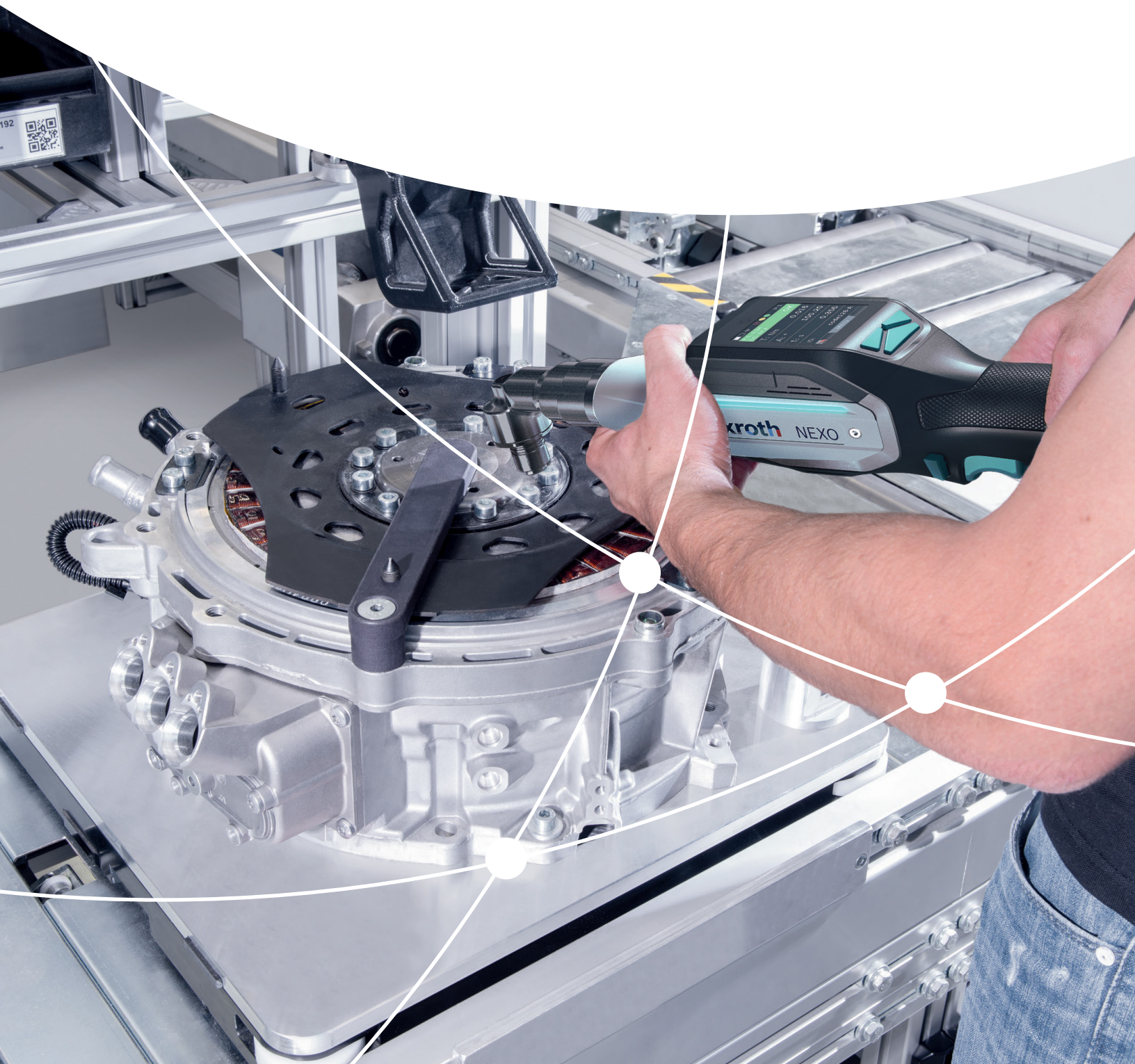


Tightening Solutions



Secure Process, Increased Productivity

Electric tightening systems from Evolution Motion Solutions and Bosch Rexroth offer smart solutions for companies facing increasing costs, myriad regulations, and client modifications. Their features establish maximum security for your production processes.





Control & Adapt

The highly accurate electric tightening systems from Bosch Rexroth secure your tightening processes and document every tightening change so you can evaluate statistics for quality assurance. Industrial requirements, such as VDI/VDE2862 automotive assembly requirements, are sure to be met with Bosch Rexroth tightening solutions.



Designed for Flexibility

Bosch Rexroth's modular construction and common platform of handheld tools and stationary spindles allow you to experience quick and efficient exchange during production. These tightening systems deliver flexibility through their wireless data transmission and reprogramming capabilities.



Efficiency Now, Continuing ROI

Bosch Rexroth's effective and energy-efficient electrical tightening systems deliver accurate and reliable assembly. Their hand tools operate with short cycle times for a high degree of automation. Rexroth systems can save operating costs and reduce CO2 emissions, increasing your ROI.



Ergonomic

Bosch Rexroth tightening systems provide a comfortable handle and trouble-free operations, incorporating an ergonomic, user-friendly approach. An intuitive user interface simplifies feedback delivery, and software settings minimize torque reaction in start-up and shutdown behavior.

Electric Tightening Systems: Intelligent, Flexible, Secure

Bosch Rexroth's patented digital transducer technology provides one of the most accurate, reliable, and robust systems in the industry. The intelligent corresponding control systems and operating software make integration and operation easy. Control systems are available for single- and multi-tool applications. Operating systems are Windows or browser-based for compatibility.



Handheld Tools

High reliability

- Accurate measurement of tightening parameters
- Digital result transmission

Low operator fatigue

- Ergonomic design
- Lightweight construction

Easy operation

- User-friendly controls and indicators



Wireless Tools

High degree of security and flexibility

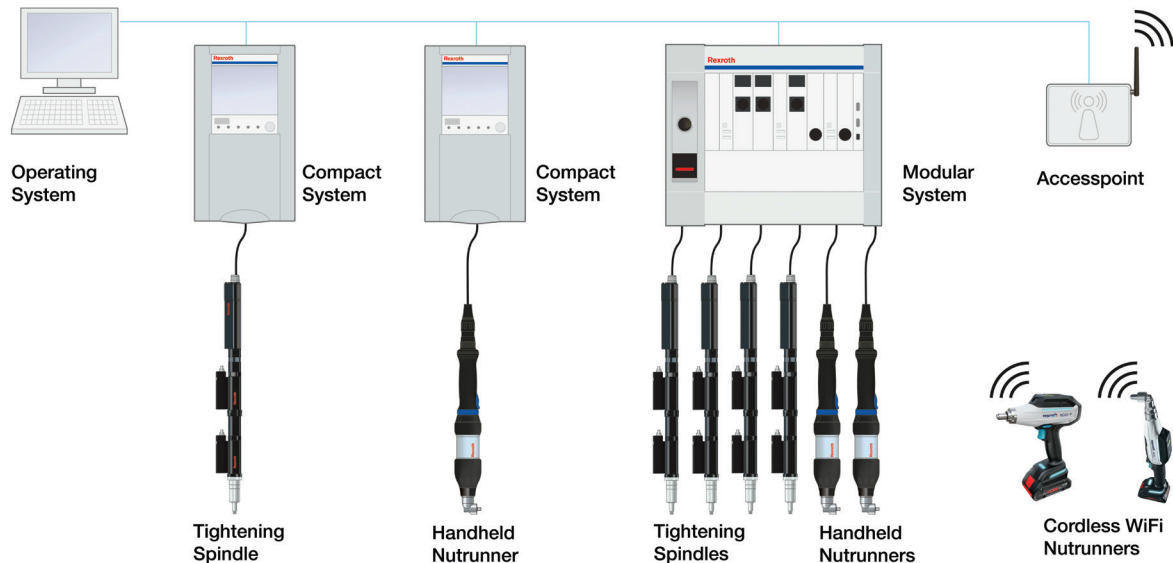
- Transducerizes measurement of torque and angle
- Process reliability via integrated onboard controller and wireless buffered data transfer
- Integrated color display gives feedback
- Easy assembly



Stationary Spindles

Modular construction and flexible solutions in a wide range of applications

- Highest levels of VDI standards for reliability achieved by redundant transducer technology
- High performance in manual and automated assembly systems



Compact System

Single tool applications with reliable and easy-to-use controllers

- Handheld tools and mounted spindles available
- HMI display and LEDs deliver clear feedback
- User-friendly operating system means simple programming
- Protection class IP54, EMC level IV

Modular System

Support for up to six tools

- Compact, economical multi-channel controller saves space
- Can be used with handheld tightening tools and stationary spindles, plus in mixed operations
- Flexible system integration with a wide range of communication protocols
- Can be used as a stand-alone system box (IP54) or as a control rack for integration among control cabinets
- Can create systems with up to 40 tightening tools through linkups with multiple system boxes

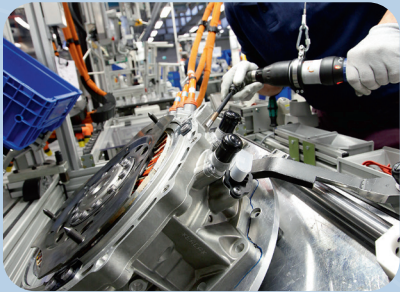
Operating System

Intuitively programmed tightening applications

- Ease of use with icon-based programming and intuitive interface
- Automatically detects all electronic components
- Produces rundown characteristics, statistical information, and results as graphical representations

The Right Tightening System for Every Application

Evolution offers efficient and flexible tightening solutions for your production needs, whether handheld, hand-guided, semiautomatic, or fully automatic.



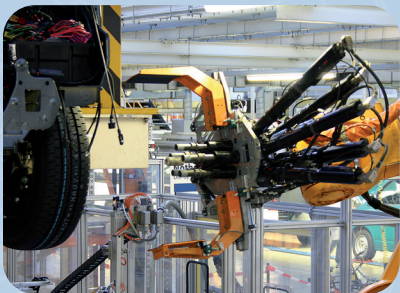
Handheld Tightening Tools

- Ideal for low throughput
- High flexibility allows for frequent product changes and access to hard-to-reach applications
- Easily expandable with a variety of motor/output options available



Hand-Guided Tightening Tools

- Ideal when complications make automated actions impractical
- Absorbs torque reaction and improves ergonomics with a variety of handling equipment
- Multiple spindle integration options provide synchronized tightening and improved cycle rates



Semiautomatic Tightening Tools

- For use in complex multi-spindle applications where a fully automatic approach is not appropriate
- Dual trigger start, guarding, and light curtains are optional features that protect workers



Fully Automatic Tightening Station

- Ideal for automated bolt feed and transfer stations with no operator needed
- Capabilities for performing automatic reworks and dealing with complex applications



Prompt Conversion, Optimal Deployment

Meet the challenges of future automotive industry requirements with Bosch Rexroth tightening applications.

Safety-Critical Tightening Applications

A system must employ methods of redundant monitoring and direct measurement of the tightening process to safeguard against situations that endanger health or cause loss of life. Every fastening cycle must be documented.

Functional-Critical Tightening Applications

Product failures arise from failures of critical joints. Minimizing these events requires both direct and indirect measurements, monitoring, and controls. Every fastening cycle must be documented.

Non-Critical Tightening Applications

Some applications are not considered safety- or function-critical. In these cases, an indirect measurement of the fastening process is sufficient.



Complete Turnkey Solutions

Evolution offers complete support for your tightening solutions from concept to completion. We will help you select the right tools, accessories, and configurations for your application. Our qualified team functions as an extension of your engineering department, providing start-up and integration support and project management.

Mechanical and Electrical Services

Integration Support

Start-up Support

Project Management

Evolution has a research and development cell for tightening technology in our Auburn Hills, Michigan branch. This cell is a comprehensive, hands-on overview of our Rexroth tightening product offerings. The fully-functioning tools on board include NEXO wireless tools, ErgoSpin tools, variations of Bosch production tools, ergonomic solutions, both control platforms, and a working demo showcasing the worker guidance display software.



**Contact us today to visit our Tightening R&D Cell
or to schedule a product demonstration in your facility.
248-373-1600 • inquiry@evolutionmotion.com**

Value-Added Solutions

Torque Arms

Used to prevent excessive reaction to the operator. Torque arms can be mounted vertically or horizontally, effectively allowing the operator to torque assemblies with little to zero force.

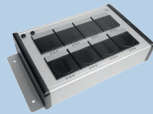
Torque Reaction Devices

Devices, including torque arms, gantries, or rails, absorb the force applied to the product being torqued.



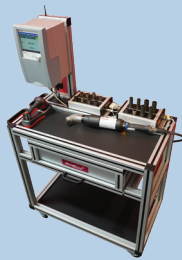
Socket Trays

Holds multiple sockets that can be swapped in and out on the torque tool for multiple tightening applications.



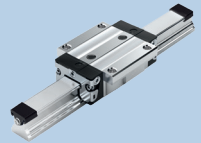
Mobile Carts

Mobile carts allow a person to move the tool to remote locations for specific functionality: a crash cart for repair, the verification part for validating tools, or a mobile production cart.



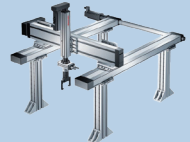
Rail Systems

Mounted to a gantry or structure, such as a building, to allow movement in multiple directions and cover a wider working envelope.



Gantries

Overhead independent structure to support torque arms or torque reaction devices.



Scanners

A barcode scanner or tag reader identifies a part to be processed.



Wireless Network

Connectivity from the Rexroth system to a local network or plant network.



Verification Systems

A custom electronic secondary system that verifies or validates the tool torque target. These systems can be mounted in a lab, on a workbench or mobile cart, or in a mobile kit utilizing a carrying case for easy transport.

Tightening Software

Rexroth offers numerous software options for its spindle tools, handheld tools, and wireless tools. They also offer and maintain a software development platform, IndraLogic, for PLC programming. With this software, programmers can control all of the discrete inputs and outputs in station controls and tightening systems.



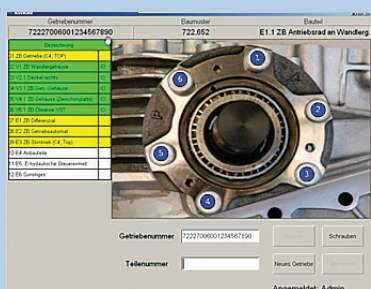
Browser-Based Software

The permanently embedded browser-based software for wireless NEXO tools is icon-based and doesn't require a computer to program. It can be accessed with any browser on any smart device connected to the Internet. This software allows 1024 programs to be created with 20 steps per program, and monitoring limits are possible for each step in the rundown. Additionally, the NEXO can store up to 10,000 rundown results, which can be viewed on the tool.



Responsive User Interface

Rexroth offers proprietary software programs that allow users to extract, view, analyze, and store data on the tightening operations for future use. This software lets users view a live stream of the tightening system's data from on-site or remote locations. It provides less downtime, consistency in production, and improved traceability.



Worker Guidance Displays

Easy-to-embed images in the worker guidance display show the correct bolt-tightening sequence for multi-bolt operations. It indicates bolts that have been tightened and bolts that still need to be tightened. The display provides real-time feedback on torque, time, and angle, enabling visual control of the production environment.

Bosch Tools

Bosch Rexroth industrial tightening tools include battery tools and heavy-duty service tools. These tightening tools are lightweight and robust for everyday use in high-production locations.



12V Battery Clutch Tools

Bosch Rexroth's 12V battery clutch tools are compact, lightweight, and ideal for precision assembly in tight spaces. They combine maneuverability with reliable performance and support multi-step tightened based on torque, angle, and time. With proven clutch technology, efficient battery performance, and a brushless motor, the 12V tools offer a balance of control and consistency for demanding production needs.



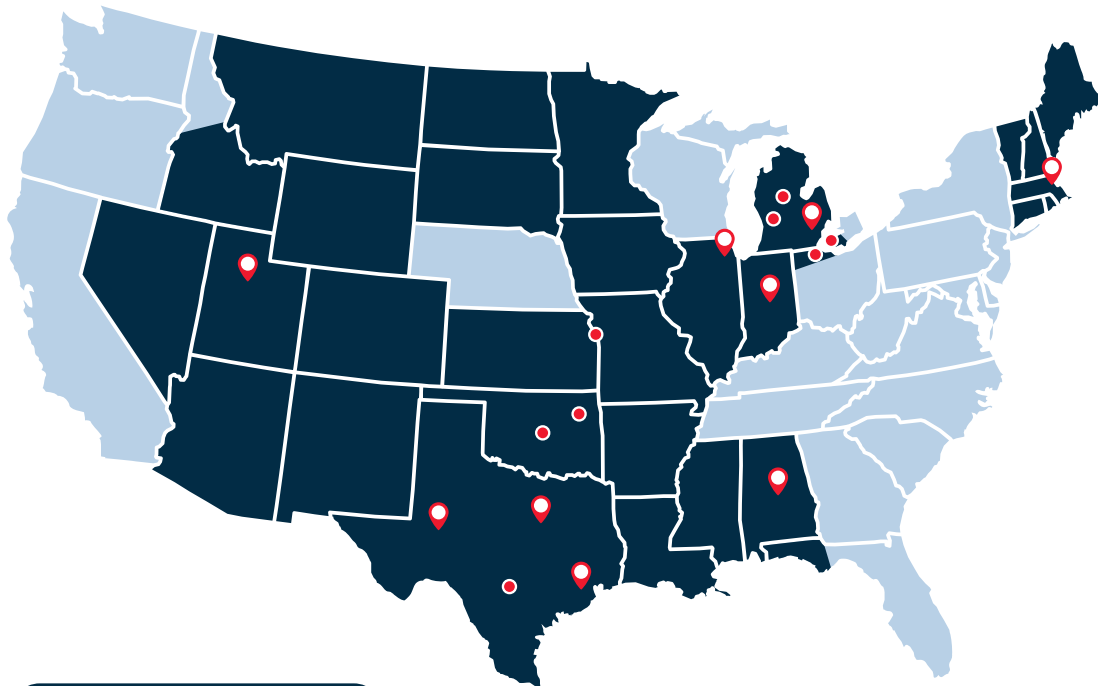
18V Battery Clutch Tools

Designed for higher torque applications, the Bosch Rexroth 18V battery clutch tools deliver increased power, speed, and runtime. These tools support advanced programmable tightening strategies and are built for high-volume, high-demand environments. Features like ergonomic design, integrated work lights, and EC motor technology ensure operator comfort and process reliability.



Battery Tools

The comprehensive line of Bosch Rexroth battery tools and corded inline handheld assembly tools include standard and compact sizes for hard-to-reach applications. Rexroth's transducer technology creates one of the most reliable and repeatable safety and function critical transducer torque tools on the market. Its unique ability to create a variable rundown program allows users to customize each application's process.



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