



Front-loader test rig from igus tests durability of plastic versus metal

New outdoor test rig directly compares bearings that are subjected to high loads

October 19, 2017 - The igus test laboratory is 29,600 square feet, quite possibly the largest in the industry. Inside, the movements of energy chains, chainflex cables and plastic bearings are continuously assessed. The newest addition to the igus laboratory is a front-loader test rig, made specifically to mimic applications in the agricultural and construction equipment industries that handle high loads. Numerous bearing and shaft combinations are being tested outdoors under conditions mimicking real application challenges. Direct comparisons of plastic and metal bearings are also being tested.

High-load tests assess durability

The current surface pressure of the test rig is between 3191 and 4,279 psi, depending on the bearing point (4,279 psi approximately corresponds to a load of 2,645 lbs on a bearing with a diameter and length of 20 millimeters). In order to find the optimal bearing and shaft combination or the most suitable iglide triboplastic material, the load to be lifted can be increased from 550 to 1,100 pounds. Four cycles are completed per minute, although the resulting speed depends on the pivoting angle of the respective bearing point. The test lasts for about two weeks. Daily visual inspections are also conducted to ensure that the front loader is not damaged if a bearing point failed.

Operation of the test rig can be followed live at <http://www.igus.eu/frontloader-test>, where the bearing and shaft combinations currently being tested are specified in the headline. On the website, the results of completed tests are also available. "These tests make it possible to accurately calculate the service life of the product," said Uwe Sund, industry manager for agricultural technology at igus. "The results of the tests are stored in databases, where the online configurators predict the expected service life of the selected components." Aside from in the test rig, iglide bearings are also proving their strength and durability in wheeled loaders made by the company F.X.S. Sauerburger, where iglide bearings have been in use in the lifting arms for over ten years. A surface pressure of approximately 3,045 psi acts on the iglide

bearings in the lifting arm, which the plastic bearings deal with without issue. The self-lubricating bearings are also impervious to wind, weather, dirt, and other common environmental factors.

Caption:



Picture PM4717-1

The series of heavy-duty tests can be followed at www.igus.eu/frontloader_test. The bearing and shaft combinations currently being tested, as well as the results of completed tests are shown. (Source: igus GmbH)



About igus®

igus® develops industry-leading energy chain® cable carriers, chainflex® continuous-flex cables, drylin® linear bearings and linear guides, iglide® plastic bushings, and igubal® spherical bearings. These seemingly unrelated products are linked together through a belief in making functionally advanced, yet affordable plastic components and assemblies. With plastic bearing experience since 1964, cable carrier experience since 1971 and continuous-flex cables since 1989, igus provides the right solution from over 100,000 products available from stock. No minimum order required. For more information, contact igus at 1-800-521-2747 or visit www.igus.com.

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