

# Magna-Mike 8600

## Thickness Measurements Made Easier



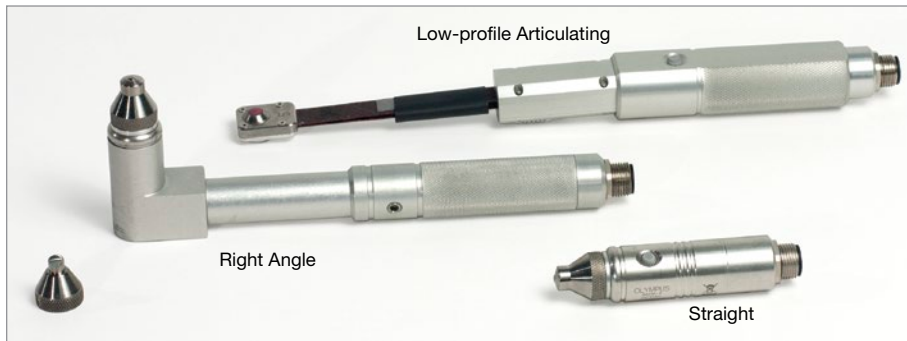
- Thickness gage for nonferrous materials
- Measures up to 1 in. (25.4 mm)
- New low-profile articulating probe
- Min Scan with 60 Hz capture rate
- Hall Effect technology

# The New Magna-Mike

The Magna-Mike® 8600 is a portable thickness gage that uses a simple magnetic method to make reliable and repeatable measurements on nonferrous materials. Operation of the Magna-Mike is very simple. Measurements are made when its magnetic probe is held or scanned on one side of the test material and a small target ball (or Disk or Wire) is placed on the opposite side or dropped inside a container. The probe's Hall Effect sensor measures the distance between the probe tip and target ball. The measurements are instantly displayed as an easy-to-read digital thickness reading.

## Three New Probe Designs

The Magna-Mike is available with straight, right angle, and low-profile articulating magnetic probes. The 86PR-1 and 86-PR2 feature replaceable wear caps to extend the probe's durability and reduce replacement costs.



Removable Standard Wear Cap  
86PR1-WC



Removable Extended Wear Cap  
86PR1-EWC



Removable Chisel Tip Wear Cap  
86PR1-CWC

## New Features:

- Three new durable probe designs:
  - Straight, Right Angle and Low-profile Articulating
- Replaceable Wear Caps
  - Standard, Chisel tip, and Extended Wear (for 86PR-1 and 86PR-2 only)
- Expanded target selection
  - 3/16 and 1/4 in. magnetic target balls
  - 0.045 in. (1.14 mm) and 0.026 in. (0.66 mm) diameter wire target
- Expanded thickness range up to 25.4 mm (1.00 in.)
- Large Color VGA display
- RS-232, USB and VGA outputs
- Fast Measurement update rate 60 Hz
- Expanded alphanumeric data logger
- Save and Recall stored calibration files
- Ability to export file to MicroSD card in .txt and CSV formats
- New accessory kits (Calibration kits)
  - Standard up to 9.1 mm (0.360 in.)
  - Extended range up to 25.4 mm (1 in.)
  - Disk kit
  - Wire target kit
  - Low-profile probe kit



86PR-3 Low-profile Articulating Probe

## Measures from 0.001 mm (0.0001 in.) to 25.4 mm (1 in.)

The Magna-Mike offers an expanded list of target options to greatly extend its measurement capability.

Targets	Min Thickness	Max Thickness	Accuracy	
			Basic Calibration	Multipoint
<b>86PR-1 and 86PR-2 Probes</b>				
1/16 in. (1.58 mm) ball (80TB1)	0.0001 in. (0.001 mm)	0.080 in. (2.03 mm)	4%	3%
1/8 in. (3.17 mm) ball (80TB2)	0.0001 in. (0.001 mm)	0.240 in. (6.1 mm)	4%	2%
3/16 in. (4.76 mm) ball (80TB3)	0.0001 in. (0.001 mm)	0.360 in. (9.1 mm)	3%	1%
1/4 in. (6.35 mm) ball (80TB4)	0.0001 in. (0.001 mm)	0.360 in. (9.1 mm)	3%	1%
3/16 in. (4.76 mm) magnetic ball (86TBM3)	0.160 in. (4.06 mm)	0.750 in. (19.05 mm)	3%	1%
1/4 in. (6.35 mm) magnetic ball (86TBM4)	0.160 in. (4.06 mm)	1.00 in. (25.4 mm)	3%	1%
0.500 in. (12.7 mm) flat disk (80TD1)	0.0001 in. (0.001 mm)	0.360 in. (9.1 mm)	3%	2%
0.250 in. (6.35 mm) V-edge disk (80TD2)	0.0001 in. (0.001 mm)	0.240 in. (6.1 mm)	3%	2%
0.045 in. (1.14 mm) dia. wire (86TW1)	0.0001 in. (0.001 mm)	0.500 in. (12.7 mm)	3%	2%
0.026 in. (0.66 mm) dia. wire (86TW2)	0.0001 in. (0.001 mm)	0.240 in. (6.1 mm)	3%	2%
<b>New 86PR-3 Low-profile Articulating Probe</b>				
1/16 in. (1.58 mm) ball (80TB1)	0.001 in. (0.01 mm)	0.080 in. (2.0 mm)	4%	3%
1/8 in. (3.17 mm) ball (80TB2)	0.001 in. (0.01 mm)	0.160 in. (4.1 mm)	4%	2%
0.026 in. (0.66 mm) dia. wire (86TW2)	0.001 in. (0.01 mm)	0.160 in. (4.1 mm)	3%	2%

Note: For 86PR-1 and 86PR-2 probes the Measurement Tolerance=[(accuracy x thickness)+(0.0001 in. or 0.003 mm)],  
for 86PR-3 probes the Measurement Tolerance=[(accuracy x thickness)+(0.001 in. or 0.025 mm)]

# Applications

## Plastic and Glass Bottles and Packaging



In applications such as plastic containers, simply drop the small target ball inside the container. The magnetic probe held on the outside of the container attracts the target ball. When scanning the probe along the surface or critical corners, the small steel target ball will follow. In the Minimum Mode feature, the gage continually displays

both the actual thickness and the lowest thickness reading.

## Automotive Tear Seams



The standard probe along with one of the two target disks and a replaceable chisel wear cap makes the Magna-Mike 8600 ideally suited for most automotive tear seam applications where measurements need to be made in a thin channel or groove.

## Aerospace and Other Applications

The Magna-Mike has been successfully integrated into quality control programs to measure aerospace parts made of composites and nonferrous materials. The wire targets can be inserted into cooling holes in turbine blades and the larger magnetic target balls can be used to measure jet engine parts up to 25.4 mm (1.00 in.) thick.



Measurement of a 24.1 mm (0.950 in.) aerospace casting

# Data Logger

## Internal Alphanumeric Data Logger

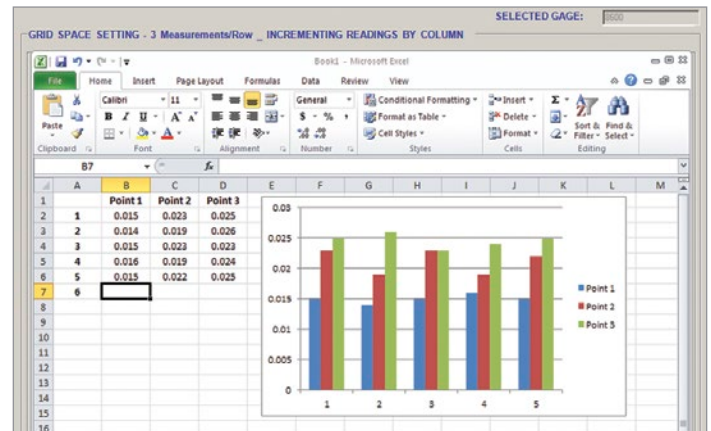
The Magna-Mike® has an extensive file-based alphanumeric data logger that is designed to easily store and transfer thickness readings.

You have the ability to store thickness readings in one of four standard file formats: Incremental, Sequential, Sequential with Custom Point and 2-D Grid.

- Single Send or File Send directly to an Excel spread sheet using WINXL
- Send data to other SPC program
- Both USB and RS-232 outputs
- Export files to a removable MicroSD card in .txt and CSV formats
- Generate on-board reports

## Direct Interface to Excel Spread Sheets

The Magna-Mike 8600 has RS-232 and USB outputs that enable the instrument to directly send data to an Excel spread sheet. The included WINXL interface program enables you to single send or file send thickness readings.



WINXL interface program



Measurement of a turbine blade using the wire targets



# Magna-Mike® 8600 Specifications\*

## GENERAL

<b>Overall dimension</b>	236 mm x 167 mm x 70 mm (9.3 in. x 6.57 in. x 2.76 in.)
<b>Weight</b>	1.68 kg (3.72 lb), including lithium-ion battery
<b>Keypad</b>	English, Japanese, Chinese, International
<b>Languages</b>	English, Spanish, French, German, Japanese, Chinese, Portuguese, Swedish, Norwegian, Dutch, Polish, Russian, Hungarian, Czech, Italian
<b>Data storage</b>	Onboard and removable 2 GB MicroSD card
<b>Battery life (Optional)</b>	16 h (lithium-ion)
<b>Power requirements</b>	AC Mains: 100 VAC to 120 VAC, 200 VAC to 240 VAC
<b>Display type</b>	Full VGA (640 x 480 pixels) transfective color LCD
<b>Display dimensions (W x H, Diag.)</b>	117 mm x 89 mm, 146 mm (4.62 in. x 3.49 in., 5.76 in.)
<b>Min/Max capture mode</b>	Captured at 60 Hz measurement rate
<b>Display update rate</b>	4, 8, 16 and 20 Hz
<b>Alarm</b>	High and Low alarms
<b>Resolution</b>	0.1 mm (0.01 in.), 0.01 mm (0.001 in.), 0.001 mm (0.0001 in.) (depending on thickness range)
<b>Data logger</b>	Internal file-based alphanumeric data logger

## PROBES

<b>86PR-1</b>	Standard straight probe 82.30 mm (3.24 in.) long and 18.62 mm (0.733 in.) dia.
<b>86PR-2</b>	Right angle probe head 58.84 mm x 18.62 mm, length 178.57 mm (2.32 in. x 0.733 in. dia., length 7.030 in.)
<b>86PR-3</b>	Low-profile articulating probe 241.3 mm (9.5 in.) long

## ENVIRONMENTAL TESTING

<b>Vibration</b>	MIL-STD-810G, Method 514.6, Procedure I
<b>Drop</b>	MIL-STD-810G, Method 516.6, Procedure IV
<b>Shock</b>	MIL-STD-810G, Method 516.6, Procedure I
<b>Designed for IP67</b>	Yes

## INPUTS/OUTPUTS

<b>USB</b>	USB 2.0 peripheral port
<b>RS-232</b>	Yes
<b>Memory card</b>	Maximum capacity: 2 GB removable MicroSD memory card
<b>Video output</b>	VGA output standard
<b>Foot switch (optional)</b>	Programmable (Save, Send, Meas or Q-Cal)
<b>Operation temperature</b>	-10 °C to 50 °C (14 °F to 122 °F)

## Standard Inclusions

Select probe and stand (straight, right angle, or low-profile):

- **86PR-1 (U8470020)**: Straight probe includes **86PRS1 (U8771043)**: Two-part probe stand
- **86PR-2 (U8470028)**: Right angle probe includes **86PRS2 (U8771044)**: Two-part right angle probe stand
- **86PR-3 (Q7800004)**: Low-profile probe includes **86PRS3 (Q7800006)** and two part low-profile probe stand
- **86PC (U8801410)**: Probe cable for 86PR-1 and 86PR-2
- **WinXL (U8774010)**: Interface program to Excel

Select one from:

- **86ACC-KIT (U8771068)**: Standard calibration kit, **86ACC-ER-KIT (U8771069)**: Extended range calibration kit or **86ACC-PR3-KIT (Q7800005)** Low-profile calibration kit.
  - **EP-MCA**: External power supply with charger
  - **8600-MAN-CD (U8778535)**: CD with manual (all languages)
  - **600-TC (U8780294)**: Plastic carrying case
- Select one from:
- **600-C-RS232-5 (U8780299)**: RS-232 cable
  - **EPLTC-C-USB-A-6 (U8840031)**: USB cable

Standard inclusions may vary depending on your location. Contact your local distributor.

## Optional Accessories

- **86PR-3 (Q7800004)**: Low-profile articulating probe
- **600-C-VGA-5 (U8780298)**: VGA output cable
- **600-BAT-L-3 (U8051431)**: Rechargeable lithium-ion battery
- **85FSW (U8780127)**: Remote foot switch
- **86PR-2 (U8470028)**: Right angle probe
- **86PRS2 (U8771044)**: Two-part probe stand for 86PR-2
- **86PCC (U8780323)**: Coiled cable for 86PR-1 and 86PR-2
- **86PR1-WC (U8780324)**: Replaceable wear cap for 86PR-1 and 86PR-2 probes
- **86PR1-CWC (U8780326)**: Chisel tip wear cap for 86PR-1 and 86PR-2 probes
- **86PR1-EWC (U8780344)**: Extended wear cap for 86PR-1 and 86PR-2 probes
- **80TB1 (U8771030)**: Target balls 1.58 mm (1/16 in.)
- **80TB2 (U8771031)**: Target balls 3.17 mm (1/8 in.)
- **80TB3 (U8771032)**: Target balls 4.76 mm (3/16 in.)
- **80TB4 (U8771022)**: Target balls 6.35 mm (1/4 in.)
- **80TD1 (U8771034)**: Target disk Flat edge
- **80TD2 (U8771035)**: Target disk V-edge
- **86TBM3 (U8771039)**: Magnetic target balls 4.76 mm (3/16 in.)
- **86TBM4 (U8771040)**: Magnetic target balls 6.35 mm (1/4 in.)
- **86TW1 (U8771041)**: Wire target 1.14 mm (0.045 in.)
- **86TW2 (U8779858)**: Wire target 0.66 mm (0.026 in.)
- **86ACC-ER-KIT (U8771069)**: Extended calibration kit
- **86ACC-W-KIT (U8771070)**: Wire target calibration kit
- **86ACC-D-KIT (U8771071)**: Target disk calibration kit
- **86ACC-PR3-KIT (Q7800005)** Low-profile probe calibration kit.
- **80CAL-NIS (U8771011)**: NIST-traced calibration standards (set of six) for 86PR-1 and 86PR-2 probes

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