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SCHAEFFLER TECHNOLOGIES GMBH & CO. KG, SCHWEINFURT

Efficiency in stock: For new series of spindle bearings

FAG spindle bearings increase productivity

Four new spindle bearing series from FAG increase the productivity of machine tools. Their suitability for high speeds, robust design and high load carrying capacity increase cutting performance and system availability with excellent accuracy and minimum maintenance requirements.

BAX-Axial bearings: High speeds for main spindles

BAX spindle bearings are high-rigidity axial bearings that feature the suitability for high speeds of main spindle bearings. When used in combination with modern, high-speed cylindrical roller bearings it is possible to create high-speed spindles with high axial and radial load carrying capacity. Since no tilting moments must be supported, the kinematic characteristics under combined load are not impaired, which makes these bearing supports particularly robust.

BAX bearings correspond in their diameter to bearings of size 70 and the possible bore diameters are between 50 mm and 200 mm. BAX bearings have a contact angle of 30° as standard, but are also available with 40° contact angle for even higher rigidity. They are also available as hybrid bearings. BAX bearings are dimensionally compatible with double direction axial angular contact ball bearings.

Overall, this involves an increase in productivity for machine tools due to spindles with

- excellent machining accuracy due to high rigidity,
- very high cutting performance due to high load carrying capacity,
- very high speed capacity.

N..-TR-Cylindrical roller bearings: Thermally robust for motor spindles

N..TR bearings provide excellent compensation of fluctuations in temperature on the non-locating bearing side of motor spindles, even at high speeds. This has been facilitated by the new design of the bearing. The solution lies in the radial elasticity of the outer ring that has two undercuts and a slight recess in the center. As a result, the bearing can undergo “radial respiration” during fluctuations in temperature, even at temperatures of 40 K.

Its clear advantages make the N..TR bearing the ideal non-locating bearing for a wide variety of motor spindle applications:

- secure non-locating bearing function
- compensation of temperature fluctuations

- suitable for very high speeds
- optimum lubricant distribution.

RS – Robust and fast: High-performance series for main spindles

The new high-performance series RS is extremely robust. At the same time, it is suitable for very high speeds. These bearings are fitted with large ball sizes, have a uniform contact angle of 20° and provide lasting cost savings by means of significantly longer tool life and new design options. The bearing supports are less sensitive to operating and environmental influences. RS bearings are offered in a wide range of designs. In addition to steel and hybrid bearings, a special hybrid solution with rings of Cronidur (X-life ultra) is available. The bearings can be designed in open versions as well as sealed and greased versions, or as Direct Lube bearings with lubrication holes and seals on the outer ring.

With RS bearings, it is possible to achieve a significant increase in the productivity of the system, especially through:

- higher speeds
- highly robust design of bearings and increased system availability
- new design options.

PTB – Powerful bearings for driven tools

High-precision turning and milling operations are now carried out in many cases using power tools and typically with short cycle times and in restricted spaces. With the PTB series, specific bearings are now available that have been precisely optimized to meet these requirements in terms of their contact angle, internal design and running accuracy. They increase machine profitability due to increased cutting performance and even higher machining accuracy.

The advantages at a glance:

- high radial and axial load carrying capacity
- high rigidity
- high running accuracy (P4)
- minimal maintenance requirements (especially in the case of the sealed bearing design)
- long life.

The Schaeffler Group's Industrial Division supplies INA and FAG-branded rolling bearing and plain bearing solutions as well as linear and direct drive technology to about 60 different industrial segments via its market-driven global organization and application engineering. The product portfolio includes over 225,000 products, their sizes ranging from miniature bearings with diameters of just a few millimeters, used for example in dental drills, to large bearings having outside diameters of several meters, needed for example in wind turbines.

- Press picture "000169C1.jpg"

The new series of high-speed FAG thrust bearings (BAX) combines high axial load capacity and rigidity with the speed capability of main spindle bearings.

Picture: Schaeffler Group

- Press picture "000169C2.jpg"

For the first time ever, the new thermally robust FAG cylindrical roller bearing N..-TR combines the reliable non-locating bearing function with the suitability for high speeds and varying temperature differences.

Picture: Schaeffler Group

- Press picture "000169C5.jpg"

Thermally robust FAG cylindrical roller bearing: Elastic outer ring

Picture: Schaeffler Group

- Press picture "000169C4.jpg"

High performance spindle bearings RS in Direct Lube design with lubrication holes and seals on the outer ring.

Picture: Schaeffler Group

- Press picture "000169C3.jpg"

PTB bearings for driven tools: High axial load capacity and rigidity enable high material removal rates.

Picture: Schaeffler Group

- Press picture "000169C6.jpg"

PTB bearing application example: Tool holder for milling and drilling.

Picture: Schaeffler Group

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The Schaeffler Group with its product brands INA, LuK and FAG is a leading manufacturer of rolling bearings and linear products as well as a renowned supplier to the automotive industry of high-precision products and systems for engines, transmissions and chassis applications. The group of companies stands for exceptional customer focus, innovative ability and the highest possible level of quality. Sales of over € 9.5 billion were generated at over 180 locations in more than 50 countries in 2010. With around 70,000 employees worldwide, the Schaeffler Group is one of the largest German and European industrial companies in family ownership.

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