

PRESS INFORMATION

New linear axes: easy implementation of heavy-lifting applications

Manuela Kessler | 22.10.2024 | Lohr am Main / Germany | PI 036/24

Compact modules from Bosch Rexroth open up new applications in the heavy-lifting sector

- Move payloads of up to 250 kg highly dynamically and position them precisely
- Compact design, digital engineering, rapid commissioning
- Easy integration into multi-axis systems and linear robots



Compact, fast and precise: The new compact modules of the size 280 move loads of up to 250 kg over distances of up to 5.5 m. (Image source: Bosch Rexroth AG)

The continuous optimization of industrial manufacturing processes requires dynamic and repeatable linear axes that take up little space. For fast handling and accurate positioning of large masses of up to 250 kg, for uses such as battery modules or workpieces, Bosch Rexroth is expanding the compact module family to include a size of 280. The solutions available with a ball screw assembly (CKK) or belt drive (CKR) shorten the engineering of single axes, multi-axis systems and Cartesian robots. Automation packages with motor, drive controller, control, and optional operating software speed up commissioning and make operation easier.

With the new size 280 compact modules, innovative solutions for the heavy-lifting sector are available to mechanical and plant engineering. Compared to the largest version to date, the 200, performance (more weight with the same dynamics) increases by about 56 percent. This makes it even easier and faster to implement many applications, such as the automatic assembly of machine tools, furniture production or the high-performance assembly of battery modules, which also depends on speed and repeatability.

In order to meet the highest demands in terms of power density, dynamics, and precision, Bosch Rexroth has increased the inherent strength of the light aluminum frame as well as the rigidity of the carriage. As a result, payloads of up to 250 kg can be moved over a length of 5,500 mm. The high acceleration of up to 5 g and a maximum speed of 5 m/s create optimum conditions for short cycle times and at the same time very high degrees of precision.

Thanks to suitable drive and automation packages including optionally preinstalled operating software, implementation is even faster. In this way, engineering and commissioning, including visual sequence programming, can be reduced to a minimum of the time previously required, and new challenges can be responded to more quickly.

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In addition, Bosch Rexroth provides support in the customized combination with other linear axes to create multi-axis systems right up to complete linear robots. Following the market launch of the single-axis system, the new size will also be integrated into the e-tool chain for multi-axis systems. In addition, the compact solution principle is to be extended to other applications, thereby continuously expanding the range of uses.

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 33,800 associates generated sales revenue of 7.6 billion euros in 2023.

Basic Information Bosch

The Bosch Group is a leading global supplier of technology and services. It employs roughly 429,000 associates worldwide (as of December 31, 2023). The company generated sales of 91.6 billion euros in 2023. 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, electrification, digitalization, connectivity, and an orientation to sustainability. In this context, Bosch's broad diversification across regions and industries strengthens its innovativeness and robustness. Bosch uses its proven expertise in sensor technology, 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 user-friendly, 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 470 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. At 136 locations across the globe, Bosch employs some 90,000 associates in research and development, of which nearly 48,000 are software engineers.

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