

Height Master

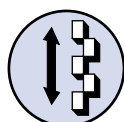
SERIES 515

FEATURES

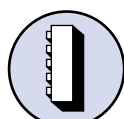
- Models with staggered arrangement of block stack have two measuring faces on the same level, one facing up and the other down (except for **515-311**).
- Each Height Master is supplied with a gauge block for zero-setting.
- Fitted wooden case supplied.



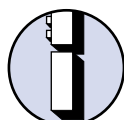
515-322



Staggered 20mm blocks (movable)



Vertical orientation



Riser block



SPECIFICATIONS

Metric		
Range (H)	Order No.	Block step
$5 < H \leq 310\text{mm}$	515-322	20mm (staggered)

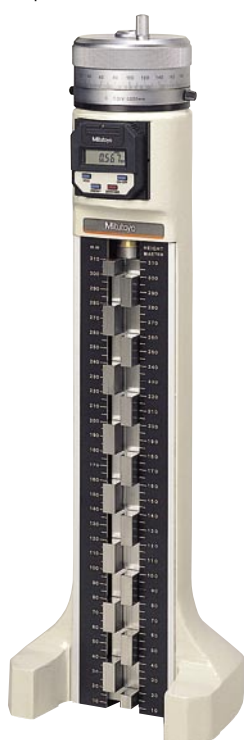
Inch		
Range (H)	Order No.	Block step
$.2" < H \leq 12.2"$	515-311	.5" (straight)
$.2" < H \leq 12.2"$	515-310	1" (staggered)

Digital Height Master

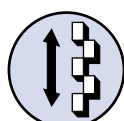
SERIES 515

FEATURES

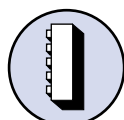
- Standard model with a digital display, featuring all essential specifications required for versatile height standard.
- With SPC output.
- Each Height Master is supplied with a gauge block for zero setting.



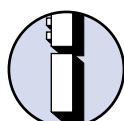
515-354



Staggered 20mm blocks (movable)



Vertical orientation



Riser block



SPECIFICATIONS

Metric		
Range (H)	Order No.	Block step
$10 < H \leq 310\text{mm}$	515-354	20mm (staggered)
$10 < H \leq 460\text{mm}$	515-356	20mm (staggered)
$10 < H \leq 610\text{mm}$	515-358	20mm (staggered)

Inch		
Range (H)	Order No.	Block step
$.5" < H \leq 12"$	515-355	1" (staggered)
$.5" < H \leq 18"$	515-357	1" (staggered)
$.5" < H \leq 24"$	515-359	1" (staggered)



(Refer to the page 9 for details.)

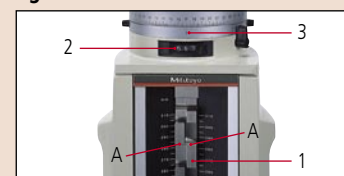
Technical Data

Measuring range (H): Refer to the list of specifications.
 Graduation: 0.001mm or .00001"
 Block arrangement: Staggered arrangement (515-311: straight arrangement)
 Block travel stroke: 20mm or 1"
 Block feeding pitch: 0.5mm/rev or .025"/rev
 Block pitch accuracy: $\pm 1.5\mu\text{m}$
 Parallelism of blocks: 1 μm
 Block feeding error: $\pm 1\mu\text{m}$
 Block retracing error: 1 μm
 Mass: 23kg

Optional Accessory

515-112: Auxiliary block kit for bore gage (mm)
515-119: Auxiliary block kit for bore gage (for **515-310**)
515-121: Auxiliary block kit for bore gage (for **515-311**)
 ———: Riser block (see page 213.)

Reading



Height A

1. Scale	280. mm
2. Counter	5.67 mm
3. Thimble	0.000 mm
	<u>285.670 mm</u>



(Refer to the page 9 for details.)

Technical Data

Measuring range (H): Refer to the list of specifications.
 Graduation: 0.001mm or .00001"
 Block arrangement: Staggered arrangement
 Block travel stroke: 20mm or 1"
 Block feeding pitch: 0.5mm/rev or .025"/rev
 Block pitch accuracy: $\pm 1.5\mu\text{m}$ ($0 < H \leq 310\text{mm}$)
 $\pm 2.5\mu\text{m}$ ($310 < H \leq 450\text{mm}$)
 $\pm 3.5\mu\text{m}$ ($450 < H \leq 610\text{mm}$)
 Parallelism of blocks: 2.0 μm ($0 < H \leq 310\text{mm}$)
 2.5 μm ($310 < H \leq 610\text{mm}$)
 Block feeding error: $\pm 2.0\mu\text{m}$ (**515-358, 515-359**: $\pm 2.5\mu\text{m}$)
 Block retracing error: 2.0 μm (**515-358, 515-359**: 2.5 μm)
 Display: LCD
 Battery: SR44 (2 pcs.), **938882**
 Battery life: Approx. 1.8 years under normal use
 Mass: 9.5kg (**515-354, 515-355**)
 13.6kg (**515-356, 515-357**)
 16kg (**515-358, 515-359**)

Function

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

Optional Accessory

515-112: Auxiliary block kit for bore gage (mm)
515-119: Auxiliary block kit for bore gage (inch)
 ———: Riser block (see page 213.)
937387: SPC cable (1m)
965013: SPC cable (2m)



(Refer to the page 9 for details.)

Technical Data

Measuring range (H): Refer to the list of specifications.
 Graduation: 0.0001mm or .000005"
 Block arrangement: Staggered arrangement
 Block travel stroke: 20mm or 1"
 Indication accuracy: $\pm 1\mu\text{m}$
 Block pitch accuracy: $\pm 0.5\mu\text{m}$
 Parallelism of blocks: 0.5 μm
 Block feeding error: $\pm 0.5\mu\text{m}$
 Display: LED
 Power supply: Via AC adaptor
 Mass: 18kg

Function

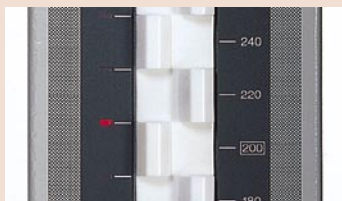
Zero-setting, Presetting, ABS/INC switching, Data hold, Data output, inch/mm conversion (inch/mm models)

Optional Accessory

—: Riser block (see page 213.)
936937: SPC cable (1m)
965014: SPC cable (2m)
940269: RS-232C interface unit



LED display



LED block indication



Bore gage zero-setting



CERA Height Master

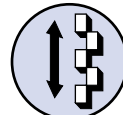
SERIES 515

FEATURES

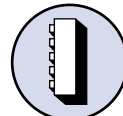
- The measuring blocks are made from a zirconia-based ceramic material which is highly resistant to corrosion and wear, and free from deterioration over time.



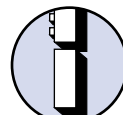
515-341



Staggered 20mm blocks (movable)



Vertical orientation



Riser block

- The CERA Height Master features the staggered arrangement of block stack which has two measuring faces on the same level, one facing up and the other facing down.
- With SPC output.
- Fitted wooden case supplied.

SPECIFICATIONS

Metric

Range (H)	Order No.*	Block step
$5 < H \leq 310\text{mm}$	515-342	20mm (staggered)

Inch

Range (H)	Order No.*	Block step
$.2" < H \leq 12"$	515-352	1" (staggered)

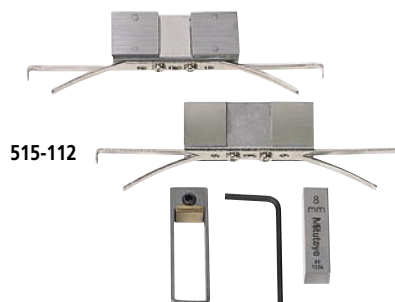
*To denote your AC line voltage add the following suffixes to the order No. (e.g.: **515-341A**):
A for 120V, **D** for 220V, **DC** for 220V (CCC), **K** for 220V (EK),
E for 240V, **No suffix** is required for 100V

Auxiliary Block Kit

SERIES 515 — for Bore Gage

FEATURES

- Used for efficient zero-setting of dial bore gages and tubular inside micrometers (18 - 150mm) on a Height Master.



515-112

SPECIFICATIONS

Metric

Order No.	Applicable height master
515-110	Universal Height Master
515-111	Digimatic Height Master
515-112	Height Master

Inch

Order No.	Applicable height master
515-119	Universal Height Master, Height Master (515-311)
515-120	Digimatic Height Master
515-121	Height Master (515-310)

Riser Blocks

SERIES 515

FEATURES

- These riser blocks are specially designed for standard/Digimatic height masters.



515-113 515-114 515-115

SPECIFICATIONS

Metric

Height	Order No.	Accuracy of height	Mass
150mm	515-113	$\pm 0.6\mu\text{m}$	5.7kg
300mm	515-114	$\pm 1.0\mu\text{m}$	11.3kg
600mm	515-115	$\pm 2.0\mu\text{m}$	31kg

Inch

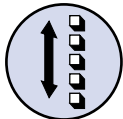
Height	Order No.	Accuracy of height	Mass
6"	515-116	$\pm 20\mu\text{in}$	12.5 lbs.
12"	515-117	$\pm 40\mu\text{in}$	24.9 lbs.
24"	515-118	$\pm 80\mu\text{in}$	68.2 lbs.

Universal Height Master

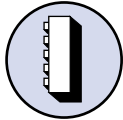
SERIES 515 — Usable in Vertical and Horizontal Orientations

FEATURES

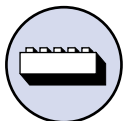
- The Universal Height Master is designed for both vertical and horizontal orientations, providing a wide range of applications such as accuracy checking of machine tool table movements.
- Fitted wooden case supplied.



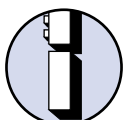
Single-row 10mm blocks (movable)



Vertical orientation



Horizontal orientation



Riser block

515-520

SPECIFICATIONS

Metric		
Range (R)	Order No.	Block step
5 < R ≤ 610mm	515-520	10mm (straight)
5 < R ≤ 1010mm	515-523	10mm (straight)

Inch		
Range (R)	Order No.	Block step
.2" < R ≤ 18.2"	515-512	.5" (straight)
.2" < R ≤ 24.2"	515-510	.5" (straight)
.2" < R ≤ 40.2"	515-513	.5" (straight)



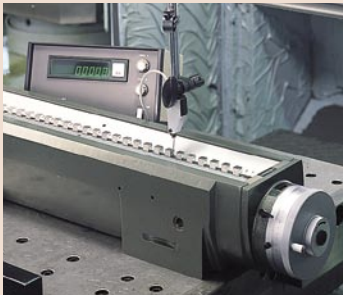
(Refer to the page 9 for details.)

Technical Data

Measuring range (R): Refer to the list of specifications.
 Graduation: 0.001mm or .00001"
 Block arrangement: Straight arrangement
 Block travel stroke: 20mm or 1"
 Block feeding pitch: 0.5mm/rev or .025"/rev
 Block pitch accuracy: ±1.5µm (0 < R ≤ 310mm)
 ±2.5µm (310 < R ≤ 610mm)
 ±3.5µm (610 < R ≤ 1010mm)
 Parallelism of blocks: 1.0µm (0 < R ≤ 310mm)
 2.5µm (310 < R ≤ 1010mm)
 Block feeding error: ±1.2µm (515-523, 515-513: ±1.5µm)
 Block retracing error: 1.2µm (515-523, 515-513: 1.5µm)
 Mass: 42kg (515-520, 515-512)
 50kg (515-510)
 63.5kg (515-523, 515-513)

Optional Accessory

- 900574: Supporting base for vertical operation
 (*supplied as a standard for 515-523 and 515-513)
 515-112: Auxiliary block kit for bore gage (mm)
 515-119: Auxiliary block kit for bore gage (inch)



Using in horizontal orientation



Supporting base

Square Master

SERIES 311 — Squareness / Straightness Measuring Instrument

Technical Data

Squareness:	3μm (311-215, 311-216)
	6μm (311-225, 311-226)
	9μm (311-245, 311-246)
Straightness:	2μm (311-215, 311-216)
	2.5μm (311-225, 311-226)
	3.5μm (311-245, 311-246)
Dial test indicator provided	
Range:	0.2mm or .008"
Graduation:	0.002mm or .0001"
Accuracy:	3μm or ±.0001"
Dial reading:	0-100-0 (metric) or 0-4-0 (inch)
Mass:	13.7kg, 30.14 lbs (311-215, 311-216)
	16.2kg, 35.64 lbs (311-225, 311-226)
	24kg 52.8 lbs (311-245, 311-246)

Optional Accessory

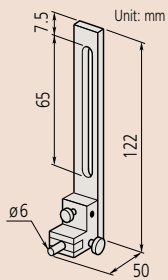
—	Riser blocks (see page 213.)*
517-665:	Granite square, 45 (W) x 140 (D) x 280 (H) mm
900571:	Adjustable holder
900551:	Extension holder
900565:	Feeler**

*Not available for 450mm (18") model.

**Adapter (902803) is required for metric model.

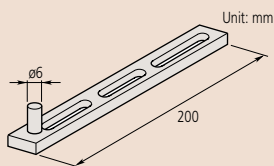
Adjustable holder

No.900571



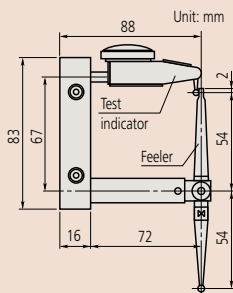
Extension holder

No.900551



Feeler

No.900565



FEATURES

- Squareness (perpendicularity) and straightness measurements can be performed accurately and efficiently by moving a lever.
- With a dial test indicator for reading displacements.
- Its own squareness is adjustable for high accuracy measurement.



311-215



311-225



311-245

SPECIFICATIONS

Metric			
Vertical travel	Order No.	Squareness	Straightness
150mm	311-215	3μm	2μm
250mm	311-225	6μm	2.5μm
450mm	311-245	9μm	3.5μm

Inch			
Vertical travel	Order No.	Squareness	Straightness
6"	311-216	.00012"	.00008"
10"	311-226	.00024"	.0001"
18"	311-246	.00036"	.00014"

