

# Height Gage

A standard measuring tool of industry

## Linear Height SERIES 518 — High Performance 2D Measurement System

- Excellent accuracy of  $(1.1+0.6L/600) \mu\text{m}$  with  $0.1 \mu\text{m}/0.4 \mu\text{m}$  resolution/repeatability.
- High-accuracy Height Gage incorporating a wide range of measurement functions.
- To achieve best-in-class accuracy, a high-accuracy reflective-type linear encoder and high-accuracy guide are used.
- Measurement can be implemented by icon-based commands that also support easy one-key operation.
- The TFT LCD provides excellent visibility and operability.
- Pneumatic full/semi-floating system allows adjustment of air-cushion height.
- Basic statistical functions are provided and, additionally, RS-232C data output provides the option of evaluating measurement data externally with SPC software on a PC.
- For precision Black Granite Surface Plates, refer to page E-46.
- Backup/Restore of data and measurement part programs can be implemented using USB storage devices (FAT16/32 format compatible).



With power grip  
518-352A-21

### SPECIFICATIONS

Metric	Order No.	518-351-10*3	518-352-10*3 (with power grip)
Measuring range (Stroke)		0 - 977 mm (600 mm) 0 - 38 in (24 in)	
Resolution		0.0001/0.001/0.01/0.1 mm (selectable) 0.000001/0.00001/0.0001/0.001 in (selectable)	
Accuracy at 20 °C	Indication accuracy*1	$(1.1 + 0.6L/600) \mu\text{m}$ , L = Measured length (mm)	
	Repeatability*1	Plane: $0.4 \mu\text{m}$ ( $2 \sigma$ ), Hole: $0.9 \mu\text{m}$ ( $2 \sigma$ )	
	Perpendicularity (forward and backward)*2	$5 \mu\text{m}$ (after compensation)	
	Straightness (forward and backward)*2	$4 \mu\text{m}$ (mechanical accuracy)	
Guiding method		Roller bearing	
Driving method		Motor-driven (5,10,15,20,25,30,40 mm/s: 7 steps)/Manual	
Scale unit		Reflective-type linear encoder	
Measuring force		1 N (automatic constant-force function)	
Balancing method		Counter weight balance	
Main unit moving mode		Full-floating (moving)/Semi-floating (measuring) air bearing	
Air source		Built-in compressor	
Monitor		5.7 inch COLOR TFT LCD	
Max. number of programs		50	
Max. number of measured data		60,000 (Max. number of data is 30,000/per program)	
Power supply		AC adapter/Battery (NiMH)	
Battery operation time		Approx. 5 hours (compressor duty cycle 25 % max.)	
Battery charging time		Approx. 3 hours (usable during charge)	
Dimensions (W x D x H)		237 x 438 x 1013 mm	247 x 438 x 1013 mm
Mass		24 kg	24.5 kg
Operating temperature/humidity ranges		5 - 40 °C / 20 - 80 % RH (non-condensing)	
Storage temperature/humidity ranges		-10 - 50 °C / 5 - 90 % RH (non-condensing)	

To obtain maximum measurement accuracy, please note the following:

Note 1: Use in an environment that is as close as possible to 20 °C, and subject to minimal temperature change over time.

Note 2: Use in conjunction with a surface plate of JIS 1 class, or higher, flatness specification.

\*1 Guaranteed when using the standard eccentric  $\phi 5$  probe.

\*2 Guaranteed when using the Lever Head (519-521), Mu-Checker (519-561).

\*3 Order No. depends on the destination as shown in the table on the right.



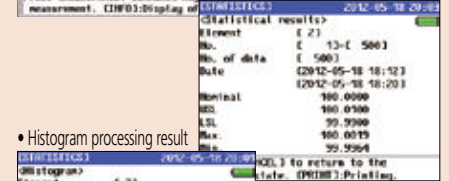
An inspection certificate is supplied as standard. Refer to page U-11 for details.

### Screenshot examples

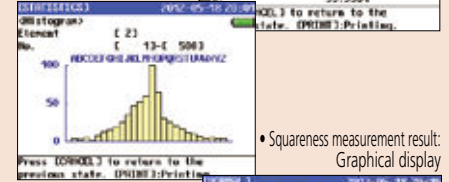
- Measurement screen



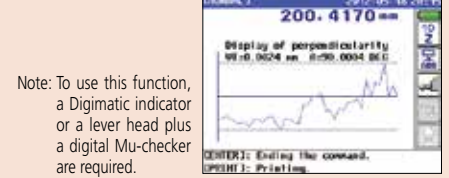
- Statistical processing result



- Histogram processing result



- Squareness measurement result: Graphical display



Note: To use this function, a Digimatic indicator or a lever head plus a digital Mu-checker are required.

- Squareness measurement result: Numeric display

### Standard Accessories

- **12AAF634** 5-step probe
- **12AAA715** Ball-diameter corrected block  
Note: When the correction is performed by using the taper type contact point, the ball-diameter corrected block **12AAA787** (for taper type contact point) is required.
- **12AAF674** Auxiliary weight\*  
\* Two auxiliary weights come with the main unit.

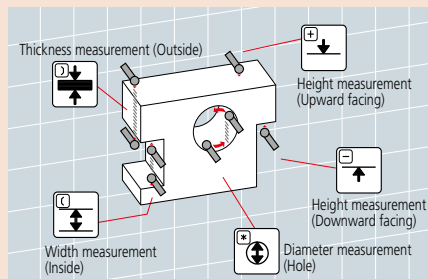
### Model without power grip

Order No.	Remarks
518-351-10	Model for Japan, Japanese manual
518-351A-21	Model for North America, English manual
518-351A-22	Model for South America, Spanish manual
518-351D-21	Model for EU, English manual
518-351E-21	Model for U.K., English manual
518-351DC	Model for China, Chinese manual
518-351K	Model for Korea, Korean manual

### Model with power grip (Power grip pre-installed model)

Order No.	Remarks
518-352-10	Model for Japan, Japanese manual
518-352A-21	Model for North America, English manual
518-352A-22	Model for South America, Spanish manual
518-352D-21	Model for EU, English manual
518-352E-21	Model for U.K., English manual
518-352DC	Model for China, Chinese manual
518-352K	Model for Korea, Korean manual

## Example of measurements

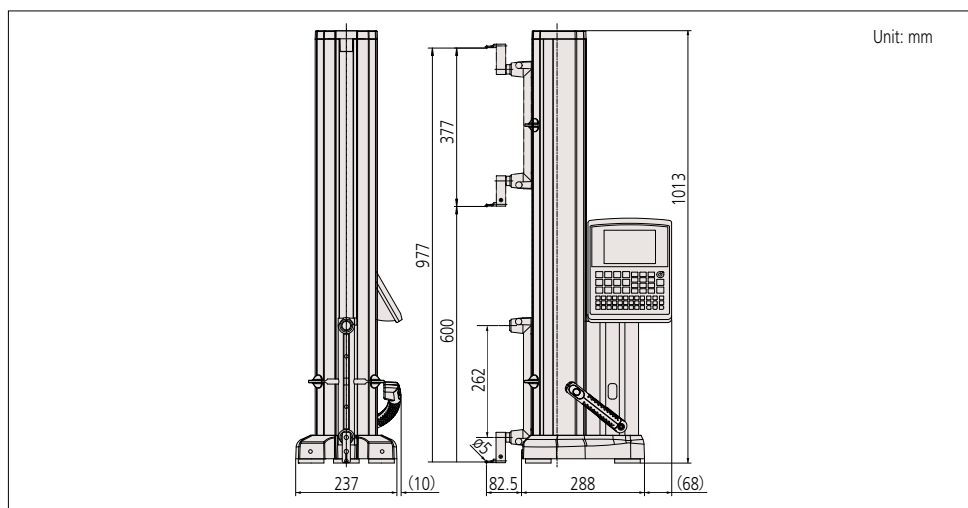


The power grip makes it easy to approach the workpiece.



The sample workpiece shown in the above photo is an optional accessory (12AAA879).

## DIMENSIONS



## Optional Accessories



- (1) 12AAC072: Depth probe
- (2) 12AAC073:  $\varnothing 20$  mm taper probe
- (3) 12AAA792: Dial indicator ( $\varnothing 8$  mm stem) holder
- (4) 12AAA793: Probe extension holder (85 mm/3.3 in)
- 12AAB136:  $\varnothing 10$  mm cylindrical probe
- (6) 932361: Mu-checker lever head holder\*  
\*Additional auxiliary weights are required (total 4 pcs).
- 12AAF666:  $\varnothing 1$  mm ball probe (coaxial type)
- 12AAF667:  $\varnothing 2$  mm ruby ball probe (coaxial type)
- (8) 957261:  $\varnothing 2$  mm ball probe (coaxial type)
- (9) 957262:  $\varnothing 3$  mm ball probe (coaxial type)
- (10) 957263:  $\varnothing 4$  mm ball probe (coaxial type)
- (11) 12AAB552:  $\varnothing 10$  mm ball probe, L = 55 mm (coaxial type)
- 12AAF668:  $\varnothing 10$  mm ball probe, L = 82 mm (coaxial type)
- 12AAF669:  $\varnothing 10$  mm ball probe, L = 120 mm (coaxial type)
- 12AAF670:  $\varnothing 5$  mm disk probe
- 12AAF671:  $\varnothing 10$  mm disk probe
- (12) 957264:  $\varnothing 14$  mm disk probe
- (13) 957265:  $\varnothing 20$  mm disk probe
- 12AAF672:  $\varnothing 1$  mm ball offset probe
- (14) 12AAA788:  $\varnothing 4$  mm ball offset probe
- $\varnothing 5$  mm ball offset probe 05HAA394
- (15) 12AAA789:  $\varnothing 6$  mm ball offset probe
- (16) 226116: Test indicator ( $\varnothing 6$  mm stem) adapter
- Sample workpiece 12AAA879
- (17) 226117: M2 CMM stylus adapter\*<sup>1</sup>
- (18) 226118: M3 CMM stylus adapter\*<sup>1</sup>
- CMM ball and disk hard probes are available.  
 $\varnothing 2$  932377A,  $\varnothing 3$  932378A  
 $\varnothing 5$  932379A,  $\varnothing 6$  932380A  
 $\varnothing 10$  532328  
Disc probe  
 $\varnothing 20$  532345,  $\varnothing 30$  930803
- 12AAF712: Battery pack

## Various peripheral devices

- 12AAN048\*<sup>2</sup> Receipt printer (for Japan)
- 12AAN049\*<sup>2</sup> Receipt printer (for North America)
- 12AAN050\*<sup>2</sup> Receipt printer (for EU; excluded U.K.)
- 12AAN051\*<sup>2</sup> Receipt printer (for U.K.)
- 12AAN052: Receipt paper (10-roll set)
- 12AAA804: Cable for page printer (2 m)
- 12AAA807: RS-232C cable (2 m/80 in)
- 12AAG920: RS-232C cable (3 m/118 in)
- Digimatic cable 936937 (1 m)
- 965014 (2 m)

\*<sup>1</sup> For enabling CMM styli to be used.

\*<sup>2</sup> Attachment for fixing the connecting cable is provided as standard.