

Press Release

Schaeffler at AMB 2024, Hall C2 | Booth 2B31

A market segment with growth potential: Bearings and drive solutions for production automation

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- New YRTA rotary axis bearing series specifically developed for production automation
- Integration of spur gear teeth into rotary axis bearing saves installation space and costs
- Schaeffler's RIB torque motor enables shortest possible cycle times in a rotary indexing machine from Strama-MPS

Experts from the metal working industry will meet again for 5-days at AMB 2024 in Stuttgart. Under the motto "Innovation across every axis", Schaeffler will present its latest innovations for the machine tool sector and offer answers to the many trends in the field of metal-cutting production.

A new rotary axis series for automation

Over half of all machining centers are ordered with automation solutions. Generally, the bearing supports used in the linear and rotary axes of these machines are the same as those installed in the machining area. The requirements that these "handling systems" place on the bearing supports with regard to speeds, loads, and accuracies are usually not as high as those in the machining area. This opens up potential for optimizations. On the basis of the proven rotary axis series YRTC, YRTS, ZKLDF, OZU, and XSU, Schaeffler will bring a new rotary axis bearing series onto the market, which is specially developed for the automation solutions in the machine tool surrounding. "Our aim is to find an optimum solution to the conflicting priorities of function and costs", says Christian Straub, Manager Sector Development Industrial Automation. The new YRTA and YRTAG rotary axis bearing series mark the start of this product campaign. They have the same external dimensions as the YRTC series. Both the radial runout accuracy and the speed capacity are slightly reduced compared to YRTC bearings. As a new feature, YRTAG-series rotary axis bearings combine the rolling bearing with the spur gear of the customer's gearbox. This functional integration saves customers the outlay of aligning a separate gear and significantly reduces the installation space and costs.

Expansion of the linear motor portfolio

The L7-series linear motors are not only an extension to the range but also represent an innovation in technology. These linear motors were developed for

high-precision machine tools with large peak forces up to 24,313 N. While motors with optimized peak force or power loss characteristics are already offered on the market, the L7 linear motors combine both these strengths. They offer an outstanding acceleration capacity, while remaining significantly cooler. As a result, cycle times can be reduced and the high energy reserves ensure high contour accuracy of the workpiece.

Direct drive in a rotary indexing machine from Strama-MPS

Strama-MPS from Straubing, one of the ten largest special machinery manufacturers in Germany, has developed the RT e-cam series, a new generation of rotary indexing machines with a minimum floor area and excellent accessibility to the entire technology and tools. The RIB torque motor from Schaeffler moves the rotary table with a diameter of over 1.5 meters and up to 18 clamping devices one station further in a cycle time of under 0.25 seconds. To achieve this, the engineers adapted the coil windings of the RIB torque motor precisely to this application and designed the cooling system in collaboration with the developer team from Strama-MPS. The highly dynamic rotary indexing table is equipped with an YRTC bearing from Schaeffler and achieves a positioning accuracy of $\pm 3 \mu\text{m}$ thanks to the rigid overall construction.

New growth potential through automation

With roller bearings specifically developed for automation in the machine tool surrounding, Schaeffler has opened up a new market segment and laid the foundation for additional growth. The company is already developing further series for production automation in order to cover the widest possible range of automation solutions and to continue to live up to the claim of "Innovation across every axis" in the future.

Schaeffler Group – We pioneer motion The Schaeffler Group has been driving forward groundbreaking inventions and developments in the field of motion technology for over 75 years. With innovative technologies, products, and services for electric mobility, CO₂-efficient drives, chassis solutions, Industry 4.0, digitalization, and renewable energies, the company is a reliable partner for making motion more efficient, intelligent, and sustainable – over the entire life cycle. The Motion Technology Company manufactures high-precision components and systems for drive train and chassis applications as well as rolling and plain bearing solutions for a large number of industrial applications. The Schaeffler Group generated sales of EUR 16.3 billion in 2023. With around 84,000 employees, Schaeffler is one of the world's largest family-owned companies and one of Germany's most innovative companies.

Performance-optimized YRTA bearing for automation solutions such as pallet changers and tool magazines Image: Schaeffler

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The YRTAG rotary axis bearing replaces the spur gear of the customer's gearbox and reduces the installation space and mounting costs. Image: Schaeffler

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The L7-series of linear motors comprises twelve motor sizes in the four secondary part widths of 100, 150, 200, and 300 mm and the three lengths of 350, 500, and 650 mm. Image: Schaeffler

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A highly dynamic RT e-cam rotary indexing machine from Strama-MPS for machining metal. The rotary table is driven by a RIB-series torque motor, the precision bearing support with high tilting rigidity comprises a YRTC axial-radial roller bearing, both from Schaeffler (Image source: Strama-MPS).

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RIB torque motors are optimized for high efficiency, which means: maximum torque in the available installation space at nominal speed and low power loss. Image: Schaeffler

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