How to Qualify, Quantify and Maximize Your Assembly Application

Assembly process challenges like fastening can often be managed with the simple implementation of an error-proofing strategy designed to reduce cost as it eliminates assembly errors. While initial focus is typically placed on preliminary operations, the critical final steps of the assembly process must also be error-proofed with the same consideration and attention to detail as the prior operations.

Potential bottlenecks or assembly process flow challenges can be costly when left uncorrected. Related issues including improper fastener installation can result in errors and product failures. These problems can be corrected by simply incorporating error-proofing equipment to streamline the assembly process ensuring that:

- Fasteners are correctly installed at the proper location and depth
- Minimal products are employed during the installation process
- Data is routinely collected and analyzed
- Installation errors are promptly addressed and resolved

With monitoring equipment, it's easy to determine whether all fasteners have been properly installed. Closed loop control systems provide batch counts to ensure the proper number of fasteners are installed to specific torque and angle limits. Integrating a program like ASG's Sequence Recognition System can ensure uniform compression of all components, and some systems can even report process status through plant-wide network systems.

To begin planning a process control solution:

- Identify problem areas, noting when and how often failures have occurred
- Estimate the potential cost of releasing a damaged product
- If errors could present potential legal ramifications, implement documentation of processes
- Determine whether to increase on-site customer lot inspections to improve quality
- Establish the appropriate level of process control to meet your facility goals

Once you've determined where your assembly challenges lie, seek the assistance of assembly equipment manufacturers, suppliers, or product distributors for advice and potential solutions.

This article is based on an original publication by ASG.