

QX Series™ Ergonomic Tightening System (ETS)

A Case Study



Tough Application Simplified

Motor Vehicle Final Assembly, USA

Ingersoll Rand® has released the [QX Series™ Ergonomic Tightening System \(ETS\)](#). With ETS, reducing the torque reaction of the fastening process doesn't have to be complicated. The ergonomically-enhanced motor control algorithm minimizes torque reaction to protect workers from injury. When tightening, ETS delivers short bursts of energy into the fastener, enabling the operator to safely stay in control of the tool. Ingersoll Rand® offers Ergonomic Tightening System with various feature options across the [QX Series™](#) cordless fastening tools in pistol & right angle configurations ranging from 1.6Nm-80Nm.

Customer Overview

Manufacturers in motor vehicle, agricultural & heavy equipment industries have been using Ingersoll Rand® QX Series™ tools to deliver precise torque and traceable results for years. The application: securing the pano roof inside the cab & overhead for the operator with a target torque at 9Nm with 10 fasteners per minute. This is a tough application since the operator must be inside the cab, using 1 hand & tightening overhead at 9Nm. The operator needs to be to maintain control, stay portable, and have acceptable torque reaction.

The Ingersoll Rand® Solution

Now workers no longer have to juggle the fastening tool and an external reaction device. ETS tools increase mobility and access for tasks requiring one-handed use or in cramped spaces. The QX Series™ ETS offers four tightening modes to simplify fastening. In addition to standard direct drive mode, each tool configuration can be independently programmed to utilize one of the three available single- parameter ETS modes, simplifying setup:

- **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

Setting up ETS is a simple, three-step process:

1. Connect to the QX Series™ tool with the included Ingersoll Rand® ICS software to setup your base program
2. Choose your preferred ETS tightening mode based off the target application
3. Choose when the tool should shift from direct drive to pulse mode

Customer Feedback

The manufacturing engineers love the QX Series™ ETS solution, it meets the operators needs, has a lower total cost of ownership & is a lighter, more balanced solution for the application.

About the Ingersoll Rand® QX Series™

The [QX Series™](#) tools improve process control, operator comfort and data communication in one package. The cordless tools increase productivity, lower costs and ensure high-quality output. The closed-loop transducer and brushless DC motor deliver precise torque and accurate, traceable results. The tools store cycle data for up to 1,200 rundowns. QX Series™ tools deliver real-time feedback to the operator. The tools wirelessly transmit the cycle data to the plant network for analysis and archival. Operators can easily program up to eight configurations per tool for torque, angle, and speed.



For more information about the Ingersoll Rand® QX Series™ ETS visit www.IRTools.com/ETS

Due to the sensitive nature of our customer relationships, Ingersoll Rand® has chosen not to include the names of our clients in these case studies. Ingersoll Rand® provides products, services and solutions that enhance our customers' energy efficiency, productivity and operations.

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