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## MANUAL PCE-TG



## Overview

PCE-TG is a miniaturized ultrasonic thickness gauge which can measure thickness.


## Keypad

- ON - Turn on the gauge
- OFF - Turn off the gauge
-  - Menu key. Circularly press to enter into different mode
-  - regulate the twinkling number (up)
-  - regulate the twinkling number (down)
-  - move the twinkling number on rightward


## LCD display

- THK - thickness measurement
- CAL - calibration function
- VEL - velocity setting
- m/s - unit of velocity of sound
- mm - unit of thickness

## Calibration


- ✓ Press menu key  until CAL 0.0 displays on LCD.
- ✓ Take the probe to measure the block of 3.0mm attached on the panel of gauge.
- ✓ After 3.0mm displays, the gauge will automatically finish calibration and the display will come back into the mode of measurement.

### 1. Change velocity

- ✓ Press menu key  consecutively until VEL and current velocity value displays on LCD.
- ✓ Press key  $\Delta$  or  $\nabla$  to change the value of velocity to be wanted.

*Note: Press and hold  $\Delta$  or  $\nabla$  to let changing number go fast.*

## Measuring velocity

- ✓ Press key  consecutively until both THK and VEL display on LCD. And also last stored thickness value will display.
- ✓ Press  $\Delta$  or  $\nabla$  to change the number to be the value of measured material.
- ✓ Take measurement on the material and after new velocity of this material displays, the gauge will automatically save this velocity and go into the mode of measurement.

## Optional probes

PT-5	5MHz	Dia. $\varnothing$ 10mm	For standard applications
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XT-5	5MHz	Dia. Ø7mm	For tubes with small diameter
GT-5	5MHz	Dia. Ø12mm	For high temperature up to 400°C
CT-2.5	2.5MHz	Dia. Ø12mm	For unfavorable attenuation cast

### Attached table:

Reference velocity of various materials

Material	Sound Velocity (L wave, m/s)	Acoustic impedance (Lwave, 10 <sup>6</sup> kg/m <sup>2</sup> s)
Al	6260	16.9
Zn	4170	29.6
Ag	3600	38.0
Au	3240	62.0
Su	3230	24.2
Fe	5900	46.0
Cu	4700	41.8
Brass	4640	39.6
SUS	5790	45.7
Acrylic resin	2730	3.2
Water(20°C)	1480	1.48
Oil	1390	1.28
Glycerin	1920	2.43
Water glass	2350	3.99

### Precautions

Avoid shock, heavy dust and damp.

Remove the batteries from the gauge when not in use for long time.

### Specifications

- ✓ Display: 4 digital LCD with back light
- ✓ Measurement frequency: 5MHz

- ✓ Measurement range: 1.0--250.0mm(steel)
- ✓ Resolution: 0.1mm
- ✓ Adjustment of velocity: Max. 9999m/s
- ✓ Automatic power off: 3 minutes of non-use
- ✓ Power : DC 3V x 2 (two AA batteries)
- ✓ Low voltage indicating with BAT display
- ✓ Size: 124 x 67 x 30mm
- ✓ Weight: 240g
- ✓ Environments for use:
  - Temperature: 0-40°C
  - Humidity:40°C(20—90)%RH

In this direction will find a vision of the measurement technique:  
<http://www.industrial-needs.com/measuring-instruments.htm>

**NOTE:** "This instrument doesn't have ATEX protection, so it should not be used in potentially explosive atmospheres (powder, flammable gases)."