Linear Height LH-600E

SERIES 518 — High-Performance 2D Measurement System

FEATURES

- Excellent accuracy of (1.1+0.6L/600)µm with 0.1µm/0.5µm resolution/repeatability.
- Perpendicularity (frontal) of 5µm and straightness of 4µm are guaranteed.
- Pneumatic full/semi-floating system allows adjustment of air-cushion height.
- Basic statistical functions are provided and, additionally, RS-232C / USB data output provides the option of evaluating measurement data externally with SPC software on a PC.
- One-key operation for running a semi-automatic measurement.
- Data entry from a Digimatic tool.

With power grip







518-351A-21

SPECIFICATIONS

Inch/Metric

Order No.		518-351A-21	518-352A-21 w/power grip
Model		LH-600E	LH-600EG
Measuring Range (stroke)		0-38" (24") / 0-977mm(600mm)	
Resolution (selectable)		.000001"/.00001"/.0001"/.001"/ 0.0001mm/0.001mm/0.01mm/0.1mm	
Accuracy at 20°C	Measuring accuracy	(.000043 + .000024 x L*/24)" / (1.1 + 0.6L**/600)µm	
	Repeatability (2s)	Plane: .000015"/0.4µm Bore: .000035"/0.9µm	
	Perpendicularity	.0002"/5µm	
	Straightness	.0002"/4µm	
Drive Method		Motor Drive (5, 10, 15, 20, 25, 30, 40mm/s=7 steps) / manual	
Measuring Force		1N	
Balancing Method		Counter balance	
Main Unit Floating Method		Full/semi-floating with air	
Air Source		Built-in air compressor	
LCD		TFT LCD (color)	
Language for Display		English/German/French/Spanish/Italian/Japanese	
Number of Programs		50 (max.)	
Number of Datas		60,000 (max.) 1 program 30,000 (Max.)	
Power Supply		AC Adapter/Battery (Ni-MH)	
Power Consumption		43VA	
Operation Time		Approx. 5 hours	
Standard Accessories		ø5 Eccentric probe (**12AAF634**)	
		Probe diameter calibration block (**12AAA715**)	
		Battery (**12AAF712**)	
		AC adapter (**357651**), Power Cable (**02ZAA010**)	
		Clear Cover (**223587**)	
		Conveying handle (**510434**)	
Mass		24kg	24.5kg

L*=Measuring length (inch) L**=Measuring length (mm)

PROPRIETARY INSPECTION CERTIFICATE

Mitutoyo guarantees the product quality.

Technical Data

Measuring range:	0 - 38" / 0 - 972mm
Slider stroke:	24" / 600mm
Resolution:	.000001" / .00001" / .0001" / .001" or
(switchable)	0.0001 / 0.001 / 0.01 / 0.1mm / 0.0001 / 0.001 / 0.01 / 0.1mm
Accuracy at 20°C:	Refer to the list of specifications
Floating method:	Full / semi-floating with built-in air compressor
Display:	TFT LCD (color)







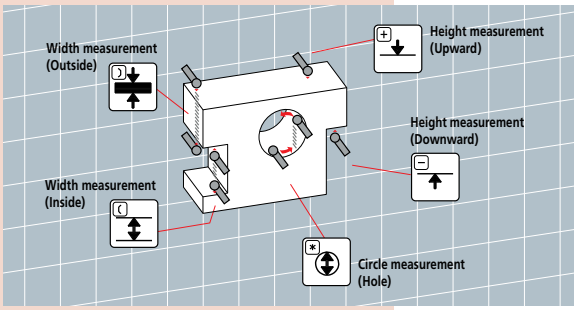
5.7" color LCD

Optional Accessories

12AAF712:	Battery pack
12AAA797	Thermal printer (120V)
12AAA802	Thermal printing paper (10pcs.)
12AAA804	Cable for page printer** (2m)
12AAA807	RS-232C cable (80" / 2m)
12AAA808	RS-232C cable (160" / 4m)

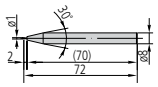




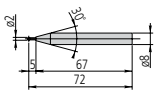


Optional probes and calibration blocks

12AAF666
ø1 ball probe

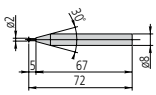


957261
ø2 ball probe

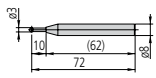


12AAF667
ø2 ruby ball probe

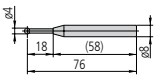




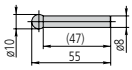
957262
ø3 ball probe



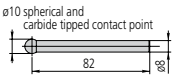
957263
ø4 ball probe



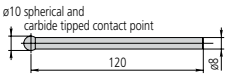
12AAB552
ø10 ball probe, L=55



12AAF668
ø10 ball probe, L=82



12AAF669
ø10 ball probe, L=120

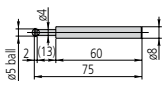


932361
Mu-checker lever head holder
CMM ball and disk hard probes are available.

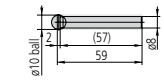
12AAA787
Block for calibrating probe diameter (applicable to taper probe)

K650986
Styli Kit M3

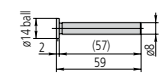
12AAF670
ø5 disk probe



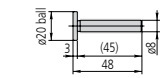
12AAF671
ø10 disk probe



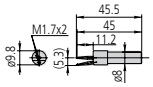
957264
ø14 disk probe



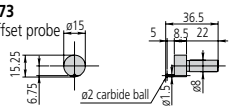
957265
ø20 disk probe



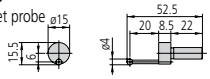
12AAF672
ø1 ball offset probe*
*test indicator stylus (103017)



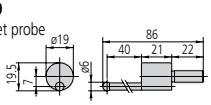
12AAF673
ø2 ball offset probe



12AAA788
ø4 ball offset probe



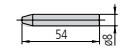
12AAA789
ø6 ball offset probe



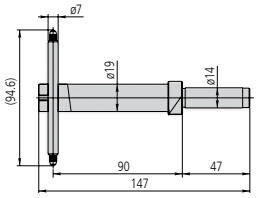
226117
M2 CMM stylus adapter



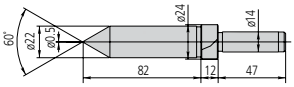
226118
M3 CMM stylus adapter



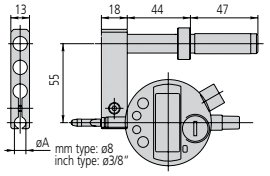
12AAC072 Depth probe



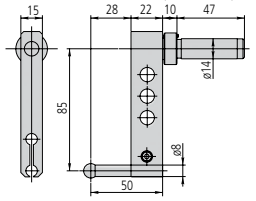
12AAC073 ø20 taper probe



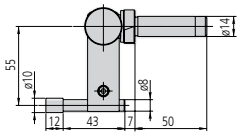
12AAA792 Dial indicator (ø8 stem) holder
12AAA837 Dial indicator (ø3/8"stem) holder



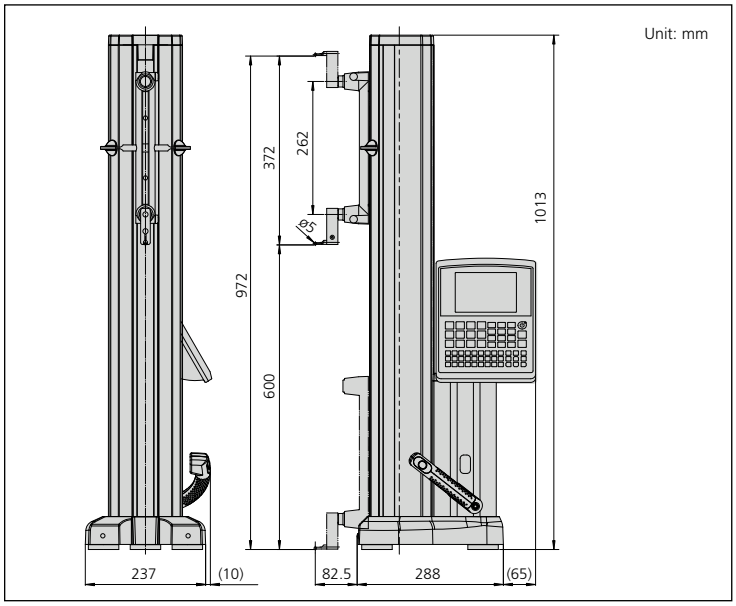
12AAA793 Probe extension holder (85mm/3.3")



12AAB136 ø10 cylindrical probe



DIMENSIONS AND MASS



Mitutoyo

QM-Height

SERIES 518 — High-Precision ABSOLUTE Digital Height Gage

FEATURES

- Newly developed high-accuracy and high-resolution ABSOLUTE linear encoder for position detection.
- Easy reference icon keys.
- Possible to measure inside/outside diameter via unique process (detect the circle apex and process by tracing measurement).
- Various types of optional probes are available.
- Large size LCD.
- Go/no-go judgment is performed by setting the upper and lower tolerances. If a result is out of tolerance, the display changes from green to red, so tolerance judgment can be made at a glance.
- Slider elevation knob (for travel) / wheel (for measurement).
- With SPC and USB output.



64PKA129A

64PKA130A

SPC

ABSOLUTE®
Absolute System Patented by MITUTOYO

Technical Data

Measuring range*:	0 - 18.3″ or 0 - 28.1″ 0 - 465mm or 0 - 715mm
Slider stroke:	14″ / 350mm or 24″ / 600mm
Resolution:	.00005″ / .0001″ / .0002″ / 0.001mm / 0.005mm
Accuracy at 20°C:	Refer to the list of specifications
Guiding method:	Roller bearing
Drive method:	Manual
Length standard:	ABSOLUTE electromagnetic induction-type linear encoder
Measuring force:	1.5±0.5N
Display:	LCD
Power supply:	AC adapter (06AEG180JA) 120V battery (LR6x4)

Battery operation time: Refer to the list of specifications

* Maximum values are obtained with the probe at the highest position. Any change of the probe orientation requires the coordinate system be re-zeroed. With the probe in the highest position, minimum measurable height is 4.53″/115mm.



SPECIFICATIONS

Inch/Metric

Order No.	64PKA094A	64PKA095A	64PKA129A	64PKA130A
Model	QMH-14″A	QMH-24″A	QMH-14″B	QMH-24″B
Range	0 - 14″/ 0-350mm	0 - 24″/ 0-600mm	0 - 14″/ 0-350mm	0 - 24″/ 0-600mm
Resolution	0.001 / 0.005mm /.00005″ / .0001″			
Accuracy at 20°C Accuracy*1	±(2.4+2.1L/600)μm L = Measuring length (mm)			
Repeatability*1	2σ≦1.8μm			
Perpendicularity	7μm	12μm	7μm	12μm
Guiding method	Roller bearing			
Drive method	Manual operation			
Scale type	Electromagnetic induction-type ABSOLUTE linear encoder			
Measuring force	1.5±0.5(N)			
Data output	Digimatic output/USB			
Pneumatic floating system	NA		Included (for movement only)	
Power supply	AC adapter battery / (LR6 x 4) Standard accessory / Nickel metal hydride battery (x4)			
Battery life	Approx. 300 hours (Not using pneumatic floating system)			
	Approx. 80 hours (Using pneumatic floating system regularly)			
Standard accessories	Stepped probe (05HZA148) Probe diameter calibration block (12AAA715) LR6 Battery / AC Adapter (06AEG180JA) 120V			
Mass	55.16 lbs (25kg)	63.93 lbs (29kg)	57.32 lbs (26kg)	66.14 lbs (30kg)
Dimensions	41.85″x21.85x18.94″ 1063(W)x555(D)x481(H)	51.02″x21.85x18.94″ 1296(W)x555(D)x481(H)	41.85″x21.85x18.94″ 1063(W)x555(D)x481(H)	51.02″x21.85x18.94″ 1296(W)x555(D)x481(H)
Main Unit	518-231	518-233	518-235	518-237

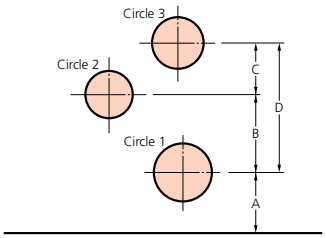
*1 Guaranteed when using the standard eccentric ø5 probe.

Optional Accessories

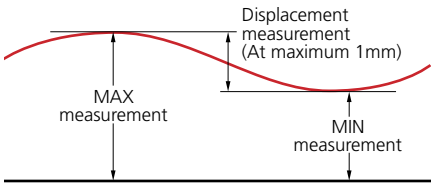
12AAC072: Depth probe
12AAA792: Dial indicator (ø8mm stem) holder
12AAA837: Dial indicator (ø3/8"stem) holder
12AAA793: Probe extension holder (3.3" / 85mm)
12AAF667: ø2mm ruby ball probe
957261: ø2mm ball probe
957262: ø3mm ball probe
957263: ø4mm ball probe
05HAA394: ø5mm ball probe (for 05HZA148)
12AAB552: ø10 mm ball probe, L=55mm
12AAF670: ø5mm ball probe
12AAF671: ø10mm ball probe
957264: ø14mm disk probe
957265: ø20mm disk probe
12AAA788: ø4mm ball offset probe
05HAA394: ø5mm ball offset probe
12AAA789: ø6mm ball offset probe
05HZA173: Scriber
264-504-5A: DP-1VR
936937: SPC cable (40" / 1m)
965014: SPC cable (80" / 2m)

Circle pitch measurement

The length A, B, C and D can be determined by measuring circles 1 to 3 once each, using the memory of measuring data together with the calculation function. (A maximum of nine circle measurements can be saved.)

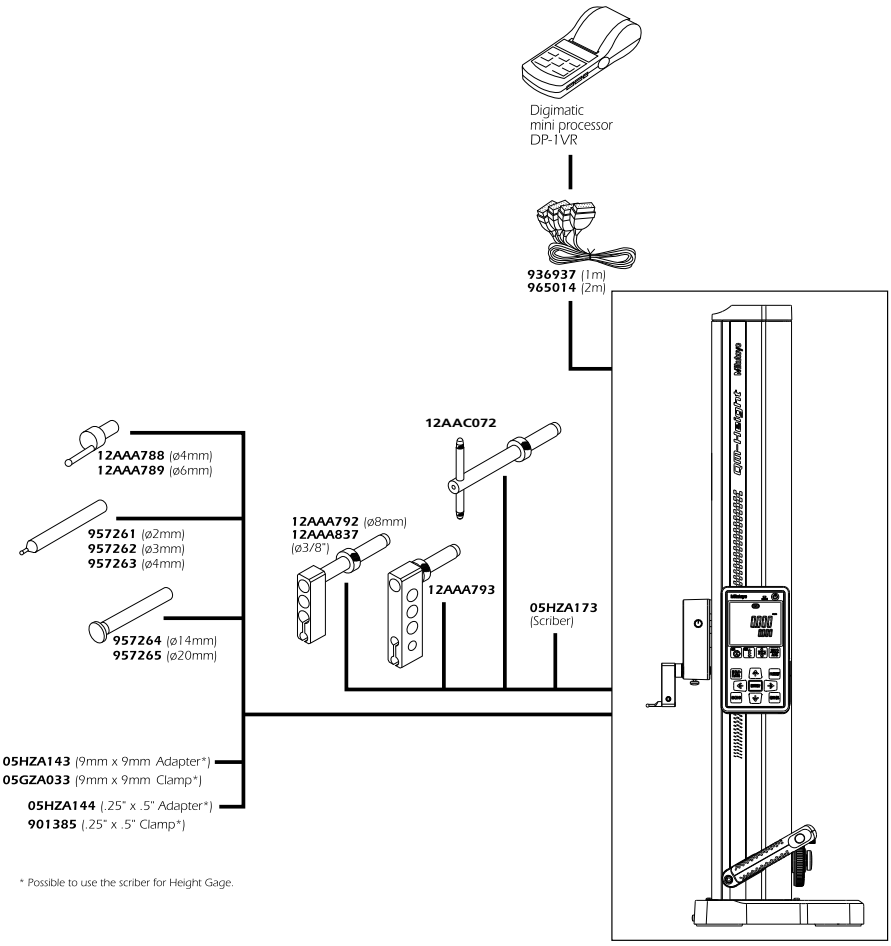


Maximum/minimum and displacement measurement

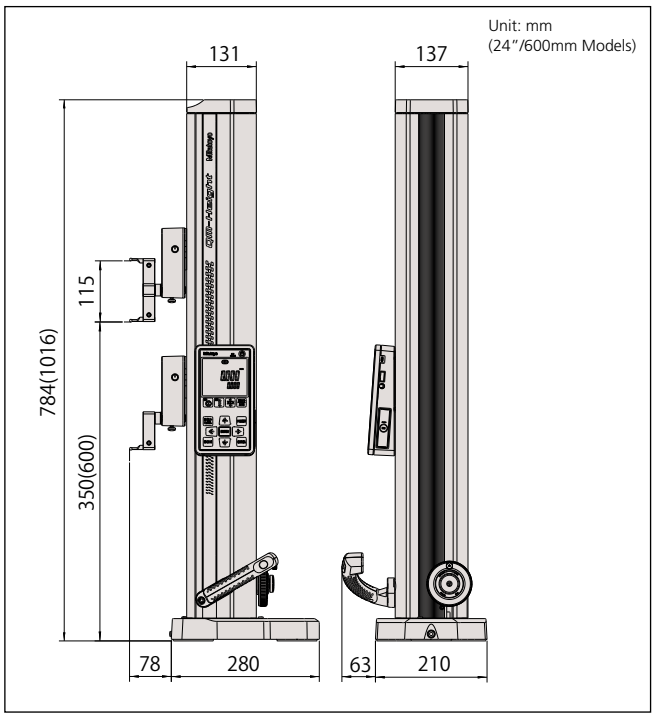




Inside diameter measurement



DIMENSIONS



Digimatic Height Gage

SERIES 192 — Multi-Function Type with SPC Data Output

FEATURES

- Highly versatile multi-function type.
- Carbide-tipped long scriber is provided.
- Rigid construction ensures repeatable measurement.
- Switchable resolution (.0002"/0.005mm or .0005"/0.01mm)
- Coarse/fine feed switching.
- Bi-directional touch-signal probe is an optional accessory. It can quickly and accurately measure steps, inside width and outside width.
- With SPC data output.
- Two preset reference heights.



192-670-10

SPECIFICATIONS

Inch/Metric

Range	Order No.	Accuracy	Resolution	Mass (kg)
0-12"/0-300mm	**192-670-10**	±001"	.0005"(0.01mm) [.0002"(0.005mm) Switchable)]	5.7
0-18"/0-450mm	**192-671-10**	±0015"	.0005"(0.01mm) [.0002"(0.005mm) Switchable)]	7.5
0-24"/0-600mm	**192-672-10**	±0015"	.0005"(0.01mm) [.0002"(0.005mm) Switchable)]	8.3
0-40"/0-1000mm	**192-673-10**	±0025"	.0005"(0.01mm) [.0002"(0.005mm) Switchable)]	15.7

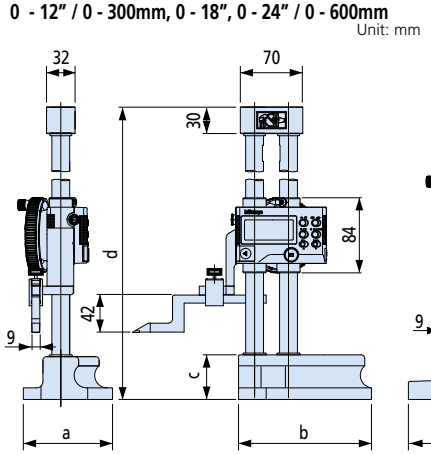
Metric

Range	Order No.	Accuracy	Resolution	Mass (kg)
0-300mm	**192-663-10**	±0.02mm	Switchable between 0.01mm and 0.005mm	5.7
0-600mm	**192-664-10**	±0.04mm	Switchable between 0.01mm and 0.005mm	8.3
0-1000mm	**192-665-10**	±0.06mm	Switchable between 0.01mm and 0.005mm	15.7

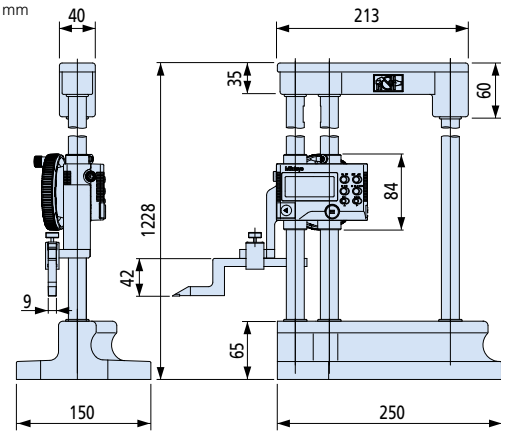
DIMENSIONS

0 - 12" / 0 - 300mm, 0 - 18", 0 - 24" / 0 - 600mm

Unit: mm



0 - 40" / 0 - 1000mm



Range	a	b	c	d
0-12"/ 0-300mm	100	149	50	510
0-18"/ 0-450mm	120	180	54	649
0-24"/ 0-600mm	120	180	54	802

SPC

Technical Data

Accuracy: Refer to the list of specifications
Resolution: 0.01+0.005mm or 0.0005"(0.01mm) [0.0002"(0.005mm) switchable]
Display: LCD, 7-digits, character height 11mm
Max. response speed: 500mm/s
Battery: SR44 (1 pc.), **938882**
Battery life: Approx. 2000 hours under normal use

Function

Zero-setting, ABS/INC switching, Two presets, Probe tip diameter compensation, -/+ switching, Power ON/OFF, Data hold, Data output,
inch/mm conversion (on inch/metric models only)
Alarm: Low voltage, Counting value composition error

Standard Scriber Provided

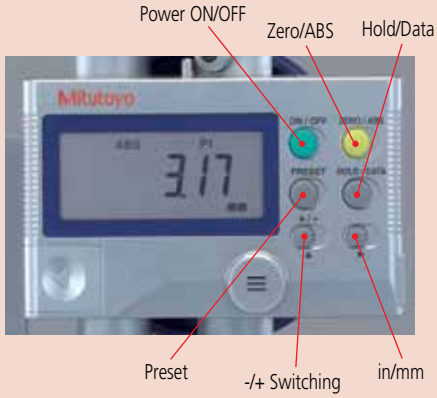
Metric models: Carbide-tipped scriber (**905200**) and scriber clamp (**05GZA033**)
Inch/Metric models: Carbide-tipped scriber (**905201**) and scriber clamp (**901385**)

Optional Accessories

905338: SPC cable (40" / 1m)
905409: SPC cable (80" / 2m)
905691: SPC cable (L-shape, 40" / 1m)
905692: SPC cable (L-shape, 80" / 2m)
192-007: Bi-directional touch-signal probe (metric)
192-008: Bi-directional touch-signal probe (inch)
953638: Holding bar for test indicator (length: 50mm)
900209: Holding bar for test indicator (length: 100mm)
953639: Holding bar for test indicator (length: 2")
900306: Holding bar for test indicator (length: 4")
900321: Swivel clamp used with holding bar (metric)
900322: Swivel clamp used with holding bar (inch)



Shown with optional touch-signal probe



SPC

Digimatic Height Gage

SERIES 192 — Standard Type with SPC Data Output

FEATURES

- Switchable resolution (.0002"/0.005mm or .0005"/0.01mm)
- Easy-to-use standard type.
- Carbide-tipped scriber is provided.
- Double-column structure ensures high measuring accuracy.
- Coarse/fine feed switching.
- Two preset reference heights.

Technical Data

Accuracy: Refer to the list of specifications
Resolution: .0005"(0.01mm) [.0002"(0.005mm)] or 0.01mm and 0.005mm
Display: LCD, 7-digit, character height 11mm
Max. response speed: 500mm/s
Battery: SR44 (1 pc.), **938882**
Battery life: Approx. 2000 hours under normal use

Function

Zero-setting, ABS/INC switching, Two presets, Probe tip diameter compensation, -/+ switching, Power ON/OFF, Data hold, With Output,
inch/mm conversion (on inch/metric models only)
Alarm: Low voltage, Counting value composition error

Standard Scriber Provided

Metric models: Carbide-tipped scriber (**07GZA000**) and scriber clamp (**05GZA033**)
Inch/Metric models: Carbide-tipped scriber (**900258**) and scriber clamp (**901385**)

Optional Accessories

953638: Holding bar for test indicator (length: 50mm)
900209: Holding bar for test indicator (length: 100mm)
953639: Holding bar for test indicator (length: 2")
900306: Holding bar for test indicator (length: 4")
900321: Swivel clamp used with holding bar (metric)
900322: Swivel clamp used with holding bar (inch)
905338: SPC cable (CD type) 1m
905409: SPC cable (CD type) 2m
905691: CD/Connecting cable L-Type 1m RIG
905692: CD/Connecting cable L-Type 2m RIG



192-630-10

SPECIFICATIONS

Inch/Metric

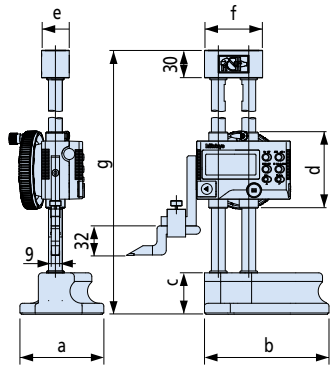
Range	Order No.	Accuracy	Resolution	Mass (kg)
0-12"/0-300mm	**192-630-10**	±001"	.0005"(0.01mm) [.0002"(0.005mm) Switchable)]	4.7
0-18"/0-450mm	**192-631-10**	±002"	.0005"(0.01mm) [.0002"(0.005mm) Switchable)]	7.5
0-24"/0-600mm	**192-632-10**	±002"	.0005"(0.01mm) [.0002"(0.005mm) Switchable)]	8.3
0-40"/0-1000mm	**192-633-10**	±003"	.0005"(0.01mm) [.0002"(0.005mm) Switchable)]	15.7

Metric

Range	Order No.	Accuracy	Resolution	Mass (kg)
0-300mm	**192-613-10**	±0.02mm	Switchable between 0.01mm and 0.005mm	4.7
0-600mm	**192-614-10**	±0.05mm	Switchable between 0.01mm and 0.005mm	8.3
0-1000mm	**192-615-10**	±0.07mm	Switchable between 0.01mm and 0.005mm	15.7

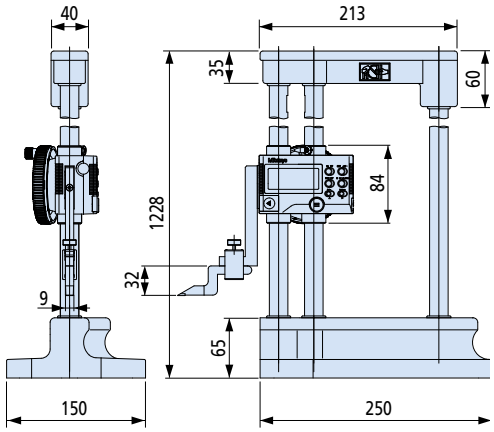
DIMENSIONS

0 - 12" / 0 - 300mm, 0 - 18", 0 - 24" / 0 - 600mm



0 - 40" / 0 - 1000mm

Unit: mm



Range	a	b	c	d	e	f	g
0-12"/ 0-300mm	91	135	45	83	30	63	475
0-18"/ 0-450mm	120	180	54	84	32	70	649
0-24"/ 0-600mm	120	180	54	84	32	70	802

Mitutoyo

ABSOLUTE Digimatic Height Gage

SERIES 570 — with ABSOLUTE Linear Encoder

FEATURES

- Built-in ABSOLUTE linear encoder
  This encoder eliminates the necessity of setting the reference point at every power-on. It has improved reliability because no over-speed error will occur.
- Fine-adjustment carriage for smooth movement.
- Carbide-tipped scriber is provided.
- With SPC data output.



Technical Data

Accuracy: Refer to the list of specifications
Resolution: .0005"/ 0.01mm or 0.01mm
Display: LCD, 6-digit
Length standard: ABSOLUTE electrostatic capacitance type linear encoder
Max. response speed: Unlimited
Battery: SR44 (1 pc.), **938882**
Battery life: Approx. 5000 hours under normal use

Function

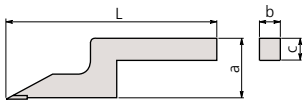
Origin setting, ABS/INC switching, Presetting, -/+ switching, Data hold, Data output,
inch/mm conversion (on inch/metric models only)
Alarm: Low voltage, Counting value composition error

Standard Scriber Provided

Metric models: Carbide-tipped scriber (**900173/905200***) and scriber clamp (**901338/05GZA033***)
*0 - 1000mm model
Inch/Metric models: Carbide-tipped scriber (**900173/905201***) and scriber clamp (**901338/901385***)
*0 - 40" model

Dimension of scriber

Unit: mm



Parts No.	L	a	b	c
900173	47	25	6.35	12.7
905200	150	42	9	9
905201	150	45.7	6.35	12.7

Optional Accessories

905338: SPC cable (40" / 1m)
905409: SPC cable (80" / 2m)
953638: Holding bar for test indicator (length: 50mm)
953639: Holding bar for test indicator (length: 2")
902053: Swivel clamp used with holding bar (metric)
900322: Swivel clamp used with holding bar (inch)

SPECIFICATIONS

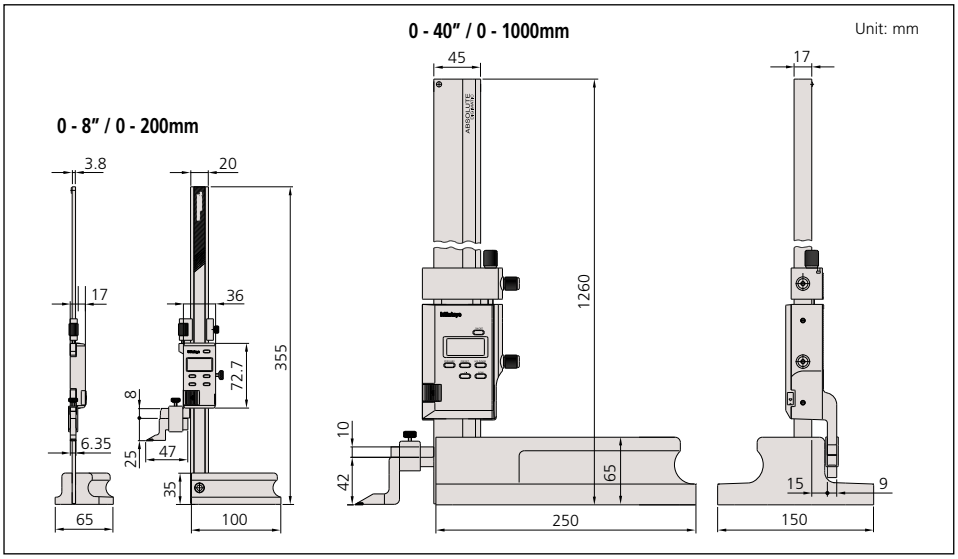
Metric

Range	Order No.	Accuracy	Resolution	Mass (kg)
0 - 200mm	**570-227**	±0.03mm	0.01mm	1.4
0 - 1000mm	**570-230**	±0.07mm	0.01mm	16.8

Inch/Metric

Range	Order No.	Accuracy	Resolution	Mass(kg)
0 - 8" / 0 - 200mm	**570-244**	±.001"	.0005" / 0.01mm	1.4
0 - 40" / 0 - 1000mm	**570-248**	±.003"	.0005" / 0.01mm	16.8

DIMENSIONS



ABSOLUTE Digimatic Height Gage

SERIES 570 — with ABSOLUTE Linear Encoder

FEATURES

- Built-in ABSOLUTE linear encoder
  This encoder eliminates the necessity of setting the reference point at every power-on. It has improved reliability because no over-speed error will occur.
- Rigid column structure ensures high measuring accuracy.
- With large, smooth slider-feed wheel.
- Carbide-tipped scriber is provided.
- With SPC data output.





SPECIFICATIONS

Metric

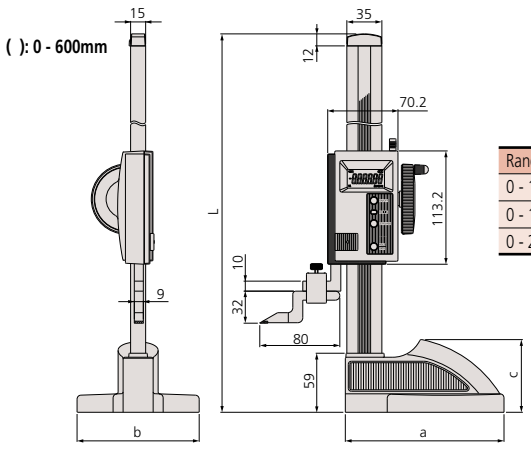
Range	Order No.	Accuracy	Resolution
0 - 300mm	**570-302**	±0.03mm	0.01mm
0 - 600mm	**570-304**	±0.05mm	0.01mm

Inch/Metric

Range	Order No.	Accuracy	Resolution
0 - 12" / 0 - 300mm	**570-312**	±.0015"	.0005" / 0.01mm
0 - 18" / 0 - 450mm	**570-313**	±.002"	.0005" / 0.01mm
0 - 24" / 0 - 600mm	**570-314**	±.002"	.0005" / 0.01mm

DIMENSIONS AND MASS

Unit: mm



Range	L	a	b	c	Mass (kg)
0 - 12" / 300mm	507	160	122	72.6	4.6
0 - 18" / 450mm	662	181	142	74.1	5.9
0 - 24" / 600mm	812	181	142	74.1	6.4

SPC

ABSOLUTE® Absolute System Patented by MITUTOYO

Technical Data

Accuracy: Refer to the list of specifications
Resolution: .0005"/0.01mm or 0.01mm
Display: LCD, 6-digit
Length standard: ABSOLUTE electrostatic capacitance-type linear encoder
Max. response speed: Unlimited
Battery: SR44 (1 pc.), **938882**
Battery life: Approx. 20000 hours under normal use

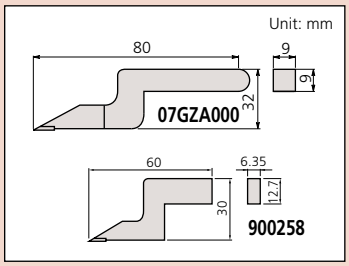
Function

Origin setting, ABS/INC switching, Power ON/OFF, Data hold, Data output,
inch/mm conversion (on inch/metric models only)
Alarm: Low voltage, Counting value composition error

Standard Scriber Provided

Metric models: Carbide-tipped scriber (**07GZA000**), scriber clamp (**05GZA033**)
Inch/Metric models: Carbide-tipped scriber (**900258**), scriber clamp (**901385**)

Dimension of scriber



Optional Accessories

905338: SPC cable (40" / 1m)
905409: SPC cable (80" / 2m)
953638: Holding bar for test indicator (length: 50mm)
953639: Holding bar for test indicator (length: 2")
902053: Swivel clamp used with holding bar (metric)
900322: Swivel clamp used with holding bar (inch)


Large, smooth slider-feed wheel


Large clamp lever


Comfortable grip base