

Tightening Solutions

exroth Nexo





Secure process,

increased productivity

Electric tightening systems from Morrell Group 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 and Adapt

The importance of process control, accuracy, and flexibility on the assembly line cannot be overstated. The need to tighten every bolt to its proper torque and angle consistently is essential for meeting final product quality requirements in a fastening process. As VDI/VDE2862 define automotive assembly requirements, in the near future such requirements for other industries will be identified. The highly accurate electric tightening systems from Rexroth not only secure your processes, but they also give you the ability to document every tightening change and to evaluate statistics for quality assurance.

Efficiency Now, Continuing ROI

Electric tightening systems are effective and energy efficient. The handheld tools deliver assembly that is both accurate and reliable. And stationary spindles operate with short cycle times and allow for a high degree of automation.

Rexroth systems can save you 50% of operating costs compared to pneumatic tools and over 90% of CO2 emissions. As these savings continue and as energy prices continue to rise your ROI on Rexroth systems will continue to increase.

Designed for Flexibility

Across the board, as the number of product variants and the pace of development increase, customers demand a system that optimizes flexibility and expedites production modifications. Rexroth's tightening systems fit the bill. Enjoy quick and efficient tool exchange during production, thanks to the Rexroth's modular construction and common platform of handheld tools and stationary spindles. The systems deliver flexibility through their wireless data transmission and reprogramming capabilities.

Ergonomic

Designed to provide a comfortable handle and trouble-free operation, electric tightening systems from Rexroth incorporate an ergonomic, user-friendly approach. Additionally, software settings can minimize torque reaction in start-up and shutdown behavior. An intuitive user interface simplifies the delivery of feedback

In summary: You can rely on tightening technology from Rexroth to achieve optimum results and maximize worker performance.

Electric tightening systems:

intelligent, flexible, secure

Rexroth offers accurate tightening technology and accessories for a wide variety of applications, from handheld to fully automatic tools.

Thanks to Rexroth's patented digital transducer technology, we can provide one of the most accurate, reliable, and robust systems in the industry. Rexroth's commitment to manufacturing standards allows Morrell Group to offer the best-in-class warranty, even at the tool's full load capability. The intelligent corresponding controls systems and operating software make integration and operation a breeze. Control systems are available for single or multi-tool applications, and operating systems are Windows or browser-based for ultimate compatibility.



Handheld Tools

High level of reliability

- Accurate measurement of tightening parameters
- Digital result transmission
- Reduced operator fatigue
 - Ergonomic design
 - Lightweight construction

Easy operation

User friendly controls
 and indicators



Wireless Tools

Produce highest degree of security and flexibility

- Transducerizes
 measurement of torque
 and angle
- Process reliability via an integrated onboard controller and wireless buffered data transfer – works even in weak signal areas
- Easy assembly
- Integrated color display
- Color display gives
 feedback to the operator



Stationary Spindles

With modular construction: Flexible solutions in a wide range of applications

- Highest levels of VDI standards for reliability achieved by the redundant transducer technology
- Deliver the highest performance in either manual or automated assembly systems





Compact System

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

- Both 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 or stationary spindles plus in mixed operations
- Achieves flexible system integration through a wide range of communication protocols
- Use as a stand alone system box (IP54) or as control rack for integration among control cabinets
- Through linkups with multiple system boxes has the ability to create systems with up to 40 tightening tools



Operating System

Tightening applications programmed intuitively

- Ease of use for both engineers and operators through use of icon based programming and intuitive interface
- Automatically detects all electronic components
- Produces rundown characteristics, statistical information, and result curves as graphical representations

The right tightening system

for every application

Morrell Group offers efficient and flexible solutions to your production needs for tightening systems, whether handheld, hand-guided, semi- or fully automatic.



Handheld tightening tools

- Ideal for low throughput
- Highly flexible, for frequent product changes or 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
- Absorb torque reaction and improve ergonomics with a variety of handling equipment
- Multiple spindle integration option provides synchronized tightening or improved cycle rates



Semi-automatic tightening tools

- For use in complex multi-spindle applications where a fully automatic approach is not appropriate such as manual part loading and operation or fully automatic fastening
- Dual trigger start, guarding, or light curtains provide protection for workers



Full automatic tightening station

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

Prompt conversion,

optimal deployment

Up until now, only tightening applications within the automotive industry have had to meet the requirements of VDI/VDE 2862. The plan to extend these higher safety regulations to other industries, however, is underway. The forward-looking designs employed by Rexroth already meet these requirements and position you to meet the challenges of the future.

Some applications are not considered safety- or function-critical. In these cases, an indirect

Safety-critical tightening applications

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

measurement of the fastening process is sufficient.

Non-critical tightening applications

Functional-critical tightening applications

Product failures arise from failures of critical joints. Minimizing these events requires direct measurement in combination with indirect measurement of monitoring and control. Every fastening cycle must be documented.

Complete turnkey solutions

Morrell Group offers complete support for your tightening solution from concept to completion. We will help you select the right tools, accessories and configurations to fit your application. Our qualified team functions as an extension of your engineering department, providing startup and integration support, as well as project management.

Mechanical and Electrical Services Integration Support Startup Support Project Management

Extensive R&D cell

Morrell Group has a research and development cell for tightening technology in our Auburn Hills, Michigan Headquarters. 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@morrellinc.com

Value-added solutions

Used to prevent excessive reaction to the Mounted to a gantry or structure, such as operator. Torque arms can be mounted the building, to allow movement in vertically or horizontally allowing the multiple directions and cover a wider operator to effectively torque assemblies working envelope. with little to zero force. **Torque Reaction Devices** Gantries Any device including torque arms, gantries Overhead independent structur to support or rails that absorb the force applied to the torque arms or torque reaction devices. product being torqued.

Socket Trays

Torque Arms

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

Scanners

Rail Systems

Barcode scanner or tag reader that identifies a part to be processed.

Mobile Carts

Allows a person to move the tool to remote locations for specific functionality: crash cart for repair, vertification part for validating tools, mobile production cart.

Wireless Network

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

Verification Systems

Custom electronic secondary system that verifies or validates the tool torque target. These systems can be mounted in a lab, on a work bench 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 control and tightening systems.

Browser-based Software



The browser-based software for the wireless Nexo tools is icon based and allows 256 programs to be created with 20 steps per program. Monitoring limits are possible for each step in the rundown. The wireless tool does not require software installed in any computer to program it. Instead, the software is browser-based and it is permanently embedded in the tool. The programming software can be accessed with any smart device that is connected to Wi-Fi using any browser, and accessibility can be limited if necessary. The tool can store up to 10,000 rundown results and each of the rundowns are viewable on the tool.

Responsive User Interface



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

Worker Guidance Displays



Worker guidance displays the correct bolt tightening sequence to the operator for a multi-bolt tightening operation. The program indicates the bolts to be tightened, bolts that have been tightened, and it provides real-time feedback on torque, time, and angle. Easy to create custom images allow for bolt sequencing patterns to be embedded into the image to show the operator the correct tightening pattern. This software enables visual control of the production environment.

Bosch tools

Morrell Group offers and supports Bosch industrial tools, including battery tools, heavy duty service and air tools and production air tools. Bosch technology ensures reliability and durability for your industrial tightening applications. The tools are designed to be lightweight and robust for everyday use in high production locations.





Bosch offers a full line of air tools for all industrial applications. Designed to be lightweight and robust for everyday use in high production locations. Bosch air production tools are driven by compressed air and provide several advantages over electric handheld tools. The Bosch air tool is driven by a pneumatic rotary vane motor, which enables it to spin and conduct mechanical work without risking burnout like an electric motor. Bosch tools also reduce maintenance and overhead costs with their modular design. Tools are designed by family, sharing many of the same air motors, housings and clutches.

Heavy Duty & Service Air Tools



Morrell Group offers a large selection of pneumatic tools for industrial services requirements. The Bosch tools are designed to be robust and offer a cost-effective alternative for many applications. The service air tools provide top performance, an outstanding price to performance ratio and excellent ergonomics. Bosch service tools are ideal for plant maintenance, service industries and production line applications. All tools excel in quality, performance and flexibility.

Battery Tools



Morrell Group offers a comprehensive line of Bosch battery tools, as well as corded inline handheld assembly tools. Bosch patented clutch technology provides one of the most reliable and repeatable clutch torque tools on the market. The unique ability to program a variable rundown program allows the user to customize the process for each application.



MICHIGAN

Auburn Hills 248-373-1600

Grand Rapids 616-583-9390

Fort Wayne 260-483-7070

Indianapolis

317-849-7007

INDIANA

ILLINOIS Glendale Heights 630-858-4600 OHIO **Toledo** 419-365-3111 Canada **Windsor** 519-944-3877

070 **morre**

morrell-group.com info@morrellinc.com

Weidman 866-644-8622

Disclaimer

Product information contained in this document, including but not limited to specifications, availability and pricing, is provided to Morrell Group by our vendors. Morrell Group is not the source of this information and therefore does not warrant the accuracy or sufficiency thereof.