

Krautkramer Testing Machines

Full Body Volumetric Inspection Of Round Bars

ROWA-B Series

The ROWA-B is an ultrasonic phased array test system for detection of core and longitudinal surface/subsurface flaws in round bars.

The ultrasonic coupling is realized by a rotating water jacket, generated by tangentially flowing coupling water (GE patent). Due to the compact dimensions of the mechanics, the ROWA-B system can be seamlessly integrated into an existing inspection line.

The bars are fed into the test chamber one by one on linear tracks by means of a guiding and transport device. A lifting/shifting table is required for installation of the test mechanism within the guiding and transport line.



ROWA-B test mechanics





Rotating water jacket

Dimension dependent guiding bushes at the inlet and outlet sides keep the water jacket within the test chamber and determine its free diameter. Rubber sealings prevent water leakage during test and remove the water from the test object's surface after the test.

Depending on the application and object diameter, 4-18 phased array probes with up to 128 elements each are arranged circumferentially in a chamber.

For testing, a multiple number of neighbouring elements are controlled in parallel and form virtual probes. Due to sequential activation of virtual probes along the circumference, the ROWA-B achieves 100% coverage of the rotating sound beam without mechanical probe rotation. The system does not contain any moving parts which results in overall robustness and easy maintenance.

One key advantage of the ROWA-B is a short changeover time. Within a wide dimension range, no mechanical probe adjustment is necessary. Probes are adjusted electronically by recalling stored parameters – only the guiding bushes and the seals have to be changed according to the diameter of the material under test.

The field proven and reliable GE ultrasonic electronics processes all signals and carries out a separate evaluation according to flaw type and position.

System Overview

System Electronics – Type VPA

Windows operating system
Max. 20 kHz PRF in full parallel operation
VME bus controller
Parameter storage
Automatic sensitivity check/adjustment
Extensive monitoring functions, self-test and diagnostic support
State of the art PC technology

Options

Pre-wetting system
Water circulation system
Guiding and transport device
Shifting table

Test Specifications

AMS 2154 class AA
Various end user specific standards

Technical Specifications

Longitudinal surface/subsurface flaw testing
Core flaw testing
Material dia. Ø 10 – 250 mm
100 % coverage
Test speed up to 120 m/min

