iglidur® test report

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 X No ☐	Development test: Yes ☐ No X

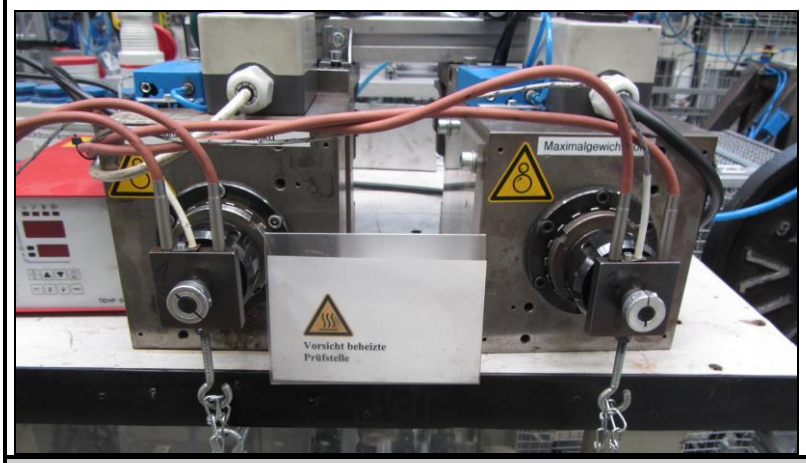
Technical data

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 ≙ 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. 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

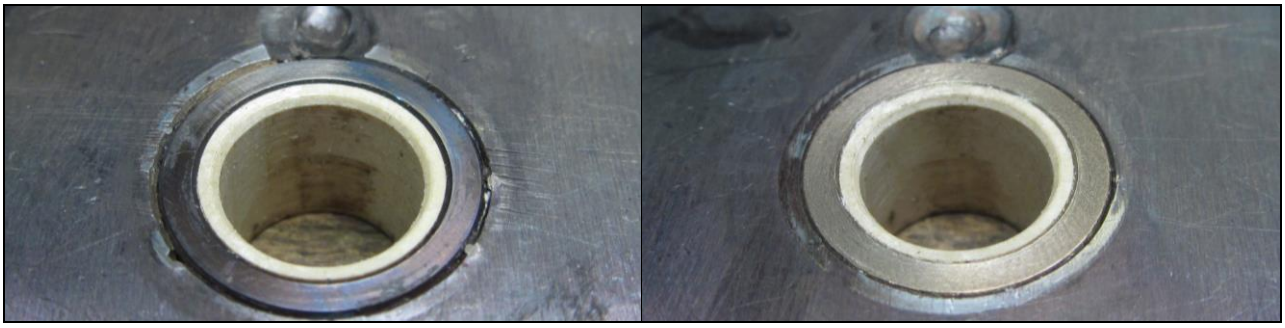
Table 1: Test results

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

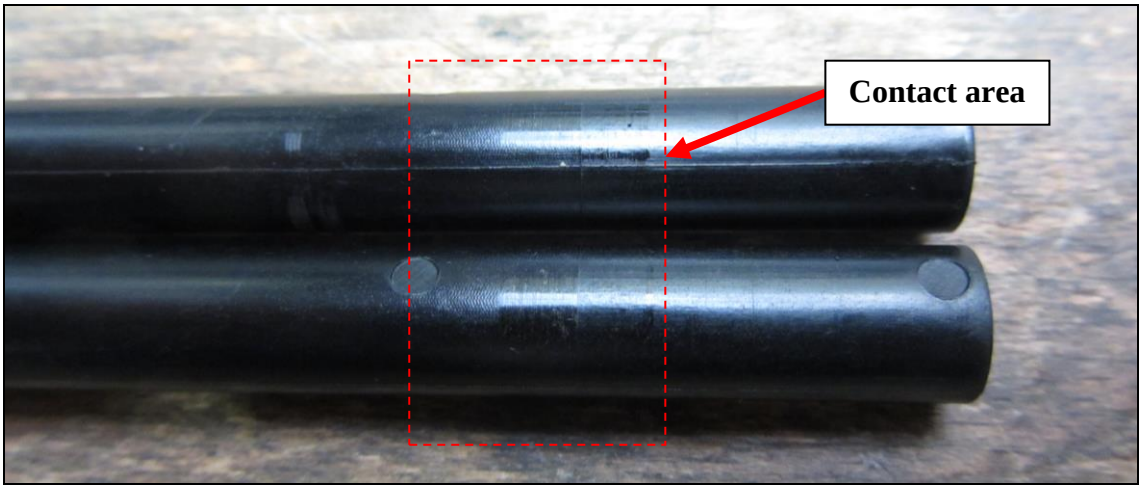
It can be seen in diagram 2 that the bearings hardly have any friction marks.

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.

Name:		**Date:**	CW07/2014