

STANLEY
Engineered Fastening



Case Study

Advanced Process Monitoring Helps Heat Pump
Manufacturer To Reduce Risk and To Improve Productivity



Case Study

Advanced Process Monitoring Helps Heat Pump Manufacturer To Improve Productivity

When a leading manufacturer of heat pump cabinets was looking to improve the assembly line of their cabinet doors, they turned to STANLEY Engineered Fastening for a system solution.

Previous Assembly Solution

The customer had been utilizing shouldered riveting as a means of assembling the heat pump cabinet doors. However, they were seeking a tooling solution that could integrate with their Programmable Logic Controller (PLC) system to keep track of the quantity and quality of the rivets installed in each door.

Customer Challenges

The main challenge was to improve productivity through process monitoring and automation for the heat pump door assembly process.

- Quality control of the number of rivets correctly installed on each door
- Record of data including force, distance, speed, current and bus voltage in real time for each rivet installed
- Connectivity of the blind rivet tool with the customer Programmable Logic Controller (PLC) system for centralized quality monitoring and auditing purposes
- Ensure joint reliability by achieving excellent hole fill with one side installation
- Vibration resistant solution with a fastener with bulbing tail formation

The STANLEY Solution Value

STANLEY Engineered Fastening provided a turnkey full system solution with a high level of process monitoring by introducing The STANLEY Process Monitoring System Solution consisting on **Avdel® Avibulb® 4 mm Aluminum/ Steel Shouldered Rivets**, the **SAT® BR12PP-8 Process Monitoring Smart Blind Rivet Tool with Barcode Scanner** and a **QBE-Series Controller** to perform the heat pump door assembly.

The results were impressive:

- Reduced risk of quality issues thanks for full error-proofing capabilities, ensuring each door is correctly assembled to specifications
- Increased quality control and process monitoring by collecting fastening cycle information and allowing full data traceability
- Enhanced assembly strength and increased resistance to vibration and corrosion
- Improved efficiencies by choosing one single leading supplier with global footprint for fasteners and tools

AVDEL®

STANLEY
Assembly Technologies

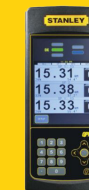


The STANLEY Process Monitoring System Solution



SAT® BR12PP-8 Process Monitoring Smart Blind Tool with Barcode Scanner

Ensures correct rivet placement & links rivet results to serial numbers for quality control.



SAT® QBE Controller with Alpha Toolbox Software

Collects fastening cycle and allows data integration with customer PLC system.



Avdel® Avibulb® 4 mm Aluminum/ Steel Shouldered Rivets

Providing high shear and tensile strength for strong, vibration resistant joints.

STANLEY
Engineered Fastening



Product Portfolio

AVDEL

Structural Blind Fasteners

INTEGRA

Plastic Components

NELSON

Stud Welding

OPTIA

Threaded Fasteners

POP

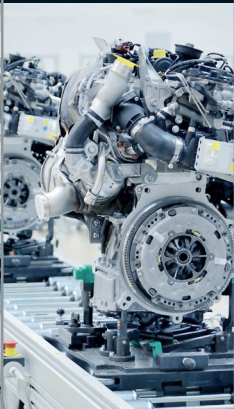
Non-structural Blind Fasteners

STANLEY
Assembly Technologies

Specialist Assembly

TUCKER

Automated Fastener Systems



STANLEY
Engineered Fastening

Stanley Engineered Fastening — a division of Stanley Black and Decker — is the global leader in precision fastening and assembly solutions. Our industry-leading brands, Avdel®, Integra™, Nelson®, Optia™, POP®, STANLEY® Assembly Technologies, and Tucker®, elevate what our customers create. Backed by a team of passionate and responsive problem-solvers, we empower engineers who are changing the world.

STANLEY ENGINEERED FASTENING FAMILY OF BRANDS

AVDEL **INTEGRA** **NELSON** **OPTIA** **POP** **STANLEY** **TUCKER**
Assembly Technologies