

MT150

Digital Ultrasonic Thickness Gauge

- 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..



Product Overview

The model MT150 is a digital ultrasonic thickness gauge. Based on the ultrasonic principle, the instrument is capable of measuring the thickness of various materials, such as metal, plastics, ceramic, glass and many other good ultrasonic conductors. It can also measure the velocity of all kinds of materials. Compared with the traditional measurement methods, the advantages of ultrasonic thickness gauge is exposed to one side of the workpiece to complete the measurement. Its unique non-destructive testing performance provide the perfect solution for the thickness testing of closed Pipes, containers, etc. It is widely used in petroleum, chemical, metallurgy, shipbuilding, aviation, aerospace and other fields because of monitoring corrosion thinning degree of various pipes and pressure vessels. It can also be used for precise measurement of sheet metal and machined parts.

Technical Specifications

| Technical Specifications | Technical Parameters |
|-----------------------------|---|
| Display | 4.5 digits LCD with EL backlight |
| Measuring Range | (0.75 ~ 300)mm (in Steel) |
| Units of Measurement | Metric / Imperial (free to switch) |
| Sound Velocity Range | (1000~9999) m/s |
| Resolution | 0.1mm |
| Accuracy | ± (0.5%Thickness+0.04) mm, depends on materials and conditions 4 times per second for single point measurement, 10 times per second for scan mode measurement. |
| Measurement Frequency | |
| Storage | Memory for up to 20 files (up to 99 values for each file) of stored values. |
| Thickness Measurement Modes | Single point measurement and scanning measurement. |
| Power Source | Two "AA" size, 1.5 Volt alkaline batteries. |
| Operating Time | More than 100 hours (EL backlight off). |
| Communication | No |
| Outline Dimension | 150mm×74mm×32 mm. |
| Weight | 245g |

Features

- Suitable for measuring metal (such as steel, cast iron, aluminum, copper, etc.) , plastics, ceramics, glass, fiber glass and any other good ultrasonic conductors;
- Dual straight beam probes with different frequencies and crystal sizes are available;
- Zero calibration, two-point calibration, automatic error correction system;
- Known thickness, sound speed can be measured, in order to improve the measurement accuracy;
- Coupling status indicator showing the coupling status;
- EL backlight for easy use in dimly lit environments;
- Remaining battery indicator can display the remaining power in real time;
- Auto sleep and auto power off function to conserve battery life
- Small, portable, high reliability for harsh operating environment, anti-vibration, anti-shock and anti-electromagnetic interference.

Measuring Principle

The digital 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

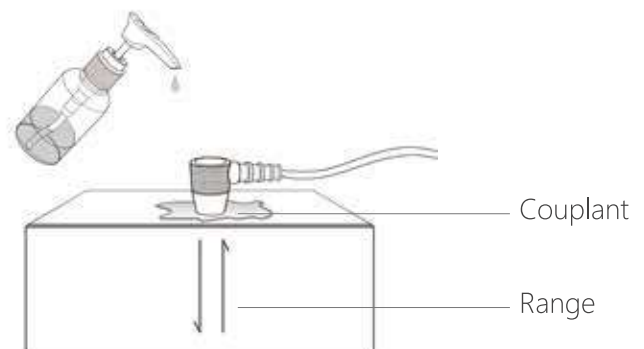
$$H = \frac{v \times t}{2}$$

Where :

H - Thickness of the test piece.

v - Sound Velocity in the material.

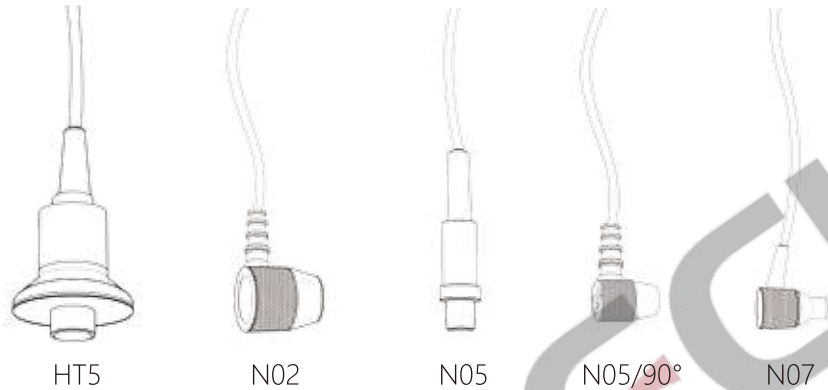
t - The measured round-trip transit time.



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.

Transducer Selection

| Model | Freq | Diam | Measuring Range | Lower limit | Description |
|---------|--------|------|--|-------------|---|
| N05 | 5MHz | 10mm | 1.2mm-230mm (In Steel) | Φ20mm×3.0mm | Normal Measurement |
| N05/90° | 5MHz | 10mm | 1.2mm-230mm (In Steel) | Φ20mm×3.0mm | Normal Measurement For thin pipe wall or small curvature pipe wall measurement |
| N07 | 7MHz | 6mm | 0.75mm ~ 80.0mm (In Steel) | Φ15mm×2.0mm | For high temperature (lower than 300°C) measurement. |
| HT5 | 5MHz | 12mm | 3.0 ~ 200mm (In Steel) | 30mm | For thick, highly attenuating, or highly scattering materials |
| N02 | 2.5MHz | 14mm | 3.0mm ~ 300.0mm (In Steel) Under 40mm (HT200) | 20mm | |



Configuration

| No. | Type | Sketch | Remarks |
|-----|---------------------------|--------|---------|
| 1 | Main body | 1 | |
| 2 | Transducer No5/90° | 1 | |
| 3 | Couplant | 1 | |
| 4 | Instrument Case | 1 | |
| 5 | Operating Manual | 1 | |
| 6 | Alkaline battery | 2 | |
| 1 | Transducer: N05 | | |
| 2 | Transducer: N07 | | |
| 3 | Transducer: N02 | | |
| 4 | Transducer: HT5 | | |
| 5 | High temperature couplant | | |

