



Digital Thickness Meter

CS 0495



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This thickness meter is small in size, light in weight, easy to carry. Although complex and advanced, it is convenient to use and operate. Its ruggedness will allow many years of use if proper operating techniques are followed. Please read the following instructions carefully and always keep this manual within easy reach.

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- A micro-computer LSI circuit and crystal time base offer high measurement accuracy.
- This is the ideal instrument to measure the thickness of lots of materials, e. g. steel, cast iron, aluminium, red copper, brass, zinc, quartz glass, polyethylene, PVC, gray cast iron, nodular cast iron.
- The automatic power off helps to save current.

Technical data

- Display: 4-digit, 10 mm LCD
- Measuring range: 1.0...200 mm (45# steel)
- Resolution: 0.1 mm/0.001 inch
- Accuracy: $\pm (0.5 \% n + 0.1)$
- Sound velocity: 500 to 9000 m/s
- Power supply: 4 x 1.5 V AAA (UM-4) batteries
- Operating conditions: Temperature 0 to 50 °C
Humidity < 80 %
- Dimensions: 120 x 62 x 30 mm (4.7 x 2.4 x 1.2 inch)
- Weight: approx. 164 g (batteries not included)

Accessories:

- Carrying case
- Instruction manual
- Ultrasonic sensor



- 1 Sensor plug
- 2 Display
- 3 mm/inch key
- 4 Power key
- 5 Material selection key (SELECT)
- 6 "▲" key
- 7 Ultrasonic sensor
- 8 Calibration key (CAL.)
- 9 "▼" key
- 10 Battery compartment/cover
- 11 Coupling indicator
- 12 Calibration block
- 13 Velocity key (VEL.)

- Press the power key (4) in order to turn on the unit.
- Press the material selection key (5) and the display (2) will show the code "cdxx" or "xxxx". "cd" is the abbreviation for "code" and "xx" is a figure between 1 and 11. "xxxx" is a 4-digit figure which is the sound velocity of the material defined by the user (see chapter "Measurement by velocity setting"). The code for the material to be measured can be taken from the following table:

Nr.	CODE	Material
1	cd01	Steel
2	cd02	Cast iron
3	cd03	Aluminium
4	cd04	Red copper
5	cd05	Brass
6	cd06	Zinc
7	cd07	Quartz glass
8	cd08	Polyethylene
9	cd09	PVC
10	cd10	Gray cast iron
11	cd11	Nodular cast iron
12	xxxx	Sound velocity

- Press the "▲" key (6) or the "▼" key (9) in order to select the material code to be measured and then press the material selection key in order to confirm. The display will show "0". Now measurement can be started (see chapter "Measurement").
- It is not necessary to select the material code once the material code is confirmed (it will be automatically stored to the memory of the meter) unless the material to be measured is different from that before.
- If you want to measure the thickness of a material which is not listed in the above table please proceed as described in the chapter "Measurement by velocity setting".

- Drop a little bit of oil onto the 5 mm calibration block (12).
- Press the calibration key (8). The display will show "CAL". "CAL" is the abbreviation for "calibration".
- Press the sensor (7) onto the calibration block (12). The coupling symbol ((•)) will occur if the coupling is well. The display will show "5.0" mm (or "0.197" inch) and "CAL". When steady, press the CAL key (8) in order to confirm. Then the unit will return to the state of measurement.
- The calibration result will be auto-saved to the unit once it is confirmed. It is not necessary to calibrate often unless you suspect the accuracy of measurement.

Measurement

- Press the power key (4) in order to turn on the unit.
- Press the mm/inch key (3) in order to select the right measurement unit.
- Press the sensor (7) onto the material surface to measure on the premise that the material code selected is the right one. Be sure that coupling is well and the symbol ((•)) is on. The reading on the display is the measurement value.
- The reading is held until a new measurement value is coming. The last value is held on the display until the instrument is powered off.
- There are two possibilities to power off the instrument:
 - The manual power off which can be effected at any time by pressing the power key.
 - The automatic power off which happens about 1 minute after the last key operation.

Measurement by velocity setting

- Take a sample of the material to be measured and measure the thickness as usual by means of a slide gauge or similar measuring device.
- Press the VEL key (13) and the display shows the velocity set last time. The velocity can be changed by pressing the "▲" or the "▼" key.
- Repeat the measurement and continue changing the velocity until the measured value does exactly correspond with the thickness of your sample.
- By means of this set velocity this material can now be measured in future.

Battery replacement

- When the battery symbol appears on the display it is time to replace the batteries.
- Slide the battery cover (10) away from the instrument and remove the batteries.
- Insert the new batteries paying careful attention to polarity.

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