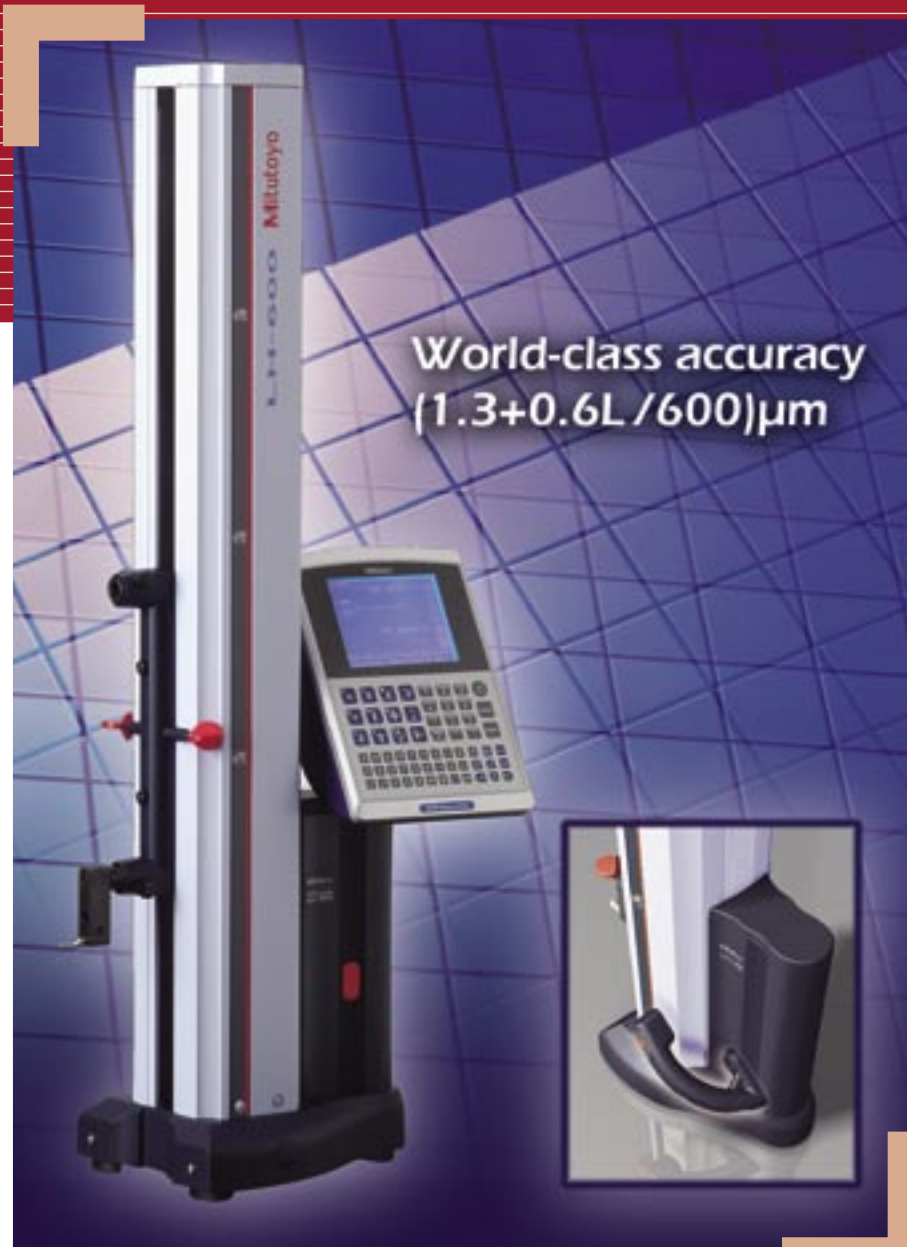


1D/2D Measuring Gage LINEAR HEIGHT

CATALOG No. E4162-518



World-class accuracy
($1.3+0.6L/600$) μm

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

Mitutoyo

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

Pursuing accuracy and ease of use.

- World-class accuracy of $(1.3+0.6L/600)\mu\text{m}$,
- Repeatability of $0.5\mu\text{m}$ (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.



Easy-of-use in measurement

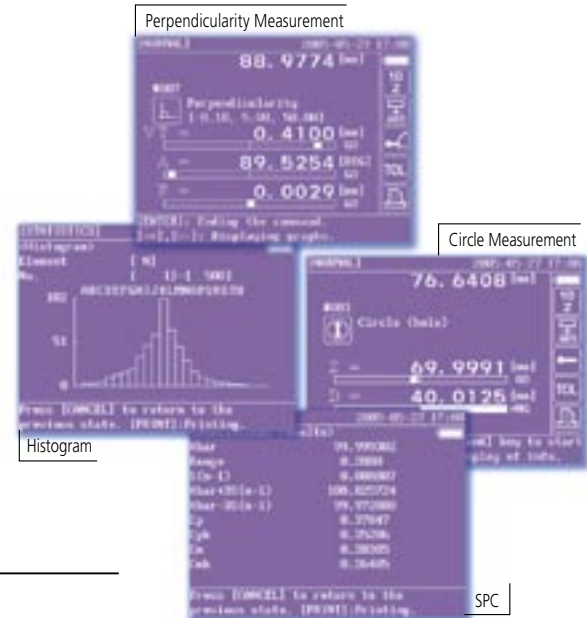
POWER GRIP



Mitutoyo

Accuracy in measurement

- Excellent accuracy of $(1.3+0.6L/600)\mu\text{m}$ with $0.1\mu\text{m}/0.5\mu\text{m}$ resolution/repeatability.
- Perpendicularity (frontal) of $6\mu\text{m}$ and straightness of $4\mu\text{m}$ 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, Traditional Chinese*, Korean** and Japanese for user-friendly operation. *Optional **518-331K and 518-322K only

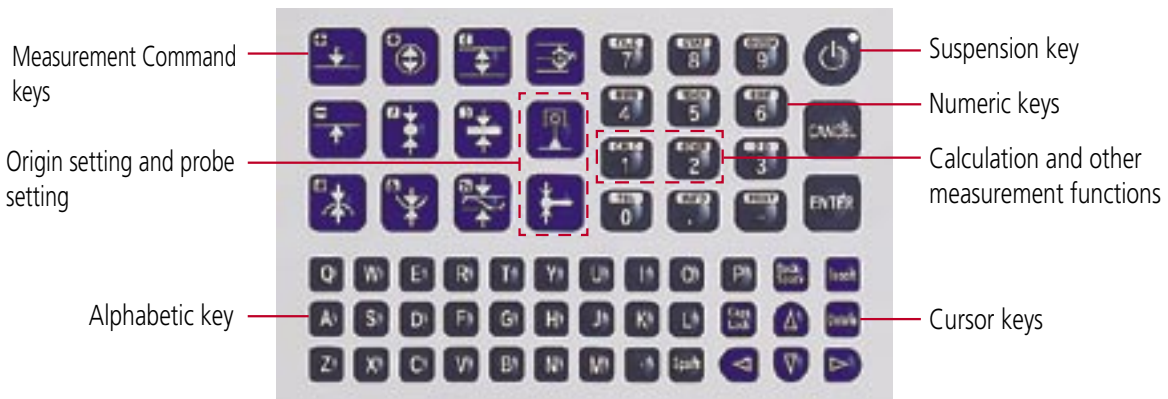
Ease-of-use in measurement

- 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")
- 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

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 the 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.		Performs calculation, including angle.
	Measures the width and center of an outer diameter.		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

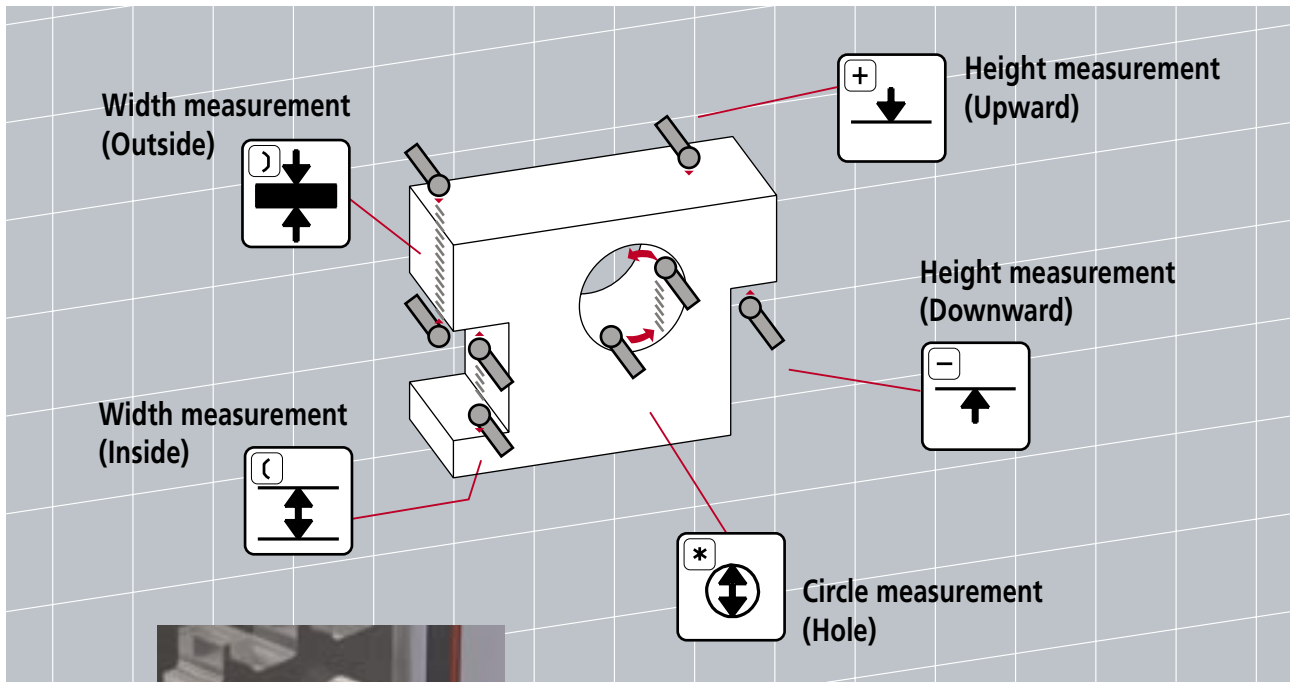
Statistical processing functions

- Basic statistical processing
- Histogram

Accuracy-compensation functions

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

frequently used measurements.



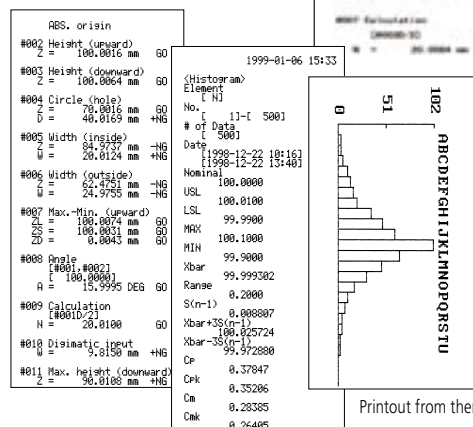
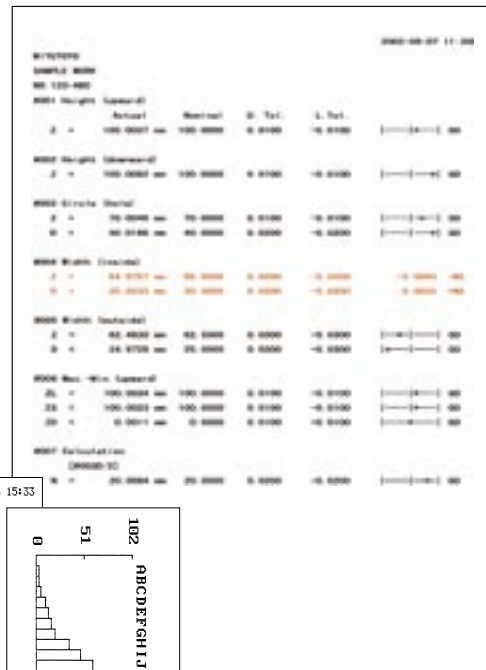
An example of a printout

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.

- 12AAA796** Thermal printer (220V)
- 12AAA797** Thermal printer (120V)
- 12AAA802** Thermal printing paper (10pcs.)
- 12AAA804** Cable for page printer* (2m)
- 12AAA805** Cable for page printer* (4m)
- 12AAA807** RS-232C cable (2m/80")
- 12AAA808** RS-232C cable (4m/160")

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

A4-size printer



Printout from thermal printer

Technical data

Specifications

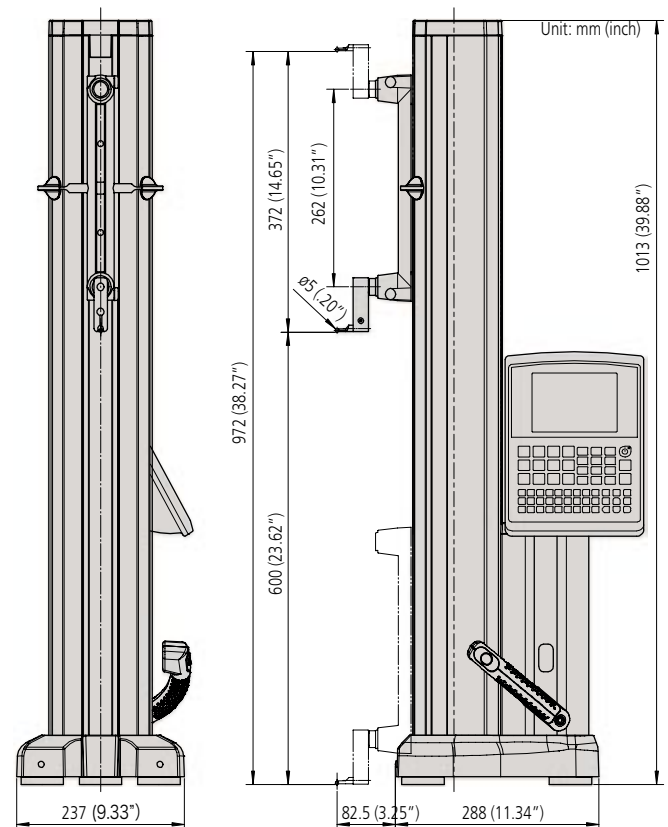
Order No.	120V/English manual	518-331A-21 / 518-332A-21*
	120V/Spanish manual	518-331A-22 / 518-332A-22*
	220V/English manual	518-331D-21 / 518-332D-21*
	220V/Spanish manual	518-331D-22 / 518-332D-22*
	220V/German manual	518-331D-23 / 518-332D-23*
	220V/French manual	518-331D-24 / 518-332D-24*
	220V/Italian manual	518-331D-25 / 518-332D-25*
	240V/English manual	518-331E-21 / 518-332E-21*
	220V/English manual	518-331DC / 518-332DC*
	220V/Korean manual	518-331K / 518-332K*
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	(1.3+0.6L/600) µm, L = Measuring length (mm)
	Repeatability (2σ)*1	Plane: 0.5µm Bore: 1µm
	Perpendicularity*2	6µm
	Straightness*2	4µm
Drive method		Manual / Motor (5 - 40mm, 7 steps)
Measuring force		1N
Balancing method		Counter balance
Main unit floating method		Full / semi-floating with air
Air source		Built-in air compressor
LCD		Graphic LCD (320x240 dot, with backlight)
Language for display		English / German / French / Spanish / Italian / Dutch / Portuguese / Swedish / Czech / Hungarian / Slovenian / Polish / Traditional Chinese / Korean / Japanese
	Traditional Chinese: Optional	
	Korean: 518-331K and 518-332K only	
Number of stored programs		50 (max.)
Number of stored data		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
Standard accessories		ø5 stepped probe (12AAF634), block for calibrating probe diameter

*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-321) or Mu-Checker (M-411)

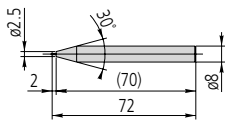
Dimensions



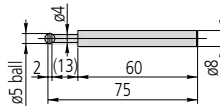
- ➔ • **For longer battery operation**
Optional large-capacity battery pack (**12AAF675**)
for longer battery-powered operation (8 hours).

Optional probes and calibration block

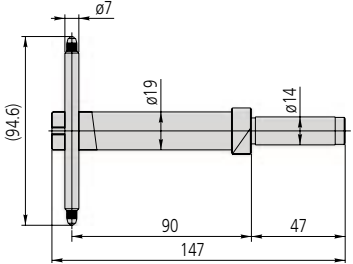
12AAF666
ø1 ball probe



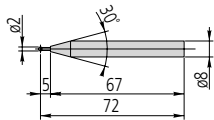
12AAF670
ø5 disk probe



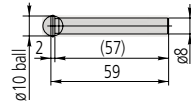
12AAC072 Depth probe



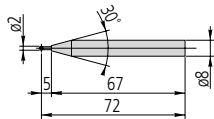
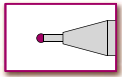
957261
ø2 ball probe



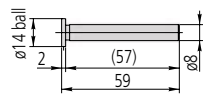
12AAF671
ø10 disk probe



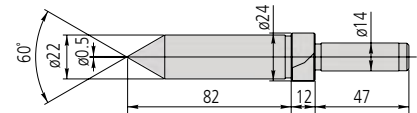
12AAF667
ø2 rubby ball probe



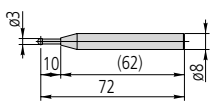
957264
ø14 disk probe



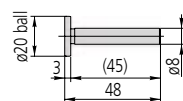
12AAC073 ø20 taper probe



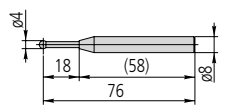
957262
ø3 ball probe



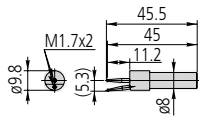
957265
ø20 disk probe



957263
ø4 ball probe

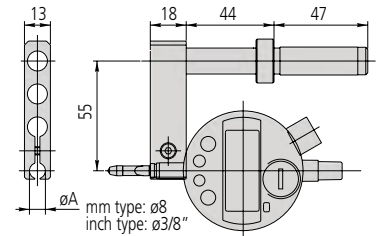


12AAF672
ø1 ball offset probe*
*test indicator stylus (103017)

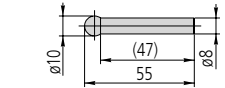


12AAA792 Dial indicator (ø8 stem) holder

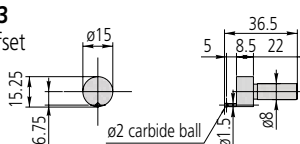
12AAA837 Dial indicator (ø3/8" stem) holder



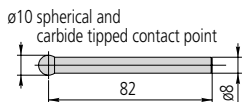
12AAB552
ø10 ball probe, L=55



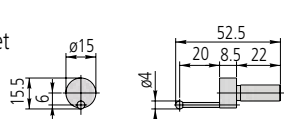
12AAF673
ø2 ball offset probe



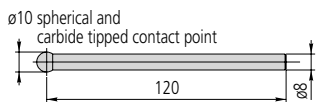
12AAF668
ø10 ball probe, L=82



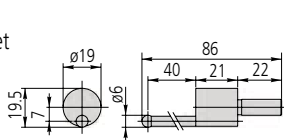
12AAA788
ø4 ball offset probe



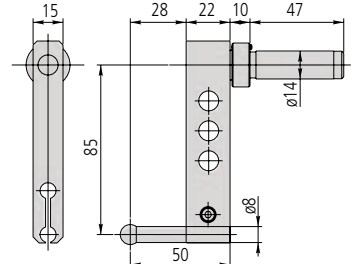
12AAF669
ø10 ball probe, L=120



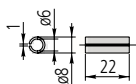
12AAA789
ø6 ball offset probe



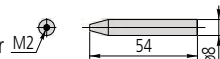
12AAA793 Probe extension holder (85mm/3.3")



226116
Test indicator (ø6 stem) adapter

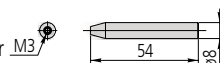


226117
M2 CMM stylus adapter

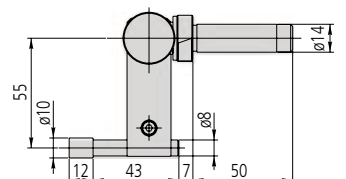


932361 Mu-checker lever head holder
CMM ball and disk hard probes are available.

226118
M3 CMM stylus adapter



12AAB136 ø10 cylindrical probe



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



- Coordinate Measuring Machines
- Vision Measuring Systems
- Form Measurement
- Optical Measuring
- Sensor Systems
- Testing Equipment and Seismometer
- Digital Scale and DRO Systems
- Small Tool Instruments and Data Management

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