

Ultrasonic Thickness gauge MT150



- Capable of performing measurements on a wide range of material, including metals, plastic, ceramics, composites, epoxies, glass and other ultrasonic wave well-conductive materials.
- Transducer models are available for special application, including for coarse grain material and high temperature applications.
- Two-Point Calibration function.
- Two work modes: Single point mode and Scan mode.
- Coupling status indicator showing the coupling status.
- Auto sleep and auto power off function to conserve battery life.

Configuration

| | No. | Item | Quantity | Remarks |
|------------------------|-----|------------------|----------|----------------|
| Standard Configuration | 1 | Main body | 1 | |
| | 2 | Transducer | 1 | Model: N05/90° |
| | 3 | Couplant | 1 | |
| | 4 | Instrument Case | 1 | |
| | 5 | Operating Manual | 1 | |
| | 6 | Alkaline battery | 2 | AA size |
| Optional Configuration | 7 | Transducer: N02 | | |
| | 8 | Transducer: N07 | | |
| | 9 | Transducer: HT5 | | |

Specifications

- Display: 4.5 digits LCD with EL backlight.
- Measuring Range: 0.75~300mm (in Steel).
- Sound Velocity Range: 1000~9999 m/s.
- Resolution: 0.1mm.
- Accuracy: $\pm (0.5\% \text{Thickness} + 0.04)$ mm, depends on materials and conditions
- Units: Metric/Imperial unit selectable.
- Four measurements readings per second for single point measurement, and ten per second for Scan Mode.

- Memory for up to 20 files (up to 99 values for each file) of stored values.
- Power Source: Two “AA” size, 1.5 Volt alkaline batteries. 100 hours typical operating time (EL backlight off).
- Outline dimensions: 150×74×32 mm. Weight: 245g

Appendix A: Transducer Selection

| Model | Freq MHZ | Diam mm | Measuring Range | Lower limit | Description |
|-------------|-------------|------------|--------------------------|------------------|---|
| N02 | 2.5 | 14 | 3.0mm~300.0mm (In Steel) | 20 | for thick, highly attenuating, or highly scattering materials |
| N05 | 5 | 10 | 1.2mm~230.0mm (In Steel) | Φ 20mm× 3.0mm | Normal Measurement |
| N05 /90° | 5 | 10 | 1.2mm~230.0mm (In Steel) | Φ 20mm× 3.0mm | Normal Measurement |
| N07 | 7 | 6 | 0.75mm~80.0mm (In Steel) | Φ 15mm× 2.0mm | For thin pipe wall or small curvature pipe wall measurement |
| HT5 | 5 | 12 | 3~200mm (In Steel) | 30 | For high temperature (lower than 300 °C) measurement. |

Appendix B: Sound Velocities

| Material | Sound Velocity | |
|------------------|----------------|-----------|
| | In/us | m/s |
| Aluminum | 0.250 | 6340-6400 |
| Steel, common | 0.233 | 5920 |
| Steel, stainless | 0.226 | 5740 |
| Brass | 0.173 | 4399 |
| Copper | 0.186 | 4720 |
| Iron | 0.233 | 5930 |
| Cast Iron | 0.173-0.229 | 4400—5820 |
| Lead | 0.094 | 2400 |

| | | |
|--------------------|-------|------|
| Nylon | 0.105 | 2680 |
| Silver | 0.142 | 3607 |
| Gold | 0.128 | 3251 |
| Zinc | 0.164 | 4170 |
| Titanium | 0.236 | 5990 |
| Tin | 0.117 | 2960 |
| Epoxy resin | 0.100 | 2540 |
| Ice | 0.157 | 3988 |
| Nickel | 0.222 | 5639 |
| Plexiglass | 0.106 | 2692 |
| Polystyrene | 0.092 | 2337 |
| Porcelain | 0.230 | 5842 |
| PVC | 0.094 | 2388 |
| Quartz glass | 0.222 | 5639 |
| Rubber, vulcanized | 0.091 | 2311 |
| Teflon | 0.056 | 1422 |
| Water | 0.058 | 1473 |