

# CTS-9005

Digital Ultrasonic Flaw Detector



Eye Catching Design

Complete Functions

Reliable Quality

Easy Operation

Compact Size

# CTS-9005

## Portable, Easy-to-Use, Reliable

### —New Generation General-Purpose Digital Flaw Detector

**Compact & Portable:** The whole unit weight (battery included) is approx. 1.2kg, suitable for aloft and field work.

**Easy Operation:** There are just a few concisely-defined keys, easy to be operated with only one hand.

**Environmental Protection:** This system is designed based on IP65 standard, suitable for complex industrial flaw detection environment.

**Super-low Consumption:** The configured Li-polymer battery can support up to 7-hour continuous operation.

**Strong Performance:** High resolution and penetration, achieving precise flaw detection from thin plates to large forged pieces.



## Superior Features

- Max. sampling rate 240MHz; Measurement resolution 0.1mm.
- Operating frequency range: 0.5~10MHz.
- 20~2000Hz (step: 20Hz): avoid reverberation signals during flaw detection.
- The AGC (auto gain control) function for efficient flaw detection.
- The AVG/DGS curve works with echo compare function, making echo quantification of different distances and amplitudes more convenient.
- The 5.7" color TFT LCD of wide viewing angle, high brightness and high definition delivers every clear detail.
- Peak memory function facilitates quick scanning and measurement on workpieces.
- Three different color schemes can meet the requirements of different application environments and habits.
- Up to 300 sets of curve and waveform can be saved for various workpieces and flaw detection standards.



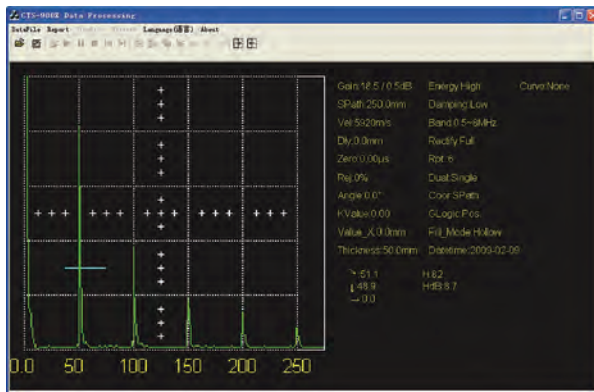
\* EN-12668-1 and ASTM E317-1 compliant

<https://a3-eng.com/>



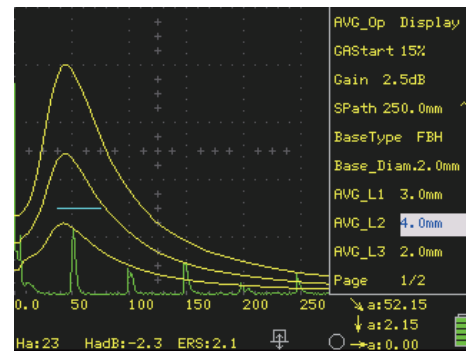
# Application Examples

## Data Storage



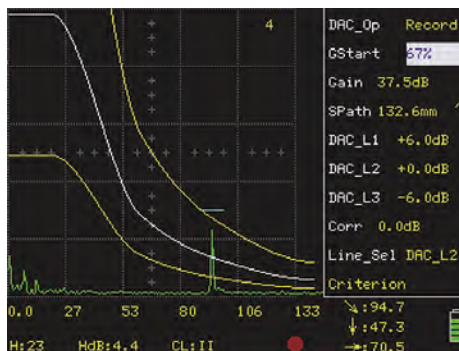
- Detection echoes, curves or parameters may be losslessly stored to a PC via the USB port, facilitating report editing and data management.

## AVG/ DGS Curve



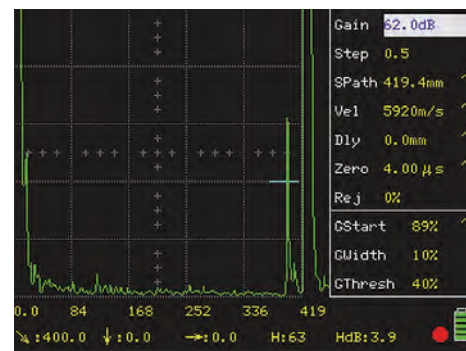
- Three curves of different equivalent values will be auto created by taking a known flat-bottom hole or large flat-bottom echo for reference.

## DAC Curve



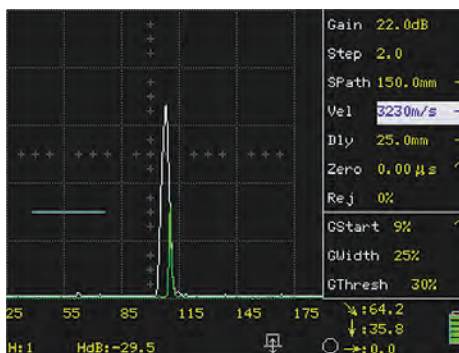
- The DAC curve function brings easier and more convenient flaw evaluation.

## Detection on Large Forged Pieces



- The large detection range and high sensitivity surplus meet the requirements of detection on large forged pieces or coarse crystal materials.
- This picture shows an echo from a 400mm  $\Phi$ 2 flat-bottom forged test block.

## Peak Memory



- Refresh the highest echo within the screen range automatically, completing flaw positioning quickly.

## On-site Application



- CTS-9005 inspect shaft.

Function	Unit	Specifications
<b>Testing Index</b>		
Attenuator Error	dB	Every 20dB $\pm$ 1dB
Vertical Linearity Error	%	$\leq$ 3
Dynamic Range	dB	$\geq$ 32
Horizontal Linearity Error	%	$\leq$ 0.5
<b>Pulser</b>		
PRF	Hz	20~2000Hz, step: 20Hz
Damping		Low /High, 2 steps (1000 $\Omega$ /50 $\Omega$ )
<b>Receiver</b>		
Operating Frequency Range	MHz	0.5~10, with steps of 1-4/ 0.5-10/ 1/ 2.5/ 4/ 5/ 10
Reject	%	0 ~ 80
Gain Adjustment	dB	0 ~ 110, with steps of 0.5 / 2 / 6 / 12
<b>Measurement</b>		
Detection Range	mm	0 ~ 13000 (Longitudinal wave in steel)
Display Delay	mm	-10 ~ 1000 (Longitudinal wave in steel)
Rectify		Positive, Negative, Full, Filter
Auto Gain		Enabling the echo amplitude within the gate auto adjusted to a designated amplitude Amplitude setup: 80% / 100%
Angle Measurement		Measure probe angle
Material Velocity	m/s	400 ~ 15000
Probe Zero	$\mu$ s	0 ~ 200
Auto Calibration		For calibrating material velocity and probe delay. Calibration mode: Velocity and Zero, Angle Measurement
DAC Curve		For making, setting and applying DAC curves, up to 8 curves
AVG / DGS Curve		For making, setting and applying AVG / DGS curves
Screenshot		Print the system screen as an image and output to a USB disk
Parameter Output		Save the screen measurement parameters to a USB disk
Peak Memory		Display waveform envelope
Freeze		Freeze screen waveforms
Zoom		Screen waveform area zoom-in and zoom-out
Dual Probe		Single / Dual
USB Port		Save the system internal data sets to a USB disk via the USB port
Alarm		Off / On, enabling and disabling the buzzer alarm
<b>Gate</b>		
Gate		Two measure alarm gates. Gate mode: off / positive / negative Gate Start: 0~109% Gate Width: 1~109% Gate Thresh: 10~90%
<b>General Technical Specification</b>		
Display Screen		5.7" high brightness TFT LCD, 320 x 240 pixels
Measure Unit		Inch/ mm
Language		Up to ten kinds of language for selection, including English, Japanese, French, Spanish, Russian, German, Polish, Hungarian, Turkish, Portuguese
Power Supply		DC 12V (external power supply); 7.4V (battery)
Battery Operating Time	h	$\geq$ 7 (Backlight brightness dependent. The brightness will be adjusted automatically according to environment temperature.)
Operating Temperature	$^{\circ}$ C	-10~40
IP Code		IP65
Weight	kg	Approx. 1.2 (including battery)
Dimension	mm	152 $\times$ 240 $\times$ 52 (W $\times$ H $\times$ L)