

PosiTector Ultrasonic Thickness Gauge

Knowing the thickness of metal or plastic from one side is very important. The PosiTector UTG from DeFelsko can be used for a number of applications such as:

- Checking the specification of materials that have been delivered
- or Measuring the remaining wall thickness due to corrosion a gauge

This compact ultrasonic device has all of the features required for site work with all the technology you expect from a premium product.

Theory

PosiTector UTG probes transmit an ultrasonic pulse into the material to be measured. This pulse travels through the material towards the other side. When it encounters an interface such as air (back wall) or another material, the pulse is reflected back to the probe. The time required for the pulse to propagate through the material is measured by the Gage, represented as t_1 and t_2 right.

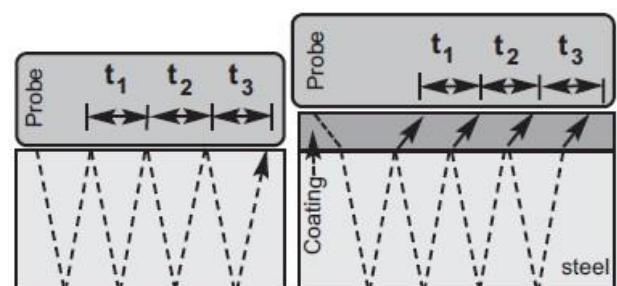
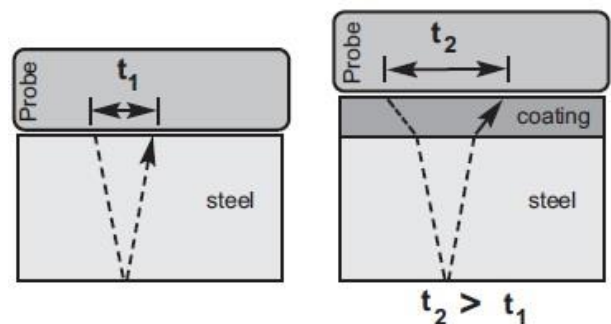
PosiTector UTG C and UTG M (in single-echo mode) probes determine thickness by measuring t_1 (uncoated) or t_2 (coated), dividing it by two and then multiplying by the velocity of sound for that material (steel).

For uncoated materials t_1 relates directly to material thickness. When a material is coated the propagation time is increased and is shown above as t_2 .

Coatings such as paint have a slower velocity of sound than that of metal. Thus the single-echo technique will produce a thickness result greater than the actual combined coating + metal thickness.

The PosiTector UTG M in multiple-echo mode determines thickness by measuring the time between at least three consecutive back wall echoes.

In the figure right, multiple-echo mode measures only the time between echoes. Regardless of whether the steel is coated or not, all times between echoes are the same. In multiple-echo mode, the Gauge determines thickness by measuring $t_1+t_2+t_3$, dividing it by six and then multiplying by the velocity of sound for that material. The resultant thickness calculation made by the instrument is therefore an accurate measurement of the steel thickness only, disregarding the coating thickness.



PosiTector Ultrasonic Thickness Gauge

All Gauges Feature...

Simple

- Enhanced one-handed menu navigation
- Pre-programmed velocities—simply select from a list of common materials or enter your own with ease
- SmartCouple™ mode eliminates unintentional decoupling—ensures continuous measurements while measuring on scaled or pitted surfaces—ideal for analysing large areas using multiple passes
- Flashing display—ideal in a noisy environment
- RESET feature instantly restores factory settings

Durable

- Solvent, acid, oil, water and dust resistant—weatherproof
- Impact resistant lens
- Shock-absorbing, protective rubber holster with belt clip
- Two year warranty on body AND probe

Accurate

- Precision transducers provide fast, accurate readings
- Certificate of Calibration showing traceability to NIST included
- Conforms to national and international standards including ASTM E797
- Built-in temperature compensation ensures measurement accuracy

Versatile

- PosiTector body accepts all PosiTector 6000, 200, DPM, UTG, RTR and SPG probes easily converting from a wall thickness gauge to a dew point meter, surface profile gauge or coating thickness gauge.
- Flip display enables right-side-up viewing
- Selectable display languages
- Hi contrast backlit display for bright or dark environments
- Single or two point adjustment
- Inch/mm switchable
- Uses alkaline or rechargeable batteries (built-in charger)

Powerful

- Min Scan mode—measurement rate of up to 20 readings per second with onscreen min/max for quick inspection over a large area
- Continually displays/updates average, standard deviation, min/max thickness and number of readings while measuring
- HiLo alarm audibly and visibly alerts when measurements exceed user-specified limits
- Screen Capture—record and save screen images into USB flash memory for record keeping and review
- USB port for fast, simple connection to a PC and to supply continuous power. USB cable included
- Every stored measurement is date and time stamped
- Software updates via web keep your gauge current
- Connects to PosiTector.net

PosiTector Ultrasonic Thickness Gauge

Select Standard or Advanced Features

Standard Models

Includes ALL features as shown on above plus...

- Monochrome display with transfective technology enhances sunlight readability
- Storage of 250 readings—stored readings can be viewed or downloaded

Advanced Models

Includes ALL features as shown on above plus...

- Hi contrast reversible colour LCD
- Storage of 100,000 readings in up to 1,000 batches and sub-batches
- Store thickness, profile and environmental measurements in individual batches
- Onscreen help, real time graphing, picture prompting, and more...
- Onscreen batch annotation—add notes and change batch names with the built-in keyboard
- NEW! WiFi technology wirelessly synchronizes with PosiTector.net, downloads software updates, and connects to mobile devices for expanded functionality
- Data transfer via USB to a PC or via Bluetooth Wireless Technology
- A-Scan with adjustable Gain and screen capture
- B-Scan—displays a cross sectional profile of the test material

All Gauges Come Complete...

With body and probe, couplant, protective rubber holster, belt clip, wrist strap, 3 AAA alkaline batteries, instructions, nylon carrying case with shoulder strap, protective lens shield, Long Form, Certificate of Calibration traceable to NIST, USB cable, PosiTector.net account, two (2) year warranty.

Optional Accessories

- Calibration Test Block to fulfil both ISO and in-house quality control requirements
- Bluetooth™ Printer receives data from Advanced models
- Rechargeable Batteries—a set of eneloop NiMH AAA batteries
- AC Power Kit for continuous operation or battery charging—works in any country
- Protective Lens Shields protect the display from overspray and debris

How to select your gauge

PosiTector ^{UTG} ORDERING GUIDE			
Probe Style	UTG C Corrosion Probe	UTG M Multiple Echo Probe	
Standard Model	UTG C1	UTG M1	
Advanced Model	UTG C3	UTG M3	
Probe Type	5 MHz Dual Element		5 MHz Contact
Mode	Single Echo	Single Echo	Multiple Echo
Measurement Range*	0.040" to 5.000" 1.00 to 125.00 mm	0.100" to 5.000" 2.50 to 125.00 mm	0.100" to 2.500" 2.50 to 60.00 mm
Thru-Paint Capability	no	no	yes
Measurement Rate – Normal	6 readings/sec		4 readings/sec
Measurement Rate – Scan	20 readings/sec		4 readings/sec
Resolution	0.001" 0.01 mm		0.001" 0.01 mm
Accuracy	±0.001" ±0.03 mm		±0.001" ±0.03 mm



PosiTector Ultrasonic Thickness Gauge

Select from 2 Probe Styles

UTG C – Corrosion Probe

Measures the wall thickness of materials such as steel, plastic and more. Ideal for measuring the effects of corrosion or erosion on tanks, pipes, or any structure where access is limited to one side.

- 5 MHz dual element transducer with durable PEEK probe tip
- Automatic V-Path compensation for thin materials

UTG M – Multiple-Echo Probe

Features Thru-Paint capability to quickly and accurately measure the metal thickness of a painted structure without having to remove the coating. The most accurate method to measure the remaining wall thickness of a painted structure because it automatically disregards the coating, lowering inspection time and expense. Also ideal for measuring on sandblasted materials or other applications requiring a durable wear face.

- 5 MHz contact probe with wear resistant Alumina probe tip
- Multiple Echo technique averages 3 or more echoes for accurate and reliable readings
- Toggle easily between
 - Multiple Echo mode to eliminate coating thickness and...
 - Single Echo mode to detect pits and flaws, and to increase the measurement range

Specifications

SIZE: 146 x 61 x 28mm

WEIGHT: 140g without batteries

Conforms to ASTM E797



About PCTE

PCTE have over 30 years' experience in the measurement and testing of construction materials. PCTE can provide more than just the equipment, they can provide expert training. PCTE have a service centre in Sydney in which they can provide calibration, repairs and warranty repairs.

Other Equipment

PCTE supply three main ranges: NDT, Lab and Geotech Instrumentation.

NDT includes: Rebound Hammers, Covermeters, Ultrasonics, GPR, Corrosion Testing, Coating Testing and Foundation Testing

Lab includes equipment for: Concrete, Cement, Aggregate, Soil, Asphalt and Metal

Geotech Instrumentation includes: Strain Gauges, Piezometers, Inclometers, Extensometers, Tiltmeters, Load Cells and Dataloggers