

Automated Crack Detection of Piston Pins and Piston Rods

At high speeds, pistons and piston pins have to withstand high loads that occur in the cylinder. This results in very high stress for the component material. To prevent the pistons and / or piston pins from breaking, it is essential to use appropriate homogeneous material without any defects.

To ensure this, a non-destructive eddy current crack testing is carried out during production in the continuous operation. In order to ensure a high test performance, FOERSTER has developed the automated test system ROTO-PUSH. The integration of the mechanical handling together with the STATOGRAPH eddy current test equipment makes ROTO-PUSH the perfect solution. ROTO-PUSH offers outstanding test sensitivity for detecting longitudinal, transversal, and pointing defects on smooth cylindrical surfaces with a test material diameter of 6 mm to 65 mm.

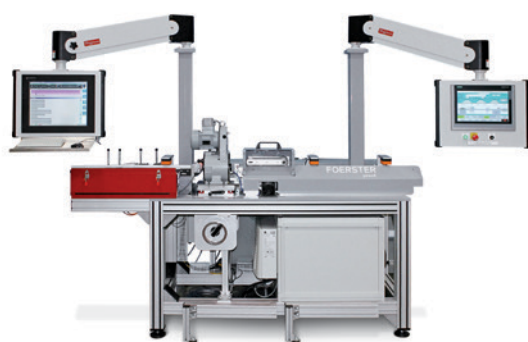


Figure 1: ROTO-PUSH by FOERSTER

The test pieces arrive individually at a constant speed conveyor belt, which transports them into a feeding module. In the feeding module, the test pieces lie axially one after the other and are guided at a constant speed through the FOERSTER rotating head.

Probes which rotate at high-velocity provide an overlapping test coverage pattern which measures the surface quality of the tested parts. The high rotational speed of the rotating sensor systems also ensures a high material throughput.

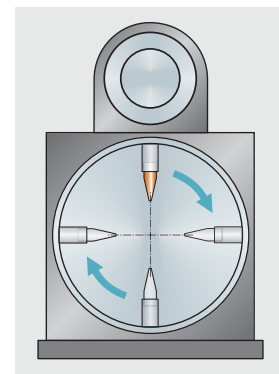


Figure 2: Schematic drawing of the rotating sensor

After testing the components are automatically sorted into good and bad parts. Additionally, the comprehensive reporting and documentation functions provide statistical data for continuous process improvement. With this system solution, FOERSTER supports manufacturers in delivering only components in perfect condition to end customers.

For the crack detection of piston pins and piston rods we recommend the automated test system ROTO-PUSH with built-in STATOGRAPH eddy current testing device. This solution enables the detection of even the finest cracks in the material surface and thus helps to monitor and improve product quality. For further information, please visit our website at: foerstergroup.de