05

Height Gages

MeasurLink® ENABLED
Data Management Software by Mitutoyo

Measurement Data Network System

MeasurLink® is a measurement data management system based on databases (SQL Server). You can build a network to manage the measurement results and measuring instruments simply by combining the required functions.

MeasurLink® is a registered trademark of Mitutoyo Corporation in Japan and Mitutoyo America Corporation in the United States.

PROPRIETARY INSPECTION CERTIFICATE

Measuring Instruments Shipped with Inspection Certificate

Mitutoyo guarantees product quality as a leading precision measuring instrument manufacturer and ships measuring instruments with an inspection certificate that includes inspection data so that customers can use them with confidence.

ABSOLUTE™

ABSOLUTE Linear Encoder

Mitutoyo developed the unique ABSOLUTE method to retain position information after the power is turned off.
The origin is set once - thereafter the live position is displayed when the power is turned on.

Linear Height

QM-Height

ABSOLUTE Digimatic Height Gage

INDEX

Mitutoyo

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 is 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

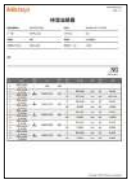
Model		LH-600F	LH-600FG
Code No.	mm	518-360-11	518-361-11
	inch/mm	518-360-13	518-361-13
Power grip		Without power grip	With power grip
Measuring range (Stroke)		0 to 977 mm (600 mm) 0 to 38 in (24 in)	
Resolution		0.0001/0.001/0.01/0.1 mm (selectable) 0.000001/0.00001/0.0001/0.001 in (selectable)	
Accuracy	Indication accuracy*1	± (1.1 + 0.6L/600) µm, L= Arbitrary measuring height (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 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 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 (W×D×H)		238×492×996 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).



PROPRIETARY INSPECTION CERTIFICATE

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

Optional products for outputting measurement data

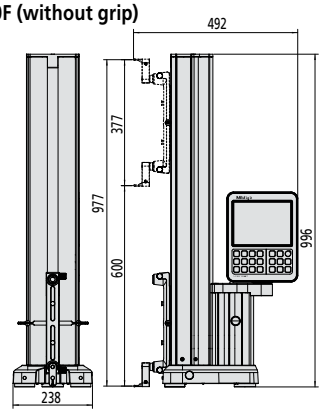
Code No.	Product name
12AAY481	Receipt printer (for Japan)*1
12AAY482	Receipt printer (for North America)*1
12AAY483	Receipt printer (for EU countries, excluding the UK)*1
12AAY484	Receipt printer (for the UK)*1
12AAN052	Printer paper for receipt printer (set of 10)
12AAY485	Printer mounting attachment
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.

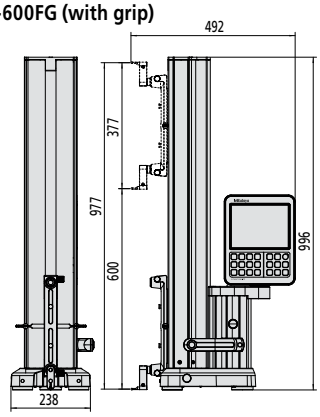
DIMENSIONS

Unit: mm

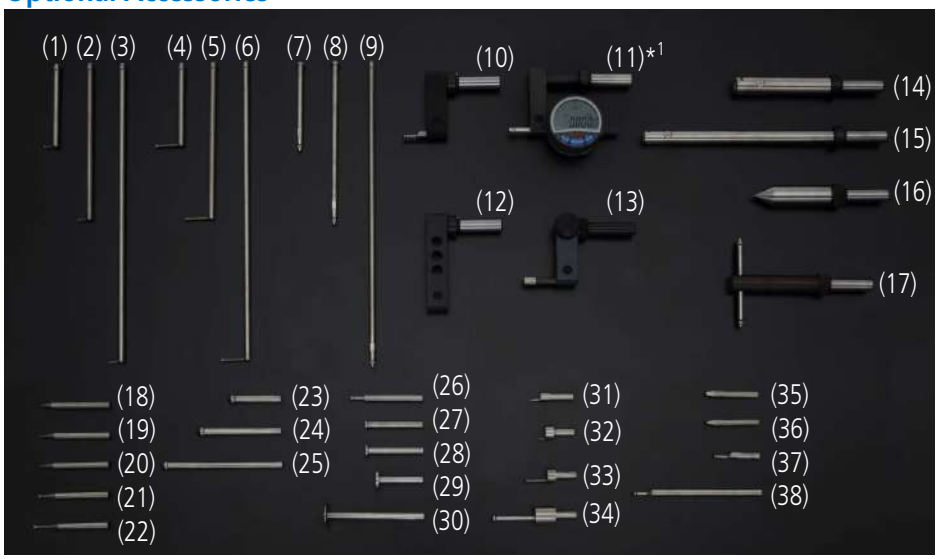
LH-600F (without grip)



LH-600FG (with grip)



Optional Accessories



No.	Code No.	Item
(1)	**12AAY602**	Depth stylus 70 ø2 ball
(2)	**12AAY603**	Depth stylus 150 ø2 ball
(3)	**12AAY604**	Depth stylus 300 ø2 ball
(4)	**12AAY605**	Depth stylus 70 ø4 ball
(5)	**12AAY606**	Depth stylus 150 ø4 ball
(6)	**12AAY607**	Depth stylus 300 ø4 ball
(7)	**12AAY599**	Depth stylus 70
(8)	**12AAY600**	Depth stylus 150
(9)	**12AAY601**	Depth stylus 300
(10)	**12AAY343**	ø5 stepped probe (standard accessory)
(11)	**12AAA792** **12AAA837**	Dial indicator holder (mm type)*1 Dial indicator holder (inch type)*1
(12)	**12AAA793**	Probe extension holder
(13)	**12AAB136**	ø10 mm cylindrical probe
(14)	**12AAY595**	Extension holder 100
(15)	**12AAY596**	Extension holder 200
(16)	**12AAC073**	Tapered probe (ø20)
(17)	**12AAC072**	Depth probe
(18)	**12AAF666**	ø1 mm ball probe (coaxial type)
(19)	**957261**	ø2 mm ball probe (coaxial type)

No.	Code No.	Item
(20)	**12AAF667**	ø2 mm ball probe (coaxial type) Ruby ball
(21)	**957262**	ø3 mm ball probe (coaxial type)
(22)	**957263**	ø4 mm ball probe (coaxial type)
(23)	**12AAB552**	ø10 mm ball probe (coaxial type)
(24)	**12AAF668**	ø10 mm ball probe (coaxial type) L: 82 mm
(25)	**12AAF669**	ø10 mm ball probe (coaxial type) L: 120 mm
(26)	**12AAF670**	ø5 mm disk probe
(27)	**12AAF671**	ø10 mm disk probe
(28)	**957264**	ø14 mm disk probe
(29)	**957265**	ø20 mm disk probe
(30)	**12AAY598**	ø25 disk stylus
(31)	**12AAF672**	ø1 mm ball offset probe
(32)	**12AAF673**	ø2 ball stylus (eccentric type)
(33)	**12AAA788**	ø4 mm ball offset probe
(34)	**12AAA789**	ø6 mm ball offset probe
(35)	**226118**	M3 CMM stylus adapter*2
(36)	**226117**	M2 CMM stylus adapter*2
(37)	**05HAA394**	ø5 ball stylus*3
(38)	**12AAY597**	ø5 ball stylus L130
	12AAF712	Additional battery pack

*1 A dial indicator is not included.
*2 For enabling CMM stylus to be used.
*3 The stylus is attached to ø5 stepped probe (**12AAY343**) and provided as standard.
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.

MeasurLink ENABLED
Data Management Software by Mitutoyo

PROPRIETARY INSPECTION CERTIFICATE

QM-Height
SERIES 518 — High-performance Height Gage

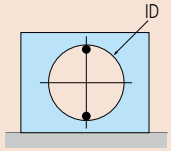
- This highly precise height gage is useful not only in height measurements but also in a wide range of applications such as measurement of steps, inside and outside diameters, and runouts.
- Easy-to-view, simple control panel enables most measurements to be made with a single keystroke.
  SPC (Digimatic) and RS-232C data output allow easy data management with a PC.
- Pneumatic floating models, which feature an air-suspension mechanism, can move smoothly on a surface plate (accuracy cannot be guaranteed for measurement while the unit is air-suspended).
- It features a long continuous operating time of approximately 1,200 hours with four AA alkaline batteries.
  (Four commercially available NiMH/HR6 rechargeable batteries can also be used.)

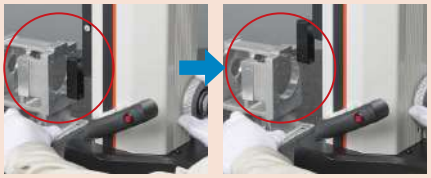
518-246

Measurement example

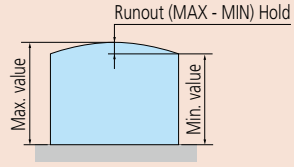
- Height measurement

- ID measurement





- Runout measurement



SPECIFICATIONS

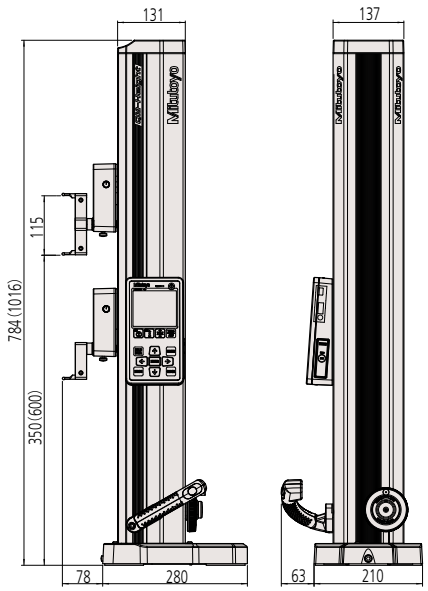
Code No.	Metric / Inch/Metric	518-240 / 518-241	518-242 / 518-243	518-244 / 518-245	518-246 / 518-247
Measuring range (stroke)		0 to 465 mm (350 mm/14 in)	0 to 715 mm (600 mm/24 in)	0 to 465 mm (350 mm/14 in)	0 to 715 mm (600 mm/24 in)
Resolution	Metric	0.001 mm/0.005 mm (Selectable)			
	Inch/Metric	0.001/0.005 mm 0.00005/0.0001/0.0002 in (Selectable)			
Accuracy	Indication accuracy*1	± (2.4 + 2.1L/600) µm			
	Repeatability*1	2 σ ≤ 1.8 µm			
Perpendicularity*2		7 µm	12 µm	7 µm	12 µm
Guiding method		Roller bearing			
Drive method		Manual (wheel)			
Measurement principle		Electromagnetic induction absolute encoder			
Measuring force		1.5±0.5 N			
Data output ports		Digimatic/USB*3			
Air-floating system		Not included		Included (for positioning only)*4	
Power source		Alkaline AA/LR6 batteries×4 (standard accessories)/AC adapter (optional accessory)*5/ Supports NiMH (HR6) rechargeable batteries×4			
Battery life guidelines*6		Approx. 1,200 hours (without using the air-floating system)			
		Approx. 90 hours (when using the air-floating system)			
Mass		25 kg	29 kg	26 kg	30 kg
Dimensions (W×D×H)		Stroke 350 mm type: 280×273×784 mm Stroke 600 mm type: 280×273×1016 mm			
Operating temperature (recommended)		0 to 40 °C (10 to 30 °C)			
Operating humidity		20 to 80% RH (non-condensing)			
Storage temperature		-10 to 50 °C			
Storage humidity		5 to 90% RH (non-condensing)			

- Standard Accessories: **05HZA148** ø5 mm stepped probe, **12AAA715** Probe diameter calibration block, Alkaline batteries×4 (AA/LR6) (For operational checks)

*1 Indication accuracy and repeatability represent the values obtained when the standard ø5 stepped probe is used. It should be used in an environment as close to 20 °C as possible, with minimal temperature changes. In the case of diameter, minimum (maximum) value, circle pitch or difference measurement, measuring errors may be larger than the accuracy ratings listed in the table due to variations in measuring force during a scanning measurement, which differs from height measurement.
*2 Indicates the value obtained from the measurement of a straight surface placed perpendicular to the the base reference surface using the Lever Head (**519-521**) and Mu-checker (**519-551**).
*3 Requires special communication driver. Consult your local Mitutoyo Sales Office for details.
These can be downloaded from the Mitutoyo web site. **https://www.mitutoyo.co.jp/eng/contact/products/usb/index.html**
*4 When using a model with the air-floating system, it is advisable to use a JIS 1 class, or higher, surface plate. Using on surfaces with scratches or unevenness may prevent the system operating to the specified performance.
*5 The AC adapter cannot be used to recharge rechargeable batteries.
*6 Battery life depends on the operating conditions. In particular, it is more economical to use the optional AC adapter to power the instrument if the application requires prolonged use of the air-floating system.

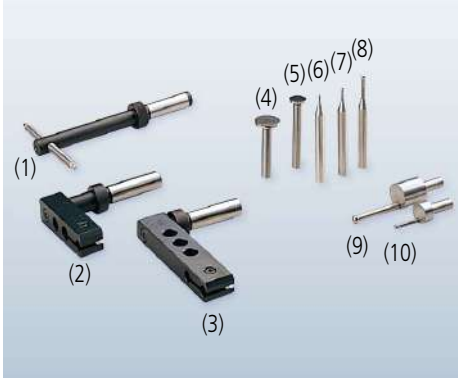
DIMENSIONS

Unit: mm



( ): 600 mm stroke type

Optional Accessories



Optional accessories that enable centralized data management

Code No.	Item name
Small printer equipped with Data Logger	
264-505	**DP-1VA LOGGER**
936937	Digimatic connection cable (1 m)
965014	Digimatic connection cable (2 m)
06AFZ050	USB cable (A-microB)
Measurement Data Input Unit	
06AFM380D	USB Input Tool Direct **USB-ITN-D**
Measurement data wireless communication system	
02AZD730G	**U-WAVE-T** (Transmission unit) (IP67 type)
02AZD880G	**U-WAVE-T** (Transmission unit) (Buzzer type)
02AZD790D	**U-WAVE-T** dedicated cable (Standard use)
02AZE140D	**U-WAVE-T** dedicated cable (For foot switch)
02AZD810D	**U-WAVE-R**
02AZE990	**U-WAVE** mounting bracket
Measurement data collection software for Excel **USB-IT PAK V2.1/V3.0**	
Measurement data network system **MeasurLink®**	

Contact points for a wide range of measurements

Item	Code No.	Description
	Depth probe	
(1)	**12AAC072**	Depth probe
	Special holder	
(2)	**12AAA792**	Holder for dial indicator
(3)	**12AAA793**	Holder (Long)
	Interchangeable contact points for ø5 mm stepped probe	
(4)	**957265**	ø20 mm disk
(5)	**957264**	ø14 mm disk
(6)	**957261**	ø2 mm ball (coaxial type)
(7)	**957262**	ø3 mm ball (coaxial type)
(8)	**957263**	ø4 mm ball (coaxial type)
(9)	**12AAA789**	ø6 mm ball (eccentric type)
(10)	**12AAA788**	ø4 mm ball (eccentric type)
	AC Adapter	
	06AGZ369JA	AD620JA for Japan/U.S.
	06AGZ369D	AD620D for the EU
	06AGZ369E	AD620E for the UK
	06AGZ369K	AD620K for Korea
	06AGZ369DC	AD620DC for China
	Other	
	05HZA173	Scriber*

* Used for measurements, cannot be used for scribing.
Note: A gauge block may be required for zero-setting depending on the probe or contact point to be used.

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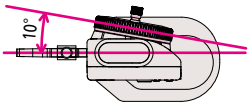
MeasurLink® ENABLED
Data Management Software by Mitutoyo

Digimatic Height Gage
SERIES 192 — Multi-function Type with SPC Data Output

- Double-column structure ensures stable measurements.
- Ergonomic base fits comfortably in the hand.
- Inclined handle improves slider ergonomics.
- Bidirectional touch-trigger probe is available as an optional accessory.
- Provided with a long scriber (150 mm).



192-663-10

SPECIFICATIONS

Metric

Code No.	Range (mm)	Resolution (mm)	Maximum permissible error E_{MPE} (mm)*	Response speed (mm/s)	Height (mm)	Mass (kg)
192-663-10	0 - 300	0.01/0.005 (selectable)	±0.02	Approx. 500	510	5.7
192-664-10	0 - 600		±0.04		802	8.3
192-665-10	0 - 1000		±0.06		1228	15.7

Inch/Metric

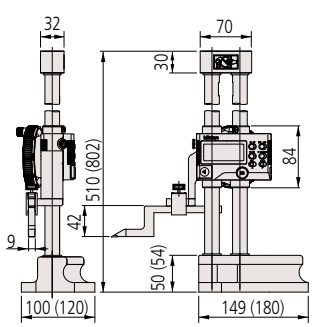
Code No.	Range (in)	Resolution	Maximum permissible error E_{MPE} (in)*	Response speed (mm/s)	Height (mm)	Mass (kg)
192-670-10	0 - 12	0.01 mm/0.005 mm (selectable)	±0.001	Approx. 500	510	5.7
192-671-10	0 - 18		±0.0015		649	7.5
192-672-10	0 - 24	0.0005 in/0.0002 in (selectable)	±0.0015		802	8.3
192-673-10	0 - 40		±0.0025		1228	15.7

- Power source: SR44 battery (1 pc.), **938882** included as standard (for operational checks)
- Battery life: Approx. 3,500 hours in continuous use

* Maximum permissible error, E_{MPE} is the term (notation) used in JIS B 7517: 2018, revised based on ISO/TR 14253-6: 2012.

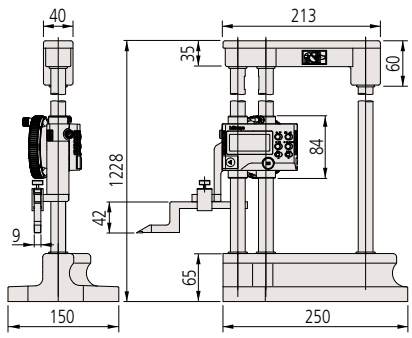
DIMENSIONS

192-663-10, 192-664-10
( ): **192-664-10**



192-665-10

Unit: mm



Functions (Refer to page 05-8)

Standard Accessories

Code No.	Description	Models
905200	Scriber	**192-663-10** **192-664-10** **192-665-10**
905201	Scriber	**192-670-10** **192-671-10** **192-672-10** **192-673-10**
05GZA033	Scriber clamp box	**192-663-10** **192-664-10** **192-665-10**
901385	Scriber clamp box	**192-670-10** **192-671-10** **192-672-10** **192-673-10**

Optional Accessories

Code No.	Type	Description
264-020	—	USB Input Tool Series USB Keyboard Signal Conversion Type **IT-020U**
905338	F	Connection cable for **IT/DP/MUX** (1 m)
905409	F	Connection cable for **IT/DP/MUX** (2 m)
06AFM380F	F	USB Input Tool Direct (2 m)
02AZD730G	IP67	**U-WAVE-T**
02AZD880G	Buzzer	**U-WAVE-T**
02AZE200	—	**U-WAVE-T** mounting bracket
02AZD790F	F	Connection cable for **U-WAVE-T** (160 mm)
02AZE140F	F	Connection cable for **U-WAVE-T** For foot switch

- **Bidirectional touch-trigger probe**: **192-007** (mm), **192-008** (inch)
  Improves accuracy in step, internal thickness, and outside width measurement by minimizing reproducibility error. A bidirectional touch-trigger probe is available as an optional accessory for **192-663-10**, **192-664-10**, **192-665-10**, **192-670-10**, **192-671-10**, **192-672-10** and **192-673-10**.

Digimatic Height Gage
SERIES 192 — Multi-function Type with SPC Data Output

- Double-column structure ensures stable measurements.
- Ergonomic base fits comfortably in the hand.
- Cannot be used with bidirectional touch-trigger probe.

192-613-10

Functions

- Origin-setting (ABS measurement mode):
  Any arbitrary value can be stored as the origin point.
- Zero-setting (INC measurement mode):
  Displayed value can be set to zero at any arbitrary position of the slider.
- Origin restoration:
  Previously set origin is restored when switching back to ABS mode.
- Presetting (ABS INC measurement mode):
  Displayed value can be set to any arbitrary value, including negative values.
- Measuring direction
  Measuring direction can be switched at the press of a button.
- Data hold
  Display value can be held. Reverts to ABS or INC mode when cancelled.
- Alarm: Error message is displayed when overflow or overspeed of displayed value arises and measurement is stopped.
- Data output:
  Allows integration into statistical process control and measurement systems. (Refer to page 09-3.)
- Fine and coarse height adjustment through knob and wheel combination.
  Slider height adjustment wheel allows fine and coarse height adjustment.
- Probe-tip diameter compensation: An adjustment is applied to the raw measurement data to compensate for the effect of the size of the spherical contact point used by the bidirectional touch-trigger probe.
- Presetting (2 positions): With two preset functions, two reference heights can be used relative to a surface plate.

Standard Accessories

Code No.	Description	Models
07GZA000	Scriber	**192-613-10** **192-614-10** **192-615-10**
900258	Scriber	**192-630-10** **192-631-10** **192-632-10** **192-633-10**
05GZA033	Scriber clamp box	**192-613-10** **192-614-10** **192-615-10**
901385	Scriber clamp box	**192-630-10** **192-631-10** **192-632-10** **192-633-10**

Optional Accessories

Code No.	Type	Description
264-020	—	USB Input Tool Series USB Keyboard Signal Conversion Type **IT-020U**
905338	F	Connection cable for **IT/DP/MUX** (1 m)
905409	F	Connection cable for **IT/DP/MUX** (2 m)
06AFM380F	F	USB Input Tool Direct (2 m)
02AZD730G	IP67	**U-WAVE-T**
02AZD880G	Buzzer	**U-WAVE-T**
02AZE990	—	**U-WAVE-T** mounting bracket
02AZD790F	F	Connection cable for **U-WAVE-T** (160 mm)
02AZE140F	F	Connection cable for **U-WAVE-T** For foot switch

SPECIFICATIONS

Metric

Code No.	Range (mm)	Resolution (mm)	Maximum permissible error E_{MPE} (mm)*	Response speed (mm/s)	Height (mm)	Mass (kg)
192-613-10	0 - 300	0.01/0.005 (selectable)	±0.02	Approx. 500	475	4.7
192-614-10	0 - 600		±0.05		802	8.3
192-615-10	0 - 1000		±0.07		1228	15.7

Inch / Metric

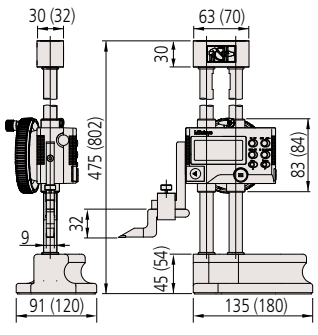
Code No.	Range (in)	Resolution	Maximum permissible error E_{MPE} (in)*	Response speed (mm/s)	Height (mm)	Mass (kg)
192-630-10	0 - 12	0.01 mm/0.005 mm (selectable)	±0.001	Approx. 500	475	4.7
192-631-10	0 - 18		±0.002		649	7.5
192-632-10	0 - 24	0.0005 in/0.0002 in (selectable)	±0.002		802	8.3
192-633-10	0 - 40		±0.003		1228	15.7

- Power source: SR44 battery (1 pc.), **938882** included as standard (for operational checks)
- Battery life: Approx. 3,500 hours in continuous use

* Maximum permissible error, E_{MPE} is the term (notation) used in JIS B 7517: 2018, revised based on ISO/TR 14253-6: 2012.

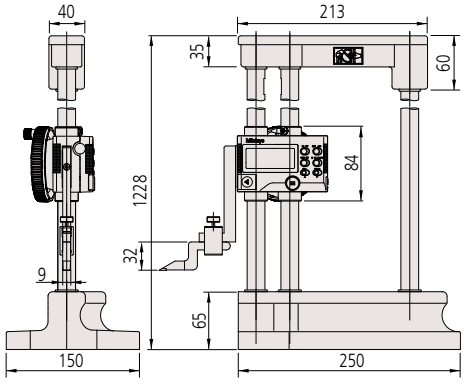
DIMENSIONS

192-613-10, 192-614-10
( ): **192-614-10**



192-615-10

Unit: mm



MeasurLink® ENABLED Data Management Software by Mitutoyo

ABSOLUTE™

ABSOLUTE Digimatic Height Gage SERIES 570 — with Ergonomic Base

- New standard model which features a prismatic column and offers excellent rigidity and accuracy.
- Allows smooth elevation by the slider adjustment wheel.
- **U-WAVE-T/TC/TCB** (wireless data transmitter) can be installed on the back of the display unit.

570-402

Equipped with **U-WAVE-T/TC/TCB**

Note: When attaching the **U-WAVE**, use commercially available double-sided tape, etc.

SPECIFICATIONS

Metric

Code No.	Range (mm)	Resolution (mm)	Maximum permissible error E_{MPE} (mm)*	Response speed	Mass (kg)
570-402	0 - 300	0.01	±0.03	Unlimited	4.6
570-404	0 - 600		±0.05		6.4

Inch / Metric

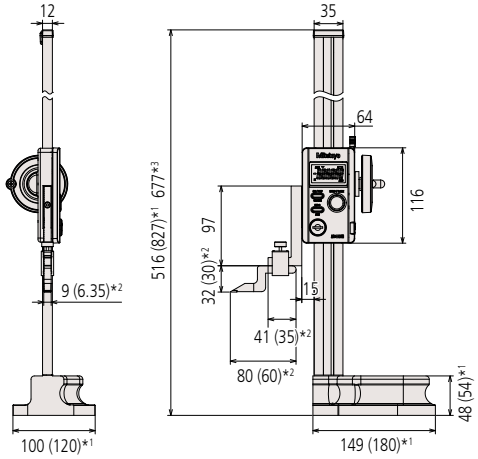
Code No.	Range	Resolution	Maximum permissible error E_{MPE}*	Response speed	Mass (kg)
570-412	0 to 12 in/0 to 300 mm	0.0005 in/ 0.01 mm	±0.0015 in/±0.03 mm	Unlimited	4.6
570-413	0 to 18 in/0 to 450 mm		±0.0020 in/±0.05 mm		5.9
570-414	0 to 24 in/0 to 600 mm				6.4

- Power source: SR44 battery (1 pc.), **938882** included as standard (for operational checks)
- Battery life: Approx. 5 years

* Maximum permissible error, E_{MPE} is the term (notation) used in JIS B 7517: 2018, revised based on ISO/TR 14253-6: 2012.

DIMENSIONS

Unit: mm



*1 0 to 450 mm, 0 to 600 mm
*2 Inch model
*3 0 to 450 mm

Measurement example

Functions

- Origin-setting:
  Any convenient reference surface, such as a surface plate, etc., can be stored as the ABSOLUTE origin point.
- ABSOLUTE measurement:
  After power is turned ON, measurement can be started without zero-setting if origin-setting was previously performed. ABSOLUTE origin position can be changed by ORIGIN button.
- Incremental measurement: Allows origin setting at any arbitrary position. In this case, the origin point is not stored after turning off the power.
- Data hold
  Display value can be held.
- Data output:
  Allows integration into statistical process control and measurement systems. (Refer to page 09-3.)
- Low-voltage alert:
  Low-voltage alert: If the battery voltage becomes low, a "B" appears in the display to alert the user before measurement is no longer possible so that the battery can be changed in good time.

Standard Accessories

Code No.	Description	Models
07ZA000	Scriber	**570-402** **570-404**
900258	Scriber	**570-412** **570-413** **570-414**
05GZA033	Scriber clamp box	**570-402** **570-404**
901385	Scriber clamp box	**570-412** **570-413** **570-414**

Optional Accessories

Code No.	Type	Description
264-020	—	USB Input Tool Series USB Keyboard Signal Conversion Type **IT-020U**
905338	F	Connection cable for **IT/DP/MUX** (1 m)
905409	F	Connection cable for **IT/DP/MUX** (2 m)
06AFM380F	F	USB Input Tool Direct (2 m)
02AZD730G	IP67	**U-WAVE-T**
02AZD880G	Buzzer	**U-WAVE-T**
02AZD790F	F	Connection cable for **U-WAVE-T** (160 mm)
264-620	IP67	**U-WAVE-TC**
264-621	Buzzer	**U-WAVE-TC**
264-624	IP67	**U-WAVE-TCB**
264-625	Buzzer	**U-WAVE-TCB**
902053	—	Clamp (with dovetail groove)*
953638	—	Holding bar*

* For mounting test indicators, etc. (Refer to pages 07-84 and 07-85 for details.)

MeasurLink® ENABLED
Data Management Software by Mitutoyo
ABSOLUTE™

ABSOLUTE Digimatic Height Gage SERIES 570 — Standard Model

- Simple design is easy to use.
- Scriber is provided as a standard accessory.
- When a dial indicator or dial test indicator is used with **570-227** and **244**, the dedicated holding bar (**953639**, overall length 50 mm) is recommended for use. However, MPE (Maximum permissible error) may be larger because the measurement point is further from the beam.

570-227

Functions

- Zero-setting
- +/- directional measurement
- Data hold
- Data output
- Presetting
- inch/mm reading (inch/mm models)
- Preset value memory
- Origin restoration
- Low battery voltage alert
- Counting value composition error alert

Standard Accessories

Code No.	Description	Models
900173	Scriber	**570-227** **570-244**
905200	Scriber	**570-230** **570-248**
901338	Scriber clamp box	**570-227** **570-244**
05GZA033	Scriber clamp box	**570-230** **570-248**

Optional Accessories

Code No.	Type	Description
264-020	—	USB Input Tool Series USB Keyboard Signal Conversion Type **IT-020U**
905338	F	Connection cable (1 m)
905409	F	Connection cable (2 m)
06AFM380F	F	USB Input Tool Direct (2 m)
02AZD730G	IP67	**U-WAVE-T**
02AZD880G	Buzzer	**U-WAVE-T**
02AZE200	—	**U-WAVE-T** mounting bracket
02AZD790F	F	Connection cable for **U-WAVE-T** (160 mm)
02AZE140F	F	Connection cable for **U-WAVE-T** For foot switch

SPECIFICATIONS

Metric

Code No.	Range (mm)	Resolution (mm)	Fine feed (mm)	Maximum permissible error E_{MPE} (mm)*	Height (mm)	Mass (kg)
570-227	0 - 200	0.01	4	±0.03	355	1.4
570-230	0 - 1000		6	±0.07	1260	16.8

Inch/Metric

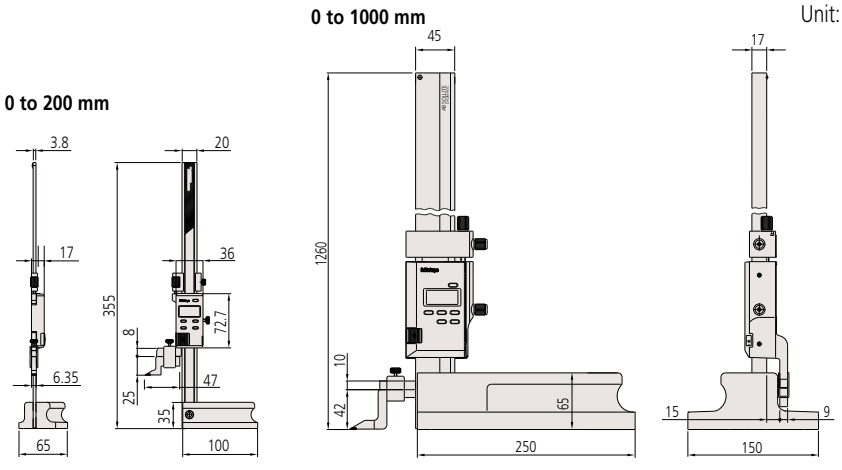
Code No.	Range (in)	Resolution	Fine feed (in)	Maximum permissible error E_{MPE} (in)*	Height (mm)	Mass (kg)
570-244	0 - 8	0.0005 in/0.01 mm	0.16	±0.002	355	1.4
570-248	0 - 40		0.24	±0.003	1260	16.8

- Power source: SR44 battery (1 pc.), **938882** included as standard (for operational checks)
- Battery life: Approx. 5,000 hours under normal use

* Maximum permissible error, E_{MPE} is the term (notation) used in JIS B 7517: 2018, revised based on ISO/TR 14253-6: 2012.

DIMENSIONS

Unit: mm



Mitutoyo

Vernier Height Gage
SERIES 514, 506 — Standard Height Gage with Adjustable Main Scale

- Standard Vernier height gage. Fits comfortably in the hand and moves easily on the surface plate.
- Scriber is provided as a standard accessory.
- When installing a dial indicator or dial test indicator on **506-207**, ensure that the overall system can keep a good weight balance to ensure reliable measurement.
- The main scale slides and clamps within the column for quick and convenient zero-setting. (only for the **514** Series)

514-102

506-207

Standard Accessories

Code No.	Description	Models
900173	Scriber	**506-207** **506-208**
07GZA000	Scriber	**514-102** **514-103** **514-104** **514-105** **514-106** **514-107**
905200	Scriber	**514-108** **514-109**
06AGR304	Scriber clamp box	**506-207** **506-208**
05GZA033	Scriber clamp box	**514-102** **514-103** **514-104** **514-105** **514-106** **514-107** **514-108** **514-109**

SPECIFICATIONS

Metric

Code No.	Range (mm)	Minimum reading (mm)	Scale adjustment (mm)	Fine feed (mm)	Maximum permissible error E_{MPE} (mm)*	Height (mm)	Mass (kg)
506-207	0 - 200	0.02	—	4	±0.03	341	1.4
514-102	0 - 300		15		±0.04	525	3.1
514-104	0 - 450				±0.05	675	3.4
514-106	0 - 600			7		870	7.4
514-108	0 - 1000		25	6	±0.07	1340	20

Inch / Metric

Code No.	Range (in)	Minimum reading	Scale adjustment (in)	Fine feed (in)	Maximum permissible error E_{MPE} (in)*	Height (mm)	Mass (kg)
506-208	0 - 8	0.001 in/0.02 mm	—	0.16	±0.001	341	1.4
514-103	0 - 12		0.6		±0.002	525	3.1
514-105	0 - 18					675	3.4
514-107	0 - 24			0.27		870	7.4
514-109	0 - 40		1	0.24	±0.003	1340	20

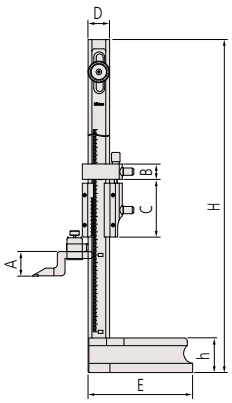
- Reading magnifier (optional): **514-102**, **104**, **106**: **07GZA003**, **514-108**: **07GZA015**

* Maximum permissible error, E_{MPE} is the term (notation) used in JIS B 7517: 2018, revised based on ISO/TR 14253-6: 2012.

DIMENSIONS

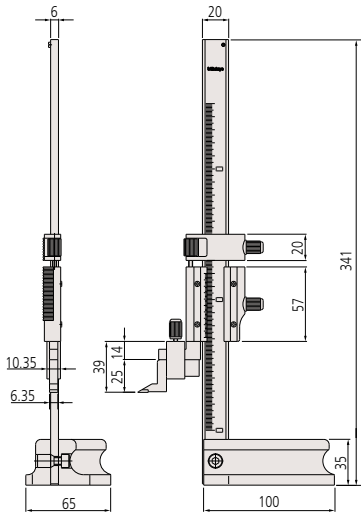
Unit: mm

0 to 300 to 0 to 1000 mm



Range (mm)	A	B	C	D	E	H	h
0 - 300	32	20	70	28	135	525	45
0 - 450						675	
0 - 600		24	85	35	180	870	54
0 - 1000	42	30	110	45	250	1340	65

0 to 200 mm



Mitutoyo

Dial Height Gage
SERIES 192 — with Mechanical Counter

- Easy and error-free reading with both up and down digital counters as well as a dial.
- The counters and dial can be re-zeroed at any scriber position.
- Provided with a feed wheel for easy coarse feeding.
- Carbide-tipped scriber is provided.

192-130

Standard Accessories

Code No.	Description	Models
07ZA000	Scriber	**192-130** **192-131** **192-132** **192-133**
900258	Scriber	**192-150** **192-151** **192-152** **192-153**
05GZA300	Scriber clamp box	**192-130** **192-131** **192-132** **192-133**
901385	Scriber clamp box	**192-150** **192-151** **192-152** **192-153**

SPECIFICATIONS

Metric

Code No.	Range (mm)	Graduation (mm)	Maximum permissible error E_{MPE} (mm)*	Height (mm)	Mass (kg)
192-130	0 - 300	0.01	±0.03	470	4.2
192-131	0 - 450		±0.05	648	9.2
192-132	0 - 600			798	9.8
192-133	0 - 1000		±0.07	1220	17.0

Inch

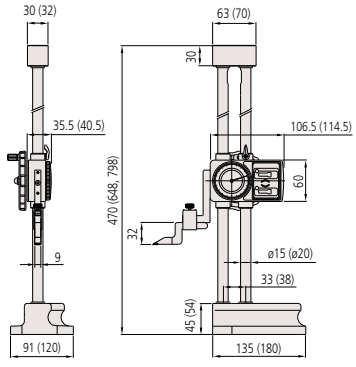
Code No.	Range (in)	Graduation (in)	Maximum permissible error E_{MPE} (in)*	Height (mm)	Mass (kg)
192-150	0 - 12	0.001	±0.0015	470	4.2
192-151	0 - 18		±0.002	648	9.2
192-152	0 - 24			798	9.8
192-153	0 - 40		±0.003	1220	17.0

* Maximum permissible error, E_{MPE} is the term (notation) used in JIS B 7517: 2018, revised based on ISO/TR 14253-6: 2012.

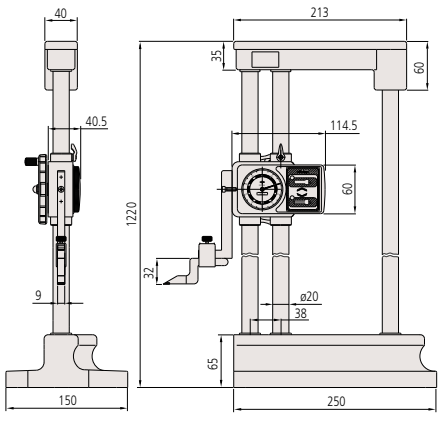
DIMENSIONS

Unit: mm

0 to 300 mm (0 to 450 mm, 0 to 600 mm)



0 to 1000 mm



Height Gage
Optional Accessories for Height Gages

SPECIFICATIONS (Scriber)

Metric

Code No.	Applicable Height Gages
07GZA000	192 Series Digimatic Height Gages (**192-613-10, 192-614-10, 192-615-10**)
	570 Series Digimatic Height Gages (**570-302, 570-304**)
	192 Series Dial Height Gages (**192-130, 192-131, 192-132, 192-133**)
	514 Series Vernier Height Gages (**514-102, 514-104, 514-106, 514-103, 514-105, 514-107**)
	570 Series Digimatic Height Gages (**570-402/404**)
900168	514 Series Vernier Height Gages (**514-160/172**)
905200	192 Series Digimatic Height Gages (**192-663-10, 192-664-10, 192-665-10**)
	570 Series Digimatic Height Gage (**570-230**)
	514 Series Vernier Height Gages (**514-108, 514-109**)
900390	514 Series Vernier Height Gage (**514-170**)

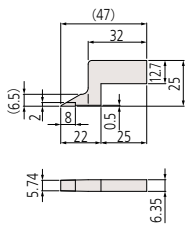
Inch

Code No.	Applicable Height Gages
900173	570 Series Digimatic Height Gages (**570-227, 570-244**)
	506 Series Vernier Height Gages (**506-201/207/204, 506-208**)
900258	192 Series Digimatic Height Gages (**192-630-10, 192-631-10, 192-632-10, 192-633-10**)
	570 Series Digimatic Height Gages (**570-412, 570-413, 570-414**)
	574 Series Heightmatic (**574-212-1, 574-211-1, 574-210-1**)
905201	192 Series Digimatic Height Gages (**192-670-10, 192-671-10, 192-672-10, 192-673-10**)
	570 Series Digimatic Height Gage (**570-248**)

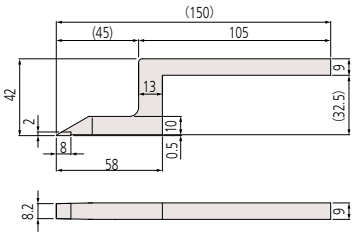
DIMENSIONS (Scriber)

Unit: mm

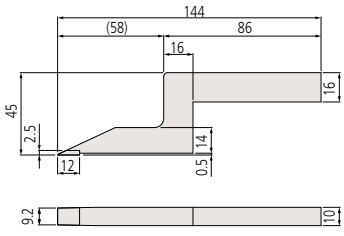
900173



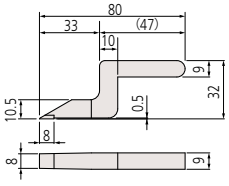
905200



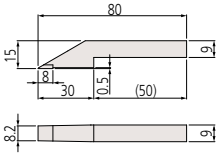
900390



07GZA000



900168



Values in parenthesis are reference dimensions.

Height Gage
Optional Accessories for Height Gages

Dial Test Indicators

• For information about the attachment of dial test indicators, refer to page 07-84.

Contact Sensor

900872

- This is a convenient sensor to be attached to both the workpiece*1 and the height gage*2, giving a lamp display when the scriber touches the workpiece.
  *1 Conductive workpieces only.
  *2 Attach to a conductive part.
- Magnet is incorporated.
- Battery (PR44, 2 pcs. required) is not included.
- Use it on a precision black granite surface plate. (Refer to page 01-51)

Center Probe

951144

- Allows quick measurement of center-to-center distance between holes.
- Measurable hole diameters: 1 to 38 mm
- Mounting bar section: 9×9 mm

Depth Gage Attachment

900764

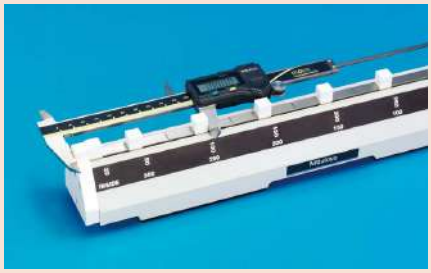
- Attaches to a height gage for measuring groove and hole depth.
- Minimum hole diameter: 5.5 mm
- Maximum distance from the bottom of the holding bar to the contact point: 80 mm (metric type), 2.95 in (inch type)
- Dial indicator contact points are usable. (Refer to pages 07-63 and 07-64.)
- Mounting bar section: 9×9 mm
- Holding bar length: 100 mm

CERA Caliper Checker
SERIES 515

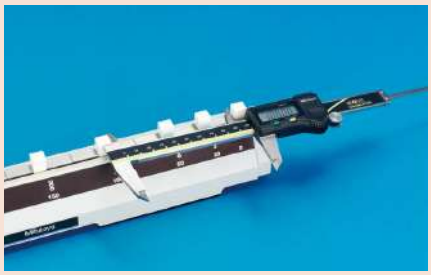
- Designed to inspect calipers.
- Can also stand perpendicular to a surface for height gage inspection.

515-555

Typical applications



Checking accuracy of caliper (outside measurement)



Checking accuracy of caliper (inside measurement)

Checking accuracy of height gage

Optional Accessories

- **602162**: Wooden case for **300 mm**, **12 inch** model
- **602164**: Wooden case for **600 mm** model

SPECIFICATIONS

Metric

Code No.	Range (mm)	Block pitch accuracy*		Parallelism of blocks*		Mass (kg)
		20 - 300 mm	350 - 600 mm	20 - 300 mm	350 - 600 mm	
515-555	0 - 300	±5.0 µm	—	2.0 µm	—	4
515-556-2	0 - 600		±7.0 µm		4.0 µm	8.5

Inch

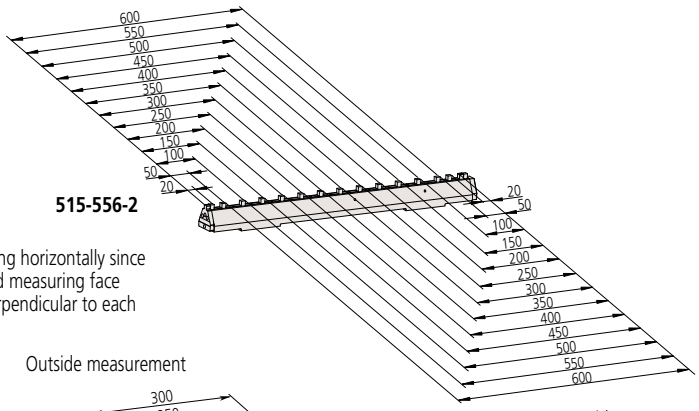
Code No.	Range (in)	Block pitch accuracy*	Parallelism of blocks*	Mass (kg)
		1 - 12 in	1 - 12 in	
515-565	0 - 12	±0.0002 in	0.00008 in	4

* The block accuracy and the parallelism of blocks are based on the following:
- Outside caliper and height gage: lower end reference plane
- Inside caliper: inside reference plane

DIMENSIONS

Unit: mm

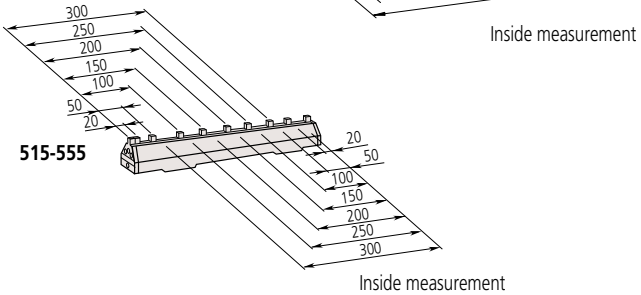
Outside measurement



515-556-2

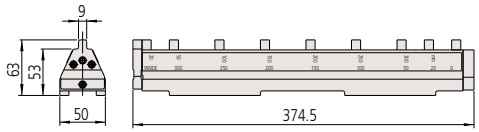
- Be careful when using horizontally since the bottom face and measuring face are not precisely perpendicular to each other.

Outside measurement



Inside measurement

515-555



Inside measurement

515-556-2