

Model CF-UTG Ultrasonic Thickness Gauge Specifications - Installation and Operating Instructions

The compact Model CF-UTG Ultrasonic Thickness Gauge can measure the thickness of a variety of materials. The UTG has a wide range of applications including industrial, automotive, HVAC, and plumbing. The UTG reads in inches or millimeters, and features an adjustable sound velocity to allow for an array of materials to be measured. The UTG is useful when using any pipe-mount ultrasonic transmitter. The UTG allows the user to find the wall thickness of the pipe when programming an ultrasonic transmitter without cutting or removing a section of the pipe to measure it. The UTG is also great for monitoring corrosion in closed vessels such as boilers and chemical tanks.

Material Selection

1. Press the Power button to turn on the unit.
2. Press the Select button and the display will show the code `Cdxx` or `XXXX`. `Cd` is the abbreviation for `code` and `xx` is one number among 01~11. `xxxx` is a 4-digit number which is the sound velocity of material defined by the user. The `Cdxx`-material relationship is as follows.

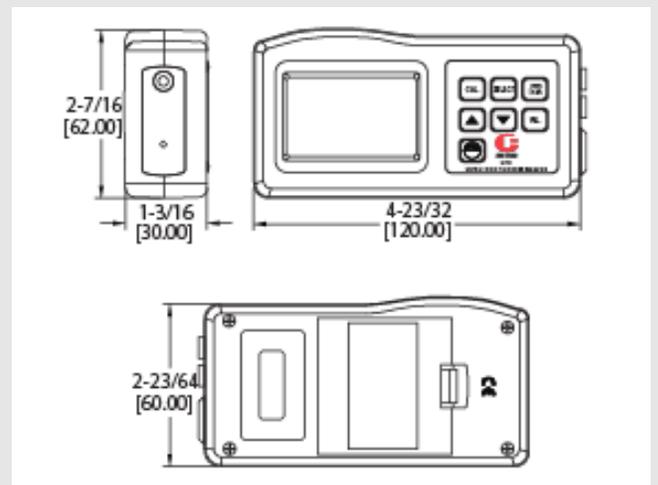
No.	Code	Material
1	cd01	Steel
2	cd02	Cast Iron
3	cd03	Aluminum
4	cd04	Red Copper
5	cd05	Brass
6	cd06	Zinc
7	cd07	Quartz Glass
8	cd08	Polyethylene
9	cd09	PVC
10	cd10	Gray Cast Iron
11	cd11	Nodular Cast Iron
12	xxxx	Sound Velocity

3. Press the Up button or Down button to select the material code to measure, and then press the Select button to confirm. The display will show `0`. If you select a material code but do not confirm the selection, the code will automatically change to `0`.

Specifications



- **Service:** Steel, cast iron, aluminum, red copper, brass, zinc, quartz glass, polyethylene, PVC, gray cast iron, nodular cast iron, other. Selectable option for special materials with known sound propagation rate.
- **Range:** 0.047 to 7.874" (1.2 to 200 mm).
- **Accuracy:** ±0.5%.
- **Resolution:** 0.001" / 0.1 mm.
- **Sound Velocity:** 1118 to 20132 mph (500 to 9000 m/s).
- **Temperature Limits:** 32 to 122°F (0 to 50°C).
- **Humidity Limit:** < 80%.
- **Display:** 4 digits, 0.394" (10 mm) LCD.
- **Power Requirement:** (4) 1.5 V AAA alkaline batteries, not included, user replaceable.
- **Weight:** 5.78 oz (164 g).
- **Agency Approvals:** CE.



after several seconds. In such case, the meter will still reserve the material code before exiting.

4. A 4-digit number will be shown on the display when the Up button is pressed when the display shows `Cd11` or by pressing the Down button when the display shows `Cd01`. The 4-digit number is the last sound velocity to be define by the user. By selecting this velocity, you could measure the thickness of the same material as previously selected.

5. It is unnecessary to select the material code once the material code is confirmed (automatically stored to the memory of the meter) unless the material to measure is different from before.

6. To browse the material code selected, press the Select button. To quit browsing, press the Select button again or wait till the code automatically changes to `0` after several seconds or the meter will automatically return to measurement state if measuring.

Calibration

1. Drop a little lubricating oil on the 5 mm standard block (see below).



2. Press the Calibration (CAL) button, and the word `CAL` will be shown on the display.

3. Press the sensor on the standard block. If the coupling symbol is on the display and the standard block is coupling well, `5.0` mm (or `0.197`") and `CAL` will be shown on the display also. When the reading is steady, press the CAL button to confirm and then the unit will return to measuring state.

4. The calibration result will be auto-saved to the unit once confirmed. It is unnecessary to calibrate frequently unless you suspect an inaccuracy in the measurement.

Measuring Procedure

1. Press the Power button to turn on the unit.
2. Press the mm/inch button to select the right measurement unit.
3. Apply a little lubricating oil onto the sensor, and be sure that there is a good coupling and the symbol is on. Press the sensor

onto the material surface to measure on the premise that the material code selected is right. The reading on the display is the measurement value.

4. The reading is held until a new measurement value is made. The last value is held on the display until the unit is powered off.

5. There are 2 methods to turn off the power to the unit. Manual shut off can be done at any time by pressing the power button, or auto power off signified by a beeping sound that occurs after about 1 minute from the last key operation.

Measure by Velocity Setting

1. Press the VEL. button and the display will show the velocity that was set last.

2. If measuring the thickness of a material with known velocity, the velocity can be changed by pressing the Up or Down button to the value of the known velocity. The increment is in 10 m/s every time when pressing the up or down button, and increment of 100 m/s if pressing the button for more than about 4 seconds.

3. Drop a little lubricating oil onto the material to be measured and press the sensor onto the surface. The reading on the display is the thickness of the material if the sensor is coupling well.

4. When measuring the thickness of a sample with a known thickness just get the sample of known thickness. Then repeat the last two steps until the measurement value is the same as the known thickness. In such a case, the set value is the velocity of the material to measure, with this process you can measure any unknown thickness of same material.

5. To browse the velocity, press the VEL. button. To quit browsing, press the VEL. button again or wait till the unit automatically shows `0`.

6. By using the velocity measurement, it is easy to measure the thickness of any hard material.

Battery Replacement

1. When the battery symbol appears on the display, it is time to replace the batteries.

2. Remove the battery cover from the instrument and remove the batteries.

3. Install the new batteries ensuring to pay close attention to the polarity.