ERROR-PROOFING & ASSEMBLY STATIONS

INDUSTRY: AUTOMOTIVE COMPONENTS CUSTOMER: SENIOR FLEXONICS, MX

CHALLENGE

A client, needed to automate assembly processes for their fluid conveyance products. The tasks—one for heat sleeve crimping and another for filter installation—involved multiple steps and required 100% quality verification to meet automotive standards.

ISSUES

Quality Risk: Manual assembly prone to errors, which could lead to part failure in the field.
Process Control: The assembly processes required a high degree of precision and repeatability.
Traceability: There was no automated system to verify and log that every assembly step was completed correctly for every part.

SOLUTION

HQA partnered with Senior Flexonics to design and build two distinct, semi-automated stations, each tailored to a specific product line. These operator-loaded machines guide the user through the process and then automate the critical assembly and inspection tasks. This approach ensures that every step is performed and verified correctly, guaranteeing a defect-free part every time.

HQA-Developed Modules

Sleeve Crimping Station
Filter Installation Station
Servo Press

Key Technologies

Control System:Allen-Bradley PLC & HMI
Inspection: Keyence Laser Sensors
Vision: 3x Cognex cameras

RESULTS

100% Error-Proofing: Automated checks completely eliminate the risk of assembly errors on both product lines.
Process Consistency: The stations deliver a repeatable, controlled process, ensuring every part meets exact specifications.
Cycle Time: Both stations were designed to meet the production target with a consistent cycle time of 15 seconds per part.
ROI: 12 Months.

THINK, DESIGN, BUILD

Contact us: info@hqainc.us, (800) 712-8706
Find us: hqainc.us, 2525 W Le Moyne St Melrose Park IL