MT180

Professional manufacturer, best quality with competitive price
Recommended by the world UT NDT inspection association for training and examination
Core technology with independent intellectual property rights, certificate of CE, GOST and etc..

Multi-model Ultrasonic Thickness Gauge

Product Overview

Miteh MT180 multi-mode ultrasonic thickness gauge, based on ultrasonic measuring principle, it can perform thickness measurements on a wide range of materials including metals, plastic, ceramics glass and other ultrasonic well-conductive materials. It is also capable for measuring the sound velocity of the object with known thickness. Compared with the traditional measurement method, the advantage of ultrasonic thickness gauge is that it can finish the measurement only if it contacts with one side of the measured workpiece. Its unique performance of capable for testing thickness through the coating provides efficient solution for testing the workpiece of coated surface or corrosion materials. It can test the workpiece directly without needing to get rid of the surface coating. It's widely used for monitoring the production equipments' various pipelines and pressure vessel corrosion reducing degree in the fields of petroleum, chemical, metallurgy, shipbuilding, aviation, aerospace and so on. It also can be used for making accurate measurement to various plates and machining parts. It is the necessary professional precision instrument for improving the production efficiency and qualification rate as well as saving cost.

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Technical Specifications

Technical Specifications	Technical Parameters
Measuring Range	Support two modes for thickness measurement Pulse-Echo mode: (0.65 ~ 600)mm Echo-Echo mode: (3 ~ 30)mm
Accuracy	±0.05mm (≤10mm) ; ± (0.5%H+0.01) mm(>10mm) ; H refer to the thickness of workpiece
Measurement Frequency	7 times per second for single point measurement, 16 times per second for scan mode measurement.
Display	High contrast Segment LCD display (support for EL backlight display)
Resolution	0.1mm/0.01mm selectable
Sound Velocity Range	(1000 ~ 9999)m/s (Capable for measuring the sound velocity of the object with known thickness)
Probe Calibration	Zero-point calibration, two pint calibration
Thickness Measurement Mode	Single Point measurement, min/max measurement, differential measurement
Data Storage	Capable for saving and managing 20 groups of thickness data (up to 100 values for each group)
Units	Metric/Imperial unit selectable
Communication Interface	USB 1.1 interface for connecting with PC for printing
Power Source	With two "AA" size alkaline batteries, it can work above 50 hours continuously with default brightness.
Auto Power Saving	Auto shutdown power saving function
Material	ABS engineering plastic
Size	150mm×74mm×32mm
Weight	245g

Features

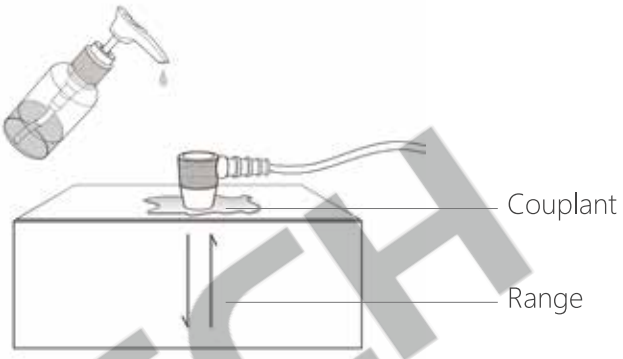
- Capable of performing thickness measurements on a wide range of material including metals (such steel, cast iron, aluminum, copper and so on) , plastic, ceramics, composites, epoxies, glass and other ultrasonic well-conductive materials.
- With two thickness measurement modes: Pulse- Echo mode and Echo-Echo model, it can measure the thickness through the coating without calculating the coating thickness.
- With large storage capacity and lower power design, it can standby super long time above months.
- Capable for measuring the sound velocity of the object with known thickness, it can meet the thickness testing requirements for various materials.
- Attach with USB data proceeding software, it can connect with PC for data's analysis, storage and printing.
- Capable for compatible with a variety of probes with different frequency and size, it can identify the probe type automatically.
- With probe-zero calibration and two point calibration functions, it can correct the system error automatically.
- Equipped with narrow impulse composite crystal high accuracy probe, it has small dead zone and accurate measurement.
- With EL backlight display, it is convenient for using in dim light environment.
- With auto sleep, auto shutdown and other power saving functions as well as battery rest capacity indicating function.
- Smart portable design with high reliability, it can anti vibration, shock and electromagnetic interference, suitable for harsh operating environment.

Measuring Principle

The ultrasonic thickness gauge determines the thickness of a part or structure by accurately measuring the time required for a short ultrasonic pulse generated by a transducer to travel through the thickness of the material, reflect from the back or inside surface, and be returned to the transducer. The measured two-way transit time is divided by two to account for the down-and-back travel path, and then multiplied by the velocity of sound in the material. The result is expressed in the well-known relationship :

$$H = \frac{v \times t}{2}$$

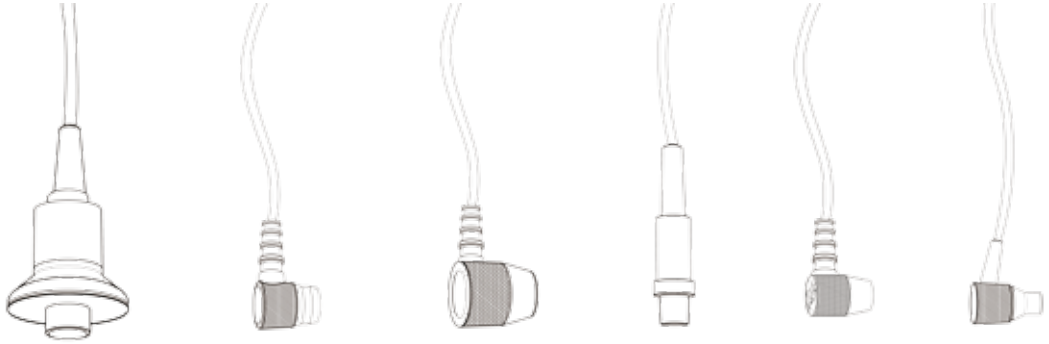
Where :
H - Thickness of the test piece.
v - Sound Velocity in the material.
t - The measured round-trip transit time.



To make sure the probe working properly, it needs to use couplant to isolate the air between the probe surface and the measured workpiece surface. The liquid used for the coupling between the probe and workpiece is called as couplant.

Probe Selection

Model	Freq	Diam	Measuring Range	Lower limit	Description
N05	5MHz	10mm	1.0mm ~ 600mm (in steel)	Φ20mm×3.0mm	Normal Measurement
N05/90°	5MHz	10mm	1.0mm ~ 600mm (in steel)	Φ20mm×3.0mm	Normal Measurement
N07	7MHz	6mm	0.65mm ~ 200mm (in steel)	Φ15mm×2.0mm	For thin pipe wall or small curvature pipe wall measurement
HT5	5MHz	12mm	1mm ~ 600mm (in steel)	30mm	For high temperature (lower than 300℃) measurement.
N02	2.5MHz	14mm	3mm ~ 600mm (in steel)	20mm	For thick, highly attenuating, or highly scattering materials
P5EE	5MHz	10mm	Pulse-Echo:2mm-600mm (in steel) Echo-Echo: 3mm-100mm (in steel)	Φ20mm×3.0mm	Trough-coating thickness testing



Configuration

	No.	Type	QTY	Remarks
Standard Configuration	1	Main Unit	1	
	2	N05/90°	1	
	3	Couplant	1	
	4	ABS Instrument Case	1	
	5	Manual	1	
	6	Warranty Card	1	
	7	Product Certificate	1	
	8	"AA" size alkaline batteries	2	
Optional Configuration	1	Through coating function P5EE		
	2	Normal Probe N05 (5MHz)		
	3	High Temperature Probe HT5(5MHz)		
	4	Coarse Grain Probe N02 (2.5MHz)		
	5	Micro Diameter Probe N07 (7MHz)		
	6	High Temperature Couplant		
	7	USB Communication Cable		
	8	Data Proceeding Software