

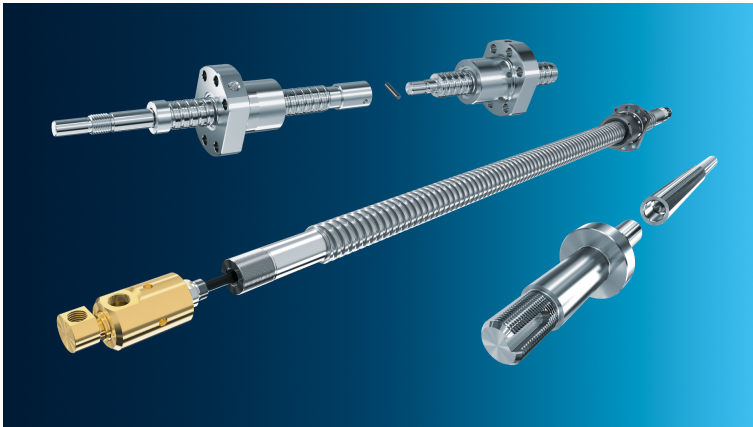
PRESS INFORMATION

When standard solutions don't fit the bill: screw drives for demanding industry applications

Manuela Kessler | 13.07.2026 | Lohr am Main / Germany | PI 027/26

Bosch Rexroth combines ball and planetary screw assemblies with custom modifications for machine tools, robotics, medical technology, semiconductor manufacturing, and intralogistics

- Efficient solutions from customer-specific screws, nuts, coatings, and pre-assembled components
- Optimized for specific requirements and environmental conditions
- Configuration, assembly, procurement, and service from a single source



Standard components combined with application expertise: customized screw drives from Bosch Rexroth. (Image source: Bosch Rexroth AG)

In robotics, medical technology, semiconductor manufacturing, machine tools and intralogistics – the need for specific screw drives is growing. In some instances, the focus is on dynamics, compactness, or safety, while in others it is on corrosion protection, temperature management, or vacuum suitability. Bosch Rexroth simplifies industry-specific machinery and equipment manufacture by combining the wide range of standard ball and planetary screw assemblies with factory customizations.

In many applications, shorter cycle times, greater precision, compact installation space, and demanding environmental conditions all need to be met simultaneously – and all under the pressure of time and cost.

Bosch Rexroth offers tailor-made solutions for this based on standardized components, directly from the factory. The range includes coatings, special lengths, and machining according to customer specifications, as well as combined screws, special nuts, and pre-assembled units – thereby saving users the trouble of having to develop complex special designs.

This service means that machinery and equipment manufacturers receive practical solutions significantly more quickly and for a predictable cost – including CAD data and comprehensive documentation. Examples of such solutions include:

For **machine tools** and other high-precision applications, Bosch Rexroth offers temperature-controllable screws with deep-hole bores and rotary bushings to enable the integration of cooling lines. The retrofittable temperature control function means higher process stability and part accuracy can be achieved from the first workpiece. Bosch Rexroth reduces the engineering and assembly work and costs of **servo presses** for sheet metal forming by providing complete solutions with ready-mounted end bearings.

Robotics requires compact, dynamic solutions that can be easily integrated into mechanical systems. For robot welding tongs, for example, Bosch Rexroth implements special nuts with

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external toothing for the pinion drive. This allows for direct consideration of customer-specific motion and installation situations.

In **medical technology**, fall protection of components is an important requirement to ensure patient safety. In the case of X-ray tubes, CT scanners, and other equipment, arrestor nuts ensure a reliable hold in the event of an emergency.

In **semiconductor manufacturing**, screw drives work under demanding environmental conditions. Special coatings, materials, and nuts with deflection systems enable use at high temperatures, in vacuums, as well as in highly dynamic applications. The **optical industry** also uses matt silver or matt black chrome-plated versions to prevent unwanted light reflections.

Bosch Rexroth responds to special requirements in the field of **intralogistics** with a combination of right-hand and left-hand threads. This modified screw solution is used in forklifts and automated guided vehicles to adjust the forks to accommodate different pallet types.

This approach of adding advanced properties or features to standard solutions allows even the most complex industry requirements to be implemented efficiently and economically. Digital tools such as the Linear Motion Technology Selector further accelerate the selection and design process, and create an outstanding basis for customer-specific modifications.

Basic Information Bosch Rexroth

As one of the world's leading suppliers of drive and control technologies, Bosch Rexroth ensures efficient, powerful and safe movement in machines and systems of any size. The company bundles global application experience in the market segments of Mobile and Industrial Applications as well as Factory Automation. With its intelligent components, customized system solutions, engineering and services, Bosch Rexroth is creating the necessary environment for fully connected applications. Bosch Rexroth offers its customers hydraulics, electric drive and control technology, gear technology and linear motion and assembly technology, including software and interfaces to the Internet of Things. With locations in over 80 countries, around 31,900 associates generated sales revenue of 6.5 billion euros in 2025.

Basic Information Bosch

The Bosch Group is a leading global supplier of technology and services. It employs roughly 413,000 associates worldwide (as of December 31, 2025). The company generated sales of 91 billion euros in 2025. Its operations are divided into four business sectors: Mobility, Industrial Technology, Consumer Goods, and Energy and Building Technology. With its business activities, the company aims to use technology to help shape universal trends such as automation, digitalization, electrification, and artificial intelligence. In this context, Bosch's broad diversification across regions and industries strengthens its innovativeness and robustness. Bosch uses its proven expertise in hardware, software, and services to offer customers cross-domain solutions from a single source. It also applies its expertise in connectivity and artificial intelligence in order to develop and manufacture intelligent, user-friendly, and sustainable products. With technology that is "Invented for life," Bosch wants to help improve quality of life and conserve natural resources. The Bosch Group comprises Robert Bosch GmbH and its roughly 500 subsidiary and regional companies in over 60 countries. Including sales and service partners, Bosch's global manufacturing, engineering, and sales network covers nearly every country in the world. Bosch's innovative strength is key to the company's further development. Bosch employs some 82,000 associates in research and development.

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