

PRESS INFORMATION

At “Schweißen & Schneiden 2023”, Bosch Rexroth will present the control unit for resistance welding of the future

Manuela Kessler | 01.08.2023 | Lohr am Main | PI 042/23

- Precision resistance welding with the welding control PRC7000 from Bosch Rexroth
- New material combinations, a shortage of skilled workers and increasing requirements as regards the process
- More quality and productivity, IoT capability and energy efficiency



With the welding control PRC7000, Bosch Rexroth allows precision resistance spot welding. (Image source: Bosch Rexroth AG)

Welding processes have become more demanding in many respects. With difficult material combinations, higher expectations as regards quality and productivity as well as new system technologies, welding must be carried out to ever higher standards. And while demands are increasing, there are fewer and fewer skilled workers as well. In light of these challenges, Bosch Rexroth has developed the welding control PRC7000. It allows precision spot welding and offers functions to modernize and simplify processes. At the “Schweißen & Schneiden 2023” trade fair from September 11 to 15, 2023 in Essen, Bosch Rexroth will demonstrate the benefits of the new system at booth 3A67 in hall 3.

With continuing trends such as lightweight construction, resistance spot welding is constantly faced with new challenges as regards process stability and productivity. At the same time, the need for IoT functions, energy-efficient solutions and intuitive operating operations is growing.

“In the automotive sector, new materials – including combinations of these materials – are being used more and more frequently. These include lightweight materials such as aluminum and high-strength steels. These require special welding techniques in order to achieve optimum results. If combinations of materials are welded, it is particularly important to be able to set the right parameters for each material,” explained Timm Bartmann, Head of Sales and Product

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Management Process Welding at Bosch Rexroth. “These and other developments require specialist knowledge, advanced welding technologies and ongoing process development.”

The welding control PRC7000 closes this gap. In terms of how it works, it is as easy as pressing a play button. The control unit helps companies to find the right welding parameters, to transition to adaptive control and to automate the search for optimum monitoring limits. This intuitive operability makes work easier and reduces dependence on highly specialized knowledge.

Productivity and quality spot on

“The complexity of the processes is increasing, while the demands as regards quality, to ensure maximum crash safety for example, are growing. On top of this, sectors such as the automotive industry are extremely competitive markets. Manufacturers must reduce their production costs and manufacture products more efficiently in order to be able to offer competitive prices,” explained Timm Bartmann.

The resistance welding control PRC7000 from Bosch Rexroth therefore follows modern approaches with AI-assisted process optimization, quick commissioning, advanced process controllers and quality monitoring systems. As a result, it can play a key role in improving productivity and quality in production.

With functions such as “Adaptive Position Regulation”, the welding process can also be controlled precisely in order to obtain welding spots of higher quality. This approach combines electric and mechanical process variables and allows much improved welding quality for various materials and material combinations.

Greater connectivity and energy efficiency

Adaptable, connective systems are indispensable for modern applications in industry. The PRC7000 therefore has IoT capabilities and allows the use of data for predictive maintenance or process optimization with the help of machine learning. Bosch Rexroth provides the IoT Connector for this. It allows the data collected to be further processed and used for automatic logging for quality assurance purposes. The company also offers the “Weld Spot Analytics – Insights” solution which allows data to be used effectively and inefficiencies to be identified and rectified quickly.

The welding control also saves energy. “Demand for energy-saving systems is increasing in all areas of automotive production and thus in body construction too as a way of reducing costs and helping to protect the environment. The PRC7000 was deliberately designed to be energy-efficient. In standby mode for example, it uses around 60 percent less energy than the previous generation,” said Timm Bartmann.

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In addition to the standard AC (alternating current) version, the control unit is also available in a DC (direct current) version for optimum power consumption.

Visitors to the Bosch Rexroth stand (Hall 3, booth 3A67) at “Schweißen & Schneiden 2023” can find out more about the welding control PRC7000 and its possible uses in the automotive industry and other sectors.

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 more than 32,000 associates generated sales revenue of around 7.0 billion euros in 2022.

Basic Information Bosch

The Bosch Group is a leading global supplier of technology and services. It employs roughly 421,000 associates worldwide (as of December 31, 2022). The company generated sales of 88.2 billion euros in 2022. Its operations are divided into four business sectors: Mobility, Industrial Technology, Consumer Goods, and Energy and Building Technology. As a leading IoT provider, Bosch offers innovative solutions for smart homes, Industry 4.0, and connected mobility. Bosch is pursuing a vision of mobility that is sustainable, safe, and exciting. It uses its expertise in sensor technology, software, and services, as well as its own IoT cloud, to offer its customers connected, cross-domain solutions from a single source. The Bosch Group’s strategic objective is to facilitate connected living with products and solutions that either contain artificial intelligence (AI) or have been developed or manufactured with its help. Bosch improves quality of life worldwide with products and services that are innovative and spark enthusiasm. In short, Bosch creates technology that is “Invented for life.” 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. The basis for the company’s future growth is its innovative strength. At 136 locations across the globe, Bosch employs some 85,500 associates in research and development, of which nearly 44,000 are software engineers.

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