

Thickness Gages

SERIES 547, 7

Thickness Gages offer a quick and efficient means of inspection with their convenient grip handle, thumb trigger and spring-loaded spindle. The various models cover a wide range of applications.

FEATURES

- Wide range of applications with various types of measuring faces (on the spindle and anvil).

- The digital models incorporate Mitutoyo's popular ID-C and ID-S Series Digimatic Indicators to provide error-free LCD readings as well as data output for SPC analysis.
- **547-401 (547-400S)** is ideally suited for measuring thicknesses of paper, film, wire, sheet metal and similar materials.

Standard Type / Digital



Deep Throat Type / Digital



Standard Type / Dial



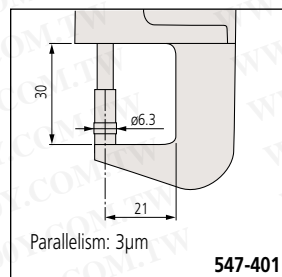
Deep Throat Type / Dial



High Accuracy Type / Digital



DIMENSIONS



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(Refer to page VIII for details.)

Technical Data of Digital Models

Accuracy: Refer to the list of specifications (excluding quantizing error)

Resolution:

0.01mm type	0.01mm
0.001mm type	0.001mm/0.001mm
.0005"/0.01mm type	.0005"/0.01mm
.00005"/0.001mm type	.0005"/.0001"/.00005"/0.01mm/0.001mm

Display: LCD

Scale type: ABSOLUTE electrostatic linear encoder

Max. response speed: Unlimited

Measuring force: Refer to the list of specifications

Stem dia.: 8mm (ISO/JIS type) or 3/8" (ANSI/AGD type)

Battery: SR44 (1 pc.), **938882**

Battery life: Approx. 7,000 hours under normal use

Dust/Water protection level: IP42 or IP53 (dust-proof type)

Functions of Digital Models

Origin-set/Preset, Zeroset, GO/±NG judgment, Counting direction switching, Power ON/OFF, Simplified calculation, Function lock, Data hold, Data output, inch/mm conversion (inch/mm models)

Alarm: Low voltage, Counting value composition error, Overflow error, Tolerance limit setting error

Optional Accessories

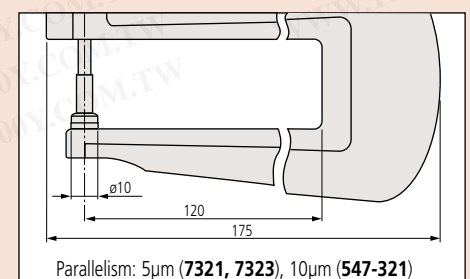
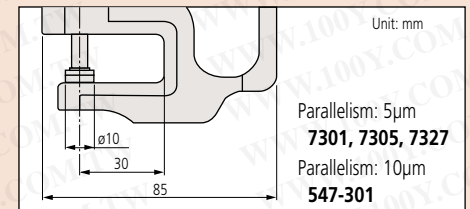
- 905338:** SPC cable (1m) for digital models
- 905409:** SPC cable (2m) for digital models
- 02AZD790F:** SPC cable for U-WAVE (160mm)
- 902011:** Spindle lifting lever (ISO/JIS type)*
- 902794:** Spindle lifting lever (ANSI/AGD type)*
- 137693:** Spindle lifting hook**
- 540774:** Spindle lifting cable
- 125317:** Spare rubber boot (for dust-proof type)
- 02ACA571:** Auxiliary spindle spring for 25mm/1" models***
- 02ACA773:** Auxiliary spindle spring for 50mm/2" models***

—: Backs (See page F-40.)

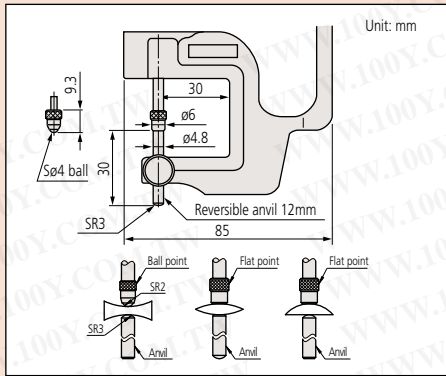
—: Contact points (See page F-36.)

*Can be used on 12mm/5" models only.
 **Can be used on 25mm/1" or 50mm/2" models.
 ***Required when orienting the indicator upside down.

DIMENSIONS



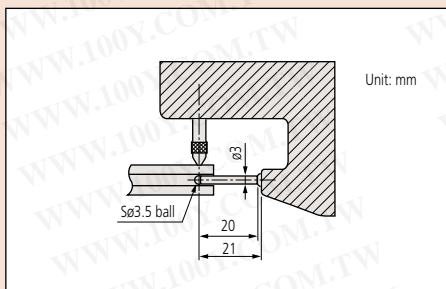
DIMENSIONS



Lens thickness measurement



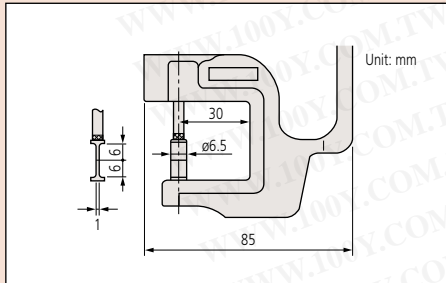
DIMENSIONS



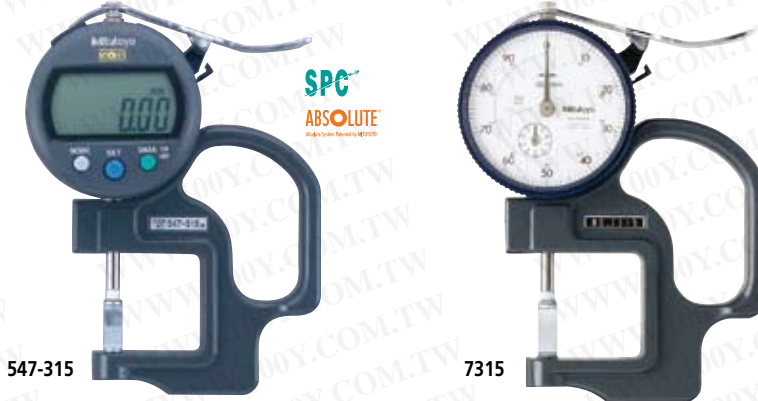
Tube thickness measurement



DIMENSIONS



Groove depth measurement



SPECIFICATIONS

Metric	Digital Type
Range	Order No. Resolution
0 - 12mm	547-401 0.001mm
0 - 10mm	547-301 0.01mm
0 - 10mm	547-321 0.01mm
0 - 10mm	547-313 0.01mm
0 - 10mm	547-315 0.01mm
0 - 10mm	547-360 0.01mm

Inch/Metric	Digital Type
Range	Order No. Resolution Accuracy Measuring force Remarks
0 - .47"	547-400S / .00005"/0.001mm ±3µm 3.5N or less High accuracy, carbide spindle/anvil
0 - .4" / 0 - .47"*	547-300S / 547-500* .0005"/0.01mm ±20µm 1.5N or less Standard, ceramic spindle/anvil
0 - .4" / 0 - .47"*	547-320S / 547-520* .0005"/0.01mm ±20µm 1.5N or less Deep throat, ceramic spindle/anvil
0 - .4" / 0 - .47"*	547-312S / 547-512* .0005"/0.01mm ±20µm 1.5N or less Lens thickness
0 - .4" / 0 - .47"*	547-316S / 547-516* .0005"/0.01mm ±20µm 1.5N or less Groove depth
0 - .4" / 0 - .47"*	547-361S / 547-561* .0005"/0.01mm ±20µm 1.5N or less Tube thickness

*using ID-S Digimatic indicator, Standard model with .0001"/0.001mm resolution ID-S is available (**547-526**).

Metric	Dial Type
Range	Order No. Dial reading
0 - 1mm	7327 0.001mm
0 - 10mm	7301 0.01mm
0 - 20mm	7305 0.01mm
0 - 10mm	7321 0.01mm
0 - 20mm	7323 0.01mm
0 - 10mm	7313 0.01mm
0 - 10mm	7315 0.01mm
0 - 10mm	7360 0.01mm

Inch	Dial Type
Range	Order No. Dial reading Accuracy Measuring force Remarks
0 - .05"	7326S .00005" ±5µm 1.4N or less Fine dial reading, ceramic spindle/anvil
0 - .5"	7300S .001" ±15µm 1.4N or less Standard, ceramic spindle/anvil
0 - 1"	7304S .001" ±20µm 2.0N or less Standard, ceramic spindle/anvil
—	— ±15µm 1.4N or less Deep throat, ceramic spindle/anvil
0 - 1"	7322S .001" ±22µm 2.0N or less Deep throat, ceramic spindle/anvil
0 - .5"	7312S .001" ±15µm 1.4N or less Lens thickness
0 - .5"	7316S .001" ±15µm 1.4N or less Groove depth
0 - .5"	7361S .001" ±15µm 1.4N or less Tube thickness

Lightweight Dial Thickness Gage

SERIES 7



Application

Measuring paper thickness



Measuring thickness of a human hair



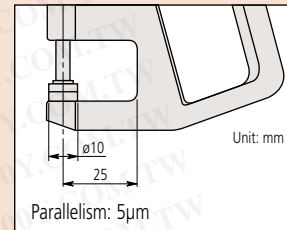
SPECIFICATIONS

Metric

Range	Order No.	Dial reading	Accuracy	Measuring force
0 - 10mm	7331S	0.01mm	±20µm	1.4N or less

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DIMENSIONS



Dial Caliper Gage

SERIES 209 — Internal Measurement Type

These Dial Caliper Gages are comparison gages, and should be used in conjunction with a Setting Ring or a micrometer. The caliper is spring loaded and makes point contact at constant measuring force.



SPECIFICATIONS

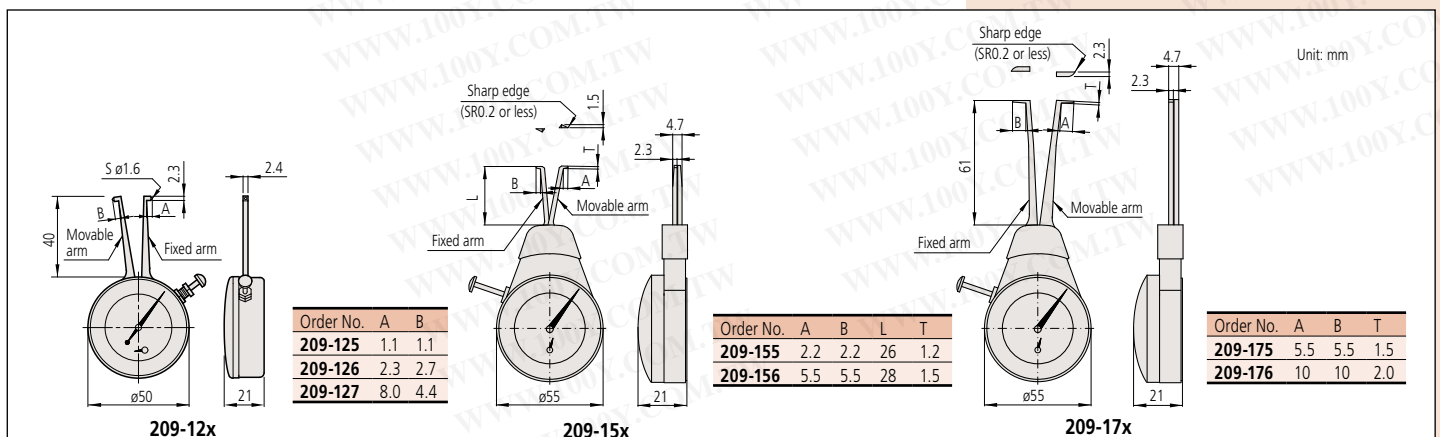
Metric

Range	Order No.	Graduation	Range of opening*1	Dial face	Accuracy	Measuring force
6 - 18mm	209-125	0.01mm	5.8 - 18.2mm	0-100-100	±40µm	2.0N or less
10 - 22mm	209-126	0.01mm	9.8 - 22.2mm	0-100-100	±40µm	2.0N or less
20 - 32mm	209-127	0.01mm	19.8 - 32.2mm	0-100-100	±40µm	2.0N or less
5 - 15mm	209-155	0.01mm	4.8 - 15.2mm	0-100	±30µm	2.0N or less
10 - 20mm	209-156	0.01mm	9.8 - 20.2mm	0-100	±30µm	2.0N or less
10 - 30mm	209-175	0.01mm	9.8 - 30.2mm	0-100-100	±40µm	2.0N or less
20 - 40mm	209-176	0.01mm	19.8 - 40.2mm	0-100-100	±40µm	2.0N or less

*1: Range of opening is a value for reference. Accuracy is not guaranteed if the Dial Caliper Gage is used beyond the measuring range.

* Please note that this Dial Caliper Gage is only provided with standard models. Special size and special specification models are not supported.

DIMENSIONS

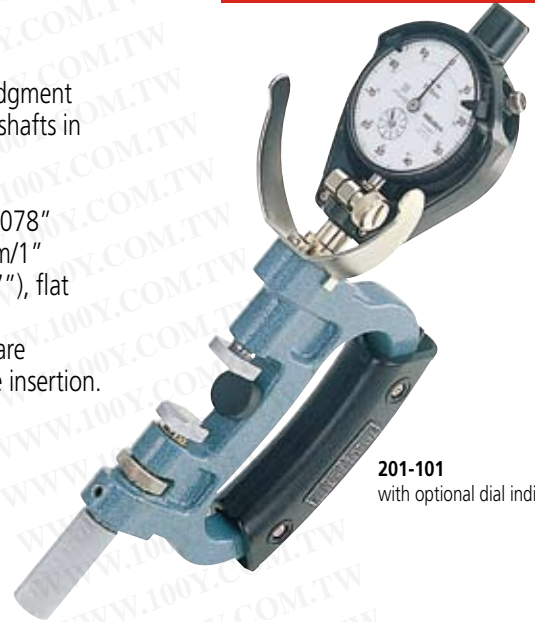


Dial Snap Gage

SERIES 201

FEATURES

- Designed for quick GO/NG judgment of diameters of cylinders and shafts in machining processes.
- Dial indicator is optional.
- Anvil retracting stroke: 2mm/.078"
- Anvil positioning range: 25mm/1"
- Wide (13.5 x 12mm/1.53 x .47"), flat carbide anvils.
- Both front edges of the anvil are chamfered for easy workpiece insertion.



201-101
with optional dial indicator

Technical Data

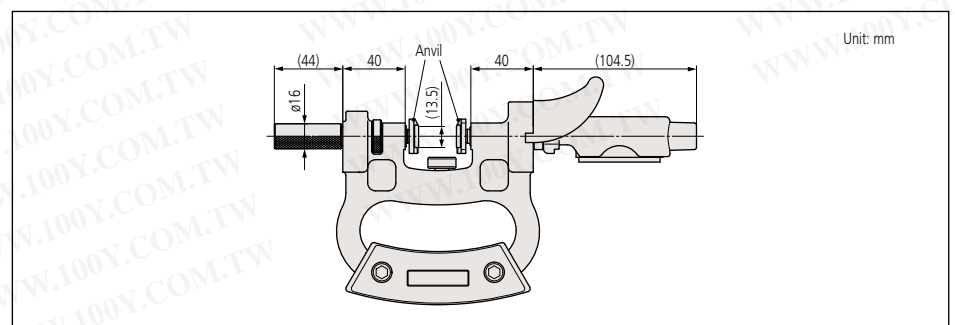
Accuracy: Refer to the list of specifications
 Anvil retracting stroke: 2mm/.078"
 Anvil positioning range: 25mm/1"
 Anvil flatness: 1μm/.00004"

SPECIFICATIONS

Metric				
Range	Order No.	Parallelism	Measuring force	Recommended dial indicator (optional)
0 - 25mm	201-101	5μm	15N±3N	2046SB (0.01mm reading), 2109SB-10 (0.001mm reading)
25 - 50mm	201-102	5μm	15N±3N	2046SB (0.01mm reading), 2109SB-10 (0.001mm reading)
50 - 75mm	201-103	5μm	15N±3N	2046SB (0.01mm reading), 2109SB-10 (0.001mm reading)
75 - 100mm	201-104	5μm	15N±3N	2046SB (0.01mm reading), 2109SB-10 (0.001mm reading)
100 - 125mm	201-105	5μm	15N±3N	2046SB (0.01mm reading), 2109SB-10 (0.001mm reading)
125 - 150mm	201-106	5μm	15N±3N	2046SB (0.01mm reading), 2109SB-10 (0.001mm reading)
150 - 175mm	201-107	5μm	15N±3N	2046SB (0.01mm reading), 2109SB-10 (0.001mm reading)
175 - 200mm	201-108	5μm	15N±3N	2046SB (0.01mm reading), 2109SB-10 (0.001mm reading)
200 - 225mm	201-109	5μm	15N±3N	2046SB (0.01mm reading), 2109SB-10 (0.001mm reading)
225 - 250mm	201-110	5μm	15N±3N	2046SB (0.01mm reading), 2109SB-10 (0.001mm reading)
250 - 275mm	201-111	5μm	15N±3N	2046SB (0.01mm reading), 2109SB-10 (0.001mm reading)
275 - 300mm	201-112	5μm	15N±3N	2046SB (0.01mm reading), 2109SB-10 (0.001mm reading)

Inch				
Range	Order No.	Parallelism	Measuring force	Recommended dial indicator (optional)
0 - 1"	201-151	.0002"	15N±3N	2803SB-10 (.0001" reading)
1 - 2"	201-152	.0002"	15N±3N	2803SB-10 (.0001" reading)
2 - 3"	201-153	.0002"	15N±3N	2803SB-10 (.0001" reading)
3 - 4"	201-154	.0002"	15N±3N	2803SB-10 (.0001" reading)
4 - 5"	201-155	.0002"	15N±3N	2803SB-10 (.0001" reading)
5 - 6"	201-156	.0002"	15N±3N	2803SB-10 (.0001" reading)
6 - 7"	201-157	.0002"	15N±3N	2803SB-10 (.0001" reading)
7 - 8"	201-158	.0002"	15N±3N	2803SB-10 (.0001" reading)
8 - 9"	201-159	.0002"	15N±3N	2803SB-10 (.0001" reading)
9 - 10"	201-160	.0002"	15N±3N	2803SB-10 (.0001" reading)
10 - 11"	201-161	.0002"	15N±3N	2803SB-10 (.0001" reading)
11 - 12"	201-162	.0002"	15N±3N	2803SB-10 (.0001" reading)

DIMENSIONS



Roll Caliper

SERIES 310

FEATURES

- The Roll Caliper is the most widely used instrument for checking the diameter of rollers used in the manufacture of many products such as metal, rubber and paper.
- Performs fast and accurate comparison measurements of roller diameter with the roller still mounted on a machine tool.
- Various types of detectors (dial indicator, Digimatic indicator, Mu-Checker gage head, etc.) can be attached according to the required accuracy and workpiece size.



310-132
with optional dial indicator

Contact Force Gage

SERIES 546

FEATURES

- Measures small forces applied to the end of its measuring lever in units of newtons (N).
- Contact Force Gages are widely used to determine the measuring force applied by

an instrument to a workpiece, as well as contact forces of electrical relays, micro-switches, valves and precision springs.

- Convenient peak-hold type gages are also available.



546-112
Standard type



546-119
Standard type



546-137
Peak hold type

SPECIFICATIONS

Standard		
Minimum reading	Order No.	Range
2mN	546-112	6mN - 50mN
5mN	546-113	10mN - 100mN
10mN	546-114	30mN - 300mN
0.02N	546-115	0.06N - 0.5N
0.05N	546-116	0.1N - 1N
0.05N	546-117	0.15N - 1.5N
0.1N	546-118	0.3N - 3N
0.2N	546-119	0.6N - 5N

Peak hold		
Graduation	Order No.	Range
5mN	546-133	10mN - 100mN
10mN	546-134	30mN - 300mN
0.02N	546-135	0.06N - 0.5N
0.05N	546-136	0.1N - 1N
0.05N	546-137	0.15N - 1.5N
0.1N	546-138	0.3N - 3N
0.2N	546-139	0.6N - 5N

V-Block Set

SERIES 181

FEATURES

- Two V-blocks per set.
- Magnetic type is available. (The magnetic type V-block is not provided with a workpiece clamp.)



SPECIFICATIONS

Metric		
Max. workpiece dia.	Order No.	Remarks
25mm	181-902	With clamp

Inch		
Max. workpiece dia.	Order No.	Remarks
1"	181-901	With clamp

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SPECIFICATIONS

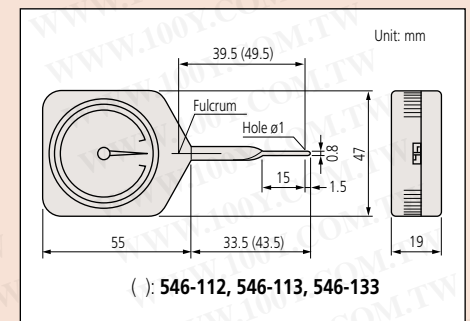
Metric		Inch	
Range	Order No.	Range	Order No.
ø500 - ø1400mm	310-131	ø20" - ø56"	310-141
ø400 - ø1050mm	310-132	ø16" - ø42"	310-142
ø275 - ø825mm	310-133	ø11" - ø32"	310-143
ø200 - ø600mm	310-134	ø8" - ø24"	310-144
ø100 - ø450mm	310-135	ø4" - ø17"	310-145

Application

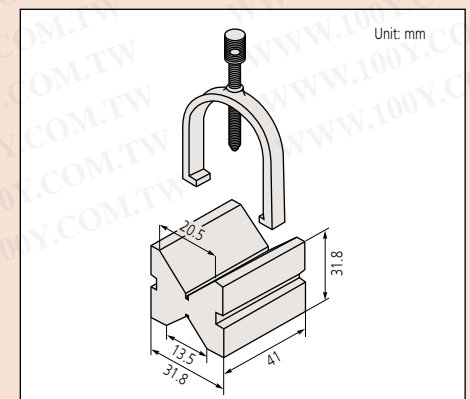
Measuring contact force of a relay



DIMENSIONS



DIMENSIONS

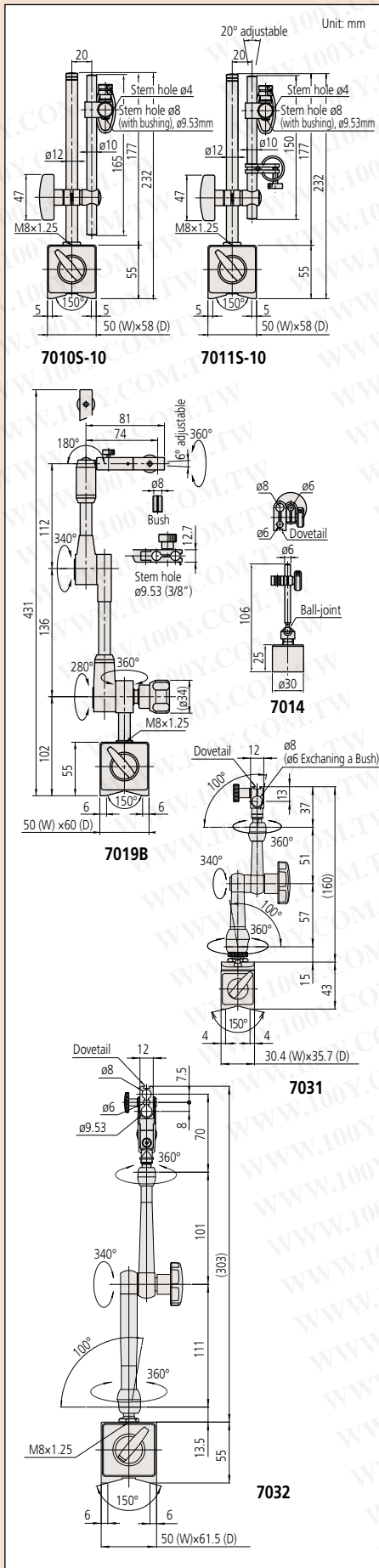


Magnetic Stands

SERIES 7

Mitutoyo's Magnetic Stands accept all dial indicators and dial test indicators. The ON-OFF switch offers instant mounting and dismounting without any adverse effect on the indicators or workpiece surface.

DIMENSIONS



SPECIFICATIONS

Order No.	Description	Applicable holding stem dia.	Dovetail groove	Remarks
7010S-10	Magnetic stand	$\phi 4\text{mm}$, $\phi 8\text{mm}$, $\phi 9.53\text{mm}$ (3/8")	—	—
7011S-10	Magnetic stand	$\phi 4\text{mm}$, $\phi 8\text{mm}$, $\phi 9.53\text{mm}$ (3/8")	—	With fine adjustment
7014	Mini magnetic stand	$\phi 6\text{mm}$, $\phi 8\text{mm}$	Provided	Without magnet ON/OFF
7014E	Mini magnetic stand	$\phi 4\text{mm}$, $\phi 9.5\text{mm}$	Provided	Without magnet ON/OFF
7019B	Universal magnetic stand	$\phi 8\text{mm}$, $\phi 9.53\text{mm}$ (3/8")	Provided	With hydraulic position lock
7031	Universal magnetic stand	$\phi 6$, $\phi 8\text{mm}$	Provided	With mechanical locking system
7032	Universal magnetic stand	$\phi 6$, $\phi 8\text{mm}$, $\phi 9.53\text{mm}$ (3/8")	Provided	With mechanical locking system

Dial Gage Stands

SERIES 7

Dial Gage Stands are designed for comparison measurements of size using a dial indicator or Digimatic Indicator.

FEATURES

- Vertical travel of the gage holder — Dial Gage Stand: 95mm (7007-10: 90mm), Transfer Stand: 320mm
- Fine-adjustment of 1mm is provided for zero-setting the indicator.
- With interchangeable anvil. Domed anvil (**101463**) is optional.



7001-10
with $\phi 58$ mm serrated anvil



7002-10
with $\phi 58$ mm flat anvil

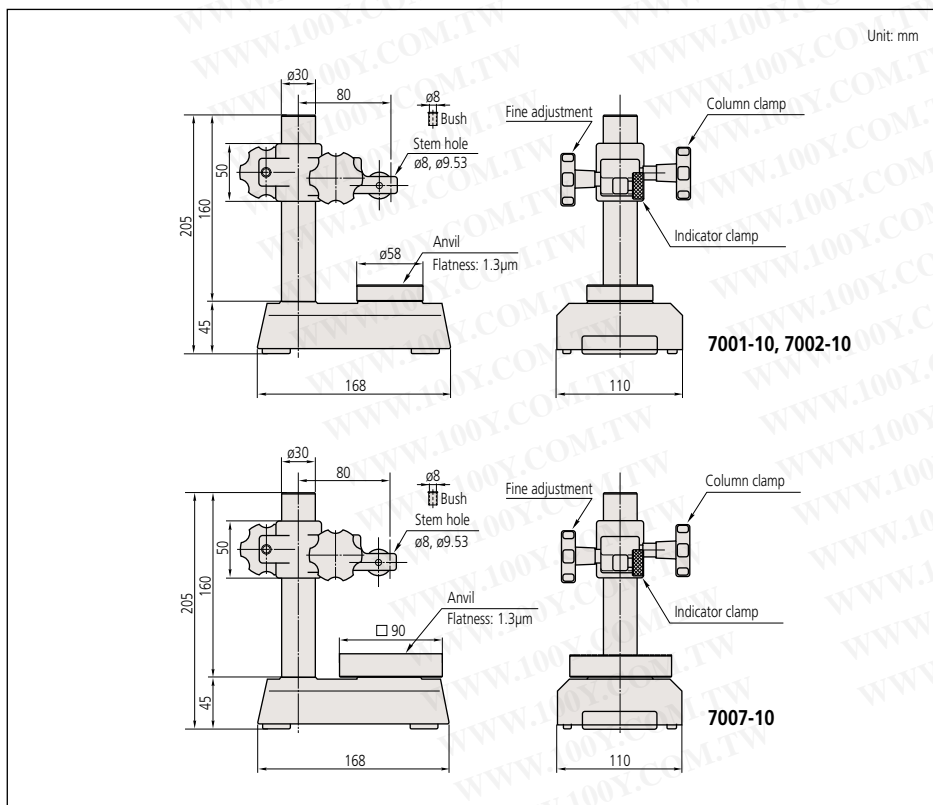


7007-10
90mm square anvil

SPECIFICATIONS

Metric		
Order No.	Stem hole	Remarks
7001-10	$\phi 8$ mm, $\phi 9.53$ mm	With serrated anvil
7002-10	$\phi 8$ mm, $\phi 9.53$ mm	With flat anvil
7007-10	$\phi 8$ mm, $\phi 9.53$ mm	With square anvil

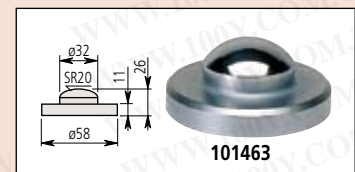
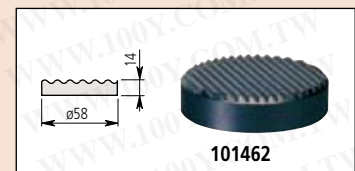
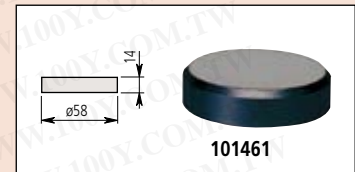
DIMENSIONS



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Optional Accessories

- 101461**: Hardened steel flat anvil
 - 101462**: Hardened steel serrated anvil
 - 101463**: Hardened steel domed anvil*
- *Not available for 7007-10



Transfer Stand

SERIES 519

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[Http://www.100y.com.tw](http://www.100y.com.tw)

Transfer Stands are designed for comparison measurements of size using a dial indicator or Digimatic Indicator.

FEATURES

- Vertical travel of the gage holder — Dial Gage Stand: 95mm (7007-10: 90mm), Transfer Stand: 320mm
- Fine-adjustment of 1mm is provided for zero-setting of the indicator.
- With interchangeable anvil. Domed anvil (**101463**) is optional.

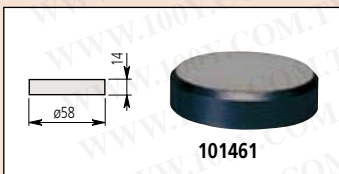


519-109-10
with $\phi 58$ mm serrated anvil

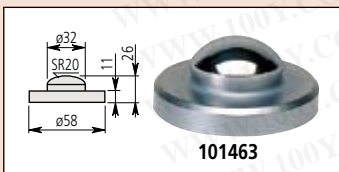
Optional Accessories

101461: Hardened steel flat anvil

101463: Hardened steel domed anvil



101461



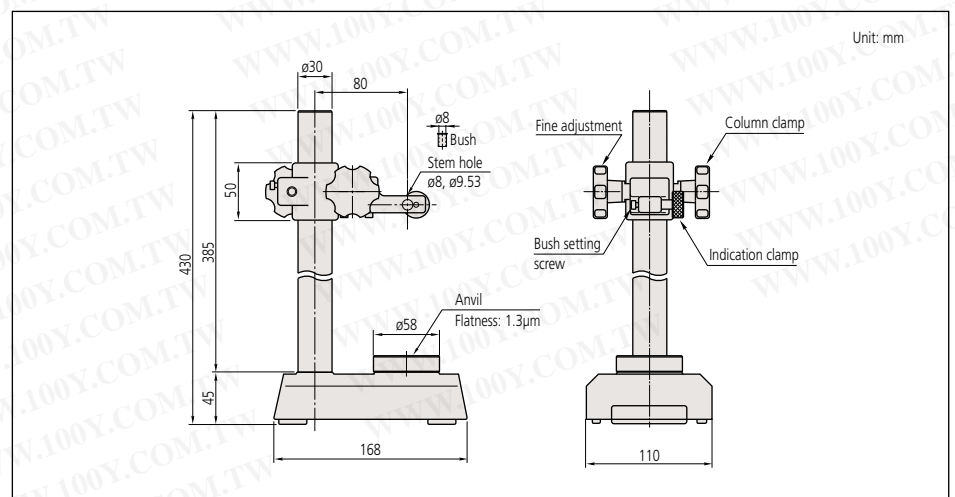
101463

SPECIFICATIONS

Metric

Order No.	Stem hole	Remarks
519-109-10	$\phi 8$ mm, $\phi 9.53$ mm	With serrated anvil

DIMENSIONS



Granite Comparator Stands

SERIES 215

Mitutoyo's Granite Comparator Stands are basic building-blocks for the assembly of special-purpose, precision measuring equipment. By mounting precision measuring instruments such as Digimatic indicators, Mu-

Checker Cartridge Heads, and Linear Gages onto the stands, it is possible to handle all manner of measuring applications. The rigid granite base is free from burrs, pileups, rust, and deterioration over time.



215-153-10

SPECIFICATIONS

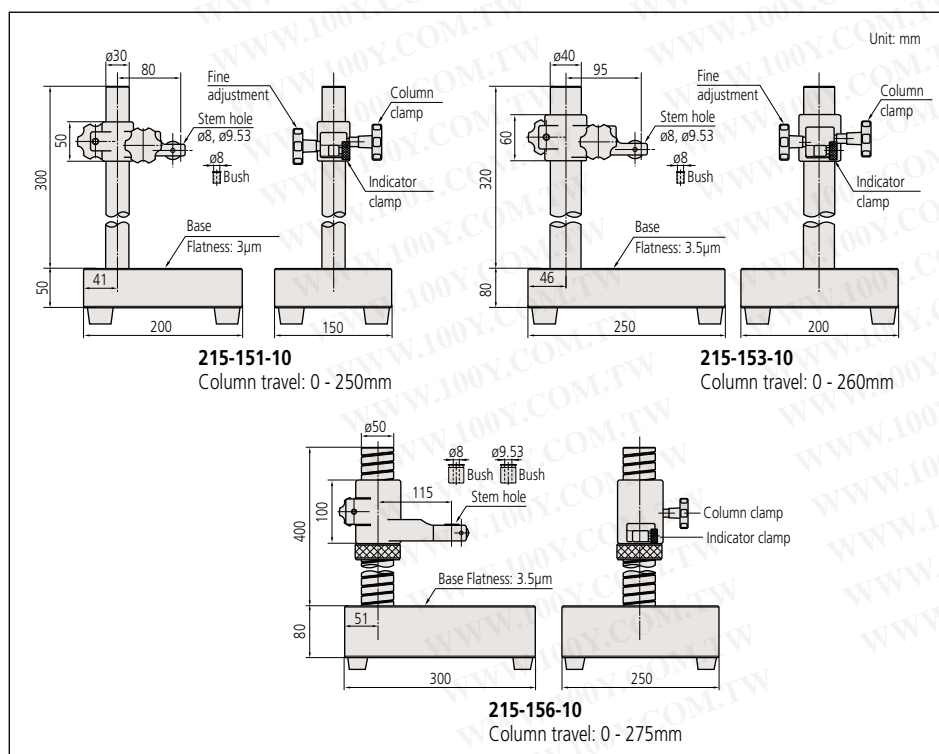
Order No.	Granite base size (W x D x H)	Column travel	Stem hole	Remarks
215-151-10	150 x 200 x 50mm	250mm	ø8mm, ø9.53mm	With fine adjustment of 1mm range
215-153-10	200 x 250 x 80mm	260mm	ø8mm, ø9.53mm	With fine adjustment of 1mm range
215-156-10	300 x 250 x 80mm	275mm	ø8mm, ø9.53mm, ø20mm	With fine adjustment over the entire travel

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Optional Accessories

21JAA329: ø8mm bush
 21JAA330: ø9.53mm bush
 21JAA331: ø15mm bush
 only available for 215-156-10

DIMENSIONS



Comparator Stands

SERIES 215

Comparator Stands consists of a very stable, cast-iron base and an upright column with a mounting bracket that features fine adjustment. The grid type anvil prevents very flat workpieces from wringing to it.

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215-405-10

Optional Accessories

- 21JAA329: $\varnothing 8$ mm bush*
- 21JAA330: $\varnothing 9.53$ mm (3/8") bush*
- 21JAA331: $\varnothing 15$ mm bush*

*Only available for 215-505-10.

SPECIFICATIONS

Order No.	Square anvil size (W x D)	Column travel	Stem hole	Remarks
215-405-10	110 x 110mm	235mm	$\varnothing 8$ mm, $\varnothing 9.53$ mm	With fine adjustment of 1mm range
215-505-10	150 x 150mm	275mm	$\varnothing 8$ mm, $\varnothing 9.53$ mm, $\varnothing 20$ mm	With fine adjustment over the entire travel

DIMENSIONS

