Automation Innovation, Inc. Signature™ Series

Brake Fitting Internal Thread Inspection and Sorting

App Note 1003

Reduction of Returns

100% In-Line Process Monitoring

Defect-Free Threads

High Production Rate

Material Handling for Various Part Sizes

Capacitive Sensor Technology

Additional Applications Notes Available

Situation

A leading manufacturer of brake hoses needed to assure that 100% of the brake fittings were the correct fitting and free of defects They wanted a system that was a self-contained system capable of keeping up with the varying production demands and capable of running 30 different fittings through the same system.

Solution

Automation Innovation designed an automated system using their Signature Analysis based Process Monitoring System and their patent pending Capacitive Thread Probes.

Bulk product was placed into the system's hopper which passed through a bowl feeder to orientate the part. The part was placed on a rotary table which provided the movement through the inspection system.

The part was moved into an inspection station where capacitive thread probes moved in and out of the threaded holes. The signature analysis controller checked the signature obtained from each probe to determine each thread's quality.

The parts are rotated to a good parts discharge station where all good parts were deposited in production totes. Bad parts remained on the table and rotated to a bad parts reject station which ejected the parts into a secured part's bin.

System production rate was 132 parts per hour or 0.45 seconds cycle time.

100% of the parts were inspected for total thread quality. Labor was reduced from 24 operators for three (3) shifts to three (3) part-time operators. In addition, the system reduced the PPMs from over 3,000 to less than two (2).

Other Products

- Process Monitoring
- Press Monitoring
- Gauging Systems
- OEM Heat Treat Monitors
- Assembly/Verification Systems
- Packaging Systems
- Robotic Automation
- Engineering Services

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