Mitutoyo

Mitutoyo Quality

Small Tool Instruments and Data Management

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

Bulletin No. 2341(1)

Mitutoyo

Easy operation and High-accuracy

Intuitive operation and outstanding ease of use
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

Linear Height

NEW Products

Easy operation using keypad and touch screen navigation

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

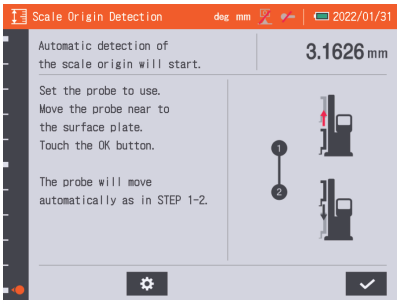
- Measurement origin setting
- Probe selection
- Measurement origin switching (ABS / INC)

Other

- Home screen
- System settings
- Data output

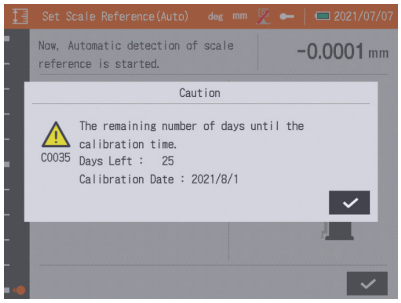
Fantastic features for shop-floor use

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.

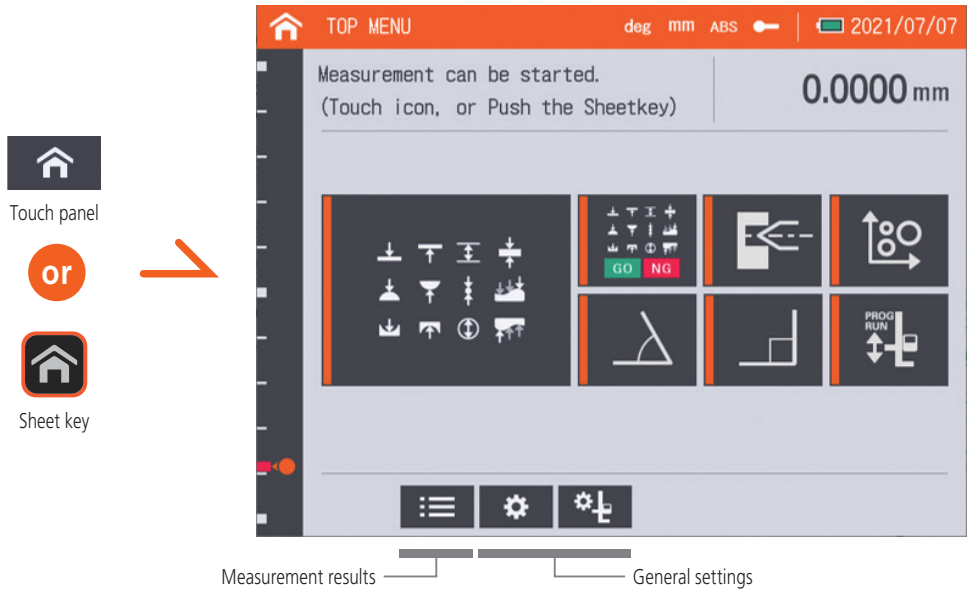
Calibration reminder



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

Home screen

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



Measurements

- Basic measurements (ABS)
- Basic measurements (ABS, INC×5)
- Angle measurements
- Hole position measurements
- Perpendicularity and straightness measurements
- 2D measurements
- Part program measurements (1D, 2D)

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 beginners.

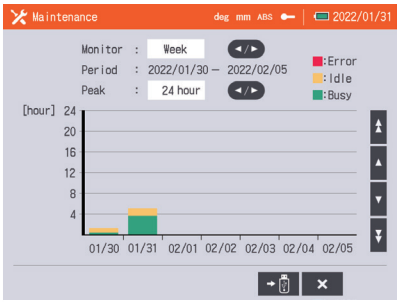
Select basic measurements

Select a measurement method

Conduct the measurement

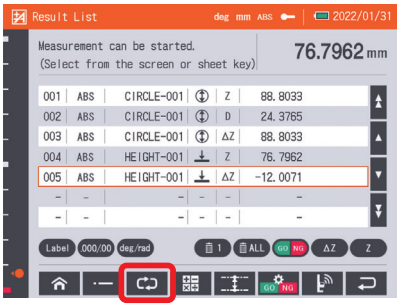
View the measurement results

Operation log



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

Repeat measurement function



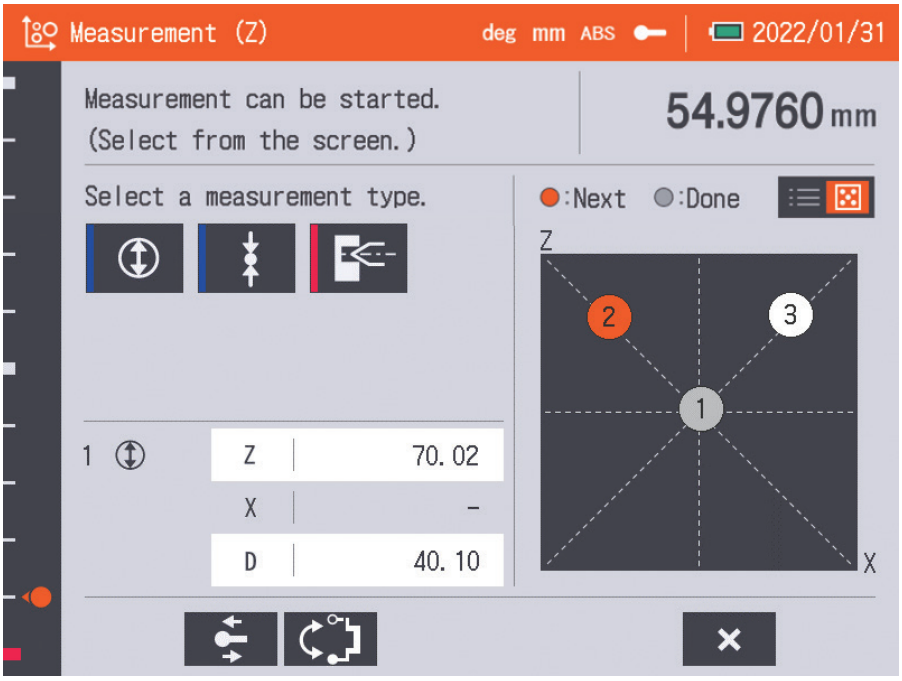
To enable efficient measurements, the user can repeat the last measurement with the optional foot switch or on-screen button.

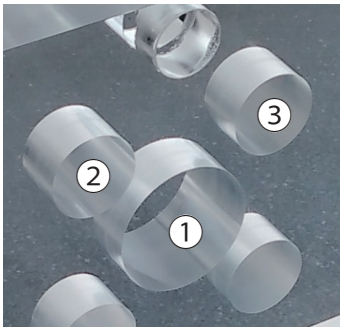
Various measurements with just one unit

Improved usability and accessibility, including advanced measurement functions

2D measurement - Pre-placement -

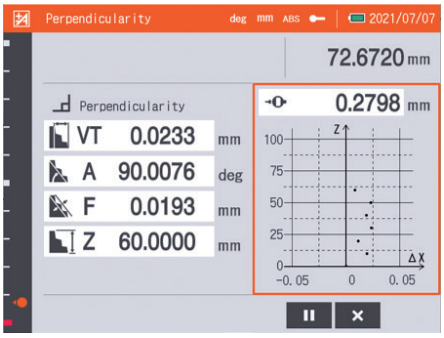
This function allows the user to register the hole position of the workpiece before measurement.



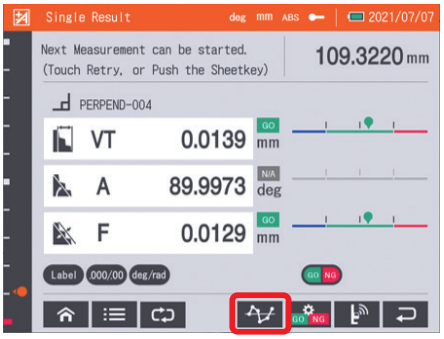


Perpendicular/ straightness measurement - Graph creation -

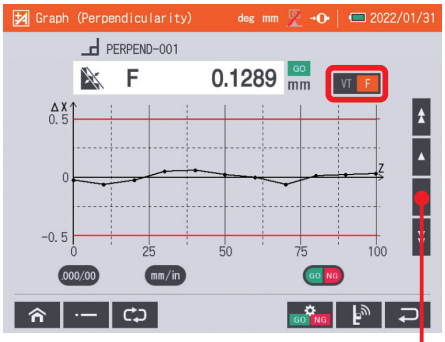
You can check the measurement results of perpendicularity and straightness in real time during measurement. After measurement, you can easily see the trends of the measurement results in a graph.



Show results in real time during measurement.



Show results after measurement.

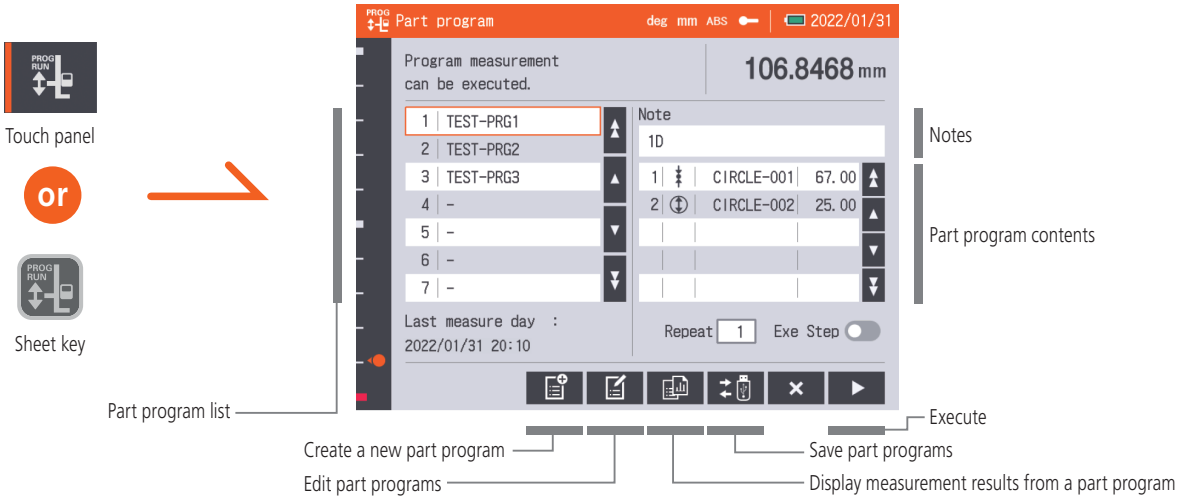


You can monitor the graphs of past measurement results.

Show measurement results in graph form.

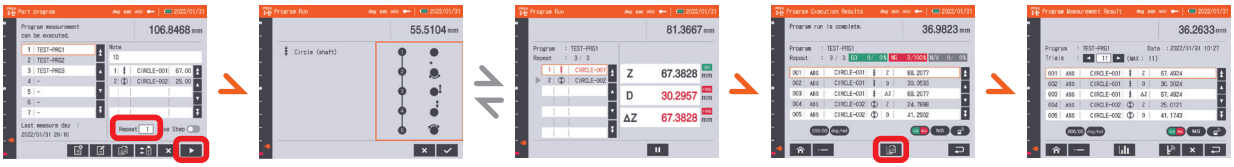
Part program measurement

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



Example of performing part program measurement

Run the program repeatedly (when the number of executions is ≠1)



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.

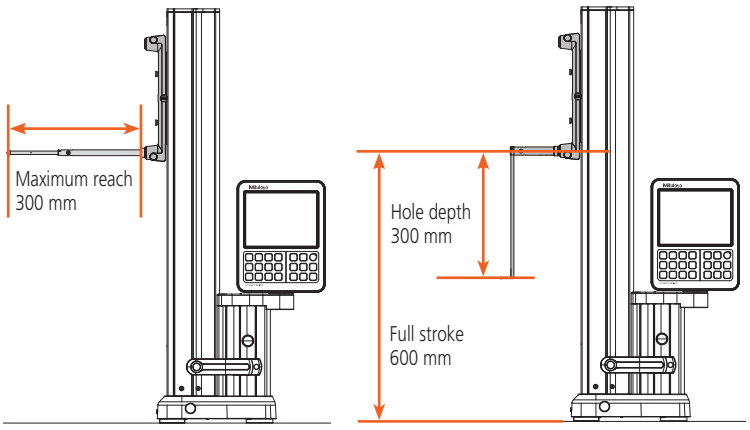
Display all results of N times of executing the program.

Copy part programs to other devices

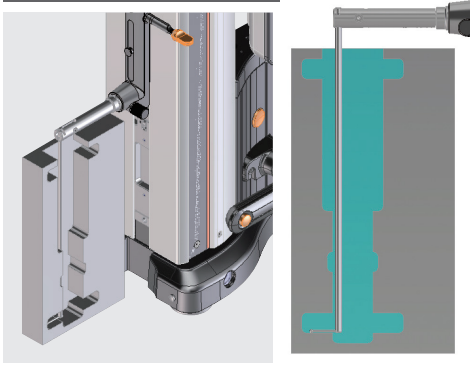
By using a USB memory device, you can copy part programs to other devices.

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

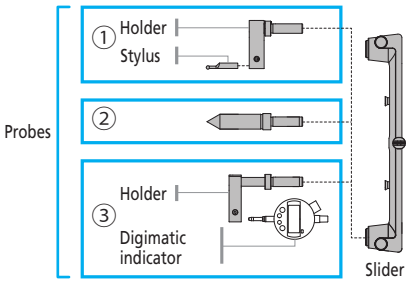
Three types of optional probes:

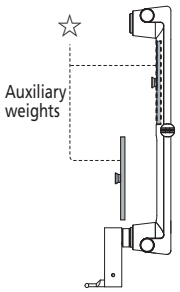
1 The holder and the stylus can be freely combined according to the purpose of measurement, and the measurement area can be changed.

2 This type is used for single-use measurements such as measuring a tapered hole or a knife edge.

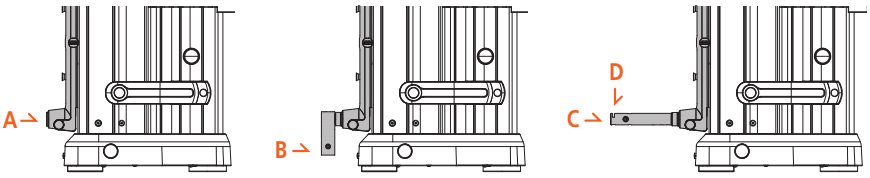
3 This type is used to measure straightness and perpendicularity.

☆ You can adjust the balance of the slider by adjusting the number of auxiliary weights.
(Magnetic auxiliary weights are easy to add and remove.)





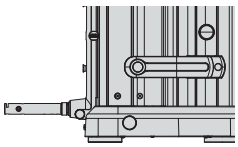
Optional probe mounting positions



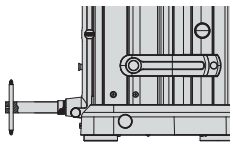
Holders/styli for position A

Mounting example

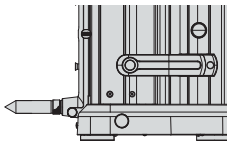
For extension holder 100

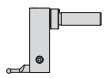
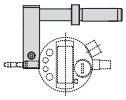
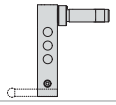
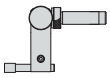
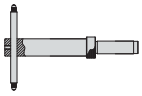


For depth measurement probes



For taper stylus (ø20)



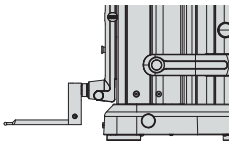
	Part No.	Product name	Number of weights
	**12AAY343**	ø5 stepped probe (standard accessory)	2
	**12AAA837** **12AAA792**	Holder for Indicator (inch – Ø3/8") Holder for Indicator (metric – Ø8mm)	0
	**12AAA793**	Holder (long)	*1
	**12AAB136**	ø10 cylindrical universal probe	2
	**12AAY595**	Extension holder 100	*1
	**12AAY596**	Extension holder 200	*1
	**12AAC072**	Depth probe	2
	**12AAC073**	Tapered stylus (ø20)	2

*1: Varies depending on the stylus

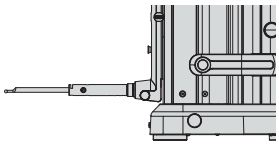
Styli for position B/C

Mounting example

Φ5 ball stylus L130 in position B



Φ5 ball stylus L130 in position C



	Part No.	Product name	Number of weights*3
	12AAF666	ø1 ball stylus (coaxial type)	2
	957261	ø2 ball stylus (coaxial type)	2
	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.

Small Styli Kit - M3 - for position B

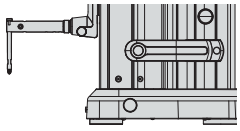
K650986

Contents	Description	øS	L
1x Part No. K650415	Adapter block		
1x Part No. K651223	Pin wrench ø 1.2mm		
1x Part No. K651157	Extension steel M3		20
1x Part No. K651156	Extenstion steel M3		10
1x Part No. A-5000-3615	Disk stylus steel M3	12.7	33
1x Part No. K651151	Stylus steel-ruby M3	4	31
1x Part No. K651148	Stylus steel-ruby M3	3	21
1x Part No. K651147	Stylus steel-ruby M3	2	21
1x Part No. K651146	Stylus steel-ruby M3	1	21

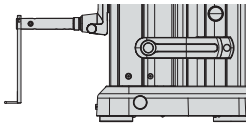
Styli for position D

Mounting example

Depth stylus 70 is mounted in position D



Depth stylus 150 ø4 ball is mounted in position D

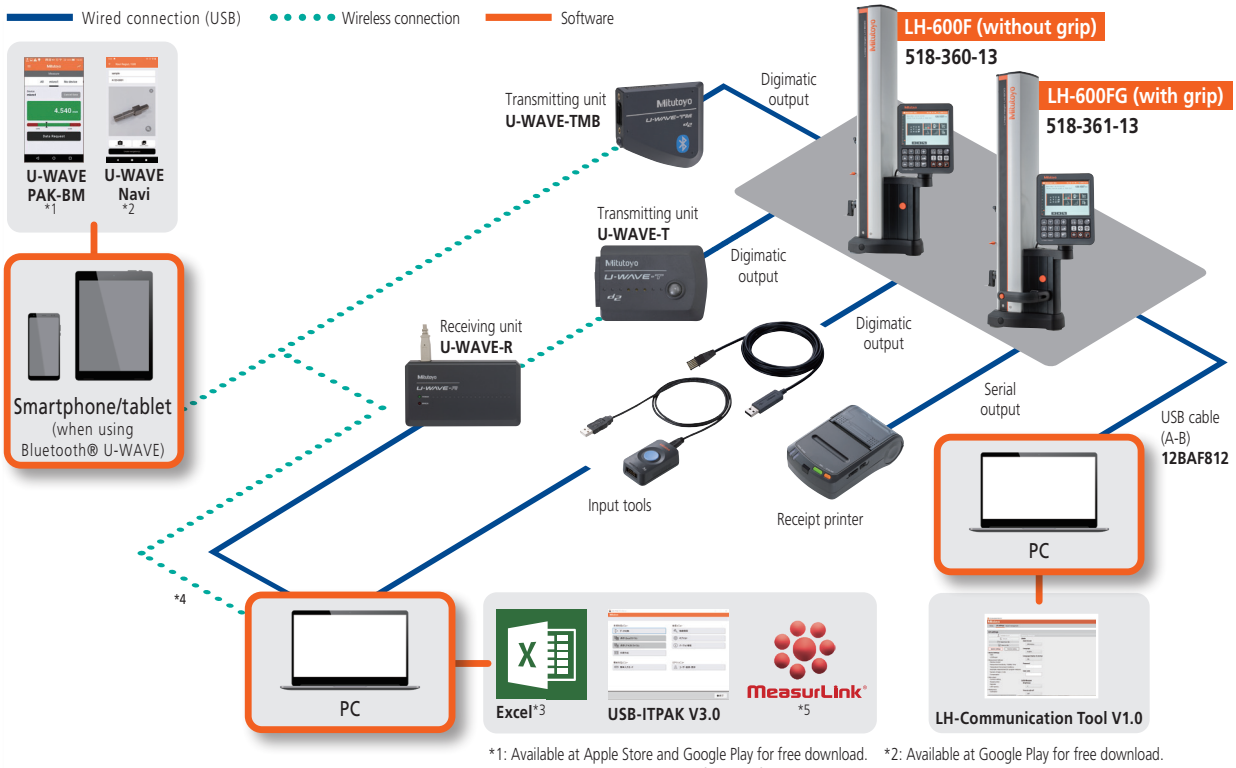


	Part No.	Product name	Number of weights*4
	12AAY599	Depth stylus 70	2
	12AAY600	Depth stylus 150	1
	12AAY601	Depth stylus 300	0
	12AAY602	Depth stylus 70 ø2 ball	2
	12AAY603	Depth stylus 150 ø2 ball	1
	12AAY604	Depth stylus 300 ø2 ball	0
	12AAY605	Depth stylus 70 ø4 ball	2
	12AAY606	Depth stylus 150 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
12AAY482	Receipt printer (for North America)*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) Ø8mm stem
543-701B	Digimatic indicator (ID-C0512MNXB) Ø8mm stem
543-702B	Digimatic indicator (ID-C0512ENXB) Ø3/8" stem
519-521	Lever head probe MLH-521
519-562A	Mu-checker M-562

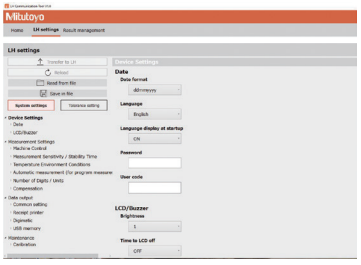
*6: A small printer (optionally battery-powered) that can be mounted on the main unit. It includes a printer cable and mounting bracket.
*7: USB memory devices should be formatted with FAT16/32. NTFS and exFAT are not supported.

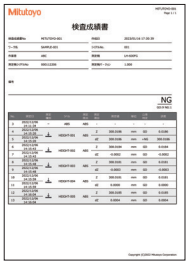
Part No.	Product name
936937	Digimatic cable (1 m) for Mu Checker
965014	Digimatic cable (2 m) for Mu Checker
264-505A	Digimatic mini processor (DP-1VA)
06AGQ001F	Input tool (USB-ITN-SF)
264-020	Input tool (IT-020U)
06AGL011	Digimatic S1 cable, (1 m) for 543-70xB Series
06AGL021	Digimatic S1 cable, (2 m) for 543-70xB Series
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 Digimatic 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).





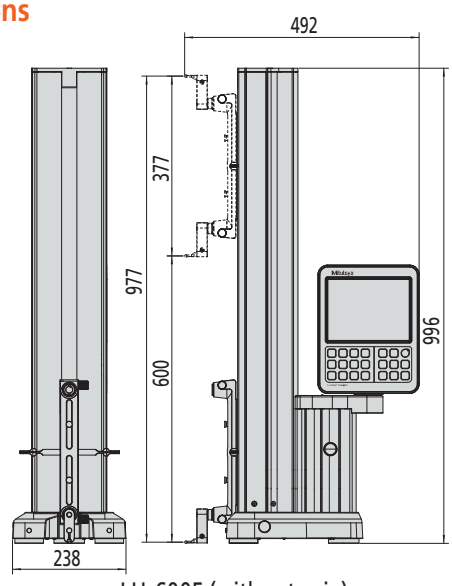
Specifications

Model		LH-600F	LH-600FG
Order No.	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 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 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) x 492 (D) x 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)	

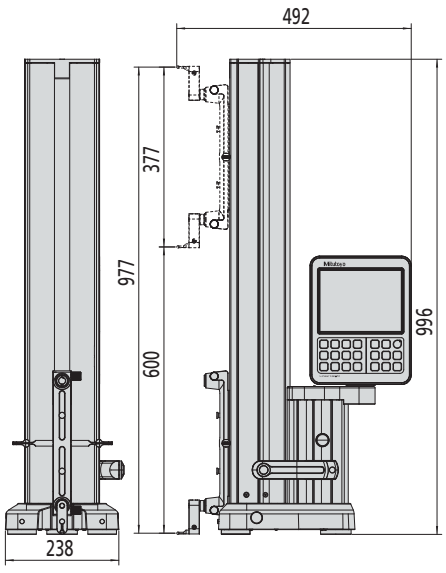
*8: Specification determined at in-house ambient temperature
*9: Guaranteed when using the Lever Head (519-521) and Mu-Checker (519-561).
*10: In-house standard(floating and motor-driven vertical movement, operated at 25%)
*11: When ambient temperature is 30 °C or higher, the battery may not be charged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

Dimensions

Unit: mm
25.4mm = 1"



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, 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**)