METROLOGY®

Ultrasound Thickness Gauge

American Society of Testing and Materials

Innovation Design R&D Patented Technology Award

UTG-9000 **Ultrasound Thickness Gauge is applicable for measuring the thickness of any material in which ultrasonic wave can be transmitted and reflected back from the other face.**

UTG-9000 **comply with** ***ASTM-E797*** **、** ***ISO-16809:2017 Non-destruction testing-Ultrasonic thickness measurement*** **international testing standards can provide quick and accurate measurement to various workpieces such as sheets of board and processing parts. Another important application of the gauge is to monitor various pipes and pressure vessels in production equipment, and monitor the degree of wear during using. It can be widely used in petroleum, chemical, mechanical, electronics, metallurgy, shipping, aerospace, aviation and other fields.**

Ultrasound Thickness Gauge

1.Shell 2.Keyboard 3.Monitor 4.Transmit & receive socket
5.Thickness calibration block 6.Ultrasonic probe

Primary Theory

The digital ultrasound 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 form 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:

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

H—Thickness of the test piece
v—Sound Velocity in the material
t—The measured round trip transit time

Main Functions

1. Capable of performing measurements on a wide range of material, including metals,plastic,ceramics,composites,epoxies,glass and other ultrasonic wave well-conductive materials.
2. Can collocate variety different frequencies,wafer sizes of probes
3. Sound Velocity Calibration function as a known thickness
4. Coupling status indicator showing the coupling status
5. EL backlight, and convenience to use under dark environment
6. Have the battery indicator function, can real-time display the remaining power
7. Auto sleep and auto power off function to conserve battery life
8. Smart, portable,high reliability, suitable for bad environment, resist to vibration, shock and electromagnetic interference.

Ultrasound Thickness Gauge

Display interface：128*64 LCD with LED backlight, Colo display

Technical Specification

ASTM-E797、ISO-16809:2017 Non-destruction testing-Ultrasonic thickness measurement

Measuring Range	1～600mm（Materials: Steel, with Standard probe）
Resolution	0.01mm
Measuring unit	metric（mm）/ imperial（inch）switchable
Measuring accuracy	±（0.5%H+0.03）mm　H : thickness value of measurement
Velocity Range	1000~9999 m/s
Calibration function	Probe zero & two-point calibration function
Data storage	3000 sets of thickness measurement data
Communication	USB software interface data output
Warning function	Tips for upper & lower limit of thickness
Value mode	With the ability to capture the minimum thickness valve
Testing temperature	-10～60℃（workpiece surface）
Measurement cycle	Single point measurement 6 times/sec, scan mode 20 times/sec
Pipe measuremeat	Lower limit Φ20 mm×3.0 mm(5Mhz probe)；Φ15 mm×2.0 mm(7Mhz probe)
Indication error	≤ ±0.1 mm
Calibration standard	4.0 mm（steel）
Power	2pcs 1.5V AA size battery
Working Time	More than 250 hours（LED backlight off）
Dimensions	145mm×74mm×32 mm（L×W×T）
Weight	245g

*Remrk：Please refer to the operation manual for the measurement technology & precautions of the Ultrasound thickness gauge.

Standard Configuration

It is composed of three main components: Main body transmitting & receiving circuit、Color counting display、Standard Φ10mm 5Mhz double crystal probe

Working Conditions

Working Temperature：-20℃～+50℃　Storage Temperature：-30℃～+70℃　Working Humidity：≦90%
Enviromental requirements：There are no strong vibration in the surrounding environment, no strong magnetic field, corrosive medium & serious dust.