

The Uni-Versal™ Test Machine



The Uni-Versal™ Test Machine is the first flexible test platform that offers totally robotic testing of metal bearings and spindles – safety-critical rotating parts – utilizing eddy current testing (ECT) for cracks and flaws.

The Uni-Versal™ was specially designed to meet the current needs of the automotive industry for automated, reliable product quality verification of metal bearings and spindles. The Uni-Versal™ speeds up the verification process with no interruption of flow. It also eliminates the possibility of operator error or misreading of results. It is the only machine of its kind to offer true automatic self-calibration.

AUTO-CALIBRATION

The operator simply selects the part number from the programmed parts library, a master part with EDM notches in each critical zone is placed into the calibration part location for the auto-calibration process. The EDM notches represent the minimal flaw level for each zone. Depending on surface conditions, flaws as small as .003" wide by .005" deep can be detected. The master part is placed into the chuck, then the other robotic arms manipulates the probe along the critical surfaces of the part while the part rotates. Auto-calibration begins and repeats until the reject thresholds for each zone are reached. The master part is returned to its “master location.”



NDT OF PARTS DURING PRODUCTION

Once a part number is selected from the library, a three-dimensional image of the part appears on the screen, and the Uni-Versal™ has set the gain for each zone of the part, production testing begins. One robotic arm then lifts the part from the conveyer belt and brings it into the test machine where it is placed on a rotating chuck. Another robotic arm manipulates the eddy current probe on all three axes, while ensuring that it remains precisely the same distance from the part's surface to ensure accuracy. If required, separate probes can be programmed to robotically test inside and outside diameters for flaws.

The Uni-Versal™ Test Machine segregates rejected parts from verified parts. An optional impact marker can then mark the accepted parts. Verified parts are then returned to the line, so there is no disruption to product flow. Rejected parts are placed onto another conveyor. Parts are divided into zones to identify flaw locations.



The Uni-Versal™ Test Machine

FEATURES

- Speeds the verification process with no interruption of flow
- Totally robotic testing
- Can be installed inline or alongside an existing conveyor belt
- Picks up and returns parts to the same conveyor
- Handles different part shapes and sizes
- Programmable to handle and test a variety of spindles and bearings
- Automatically segregates reject parts from accepted ones
- System self-calibrates to achieve the same sensitivity in all zones without operator involvement
- Adaptable – can be continually reprogrammed to accommodate new part designs
- Offers system verification and true auto-calibration
- Probe is manipulated in 3 axes to optimize eddy current performance
- Detects both circumferential and radial cracks
- Uses the UniWest eddy current signal path

SPECIFICATIONS

Control

- Allen Bradley control system

Power

- 240V AC or 480V AC

Dimensions

- Footprint: 37' deep x 44' long
- Height: Approx. 6'
- Weight: Approx. 2,300 lbs.

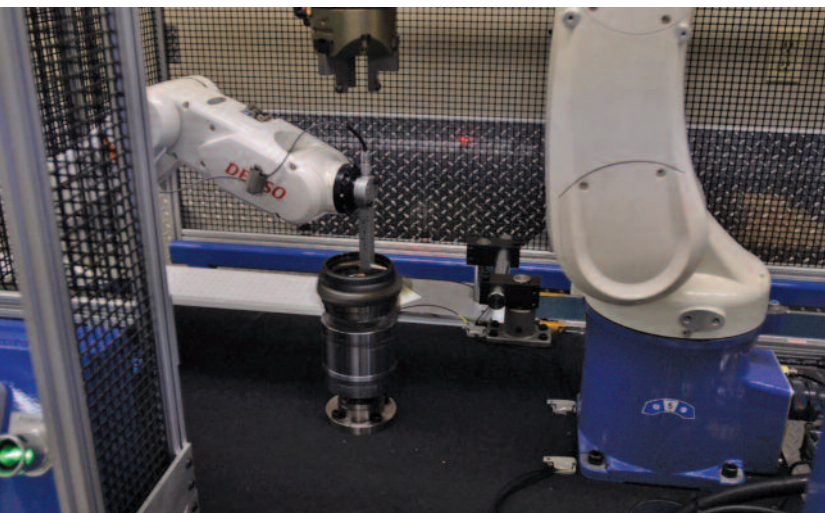
Components

Instrumentation: UniWest US-525M multi-channel eddy current testing instrument.

- Up to eight channels
- Bright 12" diagonal color LCD, flat panel display, with external RGB output
- Frequency range of 20 Hz to 10 MHz
- Eddy current impedance plane with simultaneous viewing of strip chart
- Data storage 32-Gig internal card
- Input/output (I/O) capability
- USB and Ethernet connectivity with printer support
- Three discrete alarm gates per channel, each with independent outputs.

Options

- Multi-channel eddy current instrument – UniWest model US-525M (number of channels to be specified with system)
- UniWest JF-15 bolt hole scanner
- Pin marker
- Dimensional Gauging Inspection
- Vision Inspection



UniWest
Tough Challenges. Critical Solutions.

UniWest provides critical solutions for non-destructive testing.

TEL: 509.544.0720 | FAX: 509.544.0868

122 South 4th Ave, Pasco, WA 99301

www.uniwest.com

Specifications subject to change without notice. March, 2012