



Ultrasonic Thickness Gauge

E1	Ultrasonic Thickness Gauge TIME [®] 2110/2113	P50
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Thickness check of pressure pipelines



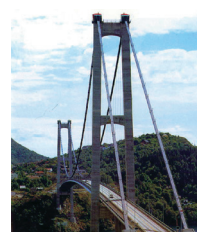
Monitoring of wall thickness of vessels easy to corrode such as oilcans



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

Measuring range	1.2~225.0mm	
Display type	4-digit LCD	
Minimum display unit	TIME®2110	0.1mm
	TIME®2113	0.01mm
Sound velocity range	1000m/s~9999m/s	
Measuring error	$\pm(1\%H+0.1)$ mm, H is the actual thickness of the object to be measured.	
Power supply	two AAA alkaline cells 1.5V	
Power consumption	working current is smaller than 20mA (3V)	
Range of operating temperature	0°C~ 40°C	
Dimensions (mm)	124×68×27	
Weight (g)	140	

TIME[®]2130/2132/2134

ULTRASONIC THICKNESS GAUGE

Optional Accessory

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

Standard deliveries

- Main unit 1
- Transducer 5PΦ10/90° 1
- Transducer ZW5P for TIME[®]2132 1
- Transducer TSTU32 for TIME[®]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



TIME[®]2132



TIME[®]2134

Features

- 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
- Free conversion between metric and imperial
- Automatic calibration of zero point: automatically correct the system errors
- Gain adjustment, Low voltage indication and Automatic turn-off
- 500 test data and 5 sound velocity can be stored, delete and review
- Big LCD screen with back-light and adjustable contrast ratio
- Equipped with the mode to capture the minimum
- Two display modes: current thickness or minimum thickness
- Two point calibration for high accuracy
- Upper / lower limits pre-setting and sound alarm
- Resolution 0.001mm and 0.01mm selectable for your use

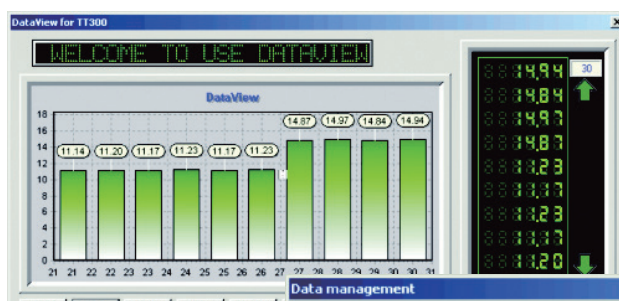
Technical specification

	TIME®2130	TIME®2132	TIME®2134
Measuring range	0.75mm-300.00mm(steel) (depend on probe)	1.2mm-225.0mm (steel) 5.0mm-80.0mm (steel high-temp)	1.2mm-300.00mm 5.0mm-40.0mm (casting iron)
Measuring accuracy	±(1%H+0.1)mm (H means the real thickness)	±(1%H+0.1)mm (H means the thickness of tested piece)	
Lower limits of steel pipes	φ20mm x 3.0mm	φ20mm x 3.0mm	
Display resolution	0.1mm/0.01mm or 0.01/0.001inch	0.1mm or 0.01inch	
Data output	RS232 Output for printer or pc	----	
Sound velocity	1000m/s~9999m/s		
Power supply	AA batteries (2pcs) 1.5V		
Battery life	100 hours without backlight		
Sound speed	1000m/s~9999m/s		
Unit scales	mm/inch		
Operating temperature	-10℃~ +60℃	-10℃~ +300℃	-10℃~ +60℃
Dimensions (mm)	152 ×74 ×35		
Weight (g)	370		

TIME[®]2130/2132/2134

ULTRASONIC THICKNESS GAUGE

Dataview for TIME[®]2130



ID	Time	Velocity	Sensor	Material	Comments
2	2001-10-29 17:49:21	2960	5MHz		
3	2001-10-29 17:50:29	4399	10MHz		
4	2001-10-29 17:58:33	4399	5MHz	tit	
7	2001-10-29 18:07:40	4400	2MHz		
8	2002-05-08 17:06:04	5900	2MHz		

Load data Modify parameters Delete data Quit

Comm Port

Please select the port: COM1

OK Cancel

Set Overbound Prompt

☒ Set Prompt

Upper limit: 3000.00 mm

Lower limit: 0.00 mm

OK Cancel

Save Data

2003-02-25 10:24:32 5000

Time Velocity (m/s)

2M Hz

Sensor Material

Comments

Save Quit



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

Measuring range(depends on probe)	Transducer 5PΦ10/90°: 1.2-200mm (steel in T-E testing mode) 3~20mm(steel in E-E mode) Transducer TSTU32: 5mm~300mm(steel in T-E testing mode)
Display resolution	0.001mm or 0.01mm
Sound speed	1000~9999m/s
Display	Backlight
Measuring accuracy	±1%H+0.1mm (H means the thickness of tested plate)
Data output	RS232
Calibration plate	4.0mm(steel)
Power	AA batteries 1.5V (2pcs)
Unit scales	mm/inch
Operating temperature	-10~60℃
Dimensions (mm)	152×74×35
Weight (g)	220



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

Measuring range	0.15~20mm
Display resolution	0.001 mm and 0.01 mm selectable
Sound velocity range	1000m/s~9999m/s
Power	AA batteries 1.5V(2 pcs)
Operating temperature	0~40℃
Dimension (mm)	152× 74× 35
Weight (g)	220



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®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: ± 0.10 mm ($H < 10.00$ mm) $\pm (1\%H + 0.01)$ mm ($H \geq 10.0$ mm) 5PΦ10, 5PΦ10/90, 7PΦ6: ± 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)	± 0.1 mm
Sound velocity range (m/s)	508-18699 (m/s)
Accuracy for thickness when change sound velocity	$\leq \pm 0.5$ mm
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)



Features

- 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

TIME® 2430

ULTRASONIC THICKNESS GAUGE

Standard Delivery

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

Optional Accessory

- Optional transducers(next Page)

Technical Specification

Measurement range	0.6mm-508mm
Velocity range	600-16000m/s
Measurement rate	4/s and 20/s in fast mode
Bandwidth	500K-12MHz (-3dB)
Resolution	0.01mm(0.001"), 0.1mm (0.01")
Velocity calibration range	0.508mm/μs~18.699mm/μs (0.0200 in/μs -0.7362in/μs)
Display	128×64 Graphics LCD monochrome
Battery life	Up to 200 hours (40 hours with backlight on)
Operating temperature	-10℃~50℃
Dimensions (mm)	127x76x32
Weight (g)	230

Connecting Cable



5PØ10 for TIME®211 series



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



7PØ6 for for TIME®211 series, TIME®2130



TSTU32 for TIME®2134



SZ2.5P for for TIME®211 series



ZW5P for TIME®2132

Technical Specification

Transducer	Feature	Testing range	Contacting diameter	Frequency	Tested surface temperature
5PØ10	Standard straight	1.2~225.0mm(steel)	10mm	5MHz	-10°C~+60°C
5PØ10/90°	Standard angle	1.2~225.0mm(steel)	10mm	5MHz	-10°C~+60°C
7PØ6	Small diameter	0.75~60mm, 15×2.0mm (steel)	6mm	7MHz	-10°C~+60°C
ZW5P	High-temperature	4.0-80.0mm(steel)	12mm	5MHz	-10°C~+300°C
SZ2.5P	High penetration	3.0-300.0mm(steel)	12mm	2.5MHz	-10°C~+60°C
TSTU32	High penetration	5.0~40.0mm (cast iron)	22mm	2MHz	-10°C~+60°C

Guideline to standard velocity in materials

Metals (m/sec)				Non-metals (m/sec)			
Aluminum	6320	Nickel	5630	Acrylic resin	2730	Polyamide	2380
Brass	4640	Platinum	3960	Aluminum oxide	8700	Polyethylene	1900
Cast iron	4500	Silver	3600	Ceramic	5631	Polyurethane	1900
Copper	4700	Steel, mild	5900	Diamond	17500	Polystyrene	2400
Cadmium	2800	Steel, low carbon	5850	Epoxy resin	2650	Porcelain	5600
Chromium	6200	Steel, stainless	5790	Glass	5440	PVC	2400
Gold	3240	Tin	3320	Ice	3980	Rubber (butyl)	1900
Inconel	5720	Titanium	6070	Neoprene	1600	Rubber (soft)	1450
Iron	5900	Tungsten carbon	5650	Nylon	2620	Rubber (vulc.)	2300
Lead	2200	Tungsten	5400	Paraffin	2200	Silicone rubber	948
Manganese	4700	Zinc	4170	Perspex	2850	Teflon	1350
Magnesium	6310	Zirconium	4650	Water glass	2350	Water (20°C)	1480

Applications



500°C Steam Pipe



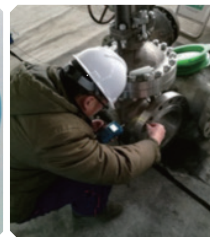
500°C Tank



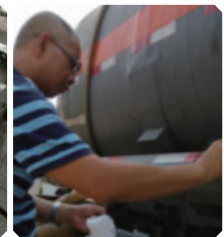
Grey Cast Iron
Material



Curved Surface of
Stamping Parts



Stainless Steel Valve
Glass



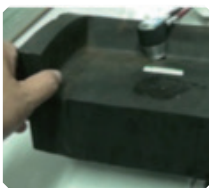
Steel Tanker



300°C Tank



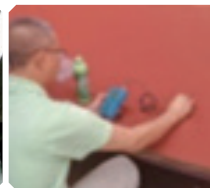
Hull Inspection



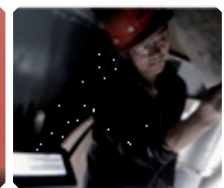
60mm Thickness
Rubber Tires



Steel/Stainless Steel
Composite Pipe



Paint Thickness Test of
FRP Pipe Inner Wall



FRP Sulfuric Acid
Tank