

Depth Micrometers
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Depth Calipers and Depth Gauges
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Depth Caliper Accessories
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Depth Micrometers without Interchangeable Rods

Specifications

Measuring face	Hardened, precision ground, micro-lap finish
Measuring span	25 mm
Base	Hardened tool steel
Scale	Thimble and sleeve satin chrome finish, \varnothing 18 mm
Measuring force	5-10 N
Spindle pitch	0,5 mm
Delivered	Including box and key



Series 128

This Depth Micrometer offers you the following benefits:

- \varnothing 4 mm measuring rod.
- Ratchet stop provides you with constant measuring force.
- Measuring rod lock.
- Carbide-tipped measuring rod model is available.



128-101



128-102

Metric

No.	Range [mm]	Graduation	Max. Permissible Error E MPE	Flatness base	Flatness rod	Parallelism base/rod	Base (W x T)	Mass [g]
128-101	0-25	0,01 mm	$\pm 3 \mu\text{m}$	1,3 μm	0,3 μm	5 μm	63,5 x 16 mm	200
128-102	0-25	0,01 mm	$\pm 3 \mu\text{m}$	2 μm	0,3 μm	5 μm	101,6 x 16 mm	250

Metric

Carbide-tipped measuring rod

No.	Range [mm]	Graduation	Max. Permissible Error E MPE	Flatness base	Flatness rod	Parallelism base/rod	Base (W x T)	Mass [g]
128-103	0-25	0,01 mm	$\pm 3 \mu\text{m}$	1,3 μm	0,3 μm	5 μm	63,5 x 16 mm	200
128-104	0-25	0,01 mm	$\pm 3 \mu\text{m}$	2 μm	0,3 μm	5 μm	101,6 x 16 mm	250

Depth Micrometers with Interchangeable Rods

Series 129

This interchangeable rod type micrometer can be used for wide range measurements. It offers you the following benefits:

- $\varnothing 4$ mm interchangeable rods, with lapped measuring surfaces, enable you to make wide-range measurement.
- The ratchet stop provides constant measuring force.
- Measuring rod lock.



129-110

Specifications

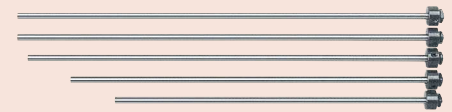
Measuring span	25 mm
Spindle pitch	0,5 mm
Measuring face	Hardened, precision ground, micro-lap finish
Base	Hardened tool steel
Scale	Thimble and sleeve satin chrome finish $\varnothing 18$ mm
Measuring force	5-10 N
Delivered	Including box and key



Metric

Base 101,6 x 16 mm

No.	Range [mm]	Graduation	Spindle feed error [μ m]	Zero point errors of rods	Flatness base	Flatness rod	Parallelism base/rod	Number of rods	Mass [g]
129-155	0-25	0,01 mm	3	$\pm 3 \mu$ m	2 μ m	0,3 μ m	5 μ m	1	290
129-113	0-50	0,01 mm	3	$\pm 3 \mu$ m	2 μ m	0,3 μ m	5 μ m	2	310
129-114	0-75	0,01 mm	3	$\pm 3 \mu$ m	2 μ m	0,3 μ m	6 μ m	3	330
129-115	0-100	0,01 mm	3	$\pm 4 \mu$ m	2 μ m	0,3 μ m	6 μ m	4	355
129-116	0-150	0,01 mm	3	$\pm 4 \mu$ m	2 μ m	0,3 μ m	7 μ m	6	410
129-153	0-300	0,01 mm	3	$\pm 6 \mu$ m	2 μ m	0,3 μ m	10 μ m	12	640

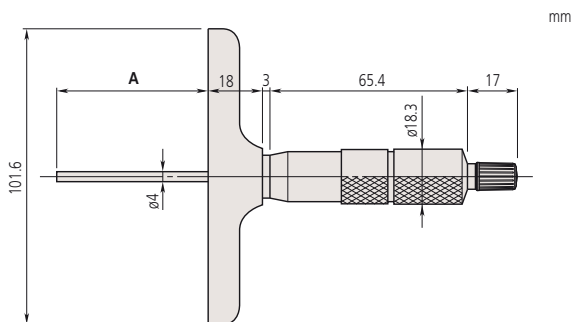


Interchangeable rods

Metric

Base 63,5 x 16 mm

No.	Range [mm]	Graduation	Spindle feed error [μ m]	Zero point errors of rods	Flatness base	Flatness rod	Parallelism base/rod	Number of rods	Mass [g]
129-154	0-25	0,01 mm	3	$\pm 3 \mu$ m	1,3 μ m	0,3 μ m	5 μ m	1	240
129-109	0-50	0,01 mm	3	$\pm 3 \mu$ m	1,3 μ m	0,3 μ m	5 μ m	2	260
129-110	0-75	0,01 mm	3	$\pm 3 \mu$ m	1,3 μ m	0,3 μ m	6 μ m	3	280
129-111	0-100	0,01 mm	3	$\pm 4 \mu$ m	1,3 μ m	0,3 μ m	6 μ m	4	310
129-112	0-150	0,01 mm	3	$\pm 4 \mu$ m	1,3 μ m	0,3 μ m	7 μ m	6	370
129-152	0-300	0,01 mm	3	$\pm 6 \mu$ m	1,3 μ m	0,3 μ m	10 μ m	12	600



A = Range

Digimatic Depth Micrometers with Interchangeable Rod

Series 329

This interchangeable rod type micrometer can be used for wide range measurements. It offers you the following benefits:

- $\varnothing 4$ mm interchangeable rods, with lapped measuring surfaces, enable you to make wide-range measurement.
- The ratchet stop provides constant measuring force.
- Measuring rod lock.

Functions	Series 329
DATA (output with cable) / HOLD (display value)	●
Lock function	●
Auto Power OFF after 20 min. non use	●
2 x PRESET	●
Low voltage alarm	●
Data output	●
ABS / INC (INC ZERO)	●

Specifications

Power supply	1 battery SR-44
Measuring span	25 mm
Spindle pitch	0,5 mm
Measuring face	Hardened, precision ground, micro-lap finish
Base	Hardened tool steel
Scale	Thimble and sleeve satin chrome finish, $\varnothing 18$ mm
Measuring force	5-10 N
Battery life	Approx. 2,4 years
Delivered	Including box, key and 1 battery

Optional accessories

No.	Description
06AGR543	USB-ITPAK Vers. 3.0, USB Dongle + Manual (Software available Online)
05CZA662	Digimatic Cable with Data Button IP Type, 1 m, Micrometer Type
05CZA663	Digimatic Cable with Data Button IP Type, 2 m, Micrometer Type
06AFM380B	USB Input Tool Direct (Digimatic to USB), 2m Cable, Digimatic/Digimatic 2, with Data Button IP Micrometer Type
264-622	U-WAVE fit, IP67 Type, Wireless Transmitter for Micrometer/Indicator
264-623	U-WAVE fit, Buzzer Type, Wireless Transmitter for Micrometer/Indicator
264-627	U-WAVE fit Bluetooth, Buzzer Type, Wireless Transmitter for Micrometer/Indicator
264-626	U-WAVE fit Bluetooth, IP67 Type, Wireless Transmitter for Micrometer/Indicator
02AZF310	Connection Unit for IP Caliper, Micrometer, with Data Button for U-WAVE fit, U-WAVE fit Bluetooth

Consumable spares

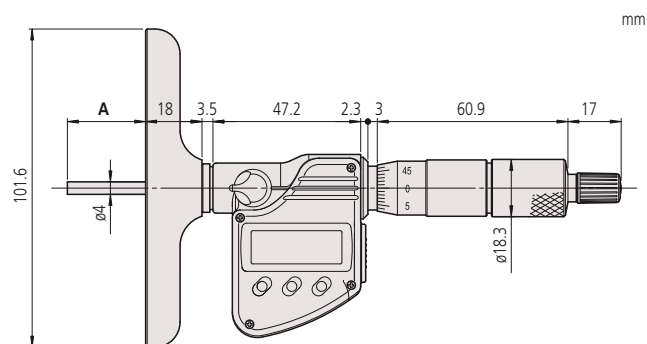
No.	Description
63AAA800	Battery SR44 1,5 V



329-250-30

Metric

No.	Range [mm]	Digital step	Spindle feed error [μ m]	Zero point errors of rods	Flatness base	Flatness rod	Parallelism base/rod	Base (W x T)	Number of rods	Mass [g]
329-250-30	0-150	0,001 mm	3	$\pm 4 \mu$ m	2 μ m	0,3 μ m	7 μ m	101,6 x 16 mm	6	540
329-251-30	0-300	0,001 mm	3	$\pm 6 \mu$ m	2 μ m	0,3 μ m	10 μ m	101,6 x 16 mm	12	790



A = Range

ABSOLUTE Digimatic Indicator Depth Gauges

Series 547

This ABSOLUTE Digimatic Indicator Depth Gauge offers you the following benefits:

- It is equipped with the ABSOLUTE Digimatic Indicator ID-C.
- Bidirectional communication e.g. to perform parameter setting from a PC (Digimatic S 1 interface) is possible.
- It has a hardened, precision ground and micro-lapped reference face on its base.

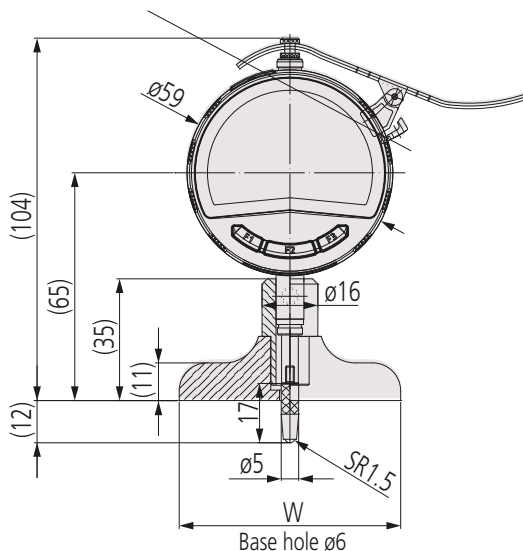


Metric With indicator No. 543-700BD

No.	Range [mm]	Digital step	Base (W x T)	Accuracy	Base flatness	Mass [g]
547-251A	0-200	0,001 mm	63,5 x 16 mm	± 5 µm	2 µm	285
547-252A	0-200	0,001 mm	101,6 x 16 mm	± 5 µm	2 µm	335

Metric With indicator No. 543-710BD

No.	Range [mm]	Digital step	Base (W x T)	Accuracy	Base flatness	Mass [g]
547-211A	0-200	0,01 mm	63,5 x 16 mm	± 20 µm	5 µm	280
547-212A	0-200	0,01 mm	101,6 x 16 mm	± 20 µm	5 µm	330



ABSOLUTE®

Functions	Series 547
DATA/HOLD	●
PRESET	●
ON/OFF	●
Lock function	●
GO/±NG judgement	●
MAX/MIN/RANGE	●
ZERO/ABS	●
ABS / INC (INC ZERO)	●
Data output	●
Analog bar resolution selection	●
Auto Power OFF setting	●
Calculation function (with formula)	●
Customizing keys	●
Counting direction switchable	●
Calibration warning function	●

Specifications

Power supply	1 battery CR-2032
Stroke	12,7 mm
Scale	Capacitance type ABSOLUTE linear encoder
Contact point	Carbide ball
Alarm	Low voltage, counting value composition error, overflow error, tolerance limit setting error
Measuring force	≤ 1,5 N
Battery life	Approx. 7000 hours
Delivered	Including box, CR-2032 battery, battery lid opener and extensions 10, 20, 30 (2 pcs.), 100 mm

Optional accessories

No.	Description
06AGR543	USB-ITPAK Vers. 3.0, USB Dongle + Manual (Software available Online)
06AGL011	Digimatic Cable, Straight, 1m, Digimatic/Digimatic 2/Digimatic S1 Interface, 1 m
06AGL021	Digimatic Cable, Straight, 2m, Digimatic/Digimatic 2/Digimatic S1 Interface, 2 m
06AGQ001F	USB Input Tool Direct (Digimatic to USB), 2m Cable, Digimatic/Digimatic 2/Digimatic S1 Interface
264-623	U-WAVE fit, Buzzer Type, Wireless Transmitter for Micrometer/Indicator
264-622	U-WAVE fit, IP67 Type, Wireless Transmitter for Micrometer/Indicator
264-627	U-WAVE fit Bluetooth, Buzzer Type, Wireless Transmitter for Micrometer/Indicator
264-626	U-WAVE fit Bluetooth, IP67 Type, Wireless Transmitter for Micrometer/Indicator
02AZF670	U-WAVE fit Transmitter Mounting Plate, for ID-C, ID-S and ID-F Digital Indicator
02AZF700	Connection Unit for ID-C Indicator, 12,7mm/0,5" Type, U-WAVE fit, U-WAVE fit Bluetooth for Digimatic S1 Interface
02AZG011	Connection Cable SF for U-WAVE, for U-WAVE-T and Instruments with Digimatic S1 Interface

Consumable spares

No.	Description
05SAA217D	Lithium battery CR-2032, 1 pcs.
21JAA224	Contact Element Ball Point, M2,5x0,45, 17mm Length, Carbide, Metric

Dial Indicator Depth Gauges

Series 7

This rectangular base dial indicator depth gauge offers you the following benefits:

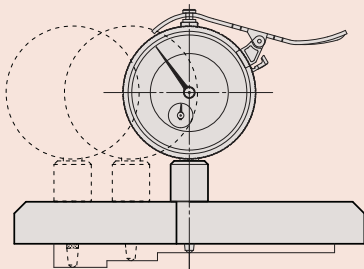
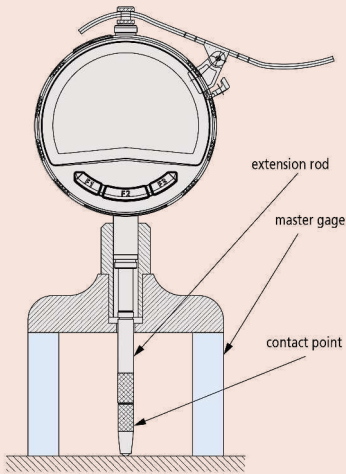
- It has a hardened, precision ground and micro-lapped reference face on its base.

Optional accessories

No.	Description
21AZB195	Limit Hands (green) 2pcs, Dial Indicator Series 2/3/4
21AZB148	Bezel Clamp for Dial Gauge, Metric, Series 2/3/4



7231A



7220A and 7221A allow the mounting position of a dial indicator to be varied.



7231A



7210A



7211A



7214A



7220A



7221A

Metric

With back plunger indicator No. 1162A

No.	Range [mm]	Graduation	Accuracy	Measuring force [N]	Base (W x T)	Stroke [mm]	Base flatness [μ m]	Probe tip	Extension rods	Mass [g]
7231A	0-200	0,01 mm	$\pm 15 \mu$ m	$\leq 1,4$	63,5 x 16 mm	5	5	Ball, R = 1.5 mm (No. 21JAA224)	10, 20, 30, 30, 100 mm	200

Dial Indicator Depth Gauges

Metric

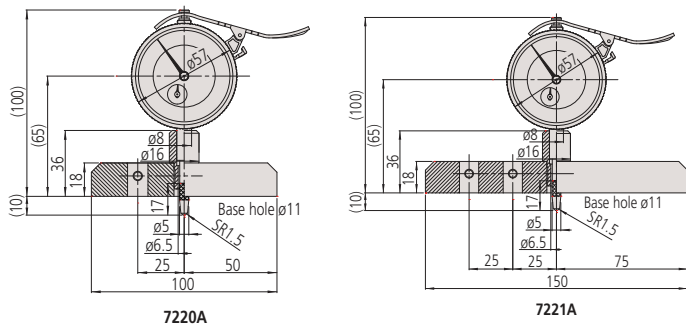
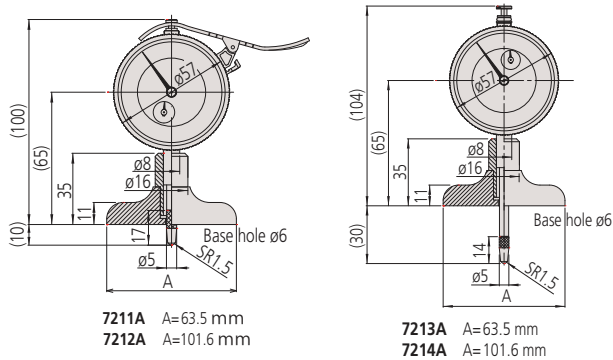
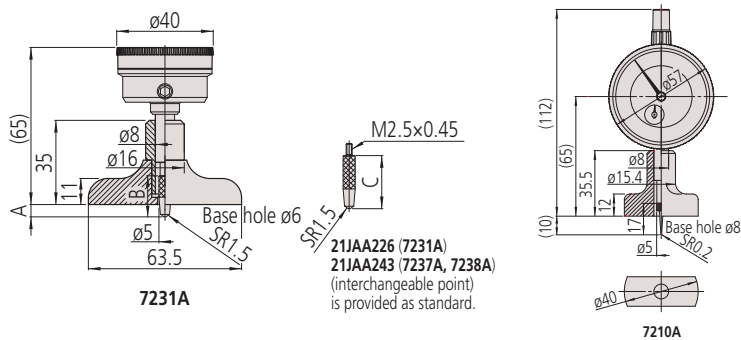
With indicator No. 2902AB

No.	Range [mm]	Graduation	Accuracy	Measuring force [N]	Base (W x T)	Stroke [mm]	Base flatness [μm]	Probe tip	Extension rods	Mass [g]
7210A	0-10	0,01 mm	$\pm 15 \mu\text{m}$	$\leq 1,4$	40 x 16 mm	10	5	Needle, R = 0.2 mm (No. 137413)		205
7211A	0-200	0,01 mm	$\pm 15 \mu\text{m}$	$\leq 1,4$	63,5 x 16 mm	10	5	Ball, R = 1.5 mm (No. 21JAA224)	10, 20, 30, 30, 100 mm	260
7212A	0-200	0,01 mm	$\pm 15 \mu\text{m}$	$\leq 1,4$	101,6 x 16 mm	10	5	Ball, R = 1.5 mm (No. 21JAA224)	10, 20, 30, 30, 100 mm	310
7220A	0-200	0,01 mm	$\pm 15 \mu\text{m}$	$\leq 1,4$	100 x 18 mm	10	5	Ball, R = 1.5 mm (No. 21JAA224)	10, 20, 30, 30, 100 mm	380
7221A	0-200	0,01 mm	$\pm 15 \mu\text{m}$	$\leq 1,4$	150 x 18 mm	10	5	Ball, R = 1.5 mm (No. 21JAA224)	10, 20, 30, 30, 100 mm	500

Metric

With indicator No. 2952AB

No.	Range [mm]	Graduation	Accuracy	Measuring force [N]	Base (W x T)	Stroke [mm]	Base flatness [μm]	Probe tip	Extension rods	Mass [g]
7213A	0-210	0,01 mm	$\pm 30 \mu\text{m}$	$\leq 2,5$	63,5 x 16 mm	30	5	Ball, R = 1.5 mm (No. 21JAA225)	30, 60, 90 mm	260
7214A	0-210	0,01 mm	$\pm 30 \mu\text{m}$	$\leq 2,5$	101,6 x 16 mm	30	5	Ball, R = 1.5 mm (No. 21JAA225)	30, 60, 90 mm	310



Dial Indicator Depth Gauges

Optional accessories

No.	Description
21AZB195	Limit Hands (green) 2pcs, Dial Indicator Series 2/3/4
21AZB148	Bezel Clamp for Dial Gauge, Metric, Series 2/3/4

Series 7

This round base type dial indicator depth gauge offers you the following benefits:

- It has a hardened, precision ground and micro-lapped reference face on its base.



7222A



7223A

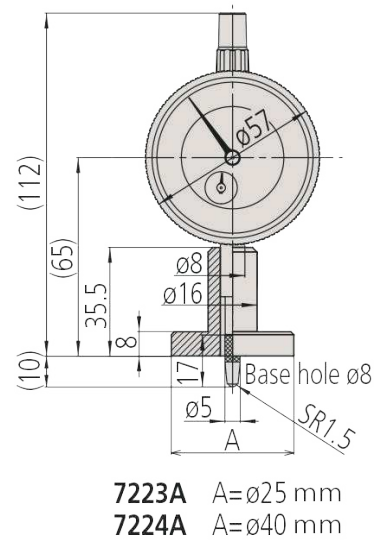
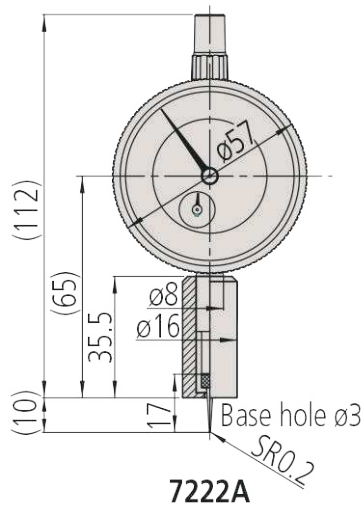


7224A

Metric

Round base with indicator No. 2902AB

No.	Range [mm]	Graduation	Accuracy	Measuring force [N]	Base (W x T)	Stroke [mm]	Base flatness [μm]	Probe tip	Mass [g]
7222A	0-10	0,01 mm	$\pm 15 \mu\text{m}$	$\leq 1,4$	$\varnothing 16 \text{ mm}$	10	5	Needle, R = 0.2 mm (No.137413)	165
7223A	0-10	0,01 mm	$\pm 15 \mu\text{m}$	$\leq 1,4$	$\varnothing 25 \text{ mm}$	10	5	Ball, R = 1.5 mm (No. 21JAA224)	180
7224A	0-10	0,01 mm	$\pm 15 \mu\text{m}$	$\leq 1,4$	$\varnothing 40 \text{ mm}$	10	5	Ball, R = 1.5 mm (No. 21JAA224)	195



ABSOLUTE Digimatic Depth Gauges

Series 571

This is a standard model Digital Depth Gauge.
It offers you the following benefits:

- ABSOLUTE System gives you reliable measurements.
- Its base and measuring faces are hardened and micro-lapped for robustness.
- Large character height makes measurements easy to read.

ABSOLUTE®



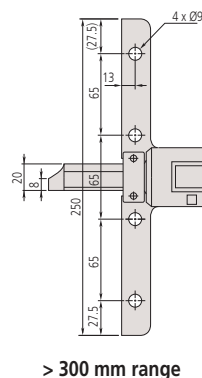
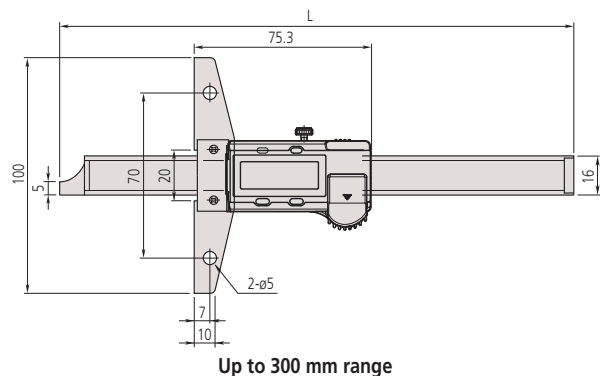
571-201-30



571-204-10

Metric

No.	Range [mm]	Digital step	Max. Permissible Error E MPE	L [mm]	Base (W x T)	Mass [g]
571-201-30	0-150	0,01 mm	±0,02 mm	239	100 x 6 mm	207
571-202-30	0-200	0,01 mm	±0,02 mm	289	100 x 6 mm	227
571-203-30	0-300	0,01 mm	±0,03 mm	403	100 x 6,3 mm	310
571-204-10	0-450	0,01 mm	±0,05 mm	635	250 x 10 mm	1270
571-205-10	0-600	0,01 mm	±0,05 mm	785	250 x 10 mm	1400
571-206-10	0-750	0,01 mm	±0,06 mm	935	250 x 10 mm	1530
571-207-10	0-1000	0,01 mm	±0,07 mm	1200	250 x 10 mm	1760



Functions	Series 571
ORIGIN (ABS-Zero)	●
ON/OFF	●
Low voltage alarm	●
Data output	●
ABS / INC (INC ZERO)	●

Specifications

Power supply	1 battery SR-44
Max. response speed	Unlimited
Battery life	Approx. 18000 hours (150, 200 mm) approx. 20000 hours (>200 mm)
Display	LCD, character height 9 mm (150/200/300 mm), 10 mm (>300 mm)
Delivered	In a box including 1 battery

Optional accessories

No.	Description
06AGR543	USB-ITPAK Vers. 3.0, USB Dongle + Manual (Software available Online)
959149	Digimatic Cable, Straight, Data Button, 1 m
959150	Digimatic Cable, Straight, Data Button, 2 m
06AFM380C	USB Input Tool Direct (Digimatic to USB), 2m Cable, Digimatic/Digimatic 2, Straight, with Data Button
959143	Data Hold Unit, for Digital Caliper

Range <300 mm

264-620	U-WAVE fit, IP67 Type, Wireless Transmitter for Caliper
264-621	U-WAVE fit, Buzzer Type, Wireless Transmitter for Caliper
264-624	U-WAVE fit Bluetooth, IP67 Type, Wireless Transmitter for Caliper
264-625	U-WAVE fit Bluetooth, Buzzer Type, Wireless Transmitter for Caliper
02AZF300	Connection Unit for Standard Caliper, with Data Button for U-WAVE fit, U-WAVE fit Bluetooth
900370	Extension Base, Depth Gauge, 180mm width for up to 300mm Range
900371	Extension Base, Depth Gauge, 260mm width for up to 300mm Range
900372	Extension Base, Depth Gauge, 320mm width for up to 300mm Range

Range >300 mm

02AZD880G	U-WAVE-T, Buzzer Type, Wireless Transmitter
02AZD730G	U-WAVE-T, IP67 Type, Wireless Transmitter
02AZD790C	Connection Cable C for U-WAVE, Straight, with Data Button

Consumable spares

No.	Description
63AAA800	Battery SR44 1,5 V

ABSOLUTE Digimatic Depth Gauges

Series 571

This Digital Depth Gauge is IP67 coolant proof and offers you the following benefits:

- ABSOLUTE System gives you reliable measurements.
- Its base and measuring faces are hardened and micro-lapped for robustness.
- It has excellent resistance against water and dust (IP67 protection level) enabling you to use it in machining situations that include splashing coolant fluid.
- Extremely resistant to both coolants and lubricants.



Functions	Series 571
Auto Power OFF after 20 min. non use	●
ORIGIN (ABS-Zero)	●
Low voltage alarm	●
Data output	●

Specifications

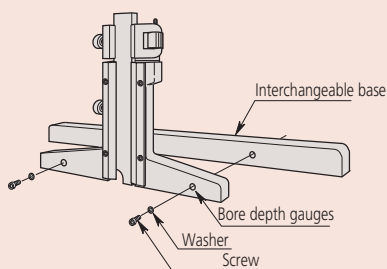
Power supply	1 battery SR-44
Max. response speed	Unlimited
Battery life	Approx. 5 years
Display	LCD, character height 9 mm (150, 200 mm) 11 mm (300 mm)
Delivered	In a box including 1 battery

Optional accessories

No.	Description
06AGR543	USB-ITPAK Vers. 3.0, USB Dongle + Manual (Software available Online)
05CZA624	Digimatic Cable with Data Button IP Type, 1 m, Caliper Type
05CZA625	Digimatic Cable with Data Button IP Type, 2 m, Caliper Type
06AFM380A	USB Input Tool Direct (Digimatic to USB), 2m Cable, Digimatic/Digimatic 2, with Data Button IP Caliper Type
264-620	U-WAVE fit, IP67 Type, Wireless Transmitter for Caliper
264-621	U-WAVE fit, Buzzer Type, Wireless Transmitter for Caliper
264-624	U-WAVE fit Bluetooth, IP67 Type, Wireless Transmitter for Caliper
264-625	U-WAVE fit Bluetooth, Buzzer Type, Wireless Transmitter for Caliper
02AZF310	Connection Unit for IP Caliper, Micrometer, with Data Button for U-WAVE fit, U-WAVE fit Bluetooth
900370	Extension Base, Depth Gauge, 180mm width for up to 300mm Range
900371	Extension Base, Depth Gauge, 260mm width for up to 300mm Range
900372	Extension Base, Depth Gauge, 320mm width for up to 300mm Range

Consumable spares

No.	Description
63AAA800	Battery SR44 1,5 V



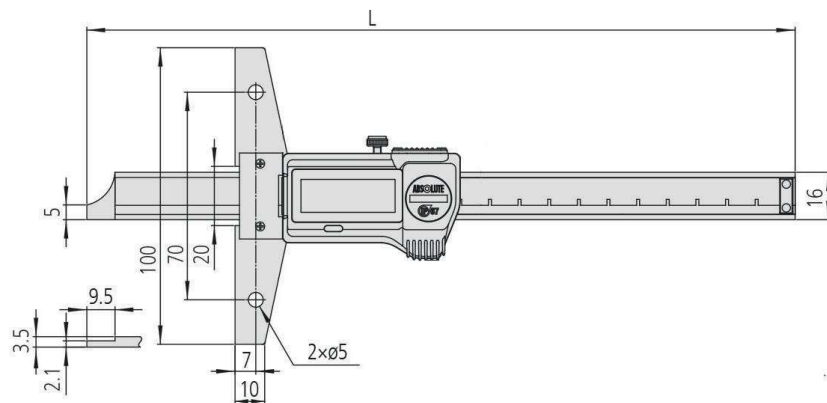
Mounting the interchangeable base



571-252-20

Metric

No.	Range [mm]	Digital step	Max. Permissible Error E MPE	L [mm]	Base (W x T)	Mass [g]
571-251-20	0-150	0,01 mm	±0,02 mm	239	100 x 6 mm	199
571-252-20	0-200	0,01 mm	±0,02 mm	289	100 x 6 mm	219
571-253-20	0-300	0,01 mm	±0,03 mm	403	100 x 6,3 mm	315



ABSOLUTE Digimatic Depth Gauges IP67 Hook/Pin Type

Series 571

This Digital Depth Gauge is IP67 and offers you the following benefits:

- It has excellent resistance against water and dust (IP67 protection level) enabling you to use it in situations that include coolant fluid.
- Direct reading by pressing the OFFSET function, which compensates for the 10 mm width of the hook (hook type).



571-255-20



571-302-20

Metric

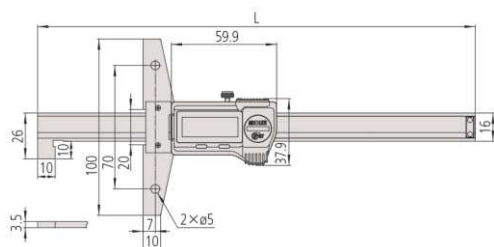
Hook Type

No.	Depth range	Hook range	Digital step	Max. Permissible Error E MPE	Base (W x T)	L [mm]	Mass [g]
571-254-20	10,1-160 mm	0-150 mm	0,01 mm	±0,03 mm	100 x 6 mm	249	216
571-255-20	10,1-210 mm	0-200 mm	0,01 mm	±0,03 mm	100 x 6 mm	299	236

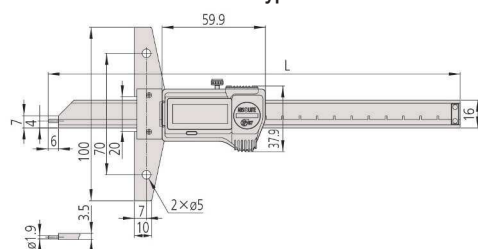
Metric

Pin Type

No.	Range [mm]	Digital step	Max. Permissible Error E MPE	Base (W x T)	L [mm]	Mass [g]
571-301-20	0-150	0,01 mm	±0,02 mm	100 x 6 mm	249	207
571-302-20	0-200	0,01 mm	±0,02 mm	100 x 6 mm	299	227



Hook Type



Pin Type

Series 571	
Functions	
ORIGIN (ABS-Zero)	●
Auto Power OFF after 20 min. non use	●
Low voltage alarm	●
Data output	●

Specifications

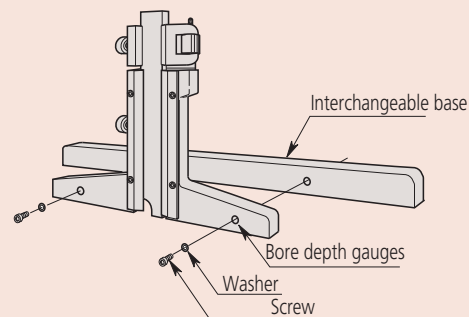
Power supply	1 battery SR-44
Max. response speed	Unlimited
Battery life	Approx. 5 years
Display	LCD, Character Height 9 mm
Delivered	In a case including 1 battery

Optional accessories

No.	Description
06AGR543	USB-ITPAK Vers. 3.0, USB Dongle + Manual (Software available Online)
05CZA624	Digimatic Cable with Data Button IP Type, 1 m, Caliper Type
05CZA625	Digimatic Cable with Data Button IP Type, 2 m, Caliper Type
06AFM380A	USB Input Tool Direct (Digimatic to USB), 2m Cable, Digimatic/Digimatic 2, with Data Button IP Caliper Type
264-620	U-WAVE fit, IP67 Type, Wireless Transmitter for Caliper
264-621	U-WAVE fit, Buzzer Type, Wireless Transmitter for Caliper
264-624	U-WAVE fit Bluetooth, IP67 Type, Wireless Transmitter for Caliper
264-625	U-WAVE fit Bluetooth, Buzzer Type, Wireless Transmitter for Caliper
02AZF310	Connection Unit for IP Caliper, Micrometer, with Data Button for U-WAVE fit, U-WAVE fit Bluetooth
900370	Extension Base, Depth Gauge, 180mm width for up to 300mm Range
900371	Extension Base, Depth Gauge, 260mm width for up to 300mm Range
900372	Extension Base, Depth Gauge, 320mm width for up to 300mm Range

Consumable spares

No.	Description
63AAA800	Battery SR44 1,5 V



Mounting the interchangeable base

Vernier Depth Gauges

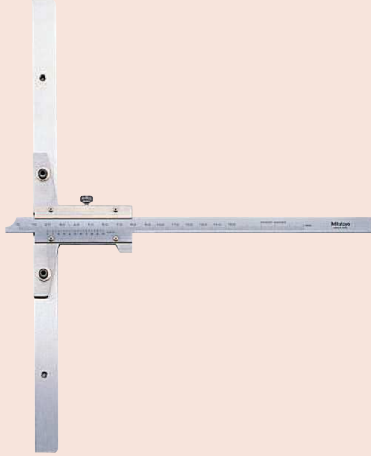
Series 527

This vernier depth gauge offers you the following benefits:

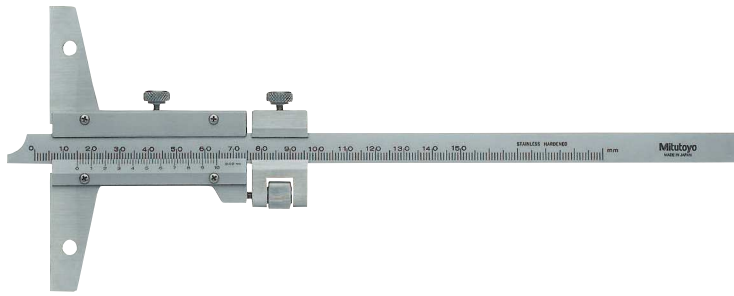
- Its base and measuring faces are hardened and micro-lapped for robustness.
- Fine adjustment models available.

Optional accessories

No.	Description
900370	Extension Base, Depth Gauge, 180mm width for up to 300mm Range
900371	Extension Base, Depth Gauge, 260mm width for up to 300mm Range
900372	Extension Base, Depth Gauge, 320mm width for up to 300mm Range



527-201 with 900372



527-101

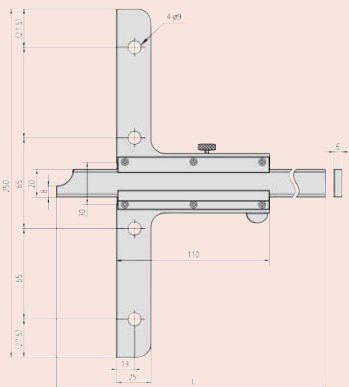
Metric

No.	Range [mm]	Graduation	Max. Permissible Error E MPE	Base (W x T)	L [mm]	Mass [g]
527-201	0-150	0,05 mm	±0,05 mm	100 x 6,5 mm	260	240
527-121	0-150	0,02 mm	±0,03 mm	100 x 6,5 mm	260	215
527-202	0-200	0,05 mm	±0,05 mm	100 x 6,5 mm	310	260
527-122	0-200	0,02 mm	±0,03 mm	100 x 6,5 mm	310	230
527-203	0-300	0,05 mm	±0,08 mm	100 x 6,5 mm	410	300
527-123	0-300	0,02 mm	±0,04 mm	100 x 6,5 mm	410	265
527-204	0-600	0,05 mm	±0,1 mm	250 x 10 mm	800	1510
527-205	0-1000	0,05 mm	±0,15 mm	250 x 10 mm	1200	1880

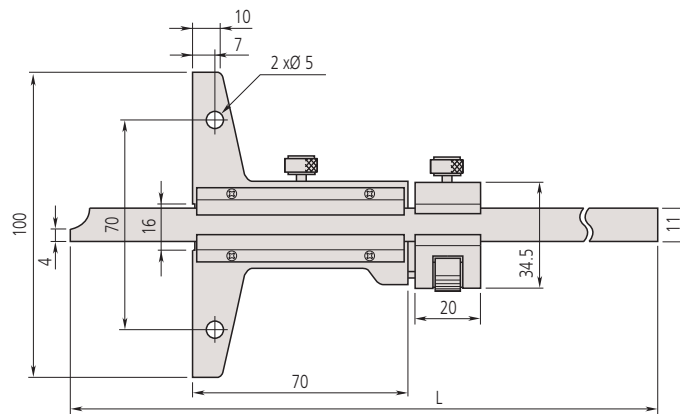
Metric

With fine adjustment

No.	Range [mm]	Graduation	Max. Permissible Error E MPE	Base (W x T)	L [mm]	Mass [g]
527-101	0-150	0,02 mm	±0,03 mm	100 x 6,5 mm	260	280
527-102	0-200	0,02 mm	±0,03 mm	100 x 6,5 mm	310	300
527-103	0-300	0,02 mm	±0,04 mm	100 x 6,5 mm	410	350
527-104	0-600	0,02 mm	±0,05 mm	250 x 10 mm	800	1510
527-105	0-1000	0,02 mm	±0,07 mm	250 x 10 mm	1200	1880



Range: 0-600 mm, 0-1000 mm



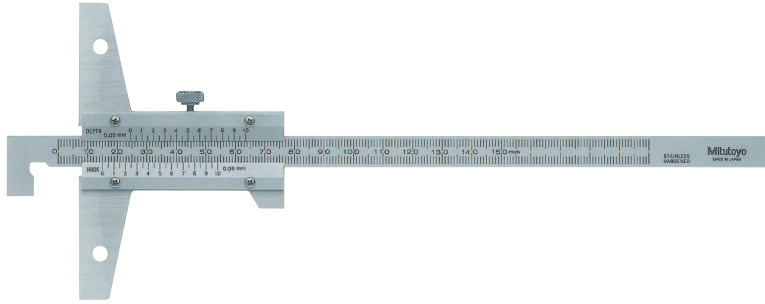
Range: 0-150 mm, 0-200 mm, 0-300 mm

Vernier Depth Gauges Hook Type

Series 527

This hook type vernier depth gauge offers you the following benefits:

- The end of the beam is hook-shaped so you can take depth and thickness measurements of a projected portion or lip in a hole, as well as standard depth measurements.
- Its base and measuring faces are hardened and micro-lapped for robustness.
- Fine adjustment models are available.



527-401

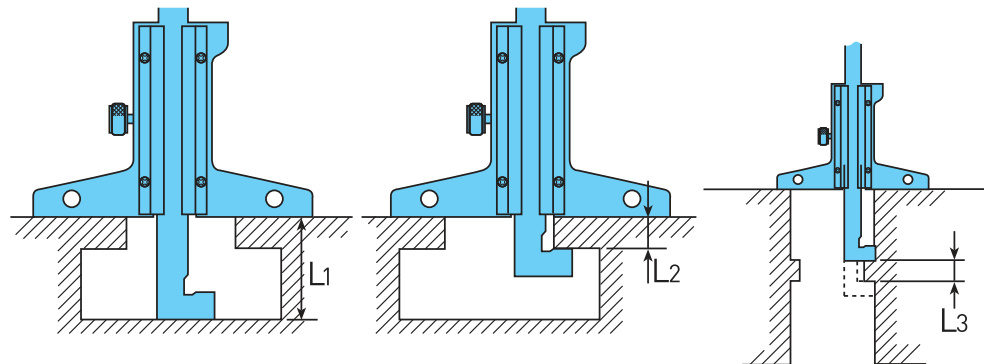
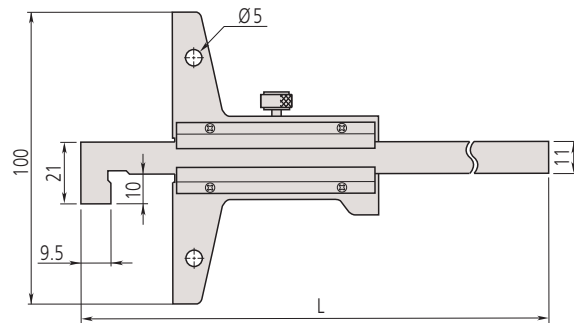
Metric

No.	Depth range	Hook range	Graduation	Max. Permissible Error E MPE	Base (W x T)	L [mm]	Mass [g]
527-401	10,1-150 mm	0-150 mm	0,05 mm	±0,05 mm	100 x 6,5 mm	260	240
527-402	10,1-200 mm	0-200 mm	0,05 mm	±0,05 mm	100 x 6,5 mm	310	240
527-403	10,1-300 mm	0-300 mm	0,05 mm	±0,08 mm	100 x 6,5 mm	410	270

Metric

With fine adjustment

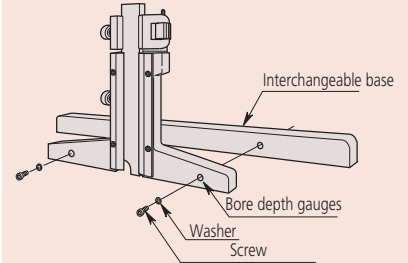
No.	Depth range	Hook range	Graduation	Max. Permissible Error E MPE	Base (W x T)	L [mm]	Mass [g]
527-411	10,1-150 mm	0-150 mm	0,02 mm	±0,03 mm	100 x 6,5 mm	260	280
527-412	10,1-200 mm	0-200 mm	0,02 mm	±0,03 mm	100 x 6,5 mm	310	300
527-413	10,1-300 mm	0-300 mm	0,02 mm	±0,04 mm	100 x 6,5 mm	410	350



L1 = depth-vernier reading / L2 = hook-vernier reading / L3 = (depth-vernier reading) - (hook-vernier reading)

Optional accessories

No.	Description
900370	Extension Base, Depth Gauge, 180mm width for up to 300mm Range
900371	Extension Base, Depth Gauge, 260mm width for up to 300mm Range
900372	Extension Base, Depth Gauge, 320mm width for up to 300mm Range



Mounting the interchangeable base

Tyre Tread Depth Gauges

Series 571

This is designed to measure tyre tread depth and offers you the following benefits:

- The ABSOLUTE feature of this gauge keeps track of the origin point (once set) for the entire life of the battery.



Functions	Series 571
ORIGIN (ABS-Zero)	●
Auto Power OFF after 20 min. non use	●
Low voltage alarm	●
Data output	●

Specifications

Power supply	1 battery SR-44
Max. response speed	Unlimited
Battery life	Approx. 5 years
Display	LCD, character height 9 mm
Delivered	Including 1 battery

Optional accessories

No.	Description
05CZA624	Digimatic Cable with Data Button IP Type, 1 m, Caliper Type
05CZA625	Digimatic Cable with Data Button IP Type, 2 m, Caliper Type
06AFM380A	USB Input Tool Direct (Digimatic to USB), 2m Cable, Digimatic/Digimatic 2, with Data Button IP Caliper Type
264-620	U-WAVE fit, IP67 Type, Wireless Transmitter for Caliper
264-621	U-WAVE fit, Buzzer Type, Wireless Transmitter for Caliper
264-624	U-WAVE fit Bluetooth, IP67 Type, Wireless Transmitter for Caliper
264-625	U-WAVE fit Bluetooth, Buzzer Type, Wireless Transmitter for Caliper
02AZF310	Connection Unit for IP Caliper, Micrometer, with Data Button for U-WAVE fit, U-WAVE fit Bluetooth

* optional extension base is unavailable

Consumable spares

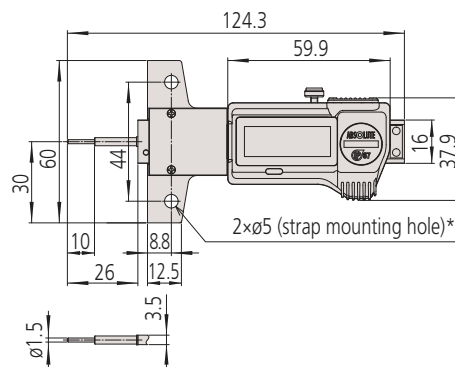
No.	Description
63AAA800	Battery SR44 1,5 V



571-100-20

Metric

No.	Range [mm]	Digital step	Max. Permissible Error E MPE	Base (W x T)	Mass [g]
571-100-20	0-25	0,01 mm	±0,02 mm	60 x 6,2 mm	160



Optional Accessories for Depth Calipers

Extension bases

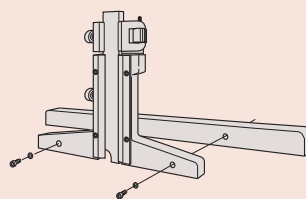
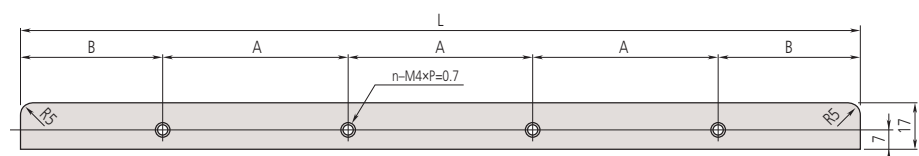
These optional extension bases can be fitted to depth gauge models up to 0-300 mm range. They cannot be attached to 0-450 mm, 0-600 mm, 0-750 mm and 0-1000 mm range models.



900372

Metric

No.	L [mm]	A [mm]	B [mm]	Number of holes	Mass [g]
900370	180	70	55	2	200
900371	260	35	60	5	270
900372	320	70	55	4	345



Attaching the extension base

Height Gauges Page 213



Height Gauge Accessories Page 219



Height Gauges with Data Processing Unit Page 220



Vernier Height Gauges

Series 514

This vernier height gauge offers you the following benefits:

- You can take accurate and fast readings thanks to the satin chrome finished main and vernier scales.
- A carbide-tipped scriber is provided.

Specifications

Scale adjustment	15 mm: 300, 450, 600 mm range, 25 mm: 1000 mm range
Delivered	Including scriber & scriber clamp

Standard accessories

No.	Description
05GZA033	Scriber Clamp, for 9x9mm Scriber
06AGR304	Scriber Clamp with Plastic Screw, for 12,7x6,35mm Scriber
900173	Carbide Tipped Scriber, 6,35x12,7mm, 47mm Length
07GZA000	Carbide Tipped Scriber, 9x9mm, 80mm Length
905200	Carbide Tipped Scriber, 9x9mm, 150mm Length

06AGR304: for 506-207

05GZA033: for 514-102, 514-104, 514-106, 514-108

900173: for 506-207

07GZA000: for 514-102, 514-104, 514-106

905200: for 514-108

Optional accessories

No.	Description
953638	Holding Bar for Swivel Clamp, 9x9mm, 50mm Length
900209	Holding Bar for Swivel Clamp, 9x9mm, 100mm Length
953639	Holding Bar for Swivel Clamp, 6,25x12,7mm, 2" Length
900321	Swivel Clamp, for D=4/8mm, Dovetail
07GZA003	Magnifier for Vernier Height Gauge, 300, 450, 600mm
07GZA015	Magnifier for Vernier Height Gauge, 1000mm

953638: except 506-207

900209: except 506-207

953639 is required for the combination of 900321 with 506-207



506-207

514-102

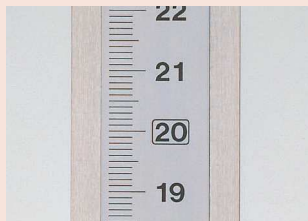
Metric

No.	Range [mm]	Graduation	Max. Permissible Error E MPE	Fine adjustment	a [mm]	b [mm]	c [mm]	d [mm]	e [mm]	L [mm]	Mass [kg]
506-207	0 - 200	0,02 mm	±0,03 mm	4 mm							1,4
514-102	0 - 300	0,02 mm	±0,04 mm	4 mm	32	20	70	28	45	525	3,1
514-104	0 - 450	0,02 mm	±0,05 mm	4 mm	32	20	70	28	45	675	3,4
514-106	0 - 600	0,02 mm	±0,05 mm	7 mm	32	24	85	35	54	870	7,4
514-108	0 - 1000	0,02 mm	±0,07 mm	6 mm	42	30	110	45	65	1340	20

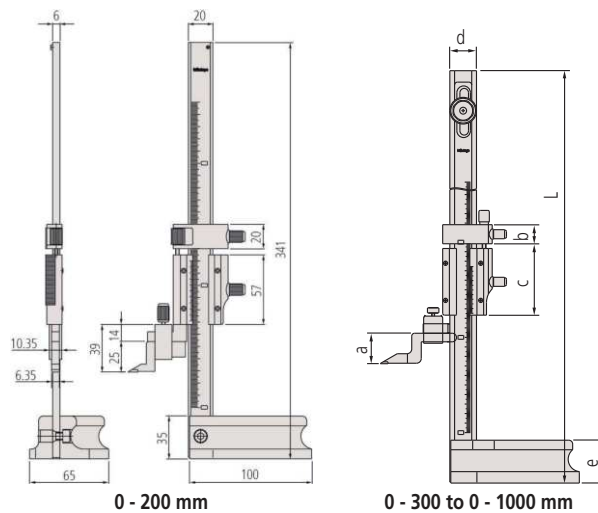


953638

900321



Large graduation



0 - 200 mm

0 - 300 to 0 - 1000 mm

Dial Height Gauges

Series 192

This Dial Height Gauge offers you the following benefits:

- It allows you easy and error-free reading with both up and down digital counters as well as a dial.
- It comes with a hand wheel so you can easily make rough adjustments.
- A carbide-tipped scriber is provided.



192-130



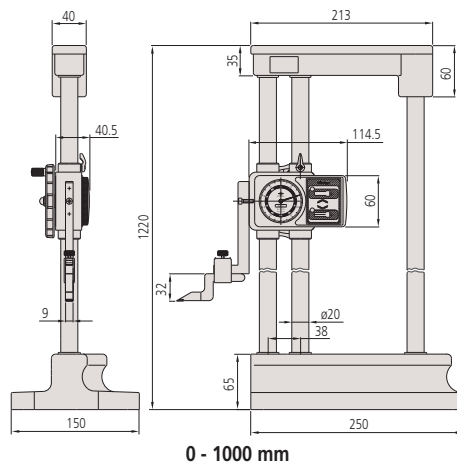
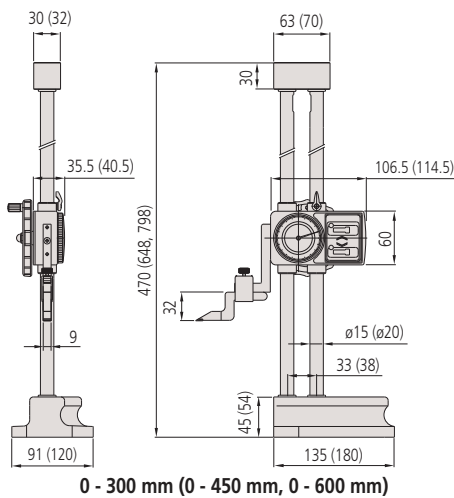
192-132



192-133

Metric

No.	Range [mm]	Digital step	Graduation	Max. Permissible Error E MPE	Mass [kg]
192-130	0 - 300	0,01 mm	0,01 mm	±0,03 mm	4,2
192-131	0 - 450	0,01 mm	0,01 mm	±0,05 mm	9,2
192-132	0 - 600	0,01 mm	0,01 mm	±0,05 mm	9,8
192-133	0 - 1000	0,01 mm	0,01 mm	±0,07 mm	17



Specifications

Delivered

Including scriber, scriber clamp and cover

Standard accessories

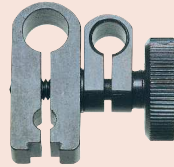
No.	Description
07GZA000	Carbide Tipped Scriber, 9x9mm, 80mm Length
05GZA033	Scriber Clamp, for 9x9mm Scriber
450291	Vinyl Cover Series 192, 300mm
450292	Vinyl Cover Series 192, 450mm, 600mm
450290	Vinyl Cover Series 192, 1000mm

Optional accessories

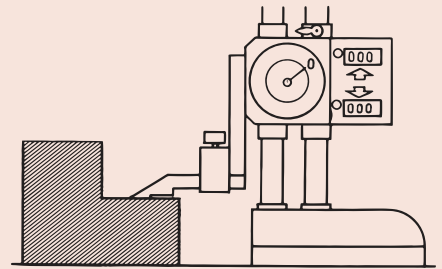
No.	Description
953638	Holding Bar for Swivel Clamp, 9x9mm, 50mm Length
900321	Swivel Clamp, for D=4/8mm, Dovetail



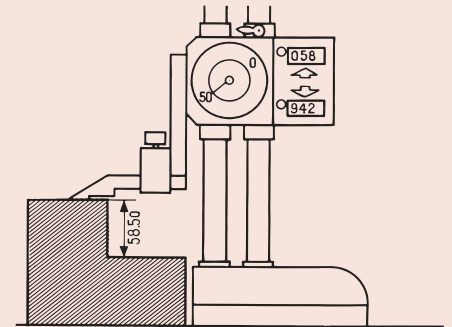
953638



900321



Reset



Reading off

Counter : 58,00 mm

Dial Gauge : 0,50 mm

Result : 58,50 mm

ABSOLUTE Digimatic Height Gauges

ABSOLUTE®

Series 570

This Digimatic height gauge is very precise and reliable, and offers you the following benefits:

- Its built-in ABSOLUTE linear encoder means you don't have to set the reference point at every power-on, improving reliability as over-speed errors cannot occur.
- Fine-adjustment gives you precise positioning.
- A carbide-tipped scriber is provided.

Functions	Series 570
ON/OFF	●
ABS / INC (INC ZERO)	●
PRESET	●
ORIGIN (ABS-Zero)	●
DATA (output with cable) / HOLD (display value)	●
Low voltage alarm	●
±SWITCHING	●

Specifications

Scale	ABSOLUTE electrostatic linear encoder
Display	LCD
Max. response speed	Unlimited
Battery life	Approx. 5000 hours
Delivered	Including 1 battery, scriber and scriber clamp

Standard accessories

No.	Description
901338	Scriber Clamp, for 6,35x12,7mm Scriber
05GZA033	Scriber Clamp, for 9x9mm Scriber
900173	Carbide Tipped Scriber, 6,35x12,7mm, 47mm Length
905200	Carbide Tipped Scriber, 9x9mm, 150mm Length

901338, 900173: 570-227
05GZA033, 905200: 570-230

Optional accessories

No.	Description
905338	Digimatic Cable, Flat Straight Type, 1 m
905409	Digimatic Cable, Flat Straight Type, 2 m
06AFM380F	USB Input Tool Direct (Digimatic to USB), 2m Cable, Digimatic/Digimatic 2, Flat Straight Type
02AZD880G	U-WAVE-T, Buzzer Type, Wireless Transmitter
02AZD730G	U-WAVE-T, IP67 Type, Wireless Transmitter
02AZD790F	Connection Cable F for U-WAVE, Straight, without Data Button
953639	Holding Bar for Swivel Clamp, 6,25x12,7mm, 2" Length
953638	Holding Bar for Swivel Clamp, 9x9mm, 50mm Length
900209	Holding Bar for Swivel Clamp, 9x9mm, 100mm Length
900321	Swivel Clamp, for D=4/8mm, Dovetail

953639: 570-227
953638, 900209: 570-230

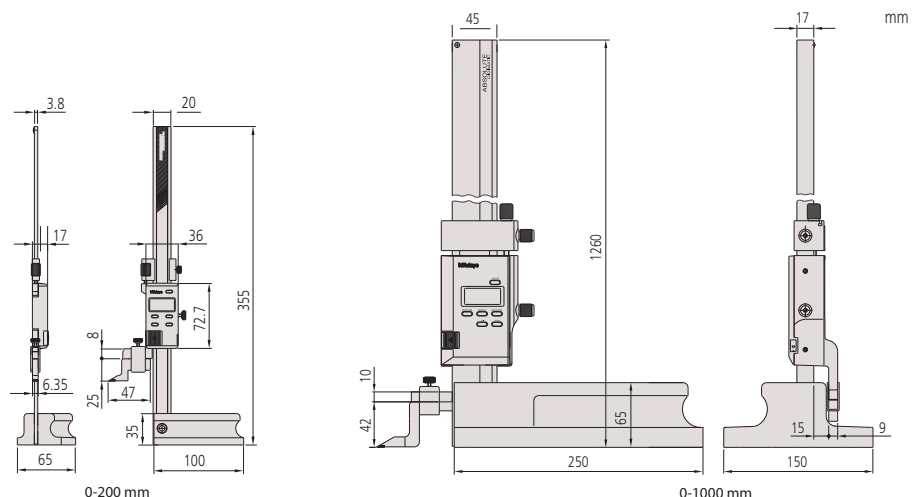
Consumable spares

No.	Description
63AAA800	Battery SR44 1,5 V



Metric

No.	Range [mm]	Digital step	Max. Permissible Error E MPE	Fine adjustment	Remarks	Mass [kg]
570-227	0 - 200	0,01 mm	±0,03 mm	4 mm	2 x PRESET	1,3
570-230	0 - 1000	0,01 mm	±0,07 mm	6 mm		16,8



ABSOLUTE Digimatic Height Gauges with Slider Adjustment Wheel

Series 570

This Digimatic height gauge is very precise and reliable, and offers you the following benefits:

- Its built-in ABSOLUTE linear encoder means you don't have to set the reference point at every power-on, improving reliability as over-speed errors cannot occur.
- It comes with large and smooth-acting slider hand wheel
- A large display and buttons for easy operability.
- A carbide-tipped scriber is provided.

ABSOLUTE®

Functions	Series 570
Data output	●
ON/OFF	●
ABS / INC (INC ZERO)	●
ORIGIN (ABS-Zero)	●
DATA (output with cable) / HOLD (display value)	●
Low voltage alarm	●

Specifications

Scale	ABSOLUTE electrostatic linear encoder
Display	LCD, character height 11 mm
Max. response speed	Unlimited
Battery life	Approx. 20000 hours
Delivered	Including 1 battery, scriber and scriber clamp

Standard accessories

No.	Description
07GZA000	Carbide Tipped Scriber, 9x9mm, 80mm Length
05GZA033	Scriber Clamp, for 9x9mm Scriber
450291	Vinyl Cover Series 192, 300mm
450292	Vinyl Cover Series 192, 450mm, 600mm

Optional accessories

No.	Description
905338	Digimatic Cable, Flat Straight Type, 1 m
905409	Digimatic Cable, Flat Straight Type, 2 m
06AFM380F	USB Input Tool Direct (Digimatic to USB), 2m Cable, Digimatic/Digimatic 2, Flat Straight Type
02AZD880G	U-WAVE-T, Buzzer Type, Wireless Transmitter
02AZD730G	U-WAVE-T, IP67 Type, Wireless Transmitter
264-624	U-WAVE fit Bluetooth, IP67 Type, Wireless Transmitter for Caliper
264-625	U-WAVE fit Bluetooth, Buzzer Type, Wireless Transmitter for Caliper
02AZD790F	Connection Cable F for U-WAVE, Straight, without Data Button
953638	Holding Bar for Swivel Clamp, 9x9mm, 50mm Length
900321	Swivel Clamp, for D=4/8mm, Dovetail

Consumable spares

No.	Description
63AAA800	Battery SR44 1,5 V

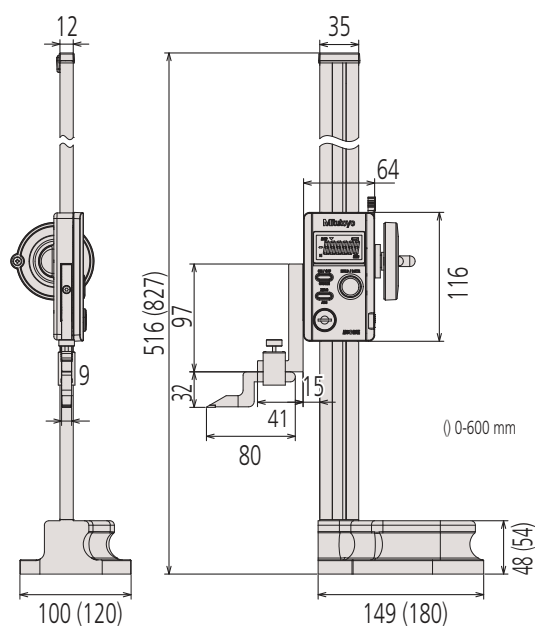


570-402



Metric

No.	Range [mm]	Digital step	Max. Permissible Error E MPE	Mass [kg]
570-402	0 - 300	0,01 mm	±0,03 mm	4,6
570-404	0 - 600	0,01 mm	±0,05 mm	6,4



953638

900321



Wireless data transmitter can be installed on the back of the display unit with double-sided tape

Digimatic Height Gauges Double Column Type

Series 192

This High Accuracy Height Gauge offers you the following benefits:

- Its double-column structure ensures high measuring accuracy.
- Large character height of 11 mm provides good readability.
- A Carbide-tipped scriber provided

Functions	Series 192
Data output	●
ON/OFF	●
ABS / INC (INC ZERO)	●
PRESET (2 values)	●
DATA (output with cable) / HOLD (display value)	●
Low voltage alarm	●
±SWITCHING	●

Specifications

Display	LCD, character height: 11 mm
Max. response speed	500 mm/s
Battery life	Approx. 3500 hours
Delivered	Including scriber, scriber clamp, 1 battery and cover

Standard accessories

No.	Description
05GZA033	Scriber Clamp, for 9x9mm Scriber
07GZA000	Carbide Tipped Scriber, 9x9mm, 80mm Length
450291	Vinyl Cover Series 192, 300mm
450292	Vinyl Cover Series 192, 450mm, 600mm
450290	Vinyl Cover Series 192, 1000mm

Optional accessories

No.	Description
905338	Digimatic Cable, Flat Straight Type, 1 m
905409	Digimatic Cable, Flat Straight Type, 2 m
06AFM380F	USB Input Tool Direct (Digimatic to USB), 2m Cable, Digimatic/Digimatic 2, Flat Straight Type
02AZD880G	U-WAVE-T, Buzzer Type, Wireless Transmitter
02AZD730G	U-WAVE-T, IP67 Type, Wireless Transmitter
02AZD790F	Connection Cable F for U-WAVE, Straight, without Data Button
953638	Holding Bar for Swivel Clamp, 9x9mm, 50mm Length
900321	Swivel Clamp, for D=4/8mm, Dovetail

Consumable spares

No.	Description
63AAA800	Battery SR44 1,5 V



953638



900321

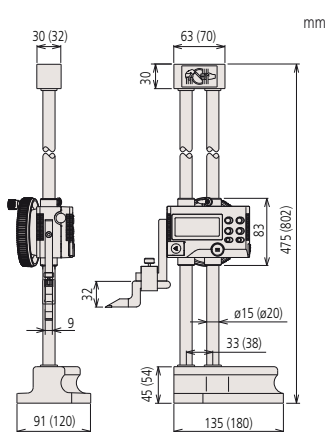


192-613-10

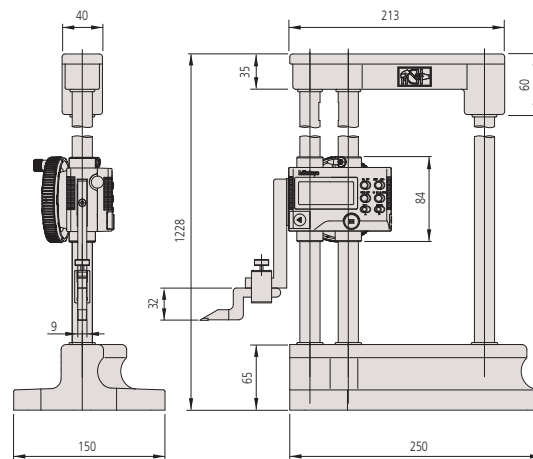


Metric

No.	Range [mm]	Digital step	Max. Permissible Error E MPE	Mass [kg]
192-613-10	0 - 300	0,01/0,005 mm	±0,02 mm	4,7
192-614-10	0 - 600	0,01/0,005 mm	±0,05 mm	8,3
192-615-10	0 - 1000	0,01/0,005 mm	±0,07 mm	15,7



0-300 mm
(0-600 mm)



0-1000 mm

Digimatic Height Gauges Double Column Type with Touch Trigger Probe Connector

Series 192

This High Accuracy Height Gauge offers you the following benefits:

- Its double-column structure ensures high measuring accuracy.
- Large character height of 11 mm provides good readability.
- A Carbide-tipped scriber provided

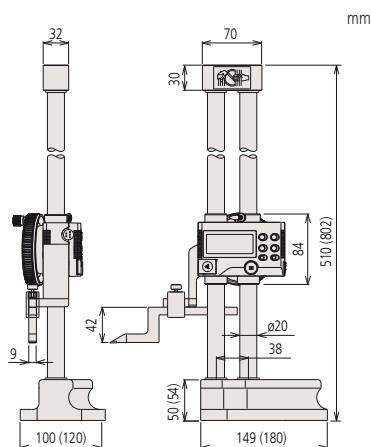


192-663-10

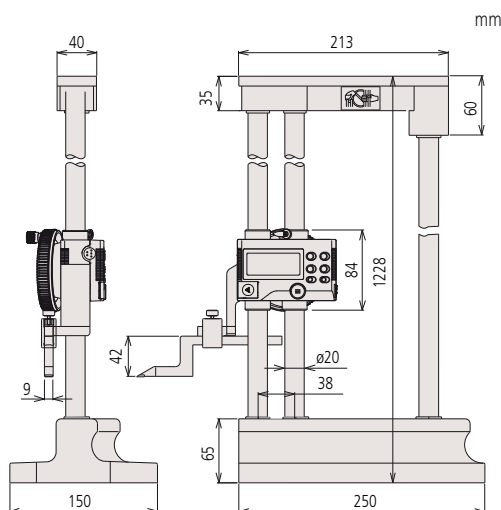


Metric

No.	Range [mm]	Digital step	Max. Permissible Error E MPE	Mass [kg]
192-663-10	0 - 300	0,01/0,005 mm	±0,02 mm	5,7
192-664-10	0 - 600	0,01/0,005 mm	±0,04 mm	8,3
192-665-10	0 - 1000	0,01/0,005 mm	±0,06 mm	15,7



0-300 mm
(0-600 mm)



0-1000 mm

Functions	Series 192
Data output	●
ON/OFF	●
ABS / INC (INC ZERO)	●
PRESET (2 values)	●
Touch-trigger probe	●
Stylus tip diameter compensation	●
DATA (output with cable) / HOLD (display value)	●
Low voltage alarm	●
±SWITCHING	●

Specifications

Display	LCD, character height: 11 mm
Max. response speed	500 mm/s
Battery life	Approx. 3500 hours
Delivered	Including scriber, scriber clamp, 1 battery and cover

Standard accessories

No.	Description
05GZA033	Scriber Clamp, for 9x9mm Scriber
905200	Carbide Tipped Scriber, 9x9mm, 150mm Length
450291	Vinyl Cover Series 192, 300mm
450292	Vinyl Cover Series 192, 450mm, 600mm
450290	Vinyl Cover Series 192, 1000mm

Optional accessories

No.	Description
192-007	Bi-Directional Touch Trigger Probe, for Series 192, Metric
905338	Digimatic Cable, Flat Straight Type, 1 m
905409	Digimatic Cable, Flat Straight Type, 2 m
06AFM380F	USB Input Tool Direct (Digimatic to USB), 2m Cable, Digimatic/Digimatic 2, Flat Straight Type
02AZD880G	U-WAVE-T, Buzzer Type, Wireless Transmitter
02AZD730G	U-WAVE-T, IP67 Type, Wireless Transmitter
02AZD790F	Connection Cable F for U-WAVE, Straight, without Data Button
953638	Holding Bar for Swivel Clamp, 9x9mm, 50mm Length
900209	Holding Bar for Swivel Clamp, 9x9mm, 100mm Length
900321	Swivel Clamp, for D=4/8mm, Dovetail

Consumable spares

No.	Description
63AAA800	Battery SR44 1,5 V



192-007

Spare Parts for Height Gauges

Standard accessories for Height Gauges

These are optional accessories and spare parts for height gauges, that you can use for different tasks.

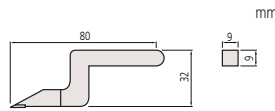
- Various accessories are available for using height gauges in different applications.
- Hard-wearing carbide-tipped scribers are available for all height gauges.



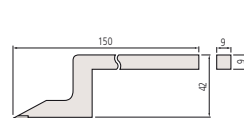
05GZA033



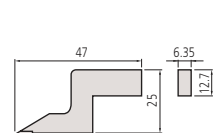
06AGR304



07GZA000



905200



900173

Carbide-tipped scribers

No.	Applicable height gauges	Remarks
07GZA000	192-130, 192-131, 192-132, 192-133 192-613-10, 192-614-10, 192-615-10	Carbide tipped scriber (9 x 9 mm) 80 mm length
	514-102, 514-104, 514-106, 514-103, 514-105, 514-107 570-302, 570-304, 570-402, 570-404	
	192-663-10, 192-664-10, 192-665-10	
905200	514-108, 514-109 570-230	Carbide tipped scriber (9 x 9 mm) 150 mm length
900173	570-227, 570-244 506-207, 506-208	Carbide tipped scriber (12,7 x 6,35 mm) 47 mm length

Scriber clamp

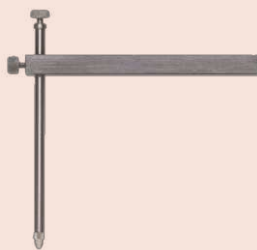
No.	Applicable height gauges	Remarks
05GZA033	192-130, 192-131, 192-132, 192-133 192-613-10, 192-614-10, 192-615-10	Scriber clamp (9 x 9 mm)
	192-663-10, 192-664-10, 192-665-10 514-102, 514-104, 514-106, 514-108 570-230	
	570-302, 570-304, 570-402, 570-404	
06AGR304	570-227, 570-244, 506-207, 506-208	Scriber clamp with plastic screw (12,7 x 6,35 mm)

Optional Accessories for Height Gauges

Optional accessories for Height Gauges

These are optional accessories for height gauges, that you can use for different tasks.

- Various accessories are available for using height gauges in different applications.



900764



Depth measurement attachment

Depth measurement attachment

No.	Applicable height gauges	Remarks
900764	192-130, 192-131, 192-132, 192-133 192-613-10, 192-614-10, 192-615-10	Depth measurement attachment (9 mm x 9 mm)
	514-102, 514-103, 514-104, 514-105, 514-106, 514-107 570-302, 570-304, 570-402, 570-404 192-663-10, 192-264-10, 192-665-10	
	514-108, 514-109	
900878	570-227, 570-244 506-207, 506-208	Depth measurement attachment (12,7 mm x 6,35 mm)
	192-150, 192-151, 192-152	
	192-630-10, 192-631-10, 192-632-10, 192-633-10 570-312, 570-313, 570-314	
	192-670-10, 192-671-10, 192-672-10, 192-673-10 570-248	

QM-Height

Series 518

This is a high precision ABSOLUTE Digital Height Gauge that offers you the following benefits:

- It has a high accuracy, high resolution ABSOLUTE linear encoder for position detection.
- Types with and without pneumatic drive mechanism.
- Automatic running of prelearnt part programs.
- You can easily implement frequently used measurements, such as inside/outside diameter and pitch calculations, by icon-based commands that also support easy one-key operation.
- Extraordinary battery life.
- GO/±NG judgement is performed by setting the upper and lower tolerances.

ABSOLUTE®



Specifications

Measuring force	1,5 ± 0,5 N
Scale	ABSOLUTE electromagnetic inductive
Display	TN monochrome LCD
Measuring function	1D measurement: height diameter, pitch, Max/Min/TIR (Max-Min), tolerance, preset, data memory
Drive method	Manual
Guiding method	Roller bearing
Power supply	Alkaline battery size AA LR6 (4 pcs.), rechargeable battery size AA Ni-MH (4 pcs.), AC-Adapter (optional)
Battery life	Approx. 1200 h (without air floating) approx. 90 h (with air floating)

Standard accessories

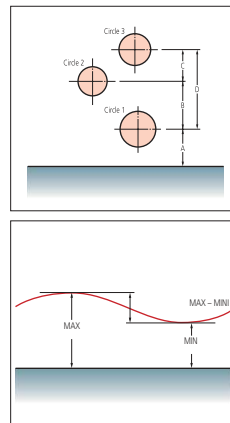
No.	Description
011037	Battery, LR6, 1,5V, 4 pcs.
12AAA715	Setting Block Linear Height/QM-Height, Probe Calibration
05HZA148	Ball Offset Probe QM-Height, D=5mm, Standard Accessory



518-254



518-256

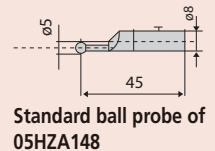


Metric

No.	Range	Digital step	Accuracy	Perpendicularity	Repeatability	Air floating	Mass [kg]
518-250	0-350 mm	0,001 mm/0,005 mm	±(2,4+2,1L/600) μm L = Measuring length (mm)	7 μm	(2σ) ≤ 1,8 μm	no	25
518-252	0-600 mm	0,001 mm/0,005 mm	±(2,4+2,1L/600) μm L = Measuring length (mm)	12 μm	(2σ) ≤ 1,8 μm	no	26
518-254	0-350 mm	0,001 mm/0,005 mm	±(2,4+2,1L/600) μm L = Measuring length (mm)	7 μm	(2σ) ≤ 1,8 μm	yes	29
518-256	0-600 mm	0,001 mm/0,005 mm	±(2,4+2,1L/600) μm L = Measuring length (mm)	12 μm	(2σ) ≤ 1,8 μm	yes	30



05HZA148



Standard ball probe of 05HZA148



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Scan QR Code with your mobile to read the QM-Height leaflet.

Optional Accessories for QM-Height

Series 518

Optional accessories

No.	Description
06AGZ369D	AC-Adapter, DC 6V 2A, CEE version Germany (Europe)
936937	Digimatic Cable, Flat 10-Pin Type, 1 m
965014	Digimatic Cable, Flat 10-Pin Type, 2 m
06AFM380D	USB Input Tool Direct (Digimatic to USB), 2m Cable, Digimatic/Digimatic 2, Flat 10-Pin Type
02AZE990	U-WAVE Transmitter Mounting Plate, for QM-Height
02AZD790D	Connection Cable D for U-WAVE, Flat 10-Pin Type
06AFZ050	USB Cable 1m, DP-1VA to PC etc., USB Type A to Micro USB Type B Plug
02AZD730G	U-WAVE-T, IP67 Type, Wireless Transmitter

Other probes and data management hardware, see optional accessories for QM-Height and Linear Height.



936937



06AFM380D



02AZE990



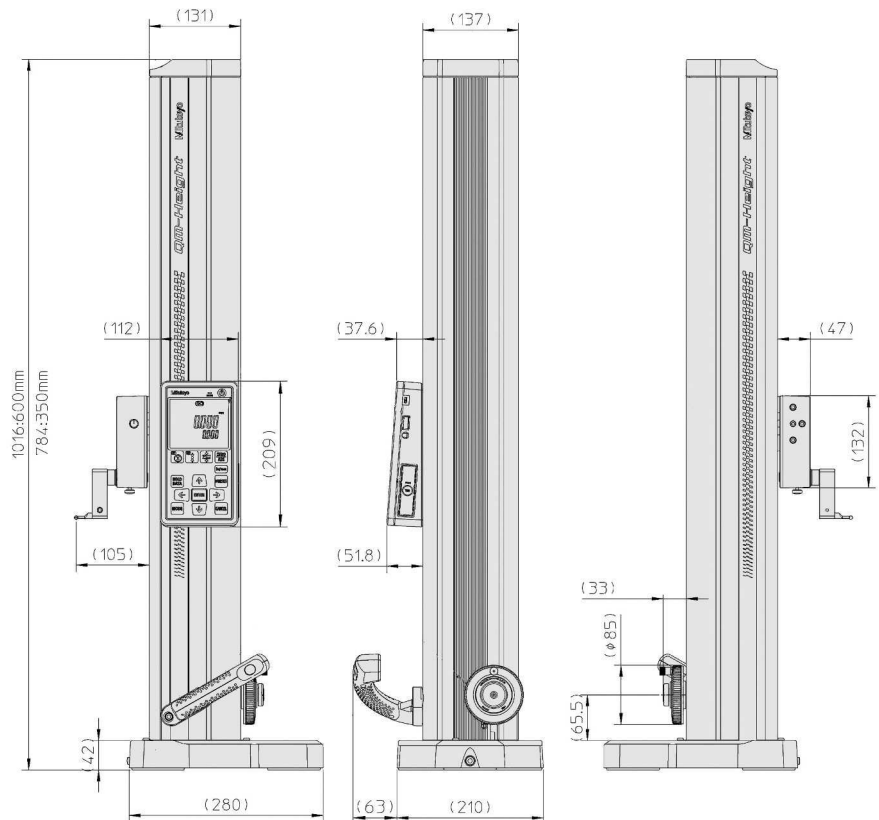
02AZE990



Inside diameter



Outside diameter



Linear Height LH-600 F/FG

Series 518

The Linear Height LH-600F/FG is a high-end 2D height-measuring instrument exhibiting the perfect combination of intuitive operation and multifunctionality.

- Measurement operations can be performed by using the hybrid controller box with a touch screen and integrated sheet keyboard
- It is capable of measuring with a digital step of 0,1 μm
- Excellent accuracy of $(1,1 + 0,6L/600) \mu\text{m}$
- Bidirectional Digimatic data output (Digimatic S1)
- Measurement results can be printed from a receipt printer or Digimatic Printer (DP-1VA) and sent to a PC via wireless communication, USB cable or USB-Stick
- Pneumatic drive mechanism
- Automatic running of pre-learned part programs
- Excellent visualization of GO/ \pm NG tolerance comparisons
- Independent operation with rechargeable battery
- LH-Communication Tool Software available online free of charge
- Dimensions L 492 mm x W 238 mm x H 996 mm



518-360-13



518-361-13 (model with power grip)



Measurements are supported via clear guidance on the large touch panel.



Rear panel

Specifications

Balancing method	Counterbalance
Drive method	Motor-driven (5, 10, 15, 20, 25, 30, 40 mm/s: 7 steps) / manual
Sliding method	Rolling bearing
Slider balance adjustment method	Manual adjustment by adding/removing auxiliary weights
Scale	Photoelectric INC encoder, STVC-20Z (8,1x10-6/K)
Display	8,4" SVGA touch screen (800x600 dot, LED, with back lightning)
Language for display	English / German / French / Spanish / Italian / Dutch / Portuguese / Swedish / Turkish / Czech / Hungarian / Slovenian / Polish / Russian / Romanian / Bulgarian / Finnish / Traditional Chinese / Simplified Chinese / Korean / Japanese
Adjustment range of display unit orientation	Tilt direction: 0-40°, swivel direction: -30-180°
Power supply	AC adapter 100-240V, 50/60Hz / battery (Ni-MH)
Battery operation time	Approx. 4 hours
Battery charging time	Appr. 3,5 h
Power consumption	Max. 49,9 W
Number of stored part programs	50
Preventive maintenance function	Scale status notification, calibration status notification
Measuring force	1 N

Standard accessories

No.	Description
12AAY343	D=5mm Ball Stylus, with Stepped Holder
518-060-13	Probe Diameter Calibration Block, Metric/Inch, for LH-600
12BAS388	Probe Diameter Calibration Block Cover, LH-600F/FG
12AAY658	Probe Diameter Calibration Block Base, LH-600F/FG
12AAF712	Battery Pack, for Height Gauge LH-600 C/D/E/F
12BAR507	Touch-Pen
12BAS384	Protective Sheet, Touch Screen LH-600F/FG
357651	AC-Adapter 12V, CEE Type, for SJ-210/ SJ-310/LH-600/QM-Data 200
12BAS276	Cap for Conveying Handles, LH-600F/FG
510434	Conveying Handles (2 pcs.), Linear Height, Profile Projector
12BAT198	Clear Cover (T0,15)
02ZAA000	Power Cord Set/PSE

Linear Height LH-600 F/FG

Metric/Inch

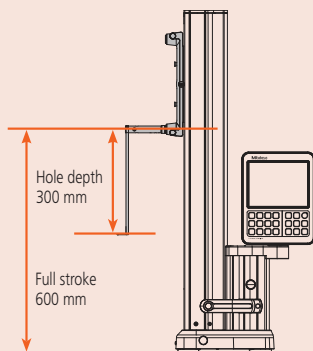
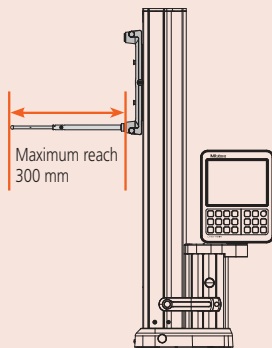
No.	Range [mm]	Slider stroke	Digital step	Remarks
518-360-13	0-977	600 mm	0,0001/ 0,001/ 0,01/ 0,1 mm or 0,000001/ 0,00001/ 0,0001/ 0,001"	Without power grip
518-361-13	0-977	600 mm	0,0001/ 0,001/ 0,01/ 0,1 mm or 0,000001/ 0,00001/ 0,0001/ 0,001"	With power grip



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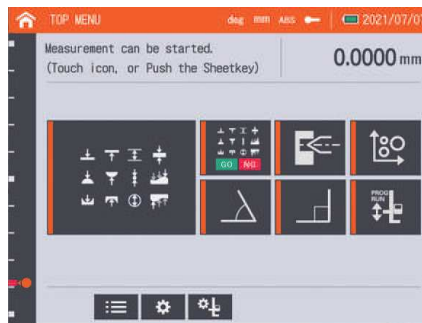
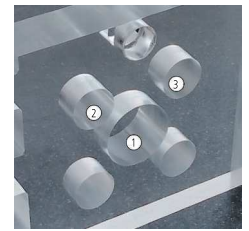


Measurement area with optional probes

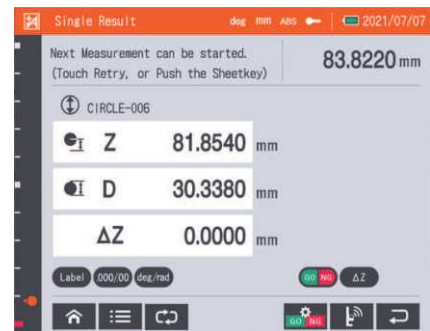
No.	Accuracy	Perpendicularity	Straightness	Repeatability	Air floating	Mass [kg]
518-360-13	$\pm(1,1 + 0,6L/600)$ μm L = length (mm)	5 μm (after compensation)	4 μm (mechanical)	(2 σ) Plane : 0,4 μm (2 σ) Bore : 0,9 μm	Full-floating (for moving), semi floating (for scanning measurement)	26,1
518-361-13	$\pm(1,1 + 0,6L/600)$ μm L = length (mm)	5 μm (after compensation)	4 μm (mechanical)	(2 σ) Plane : 0,4 μm (2 σ) Bore : 0,9 μm	Full-floating (for moving), semi floating (for scanning measurement)	26,6



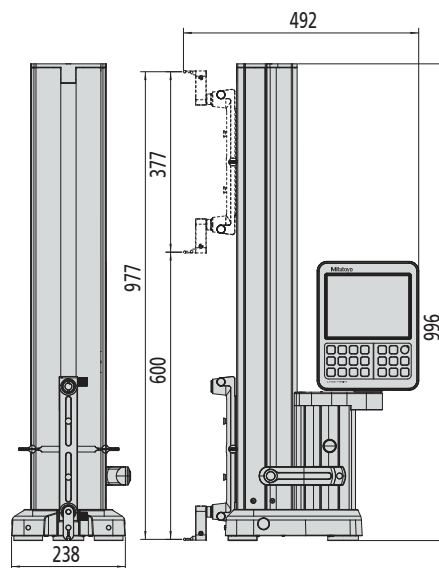
Graphic support for 2D measurement



Home screen

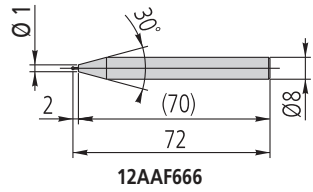


Result screen



Optional Accessories for Linear Height

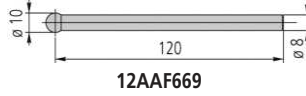
Series 518



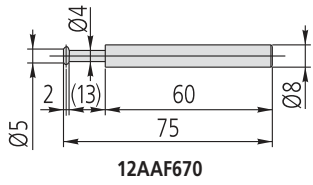
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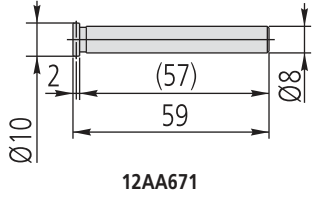
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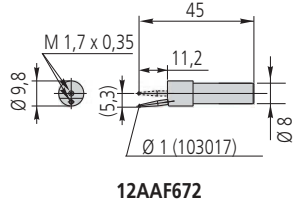
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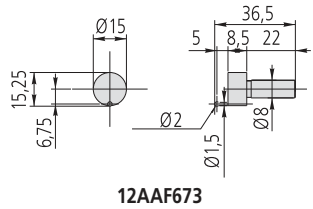
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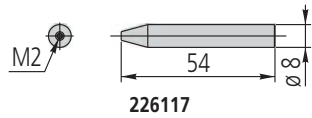
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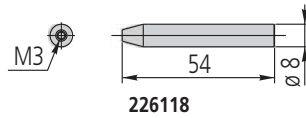
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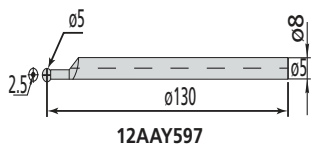
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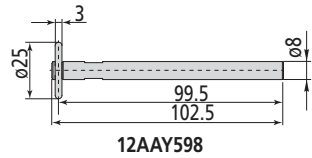
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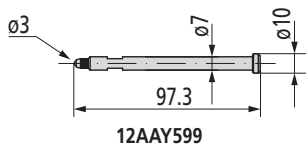
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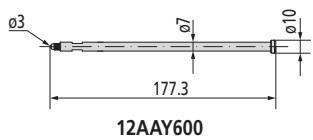
12AAY597



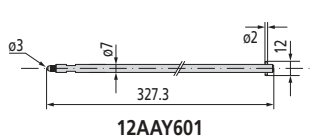
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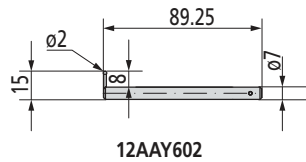
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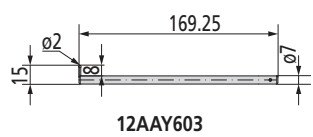
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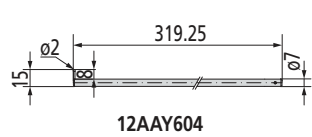
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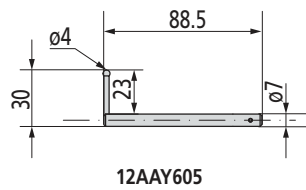
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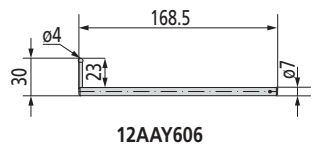
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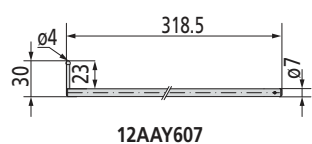
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12AAY605



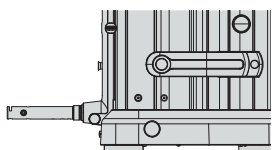
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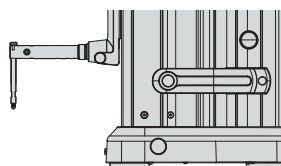
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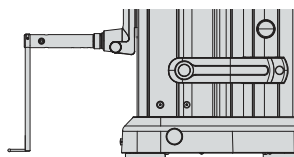
Extension holder
12AAY595 or 12AAY596



Extension holder 100 mm or
200 mm for probes and stylus



12AAY599 + 12AAY595



12AAY606 + 12AAY595

Optional accessories

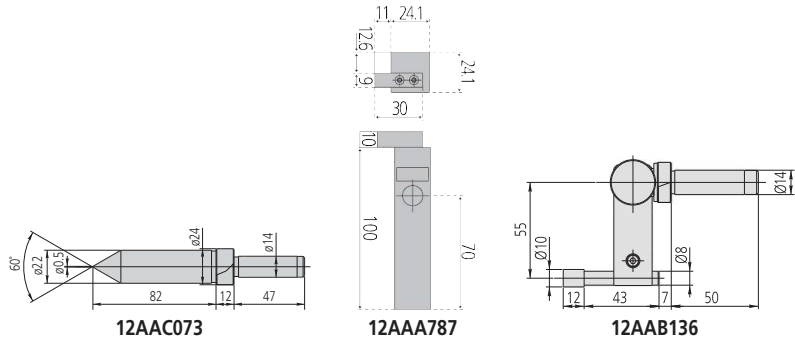
No.	Description
12AAF666	Ball Probe Coaxial Type, D=1mm, 72mm Length
12AAF668	Ball Probe Coaxial Type, D=10mm, 82mm Length
12AAF669	Ball Probe Coaxial Type, D=10mm, 120mm Length
12AAF670	Disk Probe Coaxial Type, D=5mm, 75mm Length
12AAF671	Disk Probe Coaxial Type, D=10mm, 59mm Length
12AAF672	Ball Probe Eccentric Type, D=1mm
12AAF673	Ball Probe Eccentric Type, D=2mm
226117	CMM Stylus Adapter M2
226118	CMM Stylus Adapter M3
12AAY597	Stylus, Eccentric Type, D=5mm, 130mm Length
12AAY598	Disk Stylus, Coaxial Type, D=25mm, 99.5mm Length
12AAY599	Depth Stylus for Height Gauge, for max. 70mm Depth
12AAY600	Depth Stylus for Height Gauge, for max. 150mm Depth
12AAY601	Depth Stylus for Height Gauge, for max. 300mm Depth
12AAY602	Depth Stylus for Height Gauge, Offset Type, for max. 70mm Depth, D=2mm Ball
12AAY603	Depth Stylus for Height Gauge, Offset Type, for max. 150mm Depth, D=2mm Ball
12AAY604	Depth Stylus for Height Gauge, Offset Type, for max. 300mm Depth, D=2mm Ball
12AAY605	Depth Stylus for Height Gauge, Offset Type, for max. 70mm Depth, D=4mm Ball
12AAY606	Depth Stylus for Height Gauge, Offset Type, for max. 150mm Depth, D=4mm Ball
12AAY607	Depth Stylus for Height Gauge, Offset Type, for max. 300mm Depth, D=4mm Ball
12AAY595	Extension Holder, 100mm, for Height Gauge
12AAY596	Extension Holder, 200mm, for Height Gauge

Optional Accessories for Linear Height

Series 518

Optional accessories

No.	Description
12AAC073	Tapered Measuring Insert, D=22mm
12AAA787	Setting Block Linear Height/QM-Height, Probe Calibration and Taper Probe
12AAB136	Cylindrical Probe, D=10mm
K650986	Stylus Kit M3 for Linear Height, with Holder, 5 Probes, 2 Extensions, 1 Dowel-key
02ZAA021	Power Cable CEE Type, for Europe (except UK)
06AGL011	Digimatic Cable, Straight, 1m, Digimatic/Digimatic 2/Digimatic S1 Interface, 1 m
06AGL021	Digimatic Cable, Straight, 2m, Digimatic/Digimatic 2/Digimatic S1 Interface, 2 m
519-521	Inductive Probe Lever Head Design, $\pm 0,5$ mm, appr. 0,2N
06AGQ001F	USB Input Tool Direct (Digimatic to USB), 2m Cable, Digimatic/Digimatic 2/Digimatic S1 Interface
12AAY486	U-WAVE-T Transmitter Mounting Plate, for LH-600F/FG
02AZG011	Connection Cable SF for U-WAVE, for U-WAVE-T and Instruments with Digimatic S1 Interface
12BAF812	USB Cable, A-Type 2m
519-561D	Digital Display Unit for Inductive Probe, with CEE Power Cable
02AZD880G	U-WAVE-T, Buzzer Type, Wireless Transmitter



K650986



06AGL011



06AGL021



06AGQ001F



02AZG011

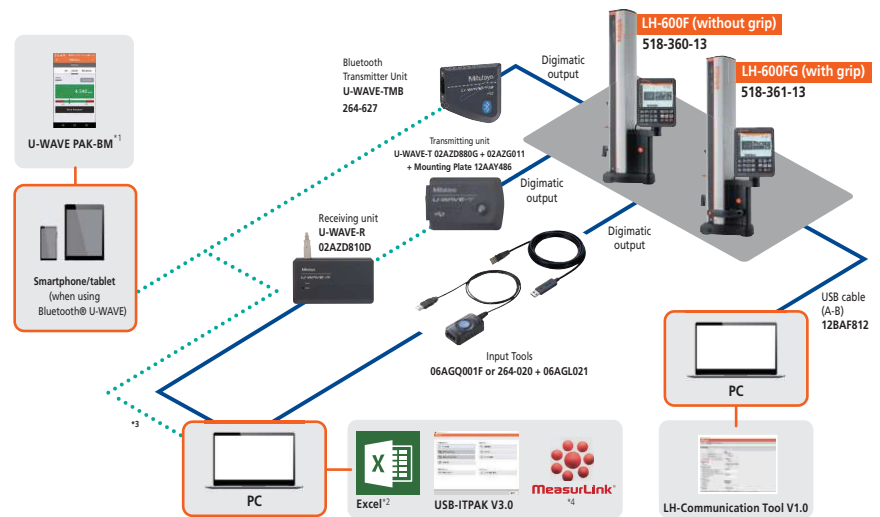


12AAY486



K650986

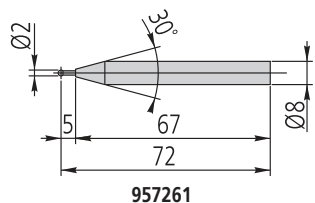
— Wired connection (USB) ••••• Wireless connection — Software



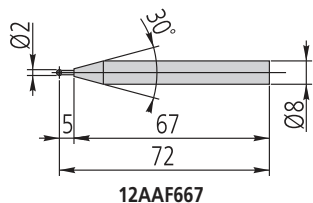
*1: Available at Apple Store and Google Play for free download. *2: Excel is a registered trademark of Microsoft Corporation. *3: It is also possible to connect with a Bluetooth-compatible PC. *4: MessurLink® is a registered trademark of Mitutoyo Corporation (Japan) and Mitutoyo America Corporation (USA).

Optional Accessories for QM-Height and Linear Height

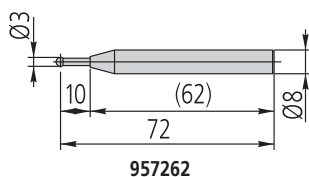
Series 518



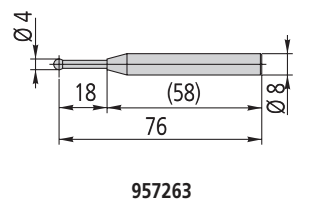
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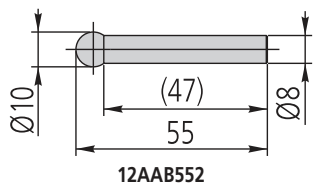
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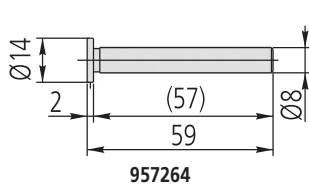
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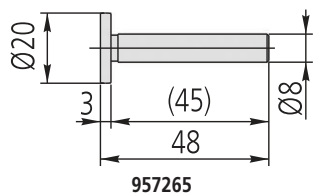
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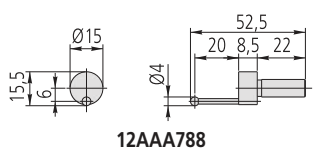
12AAB552



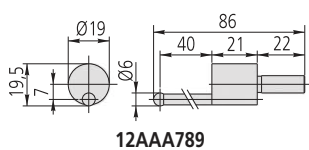
957264



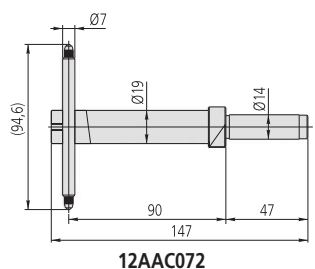
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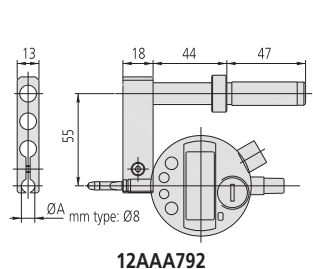
12AAA788



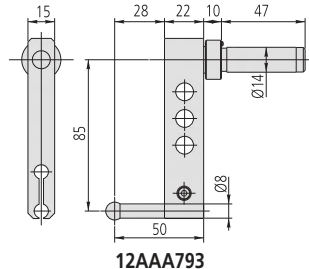
12AAA789



12AAC072



12AAA792



12AAA793



264-020



02AZD880G
(IEEE 802.15.4 Transmitter)



02AZD810D
(IEEE 802.15.4 Receiver)



264-627
(Bluetooth Transmitter)

Optional accessories

No.	Description
957261	Ball Probe Coaxial Type, D=2mm, 72mm Length
12AAF667	Ball Probe Coaxial Type, D=2mm, Ruby, 72mm Length
957262	Ball Probe Coaxial Type, D=3mm, 72mm Length
957263	Ball Probe Coaxial Type, D=4mm, 76mm Length
12AAB552	Ball Probe, Coaxial Type, D=10mm
957264	Disk Probe Coaxial Type, D=14mm, 59mm Length
957265	Disk Probe Coaxial Type, D=20mm, 48mm Length
12AAA788	Ball Probe Eccentric Type, D=4mm
12AAA789	Ball Probe Eccentric Type, D=6mm
12AAC072	Depth Probe for Height Gauge, 90mm Reach
12AAA792	Indicator Holder LH-600, For 8mm Stem
12AAA793	Probe Extension Holder, Height Gauge, 85mm
264-020	USB Input Tool Interface Box, Digimatic/Digimatic 2/Digimatic S1 Interface
02AZD730G	U-WAVE-T, IP67 Type, Wireless Transmitter
02AZD880G	U-WAVE-T, Buzzer Type, Wireless Transmitter
02AZD810D	U-WAVE-R Wireless Receiver, Based on IEEE802.15.4 (2,4 GHz)
264-626	U-WAVE fit Bluetooth, IP67 Type, Wireless Transmitter for Micrometer/Indicator
264-627	U-WAVE fit Bluetooth, Buzzer Type, Wireless Transmitter for Micrometer/Indicator
264-505D	Statistic Processing Printer DP-1VA, Data Printer and Logger CEE Type
543-701B	Digital Indicator ID-C, Inch/Metric, 0.5", 0.00002", Flat Back Plate
543-700B	Digital Indicator ID-C, 12,7mm, 0,0005mm, Flat Back Plate

For wireless transmitter, use connection cable 02AZG011 for Linear Height and 02AZD790D for QM-Height.



ABSOLUTE Digimatic Indicators
Page 228



Dial Indicators
Page 242



Accessories for Indicators
Page 261



Lever Indicators
Page 269



Accessories for Lever Indicators
Page 279



Thickness Gauges, Caliper Gauges, Dial Tension Gauges
Page 281

ABSOLUTE Digimatic Indicators ID-SX

Series 543

This is a standard model of indicator that is reliable and easy to use. The ABSOLUTE Digimatic Indicator ID-S offers you the following benefits:

- The ABSOLUTE sensor means you don't have to carry out origin setting every time you power it on, saving you time and hassle.
- You can access all functions by using the large, user-friendly buttons on the front of the indicator.
- Large character height of 9 mm provides good readability.
- Exceptional battery life.

ABSOLUTE®



IP53

IP42



543-781B-10

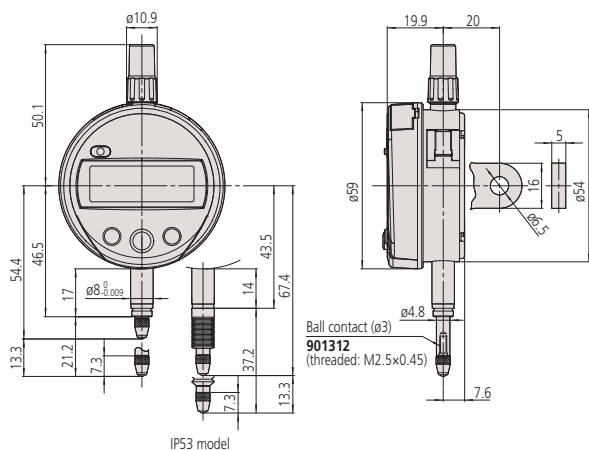
543-790B-10

543-794B-10

Metric

No.	Range [mm]	Digital step	Max. Permissible Error E MPE	H MPE (Hysteresis)	R MPE (Repeatability)	Measuring force MPL	Protection	Mass [g]
543-781B-10	12,7	0,01 mm	0,02 mm	0,02 mm	0,01 mm	≤1,5 N	IP42	140
543-781-10	12,7	0,01 mm	0,02 mm	0,02 mm	0,01 mm	≤1,5 N	IP42	150
543-790B-10	12,7	0,001 mm	0,003 mm	0,002 mm	0,002 mm	≤1,5 N	IP42	140
543-790-10	12,7	0,001 mm	0,003 mm	0,002 mm	0,002 mm	≤1,5 N	IP42	150
543-794B-10	12,7	0,001 mm	0,003 mm	0,002 mm	0,002 mm	≤2,5 N	IP53	140
543-794-10	12,7	0,001 mm	0,003 mm	0,002 mm	0,002 mm	≤2,5 N	IP53	150

No. with "B": flat back plate



Application with spindle lifting cable

Functions	Series 543
Data output	●
ON/OFF	●
Counting direction switchable	●
ORIGIN (ABS-Zero)	●

Specifications

Display	LCD, character height 9 mm
Max. response speed	Unlimited
Alarm	Low voltage, counting value composition error
Stem Ø	8 mm
Contact point	Carbide ball, thread M 2,5 x 0,45 mm
Power supply	1 battery SR-44
Battery life	Approx. 18000 hours (0,001 mm type), approx. 20000 hours (0,01 mm type)

Optional accessories

No.	Description
905338	Digimatic Cable, Flat Straight Type, 1 m
905409	Digimatic Cable, Flat Straight Type, 2 m
06AFM380F	USB Input Tool Direct (Digimatic to USB), 2m Cable, Digimatic/Digimatic 2, Flat Straight Type
264-623	U-WAVE fit, Buzzer Type, Wireless Transmitter for Micrometer/Indicator
264-622	U-WAVE fit, IP67 Type, Wireless Transmitter for Micrometer/Indicator
264-627	U-WAVE fit Bluetooth, Buzzer Type, Wireless Transmitter for Micrometer/Indicator
264-626	U-WAVE fit Bluetooth, IP67 Type, Wireless Transmitter for Micrometer/Indicator
02AZF670	U-WAVE fit Transmitter Mounting Plate, for ID-C, ID-S and ID-F Digital Indicator
02AZD790F	Connection Cable F for U-WAVE, Straight, without Data Button
21JZA295	Spindle Lifting Cable, for Indicator, L=500mm
21EZA198	Spindle Lifting Lever, for Digital Indicator, A-Type Dial Indicator Serie 2/3/4
21EZA105	Spindle Lifting Knob, for 12,7mm Range
903594	Air Drive Unit, Indicator/Linear Gauge, for ID-S, ID-C, LGS, 12,7 mm and 0,5" Range
238774	Silicon rubber boot for ID-C, ID-N, ID-S

For USB Input Tool Direct cable: a footswitch (no. 937179T), a USB-footswitch adapter (no. 06ADV384) and USB-ITPAK Software (no. 06AGR543) are required. 238774 for IP53 model only

Consumable spares

No.	Description
63AAA800	Battery SR44 1,5 V
901312	Contact Element Ball Point, M2,5x0,45, 7,3mm Length, Carbide, Metric
21EAA423	NBR Rubber Boot, Digital Gauge Series 543

21EAA423 for IP53 model only

ABSOLUTE Digimatic Indicators ID-U

ABSOLUTE®



IP42

Series 575

This is a slim type of digital indicator with a 25 mm range.

The ABSOLUTE Digimatic Indicator ID-U offers you the following benefits:

- The ABSOLUTE sensor means you don't have to carry out origin setting every time you power it on, saving you time and hassle.
- Its compact design makes it ideal for installing into measuring fixtures.
- Exceptional battery life.

Functions	Series 575
Data output	●
ON/OFF	●
Counting direction switchable	●
ORIGIN (ABS-Zero)	●

Specifications

Display	LCD, character height 8,5 mm
Max. response speed	Unlimited
Alarm	Low voltage, counting value composition error
Stem \varnothing	8 mm
Contact point	Carbide ball, thread M 2,5 x 0,45 mm
Power supply	1 battery SR-44
Battery life	Approx. 20000 hours

Standard accessories

No.	Description
21EAA426	Spindle Lifting Handle, for Indicators

Optional accessories

No.	Description
905338	Digimatic Cable, Flat Straight Type, 1 m
905409	Digimatic Cable, Flat Straight Type, 2 m
06AFM380F	USB Input Tool Direct (Digimatic to USB), 2m Cable, Digimatic/Digimatic 2, Flat Straight Type
02AZD880G	U-WAVE-T, Buzzer Type, Wireless Transmitter
02AZD730G	U-WAVE-T, IP67 Type, Wireless Transmitter
02AZD790F	Connection Cable F for U-WAVE, Straight, without Data Button
21JZA295	Spindle Lifting Cable, for Indicator, L=500mm

21JZA295: moving measuring range max. 12mm

For USB Input Tool Direct cable:

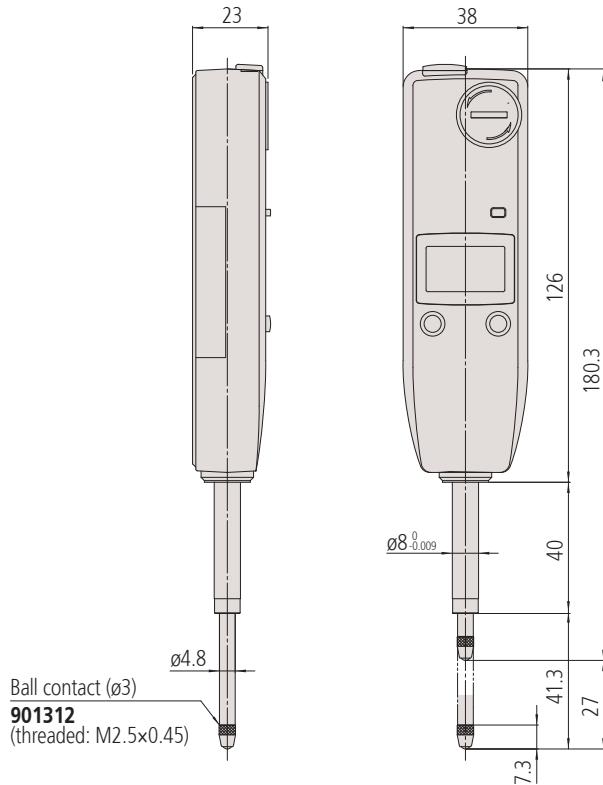
a footswitch (no. 937179T), a USB- footswitch adapter (no. 06ADV384) and USB-ITPAK Software (no. 06AGR543) are required.

Consumable spares

No.	Description
63AAA800	Battery SR44 1,5 V
901312	Contact Element Ball Point, M2,5x0,45, 7,3mm Length, Carbide, Metric



575-121

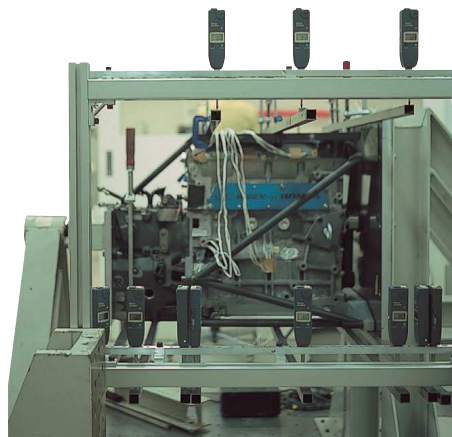


Ball contact ($\varnothing 3$)

901312
(threaded: M2.5x0.45)

Metric

No.	Range [mm]	Digital step	Max. Permissible Error E MPE	H MPE (Hysteresis)	R MPE (Repeatability)	Measuring force MPL	Protection	Mass [g]
575-121	25,4	0,01 mm	0,02 mm	0,02 mm	0,01 mm	$\leq 1,8$ N	IP42	140



ABSOLUTE Digimatic Indicators ID-C

Series 543

This is a multifunction standard indicator that is reliable and easy to use.

- Bidirectional communication e.g. to perform parameter setting from a PC (Digimatic S 1 interface) is possible.
- The ABSOLUTE sensor means you don't have to carry out origin setting every time you power it on, saving you time and hassle.
- Excellent visibility with a large digital/analog display.
- Model with 0,5 µm digital step is available.
- Measurements such as simple calculation and peak detection are possible.
- Equipped with a calibration schedule warning function.
- GO/±NG judgement is performed by setting the upper and lower tolerances.
- Display 330° rotatable.
- A function lock protects the display against unauthorised use.



Functions	Series 543
ON/OFF	●
ABS / INC (INC ZERO)	●
PRESET	●
Function lock	●
GO/±NG judgement	●
DATA/HOLD	●
Auto Power OFF setting	●
Counting direction switchable	●
Customizing keys	●
Calibration warning function	●
Low voltage alarm	●
ZERO/ABS	●

Specifications

Display	LCD, character height 11 mm, rotatable 330°
Max. response speed	Unlimited
Measurement frequency (MAX/MIN/RANGE)	50 times/s
Alarm	Low voltage, counting value composition error, overflow error, tolerance limit setting error
Stem Ø	8 mm
Contact point	Carbide ball, thread M 2,5 x 0,45 mm
Power supply	1 battery CR-2032
Battery life	Continuous use: approx. 2700h
Digital step switchable	0,5 µm model only: 0,5 µm, 1 µm, 10 µm



543-700B

543-715B



543-720B



543-730B



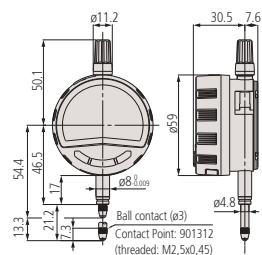
330° rotary display



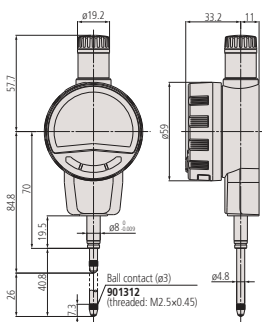
Calibration schedule warning



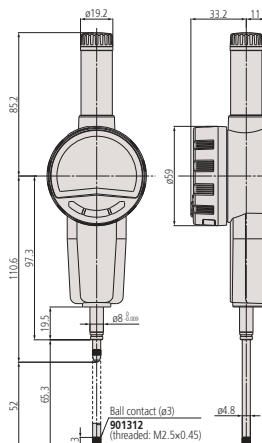
Large display



12,7 mm models



25,4 mm models



50,8 mm models

ABSOLUTE Digimatic Indicators ID-C

Optional accessories

No.	Description
06AGL011	Digimatic Cable, Straight, 1m, Digimatic/Digimatic 2/Digimatic S1 Interface, 1 m
06AGL021	Digimatic Cable, Straight, 2m, Digimatic/Digimatic 2/Digimatic S1 Interface, 2 m
06AGQ001F	USB Input Tool Direct (Digimatic to USB), 2m Cable, Digimatic/Digimatic 2/Digimatic S1 Interface
264-020	USB Input Tool Interface Box, Digimatic/Digimatic 2/Digimatic S1 Interface
264-623	U-WAVE fit, Buzzer Type, Wireless Transmitter for Micrometer/Indicator
264-622	U-WAVE fit, IP67 Type, Wireless Transmitter for Micrometer/Indicator
264-627	U-WAVE fit Bluetooth, Buzzer Type, Wireless Transmitter for Micrometer/Indicator
264-626	U-WAVE fit Bluetooth, IP67 Type, Wireless Transmitter for Micrometer/Indicator
02AZF670	U-WAVE fit Transmitter Mounting Plate, for ID-C, ID-S and ID-F Digital Indicator
02AZF700	Connection Unit for ID-C Indicator, 12,7mm/0,5" Type, U-WAVE fit, U-WAVE fit Bluetooth for Digimatic S1 Interface
02AZG011	Connection Cable SF for U-WAVE, for U-WAVE-T and Instruments with Digimatic S1 Interface
02AZG021	Connection Cable SF for U-WAVE, for Foot Switch, for Digimatic S1 Interface
21EZA198	Spindle Lifting Lever, for Digital Indicator, A-Type Dial Indicator Serie 2/3/4
21JZA295	Spindle Lifting Cable, for Indicator, L=500mm
21JZA301	Spindle Lifting Cable with Auto Stop, for Indicator, L=300mm
21EZA105	Spindle Lifting Knob, for 12,7mm Range
903594	Air Drive Unit, Indicator/Linear Gauge, for ID-S, ID-C, LGS, 12,7 mm and 0,5" Range
21EZA197	Spindle Lifting Knob, for 25,4mm Range
21EZA200	Spindle Lifting Knob, for 50,8mm Range
02ACA571	Auxiliary Spindle Spring, for 25,4mm Range
02ACA773	Auxiliary Spindle Spring, for 50,8mm Range

02ACA571 and 02ACA773 : required when orienting the indicator upside down;
02AZF700, 21EZA198, 21JZA295, 21JZA301, 903594 for 12.7 mm model only

Consumable spares

No.	Description
05SAA217D	Lithium battery CR-2032, 1 pcs.
901312	Contact Element Ball Point, M2,5x0,45, 7,3mm Length, Carbide, Metric



Scan QR code for Leaflet



Scan QR code for Video

Metric

No.	Range [mm]	Digital step	Max. Permissible Error E MPE	H MPE (Hysteresis)	R MPE (Repeatability)	Measuring force MPL	Protection	Mass [g]
543-700	12,7	0,0005 mm/0,001 mm/0,01mm	0,003 mm	0,002 mm	0,002 mm	≤1,5 N	IP42	175
543-700B	12,7	0,0005 mm/0,001 mm/0,01mm	0,003 mm	0,002 mm	0,002 mm	≤1,5 N	IP42	165
543-705	12,7	0,0005 mm/0,001 mm/0,01mm	0,003 mm	0,002 mm	0,002 mm	0,4-0,7 N	IP42	170
543-705B	12,7	0,0005 mm/0,001 mm/0,01mm	0,003 mm	0,002 mm	0,002 mm	0,4-0,7 N	IP42	160
543-710	12,7	0,01 mm	0,02 mm	0,02 mm	0,01 mm	≤0,9 N	IP42	170
543-710B	12,7	0,01 mm	0,02 mm	0,02 mm	0,01 mm	≤0,9 N	IP42	160
543-715	12,7	0,01 mm	0,02 mm	0,02 mm	0,01 mm	0,2-0,5 N	IP42	165
543-715B	12,7	0,01 mm	0,02 mm	0,02 mm	0,01 mm	0,2-0,5 N	IP42	155
543-720B	25,4	0,0005 mm/0,001 mm/0,01mm	0,003 mm	0,002 mm	0,002 mm	≤1,8 N	IP42	195
543-725B	25,4	0,01 mm	0,02 mm	0,02 mm	0,01 mm	≤1,8 N	IP42	190
543-730B	50,8	0,0005 mm/0,001 mm/0,01mm	0,005 mm	0,002 mm	0,002 mm	≤2,3 N	IP42	260
543-735B	50,8	0,01 mm	0,04 mm	0,02 mm	0,01 mm	≤2,3 N	IP42	245

No. with "B": flat back plate

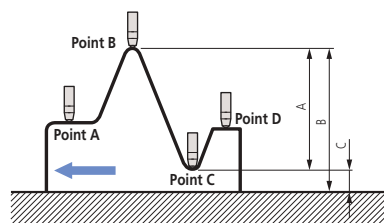
	✓	✓	≤ 0,7 N
	✓	✗	≤ 0,6 N
	✗	✓	≤ 0,4 N
	✗	✗	---

543-705(B)

	✓	✓	≤ 0,5 N
	✓	✗	≤ 0,4 N
	✗	✓	≤ 0,3 N
	✗	✗	≤ 0,2 N
	✓	✗	≤ 0,3 N

543-715(B)

Setting measuring force on low measuring force models with the help of a spring and/or weight.



Difference/Runout measurement

Example : indicator travel from points A to D.
Difference (or Total Runout) is displayed as A. Dimensions B (maximum value) and C (minimum value) can be recalled from memory with a simple key sequence.



Application with spindle lifting cable

ABSOLUTE Digimatic Indicators Calculation ID-C

ABSOLUTE®



IP42

Series 543

This indicator allows you to use a calculation function for the measured value $Ax+B+Cx^{-1}$

- The integrated calculation formula is useful in a variety of applications (e.g. roll diameter measurement)
- Coefficients A,B and C are freely definable. x = displacement of the plunger
- Analogue bar graph in the display (14 different scales switchable)
- GO/±NG tolerance judgement function
- MAX/MIN/RANGE function to measure peak values
- A fast measurement frequency mode (detection cycle 20 ms or 50 times/s) is selectable to measure in the peak detection mode (MAX/MIN/RANGE) more reliably
- Easy indicator setup via a setup menu
- A USB interface box can be used to set up the indicator from PC via dedicated software

Functions	Series 543
Data output	●
ON/OFF	●
ABS / INC (INC ZERO)	●
PRESET 3x	●
ABS/INC switchable	●
Function lock	●
GO/±NG judgement	●
DATA/HOLD	●
Low voltage alarm	●
MAX/MIN/RANGE	●
Calculation function (with formula)	●
Analog bar resolution switchable	●
Fast measurement mode	●
Selectable resolution	●

Specifications

Digital step	0,0002/ 0,0005/ 0,001/ 0,002/ 0,005/ 0,01/ 0,02/ 0,05/ 0,1/ 0,2/ 0,5/ 1 mm or non-unit (scale resolution is 0,001 mm)
Display	LCD, character height 8 mm, rotatable 330°
Max. response speed	Unlimited
Measurement frequency (MAX/MIN/RANGE)	Standard mode: 10 times/s fast mode: 50 times/s (plunger speed max. 50 µm/s for peak measurement)
Alarm	Low voltage, ABS composition error, overflow error, tolerance limit setting error
Stem Ø	8 mm
Contact point	Carbide ball, thread M 2,5 x 0,45 mm
Power supply	1 Battery CR-2032
Battery life	Standard mode: approx. 1 year fast mode: approx. 4,5 month



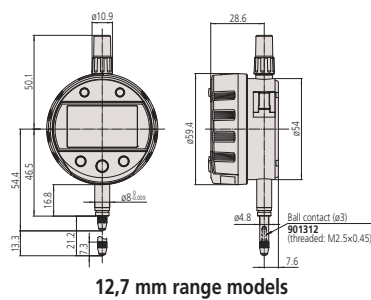
543-340B-10



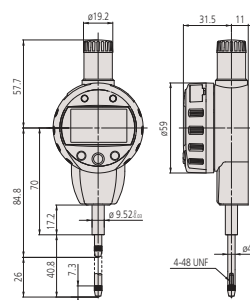
543-590B-10



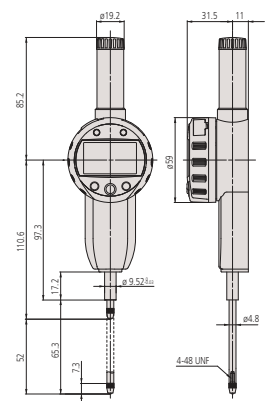
543-595B-10



12,7 mm range models



25,4 mm range models



50,8 mm range models

Metric

No.	Range [mm]	Max. Permissible Error E MPE	H MPE (Hysteresis)	R MPE (Repeatability)	Measuring force MPL	Protection	Mass [g]
543-340B-10	12,7	0,003 mm	0,002 mm	0,002 mm	≤1,5 N	IP42	170
543-590B-10	25,4	0,003 mm	0,002 mm	0,002 mm	≤1,8 N	IP42	190
543-595B-10	50,8	0,006 mm	0,002 mm	0,002 mm	≤2,3 N	IP42	260

ABSOLUTE Digimatic Indicators Calculation ID-C



K541282



011445 (similar)



Custom-made solution



21FAJ395 (similar)



21FAJ395 (similar)



543-340B-10 with 011445



21FAJ395



21FAJ394



K541281



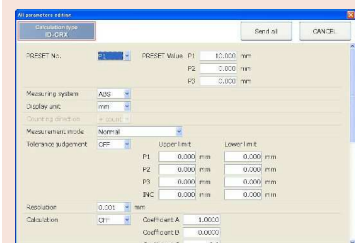
K541282

Optional accessories

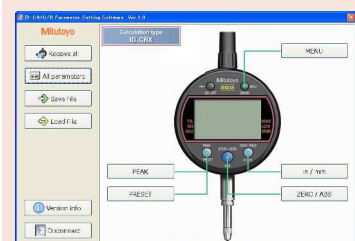
No.	Description
905338	Digimatic Cable, Flat Straight Type, 1 m
905409	Digimatic Cable, Flat Straight Type, 2 m
06AFM380F	USB Input Tool Direct (Digimatic to USB), 2m Cable, Digimatic/Digimatic 2, Flat Straight Type
264-623	U-WAVE fit, Buzzer Type, Wireless Transmitter for Micrometer/Indicator
264-622	U-WAVE fit, IP67 Type, Wireless Transmitter for Micrometer/Indicator
264-627	U-WAVE fit Bluetooth, Buzzer Type, Wireless Transmitter for Micrometer/Indicator
264-626	U-WAVE fit Bluetooth, IP67 Type, Wireless Transmitter for Micrometer/Indicator
02AZF670	U-WAVE fit Transmitter Mounting Plate, for ID-C, ID-S and ID-F Digital Indicator
02AZD790F	Connection Cable F for U-WAVE, Straight, without Data Button
21JZA295	Spindle Lifting Cable, for Indicator, L=500mm
21EZA198	Spindle Lifting Lever, for Digital Indicator, A-Type Dial Indicator Serie 2/3/4
21EZA105	Spindle Lifting Knob, for 12,7mm Range
21EZA197	Spindle Lifting Knob, for 25,4mm Range
21EZA200	Spindle Lifting Knob, for 50,8mm Range
21EZA313	USB Interface for PC Setup, ID-C Indicator
21FAJ394	Angle Plate for Calc. ID-C, Radius: 25-70mm
K541281	Angle Plate for Calc. ID-C, Radius: 50-100mm
K541282	Angle Plate for Calc. ID-C, Radius: 100-200mm
21FAJ395	Roll Type Base, outside: 45-140mm / inside: 65-100mm
011445	Inner edge probe, 90°, D=0,5-20mm
011446	Setting Standard for 011445
011447	Inner edge probe, 90°, D=20-40mm
011448	Inner edge probe, 90°, D=40-60mm

Consumable spares

No.	Description
055AA217D	Lithium battery CR-2032, 1 pcs.
901312	Contact Element Ball Point, M2,5x0,45, 7,3mm Length, Carbide, Metric



Setup software available for download at www.mitutoyo.eu (Registration is required) (optional USB Interface 21EZA313 is necessary)



ABSOLUTE Digimatic Indicators Bore Gauge ID-C

ABSOLUTE®



IP42

Series 543

This indicator is designed for inside diameter measurement applications on bore gauges

It offers the following benefits:

- Minimum value holding function that allows you to easily detect a hole diameter
- Analogue bar graph in the display (12 different scales switchable)
- The analogue bar graph enhances usability by adding a dial gauge "feel" to digital measurement
- GO/±NG tolerance judgement function
- A fast measurement frequency mode (detection cycle 20ms or 50times/s) is selectable to measure in the peak detection mode more reliably
- Easy indicator setup via a setup menu
- A USB interface box can be used to set up the indicator from PC via dedicated software

Functions	Series 543
Data output	●
ON/OFF	●
PRESET 3x	●
Function lock	●
GO/±NG judgement	●
DATA/HOLD	●
MIN Value Hold	●
Analog bar resolution switchable	●
Fast measurement mode	●

Specifications

Display	LCD, character height: 8 mm, rotatable 330°
Max. response speed	Unlimited
Measurement frequency (MAX/MIN/RANGE)	Standard mode: 10 times/s fast mode: 50 times/s (plunger speed max. 50 μm/s for peak measurement)
Alarm	Low voltage, composition error, overflow error, tolerance limit setting error
Stem Ø	8 mm
Contact point	Carbide ball, thread M 2,5 x 0,45 mm
Power supply	1 Battery CR-2032
Battery life	Standard mode: approx. 1 year fast mode: approx. 4,5 month

Optional accessories

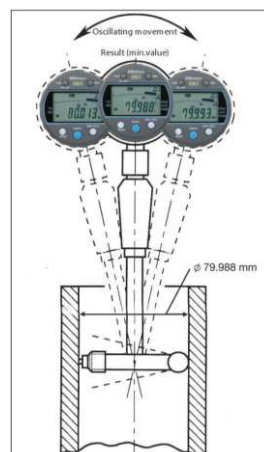
No.	Description
905338	Digimatic Cable, Flat Straight Type, 1 m
905409	Digimatic Cable, Flat Straight Type, 2 m
06AFM380F	USB Input Tool Direct (Digimatic to USB), 2m Cable, Digimatic/Digimatic 2, Flat Straight Type
264-623	U-WAVE fit, Buzzer Type, Wireless Transmitter for Micrometer/Indicator
264-622	U-WAVE fit, IP67 Type, Wireless Transmitter for Micrometer/Indicator
264-627	U-WAVE fit Bluetooth, Buzzer Type, Wireless Transmitter for Micrometer/Indicator
264-626	U-WAVE fit Bluetooth, IP67 Type, Wireless Transmitter for Micrometer/Indicator
02AZF670	U-WAVE fit Transmitter Mounting Plate, for ID-C, ID-S and ID-F Digital Indicator
02AZD790F	Connection Cable F for U-WAVE, Straight, without Data Button
21EZA313	USB Interface for PC Setup, ID-C Indicator

Consumable spares

No.	Description
055AA217D	Lithium battery CR-2032, 1 pcs.
901312	Contact Element Ball Point, M2,5x0,45, 7,3mm Length, Carbide, Metric

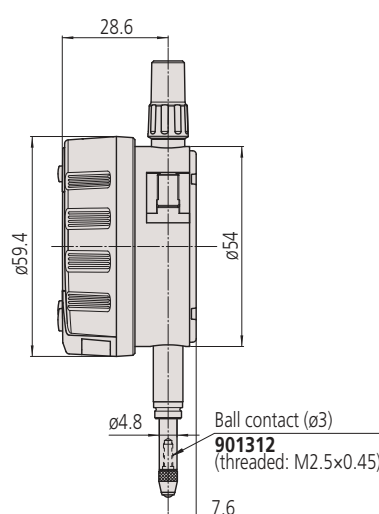
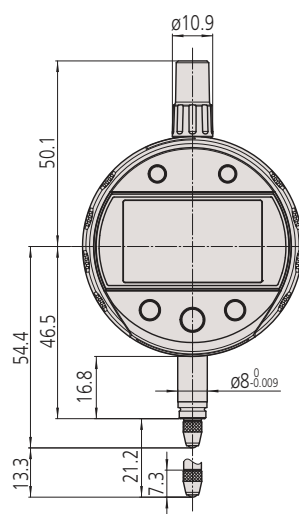


543-310B-10



Metric

No.	Range [mm]	Digital step	Max. Permissible Error E MPE	H MPE (Hysteresis)	R MPE (Repeatability)	Measuring force MPL	Protection	Mass [g]
543-310B-10	12,7	0,001 mm/ 0,01 mm	0,003 mm	0,002 mm	0,002 mm	≤1,5 N	IP42	170



ABSOLUTE Digimatic Indicators Signal ID-C

Series 543

This is an externally-powered Digimatic Indicator with a N-ch open drain -NG, OK, +NG output.

- Dust-protected and protected against splashing water, complying with IEC 60529 (equivalent to IP54)
- Measures MAX/MIN/RANGE (run-out value).
- Saves three different Preset and Tolerance settings.
- Fast measurement frequency mode (detection cycle 50 times/s) for reliable measurement in the peak detection mode (MAX/MIN/RANGE)
- Calculation function Ax. Coefficient A freely definable, x = displacement of the plunger
- Analogue bar graph in the display (12 different scales switchable)
- GO/±NG tolerance judgment function

ABSOLUTE®



IP54

Functions	Series 543
ON/OFF	●
ABS / INC (INC ZERO)	●
PRESET 3x	●
Function lock	●
GO/±NG judgement	●
Counting direction switchable	●
MAX/MIN/RANGE	●
Calculation function (with formula)	●
Analog bar resolution switchable	●
Signal output: (+NG, OK, -NG)	●
Signal input:	●
No-voltage input, (PRESET_RECALL/ZERO, HOLD_RESET)	●
GO/±NG judgement via LED	●

Specifications

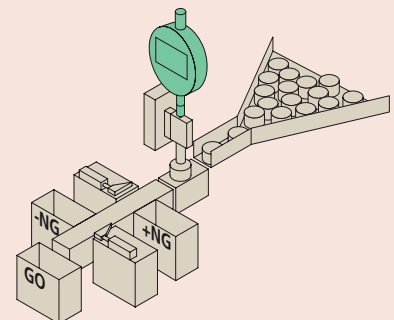
Display	LCD, character height 8 mm
Max. response speed	Unlimited
Measurement frequency (MAX/MIN/RANGE)	100 times/s (if the plunger speed >0,1 mm/s the peak value could not be displayed correctly.)
Alarm	Counting value composition error, overflow error, tolerance limit setting error
Stem Ø	8 mm
Contact point	Carbide ball, thread M 2,5 x 0,45 mm
Power supply	DC 5 - 24 V
Delivered	With signal cable 4 m. One end is fixed to the main unit. No connector is supplied for the other end.

Optional accessories

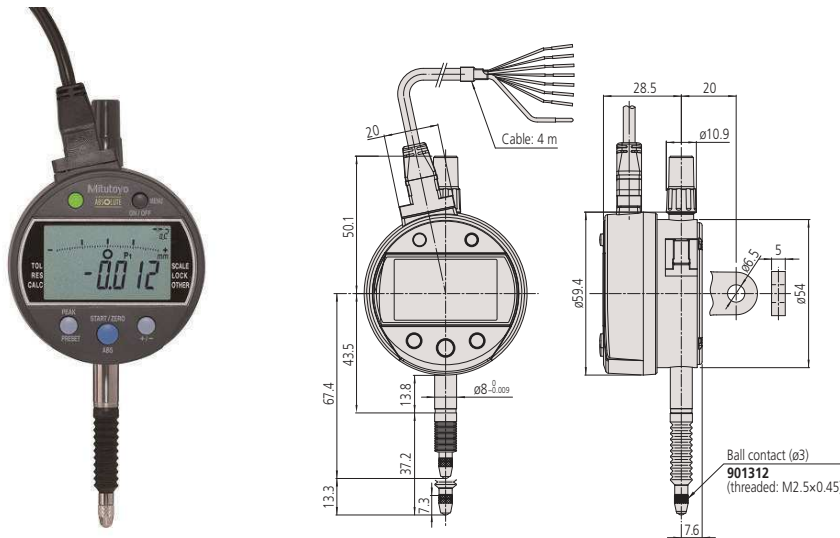
No.	Description
21EZA198	Spindle Lifting Lever, for Digital Indicator, A-Type Dial Indicator Serie 2/3/4
21JZA295	Spindle Lifting Cable, for Indicator, L=500mm
21EZA105	Spindle Lifting Knob, for 12,7mm Range
238774	Silicon rubber boot for ID-C, ID-N, ID-S

Consumable spares

No.	Description
901312	Contact Element Ball Point, M2,5x0,45, 7,3mm Length, Carbide, Metric
21EAA423	NBR Rubber Boot, Digital Gauge Series 543



Application: GO/NG Sorting



543-350B-10

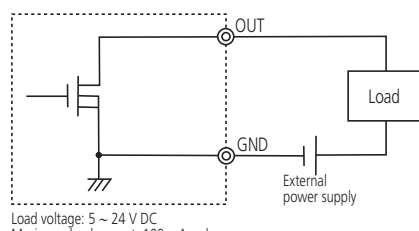
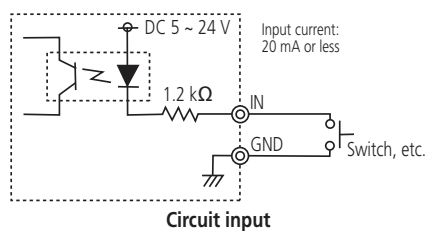
Metric

No.	Range [mm]	Digital step	Max. Permissible Error E MPE	H MPE (Hysteresis)	R MPE (Repeatability)	Measuring force MPL	Protection	Mass [g]
543-350B-10	12,7	0,001 mm / 0,01 mm	0,003 mm	0,002 mm	0,002 mm	≤2,5 N	IP54	285
543-350-10	12,7	0,001 mm / 0,01 mm	0,003 mm	0,002 mm	0,002 mm	≤2,5 N	IP54	295

No. with "B": flat back plate

Logic of output signal	Signal name	Tolerance judgment results			Sensor signal synthesizing error Overflow error of display value
		-NG	OK	+NG	
Negative logic	-NG (Orange)	Low	High	High	High
	OK (Green)	High	Low	High	High
	+NG (Brown)	High	High	Low	High
Positive logic	-NG (Orange)	High	Low	Low	Low
	OK (Green)	Low	High	Low	Low
	+NG (Brown)	Low	Low	High	Low

Normal mode, Maximum value detection mode, Minimum value detection mode



ABSOLUTE Digimatic Indicators ID-N

Series 543

This is a slim model that is highly resilient and robust. The ABSOLUTE Digimatic Indicator ID-N offers you the following benefits:

- Its slim body design is ideal for multi-point measurements.
- The ABSOLUTE sensor means you don't have to carry out origin setting every time you power it on, saving you time and hassle.
- It has excellent resistance against water and dust (IP66 protection level) allowing you to use it in machining situations that include splashing coolant fluid.
- Switchable display orientation gives you more mounting options.
- You can perform GO/±NG judgement by setting the upper and lower tolerances.



ABSOLUTE®



IP66

Functions	Series 543
Data output	●
ON/OFF	●
PRESET	●
GO/±NG judgement	●
DATA/HOLD	●
Counting direction switchable	●
External PRESET / ZERO	●

Specifications

Display	LCD, character height: 6,2 mm
Max. response speed	Unlimited
Alarm	Low voltage, counting value composition error, overflow error, tolerance limit setting error
Stem Ø	8 mm
Contact point	Carbide ball, thread M 2,5 x 0,45 mm
Power supply	1 battery SR-44
Battery life	Approx. 7000 hours

Optional accessories

No.	Description
21EAA194	Digimatic Cable for ID-N/ ID-B 1m, ID-N/ ID-B, 1 m
21EAA190	Digimatic Cable for ID-N/ ID-B 2m, for ID-N/ ID-B, 2 m
06AFM380G	USB Input Tool Direct (Digimatic to USB), 2m Cable, Digimatic/Digimatic 2, Flat Straight for ID-N/ID-B
264-623	U-WAVE fit, Buzzer Type, Wireless Transmitter for Micrometer/Indicator
264-622	U-WAVE fit, IP67 Type, Wireless Transmitter for Micrometer/Indicator
264-627	U-WAVE fit Bluetooth, Buzzer Type, Wireless Transmitter for Micrometer/ Indicator
264-626	U-WAVE fit Bluetooth, IP67 Type, Wireless Transmitter for Micrometer/Indicator
02AZF675	U-WAVE fit Transmitter Mounting Plate, for ID-N Digital Indicator
02AZD880G	U-WAVE-T, Buzzer Type, Wireless Transmitter
02AZD730G	U-WAVE-T, IP67 Type, Wireless Transmitter
02AZE200	U-WAVE Transmitter Mounting Plate, Universal Type
02AZD790G	Connection Cable G for U-WAVE, for IP66 Indicators ID-N and ID-B
21EAA210	Digimatic Cable for External Preset/ Zero, 1 m, ID-N/ID-B Indicator
21EAA211	Digimatic Cable for External Preset/ Zero, 2 m, ID-N/ID-B Indicator
21EZA105	Spindle Lifting Knob, for 12,7mm Range
21EZA145	Back Plate with Center Lug ISO Type, for ID-N/ID-B Indicator
238774	Silicon rubber boot for ID-C, ID-N, ID-S

Consumable spares

No.	Description
63AAA800	Battery SR44 1,5 V
901312	Contact Element Ball Point, M2,5x0,45, 7,3mm Length, Carbide, Metric
21EAA423	NBR Rubber Boot, Digital Gauge Series 543



21EAA210



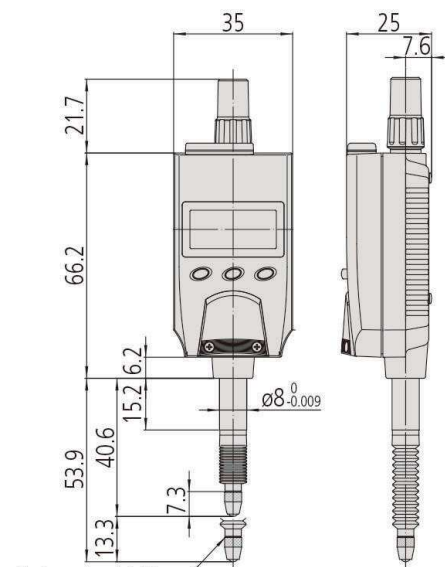
543-575-10

Flexible installation options switchable display orientation (overhead use)

Wireless transmitter U-WAVE fit 264-623, mounting plate 02AZF675 and connection cable 02AZD790G

Metric

No.	Range [mm]	Digital step	Max. Permissible Error E MPE	H MPE (Hysteresis)	R MPE (Repeatability)	Measuring force MPL	Protection	Mass [g]
543-570	12,7	0,01 mm	0,02 mm	0,02 mm	0,01 mm	≤2,5 N	IP66	130
543-575-10	12,7	0,001 mm/ 0,01 mm	0,003 mm	0,002 mm	0,002 mm	≤2,5 N	IP66	130



Ball contact (ø3)
901312
(thread: M2.5x0.45)



Rated to IP66 water-and dust-proofing standard, and oil resistance improved.

ABSOLUTE Digimatic Indicators ID-B

Series 543

This is a back-plunger model that is highly resilient and robust. The ABSOLUTE Digimatic Indicator ID-B offers you the following features:

- It is a back plunger type, with the display viewed from above.
- Its slim body design is ideal for multi-point measurements.
- The ABSOLUTE sensor means you don't have to carry out origin setting every time you power it on, saving you time and hassle.
- It has excellent resistance against water and dust (IP66 protection level) allowing you to use it in machining situations that include splashing coolant fluid.
- You can perform GO/±NG judgement.



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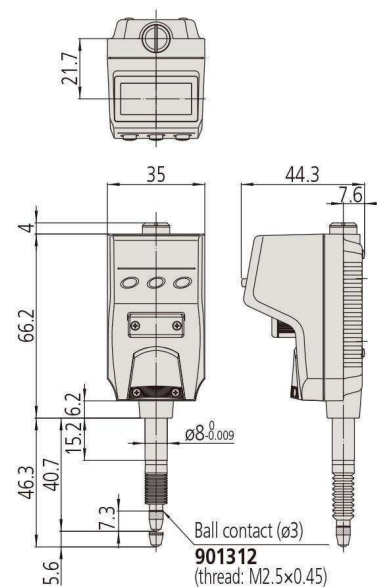


543-585-10

Flexible installation options with switchable display orientation (overhead use)

Metric

No.	Range [mm]	Digital step	Max. Permissible Error E MPE	H MPE (Hysteresis)	R MPE (Repeatability)	Measuring force MPL	Protection	Mass [g]
543-580	5	0,01 mm	0,02 mm	0,02 mm	0,01 mm	≤2 N	IP66	130
543-585-10	5	0,001 mm/ 0,01 mm	0,003 mm	0,002 mm	0,002 mm	≤2 N	IP66	130



Functions	Series 543
Data output	●
ON/OFF	●
PRESET	●
GO/±NG judgement	●
DATA/HOLD	●
Counting direction switchable	●
External PRESET / ZERO	●

Specifications

Display	LCD, character height: 6,2 mm
Max. response speed	Unlimited
Alarm	Low voltage, counting value composition error, overflow error, tolerance limit setting error
Stem Ø	8 mm
Contact point	Carbide ball, thread M 2,5 x 0,45 mm
Power supply	1 battery SR-44
Battery life	Approx. 7000 hours

Optional accessories

No.	Description
21EAA194	Digimatic Cable for ID-N/ ID-B 1m, ID-N/ ID-B, 1 m
21EAA190	Digimatic Cable for ID-N/ ID-B 2m, for ID-N/ ID-B, 2 m
06AFM380G	USB Input Tool Direct (Digimatic to USB), 2m Cable, Digimatic/Digimatic 2, Flat Straight for ID-N/ID-B
02AZD880G	U-WAVE-T, Buzzer Type, Wireless Transmitter
02AZD730G	U-WAVE-T, IP67 Type, Wireless Transmitter
02AZD790G	Connection Cable G for U-WAVE, for IP66 Indicators ID-N and ID-B
21EAA211	Digimatic Cable for External Preset/ Zero, 2 m, ID-N/ID-B Indicator
21EAA210	Digimatic Cable for External Preset/ Zero, 1 m, ID-N/ID-B Indicator
21EZA145	Back Plate with Center Lug ISO Type, for ID-N/ID-B Indicator
21EAA212	Silicon Rubber Boot, for ID-B, Series 1/2

Consumable spares

No.	Description
63AAA800	Battery SR44 1,5 V
901312	Contact Element Ball Point, M2,5x0,45, 7,3mm Length, Carbide, Metric
21AAB562	NBR Rubber Boot, Digital Gauge ID-B, Dial Gauge IP63/IP64



21EAA194

21EAA210



Digimatic Indicators ID-H

Series 543

This is a superior multi-function indicator that gives you high accuracy and high resolution of 0,0005 mm.

The Digimatic Indicator ID-H offers you the following benefits:

- 2-colour LCD backlight (green and red) provides you with visual GO/±NG tolerance judgement and analogue bar-graph display.
- You can display the maximum, minimum or range (runout value).
- Lifting mechanism over 30 mm with cable release (optional).
- You can carry out zero-setting and presetting with the optional remote controller, without having to touch the indicator.
- The remote control system can be implemented in advance with the built-in RS-232 interface and a PC.
- External power supply via AC-Adapter.



Functions	Series 543
Data output	●
ON/OFF	●
PRESET	●
Function lock	●
GO/±NG judgement	●
DATA/HOLD	●
Counting direction switchable	●
MAX/MIN/RANGE	●
Analog bar resolution switchable	●
RS-232C Output/Input	●
RS-232C Input*	●
ZERO SET	●
Selectable resolution	●

Specifications

Display	LCD, character height: 9,5 mm
Max. response speed	1000 mm/s
Alarm	Counting value composition error, overflow error, tolerance setting error
Stem \varnothing	8 mm
Contact point	Carbide ball, thread M 2,5 x 0,45 mm
Power supply	AC adapter 6 V DC, 2A

Standard accessories

No.	Description
06AGZ369D	AC-Adapter, DC 6V 2A, CEE version Germany (Europe)
137693	Lifting Handle for Indicator, for Plunger

Optional accessories

No.	Description
936937	Digimatic Cable, Flat 10-Pin Type, 1 m
965014	Digimatic Cable, Flat 10-Pin Type, 2 m
06AFM380D	USB Input Tool Direct (Digimatic to USB), 2m Cable, Digimatic/Digimatic 2, Flat 10-Pin Type
02AZD880G	U-WAVE-T, Buzzer Type, Wireless Transmitter
02AZD730G	U-WAVE-T, IP67 Type, Wireless Transmitter
02AZD790D	Connection Cable D for U-WAVE, Flat 10-Pin Type
21EAA130	Cable RS-232C for ID-H Indicator 1m
21EAA131	Cable RS-232C for ID-H Indicator 2m
21EZA099	Remote Controller, for ID-H Indicator
21JZA295	Spindle Lifting Cable, for Indicator, L=500mm
21EZA101	Spindle Lifting Knob, for ID-H Indicator

21JZA295 : moving measuring range max. 30 mm

Consumable spares

No.	Description
901312	Contact Element Ball Point, M2,5x0,45, 7,3mm Length, Carbide, Metric

* RS-232 Input/Output

Connect this instrument with an external device such as a PC using the RS-232 dedicated cable (optional accessory). With this connection it is possible to perform initial setup of the instrument, control of switching a measurement mode, etc., and processing such as measurement data transfer.



543-561D



21EZA099:
Data export
Reset Max/Min/TIR
Max/Min/TIR
switchover
Call PRESET value



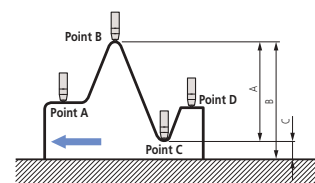
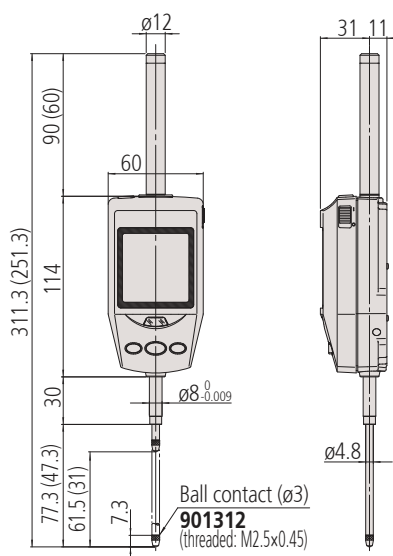
The display switches from green to red backlight if the upper or lower tolerance limit is exceeded



21EZA101

Metric

No.	Range [mm]	Digital step	Max. Permissible Error E MPE	H MPE (Hysteresis)	R MPE (Repeatability)	Measuring force MPL	Protection	Mass [g]
543-561D	30,4	0,0005mm/0,001 mm	0,0015 mm	0,0015 mm	0,001 mm	≤2 N	IP30	290
543-563D	60,9	0,0005mm/0,001 mm	0,0025 mm	0,0025 mm	0,001 mm	≤2,5 N	IP30	305



Difference/Runout measurement
Example : indicator travel from points A to D. Difference (or Total Runout) is displayed as A. Dimensions B (maximum value) and C (minimum value) can be recalled from memory with a simple key sequence.

ABSOLUTE Digimatic Indicators ID-F

Series 543

This is a superior multifunction indicator.

The ABSOLUTE Digimatic Indicator ID-F offers you the following benefits:

- Bidirectional Digimatic S1 interface
- Red/Green LCD backlight provides you with visual GO/±NG tolerance judgement
- Analogue bar-graph display
- MAX/MIN/RANGE (runout value) function with a frequency of 500 times/s
- External power supply via AC-Adapter
- High accuracy and 0,5 µm digital step

ABSOLUTE®



IP30



543-855B-D



543-851D



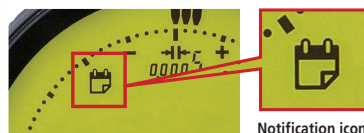
543-853D, 543-857D



Visual tolerance-monitoring



330° rotary mechanism



Calibration schedule warning function

Functions	Series 543
Data output	●
ON/OFF	●
ABS / INC (INC ZERO)	●
PRESET	●
Function lock	●
GO/±NG judgement	●
DATA/HOLD	●
Counting direction switchable	●
Customizing keys	●
Calibration warning function	●
MAX/MIN/RANGE	●
Calculation function (with formula)	●
Digimatic S1 Bidirectional interface	●
Analog bar resolution switchable	●
Selectable resolution	●

Specifications

Display	LCD with red/green backlight, character height 11 mm
Max. response speed	Unlimited
Measurement frequency (MAX/MIN/RANGE)	500 times/s
Alarm	Setting errors, sensor error, display overflow a.s.o.
Stem ∅	8 mm
Contact point	Carbide ball, thread M 2,5 x 0,45 mm
Power supply	AC adapter 5,9V DC, 2A

Standard accessories

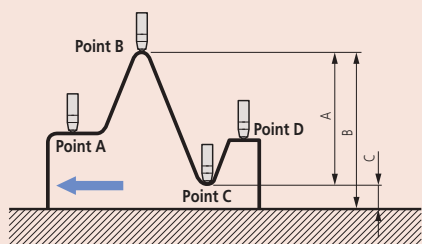
No.	Description
06AGZ369D	AC-Adapter, DC 6V 2A, CEE version Germany (Europe)
21EAA426	Spindle Lifting Handle, for Indicators

ABSOLUTE Digimatic Indicators ID-F

Optional accessories

No.	Description
06AGL011	Digimatic Cable, Straight, 1m, Digimatic/Digimatic 2/Digimatic S1 Interface, 1 m
06AGL021	Digimatic Cable, Straight, 2m, Digimatic/Digimatic 2/Digimatic S1 Interface, 2 m
06AGQ001F	USB Input Tool Direct (Digimatic to USB), 2m Cable, Digimatic/Digimatic 2/Digimatic S1 Interface
264-020	USB Input Tool Interface Box, Digimatic/Digimatic 2/Digimatic S1 Interface
264-623	U-WAVE fit, Buzzer Type, Wireless Transmitter for Micrometer/Indicator
264-622	U-WAVE fit, IP67 Type, Wireless Transmitter for Micrometer/Indicator
264-627	U-WAVE fit Bluetooth, Buzzer Type, Wireless Transmitter for Micrometer/Indicator
264-626	U-WAVE fit Bluetooth, IP67 Type, Wireless Transmitter for Micrometer/Indicator
02AZG011	Connection Cable SF for U-WAVE, for U-WAVE-T and Instruments with Digimatic S1 Interface
02AZG021	Connection Cable SF for U-WAVE, for Foot Switch, for Digimatic S1 Interface
02AZF670	U-WAVE fit Transmitter Mounting Plate, for ID-C, ID-S and ID-F Digital Indicator
21EZA198	Spindle Lifting Lever, for Digital Indicator, A-Type Dial Indicator Serie 2/3/4
21JZA295	Spindle Lifting Cable, for Indicator, L=500mm
21JZA301	Spindle Lifting Cable with Auto Stop, for Indicator, L=300mm
21EZA105	Spindle Lifting Knob, for 12,7mm Range
21EZA197	Spindle Lifting Knob, for 25,4mm Range
21EZA200	Spindle Lifting Knob, for 50,8mm Range
02ACA571	Auxiliary Spindle Spring, for 25,4mm Range
02ACA773	Auxiliary Spindle Spring, for 50,8mm Range

02ACA571 and 02ACA773 : required when orienting the indicator upside down;
21EZA198, 21JZA295, 21JZA301 for 12.7 mm model only



MAX/MIN/RANGE



543-853D + 7001-10

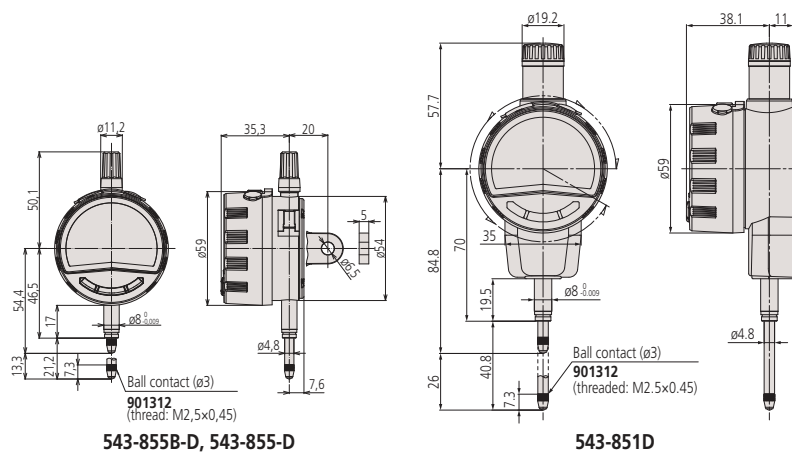


Scan the QR Code for the Leaflet

Metric

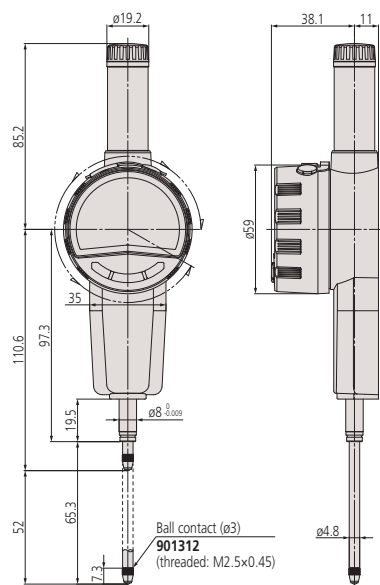
No.	Range [mm]	Digital step	Max. Permissible Error E MPE	H MPE (Hysteresis)	R MPE (Repeatability)	Measuring force MPL	Protection	Mass [g]
543-855B-D	12,7	0,0005 mm/0,001 mm/0,01 mm	0,0025 mm	0,002 mm	0,002 mm	≤1,5 N	IP30	170
543-855-D	12,7	0,0005 mm/0,001 mm/0,01 mm	0,0025 mm	0,002 mm	0,002 mm	≤1,5 N	IP30	180
543-851D	25,4	0,0005 mm/0,001 mm/0,01 mm	0,0025 mm	0,002 mm	0,002 mm	≤1,8 N	IP30	240
543-853D	50,8	0,0005 mm/0,001 mm/0,01 mm	0,004 mm	0,002 mm	0,002 mm	≤2,3 N	IP30	330
543-857D	50,8	0,0005 mm/0,001 mm/0,01 mm	0,003 mm	0,002 mm	0,002 mm	≤2,3 N	IP30	330

No. with "B": flat back plate



543-855B-D, 543-855-D

543-851D



543-853D, 543-857D

Metric Dial Indicators Series 1

Series 1

Compact Type, Extra Small Diameter - Metric

This is a compact, dial indicator with a bezel \varnothing 31 / 36 mm. It offers you the following benefits:

- It is ideal for use in applications where space is limited.



1003A(B)



1911A(B)-10



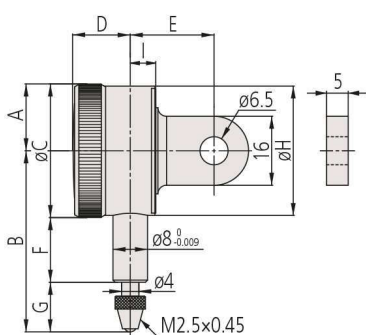
1913A(B)-10

Metric

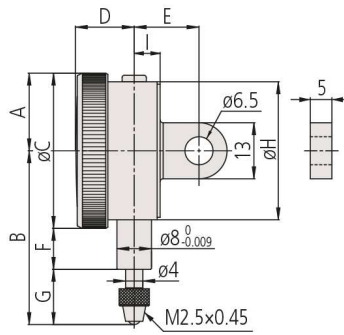
No.	Range [mm]	Range per rev.	Dial reading	Graduation [mm]	MPE any 1/10 revolution [μ m]	MPE any 1/2 revolution [μ m]	MPE any 1 revolution [μ m]	MPE measuring range [μ m]	H MPE (Hysteresis) [μ m]	R MPE (Repeatability) [μ m]
1003A	4	1 mm	0-50-0	0,01	6	9	10	14	3,5	3
1003AB	4	1 mm	0-50-0	0,01	6	9	10	14	3,5	3
1911A-10	2,5	1 mm	0-50-0	0,01	6,5	10	11	13	3,5	3
1911AB-10	2,5	1 mm	0-50-0	0,01	6,5	10	11	13	3,5	3
1913A-10	0,5	0,2 mm	0-100-0	0,002	2,5	4,5	5	6	2,5	1
1913AB-10	0,5	0,2 mm	0-100-0	0,002	2,5	4,5	5	6	2,5	1

B-type delivered with flat back plate

No.	Measuring force [N]	A [mm]	B [mm]	C [mm]	D [mm]	E [mm]	F [mm]	G [mm]	H [mm]	I [mm]	Mass [g]
1003A	0,3-1,4	18	40,3	36	13,5	15	9,5	12,8	32	6	51
1003AB	0,3-1,4	18	40,3	36	13,5	15	9,5	12,8	32	6	48
1911A-10	0,3-1,8	15,5	42	31	12,7	19,4	15,1	11,5	30	6	55
1911AB-10	0,3-1,8	15,5	42	31	12,7	19,4	15,1	11,5	30	6	51
1913A-10	0,3-1,8	15,5	39,4	31	12,7	19,4	15,1	8,9	30	6	55
1913AB-10	0,3-1,8	15,5	39,4	31	12,7	19,4	15,1	8,9	30	6	51



1911A(B)-10
1913A(B)-10



1003A(B)

Series 1		
Functions	1003A up to 1911AB-10	1913A-10 1913AB-10
Balanced dial	●	●
Jeweled bearing	●	●

Consumable spares

No.	Description
21AZA319	Contact Element Ball Point, M2,5x0,45, 8,3mm Length, Metric

For accessories and contact points, see end of dial indicators section.

Metric Dial Indicators Series 1

Series 1

Compact Type 1 and 3,5 mm Range Small Diameter - Metric

This is a compact, dial indicator with a bezel \varnothing 40 mm. It offers you the following benefits:

- It is ideal for use in applications where space is limited.



Series 1		1013A-10 up to 1109AB-10	1041A 1041AB	1040A 1040AB	1124A 1124AB
Functions					
Balanced dial		●	●		
Continuous dial				●	●
Double scale spacing			●	●	
Shockproof		●			
Jeweled bearing		●			

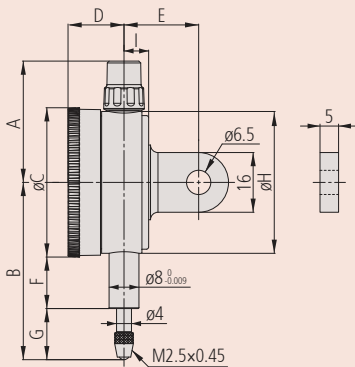
Optional accessories

No.	Description
21AAB363	Limit Hands (Green) 2 pcs., Dial Indicator Series 1, Test Indicator
21RZA149	Bezel Clamp for Dial Gauge, Series 1
902100	Spindle Lifting Lever, for S-Type and A-Type Serie 1
21JZA295	Spindle Lifting Cable, for Indicator, L=500mm
21JZA301	Spindle Lifting Cable with Auto Stop, for Indicator, L=300mm

Consumable spares

No.	Description
901312	Contact Element Ball Point, M2,5x0,45, 7,3mm Length, Carbide, Metric

For accessories and contact points, see end of dial indicators section.



1109A(B)-10



1013A(B)-10



1124A(B)



1040AB



1041AB

Metric

No.	Range [mm]	Range per rev.	Dial reading	Graduation [mm]	MPE any 1/10 revolution [μm]	MPE any 1/2 revolution [μm]	MPE any 1 revolution [μm]	MPE measuring range [μm]	H MPE (Hysteresis) [μm]
1109A-10	1	0,2 mm	0-100-0	0,001	2,5	4	4,5	5	2
1109AB-10	1	0,2 mm	0-100-0	0,001	2,5	4	4,5	5	2
1013A-10	1	0,2 mm	0-100-0	0,002	2,5	4	4,5	6	2
1013AB-10	1	0,2 mm	0-100-0	0,002	2,5	4	4,5	6	2
1124A	3,5	0,5 mm	±0-50	0,005	5	8	9	12	3
1124AB	3,5	0,5 mm	±0-50	0,005	5	8	9	12	3
1040A	3,5	0,5 mm	±0-50	0,01	5	8	9	12	3
1040AB	3,5	0,5 mm	±0-50	0,01	5	8	9	12	3
1041A	3,5	0,5 mm	0-25-0	0,01	5	8	9	12	3
1041AB	3,5	0,5 mm	0-25-0	0,01	5	8	9	12	3

B-type delivered with flat back plate

No.	R MPE (Repeatability) [μm]	Measuring force [N]	A [mm]	B [mm]	C [mm]	D [mm]	E [mm]	F [mm]	G [mm]	H [mm]	I [mm]	Mass [g]
1109A-10	1	0,4-1,5	32,5	49	40	15	20	13,8	15,2	38	6,6	95
1109AB-10	1	0,4-1,5	32,5	49	40	15	20	13,8	15,2	38	6,6	75
1013A-10	1	0,4-1,5	32,5	49	40	15	20	13,8	15,2	38	6,6	95
1013AB-10	1	0,4-1,5	32,5	49	40	15	20	13,8	15,2	38	6,6	75
1124A	3	0,4-1,4	32,5	46	40	15	20	13,8	12,2	38	6,6	90
1124AB	3	0,4-1,4	32,5	46	40	15	20	13,8	12,2	38	6,6	70
1040A	3	0,4-1,4	32,5	46	40	15	20	13,8	12,2	38	6,6	90
1040AB	3	0,4-1,4	32,5	46	40	15	20	13,8	12,2	38	6,6	70
1041A	3	0,4-1,4	32,5	46	40	15	20	13,8	12,2	38	6,6	90
1041AB	3	0,4-1,4	32,5	46	40	15	20	13,8	12,2	38	6,6	70

Metric Dial Indicators Series 1

Series 1

Compact Type 5 mm Range Small Diameter - Metric

This is a compact, dial indicator with a bezel \varnothing 40 mm. It offers you the following benefits:

- It is ideal for use in applications where space is limited.



1044A(B)-60



1044A(B)
1044A(B)-15



1044A(B)-60
IP63



1045A(B)

Metric

No.	Range [mm]	Range per rev.	Dial reading	Graduation [mm]	MPE any 1/10 revolution [μ m]
1044A	5	1 mm	\pm 0-100	0,01	5
1044AB	5	1 mm	\pm 0-100	0,01	5
1044A-15	5	1 mm	\pm 0-100	0,01	5
1044AB-15	5	1 mm	\pm 0-100	0,01	5
1044A-60	5	1 mm	\pm 0-100	0,01	5
1044AB-60	5	1 mm	\pm 0-100	0,01	5
1045A	5	1mm	0-50-0	0,01	5
1045AB	5	1 mm	0-50-0	0,01	5

1044A(B)-15: Low measuring force model. Use in vertical position only (contact point downward)

B-type delivered with flat back plate

No.	MPE any 1/2 revolution [μ m]	MPE any 1 revolution [μ m]	MPE measuring range [μ m]	H MPE (Hysteresis) [μ m]	R MPE (Repeatability) [μ m]	Measuring force [N]
1044A	9	10	12	3	3	0,4-1,4
1044AB	9	10	12	3	3	0,4-1,4
1044A-15	9	10	12	3	3	0,1-0,4
1044AB-15	9	10	12	3	3	0,1-0,4
1044A-60	9	10	12	3	3	0,4-2
1044AB-60	9	10	12	3	3	0,4-2
1045A	9	10	12	3	3	0,4-1,4
1045AB	9	10	12	3	3	0,4-1,4

No.	A [mm]	B [mm]	C [mm]	D [mm]	E [mm]	F [mm]	G [mm]	H [mm]	I [mm]	Mass [g]
1044A	32,5	47,5	40	15	20	13,8	13,7	38	6,6	90
1044AB	32,5	47,5	40	15	20	13,8	13,7	38	6,6	70
1044A-15	32,5	47,5	40	15	20	13,8	13,7	38	6,6	90
1044AB-15	32,5	47,5	40	15	20	13,8	13,7	38	6,6	70
1044A-60	32,5	57	40	15	20	12,2	24,8	38	6,6	90
1044AB-60	32,5	57	40	15	20	12,2	24,8	38	6,6	70
1045A	32,5	47,5	40	15	20	13,8	13,7	38	6,6	90
1045AB	32,5	47,5	40	15	20	13,8	13,7	38	6,6	70

		Series 1				
		1044A 1044AB	1044A-60 1044AB-60	1044A-15 1044AB-15	1045A 1045AB	
Functions						
	Balanced dial					
	Continuous dial					
	Jeweled bearing					
	IP63					

Optional accessories

No.	Description
21AAB363	Limit Hands (Green) 2 pcs., Dial Indicator Series 1, Test Indicator
21RZA149	Bezel Clamp for Dial Gauge, Series 1
902100	Spindle Lifting Lever, for S-Type and A-Type Series 1
21JZA295	Spindle Lifting Cable, for Indicator, L=500mm
21JZA301	Spindle Lifting Cable with Auto Stop, for Indicator, L=300mm

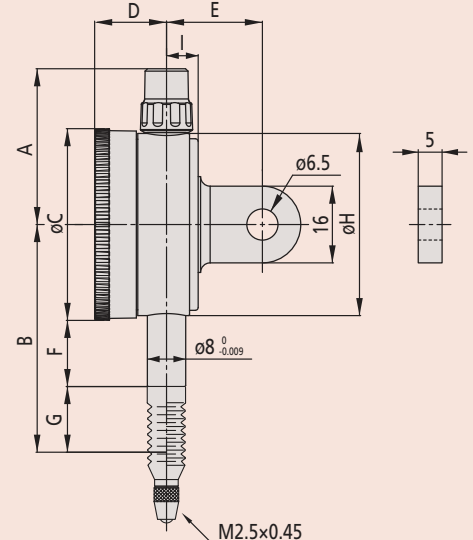
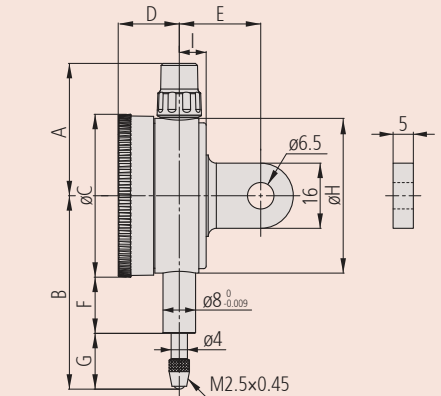
Consumable spares

No.	Description
901312	Contact Element Ball Point, M2,5x0,45, 7,3mm Length, Carbide, Metric
21AAB562	NBR Rubber Boot, Digital Gauge ID-B, Dial Gauge IP63/IP64

21AAB562: for 1044A(B)-60 (IP model)

21JZA295 and 21JZA301: not for IP63 type

For accessories and contact points, see end of dial indicators section.



1044A(B)-60

One Revolution Dial Indicators Series 1

Series 1

This is a compact, dial indicator with a bezel \varnothing 40 mm. It offers you the following benefits:

- It eliminates the possibility of reading errors due to miscounting multiple revolutions.

Series 1		1900A-10 1900AB-10	1900A-72 1900AB-72	1929A 1929AB	1929A-62 1929AB-62
Functions					
Balanced dial		●	●	●	●
One revolution		●	●	●	●
Shockproof		●	●	●	●
Jeweled bearing		●	●		●
IP52			●		●

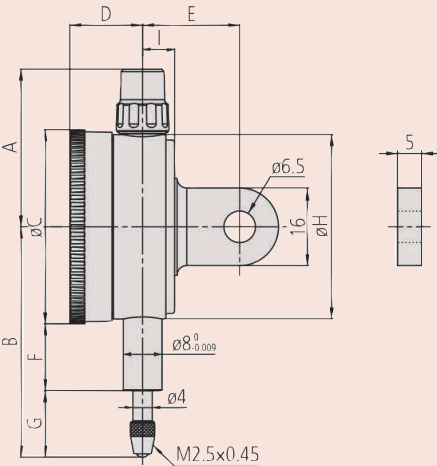
Optional accessories

No.	Description
21AAB363	Limit Hands (Green) 2 pcs., Dial Indicator Series 1, Test Indicator
21RZA149	Bezel Clamp for Dial Gauge, Series 1
902100	Spindle Lifting Lever, for S-Type and A-Type Serie 1
21JZA295	Spindle Lifting Cable, for Indicator, L=500mm
21JZA301	Spindle Lifting Cable with Auto Stop, for Indicator, L=300mm

Consumable spares

No.	Description
901312	Contact Element Ball Point, M2,5x0,45, 7,3mm Length, Carbide, Metric

For accessories and contact points, see end of dial indicators section.



1929A(B)
1929A(B)-62



1900A(B)-10
1900A(B)-72

Metric

No.	Range [mm]	Plunger Stroke [mm]	Range per rev.	Dial reading	Graduation [mm]	MPE any 1/10 revolution [μm]
1900A-10	0,1	2	0,14 mm	50-0-50	0,001	2
1900AB-10	0,1	2	0,14 mm	50-0-50	0,001	2
1900A-72	0,1	2	0,14 mm	50-0-50	0,001	2
1900AB-72	0,1	2	0,14 mm	50-0-50	0,001	2
1929A	1	3,5	1,4 mm	50-0-50	0,01	5
1929AB	1	3,5	1,4 mm	50-0-50	0,01	5
1929A-62	1	3,5	1,4 mm	50-0-50	0,01	5
1929AB-62	1	3,5	1,4 mm	50-0-50	0,01	5

B-type delivered with flat back plate

No.	MPE measuring range [μm]	H MPE (Hysteresis) [μm]	R MPE (Repeatability) [μm]	Measuring force [N]
1900A-10	4	2	1	0,4-1,5
1900AB-10	4	2	1	0,4-1,5
1900A-72	4	2	1	0,4-1,5
1900AB-72	4	2	1	0,4-1,5
1929A	9	3	3	0,4-1,4
1929AB	9	3	3	0,4-1,4
1929A-62	9	3	3	0,4-1,4
1929AB-62	9	3	3	0,4-1,4

No.	A [mm]	B [mm]	C [mm]	D [mm]	E [mm]	F [mm]	G [mm]	H [mm]	I [mm]	Mass [g]
1900A-10	32,5	53,5	40	15	20	16,8	16,7	38	6,6	95
1900AB-10	32,5	53,5	40	15	20	16,8	16,7	38	6,6	75
1900A-72	32,5	53,5	40	15	20	16,8	16,7	38	6,6	95
1900AB-72	32,5	53,5	40	15	20	16,8	16,7	38	6,6	75
1929A	32,5	47,5	40	15	20	13,8	13,7	38	6,6	90
1929AB	32,5	47,5	40	15	20	13,8	13,7	38	6,6	70
1929A-62	32,5	47,5	40	15	20	13,8	13,7	38	6,6	90
1929AB-62	32,5	47,5	40	15	20	13,8	13,7	38	6,6	70



1900A(B)-72
1929A(B)-62

Metric Dial Indicators Series 2

Series 2

Standard Type, 5 mm Range, 0,01 mm Graduation

This is a standard dial indicator with a bezel \varnothing 57 mm. It offers you the following benefits:

- Bezel clamp and lifting lever (optional) can be attached to either right or left side. They can be easily installed and removed without tools.
- No through screw holes on the frame and secure adhesion between the bezel and the crystal as well as the use of an O-ring prevents water or oil penetration.



2044A(B)
2044A(B)-09

2044A(B)-60

2045A(B)

Metric

No.	Range [mm]	Range per rev.	Dial reading	Graduation [mm]	MPE any 1/10 revolution [μ m]
2044A	5	1 mm	\pm 0-100	0,01	5
2044AB	5	1 mm	\pm 0-100	0,01	5
2044A-09	5	1 mm	\pm 0-100	0,01	5
2044AB-09	5	1 mm	\pm 0-100	0,01	5
2044A-60	5	1 mm	\pm 0-100	0,01	5
2044AB-60	5	1 mm	\pm 0-100	0,01	5
2045A	5	1 mm	0-50-0	0,01	5
2045AB	5	1 mm	0-50-0	0,01	5

B-type delivered with flat back plate

No.	MPE any 1/2 revolution [μ m]	MPE any 1 revolution [μ m]	MPE measuring range [μ m]	H MPE (Hysteresis) [μ m]	R MPE (Repeatability) [μ m]	Measuring force [N]
2044A	9	10	12	3	3	0,4-1,4
2044AB	9	10	12	3	3	0,4-1,4
2044A-09	9	10	12	3	3	0,4-1,4
2044AB-09	9	10	12	3	3	0,4-1,4
2044A-60	9	10	12	3	3	0,4-2,5
2044AB-60	9	10	12	3	3	0,4-2,5
2045A	9	10	12	3	3	0,4-1,4
2045AB	9	10	12	3	3	0,4-1,4

No.	A [mm]	B [mm]	C [mm]	D [mm]	E [mm]	F [mm]	G [mm]	H [mm]	I [mm]	Mass [g]
2044A	47,2	65,2	57	18,1	20	16,9	19,8	52	7,6	145
2044AB	47,2	65,2	57	18,1	20	16,9	19,8	52	7,6	136
2044A-09	47,2	65,2	57	18,1	20	16,9	19,8	52	7,6	147
2044AB-09	47,2	65,2	57	18,1	20	16,9	19,8	52	7,6	138
2044A-60	47,2	70	57	18,1	20	12,3	29,2	52	7,6	147
2044AB-60	47,2	70	57	18,1	20	12,3	29,2	52	7,6	138
2045A	47,2	65,2	57	18,1	20	16,9	19,8	52	7,6	145
2045AB	47,2	65,2	57	18,1	20	16,9	19,8	52	7,6	136



2044A(B)-60

		Series 2							
		2044A	2044AB	2044A-60	2044AB-60	2044A-09	2044AB-09	2045A	2045AB
Functions									
	Balanced dial								
	Continuous dial								
	Shockproof								
	IP64								

Optional accessories

No.	Description
21AZB195	Limit Hands (green) 2pcs, Dial Indicator Series 2/3/4
21AZB148	Bezel Clamp for Dial Gauge, Metric, Series 2/3/4
21EZA198	Spindle Lifting Lever, for Digital Indicator, A-Type Dial Indicator Series 2/3/4
21JZA295	Spindle Lifting Cable, for Indicator, L=500mm
21JZA301	Spindle Lifting Cable with Auto Stop, for Indicator, L=300mm

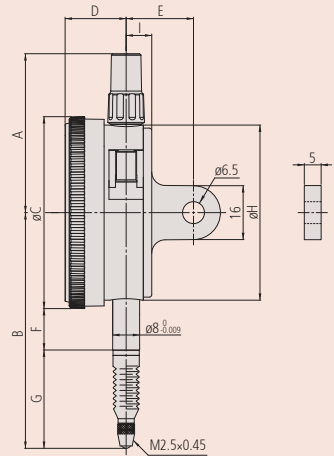
Consumable spares

No.	Description
901312	Contact Element Ball Point, M2,5x0,45, 7,3mm Length, Carbide, Metric
21AAB562	NBR Rubber Boot, Digital Gauge ID-B, Dial Gauge IP63/IP64

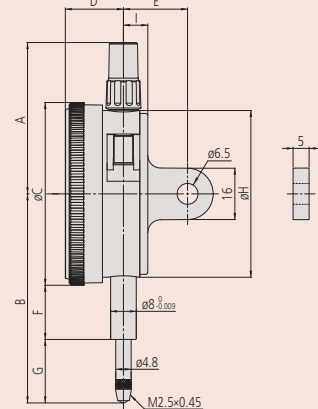
21AAB562: for 2044A(B)-60 (IP model)

21JZA295 and 21JZA301: not for IP64 type

For accessories and contact points, see end of dial indicators section.



2044A(B)-60



Metric Dial Indicators Series 2

Series 2

Standard Type, 10 mm Range, 0,01 mm Graduation

This is a standard dial indicator with a bezel \varnothing 57 mm. It offers you the following benefits:

- Bezel clamp and lifting lever (optional) can be attached to either right or left side. They can be easily installed and removed without tools.
- No through screw holes on the frame as well as the use of an O-ring prevents water or oil penetration.



IP64
2046A(B)-60

Series 2		2046A	2046AB	2046A-60	2046AB-60	2046A-09	2046AB-09	2310A-10	2310AB-10	2902A	2902AB	2047A	2047AB
Functions													
Balanced dial													
Continuous dial		•	•	•	•	•	•	•	•	•	•	•	•
Reverse reading												•	•
Coaxial revolution counter								•	•				
Shockproof						•	•						
Jeweled bearing								•	•				
IP64			•										

Optional accessories

No.	Description
21AZB195	Limit Hands (green) 2pcs, Dial Indicator Series 2/3/4
21AZB148	Bezel Clamp for Dial Gauge, Metric, Series 2/3/4
21EZA198	Spindle Lifting Lever, for Digital Indicator, A-Type Dial Indicator Serie 2/3/4
21JZA295	Spindle Lifting Cable, for Indicator, L=500mm
21JZA301	Spindle Lifting Cable with Auto Stop, for Indicator, L=300mm

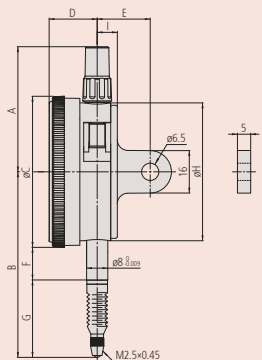
Consumable spares

No.	Description
901312	Contact Element Ball Point, M2,5x0,45, 7,3mm Length, Carbide, Metric
21AAB562	NBR Rubber Boot, Digital Gauge ID-B, Dial Gauge IP63/IP64

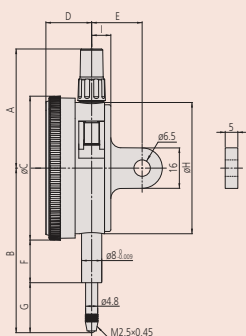
21AAB562: for 2046A(B)-60 (IP model)

21JZA295 and 21JZA301: not for IP64 type

For accessories and contact points, see end of dial indicators section.



2046A(B)-60



2046A(B)
2046A(B)-09



2046A(B)-60



2310A(B)-10



2902A(B)

Metric

No.	Range [mm]	Range per rev.	Dial reading	Graduation [mm]	MPE any 1/10 revolution [μm]	MPE any 1/2 revolution [μm]	MPE any 1 revolution [μm]	MPE measuring range [μm]	H MPE (Hysteresis) [μm]	R MPE (Repeatability) [μm]
2046A	10	1 mm	±0-100	0,01	5	9	10	13	3	3
2046AB	10	1 mm	±0-100	0,01	5	9	10	13	3	3
2046A-09	10	1 mm	±0-100	0,01	5	9	10	15	3	3
2046AB-09	10	1 mm	±0-100	0,01	5	9	10	15	3	3
2046A-60	10	1 mm	±0-100	0,01	5	9	10	13	3	3
2046AB-60	10	1 mm	±0-100	0,01	5	9	10	13	3	3
2310A-10	10	1 mm	±0-100	0,01	5	9	10	15	3	3
2310AB-10	10	1 mm	±0-100	0,01	5	9	10	15	3	3
2902A	10	1 mm	100-0	0,01	5	9	10	13	3	3
2902AB	10	1 mm	100-0	0,01	5	9	10	13	3	3
2047A	10	1 mm	0-50-0	0,01	5	9	10	13	3	3
2047AB	10	1 mm	0-50-0	0,01	5	9	10	13	3	3

B-type delivered with flat back plate

No.	Measuring force [N]	A [mm]	B [mm]	C [mm]	D [mm]	E [mm]	F [mm]	G [mm]	H [mm]	I [mm]	Mass [g]
2046A	0,4-1,4	47,2	65,2	57	18,1	20	16,9	19,8	52	7,6	144
2046AB	0,4-1,4	47,2	65,2	57	18,1	20	16,9	19,8	52	7,6	135
2046A-09	0,4-1,4	47,2	65,2	57	18,1	20	16,9	19,8	52	7,6	146
2046AB-09	0,4-1,4	47,2	65,2	57	18,1	20	16,9	19,8	52	7,6	137
2046A-60	0,4-2,5	47,2	74,7	57	18,1	20	12,3	33,9	52	7,6	146
2046AB-60	0,4-2,5	47,2	74,7	57	18,1	20	12,3	33,9	52	7,6	137
2310A-10	0,4-1,4	47,2	65,2	57	18,1	20	16,9	19,8	52	7,6	146
2310AB-10	0,4-1,4	47,2	65,2	57	18,1	20	16,9	19,8	52	7,6	137
2902A	0,4-1,4	47,2	65,2	57	18,1	20	16,9	19,8	52	7,6	144
2902AB	0,4-1,4	47,2	65,2	57	18,1	20	16,9	19,8	52	7,6	135
2047A	0,4-1,4	47,2	65,2	57	18,1	20	16,9	19,8	52	7,6	144
2047AB	0,4-1,4	47,2	65,2	57	18,1	20	16,9	19,8	52	7,6	135

Metric Dial Indicators Series 2

Series 2

Standard Type, 1 mm Range, 0,001 mm Graduation

This is a standard dial indicator with a bezel \varnothing 57 mm. It offers you the following benefits:

- Bezel clamp and lifting lever (optional) can be attached to either right or left side. They can be easily installed and removed without tools.
- No through screw holes on the frame and secure adhesion between the bezel and the crystal as well as the use of an O-ring prevents water or oil penetration.



2109A(B)-70
2110A(B)-70



2110A(B)-10



2110A(B)-70



2109A(B)-10



2109A(B)-70

Metric

No.	Range [mm]	Range per rev.	Dial reading	Graduation [mm]	MPE any 1/10 revolution [μ m]
2110A-10	1	0,1 mm	\pm 0-100	0,001	2,5
2110AB-10	1	0,1 mm	\pm 0-100	0,001	2,5
2110A-70	1	0,1 mm	\pm 0-100	0,001	2,5
2110AB-70	1	0,1 mm	\pm 0-100	0,001	2,5
2109A-10	1	0,2 mm	0-10-0	0,001	2,5
2109AB-10	1	0,2 mm	0-10-0	0,001	2,5
2109A-70	1	0,2 mm	0-100-0	0,001	2,5
2109AB-70	1	0,2 mm	0-100-0	0,001	2,5

B-type delivered with flat back plate

No.	MPE any 1/2 revolution [μ m]	MPE any 1 revolution [μ m]	MPE measuring range [μ m]	H MPE (Hysteresis) [μ m]	R MPE (Repeatability) [μ m]	Measuring force [N]
2110A-10	4	4,5	5	2	1	0,4-1,8
2110AB-10	4	4,5	5	2	1	0,4-1,8
2110A-70	4	4,5	5	2	1	0,4-2
2110AB-70	4	4,5	5	2	1	0,4-2
2109A-10	4	4,5	5	2	1	0,4-1,5
2109AB-10	4	4,5	5	2	1	0,4-1,5
2109A-70	4	4,5	5	2	1	0,4-2
2109AB-70	4	4,5	5	2	1	0,4-2

No.	A [mm]	B [mm]	C [mm]	D [mm]	E [mm]	F [mm]	G [mm]	H [mm]	I [mm]	Mass [g]
2110A-10	47,2	66,5	57	18,1	20	16,9	21,1	52	7,6	149
2110AB-10	47,2	66,5	57	18,1	20	16,9	21,1	52	7,6	140
2110A-70	47,2	67,5	57	18,1	20	12,3	26,7	52	7,6	150
2110AB-70	47,2	67,5	57	18,1	20	12,3	26,7	52	7,6	141
2109A-10	47,2	60,5	57	18,1	20	16,9	15,1	52	7,6	148
2109AB-10	47,2	60,5	57	18,1	20	16,9	15,1	52	7,6	139
2109A-70	47,2	65,3	57	18,1	20	12,3	24,5	52	7,6	149
2109AB-70	47,2	65,3	57	18,1	20	12,3	24,5	52	7,6	140

		Series 2							
		2109A-10	2109AB-10	2109A-70	2109AB-70	2110A-10	2110AB-10	2110A-70	2110AB-70
Functions									
	Balanced dial	●	●	●	●	●	●	●	●
	Continuous dial					●	●	●	●
	Double scale spacing					●	●	●	●
	Shockproof	●	●	●	●	●	●	●	●
	Jeweled bearing	●	●	●	●	●	●	●	●
	IP64					●	●	●	●

Optional accessories

No.	Description
21AZB195	Limit Hands (green) 2pcs, Dial Indicator Series 2/3/4
21AZB148	Bezel Clamp for Dial Gauge, Metric, Series 2/3/4
21EZA198	Spindle Lifting Lever, for Digital Indicator, A-Type Dial Indicator Serie 2/3/4
21JZA295	Spindle Lifting Cable, for Indicator, L=500mm
21JZA301	Spindle Lifting Cable with Auto Stop, for Indicator, L=300mm

Consumable spares

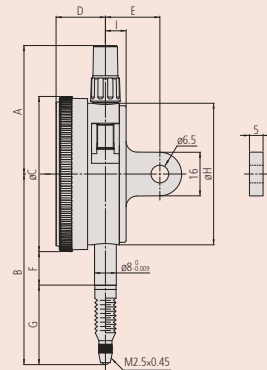
No.	Description
901312	Contact Element Ball Point, M2,5x0,45, 7,3mm Length, Carbide, Metric
21AAB562	NBR Rubber Boot, Digital Gauge ID-B, Dial Gauge IP63/IP64
21AAB563	NBR Rubber Boot, Dial Gauge IP64

21AAB562: for 2110A(B)-70

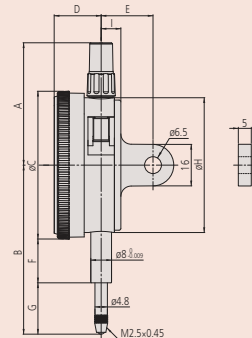
21AAB563: for 2109A(B)-70

21JZA295 and 21JZA301: not for IP64 type

For accessories and contact points, see end of dial indicators section.



2110A(B)-70
2109A(B)-70



Metric Dial Indicators Series 2

Series 2

Standard Type, 2 and 5 mm Range, 0,001 / 0,005 mm Graduation



This is a standard dial indicator. It offers you the following benefits:

- Bezel clamp and lifting lever (optional) can be attached to either right or left side. They can be easily installed and removed without tools.
- No through screw holes on the frame and secure adhesion between the bezel and the crystal as well as the use of an O-ring prevents water or oil penetration.

Series 2		2113A-10 2113AB-10	2119A-10 2119AB-10	2118A-10 up to 2124AB-10
Functions				
Balanced dial		●	●	
Continuous dial				●
Shockproof		●		
Jeweled bearing		●	●	●

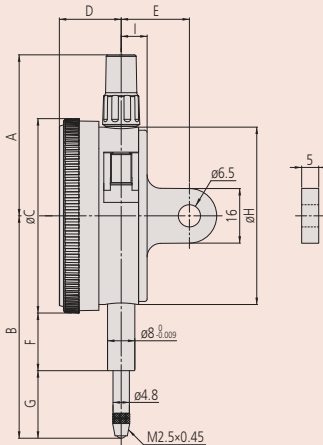
Optional accessories

No.	Description
21AZB195	Limit Hands (green) 2pcs, Dial Indicator Series 2/3/4
21AZB148	Bezel Clamp for Dial Gauge, Metric, Series 2/3/4
21EZA198	Spindle Lifting Lever, for Digital Indicator, A-Type Dial Indicator Serie 2/3/4
21JZA295	Spindle Lifting Cable, for Indicator, L=500mm
21JZA301	Spindle Lifting Cable with Auto Stop, for Indicator, L=300mm

Consumable spares

No.	Description
901312	Contact Element Ball Point, M2,5x0,45, 7,3mm Length, Carbide, Metric

For accessories and contact points, see end of dial indicators section.



2113A(B)-10



2118A(B)-10



2119A(B)-10



2124A(B)-10

Metric

No.	Range [mm]	Range per rev.	Dial reading	Graduation [mm]	MPE any 1/10 revolution [μm]
2113A-10	2	0,2 mm	0-100-0	0,001	2,5
2113AB-10	2	0,2 mm	0-100-0	0,001	2,5
2118A-10	5	0,2 mm	0-100-100	0,001	4
2118AB-10	5	0,2 mm	0-100-100	0,001	4
2119A-10	5	0,2 mm	0-100-0	0,001	4
2119AB-10	5	0,2 mm	0-100-0	0,001	4
2124A-10	5	0,5 mm	±0-50	0,005	5
2124AB-10	5	0,5 mm	±0-50	0,005	5

B-type delivered with flat back plate

No.	MPE any 1/2 revolution [μm]	MPE any 1 revolution [μm]	MPE measuring range [μm]	H MPE (Hysteresis) [μm]	R MPE (Repeatability) [μm]	Measuring force [N]
2113A-10	4	4,5	7	2	1	0,4-1,5
2113AB-10	4	4,5	7	2	1	0,4-1,5
2118A-10	6	6,5	10	2,5	2	0,4-1,5
2118AB-10	6	6,5	10	2,5	2	0,4-1,5
2119A-10	6	6,5	10	2,5	2	0,4-1,5
2119AB-10	6	6,5	10	2,5	2	0,4-1,5
2124A-10	9	10	11	3	2	0,4-1,5
2124AB-10	9	10	11	3	2	0,4-1,5

No.	A [mm]	B [mm]	C [mm]	D [mm]	E [mm]	F [mm]	G [mm]	H [mm]	I [mm]	Mass [g]
2113A-10	47,2	61	57	18,1	20	16,9	15,6	52	7,6	148
2113AB-10	47,2	61	57	18,1	20	16,9	15,6	52	7,6	139
2118A-10	47,2	60,7	57	18,1	20	16,9	15,3	52	7,6	146
2118AB-10	47,2	60,7	57	18,1	20	16,9	15,3	52	7,6	137
2119A-10	47,2	60,7	57	18,1	20	16,9	15,3	52	7,6	146
2119AB-10	47,2	60,7	57	18,1	20	16,9	15,3	52	7,6	137
2124A-10	47,2	60,7	57	18,1	20	16,9	15,3	52	7,6	146
2124AB-10	47,2	60,7	57	18,1	20	16,9	15,3	52	7,6	137

Dial Indicators with 20 mm Stroke Series 2

Series 2

Standard Type, 20 mm Range, 0,01 mm Graduation

This is a standard dial indicator. It offers you the following benefits:

- Bezel clamp and lifting lever (optional) can be attached to either right or left side. They can be easily installed and removed without tools.
- No through screw holes on the frame and secure adhesion between the bezel and the crystal as well as the use of an O-ring prevents water or oil penetration.



IP64
2050A(B)-60



2050A(B)
2050A(B)-19

2050A(B)-60

2320A(B)-10

Metric

No.	Range [mm]	Range per rev.	Dial reading	Graduation [mm]	MPE any 1/10 revolution [μm]	MPE any 1/2 revolution [μm]	MPE any 1 revolution [μm]	MPE measuring range [μm]	H MPE (Hysteresis) [μm]	R MPE (Repeatability) [μm]
2050A	20	1 mm	±0-100	0,01	6	10	11	20	4	3
2050AB	20	1 mm	±0-100	0,01	6	10	11	20	4	3
2050A-19	20	1 mm	±0-100	0,01	6	10	11	20	4	3
2050AB-19	20	1 mm	±0-100	0,01	6	10	11	20	4	3
2050A-60	20	1 mm	±0-100	0,01	6	10	11	20	4	3
2050AB-60	20	1 mm	±0-100	0,01	6	10	11	20	4	3
2320A-10	20	1 mm	±0-100	0,01	6	10	11	20	4	3
2320AB-10	20	1 mm	±0-100	0,01	6	10	11	20	4	3

B-type delivered with flat back plate

No.	Measuring force [N]	A [mm]	B [mm]	C [mm]	D [mm]	E [mm]	F [mm]	G [mm]	H [mm]	I [mm]	Mass [g]
2050A	0,4-2	38,5	75,2	57	18,1	20	16,9	29,8	52	7,6	149
2050AB	0,4-2	38,5	75,2	57	18,1	20	16,9	29,8	52	7,6	140
2050A-19	0,4-2	38,5	75,2	57	18,1	20	16,9	29,8	52	7,6	149
2050AB-19	0,4-2	38,5	75,2	57	18,1	20	16,9	29,8	52	7,6	140
2050A-60	0,4-2,5	58,2	87,2	57	18,1	20	12,3	46,4	52	7,6	155
2050AB-60	0,4-2,5	58,2	87,2	57	18,1	20	12,3	46,4	52	7,6	146
2320A-10	0,4-2	38,5	75,2	57	18,1	20	16,9	29,8	52	7,6	150
2320AB-10	0,4-2	38,5	75,2	57	18,1	20	16,9	29,8	52	7,6	141

		Series 2					
		2050A	2050AB	2050A-19	2050AB-19	2050A-60	2050AB-60
Functions							
	Continuous dial	●	●	●	●	●	●
	Coaxial revolution counter						●
	Cushioned end point	●	●	●	●		●
	Shockproof			●	●		
	Jeweled bearing			●	●		●
	IP64					●	

Optional accessories

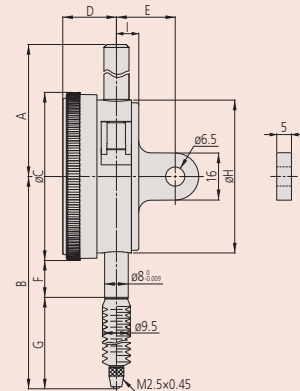
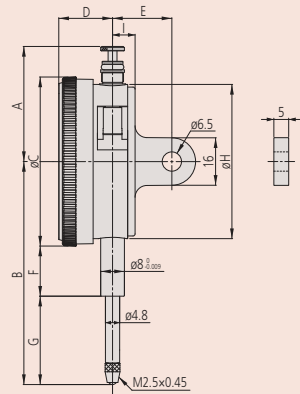
No.	Description
21AZB195	Limit Hands (green) 2pcs, Dial Indicator Series 2/3/4
21AZB148	Bezel Clamp for Dial Gauge, Metric, Series 2/3/4

Consumable spares

No.	Description
901312	Contact Element Ball Point, M2,5x0,45, 7,3mm Length, Carbide, Metric
21AAB573	NBR Rubber Boot, Dial Gauge IP64, 20 mm Range

21AAB573: for 2050A(B)-60 (IP model)

For accessories and contact points, see end of dial indicators section.



2050A(B)-60

Dial Indicators with 30 mm Stroke Series 2

Series 2

Standard Type, 30 mm Range, 0,01 mm Graduation

This is a standard dial indicator. It offers you the following benefits:

- Bezel clamp and lifting lever (optional) can be attached to either right or left side. They can be easily installed and removed without tools.
- No through screw holes on the frame and secure adhesion between the bezel and the crystal as well as the use of an O-ring prevents water or oil penetration.



		Series 2							
		2052A	2052AB	2052A-19	2052AB-19	2330A-10	2330AB-10	2952A	2952AB
Functions									
	Continuous dial	●	●	●	●	●	●	●	●
	Reverse reading							●	●
	Coaxial revolution counter					●	●		
	Cushioned end point	●	●	●	●	●	●	●	●
	Shockproof			●	●	●	●		
	Jeweled bearing			●	●	●	●		

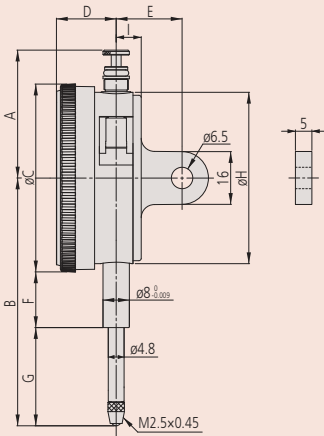
Optional accessories

No.	Description
21AZB195	Limit Hands (green) 2pcs, Dial Indicator Series 2/3/4
21AZB148	Bezel Clamp for Dial Gauge, Metric, Series 2/3/4

Consumable spares

No.	Description
901312	Contact Element Ball Point, M2,5x0,45, 7,3mm Length, Carbide, Metric

For accessories and contact points, see end of dial indicators section.



2052A(B)
2052A(B)-19



2330A(B)-10



2952A(B)

Metric

No.	Range [mm]	Range per rev.	Dial reading	Graduation [mm]	MPE any 1/10 revolution [µm]	MPE any 1/2 revolution [µm]	MPE any 1 revolution [µm]	MPE measuring range [µm]	H MPE (Hysteresis) [µm]	R MPE (Repeatability) [µm]
2052A	30	1 mm	±0-100	0,01	7	11	12	25	5	3
2052AB	30	1 mm	±0-100	0,01	7	11	12	25	5	3
2052A-19	30	1 mm	±0-100	0,01	7	11	12	25	5	3
2052AB-19	30	1 mm	±0-100	0,01	7	11	12	25	5	3
2330A-10	30	1 mm	±0-100	0,01	7	11	12	25	5	3
2330AB-10	30	1 mm	±0-100	0,01	7	11	12	25	5	3
2952A	30	1 mm	100-0	0,01	7	11	12	25	5	3
2952AB	30	1 mm	100-0	0,01	7	11	12	25	5	3

B-type delivered with flat back plate

No.	Measuring force [N]	A [mm]	B [mm]	C [mm]	D [mm]	E [mm]	F [mm]	G [mm]	H [mm]	I [mm]	Mass [g]
2052A	0,4-2,5	38,5	88,7	57	18,1	20	16,9	43,3	52	7,6	152
2052AB	0,4-2,5	38,5	88,7	57	18,1	20	16,9	43,3	52	7,6	143
2052A-19	0,4-2,5	38,5	88,7	57	18,1	20	16,9	43,3	52	7,6	152
2052AB-19	0,4-2,5	38,5	88,7	57	18,1	20	16,9	43,3	52	7,6	143
2330A-10	0,4-2,5	38,5	88,7	57	18,1	20	16,9	43,3	52	7,6	153
2330AB-10	0,4-2,5	38,5	88,7	57	18,1	20	16,9	43,3	52	7,6	144
2952A	0,4-2,5	38,5	88,7	57	18,1	20	16,9	43,3	52	7,6	152
2952AB	0,4-2,5	38,5	88,7	57	18,1	20	16,9	43,3	52	7,6	143

Special Dial Indicators Series 2

Series 2

This special dial indicators offer you the following benefits:

- In an adjustable pointer type the pointer can be adjusted independently of the position of the spindle by rotating the top knob.
- In a peak hold type a mechanism holds the pointer and the spindle at the position of maximum depression and hence displays the maximum value.



2048A(B)-10

2046A(B)-80

Metric

No.	Range [mm]	Range per rev.	Dial reading	Graduation [mm]	MPE any 1/10 revolution [μ m]
2048A-10	10	1 mm	$\pm 0-100$	0,01	5
2048AB-10	10	1 mm	$\pm 0-100$	0,01	5
2046A-80	10	1 mm	$\pm 0-100$	0,01	5
2046AB-80	10	1 mm	$\pm 0-100$	0,01	5

B-type delivered with flat back plate

No.	MPE any 1/2 revolution [μ m]	MPE any 1 revolution [μ m]	MPE measuring range [μ m]	H MPE (Hysteresis) [μ m]	R MPE (Repeatability) [μ m]	Measuring force [N]
2048A-10	9	10	15	3	3	0,4-1,4
2048AB-10	9	10	15	3	3	0,4-1,4
2046A-80	9	10	15	3	3	0,4-5
2046AB-80	9	10	15	3	3	0,4-5

No.	A [mm]	B [mm]	C [mm]	D [mm]	E [mm]	F [mm]	G [mm]	H [mm]	I [mm]	Mass [g]
2048A-10	47,4	64,9	57	18,1	20	16,9	19,5	52	7,6	144
2048AB-10	47,4	64,9	57	18,1	20	16,9	19,5	52	7,6	135
2046A-80	55,8	65,2	57	18,1	20	16,9	19,8	52	7,6	158
2046AB-80	55,8	65,2	57	18,1	20	16,9	19,8	52	7,6	149

Functions	Series 2			
	2046A-80	2046AB-80	2048A-10	2048AB-10
Continuous dial		●		●
Coaxial revolution counter				●
Peak retaining		●		
Adjustable pointer				●
Jeweled bearing				●

Optional accessories

No.	Description
21AZB195	Limit Hands (green) 2pcs, Dial Indicator Series 2/3/4
21AZB148	Bezel Clamp for Dial Gauge, Metric, Series 2/3/4

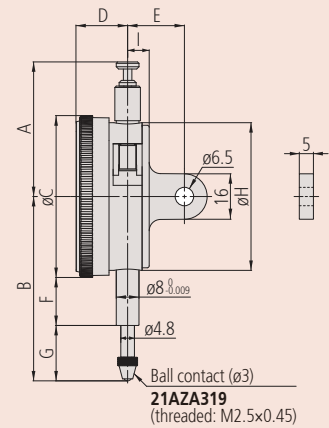
Consumable spares

No.	Description
901312	Contact Element Ball Point, M2,5x0,45, 7,3mm Length, Carbide, Metric
21AZA319	Contact Element Ball Point, M2,5x0,45, 8,3mm Length, Metric

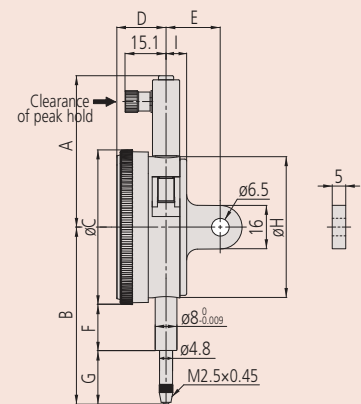
901312: for 2046A(B)-80

21AZA319: for 2048A(B)-10

For accessories and contact points, see end of dial indicators section.



2048A(B)-10



2046A(B)-80

One Revolution Dial Indicators Series 2

Series 2

Lightweight type

This is a one revolution dial indicator. It offers you the following benefits:

- Excellent water and drip-proof characteristics
- It eliminates the possibility of reading errors due to miscounting multiple revolutions.



Functions	Series 2
One revolution	
Cushioned end point	
IP52	

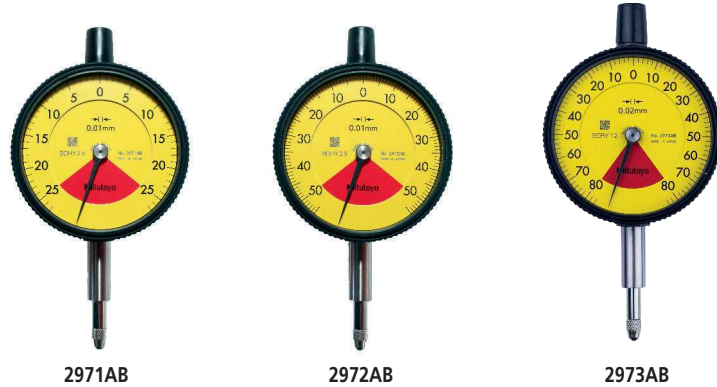
Optional accessories

No.	Description
21AZB195	Limit Hands (green) 2pcs, Dial Indicator Series 2/3/4
546666	Self-tapping Screw for Plastic, For Dial Gauge

Consumable spares

No.	Description
901312	Contact Element Ball Point, M2,5x0,45, 7,3mm Length, Carbide, Metric

For accessories and contact points, see end of dial indicators section.

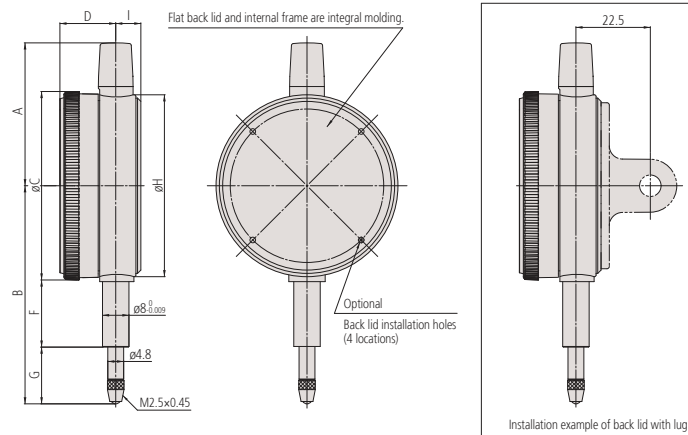


Metric

No.	Range [mm]	Plunger Stroke [mm]	Range per rev.	Dial reading	Graduation [mm]	MPE any 1/10 revolution [μm]
2971AB	0,5	3,5	0,7 mm	25-0-25	0,01	5
2972AB	1	3,5	1,4 mm	50-0-50	0,01	5
2973AB	1,6	3,5	2 mm	80-0-80	0,02	8

No.	MPE measuring range [μm]	H MPE (Hysteresis) [μm]	R MPE (Repeatability) [μm]	Measuring force [N]
2971AB	7	3	3	0,4-1,4
2972AB	7	3	3	0,4-1,4
2973AB	16	4	5	0,4-1,4

No.	A [mm]	B [mm]	C [mm]	D [mm]	F [mm]	G [mm]	H [mm]	I [mm]	Mass [g]
2971AB	43,2	65,6	57	16,9	20,3	16,8	55	7,6	70
2972AB	43,2	66	57	16,9	20,3	17,2	55	7,6	70
2973AB	43,2	66,3	57	16,9	20,3	17,5	55	7,6	75



When installing an optional back, 4 retaining screws (no. 546666) must also be obtained.

One Revolution Dial Indicators Series 2

Series 2

Graduation 0,01 / 0,1 mm

This is a one revolution dial indicator. It offers you the following benefits:

- Bezel clamp and lifting lever (optional) can be attached to either right or left side. They can be easily installed without tools.
- No through screw holes on the frame and secure adhesion between the bezel and the crystal as well as the use of an O-ring prevents water or oil penetration.



IP52
2929A(B)-62

IP64
2929A(B)-60

Series 2				
	2928A up to 2959AB	2929A-60 2929AB-60	2929A-62 2929AB-62	
Functions				
One revolution	●	●	●	
Shockproof	●	●	●	
IP52			●	
IP64		●	●	

Optional accessories

No.	Description
21AZB195	Limit Hands (green) 2pcs, Dial Indicator Series 2/3/4
21AZB148	Bezel Clamp for Dial Gauge, Metric, Series 2/3/4
21EZA198	Spindle Lifting Lever, for Digital Indicator, A-Type Dial Indicator Serie 2/3/4
21JZA295	Spindle Lifting Cable, for Indicator, L=500mm
21JZA301	Spindle Lifting Cable with Auto Stop, for Indicator, L=300mm

Consumable spares

No.	Description
901312	Contact Element Ball Point, M2,5x0,45, 7,3mm Length, Carbide, Metric
21AAB562	NBR Rubber Boot, Digital Gauge ID-B, Dial Gauge IP63/IP64

21AAB562: for 2929A(B)-60 (IP model)

21JZA295 and 21JZA301: not for IP64 type

For accessories and contact points, see end of dial indicators section.

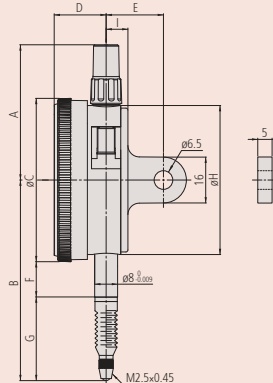
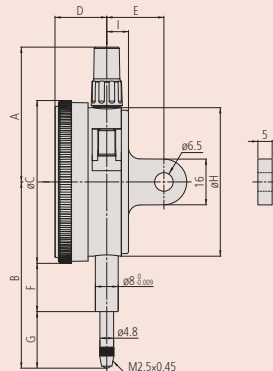
Metric

No.	Range [mm]	Plunger Stroke [mm]	Range per rev.	Dial reading	Graduation [mm]	MPE any 1/10 revolution [μm]
2928A	4	10	5 mm	2-0-2	0,1	15
2928AB	4	10	5 mm	2-0-2	0,1	15
2929A	0,8	5	1 mm	40-0-40	0,01	5
2929AB	0,8	5	1 mm	40-0-40	0,01	5
2929A-62	0,8	5	1 mm	40-0-40	0,01	5
2929AB-62	0,8	5	1 mm	40-0-40	0,01	5
2929A-60	0,8	5	1 mm	40-0-40	0,01	5
2929AB-60	0,8	5	1 mm	40-0-40	0,01	5
2959A	1,6	5	2 mm	80-0-80	0,01	5
2959AB	1,6	5	2 mm	80-0-80	0,01	5

B-type delivered with flat back plate

No.	MPE measuring range [μm]	H MPE (Hysteresis) [μm]	R MPE (Repeatability) [μm]	Measuring force [N]
2928A	25	12	20	0,4-1,4
2928AB	25	12	20	0,4-1,4
2929A	7	3	3	0,4-1,4
2929AB	7	3	3	0,4-1,4
2929A-62	7	3	3	0,4-2
2929AB-62	7	3	3	0,4-2
2929A-60	7	3	3	0,4-2
2929AB-60	7	3	3	0,4-2
2959A	9	4	3	0,4-1,4
2959AB	9	4	3	0,4-1,4

No.	A [mm]	B [mm]	C [mm]	D [mm]	E [mm]	F [mm]	G [mm]	H [mm]	I [mm]	Mass [g]
2928A	47,2	65,2	57	18,1	20	16,9	19,8	52	7,6	145
2928AB	47,2	65,2	57	18,1	20	16,9	19,8	52	7,6	136
2929A	47,2	65,2	57	18,1	20	16,9	19,8	52	7,6	145
2929AB	47,2	65,2	57	18,1	20	16,9	19,8	52	7,6	136
2929A-62	47,2	65,2	57	18,1	20	16,9	19,8	52	7,6	145
2929AB-62	47,2	65,2	57	18,1	20	16,9	19,8	52	7,6	136
2929A-60	47,2	70	57	18,1	20	12,3	29,2	52	7,6	146
2929AB-60	47,2	70	57	18,1	20	12,3	29,2	52	7,6	137
2959A	47,2	65,2	57	18,1	20	16,9	19,8	52	7,6	145
2959AB	47,2	65,2	57	18,1	20	16,9	19,8	52	7,6	136



2929A(B)-60

One Revolution Dial Indicators Series 2

Series 2

Graduation 0,001 mm

This is a one revolution dial indicator. It offers you the following benefits:

- Bezel clamp and lifting lever (optional) can be attached to either right or left side.
- No through screw holes on the frame as well as the use of an O-ring prevents water or oil penetration.
- It eliminates the possibility of reading errors due to miscounting multiple revolutions.



2900A(B)-10
2900A(B)-72



2900A(B)-70



2901A(B)-10

Metric

No.	Range [mm]	Plunger Stroke [mm]	Range per rev.	Dial reading	Graduation [mm]	MPE any 1/10 revolution [μm]
2900A-10	0,08	4	0,1 mm	40-0-40	0,001	2
2900AB-10	0,08	4	0,1 mm	40-0-40	0,001	2
2900A-70	0,08	4	0,1 mm	40-0-40	0,001	2
2900AB-70	0,08	4	0,1 mm	40-0-40	0,001	2
2900A-72	0,08	4	0,1 mm	40-0-40	0,001	2
2900AB-72	0,08	4	0,1 mm	40-0-40	0,001	2
2901A-10	0,16	4,1	0,2 mm	80-0-80	0,001	2
2901AB-10	0,16	4,1	0,2 mm	80-0-80	0,001	2

B-type delivered with flat back plate

No.	MPE measuring range [μm]	H MPE (Hysteresis) [μm]	R MPE (Repeatability) [μm]	Measuring force [N]
2900A-10	3	2	1	0,4-1,4
2900AB-10	3	2	1	0,4-1,4
2900A-70	3	2	1	0,4-2
2900AB-70	3	2	1	0,4-2
2900A-72	3	2	1	0,4-2
2900AB-72	3	2	1	0,4-2
2901A-10	4	2	1	0,4-1,5
2901AB-10	4	2	1	0,4-1,5

No.	A [mm]	B [mm]	C [mm]	D [mm]	E [mm]	F [mm]	G [mm]	H [mm]	I [mm]	Mass [g]
2900A-10	47,2	66	57	18,1	20	16,9	20,6	52	7,6	149
2900AB-10	47,2	66	57	18,1	20	16,9	20,6	52	7,6	140
2900A-70	47,2	67	57	18,1	20	12,3	26,2	52	7,6	150
2900AB-70	47,2	67	57	18,1	20	12,3	26,2	52	7,6	141
2900A-72	47,2	66	57	18,1	20	16,9	20,6	52	7,6	149
2900AB-72	47,2	66	57	18,1	20	16,9	20,6	52	7,6	140
2901A-10	47,2	66,1	57	18,1	20	16,9	20,7	52	7,6	149
2901AB-10	47,2	66,1	57	18,1	20	16,9	20,7	52	7,6	140

Functions	Series 2		
	2900A-10 up to 2901AB-10	2900A-70 2900AB-70	2900A-72 2900AB-72
One revolution	●	●	●
Shockproof	●	●	●
Jeweled bearing	●	●	●
IP52			●
IP64		●	

Optional accessories

No.	Description
21AZB195	Limit Hands (green) 2pcs, Dial Indicator Series 2/3/4
21AZB148	Bezel Clamp for Dial Gauge, Metric, Series 2/3/4
21EZA198	Spindle Lifting Lever, for Digital Indicator, A-Type Dial Indicator Serie 2/3/4
21JZA295	Spindle Lifting Cable, for Indicator, L=500mm
21JZA301	Spindle Lifting Cable with Auto Stop, for Indicator, L=300mm

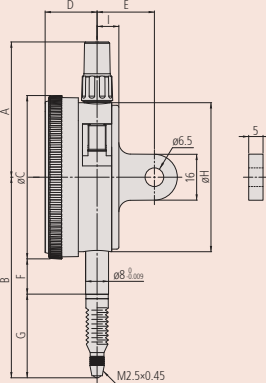
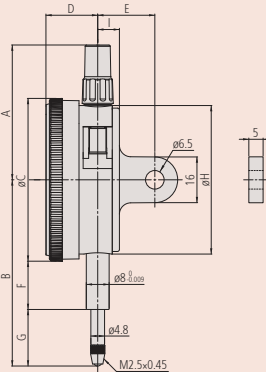
Consumable spares

No.	Description
901312	Contact Element Ball Point, M2,5x0,45, 7,3mm Length, Carbide, Metric
21AAB562	NBR Rubber Boot, Digital Gauge ID-B, Dial Gauge IP63/IP64

21AAB562: for 2900A(B)-70 (IP model)

21JZA295 and 21JZA301: not for IP64 type

For accessories and contact points, see end of dial indicators section.



2900A(B)-70



IP52

2900A(B)-72

IP64

2900A(B)-70

Metric Dial Indicators with Large Dial Face Series 3

Series 3

This is a standard dial indicator. It offers you the following benefits:

- Large-diameter dial face $\varnothing = 78 \text{ mm}$ for easy reading
- 0,01 / 0,001 mm graduation



3046A(B)



3047A(B)



3050A(B)



3052A(B)-19



3058A(B)-19



3060A(B)-19



3062A(B)-19



3109A(B)-10

		Series 3										
		3046A	3046AB	3050A	3050AB	3052A-19 up to 3062AB-19	3058A-19	3058AB-19	3047A	3047AB	3109A-10	3109AB-10
Functions												
	Balanced dial											
	Continuous dial											
	Coaxial revolution counter											
	Cushioned end point											
	Shockproof											
	Jeweled bearing											

Optional accessories

No.	Description
21AZB195	Limit Hands (green) 2pcs, Dial Indicator Series 2/3/4
21AZB148	Bezel Clamp for Dial Gauge, Metric, Series 2/3/4

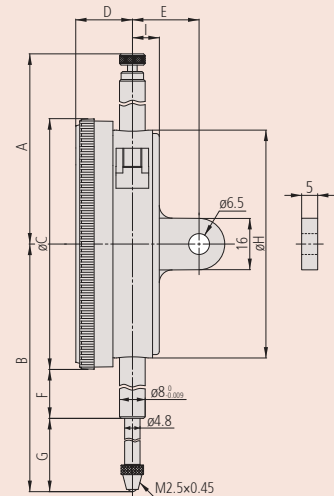
Consumable spares

No.	Description
901312	Contact Element Ball Point, M2,5x0,45, 7,3mm Length, Carbide, Metric
21AZA319	Contact Element Ball Point, M2,5x0,45, 8,3mm Length, Metric

901312: for 3046A(B), 3047A(B), 3050A(B), 3109A(B)

21AZA319: for 3052A(B)-19, 3058A(B)-19, 3060A(B)-19, 3062A(B)-19

For accessories and contact points, end of dial indicators section.



Metric Dial Indicators with Large Dial Face Series 3

Metric

No.	Range [mm]	Range per rev.	Dial reading	Graduation [mm]	MPE any 1/10 revolution [μ m]
3046A	10	1 mm	$\pm 0-100$	0,01	5
3046AB	10	1 mm	$\pm 0-100$	0,01	5
3047A	10	1 mm	0-50-0	0,01	5
3047AB	10	1 mm	0-50-0	0,01	5
3050A	20	1 mm	$\pm 0-100$	0,01	8
3050AB	20	1 mm	$\pm 0-100$	0,01	8
3052A-19	30	1 mm	$\pm 0-100$	0,01	10
3052AB-19	30	1 mm	$\pm 0-100$	0,01	10
3058A-19	50	1 mm	$\pm 0-100$	0,01	10
3058AB-19	50	1 mm	$\pm 0-100$	0,01	10
3060A-19	80	1 mm	$\pm 0-100$	0,01	10
3060AB-19	80	1 mm	$\pm 0-100$	0,01	10
3062A-19	100	1 mm	$\pm 0-100$	0,01	12
3062AB-19	100	1 mm	$\pm 0-100$	0,01	12
3109A-10	1	0,2 mm	0-100-0	0,001	2,5
3109AB-10	1	0,2 mm	0-100-0	0,001	2,5

3060A(B)-19 and 3062A(B)-19: use in a vertical position only

B-type delivered with flat back plate

No.	MPE any 1/2 revolution [μ m]	MPE any 1 revolution [μ m]	MPE measuring range [μ m]	H MPE (Hysteresis) [μ m]	R MPE (Repeatability) [μ m]	Measuring force [N]
3046A	9	10	15	3	3	0,4-1,4
3046AB	9	10	15	3	3	0,4-1,4
3047A	9	10	15	3	3	0,4-1,4
3047AB	9	10	15	3	3	0,4-1,4
3050A	10	11	20	4	3	0,4-2
3050AB	10	11	20	4	3	0,4-2
3052A-19	11	12	25	5	3	0,4-2,5
3052AB-19	11	12	25	5	3	0,4-2,5
3058A-19	12	13	30	6	3	0,4-3
3058AB-19	12	13	30	6	3	0,4-3
3060A-19	14	15	45	9	3	0,4-3
3060AB-19	14	15	45	9	3	0,4-3
3062A-19	17	20	50	9	3	0,4-3,5
3062AB-19	17	20	50	9	3	0,4-3,5
3109A-10	4	4,5	5	2	1	0,4-1,5
3109AB-10	4	4,5	5	2	1	0,4-1,5

No.	A [mm]	B [mm]	C [mm]	D [mm]	E [mm]	F [mm]	G [mm]	H [mm]	I [mm]	Mass [g]
3046A	59,6	75,5	78	17,7	21	15,9	20,6	71	9	252
3046AB	59,6	75,5	78	17,7	21	15,9	20,6	71	9	237
3047A	59,6	75,5	78	17,7	21	15,9	20,6	71	9	252
3047AB	59,6	75,5	78	17,7	21	15,9	20,6	71	9	237
3050A	52,6	94	78	17,7	21	25,9	29,1	71	9	272
3050AB	52,6	94	78	17,7	21	25,9	29,1	71	9	257
3052A-19	72,9	104,3	78	17,7	21	25,9	39,4	71	9	285
3052AB-19	72,9	104,3	78	17,7	21	25,9	39,4	71	9	270
3058A-19	81,9	142,3	78	17,7	21	43,9	59,4	71	9	298
3058AB-19	81,9	142,3	78	17,7	21	43,9	59,4	71	9	283
3060A-19	120,9	202,3	78	17,7	21	73,9	89,4	71	9	314
3060AB-19	120,9	202,3	78	17,7	21	73,9	89,4	71	9	299
3062A-19	141,9	243,3	78	17,7	21	94,9	109,4	71	9	332
3062AB-19	141,9	243,3	78	17,7	21	94,9	109,4	71	9	317
3109A-10	59,6	79	78	17,7	21	15,9	14,1	71	9	270
3109AB-10	59,6	79	78	17,7	21	15,9	14,1	71	9	255

Dial Indicators with Extra Large Dial Face Series 4

Series 4

This is a standard dial indicator. It offers you the following benefits:

- Large-diameter dial face $\varnothing = 92$ mm for easy reading



4046A(B)

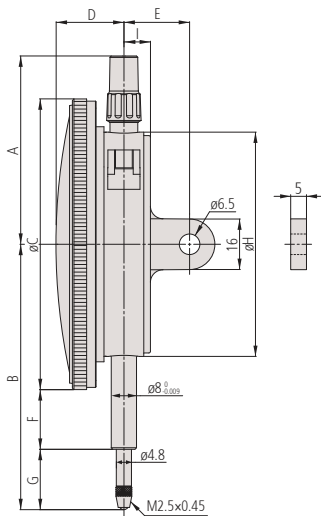
Metric

No.	Range [mm]	Range per rev.	Dial reading	Graduation [mm]	MPE any 1/10 revolution [μ m]
4046A	10	1 mm	$\pm 0-100$	0,01	5
4046AB	10	1 mm	$\pm 0-100$	0,01	5

B-type delivered with flat back plate

No.	MPE any 1/2 revolution [μ m]	MPE any 1 revolution [μ m]	MPE measuring range [μ m]	H MPE (Hysteresis) [μ m]	R MPE (Repeatability) [μ m]	Measuring force [N]
4046A	9	10	15	3	3	0,4-1,4
4046AB	9	10	15	3	3	0,4-1,4

No.	A [mm]	B [mm]	C [mm]	D [mm]	E [mm]	F [mm]	G [mm]	H [mm]	I [mm]	Mass [g]
4046A	59,6	84	92	21,5	21	18,9	19,1	71	9	345
4046AB	59,6	84	92	21,5	21	18,9	19,1	71	9	330



Functions	Series 4
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Continuous dial

Optional accessories

No.	Description
21AZB195	Limit Hands (green) 2pcs, Dial Indicator Series 2/3/4
21AZB148	Bezel Clamp for Dial Gauge, Metric, Series 2/3/4

Consumable spares

No.	Description
901312	Contact Element Ball Point, M2,5x0,45, 7,3mm Length, Carbide, Metric

For accessories and contact points, see end of dial indicators section.

Dial Indicators Back Plunger Type Series 1



Series 1

This is a back plunger, dial indicator with bezel \varnothing 40 mm. It offers you the following benefits:

- It is ideal for use in applications where space is limited.

Series 1		1160A	1960A	1162A
Functions				
Balanced dial		●	●	
Continuous dial				●
Reverse reading				●
One revolution			●	
Shockproof			●	

Specifications

Delivered Delivered with factory certificate

Optional accessories

No.	Description
21AAB363	Limit Hands (Green) 2 pcs., Dial Indicator Series 1, Test Indicator

Consumable spares

No.	Description
21AZA319	Contact Element Ball Point, M2,5x0,45, 8,3mm Length, Metric

For accessories and contact points, see end of dial indicators section.



With optional holding bar



1160A



1162A



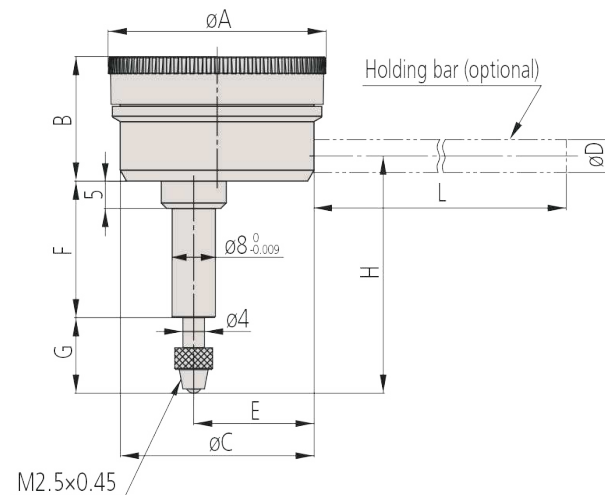
1960A

Metric

No.	Range [mm]	Plunger Stroke [mm]	Range per rev.	Dial reading	Graduation [mm]	MPE any 1/10 revolution [μ m]
1160A	5		1 mm	\pm 0-100	0,01	7
1162A	5		1 mm	100-0	0,01	7
1960A	1	4	1,27 mm	50-0-50	0,01	7

No.	MPE any 1/2 revolution [μ m]	MPE any 1 revolution [μ m]	MPE measuring range [μ m]	H MPE (Hysteresis) [μ m]	R MPE (Repeatability) [μ m]	Measuring force [N]
1160A	11	12	18	4	3	0,4-1,4
1162A	11	12	18	4	3	0,4-1,4
1960A			15	3,5	3	0,4-1,4

No.	A [mm]	B [mm]	C [mm]	E [mm]	F [mm]	G [mm]	H [mm]	Mass [g]
1160A	40	22,7	35,6	24,3	25	13,8	43,3	80
1162A	40	22,7	35,6	24,3	25	13,8	43,3	80
1960A	40	22,7	35,6	24,3	28,7	12,8	46	80



Dial Indicators Back Plunger Type Series 2

Series 2

This is a back plunger type dial indicator with bezel $\varnothing 57$ mm.



2960A

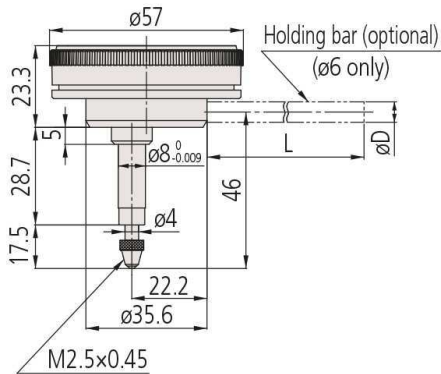


2990A-10

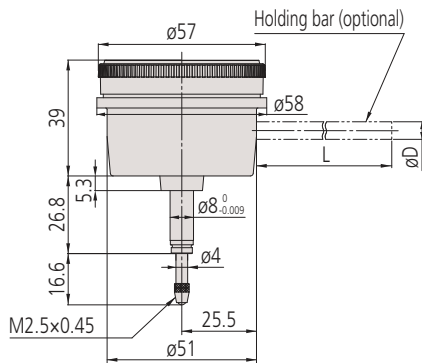
Metric

No.	Range [mm]	Plunger Stroke [mm]	Range per rev.	Dial reading	Graduation [mm]	MPE any 1/10 revolution [μ m]
2960A	1	4	1,27 mm	50-0-50	0,01	7
2990A-10	0,1	4	0,14 mm	50-0-50	0,001	2

No.	MPE measuring range [μ m]	H MPE (Hysteresis) [μ m]	R MPE (Repeatability) [μ m]	Measuring force [N]	Mass [g]
2960A	15	3,5	3	0,4-1,4	115
2990A-10	4	2	1	0,4-1,5	205



2960A



2990A-10

		Series 2	
		2960A	2990A-10
Functions			
	Balanced dial	●	●
	One revolution	●	●
	Shockproof	●	●
	Jeweled bearing		●

Specifications

Delivered	Delivered with factory certificate
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Optional accessories

No.	Description
21AZB195	Limit Hands (green) 2pcs, Dial Indicator Series 2/3/4

Consumable spares

No.	Description
901312	Contact Element Ball Point, M2,5x0,45, 7,3mm Length, Carbide, Metric
21AZA319	Contact Element Ball Point, M2,5x0,45, 8,3mm Length, Metric

901312: for 2990A-10
21AZA319: for 2960A

2960A: holding bar 136567 and 21AAA166 only

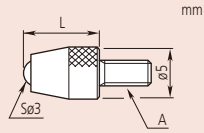
For accessories and contact points, see end of dial indicators section.



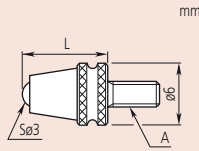
Back plunger indicator with optional holding bar and limit hands.

Contact Points

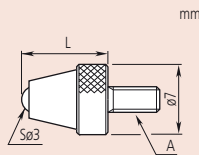
Contact Points with Radius



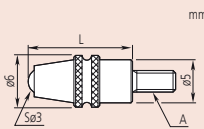
Ball point (901312)



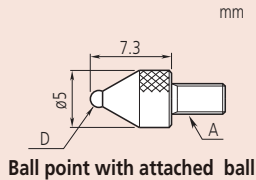
Ball point (902119)



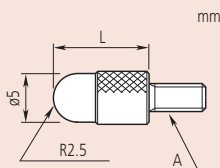
Ball point (21AZA319)



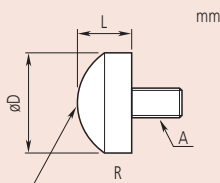
Ball point (21AZA320)



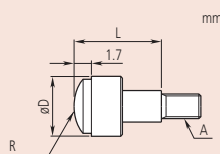
Ball point with attached ball



Shell type point



Spherical point steel



Spherical point carbide

Metric Ball Point

No.	Type	Material	A	L [mm]
901312		Carbide	M2,5x0,45	7,3
120045D		Carbide	M2,5x0,45	8
902119	Waterproof Type S-Type Series	Carbide	M2,5x0,45	8,3
21AZA319		Carbide	M2,5x0,45	8,3
21AZA320	Waterproof Type S-Type Series	Carbide	M2,5x0,45	12,1
21JAA225		Carbide	M2,5x0,45	14
120049D		Carbide	M2,5x0,45	15
21JAA224		Carbide	M2,5x0,45	17
21AZA321	Waterproof Type S-Type Series	Carbide	M2,5x0,45	19,3
137391		Carbide	M2,5x0,45	20
21JAA226		Carbide	M2,5x0,45	22
120053D		Carbide	M2,5x0,45	25
21AAA252		Carbide	M2,5x0,45	30
901994		Plastic	M2,5x0,45	7,3
120047D		Ruby	M2,5x0,45	8
120051D		Ruby	M2,5x0,45	15
137392		Ruby	M2,5x0,45	20
120055D		Ruby	M2,5x0,45	25
21AAA253		Ruby	M2,5x0,45	30
120046D		Sapphire	M2,5x0,45	8
120050D		Sapphire	M2,5x0,45	15
120054D		Sapphire	M2,5x0,45	25



Ball point (901312)



Ball Point with attached ball (101122)



Shell Type Point (101118)



Spherical Point Steel (101119)



Spherical Point Carbide (120058D)

Metric Ball point with attached ball

No.	Material	A	D [mm]
21AAA349	Carbide	M2,5x0,45	1
21AAA350	Carbide	M2,5x0,45	1,5
101122	Steel	M2,5x0,45	1,8
21AAA351	Carbide	M2,5x0,45	2,5
21AAA352	Carbide	M2,5x0,45	4

Metric Shell Type Point

No.	Material	A	L [mm]
101386	Steel	M2,5x0,45	5
101118	Steel	M2,5x0,45	10
137393	Steel	M2,5x0,45	15
101387	Steel	M2,5x0,45	20
101388	Steel	M2,5x0,45	25
21AAA254	Steel	M2,5x0,45	30

Metric Spherical Point

No.	Material	A	D [mm]	L [mm]	R [mm]
111460	Steel	M2,5x0,45	5,5	3	5
125258	Steel	M2,5x0,45	7,9	5	5
101119	Steel	M2,5x0,45	10	5	7
120058D	Carbide	M2,5x0,45	5,5	5	5
120059D	Carbide	M2,5x0,45	7,5	10	7
120060D	Carbide	M2,5x0,45	10	10	10

Contact Points

Contact Points Flat

Metric

Cylinder Point

No.	Material	A	D [mm]	L [mm]
120066D	Carbide	M2,5x0,45	0,45	3
21AAA329	Carbide	M2,5x0,45	0,45	5
120065D	Carbide	M2,5x0,45	1	3
21AAA330	Carbide	M2,5x0,45	1	5
21AAA331	Carbide	M2,5x0,45	1	8
21AAA332	Carbide	M2,5x0,45	1	10
21AAA333	Carbide	M2,5x0,45	1	20
21AAA334	Carbide	M2,5x0,45	1	40
21AAA335	Carbide	M2,5x0,45	1,5	5
21AAA336	Carbide	M2,5x0,45	1,5	10
120064D	Carbide	M2,5x0,45	1,5	13
21AAA337	Carbide	M2,5x0,45	1,5	20
21AAA338	Carbide	M2,5x0,45	1,5	40
137257	Carbide	M2,5x0,45	2	8
21AAA257	Carbide	M2,5x0,45	2	18
21AAA258	Carbide	M2,5x0,45	2	28
21AAA339	Carbide	M2,5x0,45	2	40



Cylinder Point (137257)



Flat Point carbide (120056D)



Flat Point carbide (21AZB754)



Flat Point steel (131365)



Flat Point steel (21AAB711)

Metric

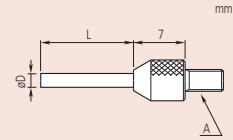
Flat Point carbide

No.	Material	A	Flatness [μm]	D [mm]	d [mm]	L [mm]
120056D	Carbide	M2,5x0,45	3	5	2	8
120041D	Carbide	M2,5x0,45	3	5,2	4,3	5
120042D	Carbide	M2,5x0,45	3	7	6,5	10
120043D	Carbide	M2,5x0,45	3	10,5	9,5	10
21AZB760	Carbide	M2,5x0,45	5	17	15	10
21AZB761	Carbide	M2,5x0,45	5	22	20	10
21AZB762	Carbide	M2,5x0,45	5	27	25	10
21AZB763	Carbide	M2,5x0,45	5	32	30	10
21AZB754	Carbide	M2,5x0,45	3	7	3	10
21AZB755	Carbide	M2,5x0,45	3	9	4,5	10

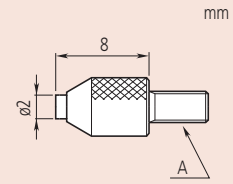
Metric

Flat Point steel

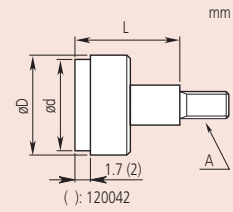
No.	Material	A	Flatness [μm]	D [mm]	L [mm]
131365	Steel	M2,5x0,45	3	5	8
21AAB715	Steel	M2,5x0,45	3	5	10
101117	Steel	M2,5x0,45	5	10	10
21AAB711	Steel	M2,5x0,45	5	15	10
21AAB712	Steel	M2,5x0,45	5	20	10
21AAB713	Steel	M2,5x0,45	5	25	10
21AAB714	Steel	M2,5x0,45	5	30	10



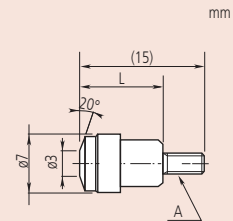
Cylinder Point



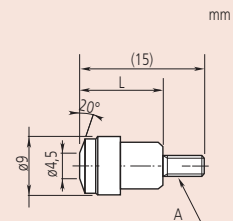
Flat point carbide (120056D)



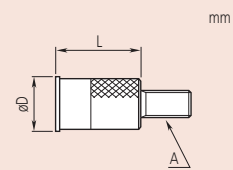
Flat point carbide (120041D)



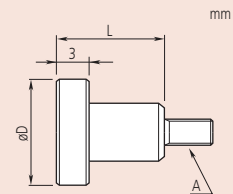
Flat point carbide (21AZB754)



Flat point carbide (21AZB755)



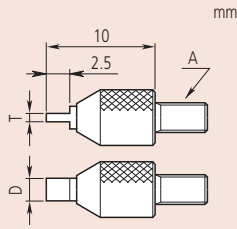
Flat point steel
Flatness 3 μm



Flat point steel
Flatness 5 μm

Contact Points

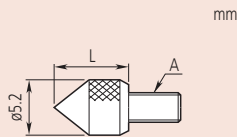
Contact Points Others



Blade point

Metric Blade Point

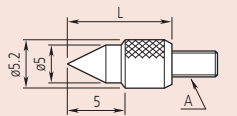
No.	Material	A	D [mm]	T [mm]
120061D	Carbide	M2,5x0,45	2	0,4
120062D	Carbide	M2,5x0,45	2	0,6
120063D	Carbide	M2,5x0,45	4	1



Conical point steel (101385)

Metric Conical Point

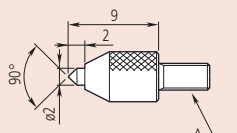
No.	Material	A	Tip angle	L [mm]
101385	Steel	M2,5x0,45	90°	5
101120	Steel	M2,5x0,45	60°	10
120057D	Carbide	M2,5x0,45	90°	9
120068D	Carbide	M2,5x0,45	90°	15



Conical point steel (101120)

Metric Knife Edge Point

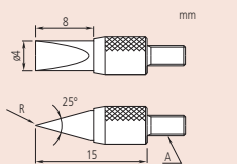
No.	Material	A	R [mm]
120067D	Carbide	M2,5x0,45	0,2



Conical point carbide (120057D)

Metric Lever Point

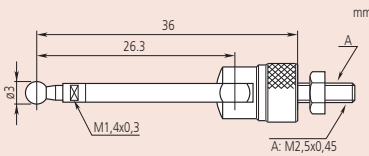
No.	Material	A
900391	Steel	M2,5x0,45



Knife edge point

Metric Needle Point

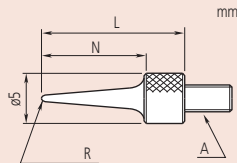
No.	Material	A	L [mm]	N [mm]	R [mm]
101121	Steel	M2,5x0,45	15	11	0,4
137413	Steel	M2,5x0,45	17	13	0,2
21AAA255	Steel	M2,5x0,45	25	21	0,4
21AAA256	Steel	M2,5x0,45	35	31	0,4



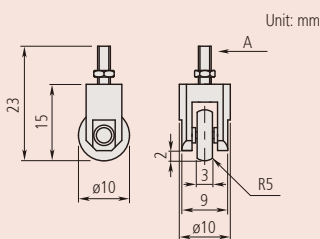
Lever Point

Metric Roller Point

No.	Material	A
901954	Steel	M2,5x0,45



Needle Point



Roller point



Blade Point (120062D)



Conical Point (101385)



Knife Edge Point (120067D)



Lever Point (900391)



Needle Point (101121)



Roller Point (901954)

Contact Points

Contact Point Set



Metric Contact Point Set

No.	Material	A
7822	Steel	M2,5x0,45

Extension Rods

Extensions



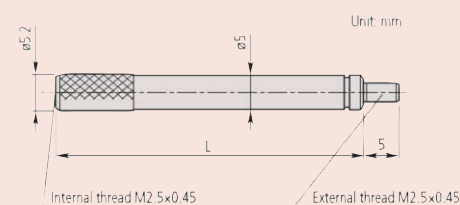
303611

Metric

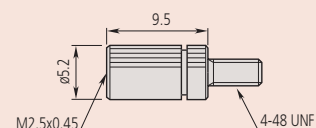
No.	Material	A	L [mm]
303611	Steel	M2,5x0,45	10
21AAA259A	Steel	M2,5x0,45	15
303612	Steel	M2,5x0,45	20
21AAA259B	Steel	M2,5x0,45	25
303613	Steel	M2,5x0,45	30
21AAA259C	Steel	M2,5x0,45	35
21AAA259D	Steel	M2,5x0,45	40
21AAA259E	Steel	M2,5x0,45	45
21AAA259F	Steel	M2,5x0,45	50
21AAA259G	Steel	M2,5x0,45	55
304146	Steel	M2,5x0,45	60
21AAA259H	Steel	M2,5x0,45	65
21AAA259J	Steel	M2,5x0,45	70
21AAA259L	Steel	M2,5x0,45	75
21AAA259M	Steel	M2,5x0,45	80
304147	Steel	M2,5x0,45	90
303614	Steel	M2,5x0,45	100
21AAA011	Steel	M2,5x0,45	9,5
21AAA012	Steel	M2,5x0,45	9,5

Standard accessories

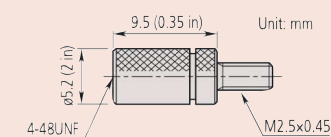
No.	Description
131365	Contact Element Flat, M2,5x0,45, 5mm, Steel, Metric
101117	Contact Element Flat, M2,5x0,45, 10mm, Steel, Metric
101121	Contact Element Needle, M2,5x0,45, R=0,4mm, Steel, Metric
101119	Contact Element Spherical, M2,5x0,45, R=7mm, Steel, Metric
101118	Contact Element Shell, M2,5x0,45, R=2,5mm, 10mm Length, Steel, Metric
101387	Contact Element Shell, M2,5x0,45, R=2,5mm, 20mm Length, Steel, Metric



A = M 2,5 x 0,45 mm (metric)



21AAA011
Adapter AGD/ANSI Indicator (INCH) to EN ISO M2,5x0,45 thread



21AAA012
Adapter EN ISO Indicator (Metric) to ANSI/AGD 4-48UNF thread

Bases for Indicators

Optional accessories

No.	Description
21JAA269	Set Screw for Base (Indicator)

Bases

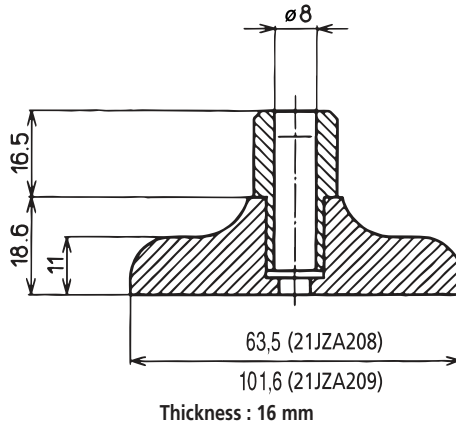


21JZA208



21JZA209

No.	Base (W x T)	Remarks
21JZA208	63,5 x 16 mm	Delivered without set screw for base/indicator
21JZA209	101,6 x 16 mm	Delivered without set screw for base/indicator



Interchangeable Backs

Interchangeable Backs



With centre lug



Flat Back Plate



With magnet



With laterally offset back lug



With post



With screw mount



With adjustable back

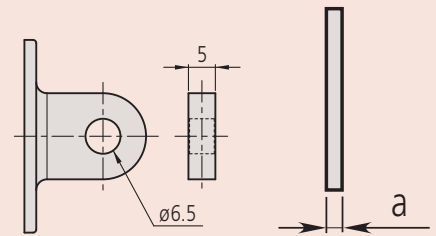


With rack



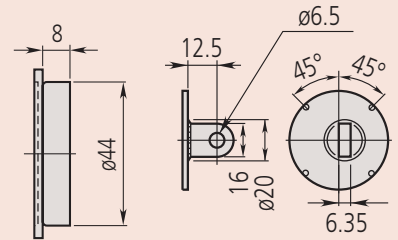
With adjustable bracket

No.	For Series	Dimensions [mm]	Remarks
191559	1911AB-10, 1913AB-10, 1921AB-10, 1923AB-10, 1925AB-10	a = 1 mm	Flat back plate
101211	1	a = 2,2 mm	Flat back plate
136872	1 (waterproof)	a = 1,5 mm	Flat back plate
137906	1003A	a = 1 mm	Flat back plate
101039	2/ ID-C/ ID-S/ ID-SS	a = 2,5 mm	Flat back plate
21AZB231	2 (waterproof S type and A type)	a = 2,5 mm	Flat back plate
100836	3/ 4	a = 3 mm	Flat back plate
190561	1911A-10, 1913A-10		Back plate with centre lug
101210	1		Back plate with centre lug
137905	1003A		Back plate with centre lug
101040	2/ ID-C/ ID-F/ ID-H/ ID-S/ ID-SS		Back plate with centre lug
21AZB230	2 (waterproof S type and A type)		Back plate with centre lug
100691	3/ 4		Back plate with centre lug
21EZA145	ID-N, ID-B		Back plate with centre lug
900928	2/ ID-C/ ID-F/ ID-H/ ID-S/ ID-SS		Back plate with magnet
900929	3/ 4		Back plate with magnet
101167	2/ ID-C/ ID-F/ ID-H/ ID-S/ ID-SS		Back plate with laterally offset back lug
193172	1		Back plate with post
101169	2/ ID-C/ ID-F/ ID-H/ ID-S/ ID-SS		Back plate with post
193173	1	M 6 x 1	Back plate with screw mount
136023	2/ ID-C/ ID-F/ ID-H/ ID-S/ ID-SS	M 6 x 1	Back plate with screw mount
136025	1	M 6 x 1	Back plate with adjustable back
136026	2/ ID-C/ ID-F/ ID-H/ ID-S/ ID-SS	M 6 x 1	Back plate with adjustable back
129902	2/ ID-C/ ID-F/ ID-H/ ID-S/ ID-SS		Back plate with rack
901963	2/ ID-C/ ID-F/ ID-H/ ID-S/ ID-SS		Back plate with adjustable bracket



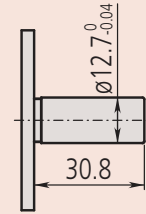
Unit : mm
With centre lug

Unit : mm
Flat back plate

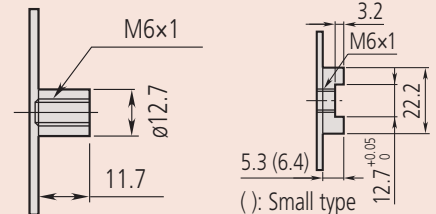


Unit : mm
With magnet

Unit : mm
With laterally offset back lug

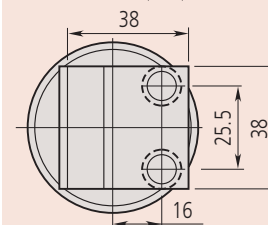
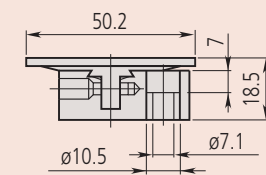


Unit : mm
With post



Unit : mm
With screw mount

Unit : mm
With adjustable back



Unit : mm
With adjustable bracket

Spindle Lifting Accessories

Spindle Lifting Accessories

- The spindle lifting accessories are attached to the indicators for improved inspection efficiency.



Application 21JZA301 and 21JZA295



21JZA301



21JZA295



902100



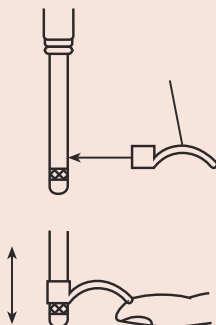
21AZB149



21AZB150



21EAA426



Application 21EAA426



21EZA198



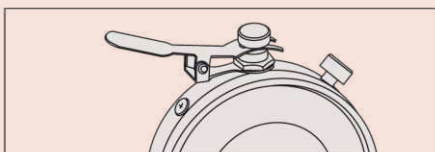
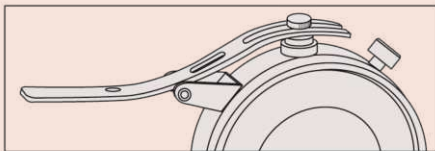
21EZA105



21EZA197



21EZA200



Application spindle lifting lever

No.	Remarks
21JZA301	Spindle lifting cable with auto-stop function, 300 mm length for all digital indicators with range 12,7 mm (0,5") and ID-U/ID-H indicators except ID-N and ID-B indicators, except all dial indicators with range >10 mm (0,5") except 2048A(B)-10, 2046A(B)-80, 1911A(B)-10, 1913(B)-10, 1921A(B)-10, 1923A(B)-10, 1925A(B)-10, except back plunger dial indicators and waterproof dial indicators, except 2971AB, 2972AB, 2973AB, 2976AB, 2977AB, 2978AB
21JZA295	Spindle lifting cable without auto-stop function, 500 mm length for all digital indicators with range 12,7 mm (0,5") and ID-U/ID-H indicators except ID-N and ID-B indicators, except all dial indicators with range >10 mm (0,5") except 2048A(B)-10, 2046A(B)-80, 1911A(B)-10, 1913(B)-10, 1921A(B)-10, 1923A(B)-10, 1925A(B)-10, except back plunger dial indicators and waterproof dial indicators, except 2971AB, 2972AB, 2973AB, 2976AB, 2977AB, 2978AB
902100	Spindle lifting lever S-type and A-type dial indicators Series 1
21AZB149	Spindle lifting lever S-type dial indicators Series 2,3 and 4 up to 10 mm/0,4"
21AZB150	Spindle lifting lever S-type and A-type dial indicators Series 2,3 >10 mm/0,4" up to 20 mm/0,8"
21EZA198	Spindle lifting lever digital indicators ID-C & ID-F (up to 12 mm range), ID-S, ID-SS and A-type dial indicators Series 2, 3 and 4 up to 10 mm/0,5" range
21EZA105	Spindle lifting knob for 12,4 mm digital indicator. This knob allows you to lift the spindle from above by hand.
21EZA197	Spindle lifting knob for 25,4 mm digital indicator. This knob allows you to lift the spindle from above by hand.
21EZA200	Spindle lifting knob for 50,8 mm digital indicator. This knob allows you to lift the spindle from above by hand.
21EZA101	Spindle lifting knob for ID-H digital indicator. This knob allows you to lift the spindle from above by hand.
21EAA426	Spindle lifting handle suitable for 4,8 mm spindle (plunger) diameter

Other Accessories for Dial Indicator

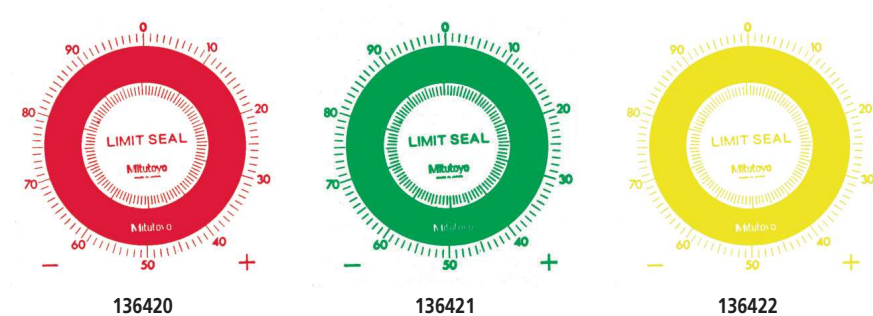
Colour-coded Spindle Caps

- 9 colour-coded spindle caps are available for dial indicators with a range of 10 mm or less.

No.	Colour	Remarks
193051	Black	For standard type
193051B	Blue	For standard type
193051D	Orange	For standard type
193051G	Green	For standard type
193051P	Pink	For standard type
193051R	Red	For standard type
193051S	Dark blue	For standard type
193051W	White	For standard type
193051Y	Yellow	For standard type
193595	Black	For waterproof type
193595B	Blue	For waterproof type
193595D	Orange	For waterproof type
193595G	Green	For waterproof type
193595P	Pink	For waterproof type
193595R	Red	For waterproof type
193595S	Dark blue	For waterproof type
193595W	White	For waterproof type
193595Y	Yellow	For waterproof type

Limit Stickers

- 10 pieces per set.



No.	For Series	Colour
136420	Series 2 Dial Indicator 55,6 or 57 mm bezel/outside diameter	Red
136421	Series 2 Dial Indicator 55,6 or 57 mm bezel/outside diameter	Green
136422	Series 2 Dial Indicator 55,6 or 57 mm bezel/outside diameter	Yellow



This accessory is not applicable to 1003A(B), 1911A(B)-10, 1913A(B)-10, 1921A(B)-10, 1923A(B)-10, 1925A(B)-10, 2971AB, 2972AB, 2973AB, 2976AB, 2977AB, 2978AB



Dial Test Indicators Lever Type

Lever Indicator Overview



Choices of dial position

Our product lineup offers four models, each with a different dial orientation on the frame to allow best readability in any situation.

- Horizontal type: standard model - with dial on the top of the frame
- Vertical type: dial on the end of the frame
- Horizontal (20° tilted face) type: dial on top of the frame, tilted backward by 20°
- Parallel type: dial on the side of the frame



Stylus length is on the dial face

The length of the applied stylus affects the indicator's scale factor. The appropriate length is indicated on the dial face to assist a customer when ordering the correct replacement stylus.



ø8 stem to fit dovetails is a standard accessory

A ø8mm plain stem (21CAB104) for the Metric models that attaches to any dovetail on the frame is supplied as a standard accessory. Other sizes of stem to fit the dovetails are available as optional accessories:

- ø4mm stem: 21CAB106
- ø6mm stem: 21CAB103



Attachable limit hands

Limit hands (optional) can be attached to the bezel as for dial indicators, allowing easy identification of the upper and lower limits of tolerance.



Improved stylus bearing

The conventional method of mounting the stylus pivot bearing screw in the frame is prone to allowing looseness to develop with prolonged use.

A unique sub-plate structure to house this screw has now been incorporated in all models and eliminates this drawback.

Lever Indicators Horizontal Type - 0,01 mm

Series 513

This is a Dial Test Indicator (Lever Type) which offers you the following benefits:

- Drastically enhanced durability, sensitivity and visibility.
- Glare-free flat crystal face allows easy reading of graduations.
- O-ring seal on the bezel has the effect of providing smooth rotation and prevents dust and oil from penetrating through to the dial face.
- The stylus length is on the dial face to reorder a replacement
- Multi-layer coatings on the crystal.



513-466-10E



513-424-10E



513-414-10E



513-464-10E



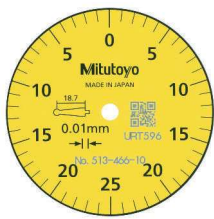
513-404-10E



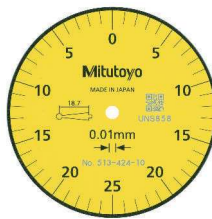
513-415-10E



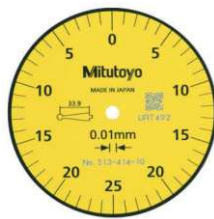
513-426-10E



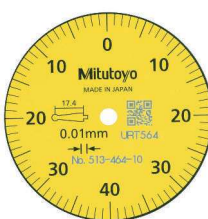
513-466-10E



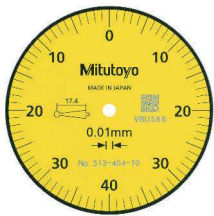
513-424-10E



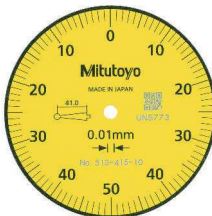
513-414-10E



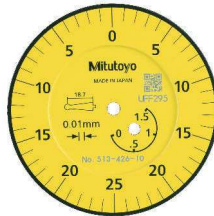
513-464-10E



513-404-10E



513-415-10E



513-426-10E

Specifications

Contact point

Thread M 1,7 x 0,35

For optional accessories, see end of lever indicators section.

Standard accessories

No.	Description
900321	Swivel Clamp, for D=4/8mm, Dovetail
900209	Holding Bar for Swivel Clamp, 9x9mm, 100mm Length

Optional accessories

No.	Description
21AAB363	Limit Hands (Green) 2 pcs., Dial Indicator Series 1, Test Indicator

Set Configuration: Metric

Full set

Swivel clamp (900321, for ø4 mm, ø8 mm, dovetail)

Metric holding bar (L: 100 mm)

Stylus, ø1 mm carbide point

Stylus, ø3 mm carbide point

Stem, ø4 mm

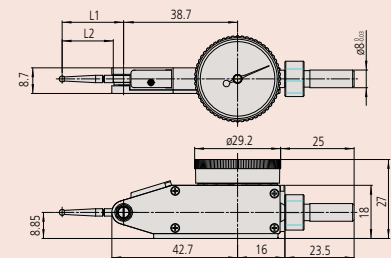
Basic set

Indicator

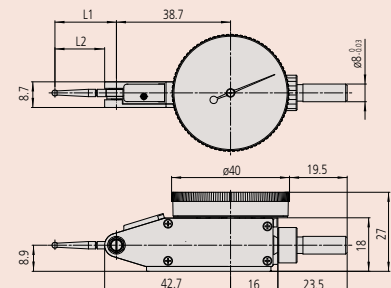
Stylus, ø2 mm contact point (carbide)

Knurled clamp ring

Stem, ø8 mm



513-466-10E, 513-464-10E



513-404-10E, 513-404-10T, 513-414-10E, 513-414-10T, 513-415-10E, 513-415-10T, 513-424-10E, 513-424-10T, 513-426-10E, 513-474-10E, 513-477-10E, 513-478-10E

Lever Indicators Horizontal Type - 0,01 mm

Metric

No.	Range [mm]	Dial reading	Graduation [mm]	MPE any 10 scale divisions [μm]	MPE any 1/2 revolution [μm]	MPE any 1 revolution [μm]	MPE measuring range [μm]	H MPE (Hysteresis) [μm]	R MPE (Repeatability) [μm]
513-466-10E	0,5	0-25-0	0,01	5			5	3	3
513-424-10E	0,5	0-25-0	0,01	5			5	3	3
513-414-10E	0,5	0-25-0	0,01	5			10	4	3
513-464-10E	0,8	0-40-0	0,01	5	6		8	3	3
513-404-10E	0,8	0-40-0	0,01	5	6		8	3	3
513-415-10E	1	0-50-0	0,01	5	8		10	4	3
513-426-10E	1,5	0-25-0	0,01	5		10	16	4	3
513-478-10E	0,5	0-25-0	0,01	5			5	3	3
513-474-10E	0,8	0-40-0	0,01	5	6		8	3	3
513-477-10E	1	0-50-0	0,01	5	8		10	4	3
513-424-10T	0,5	0-25-0	0,01	5			5	3	3
513-414-10T	0,5	0-25-0	0,01	5			10	4	3
513-404-10T	0,8	0-40-0	0,01	5	6		8	3	3
513-415-10T	1	0-50-0	0,01	5	8		10	4	3

No.	Measuring force [N]	Carbide stylus tip $\varnothing 2$ mm No.	Ruby stylus tip $\varnothing 2$ mm No.	L1 [mm]	L2 [mm]	L3 [mm]	Mass [g]
513-466-10E	0,01-0,3	137557		22,2	18,7		41
513-424-10E	0,01-0,3	137557		22,2	18,7	26,8	45
513-414-10E	0,01-0,2	131324		37,4	33,9	26,8	45
513-464-10E	0,01-0,3	103006		20,9	17,4		41
513-404-10E	0,01-0,3	103006		20,9	17,4	26,8	45
513-415-10E	0,01-0,2	136013		44,5	41	26,8	45
513-426-10E	0,01-0,4	137557		22,2	18,7	27,5	45
513-478-10E	0,01-0,3		21CZA210	22,2	18,7	26,8	45
513-474-10E	0,01-0,3		21CZA201	20,9	17,4	26,8	45
513-477-10E	0,01-0,3		21CZA211	44,5	41	26,8	45
513-424-10T	0,01-0,3	137557		22,2	18,7	26,8	45
513-414-10T	0,01-0,2	131324		37,4	33,9	26,8	45
513-404-10T	0,01-0,3	103006		20,9	17,4	26,8	45
513-415-10T	0,01-0,2	136013		44,5	41	26,8	45

Lever Indicators - Horizontal Type - 0.001/0.002 mm

Series 513

This is a Dial Test Indicator (Lever Type) which offers you the following benefits:

- Drastically enhanced durability, sensitivity and visibility.
- Glare-free flat crystal face allows easy reading of graduations.
- O-ring seal on the bezel has the effect of providing smooth rotation and prevents dust and oil from penetrating through to the dial face.
- The stylus length is on the dial face to reorder a replacement.



513-401-10E

513-465-10E

513-405-10E

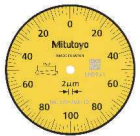
513-425-10E



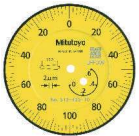
513-401-10E



513-465-10E



513-405-10E



513-425-10E

Metric

No.	Range [mm]	Dial reading	Graduation [mm]	MPE any 10 scale divisions [μm]	MPE any 1/2 revolution [μm]	MPE any 1 revolution [μm]	MPE measuring range [μm]	H MPE (Hysteresis) [μm]	R MPE (Repeatability) [μm]
513-401-10E	0,14	0-70-0	0,001	2	3		3	2	1
513-405-10E	0,2	0-100-0	0,002	2	3		3	2	1
513-465-10E	0,2	0-100-0	0,002	2	3		3	2	1
513-425-10E	0,6	0-100-0	0,002	2	3	5	7	4	1
513-471-10E	0,14	0-70-0	0,001	2	3		3	2	1
513-475-10E	0,2	0-100-0	0,002	2	3		3	2	1
513-405-10T	0,2	0-100-0	0,002	2	3		3	2	1

No.	Measuring force [N]	Carbide stylus tip ø2 mm No.	Ruby stylus tip ø2 mm No.	L1 [mm]	L2 [mm]	L3 [mm]	Mass [g]
513-401-10E	0,01 - 0,3	103010		14,7	11,2	26,8	45
513-405-10E	0,01 - 0,3	103011		18,7	15,2	26,8	45
513-465-10E	0,01 - 0,3	103011		18,7	15,2	26,8	41
513-425-10E	0,01 - 0,4	103011		18,7	15,2	27,5	45
513-471-10E	0,01 - 0,3		21CZA209	14,7	11,2	26,8	45
513-475-10E	0,01 - 0,3		21CZB068	18,7	15,2	26,8	45
513-405-10T	0,01 - 0,3	103011		18,7	15,2	26,8	45

Specifications

Contact point

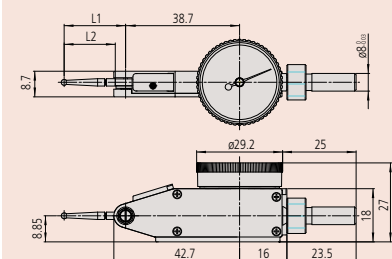
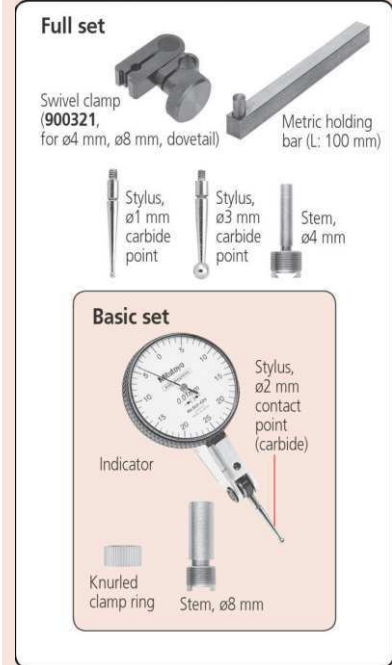
Thread M 1,7 x 0,35

For optional accessories, see end of lever indicators section.

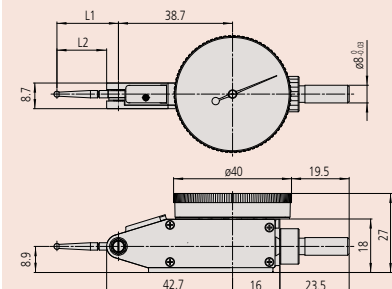
Optional accessories

No.	Description
21AAB363	Limit Hands (Green) 2 pcs., Dial Indicator Series 1, Test Indicator

Set Configuration: Metric



513-465-10E



513-401-10E, 513-405-10E, 513-425-10E, 513-475-10E

Lever Indicators and Magnet Stand

Series 513

This is a Dial Test Indicator (Lever Type) including mini magnet stand. It offers you the following benefits:

- It contains various accessories including a mini magnet stand, a swivel clamp and a stem with knurled clamp ring.



**513-908-10E
Indicator**

Centered, bi-directional action for automatic reversal of measuring direction.
Jewelled bearings and precision gears and pinions for smooth, accurate movement and quick response.

Stand

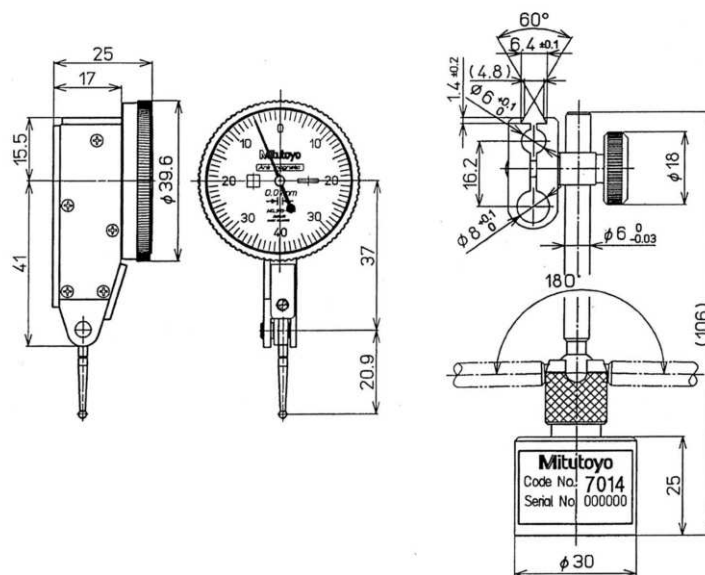
Magnetic force : 150 N.
Mass : 180 g.



513-908-10E

Metric

No.	Content of Set	Range [mm]	Dial reading	Graduation [mm]	MPE any 10 scale divisions [μm]	MPE any 1/2 revolution [μm]	MPE measuring range [μm]	H MPE (Hysteresis) [μm]	R MPE (Repeatability) [μm]
513-908-10E	513-404-10E: Lever Indicator 7014-10: Mini Magnet Stand 902804: Stem with Knurled Clamp Ring	0,8	0-40-0	0,01	5	6	8	3	3



Lever Indicators Horizontal (20° Tilted Face) Type

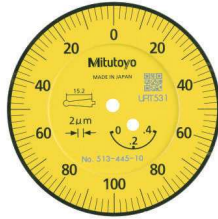
Series 513

This is a Dial Test Indicator (Lever Type) which offers you the following benefits:

- Drastically enhanced durability, sensitivity and visibility.
- Glare-free flat crystal face allows easy reading of graduations.
- O-ring seal on the bezel has the effect of providing smooth rotation and prevents dust and oil from penetrating through to the dial face.
- The stylus length is on the dial face to reorder a replacement
- Multi-layer coatings on the crystal.



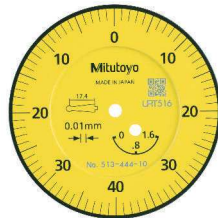
513-445-10E



513-445-10E



513-444-10E



513-444-10E

Metric

No.	Range [mm]	Dial reading	Graduation [mm]	MPE any 10 scale divisions [μm]	MPE any 1/2 revolution [μm]	MPE any 1 revolution [μm]	MPE measuring range [μm]	H MPE (Hysteresis) [μm]	R MPE (Repeatability) [μm]
513-445-10E	0,4	0-100-0	0,002	2	3	5	6	4	1
513-444-10E	1,6	0-40-0	0,01	5	8	10	16	4	3
513-445-10T	0,4	0-100-0	0,002	2	3	5	6	4	1
513-444-10T	1,6	0-40-0	0,01	5	8	10	16	4	3

No.	Measuring force [N]	Carbide stylus tip ø2 mm No.	L1 [mm]	L2 [mm]	Mass [g]
513-445-10E	0,01-0,3	103011	18,7	15,2	48
513-444-10E	0,01-0,3	103006	20,9	17,4	48
513-445-10T	0,01-0,3	103011	18,7	15,2	48
513-444-10T	0,01-0,3	103006	20,9	17,4	48

Specifications

Contact point

Thread M 1,7 x 0,35

For optional accessories, see end of lever indicators section.

Optional accessories

No.	Description
21AAB363	Limit Hands (Green) 2 pcs., Dial Indicator Series 1, Test Indicator

Set Configuration: Metric

Full set

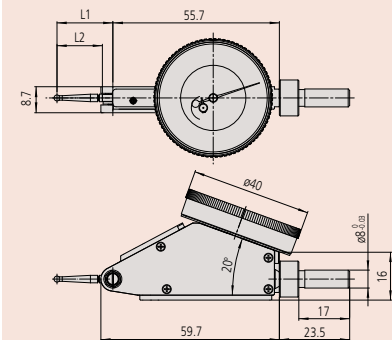
Swivel clamp (900321, for ø4 mm, ø8 mm, dovetail) Metric holding bar (L: 100 mm)

Stylus, ø1 mm carbide point Stylus, ø3 mm carbide point Stem, ø4 mm

Basic set

Indicator Stylus, ø2 mm contact point (carbide)

Knurled clamp ring Stem, ø8 mm



Lever Indicators Vertical Type

Series 513

This is a Dial Test Indicator (Lever Type) which offers you the following benefits:

- Drastically enhanced durability, sensitivity and visibility.
- Glare-free flat crystal face allows easy reading of graduations.
- O-ring seal on the bezel has the effect of providing smooth rotation and prevents dust and oil from penetrating through to the dial face.
- The stylus length is on the dial face to reorder a replacement
- Multi-layer coatings on the crystal.

Specifications

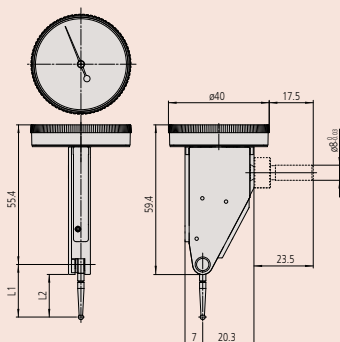
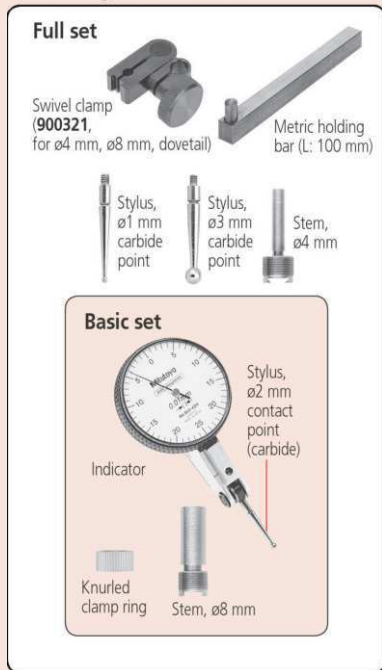
Contact point Thread M 1,7 x 0,35

For optional accessories, see end of lever indicators section.

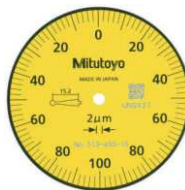
Optional accessories

No.	Description
21AAB363	Limit Hands (Green) 2 pcs., Dial Indicator Series 1, Test Indicator

Set Configuration: Metric



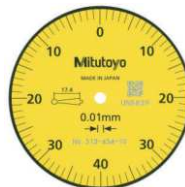
513-455-10E



513-455-10E



513-454-10E



513-454-10E

Metric

No.	Range [mm]	Dial reading	Graduation [mm]	MPE any 10 scale divisions [µm]	MPE any 1/2 revolution [µm]	MPE measuring range [µm]	H MPE (Hysteresis) [µm]	R MPE (Repeatability) [µm]
513-455-10E	0,2	0-100-0	0,002	2	3	3	2	1
513-456-10E	0,5	0-100-0	0,01	5		5	3	3
513-454-10E	0,8	0-40-0	0,01	5	6	8	3	3
513-455-10T	0,2	0-100-0	0,002	2	3	3	2	1
513-454-10T	0,8	0-40-0	0,01	5	6	8	3	3

No.	Carbide stylus tip ø2 mm No.	L1 [mm]	L2 [mm]	Mass [g]
513-455-10E	103011	18,7	15,2	46
513-456-10E	137557	22,2	18,7	46
513-454-10E	103006	20,9	17,4	46
513-455-10T	103011	18,7	15,2	46
513-454-10T	103006	20,9	17,4	46

Lever Indicators Parallel Type

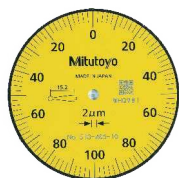
Series 513

This is a Dial Test Indicator (Lever Type) which offers you the following benefits:

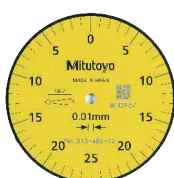
- Drastically enhanced durability, sensitivity and visibility.
- Glare-free flat crystal face allows easy reading of graduations.
- O-ring seal on the bezel has the effect of providing smooth rotation and prevents dust and oil from penetrating through to the dial face.
- The stylus length is on the dial face to reorder a replacement
- Multi-layer coatings on the crystal.



513-484-10E



513-485-10E



513-486-10E



513-484-10E

Metric

No.	Range [mm]	Graduation [mm]	MPE any 10 scale divisions [μm]	MPE any 1/2 revolution [μm]	MPE measuring range [μm]	H MPE (Hysteresis) [μm]	R MPE (Repeatability) [μm]	Measuring force [N]
513-485-10E	0,2	0,002	2	3	3	2	1	0,01-0,3
513-486-10E	0,5	0,01	5		5	3	3	0,01-0,3
513-484-10E	0,8	0,01	5	6	8	3	3	0,01-0,3
513-484-10T	0,8	0,01	5	6	8	3	3	0,01-0,3

No.	Carbide stylus tip $\varnothing 2$ mm No.	L1 [mm]	L2 [mm]	Mass [g]
513-485-10E	103011	18,7	15,2	53
513-486-10E	137557	22,2	18,7	53
513-484-10E	103006	20,9	17,4	53
513-484-10T	103006	20,9	17,4	53

Specifications

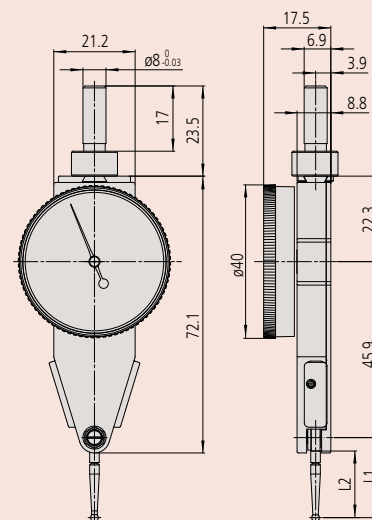
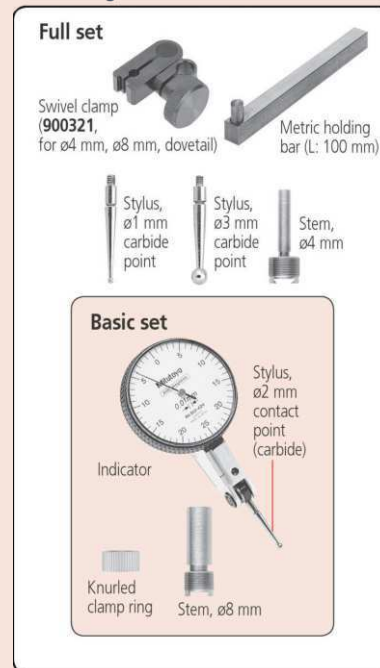
Contact point	Thread M 1,7 x 0,35
Delivered	Delivered: In box as either a full set or a basic set.

For optional accessories, see end of lever indicators section.

Optional accessories

No.	Description
21AAB363	Limit Hands (Green) 2 pcs., Dial Indicator Series 1, Test Indicator

Set Configuration: Metric



Lever Indicators Universal Type

Series 513

This is a Dial Test Indicator (Lever Type) which offers you the following benefits:

- Drastically enhanced durability, sensitivity and visibility.
- Glare-free flat crystal face allows easy reading of graduations.
- O-ring seal on the bezel has the effect of providing smooth rotation and prevents dust and oil from penetrating through to the dial face.
- The stylus length is on the dial face to reorder a replacement
- Multi-layer coatings on the crystal.

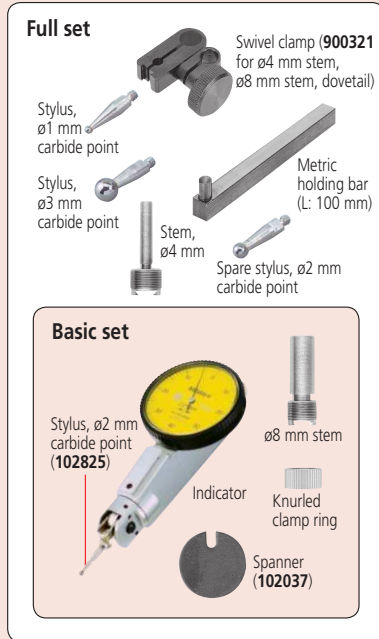
Specifications

Contact point

Thread M 1,4 x 0,3

For optional accessories, see end of lever indicators section.

Set Configuration: Metric

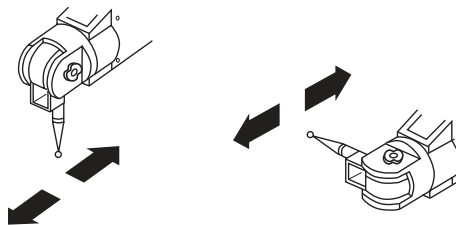
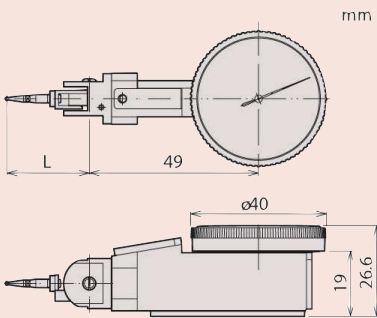


513-304-10E

Metric

No.	Range [mm]	Dial reading	Graduation [mm]	MPE any 10 scale divisions [μm]	MPE any 1/2 revolution [μm]	MPE measuring range [μm]	H MPE (Hysteresis) [μm]	R MPE (Repeatability) [μm]
513-304-10E	0,8 - 0,8	0-40-0	0,01	5	6	8	4	3
513-304-10T	0,8 - 0,8	0-40-0	0,01	5	6	8	3	3

No.	Measuring force [N]	Carbide stylus tip ø2 mm No.	L [mm]	Mass [g]
513-304-10E	0,01-0,3	102825	24	80
513-304-10T	0,01-0,3	102825	24	80



The direction of the probe movement can be freely changed by rotating the stylus section of the lever indicator.

Lever Indicators Small Type

Series 513

This is a small type Dial Test Indicator (Lever Type) which offers you the following benefits:

- Reversible measuring direction (clutch type)
- Jeweled bearings assure higher sensitivity and accuracy.



513-501-10E



513-514-10E



513-503-10E



513-517-10E



513-515-10E

Metric

No.	Range [mm]	Dial reading	Graduation [mm]	H MPE (Hysteresis)	MPE any 10 scale divisions [μm]	MPE any 1/2 revolution [μm]	MPE measuring range [μm]	R MPE (Repeatability) [μm]
513-501-10E	0,14	0-70-0	0,001	2 mm	2	3	3	1
513-503-10E	0,2	0-100-0	0,002	2 mm	2	3	3	1
513-514-10E	0,5	0-25-0	0,01	4 mm	5	10	10	3
513-517-10E	0,8	0-40-0	0,01	3 mm	5	6	8	3
513-515-10E	1	0-50-0	0,01	4 mm	5	8	10	3
513-501-10T	0,14	0-70-0	0,001	2 mm	2	3	3	1
513-503-10T	0,2	0-100-0	0,002	2 mm	2	3	3	1
513-514-10T	0,5	0-25-0	0,01	4 mm	5	10	10	3
513-517-10T	0,8	0-40-0	0,01	3 mm	5	6	8	3
513-515-10T	1	0-50-0	0,01	4 mm	5	8	10	3

No.	Measuring force [N]	Carbide stylus tip ø2 mm No.	Mass [g]	L1 [mm]	L2 [mm]	C [mm]
513-501-10E	≤ 0,5	136104	50	12,1	8,6	48,7
513-503-10E	≤ 0,4	103010	50	14,7	11,2	51,4
513-514-10E	≤ 0,3	131324	51	36,8	33,3	73,5
513-517-10E	≤ 0,3	103006	50	20,9	17,4	57,6
513-515-10E	≤ 0,3	136013	51	44,5	41	81,2
513-501-10T	≤ 0,5	136104	50	12,1	8,6	48,7
513-503-10T	≤ 0,4	103010	50	14,7	11,2	51,4
513-514-10T	≤ 0,3	131324	51	36,8	33,3	73,5
513-517-10T	≤ 0,3	103006	50	20,9	17,4	57,6
513-515-10T	≤ 0,3	136013	51	44,5	41	81,2

Specifications

Contact point

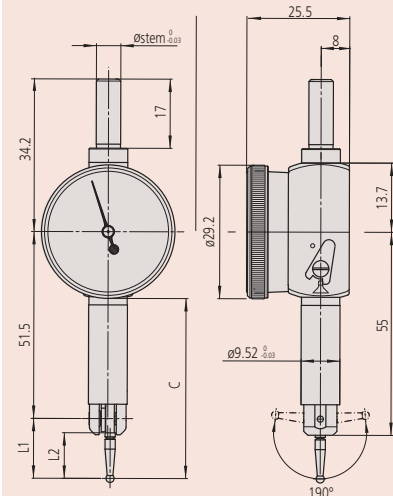
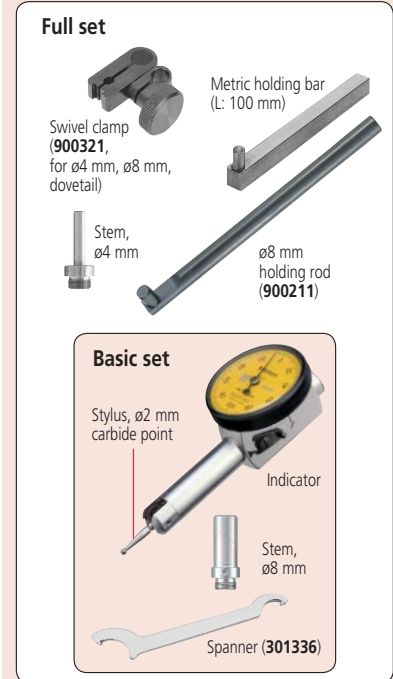
Thread M 1,7 x 0,35

For optional accessories, see end of lever indicators section.

Optional accessories

No.	Description
900322	Swivel Clamp, for D=4/9,52mm, Dovetail

Set Configuration: Metric

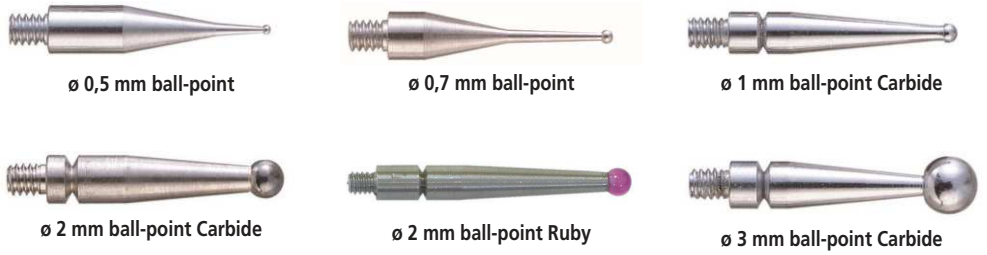
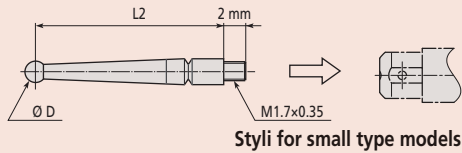
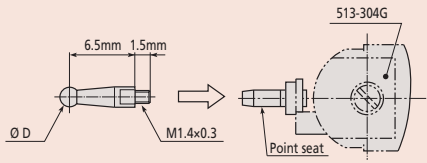
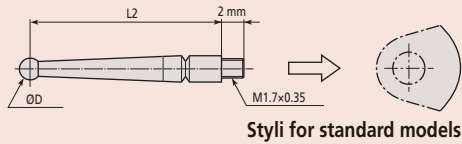


513-517-10E (full set)

Styli, Stems and Holders

Styli for Lever Indicators

Stylus length affects the scale factor of an indicator, and the styli provided to you as standard give a scale factor of unity.



No.	Standard models	Small type models	L2 [mm]	D [mm]	Ø ball point
190547	●	●	11,2	0,5	0,5 mm steel
190549	●	●	17,4	0,5	0,5 mm steel
190654	●		18,7	0,5	0,5 mm steel
190656	●	●	41	0,5	0,5 mm steel
190548	●	●	11,2	0,7	0,7 mm steel
190550	●	●	17,4	0,7	0,7 mm steel
190653	●	●	18,7	0,7	0,7 mm steel
190655	●	●	41	0,7	0,7 mm steel
136756		●	8,6	1	1 mm carbide
21CZA044	●		9,4	1	1 mm carbide
103017	●	●	11,2	1	1 mm carbide
131314	●		15,2	1	1 mm carbide
103013	●	●	17,4	1	1 mm carbide
21CZA098		●	17,4	1	1 mm carbide*3
137558	●		18,7	1	1 mm carbide
102824	●		6,5	1	1 mm carbide*2
137746	●	●	33,9	1	1 mm carbide
131316	●		33,9	1	1 mm carbide
136235	●	●	41	1	1 mm carbide
136104		●	8,6	2	2 mm carbide
21CZA036	●		9,4	2	2 mm carbide
103010	●	●	11,2	2	2 mm carbide
103011	●		15,2	2	2 mm carbide
103006	●	●	17,4	2	2 mm carbide
21CZA097		●	17,4	2	2 mm carbide*3
137557	●		18,7	2	2 mm carbide
102825	●		6,5	2	2 mm carbide*2
129949	●	●	33,9	2	2 mm carbide
131324	●		33,9	2	2 mm carbide
136013	●	●	41	2	2 mm carbide
21CZA212	●		9,4	2	2 mm ruby
21CZA209	●	●	11,2	2	2 mm ruby
21CZB068	●		15,2	2	2 mm ruby
21CZA201	●	●	17,4	2	2 mm ruby
21CZA210	●		18,7	2	2 mm ruby
21CZA211	●	●	41	2	2 mm ruby
136758		●	8,6	3	3 mm carbide
21CZA045	●		9,4	3	3 mm carbide
103018	●	●	11,2	3	3 mm carbide
131315	●		15,2	3	3 mm carbide
103014	●	●	17,4	3	3 mm carbide
21CZA099		●	17,4	3	3 mm carbide*3
137559	●		18,7	3	3 mm carbide
102826	●		6,5	3	3 mm carbide*2
137747	●	●	33,9	3	3 mm carbide
131317	●		33,9	3	3 mm carbide
136236	●	●	41	3	3 mm carbide

*2 : Used extension 209829 for 513-304-10E, 513-304-10T

*3 : For 513-517W models

Styli, Stems and Holders

Stems and Holders for Lever Indicators

Centering Holder

No.	Standard models	Stem \varnothing
901959		8 mm

Holding Bars

No.	Standard models	Small type models	Remarks	L [mm]
900211			\varnothing 8 mm	115 mm
953638			9 x 9 mm	50 mm
900209			9 x 9 mm	100 mm

Spanner

No.	Standard models	Small type models
102037		
301336		

Stems

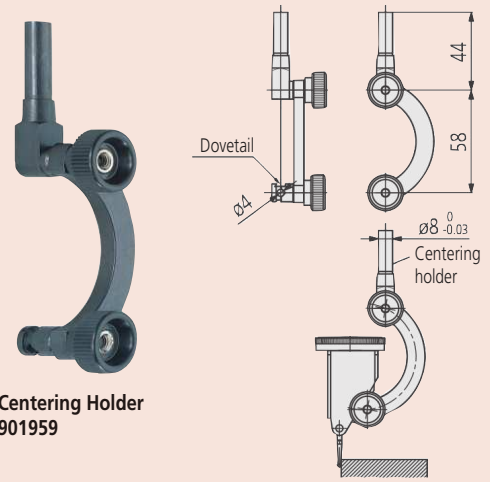
No.	Standard models	Small type models	Stem \varnothing	Remarks
21CZB131			4 mm	Stem with knurled clamp ring
21CZB128			6 mm	Stem with knurled clamp ring
21CZB129			8 mm	Stem with knurled clamp ring
21CZB130			9,52 mm	Stem with knurled clamp ring
21CZB132			4 mm, 8 mm	2 stems with knurled clamp ring
21CZB133			4 mm, 9,52 mm	2 stems with knurled clamp ring
190322				Knurled clamp ring
21CAB106			4 mm	Stem
21CAB103			6 mm	Stem
21CAB104			8 mm	Stem
102036			4 mm	Stem
102389			6 mm	Stem
102822			8 mm	Stem

Swivel Clamps

No.	Standard models	Small type models	Remarks
900321			For \varnothing 4, 8 mm stems and dovetail

Universal Holder

No.	Standard models	Small type models	Stem \varnothing
21CZA229			6 mm
21CZA233			8 mm
21CZA230			6 mm
21CZA234			8 mm



Centering Holder
901959



900211



Spanner 102037



Spanner 301336



190322



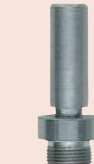
21CZB131



21CZB129



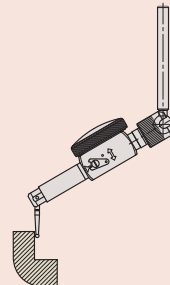
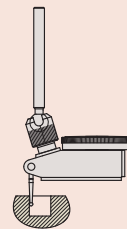
102822



102389



Universal Holder



Universal holder with standard type (left)
Universal holder with small type (right)

ABSOLUTE Digimatic Thickness Gauges

ABSOLUTE®
IP42

Series 547

This ABSOLUTE Digimatic Thickness Gauge enables you to measure tube wall thickness.

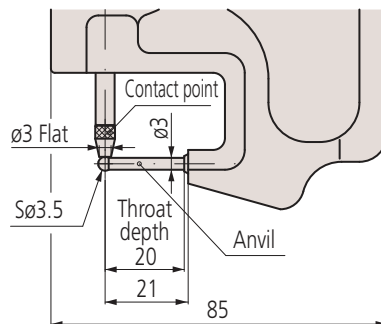
- Bidirectional communication e.g. to perform parameter setting from a PC (Digimatic S 1 interface) is possible.



547-360A

Metric

No.	Range [mm]	Type	Digital step	Accuracy	Protection	Indicator No.	Max. measuring depth	Measuring force [N]	Mass [g]
547-360A	0 - 10	Anvil D=3,5 mm, contact point D=3 mm (flat)	0,01 mm	±20 µm	IP42	543-710BS	20 mm	≤ 1,5	230



Functions	Series 547
ON/OFF	●
ABS / INC (INC ZERO)	●
PRESET	●
Function lock	●
GO/±NG judgement	●
DATA/HOLD	●
Counting direction switchable	●
Calculation function (with formula)	●
Digimatic S1 Bidirectional interface	●
Analog bar resolution selection	●
Auto Power OFF setting	●
Analog bar resolution switchable	●
Customizing keys	●
Inch/Metric switchable	●
Calibration warning function	●
Digital step switchable	●

Specifications

Alarm	Low voltage, counting value composition error, overflow error, tolerance limit setting error
Power supply	1 battery CR-2032
Battery life	Continuous use: approx. 2700h

Optional accessories

No.	Description
06AGL011	Digimatic Cable, Straight, 1m, Digimatic/Digimatic 2/Digimatic S1 Interface, 1 m
06AGL021	Digimatic Cable, Straight, 2m, Digimatic/Digimatic 2/Digimatic S1 Interface, 2 m
06AGQ001F	USB Input Tool Direct (Digimatic to USB), 2m Cable, Digimatic/Digimatic 2/Digimatic S1 Interface
264-623	U-WAVE fit, Buzzer Type, Wireless Transmitter for Micrometer/Indicator
264-622	U-WAVE fit, IP67 Type, Wireless Transmitter for Micrometer/Indicator
264-627	U-WAVE fit Bluetooth, Buzzer Type, Wireless Transmitter for Micrometer/Indicator
264-626	U-WAVE fit Bluetooth, IP67 Type, Wireless Transmitter for Micrometer/Indicator
02AZF700	Connection Unit for ID-C Indicator, 12,7mm/0,5" Type, U-WAVE fit, U-WAVE fit Bluetooth for Digimatic S1 Interface

Consumable spares

No.	Description
05SAA217D	Lithium battery CR-2032, 1 pcs.
21EZA198	Spindle Lifting Lever, for Digital Indicator, A-Type Dial Indicator Serie 2/3/4

ABSOLUTE Digimatic Thickness Gauges

Series 547

This ABSOLUTE Digimatic Thickness Gauge enables you to measure film, paper, etc., with flat contact points.

- Bidirectional communication e.g. to perform parameter setting from a PC (Digimatic S 1 interface) is possible.



547-301A

547-321A



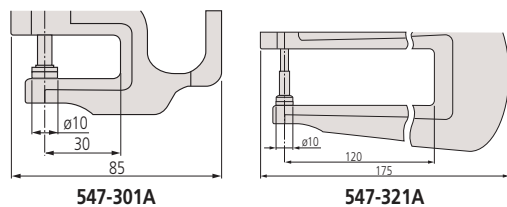
547-313A

547-315A

Metric

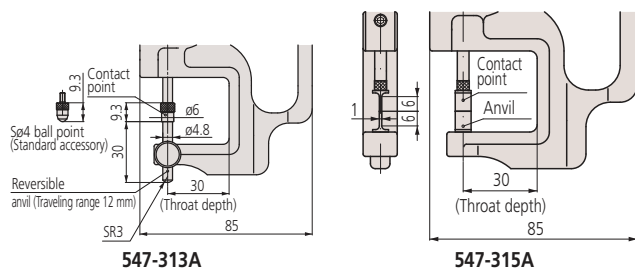
No.	Range [mm]	Type	Digital step	Accuracy	Parallelism	Protection	Indicator No.
547-301A	0 - 10	Ceramic disc contact points	0,01 mm	±20 µm	10 µm	IP42	543-710BS
547-321A	0 - 10	Ceramic disc contact points and large jaw capacity	0,01 mm	±20 µm	10 µm	IP42	543-710BS
547-313A	0 - 10	Anvils and contact points are interchangeable	0,01 mm	±20 µm	10 µm	IP42	543-710BS
547-315A	0 - 10	Blade steel contact point	0,01 mm	±20 µm	10 µm	IP42	543-710BS

No.	Max. measuring depth	Measuring force [N]	Mass [g]
547-301A	30 mm	≤ 1,5	245
547-321A	120 mm	≤ 1,5	385
547-313A	30 mm	≤ 1,5	265
547-315A	30 mm	≤ 1,5	260



547-301A

547-321A



547-313A

547-315A

Functions	Series 547
Data output	●
ON/OFF	●
ABS / INC (INC ZERO)	●
PRESET	●
Function lock	●
GO/±NG judgement	●
DATA/HOLD	●
Counting direction switchable	●
Calculation function (with formula)	●
Digimatic S1 Bidirectional interface	●
Analog bar resolution selection	●
Auto Power OFF setting	●
Analog bar resolution switchable	●
Customizing keys	●
Inch/Metric switchable	●
Calibration warning function	●
Digital step switchable	●

Specifications

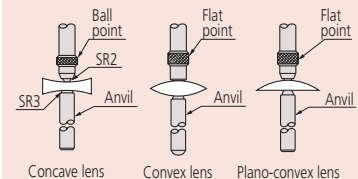
Alarm	Low voltage, counting value composition error, overflow error, tolerance limit setting error (ID-C only)
Power supply	1 battery CR-2032
Battery life	Continuous use: approx. 2700h

Optional accessories

No.	Description
06AGL011	Digimatic Cable, Straight, 1m, Digimatic/Digimatic 2/Digimatic S1 Interface, 1 m
06AGL021	Digimatic Cable, Straight, 2m, Digimatic/Digimatic 2/Digimatic S1 Interface, 2 m
06AGQ001F	USB Input Tool Direct (Digimatic to USB), 2m Cable, Digimatic/Digimatic 2/Digimatic S1 Interface
264-623	U-WAVE fit, Buzzer Type, Wireless Transmitter for Micrometer/Indicator
264-622	U-WAVE fit, IP67 Type, Wireless Transmitter for Micrometer/Indicator
264-627	U-WAVE fit Bluetooth, Buzzer Type, Wireless Transmitter for Micrometer/Indicator
264-626	U-WAVE fit Bluetooth, IP67 Type, Wireless Transmitter for Micrometer/Indicator
02AZF700	Connection Unit for ID-C Indicator, 12,7mm/0,5" Type, U-WAVE fit, U-WAVE fit Bluetooth for Digimatic S1 Interface

Consumable spares

No.	Description
05SAA217D	Lithium battery CR-2032, 1 pcs.
21EZA198	Spindle Lifting Lever, for Digital Indicator, A-Type Dial Indicator Serie 2/3/4



only for 547-313A

ABSOLUTE Digimatic Thickness Gauges

ABSOLUTE®
IP42

Series 547

This ABSOLUTE Digimatic Thickness Gauge with 1 µm digital step enables you to measure film, paper, etc., with flat contact points.

- Bidirectional communication e.g. to perform parameter setting from a PC (Digimatic S 1 interface) is possible.



547-401A

Functions	Series 547
Data output	●
ON/OFF	●
ABS / INC (INC ZERO)	●
PRESET	●
Function lock	●
GO/±NG judgement	●
DATA/HOLD	●
Counting direction switchable	●
Calculation function (with formula)	●
Digimatic S1 Bidirectional interface	●
Analog bar resolution selection	●
Auto Power OFF setting	●
Analog bar resolution switchable	●
Customizing keys	●
Inch/Metric switchable	●
Calibration warning function	●
Digital step switchable	●

Specifications

Alarm	Low voltage, counting value composition error, overflow error, tolerance limit setting error
Power supply	1 battery CR-2032
Battery life	Continuous use: approx. 2700h

Optional accessories

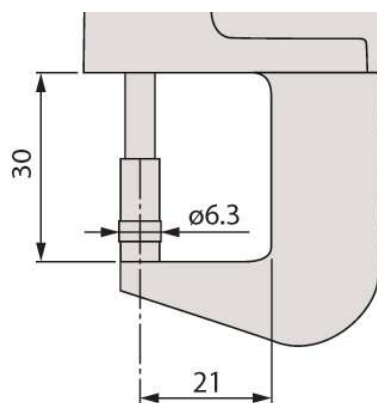
No.	Description
06AGL011	Digimatic Cable, Straight, 1m, Digimatic/Digimatic 2/Digimatic S1 Interface, 1 m
06AGL021	Digimatic Cable, Straight, 2m, Digimatic/Digimatic 2/Digimatic S1 Interface, 2 m
06AGQ001F	USB Input Tool Direct (Digimatic to USB), 2m Cable, Digimatic/Digimatic 2/Digimatic S1 Interface
264-623	U-WAVE fit, Buzzer Type, Wireless Transmitter for Micrometer/Indicator
264-622	U-WAVE fit, IP67 Type, Wireless Transmitter for Micrometer/Indicator
264-627	U-WAVE fit Bluetooth, Buzzer Type, Wireless Transmitter for Micrometer/Indicator
264-626	U-WAVE fit Bluetooth, IP67 Type, Wireless Transmitter for Micrometer/Indicator
02AZF700	Connection Unit for ID-C Indicator, 12,7mm/0,5" Type, U-WAVE fit, U-WAVE fit Bluetooth for Digimatic S1 Interface

Consumable spares

No.	Description
055AA217D	Lithium battery CR-2032, 1 pcs.
21EZA198	Spindle Lifting Lever, for Digital Indicator, A-Type Dial Indicator Serie 2/3/4

Metric

No.	Range [mm]	Type	Digital step	Accuracy	Parallelism	Protection	Indicator No.	Max. measuring depth	Measuring force [N]	Mass [g]
547-401A	0 - 12	D= 6,3 mm carbide tipped	0,0005 mm/ 0,001 mm/ 0,1 mm	±3 µm	3 µm	IP42	543-700BS	21 mm	≤ 3,5	275



547-401A

Quick Mini Thickness Gauges

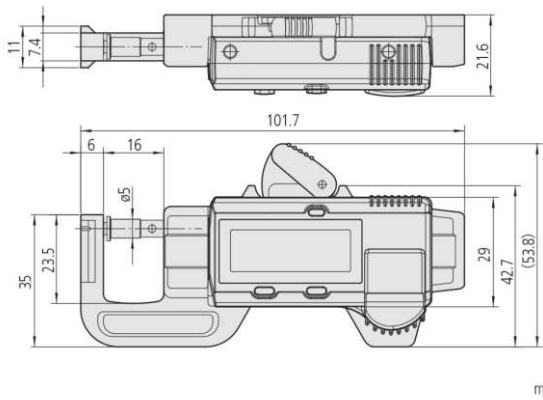
Series 700

This is a lightweight, palm-sized thickness gauge.



700-119-30

No.	Range [mm]	Digital step	Accuracy	Measuring force [N]	Mass [g]
700-119-30	0 - 12	0,01 mm	±0,02 mm	2	70



ABSOLUTE®

Functions	Series 700
ON/OFF	●
ABS / INC (INC ZERO)	●

Specifications

Display	LCD, character height 9 mm
Power supply	1 Battery SR-44
Battery life	Approx. 5 years
Delivered	In case

Consumable spares

No.	Description
63AAA800	Battery SR44 1,5 V

Dial Indicator Thickness Gauges

Series 7

This Dial Indicator Thickness Gauge enables you to measure tube wall thickness, film/paper etc. with flat contact points, resp. lens thickness or groove depth.

Optional accessories

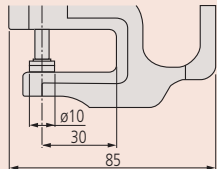
No.	Description
21AZB195	Limit Hands (green) 2pcs, Dial Indicator Series 2/3/4
21AZB148	Bezel Clamp for Dial Gauge, Metric, Series 2/3/4

Consumable spares

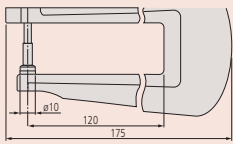
No.	Description
21AZB149	Spindle Lifting Lever, for S-Type Series 2,3,4 up to 10mm/0,4"
21AZB150	Spindle Lifting Lever, for S and A-Type Series 2,3 >10/0,4" up to 20mm/0,8"

21AZB149 : for 7301A/7327A/7321A/7313A/7315A/7360A

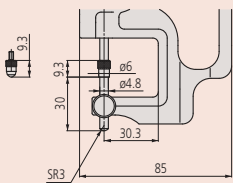
21AZB150 : for 7305A/7323A



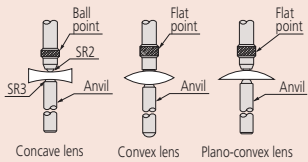
7327A / 7301A / 7305A



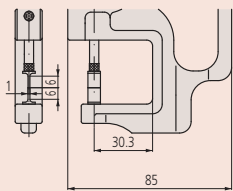
7321A / 7323A



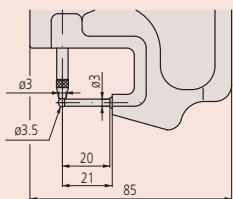
7313A



Concave lens Convex lens Plano-convex lens



7315A



7360A



7313A



7327A



7315A



7321A



7360A

Metric Adjustable Anvil

No.	Range [mm]	Graduation [mm]	Accuracy	Parallelism	Indicator No.	Max. measuring depth	Measuring force [N]	Mass [g]
7313A	0 - 10	0,01	±0,015 mm	5 μm	2046AB	30 mm	≤ 1,4	215

Metric Ceramic disc contact points

No.	Range [mm]	Graduation [mm]	Accuracy	Parallelism	Indicator No.	Max. measuring depth	Measuring force [N]	Mass [g]
7327A	0 - 1	0,001	±0,005 mm	5 μm	2109AB-10	30 mm	≤ 1,5	225
7301A	0 - 10	0,01	±0,015 mm	5 μm	2046AB	30 mm	≤ 1,4	205
7305A	0 - 20	0,01	±0,02 mm	5 μm	2050AB	30 mm	≤ 2	220

Metric Knife-edge contact point

No.	Range [mm]	Graduation [mm]	Accuracy	Parallelism	Indicator No.	Max. measuring depth	Measuring force [N]	Mass [g]
7315A	0 - 10	0,01	±0,015 mm	5 μm	2046AB	30 mm	≤ 1,4	220

Metric Large jaw capacity and ceramic disc contact points

No.	Range [mm]	Graduation [mm]	Accuracy	Parallelism	Indicator No.	Max. measuring depth	Measuring force [N]	Mass [g]
7321A	0 - 10	0,01	±0,015 mm	5 μm	2046AB	120 mm	≤ 1,4	355
7323A	0 - 20	0,01	±0,022 mm	5 μm	2050AB	120 mm	≤ 2	355

Metric Tube thicknesses - Minimum inside diameter 3,5 mm

No.	Range [mm]	Graduation [mm]	Accuracy	Indicator No.	Max. measuring depth	Measuring force [N]	Mass [g]
7360A	0 - 10	0,01	±0,015 mm	2046AB	20 mm	≤ 1,4	200

Internal Dial Caliper Gauges

Internal Dial Caliper Gauges Metric

This analog Internal Dial Caliper Gauge offers you the following benefits:

- Excellent resistance against water and dust (IP65 protection level)
- Optimized measuring force
- Ergonomically designed to lie securely in your hand when measuring



209-901

Metric

Measuring contacts: carbide ball Ø 0,6 mm

No.	Range [mm]	Type	Graduation [mm]	Accuracy	Measuring force [N]	A [mm]	B [mm]	L [mm]	Mass [g]
209-301	5 - 15	Fig. 4	0,005	0,015 mm	0,8-1,2	2,3	0,8	35	160

Metric

Measuring contacts: carbide ball Ø 1,5 mm

No.	Range [mm]	Type	Graduation [mm]	Accuracy	Measuring force [N]	A [mm]	B [mm]	L [mm]	Mass [g]
209-901	15 - 65	Fig. 4	0,05	0,05 mm	0,9-1,9	5,5	1,9	188	355

Metric

Measuring contacts: carbide ball Ø 1 mm

No.	Range [mm]	Type	Graduation [mm]	Accuracy	Measuring force [N]	A [mm]	B [mm]	L [mm]	Mass [g]
209-302	10 - 30	Fig. 4	0,01	0,03 mm	1,1-1,6	5,2	1,2	85	180
209-303	20 - 40	Fig. 2	0,01	0,03 mm	1,1-1,6	7	1,2	85	180
209-304	30 - 50	Fig. 2	0,01	0,03 mm	1,1-1,6	7	1,2	85	185
209-305	40 - 60	Fig. 3	0,01	0,03 mm	1,1-1,6	8,3	1,2	85	195
209-306	50 - 70	Fig. 3	0,01	0,03 mm	1,1-1,6	8,3	1,2	85	195
209-307	60 - 80	Fig. 3	0,01	0,03 mm	1,1-1,6	8,3	1,2	85	200
209-308	70 - 90	Fig. 3	0,01	0,03 mm	1,1-1,6	8,3	1,2	85	200
209-309	80 - 100	Fig. 3	0,01	0,03 mm	1,1-1,6	8,3	1,2	85	200

Metric

Measuring contacts: carbide ball Ø 2 mm

No.	Range [mm]	Type	Graduation [mm]	Accuracy	Measuring force [N]	A [mm]	B [mm]	L [mm]	Mass [g]
209-902	40 - 90	Fig. 3	0,05	0,05 mm	0,9-1,9	8,3	2,4	192	370
209-903	70 - 120	Fig. 3	0,05	0,05 mm	0,9-1,9	8,3	2,4	192	380

Metric

Measuring contacts: carbide bevel (R: 0,1 mm)

No.	Range [mm]	Type	Graduation [mm]	Accuracy	Measuring force [N]	A [mm]	B [mm]	L [mm]	Mass [g]
209-300	2,5 - 12,5	Fig. 1	0,005	0,015 mm	0,8-1,2	0,7	0,4	12	155

Metric

Measuring contacts: interchangeable, carbide ball Ø 1 mm

No.	Range [mm]	Type	Graduation [mm]	Accuracy	Measuring force [N]	A [mm]	B [mm]	L [mm]	Mass [g]
209-310	50 - 100	Fig. 5	0,01	0,03 mm	1,1-1,6	8,3	1,2	85	220
209-311	90 - 140	Fig. 5	0,01	0,03 mm	1,1-1,6	8,3	1,2	85	230
209-312	130 - 180	Fig. 5	0,01	0,03 mm	1,1-1,6	8,3	1,2	85	230

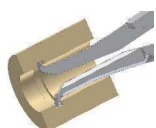


Figure 1

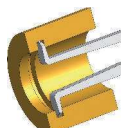


Figure 2

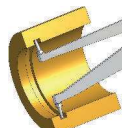


Figure 3

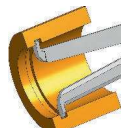


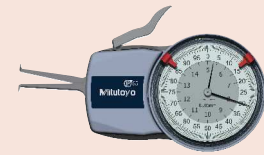
Figure 4



Figure 5

Optional accessories

No.	Description
63AAA437	Holder for Digital Caliper Gauge, for 209-901 up to 209-922
011530	Holder for Digital Caliper Gauge, for 209-300 up to 209-457 except: 209-310, -311, -312, -361, -362, -363



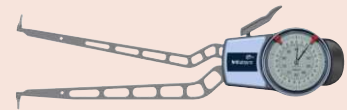
209-301



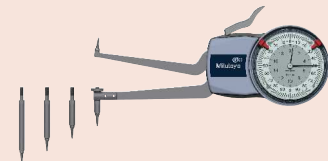
209-303



209-305



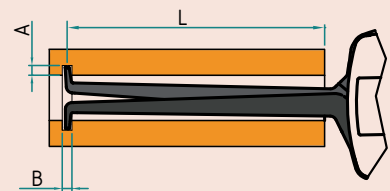
209-902



209-310



209-300



L=Maximum reach of contact arms over workpiece
A=Maximum groove depth
B=Minimum groove width



63AAA437

Internal Digimatic Caliper Gauges

Series 209

- Digital Caliper Gauge enables measurements in hard-to-reach places
- Excellent resistance against water and dust IP67 level



Functions	Series 209
ABS/INC switchable	●
Auto Power OFF after 1/5/10 min. non use OFFSET	●
Analog bar resolution switchable mm/inch conversion	●
HOLD	●
SET key	●
DATA key	●
DATA-Logger (100 measured values)	●
Max. reading	●
Min. reading	●
Tolerance LED (green/red)	●
Tolerance judgement	●

Specifications

Digital step	0,001 / 0,002 / 0,005 / 0,01 / 0,02 / 0,05 mm
Power supply	2 batteries LR3 (AAA)

Optional accessories

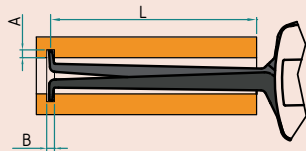
No.	Description
011551	Digimatic Interface Series 209, Digital Caliper Gauge
937387	Digimatic Cable, Round 6-Pin Type, 1 m
965013	Digimatic Cable, Round 6-Pin Type, 2 m
06AFM380E	USB Input Tool Direct (Digimatic to USB), 2m Cable, Digimatic/Digimatic 2, Round 6-Pin Type
02AZD880G	U-WAVE-T, Buzzer Type, Wireless Transmitter
02AZD730G	U-WAVE-T, IP67 Type, Wireless Transmitter
02AZD790E	Connection Cable E for U-WAVE, Round 6-Pin Type
63AAA438	Holder for Digital Caliper Gauge, for 209-930 up to 209-958

Consumable spares

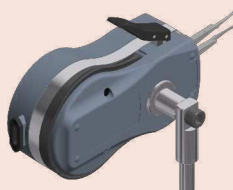
No.	Description
011511-1	Battery LR03 (AAA), 4x



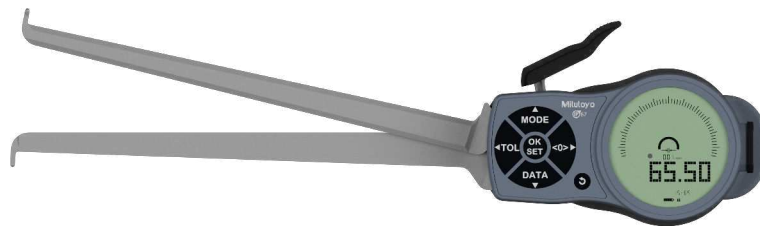
209-935



L=Maximum reach of contact arms over workpiece
A=Maximum groove depth
B=Minimum groove width



63AAA438



209-945

Metric/Inch

Measuring contacts: carbide ball Ø 0,6 mm

No.	Range [mm]	Type	Accuracy	Protection	Measuring force [N]	A [mm]	B [mm]	L [mm]	Mass [g]
209-935	5 - 15	Fig. 4	0,015 mm	IP67	0,8-1,2	2,3	0,8	35	260

Metric/Inch

Measuring contacts: carbide ball Ø 1,3 mm

No.	Range [mm]	Type	Accuracy	Protection	Measuring force [N]	A [mm]	B [mm]	L [mm]	Mass [g]
209-944	13 - 43	Fig. 4	0,04 mm	IP67	1,2-1,7	5,7	1,5	127	360

Metric/Inch

Measuring contacts: carbide ball Ø 1,5 mm

No.	Range [mm]	Type	Accuracy	Protection	Measuring force [N]	A [mm]	B [mm]	L [mm]	Mass [g]
209-945	15 - 65	Fig. 2	0,05 mm	IP67	1-1,8	5,5	1,9	188	415
209-946	30 - 60	Fig. 3	0,04 mm	IP67	1,2-1,7	6,2	1,8	132	370

Metric/Inch

Measuring contacts: carbide ball Ø 1 mm

No.	Range [mm]	Type	Accuracy	Protection	Measuring force [N]	A [mm]	B [mm]	L [mm]	Mass [g]
209-936	10 - 30	Fig. 4	0,03 mm	IP67	1,1-1,6	5,2	1,2	85	270
209-937	20 - 40	Fig. 2	0,03 mm	IP67	1,1-1,6	7	1,2	85	270
209-938	30 - 50	Fig. 2	0,03 mm	IP67	1,1-1,6	7	1,2	85	275
209-939	40 - 60	Fig. 3	0,03 mm	IP67	1,1-1,6	8,3	1,2	85	285
209-940	50 - 70	Fig. 3	0,03 mm	IP67	1,1-1,6	8,3	1,2	85	285
209-941	60 - 80	Fig. 3	0,03 mm	IP67	1,1-1,6	8,3	1,2	85	290
209-942	70 - 90	Fig. 3	0,03 mm	IP67	1,1-1,6	8,3	1,2	85	290

Metric/Inch

Measuring contacts: carbide ball Ø 2 mm

No.	Range [mm]	Type	Accuracy	Protection	Measuring force [N]	A [mm]	B [mm]	L [mm]	Mass [g]
209-947	50 - 80	Fig. 3	0,04 mm	IP67	1,2-1,7	8,3	2,4	132	370
209-948	70 - 100	Fig. 3	0,04 mm	IP67	1,2-1,7	8,3	2,4	132	375
209-949	90 - 120	Fig. 3	0,04 mm	IP67	1,2-1,7	8,3	2,4	132	380
209-950	40 - 90	Fig. 3	0,05 mm	IP67	1-1,8	8,3	2,4	192	420

Metric/Inch

Measuring contacts: carbide bevel (R = 0,1 mm)

No.	Range [mm]	Type	Accuracy	Protection	Measuring force [N]	A [mm]	B [mm]	L [mm]	Mass [g]
209-934	2,5 - 12,5	Fig. 1	0,03 mm	IP67	0,8-1,2	0,7	0,4	12	245

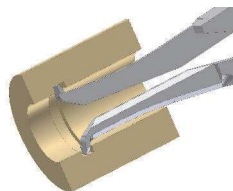


Figure 1

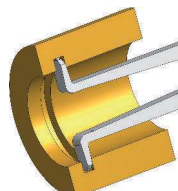


Figure 2

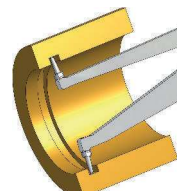


Figure 3

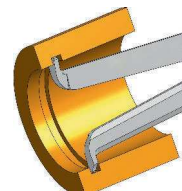


Figure 4

External Dial Caliper Gauges

External Dial Caliper Gauges Metric

This analog External Dial Caliper Gauge offers you the following benefits:

- Excellent resistance against water and dust (IP65 protection level)
- Optimized measuring force
- Ergonomically designed to lie securely in your hand when measuring



209-405

Metric Measuring contacts: bevel radius 0,4 mm (209-405), 0,75 mm (209-921)

No.	Range [mm]	Graduation [mm]	Accuracy	Protection	Measuring force [N]	Type	Hb [mm]	Hf [mm]	L [mm]	Mass [g]
209-405	0 - 20	0,01	0,03 mm	IP 65	1,1-1,6	Fig. 1	24,6	24,6	85	210
209-921	0 - 50	0,05	0,05 mm	IP 65	0,8-1,7	Fig. 1	30	30	167	430

Metric Measuring contacts: carbide ball Ø 1,5 mm, Ø 3 mm (209-911)

No.	Range [mm]	Graduation [mm]	Accuracy	Protection	Measuring force [N]	Type	Hb [mm]	Hf [mm]	L [mm]	Mass [g]
209-400	0 - 10	0,005	0,015 mm	IP 65	0,8-1,2	Fig. 4	19,1	0,9	35	165
209-402	0 - 10	0,005	0,015 mm	IP 65	0,8-1,2	Fig. 2	19,1	18,6	35	170
209-404	0 - 20	0,01	0,03 mm	IP 65	1,1-1,6	Fig. 2	24,7	24,6	85	210
209-407	0 - 20	0,01	0,03 mm	IP 65	1,1-1,6	Fig. 4	24,7	2,5	85	200
209-911	0 - 50	0,05	0,05 mm	IP 65	0,8-1,7	Fig. 2	30	30	167	430

Metric Measuring contacts: carbide ball Ø 1,5 mm / bevel radius 0,4 mm

No.	Range [mm]	Graduation [mm]	Accuracy	Protection	Measuring force [N]	Type	Hb [mm]	Hf [mm]	L [mm]	Mass [g]
209-401	0 - 10	0,005	0,015 mm	IP 65	0,8-1,2	Fig. 6	18,8	0,9	35	165
209-406	0 - 20	0,01	0,03 mm	IP 65	1,1-1,6	Fig. 3	24,7	2,5	80	200

Metric Measuring contacts: carbide ball Ø 3 mm / carbide ball Ø 3 mm, bevel radius 0,75 mm (209-922)

No.	Range [mm]	Graduation [mm]	Accuracy	Protection	Measuring force [N]	Type	Hb [mm]	Hf [mm]	L [mm]	Mass [g]
209-912	0 - 50	0,05	0,05 mm	IP 65	0,8-1,7	Fig. 4	30	4,6	169	400
209-922	0 - 50	0,05	0,05 mm	IP 65	0,8-1,7	Fig. 3	30	4,6	169	400

Metric Measuring contacts: disk measuring faces Ø 6 mm

No.	Range [mm]	Graduation [mm]	Accuracy	Protection	Measuring force [N]	Type	Hb [mm]	Hf [mm]	L [mm]	Mass [g]
209-403	0 - 10	0,005	0,02 mm	IP 65	0,8-1,2	Fig. 5	21,7	14,8	36	175

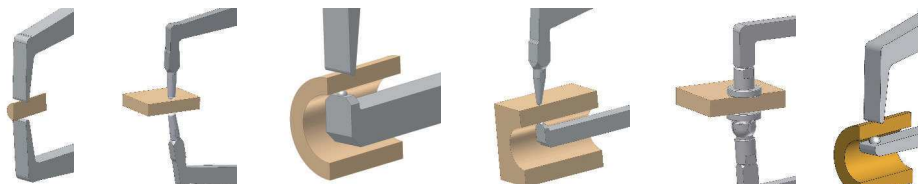


Figure 1

Figure 2

Figure 3

Figure 4

Figure 5

Figure 6

Optional accessories

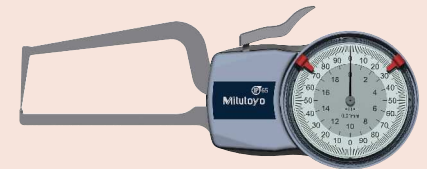
No.	Description
63AAA437	Holder for Digital Caliper Gauge, for 209-901 up to 209-922
011530	Holder for Digital Caliper Gauge, for 209-300 up to 209-457 except: 209-310, -311, -312, -361, -362, -363



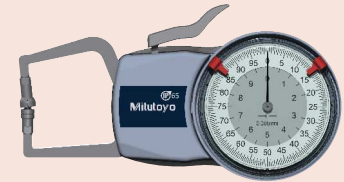
209-402



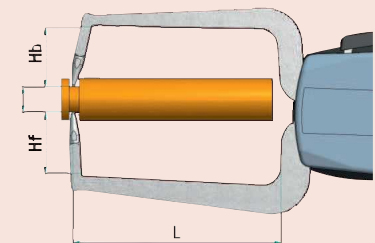
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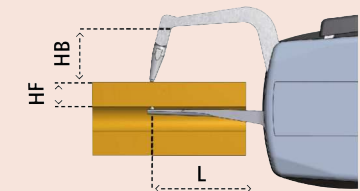
209-406



209-403



Figures 1/2/5



Figures 3/4/6

L=Maximum reach of contact arms over workpiece
Hb=Maximum penetration depth of upper contact
Hf=Maximum penetration depth of lower contact

External Digimatic Caliper Gauges

Series 209

- Digital Caliper Gauge enables measurements in hard-to-reach places
- Excellent resistance against water and dust IP67 level



Functions	Series 209
ABS/INC switchable	●
Auto Power OFF after 1/5/10 min. non use	●
Analog bar resolution switchable	●
OFFSET	●
mm/inch conversion	●
HOLD	●
SET key	●
DATA key	●
DATA-Logger (100 measured values)	●
Max. reading	●
Min. reading	●
Tolerance LED (green/red)	●
Tolerance judgement	●

Specifications

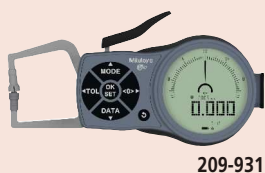
Digital step	0,001 / 0,002 / 0,005 / 0,01 / 0,02 / 0,05 mm
Power supply	2 batteries LR3 (AAA)
Delivered	Including battery and certificate of inspection

Optional accessories

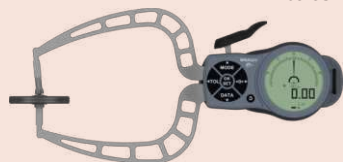
No.	Description
011551	Digimatic Interface Series 209, Digital Caliper Gauge
937387	Digimatic Cable, Round 6-Pin Type, 1 m
965013	Digimatic Cable, Round 6-Pin Type, 2 m
06AFM380E	USB Input Tool Direct (Digimatic to USB), 2m Cable, Digimatic/Digimatic 2, Round 6-Pin Type
02AZD880G	U-WAVE-T, Buzzer Type, Wireless Transmitter
02AZD730G	U-WAVE-T, IP67 Type, Wireless Transmitter
02AZD790E	Connection Cable E for U-WAVE, Round 6-Pin Type
63AAA438	Holder for Digital Caliper Gauge, for 209-930 up to 209-958
63AAA437	Holder for Digital Caliper Gauge, for 209-901 up to 209-922

Consumable spares

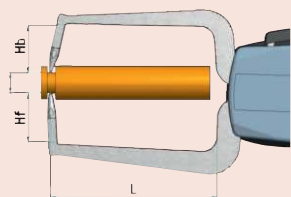
No.	Description
011511-1	Battery LR03 (AAA), 4x



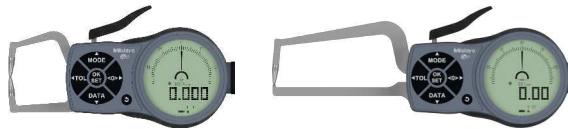
209-931



209-953



L=Maximum reach of contact arms over workpiece
 Hb=Maximum penetration depth of upper contact
 Hf=Maximum penetration depth of lower contact



209-930

209-933



209-951



209-952

Metric/Inch

Bevel radius 0,75 / carbide ball ø3 mm + bevel radius 0,75 (209-958)

No.	Range [mm]	Accuracy	Protection	Measuring force [N]	Type	Hb [mm]	Hf [mm]	L [mm]	Mass [g]
209-957	0 - 50	0,06 mm	IP67	0,8-1,7	Fig. 5	30	30	167	490
209-958	0 - 50	0,06 mm	IP67	0,8-1,7	Fig. 6	30	4,3	169	460

Metric/Inch

Measuring contacts: carbide ball Ø 1,5 mm

No.	Range [mm]	Accuracy	Protection	Measuring force [N]	Type	Hb [mm]	Hf [mm]	L [mm]	Mass [g]
209-930	0 - 10	0,015 mm	IP67	0,8-1,2	Fig. 1	19,1	18,6	36	240
209-932	0 - 20	0,03 mm	IP67	1,1-1,6	Fig. 1	24,7	24,6	81	270
209-943	0 - 10	0,015 mm	IP67	0,8-1,2	Fig. 2	19,1	9	36	255
209-933	0 - 20	0,03 mm	IP67	1,1-1,6	Fig. 2	24,7	2,5	86	430

Metric/Inch

Measuring contacts: carbide ball Ø 3 mm

No.	Range [mm]	Accuracy	Protection	Measuring force [N]	Type	Hb [mm]	Hf [mm]	L [mm]	Mass [g]
209-951	0 - 30	0,04 mm	IP67	0,9-1,6	Fig. 1	30	30	114	430
209-952	0 - 30	0,04 mm	IP67	0,9-1,6	Fig. 2	30	4	116	410
209-954	0 - 50	0,05 mm	IP67	0,8-1,7	Fig. 1	30	30	167	490
209-955	0 - 50	0,05 mm	IP67	0,8-1,7	Fig. 2	30	4,3	169	460

Metric/Inch

Measuring contacts: disk measuring faces Ø 50 mm

No.	Range [mm]	Accuracy	Protection	Measuring force [N]	Type	Hb [mm]	Hf [mm]	L [mm]	Mass [g]
209-953	0 - 30	0,06 mm	IP67	0,9-1,6	Fig. 4	36	24	116	430
209-956	0 - 50	0,06 mm	IP67	0,8-1,7	Fig. 4	36	24	167	500

Metric/Inch

Measuring contacts: disk measuring faces Ø 6 mm

No.	Range [mm]	Accuracy	Protection	Measuring force [N]	Type	Hb [mm]	Hf [mm]	L [mm]	Mass [g]
209-931	0 - 10	0,02 mm	IP67	0,8-1,2	Fig. 3	21,7	14,8	36	245



Figure 1

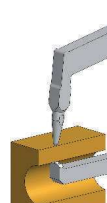


Figure 2



Figure 3

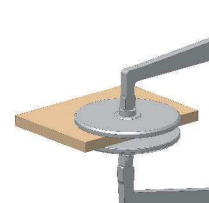


Figure 4

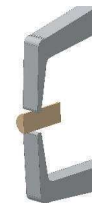


Figure 5

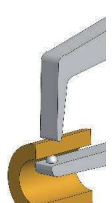


Figure 6

Internal / External Digimatic Caliper Gauges

Power Supply: Wireless Charging

Series 209

This External Dial Caliper Gauge offers you the following benefits:

- Excellent resistance against water and dust (IP67 protection level)
- Optimized measuring force
- Ergonomically designed to lie securely in your hand when measuring
- Wireless charging with integrated lithium polymer battery



Metric/Inch 1. Measuring contacts: carbide R = 0,12 mm

No.	Range [mm]	Accuracy	Protection	Measuring force [N]	Type	A [mm]	B [mm]	L [mm]	Mass [g]
209-927	2,5 - 12,5	0,01 mm	IP 67	0,8-1,3	Fig. 4	0,7	0,6	12	160

Metric/Inch 2. Measuring contacts: carbide ball Ø 0,6 mm

No.	Range [mm]	Accuracy	Protection	Measuring force [N]	Type	A [mm]	B [mm]	L [mm]	Mass [g]
209-928	5 - 20	0,01 mm	IP 67	0,8-1,3	Fig. 3	2,2	0,8	44	160

Metric/Inch 3. Measuring contacts: carbide ball Ø 1 mm

No.	Range [mm]	Accuracy	Protection	Measuring force [N]	Type	A [mm]	B [mm]	L [mm]	Mass [g]
209-929	10 - 25	0,01 mm	IP 67	0,8-1,3	Fig. 3	4	1,5	46	160

Metric/Inch 4. Measuring contacts: carbide ball Ø 1,5 mm

No.	Range [mm]	Accuracy	Protection	Measuring force [N]	Type	Hb [mm]	Hf [mm]	L [mm]	Mass [g]
209-925	0 - 15	0,01 mm	IP 67	1,3-1,5	Fig. 2	17	17	45	170

Metric/Inch 5. Measuring contacts: carbide R = 0,4 mm

No.	Range [mm]	Accuracy	Protection	Measuring force [N]	Type	Hb [mm]	Hf [mm]	L [mm]	Mass [g]
209-926	0 - 15	0,015 mm	IP 67	1,3-1,5	Fig. 1	12	12	45	170

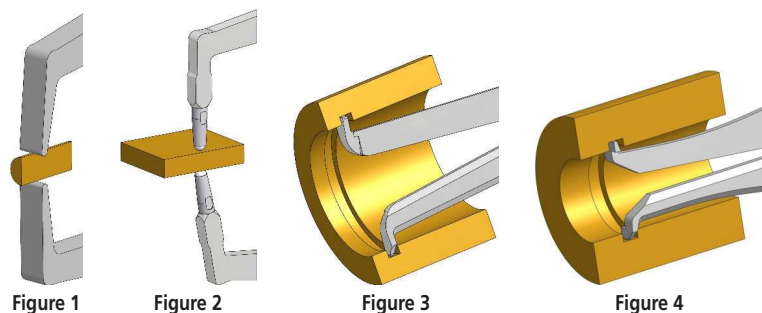


Figure 1

Figure 2

Figure 3

Figure 4

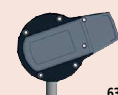
Functions	Series 209
ABS/INC switchable	●
Auto Power OFF after 1/5/10 min. non use	●
Analog bar resolution switchable	●
OFFSET	●
mm/inch conversion	●
HOLD	●
SET key	●
DATA key	●
DATA-Logger (100 measured values)	●
Max. reading	●
Min. reading	●
Tolerance LED (green/red)	●
Tolerance judgement	●

Specifications

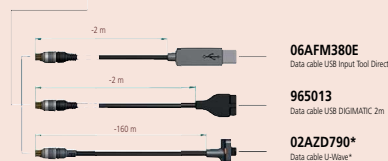
Digital step	0,001 / 0,002 / 0,005 / 0,01 mm
Power supply	Lithium-Polymer power pack
Delivered	Including certificate of inspection and wireless re-charge charging pad

Optional accessories

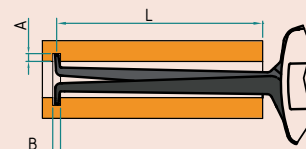
No.	Description
63AAA158	Digimatic Interface Adapter, Series 209
937387	Digimatic Cable, Round 6-Pin Type, 1 m
965013	Digimatic Cable, Round 6-Pin Type, 2 m
06AFM380E	USB Input Tool Direct (Digimatic to USB), 2m Cable, Digimatic/Digimatic 2, Round 6-Pin Type
02AZD880G	U-WAVE-T, Buzzer Type, Wireless Transmitter
02AZD730G	U-WAVE-T, IP67 Type, Wireless Transmitter
02AZD790E	Connection Cable E for U-WAVE, Round 6-Pin Type
63AAA439	Holder for Digital Caliper Gauge, for 209-925 up to 209-929



63AAA158



L=Maximum reach of contact arms over workpiece
Hb=Maximum penetration depth of upper contact
Hf=Maximum penetration depth of lower contact



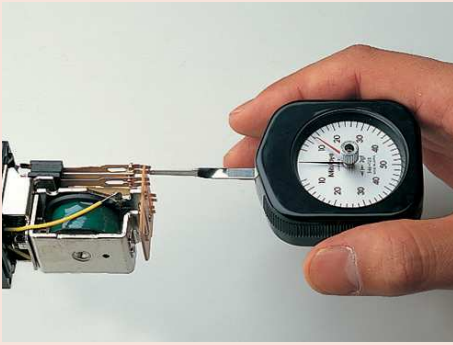
L=Maximum reach of contact arms over workpiece
A=Maximum groove depth
B=Minimum groove width

Dial Tension Gauges

Series 546

This Dial Tension Gauge has a range of applications, offering you the following benefits:

- You can set micro switches, relay springs and valves.
- It enables you testing the measuring force of dial indicators.
- You can also use it for adjusting tension and compression springs.
- A divided dial plate allows you to make measurements in both directions.



546-112

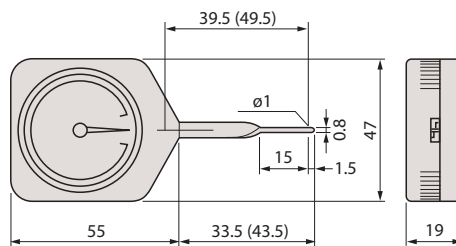
546-137

Peak Hold

No.	Range [N]	Graduation	Accuracy	Mass [g]
546-133	0,01 - 0,1	5 mN	½ graduation	56
546-134	0,03 - 0,3	10 mN	½ graduation	56
546-135	0,06 - 0,5	0,02 N	½ graduation	56
546-136	0,1 - 1	0,05 N	½ graduation	56
546-137	0,15 - 1,5	0,05 N	½ graduation	56
546-138	0,3 - 3	0,1 N	½ graduation	56
546-139	0,6 - 5	0,2 N	½ graduation	56

Standard

No.	Range [N]	Graduation	Accuracy	Mass [g]
546-112	0,006 - 0,05	2 mN	½ graduation	56
546-113	0,01 - 0,1	5 mN	½ graduation	56
546-114	0,03 - 0,3	10 mN	½ graduation	56
546-115	0,06 - 0,5	0,02 N	½ graduation	56
546-116	0,1 - 1	0,05 N	½ graduation	56
546-117	0,15 - 1,5	0,05 N	½ graduation	56
546-118	0,3 - 3	0,1 N	½ graduation	56
546-119	0,6 - 5	0,2 N	½ graduation	56

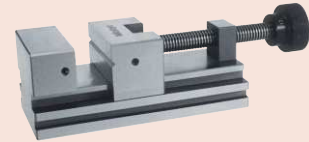


Dimensions in brackets refer to No. 546-112, 546-113, 546-133

**Indicator Stands
Page 293**



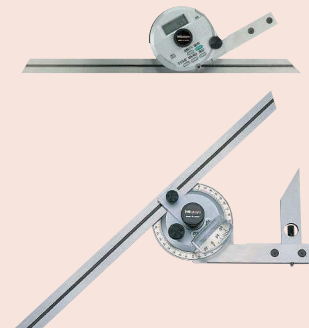
**Precision Vices
Page 303**



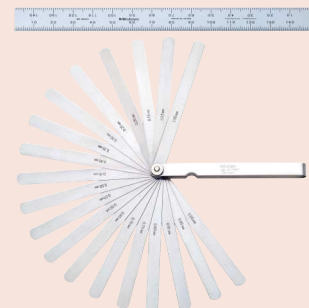
**Plates and Granite Squares
Page 305**



**Angle Measurement and Squares
Page 308**



**Feeler Gauges, Rules, Knife Edges
Page 311**



Gauge Stands with Hardened Steel Anvils

Series 519, Series 7

This gauge stand with hardened steel anvil offers you the following benefits:

- Standard version with round anvil

Standard accessories

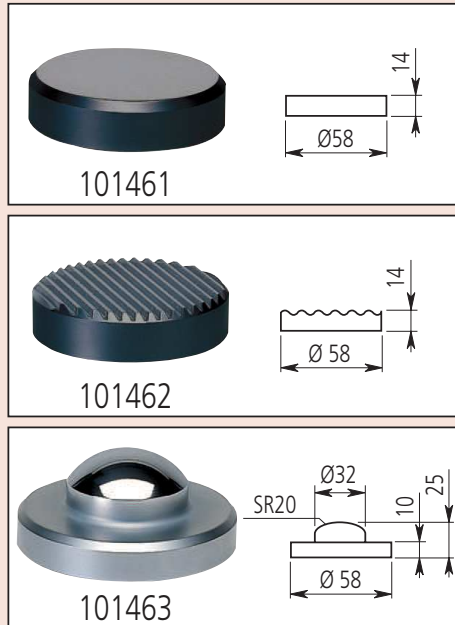
No.	Description
101461	Flat Anvil for Gauge Stand, Ø58mm
101462	Serrated Anvil for Gauge Stand, Ø58mm
21JAA316	Stem Bush for Gauge Stand, 9,53mm to 8mm

Optional accessories

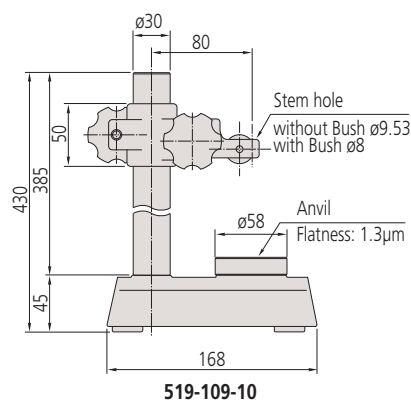
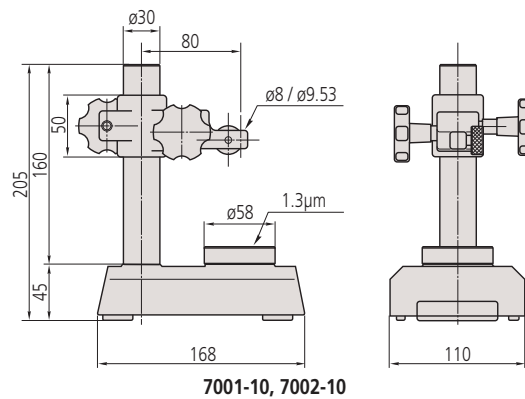
No.	Description
101463	Convex Anvil for Gauge Stand, Ø58mm

101461 for 7002-10

101462 for 7001-10, 519-109-10



No.	Effective table dimensions [mm]	Column Ø [mm]	Max. measurement height [mm]	Measuring table	Fine adjustment	Stem hole ø	Perpendicularity table-stem hole [mm/mm]	Table flatness	Mass [kg]
7001-10	Ø 58	30	95	Serrated (101462)	1 mm	ø 3/8" / 9,53 mm , 8 mm with bush (standard accessory)	0,4/100	1,3 µm	4
7002-10	Ø 58	30	95	Flat (101461)	1 mm	ø 3/8" / 9,53 mm , 8 mm with bush (standard accessory)	0,4/100	1,3 µm	4
519-109-10	Ø 58	30	320	Serrated (101462)	1 mm	ø 3/8" / 9,53 mm , 8 mm with bush (standard accessory)	0,4/100	1,3 µm	5,6



Gauge Stands with Hardened Steel Anvils

Series 215, Series 7

This gauge stand with hardened steel anvil offers you the following benefits:

- Standard version with square anvil



7007-10

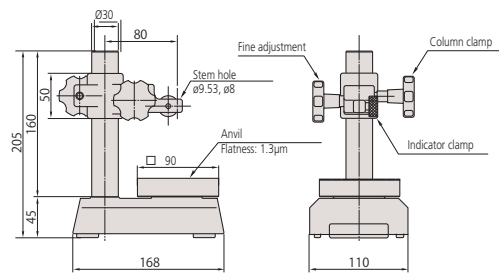


215-405-10

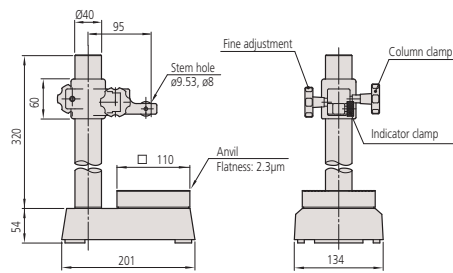


215-505-10

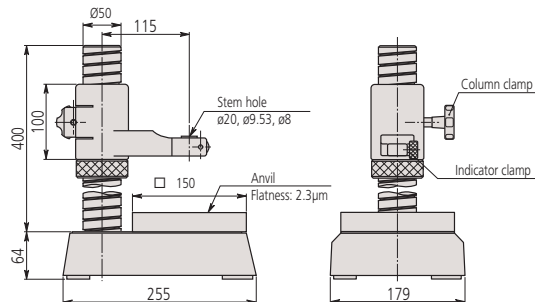
No.	Effective table dimensions [mm]	Column Ø [mm]	Max. measurement height [mm]	Fine adjustment	Stem hole ø	Perpendicularity table-stem hole [mm/mm]	Table flatness	Mass [kg]
7007-10	90 x 90	30	90	1 mm	ø 3/8" / 9,53 mm, 8 mm with bush (standard accessory)	0,4/100	1,3 µm	5
215-405-10	110 x 110	40	235	1 mm	ø 3/8" / 9,53 mm, 8 mm with bush (standard accessory)	0,4/100	2,3 µm	10,9
215-505-10	150 x 150	50	275	Screw on column	ø 20 mm, ø 3/8" / 9,53 mm, 8 mm with bush (standard accessory)	0,4/100	2,3 µm	19,7



7007-10



215-405-10



215-505-10

Standard accessories

No.	Description
21JAA316	Stem Bush for Gauge Stand, 9,53mm to 8mm
21JAA329	Stem Bush for Gauge Stand, 20mm to 8mm
21JAA330	Stem Bush for Gauge Stand, 20mm to 9,53mm

21JAA316 only for 7007-10 + 215-405-10
21JAA329 and 21JAA330 only for 215-505-10

Optional accessories

No.	Description
21JAA331	Stem Bush for Gauge Stand, 20mm to 15mm

21JAA331 : only for 215-505-10

Gauge Stands with Hardened Steel Anvils

Optional accessories

No.	Description
913-201	Horizontal Holder, for 913-101, 913-102



913-201

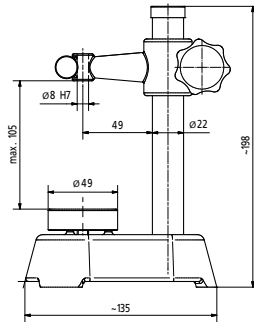
Series 913

Standard version

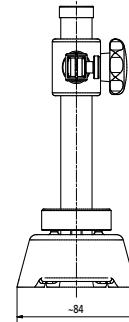
- Simple standard version.



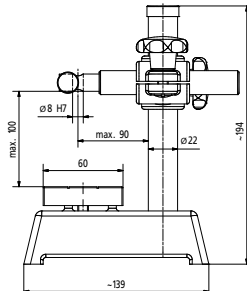
913-101



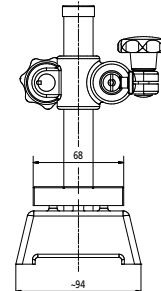
913-101



913-102



913-102

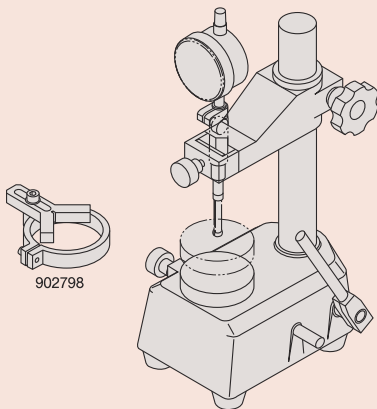


No.	Effective table dimensions [mm]	Column ϕ [mm]	Max. measurement height [mm]	Stem hole ϕ	Mass [kg]
913-101	$\phi 50$	22	100	8 mm	2,3
913-102	60 x 70	22	100	8 mm	3,6

Stands for Precision Bore Gauges

Optional accessories

No.	Description
902798	V-Attachment for 215-120-10, Stand for Bore Gauge



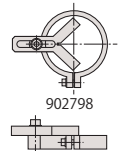
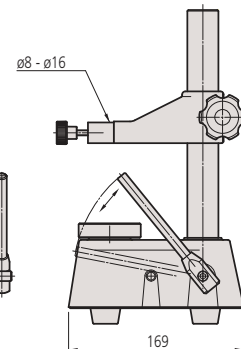
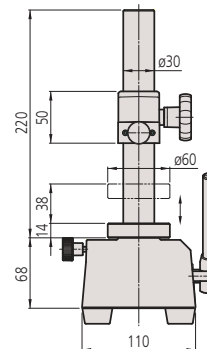
902798

Series 215

- For efficient measurement of multiple small holes with a bore gauge Series 526



215-120-10



902798

No.	Maximum measuring height [mm]	Measuring stroke [mm]	Effective table dimensions [mm]	Mass [kg]
215-120-10	110	max.38	$\phi 60$	6,5

Gauge Stands with Granite Bases

Series 912

This gauge stand with granite base offers you the following benefits:

- The base is made of granite and stays free of burrs due to its fine grain composition and the base will stay free of corrosion



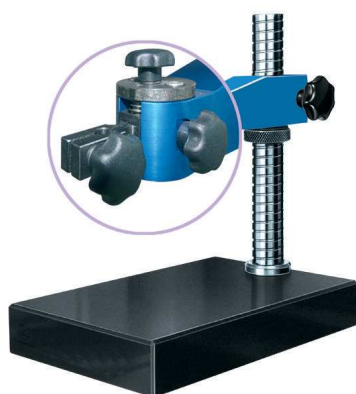
912-101

No.	Base size [mm]	Effective table dimensions [mm]	Column Ø [mm]	Max. measurement height [mm]	Throat [mm]	Arm ø [mm]	Stem hole ø	Table flatness	Mass [kg]
912-101	150 x 100 x 40	100 x 100	16	180	150	16	8 mm	2 µm	3

Series 912

This gauge stand with granite base offers you the following benefits:

- The base is made of granite that stays free of burrs due to its fine grain composition and the base will stay free of corrosion



912-105

No.	Base size [mm]	Effective table dimensions [mm]	Column Ø [mm]	Max. measurement height [mm]	Throat [mm]	Fine adjustment [mm]	Stem hole ø	Table flatness	Mass [kg]
912-105	260 x 140 x 50	200 x 140	35	180	120	8	8 mm	2 µm	9,5

Gauge Stands with Granite Bases

Series 215

This gauge stand with granite base offers you the following benefits:

- The base is made of granite that stays free of burrs due to its fine grain composition and the base will stay free of corrosion

Standard accessories

No.	Description
21JAA316	Stem Bush for Gauge Stand, 9,53mm to 8mm
21JAA329	Stem Bush for Gauge Stand, 20mm to 8mm
21JAA330	Stem Bush for Gauge Stand, 20mm to 9,53mm

21JAA316 for 215-150-10, 215-151-10, 215-153-10
21JAA329 and 21JAA330 for 215-156-10

Optional accessories

No.	Description
21JAA331	Stem Bush for Gauge Stand, 20mm to 15mm

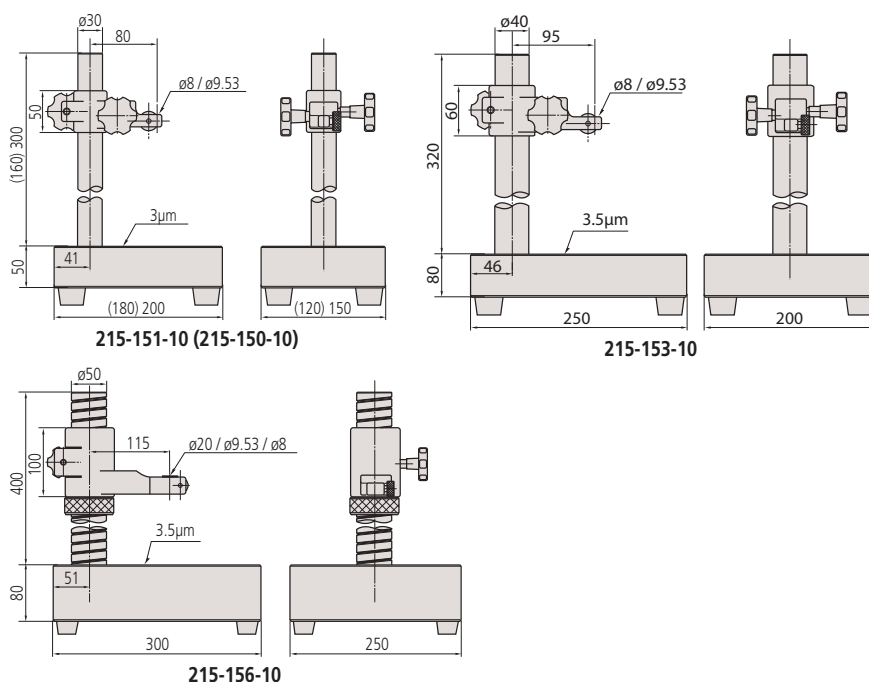
only for 215-156-10



215-150-10



No.	Column Ø [mm]	Max. measurement height [mm]	Fine adjustment [mm]	Stem hole ø	Table flatness	Perpendicularity table-stem hole [mm/mm]	Mass [kg]
215-150-10	30	120	1	ø 3/8" / 9,53 mm, 8 mm with bush (standard accessory)	3 µm	0,2/100	5,4
215-151-10	30	260	1	ø 3/8" / 9,53 mm, 8 mm with bush (standard accessory)	3 µm	0,2/100	7,5
215-153-10	40	250	1	ø 3/8" / 9,53 mm, 8 mm with bush (standard accessory)	3,5 µm	0,2/100	16
215-156-10	50	300	1	ø 20 mm, ø 3/8" / 9,53 mm 8 mm with bush (standard accessory)	3,5 µm	0,2/100	27,5



Jointed Magnetic Stands

Series 011

- With mechanical locking system and fine adjustment
- Allows a dial indicator to be fixed in any position.



011533

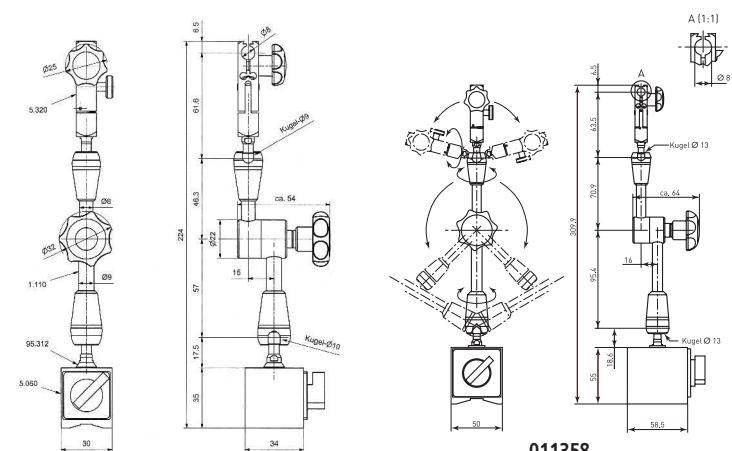
011358

011359

011360

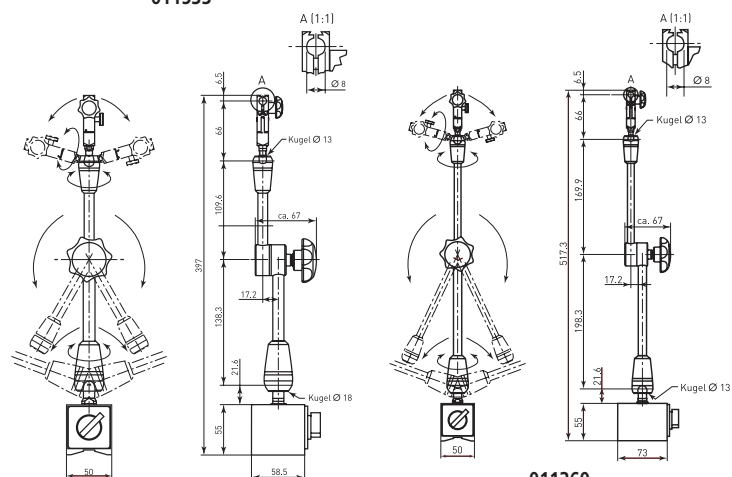
No.	Clamping device	Clamping force (vertical) [N]	Base size (LxWxH)	Total height [mm]	Fine adjustment
011533	magnetic	300	36 x 30 x 35 mm	220	with fine feed wheel 1,3 mm/rotation
011358	magnetic	750	58,5 x 50 x 55 mm	310	with fine feed wheel 1,3 mm/rotation
011359	magnetic	750	58,5 x 50 x 55 mm	397	with fine feed wheel 1,3 mm/rotation
011360	magnetic	900	73 x 50 x 55 mm	517	with fine feed wheel 1,3 mm/rotation

No.	Stem hole ϕ	Thread Arm/Base	Working radius [mm]	Mass [kg]
011533	8 mm, dovetail	M6 x 1	130	0,45
011358	8 mm, dovetail	M8 x 1,25	200	1,55
011359	8 mm, dovetail	M8 x 1,25	280	1,85
011360	8 mm, dovetail	M8 x 1,25	400	2,1



011533

011358



011359

011360

Jointed Magnetic Stands

Series 7

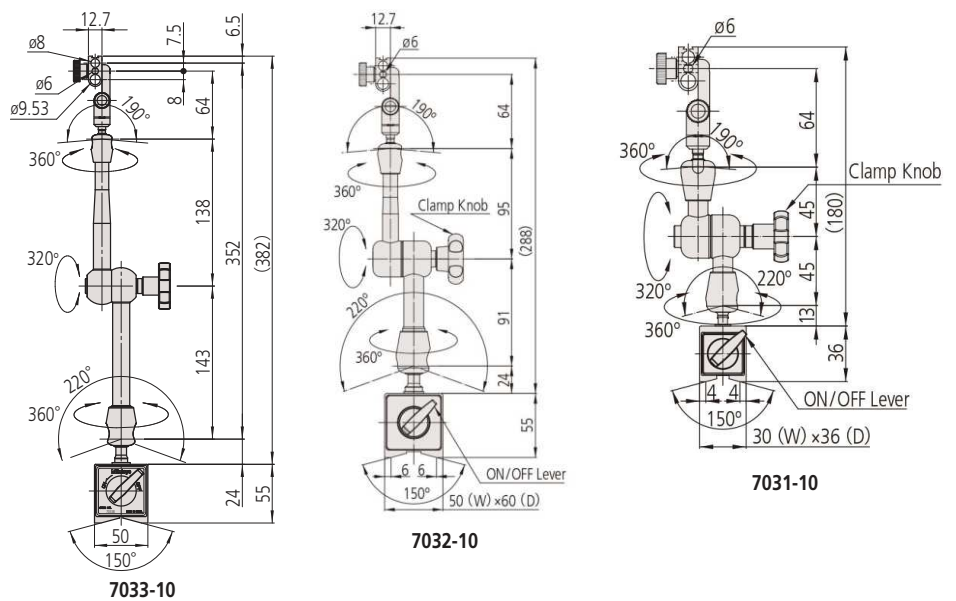
This jointed magnetic stand offers you the following benefits:

- It comes with a mechanical locking system and allows fine adjustment.
- You can also fix a dial indicator in any position by mechanically clamping the articulated arm.



No.	Clamping device	Clamping force (vertical) [N]	Base size (LxWxH)	Total height [mm]
7031-10	magnetic	300	36 x 30 x 36 mm	214
7032-10	magnetic	600	59 x 50 x 55 mm	345
7033-10	magnetic	600	59 x 50 x 55 mm	425

No.	Fine adjustment	Stem hole ϕ	Thread Arm/Base	Working radius [mm]	Mass [kg]
7031-10	with fine feed wheel $\pm 4^\circ$	6 mm, 8 mm, 9,53 mm, dovetail	M5 x 0,8	154	0,59
7032-10	with fine feed wheel $\pm 4^\circ$	6 mm, 8 mm, 9,53 mm, dovetail	M8 x 1,25	250	1,6
7033-10	with fine feed wheel $\pm 4^\circ$	6 mm, 8 mm, 9,53 mm, dovetail	M8 x 1,25	346	1,75



Flexible Jointed Arms

Arms without magnetic base



011361

Dimensions : see 011358



011362

Dimensions : see 011359



011363

Dimensions: see 011360

No.	Stem hole ϕ	Working radius [mm]	Mass [g]
63AAA130	8 mm, dovetail	Approx. 130	270
21JZA331	6, 8 mm, 3/8" (9,53 mm), dovetail	Approx. 154	380
011361	8 mm, dovetail	Approx. 200	400
21JZA332	6, 8 mm, 3/8" (9,53 mm), dovetail	Approx. 250	610
011362	8 mm, dovetail	Approx. 280	800
21JZA333	6, 8 mm, 3/8" (9,53 mm), dovetail	Approx. 346	830
011363	8 mm, dovetail	Approx. 400	900

Bases

Magnetic and pneumatic bases without arm



63AAA470



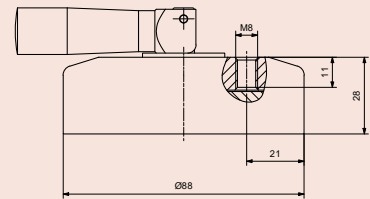
7013-10



011364

No.	Clamping device	Clamping force (vertical) [N]	Base size (LxWxH)	Thread Arm/Base	Mass [g]
63AAA470	magnetic	300	36 x 30 x 35 mm	M6 x 1	200
63AAA131	magnetic	750	58,5 x 50 x 55 mm	M8 x 1,25	980
7013-10	magnetic	600	58,5 x 50 x 55 mm	M8 x 1,25	990
011364	magnetic	900	73 x 50 x 55 mm	M8 x 1,25	1260
63AAA671	pneumatic	300	D= 88 mm	M8 x 1,25	360

Application of the pneumatic base 63AAA671 on a granite plate with indicator and flexible jointed arm (optional)



63AAA671

Magnetic Stands

Series 7

- V-block base type.

Standard accessories

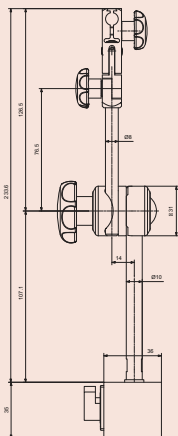
No.	Description
02AZC291	Stem Bush for Magnet Stand, 9,53mm to 8mm

for 7010S-10, 7011S-10, 7015-10

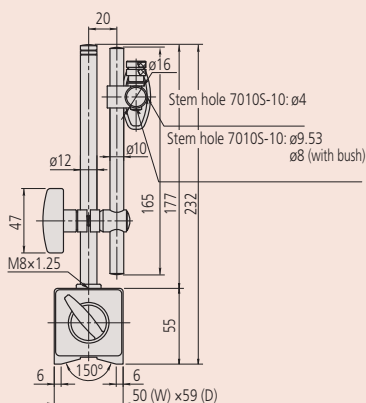
Optional accessories

No.	Description
02AZC282	Cross arm for Magnet Stand, 300mm

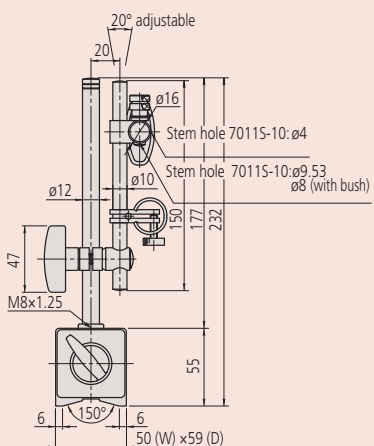
for 7010S-10, 7011S-10, 7015-10



63AAA670



7010S-10



7011S-10



63AAA670



7010S-10



7011S-10



7015-10

No.	Clamping device	Clamping force (vertical) [N]	Base size (LxWxH)	Total height [mm]	Fine adjustment	Stem hole ø	Working radius [mm]	Thread Arm/Base	Mass [kg]
63AAA670	magnetic	300	36 x 30 x 35 mm	234	with fine feed wheel 1,3 mm/rotation	8 mm, dovetail	110	M6 x 1	0,47
7010S-10	magnetic	600	59 x 50 x 55 mm	232	None	3/8" / 9,53 mm, 4 mm, 8 mm (with stem bush)	165	M8 x 1,25	1,38
7011S-10	magnetic	600	59 x 50 x 55 mm	232	with fine adjustment knob	3/8" / 9,53 mm, 4 mm, 8 mm (with stem bush)	150	M8 x 1,25	1,49
7015-10	magnetic	600	59 x 50 x 55 mm	232	with fine feed wheel +4°	3/8" / 9,53 mm, 6 mm, 8 mm (with stem bush)	170,5	M8 x 1,25	1,37



With fine feed wheel (63AAA670, 7015-10).



With fine adjustment knob (7011S-10).

Magnetic Stands

Series 7

With V-block base and flexible arm.



7012-10

No.	Clamping device	Clamping force (vertical) [N]	Base size (LxWxH)	Total height [mm]	Stem hole ϕ	Thread Arm/Base	Mass [kg]
7012-10	magnetic	600	59 x 50 x 55 mm	396	6 mm, 3/8" / 9,53 mm, 8 mm (with stem bush)	M8 x 1,25	1,5

Series 7

This is a mini type of magnetic stand that offers you the following benefits:

- Mini measuring stand without magnet ON/OFF.
- It is designed to accept dial test indicators with 6 mm or 8 mm diameter stems, or dovetail.

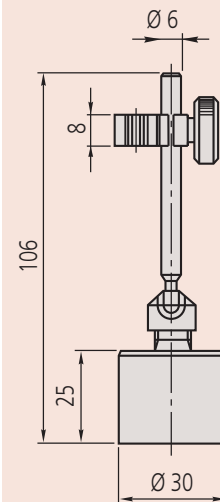
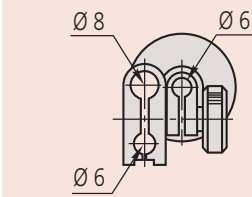
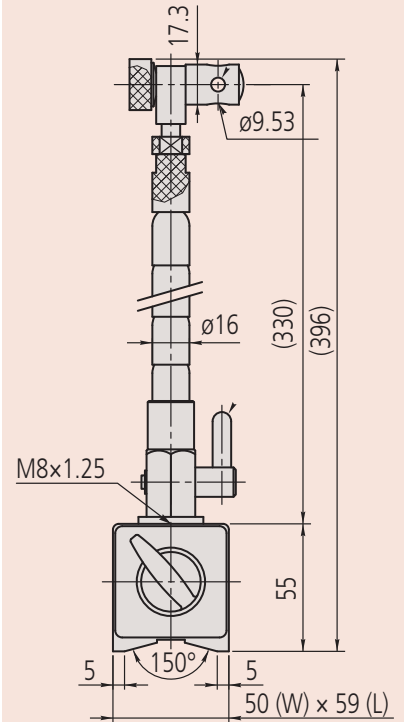


7014-10

No.	Clamping device	Clamping force (vertical) [N]	Base size [mm]	Total height [mm]	Stem hole ϕ	Working radius [mm]	Mass [g]
7014-10	magnetic	150	ϕ 30	106	6 mm, 8 mm, dovetail	68	170

Standard accessories

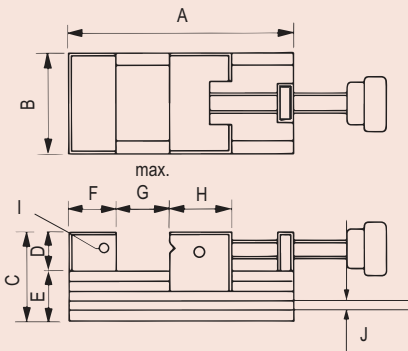
No.	Description
02AZC291	Stem Bush for Magnet Stand, 9,53mm to 8mm



Precision Vices

Specifications

Parallelism	0,002 mm / 100 mm
Squareness	0,005 mm / 100 mm



930-602

Series 930

- It is made of tool steel, hardened and precision ground.
- It has a horizontally ground V-groove in the moveable jaw.



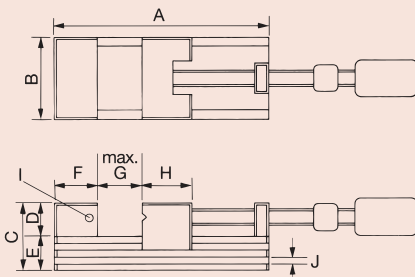
930-611

930-602

No.	A [mm]	B [mm]	C [mm]	D [mm]	E [mm]	F [mm]	G [mm]	H [mm]	I [mm]	J H x D [mm]	Mass [kg]
930-611	90	60	50	25	25	25	30	30	M5	6 x 6	1,6
930-601	160	70	62	30	32	33	80	45	M6	7 x 7	4
930-602	210	90	80	40	40	40	120	50	M6	8 x 7	7,6
930-612	285	120	90	40	50	55	150	70	M6	10 x 7	17,4

Specifications

Parallelism	0,002 mm / 100 mm
Squareness	0,03 mm / 100 mm



930-616

Series 930

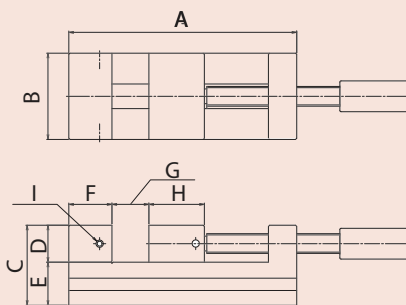
- It is made of tool steel, hardened and precision ground.
- With hydraulic system for max. clamping force of 14,7 kN.
- It has a horizontally ground V-groove in the movable jaw.



No.	A [mm]	B [mm]	C [mm]	D [mm]	E [mm]	F [mm]	G [mm]	H [mm]	I [mm]	J H x D [mm]	Mass [kg]
930-616	285	120	90	40	50	55	150	70	M6	10 x 7	17,7

Specifications

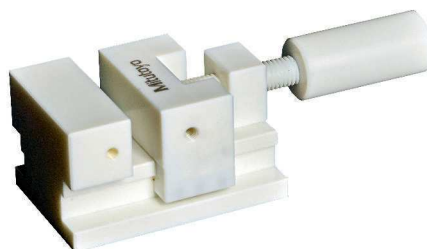
Parallelism	0,02 mm
Squareness	0,03 mm (930-641), 0,05 mm (930-642)



930-641

Series 930

- It is made of PET plastics, light weight, and protecting workpieces from scratches.



No.	A [mm]	B [mm]	C [mm]	D [mm]	E [mm]	F [mm]	G [mm]	H [mm]	I [mm]	Mass [g]
930-641	90	60	50	25	25	25	30	30	M5	350
930-642	160	70	62	30	32	33	80	45	M6	700

Precision Vices

Series 930

This precision vice has a pull-down clamping action and offers you the following benefits:

- It gives you high accuracy for precision grinding, milling, measuring and eroding.
- It is made of tool steel, hardened and precision ground.



930-630



930-631



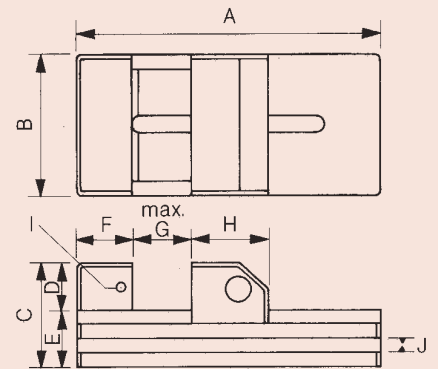
930-607



930-632

Specifications

Parallelism	0,002 mm / 100 mm
Squareness	0,005 mm / 100 mm

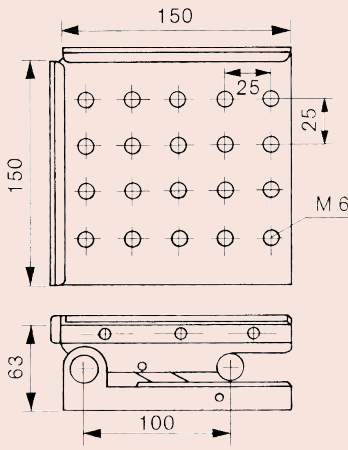


No.	Remarks	A [mm]	B [mm]	C [mm]	D [mm]	E [mm]	F [mm]	G [mm]	H [mm]	I [mm]	J H x D [mm]	Mass [kg]
930-606	V-groove (moveable jaw) vertical and horizontal	160	70	62	30	32	33	80	45	M6	8 x 7	3
930-607	V-groove (moveable jaw) vertical and horizontal	210	90	80	40	40	40	120	50	M6	10 x 7	5,8
930-630	V-groove (moveable jaw) vertical	75	34	35	15	20	20	25	30	M4	∅ 8 x 4	0,38
930-631	V-groove (moveable jaw) horizontal	110	45	45	20	25	25	50	35	M5	6 x 6	1
930-632	V-groove (moveable jaw) horizontal	285	120	90	40	50	60	150	70	M6	12 x 7	13,5
930-633	V-groove (moveable jaw) none	370	175	95	45	50	60	200	110	M8	12 x 10	28,7

Precision Sine Plates

Series 930

- Sine bar style of auxiliary plate.
- It is made of tool steel, hardened and precision ground.
- Accurate angle setting is made by gauge blocks, max. 45°.
- 930-626 Workpiece can be fixed on plate surface by tap holes and stoppers on side.
- 930-628 and 930-629 can set the angle at two directions which go straight angularly.
- 930-629 Permanently magnet chuck is adapted.



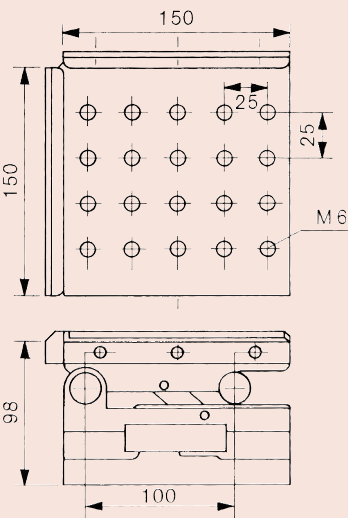
930-626



930-626



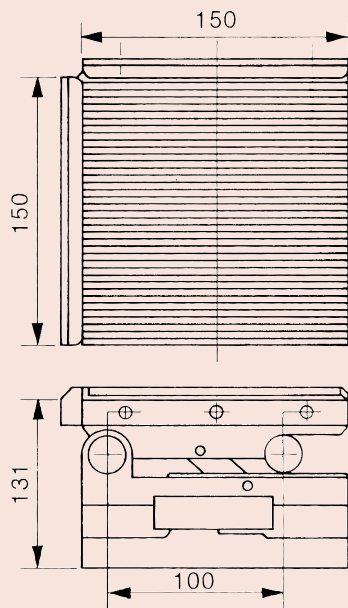
930-628



930-628



930-629



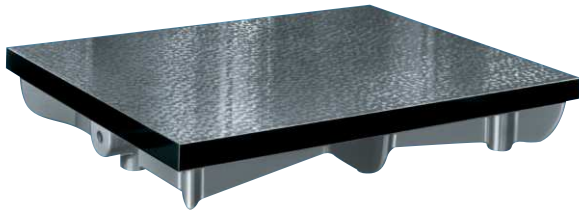
930-629

No.	Parallelism	Squareness	Remarks	Setting accuracy at 45°	Mass [kg]
930-626	0,002 mm / 100 mm	0,005 mm / 100 mm	With M6 clamping holes	±15"	7,6
930-628	0,002 mm / 100 mm	0,005 mm / 100 mm	Compound-axis type with angle in two directions With M6 clamping holes	±15"	11,3
930-629	0,002 mm / 100 mm	0,005 mm / 100 mm	Compound-axis type With lever-operated magnetic chuck	±15"	16,5

Cast Iron Surface Plates

Series 902

- A ribbed design gives you rigidity with minimum weight, and a special cast iron confers a high degree of wear resistance.
- The surface of the plate is scraped.



902-304

No.	Dimensions L x W x H [mm]	Accuracy	Mass [kg]
902-301	300 x 300 x 85	According to DIN 876; Grade 1 : fine scraped	15
902-302	400 x 400 x 90	According to DIN 876; Grade 1 : fine scraped	35
902-303	500 x 400 x 100	According to DIN 87; Grade 1 : fine scraped	40
902-304	600 x 500 x 120	According to DIN 876; Grade 1 : fine scraped	65
902-305	800 x 500 x 140	According to DIN 876; Grade 1 : fine scraped	95
902-306	1000 x 750 x 170	According to DIN 876; Grade 1 : fine scraped	210
902-101	300 x 300 x 85	According to DIN 876; Grade 3 : fine planed	15
902-102	400 x 400 x 90	According to DIN 876; Grade 3 : fine planed	35
902-103	500 x 400 x 100	According to DIN 876; Grade 3 : fine planed	40
902-104	600 x 500 x 120	According to DIN 876; Grade 3 : fine planed	65
902-105	800 x 500 x 140	According to DIN 876; Grade 3 : fine planed	95
902-106	1000 x 750 x 170	According to DIN 876; Grade 3 : fine planed	210

Optional accessories

No.	Description
902-930	Stand (Angle Steel), for Cast Iron Plate 800x500x140mm
902-931	Stand (Angle Steel), for Cast Iron Plate 1000x750x170mm



Stand for Series 902
Only available for
902-305, 902-306, 902-105, 902-106

Granite Squares 90°

Series 972

- It is made of natural hard stone, with two sides precision ground.



972-106



No.	Length [mm]	Width [mm]	Accuracy	Delivered	Mass [kg]
972-106	300 x 200	50	Perpendicularity: DIN 875 Flatness: DIN 876 Grade 00	With certificate of inspection	6,5
972-107	400 x 250	50	Perpendicularity: DIN 875 Flatness: DIN 876 Grade 00	With certificate of inspection	10
972-108	500 x 300	60	Perpendicularity: DIN 875 Flatness: DIN 876 Grade 00	With certificate of inspection	17
972-109	600 x 400	70	Perpendicularity: DIN 875 Flatness: DIN 876 Grade 00	With certificate of inspection	30

Granite Surface Plates DIN 876

Series 901

- Surface diamond lapped, side face fine ground, backside fine sawn.
- The optional stand is a welded construction including 3 or 5-point bearings and two adjusting screws.
- Delivered with a certificate of inspection

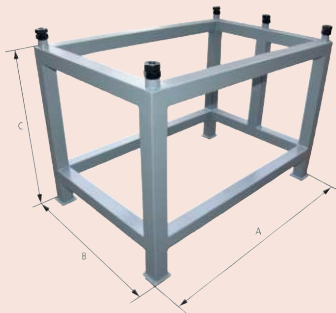


Specifications

Hardness	HV 850-900
Flexural strength	13-22 N/mm ²
Compressive strength	Approx. 280 N/mm ²
Coefficient of thermal expansion	(5 to 7,5) x 10 ⁻⁶ x K ⁻¹



Granite plate and stand (optional)



Dimensions for stand

1. Accuracy Grade 00

No.	Dimensions L x W x H [mm]	Accuracy	Max. workpiece load [kg]	Mass [kg]
901-131	400 x 250 x 50	DIN 876 grade 00	50	15
901-132	400 x 400 x 50	DIN 876 grade 00	60	25
901-133	630 x 400 x 70	DIN 876 grade 00	65	53
901-134	630 x 630 x 70	DIN 876 grade 00	75	83
901-135	1000 x 630 x 100	DIN 876 grade 00	150	189
901-136	1000 x 1000 x 100	DIN 876 grade 00	250	300
901-137	1200 x 800 x 160	DIN 876 grade 00	600	460
901-138	1600 x 1000 x 160	DIN 876 grade 00	650	768
901-139	2000 x 1000 x 220	DIN 876 grade 00	750	1.320

2. Accuracy Grade 0

No.	Dimensions L x W x H [mm]	Accuracy	Max. workpiece load [kg]	Mass [kg]
901-121	400 x 250 x 50	DIN 876 grade 0	100	15
901-122	400 x 400 x 50	DIN 876 grade 0	120	25
901-123	630 x 400 x 70	DIN 876 grade 0	130	53
901-124	630 x 630 x 70	DIN 876 grade 0	150	83
901-125	1000 x 630 x 100	DIN 876 grade 0	300	189
901-126	1000 x 1000 x 100	DIN 876 grade 0	500	300
901-127	1200 x 800 x 160	DIN 876 grade 0	1.200	460
901-128	1600 x 1000 x 160	DIN 876 grade 0	1.300	768
901-129	2000 x 1000 x 220	DIN 876 grade 0	1.500	1.320

3. Accuracy Grade 1

No.	Dimensions L x W x H [mm]	Accuracy	Max. workpiece load [kg]	Mass [kg]
901-111	400 x 250 x 50	DIN 876 grade 1	100	15
901-112	400 x 400 x 50	DIN 876 grade 1	120	25
901-113	630 x 400 x 70	DIN 876 grade 1	130	53
901-114	630 x 630 x 70	DIN 876 grade 1	150	83
901-115	1000 x 630 x 100	DIN 876 grade 1	300	189
901-116	1000 x 1000 x 100	DIN 876 grade 1	500	300
901-117	1200 x 800 x 160	DIN 876 grade 1	1.200	460
901-118	1600 x 1000 x 160	DIN 876 grade 1	1.300	768
901-119	2000 x 1000 x 220	DIN 876 grade 1	1.500	1.320

4. Accuracy Grade 2

No.	Dimensions L x W x H [mm]	Accuracy	Max. workpiece load [kg]	Mass [kg]
901-101	400 x 250 x 50	DIN 876 grade 2	100	15
901-102	400 x 400 x 50	DIN 876 grade 2	120	25
901-103	630 x 400 x 70	DIN 876 grade 2	130	53
901-104	630 x 630 x 70	DIN 876 grade 2	150	83
901-105	1000 x 630 x 100	DIN 876 grade 2	300	189
901-106	1000 x 1000 x 100	DIN 876 grade 2	500	300
901-107	1200 x 800 x 160	DIN 876 grade 2	1.200	460
901-108	1600 x 1000 x 160	DIN 876 grade 2	1.300	768
901-109	2000 x 1000 x 220	DIN 876 grade 2	1.500	1.320

Stand

No.	A [mm]	B [mm]	C [mm]	Mass [kg]
901-931	550	350	770	22
901-932	550	550	770	25
901-933	750	550	740	28
901-934	750	750	740	30
901-935	900	600	680	30
901-936	1050	750	680	35
901-937	1450	750	620	40

Universal Bevel Protractors

Series 187

This universal bevel protector offers you the following benefits:

- Its high-precision angle gauge enables you to take accurate angle measurements of machines, moulds and jigs.
- You can attach it to height gauges.



187-201



187-901-10



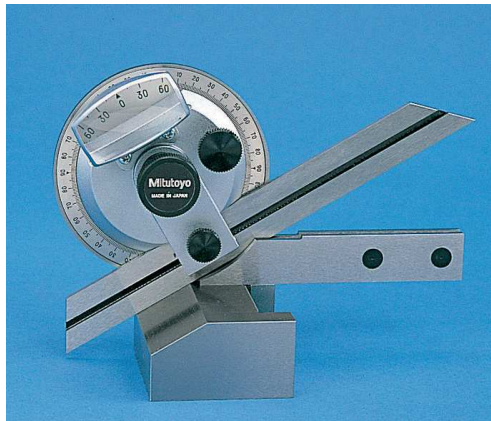
187-907-10



187-908-10
with height gage holder

Metric

No.	Graduation	Blade edge angle	Blade length	Mass [g]
187-201	5' (0° - 90° - 0°)	30°, 60° edges	137 mm	212
187-901-10	5' (0° - 90° - 0°)	60°, 45°, 30° edges	150, 300 mm	390
187-907-10	5' (0° - 90° - 0°)	60°, 45° edges	150 mm	284
187-908-10	5' (0° - 90° - 0°)	60°, 45° edges	300 mm	318



Specifications

Delivered In a box

Standard accessories

No.	Description
187-106	Steel Rule, 150mm/6", Metric/Inch
187-107	Steel Rule, 300mm/12", Metric/Inch
950750	Holder for Mounting on Height Gauges, Metric, Series 187
187-105	Acute angle attachment, for Series 187

187-106 for 187-901-10, 187-907-10
 187-107 for 187-901-10, 187-908-10
 950750 for Height Gauge with 9x 9 mm scribe shaft
 for 187-901-10, 187-907-10, 187-908-10
 187-105 for 187-201 and 187-901-10



187-106



187-107



950750



187-105

Digimatic Universal Protractors

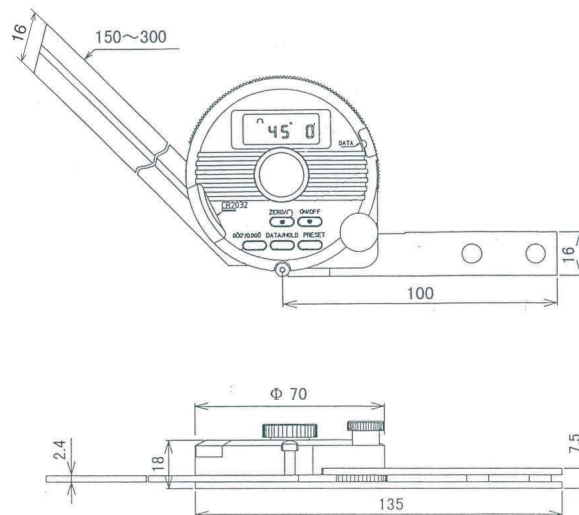
Series 187

- This is a Digimatic Universal Protractor with data output that offers you the following features:
- It has an easy-to-read digital display.
 - It automatically turns off after 10 minutes, and gives you fixed reference points for easy adjustment.
 - You can slide and clamp the measuring blade over the entire length.
 - You can make fine adjustments to precisely adjust arbitrary angle dimensions.
 - It comes with a mounting facility on height gauges and tracers of series 192 via holder.



Metric

No.	Digital step	Blade length	Mass [g]
187-501	1' (0,01°)	150 mm	624
187-502	1' (0,01°)	300 mm	662



Functions	Series 187
ON/OFF	●
DATA (output with cable) / HOLD (display value)	●
Data output	●
ZERO SET	●
PRESET	●
Angle sexagesimal/decimal	●

Specifications

Power supply	1 battery CR-2032
Max. permissible error	2' (0,03°)
Repeatability	1' (0,01°)
Battery life	Approx. 2000 hours
Display	LCD with character height 6,5 mm
Delivered	in a box including battery

Standard accessories

No.	Description
187-106	Steel Rule, 150mm/6", Metric/Inch
187-107	Steel Rule, 300mm/12", Metric/Inch
950750	Holder for Mounting on Height Gauges, Metric, Series 187

187-106 for 187-501
187-107 for 187-502
950750 for 187-501, 187-502

Optional accessories

No.	Description
905338	Digimatic Cable, Flat Straight Type, 1 m
905409	Digimatic Cable, Flat Straight Type, 2 m
06AFM380F	USB Input Tool Direct (Digimatic to USB), 2m Cable, Digimatic/Digimatic 2, Flat Straight Type
02AZD880G	U-WAVE-T, Buzzer Type, Wireless Transmitter
02AZD730G	U-WAVE-T, IP67 Type, Wireless Transmitter
02AZD790F	Connection Cable F for U-WAVE, Straight, without Data Button
187-105	Acute angle attachment, for Series 187

Consumable spares

No.	Description
055AA217D	Lithium battery CR-2032, 1 pcs.



950750

Digital Precision Levels

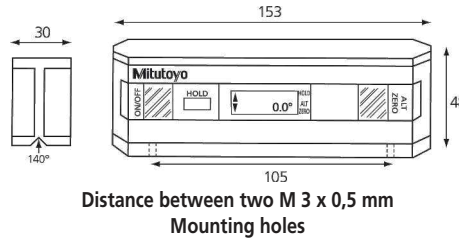
Series 950

This Digital Precision Level offers you the following benefits:

- You can measure flatness, squareness and angularity.
- Precision support surfaces in aluminium frame provide you with high rigidity and low weight.



950-318



Distance between two M 3 x 0,5 mm Mounting holes

No.	Max. permissible error (degrees)	Repeatability (degrees)	Data output	Sensitivity (degrees)	Mass [kg]
950-317	Horizontal : 0,1 Vertical : 0,2	0,1		0,1	0,3
950-318	0,05 (0 to 10) 0,1 (80 to 90) 0,2 (10 to 80)	0,05		0,01 (0 to 9,99) 0,1 (10 to 90)	0,3

90° Steel Squares

Series 916

This 90° Steel Square offers you the following benefits:

- Three types of square are available.
- It is hardened, and has precision ground edges.

Try square

No.	Length [mm]	Cross section	Accuracy	Grade	Remarks	Mass [g]
916-222	75x50	15x5	According to DIN 875	1	steel	85
916-223	100x70	20x5	According to DIN 875	1	steel	130
916-224	150x100	25x5	According to DIN 875	1	steel	270
916-225	200x130	30x6	According to DIN 875	1	steel	585
916-226	250x165	35x7	According to DIN 875	1	steel	840
916-227	300x200	40x8	According to DIN 875	1	steel	1300
916-232	75x50	15x5	According to DIN 875	2	steel	85
916-233	100x70	20x5	According to DIN 875	2	steel	130
916-234	150x100	25x5	According to DIN 875	2	steel	270
916-235	200x130	30x6	According to DIN 875	2	steel	530

Try square with shoulders

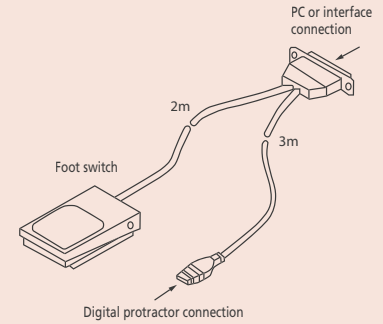
No.	Length [mm]	Cross section	Accuracy	Grade	Remarks	Mass [g]
916-321	75x50	15x5	According to DIN 875	1	steel	60
916-322	100x70	20x5	According to DIN 875	1	steel	180
916-323	150x100	25x5	According to DIN 875	1	steel	400
916-324	200x130	30x6	According to DIN 875	1	steel	675
916-325	250x165	35x7	According to DIN 875	1	steel	1185
916-326	300x200	40x8	According to DIN 875	1	steel	1730
916-332	100x70	20x5	According to DIN 875	2	steel	180
916-333	150x100	25x5	According to DIN 875	2	steel	365
916-334	200x130	30x6	According to DIN 875	2	steel	790
916-335	250x165	35x7	According to DIN 875	2	steel	1320

Specifications

Range	360° (4 x 90°)
Power supply	Standard battery (9 V) 6LR61
Battery life	Approx. 500 hours
Delivered	Including box

Optional accessories

No.	Description
50AAA983A	RS-232C Output Cable, for series 950



Try square



Try square with shoulders

Feeler Gauges

Series 184 - Feeler Gauge

This feeler gauge is ideal for a variety of measuring tasks and offers you the following benefits:

- Size clearly stamped on each leaf
- Leaves are easy to remove and can be individually locked open.



184-303S



184-304S



184-308S

Metric

No.	Range	Accuracy	Number of leaves	Leaf length [mm]	Mass [g]
184-301S	0,05-0,3 mm by 0,05 mm, 0,4-1 mm by 0,1 mm	0,03-0,15 mm: $\pm 0,005$ mm, 0,2- 0,5 mm: $\pm 0,012$ mm, 0,55-1 mm: $\pm 0,02$ mm	13	150	121
184-302S	0,03-0,1 mm by 0,01 mm, 0,2-0,5 mm by 0,1 mm, 0,15 mm	0,03-0,15 mm: $\pm 0,005$ mm, 0,2- 0,5 mm: $\pm 0,012$ mm, 0,55-1 mm: $\pm 0,02$ mm	13	150	67
184-303S	0,05-0,15 mm by 0,01 mm, 0,2-1 mm by 0,05 mm	0,03-0,15 mm: $\pm 0,005$ mm, 0,2- 0,5 mm: $\pm 0,012$ mm, 0,55-1 mm: $\pm 0,02$ mm	28	150	195
184-304S	0,05-1 mm by 0,05 mm	0,03-0,15 mm: $\pm 0,005$ mm, 0,2- 0,5 mm: $\pm 0,012$ mm, 0,55-1 mm: $\pm 0,02$ mm	20	150	184
184-305S	0,05-0,3 mm by 0,05 mm, 0,4-1 mm by 0,1 mm	0,03-0,15 mm: $\pm 0,005$ mm, 0,2- 0,5 mm: $\pm 0,012$ mm, 0,55-1 mm: $\pm 0,02$ mm	13	100	82
184-306S	0,05-0,2 mm by 0,05 mm, 0,3-0,8 mm by 0,1 mm	0,03-0,15 mm: $\pm 0,005$ mm, 0,2- 0,5 mm: $\pm 0,012$ mm, 0,55-1 mm: $\pm 0,02$ mm	10	100	62
184-307S	0,03-0,1 mm by 0,01 mm, 0,2-0,5 mm by 0,1 mm, 0,15 mm	0,03-0,15 mm: $\pm 0,005$ mm, 0,2- 0,5 mm: $\pm 0,012$ mm, 0,55-1 mm: $\pm 0,02$ mm	13	100	47
184-308S	0,05-0,2 mm by 0,05 mm, 0,3-0,8 mm by 0,1 mm	0,03-0,15 mm: $\pm 0,005$ mm, 0,2- 0,5 mm: $\pm 0,012$ mm, 0,55-1 mm: $\pm 0,02$ mm	10	150	91
184-313S	0,05-0,15 mm by 0,01 mm, 0,2-1 mm by 0,05 mm	0,03-0,15 mm: $\pm 0,005$ mm, 0,2- 0,5 mm: $\pm 0,012$ mm, 0,55-1 mm: $\pm 0,02$ mm	28	100	129

Knife Edge Straight Edge

Series 528

This Knife Edge Straight Edge offers you the following benefits:

- Its straight edges are especially suited to testing the flatness of surfaces.
- It has a hardened, ground and micro lapped measuring edge.



Series 528

No.	Cross section	Section	Accuracy	Length [mm]	Mass [g]
528-100	25 x 6 mm	60°	DIN 874-2	50	40
528-101	25 x 6 mm	60°	DIN 874-2	75	50
528-102	25 x 6 mm	60°	DIN 874-2	100	60
528-110	25 x 6 mm	60°	DIN 874-2	125	80
528-103	25 x 6 mm	60°	DIN 874-2	150	100
528-104	25 x 6 mm	60°	DIN 874-2	200	190
528-105	32 x 7 mm	60°	DIN 874-2	300	370
528-106	40 x 8 mm	60°	DIN 874-2	400	1080
528-107	50 x 10 mm	60°	DIN 874-2	500	1400

Steel Rules

Series 182

These are rigid and fully-flexible rules that offer you the following benefits:

- They have clear graduations on satin-chrome finish.
- The rules are stainless tempered.



182-211



182-131

Metric Fully-flexible rule

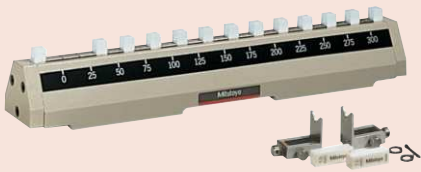
No.	Range [mm]	Graduation	Accuracy	Width	Thickness	Mass [g]
182-211	0 - 150	1 mm / 0,5 mm (on both faces)	±0,15 mm	12 mm	0,4 mm	5
182-231	0 - 300	1 mm / 0,5 mm (on both faces)	±0,15 mm	12 mm	0,4 mm	10
182-251	0 - 450	1 mm / 0,5 mm (on both faces)	±0,15 mm	19 mm	0,4 mm	130
182-271	0 - 600	1 mm / 0,5 mm (on both faces)	±0,2 mm	19 mm	0,4 mm	90

Metric Wide rigid rule

No.	Range [mm]	Graduation	Accuracy	Width	Thickness	Mass [g]
182-111	0 - 150	1 mm / 0,5 mm (on both faces)	±0,15 mm	19 mm	1,2 mm	27
182-131	0 - 300	1 mm / 0,5 mm (on both faces)	±0,15 mm	25 mm	1,2 mm	72
182-151	0 - 450	1 mm / 0,5 mm (on both faces)	±0,15 mm	30 mm	1,2 mm	130
182-171	0 - 600	1 mm / 0,5 mm (on both faces)	±0,2 mm	30 mm	1,2 mm	175



Height Masters
Page 314



Check Masters
Page 318



Calibration Tools
Page 322

Height Masters

Series 515

This height master offers you the following benefits:

- You can use it to calibrate and set height gauges and other measuring instruments.
- Models with the staggered arrangement of blocks have two measuring faces on the same level, one facing up and the other down.
- It is supplied in a fitted wooden case.



515-520



Using in horizontal orientation

Metric

No.	Range [mm]	Graduation [mm]	Block step	Feed error	Retrace error	Mass [kg]
515-520	5 - 610	0,001	10 mm straight	±1,2 μm	1,2 μm	45
515-523	5 - 1010	0,001	10 mm straight	±1,5 μm	1,5 μm	63,5

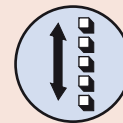
Specifications

Micrometer adjustment	20 mm
Micrometer feed	0,5 mm
Block pitch accuracy	Range ≤ 310 mm: ±1,5 μm 310 < range ≤ 610 mm: ±2,5 μm 610 < range ≤ 1010 mm: ±3,5 μm
Parallelism of blocks	Range ≤ 610 mm: 1,5 μm 610 < range ≤ 1010 mm: 2 μm

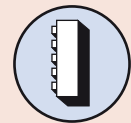
Optional accessories

No.	Description
515-110	Auxiliary Block Kit for Bore Gauge, for 515-520/515-523
900574	Supporting Base for Vertical Operation, for Height Master

900574 : supplied as a standard for 515-523



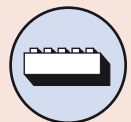
Single-row 10 mm blocks (movable)



Vertical orientation



Riser block (optional)



Horizontal orientation



900574 (optional)
Supporting base for vertical operation

Digital Height Masters

Series 515

This is a standard model with a digital display, that offers you the following benefits:

- It gives you all the essential specifications required for a versatile height standard.
- You can use it to calibrate and set height gauges and other measuring instruments.
- Models have two measuring faces on the same level, one facing up and the other down.
- It is supplied in a fitted wooden case



Functions	Series 515
DATA (output with cable) / HOLD (display value)	●
Auto Power OFF after 20 min. non use	●
Low voltage alarm	●
Data output	●
PRESET	●
ABS / INC (INC ZERO)	●

Specifications

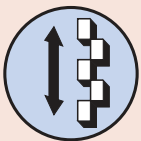
Power supply	2 batteries SR-44
Micrometer adjustment	20 mm
Micrometer feed	0,5 mm
Block pitch accuracy	Range ≤ 310 mm: ±1,5 μm 310 < range ≤ 450 mm: ±2,5 μm 450 < range ≤ 610 mm: ±3,5 μm
Parallelism of blocks	Range ≤ 310 mm: 2 μm 310 < range ≤ 610 mm: 2,5 μm
Battery life	Approx. 1,8 years

Optional accessories

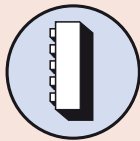
No.	Description
515-111	Auxiliary Block Kit for Bore Gauge, for 515-374/515-376/515-378
959149	Digimatic Cable, Straight, Data Button, 1 m
959150	Digimatic Cable, Straight, Data Button, 2 m
06AFM380C	USB Input Tool Direct (Digimatic to USB), 2m Cable, Digimatic/Digimatic 2, Straight, with Data Button
02AZD880G	U-WAVE-T, Buzzer Type, Wireless Transmitter
02AZD730G	U-WAVE-T, IP67 Type, Wireless Transmitter
02AZD790C	Connection Cable C for U-WAVE, Straight, with Data Button

Consumable spares

No.	Description
63AAA800	Battery SR44 1,5 V



Staggered 20 mm blocks (movable)



Vertical orientation



Riser block (optional)



515-374

Metric

No.	Range [mm]	Graduation [mm]	Digital step	Block step	Feed error	Retrace error	Mass [kg]
515-374	10 - 310	0,002	0,001 mm	20 mm staggered	±2 μm	2 μm	9,5
515-376	10 - 460	0,002	0,001 mm	20 mm staggered	±2 μm	2 μm	13,6
515-378	10 - 610	0,002	0,001 mm	20 mm staggered	±2,5 μm	2,5 μm	16

Universal Height Masters

Series 515

This Universal Height Master offers you the following benefits:

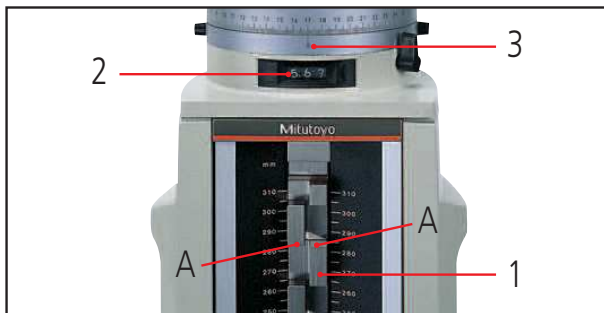
- It is designed for both vertical and horizontal orientations, enabling you to carry out a wide range of applications such as accuracy checking of machine tool table movements.
- It is supplied in a fitted wooden case.



515-322

Metric

No.	Range [mm]	Graduation [mm]	Block step	Feed error	Retrace error	Mass [kg]
515-322	5 - 310	0,001	20 mm staggered	±1 µm	1 µm	23



Height A
 1. Scale 280 mm
 2. Counter 5.67 mm
 3. Thimble 0 mm

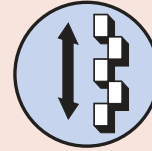
285.67 mm

Specifications

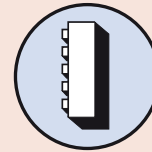
Micrometer adjustment	20 mm
Micrometer feed	0,5 mm
Block pitch accuracy	±1,5 µm
Parallelism of blocks	1 µm

Optional accessories

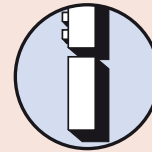
No.	Description
515-112	Auxiliary Block Kit for Bore Gauge, for 515-322



Staggered 20 mm blocks (movable)



Vertical orientation



Riser block (optional)

Optional Accessories for Height Master



Bore Gauge Series 511
reference setting

Series 515

This is an auxiliary block kit that allows you to efficiently carry out reference-setting of dial bore gauges and tubular inside micrometers (18-150mm).



Metric

No.	Suitable for Height Master	Mass [kg]
515-112	515-322	0,142
515-110	515-520 / 515-523	0,14
515-111	515-374 / 515-376 / 515-378	0,142

Series 515

These riser blocks offer you the following benefits:

- You can extend the measuring range up to 900mm by using 150, 300 or 600mm riser blocks.
- They can be used with both standard and digital Height Masters.



Sample application



515-113



515-114



515-115

Metric

No.	Parallelism	Accuracy	Height [mm]	Mass [kg]
515-113	0,6 μm	$\pm 0,6 \mu\text{m}$	150	5,7
515-114	0,8 μm	$\pm 1 \mu\text{m}$	300	11,3
515-115	1 μm	$\pm 2 \mu\text{m}$	600	31

Check Masters

Series 515

This Check Master allows you to test precision tool and coordinate measuring machines, and offers you the following benefits:

- You can test the X, Y and Z-coordinate axes of precision tool machines and coordinate measuring machines.
- It consists of rigidly clamped gauge blocks with a step of 10 mm.
- It is supplied in a fitted wooden case.



515-722



515-724

515-723

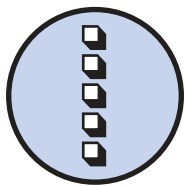
515-722

Metric

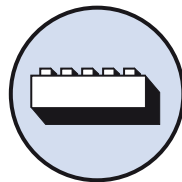
No.	Range [mm]	Mass [kg]
515-720	0 - 310	7
515-721	0 - 450	10
515-722	0 - 610	13
515-723	0 - 1010	22
515-724	0 - 1510	30

Specifications

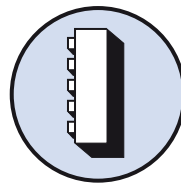
Block step	10 mm
Block pitch accuracy	Range ≤ 310 mm: ±2,5 μm 310 < range ≤ 610 mm: ±3,5 μm 610 < range ≤ 1010 mm: ±5,0 μm 1010 < range ≤ 1510 mm: ±8,0 μm
Parallelism of blocks	Range ≤ 310 mm: 1,2 μm 310 < range ≤ 610 mm: 1,5 μm 610 < range ≤ 1010 mm: 2,0 μm 1010 < range ≤ 1510 mm: 2,5 μm
Hardness	> 64 HRC
Delivered	In wooden box



Single-row 10 mm blocks



Horizontal orientation

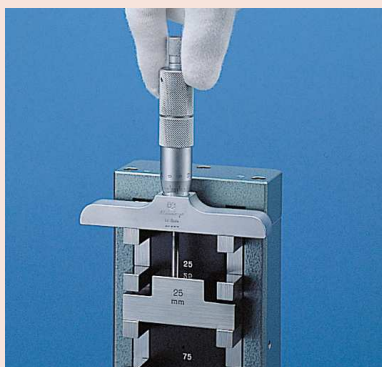


Vertical orientation

Depth Micro Checkers

Specifications

Anvil block accuracy	$\pm 0,5 \mu\text{m}$
Block pitch accuracy	$\pm (1+L/150)\mu\text{m}$ L= length to check (mm)



Series 515

This Depth Micro Checker offers you the following benefits:

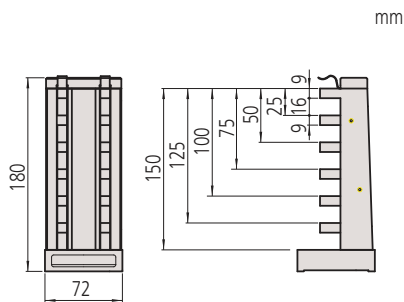
- The Depth Micro Checker is designed to let you check and help set the range-end points of a depth micrometer.
- A 25 mm carbide gauge block is provided as the reference surface.



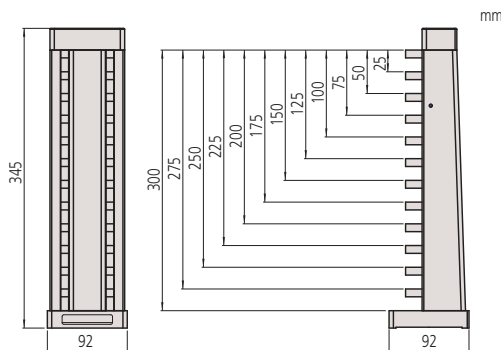
515-571

Metric

No.	Range [mm]	Reference length	Mass [kg]
515-570	0 - 150	25, 50, 75, 100, 125, 150 mm	3
515-571	0 - 300	25, 50, 75, 100, 125, 150, 175, 200, 225, 250, 275, 300 mm	17



515-570



515-571

CERA Caliper Checkers

Series 515

This CERA Caliper Checker offers you the following benefits:

- You can set and inspect caliper and height gauges.
- It comes with ceramic gauge blocks.

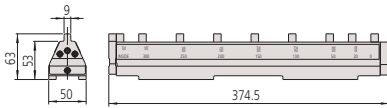


515-555

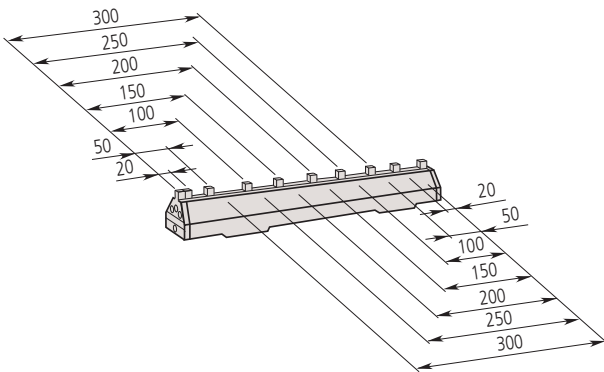
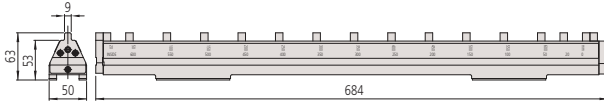
Metric

No.	Range [mm]	Reference checking lengths available for outside/inside measurement	Mass [kg]
515-555	0 - 300	20, 50, 100, 150, 200, 250 and 300 mm	4
515-556-2	0 - 600	20, 50, 100, 150, 200, 250, 300, 350, 400, 450, 500, 550 and 600 mm	8,5

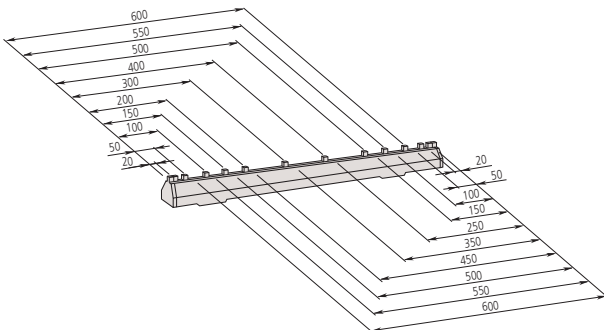
515-555



515-556-2



515-555



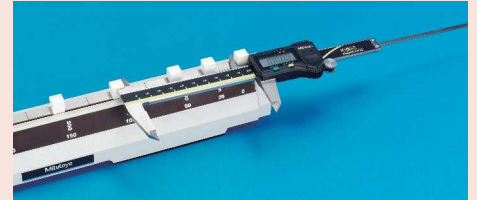
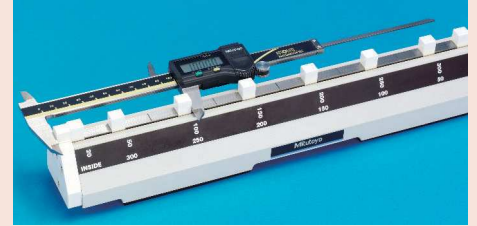
515-556-2

Specifications

Block pitch accuracy	20 - 300 mm: $\pm 0,005$ mm 350 - 600 mm: $\pm 0,007$ mm
Parallelism of blocks	20 - 300 mm: 0,002 mm 350 - 600 mm: 0,004 mm

Optional accessories

No.	Description
602162	Wooden Case (300 mm), for Caliper Checker
602164	Wooden Case (600 mm), for Caliper Checker



Inside Micro Checkers

Specifications

Block pitch accuracy

$$\pm(1+L/150) \mu\text{m}$$

L = Length to check (mm)

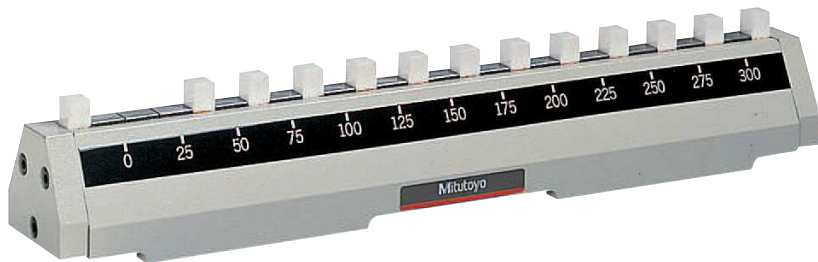


Standard accessories:
support clamps with 2x 10 mm ceramic gauge blocks
grade 0

Series 515

This Inside Micro Checker offers you the following benefits:

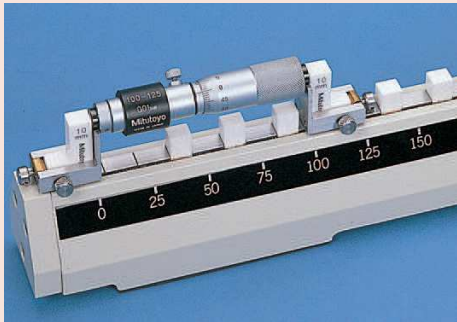
- Applicable for Series 133, 139 and 145 (over 50 mm).
- Not applicable for Series 137, 141, 337 and 339
- It designed to act as a setting standard for inside micrometers.
- It comes with ceramic gauge blocks.



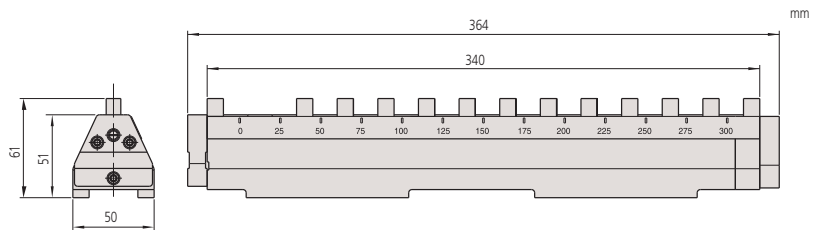
515-585

Metric

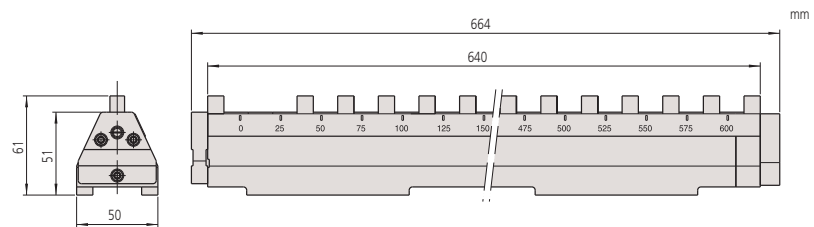
No.	Range [mm]	Graduation [mm]	Reference length	Mass [kg]
515-585	25 - 300	25	25, 50, 75, 100, 125, 150, 175, 200, 225, 250, 275, 300 mm	3,9
515-586	25 - 600	25	25, 50, 75, 100, 125, 150, 175, 200, 225, 250, 275, 300, 325, 350, 375, 400, 425, 450, 475, 500, 525, 550, 575, 600 mm	7



Application with Series 133



515-585



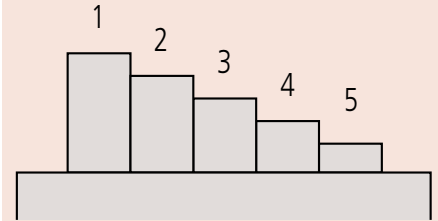
515-586

Step Masters

Series 516

The Step Master is a gauge that provides you with four small increments in height and offers you the following benefits:

- It is constructed from an assembly of five highly accurate, steel or ceramic gauge blocks.
- Each adjacent step is calibrated to a resolution of 0,01 μm by using an interferometer with an accuracy tolerance of $\pm 0,2 \mu\text{m}$.
- It is supplied in a fitted wooden case.



Step value

	1/2	2/3	3/4	4/5
516-198, 516-498	10 μm	5 μm	2 μm	1 μm
516-199, 516-499	300 μm	100 μm	50 μm	20 μm



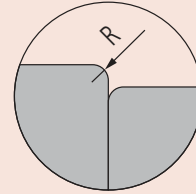
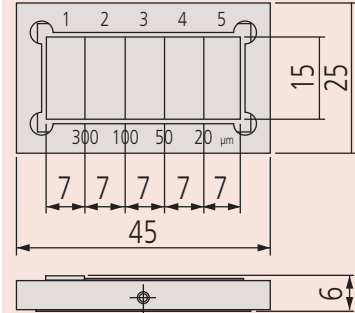
516-499 Ceramic type



516-199 Steel type

Metric

No.	Block step	Material	Certificate	Mass [kg]
516-198	10, 5, 2, 1 μm	Steel	Inspection	0,15
516-198-24	10, 5, 2, 1 μm	Steel	Calibration, JCSS	0,15
516-199	300, 100, 50, 20 μm	Steel	Inspection	0,15
516-199-24	300, 100, 50, 20 μm	Steel	Calibration, JCSS	0,15
516-498	10, 5, 2, 1 μm	Ceramic	Inspection	0,14
516-498-24	10, 5, 2, 1 μm	Ceramic	Calibration, JCSS	0,14
516-499	300, 100, 50, 20 μm	Ceramic	Inspection	0,14
516-499-24	300, 100, 50, 20 μm	Ceramic	Calibration, JCSS	0,14



Specifications

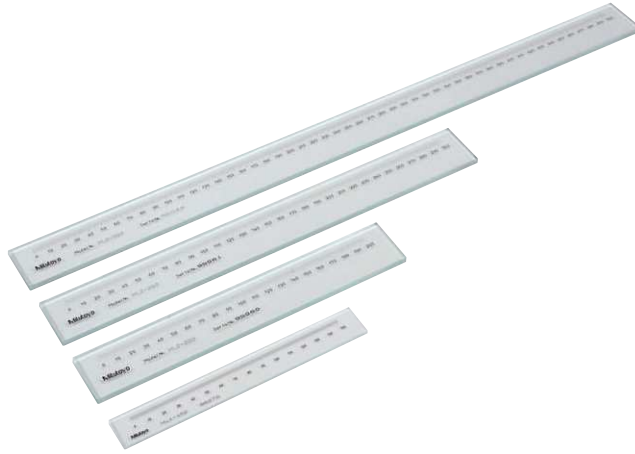
Accuracy	$(1,5+2L/1000) \mu\text{m}$ L = measured length (mm)
Material	Sodium glass
Thermal expansion coefficient	$(8\pm 1) \times 10^{-6}/\text{K}$

Glass Scales

Series 182

These high precision glass scales offer you the following benefits:

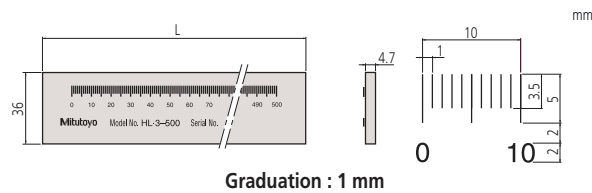
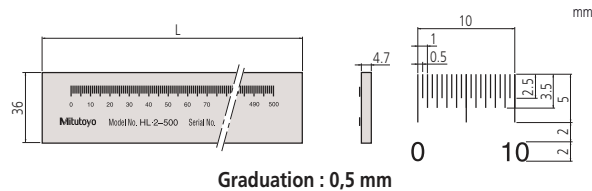
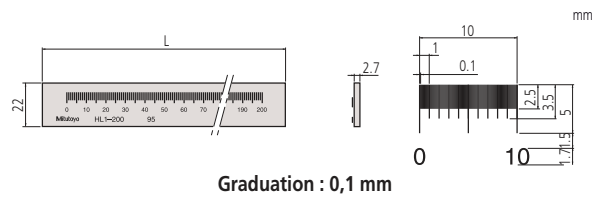
- They are manufactured using Mitutoyo's leading-edge Linear Scale production technology.
- They are ideal for checking the magnification accuracy of profile projectors and microscopes, as well as the table feed accuracy of measuring equipment.
- It is supplied in a fitted wooden case.
-



182-525-10 / 182-523-10 / 182-522-10 / 182-513-10

Metric

No.	Range [mm]	Graduation [mm]	Thickness of graduation line [μm]	L [mm]	Mass [kg]
182-511-10	0 - 50	0,1	20	75	0,23
182-512-10	0 - 100	0,1	20	125	0,24
182-521-10	0 - 100	0,5	50	130	0,27
182-513-10	0 - 150	0,1	20	175	0,35
182-514-10	0 - 200	0,1	20	225	0,36
182-522-10	0 - 200	0,5	50	230	0,32
182-531-10	0 - 250	1	100	280	0,55
182-523-10	0 - 300	0,5	50	330	0,57
182-524-10	0 - 400	0,5	50	430	0,71
182-525-10	0 - 500	0,5	50	530	0,86
182-532-10	0 - 500	1	100	530	0,86
182-533-10	0 - 750	1	100	780	1,22
182-534-10	0 - 1000	1	100	1030	1,54



Low Expansion Glass Scales

Series 182

These high precision glass scales offer you the following benefits:

- They are manufactured using Mitutoyo's leading-edge Linear Scale production technology.
- You can use them as a standard for calibrating graduating scales, with high accuracy.
- It is supplied in a fitted wooden case.
-



Specifications

Accuracy	$(0,5+L/1000) \mu\text{m}$ L = measured length (mm)
Graduation	1 mm
Thickness of graduation line	4 μm
Material	Low expansion glass
Thermal expansion coefficient	$(0\pm 0,02) \times 10^{-6}/\text{K}$

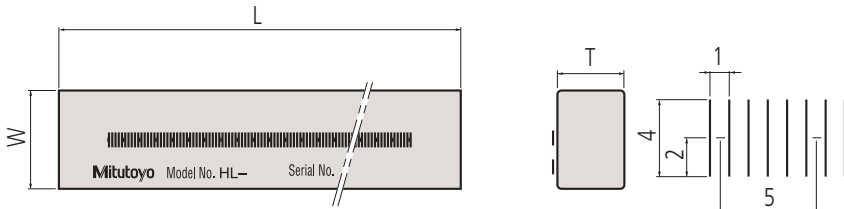


182-502-60
182-501-60

Metric

No.	Range [mm]	L [mm]	T [mm]	W [mm]	Certificate	Mass [kg]
182-501-50	0 - 250	280	10	20	Inspection	0,75
182-501-60	0 - 250	280	10	20	Calibration, JCSS	0,75
182-502-50	0 - 500	530	20	30	Inspection	1,8
182-502-60	0 - 500	530	20	30	Calibration, JCSS	1,8

mm



Calibration Testers

Series 170

This Calibration Tester offers you the following benefits:

- It enables you to test dial indicators, lever gauges and bore gauges with 0.01mm scale graduation.
- Bore gauges can be supported both horizontally and vertically.



Specifications

Graduation	0.001 mm
Measuring face	Carbide tipped, rotating
Clamping range	Ø 6/8 mm

Optional accessories

No.	Description
12AAK824	Support for Calibration Tester, Horizontal Application with Bore Gauges



Bore Gauge holder 12AAK821 is standard accessory



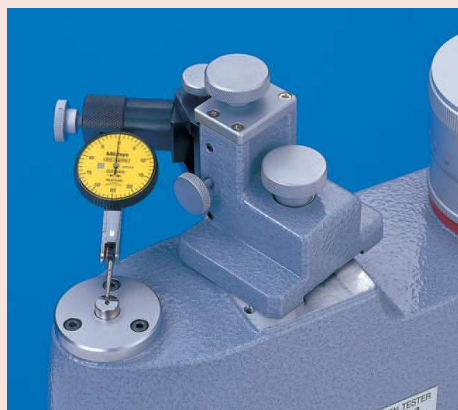
170-102-12

Metric

No.	Range [mm]	Spindle feed error [μm]	Hysteresis	Mass [kg]
170-102-12	0 - 25	± 2	0,5 μm	7,5

Specifications

Graduation	0.0002 mm
Measuring face	Carbide tipped, non rotating
Clamping range	Ø 4-10 mm



Series 521

This allows the calibration of digital and analogue indicators, lever gauges and measuring probes with a maximum measuring span of 5 mm.



521-105

Metric

No.	Range [mm]	Spindle feed error [μm]	Hysteresis	Mass [kg]
521-103	0 - 1	$\pm 0,2$	0,2 μm	7
521-105	0 - 5	$\pm 0,8$	0,8 μm	7,5

Calibration Testers i-Checker 2000

Series 170

- i-Checker is specially designed to calibrate dial indicators, dial test indicators, bore gauges, electronic digital indicator gauges and other electronic gauges.
- Inspection can be performed 2.5 times faster compared to the previous model.
- This instrument achieves the high accuracy and therefore guarantees ultra-reliable inspection results.
- Digital indicators equipped with a data output function are checked very efficiently due to spindle positioning at the inspection points and recording of measurement results being under fully automatic control.
- Analog type indicators are inspected in semi-automatic mode with the pointer of the indicator being manually adjusted at each measuring point with automatic transfer of inspection results and movement to the next measuring point.



170-402D
with optional accessories

Metric

No.	Range [mm]	Digital step	Accuracy	Mass
170-402D	0 - 100	0,01 μm	±(0,1+4L/1000) μm L = measured length (mm)	20 kg



Specifications

Power supply	100VAC to 240VAC ±10%, 50/60Hz
Max. drive speed	10 mm/s
Drive method	Motor drive, semi automatic, fully automatic only for indicator with data output
Scale	Linear encoder
PC connection	USB

Optional accessories

No.	Description
02ASK000	Test Indicator Accessory Set, I-Checker, For Ø6mm Stem
02ASK180	Test Indicator Accessory Set, I-Checker, For Ø8mm Stem
02ASK040	Stem Bush for I-Checker, For Ø6mm Stem
02ASL150	Stem Bush for I-Checker, For ø10mm Stem
02ASK060	Stem Bush for I-Checker, For Ø12mm Stem
02ASK070	Stem Bush for I-Checker, For Ø15mm Stem
02ASK080	Stem Bush for I-Checker, For Ø20mm Stem
02ASK710	Stem Bush for I-Checker, For Ø28mm Stem
02ASK090	Stem Bush for I-Checker, For Ø9,525mm (3/8") Stem
02ASU162	Cylinder Gauge Set, IC-2000



Calibration of Dial Test Indicator
(Lever Type) with optional accessories

Gauge Block Comparators GBCD-250

Series 565

This Manual Comparator with Dual Gauge Heads offers you the following benefits:

- It performs gauge block calibration according to EN ISO 3650.
- You can easily compare gauge blocks between 0,1 mm and 250 mm with reference gauge blocks.
- The upper and lower gauging heads give you of easy, high-accuracy measurement.



No.	Range [mm]	Measuring force [N]	Stroke [mm]	Measuring range	Resolution	Measuring unit	Mass [kg]
565-151D-01	0,1 - 250	0,4 N (upper) 0,2 N (lower)	10,5	0,2 - 8,2	0,001 μm	Linear Gauge (upper, lower)	55

Gauge Block Comparators GBCD-100A

Series 565

- It performs gauge block calibration according to EN ISO 3650
- Measures the length of rectangular gauge blocks in the size range 0,5 mm to 100 mm. It automatically compares a test block with an appropriate reference gauge block.
- The compensation result is not affected by any warping of thinner gauge blocks due to the use of upper and lower gage heads (dual-head system).
- Measurement configuration: 1 cycle of automatic comparison measurement with a standard gauge block.



No.	Range [mm]	Measuring force [N]	Resolution	Measuring unit
565-172	0,5 - 100	0,8 N (upper) 0,4 N (lower)	0,01 μm	Inductive probe (upper, lower)

Optional accessories

No.	Description
02ASW561	Software GB-PAK-A, Vers. 4X, for New GBCD-250 Installation, English Version
02ASF040	Heat Protection Shield, For GBCD-250
02ASP422	RS-232C Cable
02ASD130	Square Gauge Block Holder, For GBCD-250
601644	Cerastone for Gauge Blocks, 150x50x20mm
158-120	Optical Flat, 15mm, D=60mm, 0,1μm
516-650E	Maintenance Kit for Gauge Blocks
516-145-E2	Calibration Master for GB-Comparator, 11pcs., Refer to EA-10/02

Optional accessories

No.	Description
02ASW551	Software GB-PAK-A, Vers. 4X, for New GBCD-100A Installation, English Version
601644	Cerastone for Gauge Blocks, 150x50x20mm
601645	Cerastone for Gauge Blocks, 100x25x12mm
158-117	Optical Flat, 12mm, D=45mm, 0,2μm
613615-031	Gauge Block, Metric, Inspection Cert., ISO, Grade 1, Ceramic, 5mm
516-650E	Maintenance Kit for Gauge Blocks
516-146-E2	Calibration Master for GB-Comparator, 12pcs., Eng., GBCD, Cal. Cert., Trace.
02ASQ324	Square Gauge Block Holder, For GBCD-100A

Steel Gauge Block Sets
Page 329



Steel Individual Gauge Blocks
Page 337



Ceramic Gauge Block Sets
Page 339



Ceramic Individual Gauge Blocks
Page 346



Special Gauge Blocks
Page 347



Accessories for ISO Gauge Blocks
Page 349



Steel Metric Gauge Block Sets Overview

Mitutoyo provides a wide selection of boxed sets of gauge blocks to meet the various needs of industry. Selecting the best set, or sets, to acquire usually depends on the accuracy required by the target applications, the level of convenience desired and the environmental conditions in which they will be used.



Steel 32-block set



Steel 34-block set



Steel 46-block set



Steel 47-block set



Steel 56-block set



Steel 76-block set



Steel 87-block set



Steel 88-block set



Steel 103-block set



Steel 112-block set

Steel Metric Gauge Block Sets Grade K with ISO JCSS Certificate

Grade K with ISO JCSS Certificate



Calibration Certificate

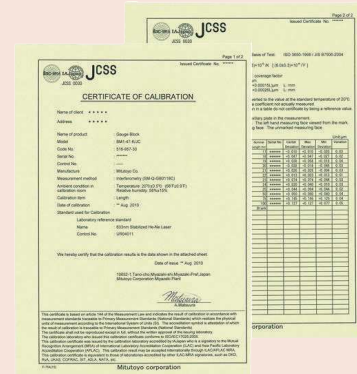
Metric

No.	Blocks per set	Grade	Material	Set configuration	Mass [g]
516-596-60	122	K	Steel	1,0005 mm (1 block) 1,001-1,009 mm (0,001 mm step / 9 blocks) 1,01-1,49 mm (0,01 mm step / 49 blocks) 1,6-1,9 mm (0,1 mm step / 4 blocks) 0,5-24,5 mm (0,5 mm step / 49 blocks) 30-100 mm (10 mm step / 8 blocks) 25, 75 mm (50 mm step / 2 blocks)	3700
516-937-60	112	K	Steel	1,0005 mm (1 block) 1,001-1,009 mm (0,001 mm step / 9 blocks) 1,01-1,49 mm (0,01 mm step / 49 blocks) 0,5-24,5 mm (0,5 mm step / 49 blocks) 25-100 mm (25 mm step / 4 blocks)	3700
516-941-60	103	K	Steel	1005 mm (1 block) 1,01-1,49 mm (0,01 mm step / 49 blocks) 0,5-24,5 mm (0,5 mm step / 49 blocks) 25-100 mm (25 mm step / 4 blocks)	3800
516-945-60	87	K	Steel	1,001-1,009 mm (0,001 mm step / 9 blocks) 1,01-1,49 mm (0,01 mm step / 49 blocks) 0,5-9,5 mm (0,5 mm step / 19 blocks) 10-100 mm (10 mm step / 10 blocks)	3300
516-949-60	76	K	Steel	1,005 mm (1 block) 1,01-1,49 mm (0,01 mm step / 49 blocks) 0,5-9,5 mm (0,5 mm step / 19 blocks) 10-40 mm (10 mm step / 4 blocks) 50-100 mm (25 mm step / 3 blocks)	2400
516-953-60	56	K	Steel	0,5 mm (1 block) 1,001-1,009 mm (0,001 mm step / 9 blocks) 1,01-1,09 mm (0,01 mm step / 9 blocks) 1,1-1,9 mm (0,1 mm step / 9 blocks) 1-24 mm (1 mm step / 24 blocks) 25-100 mm (25 mm step / 4 blocks)	2600
516-957-60	47	K	Steel	1,005 mm (1 block) 1,01-1,09 mm (0,01 mm step / 9 blocks) 1,1-1,9 mm (0,1 mm step / 9 blocks) 1-24 mm (1 mm step / 24 blocks) 25-100 mm (25 mm step / 4 blocks)	2400
516-961-60	47	K	Steel	1005 mm (1 block) 1,01-1,19 mm (0,01 mm step / 19 blocks) 1,2-1,9 mm (0,1 mm step / 8 blocks) 1-9 mm (1 mm step / 9 blocks) 10-100 mm (10 mm step / 10 blocks)	2800
516-994-60	46	K	Steel	1,001-1,009 mm (0,001 mm step / 9 blocks) 1,01-1,09 mm (0,01 mm step / 9 blocks) 1,1-1,9 mm (0,1 mm step / 9 blocks) 1-9 mm (1 mm step / 9 blocks) 10-100 mm (10 mm step / 10 blocks)	2800
516-128-60	34	K	Steel	1,0005 mm (1 block) 1,001-1,009 mm (0,001 mm step / 9 blocks) 1,01-1,09 mm (0,01 mm step / 9 blocks) 1,1-1,9 mm (0,1 mm step / 9 blocks) 1-5 mm (1 mm step / 5 blocks) 10 mm (1 block)	1200
516-965-60	32	K	Steel	1005 mm (1 block) 1,01-1,09 mm (0,01 mm step / 9 blocks) 1,1-1,9 mm (0,1 mm step / 9 blocks) 1-9 mm (1 mm step / 9 blocks) 10-30 mm (10 mm step / 3 blocks) 60 mm (1 block)	1100

Specifications

Accuracy

EN ISO 3650



JCSS Calibration Certificate

These Gauge Block Sets are delivered with a JCSS Certificate of Calibration (Japan Calibration Service System).

A JCSS Certificate of Calibration is comparable with e.g. DAKKS COFRAC, RVA or UKAS Certificate of Calibration.

This calibration result is accepted internationally.

Steel Metric Gauge Block Sets Grade 0 with ISO Inspection Certificate

Grade 0 with ISO Inspection Certificate

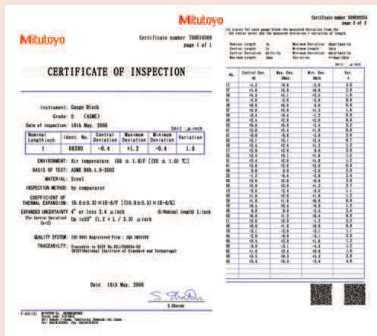
Specifications

Accuracy

EN ISO 3650



Inspection Certificate



Inspection Certificate

Grad K/0/1/2 Gauge Block Sets with JCSS Calibration Certificate (issued by the Mitutoyo JCSS accredited laboratory) see online.

Metric

No.	Blocks per set	Grade	Material	Set configuration	Mass [g]
516-597-10	122	0	Steel	1,0005 mm (1 block) 1,001-1,009 mm (0,001 mm step / 9 blocks) 1,01-1,49 mm (0,01 mm step / 49 blocks) 1,6-1,9 mm (0,1 mm step / 4 blocks) 0,5-24,5 mm (0,5 mm step / 49 blocks) 30-100 mm (10 mm step / 8 blocks) 25, 75 mm (50 mm step / 2 blocks)	3700
516-938-10	112	0	Steel	1,0005 mm (1 block) 1,001-1,009 mm (0,001 mm step / 9 blocks) 1,01-1,49 mm (0,01 mm step / 49 blocks) 0,5-24,5 mm (0,5 mm step / 49 blocks) 25-100 mm (25 mm step / 4 blocks)	3700
516-942-10	103	0	Steel	1,005 mm (1 block) 1,01-1,49 mm (0,01 mm step / 49 blocks) 0,5-24,5 mm (0,5 mm step / 49 blocks) 25-100 mm (25 mm step / 4 blocks)	3800
516-970-10	88	0	Steel	1,0005 mm (1 block) 1,001-1,009 mm (0,001 mm step / 9 blocks) 1,01-1,49 mm (0,01 mm step / 49 blocks) 0,5-9,5 mm (0,5 mm step / 19 blocks) 10-100 mm (10 mm step / 10 blocks)	3300
516-946-10	87	0	Steel	1,001-1,009 mm (0,001 mm step / 9 blocks) 1,01-1,49 mm (0,01 mm step / 49 blocks) 0,5-9,5 mm (0,5 mm step / 19 blocks) 10-100 mm (10 mm step / 10 blocks)	3300
516-950-10	76	0	Steel	1,005 mm (1 block) 1,01-1,49 mm (0,01 mm step / 49 blocks) 0,5-9,5 mm (0,5 mm step / 19 blocks) 10-40 mm (10 mm step / 4 blocks) 50-100 mm (25 mm step / 3 blocks)	2400
516-954-10	56	0	Steel	0,5 mm (1 block) 1,001-1,009 mm (0,001 mm step / 9 blocks) 1,01-1,09 mm (0,01 mm step / 9 blocks) 1,1-1,9 mm (0,1 mm step / 9 blocks) 1-24 mm (1 mm step / 24 blocks) 25-100 mm (25 mm step / 4 blocks)	2080
516-958-10	47	0	Steel	1,005 mm (1 block) 1,01-1,09 mm (0,01 mm step / 9 blocks) 1,1-1,9 mm (0,1 mm step / 9 blocks) 1-24 mm (1 mm step / 24 blocks) 25-100 mm (25 mm step / 4 blocks)	2400
516-962-10	47	0	Steel	1,005 mm (1 block) 1,01-1,19 mm (0,01 mm step / 19 blocks) 1,2-1,9 mm (0,1 mm step / 8 blocks) 1-9 mm (1 mm step / 9 blocks) 10-100 mm (10 mm step / 10 blocks)	2800
516-995-10	46	0	Steel	1,001-1,009 mm (0,001 mm step / 9 blocks) 1,01-1,09 mm (0,01 mm step / 9 blocks) 1,1-1,9 mm (0,1 mm step / 9 blocks) 1-9 mm (1 mm step / 9 blocks) 10-100 mm (10 mm step / 10 blocks)	2800
516-129-10	34	0	Steel	1,0005 mm (1 block) 1,001-1,009 mm (0,001 mm step / 9 blocks) 1,01-1,09 mm (0,01 mm step / 9 blocks) 1,1-1,9 mm (0,1 mm step / 9 blocks) 1-5 mm (1 mm step / 5 blocks) 10 mm (1 block)	1200
516-966-10	32	0	Steel	1,005 mm (1 block) 1,01-1,09 mm (0,01 mm step / 9 blocks) 1,1-1,9 mm (0,1 mm step / 9 blocks) 1-9 mm (1 mm step / 9 blocks) 10-30 mm (10 mm step / 3 blocks) 60 mm (1 block)	1100

Steel Metric Gauge Block Sets Grade 1 with ISO Inspection Certificate

Grade 1 with ISO Inspection Certificate



Inspection Certificate

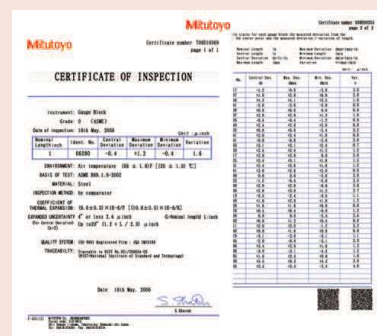
Metric

No.	Blocks per set	Grade	Material	Set configuration	Mass [g]
516-598-10	122	1	Steel	1,0005 mm (1 block) 1,001-1,009 mm (0,001 mm step / 9 blocks) 1,01-1,49 mm (0,01 mm step / 49 blocks) 1,6-1,9 mm (0,1 mm step / 4 blocks) 0,5-24,5 mm (0,5 mm step / 49 blocks) 30-100 mm (10 mm step / 8 blocks) 25, 75 mm (50 mm step / 2 blocks)	3700
516-939-10	112	1	Steel	1,0005 mm (1 block) 1,001-1,009 mm (0,001 mm step / 9 blocks) 1,01-1,49 mm (0,01 mm step / 49 blocks) 0,5-24,5 mm (0,5 mm step / 49 blocks) 25-100 mm (25 mm step / 4 blocks)	3700
516-943-10	103	1	Steel	1,005 mm (1 block) 1,01-1,49 mm (0,01 mm step / 49 blocks) 0,5-24,5 mm (0,5 mm step / 49 blocks) 25-100 mm (25 mm step / 4 blocks)	3800
516-971-10	88	1	Steel	1,0005 mm (1 block) 1,001-1,009 mm (0,001 mm step / 9 blocks) 1,01-1,49 mm (0,01 mm step / 49 blocks) 0,5-9,5 mm (0,5 mm step / 19 blocks) 10-100 mm (10 mm step / 10 blocks)	3300
516-947-10	87	1	Steel	1,001-1,009 mm (0,001 mm step / 9 blocks) 1,01-1,49 mm (0,01 mm step / 49 blocks) 0,5-9,5 mm (0,5 mm step / 19 blocks) 10-100 mm (10 mm step / 10 blocks)	3300
516-951-10	76	1	Steel	1,005 mm (1 block) 1,01-1,49 mm (0,01 mm step / 49 blocks) 0,5-9,5 mm (0,5 mm step / 19 blocks) 10-40 mm (10 mm step / 4 blocks) 50-100 mm (25 mm step / 3 blocks)	2400
516-955-10	56	1	Steel	0,5 mm (1 block) 1,001-1,009 mm (0,001 mm step / 9 blocks) 1,01-1,09 mm (0,01 mm step / 9 blocks) 1,1-1,9 mm (0,1 mm step / 9 blocks) 1-24 mm (1 mm step / 24 blocks) 25-100 mm (25 mm step / 4 blocks)	2600
516-959-10	47	1	Steel	1,005 mm (1 block) 1,01-1,09 mm (0,01 mm step / 9 blocks) 1,1-1,9 mm (0,1 mm step / 9 blocks) 1-24 mm (1 mm step / 24 blocks) 25-100 mm (25 mm step / 4 blocks)	2400
516-963-10	47	1	Steel	1,005 mm (1 block) 1,01-1,19 mm (0,01 mm step / 19 blocks) 1,2-1,9 mm (0,1 mm step / 8 blocks) 1-9 mm (1 mm step / 9 blocks) 10-100 mm (10 mm step / 10 blocks)	2800
516-996-10	46	1	Steel	1,001-1,009 mm (0,001 mm step / 9 blocks) 1,01-1,09 mm (0,01 mm step / 9 blocks) 1,1-1,9 mm (0,1 mm step / 9 blocks) 1-9 mm (1 mm step / 9 blocks) 10-100 mm (10 mm step / 10 blocks)	2800
516-130-10	34	1	Steel	1,0005 mm (1 block) 1,001-1,009 mm (0,001 mm step / 9 blocks) 1,01-1,09 mm (0,01 mm step / 9 blocks) 1,1-1,9 mm (0,1 mm step / 9 blocks) 1-5 mm (1 mm step / 5 blocks) 10 mm (1 block)	1200
516-967-10	32	1	Steel	1,005 mm (1 block) 1,01-1,09 mm (0,01 mm step / 9 blocks) 1,1-1,9 mm (0,1 mm step / 9 blocks) 1-9 mm (1 mm step / 9 blocks) 10-30 mm (10 mm step / 3 blocks) 60 mm (1 block)	1100

Specifications

Accuracy

EN ISO 3650



Inspection Certificate

Grad K/0/1/2 Gauge Block Sets with JCSS Calibration Certificate (issued by the Mitutoyo JCSS accredited laboratory) see online.

Steel Metric Gauge Block Sets Grade 2 with ISO Inspection Certificate

Grade 2 with ISO Inspection Certificate

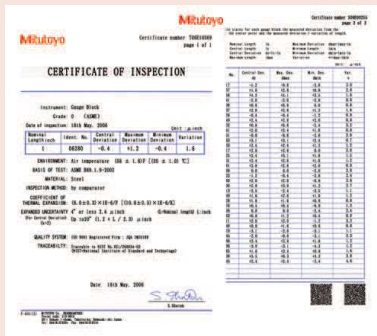
Specifications

Accuracy

EN ISO 3650



Inspection Certificate



Inspection Certificate

Grad K/0/1/2 Gauge Block Sets with JCSS Calibration Certificate (issued by the Mitutoyo JCSS accredited laboratory) see online.

Metric

No.	Blocks per set	Grade	Material	Set configuration	Mass [g]
516-599-10	122	2	Steel	1,0005 mm (1 block) 1,001-1,009 mm (0,001 mm step / 9 blocks) 1,01-1,49 mm (0,01 mm step / 49 blocks) 1,6-1,9 mm (0,1 mm step / 4 blocks) 0,5-24,5 mm (0,5 mm step / 49 blocks) 30-100 mm (10 mm step / 8 blocks) 25, 75 mm (50 mm step / 2 blocks)	3700
516-940-10	112	2	Steel	1,0005 mm (1 block) 1,001-1,009 mm (0,001 mm step / 9 blocks) 1,01-1,49 mm (0,01 mm step / 49 blocks) 0,5-24,5 mm (0,5 mm step / 49 blocks) 25-100 mm (25 mm step / 4 blocks)	3700
516-944-10	103	2	Steel	1,005 mm (1 block) 1,01-1,49 mm (0,01 mm step / 49 blocks) 0,5-24,5 mm (0,5 mm step / 49 blocks) 25-100 mm (25 mm step / 4 blocks)	3800
516-972-10	88	2	Steel	1,0005 mm (1 block) 1,001-1,009 mm (0,001 mm step / 9 blocks) 1,01-1,49 mm (0,01 mm step / 49 blocks) 0,5-9,5 mm (0,5 mm step / 19 blocks) 10-100 mm (10 mm step / 10 blocks)	3300
516-948-10	87	2	Steel	1,001-1,009 mm (0,001 mm step / 9 blocks) 1,01-1,49 mm (0,01 mm step / 49 blocks) 0,5-9,5 mm (0,5 mm step / 19 blocks) 10-100 mm (10 mm step / 10 blocks)	3300
516-952-10	76	2	Steel	1,005 mm (1 block) 1,01-1,49 mm (0,01 mm step / 49 blocks) 0,5-9,5 mm (0,5 mm step / 19 blocks) 10-40 mm (10 mm step / 4 blocks) 50-100 mm (25 mm step / 3 blocks)	2400
516-956-10	56	2	Steel	0,5 mm (1 block) 1,001-1,009 mm (0,001 mm step / 9 blocks) 1,01-1,09 mm (0,01 mm step / 9 blocks) 1,1-1,9 mm (0,1 mm step / 9 blocks) 1-24 mm (1 mm step / 24 blocks) 25-100 mm (25 mm step / 4 blocks)	2600
516-960-10	47	2	Steel	1,005 mm (1 block) 1,01-1,09 mm (0,01 mm step / 9 blocks) 1,1-1,9 mm (0,1 mm step / 9 blocks) 1-24 mm (1 mm step / 24 blocks) 25-100 mm (25 mm step / 4 blocks)	2400
516-964-10	47	2	Steel	1,005 mm (1 block) 1,01-1,19 mm (0,01 mm step / 19 blocks) 1,2-1,9 mm (0,1 mm step / 8 blocks) 1-9 mm (1 mm step / 9 blocks) 10-100 mm (10 mm step / 10 blocks)	2800
516-997-10	46	2	Steel	1,001-1,009 mm (0,001 mm step / 9 blocks) 1,01-1,09 mm (0,01 mm step / 9 blocks) 1,1-1,9 mm (0,1 mm step / 9 blocks) 1-9 mm (1 mm step / 9 blocks) 10-100 mm (10 mm step / 10 blocks)	2800
516-131-10	34	2	Steel	1,0005 mm (1 block) 1,001-1,009 mm (0,001 mm step / 9 blocks) 1,01-1,09 mm (0,01 mm step / 9 blocks) 1,1-1,9 mm (0,1 mm step / 9 blocks) 1-5 mm (1 mm step / 5 blocks) 10 mm (1 block)	1200
516-968-10	32	2	Steel	1,005 mm (1 block) 1,01-1,09 mm (0,01 mm step / 9 blocks) 1,1-1,9 mm (0,1 mm step / 9 blocks) 1-9 mm (1 mm step / 9 blocks) 10-30 mm (10 mm step / 3 blocks) 60 mm (1 block)	1100

Steel Gauge Blocks - Thin Block Sets with 0,001/0,05 mm step and ISO Inspection Certificate

With ISO Inspection Certificate



Inspection Certificate



Metric

No.	Blocks per set	Grade	Material	Set configuration	Mass [g]
516-974-10	18	0	Steel	0,991-0,999 mm (0,001 mm step / 9 blocks) 1,001-1,009 mm (0,001 mm step / 9 blocks)	500
516-975-10	18	1	Steel	0,991-0,999 mm (0,001 mm step / 9 blocks) 1,001-1,009 mm (0,001 mm step / 9 blocks)	500
516-976-10	18	2	Steel	0,991-0,999 mm (0,001 mm step / 9 blocks) 1,001-1,009 mm (0,001 mm step / 9 blocks)	500
516-982-10	9	0	Steel	1,001-1,009 mm (0,001 mm step / 9 blocks)	200
516-983-10	9	1	Steel	1,001-1,009 mm (0,001 mm step / 9 blocks)	200
516-984-10	9	2	Steel	1,001-1,009 mm (0,001 mm step / 9 blocks)	200
516-986-10	9	0	Steel	0,991-0,999 mm (0,001 mm step / 9 blocks)	200
516-987-10	9	1	Steel	0,991-0,999 mm (0,001 mm step / 9 blocks)	200
516-988-10	9	2	Steel	0,991-0,999 mm (0,001 mm step / 9 blocks)	200
516-990-10	9	0	Steel	0,10-0,50 mm (0,05 mm step / 9 blocks)	200
516-991-10	9	1	Steel	0,10-0,50 mm (0,05 mm step / 9 blocks)	200
516-992-10	9	2	Steel	0,10-0,50 mm (0,05 mm step / 9 blocks)	200

Steel Gauge Blocks - Long Block Sets with ISO Inspection Certificate

With ISO Inspection Certificate



Inspection Certificate



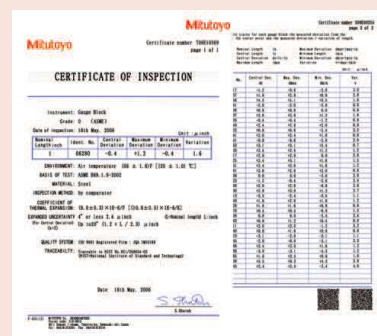
Metric

No.	Blocks per set	Grade	Material	Set configuration	Mass [g]
516-702-10	8	0	Steel	125-175 mm (25 mm step / 3 blocks) 200-250 mm (50 mm step / 2 blocks) 300-500 mm (100 mm step / 3 blocks)	7200
516-703-10	8	1	Steel	125-175 mm (25 mm step / 3 blocks) 200-250 mm (50 mm step / 2 blocks) 300-500 mm (100 mm step / 3 blocks)	7200
516-704-10	8	2	Steel	125-175 mm (25 mm step / 3 blocks) 200-250 mm (50 mm step / 2 blocks) 300-500 mm (100 mm step / 3 blocks)	7200

Specifications

Accuracy

EN ISO 3650



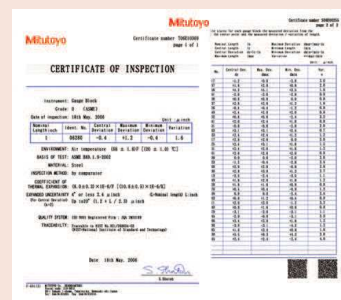
Inspection Certificate

Grad K/0/1/2 Gauge Block Sets with JCSS Calibration Certificate (issued by the Mitutoyo JCSS accredited laboratory) see online.

Specifications

Accuracy

EN ISO 3650



Inspection Certificate

Grad K/0/1/2 Gauge Block Sets with JCSS Calibration Certificate (issued by the Mitutoyo JCSS accredited laboratory) see online.

Carbide Wear Gauge Block Sets Metric ISO Standard

Wear Block Sets Metric with ISO Inspection Certificate

This set is made up of two gauge blocks and offers you the following benefits:

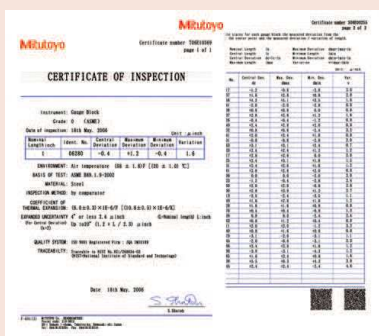
- Wear-resistant even with frequent use of individual gauge blocks



Inspection Certificate

Specifications

Accuracy EN ISO 3650



Inspection Certificate



Metric

No.	Blocks per set	Grade	Material	Set configuration	Mass [g]
516-807-10	2	0	Carbide	1 mm (2 blocks)	200
516-806-10	2	1	Carbide	1 mm (2 blocks)	200
516-803-10	2	0	Carbide	2 mm (2 blocks)	200
516-802-10	2	1	Carbide	2 mm (2 blocks)	200

Steel Caliper Inspection Gauge Block Sets Metric

Caliper Inspection Sets Metric



Inspection Certificate

Specifications

Accuracy Accuracy EN ISO 3650
Delivered In a wooden case with certificate of inspection (Gauge Blocks only)



516-124-10

516-527-10

Metric

No.	Blocks per set	Grade	Material	Calibration/Standard applications	Set configuration	Mass [g]
516-124-10	3	1	Steel	DIN 862:1988 VDI/VDE/DGQ 2618	3pcs.: 30, 41,3, 131,4 mm, Setting ring (ø4 mm, ø25 mm), Glove	1720
516-125-10	3	2	Steel	DIN 862:1988 VDI/VDE/DGQ 2618	3pcs.: 30, 41,3, 131,4 mm, Setting ring (ø4 mm, ø25 mm), Glove	1720
516-526-10	4	1	Steel	EN ISO 13385-1:2011	4pcs.: 10, 30, 50, 125 mm, Setting ring (ø4 mm, ø10 mm), Pin gage (ø10 mm), Glove	1720
516-527-10	4	2	Steel	EN ISO 13385-1:2011	4pcs.: 10, 30, 50, 125 mm, Setting ring (ø4 mm, ø10 mm), Pin gage (ø10 mm), Glove	1800

Steel Micrometer Inspection Gauge Block Sets Metric

Series 516 - Micro Checker

- For securely holding a stack of gauge blocks to be used for micrometer inspection.
- Can be used vertically and horizontally.
- Parallelism of micrometer measuring faces is checked by optical parallel which can be attached.



516-607

Metric Micro Checker (stand only)

No.	Applicable gauge block sets	Applicable gauge block size [mm]	Mass [g]
516-607	516-106-xx, 516-107-xx, 516-108-xx, 516-156-xx, 516-157-xx, 516-158-xx	2,5 / 5,1 / 7,7 / 10,3 / 12,9 / 15 / 17,6 / 20,2 / 22,8 / 25	1300

Micrometer Inspection Sets Metric



Inspection Certificate

Metric With inspection certificate

No.	Blocks per set	Grade	Material	Calibration/Standard applications	Set configuration	Mass [g]
516-580-10	10	0	Steel	For Micrometer with 2 mm spindle pitch. (QuantuMike)	2,2, 4,8, 7,8, 10,4, 12, 15,2, 17,4, 19,6, 22,6, 25 mm	900
516-581-10	10	1	Steel	For Micrometer with 2 mm spindle pitch. (QuantuMike)	2,2, 4,8, 7,8, 10,4, 12, 15,2, 17,4, 19,6, 22,6, 25 mm	900
516-582-10	10	2	Steel	For Micrometer with 2 mm spindle pitch. (QuantuMike)	2,2, 4,8, 7,8, 10,4, 12, 15,2, 17,4, 19,6, 22,6, 25 mm	900
516-106-10	10	0	Steel	EN ISO 3611 DIN 863 (1999) VDI/VDE/DGQ 2618	2,5, 5,1, 7,7, 10,3, 12,9, 15, 17,6, 20,2, 22,8, 25 mm, Optical parallel (t = 12 mm)	1000
516-107-10	10	1	Steel	EN ISO 3611 DIN 863 (1999) VDI/VDE/DGQ 2618	2,5, 5,1, 7,7, 10,3, 12,9, 15, 17,6, 20,2, 22,8, 25 mm, Optical parallel (t = 12 mm)	970
516-108-10	10	2	Steel	EN ISO 3611 DIN 863 (1999) VDI/VDE/DGQ 2618	2,5, 5,1, 7,7, 10,3, 12,9, 15, 17,6, 20,2, 22,8, 25 mm, Optical parallel (t = 12 mm)	1000
516-135-10	10	0	Steel	EN ISO 3611 DIN 863 (1999) VDI/VDE/DGQ 2618	2,5, 5,1, 7,7, 10,3, 12,9, 15, 17,6, 20,2, 22,8, 25 mm, Micro Checker, Optical parallel (t = 12 mm)	2900
516-136-10	10	1	Steel	EN ISO 3611 DIN 863 (1999) VDI/VDE/DGQ 2618	2,5, 5,1, 7,7, 10,3, 12,9, 15, 17,6, 20,2, 22,8, 25 mm, Micro Checker, Optical parallel (t = 12 mm)	2900
516-137-10	10	2	Steel	EN ISO 3611 DIN 863 (1999) VDI/VDE/DGQ 2618	2,5, 5,1, 7,7, 10,3, 12,9, 15, 17,6, 20,2, 22,8, 25 mm, Micro Checker, Optical parallel (t = 12 mm)	2900



516-607 with optional gauge blocks

Specifications

Accuracy	EN ISO 3650
Delivered	In a wooden case with certificate of inspection (Gauge Blocks only)



516-135-10

Grad K/0/1/2 Gauge Block Sets with JCSS Calibration Certificate (issued by the Mitutoyo JCSS accredited laboratory) see online.

Steel Metric Individual Gauge Blocks

Metric Blocks ≤ 1.19 mm

Ordering example: To order a 0.1mm ISO Standard grade 1 block with JCSS calibration certificate, choose No. 611821-036.



Calibration Certificate



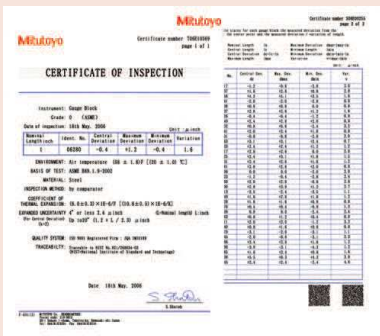
Inspection Certificate

Specifications

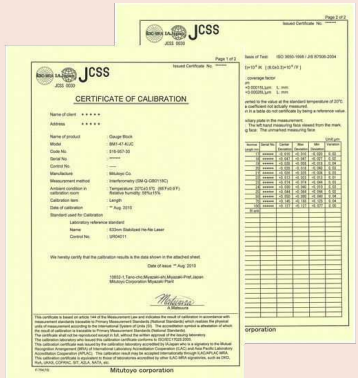
Accuracy	EN ISO 3650
Delivered	Foamed material 0,1-500 mm in a wooden case 600-1000 mm

Suffix No. (-XXX)
for Selecting Certificate Provided

ISO/DIN/JIS			
Suffix No.	Grade	Inspection Certificate	Calibration Certificate
			JCSS
-016	K	○	○
-021	0	○	—
-026	0	○	○
-031	1	○	—
-036	1	○	○
-041	2	○	—
-046	2	○	○



Inspection Certificate



JCSS Calibration Certificate

These Gauge Block Sets are delivered with a JCSS Certificate of Calibration (Japan Calibration Service System).

A JCSS Certificate of Calibration is comparable with e.g. DAkkS COFRAC, RVA or UKAS Certificate of Calibration.

This calibration result is accepted internationally.

Length [mm]	No.
0,1	611821
0,11	611860
0,12	611861
0,13	611862
0,14	611863
0,15	611822
0,16	611864
0,17	611865
0,18	611866
0,19	611867
0,2	611823
0,21	611868
0,22	611869
0,23	611870
0,24	611871
0,25	611824
0,26	611872
0,27	611873
0,28	611874
0,29	611875
0,3	611825
0,31	611876
0,32	611877
0,33	611878
0,34	611879
0,35	611826
0,36	611880
0,37	611881
0,38	611882
0,39	611883
0,4	611827
0,41	611884
0,42	611885
0,43	611886
0,44	611887
0,45	611828
0,46	611888
0,47	611889
0,48	611890
0,49	611891
0,5	611506
0,51	611892
0,52	611893

Length [mm]	No.
0,53	611894
0,54	611895
0,55	611896
0,56	611897
0,57	611898
0,58	611899
0,59	611900
0,6	611901
0,61	611902
0,62	611903
0,63	611904
0,64	611905
0,65	611906
0,66	611907
0,67	611908
0,68	611909
0,69	611910
0,7	611911
0,71	611912
0,72	611913
0,73	611914
0,74	611915
0,75	611916
0,76	611917
0,77	611918
0,78	611919
0,79	611920
0,8	611921
0,81	611922
0,82	611923
0,83	611924
0,84	611925
0,85	611926
0,86	611927
0,87	611928
0,88	611929
0,89	611930
0,9	611931
0,91	611932
0,92	611933
0,93	611934
0,94	611935
0,95	611936

Length [mm]	No.
0,96	611937
0,97	611938
0,98	611939
0,99	611940
0,991	611551
0,992	611552
0,993	611553
0,994	611554
0,995	611555
0,996	611556
0,997	611557
0,998	611558
0,999	611559
1	611611
1,0005	611520
1,001	611521
1,002	611522
1,003	611523
1,004	611524
1,005	611525
1,006	611526
1,007	611527
1,008	611528
1,009	611529
1,01	611561
1,02	611562
1,03	611563
1,04	611564
1,05	611565
1,06	611566
1,07	611567
1,08	611568
1,09	611569
1,1	611570
1,11	611571
1,12	611572
1,13	611573
1,14	611574
1,15	611575
1,16	611576
1,17	611577
1,18	611578
1,19	611579

Steel Metric Individual Gauge Blocks

Metric Blocks ≤ 1000 mm

Ordering example: To order a 1,2 mm ISO Standard grade K block with JCSS calibration certificate, choose 611580-016.



Inspection Certificate



Calibration Certificate

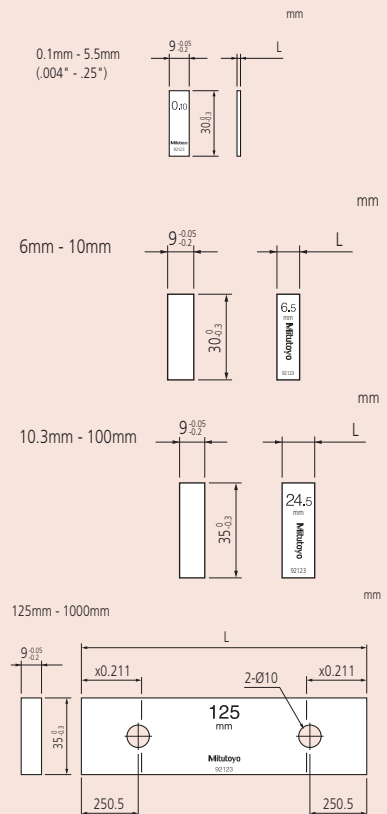
Length [mm]	No.
1,2	611580
1,21	611581
1,22	611582
1,23	611583
1,24	611584
1,25	611585
1,26	611586
1,27	611587
1,28	611588
1,29	611589
1,3	611590
1,31	611591
1,32	611592
1,33	611593
1,34	611594
1,35	611595
1,36	611596
1,37	611597
1,38	611598
1,39	611599
1,4	611600
1,41	611601
1,42	611602
1,43	611603
1,44	611604
1,45	611605
1,46	611606
1,47	611607
1,48	611608
1,49	611609
1,5	611641
1,6	611516
1,7	611517
1,8	611518
1,9	611519
2	611612
2,0005	611690
2,001	611691
2,002	611692
2,003	611693
2,004	611694
2,005	611695
2,006	611696
2,007	611697
2,008	611698
2,009	611699
2,01	611701
2,02	611702
2,03	611703
2,04	611704
2,05	611705
2,06	611706
2,07	611707
2,08	611708
2,09	611709
2,1	611710
2,11	611711
2,12	611712
2,13	611713
2,14	611714

Length [mm]	No.
2,15	611715
2,16	611716
2,17	611717
2,18	611718
2,19	611719
2,2	611720
2,21	611721
2,22	611722
2,23	611723
2,24	611724
2,25	611725
2,26	611726
2,27	611727
2,28	611728
2,29	611729
2,3	611730
2,31	611731
2,32	611732
2,33	611733
2,34	611734
2,35	611735
2,36	611736
2,37	611737
2,38	611738
2,39	611739
2,4	611740
2,41	611741
2,42	611742
2,43	611743
2,44	611744
2,45	611745
2,46	611746
2,47	611747
2,48	611748
2,49	611749
2,5	611642
2,6	611750
2,7	611751
2,8	611752
2,9	611753
3	611613
3,5	611643
4	611614
4,5	611644
5	611615
5,1	611850
5,5	611645
6	611616
6,5	611646
7	611617
7,5	611647
7,7	611851
8	611618
8,5	611648
9	611619
9,5	611649
10	611671
10,3	611852
10,5	611650
11	611621

Length [mm]	No.
11,5	611651
12	611622
12,5	611652
12,9	611853
13	611623
13,5	611653
14	611624
14,5	611654
15	611625
15,5	611655
16	611626
16,5	611656
17	611627
17,5	611657
17,6	611854
18	611628
18,5	611658
19	611629
19,5	611659
20	611672
20,2	611855
20,5	611660
21	611631
21,5	611661
22	611632
22,5	611662
22,8	611856
23	611633
23,5	611663
24	611634
24,5	611664
25	611635
25,25	611754
30	611673
35	611755
40	611674
41,3	611857
45	611756
50	611675
60	611676
70	611677
75	611801
80	611678
90	611679
100	611681
125	611802
131,4	611858
150	611803
175	611804
200	611682
250	611805
300	611683
400	611684
500	611685
600	611840
700	611841
750	611842
800	611843
900	611844
1000	611845

Suffix No. (-XXX)
for Selecting Certificate Provided

Suffix No.	Grade	Inspection Certificate	Calibration Certificate
			JCSS
-016	K	○	○
-021	0	○	—
-026	0	○	○
-031	1	○	—
-036	1	○	○
-041	2	○	—
-046	2	○	○



Ceramic Metric Gauge Block Sets Overview

Mitutoyo provides a wide selection of boxed sets of gauge blocks to meet the various needs of industry. Selecting the best set, or sets, to acquire usually depends on the accuracy required by the target applications, the level of convenience desired and the environmental conditions in which they will be used.



CERA 32-block set



CERA 34-block set



CERA 46-block set



CERA 47-block set



CERA 56-block set



CERA 76-block set



CERA 103-block set



CERA 112-block set

Ceramic Gauge Block Sets Grade 0 with Inspection Certificate

Grade 0 with Inspection Certificate



Inspection Certificate

Specifications

Accuracy

EN ISO 3650

Metric

No.	Blocks per set	Grade	Material	Set configuration	Mass [g]
516-338-10	112	0	Ceramic	1,0005 mm (1 block) 1,001-1,009 mm (0,001 mm step / 9 blocks) 1,01-1,49 mm (0,01 mm step / 49 blocks) 0,5-24,5 mm (0,5 mm step / 49 blocks) 25-100 mm (25 mm step / 4 blocks)	3200
516-342-10	103	0	Ceramic	1,005 mm (1 block) 1,01-1,49 mm (0,01 mm step / 49 blocks) 0,5-24,5 mm (0,5 mm step / 49 blocks) 25-100 mm (25 mm step / 4 blocks)	3000
516-370-10	88	0	Ceramic	1,0005 mm (1 block) 1,001-1,009 mm (0,001 mm step / 9 blocks) 1,01-1,49 mm (0,01 mm step / 49 blocks) 0,5-9,5 mm (0,5 mm step / 19 blocks) 10-100 mm (10 mm step / 10 blocks)	3200
516-346-10	87	0	Ceramic	1,001-1,009 mm (0,001 mm step / 9 blocks) 1,01-1,49 mm (0,01 mm step / 49 blocks) 0,5-9,5 mm (0,5 mm step / 19 blocks) 10-100 mm (10 mm step / 10 blocks)	2800
516-350-10	76	0	Ceramic	1,005 mm (1 block) 1,01-1,49 mm (0,01 mm step / 49 blocks) 0,5-9,5 mm (0,5 mm step / 19 blocks) 10-40 mm (10 mm step / 4 blocks) 50-100 mm (25 mm step / 3 blocks)	2400
516-354-10	56	0	Ceramic	0,5 mm (1 block) 1,001-1,009 mm (0,001 mm step / 9 blocks) 1,01-1,09 mm (0,01 mm step / 9 blocks) 1,1-1,9 mm (0,1 mm step / 9 blocks) 1-24 mm (1 mm step / 24 blocks) 25-100 mm (25 mm step / 4 blocks)	2200
516-358-10	47	0	Ceramic	1,005 mm (1 block) 1,01-1,09 mm (0,01 mm step / 9 blocks) 1,1-1,9 mm (0,1 mm step / 9 blocks) 1-24 mm (1 mm step / 24 blocks) 25-100 mm (25 mm step / 4 blocks)	2000
516-362-10	47	0	Ceramic	1,005 mm (1 block) 1,01-1,19 mm (0,01 mm step / 19 blocks) 1,2-1,9 mm (0,1 mm step / 8 blocks) 1-9 mm (1 mm step / 9 blocks) 10-100 mm (10 mm step / 10 blocks)	2600
516-395-10	46	0	Ceramic	1,001-1,009 mm (0,001 mm step / 9 blocks) 1,01-1,09 mm (0,01 mm step / 9 blocks) 1,1-1,9 mm (0,1 mm step / 9 blocks) 1-9 mm (1 mm step / 9 blocks) 10-100 mm (10 mm step / 10 blocks)	2700
516-179-10	34	0	Ceramic	1,0005 mm (1 block) 1,001-1,009 mm (0,001 mm step / 9 blocks) 1,01-1,09 mm (0,01 mm step / 9 blocks) 1,1-1,9 mm (0,1 mm step / 9 blocks) 1-5 mm (1 mm step / 5 blocks) 10 mm (1 block)	1200
516-366-10	32	0	Ceramic	1,005 mm (1 block) 1,01-1,09 mm (0,01 mm step / 9 blocks) 1,1-1,9 mm (0,1 mm step / 9 blocks) 1-9 mm (1 mm step / 9 blocks) 10-30 mm (10 mm step / 3 blocks) 60 mm (1 block)	1300



Inspection certificate

Grad K/0/1/2 Gauge Block Sets with JCSS Calibration Certificate (issued by the Mitutoyo JCSS accredited laboratory) see online.

Ceramic Gauge Block Sets Grade 1 with Inspection Certificate

Grade 1 with Inspection Certificate

Specifications

Accuracy

EN ISO 3650



Inspection Certificate



Inspection certificate

Grad K/0/1/2 Gauge Block Sets with JCSS Calibration Certificate (issued by the Mitutoyo JCSS accredited laboratory) see online.

Metric

No.	Blocks per set	Grade	Material	Set configuration	Mass [g]
516-339-10	112	1	Ceramic	1,0005 mm (1 block) 1,001-1,009 mm (0,001 mm step / 9 blocks) 1,01-1,49 mm (0,01 mm step / 49 blocks) 0,5-24,5 mm (0,5 mm step / 49 blocks) 25-100 mm (25 mm step / 4 blocks)	3200
516-343-10	103	1	Ceramic	1,005 mm (1 block) 1,01-1,49 mm (0,01 mm step / 49 blocks) 0,5-24,5 mm (0,5 mm step / 49 blocks) 25-100 mm (25 mm step / 4 blocks)	3000
516-371-10	88	1	Ceramic	1,0005 mm (1 block) 1,001-1,009 mm (0,001 mm step / 9 blocks) 1,01-1,49 mm (0,01 mm step / 49 blocks) 0,5-9,5 mm (0,5 mm step / 19 blocks) 10-100 mm (10 mm step / 10 blocks)	3200
516-347-10	87	1	Ceramic	1,001-1,009 mm (0,001 mm step / 9 blocks) 1,01-1,49 mm (0,01 mm step / 49 blocks) 0,5-9,5 mm (0,5 mm step / 19 blocks) 10-100 mm (10 mm step / 10 blocks)	2800
516-351-10	76	1	Ceramic	1,005 mm (1 block) 1,01-1,49 mm (0,01 mm step / 49 blocks) 0,5-9,5 mm (0,5 mm step / 19 blocks) 10-40 mm (10 mm step / 4 blocks) 50-100 mm (25 mm step / 3 blocks)	2400
516-355-10	56	1	Ceramic	0,5 mm (1 block) 1,001-1,009 mm (0,001 mm step / 9 blocks) 1,01-1,09 mm (0,01 mm step / 9 blocks) 1,1-1,9 mm (0,1 mm step / 9 blocks) 1-24 mm (1 mm step / 24 blocks) 25-100 mm (25 mm step / 4 blocks)	2200
516-359-10	47	1	Ceramic	1,005 mm (1 block) 1,01-1,09 mm (0,01 mm step / 9 blocks) 1,1-1,9 mm (0,1 mm step / 9 blocks) 1-24 mm (1 mm step / 24 blocks) 25-100 mm (25 mm step / 4 blocks)	2000
516-363-10	47	1	Ceramic	1005 mm (1 block) 1,01-1,19 mm (0,01 mm step / 19 blocks) 1,2-1,9 mm (0,1 mm step / 8 blocks) 1-9 mm (1 mm step / 9 blocks) 10-100 mm (10 mm step / 10 blocks)	2600
516-396-10	46	1	Ceramic	1,001-1,009 mm (0,001 mm step / 9 blocks) 1,01-1,09 mm (0,01 mm step / 9 blocks) 1,1-1,9 mm (0,1 mm step / 9 blocks) 1-9 mm (1 mm step / 9 blocks) 10-100 mm (10 mm step / 10 blocks)	2700
516-180-10	34	1	Ceramic	1,0005 mm (1 block) 1,001-1,009 mm (0,001 mm step / 9 blocks) 1,01-1,09 mm (0,01 mm step / 9 blocks) 1,1-1,9 mm (0,1 mm step / 9 blocks) 1-5 mm (1 mm step / 5 blocks) 10 mm (1 block)	1200
516-367-10	32	1	Ceramic	1,005 mm (1 block) 1,01-1,09 mm (0,01 mm step / 9 blocks) 1,1-1,9 mm (0,1 mm step / 9 blocks) 1-9 mm (1 mm step / 9 blocks) 10-30 mm (10 mm step / 3 blocks) 60 mm (1 block)	1300

Ceramic Gauge Block Sets Grade 2 with Inspection Certificate

Grade 2 with Inspection Certificate



Inspection Certificate

Specifications

Accuracy

EN ISO 3650

Metric

No.	Blocks per set	Grade	Material	Set configuration	Mass [g]
516-340-10	112	2	Ceramic	1,0005 mm (1 block) 1,001-1,009 mm (0,001 mm step / 9 blocks) 1,01-1,49 mm (0,01 mm step / 49 blocks) 0,5-24,5 mm (0,5 mm step / 49 blocks) 25-100 mm (25 mm step / 4 blocks)	3200
516-344-10	103	2	Ceramic	1,005 mm (1 block) 1,01-1,49 mm (0,01 mm step / 49 blocks) 0,5-24,5 mm (0,5 mm step / 49 blocks) 25-100 mm (25 mm step / 4 blocks)	3000
516-372-10	88	2	Ceramic	1,0005 mm (1 block) 1,001-1,009 mm (0,001 mm step / 9 blocks) 1,01-1,49 mm (0,01 mm step / 49 blocks) 0,5-9,5 mm (0,5 mm step / 19 blocks) 10-100 mm (10 mm step / 10 blocks)	3200
516-348-10	87	2	Ceramic	1,001-1,009 mm (0,001 mm step / 9 blocks) 1,01-1,49 mm (0,01 mm step / 49 blocks) 0,5-9,5 mm (0,5 mm step / 19 blocks) 10-100 mm (10 mm step / 10 blocks)	2800
516-352-10	76	2	Ceramic	1,005 mm (1 block) 1,01-1,49 mm (0,01 mm step / 49 blocks) 0,5-9,5 mm (0,5 mm step / 19 blocks) 10-40 mm (10 mm step / 4 blocks) 50-100 mm (25 mm step / 3 blocks)	2400
516-356-10	56	2	Ceramic	0,5 mm (1 block) 1,001-1,009 mm (0,001 mm step / 9 blocks) 1,01-1,09 mm (0,01 mm step / 9 blocks) 1,1-1,9 mm (0,1 mm step / 9 blocks) 1-24 mm (1 mm step / 24 blocks) 25-100 mm (25 mm step / 4 blocks)	2200
516-360-10	47	2	Ceramic	1,005 mm (1 block) 1,01-1,09 mm (0,01 mm step / 9 blocks) 1,1-1,9 mm (0,1 mm step / 9 blocks) 1-24 mm (1 mm step / 24 blocks) 25-100 mm (25 mm step / 4 blocks)	2000
516-364-10	47	2	Ceramic	1,005 mm (1 block) 1,01-1,19 mm (0,01 mm step / 19 blocks) 1,2-1,9 mm (0,1 mm step / 8 blocks) 1-9 mm (1 mm step / 9 blocks) 10-100 mm (10 mm step / 10 blocks)	2600
516-397-10	46	2	Ceramic	1,001-1,009 mm (0,001 mm step / 9 blocks) 1,01-1,09 mm (0,01 mm step / 9 blocks) 1,1-1,9 mm (0,1 mm step / 9 blocks) 1-9 mm (1 mm step / 9 blocks) 10-100 mm (10 mm step / 10 blocks)	2700
516-181-10	34	2	Ceramic	1,0005 mm (1 block) 1,001-1,009 mm (0,001 mm step / 9 blocks) 1,01-1,09 mm (0,01 mm step / 9 blocks) 1,1-1,9 mm (0,1 mm step / 9 blocks) 1-5 mm (1 mm step / 5 blocks) 10 mm (1 block)	1200
516-368-10	32	2	Ceramic	1,005 mm (1 block) 1,01-1,09 mm (0,01 mm step / 9 blocks) 1,1-1,9 mm (0,1 mm step / 9 blocks) 1-9 mm (1 mm step / 9 blocks) 10-30 mm (10 mm step / 3 blocks) 60 mm (1 block)	1300



Inspection certificate

Grad K/0/1/2 Gauge Block Sets with JCSS Calibration Certificate (issued by the Mitutoyo JCSS accredited laboratory) see online.

Ceramic Gauge Blocks - Thin Block Sets with 0,001 mm step and ISO Inspection Certificate

With ISO Inspection Certificate

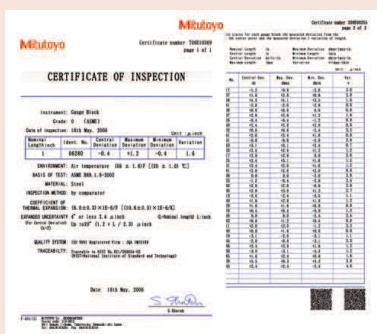


Inspection Certificate

Specifications

Accuracy

EN ISO 3650



Mitutoyo Gauge Blocks and Inspection Certificates

Grad K/0/1/2 Gauge Block Sets with JCSS Calibration Certificate (issued by the Mitutoyo JCSS accredited laboratory) see online.



Metric

No.	Blocks per set	Grade	Material	Set configuration	Mass [g]
516-374-10	18	0	Ceramic	0,991-0,999 mm (0,001 mm step / 9 blocks)	600
				1,001-1,009 mm (0,001 mm step / 9 blocks)	
516-375-10	18	1	Ceramic	0,991-0,999 mm (0,001 mm step / 9 blocks)	600
				1,001-1,009 mm (0,001 mm step / 9 blocks)	
516-376-10	18	2	Ceramic	0,991-0,999 mm (0,001 mm step / 9 blocks)	600
				1,001-1,009 mm (0,001 mm step / 9 blocks)	
516-382-10	9	0	Ceramic	1,001-1,009 mm (0,001 mm step / 9 blocks)	300
516-383-10	9	1	Ceramic	1,001-1,009 mm (0,001 mm step / 9 blocks)	300
516-384-10	9	2	Ceramic	1,001-1,009 mm (0,001 mm step / 9 blocks)	300
516-386-10	9	0	Ceramic	0,991-0,999 mm (0,001 mm step / 9 blocks)	200
516-387-10	9	1	Ceramic	0,991-0,999 mm (0,001 mm step / 9 blocks)	200
516-388-10	9	2	Ceramic	0,991-0,999 mm (0,001 mm step / 9 blocks)	200

Ceramic Gauge Blocks - Long Block Sets with ISO Inspection Certificate

With ISO Inspection Certificate

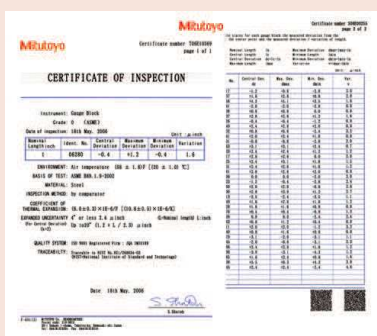


Inspection Certificate

Specifications

Accuracy

EN ISO 3650



Grad K/0/1/2 Gauge Block Sets with JCSS Calibration Certificate (issued by the Mitutoyo JCSS accredited laboratory) see online.



Metric

No.	Blocks per set	Grade	Material	Set configuration	Mass [g]
516-732-10	8	0	Ceramic	125-175 mm (25 mm step / 3 blocks)	6200
				200-250 mm (50 mm step / 2 blocks)	
				300-500 mm (100 mm step / 3 blocks)	
516-733-10	8	1	Ceramic	125-175 mm (25 mm step / 3 blocks)	6200
				200-250 mm (50 mm step / 2 blocks)	
				300-500 mm (100 mm step / 3 blocks)	
516-734-10	8	2	Ceramic	125-175 mm (25 mm step / 3 blocks)	6200
				200-250 mm (50 mm step / 2 blocks)	
				300-500 mm (100 mm step / 3 blocks)	

Ceramic Wear Gauge Block Sets Metric ISO Standard

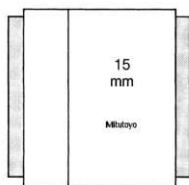
Wear Block Sets Metric ISO Standard

This set is made up of two gauge blocks and offers you the following benefits:

- Wear-resistant even with frequent use of individual gauge blocks



Ceramic 2-block set



Protection gauge blocks (highlighted in grey above) are placed at each end of the gauge block stack to absorb the wear caused by contact with workpieces.

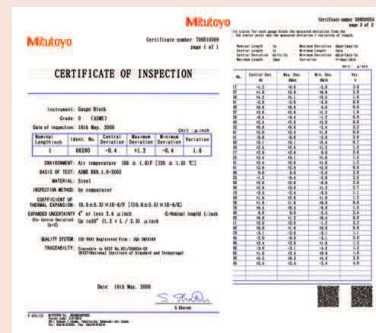


Inspection Certificate

Specifications

Accuracy

EN ISO 3650



Mitutoyo Gauge Blocks and Inspection Certificates

Grad K/0/1/2 Gauge Block Sets with JCSS Calibration Certificate (issued by the Mitutoyo JCSS accredited laboratory) see online.

Metric

No.	Blocks per set	Grade	Material	Set configuration	Mass [g]
516-832-10	2	0	Ceramic	1 mm (2 blocks)	115
516-833-10	2	1	Ceramic	1 mm (2 blocks)	130
516-830-10	2	0	Ceramic	2 mm (2 blocks)	130
516-831-10	2	1	Ceramic	2 mm (2 blocks)	130

Ceramic Caliper Inspection Gauge Block Sets Metric

Caliper Inspection Sets Metric



516-566-10



Inspection Certificate

Specifications

Accuracy

Accuracy EN ISO 3650

Delivered

In a wooden case with certificate of inspection (Gauge Blocks only)

Metric

No.	Blocks per set	Grade	Material	Calibration/Standard applications	Set configuration	Mass [g]
516-566-10	4	1	Ceramic	EN ISO 13385-1:2011	4 pcs.: 10, 30, 50, 125 mm, Setting ring (ø4 mm, ø10 mm), Pin gage (ø10 mm), Glove	1750
516-567-10	4	2	Ceramic	EN ISO 13385-1:2011	4 pcs.: 10, 30, 50, 125 mm, Setting ring (ø4 mm, ø10 mm), Pin gage (ø10 mm), Glove	1750
516-150-10	3	1	Ceramic	DIN 862:1988 VDI/VDE/DGQ 2618	3 pcs.: 30, 41,3, 131,4 mm, Setting ring (ø4 mm, ø25 mm), Glove	1700
516-151-10	3	2	Ceramic	DIN 862:1988 VDI/VDE/DGQ 2618	3 pcs.: 30, 41,3, 131,4 mm, Setting ring (ø4 mm, ø25 mm), Glove	1720

Ceramic Micrometer Inspection Sets Metric

Micrometer Inspection Sets Metric

Specifications

Accuracy	EN ISO 3650
Delivered	In a wooden case with certificate of inspection (Gauge Blocks only)



Inspection Certificate



Micro checker 516-607 applicable gauge block sets 516-156-xx, 516-157-xx, 516-158-xx

Grad K/0/1/2 Gauge Block Sets with JCSS Calibration Certificate (issued by the Mitutoyo JCSS accredited laboratory) see online.



516-156-10

Metric With inspection certificate

No.	Blocks per set	Grade	Material	Calibration/Standard applications	Set configuration	Mass [g]
516-390-10	10	0	Ceramic	Especially for Micrometer with 2 mm spindle pitch. (QuantuMike)	2,2, 4,8, 7,8, 10,4, 12, 15,2, 17,4, 19,6, 22,6, 25 mm	900
516-391-10	10	1	Ceramic	Especially for Micrometer with 2 mm spindle pitch. (QuantuMike)	2,2, 4,8, 7,8, 10,4, 12, 15,2, 17,4, 19,6, 22,6, 25 mm	900
516-392-10	10	2	Ceramic	Especially for Micrometer with 2 mm spindle pitch. (QuantuMike)	2,2, 4,8, 7,8, 10,4, 12, 15,2, 17,4, 19,6, 22,6, 25 mm	900
516-156-10	10	0	Ceramic	EN ISO 3611 DIN 863 (1999) VDI/VDE/DGQ 2618	2,5, 5,1, 7,7, 10,3, 12,9, 15, 17,6, 20,2, 22,8, 25 mm, Optical parallel (t = 12 mm)	900
516-157-10	10	1	Ceramic	EN ISO 3611 DIN 863 (1999) VDI/VDE/DGQ 2618	2,5, 5,1, 7,7, 10,3, 12,9, 15, 17,6, 20,2, 22,8, 25 mm, Optical parallel (t = 12 mm)	900
516-158-10	10	2	Ceramic	EN ISO 3611 DIN 863 (1999) VDI/VDE/DGQ 2618	2,5, 5,1, 7,7, 10,3, 12,9, 15, 17,6, 20,2, 22,8, 25 mm, Optical parallel (t = 12 mm)	900
516-185-10	10	0	Ceramic	EN ISO 3611 DIN 863 (1999) VDI/VDE/ DGQ 2618	2,5, 5,1, 7,7, 10,3, 12,9, 15, 17,6, 20,2, 22,8, 25 mm, Micro Checker, Optical parallel (t = 12 mm)	2900
516-186-10	10	1	Ceramic	EN ISO 3611 DIN 863 (1999) VDI/VDE/ DGQ 2618	2,5, 5,1, 7,7, 10,3, 12,9, 15, 17,6, 20,2, 22,8, 25 mm, Micro Checker, Optical parallel (t = 12 mm)	2900
516-187-10	10	2	Ceramic	EN ISO 3611 DIN 863 (1999) VDI/VDE/ DGQ 2618	2,5, 5,1, 7,7, 10,3, 12,9, 15, 17,6, 20,2, 22,8, 25 mm, Micro Checker, Optical parallel (t = 12 mm)	2900

Ceramic Metric Individual Gauge Blocks

Metric Blocks

Ordering example: To order a 0.5mm ISO Standard grade 1 block with JCSS calibration certificate, choose 613506-036.



Calibration Certificate



Inspection Certificate



Length [mm]	No.
0,5	613506
0,991	613551
0,992	613552
0,993	613553
0,994	613554
0,995	613555
0,996	613556
0,997	613557
0,998	613558
0,999	613559
1	613611
1,0005	613520
1,001	613521
1,002	613522
1,003	613523
1,004	613524
1,005	613525
1,006	613526
1,007	613527
1,008	613528
1,009	613529
1,01	613561
1,02	613562
1,03	613563
1,04	613564
1,05	613565
1,06	613566
1,07	613567
1,08	613568
1,09	613569
1,1	613570
1,11	613571
1,12	613572
1,13	613573
1,14	613574
1,15	613575
1,16	613576
1,17	613577
1,18	613578
1,19	613579
1,2	613580
1,21	613581
1,22	613582
1,23	613583
1,24	613584
1,25	613585
1,26	613586
1,27	613587
1,28	613588
1,29	613589

Length [mm]	No.
1,3	613590
1,31	613591
1,32	613592
1,33	613593
1,34	613594
1,35	613595
1,36	613596
1,37	613597
1,38	613598
1,39	613599
1,4	613600
1,41	613601
1,42	613602
1,43	613603
1,44	613604
1,45	613605
1,46	613606
1,47	613607
1,48	613608
1,49	613609
1,5	613641
1,6	613516
1,7	613517
1,8	613518
1,9	613519
2	613612
2,5	613642
3	613613
3,5	613643
4	613614
4,5	613644
5	613615
5,1	613850
5,5	613645
6	613616
6,5	613646
7	613617
7,5	613647
7,7	613851
8	613618
8,5	613648
9	613619
9,5	613649
10	613671
10,3	613852
10,5	613650
11	613621
11,5	613651
12	613622
12,5	613652

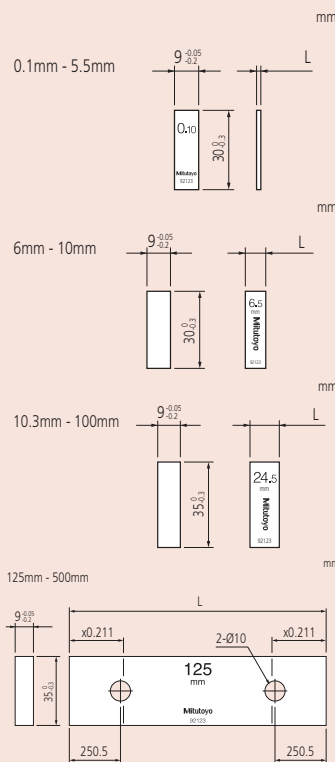
Length [mm]	No.
12,9	613853
13	613623
13,5	613653
14	613624
14,5	613654
15	613625
15,5	613655
16	613626
16,5	613656
17	613627
17,5	613657
17,6	613854
18	613628
18,5	613658
19	613629
19,5	613659
20	613672
20,2	613855
20,5	613660
21	613631
21,5	613661
22	613632
22,5	613662
22,8	613856
23	613633
23,5	613663
24	613634
25	613635
25,25	613754
30	613673
35	613755
40	613674
41,3	613857
45	613756
50	613675
60	613676
70	613677
75	613801
80	613678
90	613679
100	613681
125	613802
131,4	613858
150	613803
175	613804
200	613682
250	613805
300	613683
400	613684
500	613685

Specifications

Accuracy	EN ISO 3650
Delivered	Foamed material 0,5-100 mm in a wooden case 125-500 mm

Suffix No. (-XXX) for Selecting Certificate Provided

ISO/DIN/JIS	Suffix No.	Grade	Inspection Certificate	Calibration Certificate
				JCSS
	-016	K	○	○
	-021	0	○	—
	-026	0	○	○
	-031	1	○	—
	-036	1	○	○
	-041	2	○	—
	-046	2	○	○



Gauge Blocks with a Calibrated CTE

Gauge Blocks with a Calibrated Coefficient of Thermal Expansion

These are metric gauge blocks with a calibrated coefficient of thermal expansion. They offer you the following benefits:

- Mitutoyo offers top-level gauge blocks (steel and ceramic) which are superior to K class blocks, with their quality supported by Mitutoyo's best technologies.
- They feature an accurately calibrated thermal expansion coefficient measured with a proprietary double-faced interferometer (DFI).
- Each gauge block is calibrated for length on a highly accurate gauge block interferometer (GBI) system.
- Uncertainty of thermal expansion coefficient: $0,035 \times 10^{-6}/K$ ($k=2$).
- Uncertainty of length measurement: 30 nm ($k=2$), for 100 mm blocks.



Mitutoyo

Page 1 of 1 / 総数1頁中の1頁
Issue No./発行 No. 050001
Date of issue/発行年月日 2009-01-20

Report of calibration
校正結果

Product name / 製品名: Gauge Block / ガージブロック
Nominal Length / 呼び寸法: 500mm
Code No. / コード No.: 611685-01A
Date of calibration / 校正年月日: 2009-01-20
Serial No. / 番通 No.: 040605
Material / 材質: Steel

Calibration Item / 校正項目: Coefficient of thermal expansion / 熱膨張係数
Measurement expanded uncertainty (coverage factor: $k=2$) / 校正値の拡張不確かさ(包含係数 $k=2$): $U = 0,035 \times 10^{-6}/K$

Result of calibration / 校正結果:
Coefficient of thermal expansion / 熱膨張係数 $\alpha = 10,818 \times 10^{-6}/K$

Using DFI (Double Facing Interferometer) at each temperature (setting value) of 17 °C, 20 °C, and 23 °C, size measurement is performed after sufficient temperature stable, and a Coefficient of thermal expansion is sized from the result.

非常精密測定(DFI: Double Facing Interferometer)により、17°C、20°C、23°Cの各温度(設定値)にて、十分な温度安定後、寸法測定を行い、その結果から熱膨張係数を算出します。

Setting temperature / 設定温度 (°C)	17	20	23
Actual temperature / 実際の温度 (°C)	17,110	20,227	22,763
The amount of change of a length / 寸法変化量 (μm)	-16,860	0	13,715

It is based on a size with a setting temperature of 20 °C. 設定温度 20°Cの寸法を基準とする。

the amount of change of a size / 寸法変化量
the amount of change of a size / 寸法変化量
Temperature / 温度 (°C)

Chief inspector / 校正責任者: S. Shioh
Mitutoyo Corporation

To each final dimension a factory certificate is supplied.

Uncertainty of thermal expansion coefficient : $0,035 \times 10^{-6}/K$ ($k=2$)

Uncertainty of length measurement : 30 nm ($k=2$), for 100 mm blocks.



Calibration Certificate

Metric Steel

No.	Length [mm]	Accuracy	Grade	Material	Mass [g]
611681-01B	100	EN ISO 3650, Grade K	K	Steel	245
611802-01B	125	EN ISO 3650, Grade K	K	Steel	306
611803-01B	150	EN ISO 3650, Grade K	K	Steel	368
611804-01B	175	EN ISO 3650, Grade K	K	Steel	430
611682-01B	200	EN ISO 3650, Grade K	K	Steel	490
611805-01B	250	EN ISO 3650, Grade K	K	Steel	613
611683-01B	300	EN ISO 3650, Grade K	K	Steel	735
611684-01B	400	EN ISO 3650, Grade K	K	Steel	980
611685-01B	500	EN ISO 3650, Grade K	K	Steel	1225

Ceramic

No.	Length [mm]	Accuracy	Grade	Material	Mass [g]
613681-01B	100	EN ISO 3650, Grade K	K	Ceramic	189
613802-01B	125	EN ISO 3650, Grade K	K	Ceramic	228
613803-01B	150	EN ISO 3650, Grade K	K	Ceramic	275
613804-01B	175	EN ISO 3650, Grade K	K	Ceramic	322
613682-01B	200	EN ISO 3650, Grade K	K	Ceramic	370
613805-01B	250	EN ISO 3650, Grade K	K	Ceramic	464
613683-01B	300	EN ISO 3650, Grade K	K	Ceramic	559
613684-01B	400	EN ISO 3650, Grade K	K	Ceramic	748
613685-01B	500	EN ISO 3650, Grade K	K	Ceramic	937

ZERO CERA Blocks

Ultra-low Expansion Ceramic Gauge Blocks

These are ultra-low expansion ceramic gauge blocks. The ZERO CERA Blocks offer you the following benefits:

- Thermal expansion at $20 \pm 1^\circ\text{C}$ is less than 1/500 that of steel.
- There is almost no secular change either in the dimension or coefficient of thermal expansion.
- You will find them light and easy to handle.
- They are rust free.
- They are magnetisation free.



Calibration Certificate

Specifications

Accuracy	EN ISO 3650
Coefficient of thermal expansion	$0 \pm 0,02 \times 10^{-6}/\text{K}$ (at 20°C)*2
Density	2,5 g/cm ³ *2
Standard accessories	Inspection certificate, Calibration certificate and custom-made aluminium case

*1

If you require a grade other than K, please contact Mitutoyo.

*2

Value claimed by the material supplier.

Metric

No.	Accuracy	Blocks per set	Remarks	Length	Type	Mass [g]
617675-016	EN ISO 3650, Grade K			50 mm	Individual	40
617673-016	EN ISO 3650, Grade K			30 mm	Individual	24
617845-016	EN ISO 3650, Grade K			1000 mm	Individual	800
617844-016	EN ISO 3650, Grade K			900 mm	Individual	720
617685-016	EN ISO 3650, Grade K			500 mm	Individual	400
617843-016	EN ISO 3650, Grade K			800 mm	Individual	640
617684-016	EN ISO 3650, Grade K			400 mm	Individual	320
617683-016	EN ISO 3650, Grade K			300 mm	Individual	240
617841-016	EN ISO 3650, Grade K			700 mm	Individual	560
617682-016	EN ISO 3650, Grade K			200 mm	Individual	160
617681-016	EN ISO 3650, Grade K			100 mm	Individual	80
617840-016	EN ISO 3650, Grade K			600 mm	Individual	480
516-771-60	EN ISO 3650, Grade K	12	Zero Cera Block set. 12 blocks per set, 30 mm (1 block) 50 mm (1 block) 100 - 1000 mm (100 mm step / 10 blocks)		Set	4464

Characteristics comparison of gauge block materials

	ZERO CERA BLOCK	Low expansion glass	CERA BLOCK	Steel	Tungsten carbide
Coefficient of thermal expansion ($10^{-6}/\text{K}$)	$0 \pm 0,02$ *2) *3)	$0 \pm 0,02$ *2) *3)	$9,3 \pm 0,5$	$10,8 \pm 0,5$	$5,5 \pm 1$
Thermal conductivity (W/m*K)	3.7	1.7	2.9	54.4	79.5
Specify gravity	2.5	2.55	6	7.8	14.8
Young modulus (GPa)	130	90	206	206	618
Poisson ratio	0.3	0.25	0.3	0.3	0.2
Flexural strength (3 points) (MPa)	210	143	1270	1960	1960
Fracture toughness (MPa*m ^{1/2})	1.2	0.69 *4)	7	120	12
Vickers hardness (HV)	826 *3)	680	1350	800	1650

1) Material for Mitutoyo Products

2) Value at 20°C

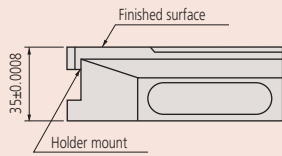
3) Claimed value by the material supplier

4) Value measured by the material supplier (reference)

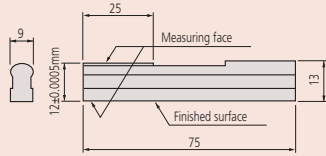
Gauge Block Accessories

Series 516

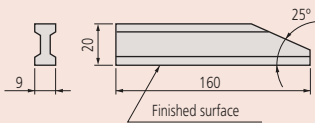
Specially designed for long gauge blocks over 100 mm which have two coupling holes on the body.



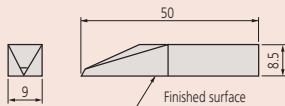
Holder base : 619009



Half-round jaw : 619013



Plain jaw : 619018



Scriber point : 619019

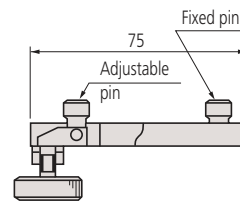


516-605

No.	Included in set	Mass [g]
516-605	Holder A (619031)-1 pc. Holder B (619032)-1 pc. Holder C (619033)-1 pc. Holder D (619034)-1 pc. Holder E (619035)-1 pc. Adapter (619036)-3 pcs. Holder base 35mm (619009)-1 pc. Half-round jaw 12mm (619013)-2 pcs. Plain jaw (619018)-2 pcs. Scriber point (619019)-1 pc.	4120



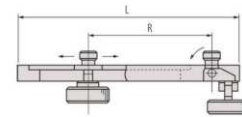
Holder A: 619031
Used for coupling two long gauge blocks.



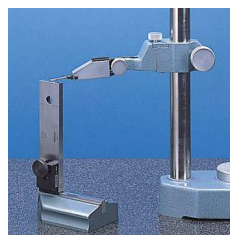
619031



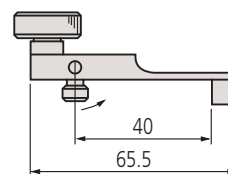
Holder B and C:
Used for coupling two long gauge blocks together with other gauge blocks up to 35 mm (Holder B) or 140 mm Holder C). Also used for attaching jaws with two adapters.
Holder B : 619032 (R max.= 90 mm- L= 126 mm)
Holder C : 619033 (R max.= 200 mm- L= 236 mm)



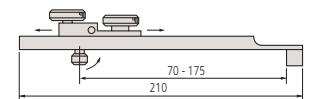
619032 / 619033



Holder D : 619034
Used for attaching to the holder base.



619034



Holder E: 619035
Used for attaching to the holder base together with other gauge blocks up to 125mm. Used for attaching jaws with one adapter.

Gauge Block Accessories

Series 619

These accessories are specially designed for long gauge blocks over 100 mm which have two coupling holes on the body.



516-601J



516-602J

1. Set

No.	Blocks per set	Included in set	Mass [g]
516-602J	14	(1 x 619002; 1 x 619003; 1 x 619004; 1 x 619005; 1 x 619009; 2 x 619010; 2 x 619011; 2 x 619012; 1 x 619019; 1 x 619020; 1 x 619022)	2590
516-601J	22	(1 x 619003; 1 x 619004; 1 x 619005; 1 x 619009; 2 x 619010; 2 x 619011; 2 x 619012; 2 x 619013; 2 x 619014; 2 x 619018; 1 x 619019; 1 x 619020; 2 x 619021; 1 x 619022; 1 x 619023)	3260

2. Holder

No.	L [mm]	Mass [g]
619005	20-250	360
619004	15-160	320
619003	5-100	170
619002	15-60	150

3. Holder base

No.	Description	Mass [g]
619009	35 mm	1200

4. Half-round jaw

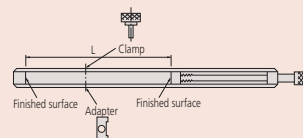
No.	A [mm]	B [mm]	C [mm]	H [mm]	Mass [g]
619010	5,5	40	7,5	2 ±0,0005	20
619011	14	45	7,5	5 ±0,0005	25
619012	18,5	50	8,5	8 ±0,0005	35
619013	25	75	13	12 ±0,0005	50
619014	25	125	20,5	20 ±0,0005	115

5. Miscellaneous jaws

No.	Description	Mass [g]
619018	Plain jaw	165
619019	Scriber point	20
619020	Centre point	20
619021	Tram point	20

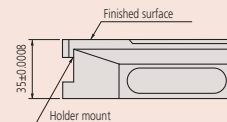
6. Triangular straight edge

No.	Length [mm]	A [mm]	L [mm]	Mass [g]
619022	100	16	100	40
619023	160	19,5	160	120



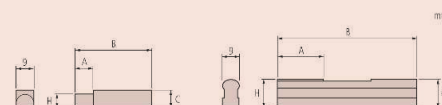
Holder : 619002 to 619005

Used to clamp plain jaws, a scriber point, etc., to a gauge block stack.



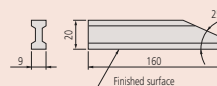
Holder base 35 mm : 619009

Acts as base for a stack of gauge blocks that carry one of the many types of point.



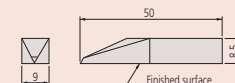
Half round jaw : 619010 to 619014

Used for gauging an outside or inside diameter if used when a pair of jaws in a holder.



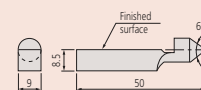
Plain jaw : 619018

Gauges outside and inside dimensions (not inside diameters) when used as a pair of jaws in a holder.



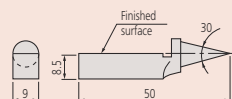
Scriber point : 619019

Scribes a straight line on a workpiece a known distance from a datum plane if used in a holder and holder base.



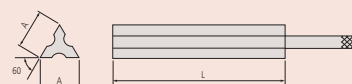
Centre point : 619020

Pushed into a small hole, or conical punch mark, this point provides the pivot for scribing a circular line with a gauge block trammel assembly.



Tram point : 619021

For checking distances between lines and points.



Triangular straight edge : 619022/619023

Can be used to indicate parallelism.

Ceraston

Accessory for Gauge Block Maintenance

This accessory for gauge block maintenance offers you the following benefits:

- Alumina-ceramic abrasive stone lets you remove burrs from hard materials such as ceramics, that ordinary stones cannot handle.
- You can use them for both steel gauge blocks and CERA Blocks.



Removing burrs

- 1 Wipe any dust and oil films from the gauge block and the Ceraston (or Arkansas stone) using a solvent.
- 2 Place the gauge block on the Ceraston so that the measuring face that has burrs is on the abrasive surface of the stone. While applying light pressure, move the gauge block to and fro about ten times (Fig. 1). Use a block rubber for thin gauge blocks to apply even pressure (Fig. 2).
- 3 Check the measuring face for burrs with an optical flat. If the burrs have not been removed, repeat step 2. If burrs are too large, they may not be removed with an abrasive stone. If so, discard the gauge block.

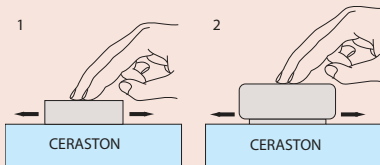


601644



601645

No.	Dimensions (WxDxH)	Length [mm]	Mass [g]
601644	150 x 50 x 20 mm	150	530
601645	100 x 25 x 12 mm	100	110



Consumable spares

No.	Description
601645	Cerastone for Gauge Blocks, 100x25x12mm
600004	Tweezer for Gauge Blocks
600005	Blower Brush for Gauge Blocks
600006	Cleaning Paper for Gauge Blocks
600007	Artificial Leather Mat for Gauge Blocks
600008	Reagent Bottle, 100 ml
600009D	Cotton Gloves, White
158-117	Optical Flat, 12mm, D=45mm, 0,2µm

Maintenance Kit for Gauge Blocks

Series 516

This is a maintenance kit for gauge blocks that offers you the following benefits:

- It includes all maintenance tools needed for the daily care and storage of gauge blocks.
- It is supplied in a fitted wooden case for portable use.



No.	Tools and accessories included	Mass [g]
516-650E	Ceraston (601645): Used for removing burrs on the measuring surface. Tweezers (600004): Used for handling thin gauge blocks. Blower brush (600005): Used for blowing dust off the measuring surface. Cleaning paper (600006): Used for wiping off rust preventive oil and contamination. Artificial leather mat (600007): Used as a gauge block mat. Reagent bottle (600008): Bottle for wiping solution (100 ml). Solution not included. Gloves (600009D) Optical flat (158-117)	2270