Linear Height
SERIES 518 — High-performance 2D Measurement System

- This is a precision height gage featuring high accuracy and outstanding ease of use. It is useful not only in height measurement but also in a wide range of applications such as inspection of moulds and precision parts.
- Easy operation using keypad and touch screen navigation allows intuitive operation that suitable even for beginners.
- The built-in scale is dirt-resistant and can be reliably used on shop floors.
- Various interfaces are available, including connection to a printer, a PC, and our wired or wireless communication system.
- Pneumatic full/semi-floating suspension system allows adjustment of air-cushion height.
- It is easily expandable to support various types of optional probes to meet your different measurement needs.

518-361-11

SPECIFICATIONS

Model		LH-600F	LH-600FG
Code No.	mm	518-360-11	518-361-11
	inch/mm	518-360-13	518-361-13
Power grip		Without power grip	With power grip
Measuring range (Stroke)		0 to 977 mm (600 mm) 0 to 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	Indication accuracy*1	± (1.1 + 0.6L/600) µm, L= Measured length (mm)	
	Repeatability*1	Plane: 0.4 µm (2σ), Hole: 0.9 µm (2σ)	
	Perpendicularity (forward and backward)*2	5 µm	
	Straightness (forward and backward)*2	4 µm	
Driving method (speed)		Motor-driven (5, 10, 15, 20, 25, 30, 40 mm/s: 7 steps)/Manual	
Scale unit		Photoelectric incrermental encoder STVC-20Z	
Measuring force		1 N (automatic constant-force function)	
Main unit moving mode		Full-floating (moving)/Semi-floating (measuring) Air bearing (built-in compressor)	
Display unit		8.4 inch touch-screen, LCD	
Adjustment of display unit		Stepless tilt adjustment: 0 to 40° Stepless swivel adjustment: -30 to 180°	
Preventive maintenance		Scale status notification, calibration schedule notification	
Probe diameter compensation		Semi-automatic compensation using the probe diameter calibration block (standard accessory) Compensation by inputting the probe diameeter	
Power source		AC adapter 100-240 V±10% 50/60 Hz/Battery (NiMH)	
Battery operation time*3		Battery powered (standard): 4 hours*4, Powered by 2 batteries: 8 hours	
Battery charging time*5		Approx. 3.5 hours (can be used while charging)	
Dimensions (WxDxH)		238x492x996 mm	
Mass		26.1 kg	26.6 kg
Operating temperature/humidity ranges		5 to 40 °C/20 to 80% RH (non-condensing)	
Data output		Digimatic D1/D2/S1 (bi-directional communication)	

• Use in an environment that is as close as possible to 20 °C, and subject to minimal temperature change over time.
*1: Indication accuracy and repeatability represent the values obtained when the standard ø5 stepped prove is used.
*2: Guaranteed when using the Lever Head (**519-521**) and Mu-Checker (**519-561**).
*3: 25% operation of vertical movement by suspension and motor
*4: One battery pack (**12AAF712**) is provided as standard.
*5: When ambient temperature is 30 °C or higher, the battery may not charge sufficiently.

LH-Communication Tool V1.0 software for creating inspection reports and configuring system settings

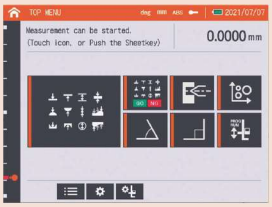
You can easily create and save inspection reports and configure device parameters.

* Available at Mitutoyo website for free download.
* To connect to a PC, use a USB cable (type A-B).

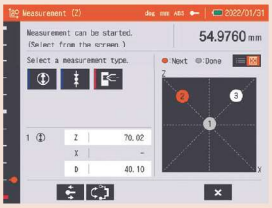
Adjustable to easy-to-see angle

Measurement guidance

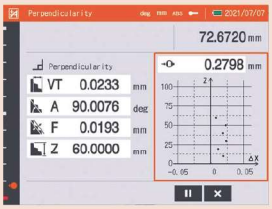
Intuitive operation thanks to guidance



Home screen
Measurement menu display is easy to understand visually. The guidance makes it easy for first-time users to operate the system.



2D measurement - Pre-placement -
This function allows the user to register the hole position of the workpiece before measurement.



Perpendicular/straightness measurement - Graph creation -
You can check the measurement results of perpendicularity and straightness in real time during measurement.

Part program measurement
You can easily create, execute, edit, and even display the results of part programs.

Product catalog E12012

Video

Easy operation and High-accuracy

In pursuit of intuitive operation and outstanding ease of use
Achieves best-in-class accuracy of ± (1.1+0.6L/600) µm

High-Accuracy Height Gage
Linear Height LH-600F/FG

- Easy operation using keypad and touch screen navigation, even suitable for beginners
- Conduct various measurements such as 2D measurement and perpendicularity measurement with just one tool
- Versatile measurements through optional probes
- Enhanced data output functions make it easier to manage your measurement data

NEW Products

Linear Height

Mitutoyo

Easy operation using keypad and touch screen navigation, even suitable for beginners

Contextual guidance on the large-screen touch panel supports your measurements

Touch panel with guidance

Measurement guidance is displayed on the large touch panel of the 8.4-inch color LCD, enabling intuitive operation.

Guidance screen

Operable with gloves

Simple, straightforward keys with icons

Icons allow the user to find the required operation at a glance.

Basic measurements

- Height (top) measurement
- Height (bottom) measurement
- Width (inside) measurement
- Width (outside) measurement
- Shaft (top) measurement
- Shaft (bottom) measurement
- Circle (shaft) measurement
- Max.-Min. (top) measurement
- Hole (bottom) measurement
- Hole (top) measurement
- Circle (hole) measurement
- Max.-Min. (bottom) measurement

Advanced measurement functions

- Part program measurement
- 2D measurement

Power

- Power

Measurement settings

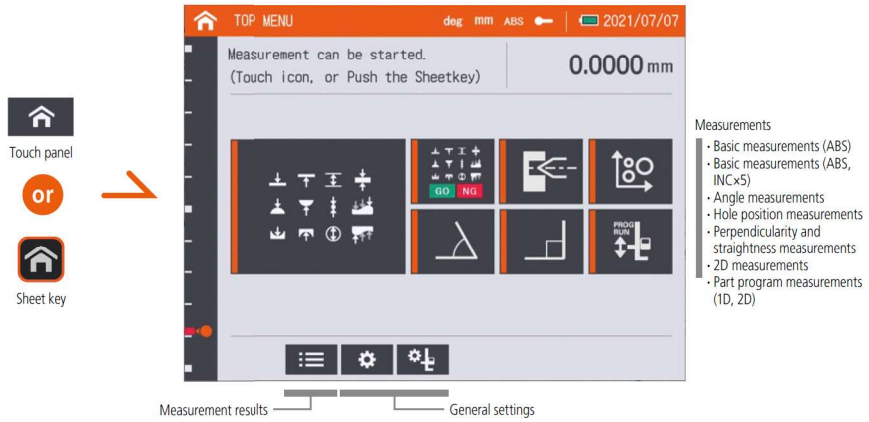
- Measurement origin setting
- Probe selection
- Measurement origin switching

Other

- Home screen
- System settings
- Data output

Home screen

With the intuitive menu, even beginners can easily access various operations and settings.



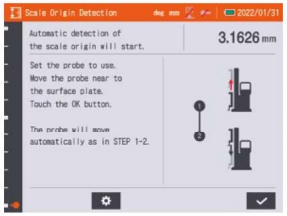
Guidance and measurement navigation

Guidance is available in 21 languages. The display shows each measurement step and it's very easy to use even for beginner.

Select basic measurements → Select a measurement method → Conduct the measurement → View the measurement results

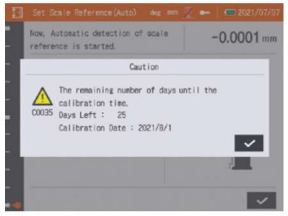
Fantastic features for shop-floor use

Automatic scale check



On start up the user is led through the menu to set the scale origin and run the automated procedure to check the scale for contamination.

Calibration reminder



A notification will be displayed before the calibration due date that the user has set.

Operation log

Operation log data is retained for up to 2 months, and can be output to a USB memory device.

Repeat measurement function

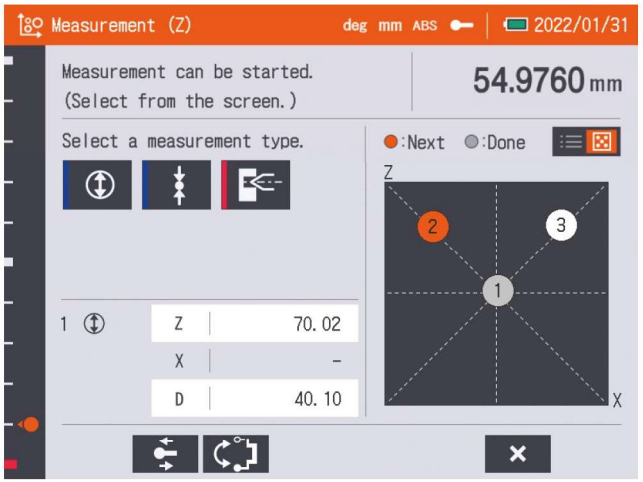
To enable efficient measurements the user can repeat the last measurement with the optional foot switch or on-screen button.

Various measurements with just one unit

Improved usability and accessibility, including advanced measurement functions

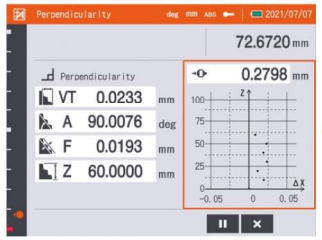
2D measurement - Pre-placement -

This function allows the user to register the hole position of the workpiece before measurement.

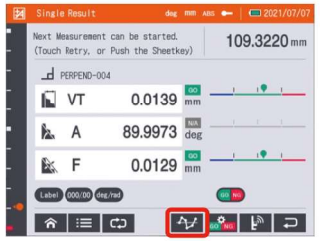


Perpendicular/ straightness measurement - Graph creation -

You can check the measurement results of perpendicularity and straightness in real time during measurement. After measurement, you can easily see the trends of the measurement results in a graph.



Show results in real time during measurement.



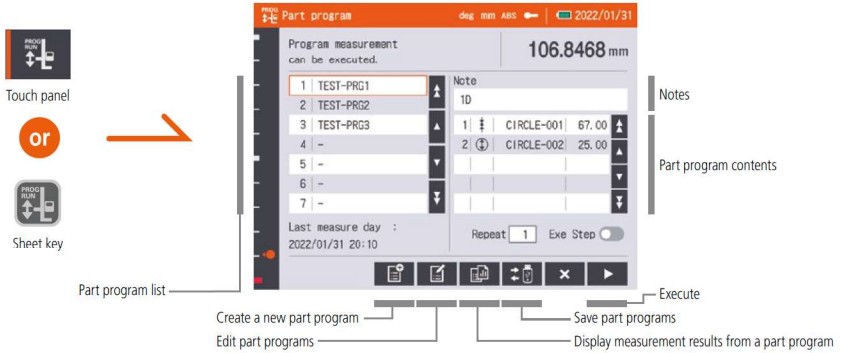
Show results after measurement.

You can monitor the graphs of past measurement results.

Show measurement results in graph form.

Part program measurement

You can easily access and use the functions of Create, Run, Edit, and View results of part programs.



Example of performing part program measurement

Set the number of times to repeat measurements and run the program.

Run the registered contents one by one.

Display the result for one execution of the program.

Display all results for one execution of the program.

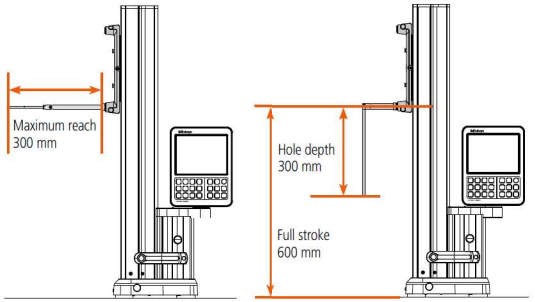
Display all results of N times of executing the program.

Copy part programs to other devices

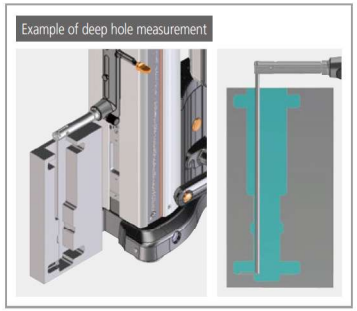
By using a USB memory device, you can copy part programs to other devices.

Expanded measurement area

With the new optional probes, you can now measure areas that were beyond the capacity of conventional probes.



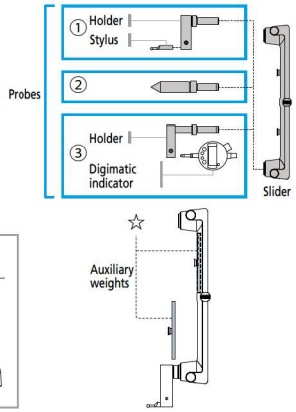
Example of deep hole measurement

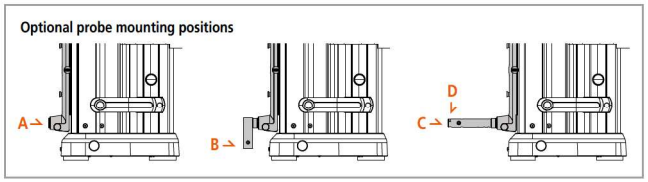


Versatile measurements through optional probes

An extension holder and a depth stylus extend the measuring range both horizontally and vertically

Three types of optional probes:
① The holder and the stylus can be freely combined according to the purpose of measurement, and the measurement area can be changed.
② This type is used for single-use measurements such as measuring a tapered hole or a knife edge.
③ This type is used to measure straightness and perpendicularity.
☆ You can adjust the balance of the slider by adjusting the number of auxiliary weights.
(Magnetic auxiliary weights are easy to add and remove.)





Holders/styli for position A

Mounting example		Part No.	Product name	Number of weights
For extension holder 100		12AAY343	ø5 stepped probe (standard accessory)	2
		12AAA792	Holder for Dial Indicator (millimeter)	0
For depth measurement probes		12AAA793	Holder (long)	*1
		12AAB136	ø10 cylindrical universal probe	2
		12AAY595	Extension holder 100	*1
For taper stylus (ø20)		12AAY596	Extension holder 200	*1
		12AAC072	Depth probe	2
		12AAC073	Tapered stylus (ø20)	2

*1: Please refer to page 8 for the number of weights to be used.

Styli for position B/C

Mounting example		Part No.	Product name	Number of weights*3
Φ5 ball stylus L130 in position B		12AAF666	ø1 ball stylus (coaxial type)	2
		957261	ø2 ball stylus (coaxial type)	2
Φ5 ball stylus L130 in position C		12AAF667	ø2 ball stylus (coaxial type), ruby ball	2
		957262	ø3 ball stylus (coaxial type)	2
		957263	ø4 ball stylus (coaxial type)	2
		12AAB552	ø10 ball stylus (coaxial type), L=50	2
		12AAF668	ø10 ball stylus (coaxial type), L=82	1
		12AAF669	ø10 ball stylus (coaxial type), L=120	1
		12AAF670	ø5 disk stylus	2
		12AAF671	ø10 disk stylus	2
		957264	ø14 disk stylus	2
		957265	ø20 disk stylus	2
		12AAF672	ø1 ball stylus (eccentric type)	2
		12AAF673	ø2 ball stylus (eccentric type)	2
		12AAA788	ø4 ball stylus (eccentric type)	2
		12AAA789	ø6 ball stylus (eccentric type)	1
		226117	Shank with M2 thread*2	2
		226118	Shank with M3 thread*2	2
		12AAY597	ø5 ball stylus L130	1
		12AAY598	ø25 disk stylus	1

*2: Stylus for coordinate measuring machine can be mounted. *3: When using an extension holder Note: Where the material is not described, the tip of the stylus is carbide.

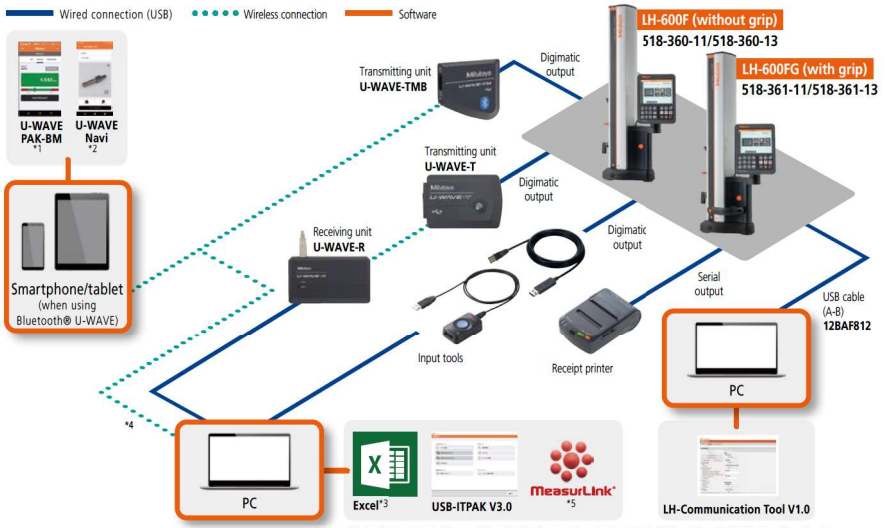
Styli for position D

Mounting example		Part No.	Product name	Number of weights*4
Depth stylus 70 is mounted in position D		12AAY599	Depth stylus 70	2
		12AAY600	Depth stylus 150	1
		12AAY601	Depth stylus 300	0
		12AAY602	Depth stylus 70 ø2 ball	2
		12AAY603	Depth stylus 150 ø2 ball	1
Depth stylus 150 ø4 ball is mounted in position D		12AAY604	Depth stylus 300 ø2 ball	0
		12AAY605	Depth stylus 70 ø4 ball	2
		12AAY606	Depth stylus 150 ø4 ball	1
		12AAY607	Depth stylus 300 ø4 ball	0

*4: Can only be attached to the extension holder. * Where the material is not described, the tip of the stylus is carbide.

Enhanced data output functions make it easier to manage your measurement data

Data output improves work efficiency and the reliability of recorded data



*1: Available at Apple Store and Google Play for free download. *2: Available at Google Play for free download.
*3: Excel is a registered trademark of Microsoft Corporation. *4: It is also possible to connect with a Bluetooth compatible PC.
*5: MeasurLink® is a registered trademark of Mitutoyo Corporation (Japan) and Mitutoyo America Corporation (USA).

Optional products for outputting measurement data

Part No.	Product name
12AAY481	Receipt printer (for Japan)*6
12AAY482	Receipt printer (for North America)*6
12AAY483	Receipt printer (for EU countries, excluding the UK)*6
12AAY484	Receipt printer (for the UK)*6
12AAN052	Printer paper for receipt printer (set of 10)
12AAY485	Printer mounting attachment
12AAN146	Connection cable for printer
—	(USB memory device)*7
12BAF812	USB cable (type A - type B) (2 m)
543-700B	Digimatic indicator (ID-C0512NXB)
543-701B	Digimatic indicator (ID-C0512MNXB)
519-521	Lever head probe MLH-521
519-561	Mu-checker M-561

*6: A small printer (optionally battery-powered) that can be mounted on the main unit.
It includes a printer cable and mounting bracket.
*7: USB memory devices should be formatted with FAT16/32.
NTFS and exFAT are not supported.

Part No.	Product name
936937	Digimatic cable (1 m)
965014	Digimatic cable (2 m)
264-505	Digimatic mini processor (DP-1VA)
06AGQ001F	Input tool (USB-ITN-SF)
264-020	Input tool (IT-020U)
06AGL011	Bidirectional digimatic S1 cable, Flat and straight (1 m)
06AGL021	Bidirectional digimatic S1 cable, Flat and straight (2 m)
12AAJ088	Foot switch
02AZD810D	U-WAVE-R
264-626	U-WAVE-TMB (IP67 type)
264-627	U-WAVE-TMB (Buzzer type)
02AZD730G	U-WAVE-T (IP67 type)
02AZD880G	U-WAVE-T (Buzzer type)
12AAY486	U-WAVE T mounting bracket
02AZG011	Bidirectional Diamatic S1 cable (160 m)

LH-Communication Tool V1.0 software for creating inspection reports and configuring system settings

You can easily create and save inspection reports and configure device parameters.

* Available at Mitutoyo website for free download.
* To connect to a PC, use a USB cable (type A-B).

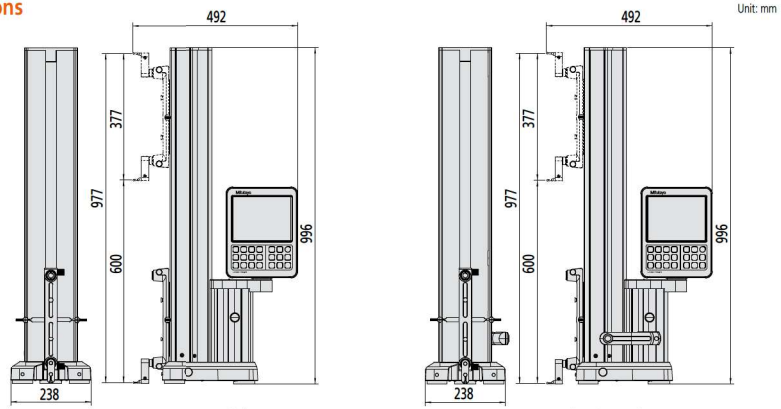
Specifications

Model		LH-600F	LH-600FG
Order No.	mm	**518-360-11**	**518-361-11**
	inch/mm	**518-360-13**	**518-361-13**
Power grip		without power grip	with power grip
Measuring range (Stroke)		0 to 977 mm (600 mm) 0 to 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*8	± (1.1 + 0.6L / 600) µm, L= Measured length (mm)	
	Repeatability*8	Plane: 0.4 µm (2 σ), Hole: 0.9 µm (2 σ)	
	Perpendicularity (forward and backward)*9	5 µm (after compensation)	
	Straightness (forward and backward)*9	4 µm (mechanical accuracy)	
Driving method(speed)		Motor-driven (5, 10, 15, 20, 25, 30, 40 mm/s: 7 steps) / Manual	
Scale unit		Photoelectric incremental encoder STVC-20Z	
Measuring force		1 N (automatic constant-force function)	
Main unit moving mode		Full-floating (moving) / Semi-floating (measuring) Air bearing (built-in compressor)	
Display unit		8.4 inch touch-screen, LCD	
Adjustment of display unit		Stepless tilt adjustment: 0 to 40° Stepless swivel adustment: -30 to 180°	
Preventive maintenance		Scale status notification, calibration schedule notification	
Probe diameter compensation		· Semi-automatic compensation using the probe diameter calibration block (standard accessory) · Compensation by inputting the probe diameeter	
Power supply		AC adapter 100-240V±10% 50/60Hz/ Battery (NiMH)	
Battery operation time*10		Battery powered(standard): 4 hours, Powered by 2 batteries: 8 hours	
Battery charging time*11		Approx. 3.5 hours (can be used while charging)	
Dimensions (W×D×H)		238 (W) × 492 (D) × 996 (H) mm	
Mass		26.1 kg	26.6 kg
Operating temperature / humidity ranges		5 to 40 °C/ 20 to 80% RH (non-condensing)	
Data output		Digimatic d2/ S1 (bi-directional communication)	

*8: Specification determined at in-house ambient temperature
*9: Guaranteed when using the Lever Head (519-521) and Mu-Checker (519-561).
*10: In-house standard(floating and motor-driven vertical movement, operated at 25%)
*11: When ambient temperature is 30 °C or higher, the battery may not be charged sufficiently.

Dimensions

Unit: mm



LH-600F (without grip) LH-600FG (with grip)

Standard accessories

ø5 stepped probe, ball-diameter compensation block (with cover and base), auxiliary weight (2 pcs. pre-mounted), battery pack (1 pc)*12, AC adapter, power cable for AC adapter (optional), clear cover, conveying handle, cap, hex wrench, manual set, inspection certificate, Touch pen, protective sheet, Phillips screwdriver

*12: One piece included as standard. Optional additional battery (using total of two batteries) for longer battery-powered operation.

Special accessories

Additional battery pack (Part No.: **12AAF712**), model workpiece (Part No.: **12AAA879**)

Optional products for outputting measurement data

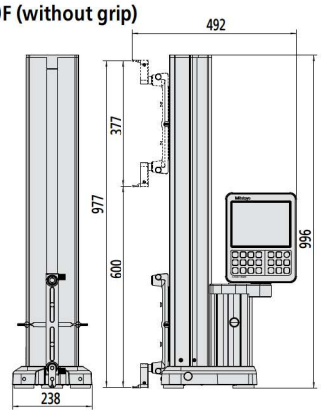
Code No.	Product name
12AAY481	Receipt printer (for Japan)*1
12AAY482	Receipt printer (for North America)*1
12AAY483	Receipt printer (for EU countries, excluding the UK)*1
12AAY484	Receipt printer (for the UK)*1
12AAN052	Printer paper for receipt printer (set of 10)
12AAY485	Printer mounting attachment
12AAN146	Connection cable for printer
—	(USB memory device)*2
12BAF812	USB cable (type A - type B) (2 m)
543-700B	Digimatic indicator (**ID-C0512NXB**)
543-701B	Digimatic indicator (**ID-C0512MNXB**)
519-521	Lever head probe **MLH-521**
519-561	Mu-checker **M-561**
936937	Digimatic cable (1 m)
965014	Digimatic cable (2 m)
264-505	Digimatic mini processor (**DP-1VA**)
264-020	Input tool (**IT-020U**)
06AGQ001F	Input tool (**USB-ITN-SF**)
06AGL011	Bidirectional digimatic S1 cable, Flat and straight (1 m)
06AGL021	Bidirectional digimatic S1 cable, Flat and straight (2 m)
12AAJ088	Foot switch
02AZD810D	**U-WAVE-R**
02AZD730G	**U-WAVE-T** (IP67 type)
02AZD880G	**U-WAVE-T** (Buzzer type)
12AAY486	**U-WAVE T** mounting bracket
02AZG011	Bidirectional Digimatic S1 cable for **U-WAVE-T** (160 mm)
264-626	**U-WAVE-TMB** (IP67 type)
264-627	**U-WAVE-TMB** (Buzzer type)

*1 A small printer (optionally battery-powered) that can be mounted on the main unit.
It includes a printer cable and mounting bracket.
*2 USB memory devices should be formatted with FAT16/32. NTFS and exFAT are not supported.

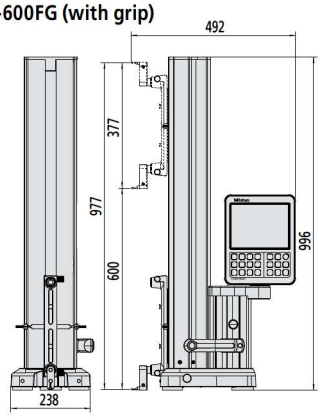
DIMENSIONS

Unit: mm

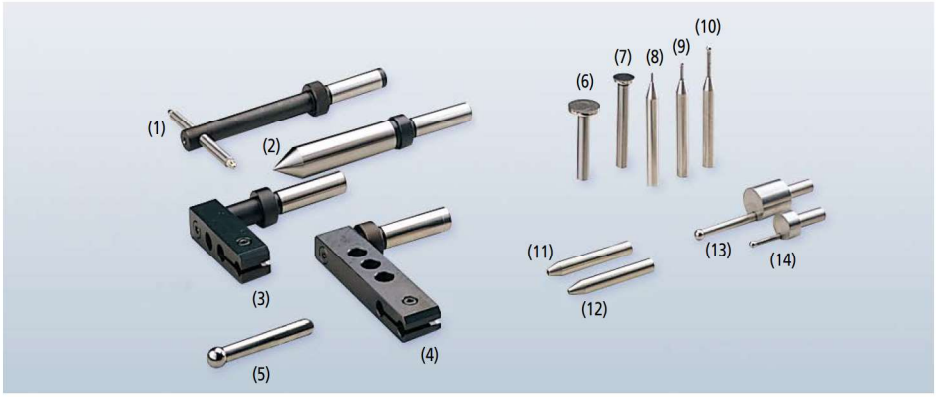
LH-600F (without grip)



LH-600FG (with grip)



Optional Accessories



No.	Code No.	Item
(1)	**12AAC072**	Depth probe
(2)	**12AAC073**	Tapered probe (ø20)
(3)	**12AAA792**	Dial indicator holder
(4)	**12AAA793**	Probe extension holder
(5)	**12AAB552**	ø10 mm ball probe (coaxial type)
(6)	**957265**	ø20 mm disk probe
(7)	**957264**	ø14 mm disk probe
(8)	**957261**	ø2 mm ball probe (coaxial type)
(9)	**957262**	ø3 mm ball probe (coaxial type)
(10)	**957263**	ø4 mm ball probe (coaxial type)
(11)	**226118**	M3 CMM stylus adapter*
(12)	**226117**	M2 CMM stylus adapter*
(13)	**12AAA789**	ø6 mm ball offset probe
(14)	**12AAA788**	ø4 mm ball offset probe

Code No.	Item
12AAB136	ø10 mm cylindrical probe
12AAF666	ø1 mm ball probe (coaxial type)
12AAF667	ø2 mm ball probe (coaxial type) Ruby ball
12AAF668	ø10 mm ball probe (coaxial type) L: 82 mm
12AAF669	ø10 mm ball probe (coaxial type) L: 120 mm
12AAF670	ø5 mm disk probe
12AAF671	ø10 mm disk probe
12AAF672	ø1 mm ball offset probe
12AAY343	ø5 stepped probe (standard accessory)
12AAY595	Extension holder 100
12AAY596	Extension holder 200
12AAF673	ø2 ball stylus (eccentric type)
12AAY597	ø5 ball stylus L130
12AAY598	ø25 disk stylus
12AAY599	Depth stylus 70
12AAY600	Depth stylus 150
12AAY601	Depth stylus 300
12AAY602	Depth stylus 70 ø2 ball
12AAY603	Depth stylus 150 ø2 ball
12AAY604	Depth stylus 300 ø2 ball
12AAY605	Depth stylus 70 ø4 ball
12AAY606	Depth stylus 150 ø4 ball
12AAY607	Depth stylus 300 ø4 ball
12AAF712	Additional battery pack

* For enabling CMM stylus to be used.
Note 1: A gauge block may be required for zero-setting depending on the probe and contact point.
Note 2: Refer to the **E12012** catalog for more details.

Mitutoyo