

## Objective of test:

### Wear test

A wear test is carried out in the igus® laboratory for the customer. The PPA GF30 shafts manufactured by igus® from the customer's original material are used for this purpose. The load requirements of customer can be seen in Table 1 below.

## Client:

Name: René Achnitz      Team: iglidur® plain bearings      Date: CW7/2014

## Order info:

Customer / No.: internal

Series / No: internal

Installation type:

Customer test:      Yes  No

Development test:      Yes  No

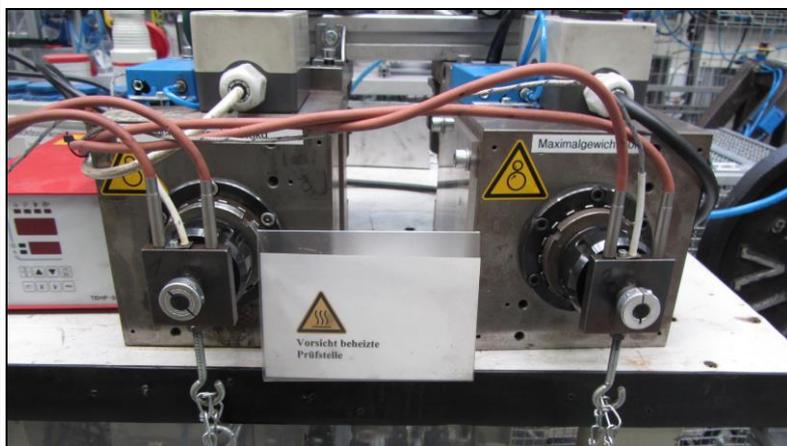
## Technical data

Load: 16 N (misuse force 135 N) / test run with 0.2 MPa	Plain bearing - designation J350SM-1012-10
Motion: Pivoting	Pivoting angle 20°
Velocity: 2 Hz $\approx$ 0.007 m/s	Shaft material PPA GF30
Counter partner: Plastic shafts PPA GF30	Temperature requirements 50% of the time 150°C; 30% of the time 120°C; 20% of the time room temperature
Run time > 800,000 cycles $\approx$ approx. 3 km	

## Experimental setup

**Experimental procedure:** The two test rigs with which the tests were carried out are shown in diagram 1. The used bearing mountings are heatable in order to allow temperature control.

### Diagram 1: Test setup



## Result

### For internal use only

The managing data show the results of the accomplished examinations. With all data it still acts neither around one or more warranties of certain characteristics around one or more warranties regarding the suitability of a product for a certain targeted application, since the examinations on laboratory conditions took place. The warranty of certain characteristics of the products and/or their suitability for a certain application requires writing in the confirmation of order. Finally we recommend user-specific measurements under genuine operating conditions.

**Table 1: Test results**

Plain bearing	Shaft	p in MPa	v in m/s	Pivot angle in °	Temperature [°C]	Distance in km	Wear in µm/km	Weight wear in mg/km	Weight wear in wt.-%/km
iglidur J350	PPA GF30	0.20	0.007	20	49% 150°C 33% 120°C 18% RT	3.0 (845200 cycles)	3.4	1.35	0.28
iglidur J350	PPA GF30	0.20	0.007	20	52% 150°C 34% 120°C 14% RT	3.2 (915900 cycles)	0.0*	2.17	0.45

\*Cannot be measured with micrometer

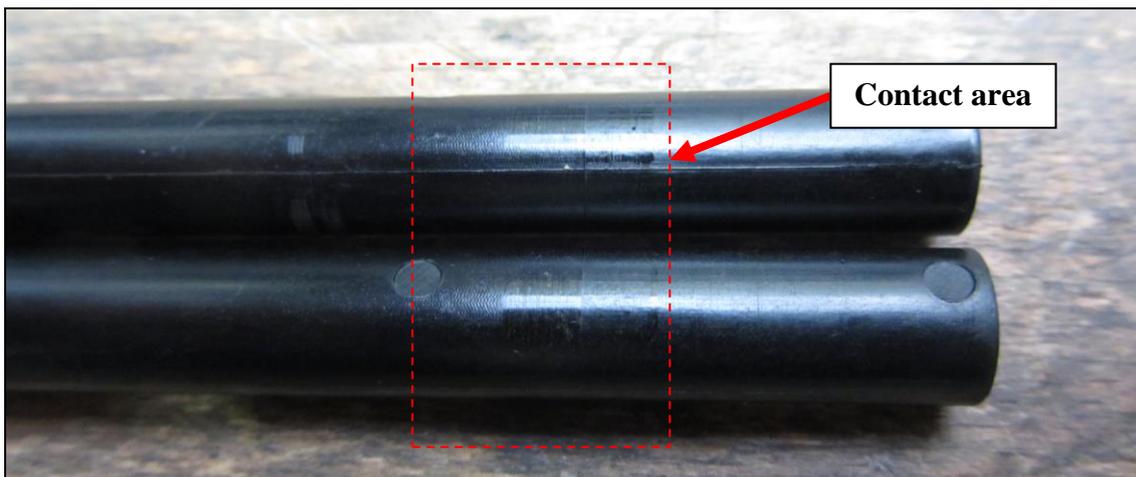
It can be seen in diagram 2 that the bearings hardly have any friction marks.

**Diagram 2: Wear pattern of the bearing**



No measurable diameter reduction could be found on the plastic shaft. The smooth running tracks can be seen in diagram 3.

**Diagram 3: Wear pattern of the shafts**



## Evaluation

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Only very slight wear of the iglidur® J350 bearings could be determined during the test against the PPA GF30 shaft. No wear could be measured on the shaft. The surface has only very slight running tracks.

<b>Name:</b>		<b>Date:</b>	CW07/2014
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