

Freezer Assembly

A Case Study



Assembly Rework Eliminated

Appliance Manufacturer, USA

This case study discusses the successful application of an Ingersoll Rand® QX Series™ Cordless Precision Screwdriver to solve an issue on an appliance manufacturer's production line. Ingersoll Rand® offers innovative solutions to customers all around the world who value reliability, efficiency and process intelligence.

Customer Overview

Our customer is a global leader in the home appliance industry.

The Challenge

This customer was using shut-off torque control tools to tighten a freezer lid on an upright refrigerator. Shut-off torque-control tools present two challenges to assembly line applications. First, shut-off torque control tools run until they reach the desired torque, but they lack the angle monitoring capability to indicate stripped screws. If the shut-off torque control tool strips a screw, workers are forced to spend additional time drilling out and replacing it on the production line. Additionally, the shut-off torque control tools are susceptible to drops in compressed air systems pressure. If the tools are not running at the required PSI, they may shut-off before they hit the torque required for accurate assembly.

The Ingersoll Rand® Solution

To resolve the issue, Ingersoll Rand® helped the customer replace the shut-off torque control tools with the Ingersoll Rand® QX Series™ cordless precision screwdriver. The [QX Series™](#) tool features advanced torque control strategies, a patented transducer control and angle inspection (monitoring). These new features help eliminate the torque over-shoot issue, and the on-board pass/fail indicator provides immediate feedback if an angle failure occurs.

The QX Series™ is a transducerized cordless tool, powered by a [20V lithium-ion battery](#). Utilizing this technology ensures that the torque target is achieved, and if the tool does not have enough battery power, the tool will not start a cycle, eliminating the possibility of pre-mature shutoff.



The Result

The customer reduced the re-work required on the top panel more than 50% by replacing the shut-off torque control tools with the Ingersoll Rand® [QX Series™](#) Tools. The customer has gone more than a month without re-working the part, which previously cost the company three to five minutes per shift. The customer estimates it will be able to recoup the tool investment in less than three months thanks to the increased uptime and production rates.

Ingersoll Rand® has worked with many of the world's leading manufacturing for more than 100 years and understands the interface between the tool and operator. Ingersoll Rand® applies the experience to ensure the accuracy, flexibility, and durability of its products.

Learn more at irtools.com/qx

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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