



Krautkramer Testing Machines

Full Body Volumetric Inspection Of Steel Bars

ROWA-B Series

Overview

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

The ROWA-B does not contain any moving parts and has a small footprint - this results in overall robustness, short changeovers and a minimized commissioning time.

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



Patented rotating water jacket coupling



Reference Standard Manipulator RSM130

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
 Reference standard manipulator

Test Specifications

AMS 2154 class AA
 Various end user specific standards

Technical

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

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, 4-12 phased array probes with up to 128 elements each are arranged circumferentially in a chamber.

Inspection and changeover

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.

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 need to be changed without the use of any tools 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.

Calibration

The ROWA-B can be either calibrated manually or by means of a fully automated Reference Standard Manipulator (recommended). The Manipulator is seamlessly integrated into the overall system and is being controlled via the application software of the ROWA-B.

Your Benefits

- Fully automated calibration in less than 15 minutes
- Increase of adjustment repeatability by reduced Human Factor
- Safe calibration procedure especially with larger diameter test bars