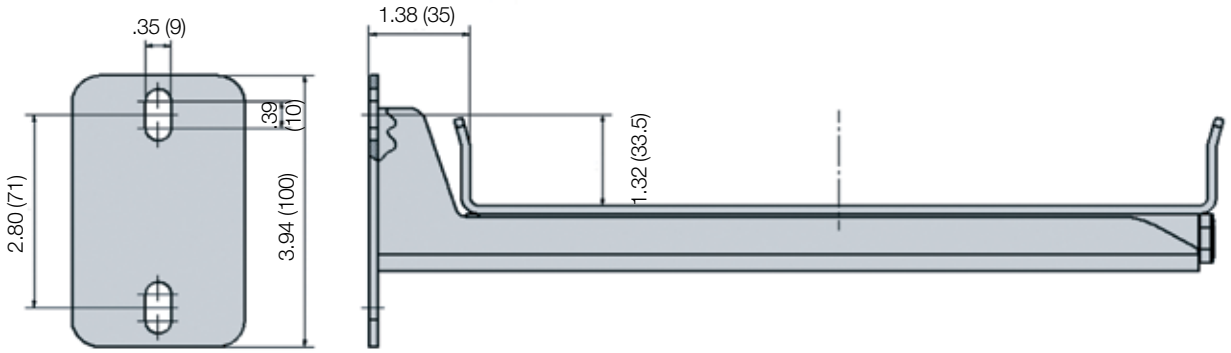
- 0 — Color, powdered black
- 1000- — Length 1000 mm
- 20- — e-chain®- width
- 020- — without bracket
- S9- — Support tray

Part No. structure with bracket 78.7” (2000 mm)

S9-	021-	20-	2000-	0

- 0 — Color, powdered black
- 2000- — Length 2000 mm
- 20- — e-chain®- width
- 021- — with bracket
- S9- — Support tray

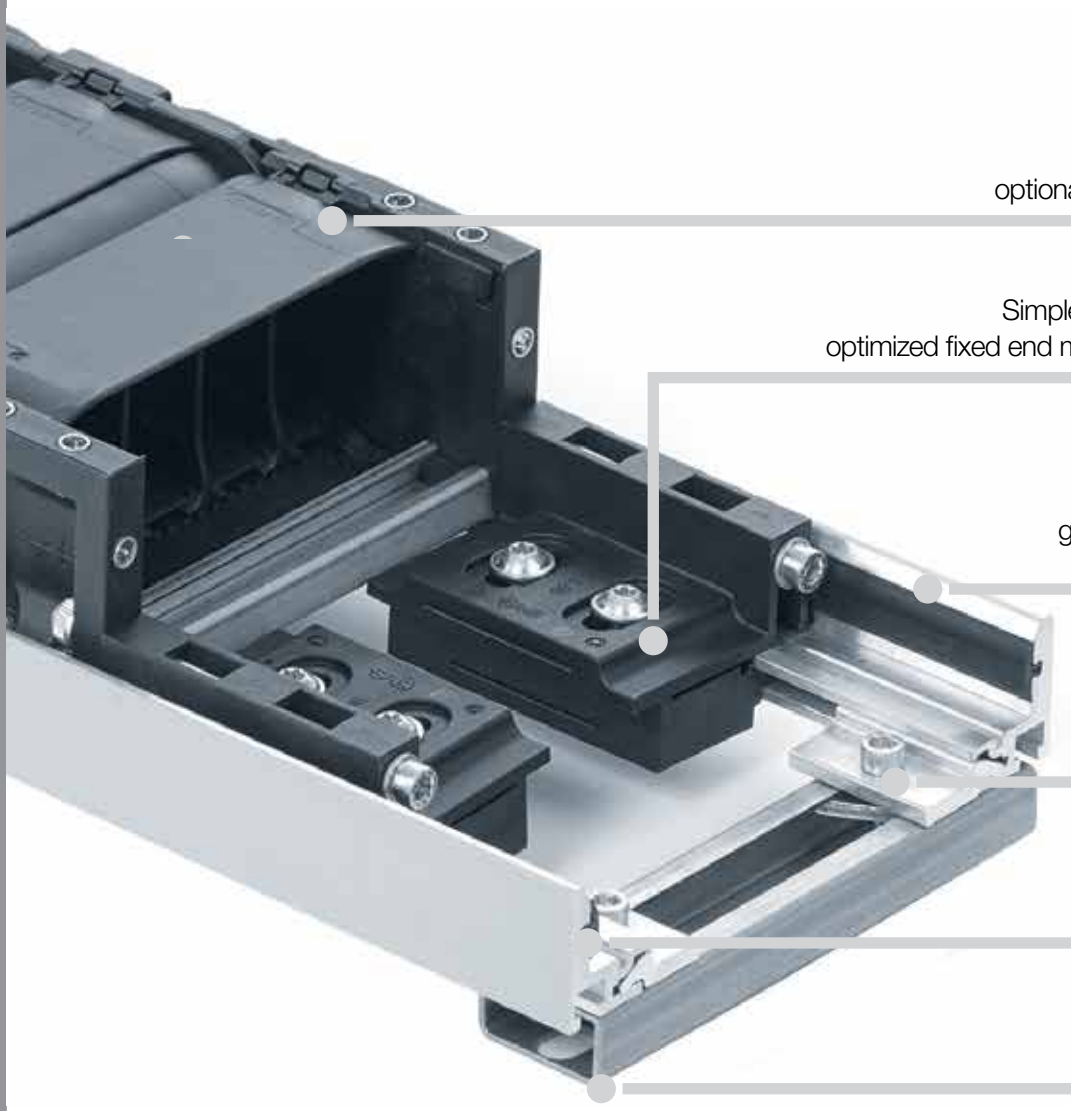
Bracket - Type 02



PDF: igus.com/e-chain-pdfs
Product information: igus.com/e-chains

Aluminum Support Tray
Introduction - Advantages

igus® e-chain system®
Telephone 1-800-521-2747
Internet: igus.com
email: sales@igus.com
QuickSpec: igus.com/quickspec



The flexible construction kit to support the lower run - aluminum support tray

The design of this aluminum support tray emulates the igus® aluminum SuperTrough. This modular construction kit covers the standard sizes of our e-chains®. Because of its flexible width adjustment using installation sets with profile rails, the aluminum support tray is used with various e-chains® series and widths. A support trough consists of 2 trough side pieces with 2m length. Standard installation sets can be used, just as for the aluminum SuperTrough.

- Corrosion-resistant, seawater-resistant aluminum profile
- Wear-reducing glide strips integrated as standard
- Quiet movement of the e-chain® with optional silencer profile
- Simple assembly on flexible width profile rails with basic clamps
- e-chain® easily connects to aluminum support tray using plastic fixed end modules
- Open guide trough design, debris can fall through
- Conductivity according to DIN EN 61537 - as standard

Aluminum Support Tray Selection Table

Part No. **without** silencer profile	Part No. **with** silencer profile	Outer height H_{Ra} in. (mm)	Part No. installation set	Side part material
				
9AT-35-SL	**9AT-35-SLA**	1.38 (35)	960AT-30-XXX*	aluminum

*XXX = profile rail length

Aluminum support tray
available with and without silencer profile

For the following systems:

● E2/000 ● R2-1
● E4-1L ● E4-1
● E6-1 ● E6

Available from stock. Ready to ship in 24 - 48hrs.*

*The delivery times indicated correspond to the average time until the ordered goods are dispatched.



An aluminum support tray consists of two 2 trough side pieces each with 6.56 ft. (2m) long

PDF: igus.com/e-chain-pdfs
Product information: igus.com/e-chains

Aluminum Support Tray
Individual parts

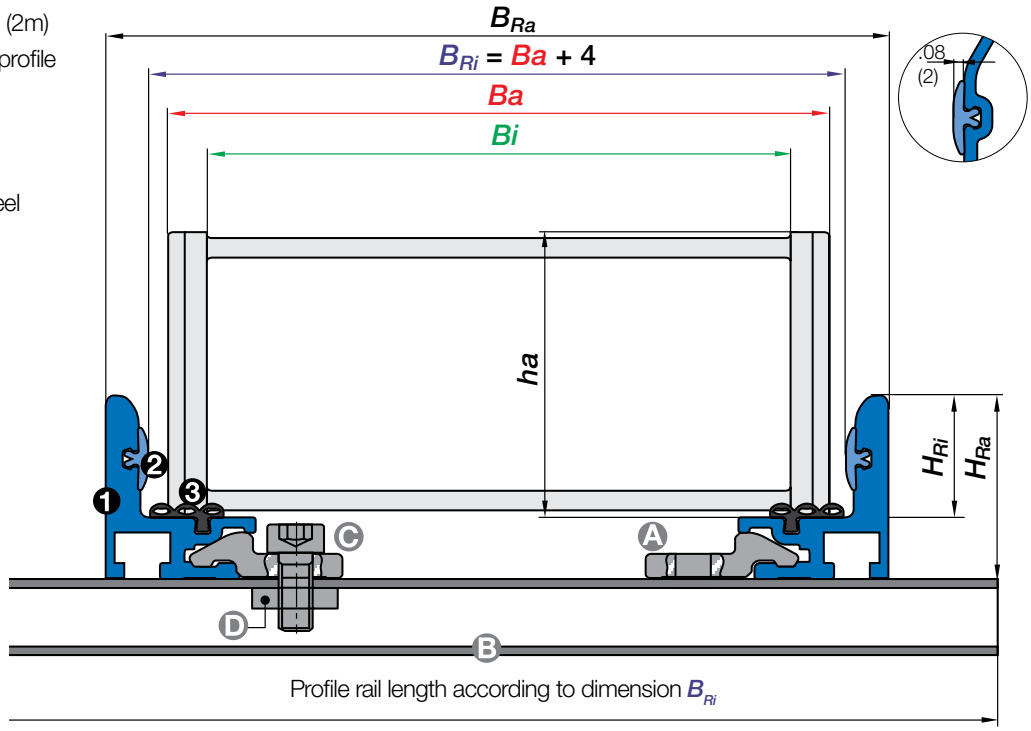
Components, guide troughs and components, mounting kits

Components

❶ Trough side parts, aluminum, 6.56 ft. (2m)
❷ Glide strip, plastic, 6.56 ft (2m)
❸ Optional: rubber silencer profile

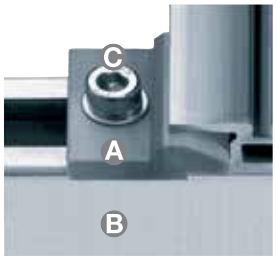
Ⓐ Bottom clamp, aluminum
Ⓑ Profile rail[1], galvanized steel
Ⓒ Allen wrench
Ⓓ Sliding nut

Ba = e-chain® outer width
Bi = e-chain® inner width
ha = e-chain® outer height
H_{Ri} = Trough inner height
H_{Ra} = Trough outer height
B_{Ri} = Trough inner width
B_{Ra} = Trough outer width

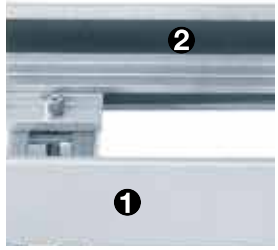


1) Profile rail also available in 304 stainless steel. Material 1.4301 (AISI 304)

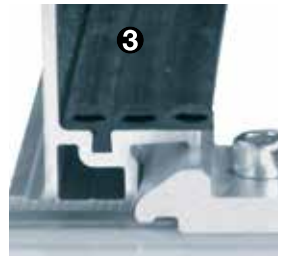
Aluminum support tray | Features



Simple fastening with basic bottom clamp and profile rail



Wear-reducing glide strips



Noise-reducing with silencer profile option


Simple connection to the e-chain® with the fixed end module

Order example | Based on Part No. 9AT-35-SLA

Order key guide trough 9AT-35-SLA

Trough system
Aluminum support tray
Outer height
With glide strip
With silencer profile

Order key installation set 960AT-30-125

Installation set
Size of bottom clamp
Length of Profile rail

Aluminum Support Tray Advantages

Quick and simple fixing onto the support tray

Fixed end module - to attach the e-chain® into the aluminum support tray

- Mounting bracket attachment on the aluminum support tray without drilling
- Fixed end module is clamped to the trough
- Save installation time
- Minimize errors from drilling holes
- Stainless and cost-effective



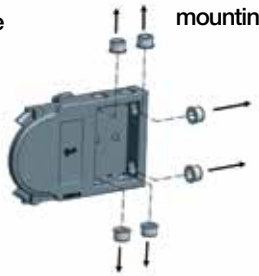


A
Installation - fixed end module



B
Installation - KMA mounting bracket

❶ Removing the preassembled metal bushings



❷ Insert the threaded bushings



❸ Installation fixed end module



❹ Mounting on KMA mounting bracket



❺ Fixing on the aluminum support tray



Fixed end module | Fixed end clamp | Product range

Series Part No.	For aluminum support tray	For e-chain® series	From inner width *Bi* in. (mm)	Mounting bracket
971-80-4[1]	**9AT-35-SL | 9AT-35-SLA**	2400/2500/2450/2480, E6-29, EF61-29/E61-29	.003 (.07)	KMA
972-80-4[1]	**9AT-35-SL | 9AT-35-SLA**	E4-28/R4-28, E4-31L/R4-31L, E6-35, E61-35	.002 (.06)	KMA
972-80-4[1]	**9AT-35-SL | 9AT-35-SLA**	E4-32/H4-32/R4-32, E4-38L/R4-38L, E6-40/R6-40, E61-40	.002 (.06)	KMA
972-80-4[1]	**9AT-35-SL | 9AT-35-SLA**	2600/2700/2650/2680	.002 (.06)	KMA

More series available upon request

1) Material: plastic. Material screw kits: standard steel, galvanized. Option: 316 stainless steel, material 1.4571 (AISI 316Ti), standard steel, galvanized.

Available from stock. Ready to ship in 24 - 48hrs.*

*The delivery times indicated correspond to the average time until the ordered goods are dispatched.

PDF: igus.com/e-chain-pdfs
Product information: igus.com/e-chains

Aluminum Support Tray
9AT-35-SL and 9AT-35-SLA
Trough height 138 in. (35mm) - Product Range

igus® e-chain system®
Telephone 1-800-521-2747
Internet: igus.com
email: sales@igus.com
QuickSpec: igus.com/quickspec

For the following igus® series

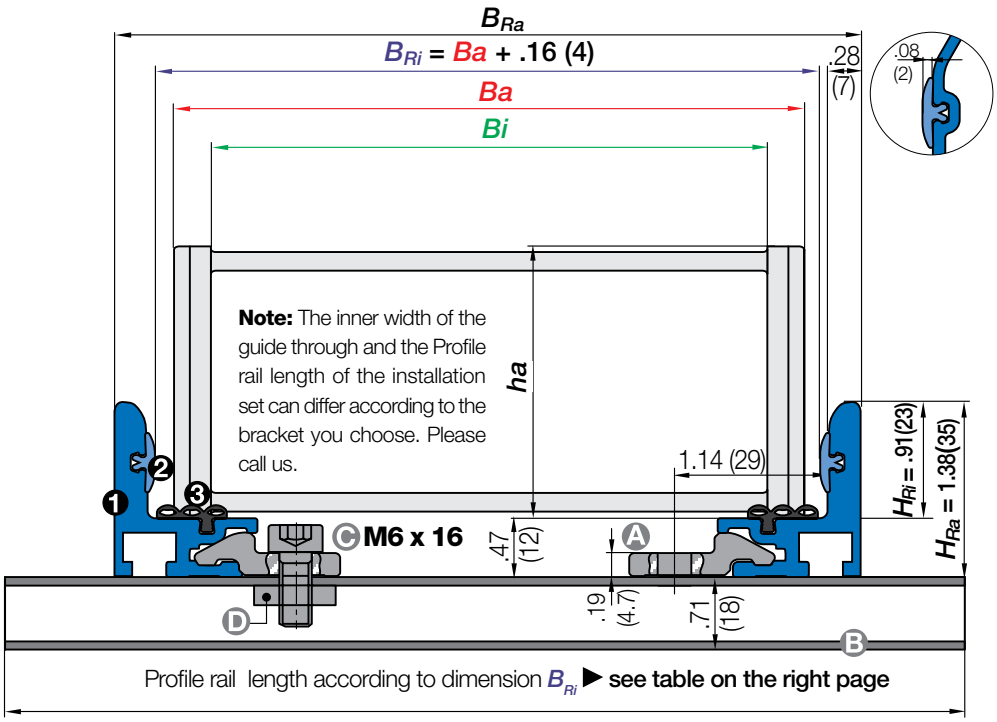
E2/000
- 2400/2500/2450/2480
- 2600/2700/2650/2680

E4-1L
- E4-31L/R4-31L
- E4-38L/R4-38L

E4-1
- E4-28/R4-28
- E4-32/H4-32/R4-32

E6-1
- EF61-29/E61-29
- E61-35
- E61-40

E6
- E6-29
- E6-35
- E6-40/R6-40



Aluminum support tray | Full set

Trough side parts sets - consisting of part ❶ | ❷ | ❸	Part No.	Weight
1 set of 2 trough side parts, incl. glide strips, **without** silencer profile, 6.56 ft. (2m) section	9AT-35-SL	≈ 3.470kg
1 set of 2 trough side parts, incl. glide strips, **with** silencer profile, 6.56 ft. (2m) section	9AT-35-SLA	≈ 3.714kg

Installation sets Ⓐ | Ⓑ | Ⓒ | Ⓓ	Part No.	Weight
1 installation set **without** Profile rail	960-30	upon request
1 installation set **with** Profile rail (Profile rail length according to dimension B_{Ri})	960AT-30-XXX*	upon request

*Please add the Profile rail length XXX as shown on the tables on the right page. Example: **960AT-30-150**

Aluminum support tray | Components as individual parts

Individual parts, trough	Part No.	Weight
❶ 1 trough side part, individual, 6.56 ft. (2m) section	9AT-35-11	≈ 1.673kg
❷ 1 glide strip, plastic, individual, 6.56 ft. (2m) section	75-01	≈ 0.062kg
❸ 1 silencer profile, rubber, individual, 6.56 ft. (2m) section (optional for an additional noise dampening)	75-67-H-2000	≈ 0.122kg
Individual parts, installation set	**Part No.**	**Weight**
Ⓐ 1 bottom clamp, individual	75-40	≈ 0.03kg
Ⓑ 1 Profile rail, individual (Profile rail length according to dimension B_{Ri})	92-52-XXX-E*	≈ 0.90kg/m
Ⓒ 1 screw M6 x 16, individual	MAT 0040209 / M6 x16	
Ⓓ 1 glide nut, individual	MAT 0040057 / M6	
Additional option for simple fastening of the e-chain® without drilling	**Part No.**	
	971-80-4 / 972-80-4	

Aluminum Support Tray
Profile Rail Lengths
For aluminum support tray with fixed end module

2400 / 2500 / 2450 / 2480

Width Index	B_{Ri} in. (mm)	Part No. attached inwards
-07	3.82 (97)	960AT-30-150
-09	4.29 (109)	960AT-30-175
-10	4.84 (123)	960AT-30-175
-12	5.71 (145)	960AT-30-200

2600 / 2700 / 2650 / 2680

Width Index	B_{Ri} in. (mm)	Part No. attached inwards
-06	3.35 (85)	960AT-30-150
-07	3.74 (95)	960AT-30-150
-09	4.33 (110)	960AT-30-175
-10	4.72 (120)	960AT-30-175
-12	5.71 (145)	960AT-30-200
-15	6.69 (170)	960AT-30-225
-17	7.79 (198)	960AT-30-250

E4-38L / R4-38L

Width Index	B_{Ri} in. (mm)	Part No. attached inwards
-062	3.23 (82)	960AT-30-150
-075	3.74 (95)	960AT-30-150
-087	4.21 (107)	960AT-30-175
-100	4.72 (120)	960AT-30-175
-105	4.92 (125)	960AT-30-175
-112	5.20 (132)	960AT-30-200
-125	5.71 (145)	960AT-30-200
-137	6.18 (157)	960AT-30-225
-150	6.69 (170)	960AT-30-225
-162	7.17 (182)	960AT-30-250
-175	7.68 (195)	960AT-30-250
-187	8.15 (207)	960AT-30-275
-200	8.66 (220)	960AT-30-275
-212	9.13 (232)	960AT-30-300
-225	9.65 (245)	960AT-30-300
-237	10.12 (257)	960AT-30-325
-250	10.63 (270)	960AT-30-325
-262	11.10 (282)	960AT-30-325
-275	11.61 (295)	960AT-30-350
-287	12.09 (307)	960AT-30-350
-300	12.60 (320)	960AT-30-375
-312	13.07 (332)	960AT-30-375
-325	13.58 (345)	960AT-30-400
-337	14.06 (357)	960AT-30-400
-350	14.57 (370)	960AT-30-425
-362	15.04 (382)	960AT-30-450
-375	15.55 (395)	960AT-30-450
-387	16.02 (407)	960AT-30-450
-400	16.54 (420)	960AT-30-475

E4-28/R4-28

Width Index	B_{Ri} in. (mm)	Part No. attached inwards
-062	3.39 (86)	960AT-30-150
-070	3.31 (94)	960AT-30-150
-075	3.90 (99)	960AT-30-175
-087	4.37 (111)	960AT-30-175
-100	4.88 (124)	960AT-30-200
-125	5.87 (149)	960AT-30-200
-150	6.85 (174)	960AT-30-200
-175	7.83 (199)	960AT-30-225
-200	8.82 (224)	960AT-30-225
-225	9.80 (249)	960AT-30-250
-250	10.78 (274)	960AT-30-250
-275	11.77 (299)	960AT-30-250
-300	12.76 (324)	960AT-30-275

E4-32 / H4-32 / R4-32

Width Index	B_{Ri} in. (mm)	Part No. attached inwards
-06	3.74 (95)	960AT-30-150
-07	4.02 (102)	960AT-30-150
-087	4.49 (114)	960AT-30-175
-10	5.00 (127)	960AT-30-175
-11	5.31 (135)	960AT-30-200
-112	5.51 (140)	960AT-30-200
-12	5.98 (152)	960AT-30-200
-137	6.50 (165)	960AT-30-225
-15	6.97 (177)	960AT-30-225
-162	7.48 (190)	960AT-30-250
-17	7.68 (195)	960AT-30-250
-18	7.95 (202)	960AT-30-250
-187	8.46 (215)	960AT-30-275
-20	8.94 (227)	960AT-30-275
-212	9.45 (240)	960AT-30-300
-23	9.92 (252)	960AT-30-300
-237	10.43 (265)	960AT-30-325
-25	10.91 (277)	960AT-30-325
-262	11.42 (290)	960AT-30-350
-28	11.89 (302)	960AT-30-350
-29	12.40 (315)	960AT-30-375
-30	12.87 (327)	960AT-30-375
-312	13.39 (340)	960AT-30-400
-325	13.86 (352)	960AT-30-400
-337	14.37 (365)	960AT-30-425
-350	14.84 (377)	960AT-30-425
-362	15.35 (390)	960AT-30-450
-375	15.83 (402)	960AT-30-450
-387	16.34 (415)	960AT-30-475
-400	16.81 (427)	960AT-30-475

E4-31L / R4-31L

Width Index	B_{Ri} in. (mm)	Part No. attached inwards
-062	3.15 (80)	960AT-30-150
-075	3.66 (93)	960AT-30-150
-087	4.13 (105)	960AT-30-175
-100	4.65 (118)	960AT-30-175
-112	5.12 (130)	960AT-30-200
-125	5.63 (143)	960AT-30-200
-137	6.10 (155)	960AT-30-225
-150	6.61 (168)	960AT-30-225
-162	7.09 (180)	960AT-30-250
-175	7.60 (193)	960AT-30-250
-187	8.07 (205)	960AT-30-275
-200	8.58 (218)	960AT-30-275

E6-40 / R6-40/ E61-40

Width Index	B_{Ri} in. (mm)	Part No. attached inwards
-062	3.39 (86)	960AT-30-150
-070	3.70 (94)	960AT-30-150
-075	3.90 (99)	960AT-30-150
-087	4.37 (111)	960AT-30-175
-100	4.88 (124)	960AT-30-175
-125	5.87 (149)	960AT-30-200
-150	6.85 (174)	960AT-30-225
-175	7.83 (199)	960AT-30-250
-200	8.82 (224)	960AT-30-275
-225	9.80 (249)	960AT-30-300
-250	10.78 (274)	960AT-30-325
-275	11.77 (299)	960AT-30-350
-300	12.76 (324)	960AT-30-375

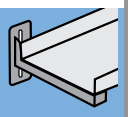
E6-29 /R6-29 / EF61-29 / E61-29

Width Index	B_{Ri} in. (mm)	Part No. attached inwards
-070	3.54 (90)	960AT-30-150
-080	3.94 (100)	960AT-30-150
-090	4.33 (110)	960AT-30-175
-100	4.72 (120)	960AT-30-175
-110	5.12 (130)	960AT-30-200
-120	5.51 (140)	960AT-30-200

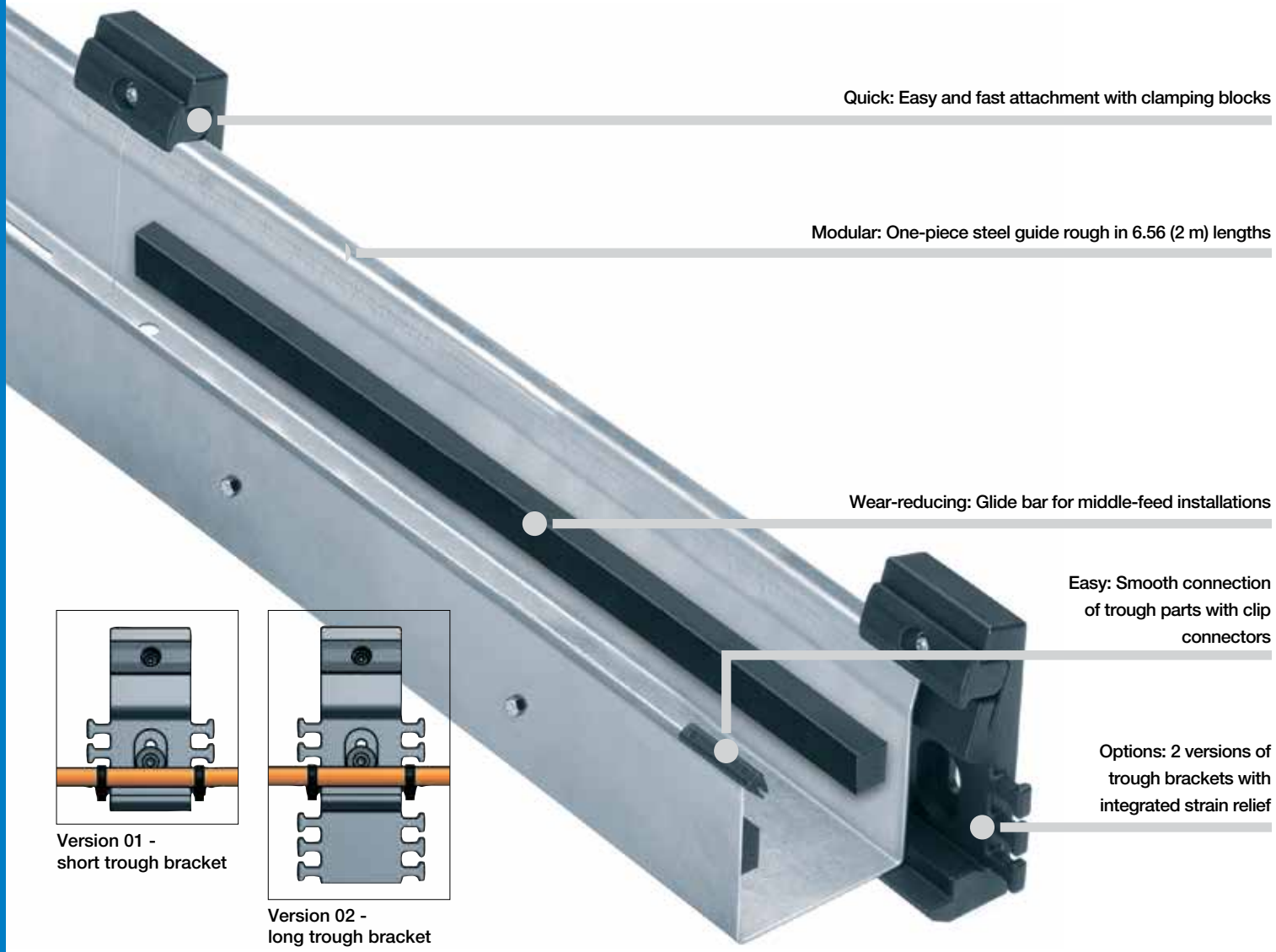
E6-35/ E61-35

Width Index	B_{Ri} in. (mm)	Part No. attached inwards
-060	3.31 (84)	960AT-30-150
-070	3.70 (94)	960AT-30-150
-080	4.09 (104)	960AT-30-150
-090	4.49 (114)	960AT-30-175
-100	4.88 (124)	960AT-30-175
-110	5.28 (134)	960AT-30-200
-120	5.67 (144)	960AT-30-200

PDF: igus.com/e-chain-pdfs
Product information: igus.com/e-chains



Guidefast Guide Trough
Introduction - Advantages



Version 01 -
short trough bracket

Version 02 -
long trough bracket

Quickly installed as a modular kit solution for crane girders and indoor cranes

The guidefast guide trough is mounted on the side of the crane girder, in case of installation on crane girders, the welding of brackets onto the girder can be omitted. Installation time is kept very short, the guide trough is only attached to the previously installed brackets and then fixed with clamping blocks. The small amount of different components and trough design contribute to a simple installation.

- Save up to 80% installation time compared to standard trough systems
- Fits virtually any standard crane girder
- 2 versions of brackets with integrated strain relief for assembly of static cables on the crane girder - possible ± .20" (5 mm) vertical adjustment of brackets
- Standard trough length of 6.56 ft. (2.0 m) - with or without glide bar
- Suitable for any side-mounted application - not only on cranes
- Easy to install due to preassembled hole patterns of e-chain® brackets
- Standard material: galvanized steel, optional: stainless steel V2A, material 1.4301 (AiSI 304) or black powder coating
- Long-term tested to withstand vibration and rough environment

Typical industries and applications

- Crane manufacturers (mainly indoor cranes)
- Applications where the lateral installation of the guide trough is beneficial

Guidefast Guide Trough Selection Table



Guidefast - **without** glide bar for E2/000 Series:

- 1500
- 2500
- 2700

Trough profile Part No.	For E2/000 e-chain®	Inner trough width B_{Ri} in. (mm)	Complete width in. (mm)	Material
GF91-30-025-2000	1500-025-	1.67 (42.5)	3.19 (81)	Galvanized steel*
GF91-30-050-2000	1500-050-	2.66 (67.5)	4.17 (106)	Galvanized steel*
GF92-30-03-2000	2500-03-	2.28 (58)	3.80 (96.5)	Galvanized steel*
GF92-30-05-2000	2500-05-	3.03 (77)	4.55 (115.5)	Galvanized steel*
GF92-30-07-2000	2500-07-	3.82 (97)	5.33 (135.5)	Galvanized steel*
GF92-30-09-2000	2500-09-	4.29 (109)	5.73 (145.5)	Galvanized steel*
GF92-30-10-2000	2500-10-	4.84 (123)	6.36 (161.5)	Galvanized steel*
GF95-30-05-2000	2700-05-	2.76 (70)	4.27 (108.5)	Galvanized steel*
GF95-30-07-2000	2700-07-	3.89 (96)	5.26 (133.5)	Galvanized steel*
GF95-30-10-2000	2700-10-	4.72 (120)	6.24 (158.5)	Galvanized steel*

*Standard material: Galvanized steel. Also available as stainless steel version V2A, material 1.4301 (AISI 304) or black powder coating



Guidefast - **with** glide bar for E2/000 Series:

- 1500
- 2500
- 2700

Support tray Part No.	For E2/000 e-chain®	Inner trough width B_{Ri} in. (mm)	Complete width in. (mm)	Material
GF91-31-025-2000	1500-025-	1.67 (42.5)	3.19 (81)	Galvanized steel*
GF91-31-050-2000	1500-050-	2.66 (67.5)	4.17 (106)	Galvanized steel*
GF92-31-03-2000	2500-03-	2.28 (58)	3.80 (96.5)	Galvanized steel*
GF92-31-05-2000	2500-05-	3.03 (77)	4.55 (115.5)	Galvanized steel*
GF92-31-07-2000	2500-07-	3.82 (97)	5.33 (135.5)	Galvanized steel*
GF92-31-09-2000	2500-09-	4.29 (109)	5.73 (145.5)	Galvanized steel*
GF92-31-10-2000	2500-10-	4.84 (123)	6.36 (161.5)	Galvanized steel*
GF95-31-05-2000	2700-05-	2.76 (70)	4.27 (108.5)	Galvanized steel*
GF95-31-07-2000	2700-07-	3.89 (96)	5.26 (133.5)	Galvanized steel*
GF95-31-10-2000	2700-10-	4.72 (120)	6.24 (158.5)	Galvanized steel*



Support tray with bracket for easy mounting on your application

Guidefast Guide Trough Components

For the following Series

System E2/000 Series:

- 1500
- 2500
- 2700

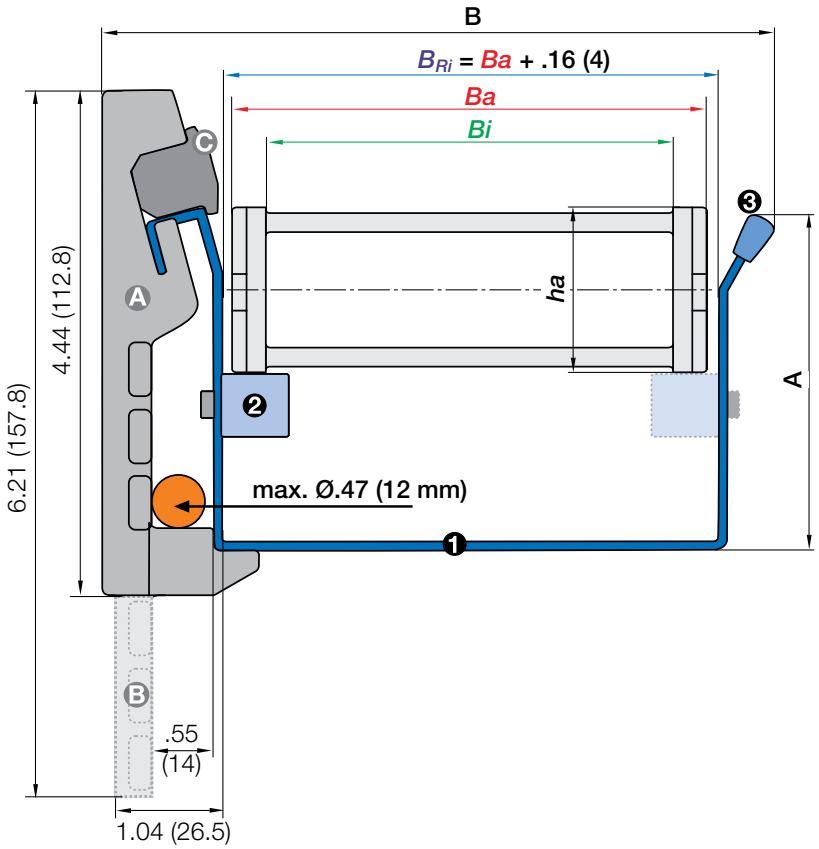
Components - Set guidefast guide trough

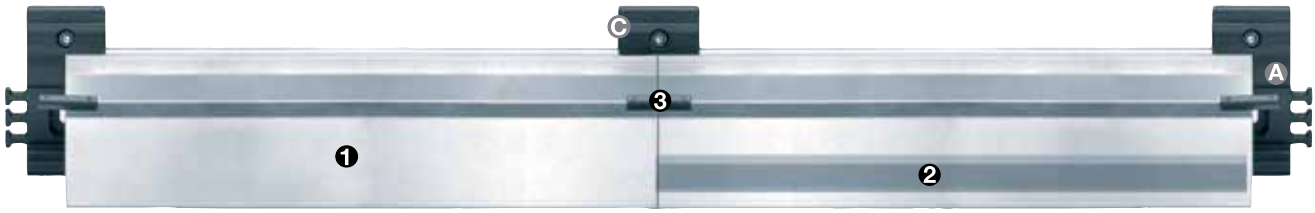
1. Trough profile, 6.56 ft. (2 m) section
2. Glide bar, 6.56 ft. (2 m) section, optional
3. Clip connector, Part No. 908-467

Components - Set trough bracket

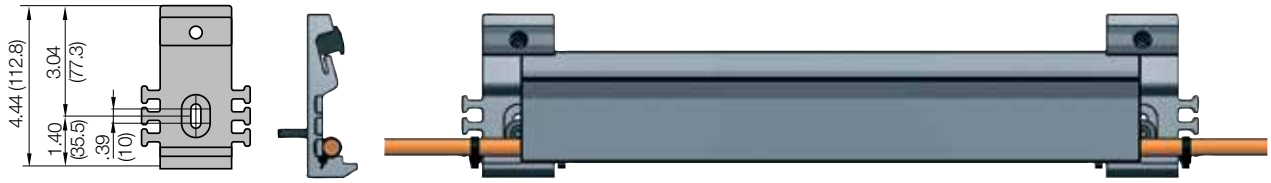
- A Version 01 - short trough bracket
- B Version 02 - long trough bracket
- C Clamping blocks, Part No. G9-2-10

Ba = Outer e-chain® width
Bi = Inner e-chain® width
ha = e-chain® outer height
B_{Ri} = Inner trough width = B_{Ri} = Ba + 4

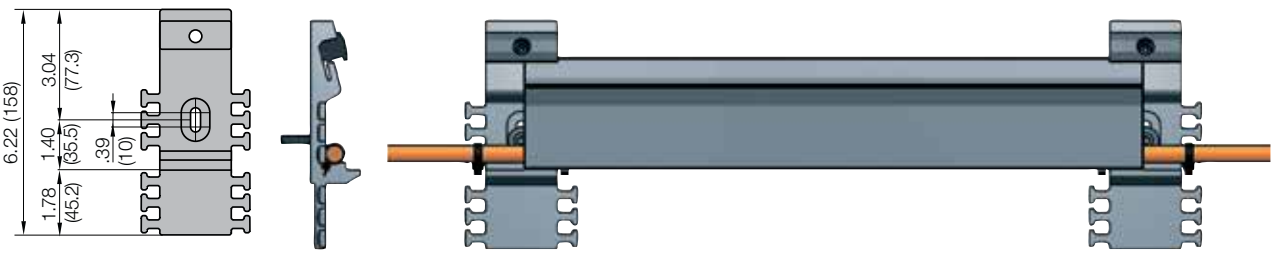




2 Versions of trough brackets with integrated strain relief



Version 01 - short trough bracket Part No. GF9.2.12 with integrated strain relief, possible ± .20" (5 mm) vertical adjustment

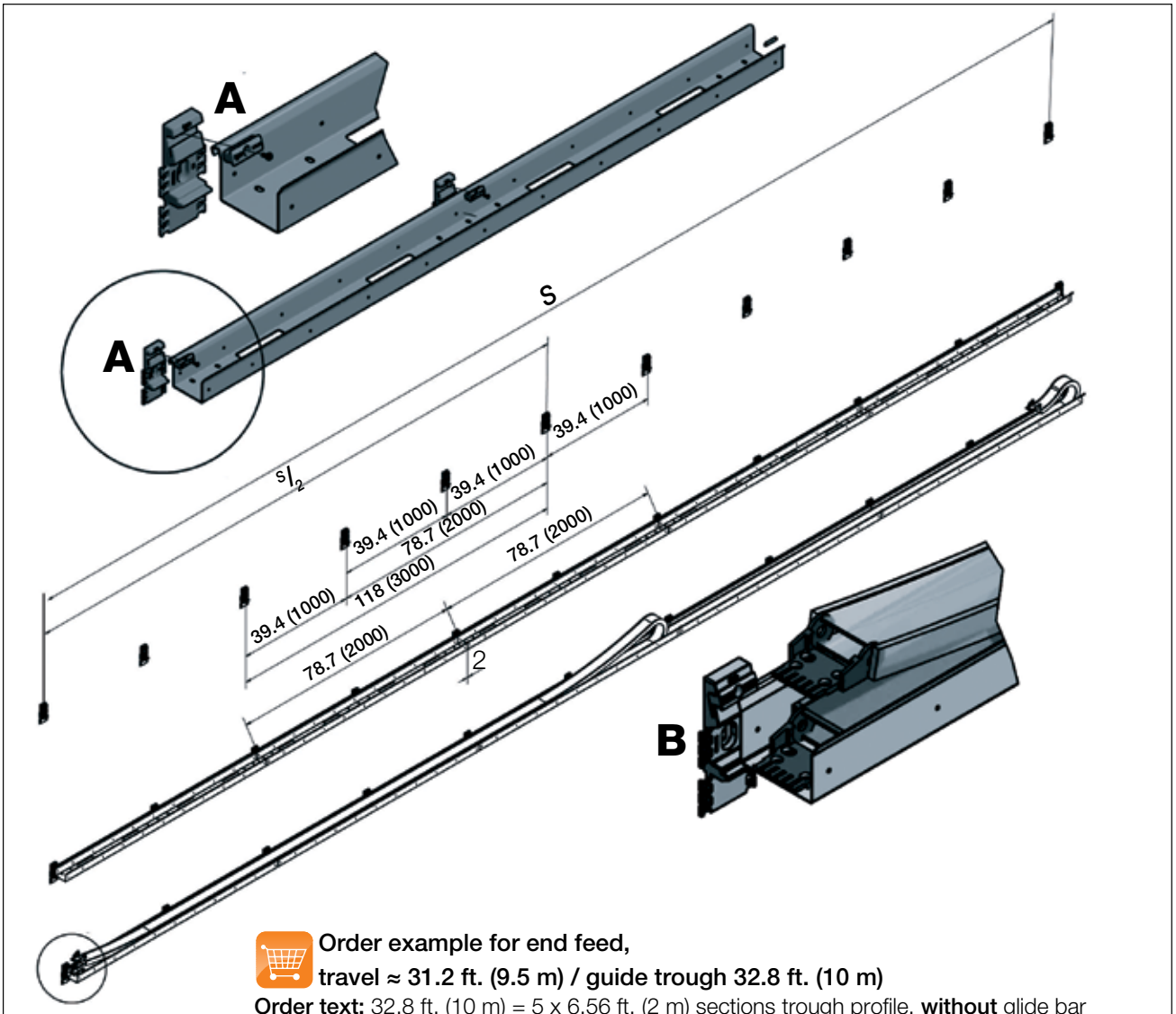


Version 02 - long trough bracket Part No. GF9-2-11 with integrated strain relief, possible ± .20" (5 mm) vertical adjustment

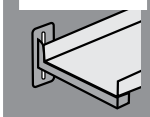
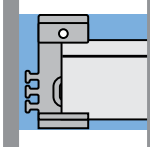
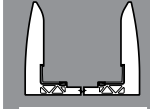
Guidefast Guide Trough Product Range

For E2/000 e-chain®	Trough Profile* without glide bar (includes clip connectors)	Trough profile* with glide bar (includes clip connectors)	Short Bracket Version 01 (includes clamping blocks)	Long Bracket Version 02 (includes clamping blocks)	Inner trough width B_{Ri}	Dim. A in. (mm)	Dim. B in. (mm)
1500-025- ➤	GF91-30-025-2000	GF91-31-025-2000	GF9-2-12	GF9-2-11	1.67 (42.5)	2.40 (61)	3.19 (81)
1500-050- ➤	GF91-30-050-2000	GF91-31-050-2000	GF9-2-12	GF9-2-11	2.66 (67.5)	2.40 (61)	4.17 (106)
2500-03- ➤	GF92-30-03-2000	GF92-31-05-2000	GF9-2-12	GF9-2-11	2.28 (58)	2.95 (75)	3.82 (97)
2500-05- ➤	GF92-30-05-2000	GF92-31-05-2000	GF9-2-12	GF9-2-11	3.03 (77)	2.95 (75)	4.55 (115.5)
2500-07- ➤	GF92-30-07-2000	GF92-31-07-2000	GF9-2-12	GF9-2-11	3.82 (97)	2.95 (75)	5.33 (135.5)
2500-09- ➤	GF92-30-09-2000	GF92-31-09-2000	GF9-2-12	GF9-2-11	4.29 (109)	2.95 (75)	5.83 (148)
2500-10- ➤	GF92-30-10-2000	GF92-31-10-2000	GF9-2-12	GF9-2-11	4.84 (123)	2.95 (75)	6.36 (161.5)
2700-05- ➤	GF95-30-05-2000	GF95-31-05-2000	GF9-2-12	GF9-2-11	2.76 (70)	4.13 (105)	4.27 (108.5)
2700-07- ➤	GF95-30-07-2000	GF95-31-07-2000	GF9-2-12	GF9-2-11	3.89 (96)	4.13 (105)	5.26 (133.5)
2700-10- ➤	GF95-30-10-2000	GF95-31-10-2000	GF9-2-12	GF9-2-11	4.72 (120)	4.13 (105)	6.24 (158.5)

*Standard material: Galvanized steel. Also available as stainless steel version V2A, material 1.4301 (AISI 304) or black powder coating



Order example for end feed,
travel ≈ 31.2 ft. (9.5 m) / guide trough 32.8 ft. (10 m)
Order text: 32.8 ft. (10 m) = 5 x 6.56 ft. (2 m) sections trough profile, **without** glide bar
Part No. GF92-30-07-2000
Order text: 11 x **"long"** version trough brackets
Part No. GF9-2-11

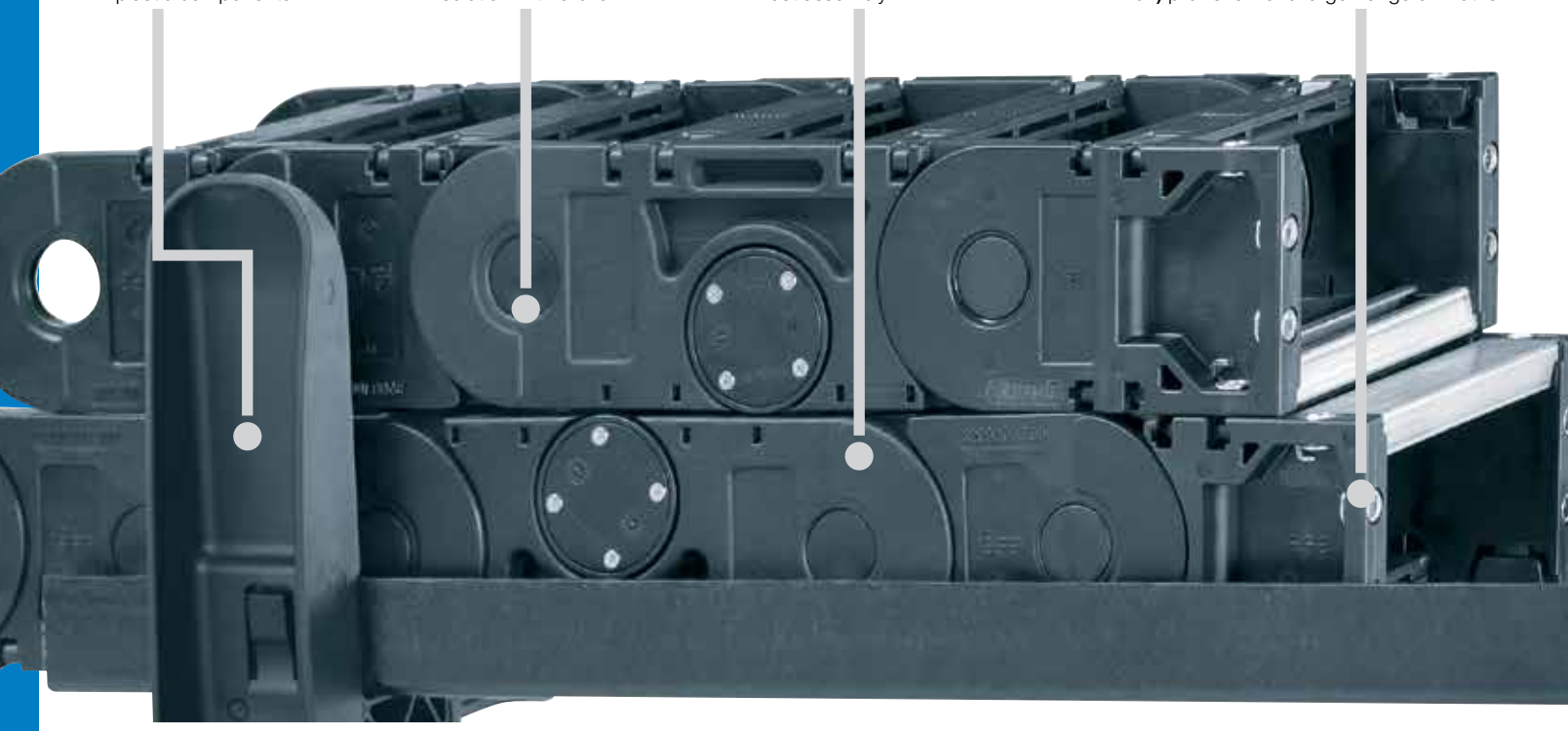
Guidelite Guide Trough
Introduction - Advantages

Corrosion-resistant:
Made completely from plastic components

Cost-effective:
Construction kit solution with e-chain®

Save time:
Easy and fast assembly

2 Versions installation sets:
01) with crossbar for a fixed width or
02) profile rail for a larger range of widths



Realize long travels up to 492 ft. (150 m), quick and cost-effective - Guidelite

As construction kit system primarily for slow applications with low cycle counts. The lower run of the e-chain® is guided in two L-shaped guide rails made from fiberglass reinforced plastics. The upper run of the e-chain® is partially guided by guide angle brackets that are installed at distances of 3.28 ft. (1m). One option to obtain the correct width is to install clip-on crossbars (Version 01) between the retainers. This greatly simplifies the installation since no retroactive adjustments are needed. Another option, which facilitates a greater range of widths, is to mount the guide angle brackets on a profile rail (Version 02).

- Save up to 80% installation time compared to standard trough systems
- Saving time through fast assembly
- Very lightweight polymer components - more quieter than troughs made from steel
- Cost-effective
- Corrosion-resistant
- Gliding application: maximum speed 3.28 ft/s (1 m/s)
- Unsupported application (Guidelite as support tray): maximum speed 16.41 ft/s (5 m/s)
  (Higher speeds can be attained. Please contact us for details)
- Construction kit solution

Typical industries and applications

- Watering cars (irrigation of potted plants)
- For applications with low number of cycles, low speed and additional load
- As cost-effective support tray for unsupported applications

Guidelite Guide Trough Selection Table



Guidelite - Version 01
Installation set with crossbar, standard

Fixed width due to clip-on crossbars, no retroactive adjustments needed

Part No. Assembly set - Guide Angles	For e-chain® Series
9GL-64-50-450-XX	• 2500 • 2700 • 3500 • E4-21 • E4-28 • E4-32



Guidelite - Version 02
Installation set with profile rail

Guide angle brackets are assembled on a profile rail for a larger range of widths

Part No. Assembly set - Guide Angles	For e-chain® Series
9GL-64-50-450-XX	• 1500 • 2500 • 2700 • 3500 • E4-21 • E4-28 • E4-32



E2/000 Rol e-chain® in a Guidelite guide trough of an irigation plant

Guidelite Guide Trough Components - Version 01

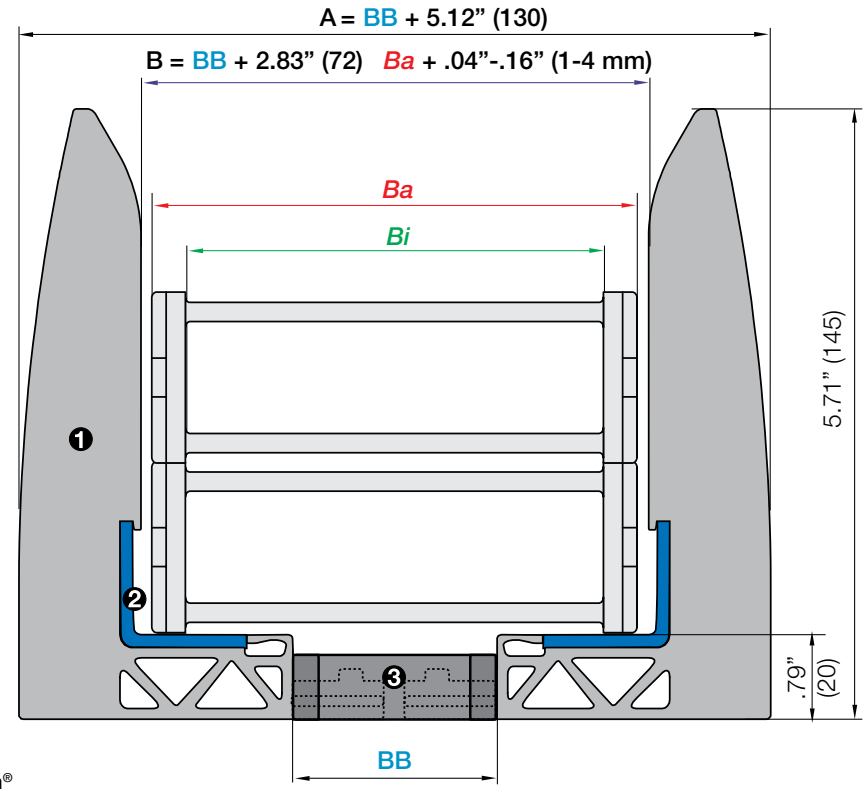
For the following Series

System E2/000 Series:
● 2500
● 2700
● 3500
System E4-1 Series:
● E4-21
● E4-28
● E4-32

Components - Version 01

❶ Guide angles
❷ Plastic guide rail
❸ Crossbar, clip-on
Ba = Outer e-chain® width
Bi = Inner e-chain® width
BB = Length of crossbar
A = Outer guide angle distance
B = Inner guide angle distance

Dimension B must always be .04" to .16" (1 to 4 mm) larger than the *Ba* of the e-chain®

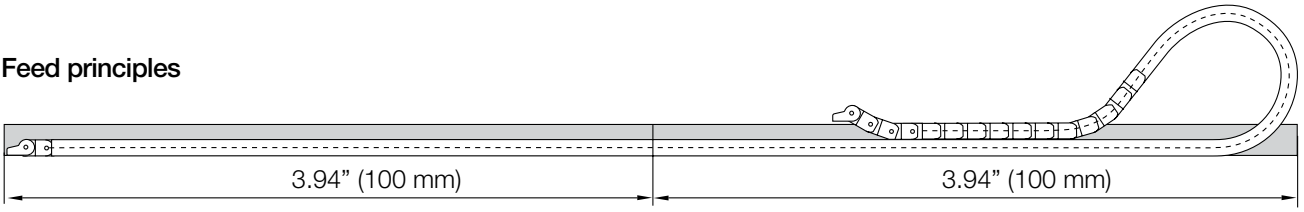


guidelite | Version 01

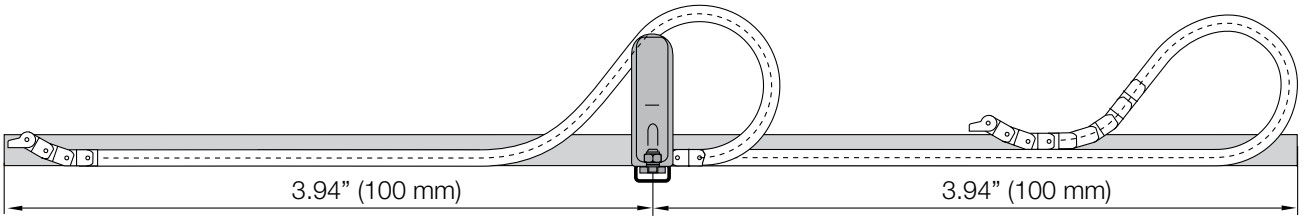
Description	Part No.
Installation set with crossbar for a fixed width, consisting of	9GL-64-50-450-XX
2 x plastic guide rails + 1 x crossbar	(XX = crossbar width-index)
Set plastic guide rails (left and right)	9GL-64-30-2000
in specified lengths: standard 78.7" (2000 mm)	
Feed module that guides the upper run of the e-chain® down, 78.7" (2000 mm)	9GL-64-80-Series-450-XX
Only for Series 2700R and 3500R RoI e-chain® with center feed	(XX = crossbar width-index

Please add the crossbar width-index XX as shown on the tables on the right page. Example: 9GL-64-50-450-05

Feed principles



End feed is recommended for all e-chains® in combination with guidelite



Center feed is only used with RoI e-chains® of Series 2700R and Series 3500R.
Please use the feed module 9GL-64-80 of Series 450-XX, which guides the upper run of the e-chain® down.

More information and assembly instructions ➤ www.igus.com/guidelite

Guidelite Guide Trough
Product Range - Version 01

Part No. Installation Set	For e-chain® Series	For RoI e-chain® Series	Length of Crossbar BB		Outer guide angle Distance A		Inner guide angle Distance B	
			in.	(mm)	in.	(mm)	in.	(mm)
9GL-64-50-450-05	2500-10-*R*-0	–	1.97	(50)	7.09	(180)	4.80	(122)
9GL-64-50-450-12	2700-17-*R*-0	2700R-17-*R*-0	4.92	(125)	10.04	(255)	7.76	(197)
9GL-64-50-450-05	3500-100-*R*-0	3500R-100-*R*-0	1.97	(50)	7.09	(180)	4.80	(122)
9GL-64-50-450-06	3500-115-*R*-0	3500R-115-*R*-0	2.56	(65)	7.68	(195)	5.39	(137)
9GL-64-50-450-07	3500-125-*R*-0	3500R-125-*R*-0	2.95	(75)	8.07	(205)	5.79	(147)
9GL-64-50-450-10	3500-150-*R*-0	3500R-150-*R*-0	3.94	(100)	9.06	(230)	6.77	(172)
9GL-64-50-450-12	3500-175-*R*-0	3500R-175-*R*-0	4.92	(125)	10.04	(255)	7.76	(197)
9GL-64-50-450-15	3500-200-*R*-0	3500R-200-*R*-0	5.91	(150)	11.02	(280)	8.74	(222)
9GL-64-50-450-17	3500-225-*R*-0	3500R-225-*R*-0	6.89	(175)	12.01	(305)	9.72	(247)
9GL-64-50-450-20	3500-250-*R*-0	3500R-250-*R*-0	7.87	(200)	12.99	(330)	10.71	(272)
9GL-64-50-450-06	E4-21-120-*R*-0	–	2.56	(65)	7.68	(195)	5.39	(137)
9GL-64-50-450-05	E4-28-100-*R*-0	–	1.97	(50)	7.09	(180)	4.80	(122)
9GL-64-50-450-07	E4-28-125-*R*-0	–	2.95	(75)	8.07	(205)	5.79	(147)
9GL-64-50-450-05	E4-32-097-*R*-0	–	1.97	(50)	7.09	(180)	4.80	(122)
9GL-64-50-450-06	E4-32-112-*R*-0	–	2.56	(65)	7.68	(195)	5.39	(137)

Dimension B must always be .04" to .16" (1 to 4 mm) larger than the *Ba* of the e-chain®



Ideal for outdoor applications - UV resistant, corrosion-free, allows dirt to pass through

PDF: igus.com/e-chain-pdfs
Product information: igus.com/e-chains

AL

ST

Guidelite Guide Trough Components - Version 02

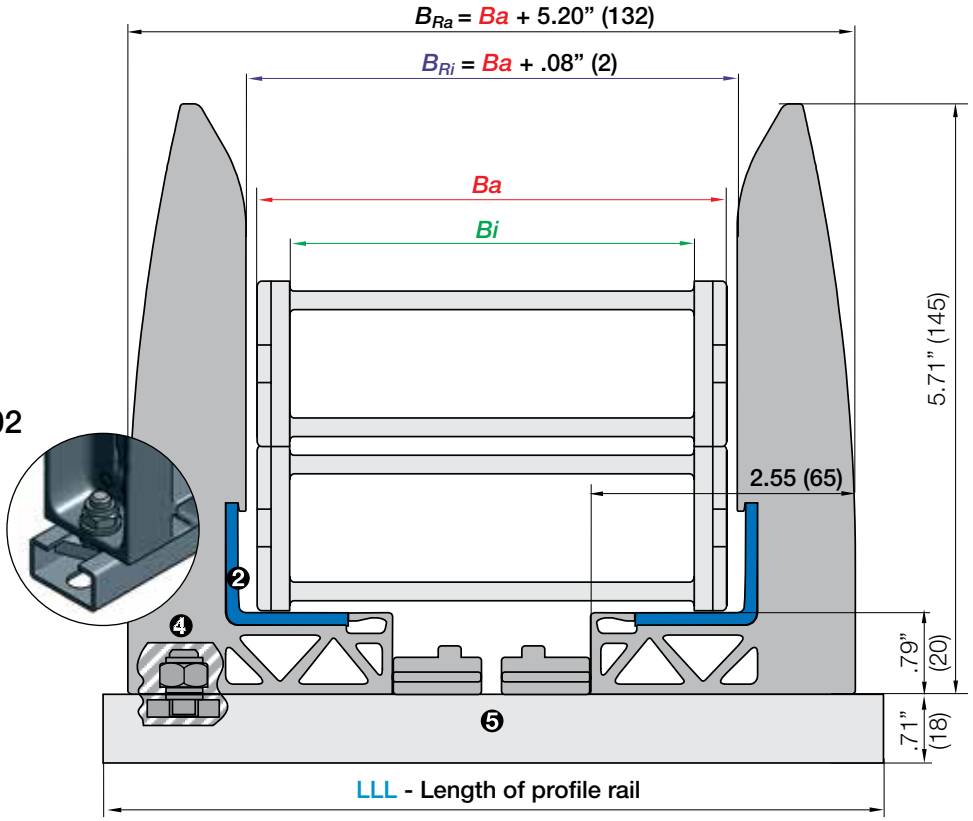
For the following Series

System E2/000 Series:
● 1500
● 2500
● 2700
● 3500
System E4-1 Series:
● E4-21
● E4-28
● E4-32

Components - Version 02

❶ Guide angles
❷ Plastic guide rail
❹ Screwset M8
❺ C-profile

Ba = Outer e-chain® width
Bi = Inner e-chain® width
B_{RA} = Outer guide angle distance
B_{Ri} = Inner guide angle distance
B_{Ri} = Ba + 2

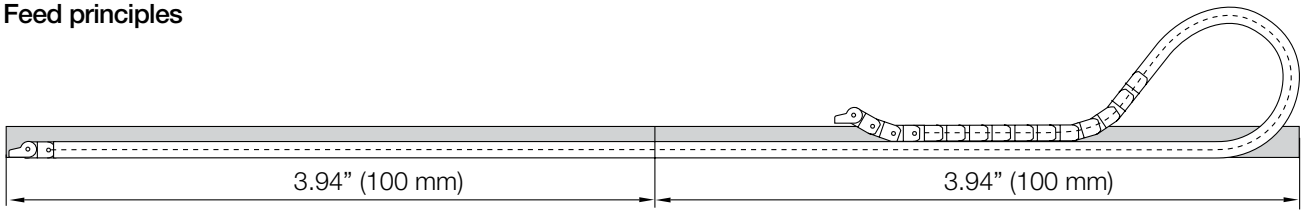


guidelite | Version 02

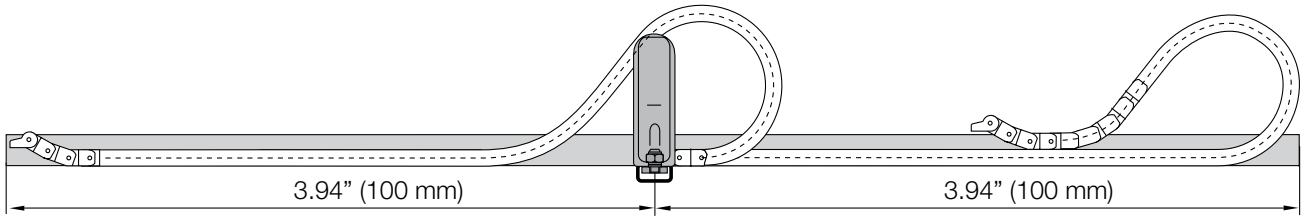
Description	Part No.
Installation set with profile rail consisting of	9GL-64-50-LLL
2 x plastic guide rails + 1 x profile rail + Screwsets M8	(LLL = Length of profile rail)
Set plastic guide rails (left and right)	9GL-64-30-2000
in specified lengths: standard 78.7" (2000 mm)	
Feed module that guides the upper run of the e-chain® down, 78.7" (2000 mm)	9GL-64-80-Series-LLL
Only for Series 2700R and 3500R RoI e-chain® with center feed	(LLL = Length of profile rail)

Please add the profile rail length LLL as shown on the tables on the right page. Example: 9GL-64-50-175

Feed principles



End feed is recommended for all e-chains® in combination with guidelite



Center feed is only used with RoI e-chains® of Series 2700R and Series 3500R.
Please use the feed module 9GL-64-80 of Series 450-XX, which guides the upper run of the e-chain® down.

More information and assembly instructions ➤ www.igus.com/guidelite

Guidelite Guide Trough
Product Range - Version 02

Part No- Installation Set	For e-chain® Series	For RoI e-chain® Series
1500		
9GL-64-50-150	1500-068-*R*-0	–
9GL-64-50-175	1500-080-*R*-0	–
9GL-64-50-175	1500-100-*R*-0	–
9GL-64-50-200	1500-125-*R*-0	–
2500		
9GL-64-50-150	2500-05-*R*-0	–
9GL-64-50-175	2500-07-*R*-0	–
9GL-64-50-175	2500-09-*R*-0	–
9GL-64-50-200	2500-10-*R*-0	–
9GL-64-50-225	2500-12-*R*-0	–
2700		
9GL-64-50-150	2700-06-*R*-0	2700R-06-*R*-0
9GL-64-50-175	2700-07-*R*-0	2700R-07-*R*-0
9GL-64-50-175	2700-09-*R*-0	2700R-09-*R*-0
9GL-64-50-200	2700-10-*R*-0	2700R-10-*R*-0
9GL-64-50-225	2700-12-*R*-0	2700R-12-*R*-0
9GL-64-50-250	2700-15-*R*-0	2700R-15-*R*-0
9GL-64-50-275	2700-17-*R*-0	2700R-17-*R*-0
3500		
9GL-64-50-175	3500-075-*R*-0	3500R-075-*R*-0
9GL-64-50-200	3500-100-*R*-0	3500R-100-*R*-0
9GL-64-50-200	3500-115-*R*-0	3500R-115-*R*-0
9GL-64-50-225	3500-125-*R*-0	3500R-125-*R*-0
9GL-64-50-250	3500-150-*R*-0	3500R-150-*R*-0
9GL-64-50-275	3500-175-*R*-0	3500R-175-*R*-0
9GL-64-50-300	3500-200-*R*-0	3500R-200-*R*-0
9GL-64-50-325	3500-225-*R*-0	3500R-225-*R*-0
9GL-64-50-350	3500-250-*R*-0	3500R-250-*R*-0
E4-21		
9GL-64-50-150	E4-21-060-*R*-0	–
9GL-64-50-150	E4-21-070-*R*-0	–
9GL-64-50-175	E4-21-080-*R*-0	–
9GL-64-50-175	E4-21-090-*R*-0	–
9GL-64-50-175	E4-21-100-*R*-0	–
9GL-64-50-200	E4-21-110-*R*-0	–
9GL-64-50-200	E4-21-120-*R*-0	–

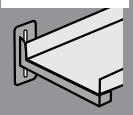
Part No- Installation Set	For e-chain® Series	For RoI e-chain® Series
E4-28		
9GL-64-50-150	E4-28-062-*R*-0	–
9GL-64-50-175	E4-28-070-*R*-0	–
9GL-64-50-175	E4-28-075-*R*-0	–
9GL-64-50-175	E4-28-087-*R*-0	–
9GL-64-50-200	E4-28-100-*R*-0	–
9GL-64-50-225	E4-28-125-*R*-0	–
9GL-64-50-250	E4-28-150-*R*-0	–
9GL-64-50-275	E4-28-175-*R*-0	–
9GL-64-50-300	E4-28-200-*R*-0	–
9GL-64-50-325	E4-28-225-*R*-0	–
9GL-64-50-350	E4-28-250-*R*-0	–
9GL-64-50-375	E4-28-275-*R*-0	–
9GL-64-50-400	E4-28-300-*R*-0	–
E4-32		
9GL-64-50-150	E4-32-05-*R*-0	–
9GL-64-50-175	E4-32-06-*R*-0	–
9GL-64-50-175	E4-32-07-*R*-0	–
9GL-64-50-175	E4-32-087-*R*-0	–
9GL-64-50-200	E4-32-09-*R*-0	–
9GL-64-50-200	E4-32-10-*R*-0	–
9GL-64-50-200	E4-32-11-*R*-0	–
9GL-64-50-200	E4-32-112-*R*-0	–
9GL-64-50-225	E4-32-12-*R*-0	–
9GL-64-50-225	E4-32-137-*R*-0	–
9GL-64-50-250	E4-32-15-*R*-0	–
9GL-64-50-275	E4-32-162-*R*-0	–
9GL-64-50-275	E4-32-17-*R*-0	–
9GL-64-50-275	E4-32-18-*R*-0	–
9GL-64-50-275	E4-32-187-*R*-0	–
9GL-64-50-300	E4-32-200-*R*-0	–
9GL-64-50-300	E4-32-212-*R*-0	–
9GL-64-50-325	E4-32-23-*R*-0	–
9GL-64-50-325	E4-32-237-*R*-0	–
9GL-64-50-350	E4-32-25-*R*-0	–
9GL-64-50-350	E4-32-262-*R*-0	–
9GL-64-50-375	E4-32-28-*R*-0	–
9GL-64-50-375	E4-32-29-*R*-0	–
9GL-64-50-400	E4-32-30-*R*-0	–

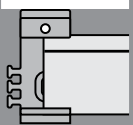
Please note: the smallest possible inner width of the guide trough is 2.83 (72 mm).

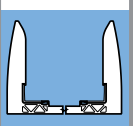
PDF: igus.com/e-chain-pdfs
Product information: igus.com/e-chains



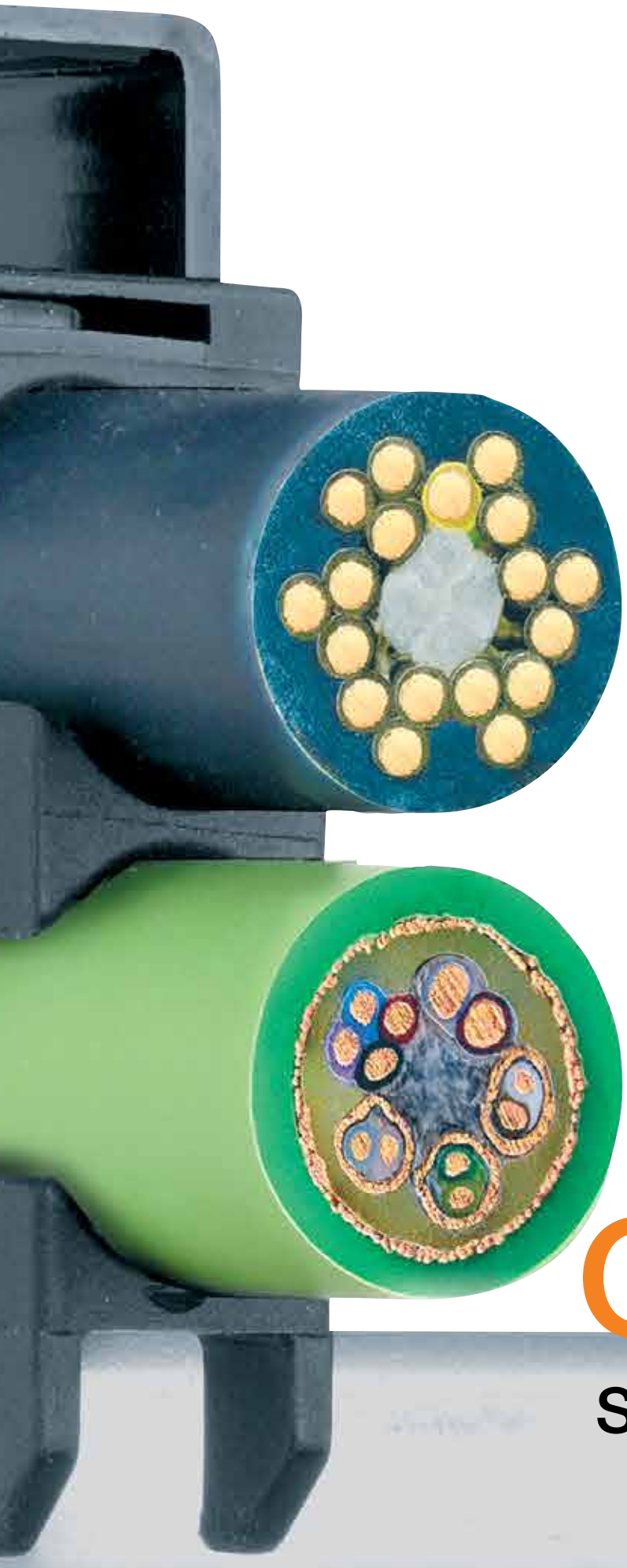









igus



igus®
Chainfix
Strain relief systems

igus® Chainfix strain relief. Flexible and fast assembled.

Strain relief from igus® is specifically developed for use in e-chains® and dynamic applications. The combination of chainflex® cable materials and the plastic strain relief components of igus® Chainfix are designed to achieve long life of the cables and maximum holding power. For a wide variety of applications igus® Chainfix is the best solution in terms of costs and benefits. igus® Chainfix strain relief components are installed in applications around the world.



Available from stock. Orders ship as early as today.*

*On average 90% of orders ship the same day..

3D-CAD files, configurators, PDF ➤ www.igus.com/chainfix

Chainfix Strain Relief systems
Overview

Profile rail - standard and for heavy-duty applications



- **Standard profile rail Part No. CF-92-42KMA** (can be integrated into KMA)
- **Profile rail Part No. CF-92-52G** for increased holding force (mounting in front of e-chain®)

Steel and stainless steel clamps - for maximum holding force



- **CFX*** Single, double, triple clamps with standard base
- **CFXL*** Single, double, triple clamps with wide base for maximum holding force
- Clamp stacker and saddle elements
- chainfix multi-clamps*

chainfix tiewrap plates - universal, bolted or clip-on



- **Option 1A:** tiewrap plates as individual parts "Series 2000" + cable tiewraps
- **Option 1B:** tiewrap plates as individual parts "Series 3000" + cable tiewraps

chainfix tiewrap plates - optional variants



- **Option 1**: tiewrap plates with clip-on connection for profile rail
- **Option 2:** integrated strain relief for R series E2 e-tubes
- **Option 3:** tiewrap plates for fixed crossbars
- **Option 4:** tiewrap plates for openable crossbars

CFU honeycomb strain relief - assembled in seconds



- Simply insert cables and hoses into honeycomb and close - strain relief for different cables in one slot

Strain relief separators - with integrated teeth



- For easy strain relief with cable tiewraps

CFV - stepped strain relief for use outside of the e-chain® section



- Easy strain relief for cables, even in fully enclosed e-tubes (with strain relief teeth, stepped)

CFN - chainfix nuggets for Profile rail and top-hat (DIN) rail



- **Option 1:** simple and universal cable attachment for cable diameters of .79" (20 mm) and 1.18" (30 mm)
- **Option 2:** fastened by clipping onto standard top-hat (DIN) rail

CFB - strain relief connector system, modular and customizable



- **CFB** polymer strain relief connector system, for many cables in a very confined space

*Standard material: galvanised steel. Also available as stainless steel version (stainless steel material: 1.4301/AISI 304)

Chainfix Strain Relief Selection Guide

	CFX Clamp, standard	CFXL Clamp, for increased holding force	CFU Honeycomb strain relief	CFN Nugget	Strain relief separator	CFV Stepped strain relief	Strain relief can be clipped onto mounting brackets / KMA
E1							
E1-17-021-	–	–	–	–	–	–	–
E-Z chain®							
E03	–	–	–	–	–	–	–
E04	–	–	–	–	–	–	–
E045/Z045	–	–	–	–	–	–	–
E06/Z06	–	–	–	–	–	–	–
E065/Z065	–	–	–	–	–	–	–
E08/Z08	–	–	–	–	–	–	–
E14/Z14	–	–	–	–	–	–	–
E200/Z200	X [1)]	–	–	–	–	–	–
E16/Z16	–	–	–	–	–	–	–
E26/Z26	X [1)]	–	–	–	–	–	–
E300/Z300	X [1)]	–	–	–	–	–	–
zipper							
047	–	–	–	–	–	–	–
07/R07	–	–	–	–	–	–	–
09/R09	–	–	–	–	–	–	–
15/R15	–	–	–	–	–	–	–
17/R17	–	–	–	–	–	–	–
E2 micro							
03	–	–	–	–	–	–	–
04	–	–	–	–	–	–	–
045	–	–	–	–	–	–	–
B07	–	–	–	–	–	–	–
06	–	–	–	–	–	–	–
B09	–	–	–	–	–	–	–
08	–	–	–	–	–	–	–
E2 mini							
10	–	–	–	–	–	–	–
11-031	–	–	–	–	–	–	–
11-080	–	–	–	–	–	–	–
11-1/11-2	–	–	–	–	–	–	–
14	–	–	–	–	–	–	–
B15/B15i	–	–	–	–	–	–	–
B17/B17i	–	–	–	–	–	–	–
F17	–	–	–	–	–	–	–
E2-1 micro							
E2-10	–	–	–	–	–	–	–
E2-15	–	–	–	–	–	–	–

1) Assembled in front of the mounting bracket. (CFXL clamps are always assembled before the mounting bracket in a separate Profile rail 92.52.XX)

	Tiewrap plate Series 2000	Tiewrap plate Series 3000	Tiewrap plate with clip-on connection for profile rail	Tiewrap plate for fixed crossbars	Tiewrap plate for openable crossbars	Tiewrap plate for triflex® R and triflex® 2)	Tiewrap plate for E2 e-tubes	Tiewrap plate/ teeth directly molded on the mounting bracket	CFB Strain relief connector system
	–	–	–	E1-021-Z	–	–	–	–	–
	–	–	–	–	–	–	–	X	–
	–	–	–	–	–	–	–	X	–
	–	–	–	–	–	–	–	X	–
	–	–	–	–	–	–	–	X	–
	–	–	–	–	–	–	–	X	–
	–	–	–	–	–	–	–	X	–
	–	–	–	–	–	–	–	X	–
	20XX-ZB	–	–	2050-Z	–	–	–	–	–
	–	–	–	–	–	–	–	X	–
	–	30XX-ZB	–	–	–	–	–	–	–
	–	30XX-ZB	–	–	–	–	–	–	–
	–	–	–	–	–	–	–	X	–
	–	–	–	–	–	–	–	X	–
	–	–	–	–	–	–	–	X	–
	–	–	–	–	–	–	–	X	–
	–	–	–	–	–	–	–	X	–
	–	–	–	–	–	–	–	X	–
	–	–	–	–	–	–	–	X	–
	–	–	–	–	–	–	–	X	–
	–	–	–	–	–	–	–	X	–
	–	–	–	–	–	–	–	X	–
	–	–	–	–	–	–	–	X	–
	–	–	–	–	–	–	–	X	–
	–	–	–	–	–	–	–	X	–
	–	–	–	–	–	–	–	X	–
	–	–	–	–	–	–	–	X	–
	–	–	–	–	–	–	–	X	–
	–	–	–	–	–	–	–	X	–
	–	–	–	–	–	–	–	X	–
	–	–	–	–	–	–	–	X	–
	–	–	–	–	–	–	–	X	–
	–	–	–	–	–	–	–	X	–
	–	–	–	–	–	–	–	X	–

2) You'll find on the product page of each e-chain® series 3) Half e-tube only = recommended strain relief for selected e-chain®

Chainfix Strain Relief Selection Guide

e-chain® Series / System	CFX Clamp, standard	CFXL Clamp, for increased holding force	CFU Honeycomb strain relief	CFN Nugget	Strain relief separator	CFV Stepped strain relief	Strain relief can be clipped onto mounting brackets / KMA
E2/000							
1400/1500	X [1]	X [1]	–	–	21-1-Z	–	–
1450/1480	X [1]	X [1]	–	–	21-1-Z	–	–
2400/2500	X [1]	X [1]	–	–	2020-Z	–	–
2450/2480	X [1]	X [1]	–	–	2020-ZR	–	–
2600/2700	X	X [1]	–	X	262-Z	CFV-42-C	–
2650/2680	X	X [1]	–	X	–	CFV-42-C	–
3400/3500	X	X [1]	CFU	X	301-Z	CFV-42-C	–
3450/3480	X	X [1]	CFU	X	34501-Z	CFV-42-C	–
255	–	–	–	–	–	–	–
E2 R100							
R117/118	X [1]	X [1]	–	–	–	–	–
R157/158	X [1]	X [1]	–	–	1585-01-Z	–	–
R167/168	X [1]	X [1]	CFU	–	1685-01-Z	–	–
E2 R							
R48	X [1]	X [1]	–	–	481-ZR	–	–
R58	X [1]	X [1]	–	–	–	–	–
R68	X [1]	X [1]	CFU	–	–	–	–
R2-1							
R2-75	X [1]	X [1]	–	–	–	CFV-80-C	–
RX							
RX32	–	–	–	–	–	–	X
RX40	–	–	–	–	–	–	X
RX48	–	–	–	–	–	–	
RX56	–	–	–	–	–	–	
E4-1L							
E4-31L/R4-31L	X [1]	X [1]	–	–	31-Z	CFV-31-N15	–
E4-38L/R4-38L	X	X [1]	–	X	–	CFV-42-C	–
E4-48L/R4-48L	X	X [1]	CFU	X	–	CFV-42-C	–
E4-64L	X	X [1]	–	X	–	CFV-42-C	–
E4-1							
E4-21	X [1]	X [1]	–	–	T2103-Z	–	–
E4-28/R4-28	X [1]	X [1]	–	–	28-Z / 28-ZT	–	–
E4-32/H4-32/R4-32	X	X [1]	–	X	–	CFV-42-C	–
E4-42/H4-42/R4-42	X	X [1]	CFU	X	–	CFV-42-C	–
E4-56/H4-56/R4-56	X	X [1]	–	X	–	CFV-80-C	–
E4-80/H4-80/R4-80	X	X [1]	–	X	–	CFV-80-C	–
E4-112	X [1]	X [1]	–	–	–	–	–
E4-162	X [1]	X [1]	–	–	–	–	–
800	X [1]	X [1]	–	–	–	–	–
840	X [1]	–	–	–	–	–	–

1) Assembled in front of the mounting bracket. (CFXL clamps are always assembled before the mounting bracket in a separate Profile rail 92.52.XX)

	Tiewrap plate Series 2000	Tiewrap plate Series 3000	Tiewrap plate with clip-on connection for profile rail	Tiewrap plate for fixed crossbars	Tiewrap plate for openable crossbars	Tiewrap plate for triflex® R and triflex® [2]	Tiewrap plate for E2 e-tubes	Tiewrap plate/ teeth directly moulded on the mounting bracket	CFB Strain relief connector system
	20XX-ZB	–	–	–	–	–	–	X	–
	20XX-ZB	–	–	–	–	–	–	X	–
	20XX-ZB	–	–	2050-Z	–	–	–	–	–
	20XX-ZB	–	–	–	–	–	–	–	–
	20XX-ZB	30XX-ZB	30XX-ZC	2050-Z	2050-Z	–	–	–	
	–	30XX-ZB	30XX-ZC	–	2050-Z [3]	–	–	–	
	–	30XX-ZB	30XX-ZC	30XX-Z	30XX-ZS	–	–	–	
	–	30XX-ZB	30XX-ZC	–	30XX-ZS [3]	–	–	–	
	20XX-ZB	–	–	–	–	–	–	–	–
	20XX-ZB	–	–	–	–	–	–	–	–
	–	–	–	–	–	–	–	–	–
	–	–	–	–	–	–	–	–	–
	20XX-ZB	–	–	–	–	–	–	–	–
	–	–	–	–	–	–	5850-Z	–	–
	–	–	–	–	–	–	30XX-Z	–	–
	–	30XX-ZB	30XX-ZC	–	–	–	–	–	–
	–	–	–	–	–	–	–	–	X
	–	–	–	–	–	–	–	–	X
	–	–	–	–	–	–	–	–	X
	–	–	–	–	–	–	–	–	X
	–	–	–	–	–	–	–	–	–
	–	30XX-ZB	30XX-ZC	–	3850-ZS	–	–	–	X
	–	30XX-ZB	30XX-ZC	–	3850-ZS	–	–	–	X
	–	30XX-ZB	30XX-ZC	–	3850-ZS	–	–	–	X
	20XX-ZB	–	–	–	–	–	–	–	–
	20XX-ZB	–	–	–	2050-Z	–	–	–	–
	–	30XX-ZB	30XX-ZC	–	3850-ZS	–	–	–	X
	–	30XX-ZB	30XX-ZC	–	3850-ZS	–	–	–	X
	–	30XX-ZB	30XX-ZC	–	45XX-ZS	–	–	–	X
	–	30XX-ZB	30XX-ZC	–	45XX-ZS	–	–	–	X
	–	30XX-ZB	–	–	45XX-ZS	–	–	–	X
	–	30XX-ZB	–	–	–	–	–	–	X
	–	30XX-ZB	–	–	–	–	–	–	–
	–	–	–	–	–	–	–	–	–

2) You'll find on the product page of each e-chain® series 3) Half e-tube only = recommended strain relief for selected e-chain®

Chainfix Strain Relief Selection Guide

e-chain® Series / System	CFX Clamp, standard	CFXL Clamp, for increased holding force	CFU Honeycomb strain relief	CFN Nugget	Strain relief separator	CFV Stepped strain relief	Strain relief can be clipped onto mounting brackets / KMA
E4/light							
14040/14140/18840	X	X [1]	–	X	–	–	–
14240/14340	X	X [1]	–	X	–	–	–
14550/14650/19050	X	X [1]	–	X	–	–	–
15050/15150/19850	X	X [1]	–	–	–	–	–
15250/15350	X	X [1]	–	–	–	–	–
1640/R1608	X	X [1]	–	–	–	–	–
T3							
T3-29	–	–	–	–	E6-29-02-Z	–	20XX-ZB
E3							
E3-10	–	–	–	–	–	–	E3-00-020
E3-15	–	–	–	–	–	–	E3-00-020
E3-22	–	–	–	–	–	–	E3-00-020
E6-1							
E61-29/EF61-29	X [1]	X [1]	–	–	E6-29-02-Z	–	–
E61-35	X [1]	X [1]	–	–	E6-35-02-Z	–	–
E61-40	X	X [1]	–	X	E6-40-02-Z	–	–
E61-52	X	X [1]	–	X	–	–	–
E6							
E6-29	X [1]	X [1]	–	–	E6-29-02-Z	–	–
R6-29	X [1]	X [1]	–	–	–	–	–
E6-35	X [1]	X [1]	–	–	E6-35-02-Z	–	–
E6-40	X	X [1]	–	X	E6-40-02-Z	–	–
E6-52	X	X [1]	–	X	–	–	–
R6-52	X	X [1]	–	X	–	–	–
E6-62	X	X [1]	–	X	–	–	–
E6-80L	X	X [1]	–	X	–	–	–
triflex® R							
TRC	X [1]	X [1]	–	–	–	–	–
TRC	X [1]	X [1]	–	–	–	–	–
TRCF	X [1]	X [1]	–	–	–	–	–
TRL	X [1]	X [1]	–	–	–	–	–
TRLF	X [1]	X [1]	–	–	–	–	–
triflex®							
E-Z triflex®	X [1]	–	–	–	–	–	–
triflex®	X [1]	–	–	–	–	–	–

1) Assembled in front of the mounting bracket. (CFXL clamps are always assembled before the mounting bracket in a separate Profile rail 92.52.XX)

	Tiewrap plate Series 2000	Tiewrap plate Series 3000	Tiewrap plate with clip-on connection for profile rail	Tiewrap plate for fixed crossbars	Tiewrap plate for openable crossbars	Tiewrap plate for triflex® R and triflex® 2)	Tiewrap plate for E2 e-tubes	Tiewrap plate/ teeth directly moulded on the mounting bracket	CFB Strain relief connector system
	–	30XX-ZB	30XX-ZC	–	45XX-ZS	–	–	–	X
	–	30XX-ZB	30XX-ZC	–	3850-ZS	–	–	–	X
	–	30XX-ZB	30XX-ZC	–	45XX-ZS	–	–	–	X
	–	30XX-ZB	30XX-ZC	–	45XX-ZS	–	–	–	X
	–	30XX-ZB	30XX-ZC	–	3850-ZS	–	–	–	X
	–	30XX-ZB	–	–	45XX-ZS	–	–	–	–
	–	–	–	–	–	–	–	–	–
	–	–	–	–	–	–	–	–	–
	–	–	–	–	–	–	–	–	–
	–	–	–	–	–	–	–	–	–
	20XX-ZB	–	–	–	–	–	–	–	–
	20XX-ZB	–	–	–	–	–	–	–	X
	20XX-ZB	–	–	–	–	–	–	–	X
	–	30XX-ZB	30XX-ZC	–	2050-Z	–	–	–	X
	20XX-ZB	–	–	–	–	–	–	–	–
	20XX-ZB	–	–	–	–	–	–	–	–
	20XX-ZB	–	–	–	–	–	–	–	X
	20XX-ZB	–	–	–	–	–	–	–	X
	–	30XX-ZB	30XX-ZC	–	2050-Z	–	–	–	X
	–	30XX-ZB	30XX-ZC	–	–	–	–	–	X
	–	30XX-ZB	30XX-ZC	–	3850-ZS	–	–	–	X
	–	30XX-ZB	30XX-ZC	–	45XX-ZS	–	–	–	X
	–	–	–	–	–		–	–	–
	–	–	–	–	–		–	–	–
	–	–	–	–	–		–	–	–
	–	–	–	–	–		–	–	–
	–	–	–	–	–		–	–	–
	–	–	–	–	–	E33X-XX-2	–	–	
	–	–	–	–	–	33X-XX	–	–	

2) You'll find on the product page of each e-chain® series 3) Half e-tube only = recommended strain relief for selected e-chain®

Chainfix Strain Relief - Overview

igus® chainfix strain relief system				
	CFX - clamps	**Tiewrap plates - bolted, clip-on**	**CFU - lean honeycomb strain relief**	
Recommended standard for the following e-chains®:	**E4, E6, for all KMA* with Profile rail** *Polymer metal mounting bracket	**easy chain®, E2/000, E2 e-tubes, E4, E6**	**E2.48, 3400/3500, 3450/3480, R68, R167/168, R2.48, E4.48L/R4.48L, E4.42/H4.42/ R4.42, E61.52, E6.52/R6.52**	
When to use this strain relief?	Standard for high accelerations, loads and demanding applications. For many cables, large cable diameters and stacked cables. For long travels, cranes, offshore, machine tools, high speeds and hydraulic cables.	Standard for many applications at medium and low accelerations. For unsupported, gliding, hanging and standing applications in general machinery and machine tools. For cables side by side. Also available as an individual part, for example in control cabinets etc.	Assembled in seconds - CFU honeycomb strain relief. Strain relief with honeycomb structure, openable from both sides. Simply insert cables and hoses into the honeycomb and close. Strain relief for different cables in one slot. Also suitable for gliding applications.	
When not to use it:	No limitation	For large cable diameters	For high loads	
Properties				
Assembly time index	+	+	+ + +	
Adjustable tensile strength	+ +	–	+	
Price Index	●●◐	●○○	●●○	
Modularity	yes	yes	yes	
Dynamics	high to very high	high	medium	

Price index
- ◐○○ low
- ●◐○ medium
- ●●● high

+++ = best suitability
\+ = good suitability
+ – = suitable
– = limited suitability

Chainfix Strain Relief - Overview

				
	CFN nuggets	**Strain relief separators**	**CFV - strain relief element**	**CFB - strain relief connector system**
	For all KMA* with Profile rail or top-hat (DIN) rail *Polymer metal mounting bracket	**E2/000, E2 e-tubes, E6, T3**	**E2/000, R2.1, E4.1L, E4.1**	**E4, E6, for all KMA* with Profile rail** *Polymer metal mounting bracket
	Cost-effective, fast strain relief for simple applications with small spaces and medium accelerations. Also available as single parts for fixed applications, such as in cabinets, etc.	Combination of separator and strain relief, ideal for small spaces. For applications with medium accelerations. For small cables diameters. Ideal for e-tubes. For machine tools and automation.	For both e-chains® and e-tubes. Stepped strain relief for use outside of the e-chain® cross section - even with different connectors. Easy to retrofit. Simple installation into top-hat (DIN) rail or Profile rail on KMA mounting brackets.	Space-saving, modular strain relief with many cables in confined spaces. For applications with high accelerations and loads e.g., in machine tools.
	For high loads	For high loads	For high loads	No limitation
	+ −	+	+ +	+ −
	−	−	−	+
	●○○	●○○	●○○	●●●
	yes	yes	yes	yes (special fabrication)
	high	high	medium	high to very high

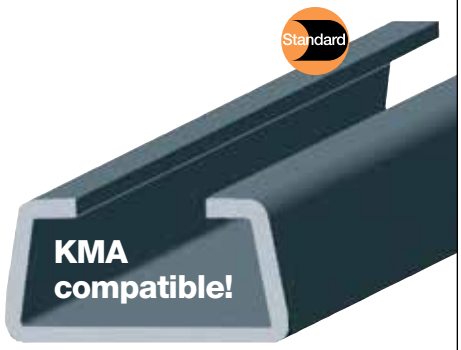
Chainfix Strain Relief Profile Rails

Telephone 1-800-521-2747

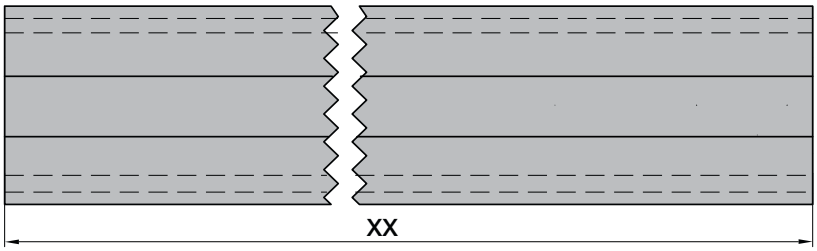
Internet: igus.com
email: sales@igus.com
QuickSpec: igus.com/quickspec

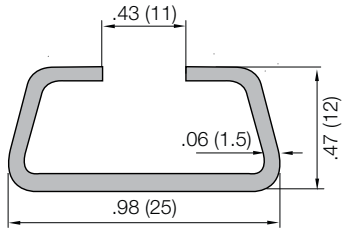
Standard Profile rails Part No. CF-92-42KMA

- For all igus® **CFX** clamps and KMA- mounting brackets with profile rail host-option
- Standard material: galvanized steel **Part No. CF-92-42KMA**
- Also available as stainless steel version (Material stainless steel: 1.4301)
  please add Index SS , example: **Part No. CF-92-42KMASS**



Standard profile rail Part No. CF-92-42KMA For conventional applications
Can be integrated into KMA with profile rail host-option!





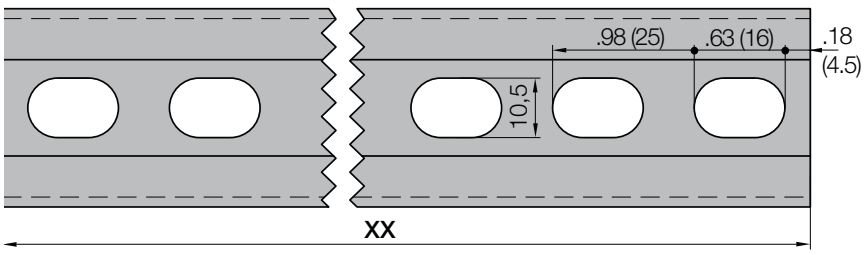
Optional - **For Heavy-Duty applications**

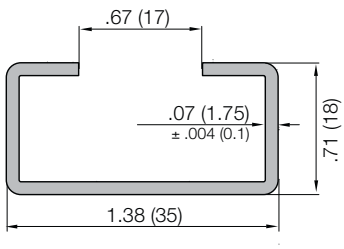
Profile rail Part No. CF-92-52G

- For all igus® **CFXL** clamps
- With increased holding power - even for harsh applications
- Standard material: galvanized steel **Part No. CF-92-52G**
- Also available as stainless steel version (Material stainless steel: 1.4301)
  please add Index SS , example: **Part No. CF-92-52GSS**



Profile rail Part No. CF-92-52G With increased holding power for harsh conditions
Assembly in front of the e-chain® - CAN NOT be integrated into KMA mounting bracket!



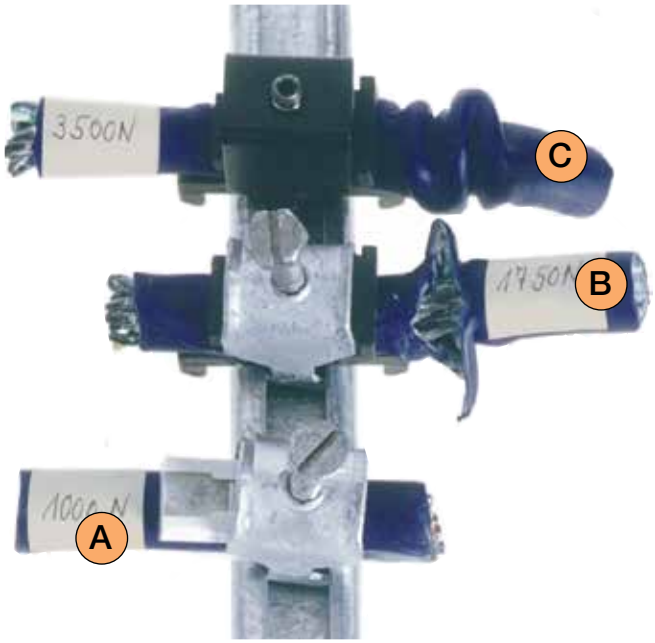


Chainfix Strain Relief Testing Methods

Three times higher tensile strength than other industry-standard clamps

We have tested three different strain relief types:

A. Standard, hot-dipped galvanized steel strain relief clamp with single and double impact-resistant polymer saddle clamp elements (Part No. CF14-1-Z, standard elements)
B. Standard strain relief housings (as used in A) with igumid G clamp saddles (Part No. CFY14-1)
C. igus® Chainfix strain relief elements (Part No. CFX14-1)



Results:

Strain relief element **"A"** saddle clamps loosen at 225 lbs (1,000 N) of pull force. The resulting diagonal position of the saddle clamp distorts the screw.

Strain relief element **"B"** saddle clamps loosen at 393 lbs (1,750 N) of pull force. The improved igumid G saddle clamps attempt to hold the cable, causing the outer jacket to "peel."

Strain relief element **"C"**,igus® new Chainfix system, saddle clamps loosen and slant 5° at 393 lbs (1,750 N). At 562 lbs (2,500 N) of pull force, the cable jacket bunches up behind the clamp and, at 787 lbs (3,500 N) of pull force, the clamps loosen completely and the cable becomes inoperative.

Conclusion:

The tensile strength of the "Chainfix" line of strain relief elements developed by igus® is more than three times higher than the tensile strength of standard strain relief elements.

Test example with cable diameter .41" (10.5 mm)

Tiewrap Plate 2070-ZB with one cable tie
Result: tensile force 65 lbs (290 N)

Chainfix Clip CFC-12-M
Result: tensile force 79 lbs (350 N)



Pull Force Test for igus Tiewrap Plates with Cable Tiewraps

Results:
Two tiewraps are more stable than one tiewrap. If one cable tiewrap is used, **the breaking force is approximately 79 lbs (350 N)**. If the cable is secured with **two** cable tiewraps, **the breaking force increases to 187 lbs (830 N)**, **i.e. pull force resistance more than doubles when using two cable tiewraps.**

Technical data:

Tiewrap plates:	2100-ZB/3100-ZB
Cable:	CF130-07-12
Cable tiewrap:	CFB-001

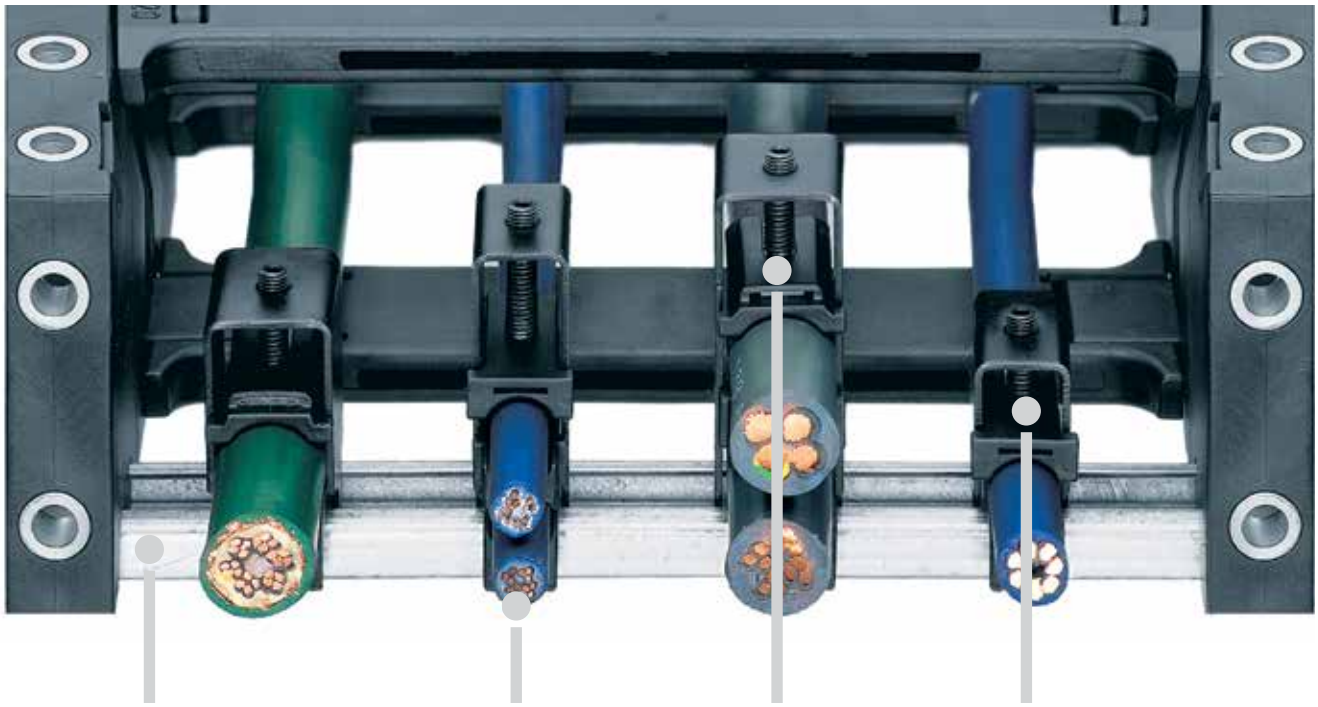


PDF: igus.com/e-chain-pdfs
Product information: igus.com/e-chains

Chainfix Strain Relief

Telephone 1-800-521-2747

Internet: igus.com
email: sales@igus.com
QuickSpec: igus.com/quickspec



To be integrated into KMA mounting bracket

For up to three cables over one another

Reduced installation height, space saving

Excellent durability for dynamic applications

Chainfix clamps - more secure, faster assembled

- Integration with KMA mounting brackets and profile rail host-option
- Easy to read the part number and lateral marking of the correct installation direction
- Reduced installation height due to optimal housing height (compared to conventional clamps up to 15 mm)
- Space- and time-saving assembly
- Delivery options for complete systems with cables and preassembled strain relief
- Improved base for easy fit on the profile rail
- Setscrews, tightened with Allen wrench, for easy installation
- Durability for dynamic applications through improved stacker elements: optimized stacker saddles, held by retaining lugs
- The long contact surface of the stacker elements improves the clamp's stability
- The high rigidity of the stacker elements significantly increases the reliability
- Built-in ribs to the stacker elements - no disconnection of cables from the strain relief
- Optional: CFXL clamps with increased holding power for Heavy-Duty applications
  NOTE: (CFXL are always assembled **in front** of the e-chain® -
  CAN NOT be integrated into KMA mounting brackets with profile rail host option!)

Strain Relief Elements for e-chains® and e-tubes with igus® Chainfix Clamps and Saddle Clamp Elements

The Chainfix clamp system design has proven itself as effective, life-prolonging strain relief for igus® e-chain systems®.

Product range and materials

- Steel clamp: clamp and screw black painted steel
- Stainless steel clamp: clamp and screw: blank (material 1.4301)
- Stacker elements: bottom saddle and stacker saddle (material igumid G)
- Profile rail: steel (material galvanized steel) or stainless steel (material 1.4301) available

Features of the igus® Chainfix Clamps

- Improved housing foot clamp for easy fit into profile rail
- Newly developed housing with reduced overall height
- Black housing and setscrews for attractive appearance
- Setscrews, tightened with Allen wrench, for easy installation

Features of the igus® Saddle Clamps

- Long support surface for improved stability
- Inherently high material rigidity for increased reliability
- Integrated ribbing to keep cables/hoses firmly strain relieved

Installation Height

If the e-chain® glides on itself over long travel distances, the screw heads of the strain relief on the fixed end must be at least .39 (10 mm) below the e-chain® link height. Our clamp housing with setscrews reduces the overall height by up to .59 (15 mm) compared to conventional clamp housings. In the case of unsupported e-chains®, the strain relief elements may be used with no problems.

For Series:

System E2/000
- 2400/2500/2450/2480
- 2600/2700/2650/2680
- 3400/3500/3450/3480

System E4-1
- E4-32/H4-32/R4-32
- E4-42/H4-42/R4-42
- E4-56/H4-56/R4-56
- E4-80/H4-80/R4-80
- E4-112/H4-112/R4-112

System E4-1/light
- E4-38L/R4-38L
- E4-48L/R4-48L

System E4/light
- 14040/14140/R18840
- 14240/14340
- 14550/14650/19050
- 15050/15150/R19850
- 15250/15350

System E6
- E6-40
- E6-52 / R6-52
- E6-62
- E6-80L
- E6-80

Please note:

- Ideally, the cables/hoses should be strain relieved at both ends of the e-chain®. At the very least, they must be strain relieved at the moving end of the e-chain®.

- When using Chainfix clamps on profile rail in the mounting bracket for the Series:
  E4-32/H4-32/R4-32,
  280/290/ R770,
  2828/2928/R7728,
  28/29/R77,
  a shortened bottom saddle must be used. For shortened bottom saddles supplement Part No. with index "**K**" = Example: **Part No. CFX12-1K**

*Add and "M" to the end of the part number for this series



CFX - Chainfix housing with reduced height



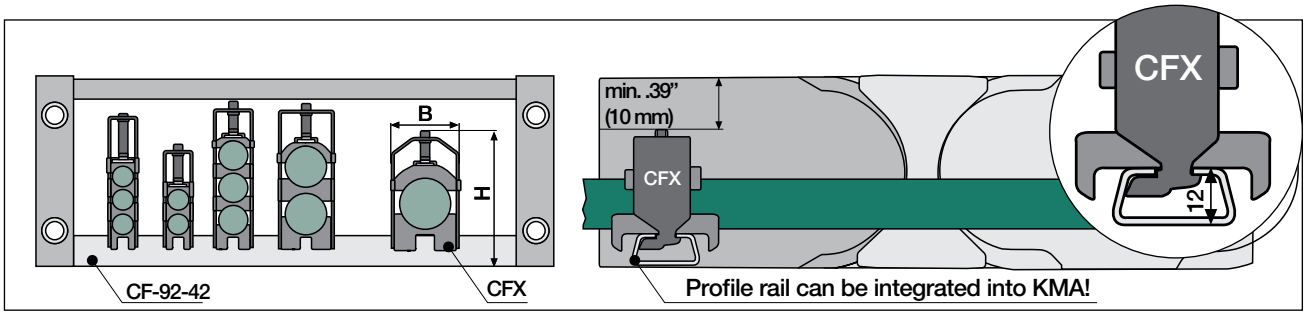
KMA mounting bracket with integrated profile rail and Chainfix clamps



Improved housing foot clamp for easy fit into profile rail

PDF: igus.com/e-chain-pdfs
Product information: igus.com/e-chains

Chainfix Strain Relief
CFX Clamps
For use inside the KMA Bracket



The dimensions given for H in the tables are based on the maximum cable diameter. Cables with smaller diameters may result in lower overall clamp housing heights.



Single clamp housing,
including top/bottom saddle clamps

Part No. Steel	Part No. Stainless Steel	For cable diameters in.	(ø mm)	B+2	H
CFX12-1	CFX12-1E	.24-.47	(6 – 12)	.63 (16)	1.57 (40)
CFX14-1	CFX14-1E	.47-.55	(12 – 14)	.71 (18)	1.97 (50)
CFX16-1	CFX16-1E	.55-.63	(14 – 16)	.79 (20)	2.05 (52)
CFX18-1	CFX18-1E	.63-.71	(16 – 18)	.87 (22)	2.13 (54)
CFX20-1	CFX20-1E	.71-.79	(18 – 20)	.94 (24)	2.20 (56)
CFX22-1	CFX22-1E	.79-.87	(20 – 22)	1.02 (26)	2.28 (58)
CFX26-1	CFX26-1E	.87-1.02	(22 – 26)	1.18 (30)	2.64 (67)
CFX30-1	CFX30-1E	1.02-1.18	(26 – 30)	1.34 (34)	2.80 (71)
CFX34-1	CFX34-1E	1.18-1.34	(30 – 34)	1.50 (38)	2.95 (75)
CFX38-1	CFX38-1E	1.34-1.50	(34 – 38)	1.65 (42)	3.11 (79)
CFX42-1	CFX42-1E	1.50-1.65	(38 – 42)	1.81 (46)	3.27 (83)



Ribbed strain relief saddle clamps withstands increased pull forces for long-term durability



Double clamp housing,
including top/bottom saddle clamps
and one stacker saddle clamp

Part No. Steel	Part No. Stainless Steel	For cable diameters in.	(mm)	B+2	H
CFX12-2	CFX12-2E	.24-.47	(6 – 12)	.63 (16)	2.83 (72)
CFX14-2	CFX14-2E	.47-.55	(12 – 14)	.71 (18)	2.91 (74)
CFX16-2	CFX16-2E	.55-.63	(14 – 16)	.79 (20)	3.07 (78)
CFX18-2	CFX18-2E	.63-.71	(16 – 18)	.87 (22)	3.23 (82)
CFX20-2	CFX20-2E	.71-.79	(18 – 20)	.94 (24)	3.38 (86)
CFX22-2	CFX22-2E	.79-.87	(20 – 22)	1.02 (26)	3.54 (90)
CFX26-2	CFX26-2E	.87-1.02	(22 – 26)	1.18 (30)	4.29 (109)
CFX30-2	CFX30-2E	1.02-1.18	(26 – 30)	1.34 (34)	4.61 (117)
CFX34-2	CFX34-2E	1.18-1.34	(30 – 34)	1.50 (38)	4.92 (125)



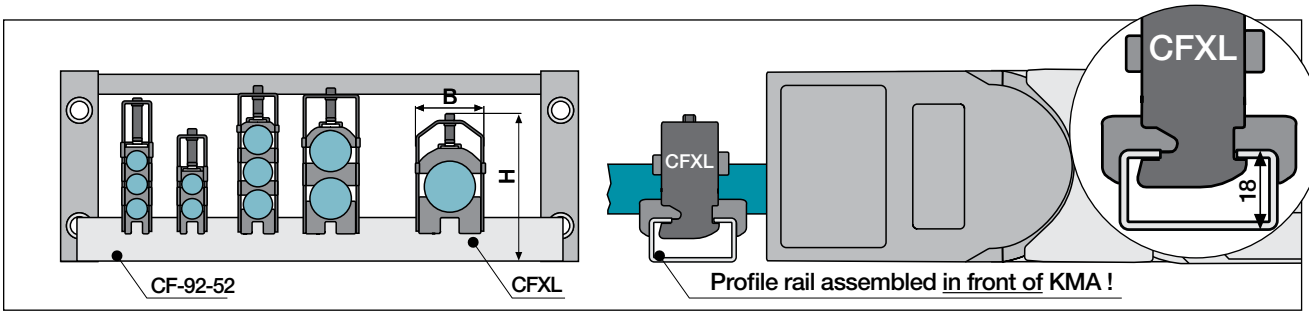
Triple clamp housing,
including top/bottom
saddle clamps and two
stacker saddle clamps

Part No. Steel	For cable diameters in.	(ø mm)	B+2	H
CFX12-3	.24-.47	(6 – 12)	.63 (16)	3.94 (100)
CFX14-3	.47-.55	(12 – 14)	.71 (18)	3.78 (96)
CFX16-3	.55-.63	(14 – 16)	.79 (20)	4.02 (102)
CFX18-3	.63-.71	(16 – 18)	.87 (22)	4.25 (108)
CFX20-3	.71-.79	(18 – 20)	.94 (24)	4.49 (114)
CFX22-3	.79-.87	(20 – 22)	1.02 (26)	4.72 (120)

Suitable profile rails for CFX clamps **Part No. CF-92-42KMA ➤ page 10.13**

igus® e-chain system®
Telephone 1-800-521-2747
Internet: igus.com
email: sales@igus.com
QuickSpec: igus.com/quickspec

Chainfix Strain Relief
CFXL Clamps
For use outside the KMA Bracket



The dimensions given for H in the tables are based on the maximum cable diameter. Cables with smaller diameters may result in lower overall clamp housing heights. Tightening torque 1.5 Nm for CFXL clamps



Single clamp housing, including top/bottom saddle clamps

CFXL - clamps with wide base for increased holding power
Suitable for profile rails CF-92-52-XX - profile rail assembled in front of KMA !
CANNOT be integrated into the KMA mounting bracket!

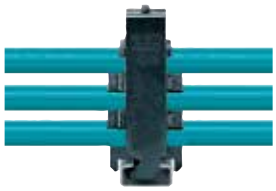
Part No. Steel	Part No. Stainless Steel	For cable diameters in.	For cable diameters (ø mm)	B+2	H
CFXL12-1	CFXL12-1E	.24-.47	(6 – 12)	.63 (16)	2.36 (60)
CFXL14-1	CFXL14-1E	.47-.55	(12 – 14)	.71 (18)	2.20 (56)
CFXL16-1	CFXL16-1E	.55-.63	(14 – 16)	.79 (20)	2.28 (58)
CFXL18-1	CFXL18-1E	.63-.71	(16 – 18)	.87 (22)	2.36 (60)
CFXL20-1	CFXL20-1E	.71-.79	(18 – 20)	.94 (24)	2.44 (62)
CFXL22-1	CFXL22-1E	.79-.87	(20 – 22)	1.02 (26)	2.52 (64)
CFXL26-1	CFXL26-1E	.87-1.02	(22 – 26)	1.18 (30)	2.87 (73)
CFXL30-1	CFXL30-1E	1.02-1.18	(26 – 30)	1.34 (34)	3.03 (77)
CFXL34-1	CFXL34-1E	1.18-1.34	(30 – 34)	1.50 (38)	3.19 (81)
CFXL38-1	CFXL38-1E	1.34-1.50	(34 – 38)	1.65 (42)	3.35 (85)
CFXL42-1	CFXL42-1E	1.50-1.65	(38 – 42)	1.81 (46)	3.50 (89)



Ribbed strain relief saddle clamps withstands increased pull forces for long-term durability



Double clamp housing, including top/bottom saddle clamps and one stacker saddle clamp



Triple clamp housing, including top/bottom saddle clamps and two stacker saddle clamps

Part No. Steel	Part No. Stainless Steel	For cable diameters in.	For cable diameters (ø mm)	B+2	H
CFXL12-2	CFXL12-2E	.24-.47	(6 – 12)	.63 (16)	3.07 (78)
CFXL14-2	CFXL14-2E	.47-.55	(12 – 14)	.71 (18)	3.15 (80)
CFXL16-2	CFXL16-2E	.55-.63	(14 – 16)	.79 (20)	3.31 (84)
CFXL18-2	CFXL18-2E	.63-.71	(16 – 18)	.87 (22)	3.39 (86)
CFXL20-2	CFXL20-2E	.71-.79	(18 – 20)	.94 (24)	3.62 (92)
CFXL22-2	CFXL22-2E	.79-.87	(20 – 22)	1.02 (26)	3.39 (86)
CFXL26-2	CFXL26-2E	.87-1.02	(22 – 26)	1.18 (30)	4.53 (115)
CFXL30-2	CFXL30-2E	1.02-1.18	(26 – 30)	1.34 (34)	4.84 (123)
CFXL34-2	CFXL34-2E	1.18-1.34	(30 – 34)	1.50 (38)	5.16 (131)

Part No. Steel	For cable diameters in.	For cable diameters (ø mm)	B+2	H
CFXL12-3	.24-.47	(6 – 12)	.63 (16)	4.17 (106)
CFXL14-3	.47-.55	(12 – 14)	.71 (18)	4.02 (102)
CFXL16-3	.55-.63	(14 – 16)	.79 (20)	4.25 (108)
CFXL18-3	.63-.71	(16 – 18)	.87 (22)	4.49 (114)
CFXL20-3	.71-.79	(18 – 20)	.94 (24)	4.72 (120)
CFXL22-3	.79-.87	(20 – 22)	1.02 (26)	4.96 (126)

Suitable profile rails for CFXL clamps **Part No. CF-92-52G ➤ page 10.13**

PDF: igus.com/e-chain-pdfs
Product information: igus.com/e-chains

Chainfix Strain Relief Clamps - Single Parts

Telephone 1-800-521-2747

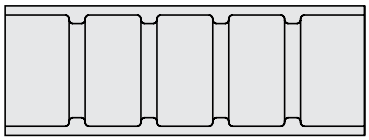
Internet: igus.com
email: sales@igus.com
QuickSpec: igus.com/quickspec

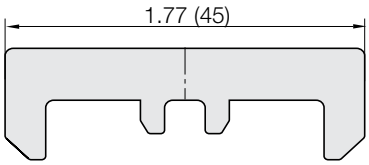
Characteristics of igus® Chainfix clamps - stacker elements

- Built-in ribs for security of cables in the strain relief
- Optimized stacker saddles, retained by ① locking spring and with ② spring grooves for a simplified and precise installation
- Conventional stacker saddles
- Long contact surface improves the clamp's stability
- More secure due to high stiffness
- Suitable for CFX and CFXL clamps



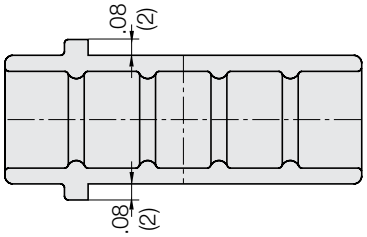
CGXX | Bottom saddles to slide into the clamp housing as single part

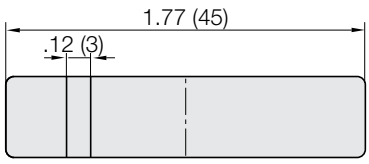






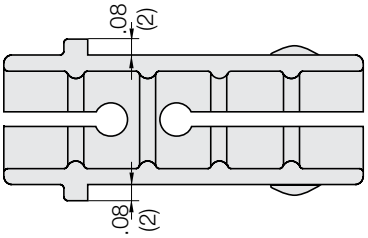
CDXX | Conventional stacker saddles for all for all double and triple clamps as single part

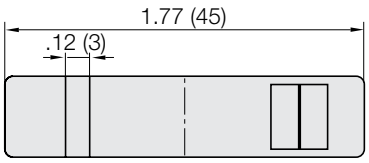


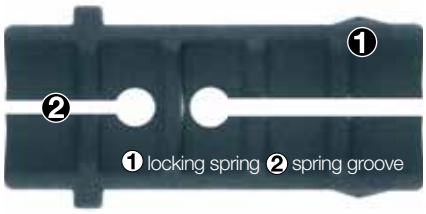




CD-XX-C | Optimized stacker saddles for all double and triple clamps as single part







Part No. Clamp	CGXX bottom saddle for singles	CDXX stacker saddle for doubles & triples	CD-XX-C optimized stacker saddle for doubles & triples	Diameter	
				in.	(mm)
CFX / CFXL12-1	CG12	CD12	–	.24-.47	(6 – 12)
CFX / CFXL14-1	CG14	CD14	CD-14-C	.47-.55	(12 – 14)
CFX / CFXL16-1	CG16	CD16	CD-16-C	.55-.63	(14 – 16)
CFX / CFXL18-1	CG18	CD18	CD-18-C	.63-.71	(16 – 18)
CFX / CFXL20-1	CG20	CD20	CD-20-C	.71-.79	(18 – 20)
CFX / CFXL22-1	CG22	CD22	CD-22-C	.79-.87	(20 – 22)
CFX / CFXL26-1	CG26	CD26	CD-26-C	.87-1.02	(22 – 26)
CFX / CFXL30-1	CG30	CD30	CD-30-C	1.02 -1.18	(26 – 30)
CFX / CFXL34-1	CG34	CD34	CD-34-C	1.18 -1.34	(30 – 34)
CFX / CFXL38-1	CG38	–	–	1.34-1.50	(34 – 38)
CFX / CFXL42-1	CG42	–	–	1.50-1.65	(38 – 42)

Please note: When using chainfix clamps on profile rail in the mounting bracket for Series E4-32/H4-32/R4-32, 280/290/ R770, 2828/2928/R7728, 28/29/R77 a shortened bottom saddle has to be used.
The Part No. for this is "**K**", Example: **Part No. CFX12-1K**

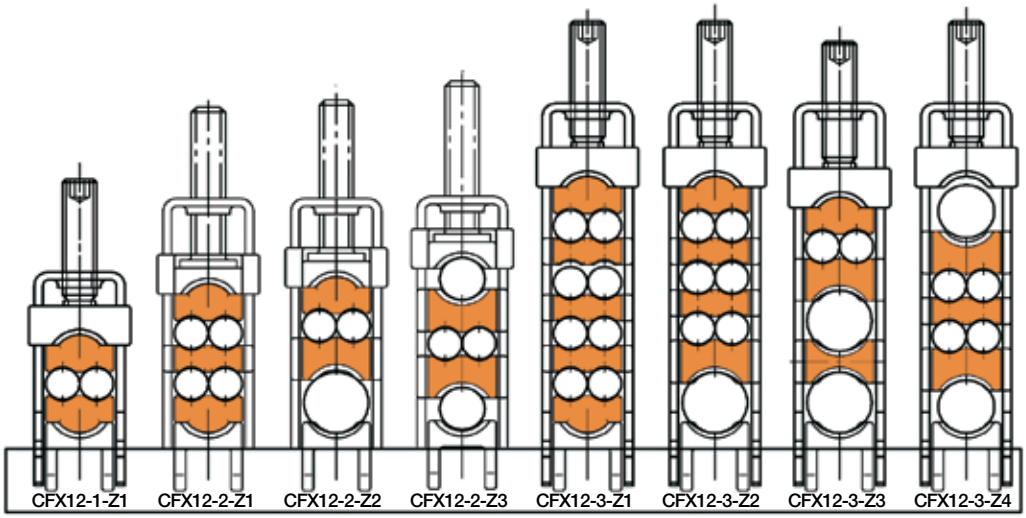
Chainfix Strain Relief Multi-Clamps

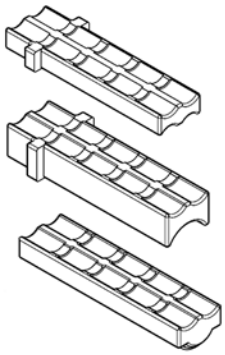
Characteristics of igus® Chainfix Multi-Clamps

The proven Chainfix clamps now even more versatile. New parts offer numberless solutions to assemble.

- New universal strain relief
- Save assembly time and space
- Compact and modular
- For small outer diameters
- Cost-effective







New universal saddle clamps

Part No.	Part No. trays as single parts				For cables Max. Diameter	
	CDA-4/4/8 	**CD-4/4** 	**CD-4/4-8** 	**CD-12** 	in.	(mm)
CFX12-1-Z1	**X** (2-piece)	–	–	–	.24	(6)
CFX12-2-Z1	**X** (2-piece)	**X** (1-piece)	–	–	.24	(6)
CFX12-2-Z2	**X** (1-piece)	–	**X** (1-piece)	–	.24 + .47	(6 + 12)
CFX12-2-Z3	–	–	**X** (2-piece)	–	.24 + .31	(6 + 8)
CFX12-3-Z1	**X** (2-piece)	**X** (3-piece)	–	–	.24	(6)
CFX12-3-Z2	**X** (1-piece)	**X** (2-piece)	**X** (1-piece)	–	.24 + .47	(6 + 12)
CFX12-3-Z3	**X** (1-piece)	–	**X** (1-piece)	**X** (1-piece)	.24 + .47	(6 + 12)
CFX12-3-Z4	–	**X** (1-piece)	**X** (2-piece)	–	.24 + .39	(6 + 10)

For stainless-steel version please insert index SS Example: **Part No. CFX-12-3-Z1SS**

Standard material steel zinc-coated

PDF: igus.com/e-chain-pdfs
Product information: igus.com/e-chains

Chainfix Strain Relief Tiewrap Plates

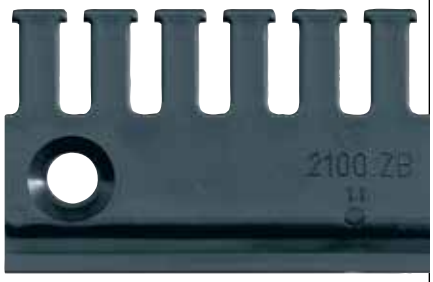
Telephone 1-800-521-2747

Internet: igus.com
email: sales@igus.com
QuickSpec: igus.com/quickspec

Characteristics of igus® chainfix tiewrap plate Series 2000

Option 1A: Tiewrap plate as single part

- Available as individual component
- Screwed on KMA* with profile rail (*polymer metal mounting bracket)
- Can be stacked onto the mounting bracket
- Can be used at the end of the e-chain® or within electrical cabinets
- Accessory for igus® e-chain systems®



For Series:

E-Z Chain®
- E200/Z200

System E2/000
- 1400/1500/1450/1480
- 2400/2500/2450/2480
- 255

System E2 Tubes
- R117/R118
- R48

System E4-1
- E4-21

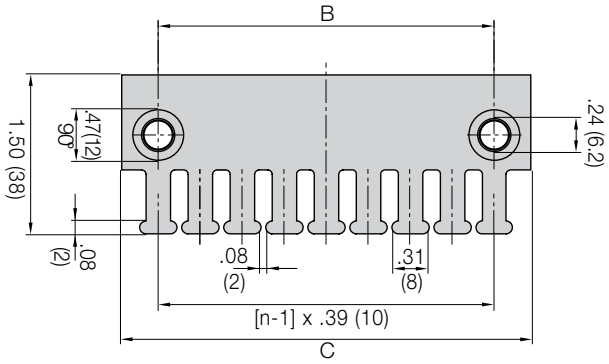
System E6
- E6-29/R6-29
- E6-35
- E6-40

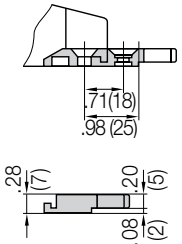
System E6-1
- E61-29

Tiewrap plates as an individual part

Available as an individual component or can be fixed onto a mounting bracket with the use of a profile rail.

Series 2000





Shown assembled

Single tiewrap plate

Tiewrap Plates	n Number of Teeth	Dimension C	Dimension B	
2020-ZB	3	1.18 (30)	.59 (15)	
2030-ZB	4	1.57 (40)	.79 (20)	
2040-ZB	5	1.97 (50)	1.18 (30)	
2050-ZB	6	2.36 (60)	1.57 (40)	
2070-ZB	8	3.15 (80)	2.36 (60)	
2090-ZB	9	3.54 (90)	2.76 (70)	= 2030-ZB + 2040-ZB combined
2100-ZB	10	3.94 (100)	3.15 (80)	
2125-ZB	12	4.72 (120)	3.94 (100)	= 2050-ZB x 2 pieces combined

If used with KMA brackets with profile rail please add “KMA” to the end of the part number.
Example: 2020-ZBKMA

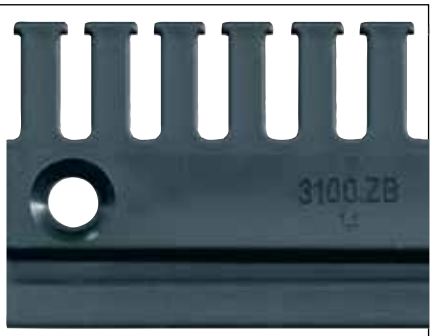
Cable tiewraps as individual parts

Cable tiewraps 100 pieces/bag	Width x Length		Maximum Ø		Tensile Strength	
	in.	(mm)	in.	(mm)	lbs	(N)
CFB-001	.19 x 5.91	(4.8 x 150)	1.42	(36)	50	(222)

Chainfix Strain Relief
Tiewrap Plates

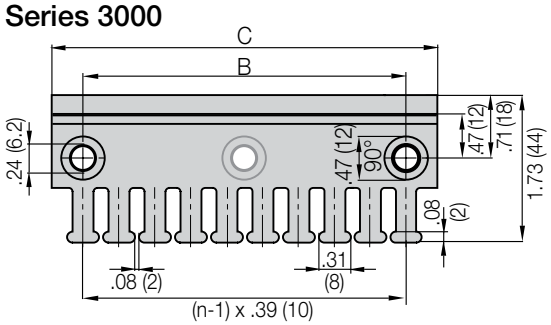
Characteristics of igus® chainfix tiewrap plate Series 3000
Option 1B: Tiewrap plate as single part

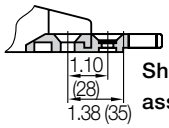
- Available as individual component
- Screwed on KMA* with profile rail (*polymer metal mounting bracket)
- Can be stacked onto the mounting bracket
- Can be used at the end of the e-chain® or within electrical cabinets
- Accessory for igus® e-chain systems®



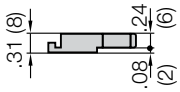
Tiewrap plates as an individual part
Available as an individual component or can be fixed onto a mounting bracket with the use of a profile rail.

Series 3000





Shown assembled



Single tiewrap plate

Tiewrap Plate	n Number of Teeth	C Overall Width in. (mm)	B Bore Width in. (mm)	Center Bore
3050-ZB	5	1.97 (50)	1.18 (30)	no
3075-ZB	7	2.95 (75)	2.16 (55)	no
3100-ZB	10	3.94 (100)	3.15 (80)	no
3115-ZB	11	4.53 (115)	3.74 (95)	no
3125-ZB	12	4.92 (125)	4.13 (105)	no
3150-ZB	15	5.91 (150)	5.12 (130)	no
3175-ZB	17	6.89 (175)	6.10 (155)	no
3200-ZB	20	7.87 (200)	7.09 (180)	yes
3225-ZB	22	8.86 (225)	8.07 (205)	yes
3250-ZB	25	9.84 (250)	9.06 (230)	yes

If used with KMA brackets with profile rail please add “KMA” to the end of the part number.
Example: 3050-ZBKMA

For Series:

E-Z Chain®
- E26/Z26
- E300/Z300

System E2/000
- 2600/2700/2650/2680
- 3400/3500/3450/3480

System E4-1
- E4-32/H4-32/R4-32
- E4-42/H4-42/R4-42
- E4-56/H4-56/R4-56
- E4-80/H4-80/R4-80
- E4-112/H4-112/R4-112
- 800
- 840

System E4-1 Light
- E4-38L/R4-38L
- E4-48L/R4-48L

System E4/light
- 14040/14140/R18840
- 15050/15150/R19850
- 14240/14340
- 1640

System E6
- E6-52/R6-52
- E6-62
- E6-80L / E6-80

Cable tiewraps as individual parts

Cable tiewraps 100 pieces/bag	Width x Length		Maximum Ø		Tensile Strength	
	in.	(mm)	in.	(mm)	lbs	(N)
CFB-001	.19 x 5.91	(4.8 x 150)	1.42	(36)	50	(222)

PDF: igus.com/e-chain-pdfs
Product information: igus.com/e-chains

Chainfix Strain Relief Tiewrap Plates

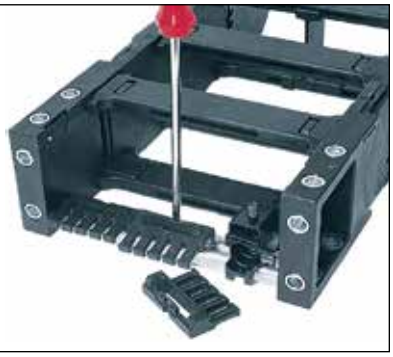
Telephone 1-800-521-2747

Internet: igus.com
email: sales@igus.com
QuickSpec: igus.com/quickspec

Characteristics of igus® Chainfix tiewrap plate

Option 1: With clip-on connection for the profile rail

- Can be clipped onto KMA profile rail
- Easy to assemble without any screws
- Easy to remove with screwdriver
- Can be used at the end of the e-chain® or within electrical cabinets
- Accessory for igus® e-chain systems®



Option 1 - Tiewrap plate for profile rail

Part No.	Number of Teeth	Width of Strain Relief	
		in.	(mm)
3050-ZC	5	1.97	(50)
3075-ZC	7	2.95	(75)

For Series:

Tiewrap plates for profile rail
For all mounting brackets
with profile rail option

Characteristics of igus® Chainfix tiewrap plate

Option 2: integrated strain relief for E2 e-tubes - Series R

- Strain relief is hidden within the e-tube
- Easy to assemble without any screws
- Can be used at the end of the e-chain® or within electrical cabinets
- Accessory for igus® e-chain systems®



Option 2 - Tiewrap plate for E2 e-tubes Series R

Part No. fixed crossbar	Width		Number of teeth	For Series
	in.	(mm)		
3050-Z	1.97	(50)	5	R68
3075-Z	2.95	(75)	7	R68
5850-Z	1.81	(46)	4	R58

For Series:

e-tubes Series R
● R58
● R68

Chainfix Strain Relief Tiewrap Plates

Characteristics of igus® Chainfix tiewrap plates
Option 3: for fixed crossbars

- Can be fitted to fixed and opening crossbars
- For use with various cable assemblies
- Strain relief on two levels
- Easy to assemble without any screws
- Accessory for igus® e-chain systems®



Option 3 - Tiewrap plate for fixed crossbars

Part No. fixed crossbar	Width in.	Width (mm)	Number of teeth	For Series
2050-Z	2.36	(60)	6	**E/Z200, 2400/2500, 2600/2700**
3050-Z	1.97	(50)	5	**3400/3500**
3075-Z	2.91	(74)	7	**3400/3500**

For Series:

E-Z Chain®
- E200/Z200

System E2/000
- 2600/2700/2650/2680
- 3400/3500/3450/3480

PDF: igus.com/e-chain-pdfs
Product information: igus.com/e-chains

Chainfix Strain Relief Tiewrap Plates

Telephone 1-800-521-2747

Internet: igus.com
email: sales@igus.com
QuickSpec: igus.com/quickspec

Characteristics of igus® Chainfix tiewrap plates

Option 4: for opening crossbars

- Can be fitted to fixed and opening crossbars
- For use with various cable assemblies
- Strain relief on two levels
- Easy to assemble without any screws
- Accessory for igus® e-chain systems®



Option 4 - Tiewrap plate for opening crossbars

Part No. opening crossbar	Width in.	(mm)	Number of teeth	For Series
2050-Z	2.36	(60)	6	2600/2700/2650, E4-28, E61-52, E6-52
3035-ZS	1.38	(35)	3	3400/3500/3450
3050-ZS	1.97	(50)	5	3400/3500/3450
3075-ZS	2.91	(74)	7	3400/3500/3450
3850-ZS	1.89	(48)	5	E4/H4/R4-32, E4/H4/R4-42, 14240/14340, 15250/15350, E61-62, E6-62
4550-ZS	1.89	(48)	5	E4/H4/R4-56, E4/H4/R4-.80, E4/R4-.112, 14040/14140/R18840, 14550/14650/19050 15050/15150/R19850, E61-80, E6-80L, E6-80, 1640/R1608
4575-ZS	2.91	(74)	7	E4/H4/R4-56, E4/H4/R4-80, E4/R4-112, 14040/14140/R18840, 14550/14650/19050 15050/15150/R19850, E61-80, E6-80L, E6-80, 1640/R1608
C622-100-ZS	3.15	(80)	8	E4-38L, E4-48L

For Series:

System E2/000
- 2600-2700/2650
- 3400/3500/3450

System E4-1
- E4-28
- E4-32/H4-32/R4-32
- E4-42/H4-42/R4-42
- E4-56/H4-56/R4-56
- E4-80/H4-80/R4-80
- E4-112/R4-112

System E4-1L
- E4-38L
- E4-48L

System E4/light
- 14040/14140/R18840
- 14240/14340
- 14550/14650/R19050
- 15050/15150/R19850
- 15250/15350
- 1640/R1608

System E6
- E6-52/R6-52
- E6-62
- E6-80L
- E6-80

System E6-1
- E61-52

Chainfix Strain Relief
Chainfix Clip

Assembled in seconds - honeycomb strain relief CFU

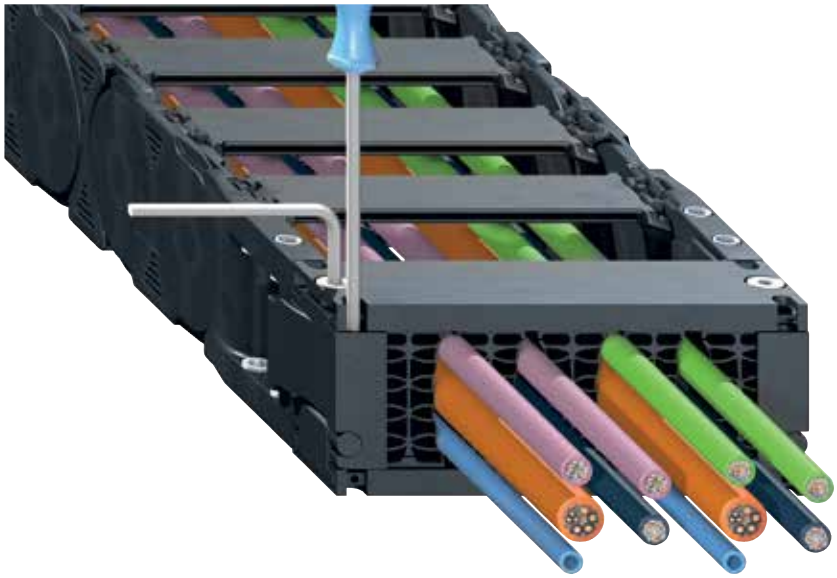
- Up to 80% faster strain relief for different cables in one slot
- Simply insert cables and hoses into the honeycomb and close
- Easy to make changes - add or remove cables/hoses
- Simplified parts
- Can be used in gliding applications



CFU - Honeycomb strain relief design



Strain relief of different cables in one slot, openable on both sides. Black anodized aluminum rails with side recesses for easier assembly



Strain relief can be screwed in from above or below. Compact design is smaller than the mounting bracket of the e-chain® at the fixed end, meaning it can also be used for long travels

For Series:

E2.1
- E2.48

E2/000
- 3400/3500/3450/3480

E2 R
- R68

R2.1
- R2.48

E2 R
- R68

E4.1L
- E4.48L/R4.48L

E4.1
- E4.42/H4.42/R4.42

E6.1
- E61.52

E6
- E6.52/R6.52

reddot design award
winner 2018

More (technical) information
on request or online
▶ www.igus.com/CFU

PDF: igus.com/e-chain-pdfs
Product information: igus.com/e-chains

Chainfix Strain Relief
Strain Relief Separators

Telephone 1-800-521-2747

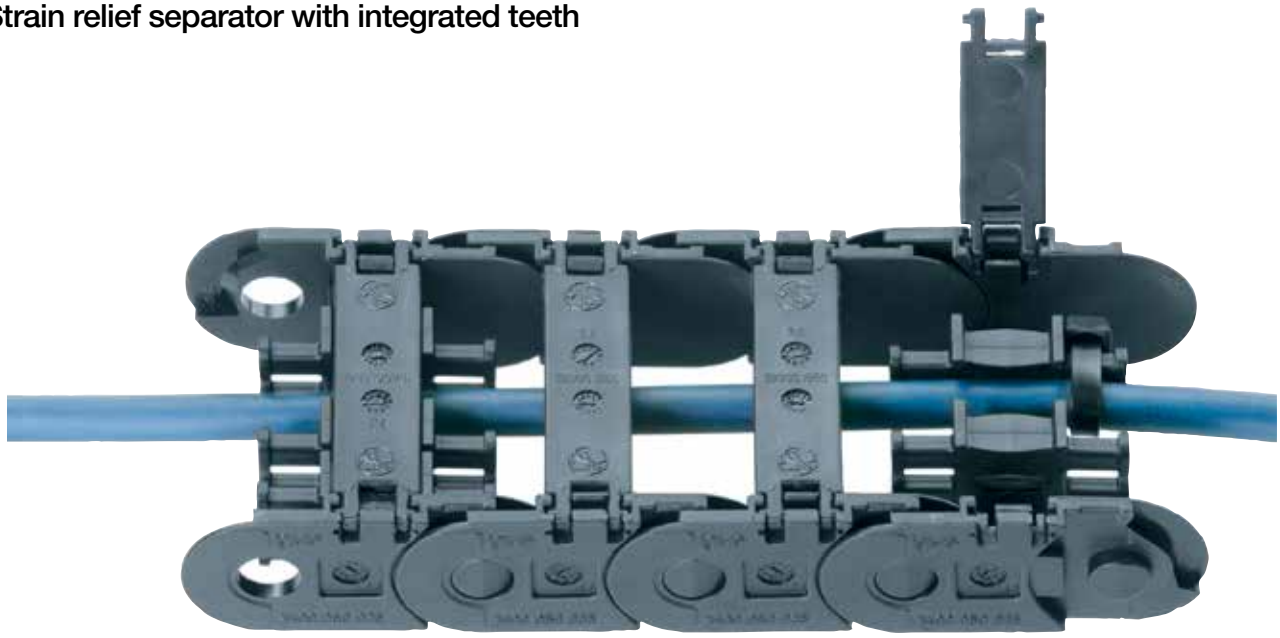
Internet: igus.com
email: sales@igus.com
QuickSpec: igus.com/quickspec

Characteristics of igus® strain relief separators - Separator with integrated strain relief teeth

- For the use in the first or last chain link
- Accessory for igus® e-chain systems®
- Easy to assemble without any screws
- For restricted space conditions
- The number **of teeth** is dependent upon the selection of cable (diameter, type) and available space

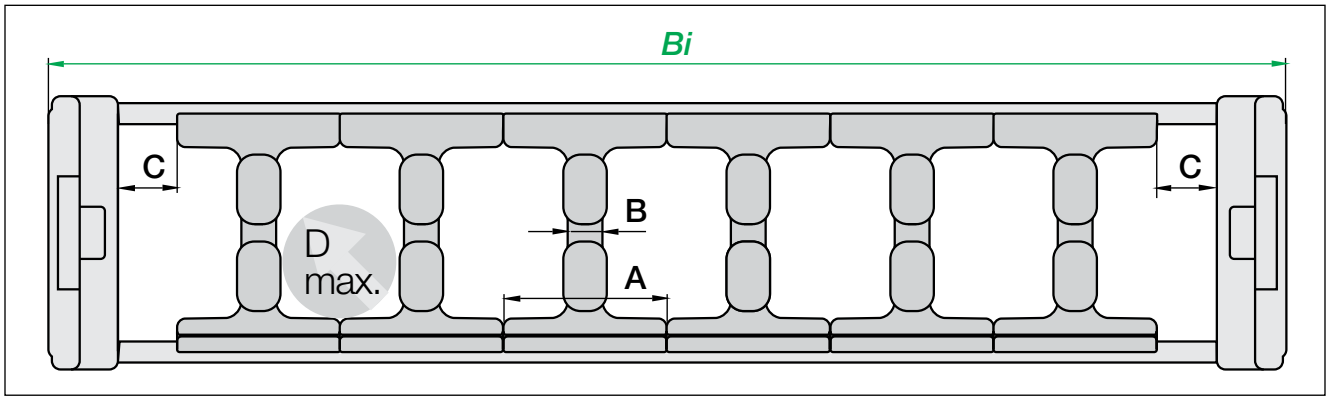


Strain relief separator with integrated teeth



Strain relief separators are assembled either at the first or last e-chain® link. For an intermediate strain relief they can alternatively be assembled in the e-chain®.

Chainfix Strain Relief
Strain Relief Separators - Product range overview



For Series	Part No. Strain Relief Separator	Number Of Teeth	Dimension A		Dimension B		Dimension C Min. distance L/R		Dimension D max. cable Ø	
			in.	(mm)	in.	(mm)	in.	(mm)	in.	(mm)
E2/000 System										
1400/1500	21-1-Z	2	.39	(10)	.16	(4)	–	–	.24	(6)
2400/2500	2020-Z	2	.39	(10)	.16	(4)	–	–	.24	(6)
2450/2480	2020-ZR	2	.39	(10)	.16	(4)	–	–	.24	(6)
2600/2700	262-Z	3	.39	(10)	.16	(4)	–	–	.24	(6)
3400/3500	301-Z	3	.71	(18)	.16	(4)	–	–	.55	(14)
3450/3480	34501-Z	3	.55	(14)	.16	(4)	–	–	.39	(10)
E2 R100 System										
R157/R158	1585-01-Z	3	.87	(22)	.16	(4)	–	–	.71	(18)
R167/R168	1685-01-Z	4	.87	(22)	.16	(4)	–	–	.71	(18)
E2 R System										
R48	481-ZR	2	.39	(10)	.14	(3.5)	.39	(10)	.26	(6.5)
E4-1L System										
E4-31L/R4-31L	31-Z	4	.35	(9)	.16	(4)	.24	(6)	.24	(6)
E4-48L/R4-48L	48-Z	4	.55	(14)	.18	(4.5)	.31	(8)	.79	(20)
E4-48L/R4-48L	48-ZS	4	.55	(14)	.18	(4.5)	.31	(8)	.79	(20)
E4-1 System										
E4-21	T2103-Z	2	.31	(8)	.16	(4)	.51	(13)	.16	(4)
E4-28	28-Z	2	.39	(10)	.16	(4)	–	–	.24	(6)
R4-28	28-ZT	2	.39	(10)	.16	(4)	.59	(15)	.24	(6)
T3 System										
T3-29	E6-29-02-Z	2	.31	(8)	.16	(4)	.47	(12)	.16	(4)
E6 / E6-1 System										
E6-29/E61-29	E6-29-02-Z	2	.31	(8)	.16	(4)	.47	(12)	.16	(4)
R6-29	E6-29-02-Z	2	.31	(8)	.16	(4)	.47	(12)	.16	(4)
E6-35/E61-35	E6-35-02-Z	3	.31	(8)	.16	(4)	.47	(12)	.16	(4)
E6-40/E61-40	E6-40-02-Z	3	.51	(13)	.16	(4)	–	–	.31	(8)

For Series:

System E2/000
- 1400/1500
- 2400/2500
- 2450/2480
- 2600/2700
- 3400/3500
- 3450/3480

System E2 R100
- R157/R158
- R167/R168

System E2 R
- R48

System E4-1L
- E4-31L / R4-31L
- E4-48L / R4-48L

System E4-1
- E4-21
- E4-28/R4-28

System T3
- T3-29

System E6-1
- E61-29 / EF61-29
- E61-35
- E61-40

System E6
- E6-29
- R6-29
- E6-35
- E6-40

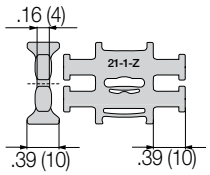
PDF: igus.com/e-chain-pdfs
Product information: igus.com/e-chains

Chainfix Strain Relief
Strain Relief Separators - Product range overview

igus® e-chain system®
Telephone 1-800-521-2747
Internet: igus.com
email: sales@igus.com
QuickSpec: igus.com/quickspec

For Series E2/000

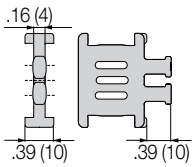




1400/1500
e-chains®

unassembled	21-1-Z
assembled	21-1-Z-1

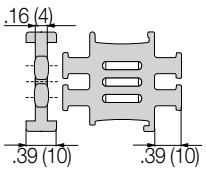




2400/2500
e-chains®

unassembled	2020-Z
assembled	2120-1

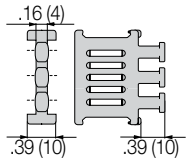




2450/2480
e-tubes

unassembled	2020-ZR
assembled	2120-ZR

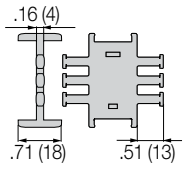




2600/2700
e-chains®

unassembled	262-Z
assembled	263-Z

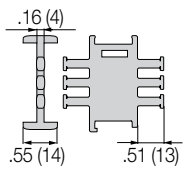




3400/3500
e-chains®

unassembled	301-Z
assembled	E6-29-12-Z



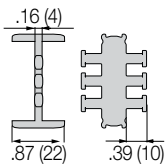


3450/3480
e-tubes

unassembled	34501-Z
assembled	34511-Z

For Series R100 e-tubes

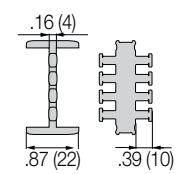




R157/R158
e-tubes

unassembled	1585-01-Z
assembled	1586-01-Z



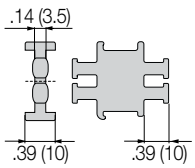


R167/R168
e-tubes

unassembled	1685-01-Z
assembled	1686-01-Z

For Series R E2 e-tubes



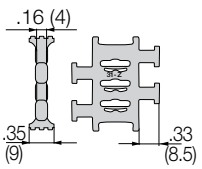


R48
e-tubes

unassembled	481-ZR
assembled	482-ZR

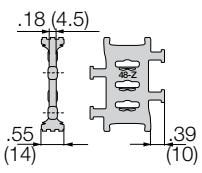
Chainfix Strain Relief
Strain Relief Separators - Product range overview

For Series E4-1L

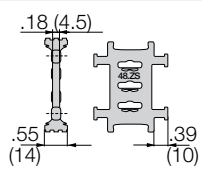
E4-31L / R4-31L
e-chains® / e-tubes

unassembled	31-Z
assembled	31-Z-1

E4-48L / R4-48L
e-chains® / e-tubes

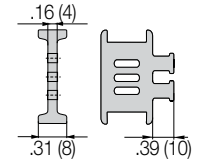
unassembled	48-Z
assembled	48-Z-1

E4-48L / R4-48L
e-chains® / e-tubes

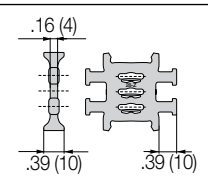
unassembled	48-ZS
assembled	48-ZS-1

For Series E4-1

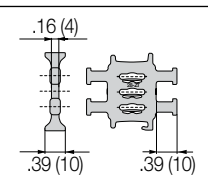
E4-21
e-chains®

unassembled	T2103-Z
assembled	T2113-Z

E4-28
e-chains®

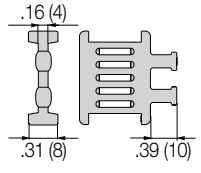
unassembled	28-Z
assembled	28-Z-1

R4-28
e-chains®

unassembled	28-ZT
assembled	28-ZT-1

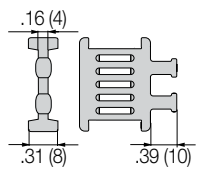
For Series T3

T3-29
e-chains®

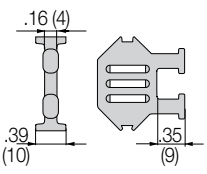
unassembled	E6-29-02-Z
assembled	E6-29-12-Z

For Series E6-1 / E6 / R6

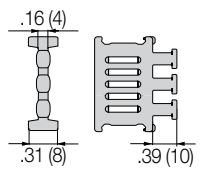
E6-29/E61-29
e-chains®

unassembled	E6-29-02-Z
assembled	E6-29-12-Z

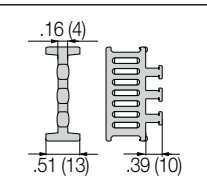
R6-29
e-tubes

unassembled	R6-29-02-Z
assembled	R6-29-12-Z

E6-35/E61-35
e-chains®

unassembled	E6-35-02-Z
assembled	E6-35-12-Z

E6-40 /E61-40
e-chains®

unassembled	E6-40-02-Z
assembled	E6-40-12-Z

PDF: igus.com/e-chain-pdfs
Product information: igus.com/e-chains

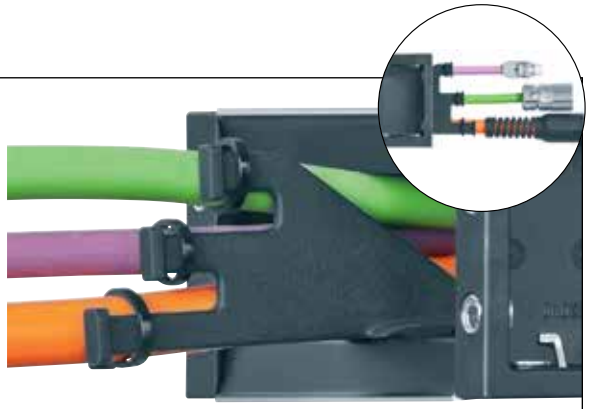
Chainfix Strain Relief Clip-on Solutions

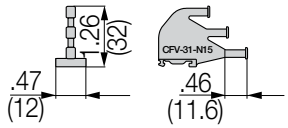
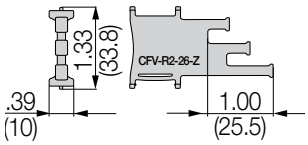
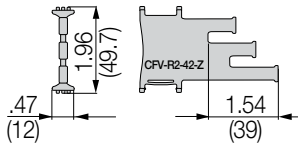
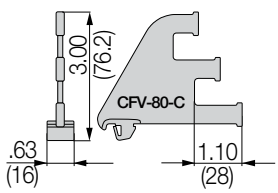
Telephone 1-800-521-2747

Internet: igus.com
email: sales@igus.com
QuickSpec: igus.com/quickspec

CFV strain relief element - for stepped strain relief for use ouotside of the e-chain® section

- Easy strain relief for cables, even in fully enclosed tubes and with different connectors
- For e-chains® and e-tubes
- Easy to retrofit
- Simple installation into KMA mounting brackets or top-hat (DIN) rail 15 (TS92-31)



Part No.	For series	Inner height *hi* in.	(mm)	For use in
CFV-31-N15	**E4-31L/R4-31L**	1.22	(31)	Top-hat (DIN) rail 15 (TS92-31)
				
CFV-R2-26-Z	**R2-26**	1.02	(26)	KMA*
				
CFV-R2-40-Z	**R2-40**	1.57	(40)	KMA*
				
CFV-42-C	**2600/2700/2650/2680**	1.38	(35)	KMA*
	3400/3500/3450/3480	1.77	(45)	KMA*
	E4-32/H4-32/R4-32	1.26	(32)	KMA*
	E4-42/H4-42/R4-42	1.65	(42)	KMA*
	E4-38L/R4-38L	1.50	(38)	KMA*
	E4-48L/R4-48L	1.89	(48)	KMA*
CFV-80-C	**R2-75**	2.95	(75)	KMA*
	**E4-64L**	2.52	(64)	KMA*
	E4-56/H4-56/R4-56	2.20	(56)	KMA*
	E4-80/H4-80/R4-80	3.15	(80)	KMA*

*KMA = plastic metal mounting bracket

For Series:

System E2/000
- 2600/2700
- 2650/2680
- 3400/3500
- 3450/3480

System R2-1
- R2-26
- R2-40
- R2-75

System E4-1
- E4-32/H4-32/R4-32
- E4-42/H4-42/R4-42
- E4-56/H4-56/R4-56
- E4-80/H4-80/R4-80

System E4-1 Light
- E4-31L/R4-31L
- E4-38L/R4-38L
- E4-48L/R4-48L
- E4-64L



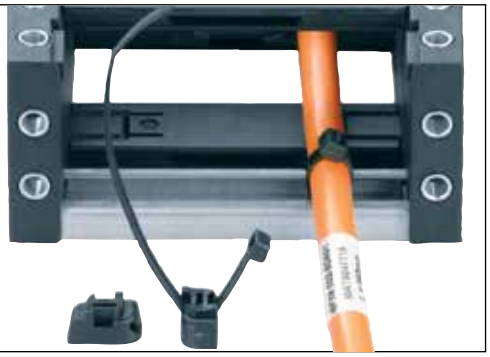


CFV stepped strain relief element easily clipped in from above

Chainfix Strain Relief
Clip-on Solutions

Characteristics of igus® Chainfix nuggets for profile rails

- Universal cable attachment in profile rail
- Simple strain relief - pre-attached cable tiewraps
- Minimum space required
- Easy to assemble without any screws and tools
- Adjustable to every e-chain® filling



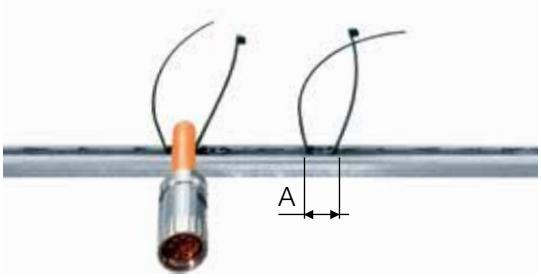
Option 1 - CFN nuggets for profile rail

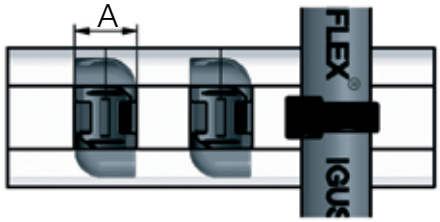
Part No. Nugget	For profile rails	Cable Diameter Max. in.	(mm)	Dimension A in.	(mm)
CFN-20	92-42.../92-42...E	.79	(20)	.43	(10.8)
CFN-30-52	92-42.../92-42...E	1.18	(30)	.65	(16.4)

For Series:

For profile rail

- For all mounting brackets with profile rail option





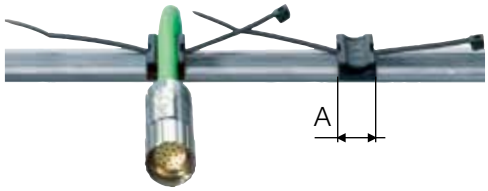
Option 2 - CFN nuggets for top-hat (DIN) rail

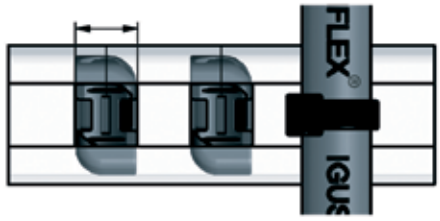
Part No. Nugget	For top-hat DIN rail	Cable Diameter Max. in.	(mm)	Dimension A in.	(mm)
CFN-20-N35	Top-hat (DIN) rail 35	.79	(20)	.43	(10.8)

For Series:

For top-hat (DIN) rail

- Top-hat (DIN) rail 35





PDF: igus.com/e-chain-pdfs
Product information: igus.com/e-chains

Chainfix Strain Relief
Strain Relief Connector System

Telephone 1-800-521-2747

Internet: igus.com
email: sales@igus.com
QuickSpec: igus.com/quickspec

Characteristics of the modular igus® CFB: Polymer strain relief connector system to be mounted onto the profile rail

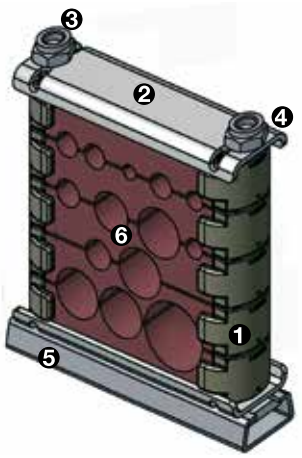
- Customized strain relief solutions can be offered
- 2 variations available
- Fast assembly by standard screw connection
- Can be mounted in the mounting bracket or in front of the e-chain®
- Customized production from 1 piece
- Low priced and effective



CFB 907-881- Polymer strain relief connector system

Parts List Description	Part No.	Quantity
① Outer fixing block	**CFB20-1**	N x 2
② Clamping bar	**907-881-1-XXX**	2
③ Threaded bolt with plate	**907-825-2-LLL**	2
④ Hexagon nut M8	**MAT 0040012**	2
⑤ Profile rail (part of KMA)	**92-42-KMA**	1
⑥ Strain relief block	Customer specific	1

Please contact igus® for individual design



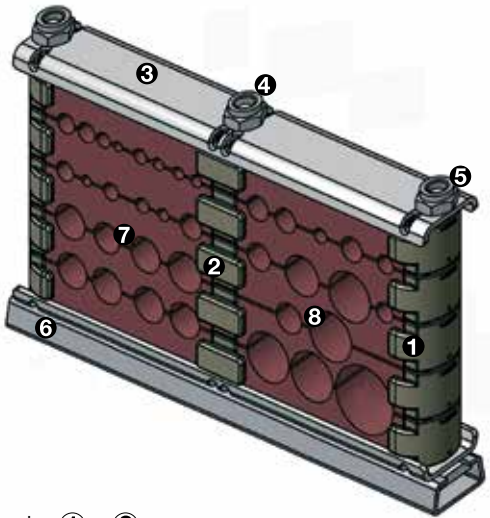
Order key
907-881-XXX-N

N = Number of layers fixing blocks ①
XXX= Bi - 3 mm (mounting bracket)
Part No. with version 881

CFB 907-825- Polymer strain relief connector system

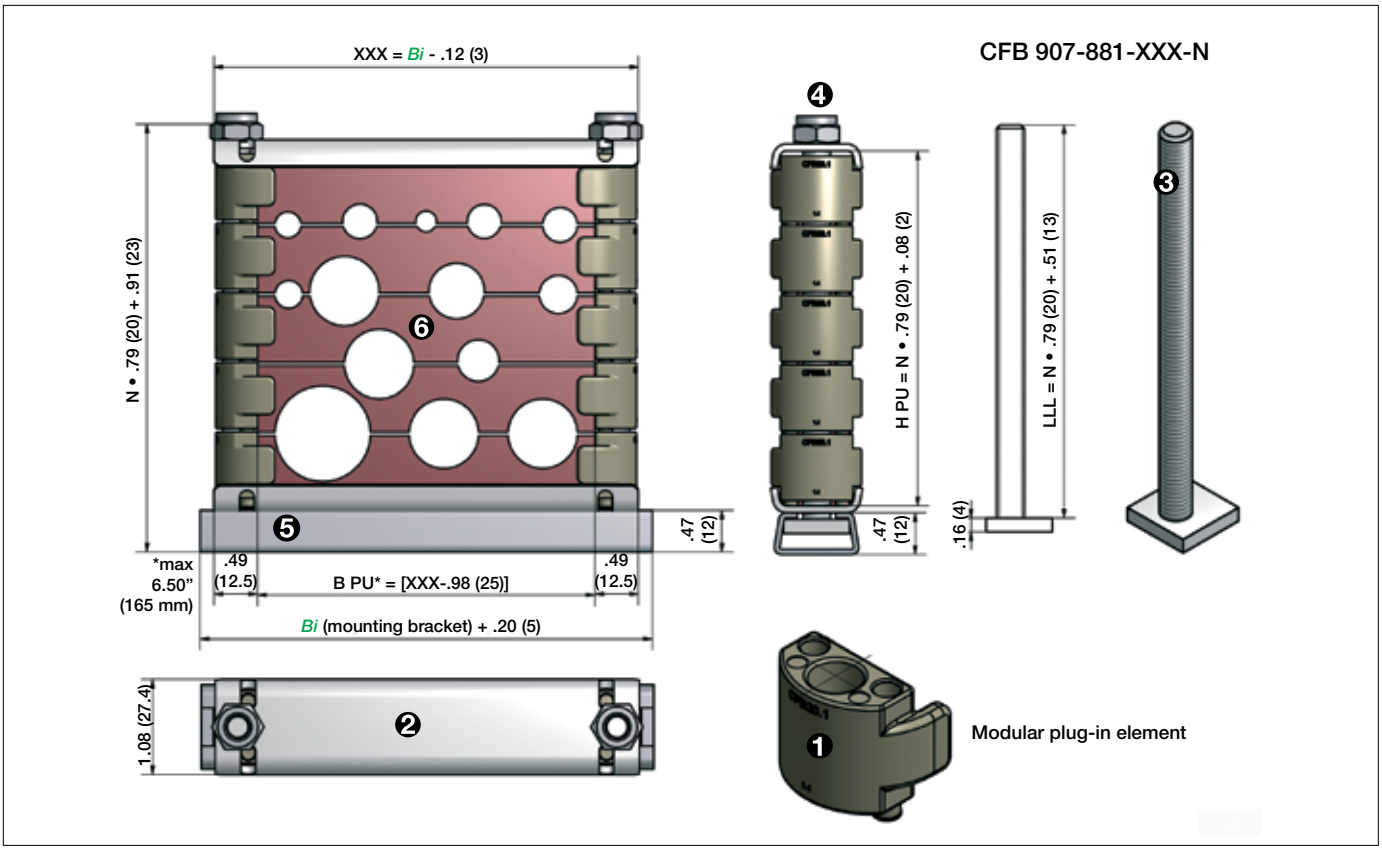
Parts List Description	Part No.	Quantity
① Outer fixing block	**CFB20-1**	N x 2
② Inner fixing block	**CFB20-2**	N
③ Clamping bar	**907-825-1-XXX**	2
④ Threaded bolt with plate	**907-825-2-LLL**	3
⑤ Hexagon nut M8	**MAT 0040012**	3
⑥ Profile rail (part of KMA)	**92-42-KMA**	1
⑦ Strain relief block	Customer specific	1
⑧ Strain relief block	Customer specific	1

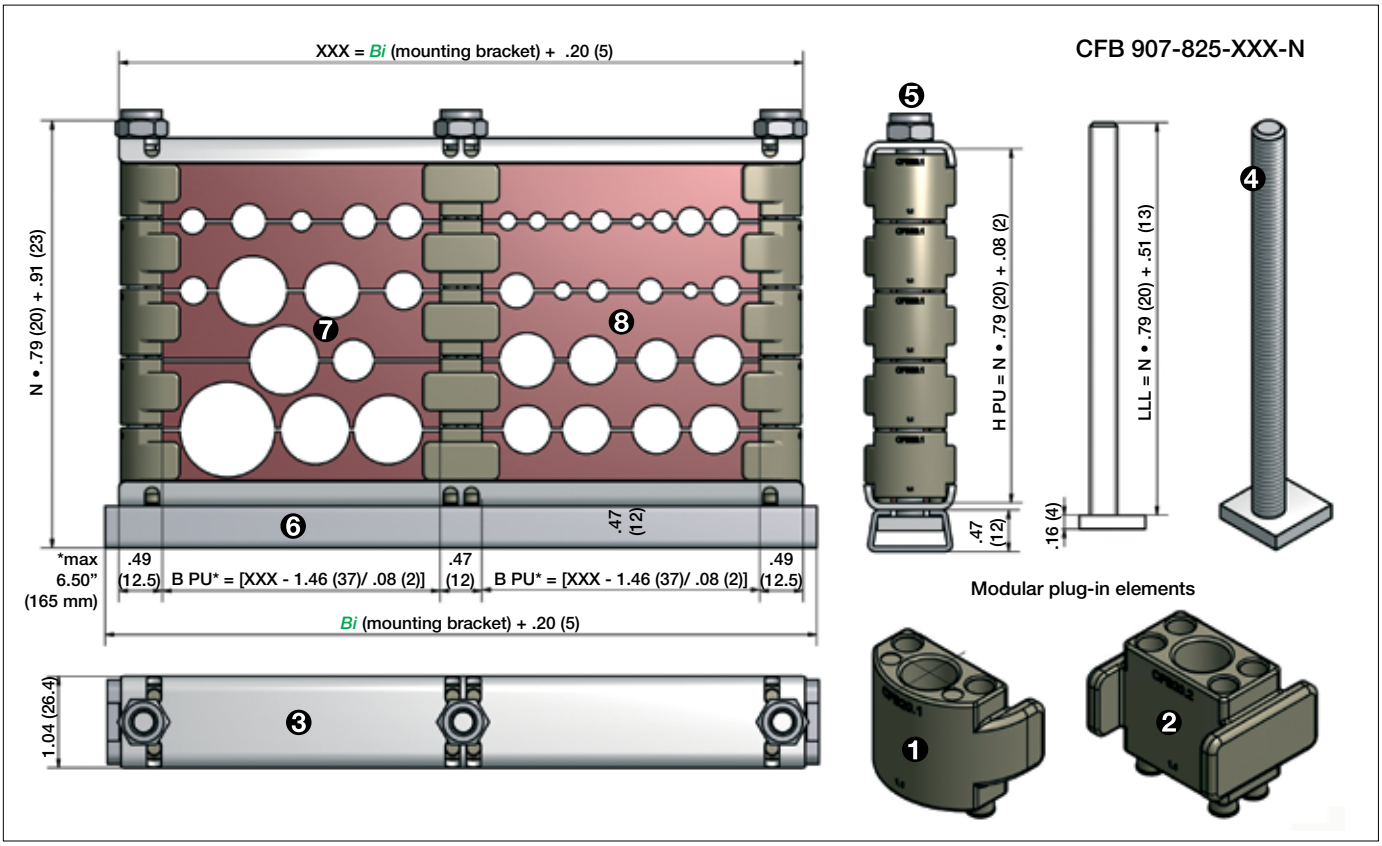
Please contact igus® for individual design



Order key
907-825-XXX-N

N = number of layers fixing blocks ① + ②
XXX= Bi - mm (mounting bracket)
Part No. with version 825





Delivery time upon request

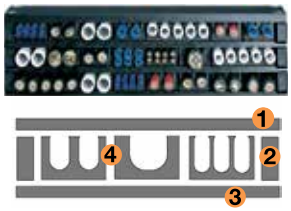
Chainfix Strain Relief
Strain Relief Block

Telephone 1-800-521-2747

Internet: igus.com
email: sales@igus.com
QuickSpec: igus.com/quickspec

igus® strain relief block for small hoses and cables

- Modular system for great adaptability
- No hose damage
- Space-saving design
- Hoses and cables can be installed together in the same e-chain®
- Accommodation of hose diameters from .17 to .55 (4.3 to 14 mm)
- Easy installation - pressing the hose into the locating notch provides reliable fastening without hardware



1 Cover plate
2 Spacers
3 Base plate

4 Grid-dimensioned modules
W = 1.08 (27.5 mm)
H = .63 (16 mm)

The modules accommodate hoses from .17 to .55 (4.3 to 14 mm), 3 x .17 (3 x 4.3 mm) hoses can be fitted on top of each in module CFS-4.3 and 2 hoses can be fitted directly on top of each other in one notch using module CFS-6. The modules have a width of 1.08 (27.5), are inserted into the base plate and then fastened in position with M4 countersunk-head screws. The exception is module CFS-55.9 which offers the capacity for 5 x .35 (5 x 9 mm) hoses with twice the width. The base plate and cover plate are available in widths ranging from 2.95 to 9.45 (75 to 240 mm). The height of the spacers and modules is .63 (16 mm). Several layers can be installed directly above one another.

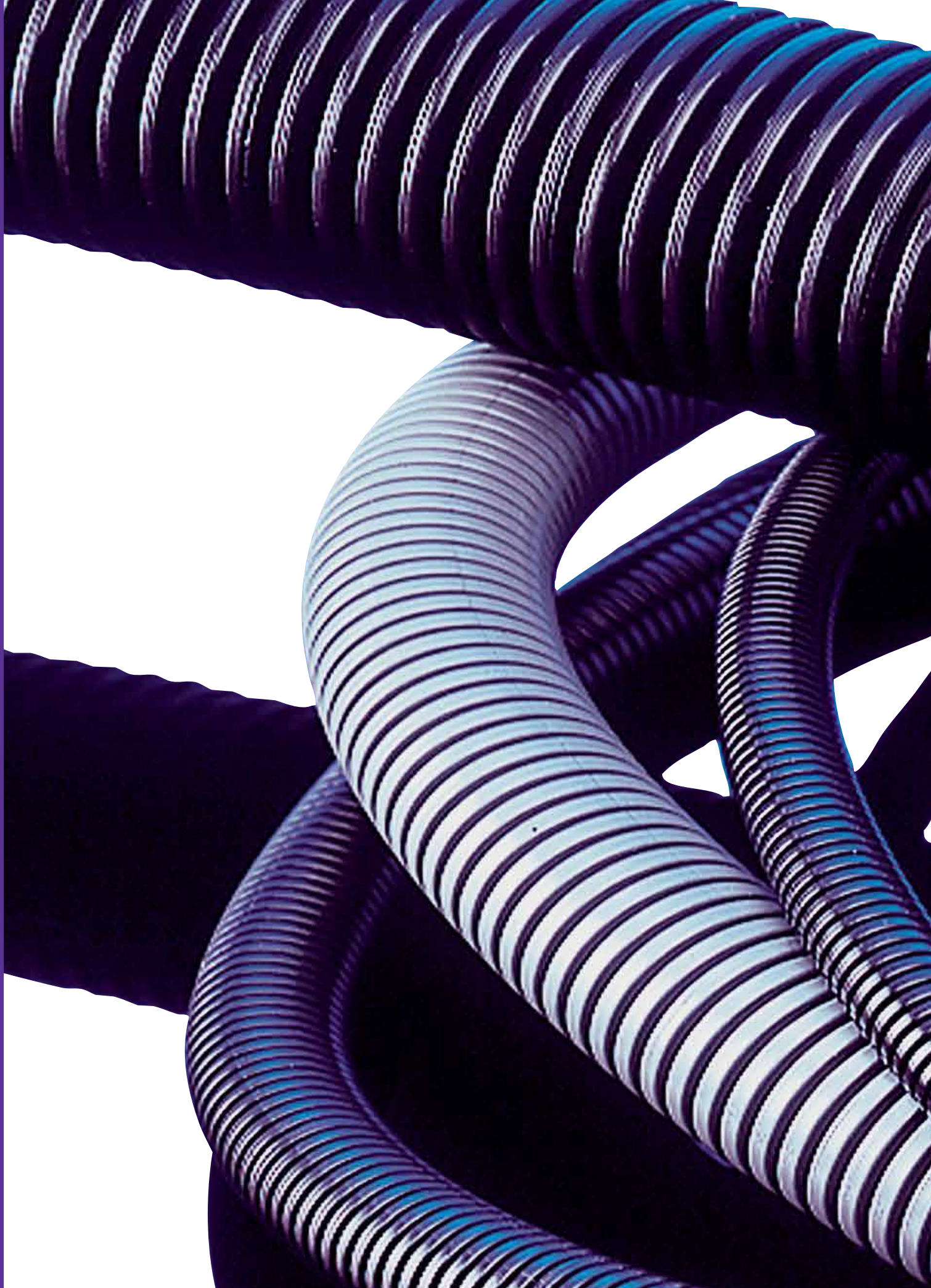
Part No. Block	Hose Ø mm	Number of Hoses	Width	
			in.	(mm)
CFS-4.3	.17 (4.3)	4 – 12	1.08	(27.5)
CFS-6	.24 (6)	3 – 6	1.08	(27.5)
CFS-9	.35 (9)	2	1.08	(27.5)
CFS-55.9	.35 (9)	5	2.16	(55.0)
CFS-10	.39 (10)	2	1.08	(27.5)
CFS-14	.55 (14)	1	1.08	(27.5)

Part No. Base Plate	Part No. Cover Plate	Width	
		in.	(mm)
CFSU-75	CFS-P-75	2.95	(75)
CFSU-102.5	CFS-P-102.5	4.04	(102.5)
CFSU-130	CFS-P-130	5.12	(130)
CFSU-185	CFS-P-185	7.28	(185)
CFSU-212	CFS-P-212	8.34	(212)
CFSU-240	CFS-P-240	9.45	(240)

Part No. Spacer	Height	
	in.	(mm)
CFSD-16	.63	(16)
CFSD-12	.47	(12)

Telephone 1-800-521-2747

Internet: igus.com
email: sales@igus.com
QuickSpec: igus.com/quickspec




PMA

PMA Overview

PMAFLEX | Conduits | Cable protection



Product	Description
PMA conduits	
PACOF	Flexible, medium, split
PPCOF	Very flexible, medium, split
LN	Two-part lock nuts
LNO	One-piece split connectors
VCS	Flexible, heavy
PIS/PIH	Highly flexible, medium
CYL	Very flexible, medium

PMAFIX | Connectors | Safety and sealing systems



Product	Description
PMA connectors	
IP66 - stat., IP54 dyn.	Universal safety clip
IP68 - stat., IP67 dyn.	Oval clip
PMAFIX / PMAFLEX	Connectors
PMAFIX connectors VW	90° elbow, PG
PMAFIX connectors VA	45° elbow, metric & PG
PMAFIX connectors VN	Straight, metric
PMAFIX connectors VN	Straight, PG
PMAFIX connectors VB	90° curved elbow, metric & PG
PMAFIX connectors VO	Flange 90°

PMA | Accessories



Product	Description
PMA accessories	
PMAFIX FH-O	One-piece system support
PMA VH	System supports
PMA GPS	One-piece system supports
PMA MN	Hexagonal lock nuts, metric & PG
PMA SGB	Tube clamps
PMA 514	Plug screws, metric & PG

PMA Protective Corrugated Tubing

Tubes, connectors, system supports, and accessories

PMA - corrugated conduits, connectors, system support, and accessories

- Wide range of tubes
- Long service life of the tubes especially through millions of reverse bending cycles
- UL-recognized products available
- PMAFIX safety locking system



igus® E-Chain® System E4 combined with PMAFLEX protective tubing and igus Chainflex® CF9

PMA-Program - Wide selection of tubes and systems

The PMA cable protection system is applied wherever the mechanical protection of electrical wires and cables is required. Very flexible types of conduits are especially suitable for the additional protection of leads in E-Chain systems® if required. By combining technical excellence with rigorous international safety standards, PMA meets the demands of industry worldwide - specializing in applications from the machine building industries to high tech manufacturing; heavy plant and vehicle construction; fiber optics, solar energy and robotic applications with high speed and millions of reversed bending cycles.

PMAFLEX - Conduits

PMAFLEX covers different conduit types for a variety of applications in cable protection. The **PMAFLEX** range offers conduits for technically demanding applications and special requirements. Conduit sizes range from 4.5 mm to 125 mm diameters, from lightweight to heavyweight, and pliable to highly flexible. Standard colors are black and grey. Many conduits are specially approved, e.g. CSA, UL Recognition, NF, SNCF, DB, etc.

PMAFIX- Connectors

The designation **PMAFIX** describes a very large range of connectors for PMA conduits with the patented PMA safety clip system. Connectors are available for ingress protection IP66 and IP68. IP66 connectors are fitted with a pre-installed universal safety clip which ensures a quick “push-in” installation. IP68 connectors for increased requirements will be delivered with a special conduit seal cap.<?>

PMA Protective Corrugated Tubing



PMA COFLEX Conduit PACOF - medium, flexible, split

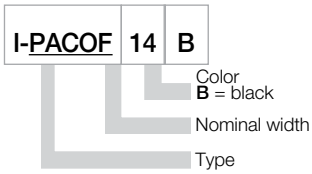
The PMA COFLEX conduit type PACOF has been created for retrofit and pre-loomed applications. New cables can be added to existing arrangements without the need for re-wiring or re-threading within the building of machines and installations. This product is suitable for vehicle manufacturing and building construction. Split connectors and locknuts are available for this product group.

Temperature range:
-40°F to +221°F (-40°C to +105°C), or a short time up to +320°F (+160°C)

Features:
- specially modified PA6 (polyamide 6)
- good closure up to IP50
- self-extinguishing
- halogen-free and cadmium-free

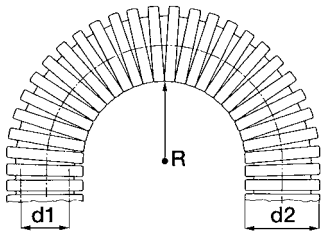
Chemical resistance:
- fuels
- mineral oils
- fats
- alkalis
- weak acids and bases, etc.

Part No. structure



Part No. (Black)	Conduit size Nominal	Metric	Inside diameter d1 (mm)	Outside diameter d2 (mm)	Radius (stat.) (mm)	PU (m)
I-PACOF-07B	7	10	5.6	10.0	30	50
I-PACOF-10B	10	12	8.5	12.8	33	50
I-PACOF-12B	12	16	11.0	15.6	35	50
I-PACOF-17B	17	20	15.5	21.1	45	50
I-PACOF-23B	23	25	22.1	28.4	70	50
I-PACOF-29B	29	32	27.2	34.5	120	50
I-PACOF-36B	36	40	32.0	42.4	145	30
I-PACOF-48B	48	50	43.9	54.1	150	30
I-PACOF-70B	70	80	66.0	80.0	220	10

I-PACOF - is suitable for static use only!



** ***stat. R*** = lowest recommended bending radius for static (fixed) installation



PMA COFLEX Conduit PPCOF - medium, very flexible, split

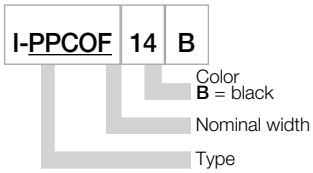
The PMA COFLEX conduit type PPCOF has been created for retrofit and pre-loomed applications. New cables can be added to existing arrangements without the need for re-wiring or re-threading within the building of machines and installations. This product is suitable for vehicle manufacturing and building construction. Split connectors and locknuts are available for this product group.

Temperature range:
-4°F to +221°F (-20 °C to +105 °C), or a short time up to +275°F (+135°C)

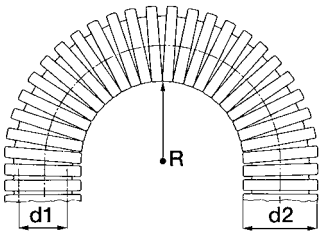
Features:
- specially modified polypropylene
- good closure up to IP50
- self-extinguishing,

Chemical resistance:
- fuels
- mineral oils
- fats
- alkalis
- acids, etc.

Part No. structure



Part No. (Black)	Conduit size Nominal	Metric	Inside diameter d1 (mm)	Outside diameter d2 (mm)	Radius (stat.) (mm)	PU (m)
I-PPCOF-07B	7	10	5.9	10	25	50
I-PPCOF-10B	10	12	8.5	12.8	28	50
I-PPCOF-12B	12	16	11.0	15.6	35	50
I-PPCOF-17B	17	20	15.1	21.1	45	50
I-PPCOF-23B	23	25	21.1	28.4	60	50
I-PPCOF-29B	29	32	26.6	34.5	100	50
I-PPCOF-36B	36	40	31.8	42.4	120	30
I-PPCOF-48B	45	50	43.9	54.1	140	30



** ***stat. R*** = lowest recommended bending radius for static (fixed) installation

PMA Protective Corrugated Tubing



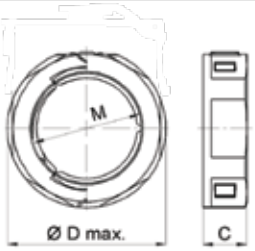
LN - Two-part Lock Nut - metric

These split counter nuts are ideal in conjunction with TN fittings for the smooth re-installation and repair in machinery and plant construction. In addition, this product is becoming increasingly important in automotive construction and in building installation technology.

Temperature range:
-22°F to +212°F (-30 °C to +100 °C), or a short time up to +266°F (+130°C)

Features:

- specially formulated polyamide
- self-extinguishing
- free of halogen, cadmium and phosphor
- very good impact strength



PMA-COFIX LN: Two-part lock nut, metric

Part No. Black	Thread M metric	Fits PMA COFLEX LNO		Outer diameter (mm)	Width C (mm)
I-BLN-M16	M16 x 1.5	I-BLNO-M160	I-BLNO-M162	21.5	8.0
I-BLN-M20	M20 x 1.5	I-BLNO-M202	I-BLNO-M207	29.5	8.0
I-BLN-M25	M25 x 1.5	I-BLNO-M257	I-BLNO-M253	35.5	9.0
I-BLN-M32	M32 x 1.5	I-BLNO-M323	I-BLNO-M329	44.5	12.0
I-BLN-M40	M40 x 1.5	I-BLNO-M409	I-BLNO-M406	53.5	15.0
I-BLN-M50	M50 x 1.5	I-BLNO-M508		69.5	15.0



LNO - One-piece split connector, straight

These split lock nuts are used in conjunction with the connectors TN for repairs or where cable protection systems are installed after wiring has taken place in the machine building and installation industry. Further, these products will be used increasingly in the vehicle building and building construction.

Temperature range:
-22°F to +212°F (-30 °C to +100 °C), or a short time up to +266°F (+130°C)

Features:

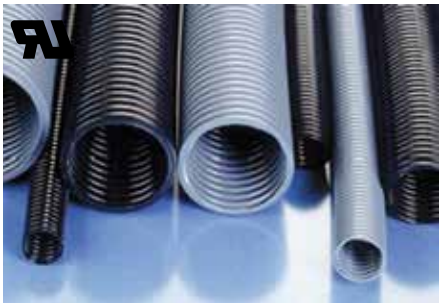
- specially formulated polyamide
- IP50
- self-extinguishing
- free of halogen, cadmium and phosphor
- very good impact strength



PMA-COFIX LNO: one-piece split connector

Part No. Black	Thread metric	Fits conduit size NW	Fits conduit size metric	Thread length g (mm)	Overall length L (mm)
I-BLNO-M160	M16 x 1.5	12	16	13.0	36.5
I-BLNO-M162	M16 x 1.5	12	16	13.0	39.5
I-BLNO-M202	M20 x 1.5	12	16	13.0	39.5
I-BLNO-M207	M20 x 1.5	17	20	13.0	43.5
I-BLNO-M257	M25 x 1.5	17	20	14.0	44.5
I-BLNO-M253	M25 x 1.5	23	25	14.0	52.5
I-BLNO-M323	M32 x 1.5	23	25	17.0	56.0
I-BLNO-M329	M32 x 1.5	29	32	17.0	61.0
I-BLNO-M409	M40 x 1.5	29	32	21.0	65.0
I-BLNO-M406	M40 x 1.5	34	40	22.0	74.5
I-BLNO-M508	M50 x 1.5	48	50	22.0	80.5

PMA Protective Corrugated Tubing



PMAFLEX Conduits VCS - flexible, heavy

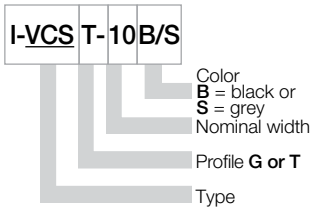
PMAFLEX VCS heavy conduit is characterized by high impact resistance at low temperatures and good weather resistance. These conduits find their application primarily in railway vehicle undercarriages, but are also well-suited to static applications in general construction of machinery or installations.

Temperature range:
-58°F to +221°F (-50 °C to +105 °C), or a short time up to +302°F (+150°C)

Features:
- specially modified PA6 (polyamide 6) for cold impact
- excellent mechanical properties also at low temperatures
- self-extinguishing
- halogen-free and cadmium-free

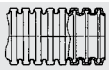
Chemical resistance:
- fuels
- mineral oils
- fats
- alkalis
- weak acids and bases, etc.

Part No. structure



Part No. black	Part No. grey*	Conduit size NW	Conduit size metric	Inside diameter (mm)	Outside diameter (mm)	Radius (stat.)** (mm)	PU (m)
I-VCST-07B	I-VCST-07S	7	10	6.0	10.0	20	100
I-VCST-10B	I-VCST-10S	10	12	9.2	13.0	25	50
I-VCST-12B	I-VCST-12S	12	16	11.8	15.8	30	50
I-VCST-17B	I-VCST-17S	17	20	16.0	21.2	40	50
I-VCSG-17B	I-VCSG-17S	17	20	15.2	21.2	40	50
I-VCSG-23B	I-VCSG-23S	23	25	22.0	28.5	50	50
I-VCSG-29B	I-VCSG-29S	29	32	27.7	34.4	60	50
I-VCSG-36B	I-VCSG-36S	36	40	35.8	42.4	70	30
I-VCSG-48B	I-VCSG-48S	48	50	46.8	54.4	80	30
I-VCSG-56B	I-VCSG-56S	56	68	56.1	67.2	150	30
I-VCSG-70B	I-VCSG-70S	70	80	66.5	80.0	200	10
I-VCSG-95B	I-VCSG-95S	95	106	91.0	106.0	300	10

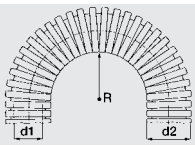
*Grey part is a special order, call igus® for availability



Fine profile T -
tight bending radius



Coarse profile G -
high pull-out strength



** ***stat. R*** = lowest recommended bending radius for static (fixed) installation

I-VCST/VCSG - is suitable for static use only!

PMA Protective Corrugated Tubing



PMAFLEX Conduits PIS/PIH - highly flexible, medium

These highly flexible products are used orimarily in automation applications and for connections subject to intense movements in general machinery construction. Their outstanding material properties make these conduits especially suitable for outdoor applications where they are exposed to intensive sunlight (UV).

Temperature range:
-58°F to +203°F (-50 °C to +95 °C), or a short time up to +302°F (+150°C)

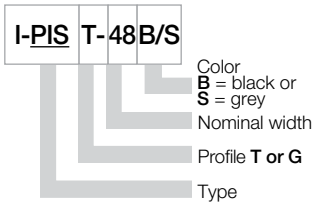
Features:

- specially modified polyamide 12
- **PIS: medium-wall (nominal width 07 to 48**
  PIH: heavy-wall (nominal width 56 to 125)
- self-extinguishing
- halogen-free and cadmium-free
- good mechanical properties also at low temperatures

Chemical resistance:

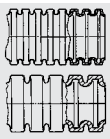
- fuels
- mineral oils
- fats
- alkalis
- acids etc.

Part No. structure

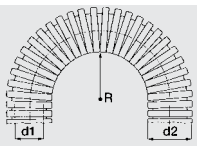


Part No. black	Part No. grey*	Conduit size NW	Conduit size metric	Inside diameter (mm)	Outside diameter (mm)	Radius stat.**/dyn.*** (mm)	PU (m)
I-PIST-07B	I-PIST-07S	7	10	6.2	10.0	15 / 40	50
I-PIST-10B	I-PIST-10S	10	12	9.6	13.0	20 / 50	50
I-PIST-12B	I-PIST-12S	12	16	11.9	15.8	25 / 65	50
I-PIST-17B	I-PIST-17S	17	20	16.4	21.1	30 / 65	50
I-PIST-23B	I-PIST-23S	23	25	22.6	28.4	35 / 90	50
I-PIST-29B	I-PIST-29S	29	32	29.0	34.3	45 / 110	50
I-PIST-36B	I-PIST-36S	36	40	36.5	42.5	60 / 165	30
I-PIST-48B	I-PIST-48S	48	50	47.5	54.5	70 / 180	30
I-PISG-17B	–	17	20	15.2	21.1	30 / 80	50
I-PISG-23B	I-PISG-23S	23	25	21.7	28.4	40 / 100	50
I-PISG-29B	I-PISG-29S	29	32	27.4	34.3	50 / 120	50
I-PISG-36B	I-PISG-36S	36	40	35.8	42.3	60 / 180	30
I-PISG-48B	I-PISG-48S	48	50	46.7	54.2	70 / 200	30
I-PIHG-56B	I-PIHG-56S	56	68	56.3	67.2	110 / 270	30
I-PIHG-70B	I-PIHG-70S	70	80	67.2	79.6	150 / 350	30
I-PIHG-95B	I-PIHG-95S	95	106	91.3	106.0	170 / 450	30
I-PIHG-125B	I-PIHG-125S	125	146	126.5	146.5	350 / 580	20

*Grey part is a special order, call igus® for availability



Fine profile T -
tight bending radius
Coarse profile G -
high pull-out strength



** ***stat. R*** = lowest recommended bending radius for static (fixed) installation
dyn. R = lowest recommended bending radius for dynamic (flexible) installation

I-PIS/PIH is recommended for highly flexible application

PMA Protective Corrugated Tubing

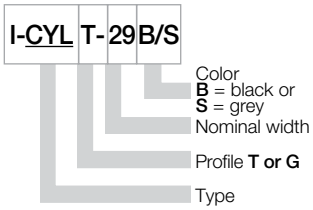


PMAFLEX Conduits CYL - very flexible, medium, economy

PMA CYL ECONOMY conduit exhibits very good flexibility and is also suitable for low temperature applications. These conduits are used primarily in construction of machinery and equipment.

Temperature range:
-40°F to +221°F (-40 °C to +105 °C), or a short time up to +302°F (+150°C)

Part No. structure

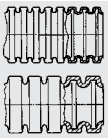


Features:
- specially modified polyamide 6/6.6 for cold impact
- good impact strength also at low temperatures
- self-extinguishing
- halogen-free and cadmium-free

Chemical resistance:
- fuels
- mineral oils
- fats
- alkalis
- weak acids and bases, etc.

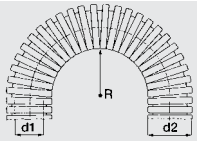
Part No. black	Part No. grey*	Conduit size NW	Conduit size metric	Inside diameter (mm)	Outside diameter (mm)	Radius (stat.)** (mm)	PU (m)
I-CYLT-07B	I-CYLT-07S	7	10	6.2	10.0	15	50
I-CYLT-10B	I-CYLT-10S	10	12	9.6	13.0	20	50
I-CYLT-12B	I-CYLT-12S	12	16	12.0	15.8	30	50
I-CYLT-17B	I-CYLT-17S	17	20	16.2	21.2	40	50
I-CYLT-23B	I-CYLT-23S	23	25	22.6	28.5	40	50
I-CYLT-29B	I-CYLT-29S	29	32	29.0	34.5	50	50
I-CYLT-36B	I-CYLT-36S	36	40	36.5	42.5	60	30
I-CYLT-48B	I-CYLT-48S	48	50	47.5	54.5	70	30
I-CYLG-23B	I-CYLG-23S	23	25	21.9	28.5	45	50
I-CYLG-29B	I-CYLG-29S	29	32	27.6	34.5	55	50
I-CYLG-36B	I-CYLG-36S	36	40	36.0	42.5	60	30
I-CYLG-48B	I-CYLG-48S	48	50	47.0	54.5	70	30
I-CYLG-56B	–	56	68	56.3	67.2	120	30
I-CYLG-70B	–	70	80	68.0	80.0	160	30
I-CYLG-95B	–	95	106	91.9	106.0	210	10
I-CYLG-125B	–	125	146	126.5	146.5	450	6

*Grey part is a special order, call igus® for availability



Fine profile T -
tight bending radius

Coarse profile G -
high pull-out strength



** ***stat. R*** = lowest recommended bending radius for static (fixed) installation

dyn. R = lowest recommended bending radius for dynamic (flexible) installation

I-CYLT/CYLG - is recommended for static use!
(moderate dynamic application possible)

igus® e-chain system®
Telephone 1-800-521-2747
Internet: igus.com
email: sales@igus.com
QuickSpec: igus.com/quickspec

PMAFIX Connectors - Safety and Sealing Systems

Telephone 1-800-521-2747

Internet: igus.com
email: sales@igus.com
QuickSpec: igus.com/quickspec

IP66 - static, IP54 dynamic - universal safety clip

- One piece Fitting, sealing by cone
- Easy “push-in” installation
- Pre-installed safety clip AFN2
- Fits any type of conduit profile (T and G)
- Excellent pull-out strength
- Re-opening for safety reasons only possible with a screwdriver
- Clip pre-installed in all IP66 connectors





Installation



Push in conduit with a slight twist (open using screw-driver on conduit side)



Pull back slightly to ensure the locking mechanism is fully engaged



To re-open use a screwdriver

IP68 - static - oval clip

- High sealing through additional seal cap
- For highest dynamic applications
- Fits any type of conduit profile (T and G)
- Excellent pull-out strength
- Re-opening for safety reasons only possible with a screwdriver





Installation



A Conduit,
B Seal cap,
C Connector,
D Oval clip,
E flat gasket
(or O-ring seal)



Push seal cap onto end of conduit to achieve IP68



For ease of installation moisten seal cap with water or grease



Push conduit with seal cap fully into connector. This guarantees PMA’s unique IP68/67 rating*



Install retaining oval clip



To re-open use a screwdriver

* For safety reasons, oval clip will not fit if seal cap is not fully installed.

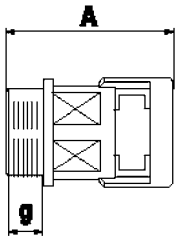
Ensure to follow O-ring manufacturers guidelines when using O-rings for sealing purposes.

PMAFIX - Connectors

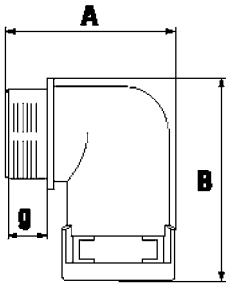
The designation **PMAFIX** describes a very large range of connectors for PMA conduits with the patented PMA safety clip system. Connectors are available for ingress protection IP66 and IP68. IP66 connectors are fitted with a preinstalled universal safety clip which ensures a quick “push-in” installation. IP68 connectors for increased requirements will be delivered with a special conduit seal cap.

Table 1 - **PMAFIX / PMAFLEX** conduit code

Nominal width	PMA code
7	**M**
10	**0**
12	**2**
17	**7**
23	**3**
29	**9**
36	**6**
48	**8**



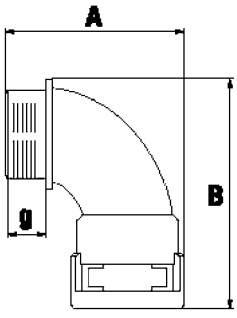
g = Thread length
A = Overall length



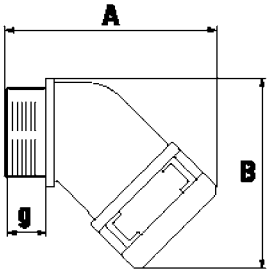
g = Thread length
A x B = External dimensions

Table 2 - Thread codes

Thread metric	PMA code	Thread PG	PMA code
M12 x 1.5	**M12**	PG07	**P07**
M16 x 1.5	**M16**	PG09	**P09**
M20 x 1.5	**M20**	PG11	**P11**
–	–	PG13.5	**P13**
M25 x 1.5	**M25**	PG16	**P16**
M32 x 1.5	**M32**	PG21	**P21**
M40 x 1.5	**M40**	PG29	**P29**
M50 x 1.5	**M50**	PG36	**P36**
M63 x 1.5	**M63**	PG42	**P42**
		PG48	**P48**



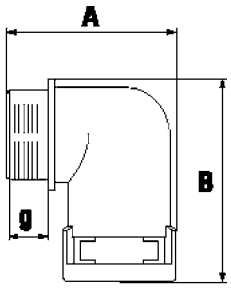
g = Thread length
A x B = External dimensions



g = Thread length
A x B = External dimensions

PMAFIX Connectors - Safety and Sealing Systems





g = Thread length
A x B = External dimensions

PMAFIX Connectors VW - 90° elbow, PG

These **PMAFIX** connectors are used in a wide range of applications. Together with **PMAFLEX** conduits they offer the highest grade of safety and sealing.

Temperature range:
-40°F to +221°F (-40 °C to +105 °C), or a short time up to +320°F (+160°C)

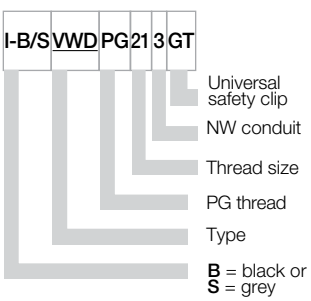
Content of delivery IP66:
Fitting with pre-assembled universal safety clips (AFN2)
Content of delivery IP68:
Fitting with oval clips (OVN2), conduit and thread seal (NVN3, SVN4)

Features:
- high grade formulated polyamide
- excellent impact strength
- self-extinguishing
- free of halogen, phosphor and cadmium

Part No. IP66	Part No. IP68	Thread	Fits to conduit size:		Thread	External	
		PG	NW	metric	length [mm]	dim. [mm]	
I-__VWD-PG07MGT-11	I-__VWV-PG07M	7	7	10	(11.0)	32.0 x 35.0	
I-__VWD-PG070GT-11	I-__VWV-PG070	7	10	12	(11.0)	34.0 x 39.5	
I-__VWD-PG09MGT-11	—	9	7	10	(11.0)	32.0 x 36.5	
I-__VWD-PG090GT-11	I-__VWV-PG090	9	10	12	(11.0)	34.0 x 39.5	
I-__VWD-PG092GT-11	I-__VWV-PG092	9	12	16	(11.0)	38.5 x 44.5	
I-__VWD-PG11MGT-11	—	11	7	10	(11.0)	32.0 x 38.0	
I-__VWD-PG110GT-11	I-__VWV-PG110	11	10	12	(11.0)	34.0 x 41.0	
I-__VWD-PG112GT-11	I-__VWV-PG112	11	12	16	(11.0)	38.5 x 46.0	
I-__VWD-PG13MGT-11	—	13.5	7	10	(11.0)	32.0 x 39.5	
I-__VWD-PG130GT-11	I-__VWV-PG130	13.5	10	12	(11.0)	34.0 x 42.5	
I-__VWD-PG132GT-11	I-__VWV-PG132	13.5	12	16	(11.0)	38.5 x 47.5	
I-__VWD-PG137GT-11	I-__VWV-PG137	13.5	17	20	(11.0)	43.5 x 58.5	
I-__VWD-PG167GT-11	I-__VWV-PG167	16	17	20	(11.0)	43.5 x 58.5	
I-__VWD-PG213GT	I-__VWV-PG213	21	23	25	(11.0)	54.0 x 67.0	
I-__VWD-PG299GT	I-__VWV-PG299	29	29	32	(12.0)	61.5 x 74.5	
I-__VWD-PG366GT	I-__VWV-PG366	36	36	40	(13.0)	72.0 x 98.0	
I-__VWD-PG488GT	I-__VWV-PG488	48	48	50	(13.0)	85.5 x 111.0	

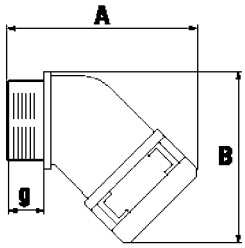
Fill in the blank with either “B” to order black or “S” to order grey*
For smaller conduit sizes NW 07 to NW 12 appropriate standard elbows of type VB are available
*Grey part is a special order, call igus® for availability

Part No. structure PG



PMAFIX Connectors - Safety and Sealing Systems





g = Thread length
A x B = External dimensions

PMAFIX Connectors VA - 45° elbow, metric & PG

These **PMAFIX** connectors are used in a wide range of applications. Together with **PMAFLEX** conduits they offer the highest grade of safety and sealing.

Temperature range:
-40°F to +221°F (-40 °C to +105 °C), or a short time up to +320°F (+160°C)

Content of delivery IP66:
Fitting with pre-assembled universal safety clips (AFN2)
Content of delivery IP68:
Fitting with oval clips (OVN2), conduit and thread seal (NVN3, SVN4)

Features:

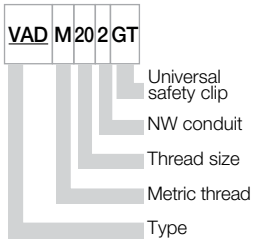
- high grade formulated polyamide
- excellent impact strength
- self-extinguishing
- free of halogen, phosphor and cadmium

Part No. IP66	Part No. IP68	Thread metric	Fits to conduit size: NW	metric	Thread length [mm]	External dim. [mm]
I-__VAD-M120GT	—	M12 x 1.5	10	12	11.0	43.5 x 37.0
I-__VAD-M160GT	I-__VAV-M160	M16 x 1.5	10	12	11.0	43.5 x 38.0
I-__VAD-M162GT	I-__VAV-M162	M16 x 1.5	12	16	11.0	48.0 x 40.0
I-__VAD-M202GT	I-__VAV-M202	M20 x 1.5	12	16	11.0	48.0 x 41.5
I-__VAD-M207GT	I-__VAV-M207	M20 x 1.5	17	20	11.0	55.5 x 51.5
I-__VAD-M253GT	I-__VAV-M253	M25 x 1.5	23	25	12.0	65.0 x 58.5
I-__VAD-M329GT	I-__VAV-M329	M32 x 1.5	29	32	15.0	73.5 x 66.5
I-__VAD-M406GT	I-__VAV-M406	M40 x 1.5	36	40	19.0	92.5 x 85.5
I-__VAD-M506GT	I-__VAV-M506	M50 x 1.5	36	40	19.0	100.0 x 89.5
I-__VAD-M508GT	I-__VAV-M508	M50 x 1.5	48	50	19.0	100.0 x 96.0
I-__VAD-M638GT	I-__VAV-M638	M63 x 1.5	48	50	19.0	100.0 x 104.0

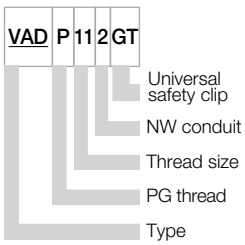
Part No. IP66	Part No. IP68	Thread PG	Fits to conduit size: NW	metric	Thread length [mm]	External dim. [mm]
I-__VAD-P090GT	I-__VAV-P090	9	10	12	11.0	43.5 x 37.0
I-__VAD-P112GT	I-__VAV-P112	11	12	16	11.0	48.0 x 40.0
I-__VAD-P132GT	I-__VAV-P132	13.5	12	16	11.0	48.0 x 41.5
I-__VAD-P137GT	I-__VAV-P137	13.5	17	20	11.0	55.0 x 50.0
I-__VAD-P167GT	I-__VAV-P167	16	17	20	11.0	55.0 x 51.5
I-__VAD-P213GT	I-__VAV-P213	21	23	25	12.0	67.0 x 59.0
I-__VAD-P299GT	I-__VAV-P299	29	29	32	12.0	69.0 x 67.0
I-__VAD-P366GT	I-__VAV-P366	36	36	40	13.0	86.0 x 86.0
I-__VAD-P488GT	I-__VAV-P488	48	48	50	13.0	93.0 x 99.0

Fill in the blank with either “B” to order black or “S” to order grey*
*Grey part is a special order, call igus® for availability

Part No. structure metric



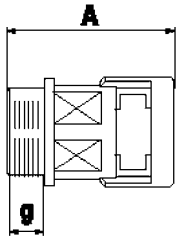
Part No. structure PG



igus® e-chain system®
Telephone 1-800-521-2747
Internet: igus.com
email: sales@igus.com
QuickSpec: igus.com/quickspec

PMAFIX Connectors - Safety and Sealing Systems





PMAFIX Connectors VN - straight, metric

These **PMAFIX** connectors are used in a wide range of applications. Together with **PMAFLEX** conduits they offer the highest grade of safety and sealing.

Temperature range:
-40°F to +221°F (-40 °C to +105 °C), or a short time up to +320°F (+160°C)

Content of delivery IP66:
Fitting with pre-assembled universal safety clips (AFN2)
Content of delivery IP68:
Fitting with oval clips (OVN2), conduit and thread seal (NVN3, SVN4)

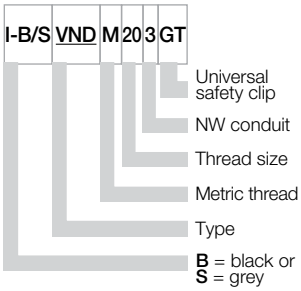
Features:

- high grade formulated polyamide
- excellent impact strength
- self-extinguishing
- free of halogen, phosphor and cadmium

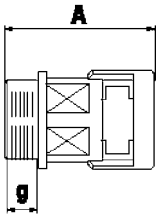
Part No. IP66	Part No. IP68	Thread metric	Fits to conduit size: NW	metric	Thread length [mm]	Overall length [mm]
I-__VND-M12MGT	I-__VNV-M12M	M12 x 1.5	7	10	11.0	34.5
I-__VND-M120GT	I-__VNV-M120	M12 x 1.5	10	12	11.0	36.5
I-__VND-M160GT	I-__VNV-M160	M16 x 1.5	10	12	11.0	36.5
I-__VND-M162GT	I-__VNV-M162	M16 x 1.5	12	16	11.0	39.5
I-__VND-M202GT	I-__VNV-M202	M20 x 1.5	12	16	11.0	39.5
I-__VND-M207GT	I-__VNV-M207	M20 x 1.5	17	20	11.0	47.5
I-__VND-M257GT	I-__VNV-M257	M25 x 1.5	17	20	12.0	48.5
I-__VND-M253GT	I-__VNV-M253	M25 x 1.5	23	25	12.0	52.0
I-__VND-M323GT	I-__VNV-M323	M32 x 1.5	23	25	15.0	55.5
I-__VND-M329GT	I-__VNV-M329	M32 x 1.5	29	32	15.0	56.0
I-__VND-M409GT	I-__VNV-M409	M40 x 1.5	29	32	19.0	60.0
I-__VND-M406GT	I-__VNV-M406	M40 x 1.5	36	40	19.0	72.5
I-__VND-M506GT	I-__VNV-M506	M50 x 1.5	36	40	19.0	72.0
I-__VND-M508GT	I-__VNV-M508	M50 x 1.5	48	50	19.0	72.5
I-__VND-M638GT	I-__VNV-M638	M63 x 1.5	48	50	19.0	72.0

Fill in the blank with either “B” to order black or “S” to order grey*
*Grey part is a special order, call igus® for availability

Part No. structure metric







PMAFIX Connectors VN - straight, PG

These **PMAFIX** connectors are used in a wide range of applications. Together with **PMAFLEX** conduits they offer the highest grade of safety and sealing.

Temperature range:
-40°F to +221°F (-40 °C to +105 °C), or a short time up to +320°F (+160°C)

Content of delivery IP66:
Fitting with pre-assembled universal safety clips (AFN2)
Content of delivery IP68:
Fitting with oval clips (OVN2), conduit and thread seal (NVN3, SVN4)

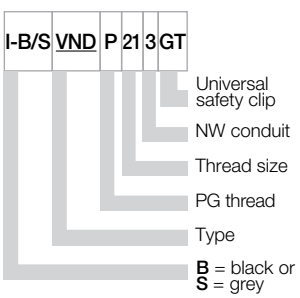
Features:

- high grade formulated polyamide
- excellent impact strength
- self-extinguishing
- free of halogen, phosphor and cadmium

Part No. IP66	Part No. IP68	Thread PG	Fits to conduit size: NW	metric	Thread length [mm]	Overall length [mm]
I-__VND-P07MGT-11	I-__VNV-P07M	7	7	10	11.0	34.5
I-__VND-P070GT-11	I-__VNV-P070	7	10	12	11.0	36.5
I-__VND-P072GT-11	—	7	12	16	11.0	39.0
I-__VND-P09MGT-11	I-__VNV-P09M	9	7	10	11.0	34.5
I-__VND-P090GT-11	I-__VNV-P090	9	10	12	11.0	36.5
I-__VND-P092GT-11	I-__VNV-P092	9	12	16	11.0	39.0
I-__VND-P097GT-11	I-__VNV-P097	9	17	20	11.0	47.5
I-__VND-P11MGT-11	I-__VNV-P11M	11	7	10	11.0	34.5
I-__VND-P110GT-11	I-__VNV-P110	11	10	12	11.0	36.5
I-__VND-P112GT-11	I-__VNV-P112	11	12	16	11.0	39.0
I-__VND-P117GT-11	I-__VNV-P117	11	17	20	11.0	47.5
I-__VND-P13MGT-11	—	13.5	7	10	11.0	34.5
I-__VND-P130GT-11	I-__VNV-P130	13.5	10	12	11.0	36.5
I-__VND-P132GT-11	I-__VNV-P132	13.5	12	16	11.0	39.0
I-__VND-P137GT-11	I-__VNV-P137	13.5	17	20	11.0	47.5
I-__VND-P160GT-11	—	16	10	12	11.0	36.5
I-__VND-P162GT-11	I-__VNV-P162	16	12	16	11.0	39.0
I-__VND-P167GT-11	I-__VNV-P167	16	17	20	11.0	47.5
I-__VND-P163GT-11	I-__VNV-P163	16	23	25	11.0	51.0
I-__VND-P213GT	I-__VNV-P213	21	23	25	12.0	52.0
I-__VND-P299GT	I-__VNV-P299	29	29	32	12.0	53.0
I-__VND-P296GT	I-__VNV-P296	29	36	40	12.0	67.5
I-__VND-P366GT	I-__VNV-P366	36	36	40	13.0	66.0
I-__VND-P368GT	—	36	48	50	13.0	68.5
I-__VND-P428GT	I-__VNV-P428	42	48	50	13.0	68.5
I-__VND-P488GT	I-__VNV-P488	48	48	50	13.0	66.5

Fill in the blank with either “B” to order black or “S” to order grey*
*Grey part is a special order, call igus® for availability

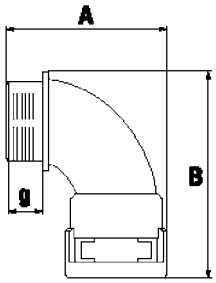
Part No. structure PG



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PMAFIX Connectors - Safety and Sealing Systems





g = Thread length
A x B = External dimensions

PMAFIX Connectors VB - 90° curved elbow, metric & PG

These **PMAFIX** connectors are used in a wide range of applications. Together with **PMAFLEX** conduits they offer the highest grade of safety and sealing.

Temperature range:
-40°F to +221°F (-40 °C to +105 °C), or a short time up to +320°F (+160°C)

Content of delivery IP66:
Fitting with pre-assembled universal safety clips (AFN2)
Content of delivery IP68:
Fitting with oval clips (OVN2), conduit and thread seal (NVN3, SVN4)

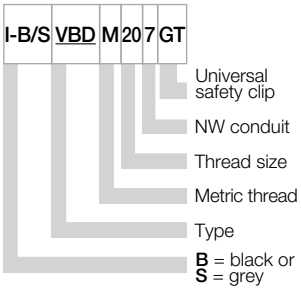
Features:
- high grade formulated polyamide
- excellent impact strength
- self-extinguishing
- free of halogen, phosphor and cadmium

Part No. IP66	Part No. IP68	Thread metric	Fits to conduit size: NW	metric	Thread length [mm]	External dim. [mm]
I-__VBD-M207GT	I-__VBV-M207	M20 x 1.5	17	20	11.0	47.5 x 73.0
I-__VBD-M257GT	I-__VBV-M257	M25 x 1.5	17	20	12.0	48.5 x 76.0
I-__VBD-M253GT	I-__VBV-M253	M25 x 1.5	23	25	12.0	57.5 x 83.0
I-__VBD-M323GT	I-__VBV-M323	M32 x 1.5	23	25	15.0	61.0 x 87.5
I-__VBD-M329GT	I-__VBV-M329	M32 x 1.5	29	32	15.0	70.5 x 93.0
I-__VBD-M409GT	I-__VBV-M409	M40 x 1.5	29	32	19.0	74.5 x 98.5
I-__VBD-M406GT	I-__VBV-M406	M40 x 1.5	36	40	19.0	85.0 x 121.0
I-__VBD-M506GT	I-__VBV-M506	M50 x 1.5	36	40	19.0	85.0 x 125.0
I-__VBD-M508GT	I-__VBV-M508	M50 x 1.5	48	50	19.0	98.5 x 130.0
I-__VBD-M638GT	I-__VBV-M638	M63 x 1.5	48	50	19.0	98.5 x 138.0

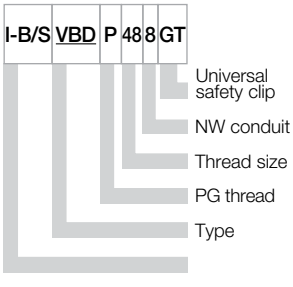
Part No. IP66	Part No. IP68	Thread metric	Fits to conduit size: NW	metric	Thread length [mm]	External dim. [mm]
I-__VBD-P167GT	I-__VBV-P167	16	17	20	11.0	47.4 x 73.0
I-__VBD-P213GT	I-__VBV-P213	21	23	25	12.0	57.5 x 85.0
I-__VBD-P299GT	I-__VBV-P299	29	29	32	12.0	67.5 x 96.0
I-__VBD-P366GT	I-__VBV-P366	36	36	40	13.0	79.0 x 123.0
I-__VBD-P488GT	I-__VBV-P488	48	48	50	13.0	92.5 x 135.0

Fill in the blank with either “B” to order black or “S” to order grey*
*Grey part is a special order, call igus® for availability
For smaller conduit sizes NW 07 to NW 12 appropriate standard elbows of type VW are available

Part No. structure metric



Part No. structure PG



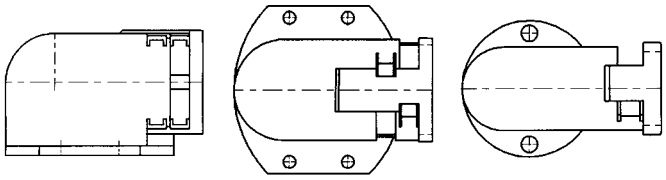
PMAFIX Connectors - Safety and Sealing Systems



PMAFIX Connectors VO - Flange 90°

These **PMAFIX** connectors are used in a wide range of applications. Together with **PMAFLEX** conduits they offer the highest grade of safety and sealing.

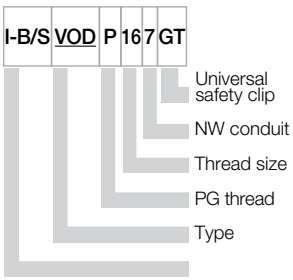
Content of delivery IP66:
Fitting with pre-assembled universal safety clips (AFN2), flange seal (FG04)
Content of delivery IP68:
Fitting with oval clips (OVN2), conduit and thread seal (NVN3, FG04)



Part No. IP66	Part No. IP68	Fits to conduit size: NW	metric	Dimensions width x length x depth	Fixing screws
I-__VOD-P167GT	I-__VOV-P167	17	20	46.0 x 66.0 x 35.5	2 x M5
I-__VOD-P213GT	I-__VOV-P213	23	25	65.5 x 70.0 x 43.0	2 x M6
I-__VOD-P299GT	I-__VOV-P299	29	32	67.0 x 78.0 x 49.5	4 x M6
I-__VOD-P366GT	I-__VOV-P366	36	40	85.0 x 102.0 x 65.5	4 x M6
I-__VOD-P488GT	I-__VOV-P488	48	50	86.0 x 119.0 x 77.5	4 x M6

Fill in the blank with either “B” to order black or “S” to order grey*
*Grey part is a special order, call igus® for availability

Part No. structure PG



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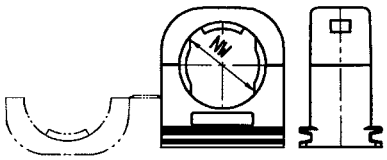
PMA Connectors - Accessories



PMAFIX FH-0 - One-piece system supports

The one-piece **PMACLIP** system support is designed for fixation of **PMAFLEX** conduits. This product can be used in all **machine and installation applications** for easy assembly of the PMA system.

Temperature range:
-40°F to +221°F (-40 °C to +105 °C), or a short time up to +320°F (+160°C)



Features:

- high grade formulated polyamide
- excellent impact strength
- self-extinguishing
- free of halogen, phosphor and cadmium

Part No. black	Part No. grey	Fits to conduit size: NW	metric	Dimensions width x length x depth	Fixing screw
I-BFH-07-0	I-SFH-07-0	7	10	17.0 x 21.5 x 20.0	1 x M4
I-BFH-10-0	I-SFH-10-0	10	12	20.5 x 24.5 x 20.0	1 x M5
I-BFH-12-0	I-SFH-12-0	12	16	24.0 x 27.0 x 20.0	1 x M5
I-BFH-17-0	I-SFH-17-0	17	20	30.0 x 34.0 x 20.0	1 x M6
I-BFH-23-0	I-SFH-23-0	23	25	38.5 x 42.0 x 20.0	1 x M6
I-BFH-29-0	I-SFH-29-0	29	32	45.5 x 48.0 x 20.0	1 x M6
I-BFH-36-0	I-SFH-36-0	36	40	55.5 x 56.0 x 20.0	1 x M6
I-BFH-48-0	I-SFH-48-0	48	50	67.5 x 68.0 x 20.0	1 x M6



PMAFIX VH - System supports

These PMACLIP system supports are designed for support and guidance of PMA conduits with fine or coarse profile and can be used in all machine building and installation applications. The system is safe against turning/movement and offers maximum sucrity with the additional safety clip, variable assembly due to six hole fastening and optimal strain relief due to integrated rib.

Temperature range:
-40°F to +221°F (-40 °C to +105 °C), or a short time up to +320°F (+160°C)

Features:

- high grade formulated polyamide
- excellent impact strength
- self-extinguishing
- free of halogen, phosphor and cadmium

Part No. Support only	Part No. Locking clip	Part No. Complete	Fits to conduit size: NW	metric	Dimensions width x length x depth	Fixing screw
I-BVH-07	BVH-07-020	BVH-07-000	7	10	17.0 x 21.5 x 20.0	1 x M4
I-BVH-10	BVH-10-020	BVH-10-000	10	12	20.5 x 24.5 x 20.0	1 x M5
I-BVH-12	BVH-12-020	BVH-12-000	12	16	24.0 x 27.0 x 20.0	1 x M5
I-BVH-17	BVH-17-020	BVH-17-000	17	20	35.0 x 36.0 x 36.0	6 x M5
I-BVH-23	BVH-23-020	BVH-23-000	23	25	35.0 x 44.0 x 36.0	6 x M5
I-BVH-29	BVH-29-020	BVH-29-000	29	32	46.0 x 52.0 x 40.0	6 x M5
I-BVH-36	BVH-36-020	BVH-36-000	36	40	53.0 x 58.0 x 60.0	6 x M5
I-BVH-48	BVH-48-020	BVH-48-000	48	50	66.0 x 72.0 x 60.0	6 x M5



PMAFIX GPS - One-piece System supports for stacking

The **PMAFIX** system supports for stacking are specially designed for increased mechanical requirements in the traction and heavy machine building industries. The one-piece systems supports offer a clasp for easy pre-mounting and final assembly. Fixation in standard rails type C and strain relief due to gripping around the conduit. In addition these products are partially stackable.

Temperature range:
-40°F to +221°F (-40 °C to +105 °C), or a short time up to +320°F (+160°C)

Features:

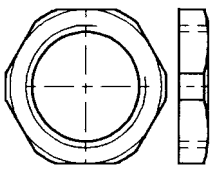
- high grade formulated polyamide
- excellent impact strength
- self-extinguishing
- free of halogen, phosphor and cadmium

Stacking options
The following nominal widths can be combined for stacking:

- NW 17 with NW23
- NW 29 with NW 36
- NW 48 with NW 56

Part No.	Fits to conduit size			Dimensions		
fine profile	NW	metric	DIN-NW	width	height	depth
BGPS-17	17	20	2	70.0	45.0	30.0
BGPS-23	23	25	2	70.0	45.0	30.0
BGPS-29	29	32	3	85.0	60.0	30.0
BGPS-36	36	40	3	85.0	60.0	30.0
BGPS-48	48	50	4	115.0	90.0	30.0
BGPS-56	56	-	4	115.0	90.0	30.0





PMA MN - Hexagonal Lock Nuts, metric & PG

These hexagonal lock nuts are suitable for a wide range of applications. High torque guarantees a safe connection of the system. Made of reinforced polyamide glass fiber

Temperature range:
-40°F to +221°F (-40 °C to +105 °C), or a short time up to +302°F (+150°C)

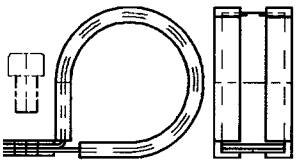
Part No.	Part No.	Fits to thread:	Wrench	Dimensions
black	grey	metric	size	height
I-BMN-M12	I-GMN-M12	M12 x 1.5	17.0	5.0
I-BMN-M16	I-GMN-M16	M16 x 1.5	22.0	5.0
I-BMN-M20	I-GMN-M20	M20 x 1.5	27.0	6.0
I-BMN-M25	I-GMN-M25	M25 x 1.5	32.0	6.0
I-BMN-M32	I-GMN-M32	M32 x 1.5	41.0	7.0
I-BMN-M40	I-GMN-M40	M40 x 1.5	50.0	7.0
I-BMN-M50	I-GMN-M50	M50 x 1.5	60.0	8.0
I-BMN-M63	I-GMN-M63	M63 x 1.5	75.0	8.0

Part No.	Part No.	Fits to thread:	Wrench	Dimensions
black	grey	PG	size	height
I-BMN-07	I-GMN-07	7	19.0	5.0
I-BMN-09	I-GMN-09	9	22.0	5.0
I-BMN-11	I-GMN-11	11	24.0	5.3
I-BMN-13	I-GMN-13	13.5	27.0	6.3
I-BMN-16	I-GMN-16	16	30.0	6.3
I-BMN-21	I-GMN-21	21	36.0	7.0
I-BMN-29	I-GMN-29	29	46.0	7.0
I-BMN-36	I-GMN-36	36	60.0	8.0
I-BMN-48	I-GMN-48	48	70.0	8.0

PMA Connectors - Accessories

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Internet: igus.com
email: sales@igus.com
QuickSpec: igus.com/quickspec





PMA SGB - Tube clamps

These tube clamps are used for the mounting and smooth connection to the PMA conduits in the general machine and installation applications. They are especially suitable for the mounting of static conduits.

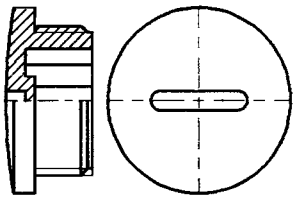
Temperature range: -58°F to +221°F (-50 °C to +105 °C)

Features:

- galvanized steel according to DIN 3016
- Elastomer free of halogen

Part No.	Fits to conduit size NW	Fits to conduit size metric	Dimensions width [mm]	Fixing screw
I-SGB-07	7	10	13.0	1 x M4
I-SGB-09	10	12	13.0	1 x M4
I-SGB-11	12	16	13.0	1 x M4
I-SGB-16	17	20	16.0	1 x M5
I-SGB-21	23	25	16.0	1 x M5
I-SGB-29	29	32	19.0	1 x M6
I-SGB-36	36	40	19.0	1 x M6
I-SGB-48	48	50	19.0	1 x M6





PMA 514 - Plug Screws, metric & PG

These plug screws are suitable for an accurate termination where no thread holes in casing and distribution boxes are needed.

Temperature range: -4°F to +212°F (-20 °C to +100 °C), or a short time up to +302°F (+150°C)

Features:

- product with metric thread: PA-GF
- product with PG thread: PS
- free of halogen, phosphor and cadmium
- IP54

Part No.	Fits to thread metric	Outside Ø [mm]	Total length [mm]	Thread length [mm]
I-514-M12	M12 x 1.5	15.0	8.0	6.0
I-514-M16	M16 x 1.5	20.0	9.0	6.0
I-514-M20	M20 x 1.5	24.0	9.5	6.0
I-514-M25	M25 x 1.5	30.0	11.5	8.0
I-514-M32	M32 x 1.5	37.0	12.0	8.0
I-514-M40	M40 x 1.5	46.0	13.0	8.0
I-514-M50	M50 x 1.5	56.0	15.0	10.0
I-514-M63	M63 x 1.5	70.0	17.0	12.0

Part No.	Fits to thread PG	Outside Ø [mm]	Total length [mm]	Thread length [mm]
I-514-07	7	15.0	8.0	6.0
I-514-09	9	19.0	9.5	6.5
I-514-11	11	22.0	10.0	6.5
I-514-13	13.5	25.0	10.0	6.5
I-514-16	16	27.0	10.0	6.5
I-514-21	21	33.0	12.0	8.0
I-514-29	29	44.0	11.5	8.0
I-514-36	36	55.0	14.0	10.0
I-514-48	48	68.0	16.0	12.0

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PMA Connectors - Accessories

Standard Corrugated Conduits					
Products	**CYL PA6**	**VCS PA6**	**PIS PA12**	**FH**	**VH**
Tube size: metric / width [mm]	Very flexible, medium wall corrugated conduits	Flexible, very heavy corrugated conduits	Highly flexible medium wall corrugated conduits	PMACLIP - one-piece system support	PMACLIP two-piece system support
10 / 07	CYLT-07* –	VCST-07* –	PIST-07* –	*FH-07-0	*VH-17-000
12 / 10	CYLT-10* –	VCST-10* –	PIST-10* –	*FH-10-0	*VH-23-000
16 / 12	CYLT-12* –	VCST-12* –	PIST-12* –	*FH-12-0	*VH-29-000
20 / 17	CYLT-17* –	VCST-17* VCSG-17*	PIST-17* PISG-17*	*FH-17-0	*VH-36-000
25 / 23	CYLT-23* CYLG-23*	– VCSG-23*	PIST-23* PISG-23*	*FH-23-0	*VH-48-000
32 / 29	CYLT-29* CYLG-29*	– VCSG-29*	PIST-29* PISG-29*	*FH-29-0	
40 / 36	CYLT-36* CYLG-36*	– VCSG-36*	PIST-36* PISG-36*	*FH-36-0	
50 / 48	CYLT-48* CYLG-48*	– VCSG-48*	PIST-48* PISG-48*	*FH-48-0	
		VCSG-56*			
		VCSG-70*			
		VCSG-95*			

* = replaced by “B” for black or “S” for gray T or D = fine profile G = coarse profile

Standard Corrugated Conduits					
Products	**CYL PA6**	**VCS PA6**	**PIS PA12**	**FH**	**VH**
Tube size: metric / width [mm]	Very flexible, medium wall corrugated conduits	Flexible, very heavy corrugated conduits	Highly flexible medium wall corrugated conduits	PMACLIP - one-piece system support	PMACLIP two-piece system support
10 / 07	CYLT-07* –	VCST-07* –	PIST-07* –	*FH-07-0	*VH-17-000
12 / 10	CYLT-10* –	VCST-10* –	PIST-10* –	*FH-10-0	*VH-23-000
16 / 12	CYLT-12* –	VCST-12* –	PIST-12* –	*FH-12-0	*VH-29-000
20 / 17	CYLT-17* –	VCST-17* VCSG-17*	PIST-17* PISG-17*	*FH-17-0	*VH-36-000
25 / 23	CYLT-23* CYLG-23*	– VCSG-23*	PIST-23* PISG-23*	*FH-23-0	*VH-48-000
32 / 29	CYLT-29* CYLG-29*	– VCSG-29*	PIST-29* PISG-29*	*FH-29-0	
40 / 36	CYLT-36* CYLG-36*	– VCSG-36*	PIST-36* PISG-36*	*FH-36-0	
50 / 48	CYLT-48* CYLG-48*	– VCSG-48*	PIST-48* PISG-48*	*FH-48-0	
		VCSG-56*			
		VCSG-70*			
		VCSG-95*			

* = replaced by “B” for black or “S” for gray T or D = fine profile G = coarse profile

JUMBO Corrugated Conduits PMAGRIP				
Products	**PIHG PA12**	**BGG**	**BGO**	**SGS**
Tube size: Width [mm]	Highly flexible medium wall corrugated conduits	PMAGRIP-straight	PMAGRIP-90° angle	PMAGRIP-tube clamps
56	PIHG-56*	*GG-56	*GO-56	SGS-56
70	PIHG-70*	*GG-70	*GO-70	SGS-70
95	PIHG-95*	*GG-95	*GO-95	SGS-95
125	PIHG-125*	*GG-125	–	SGS-125

PMA Connectors - Accessories

PMAFIX








Products	IP66 - VN	IP66 - VA	IP66 - VW	IP66 - VB	IP68 - VNZ	MN
Thread Typ	PMAFIX straight	PMAFIX 45° angle	PMAFIX 90° angle	PMAFIX 90° elbow angle	Straight with strain relief	PMA hexagonal lock nuts
M12x1.5	*VND-M12MGT	–	*VWD-M12MGT	–	–	*MN-M12
M12x1.5	*VND-M120GT	*VAD-M120GT	*VWD-M120GT	–	–	*MN-M12
M16x1.5	*VND-M162GT	*VAD-M162GT	*VWD-M162GT	–	*VNZ-M162S	*MN-M16
M20x1.5	*VND-M207GT	*VAD-M207GT	*VWD-M207GT	*VBD-M207GT	*VNZ-M207S	*MN-M20
M25x1.5	*VND-M253GT	*VAD-M253GT	*VWD-M253GT	*VBD-M253GT	*VNZ-M253S	*MN-M25
M32x1.5	*VND-M329GT	*VAD-M329GT	*VWD-M329GT	*VBD-M329GT	*VNZ-M329S	*MN-M32
M40x1.5	*VND-M406GT	*VAD-M406GT	*VWD-M406GT	*VBD-M406GT	*VNZ-M406S	*MN-M40
M50x1.5	*VND-M508GT	*VAD-M508GT	*VWD-M508GT	*VBD-M508GT	*VNZ-M508S	*MN-M50

* = replaced by “B” for black or “S” for gray

PMAFIX







Products		IP66 - VOD	IP66 - VY	IP66 - FT/VT	IP66 - FV	SGB
Tube size: metric	width [mm]	PMAFIX flange 90°	PMAFIX Y-distribution piece	PMAFIX T-distribution piece	PMAFIX V-distribution piece	PMAFIX-tube clamps
10	07	–	–	–	–	SGB-07
12	10	–	*VYD-100707GT	*FTD-101010GT	*FVD-100707GT	SGB-09
16	12	–	*VYD-121010GT	*FTD-121212GT	*FVD-121010GT	SGB-11
20	17	*VOD-P167GT	*VYD-171212GT	*FTD-171717GT	*FVD-171212GT	SGB-16
25	23	*VOD-P213GT	*VYD-231717GT	*VTD-232323GT	*FVD-231717GT	SGB-21
32	29	*VOD-P299GT	*VYD-292323GT	*FTD-292929GT	–	SGB-29
40	36	*VOD-P366GT	*VYD-362929GT	*VTD-363636GT	–	SGB-36
50	48	*VOD-P488GT	*VYD-483636GT	–	–	SGB-48

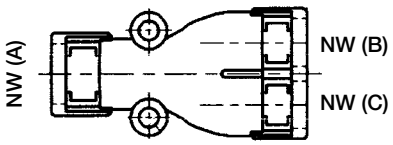
* = replaced by “B” for black or “S” for gray

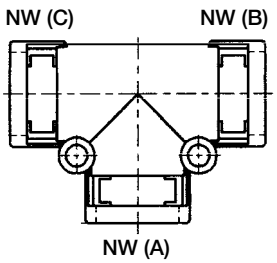
PMAFIX - Order Example

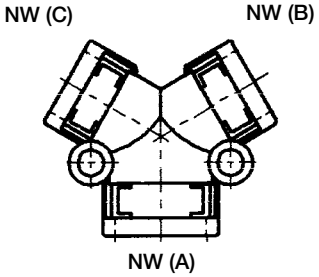
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PMAFIX - Distribution Piece







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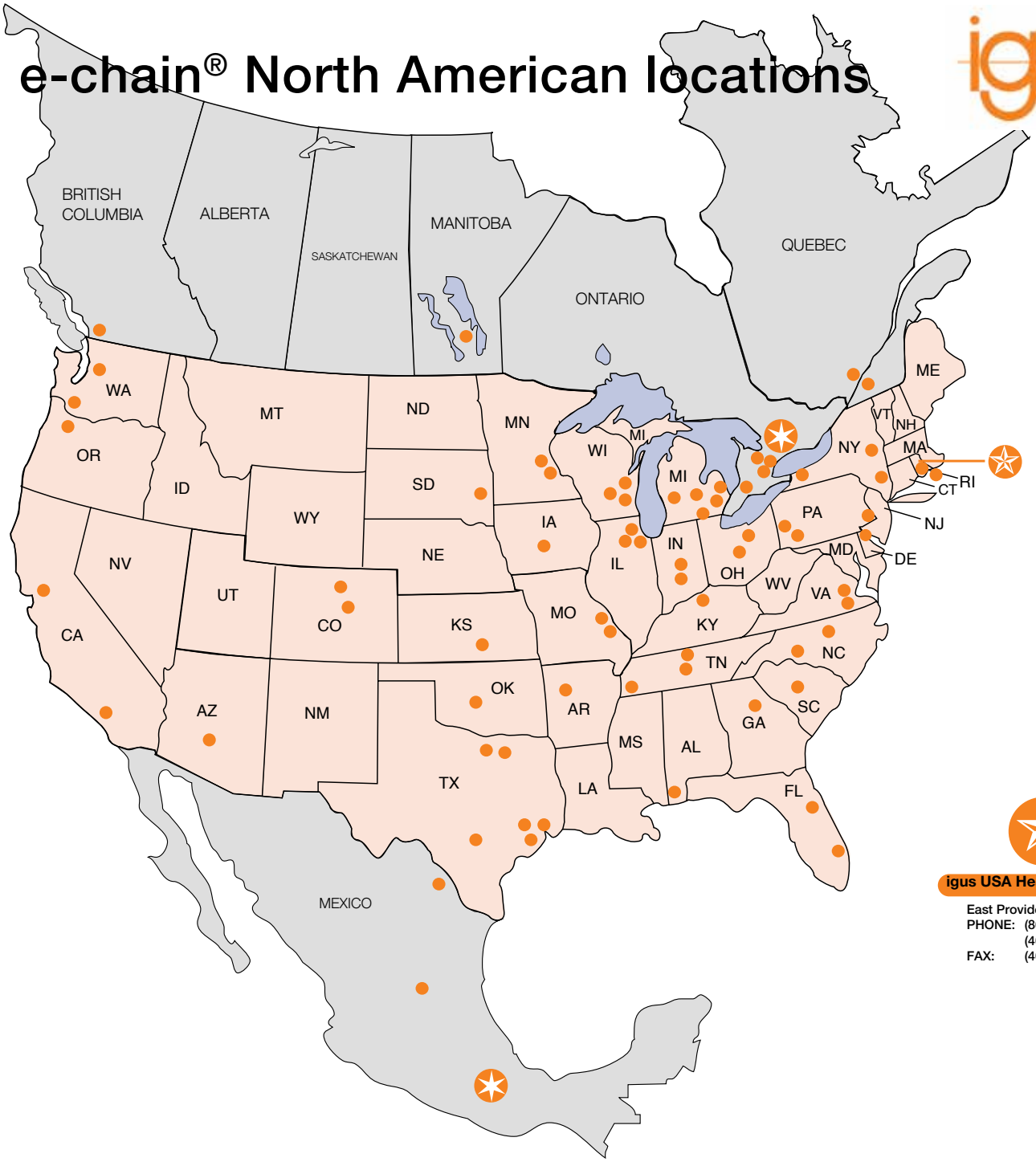








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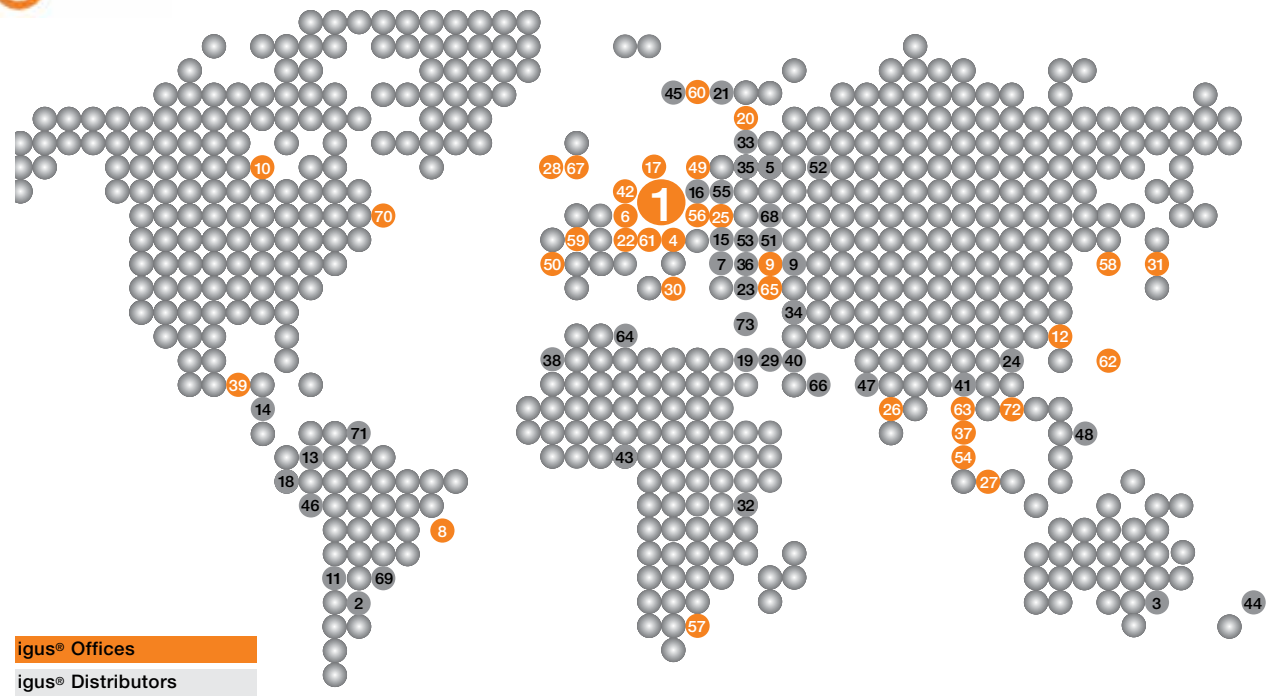
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