byko-test Lite
Film Thickness Gage

Manual

A member of ALTANA

BYK
Film Thickness Gage

November 2019

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CAUTION!
Read Instruction Manual before using this instrument.

WARNING!
This manual cannot address all of the safety considerations associated with its use. It is the responsibility of the user to consult this manual and establish appropriate safety practices for use with this equipment and the individual material being tested.

WARNING!
The byko-test Lite Dry Film Thickness Gage is designed and intended for the use described in this manual. Using the Dry Film Thickness Gage for other purposes for which it was not designed may reduce or eliminate the protection offered by the features of the instrument. Serious injury may result.

WARNING!
Ultimate disposal of this product should be handled according to all national laws and regulations.

Please note the following points:
• Familiarize yourself with the layout and operation of the controls.
2 Preparations

Unpack the unit being careful to check all packaging for items. Some accessories required for specific tests may be found in a separate box within the main box.

Within the package are the following standard items:

<table>
<thead>
<tr>
<th>Quantity</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>byko-test Lite Film Thickness Gage</td>
</tr>
<tr>
<td>2</td>
<td>AA alkaline batteries</td>
</tr>
<tr>
<td>1</td>
<td>Wrist strap</td>
</tr>
<tr>
<td>1</td>
<td>Fe zero plate</td>
</tr>
<tr>
<td>1</td>
<td>NFe zero plate</td>
</tr>
<tr>
<td>1</td>
<td>Plastic calibration shim (100 um)</td>
</tr>
</tbody>
</table>

To install the batteries, remove the battery cover using a #1 Philips screwdriver. Install the batteries taking note of the + and – indications inside the battery compartment. Reinstall the cover and tighten the screw. The instrument is powered by 2 AA size alkaline batteries. Rechargeable batteries may be used but do not mix battery types.

Power on the unit using the Menu/Power button.

The battery cover screw is near the bottom of the cover.
The byko-test Film Thickness Gage is a small, hand-held instrument used for measuring the thickness of coatings on metallic substrates. It is powered by 2 AA size alkaline batteries.

A ruby tipped probe is at the bottom of the instrument. It is spring-loaded and takes a reading every time it is placed on a sample.

Four buttons on the front control all of the functions. They are Menu/Power, Enter, Up, Down.

On the left side is a USB port that allows downloading of data to an external device. No battery charging provision has been made and the USB port will not power the instrument.

The sides are made from a soft-textured material to aid the user in holding the instrument.

A full-color TFT screen is used to display the measurement and statistics information as selected by the user.

Battery power is indicated in the upper right corner of the screen. The dark line indicates power remaining.
4 Set Up

The byko-test Lite is customizable for your needs through an easy-to-use menu system. Familiarize yourself with the menu prior to use so you may get maximum benefit from the features and options available. Power on the instrument by pushing the Menu/Power button.

Each button has multiple functions which depend on the current mode.

**The Menu/Power button:**
- Pressing once turns on the power.
- Holding for 3 seconds turns the power off.
- Once the power is on, pressing brings up the menu.
- Within the menu, pressing brings you back one level.

**The Enter button:**
- Within a menu item, pressing selects that item.
- In measurement mode, pressing deletes the last reading.

**The Up button:**
- Within the menus, pressing moves the selection area up.
- Within a number selection screen, pressing moves the number up.
- In measurement mode, pressing displays the next reading in an average set.

**The Down button:**
- Within the menus, pressing moves the selection area down.
- Within a number selection screen, pressing moves the number down.
- In measurement mode, pressing displays the previous reading in an average set.

**BUTTON DISABLE FUNCTION:**
- The buttons may be disabled to allow the instrument to be used in tight quarters or fast moving situations without concern of accidentally deleting a reading.
- Press both the Menu/Power and Down buttons for more than 5 seconds.
- A Lock icon will appear in the upper right corner of the screen next to the battery icon.
- Now short presses of the buttons will not be recognized, the normal functionality of the buttons may be restored by pressing
both the Menu/Power  button and Down  buttons for more than 5 seconds.
- Power off may be accomplished by a long press of the Menu/Power  button.

SCREEN LAYOUT:

Once the instrument is powered on, press the Menu/Power  button. This brings up the Settings Menu where the following selections are available:

**Units | Fe/NFe | Environment | System Settings | Statistics | Calibration | Limits**

Move the green selection bar up and down with the  and  buttons and press Enter ← to select that setting. The options for each selection are described below.

**UNITS: Microns | Mills**

Move the green selection bar and press Enter ← to select. After selection press Menu/Power  to return to the Main screen.

**FE/NFE: Fe | NFe | Both**

Move the green selection bar and press Enter ← to select. After selection press Menu/Power  to return to the Main screen.

**SYSTEM SETTINGS**

Each System Settings selection brings up a sub-menu to choose from.

**Rotation on/off**
- Turn automatic screen rotation on or off.

**Key Beep on/off**
- Turns the beeper off and on.
4 Set Up

Stability Test on/off
- Turns off stability testing for use on moving vehicles. Stability mode is indicated by the letter S in the display. This setting is overridden when Continuous Mode is selected.

Sleep Timer
- Select between:
  - 30 seconds | 1 minute | 5 minutes | Disable sleep

Brightness
- Use the Up or Down arrows to change the brightness, 1 is backlight off, 10 is brightest.

Language
- Choose between English, German, French, Spanish, Italian, Portuguese, Chinese or Japanese

About
- Information screen, shows current software version and copyright information

STATISTICS
Statistics on/off
- On – Standard statistics mode is on, calculations are based on Number of Readings to Average setting. (see below)
- Off – All statistics turned off.

Number of Readings to Average
- Standard Mode – Use Up and Down arrow buttons to set the number of readings to use for statistics calculations.

Clear Memory
- Clears the statistics memory.

CALIBRATION
Zero only
- Calibration on the zero plate only. Take one or more readings on a zero plate. When finished press the Enter button to save.

Reset to Factory Values
- Resets the instrument to the factory programmed calibration.
Grip the instrument in your hand with your thumb on the ribbed section between the buttons and your other fingers on the back.

Press the Menu/Power button to power on the instrument.

To calibrate, select the Zero Calibration then press the instrument to the calibration surface and remove. For each reading, place the instrument on the surface and remove by at least 25 mm for each reading. Press the Enter button to complete the calibration after removing the instrument from the calibration surface.

Press the instrument probe firmly against the surface to be measured. Remove from the surface and read the measurement directly on the screen. The backlight will turn off in 15 seconds, to restore the backlight simply press either the Up or Down arrow buttons.

Statistics are shown on the lower area of the screen. The reading number in the statistics count is shown above the stats preceded by the letter N.
6 Maintenance and Repair

CLEANING AND ROUTINE MAINTENANCE
Care should be taken to avoid dropping the instrument. Do not immerse in water or any other liquid. If the instrument case becomes dirty, clean the covers with mild soap and water as soon as practical. Avoid using solvents to clean the instrument as it may be seriously damaged by strong solvents.

TROUBLESHOOTING
If an error occurs, first remove the batteries and replace with a new set. Use of high quality alkaline batteries are preferred however, rechargeable batteries may be used. The instrument has no provision to charge rechargeable batteries so they must be recharged using a separate charger (not included). Do not mix battery types. If the instrument is going to be stored for more than 30 days, remove the batteries to prevent discharge and subsequent leakage. If new batteries do not restore use, contact your local BYK-Gardner office for assistance.

SERVICE AND SPARE PARTS
For all service and spare parts requirements, please contact your local BYK-Gardner office.

Components
Ordering Information

<table>
<thead>
<tr>
<th>Part Number</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>3791</td>
<td>byko-test Lite Film Thickness Gage</td>
</tr>
<tr>
<td>180503791</td>
<td>byko-test Lite Film Thickness Gage (Certified calibration)</td>
</tr>
</tbody>
</table>

Recommended Accessories

<table>
<thead>
<tr>
<th>Part Number</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>3798</td>
<td>byko-test Connect Software</td>
</tr>
<tr>
<td>3799</td>
<td>USB connection cable</td>
</tr>
<tr>
<td>0470</td>
<td>BYK t200 IR Thermometer (for surface temperature measurements)</td>
</tr>
</tbody>
</table>
### 7 Technical Data

<table>
<thead>
<tr>
<th></th>
<th>Weight</th>
<th>Height</th>
<th>Width</th>
<th>Depth</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Weight</strong></td>
<td>5.6 oz</td>
<td>4.53 inches</td>
<td>2.65 inches</td>
<td>1.75 inches</td>
</tr>
<tr>
<td><strong>Height</strong></td>
<td></td>
<td>115 mm</td>
<td></td>
<td>44 mm</td>
</tr>
<tr>
<td><strong>Width</strong></td>
<td></td>
<td></td>
<td>67 mm</td>
<td></td>
</tr>
<tr>
<td><strong>Depth</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Measurement Range</strong></td>
<td>0-79 mils</td>
<td>0-2000 microns</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Accuracy</strong></td>
<td>±0.078 mils + 3% of measured value</td>
<td>±2 microns + 3% of measured value</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Min Substrate Thickness</strong></td>
<td>FE – 0.008 in</td>
<td>FE – 0.2 mm</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>NFE – 0.002 in</td>
<td>NFE – 0.05 mm</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Minimum Curvature</strong></td>
<td>Convex 0.2 in</td>
<td>Convex 5 mm</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Concave 1.2 in</td>
<td>Concave 30 mm</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Temperature - Storage</strong></td>
<td>0° – 150° F</td>
<td>-18° – 66° C</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Temperature - Operating</strong></td>
<td>32° – 140° F</td>
<td>0° – 60° C</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Power</strong></td>
<td>2 AA 1.5v Alkaline batteries</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

All technical data is subject to change.
EC – Declaration of Conformity

We, BYK-Gardner USA
9104 Guilford Road
Columbia, MD 21046 USA

herewith declare the product:

Type: byko-test Ne/NFe, byko-test Lite Coating Thickness Tester

comply with the requirements of the following EC directives:

Electromagnetic Compatibility 2014/30/EU

The following harmonized standards were applied:

EN 61326-1:2013
EN 61326-2-1:2013

Columbia, MD, August 30, 2019

Technical documentation is available

Mr. Michael J. Gogoel
V.P. General Manager