

# ULTRASONIC FLAW DETECTOR TUD210



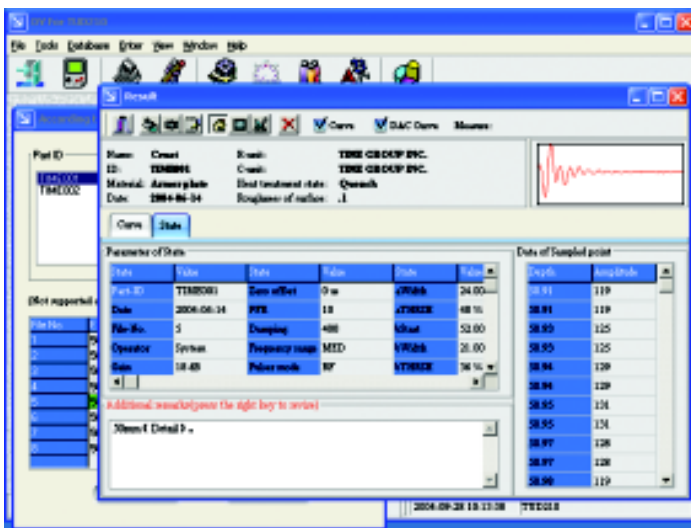
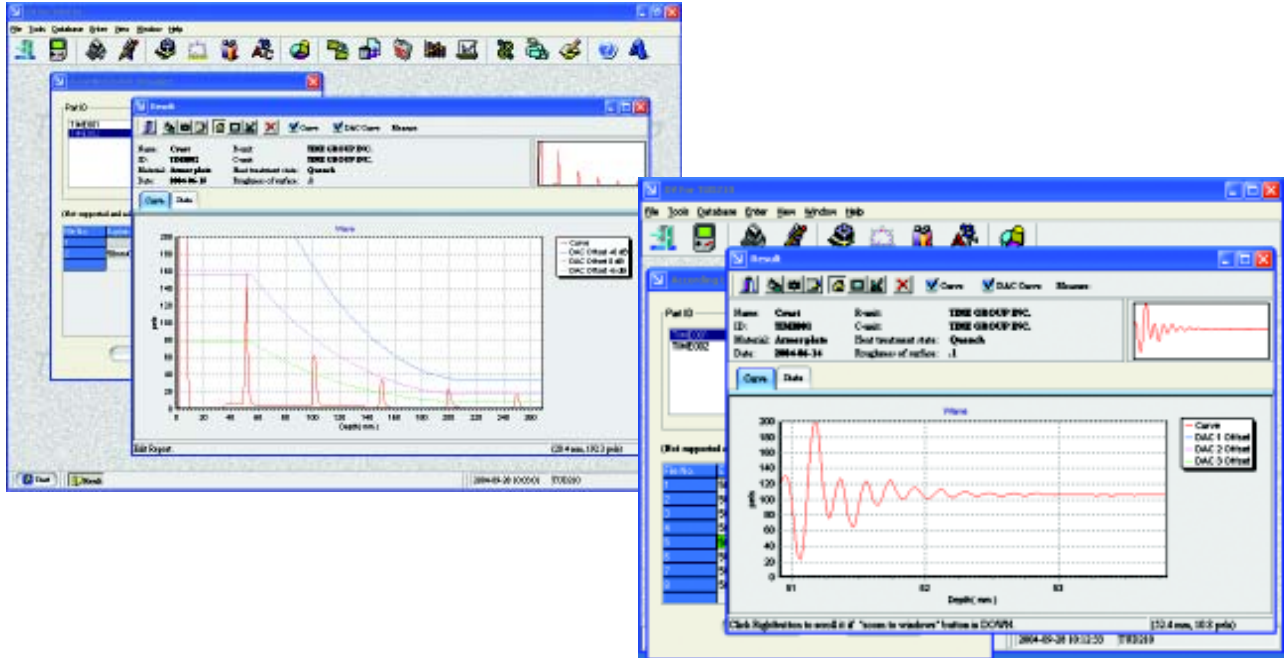
## Features:

- Real-time multi function system, stable, reliable and efficient operation
- The embedded software can be updated online
- Big memory of 400 A graph and 40000 thickness value
- Super Fast sampling capability, RF wave full display
- Wide & high bright EL display screen
- Alternative switch between single probe and double probe
- DAC automatically creation with standard test block
- Li battery, continue working time up to 6 hours
- USB and RS232 interface
- Adjustability of DAC curve is available for various requirements of DAC application
- High speed sampling, radio frequency display with 80 MHz for sampling  
Min. display range 2.5mm

## Technical Specification

Test modes	Pulse-echo and dual
Pulse	Spike excitation pulse
Measuring range	2.5mm to 5000mm / 0.1 inch to 200 inch
Sound speed	1000 m/s~9999m/s
Vertical linearity error	≤ 3%
Dynamic range	≥ 32dB
Horizontal linearity error	≤ 0.2%
Display delay	-20μs to +3400μs
Sensitivity leavings	≥ 50dB
Probe delay	0μs~99.99μs, resolution 0.01
Gain	0-110 dB variable in selectable steps of 0.2,0.5 ,1,2,6,12, and locked
Damping	50 ohms, 150 ohms, and 400 ohms
Rectification	Full wave, positive half wave, negative half wave and RF
Bandwidth	0.2MHz~10MHz (Low0.2~1, Mid.0.5~4, High 2~10)
Reject	Linear, 0-80% of full screen, variable in steps of 1%
Scanning Resolution	0.1mm (2.5mm~100mm) 1mm (100 mm~5000mm)
Display screen	320 × 240 pixels
Distance readout	Provide single echo or echo to echo thickness reading or sound path, surface, and depth reading for angle beam testing with either peak or flank detection
Unit	mm/inch
Interface	RS 232 and USB interface 9600 baud, 8 bits word length, no parity, 1 stop bit
Printer driver	TP UP-NH-S thermal printer
Power supply	Li batteries, continues working time approx. 6 hours
AC requirements	85 to 264V AC/1.0A, 47 to 63Hz
Charging time	5 hours maximum
Operating temperature	0°C to +40°C
Storage temperature	-20°C to +60°C
Dimensions (D × W × H)	53 mm × 184 mm × 230 mm
Weight	1.2 kg
Probe connector	LEMO

## Dataview for TIME ultrasonic flaw detector TUD210

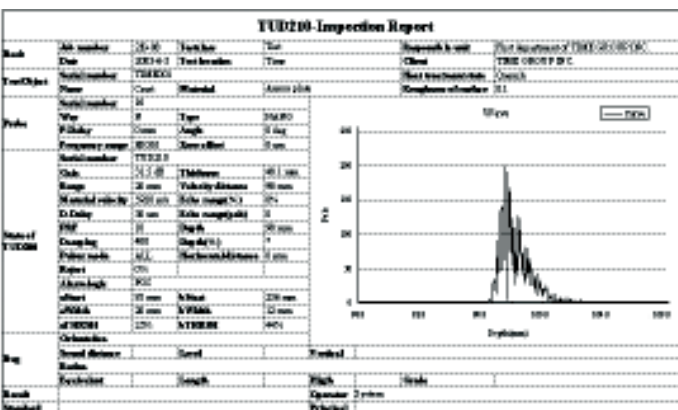


### Standard Delivery

- Main unit 1
- Li battery 1
- Neck strap 1
- Power adapter 1
- Couplant 1
- Straight probe 1
- Angle probe 1
- Cable with LEMO connector 2
- Protection case 1
- Screwdriver 1
- TIME certificate 1
- Warranty card 1
- Instruction manual 1

### Optional Accessory

- Various probes (see page 35)
- Dataview for TUD210 ( software)
- Connecting cable
- Printer TP UP-NH



# ULTRASONIC FLAW DETECTOR TUD300



## Features:

- Measuring of pitch interval and analyze of echo times
- Auto-calibration of probe and auto-gain
- Two measuring unit: mm/inch
- All built-in software can be up-graded on PC
- Lock/unlock the system parameters
- Equipped with gate setting and alarming function
- Two measurement displaying mode: A-scan and B-scan
- Freeze/defreeze waveform and detection parameters
- Communicating with PC by RS232 port for transferring the measuring data and system parameters
- 10 detecting channels are available with separated detecting parameters and DAC curve in every channel
- Automatic generation of DAC curve, and 30 points can be recorded at most, adjustable offset curves and gain correction functions are available
- Provided with linear reject function, the highest range is 80% of the screen height
- Memory up to 300 A scanned images, parameters and DAC, and 30000 thickness values
- Four Rectify Ways: positive half-wave, negative half-wave, full wave and radio frequency
- Three detecting modes: single-probe , dual-probe ones and transmission

## Technical Specification

Scanning Range	2.5 mm ~5000 mm
Scanning Resolution	0.1mm (2.5mm~100mm) 1mm (100 mm~5000mm)
Gain Range	0dB ~110 dB
D-Delay	-20μs~ +3400μs
P-Delay	0μs~99.99μs, resolution 0.01μs
Sound speed	1000 m/s~9999m/s
Bandwidth	0.2MHz~15MHz (Low0.2~1, Mid.0.5~4, High 3~15)
Vertical linearity error	≤ 3%
Horizontal linearity error	≤ 0.2%
Dynamic range	≥ 32dB
Rectification	Positive half wave, negative wave, full wave, and RF
Sensitivity leavings	≥ 60dB
Test mode	Pulse-echo, dual and through transmission
Pulser	Spike excitation pulser
Damping	50ohms, 150ohms and 400ohms
Reject	Linear, 0-80% of full screen, variable in steps of 1%
Unit	mm/inch
Interface	RS232
Printer	TP UP-NH-S line thermal printer
AC requirements	85-264V AC/1.0A,47-63Hz
Temperature	-10°C ~40°C
Humidity	20%~90%RH
Power supply	Li battery 4 × 3.6V 4000mAh
Charging time	4~5hours
Weight	1.47kg
Overall dimension	243mm × 173 mm × 70 mm

## Standard Delivery

- Main unit 1
- power adaptor 1
- Neck strap 1
- Cable for probe 2
- Carrying case 1
- Instruction manual 1
- Straight probe 1
- Angle probe 1
- Couplant 1
- TIME certificate 1
- Warranty card 1
- Instruction manual 1

## Optional Accessory

- Connecting Cable
- Dataview software for TUD300
- Printer TP UP-NH
- Various probes (see page 35)



## Features:

- Two measuring unit: mm/inch
- Four Rectify Ways: positive half-wave, negative half-wave, full wave and radio frequency
- Two scanning mode: A and B
- Gate alarming function
- 32 detecting channels are available with separated detecting parameters and DAC curve in every channel
- Automatic generation of DAC curve, and 30 points can be recorded at most, adjustable offset curves and gain correction functions are available
- Three detecting modes: single-probe , dual-probe and transmission
- Equipped with high-speed USB port and flash memory device can be used directly on the instrument
- Data and documents are managed under FAT file system, making the management of inspection data more convenient, faster and more reliant
- Super large memory up to 32M, 1000 echo data can be stored in 32 detecting channels
- Brand new digital signal circuit is designed for TUD310, Digital signal processor (DSP) is used for signals analyzing, making circuit noise reduced properly and waveform more stable
- EPSON ink-jet printer can be connected with TUD310 by USB cable
- Real-time waveform display and review

## Technical Specification

Scanning Range	2.5 mm ~9999 mm
Scanning Resolution	0.1mm (2.5mm~100mm) 1mm (100 mm~5000mm)
Gain Range	0dB ~110 dB
D-Delay	-20 $\mu$ s~+3400 $\mu$ s
P-Delay	0 $\mu$ s~99.99 $\mu$ s, resolution 0.01 $\mu$ s
Sound speed	1000 m/s~9999m/s
Bandwidth	0.2MHz~15MHz (Low0.2~1 Mid.0.5~4 High 3~15)
Vertical linearity error	$\leq$ 3%
Horizontal linearity error	$\leq$ 0.2%
Dynamic range	$\geq$ 32dB
Rectification	Positive half wave, negative wave, full wave, and RF
Sensitivity leavings	$\geq$ 60dB
Test mode	Pulse-echo, dual and through transmission
Pulser	Spike excitation pulser
Damping	50ohms, 150ohms and 400ohms
Reject	Linear, 0-80% of full screen, variable in steps of 1%
Unit	mm/inch
Interface	RS232 / USB
Printer	EPSON ink-jet printers
AC requirements	85-264V AC/1.0A,47-63Hz
Temperature	-10 $^{\circ}$ C ~40 $^{\circ}$ C
Humidity	20%~90%RH
Power supply	Li battery 4 $\times$ 3.6V 4000mAh
Charging time	4~5hours
Weight	1.47kg
Overall dimension	243mm $\times$ 173 mm $\times$ 70 mm

## Standard Delivery

- Main unit 1
- Power adaptor 1
- Neck strap 1
- Cable for probe 2
- Carrying case 1
- Instruction manual 1
- Straight probe 1
- Angle probe 1
- Couplant 1
- Flash disk 1
- TIME certificate 1
- Warranty card 1
- Instruction manual 1

## Optional Accessory

- Connecting Cable
- Dataview software for TUD310
- Various probes (see page 35)
- EPSON ink-jet printer

# ULTRASONIC FLAW DETECTOR TUD320



## Features:

- Color TFT display screen with backlight
- Reference waves with different colors can be displayed at the same time
- Curved surface correction: inspection of inner and outer curved surface, auto-correcting the detecting result according to diameter of curved surface
- DGS (AVG) curve: special key is designed for 2 types of DGS curves: flat-bottom hole and infinite plane
- Real-time battery power indication, displayed by percentage
- Displaying echo times during multi-times echo detecting in which users are required to input the thickness value of work piece into instrument
- Automatic generation of DAC curve, and 30 points can be recorded at most, adjustable offset curves and gain correction functions are available
- Three detecting modes: single-probe, dual-probe and transmission
- Two scanning modes: A and B
- Two measuring unit: mm/inch
- Four Rectify Ways: positive half-wave, negative half-wave, full wave and radio frequency
- Gate alarming function
- 10 detecting channels are available with a separate detecting parameter and DAC curve in every channel

## Technical Specification

Scanning Range	2.5 mm~5000mm
Scanning Resolution	0.1mm (2.5mm~100mm) 1mm (100 mm~5000mm)
Gain Range	0dB~110 dB
D-Delay	-20 $\mu$ s~+3400 $\mu$ s
P-Delay	0 $\mu$ s~99.99 $\mu$ s, resolution 0.01 $\mu$ s
Sound speed	1000 m/s~9999m/s
Bandwidth	0.2MHz~15MHz (Low0.2~1 Mid.0.5~4 High 3~15)
Vertical linearity error	$\leq$ 3%
Horizontal linearity error	$\leq$ 0.2%
Dynamic range	$\geq$ 32dB
Rectification	Positive half wave, negative wave, full wave, and RF
Sensitivity leavings	$\geq$ 60dB
Test mode	Pulse-echo, dual and through transmission
Pulser	Spike excitation pulser
Damping	50ohms, 150ohms and 400ohms
Reject	Linear, 0-80% of full screen, variable in steps of 1%
Unit	mm/inch
Interface	RS232
Printer	TP UP-NH-S line thermal printer
AC requirements	85-264V AC/1.0A ,47-63Hz
Temperature	-10 $^{\circ}$ C ~40 $^{\circ}$ C
Humidity	20%~90%RH
Power supply	Li battery 4 $\times$ 3.6V 4000mAh
Charging time	4~5hours
Weight	1.47kg
Overall dimension	243mm $\times$ 173 mm $\times$ 70 mm

## Standard Delivery

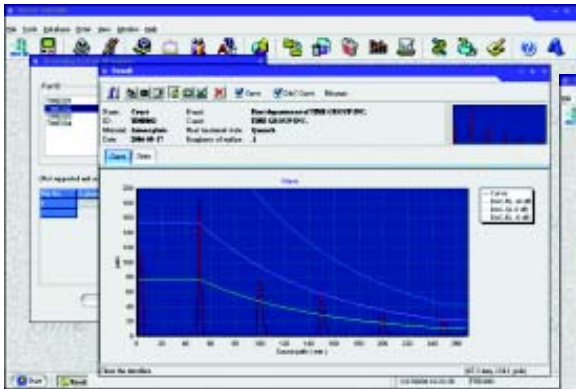
- Main unit 1
- power adaptor 1
- Neck strap 1
- Cable for probe 2
- Carrying case 1
- Instruction manual 1
- Straight probe 1
- Angle probe 1
- Couplant 1
- TIME certificate 1
- Warranty card 1
- Instruction manual 1

## Optional Accessory

- Connecting Cable
- Dataview software for TUD320
- Printer TP UP-NH
- Various probes (see page 35)

## Dataview for TIME ultrasonic flaw detector TUD300/310/320

- Editing and management of saved data and echoes
- Edit and print of examination report as users' demand
- Dataview for TUD310 and TUD320 is equipped with real-time display of detecting waves on the computer screen
- Copy screen and DGS(AVG) management functions are supplied for TUD320 dataview

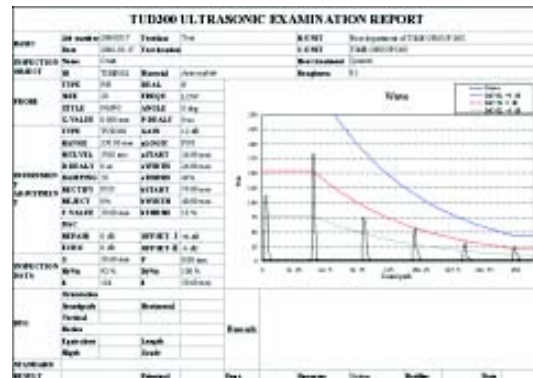


Review of echo




Depth	Size	Location	...
100	2.0	100	...
150	1.5	150	...
200	1.0	200	...
250	0.8	250	...
300	0.6	300	...
350	0.5	350	...
400	0.4	400	...
450	0.3	450	...
500	0.2	500	...

Scroll and review data for examination



Edit and print of Examination Report

## TIME ultrasonic probes

TIME supplies various kinds of ultrasonic probes as customer's requirements

