

# Digital Ultrasonic Thickness Testers



## Time TT100



TT100 is a hand held microprocessor controlled thickness gauge specifically designed for measuring the thickness of metallic and non-metallic materials e.g. aluminium, titanium, plastics, ceramics, glass and other good ultrasonic wave-conducting as long as the material has parallel top and bottom surfaces.

With uses in many areas of industry TT100 can perform precise measurements on various types of raw materials, components parts, and assembled machinery. It can also be used to monitor all types of pipes and pressure vessels for loss of thickness due to corrosion.

TT100 is very easy to use, after a simple calibration to a known thickness or sound velocity, the gauge will give fast and accurate readings in millimetres. Sound velocities for 5 different materials can be pre-set and 10 thickness readings can be stored in the memory.

### Specifications

Material :	Metallic & Non-Metallic	Measuring units :	mm
Range (probe dependant) :	1.0 to 225.0 mm	Frequency :	5 MHz
Accuracy :	+/-1% of Material Thickness + 0.1 mm	Display :	4 digit LCD
Resolution :	0.1 up to 99.9 mm	Memory :	10 readings
Sound velocity range :	1000 to 9999 m/sec	RS232 :	no
Probe Tip diameter :	12 mm	Sound Velocity :	5 Preset Sound Velocities
Pipe Diameter Limits :	20 mm x 3 mm	Auto power off :	yes
Working Temp. :	-5 to 40 deg C	Power Supply :	2 x 1.5 AA Alkaline
Relative Humidity :	< 90%	Alarm limit setting :	no
Surface Temperature :	< 60 deg C	Battery Life :	250 hours per battery set
Non-linear Automatic Compensation		Dimensions :	126 x 68 x 23 mm
Indication of Coupling Status and low Voltage		Weight :	170g

### Optional probes

Type of Probe	Working Frequency	Measuring Thickness Range	Minimum Size of Measuring Pipe	Characteristic
5PØ10	5MHz	1.2 - 225	Ø20 x 3	Straight Probe
5PØ10/90°	5MHz	1.2 - 225	Ø20 x 3	Right Angle Probe
7PØ6	7MHz	0.75 - 60	Ø15 x 2	For testing thin materials
SZ2.5P	2.5MHz	3 - 300		For testing thick materials with Rough Surfaces
ZW5P	5MHz	4 - 80		High Temp up to 300 deg C

### Standard Package

- Plastic case – foam lined with Combination Lock
- **2 Probes – Straight & Right angle – both 5 MHz**
- Coupling Agent – (Vaseline or Grease Hand Cleaner will also give accurate readings)
- Instruction Manual

Supplied by :

**Test and Measurement Instruments C.C.**  
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# STANDARD VELOCITY IN MATERIALS

**TIM** FOR ULTRASONIC THICKNESS GAUGES



## METALS

	m/s		m/s
A ALUMINIUM	6 320 - 6 400	M MOLYBDENUM	6 250 - 6 300
ALUMINIUM 2024-T4	6 380	NICKEL	5 480 - 6 040
ASBESTOS CEMENT	2 200	PLATINUM	3 960
B BERYLLIUM	12 890	S SILVER	3 600 - 3 700
BISMUTH	2180	SILVER - GERMAN	4 750
BORON CARBIDE	10 920	MOTOR OIL (SAE 30)	1 750
BRASS	3 800 - 4 700	STEEL, MILD	5 900 - 6 100
C CADMIUM	2 770 - 2 800	STEEL, CASTING	5 850
CAST IRON	3 500 - 5 600	STEEL, STAINLESS (AUSTENITIC)	5 660 - 6 120
" " (MODULAR GRAPHITE)	5 600	STELLITE	7 050
CAST GREY MIDDLE	4 600	T TIN	3 300 - 3 330
CONSTANTAN	5 230	TITANIUM	5 900 - 6 100
COPPER	4 650 - 4 720	TUNGSTEN CARBON	6 650
CHROMIUM	6 200	TUNGSTEN	5 180 - 5 400
G GOLD	3 200 - 3 250	URANIUM	3380
INCONEL	5 820	W WATER	1 470
IRON	5 890 - 5 930	WOLFRAM	5 460
LEAD	1 960 - 2 400	ZINC	4 170 - 4 320
M MANGANESE	4 660 - 4 700	ZIRCALOY 2	4 700
MAGNESIUM	5 770 - 5 840	ZIRCONIUM	4 650
MERCURY	1 450		

## NON-METAL (m/s)

A ACRYLIC	2 870	N NYLON	2 600 - 2 690
ACRYLIC RESIN	2 730 - 2 870	OIL (SAE 30)	1 740
AIR	330	P PARAFFIN WAX	2 200
ALUM. OXIDE	8 700	PERSPEX	2 860
C CERAMIC (MACOR)	5 631	PHENOLIC	1 400
CLAY	2 600	PLEXI GLASS	2 700
CONCRETE	3 650 - 4 270	POLYAMIDE	2 380
DIAMOND	17 500	POLYETHYLENE	1 900 - 2 400
DIESEL OIL	1 250	POLYURETHANE	1 780 - 1 900
EPOXY RESIN	2 650	POLYSTYRENE	2 340 - 2 400
G GLASS (FLINT)	4 260	PORCELAIN	5 600 - 5 900
GLASS (CROWN)	5 260 - 6 120	PVC	2 400
GLASS (QUARTZ)	5 570	Q QUARTZ X CUT	5 740
GLASS (WINDOW)	6 800	QUARTZ FUSED	5 980
GLYCERINE	1 920	QUARTZ GLASS	5 640
ICE	3 980	R RUBBER (BUTYL)	1 900
H HI-DENSITY POLYETHELENE	2 220 - 2 300	RUBBER (SOFT)	1 480
(GREY & WHITE NOT BLACK)		RUBBER (VULC.)	2 300
M METHYLENE-OXIDE	9 980	S SILICONE RUBBER	948
MONEL	5 360 - 5 400	TEFLON	1 350 - 1 520
MOTOR OIL (SAE 30)	1 750	WATER	1470
N NEOPRENE	1 600		

**NB NOTE : THIS SCHEDULE IS ONLY A GUIDE**

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