



# WORK SMARTER AND STAY COMPETITIVE WITH INGERSOLL RAND

Wi-Fi and Bluetooth connected tools with proven results



With fastening technology constantly changing, you can rely on the new wave of Ingersoll Rand® smart tools that provide data-driven insights through network-connected equipment. Learn how the following companies made an upgrade to improve quality, optimize performance, and lower costs.



## UPGRADED PRODUCTIVITY

A leading aerospace manufacturer found that the new advanced composite materials they transitioned to required increased precision, accuracy, and traceability. They wanted to continue producing complex products while maximizing productivity. The inability to efficiently provide precision-made products led to delays, which cost them money and put customer projects behind schedule.

To lower labor costs, prevent productivity loss, and reduce equipment failures, the manufacturer turned to Ingersoll Rand® products. With Ingersoll Rand® QX Series™ tools, they identified and eliminated errors in the assembly process and utilized advanced settings that made assembly operations more efficient, consistent, and reliable. The smart wireless tools improved throughput, increased efficiency, and enabled the manufacturer to work with greater precision and safety.

The aerospace manufacturer was impressed with Ingersoll Rand's® ability to improve reliability and consistency to their products. The tools provided the added benefit of increased quality control over their assembly lines.

### Implementing Ingersoll Rand® QX Series™ Tools to Your Line Allows You to:

- Store records for up to 1,200 fastenings which provides reliable data that is available for review, analysis, and record-keeping
- Utilize programmable speed control, allowing the technician to optimize the speed for each application
- Support eight user-programmable configurations for torque, angle, and speed – allowing one tool to do the work of eight
- Integrate automation using software that automatically counts fasteners as they are tightened, while ensuring traceability by monitoring and recording that they have been secured correctly
- Reduce the rework, increase uptime, and improve production rates with immediate feedback from a tool's on-board pass/fail indicator

# REVOLUTIONARY UPTIME

A manufacturer in the motor vehicle, agricultural, heavy equipment industries needed to speed up their toughest assembly application: securing the pano roof inside the cab and overhead with a target torque at 9Nm with 10 fasteners per minute. This is precarious since an operator must be inside the cab, use only one hand, and tighten overhead, all while maintaining control, staying portable, and having an acceptable torque reaction.

The company turned to the Ingersoll Rand® QX Series™ Ergonomic Tightening System (ETS). ETS tools increase mobility and access for tasks in cramped spaces or that require one-handed use. With ETS reducing the torque reaction, workers no longer had to juggle the fastening tool and an external reaction device.

The manufacturing engineers loved the QX Series™ ETS solution, because it meets the operator's needs, has a lower total cost of ownership, and is a lighter, more balanced solution for the application.

The QX Series™ ETS offers four tightening modes. In addition to standard **Direct Drive Mode**, each tool configuration can be programmed to utilize one of the three available single-parameter ETS modes:



### Ergonomic Mode

Delivers the lowest energy pulses, ideal for hard joints or when arm, wrist and/or tool angles are most difficult



### Performance Mode

Delivers medium energy pulses, best all-purposes mode



### Productivity Mode

Delivers the highest energy pulses and is the fastest mode, ideal for soft joints or when high production rates are required

**Advanced fastening processes, data collection, and analysis don't have to be complicated. Ingersoll Rand® QX Series™ tools improve process control, operator comfort, and data communication in one package. They empower you to utilize real-time data to increase productivity, efficiency, and ROI while keeping your workers safe.**

**ARE YOU READY TO BOOST CONTINUOUS IMPROVEMENT EFFORTS ON YOUR ASSEMBLY LINE?**

Contact  
Ingersoll Rand

Ingersoll Rand (NYSE:IR), driven by an entrepreneurial spirit and ownership mindset, is dedicated to helping make life better for our employees, customers and communities. Customers lean on us for our technology-driven excellence in mission-critical flow creation and industrial solutions across 40+ respected brands where our products and services excel in the most complex and harsh conditions. Our employees develop customers for life through their daily commitment to expertise, productivity and efficiency.



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