KRAUTKRAMER USLT 2000B

The proven and tested ultrasonic notebook as a PC-based instrument

Test your joins non-destructively with ultrasound!

The variety of jointing methods used in automotive welding and assembly lines has significantly increased in the last few years. While a few years ago resistance-welding and MIG/MAG welds were the favoured joining methods, nowadays laser welding/soldering, bonding, etc, are preferred.

Since all of these procedures are more and more used complementarily (best fit), a lot of great demands have been made on the test engineering.

Instead of destructive testing of welding spots, for instance with a hammer and chisel, in recent years non-destructive testing with ultrasound has become more and more prominent. The continually increased acceptance of this procedure is last but not least due to the fact that GE Inspection Technologies, co-operating with industry, has made substantial contributions to the technical progress.

All well-known car manufacturers already work successfully with these innovative systems.

USLT 2000B ultrasonic instrument

GE Inspection Technologies is constantly advancing its products and testing solutions, and has developed the new USLT 2000B portable ultrasonic instrument for testing welding spots with ultrasound, in particular for meeting the requirements of the automotive industry. The key features comprise:

Mobile use:
This light, battery-driven ultrasonic test system is recommended for local application, e.g. in production plants. The large TFT screen allows test data to be read easily from significant distances.

Easy handling:
The USLT 2000B distinguishes itself by an ergonomic user interface. The built-in touch screen and the 14 programmable function keys considerably simplify the operation.

A variety of outputs:
The standard interfaces, such as LAN, USB and VGA, allow the instrument to be connected with all known tools from the office world.

From one source you will receive software packages for ultrasonic testing instruments for easy monitoring of joins.

Constant readiness for the future by virtue of productivity, quality and security is and remains a special characteristic of our technology for testing solutions.

Creation of inspection plans with the Database Manager

The Database Manager contains an entire database system for the creation and administration of the testing records. You can plan, control and document your testing, for instance by distributing world-wide via E-mail testing records tuned to the structure of your manufacturing process.

Test with the UltraLOG program

With our application software the evaluation of the welding spots is automated to a large extent. During the testing, which follows an individual test plan, the program delivers a proposal for evaluation.

UltraLOG carries on with testing when the operator has accepted the result. The results are automatically documented, too.

Technical data

Adjustment ranges

min.: 0 - 2.5 mm (steel)
max.: 0 – 9,700 mm (steel)

Range of sound velocity

500 – 15,000 m/s
integrated editable table of materials

Pulse shifting

-10 mm - 1500 mm (steel)

Probe delay

0 - 100 ms

Damping attenuation

50 Ohms / 500 Ohms; 1000 Ohms when used as double transducer probe or in transmission

Pulse strength

220 pF / 1 nF

Frequency range

0.5 - 20 MHz (-3 dB); 4 filter ranges

Pulse repetition frequency

1-1000 Hz, adjustable automatically or manually

Amplification range

110 dB, adjustable in steps of 0.5 / 1 / 2 / 6 dB

Modes of operation

Pulse Echo, as double transducer probe, transmission alignment, one way positive, one way negative, R.F. representation (up to 150 mm steel)

Suppression

0 - 90 % linear

Depth compensation

DAC with up to 16 reference reflectors, dynamic range of 37 dB, maximum slope of 6 dB/ms; Three additional curves with adjustable dB-intervals, convertible as depth compensation (horizontal recording level); satisfies national and international testing regulations

DGS

Recording curves for all valid replacement reflector sizes and probes suitable for DGS; adjustment to DAC or depth compensation; evaluation in dB to the curve, ERG or class (JIS); sound attenuation and transfer correction; applicable reference reflectors: back wall, disc-shaped reflectors and cross holes

Monitor gates

Two independent gates, adjustable across the whole adjustment range; evaluation from the A-scan with frame repetition rate; gate alarm: off, coincidence, anticoincidence; – optic and/or acoustic alarm

Range finding

Individually selectable for each gate at the echo edge or peak in R.F. presentation, and additionally at the zero crossing of the leading and trailing edges of an echo
- Original pulse indication and check point in gate A or B
- Check points: gate B – gate A (differential measurement)

Measurement resolution

Sound path / delay up to 12.6 mm: 0.01 mm; or 0.2 % of the screen width

Amplitude display

0.5 % of screen height or 0.2 dB

A-scan digitising

1024 x 1024 pixels

Image storage

A-scan freeze static, A-scan freeze dynamic (peak value, echo dynamics and real-time signal), average from 2 to 32 ultrasonic shots

Echo comparison

Simultaneous display of the current signal with a saved A-scan

Outputs

Documentation on the existing standard interfaces of the ultrasonic instrument

Conventional languages

German, English, French, Spanish and Italian

Measurement units

mm, inches, µs

Probes

Connection of standard and dialogue probes (automatic recognition)

Interfaces with PC

4 x USB 1.1
Ethernet TCP/IP 10 MBd
Monitor SUB-D 15 pol.

Data storage

Database for the storage and administration of instrument settings, test jobs and test results with A-scan, DAC and alphanumeric commentary, export to Microsoft Excel; limited only by size of hard drive

Software

Operating system: client-server interface OLE 2.0; optional: UltraWORKS (development tool), FFT (Fast Fourier Transformation), EHT (Effective Hardening Testing), RTM (Resonance Thickness Measurement 1 µs resolution), UltraLOG (evaluation program for welding spot testing), UDB Manager (creation of inspection and test schedules)
12,1", TFT, SVGA touch-screen

Display

12.1" TFT, SVAG touchscreen

Battery operation

Approx. 4 h, depending on load on the processor

Operating temperature

0 °C to 40 °C

Dimensions (H x W x T)

390 mm x 374 mm x 155 mm

Weight (incl. 1 battery)

6.7 kg

Options

USLT 2000B	USLT software
USLT 2000BP3	USLT software + UltraLOG
USLT 2000BA3	USLT software + UDB-Manager + UltraLOG