

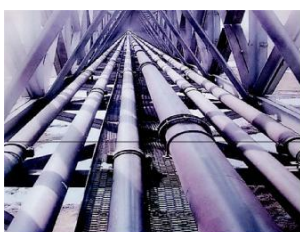
# TIME

## TESTING INSTRUMENTS



## Ultrasonic Thickness Gauge

E1	Ultrasonic Thickness Gauge TIME <sup>®</sup> 2110/2113	P50
E2	Ultrasonic Thickness Gauge TIME <sup>®</sup> 2130/2132/2134	P51
E3	Ultrasonic Thickness Gauge TIME <sup>®</sup> 2136	P53
E4	Ultrasonic Thickness Gauge TIME <sup>®</sup> 2170	P54
E5	Ultrasonic Thickness Gauge TIME <sup>®</sup> 2131	P55
E6	Ultrasonic Thickness Gauge TIME <sup>®</sup> 2430	P56



Thickness check of pressure pipelines



Monitoring of wall thickness of vessels easy to corrode such as oil cans



Thickness monitoring of pressure vessels such as boilers



Quality control of forging and casting parts



Routine maintenance of roads and bridges



Corrosion check of ship walls and bottom



### Features

- Free conversion between metric and Imperial
- Automatic calibration of zero point: automatically correct the system errors
- Automatic non-linear compensation: computer software is used to correct the non- linear errors of the probe for the purpose of improving the accuracy
- The upward and downward adjustment keys enable prompt selection of sound velocity, thickness, and check the thickness memory units
- Prompt indication for coupling state
- Sound velocity can be measured according to the test block's thickness
- Ten thickness values can be stored without loss after turn-off
- Sound velocity of five different materials can be stored directly needless to search in the conversion table
- Low voltage indication and Automatic turn-off
- Oil proof protection for longer service life

TIME®2110/2113

ULTRASONIC THICKNESS GAUGE

### Standard Delivery

- Main unit 1
- 5PΦ10 probe 1
- Couplant 1
- AAA battery 1
- TIME certificate 1
- Warranty card 1
- Instruction manual 1

### Optional Accessory

- 5P 10/90 probe (1.2~225.0mm)
- SZ2.5P probe (3.0~300.0mm)
- 7PΦ6 probe (0.75~60mm)

### Technical Specification

	4-digit LCD	
		0.1mm
		0.01mm
	0℃~ 40℃	

## ULTRASONIC THICKNESS GAUGE

- Optional transducers
- Printer TA230 with cable for TIME®2130
- Dataview software for TIME®2130

●Main unit	1
●Transducer 5PΦ10/90°	1
●Transducer ZW5P for TIME <sup>®</sup> 2132	1
●Transducer TSTU32 for TIME <sup>®</sup> 2134	1
●Rubber jacket	1
●Couplant	1
●Batteries AA 1.5V	2
●Screwdriver	1
●TIME certificate	1
●Warranty card	1
●Instruction manual	1



- TIME®2130: Equipped with RS232 interface to connect TA230 printer and PC with optional software.
- 5PΦ10/90° transducer for normal purpose and optional TSTU32 transducer for casting iron.
- TIME®2132: Anti-high-temperature reaching up to 300°C
- TIME®2134: equipped with TSTU32 transducer for casting iron

<ul style="list-style-type: none"> <li>●Free conversion between metric and imperial</li> <li>●Automatic calibration of zero point: automatically correct the system errors</li> <li>●Gain adjustment, Low voltage indication and Automatic turn-off</li> <li>●500 test data and 5 sound velocity can be stored, delete and review</li> <li>●Big LCD screen with back-light and adjustable contrast ratio</li> <li>●Equipped with the mode to capture the minimum</li> </ul>	<ul style="list-style-type: none"> <li>●Two display modes: current thickness or minimum thickness</li> <li>●Two point calibration for high accuracy</li> <li>●Upper /lower limits pre-setting and sound alarm</li> <li>●Resolution 0.001mm and 0.01mm selectable for your use</li> </ul>
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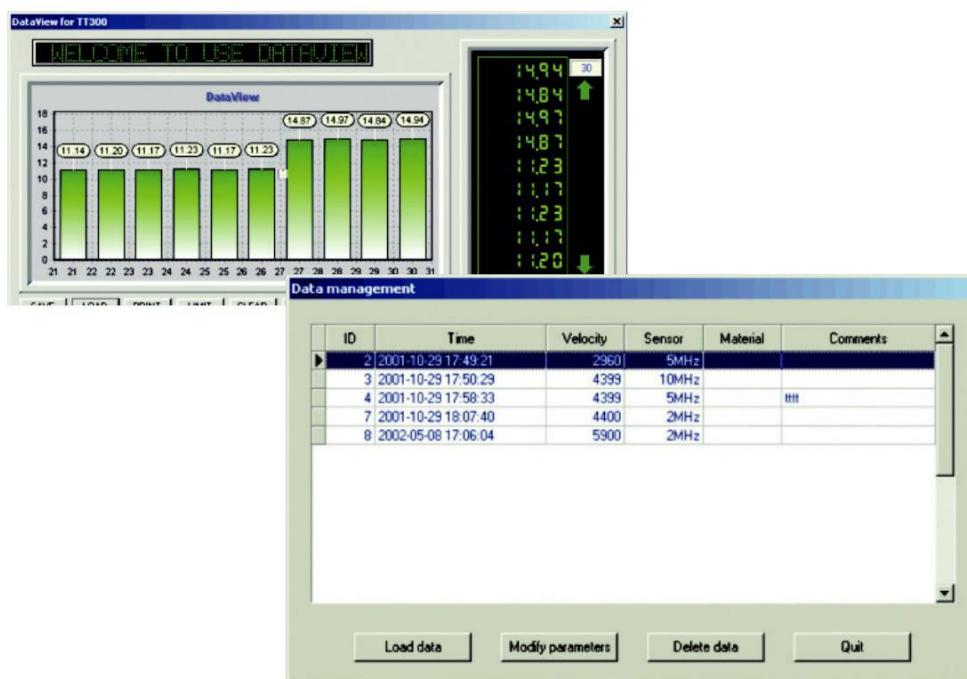
	0.75mm-300.00mm(steel)	5.0mm-80.0mm	5.0mm-40.0mm (casting iron)
	0: 1mm/0.01mm or 0.01/0.001inch	0: 1mm or 0.01inch	
	-10℃~ +60℃	-10℃~ +300℃	-10℃~ +60℃



# TIME<sup>®</sup>2130/2132/2134

ULTRASONIC THICKNESS GAUGE

## Dataview for TIME<sup>®</sup>2130





## Features

- Measure through coated surfaces and eliminate the thickness of the paint using a dual element style transducer in echo-echo mode
- Identify the standard transducer automatically, or preset the transducer frequency manually
- Transducer TSTU17 and TSTU32 are optional to measure various materials
- Connect to TIME TA230 printer or PC via RS232 interface
- Upper /lower limits pre-setting and sound alarm
- Differential mode shows the difference between the test thickness value and the user-setting thickness range.
- Memory of 500 test data
- Resolution 0.001mm and 0.01mm selectable for your use

# TIME® 2136

## ULTRASONIC THICKNESS GAUGE

### Standard Delivery

- Main unit
- Transducer 5PΦ10/90°
- Couplant
- Sheath for main unit
- TIME certificate
- Warranty card
- Instruction manual

### Optional Accessory

- Communication cable
- Standard plate
- TIME TA230 printer
- Transducer TSTU17
- Transducer TSTU32

## Technical Specification

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<div> <div></div> <div></div> </div>	<div> <div>0.001mm or 0.01mm</div> <div>0.001mm or 0.01mm</div> </div>
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<div> <div></div> </div>	<div> <div></div> </div>
<div> <div></div> </div>	<div> <div>4.0mm(steel)</div> <div>4.0mm(steel)</div> </div>
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<div> <div></div> <div></div> </div>	<div> <div>-10~60℃</div> <div>-10~60℃</div> </div>
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### Features

- Especially suitable for testing thin workpieces while keeping high accuracy
- I-E testing mode and E-E testing mode
- Sound velocity calibration and single point calibration
- Sound alarm and differential mode are available
- Free conversion between metric and imperial
- Up to 500 data can be stored, reviewed and deleted
- Backlight and adjustable contrast
- Result can be print out and transfer to PC

# TIME®2170

ULTRASONIC THICKNESS GAUGE

### Standard Delivery

- |                                   |   |
|-----------------------------------|---|
| • Main unit                       | 1 |
| • Transducer 15Pø6                | 1 |
| • Screw driver                    | 1 |
| • Protection sheath for main unit | 1 |
| • Connecting protection sheath    | 1 |
| • Cover protection sheath         | 1 |
| • AA battery 1.5V                 | 2 |
| • Couplant                        | 1 |
| • TIME certificate                | 1 |
| • Warranty card                   | 1 |
| • Instruction manual              | 1 |

### Optional Accessory

- Communication cable
- Standard test block
- 20MHz transducer
- TA230 printer

### Technical Specification

	0.15~20mm
	0.001 mm and 0.01 mm selectable



## Features

- Auto recognition of probe
- Dynamic compensation of measurement error caused by probe change and coupling condition
- Real time display coupling condition
- OLED screen with high contrast and brightness suitable to use in sunlight
- Scanning measuring mode, up to 20 times per second
- I-E testing mode, E-E testing mode and auto mode for option
- Memory of 3000 data: stored in 30 thickness files, 100 thickness values for each file
- Upgrade online, upgrade the firmware of the unit by WIFI or APP
- Dataview available for selection of data store, ZW5P, TSTU32 etc.

# TIME<sup>®</sup> 2131

ULTRASONIC THICKNESS GAUGE

## Standard Delivery

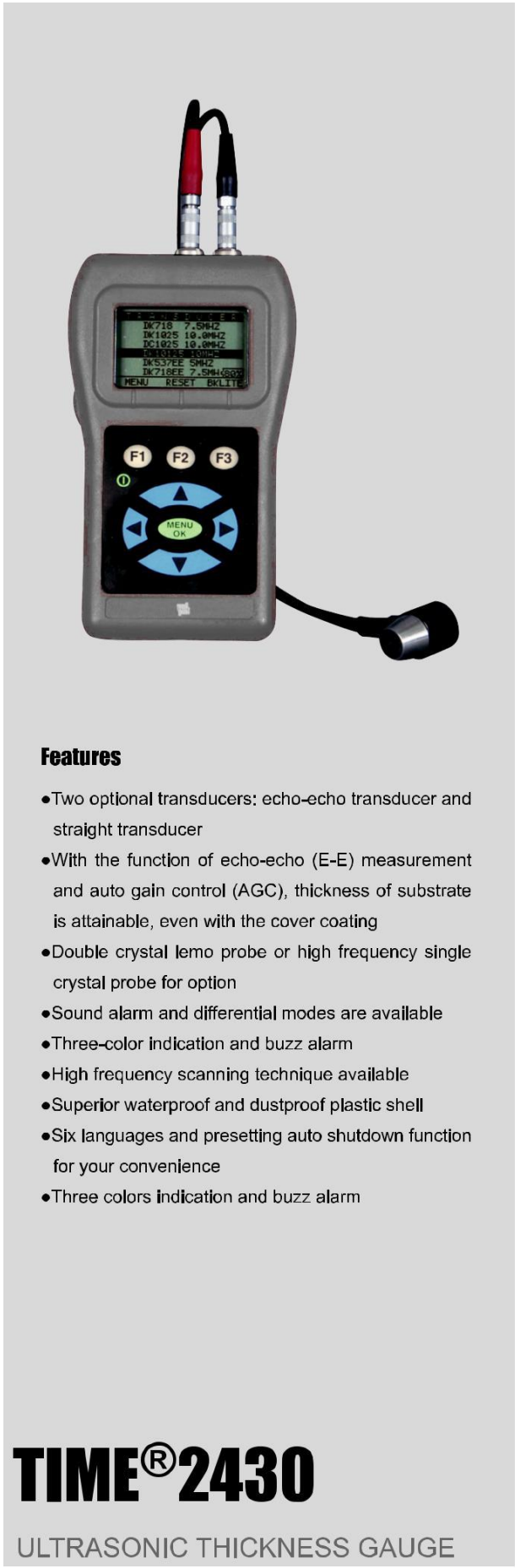
● Main unit	1
● Bent Probe	1
● Couplant	1
● AA battery	2
● TIME certificate	1
● Warranty card	1
● Instruction manual	1

## Technical Specification

Measuring range (steel)	5PΦ10, 5PΦ10/90: 1.2-225.0 mm, 7PΦ6: 0.75-60.0 mm, ZW5P: 4.0-80.0 mm, TSTU32: 3.0-300.0 mm
Accuracy (steel)	ZW5P, TSTU32: $\pm 0.10$ mm ( $H < 10.00$ mm) $\pm (1\%H + 0.01)$ mm ( $H \geq 10.0$ mm) 5PΦ10, 5PΦ10/90, 7PΦ6: $\pm 0.05$ mm ( $H < 10.00$ mm) $\pm (0.5\%H + 0.01)$ mm ( $H \geq 10.00$ mm)
Repeatability (steel)	ZW5P, TSTU32: 0.10 mm, 5PΦ10, 5PΦ10/90, 7PΦ6: 0.03 mm
Stability (steel)	ZW5P, TSTU32: 0.10 mm, 5PΦ10, 5PΦ10/90, 7PΦ6: 0.05 mm
Accuracy for wall thickness of curve surface(steel)	$\pm 0.1$ mm
Sound velocity range (m/s)	508-18699 (m/s)
Accuracy for thickness when change sound velocity	$\leq \pm 0.5$ mm
Resolution	0.1 mm, 0.01 mm, 0.001 mm
Special display	Min. value, Max. Value, Average value
Alarm	Upper, lower limit
Two point calibration	√
mm/inch	√
Indicator for battery power	√
Indicator for coupling condition	√
Memory	6 sound velocity value, 3000 thickness value
Communication	USB or WIFI
Switch off	Auto switch off in 2 minutes if no use
Working environment	Temperature: 0-40°C, Humidity: 90% RH
Memory environment	Temperature: -25-60°C, Humidity: 90% RH
Power	2 pcs AA battery
Working electricity	60 mA (3.0 V)







- Two optional transducers: echo-echo transducer and straight transducer
- With the function of echo-echo (E-E) measurement and auto gain control (AGC), thickness of substrate is attainable, even with the cover coating
- Double crystal lemo probe or high frequency single crystal probe for option
- Sound alarm and differential modes are available
- Three-color indication and buzz alarm
- High frequency scanning technique available
- Superior waterproof and dustproof plastic shell
- Six languages and presetting auto shutdown function for your convenience
- Three colors indication and buzz alarm

## ULTRASONIC THICKNESS GAUGE

● Main unit	1
● 5PØ10/90° transducer	1
● Batteries AA 1.5V	2
● Couplant	1
● Time certificate	1
● Warranty card	1
● Instruction manual	1

- Optional transducers(next Page)

<div></div> <div></div>	0.6mm-508mm
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<div></div>	0.01mm(0.001"); 0.1mm (0.01")
<div></div> <div></div>	0.508mm/μs~18.699mm/μs <div></div>
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Connecting Cable



5PØ10 for TIME®211 series



5PØ10/90° for TIME®211 series, TIME®213 series



7PØ6 for TIME®211 series, TIME®2130



TSTU32 for TIME®2134



SZ2.5P for TIME®211 series



ZW5P for TIME®2132

Technical Specification

		0.75~80mm,			
		4.0~80.0mm(steel)			
		3.0~300.0mm(steel)		2.5MHz	
		5.0~40.0mm (cast iron)			

## Guideline to standard velocity in materials

Aluminum	66320	Nickel	56680	Acrylic resin	27280
Brass	46440	Platinum	39960	Aluminum oxide	88700
Cast Iron	44900	Silver	36600	Ceramic	5631
Copper	47000	Steel, mild	56900	Diamond	17500
Cadmium	22800			Epoxy resin	28690
Chromium	66200	Steel, stainless	57290	Glass	54440
Gold	33440	Tin	33220	Ice	39980
Inconel	57220	Titanium	66720	Neoprene	16600
Iron	59900			Nylon	26620
Lead	22200	Tungsten	54400	Paraffin	2200
		Zinc	44720	Perspex	22650
		Zirconium	4660	Water glass	23560

## Applications



500°C Steam Pipe



500°C Tank



Grey Cast Iron Material



Curved Surface of Stamping Parts



Stainless Steel Valve Glass



Steel Tanker



300°C Tank



Hull Inspection



60mm Thickness Rubber Tires



Steel/Stainless Steel Composite Pipe



Paint Thickness Test of FRP Pipe Inner Wall



FRP Sulfuric Acid Tank