

## Instruction Manual TB-US, TB-US-red

### DIGITAL THICKNESS GAUGE



**Model: TB 200-0.1 US**  
TB 200-0.1 US-red

Annotation: Model TB 200-0.1 US-red has no free adjustable measurement range. Only the pre-set materials can be measured. Please only read the adequate sections.

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**Annotation: It is strongly recommended to calibrate the new instrument before the first use, as described in paragraph 5. By doing this it will be achieved a much better measurement result right from the start.**

#### 1. Features

- » Wide measuring range and high resolution
- » Convenient to measure the thickness of many materials, e.g. steel, cast iron, aluminium, red copper, brass, zinc, quartz glass, Polyethylen, PVC, grey cast iron, nodular cast iron.
- » Automatic power-off to preserve batteries

#### 2. Specifications

Display: 4 digits, 10mm LCD

Range: 1.5 to 200mm (in 45# steel)

Resolution: 0.1mm/ 0.001inch

Accuracy:  $\pm (0.5\%n+0.1)$

Sound velocity: 500 to 9000m/s

Power supply: 4×1.5V AA (UM-3) battery

Operating conditions: Temperature: 0 to 50°C  
Humidity: <80%

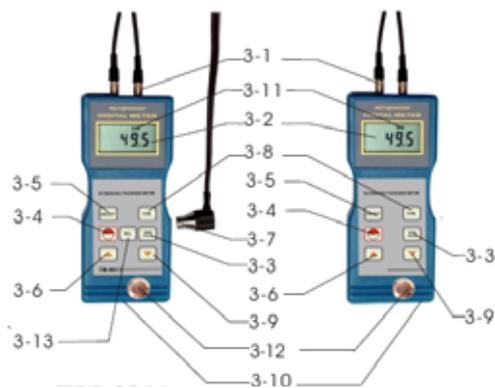
Size: 160×68×32mm (5.5×2.8×1.2inch)

Weight: about 208g (not including batteries)

Accessories:

- Carrying case
- Operation manual
- Ultrasonic sensor

#### 3. Front panel description



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- 3- 1 Sensor plug
- 3- 2 Display
- 3- 3 mm/ inch key
- 3- 4 Power- key
- 3- 5 Material selection key
- 3- 6 Plus- key
- 3- 7 Ultrasonic sensor
- 3- 8 Calibration key
- 3- 9 Minus- key
- 3-10 Battery compartment/ cover
- 3-11 Coupling indicator
- 3-12 Base plate
- 3-13 Velocity key (only TB 200-0.1 US)

#### 4. Material selection

- 4.1 The instrument has to be switched on by the Power- key 3-4.
- 4.2 The Material selection key 3-5 has to be pressed and the display 3-2 will show the code `cdxx` or `xxxx`. `cd` is the abbreviation for `code` and `xx` is a number among 0.1 and 11 that stands for the material to be measured as shown in the scale below. `xxxx` is a 4-digit number describing the sound velocity of the material defined by the user. The `cdxx` material relationship is as follows:

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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	Quarz glass
8	cd08	Polyethylen
9	cd09	PVC
10	cd10	Grey cast iron
11	cd11	Nodular cast iron
12	xxxx	Sound velocity

4.3 The Plus key 3-6 or the Minus key 3-9 is to be pressed to select the material code to measure. Then the Material selection key 3-5 is to be pressed to confirm. The instrument changes into the measuring mode and on the display occurs `0`.

If a material code is selected without confirming this selection, the instrument will automatically change back into the measuring mode after a few seconds. In this case the primary material code will still be stored before switching off.

4.4 A 4-digit number will be shown on the display by pressing the Plus key 3-6 when displaying `cd11` or the Minus key 3-9 is to be pressed when displaying `cd01`. The 4-digit number is the last sound velocity being defined by the user. By changing the velocity, varying qualities of materials can be compensated.

4.5 If the material code has once been selected and saved it is stored in the memory of the instrument. As long as no modification is done, the instrument will always raise (use) this material code.

4.6 To get into the menu selection of the material code, the Material selection key 3-5 is to be pressed. To quit the menu the material selection key is to be pressed again or it has to be waited until the instrument- after a few seconds - changes back into the measuring mode. On the display appears `0`.

### 5. Calibration

5.1 A little oil is to be dropped on the base plate 3-12.

5.2 The calibration key 3-8 is to be pressed and `CAL` appears on the display. `CAL` is the abbreviation for calibration.

5.3 The sensor 3-7 is to be pressed on the base plate. The coupling symbol ((•)) (measurement in action) occurs if measuring procedure has been established successfully by the process of sound sending and receiving. On the display appears `5.0mm` (debit thickness of the base plate) and `CAL` in turn. As soon as the value is stabilized, the `CAL` key 3-8 is to be pressed to confirm. Then the instrument changes back into the measuring mode.

5.4 The calibration has been finished and automatically saved in the instrument.

### 6. Measuring procedure

6.1 The Power key 3-4 is to be pressed to switch on the

instrument.

6.2 The mm/ inch key 3-3 is to be pressed to select the correct measurement unit.

6.3 The sensor 3-7 is to be placed onto the material surface to be measured, provided that the material code has been selected correctly. Assure yourself that coupling is fine and the symbol ((•)) 3-11 is active. The measurement result is to be shown on the display.

6.4 The measurement result is saved until a new measurement is performed. The last value is conserved on the display until the instrument is switched off.

6.5 The instrument can be switched off by the Power- on/ Power- off key or by Auto-Power off function, one minute from last key operation.

### 7. Measuring by velocity setting (not for TB 200-0.1 US-red)

7.1 By pressing the VEL- key 3-13, on the display appears last saved velocity.

#### 7.2 Measuring of coatings & materials by a known thickness:

Velocity can be adjusted by pressing the Plus- or the Minus- key. By doing this, the value shown on the display is changed higher or lower. First the increase is 10m/ s. If the Plus- or Minus- key is pressed for longer than 4 seconds, the increase is 100m/ s.

A little oil is to be dropped onto the material to be measured. Now the sensor is pressed onto the surface to be measured. The reading on the display is the thickness, assumed that coupling is well.

If velocity of a special material is known, it is easy to measure the thickness with the help of step 7.2.

#### 7.3 Measuring of coatings & materials with an unknown thickness:

A test material of known thickness is to be selected. Step 7.2 (velocity setting) is to be repeated until the measured value is exactly the same as the known thickness. In this case the set value is the velocity of the material to be measured. With this, any number of unknown thicknesses of the same material can now be measured.

7.4 To change velocity, VEL- key 3-13 is to be pressed. To return into the measuring mode, this key is to be pressed again or it has to be waited until the instrument automatically shows `0`.

7.5 By using velocity measurement, the coating thickness or the thickness of any hard materials can easily be measured.

### 8. Battery replacement

8.1 If the battery symbol appears on the display,



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batteries should be replaced.

8.2 The battery cover is to be removed from the instrument and the batteries are to be taken off.

8.3 Batteries are to be installed, paying carefully attention to polarity.

8.4 If the instrument is not to be used for an extended Period, batteries are to be extracted.

### 9. Declaration of conformity

TB 200-0.1 US



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#### Konformitätserklärung

Declaration of conformity for apparatus with CE mark  
Konformitätserklärung für Geräte mit CE-Zeichen  
Déclaration de conformité pour appareils portant la marque CE  
Declaración de conformidad para aparatos con marca CE  
Dichiarazione di conformità per apparecchi contrassegnati con la marcatura CE

**English** We hereby declare that the product to which this declaration refers conforms with the following standards.  
**Deutsch** Wir erklären hiermit, dass das Produkt, auf das sich diese Erklärung bezieht, mit den nachstehenden Normen übereinstimmt.  
**Français** Nous déclarons avec oela responsabilité que le produit, auquel se rapporte la présente déclaration, est conforme aux normes citées ci-après.  
**Español** Manifestamos en la presente que el producto al que se refiere esta declaración es "a de acuerdo con las normas siguientes  
**Italiano** Dichiariamo con ciò che il prodotto al quale la presente dichiarazione si riferisce è conforme alle norme di seguito citate.

#### Thickness Gauge: SAUTER TB 200-0.1 US

Mark applied	EU Directives	Standards
<b>CE</b>	89/336/EEC EMC	EN 61326 : 1997+A1 : 1998+A2 : 2001 EN 55022 EN 61000-4-2 I,3

Date: 07.01.2009

Signature:   
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