

# Magna-Mike™ 8600 Thickness Gauge

## Thickness Measurements Made Easier



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

# Reliable Thickness Measurements

The Magna-Mike™ 8600 portable thickness gauge uses a simple magnetic method to make reliable and repeatable measurements on nonferrous materials. Operation of the gauge 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 Versatile Probe Designs

The Magna-Mike thickness gauge is available with straight, right angle, and low-profile articulating magnetic probes. The 86PR-1 and 86PR-2 probes feature replaceable wear caps to extend their durability and reduce replacement costs.



## Key Features:

- Three 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
  - 1.14 mm (0.045 in.) and 0.66 mm (0.026 in.) 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 a 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



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

The Magna-Mike thickness gauge 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 gauge 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 gauge 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 thickness gauge 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.



# Data Logger

## Internal Alphanumeric Data Logger

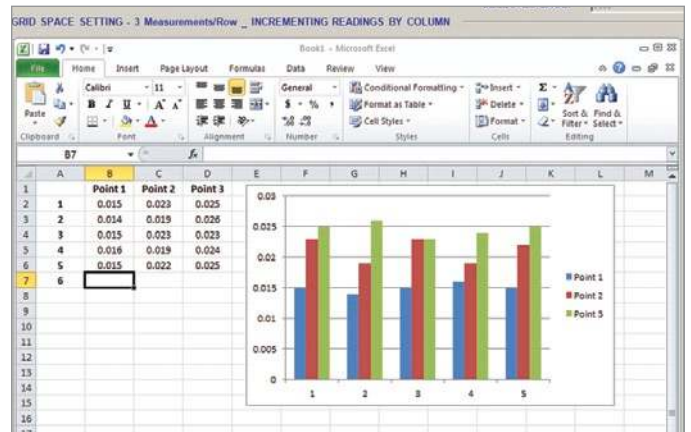
The Magna-Mike™ thickness gauge has an extensive file-based alphanumeric data logger that is designed to easily store and transfer thickness readings.

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

- Single send or file send directly to an Excel® spreadsheet using WINXL
- Send data to other SPC programs
- Both USB and RS-232 outputs
- Export files to a removable microSD card in .txt and CSV formats
- Generate onboard reports

## Direct Interface to Excel® Spreadsheets

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



# Magna-Mike™ 8600 Specifications\*

## GENERAL

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

## Probes

86PR-1	Standard straight probe 82.30 mm (3.24 in.) long and 18.62 mm (0.733 in.) dia.
86PR-2	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.)
86PR-3	Low-profile articulating probe 241.3 mm (9.5 in.) long

## Environmental Testing

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

## Inputs/Outputs

USB	USB 2.0 peripheral port
RS-232	Yes
Memory card	Maximum capacity: 64 GB removable microSD memory card
Video output	VGA output standard
Foot switch (optional)	Programmable (Save, Send, Meas or Q-Cal)
Operation temperature	-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)**: 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 (U8771033)**: 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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MagnaMike-8600\_EN\_A4\_2024\_05

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