SpotChecker

A Truly Mobile Solution for Spot Weld Testing
Offering Significant Gains in Productivity

SpotChecker combines the power of a computerized expert system with easy-to-use portability.

GE imagination at work

The SpotChecker :
A Hand-Held Flaw Detector for Testing Spot Welds in Situ on the Production Line

The range of joining methods used in automotive body assembly lines has significantly increased in the last few years. While formerly, resistance-welding and MIG/MAG welds were the preferred joining methods, techniques such as laser welding/soldering, bonding, etc, are also in common use today. Since all of these processes can be used singly and sometimes all together, this complexity places new demands on test engineering. In addition to destructive testing of spot welds, i.e. with a hammer and chisel, non-destructive testing with ultrasound has become routinely applied in recent years. The increased acceptance of this procedure is due in no small part to the decisive advancements contributed by GE Sensing & Inspection Technologies, working in close cooperation with the automotive sector. Today ultrasonic spot weld checking is a technique employed by major car manufacturers. The SpotChecker allows to take spot weld checking right onto the production line, saving time – and money.

Portable and Robust

SpotChecker weighs just 3.2 kg (7.05 lb), is battery operated and is sealed to IP65. It features hot swap battery exchange to ensure continuous operation. Battery charging can be done with batteries inside or outside of the instrument, using an external charger. Portability allows inspection to be carried out at the place of welding or on the production line, with no need to transport components to designated inspection stations. As a result, more inspections can be carried out within the same time frame, which means increased productivity.

Easy-to-Use

SpotChecker does not require intensive training but offers the advantage of an "expert" system for people less qualified in weld inspection. Its ergonomically designed operator interface features an 8.4" LCD touch screen, six programmable function keys and twin track balls, so that it can be operated simply and efficiently in the most restricted of testing locations.

Connectivity

The flaw detector can be connected to external periphery devices such as mouse, keyboard and printer by USB. The instrument can also be connected to a PC wirelessly by WLAN or Bluetooth for data up-and down-load.

A non-directional, user-friendly remote control, equipped with programmable functions, provides extended flexibility. Intelligent dialog probes, whose data is automatically recognized and loaded, ensure 100-percent documentation accuracy and increased test reliability in spot weld inspection.

Can be Integrated within Quality Control Loops

By transmitting test results immediately and wirelessly to a suitable database, it is possible to achieve accurate and reliable feedback to adjust welding parameters and correct welding faults and eliminate spotweld defects.
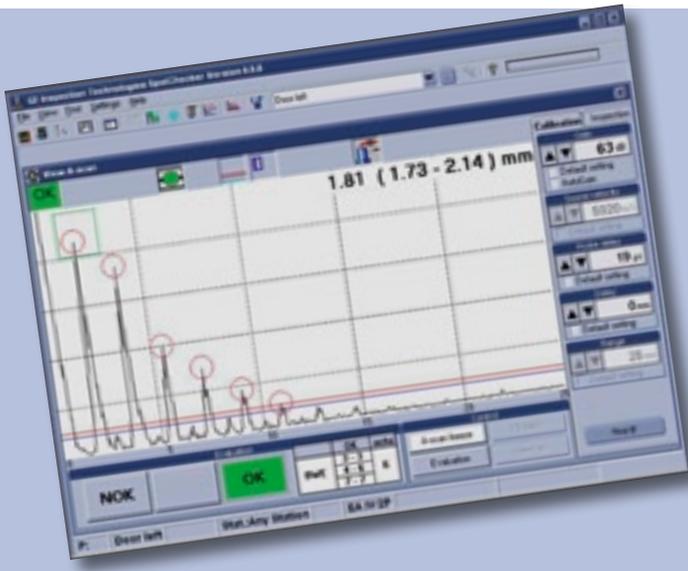
Application Specific Software

By combining ultrasonic expertise with high power computer specifications and application specific electronic data processing, SpotChecker provides a package solution for performing inspection, evaluation and documentation of test results, meeting strict quality management requirements. It uses field-proven UltraLOG software, which been developed specifically for the evaluation and documentation of spotweld inspections. It can help to analyse A-scan echo displays and can provide detailed flaw classification, such as sound spot weld, loose or burnt spot weld, inadequate weld nugget diameter, etc. The software's extensive database also allows the management of specific inspection plans, tailored to suit particular manufacturing processes. It can specify the number of welds to be inspected, and describe the test location, material data, test diagrams and ultrasonic settings, allowing SpotChecker to be used by relatively unskilled personnel.

Compatible with Existing GE Spotweld Testing Instruments

The SpotChecker continues and complements GE Sensing & Inspection Technologies' comprehensive range of USLT spot weld testing solutions. It employs the same software so that data can be shared if required between various products in the range. Inspectors who are familiar with the USLT operating platform soon become proficient in SpotChecker operation.

Supported Globally by the Tradition, Service and Expertise

SpotChecker is a product which enjoys the global support of one of the world's leading manufacturers of NDT solutions. We offer after-sales service, maintenance, calibration and training on a worldwide basis and are proud of a heritage extending back more than 50 years.

Recommended accessories
(not included in the price of the instrument)

Spot-BAT	Lithium-ion battery for Hot Swap (add. battery/spare part)
Spot-Chrg	Battery charger for external charging of the Li-Ion battery Spot-BAT
Spot-BT	Bluetooth Adapter (external via USB)
Spot-WLAN	WLAN module (internal)
Spot-RC	Remote Control incl. tansmitter box and internal receiver
	Optical mouse for USB connection
	External keyboard for USB connection (German layout)
	External keyboard for USB connection (US-American layout) (price on request)
	3.5" floppy disk drive for USB connection
	CD-RW drive for USB connection
Spot-NS	Neck / Shoulder strap

Technical Specifications - SpotChecker

SpotChecker		
Enclosure	Storage Temperature	-20 to +60 °C (-4 to +140°F)
	Operating Temperature	0 to +45 °C (32 to 113°F)
	Dimensions	W 225 × H 314 × D 94 mm (W 8.85 × H 12.36 × D 3.7")
	Weight	Approx. 3.2 kg (7.05 lb) (Incl. Batteries)
	Protection Rating	IP 65
	Shock Resistance	According to EN 600 68-2-27
	Vibration Resistance	According to IEC 600 68-2-6 Fc
	Display	8.4" TFT, SVGA, Touchscreen
	Control Devices	2 × Trackball with 2 Buttons Each, 6 Function Keys, Touchscreen
Connections	Probes	2 × LEMO 00 Triax
	Power Supply Unit	1 × LEMO 0S, 4-pin Socket
	Network	1 × RJ45
	USB	4 × USB Type A Socket, 1 × USB Type B Socket
	Optional	WLAN, Bluetooth
Power Supply	Operating Voltage	15 V DC
	Power Consumption	Approx. 22 W
	Batteries	2 × Lithium-Ion 10.8 V, 4.8 Ah
	Operating Time	Approx. 4.0 h with 2 Batteries
	Power Supply Unit	External Power Supply Unit 100 ... 230 V AC, Max. 70 W
Ultrasound	Pulser Type	Spike Pulse
	Pulse Repetition Frequency (PRF)	Max. 1,000 Hz, No Continuous Pulse Sequence
	Voltage	Max. 400 V
	Initial Pulse Rise Time	< 15 ns
	Damping	50 Ohm
Settings and Evaluation	Calibration Ranges	Min. 0 to 2.5 mm (0 to 0.1") (steel); max. 0 to 9,700 mm (0 to 381") (steel)
	Sound Velocity Range	500 ... 15,000 m/s (0.02 ... 0.59 "/µs) Integrated, Editable Material Table
	Pulse Shift	-10 to 1,500 mm (-0.39 to 50") (steel)
	Probe Delay	0 to 100 µs
	Frequency Range	2 to 20 MHz (–3 dB)
	Gain	110 dB, Adjustable in Steps of 0.5/1/2/6 dB
	Rectification	Full-Wave
	Monitor Gates	2 Independent Monitor Gates, Adjustable over the Entire Maximum Calibration Range; Evaluation on the Basis of A-scan at Display Refresh Rate
	Distance Measurement	- Initial Pulse and Measurement Point in Gate A or B - Measuring Points: Gate B – Gate A (Differential Measurement)
	Measurement Resolution	Sound Path/Time of Flight: up to 12.6 mm: 0.01 mm; Otherwise 0.2 % of Display Width
	Amplitude	0.5 % Screen Height or 0.2 dB
	A-scan Digitization	1,024 × 1,024 Pixels
	Display Freeze	Static A-scan Freeze, Dynamic A-scan Freeze (Freeze Box)
	Echo Comparison	Simultaneous Display of the Currently Active Signal and a Stored A-scan
	Dialog Languages	German, English, French, Spanish, Italian, Chinese, Japanese
	Units	mm

Note: We reserve the right to technical modifications without prior notice.

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