The Drive & Control Company

Rexroth
Bosch Group

Aerospace Manufacturing

Productivity and performance, from machining to final assembly

Meeting the needs of the aerospace market with solutions and products that are reliable, scalable, and freely combined according to your needs

- Additive manufacturing
- Cutting
- Stamping
- Broaching
- Drilling
- Milling

Products to support machining and forming machinery

- Lean manufacturing
- Conveyors
- Manual workstations
- Robotic assembly

Products to support Tier One suppliers

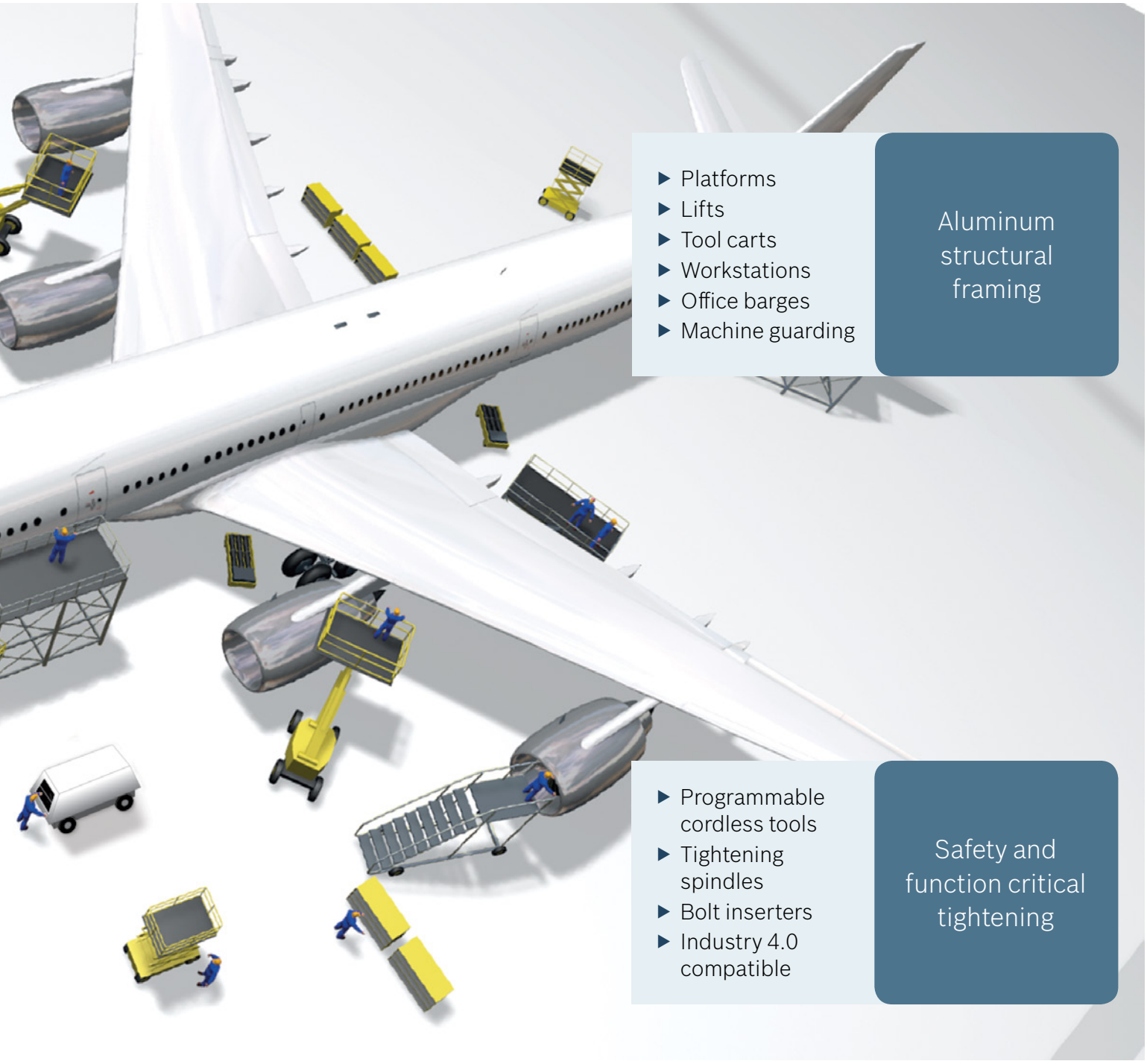
- Riveting
- Tape laying
- Joining
- Dispensing
- Holding and positioning
- Bolt inserters

Products to support fastening and lay-up operations

- Skydrol systems
- Central systems
- Proportional/ servo valves
- Flight simulators

Rexroth hydraulic systems support

Increase safety, quality, and productivity in automated and manual operations with the expert assistance of Bosch Rexroth.



- Platforms
- Lifts
- Tool carts
- Workstations
- Office barges
- Machine guarding

Aluminum structural framing

- Programmable cordless tools
- Tightening spindles
- Bolt inserters
- Industry 4.0 compatible

Safety and function critical tightening

Innovative concepts ready for the future

Products and engineering support for the Internet of Things and Industry 4.0: Realizing the Factory of the Future, today

Smart manufacturing will realize the promise and potential of Industry 4.0. In many cases, a tipping point has been reached, where machine builders and manufacturers are actively engaged in implementing smart manufacturing systems. Based on our experience in pilot projects in our own plants, we have identified seven essential features that are necessary for the implementation of Industry 4.0.

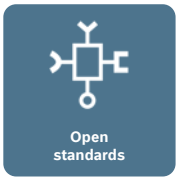
People as key players

The Factory of the Future is not just a building full of robots. Rexroth will work with you to insure that I4.0 concepts are applied in a user friendly and truly beneficial manner. From digital assistant functions and intelligent workplace design to big data boiled down to actionable performance indicators, we put people at the center of the factory of the future.

Distributed intelligence

Decentralized intelligent automation components with integrated software perform their tasks independently, according to the specifications of higher-level systems, and make autonomous decisions.

Open standards



Open Standards that extend across manufacturers and are platform-independent form the basis for horizontal and vertical integration and thus for the seamless exchange of information in value-creation networks.

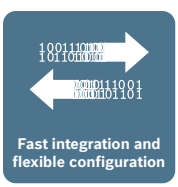
Digital life-cycle management

The comprehensive networking of all automation components, machines, processes and product data – from development and production to recycling – decreases development time and therefore development costs, for both completely new smart manufacturing lines and upgrades to existing platforms. In addition, this also ensures the application-oriented design of all components.

Secure value-creation networks

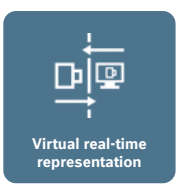
Security and safety for Industry 4.0 includes protecting people from machinery-related hazards (safety) as well as the protection of production facilities and corporate IT from attacks and faults from the surrounding environment (security). This involves securing sensitive data as well as the prevention of intentional and unintentional malfunctions.

Fast integration and flexible configuration



With Plug and Produce, people, machines, processes and the flow of goods are networked together on an ad hoc basis. Software tools simplify multiple smart manufacturing machine steps: commissioning, integration and (re) configuration, as well as preventive maintenance of all components, modules and machines.

Virtual real-time representation

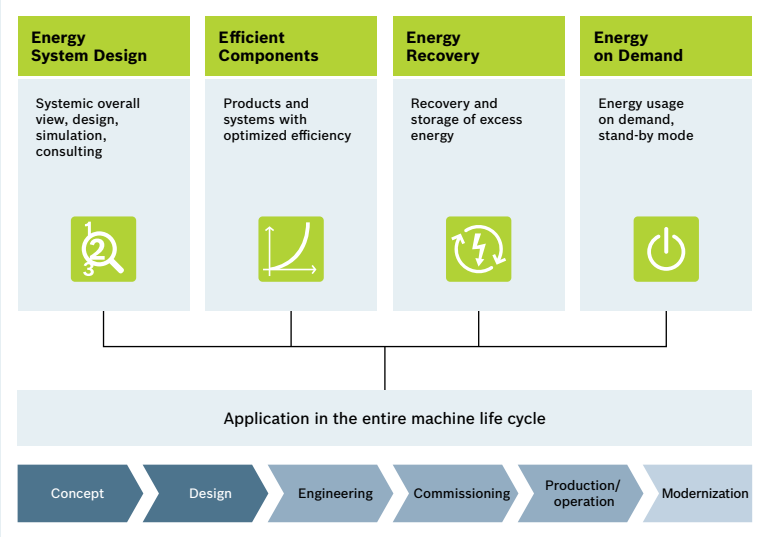


All components and objects are represented as virtual real-time representations across the entire value creation process. These virtual elements are closely linked to their physical counterparts and provide in-context information for continuous process improvement in real-time.

Manufacturing concepts for future growth

Increasing productivity and output by saving energy, conserving resources, and keeping up with the latest safety standards

Rexroth for Energy Efficiency



4EE ENERGY EFFICIENCY

- 4EE systematic approach to lower energy costs and CO_2 emission
- Systematic approach bundles all relevant technologies
- Competency across all technologies
- Energy efficient and perfect match components
- Energy Efficiency consulting
- Optimization in all machine life cycles

- ☑ Energy and Costs saved
- ☑ Emissions reduced
- ☑ Productivity increased
- ☑ Legal requirements maintained

Functional Safety in Automation

SAFETY ON BOARD

The latest safety regulations cover many aspects of your machine and system—whether electrical, hydraulic, mechanical or pneumatic, and as individual components or in combination with each other. Rexroth understands your requirements and shows you how to achieve machine safety that complies with the standards while at the same time increasing your productivity.

- ☑ More safety for people and systems
- ☑ Certified control systems and components
- ☑ Scalable safety solutions
- ☑ Professional service and support

Automation Technologies

Linear Technologies

Ball Rail™ Systems

Primarily designed for machining centers and general automation equipment, Ball Rail Systems from Rexroth add more value to manufacturing processes thanks to fast, high-precision guidance and long service life. In highly competitive markets like machine tool these systems consume 90% less energy and offer critical efficiency.

Ball and Roller Screws – PLSA

PLSAs are used in drive systems and are comprised of threaded rollers that rotate around the screw. Ultimately, this produces efficient linear actuation that is easy to integrate into applications that require high load capability, precision, and low environmental impact.

Electromechanical Cylinder – EMC & EMC-HD

The EMC is a robust electromechanical cylinder used for heavy duty applications with high load forces under tough conditions. The integrated precise planetary screw allows accurate movement and positioning and a long service life.

EasyHandling

EasyHandling is a complete platform for the easy design, construction, and commissioning of Cartesian motion robots. It combines open, user-friendly programming environments with precise and reliable linear componentry to create the most accessible, easy-to-use Cartesian motion robot.

Drives & Controls

IndraDrive Mi

IndraDrive Mi enables machine manufacturers to integrate all electrical drive components directly into the machine resulting in cabinet free, modular machines with less required space. The simple system design offers up to 90% less wiring, minimal control cabinet volume, and a drastically reduced cooling load.

IndraMotion – MTX

Thanks to the modular design of its hardware and software, IndraMotion MTX is one of the most advanced CNC platforms, completely covering control and drive solutions that meet requirements for applications in job shops to connected production lines in the Industry 4.0 environment.

MS2N Servo Motors

More torque, higher rotational speeds, single-cable connection, and an extensive option program: Rexroth's MS2N generation of motors connects ultimate dynamics with compact dimensions and the best of energy efficiency. The MS2N motors become a data source for intelligent solutions in the Industry 4.0 environment.

PLC and Motion Control

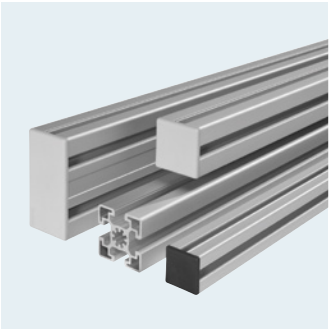
Thanks to the most high-performance CNC and motion control on the market, we ensure maximum performance of your machines and set the standard for servo drives. Within the Bosch group, we are already implementing system solutions to make your machines future-proof for the Internet of Things.

Assembly Technologies

Aluminum Framing/ Conveyors

Manual Production Systems

The main concern of modern production is to avoid waste. The MPS Manual Production Systems from Rexroth have been developed strictly in line with aspects for lean production, enabling simple and fast planning, and implementation of lean production installations.

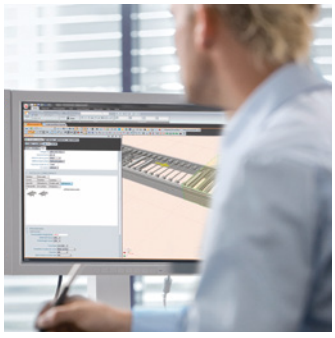


Aluminum Structural Framing

Our aluminum framing line is the most extensive, meaning no limits to what you can build. With hundreds of profile variants and thousands of products for joining, finishing, and moving elements, any type of support structure, enclosure, or machine base is possible. Includes options for ESD, clean and dry room applications.

Guarding Systems

Bosch Rexroth offers a wide range of machine and perimeter guarding options for creating physical enclosures, guards, and barriers to protect workers. Partitions can be constructed from pre-assembled, ready-to-use components that install quickly and easily integrate into other Rexroth aluminum framing structures.



Conveyor Systems

Transfer of parts, sub-assemblies, and structures needs care in both physical handling and traceability. With Rexroth conveyors many options exist, from the VarioFlow flexible plastic chain conveyors to pallet based TS assembly conveyors for light to heavy applications. Best of all, the lines all accommodate RFID tracking.

Tightening Systems

Control and Power Electronics

Powerful and sturdy—the new hardware platform is based on cutting-edge technologies and thus ensures investment security. It has been specially developed for industrial applications. The system box and compact system fully comply with the IP54 protection class.

NEXO Handheld Nutrunner

With NEXO, the entire controller is located in the nutrunner—an innovation that makes many Industry 4.0 applications possible for the first time. The integrated control systems enable the wireless cordless nutrunners to be connected directly to the higher-level systems without any additional hardware.

Tightening Spindles

With a working range between 0.6 and 1000 Nm and a choice between straight output drives, offset output drives, feed output drives, and angle heads—with Rexroth components you can configure a tightening spindle that is customized to your individual requirements.

Bosch Production Tools – BPT

Bosch cordless and electric screwdrivers form an advanced family of production tools that make the assembly process easier, faster, safer, and more accurate. The EXACT series of assembly tools from Bosch—incredibly accurate, durable, and energy-efficient.

The Drive & Control Company

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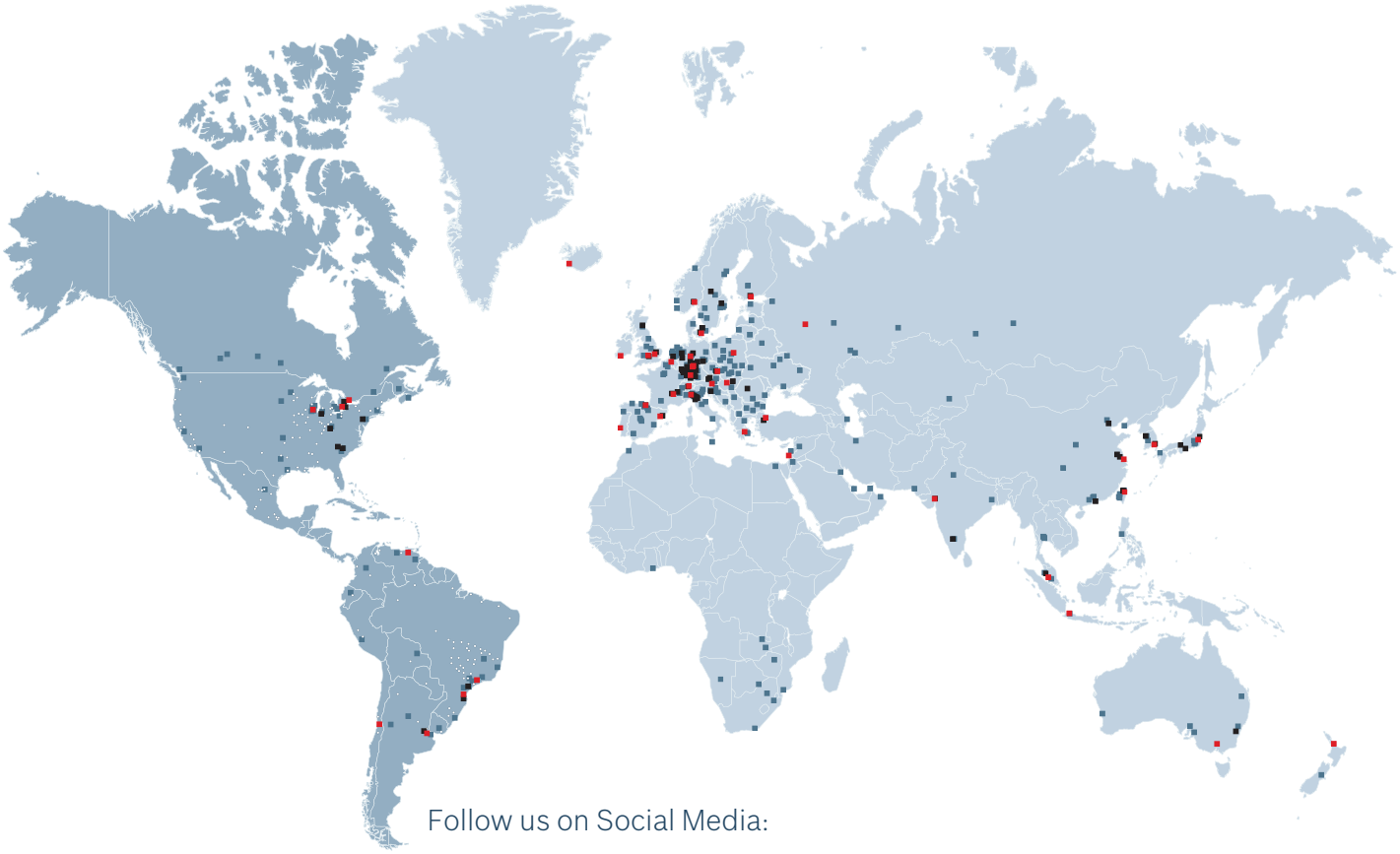
Bosch Rexroth – the global partner for the Aerospace Market.



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