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Uni-Versal Test Machine

Flexible Test Platform

This automatic testing platform was designed to inspect metal parts for flaws and cracks using eddy current technology. Using other techniques it can inspect for dimensional accuracy, internal defects, and feature presence or absence. It utilizes two robots, one to transfer and segregate the parts and the other to manipulate the eddy current probe over the surface of the rotating part. The eddy current instrument is by Uni-West and is located in the base of the self-contained machine. The equipment can be programmed to handle a variety of part numbers. The operator selects the part to test from a menu of parts and changes fingers or jaws as required to automatically test and segregate production parts. The machine is located alongside a parts conveyor. The robot takes parts from the conveyor and deposits them in the test station. The parts are rotated, tested, and accepted parts returned to the conveyor.

In the test station the part is secured in a rotating chuck and the eddy current probe is passed over the surface being inspected. The probe is moved in 3-axis to find radial and circumferential cracks. The reject criteria is determined by a master part with EDM notches representing the minimum flaw level. Depending on the surface conditions flaws as small as .003" wide by .005" deep can be detected.

Using communication between the control system and the Uni-West Instrument the machine operation can be verified and can even self-calibrate itself by adjusting the gain settings for each inspection zone. The master part is placed into the test station and the adjustments are made without operator involvement.



FEATURES

- **Automatically inspects a variety of parts by scanning the ID and/or OD with an eddy current probe**
 - Part selection through the operator screen
 - Robotic Handling and Scanning
- **Installs in-line or beside an existing part conveyor**
 - Picks and returns parts to the same conveyor
 - Handles different part shapes and sizes
 - Automatically segregates reject parts from accepted ones
- **Eddy Current Test with the Uni-West Instrument**
 - Divides parts into zones to identify flaw locations
 - Automatic Verification
 - Probe is manipulated in 3-axis to optimize eddy current performance
 - Detects both circumferential and radial cracks
 - System self-calibrates to achieve the same sensitivity in all zones without operator involvement



Contact us to review your inspection requirements

Your Solutions Partner