

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 freezer production line. Ingersoll Rand offers innovative, reliable solutions to help customers increase their efficiency and process intelligence.

Customer Overview

This Ingersoll Rand customer is a global, manufacturer of home appliances.

The Challenge

The 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 system 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 manufacturers for more than 140 years and understands the interface between the tool and operator. Ingersoll Rand applies this experience to ensure the accuracy, flexibility and durability of its products. Learn more at ingersollrandproducts.com/qx.

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