Mitutoyo

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

NEW
Products

Mitutoyo

Easy operation and
High-accuracy

High-Accuracy Height Gauge
LH-600F/FG

▌ Suitable for even beginners, navigate easily via keypad
and touchscreen operation

▌ Conduct various measurements such as 2D measurement
and perpendicularity measurement with just one tool

▌ Optional probes provide versatile measurement capabilities

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

NEW Products

Suitable for even beginners, navigate easily via keypad and touchscreen operation
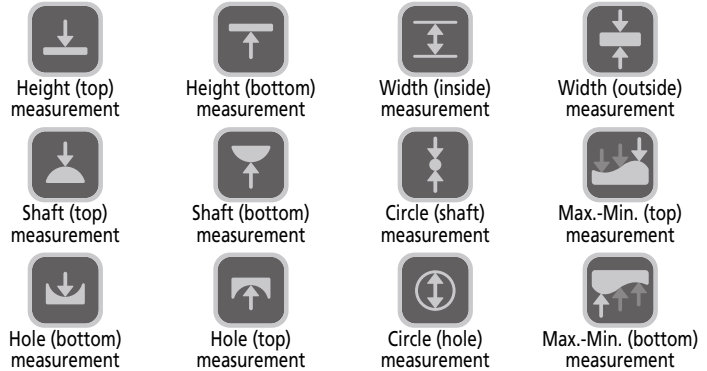
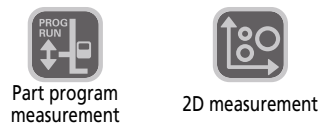## Measurements are supported via clear guidance on the large touch panel

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 **Power**

Part program measurement	2D measurement	Power

Measurement settings

Measurement origin setting	Probe selection	Measurement reference

Other

Home screen	System settings	Data output

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
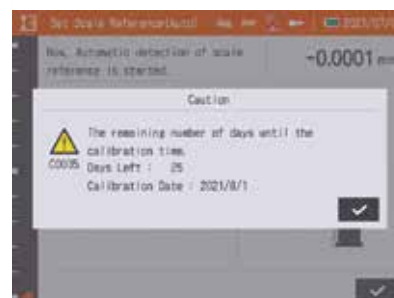
Operable with gloves

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.
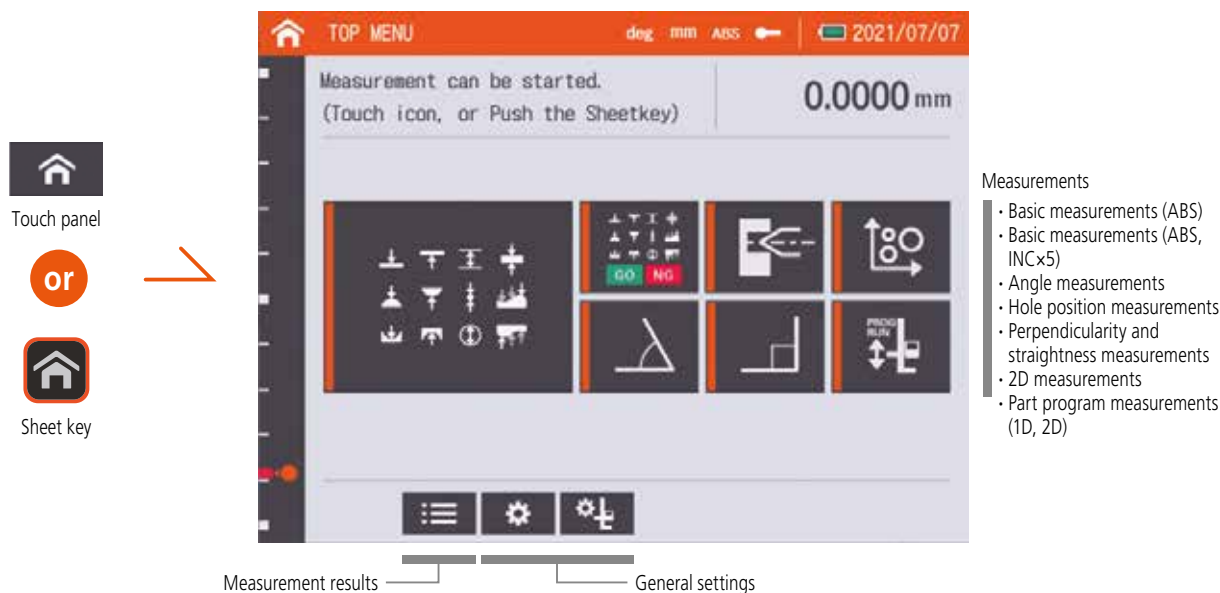
Calibration reminder

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

Home screen

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

Touch panel

or

Sheet key

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)

Measurement results ⎯⎯⎯ General settings

Guidance and measurement navigation

Available in 21 languages, each measurement step is displayed in a way that is easy to understand for the user.

Select basic measurements   Select a measurement method   Conduct the measurement   View the measurement results
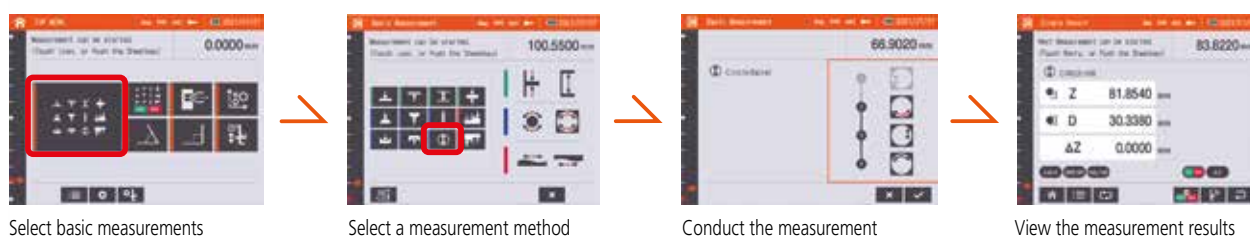
Operation log

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

Repeat measurement function
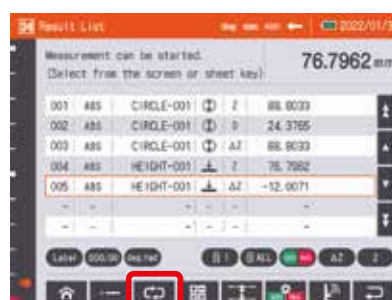
To enable efficient measurements the user can repeat the last measurement with the optional footswitch or on-screen button.

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.
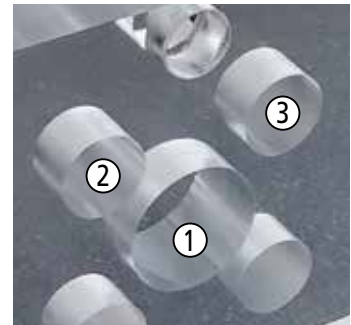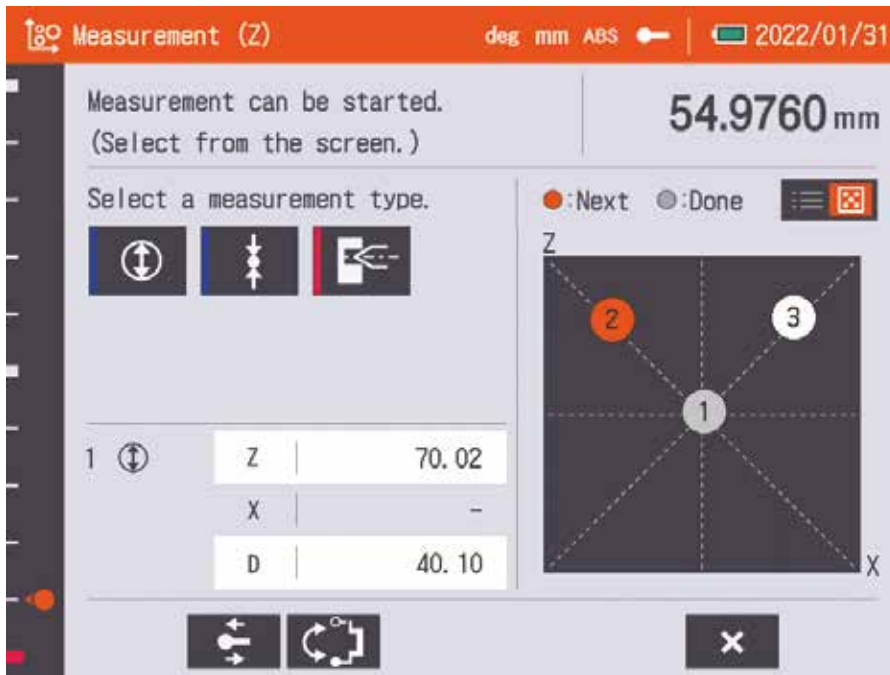
Perpendicular/straightness measurement "Graph Creation"

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

Real-time results during measurement

Results post measurement

Previous measurement results

Graph display of measurement results

Part program measurement

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

Touch panel

or

Sheet key

Part program list

Create a new part program

Edit part programs

Notes

Part program contents

Execute

Save part programs

Display measurement results from a part program

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

You can copy part programs to other devices via USB storage device.

Expanded measurement area

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

Maximum reach 300 mm

Hole depth 300 mm

Full stroke 600 mm
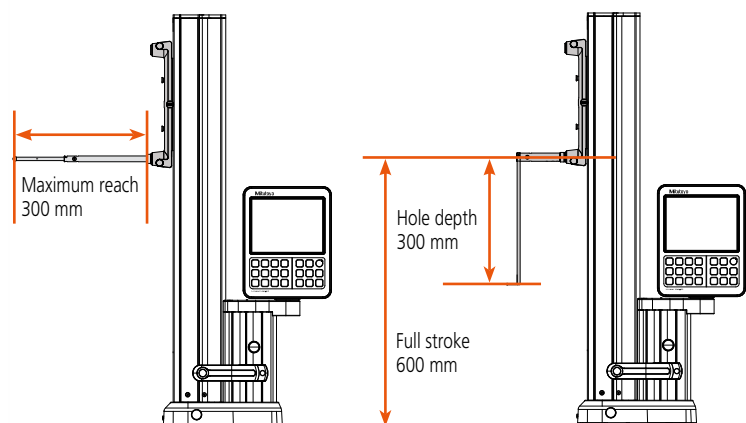
Example of deep hole measurement
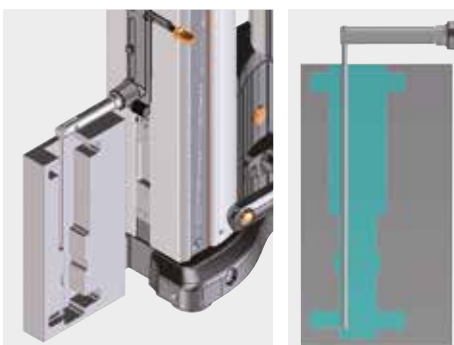
Optional probes provide versatile measurement capabilities

An extension holder and a depth stylus extend the measuring range both horizontally and vertically
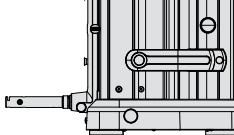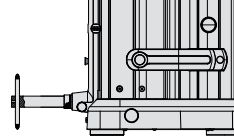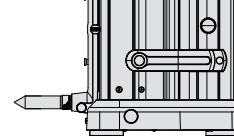
Three types of optional probes:

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.
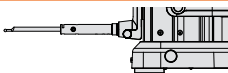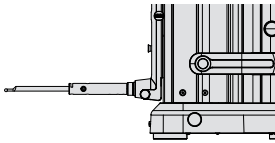3. This type is used to measure straightness and perpendicularity.

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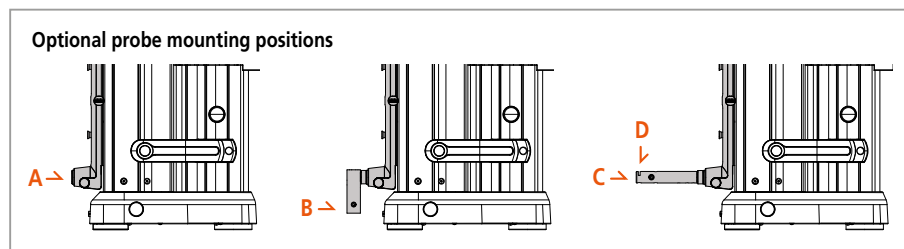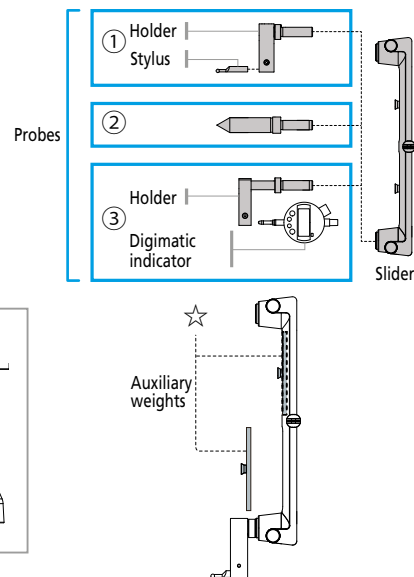
You can adjust the balance of the slider by adjusting the number of auxiliary weights. (Magnetic auxiliary weights are easy to add and remove.)

Holders/styli for position A

		Part No.	Product name	Number of weights
Mounting example		12AAY343	ø5 stepped probe (standard accessory)	2
For extension holder 100		12AAA792	Holder for dial indicator (millimeter)	0
		12AAA793	Holder (long)	*1
For depth measurement probes		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
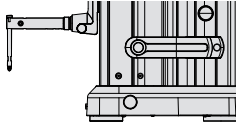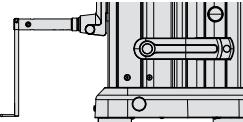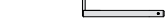
*1: Please refer to page 9 for the number of weights to be used.

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.

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

Wired connection (USB) • • • • Wireless connection — Software

U-WAVE PAK-BM *1

U-WAVE Navi *2

Smartphone/tablet (when using Bluetooth® U-WAVE)

Transmitting unit U-WAVE-TMB

Transmitting unit U-WAVE-T

Receiving unit U-WAVE-R

Input tools

Receipt printer

Digimatic output

Digimatic output

Digimatic output

Serial output

LH-600F (without grip) 518-360-13

LH-600FG (with grip) 518-361-13

USB cable (A-B) 12BAF812

PC

PC

*4

Excel*3

USB-ITPAK V3.0

MeasurLink® *5

LH-Communication Tool V1.0

*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
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
936937	Digimatic cable (1 m)
965014	Digimatic cable (2 m)

Part No.	Product name
264-505D	Digimatic mini processor (DP-1VA) (with AC-Adapter CEE Type)
264-505E	Digimatic mini processor (DP-1VA) (with AC-Adapter BS Type)
06AGQ001F	USB Input Tool Direct (Digimatic USB Cable)
264-020	USB Input Tool
06AGL011	Bidirectional digimatic S1 cable, Flat and straight (1 m)
06AGL021	Bidirectional digimatic S1 cable, Flat and straight (2 m)
12AAJ088	Footswitch
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 Diaimatic S1 cable (160 m)

*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.

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

Dimensions

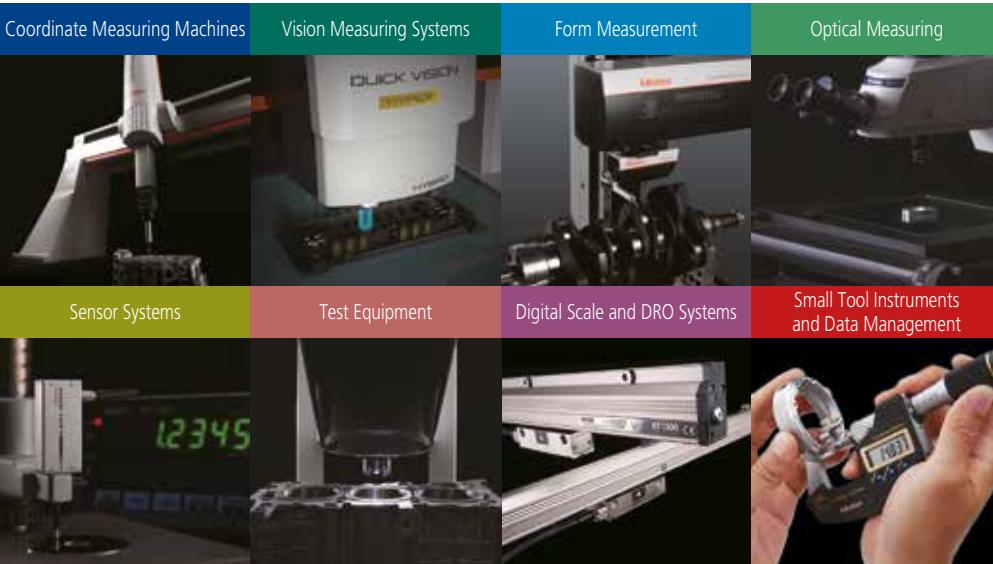LH-600F (without grip)

LH-600FG (with grip)

Unit: mm
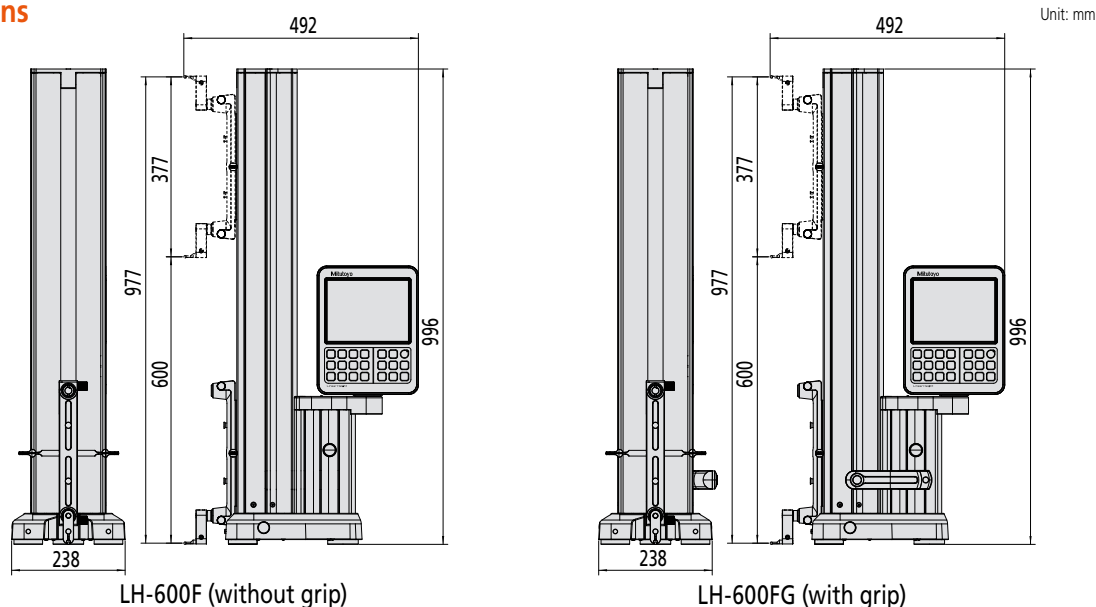
Standard accessories

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 a total of two batteries) for longer battery-powered operation.

Special accessories

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

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

Whatever your challenges are, Mitutoyo supports you from start to finish.

Mitutoyo is not only a manufacturer of top quality measuring products but one that also offers qualified support for the lifetime of the equipment, backed up by comprehensive services that ensure your staff can make the very best use of the investment.

Apart from the basics of calibration and repair, Mitutoyo offers product and metrology training, as well as IT support for the sophisticated software used in modern measuring technology. We can also design, build, test and deliver measuring solutions and even, if deemed cost-effective, take your critical measurement challenges in-house on a sub-contract basis.
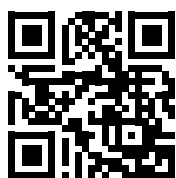
Find additional product literature and our complete catalog here.

www.mitutoyo.eu

Note: All information regarding our products, and in particular the illustrations, drawings, dimensional and performance data contained in this printed matter as well as other technical data are to be regarded as approximate average values. We therefore reserve the right to make changes to the corresponding designs, dimensions and weights. The stated standards, similar technical regulations, descriptions and illustrations of the products were valid at the time of printing. In addition, the latest applicable version of our General Trading Conditions will apply. Only quotations submitted by ourselves may be regarded as definitive.

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