Innovative Solutions for Life Science and Healthcare
Systems for Diagnostics, Therapy and Laboratory Automation
Life Science Technology has to meet very high quality standards nowadays. Yet, the funding of modern healthcare and laboratory equipment is getting increasingly difficult due to imminent tax hikes and regulatory reforms. Therefore, it is necessary to significantly reduce costs in the health care segment without compromising quality. Manufacturers of imaging systems, therapy systems and laboratory automation solutions are asking for suppliers who can provide them with economically and ecologically efficient components. Bosch Rexroth offers a complete range of drive and control technologies for innovative machine designs and tailor-made manufacturing lines in the fast-growing sectors of the Life Science industry.

Working for the Future of Life Science Technology
Intelligent solutions for global challenges
The average age of the world’s population is continually rising, and senior citizens are highly susceptible to health problems such as cancer, osteoporosis, strokes and cardiovascular diseases.
State-of-the-art imaging systems and radiation therapies are crucial for the successful early detection of diseases such as cancer. This significantly helps to reduce the overall costs of health care.
Major device manufacturers are also demanding customized solutions for the automation of laboratory processing systems in order to meet the individual requirements of hospitals, laboratories and researchers.

With its extensive interdisciplinary knowledge and expertise, Bosch Rexroth is able to supply manufacturers of health care and Life Science equipment with a comprehensive range of sophisticated modular components. These are suitable for the realization of innovative and scalable solutions such as:

- Multi-purpose x-ray systems
- Computer tomography scanners
- Magnetic resonance scanners
- Laboratory liquid handling workstation
- Automatic laboratory processing systems
- Others, e.g. surgical robots, consumables/disposables or analytical instruments
Unique Modular Technology for Customer-Specific Solutions

Multi-Purpose X-Ray Systems
Modern mobile C-arm X-ray devices and innovative handheld X-ray machines are indispensable tools for the early and reliable diagnosis of a broad range of widespread diseases. The requirements of strict safety regulations and cost-efficiency can be met with the use of standardized modular components provided by Rexroth. Rexroth ball rail systems are available in a wide range of sizes and facilitate low friction movements and the extremely accurate positioning of movable elements. High load capacities considerably increase the nominal service life and allow for the safe design of compact, powerful and energy-efficient lightweight systems. Electromechanical cylinders are used for precisely parameterized vertical movements.

Key Technical Data
Ball Rail Systems
- Available in 16 different sizes from 7 mm to 125 mm
- Rail lengths up to 6 m
- Extremely high load capacities up to 223,000 N
- High speeds up to 10 m/s
- 6 accuracy classes

Customer Benefits
- Long operating life
- Low maintenance requirements
- Low vibration
- Possibility of downsizing
  (due to high load rating and rigidity)
Imaging Devices (MRI, CT, etc.)
The increasing ratio of elderly or overweight people requires sophisticated imaging solutions for the efficient, flexible and comfortable treatment of patients. Manufacturers of state-of-the-art health care products such as computer tomography scanners (CT) also benefit from innovative Rexroth modular technologies.
Rexroth provides robust, highly precise and reliable components such as ball rail systems, electromechanical cylinders or ball screw assemblies, which facilitate almost frictionless movements and the accurate positioning required for high quality imaging. Rexroth components are explicitly designed for low maintenance and an especially long operating life.

Key Technical Data

**Ball Rail Systems**
- Extremely high load capacities up to 223,000 N
- High speeds up to 10 m/s
- 6 accuracy classes

**Ball Screw Assemblies**
- Available in sizes from 6 mm to 80 mm
- Leads from 1 mm to 40 mm
- 13 different ball nut designs
- 4 accuracy classes

**Customer Benefits**
- Long operating life
- Low maintenance requirements
- Low vibration
- Low noise
Laboratory Liquid Handling Workstations
Liquids in laboratories have to be processed with extraordinary care and accuracy in order to achieve the required results. Rexroth components help to combine efficient handling with maximum flexibility and low maintenance. Our portfolio of ball rail systems, miniature ball screws and precision modules is suitable for clean rooms and meets all requirements of modern Life Science laboratory equipment, such as precise positioning and very smooth motion sequences. Rexroth provides all technologies to make liquid handling even more productive and cost-efficient.

Key Technical Data
Miniature Ball Rail Systems
- All parts made of corrosion- and acid-resistant materials according to DIN 17230/EN10088

Precision Module PSK
- Available in 4 sizes
- Lengths up to 940 mm
- High rigidity

Customer Benefits
- Long operating life
- Low maintenance
- Low particle emission
Automatic Laboratory Processing Systems
Automation systems are essential for an optimized workflow in laboratories and have to conform to the strictest hygienic standards. With a broad range of linear motion systems, precise and almost frictionless ball rail systems, transfer systems and motors and drives, Rexroth offers flexible and individual solutions for your laboratory requirements.

The VarioFlow plus chain conveyor is the ideal solution for laboratory environments: available as a stainless steel variant, it is quickly assembled, easy to clean and nearly maintenance-free. The optimized sliding properties of chains and guide bars and the decoupling of chain links help to reduce vibration and noise.

Key Technical Data

**VarioFlow plus**
- Materials compliant with FDA standards
- Quick and easy project planning with MTpro
- Available in the sizes 65, 90, 120, 160, 240 and 320
- Maximum driving power 1250 N
- Innovative and patented pivot bolt for high running smoothness

Customer Benefits
- Low noise
- Low wear
- Long operating life
- Low downtimes
Reliable Products for Innovative Solutions in Life Science Technology

**Profiled Rail Systems**
With a comprehensive range of profiled rail systems for many different purposes, Rexroth provides perfectly fitting solutions for the individual requirements of manufacturers. Our ball rail systems are used in imaging and radiation systems, treatment robots and many other Life Science devices. They facilitate low friction motion sequences and the extremely accurate positioning of movable elements. High load capacities considerably increase the nominal service life and allow for the design of compact, powerful and energy-efficient lightweight systems.

**Ball Screw Assemblies**
Ball screw assemblies can be applied in imaging and radiation systems as well as in laboratory equipment. With their extraordinary accurate, smooth and quiet motions even at high speeds, they open up countless possibilities to solve challenging transport and positioning tasks in the health care and Life Science industry.

**Linear Motion Systems**
Rexroth’s ready-to-mount linear motion systems range from compact modules to precision modules and electromechanical cylinders. They offer great flexibility with various configurations. Our fully functional compact modules simplify modern designs and can be flexibly adapted to the individual needs of the manufacturer. Powerful precision modules come with a ball rail system and a ball screw fitted into a rigid steel base and can be enhanced with a wide range of accessories. Electromechanical cylinders provide an energy-efficient alternative to pneumatic cylinders and benefit from Rexroth’s well-established planetary and ball screw assemblies.
Transfer Systems
Our TS family of pre-engineered modular conveyors offers the required flexibility for modern medical assembly environments. Manufacturers are enabled to design systems according to their current needs and easily modify or expand them later on. TS conveyors are suitable for manual and automated operations and conform to the strict hygienic standards in Life Science and healthcare environments. The VarioFlow plus chain conveyor using FDA-conform materials is available in aluminum and stainless steel variants. It is quickly assembled and nearly maintenance-free. The optimized sliding properties of the chains and guide bars help to significantly reduce noise and vibration. VarioFlow plus features extended section layouts which require less drives and thus are exceptionally cost-effective.

Motors & Drives
With safe, reliable and energy-efficient motors and drives, we enable manufacturers to drastically improve the performance and flexibility of their production. IndraDrive machine drives are the ideal solution for complex single and multi-axis systems. Their advanced electronics allow for the implementation of drive-based distributed intelligence automation systems and increase the scalability of machine designs.
Global Partner in Life Science Technology

Bosch Rexroth combines the ability to link global resources and local trade – thanks to regionally adapted versions of global product platforms, local added value, the ability to coordinate projects spanning borders and to bundle the necessary resources. We are present in over 80 countries, guaranteeing expert advice and support as well as fast service anywhere in the world. Bosch Rexroth develops and produces locally adapted products based on global product platforms in Europe, the Americas, and Asia. With the services we offer, we work alongside machinery manufacturers and end-users around the world and ensure the success of international projects.
Complete range of drive and control technologies
Reliable products for innovative machine designs
Customizable system solutions
Long operating life of all components

Tough application, ingenious solution
Exactly
The data specified serve only to describe the product. Due to continuous product advancements, no statements concerning a certain condition or suitability for a certain application can be derived from our information. The information given does not release the user from the obligation of own judgment and verification. It must be remembered that our products are subject to a natural process of wear and aging.