

HIRSCHMANN redefines lightweight construction Aluminum-Titanium Spherical Bearings for Aerospace

This innovation redefines the subject light weight construction in aerospace technology: HIRSCHMANN GmbH from Baden-Württemberg in cooperation with Austrian company TEUFELBERGER GmbH has placed on the market extreme light tie rods (stabilizer bars) with aluminum-titanium spherical bearings. This combination of HIRSCHMANN lightweight bearings and TEUFELBERGER tie rods netted of high tensile composite fibers allows a product design offering a large weight reduction at high load capacity.

“Our innovation opens up large possible savings in aerospace and contributes to an improved economy”, as manager Rainer Harter points up.

HIRSCHMANN is a declared specialist for heavy duty rod ends and spherical plain bearings. For more than 60 years the company develops and manufactures trendsetting and practical products which meet highest standards. With the aluminum-titanium spherical plain bearings applied for a patent HIRSCHMANN already made a breakthrough in automotive racing – a discipline, in which weight reduction plays a decisive role as well as in aerospace technology. The lightweight spherical bearings reach the same performance data as standard bearing technology, but at half the weight. Thus, the transfer to aerospace technology was successful.

For this new application HIRSCHMANN found the ideal partner in the Austrian company TEUFELBERGER, who is delivering ultra light Tie Rods as connecting elements between lightweight spherical bearings. For its ultra light Tie Rods the company located in Wels uses the braiding technology, which offers great variance in geometry for components with high requirements along longitudinal axis. After processing the preform is injected with resin and the internal core is suspended in a water quench, so that only the hollow inside and extremely resistant stabilizer bar is remaining.

HIRSCHMANN

SPHERICAL BEARINGS

The end pieces for the aluminum-titanium bearings are combined with patented T-IGEL® connections made by TEUFELBERGER, designed in 3D print technology and design compliant manufactured in titanium. That allows load-dependent product design. A special program calculates the individual load profile and the support of largest forces, the result is the necessary but nevertheless lowest material thickness. The following operation is the additional postprocessing of bearing seat to reach exact fitting. Then the spherical bearings with a defined torque and tilting effect of HIRSCHMANN are pressed into a swaged socket in the outer part and rolled in to guarantee axial protection (lock). To secure the bearing permanently und to guarantee proper functioning a seal is applied.

The tie rods transfer movements and forces optimally, so the gimbal in aircraft construction offers lots of possible applications for the new HIRSCHMANN products – for example in plane doors or to fasten cabin equipment, walls and luggage racks. The tie rods with lightweight spherical bearings are available in variable dimensions for various applications. “On the ILA trade fair we present an innovation, that gives aerospace developers the possibility to reduce weight under high stability criteria”, underlines Rainer Harter.



New: Lightweight Aluminum-Titanium Spherical Bearing Photo: HIRSCHMANN GmbH



New: Ultra lightweight Tie Rod **Photo:** HIRSCHMANN GmbH

Pictures and text for download: www.hirschmanngmbh.com/press



Free of charge. Please send us a copy after publication.

Your contact person for press:

Florian Joos / +49 7402 183 66 / florian.joos@hirschmanngmbh.de

Visit us at the Hannover Fair 2018 Hall 5 Stand D46

Your contact persons:

Ingo Schmidberger / +49 7402 183 41 / ingo.schmidberger@hirschmanngmbh.de

Rainer Harter / +49 7402 183 0 / rainer.harter@hirschmanngmbh.de

About HIRSCHMANN

For more than 60 years HIRSCHMANN develops and manufactures trendsetting products amongst others for vehicle construction, motor sport, aerospace, railed vehicles, mechanical engineering, naval architecture and wind power plants. Core competences lie in the three product lines Rod Ends and Spherical Bearings, Rotary Indexing Tables and Reference Systems. In these sectors HIRSCHMANN has extensive expert knowledge as well as experience for decades and can offer beside a varied standard assortment also customer-specific solutions. The medium-sized enterprise from Baden-Württemberg with sales companies in US and China actually has about 200 employees.