

## Avenger II - Versatile Flaw Detector Built to Last

The Avenger II is rugged and lightweight handheld ultrasonic instrument utilized daily in the evaluation of investment castings, in-service inspection, plastics, and turbine blades, tanks, tubes and pipes.



Incorporating a palmtop design and weighing only 800 grams, the Avenger II allows for a grip-orientated weight distribution to maximize ultrasonic testing efficiency. Single-hand operation frees up the user's other hand to maneuver the probe for a thorough inspection. By utilizing just a few keys, the operator can toggle through the menu navigation functions along with the menu architecture of the operating system with ease. A 'Display Rotation' or 'Flip' feature is an added benefit to assist left-handed users (as well as right) with inspections.

The Avenger II flaw detector includes a Micro USB connection for fast data transfer and the Micro SD Card Slot enables data storage that is expandable up to 32 GB, upon request. Additional standard features are the I/O port for single axis encoding capability, input and TTL output for an external monitor alarm. The Avenger II features a high capacity Li-Ion battery providing 8 hours of continuous operation with full charge.

Onboard analysis tools and reporting capability enhance the user experience and deliver high quality inspection data. The Avenger is designed to operate at a high level in all types of environments and meets the American Welding Society (AWS) standards as well as other published guidelines and requirements. A kit is available for the Avenger II that will meet or exceed code requirements. AWS compliant wedges, shear-wave and straight-beam transducers, cables, and a calibration block are included in the kit.

### FEATURES:

- Ultralight, weighs only 800g
- Code compliant to AWS Standards
- 2 Point Auto calibration
- Single Axis Encoded Scans
- A-Scan Capture as standard / 100 hours of UT data recording
- A-Scan and B-Scan Data analysis on the instrument and PC
- CE Marked
- Ruggedized – IP 66 (Dust Tight, High Pressure Water Jet Safe)



## SPECIFICATIONS:

Physical / Case	Weight	1.76lb (0.79kg) with battery
	Dimensions (H x W x D)	4.61 in. x 6.92 in. x 2.20 in. (117 mm x 176 mm x 56 mm)
	Operating Temperature	32 °F to 131 °F (0 °C to 55 °C)
	Connector type	LEMO (Size 00) 2 Nos.
Power Source	Power Source	Lithium-Ion Battery pack 7.2VDC, 4AH, gives 8 hours continuous operation from fully charged battery
	Charger	Input voltage 100 to 250 VAC. Charge status indicators provided.
Display	Display type	5 Inch color wide VGA LCD/TFT display with higher resolution LCD for better signal representation and better visibility with different color sets
	Display size	800 x 480 pixels, screen size 4.25 in. x 2.52 in. (108 mm x 64 mm)
Measurements	Test Range	0.100 in. to 400 in. (2.5 mm to 10 meters) [in steel]. Fine mode adjustable in steps of 0.001/0.01/0.1 or 1 in. (0.01/0.1 or 1 mm).
	Measurement Unit	Metric or Imperial unit of measurement is selectable.
	Damping	Damping high/low is selectable
	Delay	30 in. (120 mm) adjustable
	Velocity	40 in/millisecond to 600 in/millisecond (1000 m/sec to 15000 m/sec). Fine mode adjustable in steps of 0.1 in/millisecond (1 m/sec).
	Gain	100dB calibrated gain adjustable in 0.1,0.5, 1, 2, 6, or 14 dB steps
	Rejection	0 to 125% FSH
	Rectification	Full wave rectified with filtering
	Frequency	Broad Band amplifier 0.5 MHz to 15 MHz
	Linearity Deviation	Vertical: +3 %, Horizontal + 0.5%
	Test Mode	Pulse echo and Transmit/Receive
	Update Rate	50 Hz
Other Specifications	Monitor	Dual gate adjustable in 1% of Screen width with Positive/Negative Logic, Gate Expand modes

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A-Scan memory	500 Trace Patterns can be stored (with Note/Detail), recalled, or transferred to PC via USB port. A scan trace patterns can be directly stored on SD card or USB disk.
USB and SD card	External USB disk and Micro SD card (up to 32GB) ports provided for data storage
Calibration Set-up	50 different calibration set-ups can be Stored and Recalled
Software	Avengsoft Interface software for transferring A-Scan from AVENGER II to PC is supplied
Reference A-Scan	Reference A-Scan pattern of standard test object can saved and recalled in the background for easy comparison during testing
Echo Dynamics	Echo dynamic pattern display
DAC	Dynamic DAC curve can be digitally plotted (Smooth bolic curve) on screen with selectable offset curves from 0dB to 14dB in 0.5 dB selectable steps. DAC curve can be set as flaw monitor gate. Using minimum 2 to maximum 10 points.
DGS	Defect size evaluation using predefined probe settings and custom probe set-ups, ERS (Equivalent Reflector Size) can also be displayed on the screen
AWS	Built in Software for Evaluation of defects in accordance with AWS Specification D1.1.
Built-In UT Data	Carries out 100 Hours of continuous /Dynamic A-Scan and Recording. B-scan recording (in 8 GB SD Card) which can be replayed and analyzed in Machine as well as PC.
Color B-Scan	Real time Color coded Un-Encoded B-Scan along with A-Scan on the Screen which can be transferred to PC. Analysis of A-Scan and B-Scan can be done in the machine as well as on a PC.
Digital Readout	Thickness/Depth can be displayed in digital readout when using a normal probe and Sound path; Surface Distance and Depth are directly displayed when angle probe is in use.

### **APPLICATIONS:**

- Chemical milling
- Investment Castings
- Turbine blades
- Tube and Pipe
- Tanks
- Boilers Glass
- Metals, plastics, composites, glass, rubber

### **ACCESSORIES:**

- Various Transducer types
- Code-compliant Transducers, Wedges, and Cables
- Couplant

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# AVENGER II

## Flaw Detector



Avenger II Flaw Detector

## Features

- Ultralight, weighs only 800g
- Code compliant to AWS Standards
- 2 Point Auto calibration
- Single Axis Encoded Scans
- A-Scan Capture as standard / 100 hours of UT data recording
- A-Scan and B-Scan Data analysis on the instrument and PC
- CE Marked
- Ruggedized - IP 66 (Dust Tight, High Pressure Water Jet Safe)

## Avenger II is an ultralight ruggedized flaw detector for A-Scan and B-Scan data analysis.

Ease of use is in the design of the Avenger collection and the Avenger II is no exception, incorporating a palmtop design and ultralight weight. A high-resolution display provides excellent brightness with the additional option of a white background for maximum visibility in direct sunlight.

On-board analysis tools and reporting capabilities enhance the user experience and deliver high quality inspection data. The Avenger II is a code compliant instrument and meets the American Welding Society (AWS) criteria. The optional AWS kit includes AWS-compliant wedges, shear-wave and straight-beam transducers, cables and calibration block. Included software automatically calculates a D-value to help improve inspection cycle times.

**Give NDT Systems a call or email us to arrange your demonstration.**



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# AVENGER II

## Flaw Detector



### Technical Parameters

Palmtop, Ultralight, Weighs 800gms including Battery

Test / Range 2.5mm to 5 metre (in steel)

Gain 100 dB adjustable in step of 0.1, 0.5, 1, 2, 6, or 14 dB Step

Micro SD Card Slot (Upto 32GB)

USB 'on the go' communication Port

Dynamic DAC, which can be easily plotted on the screen

Selection of Imperial and Metric Units

Lithium Ion Battery Pack 7.2VDC, 4AH providing 8+ hours of battery life

High Resolution 5 inch Color WVGA LCD/TFT Display  
(800 x 480 pixel, Size 108 x 64mm)

Internal memory of 500 A-Scan patterns and 50 Calibration Setups

Reporting and Printing in A4 format

TTL Output

TCG (Time Corrected Gain) for Echo Amplitude Compensation

Built-in DGS/AVG Curves for time proven flaw size evaluation

Built-in Software for Flaw Rating as per AWS Standards

Test Range 2.5mm to 10 metre (in steel)

Continuous UT Data Recording

Color Coded B-Scan along with recording facility

Single Axis Encoder Input

100 hours of UT Data Recording which can be transferred to PC

A-Scan and B-Scan Data Analysis inside the machine as well as PC

## Kit

- Main Unit Ultrasonic Flaw Detector Model: Avenger II
- Rechargeable Li-Ion Battery Pack BPA (7.2V 4AH)
- Charger / Mains Adaptor AC-1 (100-250V 50Hz-60Hz)
- Charging Dock Station for external charging ABC-1
- 8GB USB Flash Drive containing User Manual and Data Transfer Software
- USB ON the Go (OTG) Cable for data transfer
- Neck Strap for extra protection
- Pelican-type Carrying Case

