

[A1550 IntroVisor]

ULTRASONIC FLAW DETECTOR-TOMOGRAPH

The universal portable ultrasonic tomograph provides the object internal structure visualization as real-time section imaging, making the results interpretation much easier and more accessible in compare to an ordinary flaw detector.

The tomograph uses various types of phased arrays comparable by size with traditional transducers. Thanks to a special control algorithm a phased array substitutes a whole kit of standard transducers traditionally used for testing.

A1550 IntroVisor operates basing on the principle of ultrasound virtual focusing in every point of the visualized section, providing high efficiency and best results for spatial resolution and sensitivity.

The A1550 IntroVisor tomograph is designed to meet the challenge of quick and efficient flaw detection at metal, plastic and composite objects with detailed documenting of the results.



Easy insight into the metal...

ADVANTAGES

- Real-time visual imaging of the object internal structure
- Option to use various types of waves:
 - shear waves to inspect welds;
 - longitudinal waves to inspect base metal overlapping angular range used by standard methods of ultrasonic testing
- Enhanced resolution and sensitivity
- Possibility to measure discontinuity flaw size
- High testing efficiency
- Possibility to operate as a tomograph (B-Scan) and as a traditional flaw detector (A-Scan)

FUNCTIONS

- Signal level measurement and reflectors' positions determination at every point of the tomogram
- Changing the scale and imaging area of the tomographic mode in relation to the center of the antenna array
- Displaying multiple echo-signals when the thickness is known
- Two fully adjustable 2D gates
- Run-time control of the tomogram contrast
- Option of choosing a colour and brightness scale
- Creating, saving and selecting of the device settings configuration
- Saving and viewing tomograms and echo signals
- Output of the saved data to an external PC for further processing

ARRAY TYPES FOR THE TOMOGRAPH

The A1550 tomograph uses the following arrays for various fields of application:

- M9060 4.0V0R40X10CL – 16 elements longitudinal wave array with central operation frequency of 4 MHz and scan zone of $\pm 50^\circ$. It is used to test metal and plastic objects.
- M9065 4.0V60R40X10CS - 16 elements shear wave array with central operation frequency of 4 MHz and scan zone from 35° to 85° . It is used to test welds including austenitic. This array is distinguished with the absence of a large refracting prism.

FEATURES

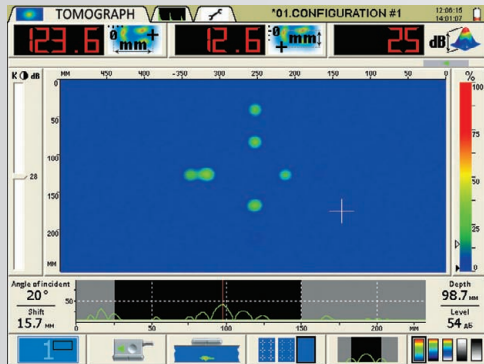
- Raster scanning of the tested object by sampling focus technique with reconstructing a right-angled image (B-Scan)
- Easy to set up and to operate
- Small size
- Large colour display provides presentation of the section graphic image as well as results of signals levels and coordinate measuring
- Easy-to-use intuitive interface with shortcuts to core settings, parameters and control allows to master the device quickly
- Fast-detachable accumulator
- Nonvolatile memory
- USB connection to PC
- Special software



OPERATION MODES

SETUP mode

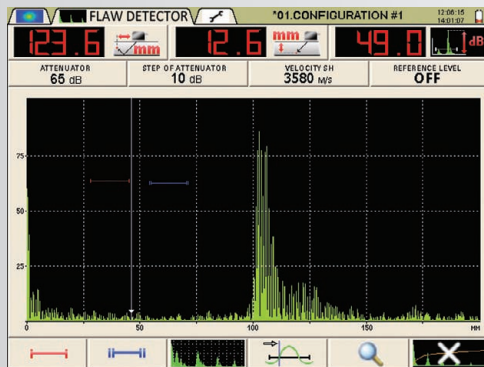
This mode is used to set up and select parameters and working configuration.



TOMOGRAPH mode

Provides operating with arrays and real-time tomogram forming. At this mode not only tomogram (B-Scan) is displayed but all service information as well, including strobes, cursors, digital indicators etc.

When a flaw is detected the user has an option to estimate its real or equivalent size in one of the following ways: using the classic method (comparing to the signal amplitude from the reference deflector) or the flaw-detecting method (measuring coordinates of the flaw image characteristic points and the distance between them directly at the reconstructed image)



FLAW DETECTOR mode

To operate as a conventional flaw detector with classic direct or angle beam transducers. Signals are displayed as A-Scan.

At this mode the device has all features of a modern flaw detector (built-in DGS-diagrams, multilevel digital automatic flaw alarm indication, programmable form of the transducers' outgoing pulse etc)

A1550 IntroVisor combines two devices: an industrial tomograph and a traditional universal ultrasonic flaw detector. It is a reliable and effective tool for most tasks of nondestructive testing.

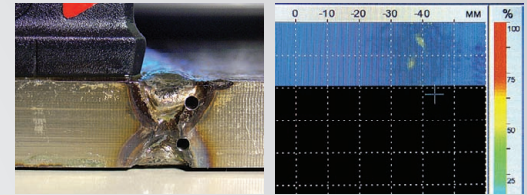
In spite of the fact that the device is designed for quick manual testing it can be used as a part of automated systems. Additionally the A1550 IntroVisor tomograph can be adapted and updated for customer's special needs.

SPECIFICATION

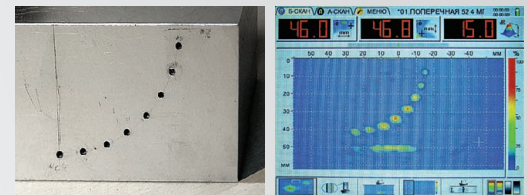
Number of elements in the array	16
Size of image in pixels	256 x 256
Tomogram reconstruction interval	0,1 – 2,0 mm
Operation frequencies	1,0; 1,25; 1,5; 1,8; 2,0; 2,25; 2,5; 3,0; 3,5; 4,0; 5,0; 6,0; 7,5; 8,0; 10,0 MHz
Velocity range	1000 – 9999 m/s
Attenuator range	0 – 80 dB
Attenuator interval	1, 6, 10 dB
Display type	TFT
Display resolution	640 x 480
Power	Accumulator
Rated power voltage	11,2 V
Operation time with the accumulator, not less than	8 h
Size of the electronic unit	258 x 164 x 110 mm
Weight of the electronic unit	1,9 kg
Operation temperature	from -10 to +55 °C

DELIVERY KIT

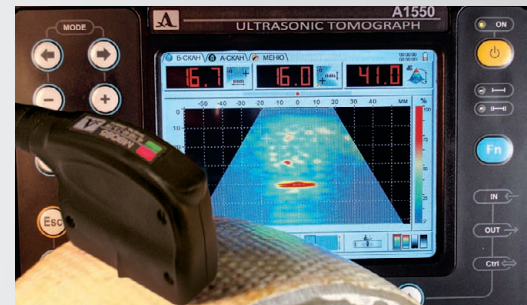
- A1550 IntroVisor – ultrasonic flaw detector - tomograph
- M9065 4.0V60R40X10CS array
- M9060 4.0V0R40X10CL array
- S3568 2.5A0D10CL transducer
- S5182 2.5A65D12CS transducer
- S5096 5.0A70D6CS transducer
- LEMO 00 - LEMO 00 single cable 1,2 m
- USB A - Mini B (5P) cable
- Detachable accumulator
- Power adaptor
- Calibrating sample V2/25
- Travel bag



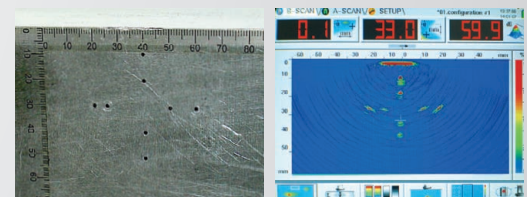
The image of the drilling which is 2,5 mm in diameter, made in austenitic weld with a thickness of 20 mm.



The image of the drilling which is 3,5 mm in diameter, made in aluminum weld with a thickness of 50 mm.



The image of the internal structure of a fiberglass sample with a thickness of 40 mm.



The image of the drilling which is 1 mm in diameter, made in aluminum sample in the form of a "cross".