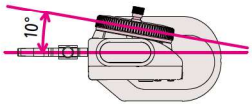
Height Gage

A standard measuring tool of industry

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

MeasurLink® ENABLED
Data Management Software by Mitutoyo

- Double-column structure ensures high measuring accuracy.
- Ergonomic base fits comfortably in the hand.
- 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**.
- Better readability is provided thanks to display of measurement result with a large character height (11 mm) and high-contrast LCD.
- The drive handle is inclined to improve slider operability.
- Allows integration into statistical process control and measurement systems for models with measurement data output connector. (Refer to page A-3.)
- Battery: SR44 (1 pc), **938882**. For initial operational checks (standard accessory)
- Battery life is 3,500 hours in continuous use.
- **192-663-10**, **192-664-10** and **192-665-10** are provided with a long scriber (overall length of 150 mm).
- For precision Black Granite Surface Plates, refer to page E-49.



192-663-10

192-613-10

SPECIFICATIONS

Metric

Order No.	Range (mm)	Resolution (mm)	Maximum Permissible Error* (mm)/E_{MPE}	Max. response speed (mm/s)	Height (mm)	Mass (kg)
192-663-10	0 - 300	0.01/0.005 (selectable)	±0.02	500	510	5.7
192-664-10	0 - 600		±0.04		802	8.3
192-665-10	0 - 1000		±0.06		1228	15.7
192-613-10	0 - 300		±0.02		475	4.7
192-614-10	0 - 600		±0.05		802	8.3
192-615-10	0 - 1000		±0.07		1228	15.7

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

Inch / Metric

Order No.	Range (in)	Resolution	Maximum Permissible Error* (in)/E_{MPE}	Max. response speed (mm/s)	Height (mm)	Mass (kg)
192-670-10	0 - 12	0.01 mm/0.005 mm (selectable) 0.0005 in/0.0002 in (selectable)	±0.001	500	510	5.7
192-671-10	0 - 18		±0.0015		649	7.5
192-672-10	0 - 24		±0.0015		802	8.3
192-673-10	0 - 40		±0.0025		1228	15.7
192-630-10	0 - 12		±0.001		475	4.7
192-631-10	0 - 18		±0.002		649	7.5
192-632-10	0 - 24		±0.002		802	8.3
192-633-10	0 - 40		±0.003		1228	15.7

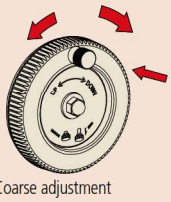
* Maximum Permissible Error, E_{MPE}, is the term (notation) used in JIS B 7517: 2018, revised based on ISO/TR 14253-6: 2012.

MeasurLink® ENABLED Data Management Software by Mitutoyo

Products equipped with the measurement data output function can be connected to the measurement data network system MeasurLink (refer to page A-5 for details).

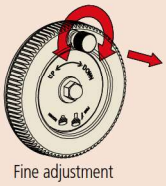
Functions

- 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 A-3.)
- Fine and coarse height adjustment through knob and wheel combination.
  Slider height adjustment wheel allows fine and coarse height adjustment.



Coarse adjustment

Push the small fine-adjustment knob in to disengage gearing and then turn the large wheel.



Fine adjustment

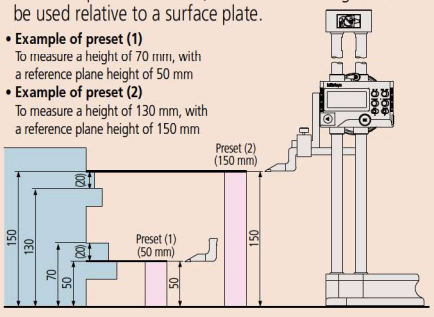
Pull the fine-adjustment knob out to engage gearing and then turn this knob, which then slowly turns the wheel.

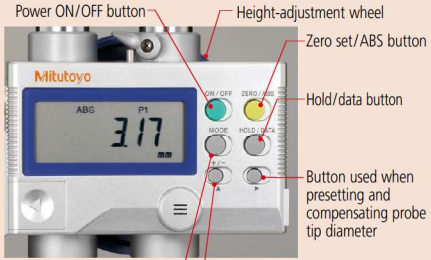
- Low-voltage alert:
  When battery voltage becomes low, a warning appears in the display.
- Probe-tip diameter compensation:
  An adjustment is applied to the raw measurement data to compensate for the effect of the size of the spherical contact point used by the bidirectional touch-trigger probe.

Presetting (2 positions)

- With two preset functions, two reference heights can be used relative to a surface plate.

- **Example of preset (1)**
  To measure a height of 70 mm, with a reference plane height of 50 mm
- **Example of preset (2)**
  To measure a height of 130 mm, with a reference plane height of 150 mm





Preset/probe-tip-diameter compensation mode button

Button used when presetting measuring direction and compensating probe-tip diameter

Note: Probe-tip-diameter compensation mode is a function provided for **192-663-10**/**192-664-10**/**192-665-10**/**192-670-10**/**192-671-10**/**192-672-10**/**192-673-10**.

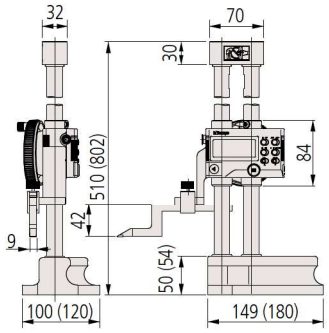
Standard Accessories

- Scriber
  192-663-10, **192-664-10**, **192-665-10**: **905200**
  192-613-10, **192-614-10**, **192-615-10**: **07GZA000**
- Scriber clamp
  05GZA033

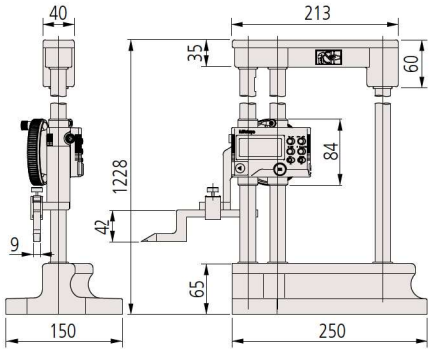
DIMENSIONS

Unit: mm

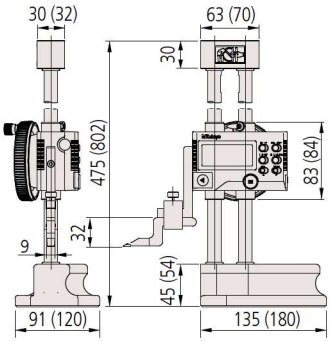
192-663-10, 192-664-10
( ): **192-664-10**



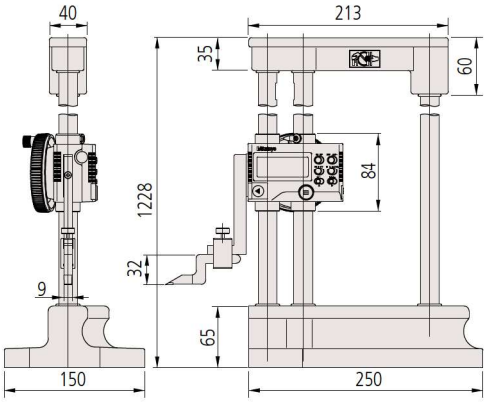
192-665-10



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



192-615-10



Optional Accessory

- **Bidirectional touch-trigger probe**
  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**.

SPECIFICATIONS

Metric

Order No.	Measuring direction	Relay contact type	Probe overtravel (mm)	Probe size (mm)	Repeatability (μm)	Measuring force (N)	Standard accessories
192-007	Bidirectional	Normally Open	1.5	ø3	σ: 2	0.4	Holder arm, Clamp

Inch

Order No.	Measuring direction	Relay contact type	Probe overtravel (mm)	Probe size (mm)	Repeatability (μm)	Measuring force (N)	Standard accessories
192-008	Bidirectional	Normally Open	1.5	ø3	σ: 2	0.4	Holder arm, Clamp

For details of the connecting cable, refer to page A-27, and for the holder arm and clamp, refer to page F-75.

- **Connecting cables for IT / DP / MUX**
  905338: SPC cable (1 m)
  905409: SPC cable (2 m)

- **USB Input Tool Direct**
  06AFM380F: SPC cable for **USB-ITN-F** (2 m)
- **Connecting cables for U-WAVE-T**
  02AZD790F: SPC cable (160 mm)
  02AZE140F: SPC cable for foot switch
- **953638: Holding bar***
- **902053: Swivel clamp***

* A test indicator can be mounted on a height gage using a holding bar and clamp.

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