INTRODUCTION

This instrument is a portable easy to use 3½ digit, coating thickness gauge for the non-destructive measurement of non-magnetic coatings on a ferrous surface. Useful applications of this gauge include measuring the thickness of paint, enamel, plating, galvanizing, etc. on a ferrous surface. Designed for sample one hand operation, the meter has a backlit LCD display. Auto-Hold function and auto power down (15 seconds approx.) after releasing trigger to extend battery life.

CAUTION

- Do not use the unit near any device which generates strong electromagnetic radiation or near a static electrical charge, as these may cause errors.
- Do not use the unit where it may be exposed to corrosive or explosive gases. The unit may be damaged, or explosion may occur.
- Do not keep or use this unit in an environment where it will be directly illuminated by sunshine, or where it condensation. If you do, it may be deformed. Its insulation may be damaged, or it may no longer function according to specification.
- Do not place the meter on or around hot objects (70°C 158°F). It may cause damage to the case.
- If the meter is exposed to significant changes in ambient temperature (hot to cold or cold to hot). Allow 30 minutes for temperature stabilization, before taking measurement.

DTG-500
Coating Thickness Gauge

Calibration:
1. Turn on the power.
2. Select unit (mils or um).
3. Press and hold “CAL” key (for about 4 sec) until “- - -” flashes on the LCD and “CAL”, “HOLD” indicated at middle-lower of LCD. These mean the gauge is in calibration mode. Press and hold “CAL” key for about 4 seconds. To exit the calibration mode.
4. Press the sensor onto the metal calibrating plate, pull and release trigger. There is a measured reading held on LCD. Adjust the reading to “00.0” (for mils, “000” for um) with “▲” and “▼” keys. Then press “CAL” key, LCD shows “- - -” 3 times, and LCD shows “- - - 2”. Press and hold “CAL” key for about 4 seconds. To abort the input data and exit the calibration mode.
5. Place the foil with known thickness on the metal calibrating plate, press the sensor onto the foil, pull the trigger and release. There is a measured reading held on LCD. Adjust the reading to the thickness of the foil with “▲” and “▼” keys. Then press “CAL” key, LCD shows “- - -” 3 times, and LCD shows “- - - 3”.
6. Remove the gauge from the foil and calibration plate.
7. Press and hold the “CAL” key for 4 seconds to exit the calibration mode, the power will go off and the calibration is completed.
8. If it exits the calibration mode, the procedure is not completed. The power does not go off, and the calibration data kept the previous calibration settings.

“▼” button
Use “▼” button to select turn on or off the Back-Light.

mils/um button
1. Press “mils/um” key to switch between mils and um. (1 mils = 25.4 um).
2. Selected unit is shown in LCD above the reading.

OPERATION

1. Pull the trigger to turn on the meter.
2. Press the sensor on the object.
3. Pull the trigger to the measuring the thickness, releasing trigger to stop measuring the thickness.

MAINTENANCE

Battery Replacement
1. Power is supplied by a 9 volt "transistor" battery (NEDA 1604, IEC 6F22).
2. Pull off battery cover “□”.
3. Remove the battery cover by gently sliding it forwards the bottom of the meter.
4. Remove and disconnect the old battery from the meter and replace with a new unit. Wind the excess lead length and put the top of battery beneath the battery chamber. Install the battery and put the battery cover.
**SPECIFICATIONS**

**GENERAL**
- **Display:** 3½ digit liquid crystal display (LCD) with maximum reading of 19999.
- **Low battery indication:** The “ battery” is displayed when the battery voltage drops below the operating level.
- **Measurement rate:** 1 second, nominal.
- **Operating Environment:** 32°F to 122°F (0°C to 50°C) at 5% to 95% R.H. with battery removed from meter.
- **Auto power off:** 15 seconds.
- **Standby consuming current:** <6μA.
- **Battery:** Standard 9V battery (NEDA 1604, IEC 6F22 006P).
- **Battery Life:** 9 hours (continuity) typical (contain Backlight).
- **Dimensions:** 148mm(H) x 105mm(W) x 42mm(D).
- **Weight:** Approx. 157g (including battery).
- **Applications:** All non-magnetic coatings such as paint, enamel, cadmium, chrome, teflon, on a ferrous surface.

**Cleaning**
- Periodically wipe the case with a damp cloth and detergent. Do not use abrasives or solvents.

**ELECTRICAL**
- **Thickness Range:** 0 to 40.0mils (0 to 1 um).
- **Display Resolution:** 0.1mil/1um.
- **Accuracy:**
  - ±4digs on 0 to 7.8mils
  - ±7digs on 0 to 199um
  - ±(1%±4digs) on 7.9mils to 40mils
- **Temperature Coefficient:** ±0.1% of reading is greater, change in accuracy per °F/°C.
- **Bient Operating Temperature:** Above 82°F/64.4°C.
- **Battery Life:** Automatic.
- **Response Time:** 1 second.

**OPERATING INSTRUCTIONS**

**Turn on and off power:**
1. Pull the trigger to turn on power, LC1.
2. Auto Power Off (APO) function: lasts without operation for 15 seconds, power is automatically turned off.

**Measuring:**
1. Turn on the power.
2. Pull the trigger to the measuring the test foil.
3. Releasing the trigger to stop measuring and hold the display reading.
4. During the trigger being pulled, read every second.
5. During the trigger being pulled, APO
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If the unit malfunctions, it must be returned to the factory for evaluation. OMEGA’s Customer Service Department will issue an Authorized Return (AR) number immediately upon phone or written request. Upon examination by OMEGA, if the unit is found to be defective, it will be repaired or replaced at no charge. OMEGA’s WARRANTY does not apply to defects resulting from any action of the purchaser, including but not limited to mishandling, improper interfacing, operation outside of design limits, improper repair, or unauthorized modification. This WARRANTY is VOID if the unit shows evidence of having been tampered with or shows evidence of having been damaged as a result of excessive corrosion; or current, heat, moisture, or vibration; improper specification; misapplication; misuse or other operating conditions outside of OMEGA’s control. Components in which wear is not warranted, include but are not limited to contact points, fuses, and traces.

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