

ABS Housing Internal Thread Inspection

App Note 1004

Elimination of Returns

100% In-Line Process Monitoring

Defect-Free Threads

Integration into Existing Automated Clean Room Line

Capacitive Sensor Technology

Additional Applications Notes Available

Situation

A leading manufacturer of ABS systems needed to assure that 100% of the housings and pumps were free of thread defects. They wanted a system integrated into their existing automated clean room line which was capable of running all combinations of threaded bodies - 32 different combinations.

Solution

Automation Innovation designed three (3) bolt-on testing heads using their Signature Analysis based Process Monitoring System, their patent pending Capacitive Thread Probes and their patent pending Floating Head Probe Alignment Device.

A self-contained testing head was designed that included a linear actuator and mounting plate. The basic design was used in all systems.

The systems were mounted into existing test stations along their automated assembly line. The parts were fixtured on part pallets which were registered by lift stations. The linear actuator moved the thread probes into the holes while the probe alignment devices orientated the probes to the centerline of each threaded hole.



The linear actuator removed the thread probes from the holes while the signature analysis controller checked the signature obtained from each threaded hole to determine thread quality.

The testing heads completed their inspection as additional operations were being performed to the parts at the same station. The cycle time for the line was approximately ten (10) seconds, while the testing head's cycle time was less than three (3) seconds.

100% of the parts were inspected for total thread quality. The customer's return rate due to thread problems virtually disappeared.

Other Products

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