

Press Release

Schaeffler Presents Advanced Solutions for Industrial Robotics at the Automate 2023 Trade Show

DETROIT, MICH., 2023-05-22.

- Schaeffler's Precise Silent Constant (PSC) series planetary gear units that exhibit virtually no torsional backlash
- Heavy-duty (RT1) and standard-duty (RT2) precision strain wave gears from Schaeffler for industrial automation and robotics applications
- Heavy-duty RT1-T strain wave gear with integrated torque sensor system featuring Schaeffler's proprietary sensory coating

[Schaeffler](#), a leading global technology company specializing in automotive and industrial solutions, is exhibiting an array of advanced innovations for the industrial automation and robotics industries under the theme "Driving Smart Manufacturing at Every Axis" at the Automate 2023 trade show, which takes place May 22-25 in Detroit's Huntington Place Convention Center.

Beyond its extensive portfolio of linear and rolling bearings for which the company has long been respected as a principal supplier to industrial robotics manufacturers, Schaeffler has also established itself within the automation industry as a trusted partner for system components, precision gearboxes, pivot bearing supports, drive motors, sensors as well as the robotic 7th axis.

"For several decades, Schaeffler has provided a comprehensive range of solutions for industrial robotics based on conventional bearing components and specialized products. With our recent acquisition of Melior Motion and the development of our strain wave gearbox with its integrated torque measuring system, Schaeffler is now further expanding its offerings for the robotics sector," said Ulrich (Uli) Mayr, vice president of industrial automation for Schaeffler in the Americas. "This is an exciting time to be at Automate, and we are proud to showcase our technological expertise and systems know-how through our ever-increasing portfolio of automation solutions," said Mayr.

As companies increasingly rely on collaborative robots (cobots) to support factory-level tasks and compensate for labor shortages, Schaeffler will be showcasing its growing lineup of high-precision planetary gearboxes and strain wave gear sets – vital components inside robotic joints – at Automate 2023.

PSC-Series Precision Planetary Gear Units

Schaeffler's new PSC-series planetary gear units represent the new benchmark for ultra-precision gear sets used in a wide range of industrial automation and robotics applications. PSC stands for Precise (the highest precision available on the market), Silent (the lowest noise level), and Constant (a constant level of precision during the application period). Whereas traditional gear drives exhibit torsional backlash that only increases with wear, Schaeffler's PSC gear units feature a patented tooth system that reduces torsional backlash to less than 0.1 angular minutes – a value that remains constant throughout the device's entire operating life of 20,000 hours.

RT1 and RT2 Precision Strain Wave Gear Sets

Schaeffler has been producing strain wave gears for the automotive market for many years. By transferring its engineering and manufacturing technologies to the industrial sector, Schaeffler is now also offering two series of precision strain wave gears for industrial automation and lightweight robotics applications.

Encompassing five sizes, Schaeffler's standard-duty RT2-series strain wave gears cover approximately 80% of normal cobot applications. Other variants are available in a variety of configurations – including versions with a hollow shaft and for direct mounting on the motor shaft, as a closed unit with seals, and as a component set.

Designed for high-torque applications up to 900 Nm, Schaeffler's heavy-duty RT1 gear units are currently offered in four sizes. Thanks to their low weight and compact design, they are ideally suited for use in cobots. The RT1's backlash-free and wear-resistant gear teeth ensure excellent positional accuracies throughout the unit's entire operating life.

RT1-T Precision Strain Wave Gear with Integrated Sensor

In the automation field, the ability to measure dynamic forces and torques is key to controlling the quality of machine processes such as tracking a robotic arm. Schaeffler's heavy-duty RT1-T precision strain wave gears feature integrated microelectronics, embedded AI, and the company's proprietary Sensotect® sensory coating that measures right at the load point with highest sensitivity and accuracy without reducing mechanical stiffness.

XZU-Series Angular Contact Needle Roller Bearings

RT1- and RT2-series strain wave gears incorporate Schaeffler's proprietary double-row XZU-series angular contact needle roller bearings that deliver up to 30% more tilting rigidity and 20% less friction vs. crossed roller bearings, which are typically used in gear set applications.

About AUTOMATE

Featuring the latest in cutting-edge robotics, vision, artificial intelligence, motion control and more, Automate is North America's leading industrial automation showcase. Produced by the Association for Advancing Automation (A3), Automate delivers the latest innovations in manufacturing automation technology from more than 600 leading exhibitors.

Schaeffler is located in **booth #841** in Detroit's Huntington Place Convention Center.

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 15.8 billion in 2022. With around 84,000 employees, the Schaeffler Group is one of the world's largest family-owned companies. With more than 1,250 patent applications in 2022, Schaeffler is Germany's fourth most innovative company according to the DPMA (German Patent and Trademark Office).

Schaeffler PSC-series precision planetary gear unit (Image: Schaeffler)

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Schaeffler RT1 precision strain wave gear unit (Image: Schaeffler)

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RT2 precision strain wave gear set (Image: Schaeffler)

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RT1-T precision strain wave gear with integrated torque sensor system (Image: Schaeffler)

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