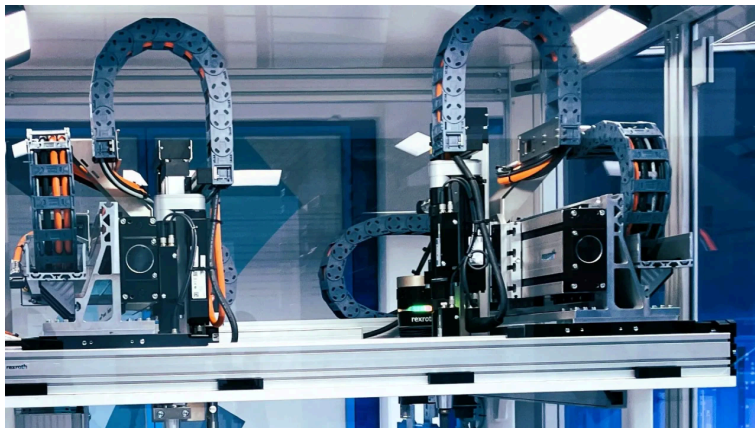


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Battery production in the gigafactory: Bosch Rexroth presents solution portfolio at the Hannover Messe

Manuela Kessler | 12.03.2025 | Lohr am Main / Germany | PI 013/25

- Throughput maximization: several thousand round cells per hour
- Dynamic transport from one kilogram to over three tons
- Scalable automation portfolio for the entire value stream



At the Hannover Messe, Bosch Rexroth shows how complex value streams and end-to-end material flow solutions can be realized with maximum dynamics. (Image source: Bosch Rexroth AG)

With a combination of real exhibits and a virtual gigafactory, Bosch Rexroth is showcasing selected process steps of high-performance battery production at the Hannover Messe. Under the premise of the highest possible throughput, the complex value streams can be experienced using the example of round cell module assembly: from the virtual warehouse, cell preparation, module and pack assembly through to transportation and end-of-line testing.

Battery production is considered a key technology for the energy transition. Manufacturers will only be able to meet the high demand in the future by rapidly scaling up battery production capacities. To achieve this, production must become more efficient, more cost-effective and more sustainable. At the Hannover Messe, Bosch Rexroth will be presenting real material flow solutions along the entire value stream to show how complex value streams and material movements can be realized with maximum dynamics.

One solution for cell handling and transportation combines the VarioFlow chain conveyor system with a spiral conveyor. The round cells are first delivered by the autonomous mobile robot (AMR) ACTIVE Shuttle and then placed on the conveyor by a cobot from Kassow Robots. The spiral conveyor makes it possible to distribute various tasks, such as sorting, over several levels up to a height of 3.5 meters and thus create important buffers and storage areas above the transport routes of the actual production.

With speeds of up to 5 m/s, the linear high-speed motion system ctrlX FLOWHS can be moved and controlled individually for on-the-fly testing of individual round cells or for applying

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insulation, among other things. The system is based on the control unit ctrlX CORE and therefore benefits from the openness and safety of the automation system ctrlX AUTOMATION.

Bosch Rexroth offers further solutions for module and pack assembly - including transportation, insertion, gluing of the cells and screwing of the cover. In a solution presented at the trade fair, Bosch Rexroth shows how two linear robots apply the lid and screw it on automatically. Thanks to the high precision of the Rexroth linear axes, positioning does not require any additional measuring systems such as image processing, making assembly faster and more economical.

The TS 7 plus heavy-duty transfer system enables the safe, highly dynamic transport of battery packs weighing up to over three tons on workpiece carriers along the entire battery pack assembly line. Thanks to its modular design and low maintenance requirements, the roller conveyor can be set up quickly and can also be quickly adapted in the future for product adjustments or new and revised production processes.

Together with a cobot from Kassow Robots, manual assembly workstations and a battery discharge solution, the TS 7 transfer system is also part of a battery recycling solution at the trade fair: In Deutsche Messe AG's "Battery Use Case" exhibitor project (hall 6, booth D62), companies will be jointly showcasing their solution portfolio for the production and recycling of vehicle batteries.

"With our mix of solution examples and virtual gigafactory, we will be demonstrating at our booth how battery production can be achieved faster and more economically with innovative solutions," comments Dr. Andreas Letsch, Head of Center of Competence Battery at Bosch Rexroth. "We support machine and system manufacturers along the entire value stream with the broadest product and solution portfolio on the market, including clean room designs, a future-proof automation platform and transport solutions that can be combined as required from a single source."

Bosch Rexroth at the Hannover Messe: Hall 6, Booth D26

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 417,900 associates worldwide (as of December 31, 2024). According to preliminary figures, the company generated sales of 90.5 billion euros in 2024. Its operations are divided into

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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 86,900 associates in research and development, of which nearly 48,000 are software engineers.

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