

Factsheet

Technology Area Linear Motion and Assembly Technologies

Bosch Rexroth. The Drive & Control Company

Bosch Rexroth is one of the leading specialists worldwide in drive and control technology. Under the brand name Rexroth, the company supplies tailored solutions for driving, controlling and moving. Bosch Rexroth is a partner for industrial applications and factory automation, mobile applications and using renewable energies. The Drive & Control Company is the supplier of choice to more than 500,000 customers for high quality electrical, hydraulic, mechatronic and pneumatic components and systems. In more than 80 countries Rexroth is a reliable partner for its customers, supporting their production of safe and efficient machines and thereby contributing to the economical use of natural resources.

Multi-disciplinary know-how is the basis for innovative solutions that are used as components or customized systems. Because Rexroth offers a complete range of drives and controls, advice to customers is free of technological bias, resulting in the most appropriate solution for the task at hand. Rexroth technologies are used in all branches of industry. As system-level partner, service provider and supplier, Rexroth has a fund of knowledge in more than 30 industrial sectors. Comprehensive service offerings fortify Rexroth's leading position worldwide as a partner for machine and system manufacturers.

In 2008, Bosch Rexroth achieved sales of around 5.9 billion Euro with 35,300 employees. The company was created in 2001 through the merger of Bosch Automationstechnik and Mannesmann Rexroth. The entrepreneurial tradition of both companies continues under one roof. In the case of the Rexroth family this extends back to 1795 and in the case of the Bosch family back to 1886.

1. Short Profile of Linear Motion and Assembly Technologies

Linear motion technology products are used wherever precision and high load-bearing capacities are required in automated production. They form the decisive interface between stationary and moving machine parts, for example in the shape of profiled rail systems, linear bushings, ball screw assemblies and linear modules. Assembly technology offers basic mechanical elements, add-on modules for manual production systems, assembly transfer systems, as well as flexible chain conveyor systems for component transport between machine tools, in assembly or in the field of packaging. Rexroth offers a complete product and system program in linear motion and assembly technologies.

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Rexroth's camoLINE, the new Cartesian Motion Building System, combines perfectly adapted linear motion systems and motors with pneumatic mini slides, rotary compact modules and grippers. Through its innovative connection technology with positive-locking connectors, the building system achieves a level of accuracy in the supporting structure that could previously only be obtained with additional and expensive custom-fabricated parts.

The Rexroth modular system Desktop Factory also proves to be convincing in the production of small products with weights up to 500 grams, thanks to substantially lower costs in comparison to common production processes. The maximum possibilities in savings start with investment costs and continue on to indirect costs. Rexroth developed this innovative DTF concept based on its comprehensive technological know-how and offers all the associated components, e.g. for smooth material flow, central power and pneumatics supply, as well as basic PLC equipment.

2. Products

Linear motion technology

Profiled rail systems, linear bushings, ball screw assemblies, ready-to-install linear motion systems, multi-axis systems

Assembly technology

Basic mechanical elements, modules for manual production systems, material and information flow technology, Modular system 'Desktop Factory'

3. Industries

General machine construction, drive technology, automotive, sheet metal working, printing and paper, electronics, semiconductors, electronics, solar, fine mechanics, wood processing, plastics, food and packaging, medicines, medical technology, material flow, measurement and test technology, metal processing, assembly and handling technology, metal forming technology/presses, machine tools.

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4. Trends in Technology

Enhanced performance in a confined space. The trend towards **miniaturization** continues. With its **PSK modules**, **miniature versions** and **TS 1 Transfer System** Rexroth is offering a continually growing product program in this market segment and is thus serving applications in the semiconductor and electronics industry as well as in medical technology.

By way of painstaking miniaturization, standardization and modularization, the **Rexroth modular system 'Desktop Factory' (DTF)** enables, depending upon the application, a reduction of the investment costs by up to 15 percent, the energy consumption by up to 20 percent and the floor space requirement by up to 75 percent when compared to traditional manufacturing facilities.

Shorter cycle times in virtually all applications is the demand placed on components for **applications requiring high dynamics**. The long-term trend is towards higher speeds and accelerations, something which Rexroth Linear Motion Technology is already demonstrating. Rexroth is also helping to achieve shorter cycle times in assembly technology by means of innovative system solutions for material and information flow.

Lower costs for design and construction, commissioning and maintenance:

With **camoLINE**, Rexroth combines linear motion technology, electric drive systems and pneumatics that are perfectly tailored to one another to form a **universal module for handling systems**. All components are tailored to one another and the user is able to combine actuators from different technologies at will. **Innovative connection technology** enables the customer to assemble the axes **with positive locking** without the need for complex alignment. With **camoLINE**, our customers themselves tell us that they save up to 75 percent of the production parts that used to be needed and that the time needed for design and construction is some 30 percent shorter.

In addition, Rexroth supports the trend to functional integration with its mechatronic solutions, such as the **Integrated Measuring System**. The Plug-and-Play modules of **intelligent stop gates**, **AS-i Stop Gate** and the **ID 15 Identification System** are characterized by their high level of reliability and easy commissioning. The VE 2/AS-i stop gate already combines pneumatic cylinder and valve, proximity switch, status inquiry, and the AS-i bus interface, as well as the connection for external sensors, all in a single standard product.

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Economic solutions: With the products of the **eLINE Series** Rexroth is developing components and modules that, with user-appropriate precision, are opening up the advantages of roller bearing technology, even for light machinery construction and the non-machinery sector. In the field of assembly technology too the **Modules for Manual Production Systems** are reducing the necessary investments to the absolute minimum. The product program comprises individually configurable workstations and flow rack systems together with the associated manual links. For kanban controls Rexroth offers flow rack systems with color coding to make information on materials in stock immediately visible throughout the complete process.

5. Production Sites



Schweinfurt, Germany (Linear motion technology)

- Ball rail systems
- Roller rail systems
- Linear bushings
- Cam roller guides
- Linear motion systems



Stuttgart, Germany (Assembly technology)

- Basic mechanical elements
- Modules for manual production systems
- Assembly transfer systems
- Chain conveyor systems



Volkach, Germany (Linear motion technology)

- Ball screw assemblies
- Precision steel shafts

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Buchanan, USA

(Assembly technology)

- Basic mechanical elements
- Modules for manual production systems
- Assembly transfer systems
- Chain conveyor systems



Charlotte, USA

(Linear motion technology)

Customized production

- Cutting and customizing of guide rails
- Grinding of butt joints (composit guide rails)
- Customizing of shafts
- Spindle end processing
- Assembly of nuts
- Assembly of linear motion systems



Blaj, Rumania

(Linear motion technology)

- Profiled rail systems
- Linear bushings and shafts

6. Contact

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