

Automotive industry: "There's no need to go to China to reduce costs"

igus at the IAA - numerous new developments in plastic bearing technology

There's hardly a vehicle around today that doesn't have plastic plain bearings in place of metallic, plain and rolling bearings. The application spectrum ranges from simple seating system applications to mechanical applications under a high thermal load in the engine compartment, in gear boxes or in the exhaust systems of modern diesel engines, for example. igus (Cologne), researcher, developer and producer of high-performance polymer plain bearings for automotive applications, presented numerous new products and



Picture PM1805-03: igus GmbH, Cologne
New double flanged bush made of plastic for door and multi-joint hinges.

range extensions at the IAA Motor Show. Automotive Manager, Markus Feth: "There's no need to go to China to reduce costs. Lubricant-free and maintenance-free plastic bearings reduce weight, extend service life and lead to cost savings of up to 70 percent." Thus, for example, customers can replace needle bearings by plastic bushes in the engine compartment. The same is true for applications in brakes, steering, engine compartments and many other important areas on vehicles.

Pedal mechanisms: no rattling noises

One new development from igus and ideal for pedal mechanisms is a pre-stressed bearing bush with axial and radial tolerance compensation of up to 0.3 mm. Insensitive to edge loads, the noiseless bearing "iglidur JVFM Preload" is very suitable for high static loads. "Rattling noises are avoided," says Feth, "and rough tolerated and low-weight pipes or even fibre-filled plastic shafts can be used."

New - tolerance compensation bearing

Another new development by the Cologne-based

company is the tolerance compensation bearing "iglidur Easy Fit". This plastic bearing helps wherever rough tolerances of the housing bore have to be separated from the fit of the interior diameter. Traditional plain bearings always pass tolerances on to the interior diameter - "Easy Fit" compensates housing tolerances of up to +/- 0.2 mm.

Double flanged bush: straightforward assembly

With the new "iglidur MKM" igus is presenting a double flanged bush that is very straightforward to mount, extremely wear-resistant and can absorb high axial forces on both sides. The self-lubricating plastic plain bearing is used in car doors, multi-joint hinges and bonnets, among other automotive applications.

New energy chain for sliding doors

In the area of energy supply chains, igus has developed the new universal energy chain "E1" especially for the automotive industry. Completely pre-harnessed, this chain guarantees the power supply to sliding doors in vans and SUVs even when they are open. Further application areas in cars

include the safe step part under the foot mat or the seat adjustment feature. The new energy supply chain is quickly installed thanks to pre-fitted pushbuttons.

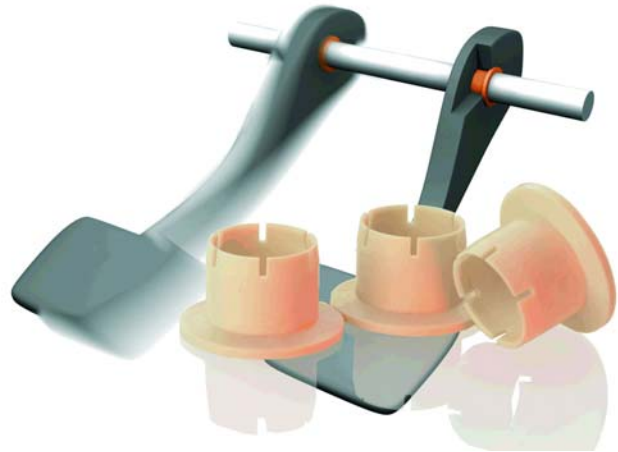
Swivelling test benches, friction coefficient measurement

In the past year, igus tested more than 120 plastic compounds and carried out around 5,000 trials in in-house laboratories. In the meantime, the company can look back on more than 20 years of experience in polymer research. The results of this research are recorded in a comprehensive database which makes it possible to calculate the service life of every plastic plain bearing extremely reliably. Moreover, since 2001 the company has been able to offer engineers and technical designers the possibility of calculating the service life of the bearings (plastic compounds on the basis of fibre-reinforced thermoplastics) using an expert system on CD or online on the Internet.

Ongoing material research:

Thermosetting pins for lighting systems

If there are no test data available for the shaft used, tests are carried out at short notice. Thus, for example, igus developed a new plain bearing material for an application with a thermosetting pin for automotive lighting systems in only eight weeks. Automotive Manager, Markus Feth: "igus develops plastic compounds that are tailor-made to customer requirements. The tribo-system - in other words the bearing and the shaft - is of particular importance."



Picture PM1805-01: igus GmbH, Cologne

No rattling: pre-stressed plastic bearing bush for pedal mechanisms.



Picture PM1805-02: igus GmbH, Cologne

New: tolerance compensation "iglidur Easy Fit".



Picture PM1805-04: igus GmbH, Cologne

The energy chain "E1" is quickly installed for use in seat adjustment applications or for sliding doors in vans and SUVs.



Picture PM1805-05: igus GmbH, Cologne

Swivelling test bench in the igus test lab. 5,000 tests a year are carried out.



Picture PM1805-06: igus GmbH, Cologne

"Save 70 percent of purchasing costs and eliminate any need for lubrication" - igus Automotive Manager Markus Feth underlines the advantages of plastic bushes.

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