

Oil Filter Internal Thread Inspection Test Stand

App Note 1007

Reduction of PPMs

**100% In-Line Process
Monitoring**

Defect-Free Threads

**Material Handling for Various
Part Sizes**

Capacitive Sensor Technology

Inductive Sensor Technology

**Additional Applications Notes
Available**

Situation

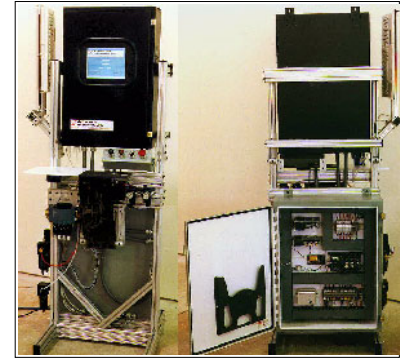
A leading producer of heavy equipment oil filters needed a solution to inspect a new oil filter to be manufactured in a limited number for test marketing. The inspection would assure that 100% of their product was free from thread defects.

Solution

Automation Innovation coupled their proprietary Signature Analysis based Process Monitoring System to their Patent Pending Capacitive Thread Probes and Patent Pending Floating Head Alignment Device and created a manually operated test station.

After the oil filter can was manually placed in a nest, a proximity sensor, sensed its presence and triggered an automatic clamp that gripped the outer diameter of the can and held it in place. An inspection head automatically raised up and moved a capacitive probe in and out of the threaded hole for inspection.

The centerline of the outer diameter of the oil filter can relative to the centerline of the threaded was off as much as 0.080 inches. The inspection station utilized the alignment device compensate for this misalignment.



The signature analysis controller checked the signature obtained for the threaded hole and determined the quality of the threads.

If the threads were good, the can was automatically released, which allowed the operator to remove the oil filter and place another oil filter in the nest for inspection. If the threads were bad, the operator was signaled with a flashing red light and the filter was retained in the clamp until the operator depressed a part release. This prevented the operator from mixing bad product with good due to continuous repetition.

100% of the product was inspected for thread quality. With the system detecting several defective cans, the test stand's return on investment was two (2) months based solely on return costs.

Other Products

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

Providing Process Monitoring Automation to Achieve Zero-Defects

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