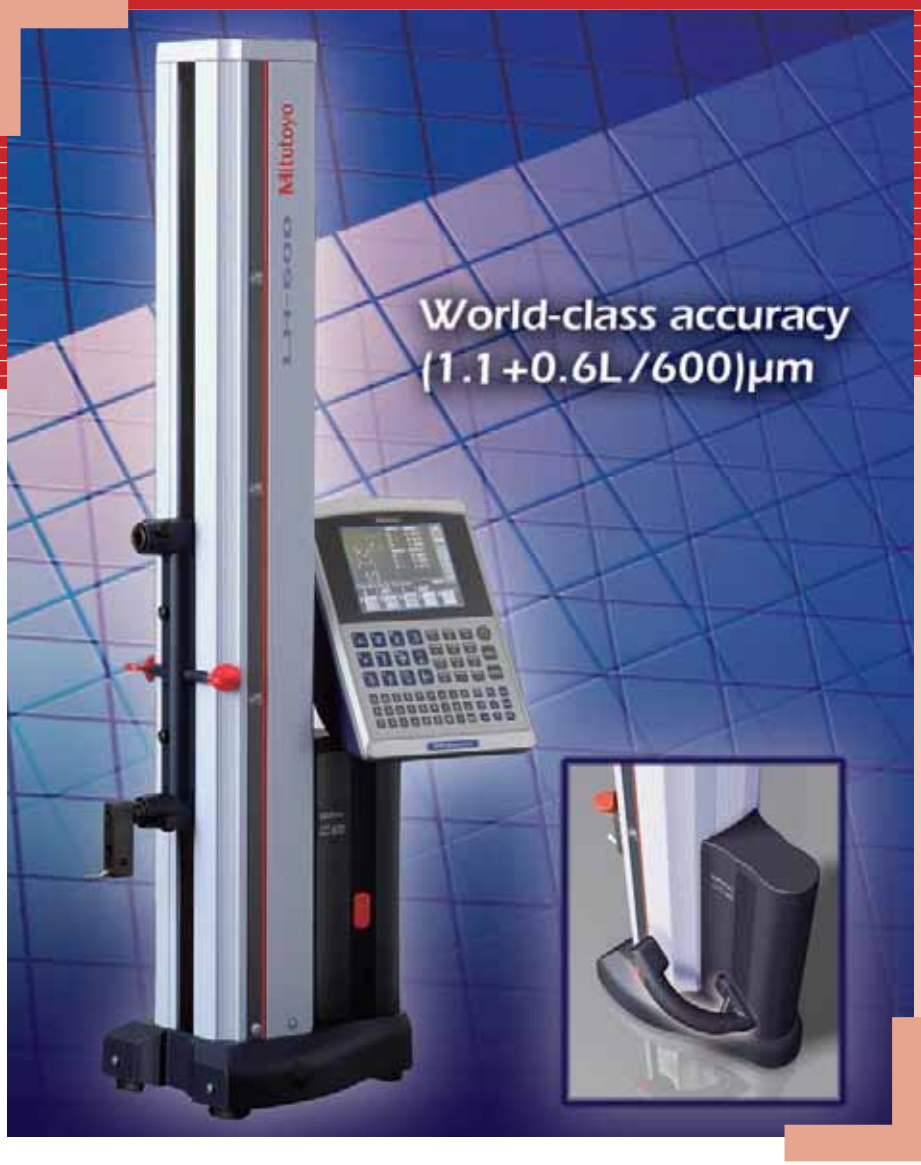
1D/2D Measuring Gage
LINEAR HEIGHT

Bulletin No. 1982



World-class accuracy, cost effective, ergonomic design and optional large-capacity battery pack plus many probe combinations for measurement flexibility.

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The Linear Height multifunctional height gage makes 2D measurement straightforward and accurate.

Pursuing accuracy and ease of use.

> World-class accuracy of (1.1+0.6L/600)µm

> Repeatability of 0.4µm (2σ)

> Longer battery operation with large-capacity battery pack

> Ergonomic machine design and power grip operation

The Linear Height offers advanced performance for reliable and simple 2D measurement.

POWER GRIP

Easy-of-use in measurement

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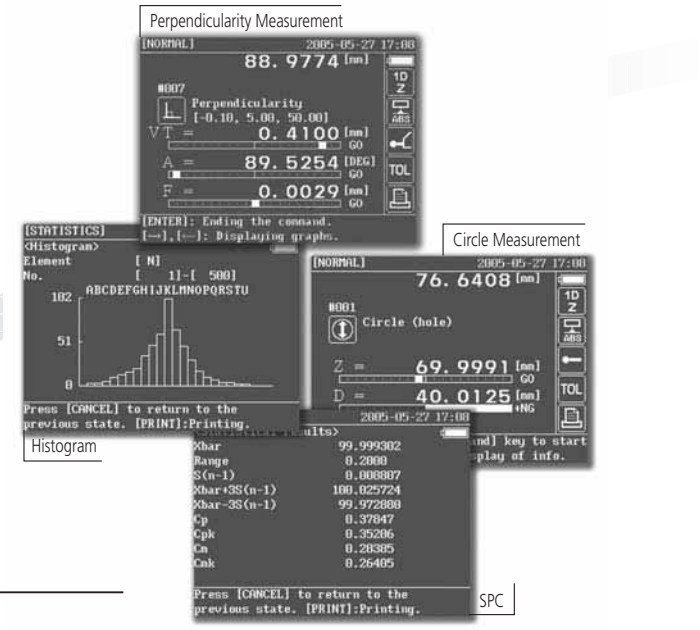
Accuracy in measurement

> Excellent accuracy of (1.1+0.6L/600)µm with 0.1µm/0.4µm resolution/repeatability.

> Perpendicularity (frontal) of 5µm and straightness of 4µm are guaranteed.

> Pneumatic full/semi-floating system allows adjustment of air-cushion height according to the operation (movement/measurement) to achieve rapid inspection speed while maintaining accuracy.

> Independent drive/measurement speed setting for quick positioning (max. 40mm/s) and careful measuring.



Data processing unit

Flexibility in measurement

> Optional large-capacity battery pack for longer battery-powered operation.

> Extensive probe/stylus selection to suit practically any workpiece.

> Choice of message language in English, German, French, Spanish, Italian, Dutch, Portuguese. Swedish, Czech, Hungarian, Slovenian, Polish, Mandarin Chinese, Traditional Chinese*, Korean** and Japanese for user-friendly operation.

*Optional **518-331K and 518-342K only

Ease-of-use in measurement

> One-key operation for running a semi-automatic measurement.

> Automatic stand-by in repeat measurement mode. The probe automatically moves to the next measurement start position.

> Data entry from a Digimatic tool. SPC cable: **936937** (1m/40"), **965014** (2m/80")

> Back up data of the part program or measurement data can be restored by USB-Memory stick or USB-FDD.

> Basic statistical functions are provided and, additionally, the RS-232C data output provides the option of evaluating measurement data externally with SPC software on a PC.

> Immediate GO/NG judgment at each measurement.

> Large memory capacity for 50 measuring programs and 60,000 measurements.

> Off-line part programming for increased measurement efficiency.

> 24kg smart body for high mobility.

Greater convenience and ease of use through the integration of sequential key operations for frequently used measurements.

The touch of a single key automatically runs the instrument until the last result is displayed. This eliminates the need to execute key operations at each step in the measurement process, allowing you to concentrate 100% on workpiece inspection.

Single-touch Basic functions

Measures the height of an upward-facing surface.	Measures the difference between maximum height and minimum height of an upward or downward facing surface
Measures the height of a downward-facing surface.	Measures the width and center position between two elements.
Measures the diameter and center of a hole.	Sets the ABS origin (absolute reference origin) or INC origin (incremental origin defined by the user), switches between ABS/INC origins and sets the offset ABS origin
Measures the diameter and center of a shaft.	Sets the probe type, measures the probe diameter, inputs the probe diameter, saves the probe, loads the probe and shifts the probe position.
Measures the width and center of an inner diameter.	CALC 1 — Performs calculation, including angle.
Measures the width and center of an outer diameter.	OTHER 2 — Displays a comment when operations are paused, measures the position of a hole with a tapered probe, inputs measurement from a Digimatic measuring instrument and measures perpendicularity.
Measures the maximum height of a downward or upward-facing surface.	Suspends or resumes system operation.
Measures the minimum height of an upward or downward-facing surface.	

Other functions

2D measurement

- > 2D origin setting
- > X/Y axis setting
- > Coordinate system rotation
- > 2D origin translation
- > Coordinate save
- > Coordinate recall
- > Element recall
- > Polar coordinate recall
- > Coordinate distance calculation
- > 2D distance calculation
- > 2 elements intersection-angle calculation
- > 3 elements intersection-angle calculation
- > Pitch-circle calculation
- > Tolerance judgment function
- > Tolerance/nominal value setting
- > Tolerance judgment result output
- > Warning functions

User-support functions

- > Switching resolution
- > Power saving function
- > Switchable measurement speed
- > Semi-floating measurement
- > Part-program functions
- > Creating/editing/executing a part program

Statistical processing functions

- > Basic statistical processing
- > Histogram

Accuracy-compensation functions

- > Temperature compensation
- > Scale factor
- > Setting of workpiece thermal-expansion coefficient

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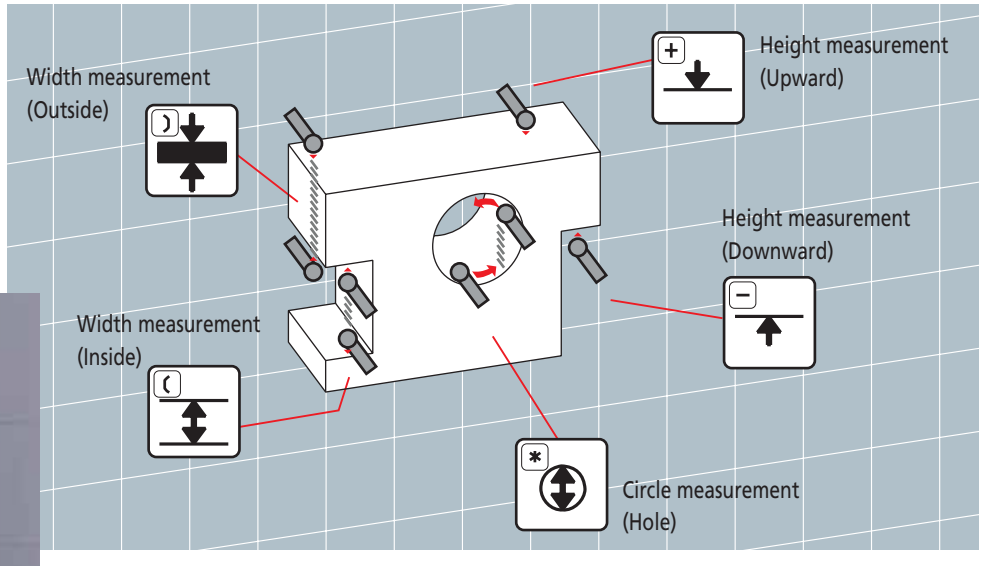


Optional accessories

Receipt printer

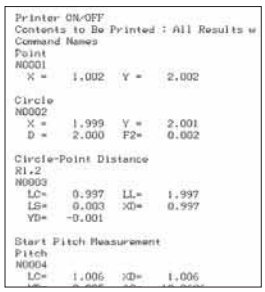
> Used to print out measurement results.

An example of a printout

A thermal printer, which can be attached to the main unit of the Linear Height, is available as an optional accessory. Printouts can also be obtained from a commercially available A4 page printer.

12AAA795 Thermal printer (100V)
12AAA796 Thermal printer (230V)
12AAA797 Thermal printer (120V)
12AAA802 Thermal printing paper (10pcs.)
12AAA804 Cable for A4 printer* (2m)
12AAA807 RS-232C cable (2m/80")
12AAG920 RS-232C cable (3m/118")
12AAF712 Battery pack
12AAG245 Large capacity battery pack
12AAF765 Large capacity battery set

*Page printer recommended: EPSON LQ-300 or LX-300



Optional Accessories
Order No. 12AAA802 Recording paper for receipt printer (10 rolls/set)

Printing method	Thermal serial dot
Printing digits	40 digits
Maximum print speed	52.5cps (normal characters)
Dimensions (XxDxH)	160mmx170mmx65.5mm (printer body)
Standard accessories	Printer cable, recording paper (1 roll), AC adapter (100V)

*Supports external printer (color or black & white) for ESP/C
Printer control code system: ESC/P, MS-DOS 24 pins
Printer cable 2m (**12AAA804**)... optional

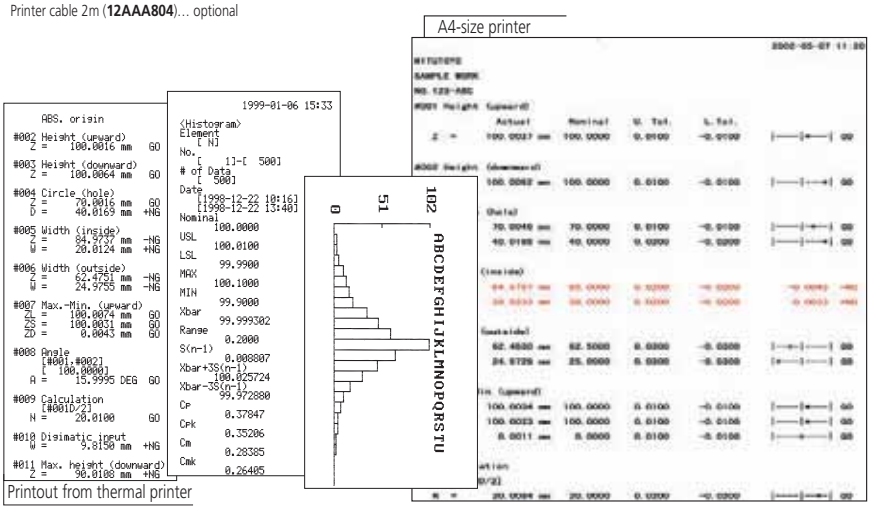
USB-FDD Unit

Order No. 12AAH035

USB-Memory stick

Order No. 12AAH034

> Convenient for saving measurement procedures and measurement result files.



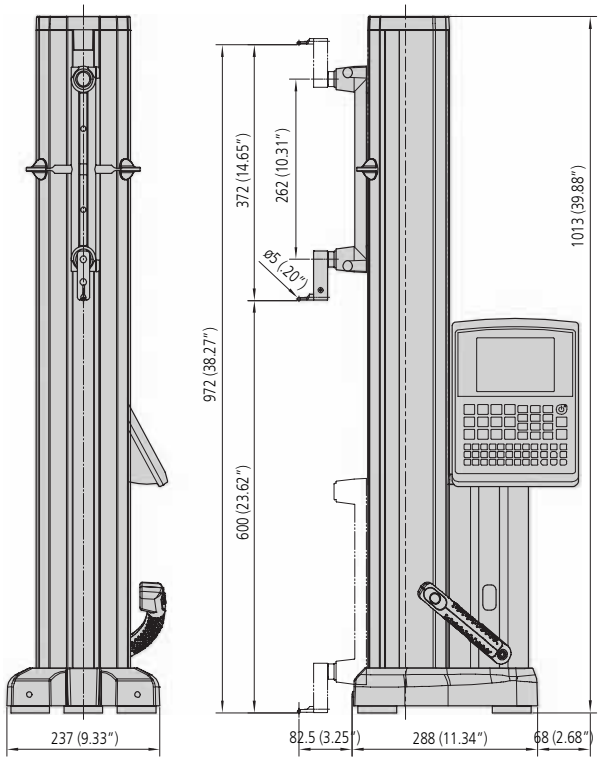
Technical data

Specifications

Model		LH600D	LH600D w/ power grip
Order No.		**518-341A-21**	**518-342A-21**
Measuring range (stroke)		0 - 972mm (600mm) / 0 - 38" (24")	
Resolution (selectable)		0.0001 / 0.001 / 0.01/0.1mm .000001/.00001/.0001/.001"	
Accuracy at 20˚C	Measuring accuracy*1	(1.1+0.6L/600) µm, L = Measuring length (mm)	
	Repeatability (2σ)*1	Plane: 0.4µm Bore: 0.9µm	
	Perpendicularity*2	5µm	
	Straightness*2	4µm	
Drive method		Manual / Motor (5 - 40mm/s, 7 steps)	
Measuring force		1N	
Counterbalance type		Suspended weight	
Main unit suspension method		Full / semi-floating on air	
Air source		Built-in air compressor	
LCD		Monochrome Graphic LCD (with LED backlight)	
Language for display*3		English / German / French / Spanish / Italian / Dutch / Portuguese / Swedish / Czech / Hungarian / Slovenian / Polish / Mandarin Chinese / Traditional Chinese / Korean /Japanese	
Number of stored programs		50 (max.)	
Number of stored data items		60.000 (max.)	
Power supply		AC adapter/Battery (Ni-MH)	
Power consumption		43VA	
Battery (**12AAF712**) operation time		Approx. 5 hours (Air floating & slider elevation: 25%)	
Mass		24kg / 52.8lb (24.5kg / 53.9lb)	
Standard accessories		ø5 stepped probe (**12AAF634**), block for calibrating probe diameter (**12AAA715**)	

Dimensions

Unit: mm (inch)



> For longer battery operation
Optional large-capacity battery pack (**12AAF675**) for longer battery-powered operation (8 hours).

* With power grip model
*1 This accuracy is guaranteed when using the standard eccentric ø5 probe.
*2 This accuracy is guaranteed when using a lever head (MLH-421) or Mu-Checker (M-411)
*3 Traditional Chinese: Optional
Korean: 518-331K and 518-322K only

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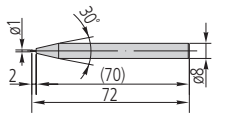
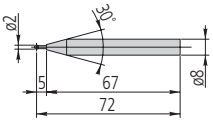
Optional probes and calibration block

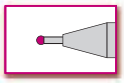
12AAF666
ø1 ball probe

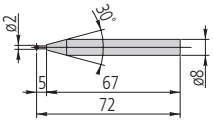


957261
ø2 ball probe

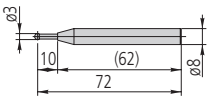


12AAF667
ø2 ruby ball probe

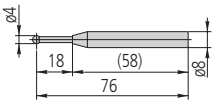




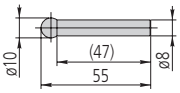
957262
ø3 ball probe



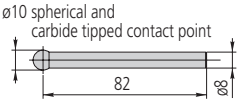
957263
ø4 ball probe



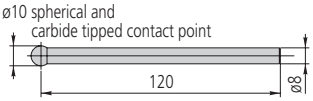
12AAB552
ø10 ball probe, L=55



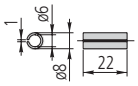
12AAF668
ø10 ball probe, L=82



12AAF669
ø10 ball probe, L=120



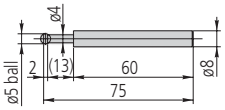
226116
Test indicator (ø6 stem) adapter



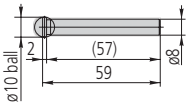
932361 Mu-checker lever head holder
CMM ball and disk hard probes are available.

12AAA787 Block for calibrating probe diameter (applicable to taper probe)

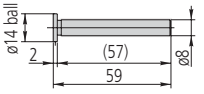
12AAF670
ø5 disk probe



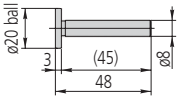
12AAF671
ø10 disk probe



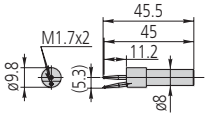
957264
ø14 disk probe



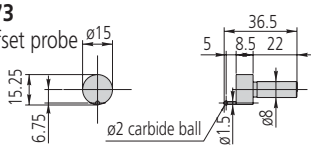
957265
ø20 disk probe



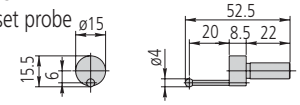
12AAF672
ø1 ball offset probe*
*test indicator stylus (103017)



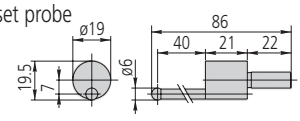
12AAF673
ø2 ball offset probe



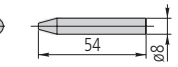
12AAA788
ø4 ball offset probe



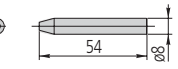
12AAA789
ø6 ball offset probe



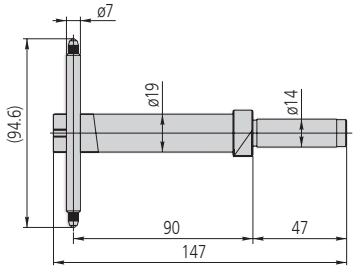
226117
M2 CMM stylus adapter



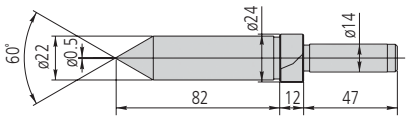
226118
M3 CMM stylus adapter



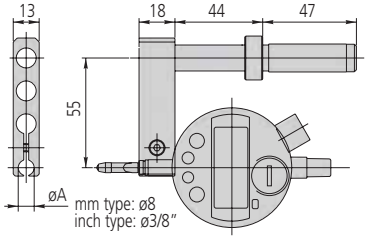
12AAC072 Depth probe



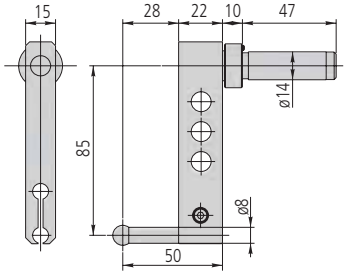
12AAC073 ø20 taper probe



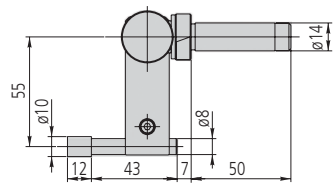
12AAA792 Dial indicator (ø8 stem) holder
12AAA837 Dial indicator (ø3/8"stem) holder

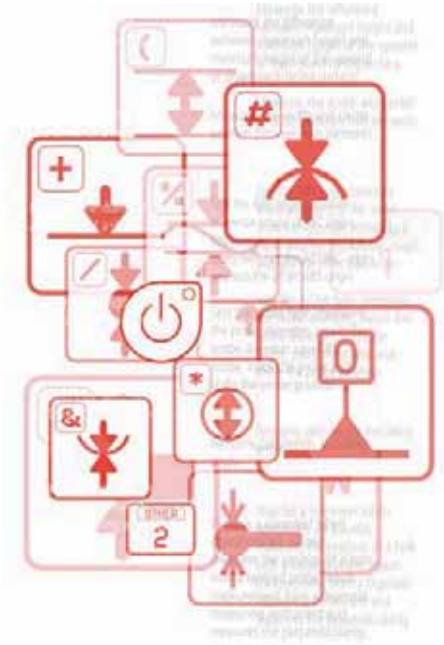


12AAA793 Probe extension holder (85mm/3.3")



12AAB136 ø10 cylindrical probe





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1009-09 • Printed in USA • January 2010

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