

Objective of test:

Linear short stroke on various shafts

The wear of iglidur® bearings must be tested with linear movements in the short stroke. Among other things, very short linear movements of 5 mm are systematically analysed at high frequency as they occur in actuators and in magnetic technology. The aim of the series of tests is to determine the most wear-resistant iglidur® plain bearing material on different shafts for the linear short stroke. Further objective of the investigation: wear data for the online service life calculation (iglidur® expert).

Client:

Name: Gerhard Baus Team: iglidur® plain bearings Date: CW21/2013

Order info:

Customer / No.: internal

Series / No: internal

Installation type:

Customer test: Yes No X

Development test: Yes X No

Technical data

Force: 1MPa

Run time: 168 hours

Frequency: 600 strokes per minute

Shaft diameter: 10 mm

Total number of strokes: 6.05 million

Stroke length: 5 mm

Tested iglidur® bearings: G, J, M250, W300, X, A160, A180, A181, A200, A290, A350, A500, B, C, C500, D, F, F2, GLW, GV0, H, H2, H370, H4, J2, J200, J260, J3, J350, J4, K, L100, L250, N54, P, P210, Q, Q2, R, T220, UW, UW160, UW500, V400, X6, Z, H1

Counter partner: Hard anodised aluminium, hardened steel shafts (CF53), 304 stainless steel, hardened stainless steel (high grade steel), structural steel (HR carbon steel)

Experimental setup

Experimental procedure: The wear tests were carried out on the short-stroke test stand in the igus® laboratory. There are 10 test rigs available.

Diagram 1: Short stroke test stand

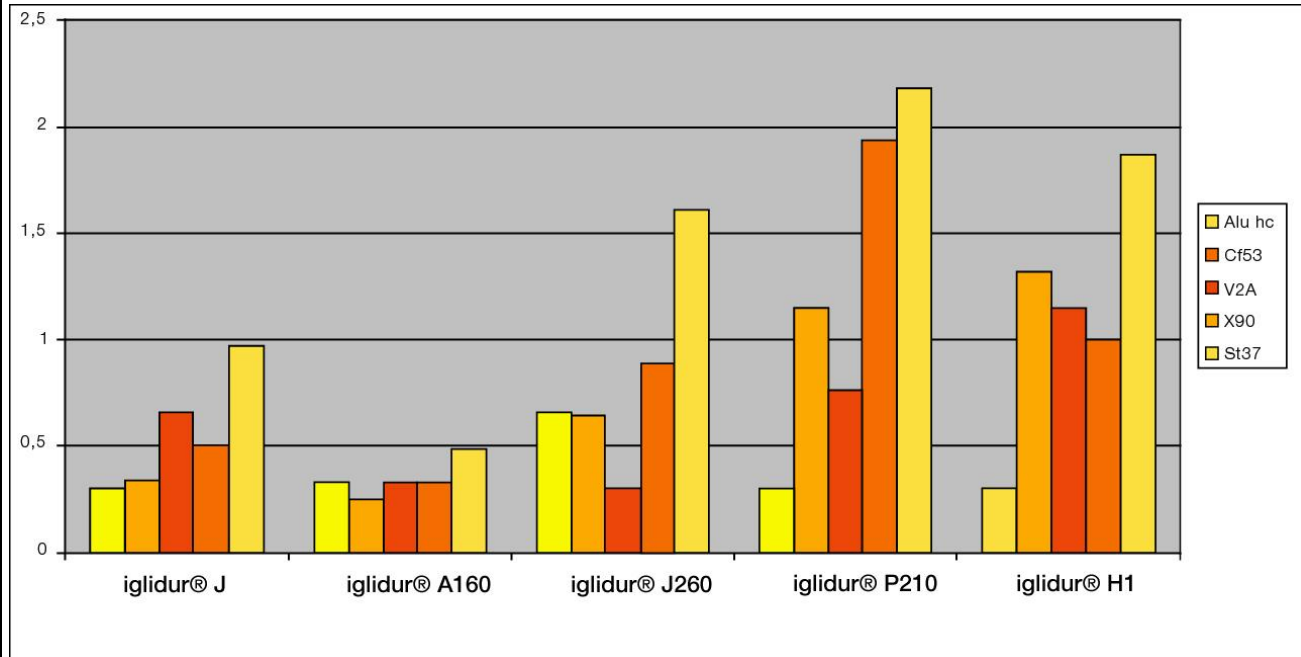


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The managing data show the results of the accomplished examinations. With all data it still acts neither around one or more warranties of certain characteristics around one or more warranties regarding the suitability of a product for a certain targeted 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.

Result

Graph 1: Results of the wear tests



Evaluation

The wear behaviour of each iglidur® material varies on different shafts/counter partners in the wear tests. It is seen that the iglidur® materials are more wear-resistant on shafts made of hard anodised aluminium than on shafts made of structural steel (HR carbon steel). It should be emphasised that there is an iglidur® material for each shaft material that is wear-optimised, and vice versa.

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