

Indicator

Move to other products

- 1 SPC
- 2 Caliper
- 3 Depth gage
- 4 Height gage
- 5 Micrometer
- 6 Inside micrometer
- 7 Micrometer head
- Indicator
- 9 Test indicator
- 10 Gage head
- 11 Gauge Block
- 12 Reference gage
- 13 Surface plate
- 14 Miscellaneous
- 15 Linear scale
- 16 Digimatic scale unit
- 17 Profile projector
- 18 Microscope
- 19 Contracer
- 20 Surftest
- 21 Formtracer
- 22 Roundtest
- 23 Hardness tester
- 24 CMM
- 25 Flexible measuring gage
- 26 Vision measuring system
- 27 Detailed shape measuring system
- 28 Laser scan micrometer
- 29 DIY tools

List of products 1 2 3 4

IDF Series Digimatic Indicators
SERIES 543



IDC Series Digimatic Indicators
SERIES 543



IDC Series Digimatic Indicators
SERIES 543 — Calculation Type



IDC Series Digimatic Indicators
SERIES 543 — with Max./Min. Value



IDC Series Digimatic Indicators
SERIES 543 — with GO/NG Signal Output



IDC Series Digimatic Indicators
SERIES 543 — Low Measuring Force Type



IDS Series Digimatic Indicators
SERIES 543



IDU Series Digimatic Indicators
SERIES 575



LGS Linear Gages
SERIES 575



LGD, LGD-M Linear Gages
SERIES 575



Dial Indicators
SERIES 1



Dial Indicators
SERIES 1



Dial Indicators
SERIES 1



Dial Indicators
SERIES 2



Dial Indicators
SERIES 2



One-Revolution Dial Indicator
SERIES 2



Hicator
SERIES 524



Dial Indicators
SERIES 2



Double-Face Dial Indicator
SERIES 2



List of products 1 2 3 4

Indicator

Move to other products

- [1](#) SPC
- [2](#) Caliper
- [3](#) Depth gage
- [4](#) Height gage
- [5](#) Micrometer
- [6](#) Inside micrometer
- [7](#) Micrometer head

Indicator

- [9](#) Test indicator
- [10](#) Gage head
- [11](#) Gauge Block
- [12](#) Reference gage
- [13](#) Surface plate
- [14](#) Miscellaneous
- [15](#) Linear scale
- [16](#) Digimatic scale unit
- [17](#) Profile projector
- [18](#) Microscope
- [19](#) Contracer
- [20](#) Surftest
- [21](#) Formtracer
- [22](#) Roundtest
- [23](#) Hardness tester
- [24](#) CMM
- [25](#) Flexible measuring gage
- [26](#) Vision measuring system
- [27](#) Detailed shape measuring system
- [28](#) Laser scan micrometer
- [29](#) DIY tools

List of products [1](#) [2](#) [3](#) [4](#)

Dial Indicators
SERIES 3



Dial Indicators
SERIES 4



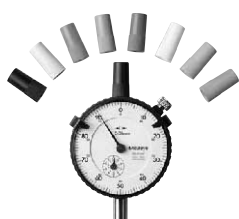
Contact Points



Backs



Accessories



Dial Indicator Repair Tool Kit



Dial Indicator Crystal Setter



UDT-2 Dial Gage Tester
SERIES 170



Calibration Tester
SERIES 521



i-Checker
SERIES 170



Magnetic Stands
SERIES 7



Dial Gage Stands
SERIES 7



Transfer Stands
SERIES 519



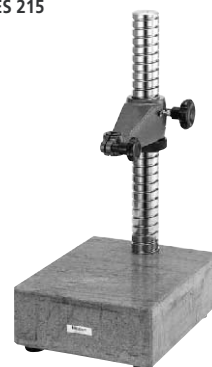
Dial Gage Stands
SERIES 7



Comparator Stands
SERIES 215



Granite Comparator Stands
SERIES 215



Heavy Duty
Comparator Stands
SERIES 215



Dial Bench Gage
SERIES 547, 7



Roll Calipers
SERIES 310



List of products [1](#) [2](#) [3](#) [4](#)

Indicator

Move to other products

- [1](#) SPC
- [2](#) Caliper
- [3](#) Depth gage
- [4](#) Height gage
- [5](#) Micrometer
- [6](#) Inside micrometer
- [7](#) Micrometer head
- Indicator**
- [9](#) Test indicator
- [10](#) Gage head
- [11](#) Gauge Block
- [12](#) Reference gage
- [13](#) Surface plate
- [14](#) Miscellaneous
- [15](#) Linear scale
- [16](#) Digimatic scale unit
- [17](#) Profile projector
- [18](#) Microscope
- [19](#) Contracer
- [20](#) Surftest
- [21](#) Formtracer
- [22](#) Roundtest
- [23](#) Hardness tester
- [24](#) CMM
- [25](#) Flexible measuring gage
- [26](#) Vision measuring system
- [27](#) Detailed shape measuring system
- [28](#) Laser scan micrometer
- [29](#) DIY tools

List of products [1](#) [2](#) [3](#) [4](#)

Upright Gages
SERIES 547, 7



Dial Snap Gages
SERIES 201



Absolute Digimatic Bore Gage
SERIES 511



IDC Series Digimatic Indicators
SERIES 543 — for Bore Gages



Bore Gages
SERIES 526



Bore Gages
SERIES 511



Bore Gages
SERIES 511



Bore Gages
SERIES 511



Bore Gages
SERIES 511



Bore Gages
SERIES 511



Dial Bore Gages
SERIES 545



Setting Rings
SERIES 177



Bore Gage
Zero Checker
SERIES 515



Dial Depth Gages
SERIES 7



Dial Depth Gages
SERIES 7



Digimatic Depth Gages
SERIES 547



Digimatic Thickness Gages
SERIES 547



Light-Weight Dial Thickness Gages
SERIES 7



Dial Thickness Gages
SERIES 7



Pocket Thickness Gage
SERIES 7



Female Screw Thread Comparators
SERIES 243



List of products [1](#) [2](#) [3](#) [4](#)

Indicator

Move to other products

- [1](#) SPC
- [2](#) Caliper
- [3](#) Depth gage
- [4](#) Height gage
- [5](#) Micrometer
- [6](#) Inside micrometer
- [7](#) Micrometer head
- Indicator
- [9](#) Test indicator
- [10](#) Gage head
- [11](#) Gauge Block
- [12](#) Reference gage
- [13](#) Surface plate
- [14](#) Miscellaneous
- [15](#) Linear scale
- [16](#) Digimatic scale unit
- [17](#) Profile projector
- [18](#) Microscope
- [19](#) Contracer
- [20](#) Surftest
- [21](#) Formtracer
- [22](#) Roundtest
- [23](#) Hardness tester
- [24](#) CMM
- [25](#) Flexible measuring gage
- [26](#) Vision measuring system
- [27](#) Detailed shape measuring system
- [28](#) Laser scan micrometer
- [29](#) DIY tools

List of products [1](#) [2](#) [3](#) [4](#)

Digimatic Caliper Gages
SERIES 209



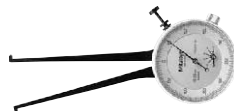
Dial Caliper Gages
SERIES 209



Dial Caliper Gages
SERIES 209



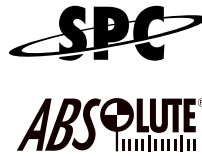
Dial Caliper Gages
SERIES 209



List of products [1](#) [2](#) [3](#) [4](#)

IDF Series Digimatic Indicators

SERIES 543 — with Back-lit LCD Screen



FEATURES

- The external power supply eliminates the need to replace batteries for extended continuous operation.
- GO/±NG judgment is performed by setting the upper and lower tolerances. If a judgment result is out of tolerance, the display backlighting changes from green to red, so tolerance judgment can be made at a glance.
- The PRESET button allows a reference point to be set at any spindle position. With the ABSOLUTE Linear Encoder technology, once the measurement reference point has been preset it will not be lost when the power is turned on.
- The ZERO/ABS button allows a display value to be zero-set at any spindle position. Press this button again to restore the absolute (ABS) coordinate.
- The maximum, minimum, or runout value can be displayed during measurement.
- An analog bar indicator has been integrated to handle upper/lower limit approaching and zero approaching. It enhances the ease of operation in the same manner as a dial indicator. The display range of the analog bar can be changed.

The new multi-function IDF Series ABSOLUTE Digimatic Indicator never forgets its absolute origin throughout the entire service life unless otherwise preset for a different setup or the main power cable is disconnected. The large LCD has several features including greatly improved visibility, green/red backlit screen for easy GO/NG judgment, the analog bar indicator for easy process monitoring such as zero/tolerance zone approaching. Maximum/minimum value hold, runout measurement, and data output functions are also included as standard features of the IDF Series Digimatic Indicator.

OPTIONAL ACCESSORIES

Order No.	Description
936937	SPC cable (1m)
965014	SPC cable (2m)
540774	Spindle lifting cable*
101040	Lug-on-center back (mm type)
101306	Lug-on-center back (inch/mm type)
02ACA571	Auxiliary spindle spring (for 25mm IDF)**
02ACA773	Auxiliary spindle spring (for 50mm IDF)**

*Lifts the spindle up to 10mm.

**Required when orienting an IDF upside down.

Technical Data

Display: LCD
Functions: Origin-Set (presetting), Zero-Set, power on/off, inch/mm conversion (inch/mm type only), resolution switching, MAX/MIN value hold, runout measurement, SPC data output, counting direction switching, analog bar range switching, GO/±NG tolerance judgment, measuring condition memory
Power supply: 9V DC (via AC adaptor)
Stem diameter: 8mm (mm type) or 3/8" (inch/mm type)
Contact point: Carbide ball with M2.5x0.45 thread (mm type) or steel ball with #4-48UNF thread (inch/mm type)
Alarm: Over-flow error, tolerance limit setting error, counting value composition error
Dust/Water protection level: Conforming to IP30
Operating temperature: 0°C to 40°C



SPECIFICATIONS

Metric

Resolution (switchable)	Range	Order No.	Accuracy	Measuring force	Mass	Remarks
0.001mm/0.01mm	25mm	543-551	0.003mm	1.8N or less	240g	With 100V AC adaptor
		543-551A	0.003mm	1.8N or less	240g	With 120V AC adaptor
		543-551D	0.003mm	1.8N or less	240g	With 230V AC adaptor (Germany)
		543-551E	0.003mm	1.8N or less	240g	With 230V AC adaptor (UK)
		543-551DC	0.003mm	1.8N or less	240g	With 230V AC adaptor (China)
	50mm	543-553*	0.006mm	2.3N or less	330g	With 100V AC adaptor
		543-553A*	0.006mm	2.3N or less	330g	With 120V AC adaptor
		543-553D*	0.006mm	2.3N or less	330g	With 230V AC adaptor (Germany)
		543-553E*	0.006mm	2.3N or less	330g	With 230V AC adaptor (UK)
		543-553DC*	0.006mm	2.3N or less	330g	With 230V AC adaptor (China)

*A 50mm range type IDF (543-557/A/D/E/DC) is available with a measuring accuracy equal to that of the 25mm range type.

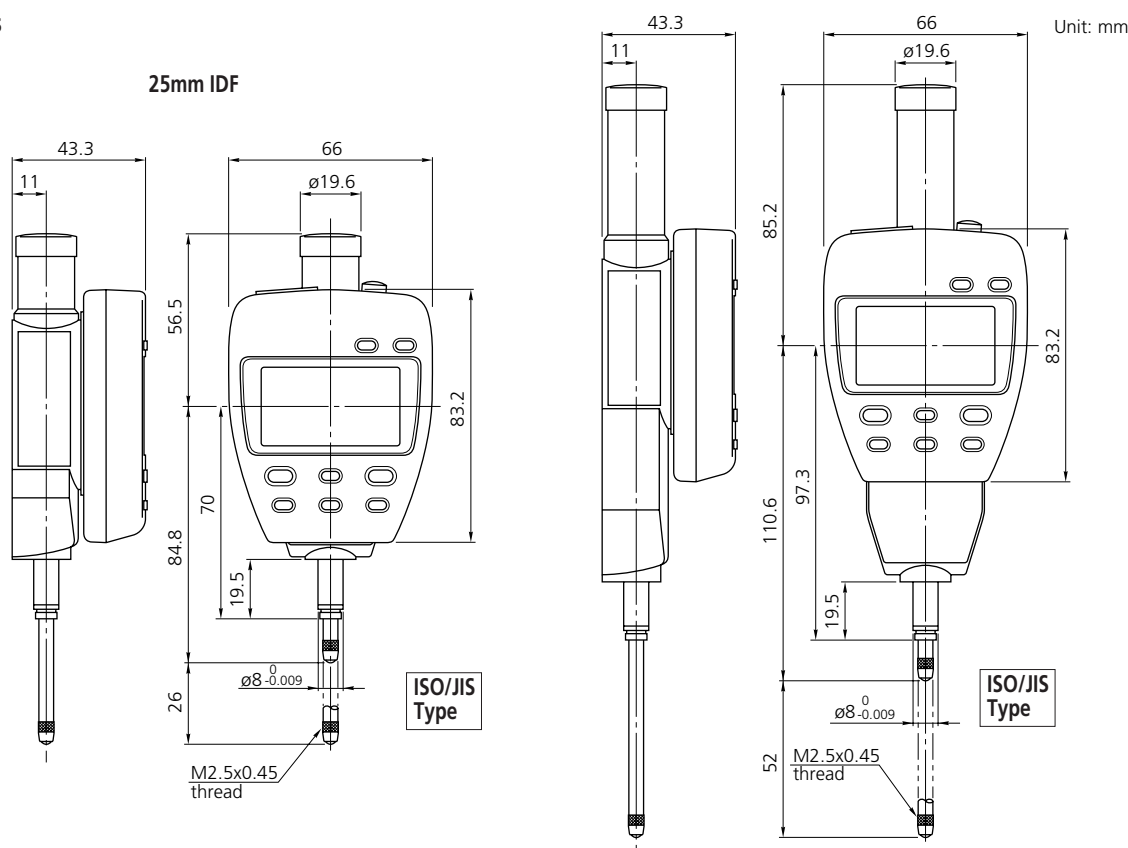
Inch/Metric

Resolution (switchable)	Range	Order No.	Accuracy	Measuring force	Mass	Remarks
.00005"/.0001"/ .0005"/.001"/ 0.001mm/0.01mm	1" (25.4mm)	543-552	.00012"	1.8N or less	.53 lbs.	With 100V AC adaptor
		543-552A	.00012"	1.8N or less	.53 lbs.	With 120V AC adaptor
		543-552D	.00012"	1.8N or less	.53 lbs.	With 230V AC adaptor (Germany)
		543-552E	.00012"	1.8N or less	.53 lbs.	With 230V AC adaptor (UK)
		543-552DC	.00012"	1.8N or less	.53 lbs.	With 230V AC adaptor (China)
	2" (50.8mm)	543-554*	.00024"	2.3N or less	.73 lbs.	With 100V AC adaptor
		543-554A*	.00024"	2.3N or less	.73 lbs.	With 120V AC adaptor
		543-554D*	.00024"	2.3N or less	.73 lbs.	With 230V AC adaptor (Germany)
		543-554E*	.00024"	2.3N or less	.73 lbs.	With 230V AC adaptor (UK)
		543-554DC*	.00024"	2.3N or less	.73 lbs.	With 230V AC adaptor (China)

*A 2" (50.8mm) range type IDF (543-558/A/D/E/DC) is available with a measuring accuracy equal to that of the 1" (25.4mm) range type.

50mm IDF

Dimensions



Note: Dimensions of the ANSI/AGD (inch/metric) type IDF indicator partly differ from those of the ISO/JIS (metric) type IDF.



IDC Series Digimatic Indicators

SERIES 543 — Standard Type with Multiple Functions



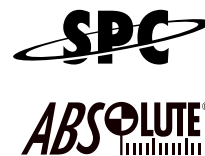
543-252



543-452B



543-462B



DIGIMATIC INDICATORS

Mitutoyo's new IDC Series Digimatic Indicator presents error-free digital readings in measurements. Its unique ABSOLUTE Linear Encoder keeps track of the origin point once set over the entire battery life, allowing the large LCD screen to display the actual spindle position from the origin point at power-on. Whenever turned on, the operator can take measurements with no need for preliminary absolute positioning.

FEATURES

- As compact as standard Series 2 dial indicators.
- Large, easy-to-read LCD.
- ZERO/ABS key: Allows the display to be Zero-Set at any spindle position for comparison measurements. This switch will also allow return to the absolute coordinate and display of the true position from the origin point.
- GO/±NG judgment can be performed by setting upper and lower tolerance limits. The judgment result (GO/±NG) can be displayed in full-size characters.
- The positive/negative count resulting from the spindle's up/down movement can be toggled.
- Unlimited response speed eliminates spindle over-speed errors.
- The IDC indicator face can be rotated 330° to an appropriate angle for easy reading.
- The measurement data can be output to an external data processor using the optional SPC cable.

Technical Data

Display:	LCD
Functions:	Origin-Set (preset), Zero-Set, power on/off, inch/mm conversion (inch/mm type only), SPC data output, counting direction switching, GO/±NG judgment
Battery:	SR44 (1 pc.) (938882)
Battery life:	Approx. 5000 hours in continuous use
Stem diameter:	8mm (ISO/JIS type) or 3/8" (ANSI/AGD type)
Contact point:	Carbide ball with M2.5x0.45 thread (ISO/JIS type) or steel ball with #4-48UNF thread (ANSI/AGD type)
Alarm:	Low battery voltage, scale contamination, over-flow error, tolerance limit setting error
Dust/Water protection level:	Conforming to IP42
Operating temperature:	0°C to 40°C

OPTIONAL ACCESSORIES

Order No.	Description
905338	SPC cable (1m)
905409	SPC cable (2m)
902011	Spindle lifting lever (ISO/JIS type)*
902794	Spindle lifting lever (ANSI/AGD type)*
540774	Spindle lifting cable
101040	Lug-on-center back (ISO/JIS type)**
101306	Lug-on-center back (ANSI/AGD type)**
02ACA571	Auxiliary spindle spring (for 25mm IDC)***
02ACA773	Auxiliary spindle spring (for 50mm IDC)***

*Can be used on 12mm (.5") IDC only.

**Can be used on 25mm (1") IDC or 50mm (2") IDC.

***Required when orienting an IDC upside down.

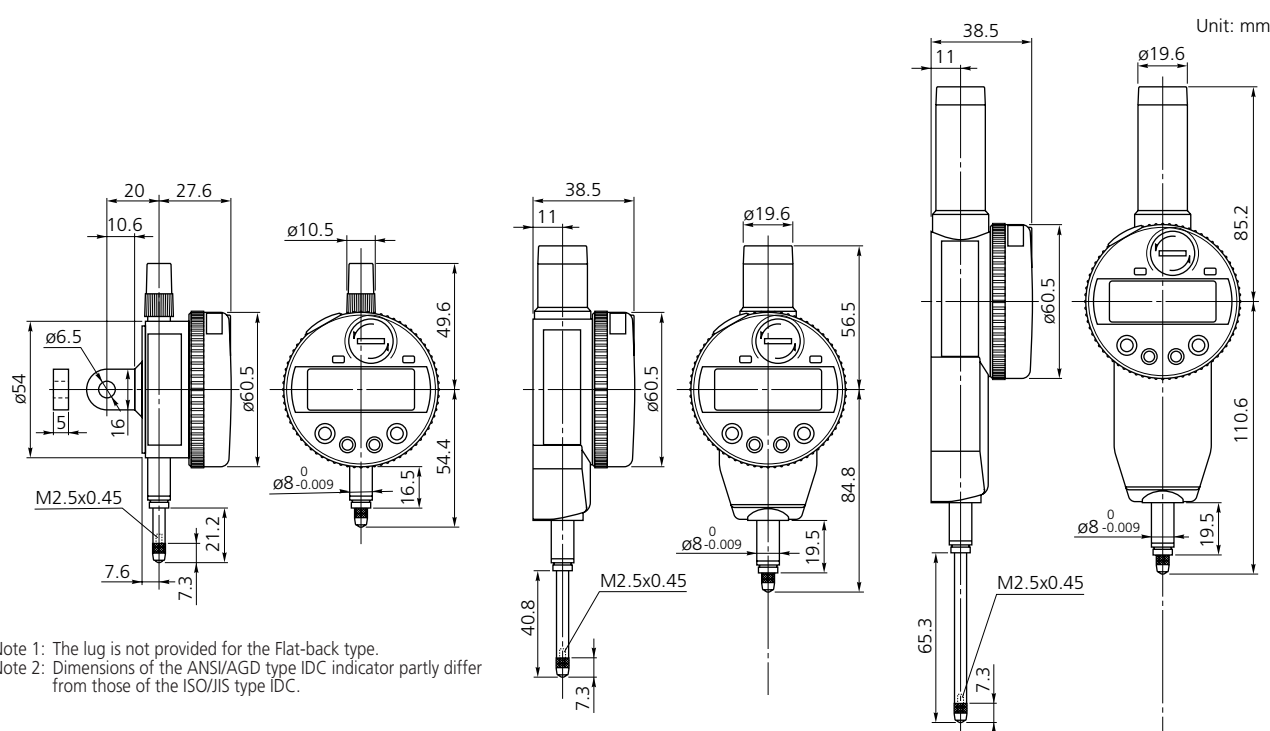
SPECIFICATIONS

Metric							
Resolution	Range	Order No. Back w/lug	Order No. Flat-back	Accuracy	Measuring force	Mass	Remarks
0.001mm	12mm	543-250	543-250B	0.003mm	1.5N or less	160g	ISO/JIS type
	25mm	—	543-450B	0.003mm	1.8N or less	190g	ISO/JIS type
	50mm	—	543-460B	0.006mm	2.3N or less	280g	ISO/JIS type
0.01mm	12mm	543-290	543-290B	0.005mm	1.5N or less	160g	ISO/JIS type
		543-270	543-270B	0.02mm	0.9N or less	160g	ISO/JIS type
	25mm	—	543-457B	0.005mm	1.8N or less	190g	ISO/JIS type
		—	543-454B	0.03mm	1.8N or less	190g	ISO/JIS type

Note: A 0.01mm reading type IDC is available with a measuring accuracy equal to that of the 0.001mm reading type.

Inch/Metric							
Resolution	Range	Order No. Back w/lug	Order No. Flat-back	Accuracy	Measuring force	Mass	Remarks
.00005"/0.001mm	.5" (12.7mm)	543-251	543-251B	.00012"	1.5N or less	.35 lbs.	ISO/JIS type
		543-252	543-252B	.00012"	1.5N or less	.35 lbs.	ANSI/AGD type
	1" (25.4mm)	—	543-451B	.00012"	1.8N or less	.42 lbs.	ISO/JIS type
		—	543-452B	.00012"	1.8N or less	.42 lbs.	ANSI/AGD type
	2" (50.8mm)	—	543-461B	.00025"	2.3N or less	.62 lbs.	ISO/JIS type
		—	543-462B	.00025"	2.3N or less	.62 lbs.	ANSI/AGD type
.0001"/0.001mm	.5" (12.7mm)	543-253	543-253B	.00012"	1.5N or less	.35 lbs.	ANSI/AGD type
	1" (25.4mm)	—	543-453B	.00012"	1.8N or less	.42 lbs.	ANSI/AGD type
	2" (50.8mm)	—	543-463B	.00025"	2.3N or less	.62 lbs.	ANSI/AGD type
.0005"/0.01mm	.5" (12.7mm)	543-291	543-291B	.0002"	1.5N or less	.35 lbs.	ISO/JIS type
		543-292	543-292B	.0002"	1.5N or less	.35 lbs.	ANSI/AGD type
		543-271	543-271B	.0008"	0.9N or less	.35 lbs.	ISO/JIS type
		543-272	543-272B	.0008"	0.9N or less	.35 lbs.	ANSI/AGD type
	1" (25.4mm)	—	543-458B	.0002"	1.8N or less	.42 lbs.	ISO/JIS type
		—	543-459B	.0002"	1.8N or less	.42 lbs.	ANSI/AGD type
		—	543-455B	.0012"	1.8N or less	.42 lbs.	ISO/JIS type
		—	543-456B	.0012"	1.8N or less	.42 lbs.	ANSI/AGD type
	2" (50.8mm)	—	543-465B	.0016"	2.3N or less	.62 lbs.	ISO/JIS type
		—	543-466B	.0016"	2.3N or less	.62 lbs.	ANSI/AGD type

Note: A .0005"/0.01mm reading type IDC is available with a measuring accuracy equal to that of the .00005"/0.001mm reading type.

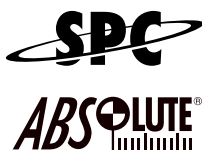


IDC Series Digimatic Indicators

SERIES 543 — Calculation Type



543-285B



Metric

Resolution	Range	Stem diameter	Order No. (Flat-back)	Accuracy
0.0002mm - 1mm	12mm	8mm (ISO/JIS type)	543-285B	0.003mm
	25mm	8mm (ISO/JIS type)	543-480B	0.003mm
	50mm	8mm (ISO/JIS type)	543-485B	0.003mm

Inch/Metric

Resolution	Range	Stem diameter	Order No. (Flat-back)	Accuracy
.00001" - .05"/	.5" (12.7mm)	8mm (ISO/JIS type)	543-286B	.00012"
0.0002mm - 1mm	.5" (12.7mm)	3/8" (ANSI/AGD type)	543-287B	.00012"
	1" (25.4mm)	8mm (ISO/JIS type)	543-481B	.00012"
	1" (25.4mm)	3/8" (ANSI/AGD type)	543-482B	.00012"
	2" (50.8mm)	8mm (ISO/JIS type)	543-486B	.00012"
	2" (50.8mm)	3/8" (ANSI/AGD type)	543-487B	.00012"

Technical Data

Display:	LCD
Functions:	Origin-Set (preset), Zero-Set, power on/off, calculation, inch/mm conversion (inch/mm type only), SPC data output, counting direction switching, GO/±NG judgment
Battery:	SR44 (1 pc.) (938882)
Battery life:	Approx. 5000 hours in continuous use
Contact point:	Carbide ball with M2.5x0.45 thread (ISO/JIS type) or steel ball with #4-48UNF thread (ANSI/AGD type)
Alarm:	Low battery voltage, scale contamination, over-flow error, tolerance limit setting error
Operating temperature:	0°C to 40°C

OPTIONAL ACCESSORIES

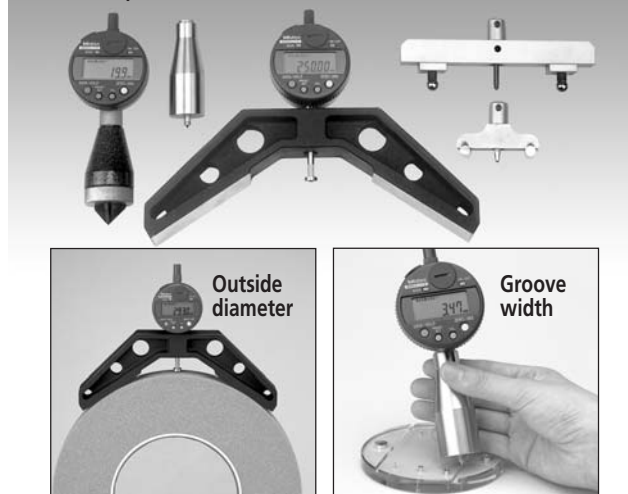
Order No.	Description
905338	SPC cable (1m)
905409	SPC cable (2m)
902011	Spindle lifting lever (ISO/JIS type)
540774	Spindle lifting cable

A conventional Digimatic indicator simply displays a spindle displacement, but the Calculation-Type Digimatic indicator incorporates an internal calculation function in place of spindle displacement. With fixtures, measurements such as feeler, inside diameter and radius of curvature measurement can easily be obtained without the hassle of conversion tables or equivalents.

FEATURES

- The Absolute Digimatic indicator performs internal calculations using the formula $Ax+B+Cx^{-1}$ (assuming spindle displacement as x) while the specified coefficients A, B and, C can be set with respect to the purpose of measurement or dimensions of the fixtures. This unique features allows you to read your measurements directly, without fumbling for conversions.

Fixture examples



- Various fixtures suited for individual workpieces can be prepared.
- Measuring accuracy is subject to fixture accuracy.

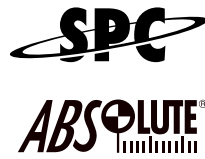
Fixture		
Contact point	Cone	—
Dimension X: Spindle displacement		
Measurement item	D= Diameter/Feeler/ Groove width H= Countersink depth	2R=Outside diameter
Calculation formula	D=Ax	R=Ax
Arithmetic Coefficient	A	$-2 \tan \frac{\theta}{2}$
	B	0
	C	0

IDC Series Digimatic Indicators

SERIES 543 — with Max./Min. Value Holding Function



543-262



With max./min. value holding function model of the IDC Series Digimatic Indicators.

FEATURES

- The maximum, minimum, or runout value can be displayed during measurement

Maximum value holding



- GO/±NG judgment is performed by setting the upper and lower tolerances for max., min. and runout values.
- High speed sampling ratio of 50 times/s.

SPECIFICATIONS

Metric

Resolution	Range	Order No. Back w/lug	Order No. Flat-back	Accuracy	Measuring force	Mass	Remarks
0.001mm	12mm	543-260	—	0.003mm	1.5N or less	160g	ISO/JIS type

Inch/Metric

Resolution	Range	Order No. Back w/lug	Order No. Flat-back	Accuracy	Measuring force	Mass	Remarks
.00005"/0.001mm	.5" (12.7mm)	543-261	—	.00012"	1.5N or less	.35 lbs.	ISO/JIS type
		543-262	—	.00012"	1.5N or less	.35 lbs.	ANSI/AGD type
.0001"/0.001mm	.5" (12.7mm)	543-263	—	.00012"	1.5N or less	.35 lbs.	ANSI/AGD type

Technical Data

Display:	LCD
Functions:	Origin-Set (preset), Zero-Set, power on/off, inch/mm conversion (inch/mm type only), SPC data output, counting direction switching, GO/±NG judgment, max./min./runout value holding
Battery:	SR44 (1 pc.) (938882)
Battery life:	Approx. 5000 hours in continuous use
Stem diameter:	8mm (ISO/JIS type) or 3/8" (ANSI/AGD type)
Contact point:	Carbide ball with M2.5x0.45 thread (ISO/JIS type) or steel ball with #4-48UNF thread (ANSI/AGD type)
Alarm:	Low battery voltage, scale contamination, over-flow error, tolerance limit setting error
Dust/Water protection level:	Conforming to IP42
Operating temperature:	0°C to 40°C

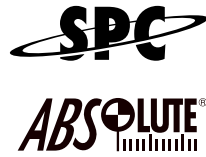
OPTIONAL ACCESSORIES

Order No.	Description
905338	SPC cable (1m)
905409	SPC cable (2m)
902011	Spindle lifting lever (ISO/JIS type)
902794	Spindle lifting lever (ANSI/AGD type)
540774	Spindle lifting cable

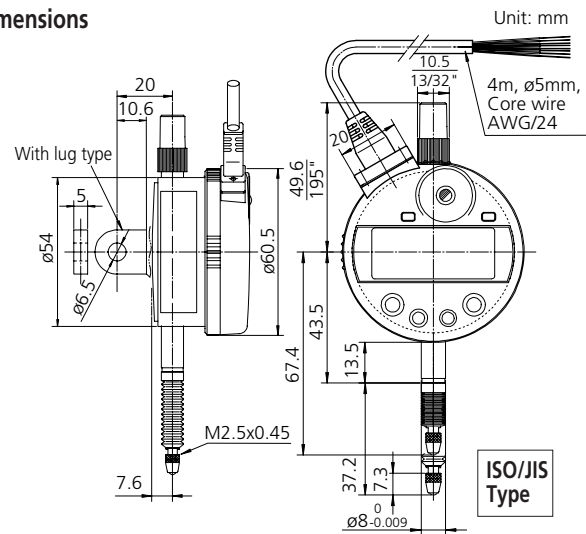


IDC Series Digimatic Indicators

SERIES 543 — with Green/Red LED and GO/±NG Signal Output Function



Dimensions



Note 1: The lug is not provided for the Flat-back type.
Note 2: Dimensions of the ANSI/AGD type IDS indicator partly differ from those of the ISO/JIS type IDS.

FEATURES

- With the max./min. value holding function, the signal IDC can output the signal of the GO/±NG judgment result against the peak values set. Substitute for the mechanical/electrical contact, the judgment is carried out by calculating the measurement data obtained. This provides high reliability with no deterioration of the contact point and volume adjustment.
- Employing the absolute linear encoder, the Signal IDC always displays the spindle "Absolute Position" from the origin at power-on. Also unlimited response speed eliminates over-speed errors.
- The signal can be output to an external device like a sequencer through the NPN open-collector.
- The GO/±NG judgment result is also indicated by the green/red LED and the "<, 0, >" signs on LCD.
- The Signal IDC achieves the IP54 protection level to resist dust and contaminants for safe operation in harsh machine shop environments.

Technical Data

Display: LCD

Functions:

- Signal output: -NG/OK/+NG (judgment result only), NPN open-collector, 30mA/24V max. output current/voltage
- Remote control: Hold-preset, Preset-recall, Zero-Set
- Other functions: Origin-Set, Zero-Set, power on/off, inch/mm conversion (inch/mm type only), counting direction switching, GO/±NG judgment, max./min./runout value holding

Signal cable length: 4m

Power supply: DC12 - 24V±10%

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

Contact point: Carbide ball with M2.5x0.45 thread (ISO/JIS type) or steel ball with #4-48UNF thread (ANSI/AGD type)

Dust/Water protection level: Conforming to IP54

Operation temperature: 0°C to 40°C

OPTIONAL ACCESSORIES

Order No.	Description
540774	Spindle lifting cable
902011	Spindle lifting lever (ISO/JIS type)
902794	Spindle lifting lever (ANSI/AGD type)
125317	Rubber boot

SPECIFICATIONS

Metric

Resolution	Range	Order No. Back w/lug	Order No. Flat-back	Accuracy	Measuring force	Mass	Remarks
0.001mm	12.7mm	543-280	543-280B	0.003mm	2.0N or less	345g	ISO/JIS type

Inch/Metric

Resolution	Range	Order No. Back w/lug	Order No. Flat-back	Accuracy	Measuring force	Mass	Remarks
.00005"/0.001mm	.5" (12.7mm)	543-281	543-281B	.00012"	2.0N or less	.76 lbs.	ISO/JIS type
		543-282	543-282B	.00012"	2.0N or less	.76 lbs.	ANSI/AGD type
.0001"/0.001mm	.5" (12.7mm)	543-283	543-283B	.00012"	2.0N or less	.76 lbs.	ANSI/AGD type

IDC Series Digimatic Indicators

SERIES 543 — Dust-proof Type and Low Measuring Force Type



FEATURES

- The IP53 protection level structure of the dust-proof type IDC allows the indicator to resist dust and contaminants for safe operation in harsh machine shop environments.
- The low measuring force type IDC indicators are specially designed for elastic workpieces such as plastic parts.

Technical Data

Display:	LCD
Functions:	Origin-Set (preset), Zero-Set, power on/off, inch/mm conversion (inch/mm type only), SPC data output, counting direction switching, GO/±NG judgment
Battery:	SR44 (1 pc.) (938882)
Battery life:	Approx. 5000 hours in continuous use
Stem diameter:	8mm (ISO/JIS type) or 3/8" (ANSI/AGD type)
Contact point:	Carbide ball with M2.5x0.45 thread (ISO/JIS type) or steel ball with #4-48UNF thread (ANSI/AGD type)
Alarm:	Low battery voltage, scale contamination, over-flow error, tolerance limit setting error
Operating temperature:	0°C to 40°C

OPTIONAL ACCESSORIES

Order No.	Description
905338	SPC cable (1m)
905409	SPC cable (2m)
902011	Spindle lifting lever (ISO/JIS type)*
902794	Spindle lifting lever (ANSI/AGD type)*
540774	Spindle lifting cable

*Can not be used on the dust-proof type IDC.

SPECIFICATIONS

Metric Dust-proof Type IDC Series Digimatic Indicators

Resolution	Range	Order No. Back w/lug	Order No. Flat-back	Accuracy	Measuring force	Mass	Remarks
0.001mm	12mm	543-257	543-257B	0.003mm	2.0N or less	160g	ISO/JIS type
0.01mm	12mm	543-277	543-277B	0.02mm	2.0N or less	160g	ISO/JIS type

Inch/Metric Dust-proof Type IDC Series Digimatic Indicators

Resolution	Range	Order No. Back w/lug	Order No. Flat-back	Accuracy	Measuring force	Mass	Remarks
.00005"/0.001mm	.5" (12.7mm)	543-258	543-258B	.00012"	2.0N or less	.35 lbs.	ISO/JIS type
		543-259	543-259B	.00012"	2.0N or less	.35 lbs.	ANSI/AGD type
.0005"/0.01mm	.5" (12.7mm)	543-278	543-278B	.0008"	2.0N or less	.35 lbs.	ISO/JIS type
		543-279	543-279B	.0008"	2.0N or less	.35 lbs.	ANSI/AGD type

Metric Low Measuring Force Type IDC Series Digimatic Indicators

Resolution	Range	Order No. Back w/lug	Order No. Flat-back	Accuracy	Measuring force	Mass	Remarks
0.001mm	12mm	543-254	543-254B	0.003mm	0.4N - 0.7N	160g	ISO/JIS type
0.01mm	12mm	543-274	543-274B	0.02mm	0.2N - 0.5N	160g	ISO/JIS type

Inch/Metric Low Measuring Force Type IDC Series Digimatic Indicators

Resolution	Range	Order No. Back w/lug	Order No. Flat-back	Accuracy	Measuring force	Mass	Remarks
.00005"/0.001mm	.5" (12.7mm)	543-255	543-255B	.00012"	0.4N - 0.7N	.35 lbs.	ISO/JIS type
		543-256	543-256B	.00012"	0.4N - 0.7N	.35 lbs.	ANSI/AGD type
.0005"/0.01mm	.5" (12.7mm)	543-275	543-275B	.0008"	0.2N - 0.5N	.35 lbs.	ISO/JIS type
		543-276	543-276B	.0008"	0.2N - 0.5N	.35 lbs.	ANSI/AGD type



IDS Series Digimatic Indicators

SERIES 543 — with Economical Design



The IDS Series Digimatic Indicator offers simple, error-free digital readings in a basic and economical package.

FEATURES

- As compact as standard Series 2 dial indicators.
- The IDS indicates the absolute position of the spindle from the origin point at power-on, allowing to start measurements.
- After the initial zero-setting with the ORIGIN button, the repeated absolute positioning is no longer necessary over the entire battery life.
- Measurement error due to spindle over-speed is eliminated with the ABSOLUTE Encoder.

Technical Data

Display: LCD
Functions: Origin-Set, power on/off, counting direction switching, inch/mm conversion (inch/mm type only), SPC data output
Battery: SR44 (1 pc.) (938882)
Battery life: Approx. 20000 hours in continuous use
Stem diameter: 8mm (ISO/JIS type) or 3/8" (ANSI/AGD type)
Contact point: Carbide ball with M2.5x0.45 thread (ISO/JIS type) or steel ball with #4-48UNF thread (ANSI/AGD type)
Dust/Water protection level: Conforming to IP42
Alarm: Low battery voltage, scale contamination
Operating temperature: 0°C to 40°C

SPECIFICATIONS

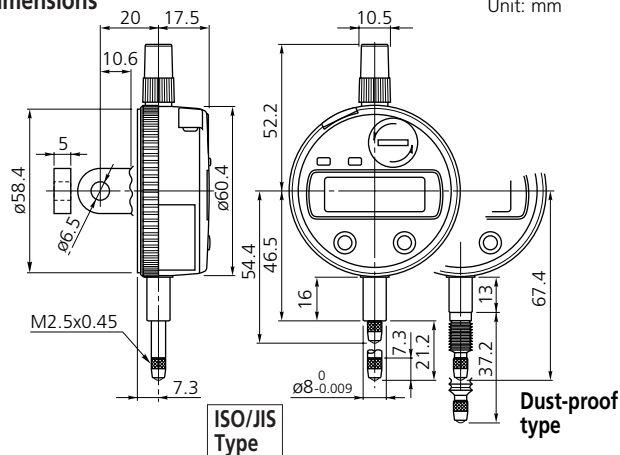
Metric

Resolution	Range	Order No. Back w/lug	Flat-back	Accuracy	Measuring force	Mass	Remarks
0.001mm	12mm	543-690	543-690B	0.003mm	2.0N or less	150g	ISO/JIS type
	12mm	543-694	543-694B	0.003mm	2.0N or less	150g	ISO/JIS type, Dust-proof
0.01mm	12mm	543-681	543-681B	0.02mm	2.0N or less	120g	ISO/JIS type

Inch/Metric

Resolution	Range	Order No. Back w/lug	Flat-back	Accuracy	Measuring force	Mass	Remarks
.00005"/0.001mm	.5" (12.7mm)	543-691	543-691B	.00012"	2.0N or less	.33 lbs.	ISO/JIS type
		543-695	543-695B	.00012"	2.0N or less	.33 lbs.	ISO/JIS type, Dust-proof
	.5" (12.7mm)	543-692	543-692B	.00012"	2.0N or less	.33 lbs.	ANSI/AGD type
		543-696	543-696B	.00012"	2.0N or less	.33 lbs.	ANSI/AGD type, Dust-proof
.0001"/0.001mm	.5" (12.7mm)	543-693	543-693B	.00012"	2.0N or less	.33 lbs.	ANSI/AGD type
.0005"/0.01mm	.5" (12.7mm)	543-682	543-682B	.0008"	2.0N or less	.26 lbs.	ISO/JIS type
		543-683	543-683B	.0008"	2.0N or less	.26 lbs.	ANSI/AGD type

Dimensions



Note 1: The lug is not provided for the Flat-back type.
 Note 2: Dimensions of the ANSI/AGD type IDS indicator partly differ from those of the ISO/JIS type IDS.

OPTIONAL ACCESSORIES

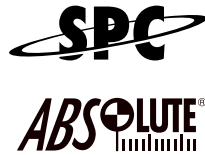
Order No.	Description
905338	SPC cable (1m)
905409	SPC cable (2m)
903424	Spindle lifting lever (ISO/JIS type)
903425	Spindle lifting lever (ANSI/AGD type)
540774	Spindle lifting cable
125317	Spare rubber boot (for dust-proof type)
02ACB420	Lug-on-center back (ISO/JIS type)
02ACB430	Lug-on-center back (ANSI/AGD type)
02ACB440	Flat back
02ACB610	Back with post
02ACB630	Adjustable back (ISO/JIS type)
02ACB620	Adjustable back (ANSI/AGD type)
02ACB640	Back with offset lug
02ACB650	Magnetic back
02ACB670	Back with screw mount (ISO/JIS type)
02ACB660	Back with screw mount (ANSI/AGD type)
02ACB680	Back with adjustable bracket

IDU Series Digimatic Indicators

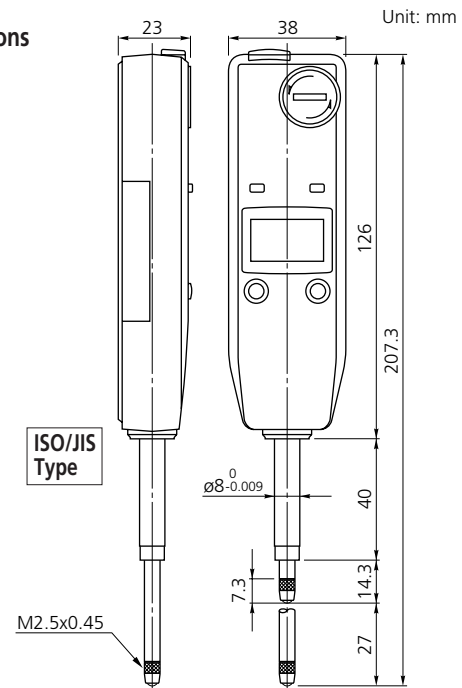
SERIES 575 — with Slim and Economical Design



575-123



Dimensions



Note : Dimensions of the ANSI/AGD type IDU indicator partly differ from those of the ISO/JIS type IDU.

FEATURES

- Slim type digital indicator with low price.
- Large LCD and simple key operation.
- The IDU displays the absolute position of the spindle from the origin point at power-on.
- After the initial origin setting, the IDU no longer needs absolute positioning over the entire battery life; the origin is remembered even after power-off.
- Ideal for installation into measuring devices because of its compact design and long battery life.
- The ABSOLUTE Encoder eliminates spindle over-speed error and prevents electrical noise interference errors.
- SPC data output.

Technical Data

- Display:** LCD
- Functions:** Origin-Set, power on/off, inch/mm conversion (inch/mm type only), counting direction switching, SPC data output
- Battery:** SR44 (1 pc.) (938882)
- Battery life:** Approx. 20000 hours in continuous use
- Stem diameter:** 8mm (ISO/JIS type) or 3/8" (ANSI/AGD type)
- Contact point:** Carbide ball with M2.5x0.45 thread (ISO/JIS type) or steel ball with #4-48UNF thread (ANSI/AGD type)
- Dust/Water protection level:** Conforming to IP42
- Alarm:** Low battery voltage, scale contamination
- Operating temperature:** 0°C to 40°C

OPTIONAL ACCESSORIES

Order No.	Description
905338	SPC cable (1m)
905409	SPC cable (2m)
540774	Spindle lifting cable*

*Lifts the spindle up to 10mm.

SPECIFICATIONS

Metric

Resolution	Range	Order No. Back w/lug	Order No. Flat-back	Accuracy	Measuring force	Mass	Remarks
0.01mm	25mm	—	575-121	0.02mm	1.8N or less	140g	ISO/JIS type

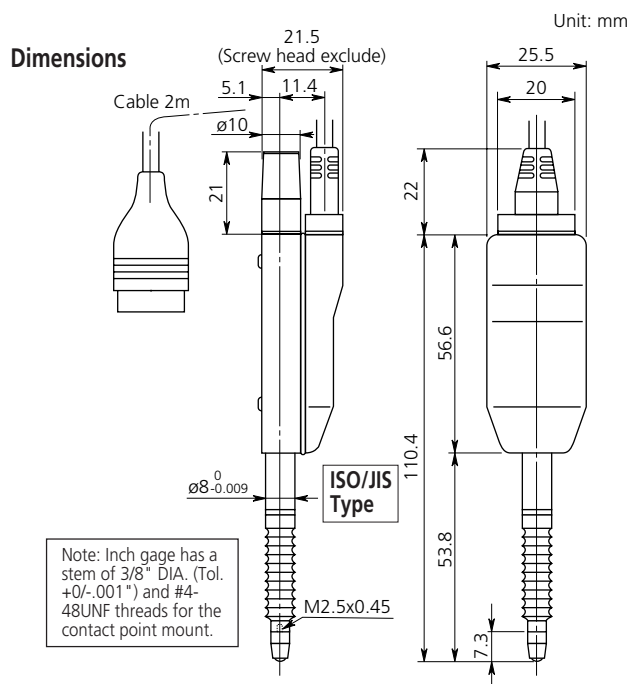
Inch/Metric

Resolution	Range	Order No. Back w/lug	Order No. Flat-back	Accuracy	Measuring force	Mass	Remarks
.0005"/0.01mm	1" (25.4mm)	—	575-122	.0008"	1.8N or less	.31 lbs.	ISO/JIS type
		—	575-123	.0008"	1.8N or less	.31 lbs.	ANSI/AGD type

LGS Linear Gages

SERIES 575 — Compact and Economical Design

DIGIMATIC INDICATORS



The LGS is Mitutoyo's new, compact Linear Gage designed to fit into tight spaces. Two versions are available offering either positive or negative readings as the spindle retracts. An EC Counter must also be ordered for readout. (See page 252.)

FEATURES

- Powered by the display unit connected via the permanently fixed SPC cable (2m).
- Maximum response speed: 1600mm/s

OPTIONAL ACCESSORIES

Order No.	Description
903594	Air Drive Unit (metric)
903598	Air Drive Unit (inch)
02ADF640	Cable extension adapter
936937	Extension cable (1m)
965014	Extension cable (2m)
(See page 252.)	EC Counter

SPECIFICATIONS

Metric

Resolution	Range	Order No.	Accuracy	IP protection level	Measuring force	Remarks
0.01mm	12mm	575-301	0.02mm	IP66	1.96N or less	ISO/JIS type
		575-302	0.02mm	IP66	1.96N or less	ISO/JIS type, Minus reading type

Inch

Resolution	Range	Order No.	Accuracy	IP protection level	Measuring force	Remarks
.0005"	.5"	575-311	.001"	IP66	1.96N or less	ANSI/AGD type
		575-312	.001"	IP66	1.96N or less	ANSI/AGD type, Minus reading type

LGD, LGD-M Linear Gages

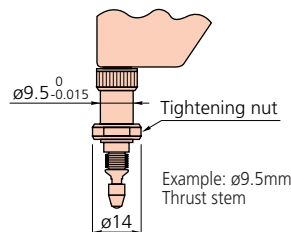
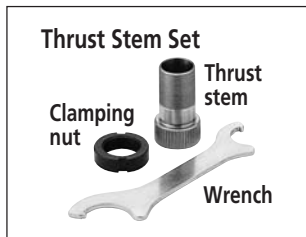
SERIES 575 — with Continuous Position Tracking



The LGD is Mitutoyo's new, ultra-compact ABS Linear Gage designed to fit into very tight spaces. It keeps track of its origin point once set. An EC Counter must also be ordered for readout. (See page 252.)

FEATURES

- Length of SPC cable: 2m (permanently fixed)
- Digimatic Power Supply Unit is required for setting the origin point.
- Special linear ball bearings are used for the spindle guide to ensure a long service life (except for LGD-M).
- Optional thrust stem and tightening nut facilitate setup of the LGD linear gage in holes of the plate.



SPECIFICATIONS

Metric						
Resolution	Range	Order No.	Accuracy	IP protection level	Measuring force	Remarks
0.01mm	10mm	575-321	0.02mm	IP66	1.2N or less	—
		575-324	0.02mm	IP54	1.2N or less	With pneumatic cylinder
		575-325	0.015mm	IP66	2.0N or less	LGD-M
	25mm	575-322	0.02mm	IP66	4.6N or less	—
	50mm	575-323	0.03mm	IP66	5.7N or less	—
Inch						
Resolution	Range	Order No.	Accuracy	IP protection level	Measuring force	Remarks
.0005"	.4"	575-331	.001"	IP66	1.2N or less	—
		575-334	.001"	IP54	1.2N or less	With pneumatic cylinder
		575-335	.0006"	IP66	2.0N or less	LGD-M
	1"	575-332	.001"	IP66	4.6N or less	—
	2"	575-333	.0012"	IP66	5.7N or less	—

Digimatic Power Supply Unit

965275 ■

(To denote your AC line voltage fill the blank of order number with the following suffixes. **A** for 120V, **D** for 220V, **E** for 240/220V. No suffix is required for 100V.)

Optional Accessories:

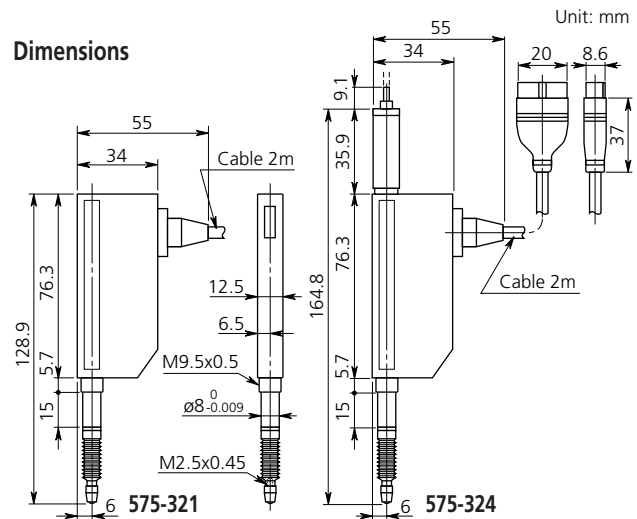
936937 SPC cable (1m)

965014 SPC cable (2m)

937179T Foot switch



Dimensions



Note 1: 25mm and 50mm LGD Linear Gages have a stem of ø15mm (Tol. +0/-0.018).

OPTIONAL ACCESSORIES

Order No.	Description
238772	Spare rubber boot (for 10mm LGD)
02ACA376	Spare rubber boot (for LGD-M)
962504	Spare rubber boot (for 25mm LGD)
962505	Spare rubber boot (for 50mm LGD)
02ADC730	ø9.5mm Thrust stem set (for 10mm LGD)
02ADC740	ø18mm Thrust stem set (for 25mm/50mm LGD)
02ADF640	Cable extension adapter
936937	Extension cable (1m)
965014	Extension cable (2m)
(See page 252.)	EC Counter

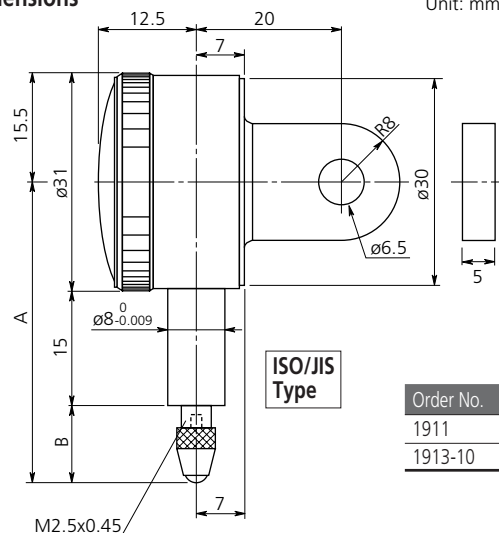
SERIES 1



1913-10

1911

Unit: mm



Order No.	A	B
1911	42	11.5
1913-10	40	9.5

Note 2: Inch (ANSI/AGD Type) dial indicator is provided with a stem of 3/8" dia. and #4-48UNF thread mount for the contact point.

FEATURES

- Face diameter: 31mm
- With revolution counter.

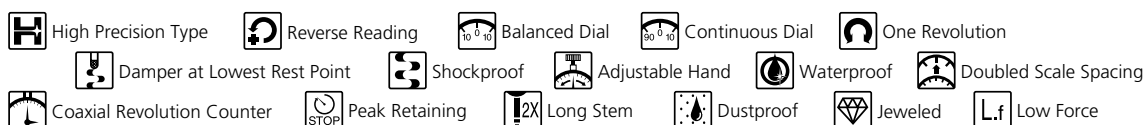
SPECIFICATIONS

Metric ISO/JIS

Graduation	Range	Order No. Lug-Back	Order No. Flat-back	Range per revolution	Dial reading	Accuracy	Measuring force	Remarks
0.01mm	2.5mm	1911	1911B	1mm	0-50-0	±12µm	1.4N or less	
0.002mm	0.5mm	1913-10	1913B-10	0.2mm	0-100-0	±8µm	1.5N or less	 

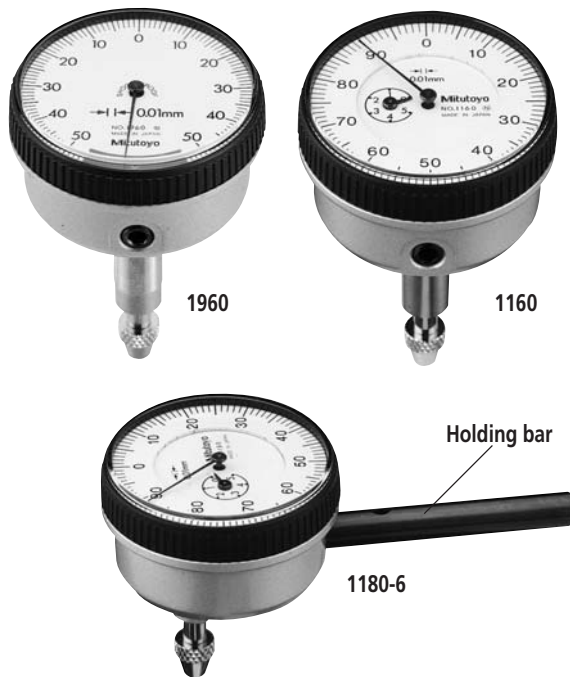
Inch ANSI/AGD

Graduation	Range	Order No. Lug-Back	Order No. Flat-back	Range per revolution	Dial reading	Accuracy	Measuring force	Remarks
.001 "	.1 "	1921	1921B	.04 "	0-20-0	±.001 "	1.4N or less	
.0005 "	.05 "	1923	1923B	.02 "	0-10-0	±.0005 "	1.4N or less	
.0001 "	.01 "	1927-10	1927B-10	.004 "	0-2-0	±.0001 "	1.4N or less	 
	.025 "	1925-10	1925B-10	.01 "	0-5-0	±.0001 "	1.4N or less	 

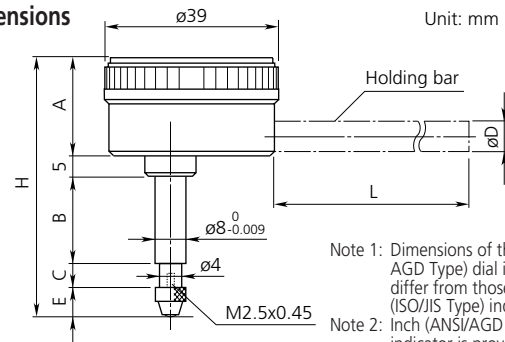


Dial Indicators

SERIES 1 — Back Plunger Type



Dimensions



ISO/JIS
Type

Note 1: Dimensions of the inch (ANSI/AGD Type) dial indicator partly differ from those of the metric (ISO/JIS Type) indicator.

Note 2: Inch (ANSI/AGD Type) dial indicator is provided with a stem of 3/8" dia. and #4-48UNF thread mount for the contact point.

Order No.	A	B	C	D	E	H	L
1960	21.5	23.7	4.5	—	8.3	63	—
1160	21.5	20	5.5	—	8.3	60.3	—
1162	21.5	20	5.5	—	8.3	60.3	—
1180-6	21.5	4.5	5.5	6	8.3	44.8	42
1180-7	21.5	4.5	5.5	6.35	8.3	44.8	42
1180-8	21.5	4.5	5.5	8	8.3	44.8	42

With its plunger on the back, Mitutoyo's back plunger dial indicator offers the flexibility of measuring in unusual set-ups. They are built to the same exacting standards that Mitutoyo requires for all its dial indicators.

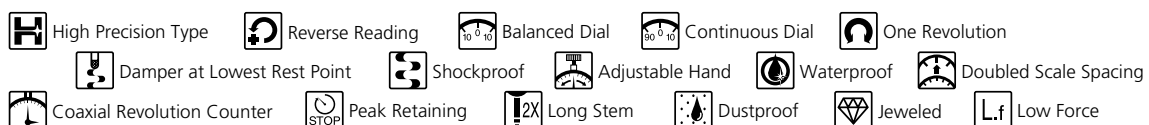
SPECIFICATIONS

Metric ISO/JIS

Graduation	Range	Order No.	Range per revolution	Dial reading	Accuracy	Measuring force	Remarks
0.01mm	1mm	1960	—	50-0-50	±14μm	1.4N or less	
		1160	1mm	0-100	±16μm	1.4N or less	
	5mm	1162	1mm	100-0	±16μm	1.4N or less	
		1180-6	1mm	0-100	±16μm	1.4N or less	(with Ø6mm holding bar)
		1180-7	1mm	0-100	±16μm	1.4N or less	(with .25" DIA. holding bar)
		1180-8	1mm	0-100	±16μm	1.4N or less	(with Ø8mm holding bar)

Inch ANSI/AGD

Graduation	Range	Order No.	Range per revolution	Dial reading	Accuracy	Measuring force	Remarks
.001"	.04"	1961	—	20-0-20	±.001"	1.4N or less	
		1156	.1"	0-100	±.001"	2.1N or less	(with .25" DIA. holding bar)
	.1"	1157	.1"	0-50-0	±.001"	2.1N or less	(with .25" DIA. holding bar)
		1166	.05"	0-50	±.001"	1.4N or less	
	.2"	1167	.05"	0-25-0	±.001"	1.4N or less	
		1168	.05"	50-0	±.001"	1.4N or less	



SERIES 1



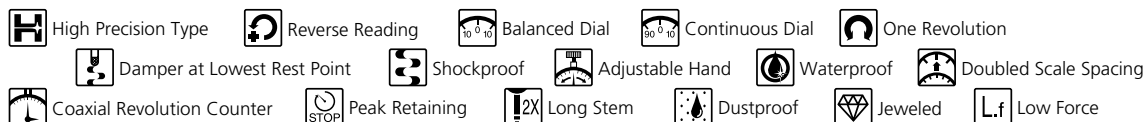
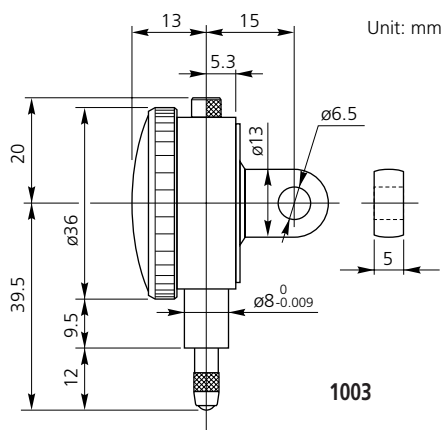
FEATURES

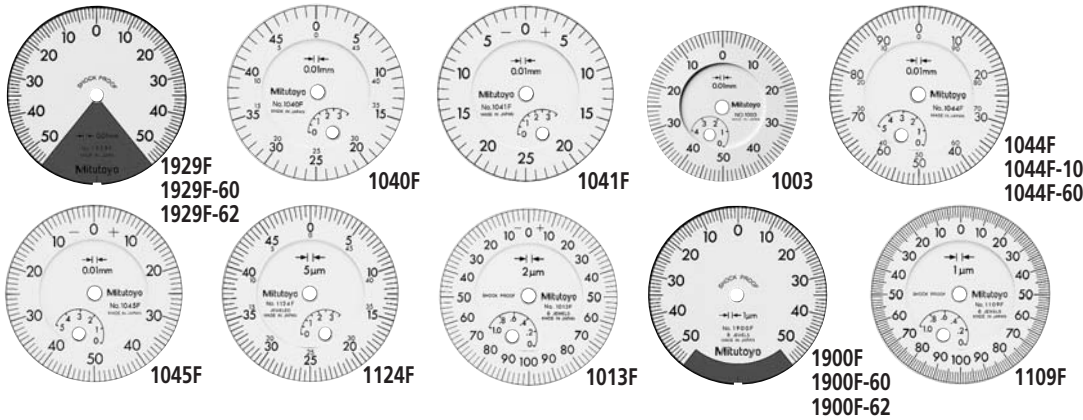
- Spindle is made of hardened stainless steel.
- Gears fit tight for dependable accuracy.
- Face diameter: 41mm

[illegible]

Note 2: Inch (ANSI/AGD Type) dial indicator is provided with a stem of 3/8" dia. and #4-48UNF thread mount for the contact point.

Order No.	A	B	C
1929F	47.5	13	14
1929F-60	55.5	11.5	23.5
1929F-62	437.5	13	14
1040F	46	13	12.5
1041F	46	13	12.5
1044F	47.5	13	14
1044F-10	47.5	13	14
1044F-60	57	11.5	25
1045F	47.5	13	14
1024F	46	13	12.5
1124F	46	13	12.5
1013F	49	13	15.5
1900F	53.5	16	17
1900F-60	54.5	11.5	22.5
1900F-62	53.5	16	17
1109F	49	13	15.5





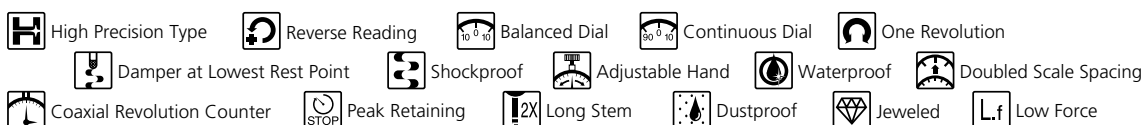
SPECIFICATIONS

Metric ISO/JIS

Graduation	Range	Order No. Lug-Back	Order No. Flat-back	Range per revolution	Dial reading	Accuracy	Measuring force	Remarks
0.01mm	1mm	1929F	1929FB	—	50-0-50	±11µm	1.4N or less	
		1929F-60	1929FB-60	—	50-0-50	±11µm	1.4N or less	
		1929F-62	1929F-62	—	50-0-50	±11µm	1.4N or less	
	3.5mm	1040F	1040FB	0.5mm	0-50 (50-0)	±13µm	1.4N or less	
		1041F	1041FB	0.5mm	0-25-0	±13µm	1.4N or less	
	4mm	1003	1003B	1mm	0-50-0	±13µm	1.4N or less	
	5mm	1044F	1044FB	1mm	0-100 (100-0)	±13µm	1.4N or less	
		1044F-10	1044FB-10	1mm	0-100 (100-0)	±13µm	0.4N or less	
		1044F-60	1044FB-60	1mm	0-100 (100-0)	±13µm	2.0N or less	
		1045F	1045FB	1mm	0-50-0	±13µm	1.4N or less	
0.005mm	3.5mm	1124F	1124FB	0.5mm	0-50 (50-0)	±13µm	1.4N or less	
0.002mm	1mm	1013F	1013FB	0.2mm	0-100-0	±10µm	1.5N or less	
0.001mm	0.1mm	1900F	1900FB	—	50-0-50	±6µm	1.5N or less	
		1900F-60	1900FB-60	—	50-0-50	±6µm	1.5N or less	
		1900F-62	1900FB-62	—	50-0-50	±6µm	1.5N or less	
	1mm	1109F	1109FB	0.2mm	0-100-0	±7µm	1.5N or less	

Inch ANSI/AGD

Graduation	Range	Order No. Lug-Back	Order No. Flat-back	Range per revolution	Dial reading	Accuracy	Measuring force	Remarks
.001"	.075"	1580-10	—	.03"	0-30	±.0005"	1.4N or less	
		1581-10	—	.03"	0-15-0	±.0005"	1.4N or less	
	.125"	1780	—	.05"	0-50	±.001"	1.4N or less	
		1781	—	.05"	0-25-0	±.001"	1.4N or less	
	.25"	1410	1410B	.1"	0-100	±.001"	1.4N or less	
		1411	1411B	.1"	0-50-0	±.001"	1.4N or less	
.0005"	.04"	1909-62	1909B-62	—	20-0-20	±.0005"	1.4N or less	
	.075"	1570-10	—	.03"	0-30	±.0005"	1.5N or less	
		1571-10	—	.03"	0-15-0	±.0005"	1.5N or less	
	.1"	1670	—	.04"	0-40	±.0005"	1.4N or less	
		1671	—	.04"	0-20-0	±.0005"	1.4N or less	
	.125"	1506	1506B	.05"	0-50	±.0005"	1.4N or less	
.00025"	.05"	1507	1507B	.05"	0-25-0	±.0005"	1.4N or less	
		1470	—	.02"	0-20	±.0005"	1.4N or less	
		1471	—	.02"	0-10-0	±.0005"	1.4N or less	
.0001"	.006"	1910-72	1910B-72	—	3-0-3	±.0001"	1.4N or less	
	.025"	1802-10	1802B-10	.01"	0-10	±.0002"	1.5N or less	
		1803-10	1803B-10	.01"	0-5-0	±.0002"	1.5N or less	



Dial Indicators

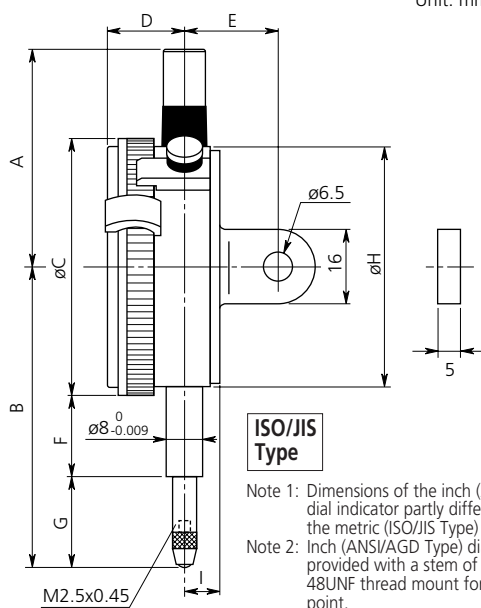
SERIES 2

DIAL INDICATORS



Dimensions

Unit: mm



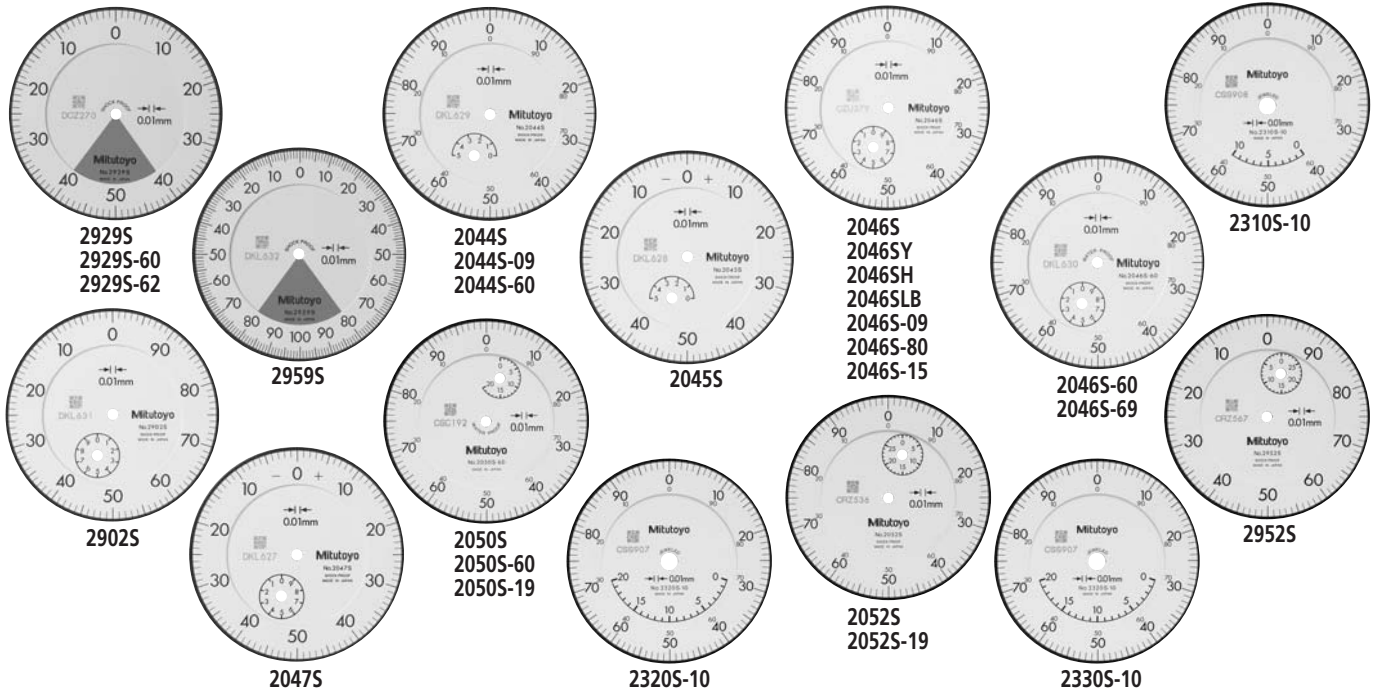
ISO/JIS Type

Note 1: Dimensions of the inch (ANSI/AGD Type) dial indicator partly differ from those of the metric (ISO/JIS Type) indicator.
Note 2: Inch (ANSI/AGD Type) dial indicator is provided with a stem of 3/8" dia. and #4-48UNF thread mount for the contact point.

Order No.	A	B	C	D	E	F	G	H	I
2929S	48.8	65.2	57	17.7	20	16.9	19.8	52	7.6
2929S-62	48.8	65.2	57	17.7	20	16.9	19.8	52	7.6
2929S-60	48.8	70	57	17.7	20	12.3	39.2	52	7.6
2959S	48.8	65.2	57	17.7	20	16.9	19.8	52	7.6
2044S	48.8	65.2	57	17.7	20	16.9	19.8	52	7.6
2044S-09	48.8	65.2	57	17.7	20	16.9	19.8	52	7.6
2044S-60	48.8	70	57	17.7	20	12.3	29.2	52	7.6
2045S	48.8	65.2	57	17.7	20	16.9	19.8	52	7.6
2046S	48.8	65.2	57	17.7	20	16.9	19.8	52	7.6
2046SH	48.8	65.2	57	17.7	20	16.9	19.8	52	7.6
2046SLB	48.8	85.2	57	17.7	—	36.9	19.8	52	7.6
2046S-09	48.8	65.2	57	17.7	20	16.9	19.8	52	7.6
2046S-60	48.8	70	57	17.7	20	12.3	29.2	52	7.6
2046S-69	48.8	70	57	17.7	20	12.3	29.2	52	7.6
2046S-80	59.8	65.2	57	17.7	20	16.9	19.8	52	7.6
2046S-15	48.8	65.2	57	17.7	20	16.9	19.8	52	7.6
2048S-10	47.4	64.9	57	17.7	20	16.9	19.8	52	7.6
2310S-10	48.8	65.2	57	17.7	20	16.9	19.5	52	7.6
2902S	48.8	65.2	57	17.7	20	16.9	19.8	52	7.6
2047S	48.8	65.2	57	17.7	20	16.9	19.8	52	7.6
2050S	38.8	75.2	57	17.7	20	16.9	29.8	52	7.6
2050S-60	59.8	87.2	57	17.7	20	12.3	46.4	52	7.6
2050S-19	38.8	75.2	57	17.7	20	16.9	29.8	52	7.6
2320S-10	38.8	75.2	57	17.7	20	16.9	29.8	52	7.6
2052S	38.8	88.7	57	17.7	20	16.9	43.3	52	7.6
2052S-19	38.8	88.7	57	17.7	20	16.9	43.3	52	7.6
2330S-10	38.8	88.7	57	17.7	20	16.9	43.3	52	7.6
2952S	38.8	88.7	57	17.7	20	16.9	43.3	52	7.6

Series 2 dial indicators are Mitutoyo's most popular, and have the widest application. Especially the "one revolution" dial indicator is developed for in-process measuring. This indicator features a hand that makes only one revolution throughout the entire spindle range. This prevents costly measuring errors made with indicators whose hands make as many as 2 - 1/2 revolutions.

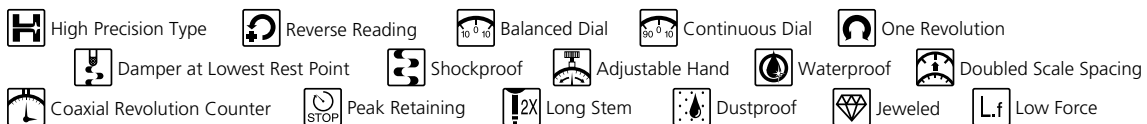
- High Precision Type
- Reverse Reading
- Balanced Dial
- Continuous Dial
- One Revolution
- Damper at Lowest Rest Point
- Shockproof
- Adjustable Hand
- Waterproof
- Doubled Scale Spacing
- Coaxial Revolution Counter
- Peak Retaining
- Long Stem
- Dustproof
- Jeweled
- Low Force



SPECIFICATIONS

Metric ISO/JIS

Graduation	Range	Order No.		Range per revolution	Dial reading	Accuracy	Measuring force	Remarks
		Lug-Back	Flat-back					
0.01mm	1mm	2929S	2929SB	—	50-0-50	±10μm	1.4N or less	
		2929S-60	2929SB-60	—	50-0-50	±10μm	1.4N or less	
		2929S-62	2929SB-62	—	50-0-50	±10μm	1.4N or less	
	1.6mm	2959S	2959SB	—	80-0-80	±14μm	1.4N or less	
	5mm	2044S	2044SB	1mm	0-100 (100-0)	±12μm	1.4N or less	
		2044S-09	2044SB-09	1mm	0-100 (100-0)	±13μm	1.4N or less	
		2044S-60	2044SB-60	1mm	0-100 (100-0)	±12μm	1.4N or less	
	10mm	2045S	2045SB	1mm	0-50-0	±12μm	1.4N or less	
		2046S	2046SB	1mm	0-100 (100-0)	±13μm	1.4N or less	
		2046SY	2046SYB	1mm	0-100 (100-0)	±13μm	1.4N or less	
		2046SH	2046SHB	1mm	0-100 (100-0)	±8μm	1.4N or less	
		—	2046SLB	1mm	0-100 (100-0)	±13μm	1.4N or less	
		2046S-09	2046SB-09	1mm	0-100 (100-0)	±15μm	1.4N or less	
		2046S-60	2046SB-60	1mm	0-100 (100-0)	±13μm	2.5N or less	
		2046S-69	2046SB-69	1mm	0-100 (100-0)	±15μm	2.5N or less	
		2046S-80	2046SB-80	1mm	0-100 (100-0)	±15μm	5.0N	
		2046S-15	2046SB-15	1mm	0-100 (100-0)	±15μm	0.8N or less	
		2048S-10	2048SB-10	1mm	0-100 (100-0)	±15μm	1.4N or less	
		2310S-10	2310SB-10	1mm	0-100	±15μm	1.4N or less	
	20mm	2902S	2902SB	1mm	100-0	±13μm	1.4N or less	
		2047S	2047SB	1mm	0-50-0	±13μm	1.4N or less	
		2050S	2050SB	1mm	0-100 (100-0)	±20μm	2.0N or less	
		2050S-60	2050SB-60	1mm	0-100 (100-0)	±20μm	2.2N or less	
		2050S-19	2050SB-19	1mm	0-100 (100-0)	±20μm	2.0N or less	
	30mm	2320S-10	2320SB-10	1mm	0-100	±20μm	2.0N or less	
		2052S	2052SB	1mm	0-100 (100-0)	±25μm	2.5N or less	
		2052S-19	2052SB-19	1mm	0-100 (100-0)	±25μm	2.2N or less	
		2330S-10	2330SB-10	1mm	0-100	±25μm	2.5N or less	
		2952S	2952SB	1mm	100-0	±25μm	2.5N or less	



Dial Indicators

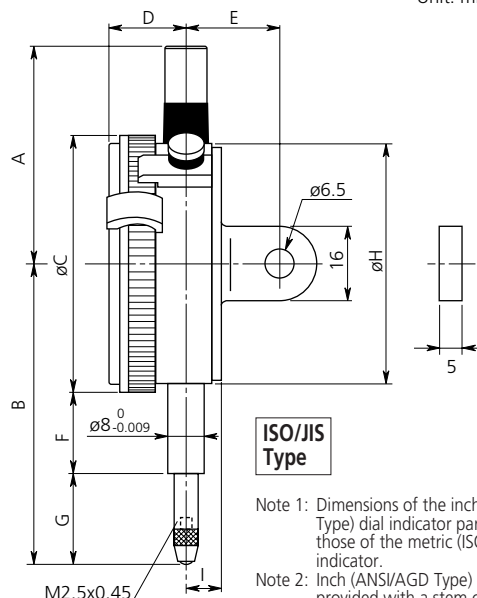
SERIES 2

DIAL INDICATORS



Dimensions

Unit: mm

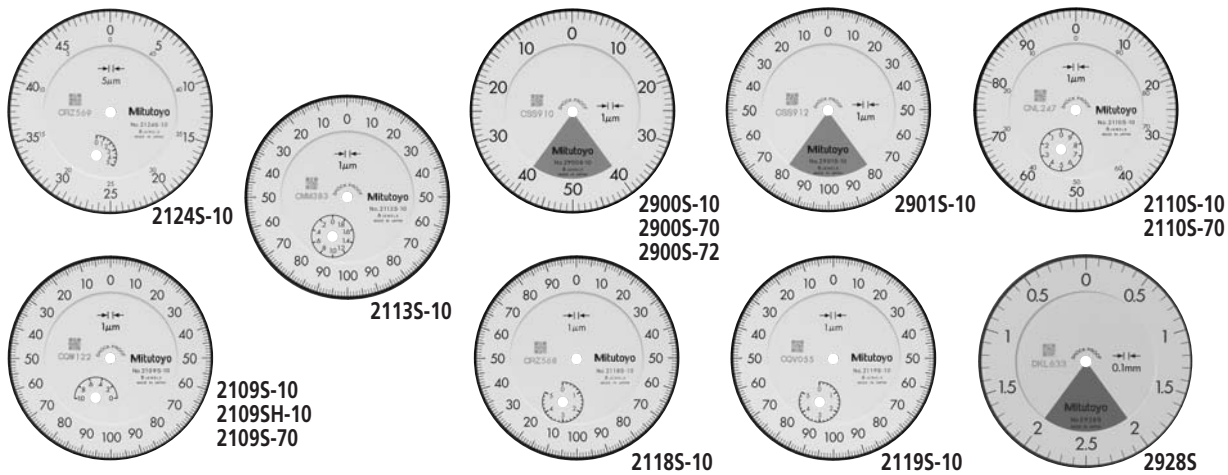


Note 1: Dimensions of the inch (ANSI/AGD Type) dial indicator partly differ from those of the metric (ISO/JIS Type) indicator.

Note 2: Inch (ANSI/AGD Type) dial indicator is provided with a stem of 3/8" dia. and #4-48UNF thread mount for the contact point.

Order No.	A	B	C	D	E	F	G	H	I
2124S-10	48.8	60.3	57	17.7	20	16.9	14.9	52	7.6
2900S-10	48.8	66	57	17.7	20	16.9	20.6	52	7.6
2900S-72	48.8	66	57	17.7	20	16.9	20.6	52	7.6
2900S-70	48.8	67	57	17.7	20	12.3	26.2	52	7.6
2901S-10	48.8	66.1	57	17.7	20	16.9	20.7	52	7.6
2110S-10	48.8	66.5	57	17.7	20	16.9	21.1	52	7.6
2110S-70	48.8	67.5	57	17.7	20	12.3	26.7	52	7.6
2109S-10	48.8	60.5	57	17.7	20	16.9	15.1	52	7.6
2109SH-10	48.8	60.5	57	17.7	20	16.9	15.1	52	7.6
2109SLB-10	48.8	80.5	57	17.7	—	36.9	15.1	52	7.6
2109S-70	48.8	65.3	57	17.7	20	12.3	24.5	52	7.6
2113S-10	48.8	61	57	17.7	20	16.9	14.9	52	7.6
2118S-10	48.8	60.3	57	17.7	20	16.9	14.9	52	7.6
2119S-10	48.8	60.3	57	17.7	20	16.9	14.9	52	7.6
2928S	48.8	65.2	57	17.7	20	16.9	19.8	52	7.6

- High Precision Type
- Reverse Reading
- Balanced Dial
- Continuous Dial
- One Revolution
- Damper at Lowest Rest Point
- Shockproof
- Adjustable Hand
- Waterproof
- Doubled Scale Spacing
- Coaxial Revolution Counter
- Peak Retaining
- Long Stem
- Dustproof
- Jeweled
- Low Force



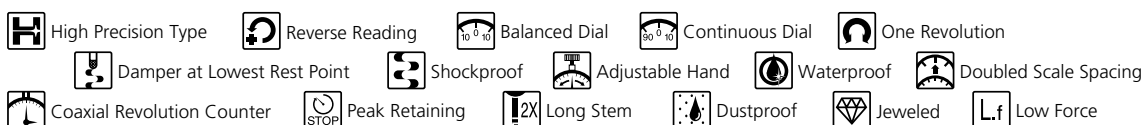
SPECIFICATIONS

Metric ISO/JIS

Graduation	Range	Order No. Lug-Back	Order No. Flat-back	Range per revolution	Dial reading	Accuracy	Measuring force	Remarks
0.005mm	5mm	2124S-10	2124SB-10	0.5mm	0-50 (50-0)	±12μm	1.5N or less	
0.001mm	0.1mm	2900S-10	2900SB-10	—	50-0-50	±3.5μm	1.4N or less	
		2900S-70	2900SB-70	—	50-0-50	±3.5μm	1.4N or less	
		2900S-72	2900SB-72	—	50-0-50	±3.5μm	1.4N or less	
	0.16mm	2901S-10	2901SB-10	—	80-0-80	±5μm	1.4N or less	
	1mm	2110S-10	2110SB-10	0.1mm	0-100 (100-0)	±5μm	1.5N or less	
		2110S-70	2110SB-70	0.1mm	0-100 (100-0)	±5μm	1.5N or less	
		2109S-10	2109SB-10	0.2mm	0-100-0	±5μm	1.5N or less	
		2109SH-10	2109SHB-10	0.2mm	0-100-0	±3μm	1.5N or less	
	2mm	—	2109SLB-10	0.2mm	0-100-0	±5μm	1.5N or less	
		2109S-70	2109SB-70	0.2mm	0-100-0	±5μm	2.0N or less	
0.1mm	5mm	2113S-10	2113SB-10	0.2mm	0-100-0	±7μm	1.5N or less	
	5mm	2118S-10	2118SB-10	0.2mm	0-100-100	±10μm	1.5N or less	
		2119S-10	2119SB-10	0.2mm	0-100-0	±10μm	1.5N or less	
	4mm	2928S	2928SB	—	2-0-2	±40μm	1.4N or less	

Inch ANSI/AGD

Graduation	Range	Order No. Lug-Back	Order No. Flat-back	Range per revolution	Dial reading	Accuracy	Measuring force	Remarks
.01"	1"	2204F	2204FB	1"	0-1000	±.005"	2.0N or less	
.001"	.08"	2945-40	2945B-40	—	40-0-40	±.001"	1.4N or less	
		—	2908B-62	—	40-0-40	±.001"	1.4N or less	
	.125"	2780F	2780FB	.05"	0-50	±.001"	1.5N or less	
		2781F	2781FB	.05"	0-25-0	±.001"	1.5N or less	
	.25"	2410F	2410FB	.1"	0-100	±.001"	1.5N or less	
		2410F-10	2410FB-10	.1"	0-100	±.001"	1.5N or less	
		2410F-60	2410FB-60	.1"	0-100	±.001"	1.5N or less	
		2919F-10	2919FB-10	.1"	0-100	±.001"	1.5N or less	
		2411F	2411FB	.1"	0-50-0	±.001"	1.5N or less	
		2411F-10	2411FB-10	.1"	0-50-0	±.001"	1.5N or less	
		2411F-60	2411FB-60	.1"	0-50-0	±.001"	1.5N or less	
		2920F-10	2920FB-10	.1"	0-50-0	±.001"	1.5N or less	



Dial Indicators

SERIES 2

SPECIFICATIONS

Inch ANSI/AGD

Graduation	Range	Order No. Lug-Back	Order No. Flat-back	Range per revolution	Dial reading	Accuracy	Measuring force	Remarks
.001 "	.4 "	2412F	2412FB	.1 "	0-100	±.001 "	1.5N or less	
		2412-80	—	.1 "	0-100	±.001 "	5.0N or less	
		2903F	2903FB	.1 "	100-0	±.001 "	1.5N or less	
		2413F	2413FB	.1 "	0-50-0	±.001 "	1.5N or less	
	.5 "	2414F	—	.1 "	0-100	±.001 "	1.5N or less	
		2414F-10	2414FB-10	.1 "	0-100	±.001 "	1.5N or less	
		2915F-10	2915FB-10	.1 "	0-100	±.001 "	1.5N or less	
		2415F	2415FB	.1 "	0-50-0	±.001 "	1.5N or less	
		2415F-10	2415FB-10	.1 "	0-50-0	±.001 "	1.5N or less	
		2415F-60	2415FB-60	.1 "	0-50-0	±.001 "	1.5N or less	
		2918F-10	2918FB-10	.1 "	0-50-0	±.001 "	1.5N or less	
		2416F	2416FB	.1 "	0-100	±.002 "	2.0N or less	
	1 "	2416F-10	2416FB-10	.1 "	0-100	±.002 "	2.0N or less	
		2904F	2904FB	.1 "	100-0	±.002 "	2.0N or less	
		2417F	2417FB	.1 "	0-50-0	±.002 "	2.0N or less	
		2424-10	2424B-10	.1 "	0-100	±.003 "	2.5N or less	
.0005 "	.04 "	2909-62	2909B-62	—	20-0-20	±.0005 "	1.4N or less	
	.075 "	2570F	2570FB	.03 "	0-30	±.0005 "	1.5N or less	
		2570F-60	2570FB-60	.03 "	0-30	±.0005 "	1.5N or less	
		2571F	2571FB	.03 "	0-15-0	±.0005 "	1.5N or less	
		2571F-60	2571FB-60	.03 "	0-15-0	±.0005 "	1.5N or less	
	.1 "	2670F	2670FB	.04 "	0-40	±.0005 "	1.5N or less	
		2670F-10	2670FB-10	.04 "	0-40	±.0005 "	1.5N or less	
		2671F	2671FB	.04 "	0-20-0	±.0005 "	1.5N or less	
	.125 "	2506F	2506FB	.05 "	0-50	±.0005 "	1.5N or less	
		2906F	2906FB	.05 "	50-0	±.0005 "	1.5N or less	
		2507F	2507FB	.05 "	0-25-0	±.0005 "	1.5N or less	
		2922F	2922FB	.05 "	0-25-0	±.0005 "	1.5N or less	
	.4 "	2675-08	2675B-08	.04 "	0-20-0	±.001 "	1.5N or less	
	.5 "	2514F	2514FB	.05 "	0-50	±.002 "	1.5N or less	
	1 "	2776F	2776FB	.05 "	0-50	±.003 "	1.5N or less	
.00025 "	.05 "	2470-50	—	.02 "	0-20	±.0005 "	1.5N or less	
		2471-50	—	.02 "	0-10-0	±.0005 "	1.5N or less	
.0001 "	.008 "	2947F-10	2947FB-10	—	4-0-4	±.0001 "	1.5N or less	
		2910-72	2910B-72	—	4-0-4	±.0001 "	1.4N or less	
	.02 "	2938F-10	2938FB-10	.008 "	0-8	±.0001 "	1.5N or less	
		2937F-10	2937FB-10	.008 "	0-4-0	±.0001 "	1.5N or less	
	.025 "	2802F-10	2802FB-10	.01 "	0-10	±.0002 "	1.5N or less	
		2802F-60	2802FB-60	.01 "	0-10	±.0002 "	1.5N or less	
		2803F-10	2803FB-10	.01 "	0-5-0	±.0002 "	1.5N or less	
		2803-70	—	.01 "	0-5-0	±.0002 "	1.5N or less	
	.05 "	2804F-10	2804FB-10	.01 "	0-10	±.0002 "	1.5N or less	
		2905F-10	2905FB-10	.01 "	10-0	±.0002 "	1.5N or less	
		2805F-10	2805FB-10	.01 "	0-5-0	±.0002 "	1.5N or less	
		2805-80	—	.01 "	0-5-0	±.0002 "	5.0N or less	
		2923F-10	2923FB-10	.01 "	0-5-0	±.0002 "	1.5N or less	
	.25 "	2356-50	—	.01 "	0-10	±.0002 "	1.5N or less	
	.5 "	2358-50	—	.01 "	0-10	±.0002 "	1.5N or less	



High Precision Type



Reverse Reading



Balanced Dial



Continuous Dial



One Revolution



Damper at Lowest Rest Point



Shockproof



Adjustable Hand



Waterproof



Doubled Scale Spacing



Coaxial Revolution Counter



Peak Retaining



Long Stem



Dustproof



Jeweled

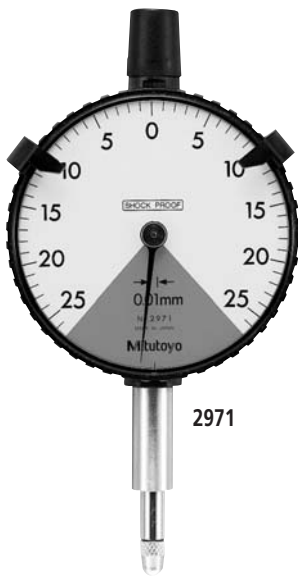


Low Force

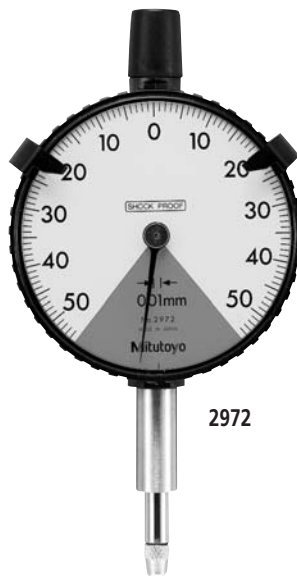


One-Revolution Dial Indicator

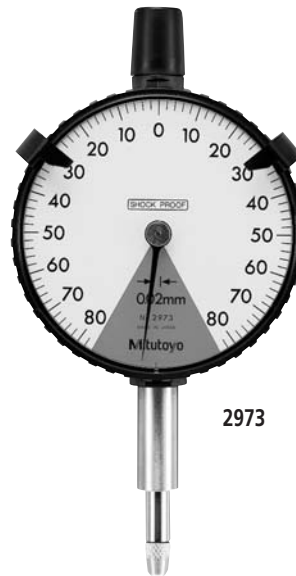
SERIES 2 — for Error-free Gaging on the Production Site



2971



2972



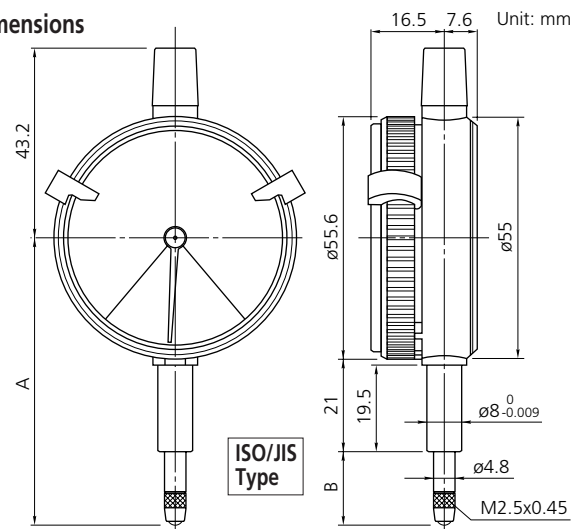
2973

Unlike many other dial indicators, the one-revolution dial indicator literally shows the entire spindle travel or range as one sweep of the hand, eliminating the possibility of reading errors due to miscounting the multiple revolutions. With one-revolution dial indicators, "within tolerance" and "out-of-tolerance" can never misinterpreted.

FEATURES

- An unique shock-proof mechanism is incorporated, providing improved immunity to shock due to sudden spindle retraction caused by high impact.
- The crystal is hard coated for durability and scratch resistance.
- Approximately 40% lighter than the conventional dial indicator.
- Provided with an improved resistance to shop floor contaminants such as water and dust.
- Due to the spindle bushing being offset from the stem, spindle movement will not be hindered or jammed when clamping along the stem.
- A pair of limit hands are provided for quick and easy tolerance judgment (GO/±NG).

Dimensions



Note 1: Dimensions of the inch (ANSI/AGD Type) dial indicator partly differ from those of the metric (ISO/JIS Type) indicator.

Note 2: Inch (ANSI/AGD Type) dial indicator is provided with a stem of 3/8" dia. and #4-48UNF thread mount for the contact point.

Order No.	A	B
2971	65.6	16.8
2972	66.0	17.2
2973	66.3	17.5

SPECIFICATIONS

Metric ISO/JIS

Graduation	Range	Order No.		Dial reading	Accuracy	Spindle travel	Mass	Remarks
		Back w/lug	Flat-back					
0.01mm	0.5mm	—	2971	25-0-25	±10μm	3.5mm	75g	☑ ☑ ☑
	1mm	—	2972	50-0-50	±12μm	3.5mm	75g	☑ ☑ ☑
0.02mm	1.6mm	—	2973	80-0-80	±16μm	3.5mm	75g	☑ ☑ ☑

Inch ANSI/AGD

Graduation	Range	Order No.		Dial reading	Accuracy	Spindle travel	Mass	Remarks
		Back w/lug	Flat-back					
.0005"	.02"	—	2976	10-0-10	±.0005"	.14"	.17 lbs.	☑ ☑ ☑
	.04"	—	2977	20-0-20	±.0005"	.14"	.17 lbs.	☑ ☑ ☑
.001"	.06"	—	2978	30-0-30	±.001"	.14"	.17 lbs.	☑ ☑ ☑

Hicator

SERIES 524 — High-Accuracy One-Revolution Dial Indicator

Hicator



524-501

Signal Hicator



524-601

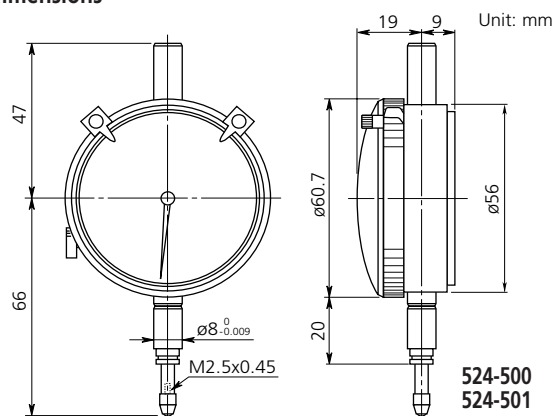
Signal Box
(optional)



FEATURES

- The Hicator is capable of probing measurements up to 0.0005mm.
- Connected to an optional Signal Box, the Signal Hicator can output limit signals to perform GO/±NO-GO judgment.
- Splash-proof structure.
- Lug-on-center back is optional.

Dimensions



524-500
524-501

The Hicator is Mitutoyo's ultra-sensitive, one-revolution dial indicator. The spindle is made of highly durable stainless steel, and this device features jeweled bearings for extreme sensitivity as well as a shock-proof and dust-proof structure.

OPTIONAL ACCESSORIES

Order No.	Description
131304	Lug-on-center back (ISO/JIS type)
524-001	Signal Box (100V AC)
524-001A	Signal Box (120V AC)

SPECIFICATIONS

Metric ISO/JIS Standard

Graduation	Range	Order No.	Dial reading	Accuracy	Spindle travel	Measuring force	Mass	Remarks
0.0005mm	0.06mm	524-500	30-0-30	±0.5μm	3mm	1.2N or less	125g	w/Spindle lifting cable
0.001mm	0.1mm	524-501	50-0-50	±1μm	3mm	1.2N or less	125g	w/Spindle lifting cable
		524-601*	50-0-50	±1μm	3mm	1.2N or less	140g	w/Spindle cable (2m)
0.002mm	0.2mm	524-602*	100-0-100	±1.5μm	3mm	1.2N or less	140g	w/Spindle cable (2m)
0.01mm	1mm	524-603*	50-0-50	±5μm	3mm	1.2N or less	140g	w/Spindle cable (2m)

*Signal Hicator (An optional Signal Box is required to perform GO/±NG judgment.)

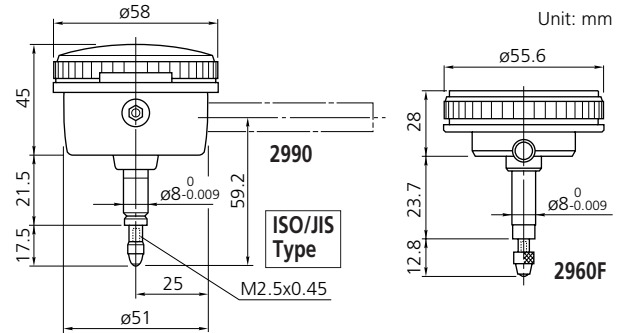
Dial Indicators

SERIES 2 — Back Plunger Type



Mitutoyo's back plunger type dial indicators are built with the measuring spindles on the back of the units. This type of indicator offers the same precision and durability as all other Mitutoyo dial indicators, and operates very effectively with optional holding bars (See page 178).

Dimensions



Note 1: Dimensions of the inch (ANSI/AGD Type) dial indicator partly differ from those of the metric (ISO/JIS Type) indicator.
Note 2: Inch (ANSI/AGD Type) dial indicator is provided with a stem of 3/8" dia. and #4-48UNF thread mount for the contact point.

SPECIFICATIONS

Metric ISO/JIS

Graduation	Range	Order No.	Dial reading	Accuracy	Spindle travel	Measuring force	Mass	Remarks
0.001mm	0.1mm	2990	50-0-50	$\pm 6.5\mu\text{m}$	4mm	1.5N or less	220g	ISO/JIS Type
0.01mm	1mm	2960F	50-0-50	$\pm 14\mu\text{m}$	4.5mm	1.4N or less	115g	ISO/JIS Type

Inch ANSI/AGD

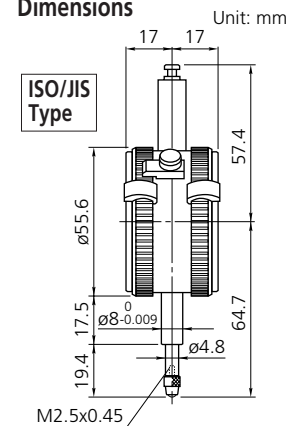
Graduation	Range	Order No.	Dial reading	Accuracy	Spindle travel	Measuring force	Mass	Remarks
.0001"	.008"	2991	4-0-4	.0002"	.15"	1.5N or less	.24 lbs.	ANSI/AGD Type
.0005"	.04"	2961	20-0-20	$\pm .0005"$	.12"	1.4N or less	.48 lbs.	ANSI/AGD Type

Double-Face Dial Indicator

SERIES 2



Dimensions



FEATURES

- Specially designed dial indicator that allows the inspector to read measurements from both back and front sides.
- Dial reading: 0-100
- Measuring force: 3.0N or less

SPECIFICATIONS

Metric ISO/JIS

Graduation	Range	Order No.	Accuracy	Mass
0.01mm	10mm	2940S	$\pm 15\mu\text{m}$	260g



Dial Indicators

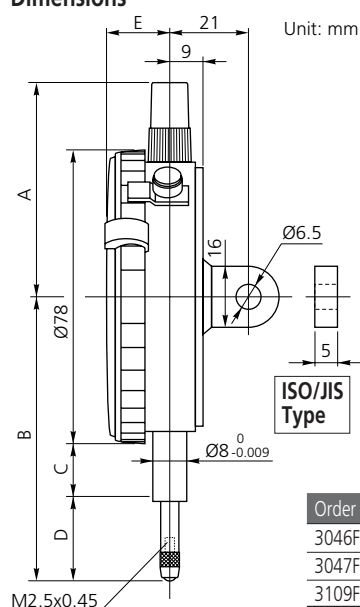
SERIES 3

DIAL INDICATORS



Mitutoyo's Series 3 dial indicators are recommended for larger gaging distance or those applications where a larger dial face is required for improved dial visibility and readability. They offer excellent accuracy and repeatability over longer measuring distances for operations such as turning and drilling.

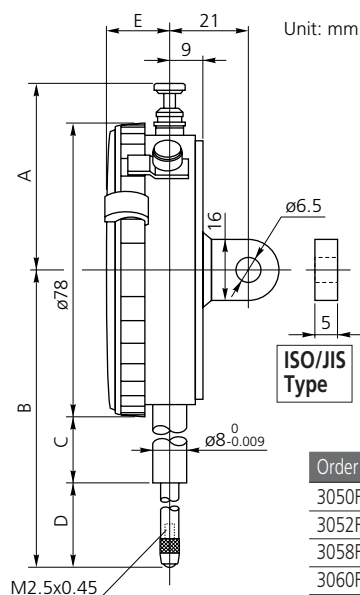
Dimensions



Note 1: Dimensions of the inch (ANSI/AGD Type) dial indicator partly differ from those of the metric (ISO/JIS Type) indicator.

Note 2: Inch (ANSI/AGD Type) dial indicator is provided with a stem of 3/8" dia. and #4-48UNF thread mount for the contact point.

Order No.	A	B	C	D	E
3046F	56	75.5	15.5	21	16.5
3047F	56	75.5	15.5	21	16.5
3109F	56	79	25	15	17



Note 1: Dimensions of the inch (ANSI/AGD Type) dial indicator partly differ from those of the metric (ISO/JIS Type) indicator.

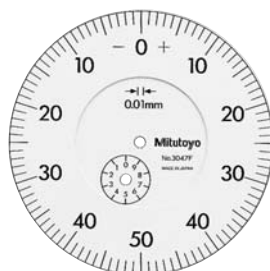
Note 2: Inch (ANSI/AGD Type) dial indicator is provided with a stem of 3/8" dia. and #4-48UNF thread mount for the contact point.

Order No.	A	B	C	D	E
3050F	49	93	25	29	16.5
3052F	73	104	25	40	17
3058F	82	142	43	60	17
3060F	112	203	73	91	17
3062F	132	243	94	110	17

- High Precision Type
- Reverse Reading
- Balanced Dial
- Continuous Dial
- One Revolution
- Damper at Lowest Rest Point
- Shockproof
- Adjustable Hand
- Water resistance
- Doubled Scale Spacing
- Coaxial Revolution Counter
- Peak Retaining
- Long Stem
- Dustproof
- Jeweled
- Low Force



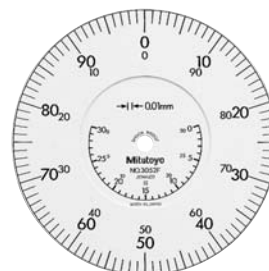
3046F



3047F



3050F



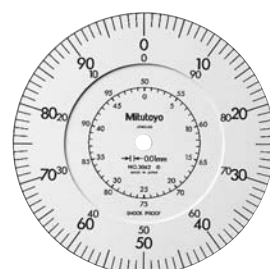
3052F



3058F



3060F



3062F



3109F

SPECIFICATIONS

Metric ISO/JIS

Graduation	Range	Order No. Lug-Back	Order No. Flat-back	Range per revolution	Dial reading	Accuracy	Measuring force	Remarks
0.01mm	10mm	3046F	3046FB	1mm	0-100 (100-0)	$\pm 15\mu\text{m}$	1.5N or less	
		3047F	3047FB	1mm	0-50-0	$\pm 15\mu\text{m}$	1.5N or less	
	20mm	3050F	3050FB	1mm	0-100 (100-0)	$\pm 20\mu\text{m}$	1.4N or less	
	30mm	3052F	3052FB	1mm	0-100 (100-0)	$\pm 25\mu\text{m}$	1.4N or less	
	50mm	3058F*	3058FB*	1mm	0-100 (100-0)	$\pm 35\mu\text{m}$	1.4N or less	
	80mm	3060F*	3060FB*	1mm	0-100 (100-0)	$\pm 45\mu\text{m}$	1.4N or less	
0.001mm	100mm	3062F*	3062FB*	1mm	0-100 (100-0)	$\pm 50\mu\text{m}$	1.5N or less	
	1mm	3109F	3109FB	0.2mm	0-100-0	$\pm 6\mu\text{m}$	1.5N or less	

*Use the gage in a vertical position only.

Inch ANSI/AGD

Graduation	Range	Order No. Lug-Back	Order No. Flat-back	Range per revolution	Dial reading	Accuracy	Measuring force	Remarks
.001"	.125"	3780	—	.05"	0-50	$\pm .001"$	1.5N or less	
		3781	—	.05"	0-25-0	$\pm .001"$	1.5N or less	
	.25"	3410	3410B	.1"	0-100	$\pm .001"$	1.5N or less	
		3411	3411B	.1"	0-50-0	$\pm .001"$	1.5N or less	
	.4"	3412	3412B	.1"	0-100	$\pm .001"$	1.5N or less	
		3413	3413B	.1"	0-50-0	$\pm .001"$	1.5N or less	
	1"	3416	3416B	.1"	0-100	$\pm .002"$	2.0N or less	
		3417	3417B	.1"	0-50-0	$\pm .002"$	2.0N or less	
	2"	3424-10	3424B-10	.1"	0-100 (100-0)	$\pm .003"$	2.5N or less	
	3"	3426-10	3426B-10	.1"	0-100 (100-0)	$\pm .005"$	3.0N or less	
.0005"	.075"	3570	—	.03"	0-30	$\pm .0005"$	1.5N or less	
		3571	—	.03"	0-15-0	$\pm .0005"$	1.5N or less	
.0001"	.025"	3802-10	—	.01"	0-10	$\pm .0002"$	1.5N or less	
		3803-10	—	.01"	0-5-0	$\pm .0002"$	1.5N or less	



High Precision Type



Reverse Reading



Balanced Dial



Continuous Dial



One Revolution



Damped at Lowest Rest Point



Shockproof



Adjustable Hand



Water resistance



Doubled Scale Spacing



Coaxial Revolution Counter



Peak Retaining



Long Stem



Dustproof



Jeweled



Low Force

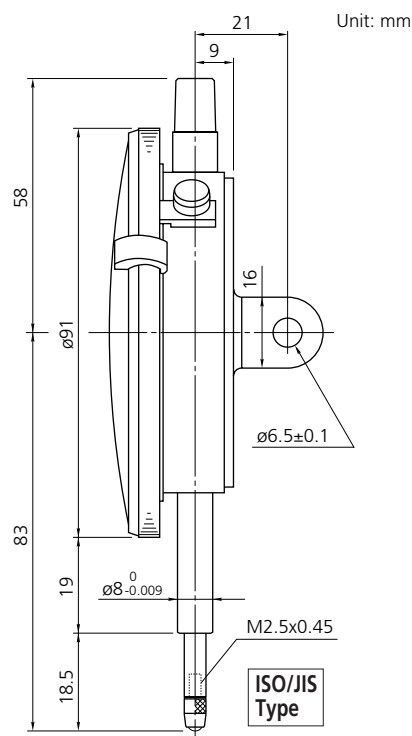


Dial Indicators

SERIES 4



Dimensions



Mitutoyo's Series 4 dial indicators give users the advantage of an accurate and durable gaging device that includes easy readability. Their large dial faces make them perfect for applications where reduced lighting or distance makes reading difficult.

Note 1: Dimensions of the inch (ANSI/AGD Type) dial indicator partly differ from those of the metric (ISO/JIS Type) indicator.

Note 2: Inch (ANSI/AGD Type) dial indicator is provided with a stem of 3/8" dia. and #4-48UNF thread mount for the contact point.

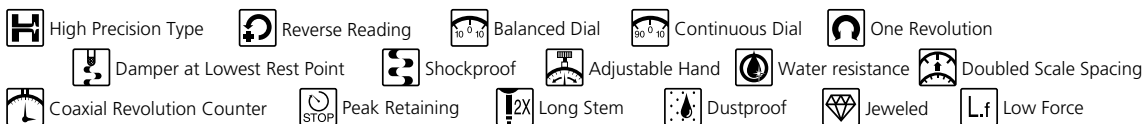
SPECIFICATIONS

Metric ISO/JIS

Graduation	Range	Order No. Lug-Back	Order No. Flat-back	Range per revolution	Dial reading	Accuracy	Measuring force	Remarks
0.01mm	10mm	4046	4046B	1mm	0-100 (100-0)	±15μm	1.4N or less	

Inch ANSI/AGD

Graduation	Range	Order No. Lug-Back	Order No. Flat-back	Range per revolution	Dial reading	Accuracy	Measuring force	Remarks
.001"	.25"	4410	—	.1"	0-100	±.001"	1.5N or less	
		4411	—	.1"	0-50-0	±.001"	1.5N or less	
	3"	4887	—	.1"	0-100	±.005"	2.5N or less	
.0005"	.075"	4570	—	.03"	0-30	±.0005"	1.5N or less	
		4571	—	.03"	0-15-0	±.0005"	1.5N or less	
.0001"	.025"	4802-10	—	.01"	0-10	±.0002"	1.5N or less	
		4803-10	—	.01"	0-5-0	±.0002"	1.5N or less	



ANSI/AGD Type Metric Dial Indicators

with 3/8" DIA. Stem and #4-48UNF-Thread Contact Point Mount

SPECIFICATIONS

Metric ^{ANSI/AGD} Series 1

Graduation	Range	Order No. Lug-Back	Order No. Flat-back	Range per revolution	Dial reading	Accuracy	Measuring force	Remarks
0.01mm	2.5mm	1230-01	—	1mm	0-100	±10μm	1.5N or less	
		1231-01	—	1mm	0-50-0	±10μm	1.5N or less	
	5mm	1044-01	—	1mm	0-100	12μm	1.4N or less	
		1045-01	—	1mm	0-50-0	12μm	1.4N or less	
0.002mm	0.5mm	1010-11	—	0.2mm	0-20	5μm	1.5N or less	
		1011-11	—	0.2mm	0-10-0	5μm	1.5N or less	

Metric ^{ANSI/AGD} Series 2

Graduation	Range	Order No. Lug-Back	Order No. Flat-back	Range per revolution	Dial reading	Accuracy	Measuring force	Remarks
0.01mm	2.5mm	2230F-01	2230FB-01	1mm	0-100	±10μm	1.4N or less	
		2231F-01	2231FB-01	1mm	0-50-0	±10μm	1.4N or less	
	5mm	2044F-61	2044FB-61	1mm	0-100	10μm	1.4N or less	
		2046F-01	2046FB-01	1mm	0-100	15μm	1.4N or less	
		2046F-11	2046FB-11	1mm	0-100	15μm	1.4N or less	
		2048F-01	2048FB-01	1mm	0-100	15μm	1.4N or less	
		2048F-11	2048FB-11	1mm	0-100	15μm	1.4N or less	
		2047F-01	2047FB-01	1mm	0-50-0	15μm	1.4N or less	
		2047F-11	2047FB-11	1mm	0-50-0	15μm	1.4N or less	
	20mm	2050F-01	2050FB-01	1mm	0-100	20μm	2.0N or less	
		2050F-11	2050FB-11	1mm	0-100	20μm	2.0N or less	
	25mm	2056F-01	2056FB-01	1mm	0-100	30μm	2.0N or less	
0.005mm	1.25mm	2120-71	—	0.5mm	0-50	±5μm	1.5N or less	
		2121-71	—	0.5mm	0-25-0	±5μm	1.5N or less	
0.002mm	0.5mm	2010F-11	2010FB-11	0.2mm	0-20	5μm	1.5N or less	
		2010F-61	2010FB-61	0.2mm	0-20	5μm	1.5N or less	
		2011F-11	2011FB-11	0.2mm	0-10-0	5μm	1.5N or less	
		2011F-61	2011FB-61	0.2mm	0-10-0	5μm	1.5N or less	
0.001mm	0.1mm	2900-73	—	—	50-0-50	±1μm	1.5N or less	
	1mm	2109F-11	2109FB-11	0.2mm	0-10-0	3μm	1.5N or less	
	5mm	2119-51	—	0.2mm	0-10-0	8μm	1.5N or less	

Metric ^{ANSI/AGD} Series 3

Graduation	Range	Order No. Lug-Back	Order No. Flat-back	Range per revolution	Dial reading	Accuracy	Measuring force	Remarks
0.01mm	2.5mm	3230-01	—	1mm	0-100	±10μm	1.4N or less	
		3231-01	—	1mm	0-50-0	±10μm	1.4N or less	
	30mm	3052-01	—	1mm	0-100	30μm	2.2N or less	
		3052-11	—	1mm	0-100	30μm	2.2N or less	
	50mm	3058-01	—	1mm	0-100	50μm	2.5N or less	
		3058-11	—	1mm	0-100	50μm	2.5N or less	
0.002mm	0.5mm	3010-11	—	0.2mm	0-20	5μm	1.5N or less	
		3011-11	—	0.2mm	0-10-0	5μm	1.5N or less	

Metric ^{ANSI/AGD} Series 4

Graduation	Range	Order No. Lug-Back	Order No. Flat-back	Range per revolution	Dial reading	Accuracy	Measuring force	Remarks
0.01mm	2.5mm	4230-01	—	1mm	0-100	±10μm	1.2N or less	
		4231-01	—	1mm	0-50-0	±10μm	1.2N or less	

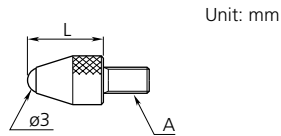


Contact Points

for Digimatic and Dial Indicators, and Linear Gages

SPECIFICATIONS

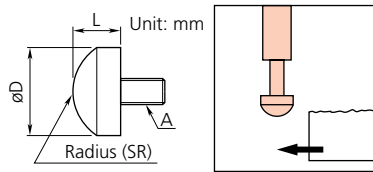
Ø3mm Ball Points



L	Material	Order No.	A
7.3	Carbide	901312	M2.5x0.45
		901454	#4-48UNF
	Steel	900030	M2.5x0.45
	Plastic	901994	M2.5x0.45
		902018	#4-48UNF
	Ruby	120047	M2.5x0.45
8.3*	Carbide	902119	M2.5x0.45
	Steel	900986	M2.5x0.45
15	Carbide	120049	M2.5x0.45
	Ruby	120051	M2.5x0.45
20	Carbide	137391	M2.5x0.45
	Ruby	137392	M2.5x0.45
25	Carbide	120053	M2.5x0.45
	Ruby	120055	M2.5x0.45

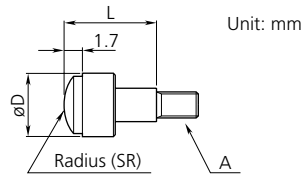
*For waterproof dial indicators

Spherical Points



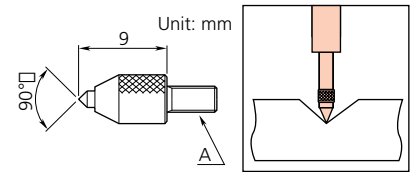
D	L	SR	Order No.	A
10	5	7	101119	M2.5x0.45
12.7	3.18	7	101205	#4-48UNF
9.53	2.38	9	101204	#4-48UNF

Spherical Points (Carbide)

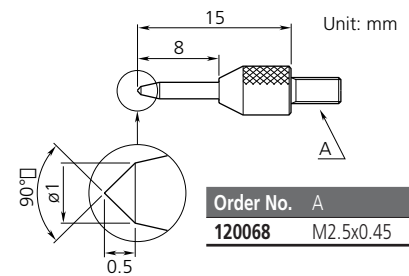


D	L	SR	Order No.	A
5.2	5	5	120058	M2.5x0.45
7.5	10	7	120059	M2.5x0.45
10.5	10	10	120060	M2.5x0.45

90° Conical Points (Carbide)

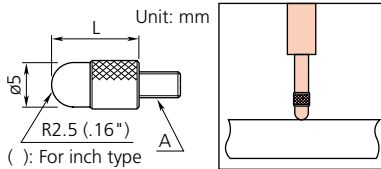


Order No.	A
120057	M2.5x0.45



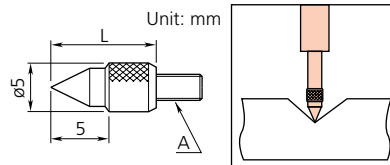
Order No.	A
120068	M2.5x0.45

Shell Type Points



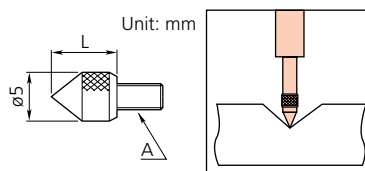
L	Order No.	A
3.97	101184	#4-48UNF
5	101386	M2.5x0.45
10	101118	M2.5x0.45
12.7	101185	#4-48UNF
15	137393	M2.5x0.45
19.05	101186	#4-48UNF
20	101387	M2.5x0.45
25	101388	M2.5x0.45
25.4	101187	#4-48UNF

60° Conical Points



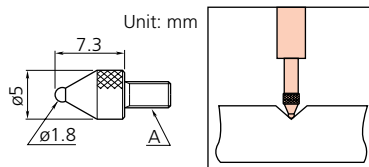
L	Order No.	A
10	101120	M2.5x0.45
12.7	101190	#4-48UNF

90° Conical Points



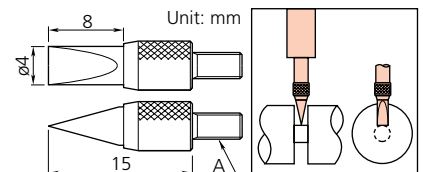
L	Order No.	A
5	101385	M2.5x0.45
7.14	101191	#4-48UNF

Ø1.8mm Ball Point



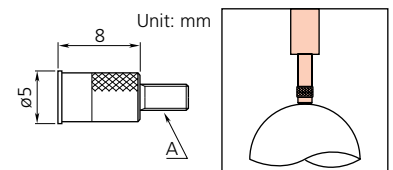
Order No.	A
101122	M2.5x0.45

Knife Edge Point (Carbide)

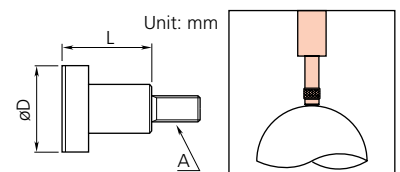


Order No.	A
120067	M2.5x0.45

Flat Points

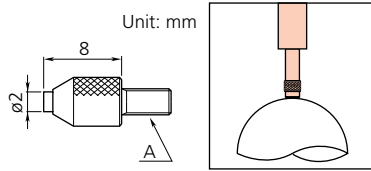


Order No.	A
131365	M2.5x0.45
133017	#4-48UNF

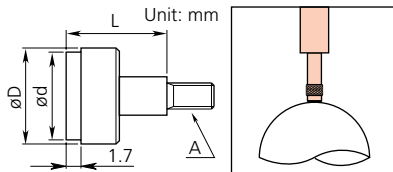


D	L	Order No.	A
10	10	101117	M2.5x0.45
12.7	9.53	101188	#4-48UNF
9.53	9.53	101189	#4-48UNF

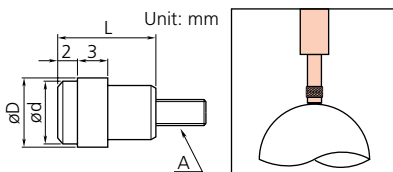
Flat Points (Carbide)



Order No.	A
120056	M2.5x0.45

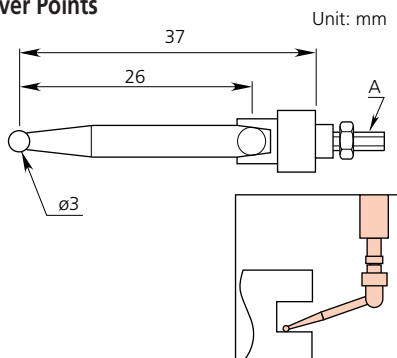


D	d	L	Order No.	A
5.2	4.3	5	120041	M2.5x0.45
7	6.5	10	120042	M2.5x0.45
10.5	9.5	10	120043	M2.5x0.45



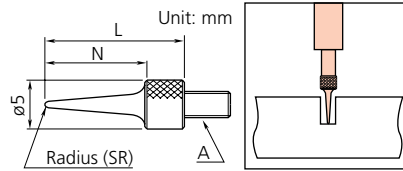
D	d	L	Order No.	A
7	6.5	10	137255	M2.5x0.45
9	8	10	137399	M2.5x0.45

Lever Points



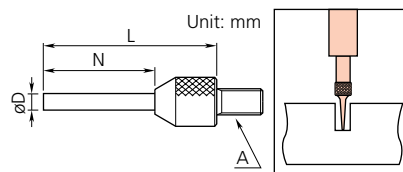
Order No.	A
900391	M2.5x0.45
900393	#4-48UNF

Needle Points



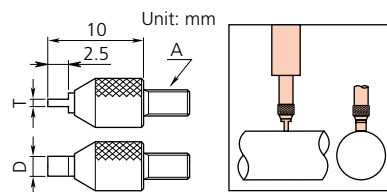
N	L	SR	Order No.	A
11	15	0.4	101121	M2.5x0.45
13	17	0.2	137413	M2.5x0.45

Needle Points (Carbide)



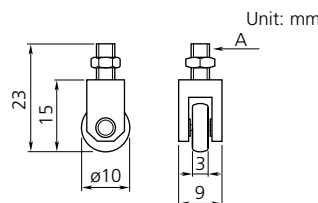
D	N	L	Order No.	A
0.45	2.5	10	120066	M2.5x0.45
1	2.5	10	120065	M2.5x0.45
1.5	13	20	120064	M2.5x0.45
2	8	15	137257	M2.5x0.45

Blade Points (Carbide)



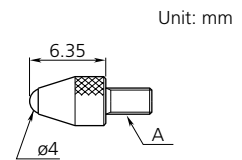
T	W	Order No.	A
0.4	2	120061	M2.5x0.45
0.6	2	120062	M2.5x0.45
1	4	120063	M2.5x0.45

Roller Points



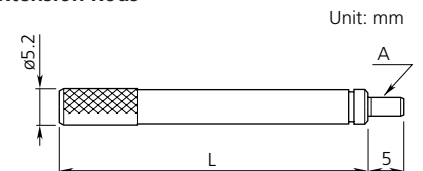
Order No.	A
901954	M2.5x0.45
901991	#4-48UNF

ø4mm Ball Point



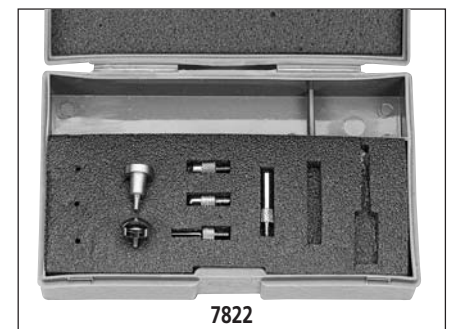
Order No.	A
900032	#4-48UNF

Extension Rods



L	Order No.	A
10	303611	M2.5x0.45
20	303612	M2.5x0.45
25.4	301655	#4-48UNF
30	303613	M2.5x0.45
50.8	301657	#4-48UNF
100	303614	M2.5x0.45
101.6	301659	#4-48UNF

Interchangeable Contact Point Set (M2.5x0.45)



Order No.	Components
7822	Flat Point (131365, ø5mm) Flat Point (101117, ø10mm) Needle Point (101121) Spherical Point (101119) Shell Type Point (101118) Shell Type Point (101387)

Backs

for Digimatic and Dial Indicators

SPECIFICATIONS

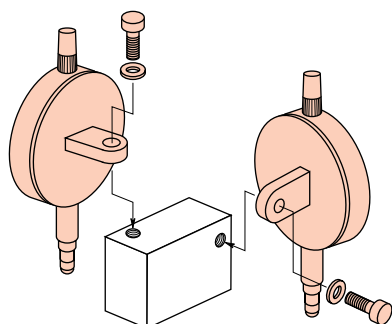
Description		Order No.		
		Series 1 ($\phi 41$ mm)	Series 2 ($\phi 55.6$ mm)	Series 3, 4 ($\phi 77, 91$ mm)
Flat Back	Unit: mm	101211 (a=2.2)	101039 (a=2.5) 21AZB231 (for water-proof & type)	100836 (a=3.0)
Lug-on-Center Back	Unit: mm	101210 (metric) 101307 (inch)	101040 (metric) 101306 (inch) 21AZB230 (for water-proof & type)	100691 (metric) 100797 (inch)
Magnetic Back	Unit: mm	—	900928	900929
Back with Offset Lug	Unit: mm	—	101167	100837
Back with Post	Unit: mm	193172	101169	100839
Back with Screw Mount	Unit: mm	193173 (M6x1) 193174 (#1/4-28UNF)	136023 (M6x1) 193174 (#1/4-28UNF)	136024 (M6x1) 100840 (#1/4-28UNF)
Adjustable Back	Unit: mm	136025 (M6x1) 129721 (#1/4-28UNF)	136026 (M6x1) 101168 (#1/4-28UNF)	136027 (M6x1) 100838 (#1/4-28UNF)
Back with Dovetail	Unit: mm	—	900008	—
Back with Adjustable Bracket	Unit: mm	—	901963	—

There are two ways to support Digimatic and dial indicators; by either holding the stem or the lug on the back of the indicator. The back of the indicator may need to be replaced for special applications. A wide variety of backs are available for Mitutoyo Digimatic and dial indicators.

FEATURES

- The lug can be orientated in 90° increments.

Application



Accessories

for Digimatic and Dial Indicators

Spindle Lifting Levers



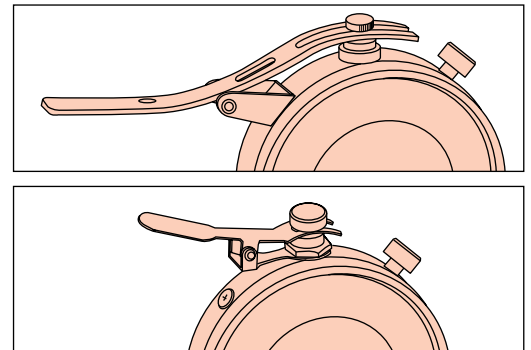
FEATURES

- The Spindle Lifting Lever is attached to the top end of the spindle for improved inspection efficiency when using a dial indicator mounted on a stand.

SPECIFICATIONS

Order No.	Applicable dial indicators
21BZA205 (Lifting range: Up to 5mm)	Series 1: 1040F, 1041F, 1044F, 1044F-10, 1045F, 1124F, 1013F, 1109F, 1900F, 1929F
902011 (Lifting range: Up to 10mm) 902100 (Lifting range: Up to 10mm)	Series 2: 2929F, 2959F, 2044FE, 2044FE-09, 2045FE, 2046FE, 2046FH, 2046FLB, 2046FE-09, 2046FE-10, 2310FE, 2902FE, 2047FE, 2124F, 2125F, 2900F, 2901F, 2110F, 2109F, 2109FH, 2109FLB, 2113F, 2118F, 2119F, 2928F
903424 (Lifting range: Up to 25mm)	Series 2: 2048FE-10, 2050FE, 2050FE-10, 2320FE Series 3: 3046F, 3047F, 3109F Series 4: 4046
21AZB149 (Lifting range: Up to 10mm)	Series 2: 2929S, 2959S, 2044S, 2044S-09, 2045S, 2046S, 2046SH, 2046SLB, 2046S-09, 2046S-15, 2310S-10, 2902S, 2047S, 2124S-10, 2900S-10, 2901S-10, 2110S-10, 2109S-10, 2109SLB-10, 2113S-10, 2118S-10, 2119S-10, 2928S
21AZB150 (Lifting range: From 10mm up to 20mm)	Series 2: 2050S, 2050S-19, 2320S-10, 2048S-10

Application



DIAL INDICATORS

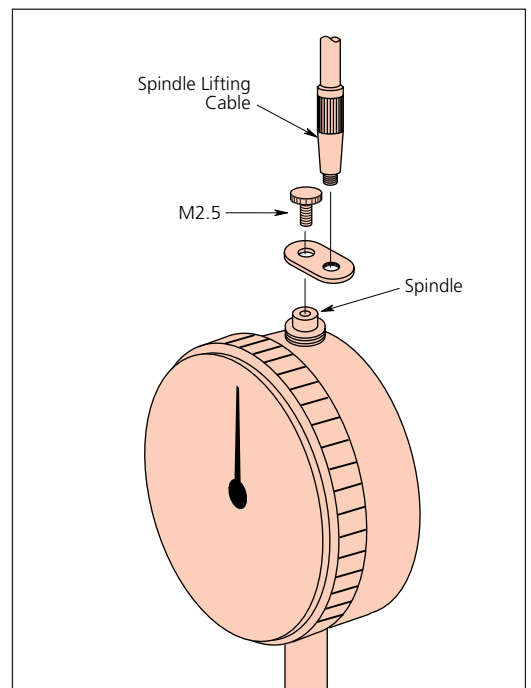
Spindle Lifting Cable



SPECIFICATIONS

Order No.	Lifting range	Remarks
901975	Up to 10mm	Cable length: 300mm

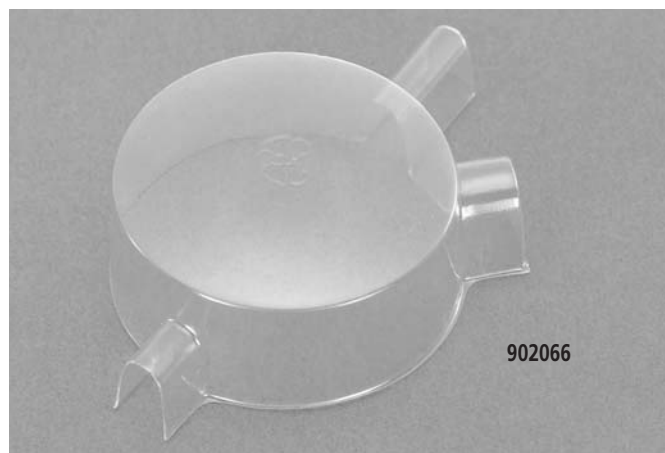
Application



Accessories

for Digimatic and Dial Indicators

Protective Covers

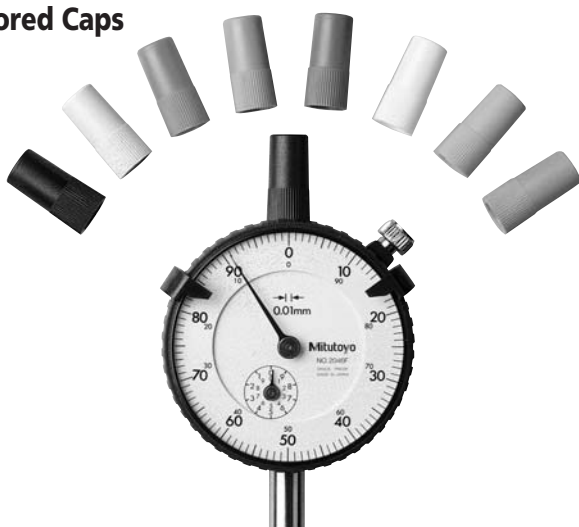


Clear plastic protective covers are available that surround and protect the dial indicators from oils, dust, and flying particles.

SPECIFICATIONS

Application	Order No.	Remarks
Metric Series 2 Dial Indicators	902066	10 pieces per set
Inch Series 2 Dial Indicators	902065	10 pieces per set

Colored Caps



8 colors of spindle caps are available for dial indicators with a range of 10mm or less.

SPECIFICATIONS

Color	Order No. Standard	Order No. Water-resistant
Black	193051	193595
White	193051W	193595W
Red	193051R	193595R
Green	193051G	193595G
Blue	193051B	193595B
Yellow	193051Y	193595Y
Orange	193051D	193595D
Pink	193051P	193595P

Limit Stickers



FEATURES

- Stuck on the dial face or crystal of a dial indicator to indicate tolerance limits.

SPECIFICATIONS

Color	Order No.	Remarks
Red	136420	10 stickers per set
Green	136421	10 stickers per set
Yellow	136422	10 stickers per set

Dial Indicator Repair Tool Kit



7823

Mitutoyo offers a tool set designed to let you perform simple repairs to your Mitutoyo dial indicator, and a device that lets you reset the indicator crystals.

FEATURES

- To free a jammed bezel: Apply Molykote with a brush (8) around the entire groove of the bezel.
- To oil a bearing: Use brush (9) to apply lubricating oil (2) to the pinion shaft.
- To remove the long hand: Use hand remover (15) to lift out without damaging the bearing.

- To remove the short hand: Use nippers (13).
- To adjust the bearing position: Use the bearing adjuster (18) to force the bearing into position.
- To remove the pin or drive it into position: Use the pin remover (16) and hammer (10) on the V-groove of the spindle rest (11).
- To drive the long or short hand into position: Use the pinion rest (19) and pin rest (12) to hold the pin and pinion, then drive with hammer (10) and punch (17) into the center position.

SPECIFICATIONS

Order No.	Assortment of tools (1) - (20)
7823	(1) Molykote (lubricant) (901171)
	(2) Lubricating oil (901172)
	(3) Screwdriver (Phillips) (901173)
	(4) Screwdriver (Phillips/flat blade) (901174)
	(5) Tweezers (129729)
	(6) Pin-vise (901175)
	(7) Brush (901176)
	(8) Brush (901177)
	(9) Brush (901177)
	(10) Hammer (901178)
	(11) Spindle rest (129730)
	(12) Pin rest (129731)
	(13) Nippers (901179)
	(14) Pliers (901180)
	(15) Hand remover (901181)
	(16) Pin remover (129732)
	(17) Punch (129733)
	(18) Bearing adjuster (129734)
	(19) Pinion rest (129735)
	(20) Reamer $\phi 1$ (129736), $\phi 0.6$ (193702)
	(21) Case (901182)



Dial Indicator Crystal Setter



7000

FEATURES

- Used for fitting a crystal on dial indicators, dial test indicators, and dial calipers.

SPECIFICATIONS

Order No.	Remarks
7000	With 8 sizes of crystal setting pads

UDT-2 Dial Gage Tester

SERIES 170



170-102M-2

The UDT-2 Dial Gage Tester consists of a specially designed 25mm micrometer head, with a large disc, and rigid holding fixtures. With graduations in 0.001mm on the micrometer head, the UDT-2 is highly recommended to calibrate 1mm, 5mm, 10mm, and 20mm range, 0.01mm reading, dial indicators and dial test indicators.

FEATURES

- Clamping stem diameter— 170-102M-2: 6mm and 8mm, 170-101E: .25" and .375"
- With the optional stand (951498), inspection of Dial Bore Gages becomes possible to perform.



SPECIFICATIONS

Metric

Order No.	Graduation	Range	Accuracy
170-102M-2	0.001mm	0-25mm	±2μm

Inch

Order No.	Graduation	Range	Accuracy
170-101E	.0001"	0-1"	±.0001"

OPTIONAL ACCESSORY

Order No.	Description
951498	Stand for Dial Bore Gage inspection

Calibration Tester

SERIES 521



521-103

The Calibration Tester is specially designed to calibrate measuring accuracy of short range dial indicators, dial test indicators, and other electronic comparison gage heads.

FEATURES

- Universal bracket accepts any dial indicator, dial test indicator, lever head of Mu-Checker without any additional accessory.
- Clamping capacity: ø4mm - ø10mm
- Dual color-indexed directional graduations to facilitate measurements.



SPECIFICATIONS

Metric

Order No.	Graduation	Range	Accuracy
521-103	0.0002mm	0-1mm	±0.2μm
521-105	0.0002mm	0-5mm	±0.8μm

Inch

Order No.	Graduation	Range	Accuracy
521-104	.00001"	0-.05"	±.00001"
521-106	.00001"	0-.2"	±.00003"

i-Checker

SERIES 170



Personal computer (optional)

The i-Checker is specially designed to calibrate measuring accuracy of dial indicators, dial test indicators, and other electronic comparison gage heads with a stroke of up to 100mm (4").

FEATURES

- $\pm(0.2+L/100)\mu\text{m}$ * indication accuracy
* When inspecting in vertical posture.
- Directly inspects an indicator with a stroke of up to 100mm (4"). The dial test indicator, bore gage and lever-type inductive head can be inspected with optional accessories.
- Adjustment of the measurement position is very easily accomplished because of semi-automatic measurement and full automatic measurement functions.
- Creates and prints out the simple inspection certificate.
- Saves inspection result as CSV file for reusable inspection result by any kind of software.

SPECIFICATIONS

Model No.	i-Checker
Order No.	170-302■ (w ø8 bush) 170-303■ (w ø3/8" bush) 170-302■-01 (w ø8 bush, calibration certificate) 170-303■-01 (w ø3/8" bush, calibration certificate)
Measuring Range	100mm/4"
Resolution	0.02μm/1.24μin
Accuracy	vertical position $\pm(0.2+L/100)\mu\text{m}$ L = Arbitrary length lateral position $\pm(0.3+2L/100)\mu\text{m}$ L = Arbitrary length
Drive method	Motor drive
Measuring Unit	Reflective-type metal linear encoder
Thermal expansion coefficient of measurement mode	$(8\pm 1)\times 10^{-6}/\text{K}$
Measurement method	Semiautomatic measurement Fully automatic measurement* ¹ Digimatic Indicator with RS-232C output* ²
Dimensions (W x D x H)	184 x 225 x 532mm (7.24" x 8.86" x 20.94")
Operating temperature range	20°C ±3°C
Power supply	100VAC to 240VAC ±10%, 50/60Hz
Mass	20kg/44.1lbs

Note: To denote your AC line voltage fill the blank of order number with the following suffixes (e.g. 170-302A). A for 120V, D and K for 220V, E for 240/220V. No suffix is required for 100V.

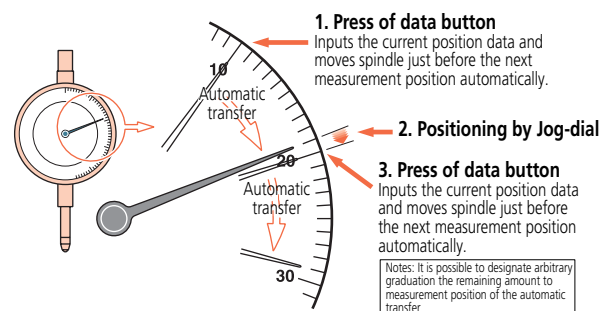
*¹Automatic measurement requires the indicator's connection cable. Additionally some form of indicator, along with a connecting machine (the optional accessory for indicator as a Digimatic power-supply unit on EF counter) will be needed.

*²The indicator that can be measured via RS-232C is the one equipped with the function to receive the "send data" request command form from the main unit and can output the counter value to the main unit.

Inspect your analog indicator semi-automatically!

- The pointer of the analog indicator is positioned just before the measuring point automatically via Mitutoyo's Semi-automatic Measurement function. After that, inspection begins simply by adjusting the pointer position with the jog-dial. Because of this function, measurement time is reduced and user fatigue is practically eliminated.

Additionally all functions necessary for inspection are combined in the control box so that the operator need not rely on excessive eye movement to adjust the pointer.



Fully automatic inspection of digital indicator

- The Automatic Measurement function, in tandem with a digital indicator makes the spindle move so that measurement data is acquired automatically. Therefore, manual adjustment to the measurement position is needless and the efficiency of every inspection is enhanced.



Create and printout a simplified inspection certificate

- It is possible to create, edit and print out your own inspection certificate. Further more, that data can be saved as a CSV file.

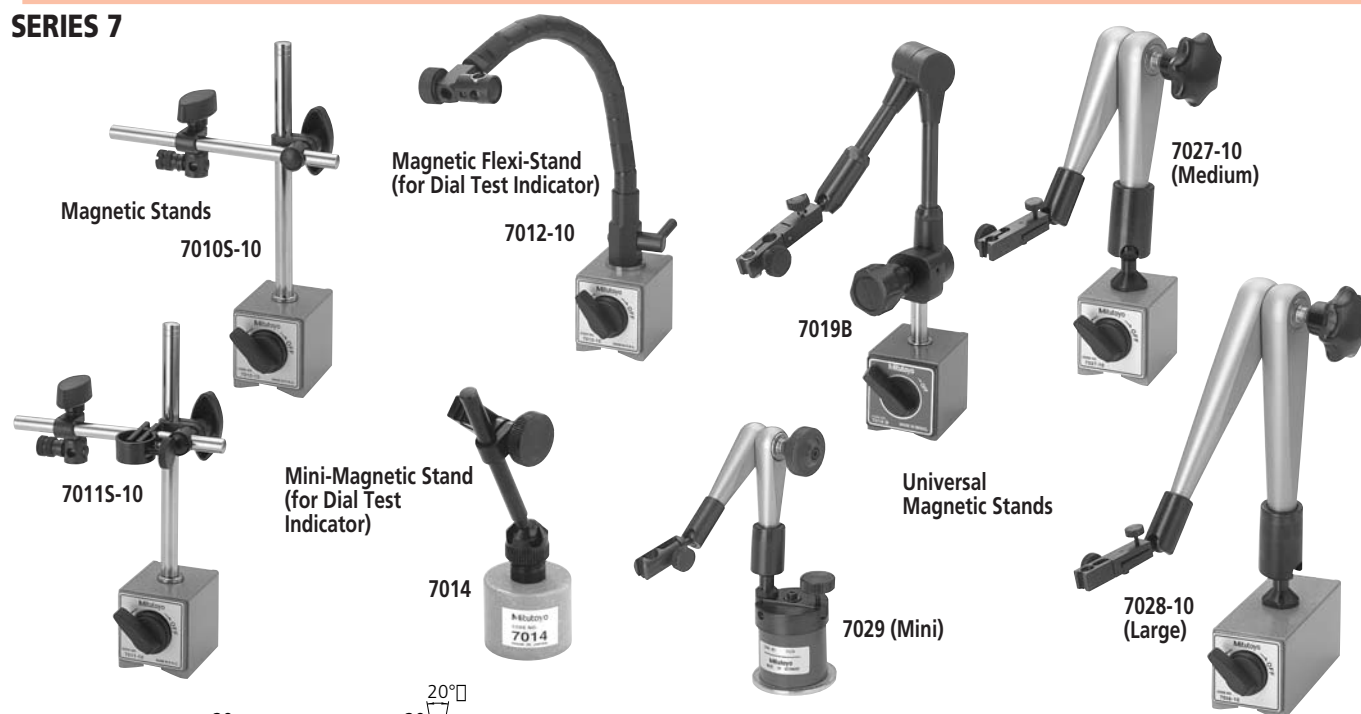
OPTIONAL ACCESSORIES

Order No.	Description
02ASK000	Test indicator attachment set (ø6 stem)
02ASK180	Test indicator attachment set (ø8 stem)
02ASK370	Test indicator holder (ø6 stem)
02ASK380	Test indicator holder (ø8 stem)
02ASK110	Bore gage accessories (1 set)
902803	ø6 dovetail grooved stem
902804	ø8 dovetail grooved stem
02ASK040	Stem bush ø6
02ASK856	Stem bush ø8
02ASK150	Stem bush ø8, short
02ASK050	Bush ø9.5 (Requires 02ASK070)
02ASK060	Stem bush ø12
02ASK070	Stem bush ø15
02ASK080	Stem bush ø20
02ASK090	Stem bush 3/8"
02ASK130	Stem bush case
02ASK730	Reflector
937179T	Foot switch

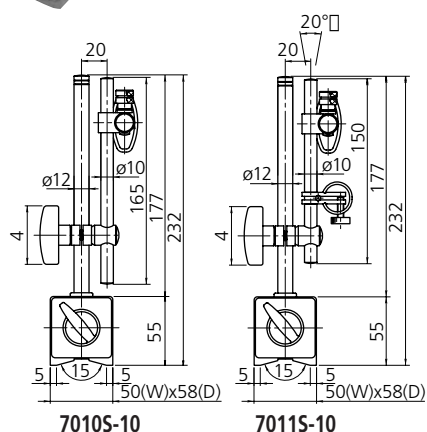


Magnetic Stands

SERIES 7

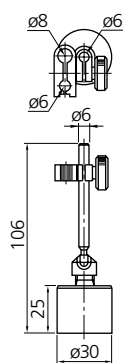


Dimensions

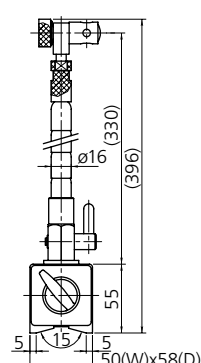


7010S-10

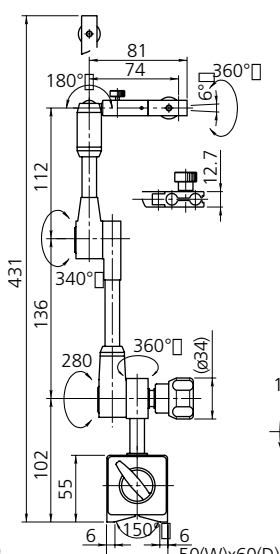
7011S-10



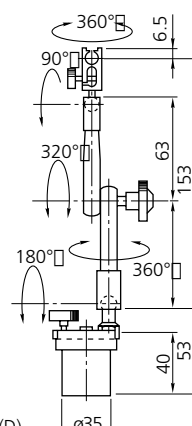
7014



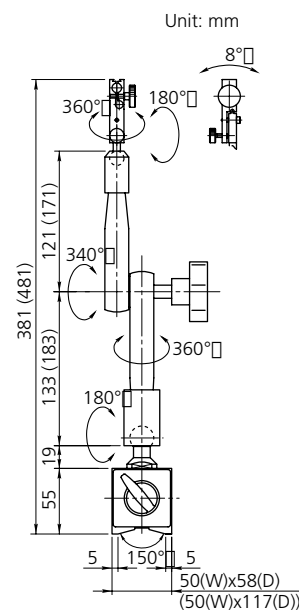
7012-10



7019B



7029



7027-10/7028-10

(Numerical values inside parentheses denotes the dimensions of 7028-10.)

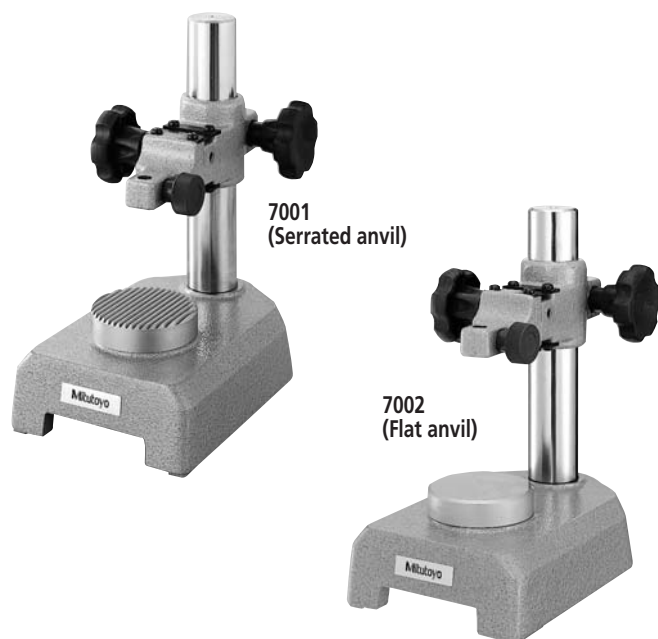
Mitutoyo's Magnetic Stands accept all dial indicators and dial test indicators. The ON-OFF switch offers instant mounting and dismounting without any adverse effect to the indicators or workpiece surface.

SPECIFICATIONS

Order No.	Description	Applicable holding stem	Dovetail groove*	Mass	Remarks
7010S-10	Magnetic stand	ø8mm, ø4.5mm, 3/8" DIA.	—	1.4kg	—
7011S-10	Magnetic stand	ø8mm, ø4.5mm, 3/8" DIA.	—	1.4kg	With fine adjustment
7012-10	Magnetic flexi-stand	ø8mm, ø6mm, 3/8" DIA.	—	1.6kg	For Dial Test Indicator
7014	Mini magnetic stand	ø8mm, ø6mm	Provided	0.2kg	Without ON-OFF switch
7019B	Universal magnetic stand	ø8mm, 3/8" DIA.	Provided	1.8kg	With hydraulic position lock
7027-10	Universal magnetic stand	ø8mm	Provided	1.7kg	With hydraulic position lock
7028-10	Universal magnetic stand	ø8mm	Provided	2.8kg	With hydraulic position lock
7029	Universal magnetic stand	ø8mm	Provided	0.5kg	Without ON-OFF switch

Dial Gage Stands

SERIES 7



These Dial Gage Stands and Transfer Stands are designed for comparison measurements of height using a dial indicator or Digimatic Indicator.

FEATURES

- Vertical travel of the gage holder — Dial Gage Stand: 100mm (4"), Transfer Stand: 335mm (13.19")
- Fine-adjustment of 1mm available for zero-setting of the indicator.
- With an interchangeable anvil. Domed anvil (**101463**) is optional.

SPECIFICATIONS

Metric Dial Gage Stands			
Order No.	Applicable holding stem	Mass	Remarks
7001	ø8mm	4kg	w/Serrated anvil (101462)
7002	ø8mm	4kg	w/Flat anvil (101461)

Inch Dial Gage Stands			
Order No.	Applicable holding stem	Mass	Remarks
7003	3/8" DIA.	8.8 lbs.	w/Serrated anvil (101462)
7004	3/8" DIA.	8.8 lbs.	w/Flat anvil (101461)

Metric Transfer Stands			
Order No.	Applicable holding stem	Mass	Remarks
519-109M	ø8mm	7.5kg	w/Serrated anvil (101462)

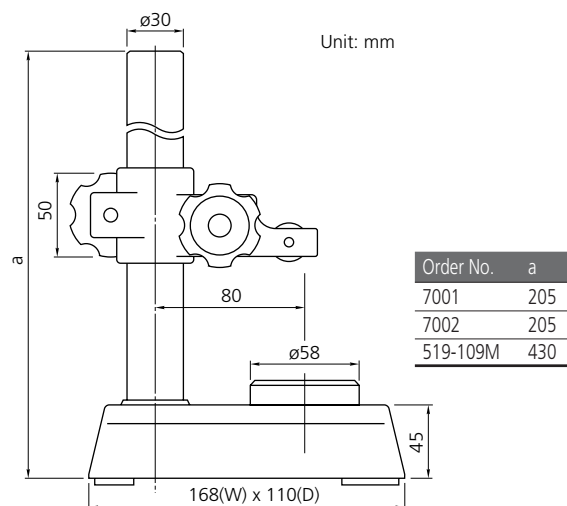
Inch Transfer Stands			
Order No.	Applicable holding stem	Mass	Remarks
519-109E	3/8" DIA.	7.5kg	w/Serrated anvil (101462)

Transfer Stands

SERIES 519



Dimensions



Serrated Anvil



101462
Hardened steel
Flatness: 1μm

Domed Anvil



101463
Hardened steel

Flat Anvil



101461
Hardened steel
Flatness: 1μm



Dial Gage Stands

SERIES 7

Comparator Stands

SERIES 215



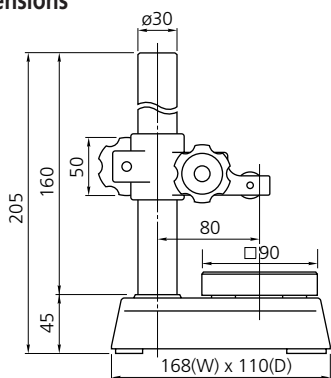
7007



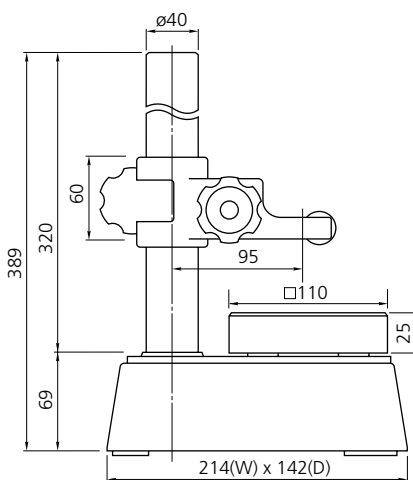
215-405

These Dial Gage Stand and Comparator Stands consist of a very stable, cast-iron base and an upright column with a mounting bracket that features fine adjustment. The grid type anvil prevents the workpiece from sticking to it.

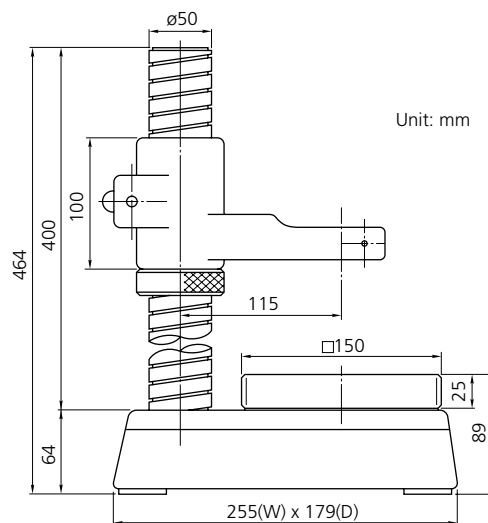
Dimensions



7007



215-405



Unit: mm

215-504 (ø8mm)
215-505 (ø20mm)

SPECIFICATIONS

Metric Dial Gage Stands			
Order No.	Vertical travel of stem holder	Applicable holding stem	Mass
7007	110mm*	ø8mm	6kg

*With fine adjustment of 1mm

Inch Dial Gage Stands			
Order No.	Vertical travel of stem holder	Applicable holding stem	Mass
7008	4.33"*	3/8" DIA.	13.2 lbs.

*With fine adjustment of .04"

Comparator Stands

Order No.	Vertical travel of stem holder	Applicable holding stem	Mass
215-405	200mm*	ø8mm	11kg
215-504	260mm**	ø8mm	17kg
215-505	260mm**	ø8mm, ø20mm	17kg

*With fine adjustment of 1mm

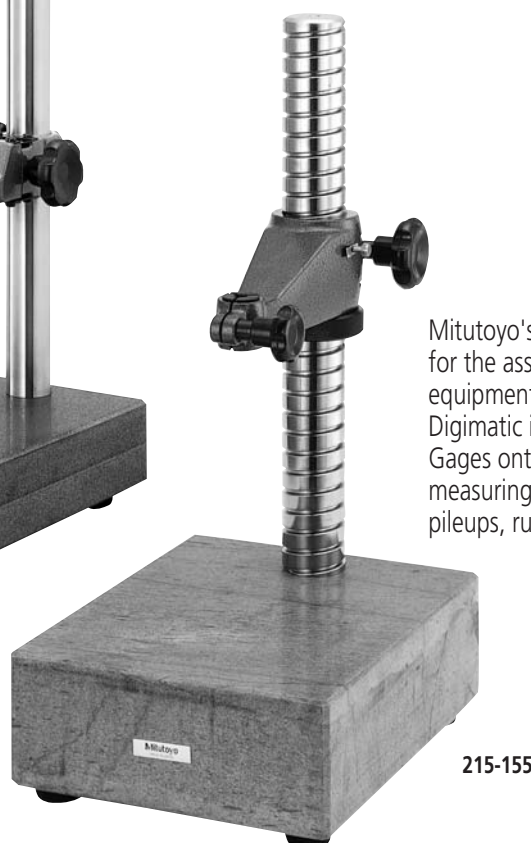
**Fine adjustment available over the entire travel

Granite Comparator Stands

SERIES 215



215-151



215-155

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 satisfy all manner of measuring assignment. The rigid granite base is free from burrs, pileups, rust, and deterioration over time.

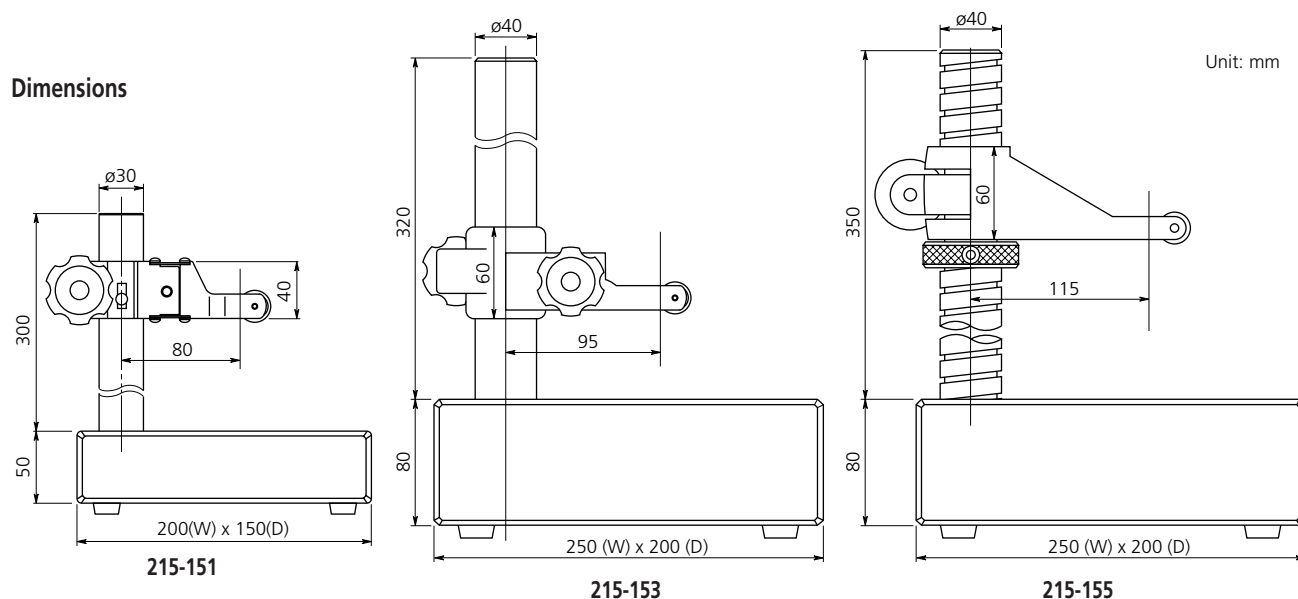
DIAL INDICATORS



SPECIFICATIONS

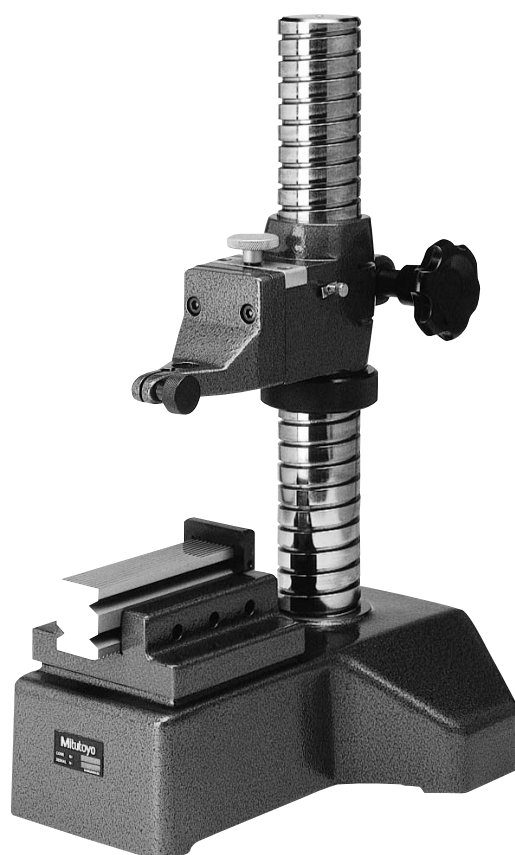
Order No.	Granite base size (WxDxH)	Vertical travel of gage holder	Applicable holding stem	Mass	Remarks
215-151	150x200x50mm	260mm	ø8mm	7kg	With fine adjustment of 1mm
215-153	200x250x80mm	250mm	ø8mm	16kg	With fine adjustment of 1mm
215-155	200x250x80mm	270mm	ø8mm, ø20mm	15kg	With fine adjustment over the entire travel

Dimensions



Heavy Duty Comparator Stands

SERIES 215



215-813

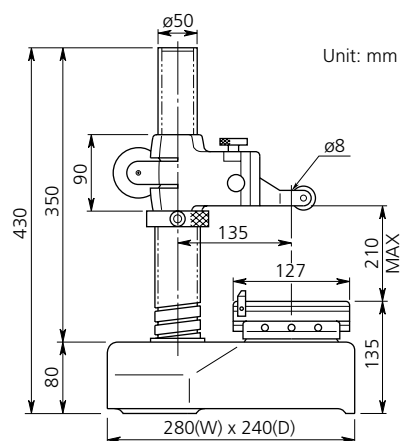
The Heavy Duty Comparator Stand has rigid construction and fine adjustments, which makes the stand suitable as a gaging stand for dial indicators, Linear Gages, and probes of Mu-Checkers. Its serrated anvil (**070673**) prevents the workpiece from sticking to it.

SPECIFICATIONS

Order No.	Vertical travel of stem holder	Applicable holding stem	Mass
215-813	210mm*	ø8mm	22kg
215-804	210mm*	3/8" DIA.	22kg

*With fine adjustment of 10mm

Dimensions



OPTIONAL ACCESSORIES

Large Anvil	Ball Anvil
990015 Size: 100x100mm, Serrated	990018 Ball diameter: 3/8"

Unit: mm

Dial Bench Gage

SERIES 547, 7



SPECIFICATIONS

Metric	Digimatic Bench Gages
--------	-----------------------

Resolution	Max. workpiece height	Order No.	Measuring range	Accuracy	Mass	Remarks
0.01mm	25mm	547-064	12mm	±0.02mm	1.0kg	With ø6.3mm flat contact point

Inch/Metric _____ **Digimatic Bench Gages**

Resolution	Max. workpiece height	Order No.	Measuring range	Accuracy	Mass	Remarks
.0005"/0.01mm	1" (25mm)	547-066	.5" (12.7mm)	±.001"	2.2 lbs.	With .248" DIA. flat contact point

Metric	Dial Bench Gage
Accuracy	±0.0005 in.
Resolution	0.0001 in.
Repeatability	±0.0002 in.
Stability	±0.0001 in.
Range	0 to 1.0 in.
Linearity	±0.0001 in.
Temperature Sensitivity	±0.0001 in./°F
Surface Finish Sensitivity	±0.0001 in.
Alignment Sensitivity	±0.0001 in.
Measurement Time	10-15 minutes
Operator Skill	High
Cost	High
Flexibility	Low
Portability	Low
Integration	Low
Documentation	Low
Calibration	Low
Maintenance	Low
Compliance	Low
Scalability	Low
Interoperability	Low
Security	Low
Reliability	Low
Availability	Low
Performance	Low
Efficiency	Low
Effectiveness	Low
Productivity	Low
Quality	Low
Consistency	Low
Accuracy	Low
Precision	Low
Resolution	Low
Repeatability	Low
Stability	Low
Range	Low
Linearity	Low
Temperature Sensitivity	Low
Surface Finish Sensitivity	Low
Alignment Sensitivity	Low
Measurement Time	Low
Operator Skill	Low
Cost	Low
Flexibility	Low
Portability	Low
Integration	Low
Documentation	Low
Calibration	Low
Maintenance	Low
Compliance	Low
Scalability	Low
Interoperability	Low
Security	Low
Reliability	Low
Availability	Low
Performance	Low
Efficiency	Low
Effectiveness	Low
Productivity	Low
Quality	Low
Consistency	Low
Accuracy	Low
Precision	Low
Resolution	Low
Repeatability	Low
Stability	Low
Range	Low
Linearity	Low
Temperature Sensitivity	Low
Surface Finish Sensitivity	Low
Alignment Sensitivity	Low
Measurement Time	Low
Operator Skill	Low
Cost	Low
Flexibility	Low
Portability	Low
Integration	Low
Documentation	Low
Calibration	Low
Maintenance	Low
Compliance	Low
Scalability	Low
Interoperability	Low
Security	Low
Reliability	Low
Availability	Low
Performance	Low
Efficiency	Low
Effectiveness	Low
Productivity	Low
Quality	Low
Consistency	Low
Accuracy	Low
Precision	Low
Resolution	Low
Repeatability	Low
Stability	Low
Range	Low
Linearity	Low
Temperature Sensitivity	Low
Surface Finish Sensitivity	Low
Alignment Sensitivity	Low
Measurement Time	Low
Operator Skill	Low
Cost	Low
Flexibility	Low
Portability	Low
Integration	Low
Documentation	Low
Calibration	Low
Maintenance	Low
Compliance	Low
Scalability	Low
Interoperability	Low
Security	Low
Reliability	Low
Availability	Low
Performance	Low
Efficiency	Low
Effectiveness	Low
Productivity	Low
Quality	Low
Consistency	Low
Accuracy	Low
Precision	Low
Resolution	Low
Repeatability	Low
Stability	Low
Range	Low
Linearity	Low
Temperature Sensitivity	Low
Surface Finish Sensitivity	Low
Alignment Sensitivity	Low
Measurement Time	Low
Operator Skill	Low
Cost	Low
Flexibility	Low
Portability	Low
Integration	Low
Documentation	Low
Calibration	Low
Maintenance	Low
Compliance	Low
Scalability	Low
Interoperability	Low
Security	Low
Reliability	Low
Availability	Low
Performance	Low
Efficiency	Low
Effectiveness	Low
Productivity	Low
Quality	Low
Consistency	Low
Accuracy	Low
Precision	Low
Resolution	Low
Repeatability	Low
Stability	Low
Range	Low
Linearity	Low
Temperature Sensitivity	Low
Surface Finish Sensitivity	Low
Alignment Sensitivity	Low
Measurement Time	Low
Operator Skill	Low
Cost	Low
Flexibility	Low
Portability	Low
Integration	Low
Documentation	Low
Calibration	Low
Maintenance	Low
Compliance	Low
Scalability	Low
Interoperability	Low
Security	Low
Reliability	Low
Availability	Low
Performance	Low
Efficiency	Low
Effectiveness	Low

Resolution	Max. workpiece height	Order No.	Measuring range	Accuracy	Mass	Remarks
0.01mm	20mm	7060	10mm	0.012mm	0.95kg	With ø6.3mm flat contact point

Roll Calipers

SERIES 310



SPECIFICATIONS

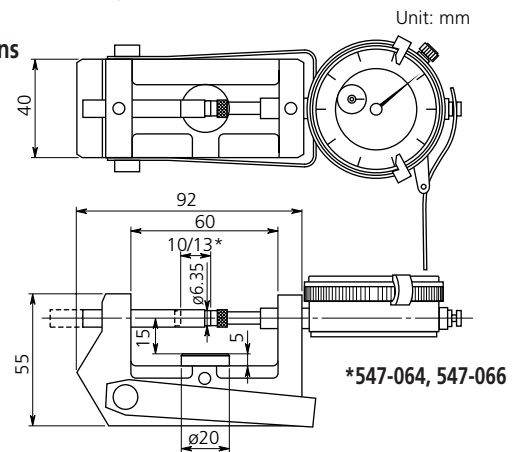
Metric

Range	Order No.	Mass
ø500 - ø1400mm	310-131	30kg
ø400 - ø1050mm	310-132	20kg
ø275 - ø825mm	310-133	9kg
ø200 - ø600mm	310-134	7kg
ø100 - ø450mm	310-135	4.5kg

FEATURES

- Compact and inexpensive gaging unit that consists of a dial indicator and a bench stand.
- Suitable for inspecting small parts on the shop floor.
- With $\varnothing 20\text{mm}$ workpiece rest.

Dimensions



DIAL INDICATORS



FEATURES

- The Roll Calipers is the most widely used instrument for checking the diameter and crown of rollers which have a great influence on many products such as metal, rubber and paper.
- Performs fast and accurate comparison measurements of roller diameter with the roller mounted on the 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.

Inch

Range	Order No.	Mass
ø20 - ø56"	310-141	66 lbs.
ø16 - ø42"	310-142	44 lbs.
ø11 - ø32"	310-143	19.8 lbs.
ø8 - ø24"	310-144	15.4 lbs.
ø4 - ø17"	310-145	15.4 lbs.

Upright Gages

SERIES 547, 7



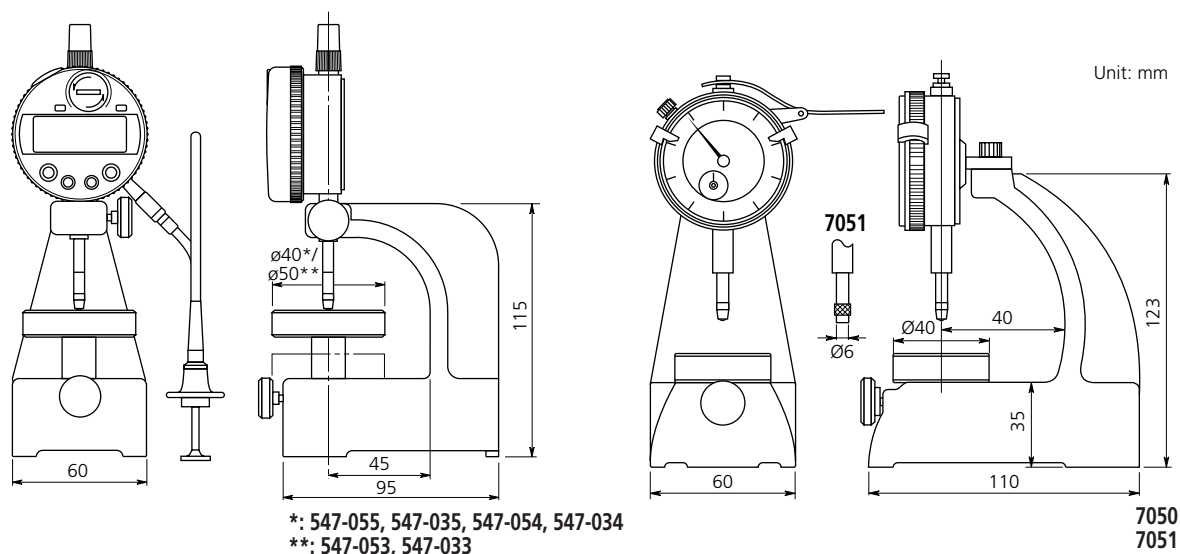
FEATURES

- The Digimatic Upright Gage offers multiple functions including GO/±NG judgment, and SPC data output.
- Compact and inexpensive gaging unit that consists of a dial indicator and a stand.
- Suitable for inspecting small parts on the shop floor.
- Anvil size: 40/50mm in diameter.
- Contact point:
 - ø3mm carbide (metric)
 - ø6mm flat point (**7051**)
 - .118" DIA. ball (inch)

OPTIONAL ACCESSORY

Order No.	Description
902190	Large diameter anvil (ø80mm)
903526	Ceramic anvil (ø50mm)

Dimensions



SPECIFICATIONS

Metric		Digimatic Upright Gages				
Resolution	Max. workpiece height	Order No.	Measuring range	Accuracy	Mass	Remarks
0.001mm	30mm	547-053	12mm	±0.003mm	1.7kg	With ø50mm ceramic anvil
		547-055	12mm	±0.003mm	1.7kg	With ø40mm anvil
0.01mm	30mm	547-054	12mm	±0.02mm	1.7kg	With ø40mm anvil

Inch/Metric		Digimatic Upright Gages				
Resolution	Max. workpiece height	Order No.	Measuring range	Accuracy	Mass	Remarks
.00005"/0.001mm	1.2" (30mm)	547-033	.5" (12.7mm)	±.00015"	2.64 lbs.	With 1.97" DIA. ceramic anvil
		547-035	.5" (12.7mm)	±.00015"	2.64 lbs.	With 1.57" DIA. anvil
.0005"/0.01mm	1.2" (30mm)	547-034	.5" (12.7mm)	±.001"	2.64 lbs.	With 1.57" DIA. anvil

Metric		Dial Upright Gages				
Resolution	Max. workpiece height	Order No.	Range of dial indicator	Accuracy of dial indicator	Mass	Remarks
0.001mm	25mm	7053	1mm	0.003mm	1.2kg	With ø40mm ceramic anvil
0.01mm	20mm	7050	10mm	0.012mm	1.2kg	With ø40mm ceramic anvil
		7051	10mm	0.012mm	1.6kg	With ø40mm ceramic anvil
	35mm	7052	10mm	0.012mm	1.6kg	With ø40mm ceramic anvil

Inch		Dial Upright Gages				
Resolution	Max. workpiece height	Order No.	Range of dial indicator	Accuracy of dial indicator	Mass	Remarks
.001"	1"	7056	1"	±.002"	2.64 lbs.	With 1.97" DIA. ceramic anvil



Dial Snap Gages

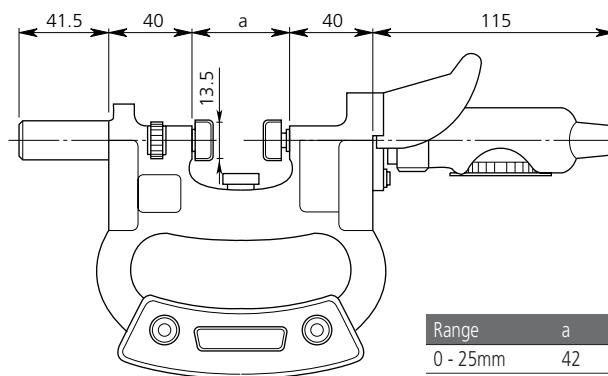
SERIES 201



201-101
with a dial indicator
(2109FB)

Dimensions

Unit: mm



Range	a	b
0 - 25mm	42	14
25 - 50mm	67	22
50 - 75mm	93	37
75 - 100mm	118	51
100 - 125mm	144	67
125 - 150mm	169	80
150 - 175mm	194	93
175 - 200mm	220	100
200 - 225mm	245	111
225 - 250mm	271	125
250 - 275mm	296	140
275 - 300mm	321	153

FEATURES

- Designed for quick GO/NG judgment of diameters of cylinders and shafts in machining processes.
- Dial indicator is optional.
- Anvil retracting range: 2mm (.08")
- Wide (13.5x12mm), flat carbide anvils.
- Both front edges of the anvil are chamfered for easy insertion.

SPECIFICATIONS

Metric

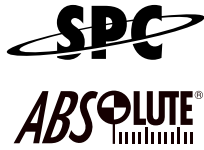
Range	Order No.	Measuring force	Recommended dial indicator (Optional)
0 - 25mm	201-101	12 to 18N	2109FB (0.001mm)
25 - 50mm	201-102	12 to 18N	2109FB (0.001mm)
50 - 75mm	201-103	12 to 18N	2109FB (0.001mm)
75 - 100mm	201-104	12 to 18N	2109FB (0.001mm)
100 - 125mm	201-105	12 to 18N	2109FB (0.001mm)
125 - 150mm	201-106	12 to 18N	2109FB (0.001mm)
150 - 175mm	201-107	12 to 18N	2109FB (0.001mm)
175 - 200mm	201-108	12 to 18N	2109FB (0.001mm)
200 - 225mm	201-109	12 to 18N	2109FB (0.001mm)
225 - 250mm	201-110	12 to 18N	2109FB (0.001mm)
250 - 275mm	201-111	12 to 18N	2109FB (0.001mm)
275 - 300mm	201-112	12 to 18N	2109FB (0.001mm)

Inch

Range	Order No.	Measuring force	Recommended dial indicator (Optional)
0 - 1"	201-151	12 to 18N	2803B-10 (.0001")
1" - 2"	201-152	12 to 18N	2803B-10 (.0001")
2" - 3"	201-153	12 to 18N	2803B-10 (.0001")
3" - 4"	201-154	12 to 18N	2803B-10 (.0001")
4" - 5"	201-155	12 to 18N	2803B-10 (.0001")
5" - 6"	201-156	12 to 18N	2803B-10 (.0001")
6" - 7"	201-157	12 to 18N	2803B-10 (.0001")
7" - 8"	201-158	12 to 18N	2803B-10 (.0001")
8" - 9"	201-159	12 to 18N	2803B-10 (.0001")
9" - 10"	201-160	12 to 18N	2803B-10 (.0001")
10" - 11"	201-161	12 to 18N	2803B-10 (.0001")
11" - 12"	201-162	12 to 18N	2803B-10 (.0001")

Absolute Digimatic Bore Gage

SERIES 511



511-521

This absolute Digimatic bore gages are exclusively designed for ID measurement.

FEATURES

- The minimum value holding function provides the easy of detection of hole diameter.



- Up to three sets of master value and upper/lower tolerance value can be memorized.



SPECIFICATIONS

Metric				
Resolution	Range	Order No.	Probe depth	Mass
0.001mm	45 - 100mm	511-501	150mm	500g

Inch/Metric				
Resolution	Range	Order No.	Probe depth	Mass
0.001mm	1.8 - 4"	511-521	6"	1.10 lbs.

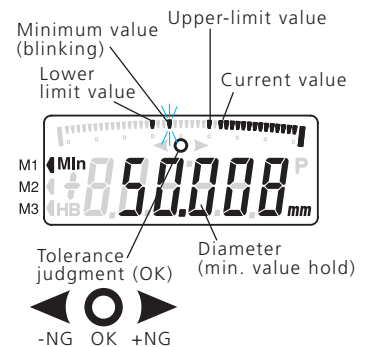
Technical Data

Display: LCD
Functions: Origin-Set (preset), Zero-Set, power on/off, inch/mm conversion (inch/mm type only), SPC data output, GO/±NG tolerance judgment
Battery: SR44 (1 pc.) (938882)
Battery life: Approx. 9 months for normal use
Alarm: Low battery voltage, scale contamination, over-flow error, tolerance limit setting error
Dust/Water protection level: Conforming to IP53
Operating temperature: 0°C to 40°C

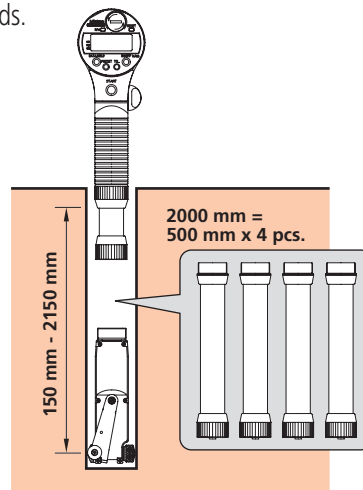
OPTIONAL ACCESSORIES

Order No.	Description
21DZA089	Extension rod 250 mm (10")
21DZA081	Extension rod 500 mm (20")
516-118-10	Origin setup metric rectangular gauge block set
516-119-10	Origin setup metric square gauge block set
905338	SPC cable (1m)
905409	SPC cable (2m)

- An analog bar indicator is integrated to enhance the intuition in reading.
- GO/±NG judgment is performed by setting the upper and lower tolerances.



- Up to four rods can be used (500 mm (20") extension rod). The unit is also compatible with 250 mm (10") extension rods.

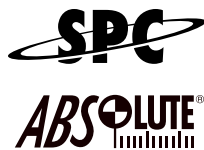


IDC Series Digimatic Indicators

SERIES 543 — Exclusively Designed for Bore Gages



543-266B



SPECIFICATIONS

Metric			
Resolution	Range	Order No. (Flat-back)	Accuracy
0.001mm	12mm	543-264B	0.003mm

Inch/Metric			
Resolution	Range	Order No. (Flat-back)	Accuracy
.00005"/0.001mm	.5" (12.7mm)	543-266B	.00012"

Technical Data

- Display:** LCD
- Functions:** Origin-Set (preset), Zero-Set, power on/off, inch/mm conversion (inch/mm type only), SPC data output, counting direction switching, GO/±NG tolerance judgment
- Battery:** SR44 (1 pc.) (938882)
- Battery life:** Approx. 2000 hours in continuous use
- Stem diameter:** 8mm (ISO/JIS type) or 3/8" (ANSI/AGD type)
- Contact point:** Carbide ball with M2.5x0.45 thread (ISO/JIS type) or steel ball with #4-48UNF thread (ANSI/AGD type)
- Alarm:** Low battery voltage, scale contamination, over-flow error, tolerance limit setting error
- Dust/Water protection level:** Conforming to IP42
- Operating temperature:** 0°C to 40°C

This IDC Series Digimatic Indicators are exclusively designed for ID measurement.

FEATURES

- The minimum value holding function provides the easy of detection of hole diameter.



Minimum value holding for easy measurement

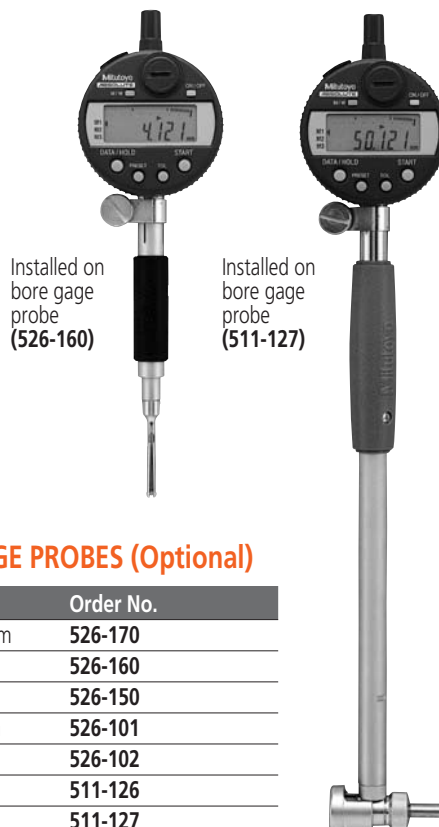
- An analog bar indicator is integrated to enhance the intuition in reading.
- GO/±NG judgment is performed by setting the upper and lower tolerances.
- Up to three sets of master value and upper/lower tolerance value can be memorized.

OPTIONAL ACCESSORIES

Order No.	Description
905338	SPC cable (1m)
905409	SPC cable (2m)

BORE GAGE PROBES (Optional)

Range	Order No.
0.95 - 1.55mm	526-170
1.5 - 4.0mm	526-160
3.7 - 7.3mm	526-150
7.0 - 10.0mm	526-101
10 - 18mm	526-102
18 - 35mm	511-126
35 - 60mm	511-127
50 - 150mm	511-132



Bore Gages

SERIES 526 — for Extra Small Holes



526-127



Optional Stand
(215-120M)

These Bore Gages measure diameters of small holes. The radial displacement of split-ball contact is converted to axial displacement of measuring rod, which is shown on the dial indicator.

FEATURES

- Optional stand (215-120M) is available for efficient measurement of multiple small holes.

SPECIFICATIONS

Metric

Graduation	Range	Order No.	Probe depth	Mass
0.001mm	0.95 - 1.55mm	526-172*	11.5mm	326g
	1.5 - 4mm	526-162*	17.5, 22.5mm	385g
	3.7 - 7.3mm	526-152*	32mm	338g
	7 - 10mm	526-124	56mm	300g
	10 - 18mm	526-125	62mm	300g
0.01mm	0.95 - 1.55mm	526-173*	11.5mm	326g
	1.5 - 4mm	526-163*	17.5, 22.5mm	385g
	3.7 - 7.3mm	526-153*	32mm	338g
	7 - 10mm	526-126	56mm	300g
	10 - 18mm	526-127	62mm	366g

Inch

Graduation	Range	Order No.	Probe depth	Mass
.0001"	.037" - .061"	526-176*	.45"	.72 lbs.
	.06" - .155"	526-166*	.68", .88"	.85 lbs.
	.145" - .29"	526-156*	1.25"	.74 lbs.
	.3" - .4"	526-122	2.2"	.69 lbs.
	.4" - .7"	526-123	2.4"	.84 lbs.
.0005"	.3" - .4"	526-119	2.2"	.69 lbs.
	.4" - .7"	526-120	2.4"	.84 lbs.

*Provided with Setting Rings for each probe size.



Bore Gages

SERIES 511 — for Small Holes



FEATURES

- Its interchangeable anvils are made of alloyed steel.
- The dial indicator is fully protected by a rugged cover.

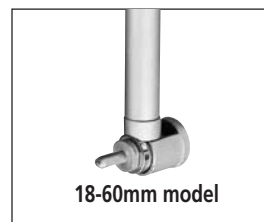
SPECIFICATIONS

Metric				
Graduation	Range	Order No.	Probe depth	Mass
0.001mm	6 - 10mm	511-210	47mm	255g
	10 - 18.5mm	511-203	100mm	268g
0.01mm	6 - 10mm	511-211	47mm	255g
	10 - 18.5mm	511-204	100mm	268g

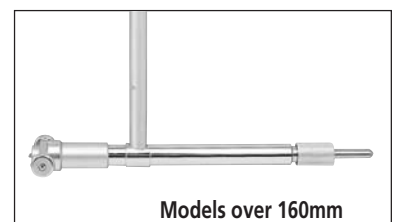
Inch				
Graduation	Range	Order No.	Probe depth	Mass
.0001"	.24" - .4"	511-212	2"	.57 lbs.
	.4" - .74"	511-206	4"	.61 lbs.
.0005"	.24" - .4"	511-213	2"	.57 lbs.
	.4" - .74"	511-207	4"	.61 lbs.

Bore Gages

SERIES 511



18-60mm model



Models over 160mm

Mitutoyo offers a complete selection of Bore Gages, all of them with interchangeable anvils and necessary accessories to perform close tolerance I.D. measurements. Some of larger Bore Gages are equipped with a unique self-centering device which facilitates accurate measurement of the bore.

FEATURES

- Most popular Bore Gages.
- Carbide-tipped contact points for durability.
- The dial indicator is fully protected by a rugged cover.
- Optional extension rods can be attached for measuring deep holes.
- Economy Bore Gage Sets are also available.

SPECIFICATIONS

Metric Bore Gages with Standard Dial Indicator				
Graduation	Range	Order No.	Probe depth	Mass
0.001mm	18 - 35mm	511-167	100mm	332g
	35 - 60mm	511-168	150mm	426g
	50 - 100mm	511-169	150mm	426g
	50 - 150mm	511-170	150mm	544g
	50 - 150mm	511-178	150mm	610g
	160 - 250mm	511-179	250mm	1060g
	250 - 400mm	511-180	250mm	1060g
0.01mm	18 - 35mm	511-171	100mm	332g
	35 - 60mm	511-172	150mm	426g
	50 - 100mm	511-173	150mm	509g
	50 - 150mm	511-174	150mm	544g
	100 - 160mm	511-175	150mm	610g
	160 - 250mm	511-176	250mm	1060g
	250 - 400mm	511-177	250mm	1330g

Inch Bore Gages with Standard Dial Indicator				
Graduation	Range	Order No.	Probe depth	Mass
.0001"	.7" - 1.4"	511-163	4"	.76 lbs.
	1.4" - 2.5"	511-164	6"	.91 lbs.
	2" - 4"	511-165	6"	1.10 lbs.
	2" - 6"	511-166	6"	1.17 lbs.
	4" - 6.5"	511-187	6"	1.38 lbs.
	6.5" - 10"	511-188	10"	2.38 lbs.
	10" - 16"	511-189	10"	3.04 lbs.
.0005"	.7" - 1.4"	511-159	4"	.76 lbs.
	1.4" - 2.5"	511-160	6"	.91 lbs.
	2" - 4"	511-161	6"	1.10 lbs.
	2" - 6"	511-162	6"	1.17 lbs.
	4" - 6.5"	511-164	6"	1.38 lbs.
	6.5" - 10"	511-165	10"	2.38 lbs.
	10" - 16"	511-166	10"	3.04 lbs.

Metric Bore Gage Sets with Standard Dial Indicator				
Graduation	Range	Order No.	Number of probes	Mass
0.001mm	18 - 150mm	511-902	3	954g
0.01mm	18 - 150mm	511-901	3	954g

Inch Bore Gage Sets with Standard Dial Indicator				
Graduation	Range	Order No.	Number of probes	Mass
.0001"	.7" - 6"	511-912	3	2.10 lbs.
.0005"	.7" - 6"	511-911	3	2.10 lbs.

OPTIONAL ACCESSORIES

Order No.	Description
953549	125mm Extension Rod for 18-35mm (.7"-1.4") models
953552	125mm Extension Rod for 35-160mm (1.4"-6.5") models
953557	125mm Extension Rod for 160-400mm (6.5"-16") models
953550	250mm Extension Rod for 18-35mm (.7"-1.4") models
953553	250mm Extension Rod for 35-160mm (1.4"-6.5") models
952361	250mm Extension Rod for 160-400mm (6.5"-16") models
953551	500mm Extension Rod for 18-35mm (.7"-1.4") models
953554	500mm Extension Rod for 35-160mm (1.4"-6.5") models
953558	500mm Extension Rod for 160-400mm (6.5"-16") models
953555	750mm Extension Rod for 35-160mm (1.4"-6.5") models
953559	750mm Extension Rod for 160-400mm (6.5"-16") models
953556	1000mm Extension Rod for 35-160mm (1.4"-6.5") models
953560	1000mm Extension Rod for 160-400mm (6.5"-16") models



Bore Gages

SERIES 511 — Short Leg Type



511-461

511-463

FEATURES

- Compact and lightweight because of the short length below the grip.
- Carbide-tipped contact point for durability.

SPECIFICATIONS

Metric

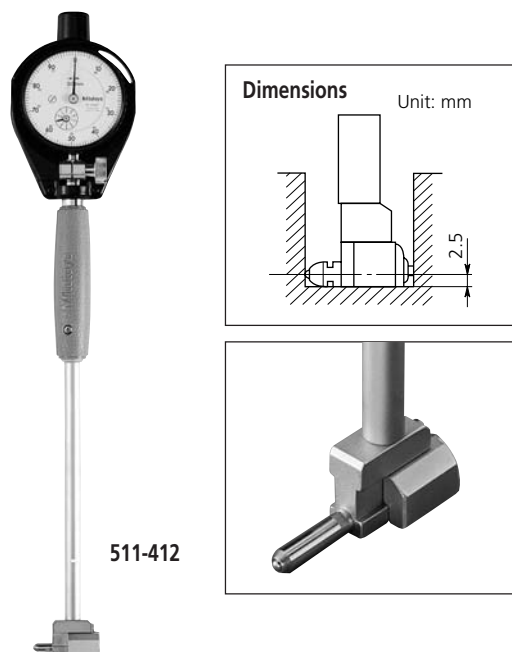
Graduation	Range	Order No.	Probe depth	Mass
0.001mm	18 - 35mm	511-471	50mm	315g
	35 - 60mm	511-472	50mm	386g
	50 - 100mm	511-473	50mm	469g
	50 - 150mm	511-474	50mm	504g
0.01mm	18 - 35mm	511-461	50mm	315g
	35 - 60mm	511-462	50mm	386g
	50 - 100mm	511-463	50mm	469g
	50 - 150mm	511-464	50mm	504g

Inch

Graduation	Range	Order No.	Probe depth	Mass
.0001"	.7" - 1.4"	511-491	2"	.67 lbs.
	1.4" - 2.5"	511-492	2"	.82 lbs.
	2" - 4"	511-493	2"	1.02 lbs.
	2" - 6"	511-494	2"	1.08 lbs.
	4" - 6.5"	511-495	2"	1.29 lbs.
.0005"	.7" - 1.4"	511-481	2"	.67 lbs.
	1.4" - 2.5"	511-482	2"	.82 lbs.
	2" - 4"	511-483	2"	1.02 lbs.
	2" - 6"	511-484	2"	1.08 lbs.
	4" - 6.5"	511-485	2"	1.29 lbs.

Bore Gages

SERIES 511 — for Blind Holes



511-412

FEATURES

- Can measure ID at position close to the bottom of blind holes.

SPECIFICATIONS

Metric

Graduation	Range	Order No.	Probe depth	Mass
0.001mm	15 - 35mm	511-421	150mm	740g
	35 - 60mm	511-422	150mm	765g
	50 - 100mm	511-423	150mm	800g
	50 - 150mm	511-424	150mm	820g
0.01mm	15 - 35mm	511-411	150mm	740g
	35 - 60mm	511-412	150mm	765g
	50 - 100mm	511-413	150mm	800g
	50 - 150mm	511-414	150mm	820g

Inch

Graduation	Range	Order No.	Probe depth	Mass
.0001"	.6" - 1.4"	511-441	6"	1.63 lbs.
	1.4" - 2.4"	511-442	6"	1.68 lbs.
	2" - 4"	511-443	6"	1.76 lbs.
	2" - 6"	511-444	6"	1.80 lbs.
.0005"	.6" - 1.4"	511-431	6"	1.63 lbs.
	1.4" - 2.4"	511-432	6"	1.68 lbs.
	2" - 4"	511-433	6"	1.76 lbs.
	2" - 6"	511-434	6"	1.80 lbs.

Bore Gages

SERIES 511 — with Micrometer Head



SPECIFICATIONS

Metric

Graduation	Range	Order No.	Probe depth	Mass
0.001mm	35 - 60mm	511-343	150mm	400g
	60 - 100mm	511-333	150mm	455g
	100 - 160mm	511-311	150mm	575g
	150 - 250mm	511-313	250mm	930g
	250 - 400mm	511-315	250mm	1200g
	400 - 600mm	511-317	250mm	1500g
	600 - 800mm	511-327	250mm	1900g
0.01mm	35 - 60mm	511-344	150mm	400g
	60 - 100mm	511-334	150mm	455g
	100 - 160mm	511-312	150mm	575g
	150 - 250mm	511-314	250mm	930g
	250 - 400mm	511-316	250mm	1200g
	400 - 600mm	511-318	250mm	1500g
	600 - 800mm	511-328	250mm	1900g

Inch

Graduation	Range	Order No.	Probe depth	Mass
.0001"	1.4" - 2.5"	511-346	6"	.91 lbs.
	2.4" - 4"	511-336	6"	.98 lbs.
	4" - 6.4"	511-326	6"	1.54 lbs.
	6" - 10"	511-320	10"	2.05 lbs.
	10" - 16"	511-322	10"	2.31 lbs.
	16" - 24"	511-324	10"	3.30 lbs.
	24" - 32"	511-330	10"	4.18 lbs.
.0005"	1.4" - 2.5"	511-345	6"	.91 lbs.
	2.4" - 4"	511-335	6"	.98 lbs.
	4" - 6.4"	511-325	6"	1.54 lbs.
	6" - 10"	511-319	10"	2.05 lbs.
	10" - 16"	511-321	10"	2.31 lbs.
	16" - 24"	511-323	10"	3.30 lbs.
	24" - 32"	511-329	10"	4.18 lbs.

FEATURES

- Interchangeable anvil is attached to a micrometer head for accurate dimensional setting.
- Wide measuring range with sub-anvils.
- Carbide ball contact point for durability.
- Extension rods (optional) can be attached for measuring deep holes.
- Optional Setting Rings offer the best method of zero-setting Bore Gages.



Setting Ring
(See page 225.)

OPTIONAL ACCESSORIES

Order No.	Description
953549	125mm Extension Rod for 18-35mm (.7"-1.4") models
953552	125mm Extension Rod for 35-160mm (1.4"-6.5") models
953557	125mm Extension Rod for 160-400mm (6.5"-16") models
953550	250mm Extension Rod for 18-35mm (.7"-1.4") models
953553	250mm Extension Rod for 35-160mm (1.4"-6.5") models
952361	250mm Extension Rod for 160-400mm (6.5"-16") models
953551	500mm Extension Rod for 18-35mm (.7"-1.4") models
953554	500mm Extension Rod for 35-160mm (1.4"-6.5") models
953558	500mm Extension Rod for 160-400mm (6.5"-16") models
953555	750mm Extension Rod for 35-160mm (1.4"-6.5") models
953559	750mm Extension Rod for 160-400mm (6.5"-16") models
953556	1000mm Extension Rod for 35-160mm (1.4"-6.5") models
953560	1000mm Extension Rod for 160-400mm (6.5"-16") models

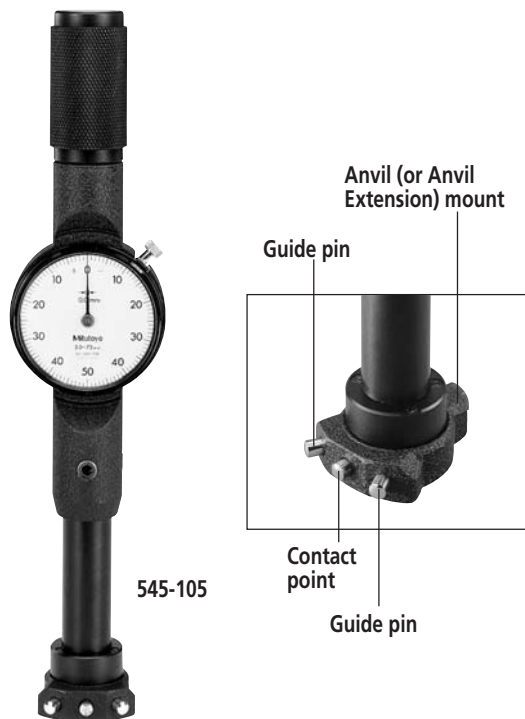


Bore Gage
with an
Extension Rod



Dial Bore Gages

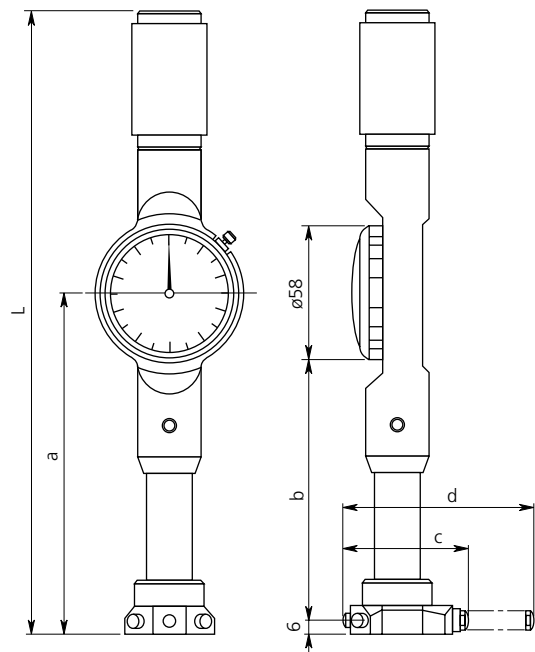
SERIES 545 — Rugged, Production-Line Tools



545-105

Dimensions

Unit: mm



Range	L	a	b	c	d
35 - 50mm	240	123	88	35	50
50 - 75mm	265	148	113	50	75
75 - 150mm	305	188	153	75	150

FEATURES

- Carbide-tipped contact point for excellent durability.
- Wide range of measurements with interchangeable Anvil Extensions (screw-in type).
- Carbide-tipped anvil is optional (**901484**).
- Two guide pins ensure high repeatability of measurements.
- Easy zero adjustment because the Dial Bore Gage can stand upright.
- Optional interchangeable rods provide a variety of probe depths.

SPECIFICATIONS

Metric

Graduation	Range	Order No.	Probe depth	Mass
0.001mm	35 - 50mm	545-114	85mm	480g
	50 - 75mm	545-115	115mm	540g
	75 - 150mm	545-116	150mm	650g
0.01mm	35 - 50mm	545-104	85mm	480g
	50 - 75mm	545-105	115mm	540g
	75 - 150mm	545-106	150mm	650g

Inch

Graduation	Range	Order No.	Probe depth	Mass
.0001"	1.475" - 2.075"	545-134	3.5"	1.06 lbs.
	1.975" - 3.075"	545-135	4.5"	1.19 lbs.
	2.975" - 6.075"	545-136	6"	1.43 lbs.
.0005"	1.475" - 2.075"	545-124	3.5"	1.06 lbs.
	1.975" - 3.075"	545-125	4.5"	1.19 lbs.
	2.975" - 6.075"	545-126	6"	1.43 lbs.

OPTIONAL ACCESSORIES

Order No.	Description
901484	Carbide-tipped Anvil
901529	Interchangeable Rod (Probe depth: 85mm)
901530	Interchangeable Rod (Probe depth: 115mm)
901940	Interchangeable Rod (Probe depth: 150mm)
901531	Interchangeable Rod (Probe depth: 265mm)
901532	Interchangeable Rod (Probe depth: 315mm)
901533	Interchangeable Rod (Probe depth: 390mm)



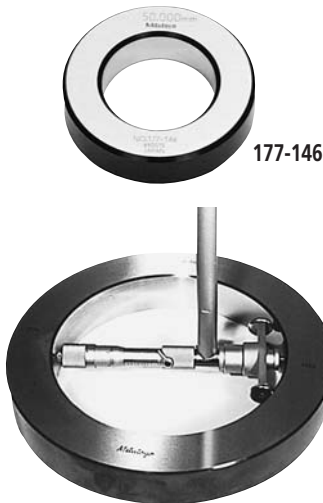
901484



Interchangeable Rod

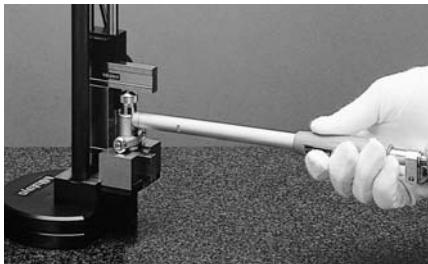
Setting Rings

SERIES 177



FEATURES

- Used for quick zero adjustment of dial bore gages.
- See page 149 for smaller sizes of Setting Rings than 6mm (.24").
- Ceramic Setting Rings are also available.



SPECIFICATION

Metric			
Size	Order No.	Accuracy	Mass
6mm	177-267	$\pm 1.5\mu\text{m}$	30g
6.5mm	177-271	$\pm 1.5\mu\text{m}$	30g
7mm	177-275	$\pm 1.5\mu\text{m}$	30g
8mm	177-125	$\pm 1.5\mu\text{m}$	60g
10mm	177-126	$\pm 1.5\mu\text{m}$	58g
12mm	177-284	$\pm 1.5\mu\text{m}$	62g
14mm	177-132	$\pm 1.5\mu\text{m}$	110g
16mm	177-177	$\pm 1.5\mu\text{m}$	110g
17mm	177-133	$\pm 1.5\mu\text{m}$	190g
20mm	177-286	$\pm 1.5\mu\text{m}$	110g
25mm	177-139	$\pm 1.5\mu\text{m}$	204g
30mm	177-288	$\pm 1.5\mu\text{m}$	400g
35mm	177-140	$\pm 1.5\mu\text{m}$	364g
40mm	177-290	$\pm 1.5\mu\text{m}$	330g
45mm	177-178	$\pm 1.5\mu\text{m}$	490g
50mm	177-146	$\pm 1.5\mu\text{m}$	580g
60mm	177-292	$\pm 1.5\mu\text{m}$	1.14kg
62mm	177-314	$\pm 1.5\mu\text{m}$	1.05kg
70mm	177-147	$\pm 1.5\mu\text{m}$	0.93kg
75mm	177-316	$\pm 1.5\mu\text{m}$	1.54kg
80mm	177-294	$\pm 1.5\mu\text{m}$	1.42kg
87mm	177-318	$\pm 1.5\mu\text{m}$	1.85kg
90mm	177-148	$\pm 1.5\mu\text{m}$	1.75kg
100mm	177-296	$\pm 1.5\mu\text{m}$	2.38kg
125mm	177-298	$\pm 2.5\mu\text{m}$	5.5kg
150mm	177-300	$\pm 2.5\mu\text{m}$	6.1kg
175mm	177-300	$\pm 2.5\mu\text{m}$	6.7kg
200mm	177-300	$\pm 2.5\mu\text{m}$	10.4kg
225mm	177-306	$\pm 2.5\mu\text{m}$	11.4kg
250mm	177-308	$\pm 2.5\mu\text{m}$	12.1kg
275mm	177-310	$\pm 2.5\mu\text{m}$	17kg
300mm	177-312	$\pm 2.5\mu\text{m}$	17.8kg

Technical Data

Tolerance between the nominal size and the actual diameter:

$\pm 0.01\text{mm}$ for $\phi 6 - 45\text{mm}$ setting rings
 $\pm 0.02\text{mm}$ for $\phi 50 - 300\text{mm}$ setting rings
 $\pm .0004"$ for .24" - 1.8" DIA. setting rings
 $\pm .0008"$ for 2" - 12" DIA. setting rings

Cylindricity:

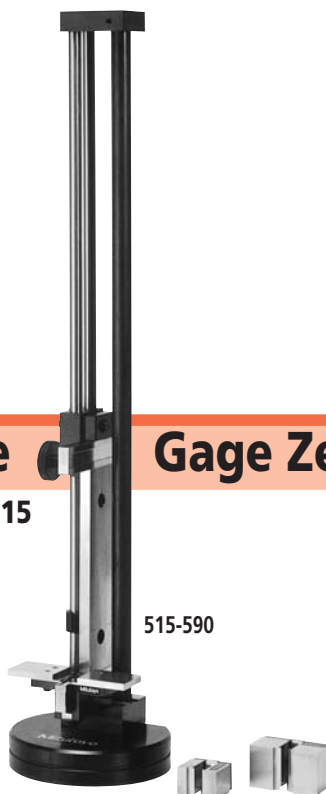
$1.0\mu\text{m}$ for $\phi 6 - 60\text{mm}$ setting rings
 $1.5\mu\text{m}$ for $\phi 62 - 90\text{mm}$ setting rings

Inch			
Size	Order No.	Accuracy	Mass
.24"	177-207	$\pm .00006"$	.055lbs.
.275"	177-281	$\pm .00006"$	.055lbs.
.35"	177-179	$\pm .00006"$	.127lbs.
.425"	177-293	$\pm .00006"$	.123lbs.
.50"	177-180	$\pm .00006"$	.116lbs.
.60"	177-181	$\pm .00006"$	.162lbs.
.65"	177-182	$\pm .00006"$	.242lbs.
.70"	177-183	$\pm .00006"$	.242lbs.
.80"	177-287	$\pm .00006"$	.220lbs.
1.0"	177-184	$\pm .00006"$	.440lbs.
1.2"	177-289	$\pm .00006"$	.836lbs.
1.4"	177-185	$\pm .00006"$	.770lbs.
1.6"	177-291	$\pm .00006"$	.682lbs.
1.8"	177-186	$\pm .00006"$	1.034lbs.
2.0"	177-187	$\pm .00006"$	1.254lbs.
2.4"	177-293	$\pm .00006"$	2.420lbs.
2.5"	177-315	$\pm .00006"$	2.200lbs.
2.8"	177-188	$\pm .00006"$	2.024lbs.
3.0"	177-317	$\pm .00006"$	3.300lbs.
3.2"	177-295	$\pm .00006"$	3.080lbs.
3.5"	177-319	$\pm .00006"$	3.960lbs.
3.6"	177-189	$\pm .00006"$	3.740lbs.
4.0"	177-297	$\pm .00006"$	5.060lbs.
5.0"	177-299	$\pm .00010"$	12.980lbs.
6.0"	177-301	$\pm .00010"$	12.980lbs.
7.0"	177-303	$\pm .00010"$	14.740lbs.
8.0"	177-305	$\pm .00010"$	22.000lbs.
9.0"	177-307	$\pm .00010"$	23.980lbs.
10.0"	177-309	$\pm .00010"$	26.180lbs.
11.0"	177-311	$\pm .00010"$	35.860lbs.
12.0"	177-313	$\pm .00010"$	37.840lbs.

$2.0\mu\text{m}$ for $\phi 100 - 150\text{mm}$ setting rings
 $2.5\mu\text{m}$ for $\phi 175 - 225\text{mm}$ setting rings
 $3.0\mu\text{m}$ for $\phi 250 - 300\text{mm}$ setting rings
 $.00004"$ for .24" - 2.4" DIA. setting rings
 $.00006"$ for 2.5" - 3.6" DIA. setting rings
 $.00008"$ for 4" - 6" DIA. setting rings
 $.00010"$ for 7" - 9" DIA. setting rings
 $.00012"$ for 10" - 12" DIA. setting rings

Bore Gage Zero Checker

SERIES 515



The Bore Gage Zero Checker allows easy zero adjustment of dial bore gages with ranges of 18mm (.7") through 400mm (16") using gage blocks.

SPECIFICATIONS

Order No.	Applicable range
515-590	18 - 400mm (.7" - 16")



Dial Depth Gages

SERIES 7

Needle Probe Type



Disk Type



Standard Type



FEATURES

- Wide probing range is available with the supplied extension rod.
- Contact point is made of alloyed steel.
- Bottom surface of the base is hardened, ground and lapped for highest degree of flatness.

SPECIFICATIONS

Metric					
Graduation	Range	Order No.	Spindle stroke	Mass	Remarks
0.01mm	0 - 10mm	7210**	10mm	205g	w/Angular base (40x16mm)
		7222**	10mm	164g	w/Disk base (ø16mm)
		7223	10mm	184g	w/Disk base (ø25mm)
		7224	10mm	234g	w/Disk base (ø40mm)
	0 - 200mm*	7211	10mm	294g	w/Angular base (63.5x16mm)
		7212	10mm	344g	w/Angular base (101.6x16mm)
		7220***	10mm	374g	w/Angular base (100x18mm)
		7221***	10mm	494g	w/Angular base (150x18mm)
	0 - 210mm*	7213	30mm	294g	w/Angular base (63.5x16mm)
		7214	30mm	344g	w/Angular base (101.6x16mm)

*Available with extension rods

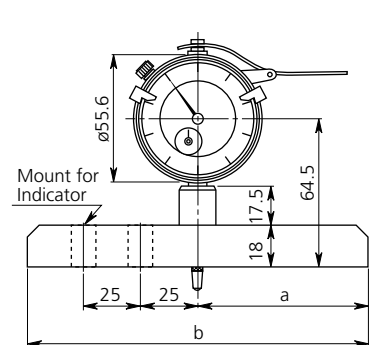
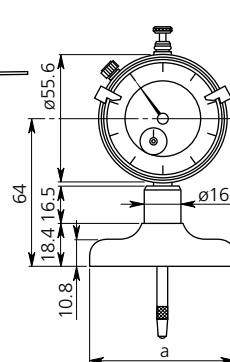
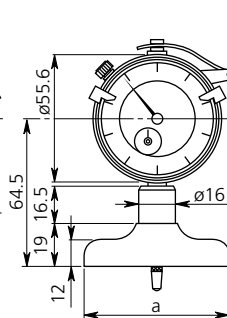
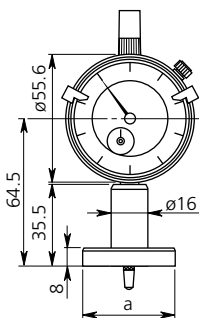
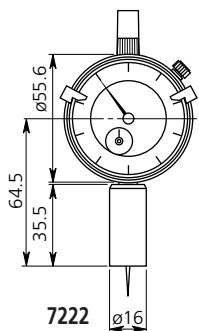
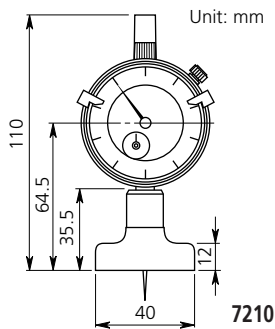
**With needle probe

***A constant (25mm) pitch probing is possible due to the indicator mounts on the base

Inch					
Graduation	Range	Order No.	Spindle stroke	Mass	Remarks
.001"	0 - 8"*	7217	1"	.65 lbs.	w/Angular base (2.5"x.63")
		7218	1"	.76 lbs.	w/Angular base (4"x.63")

*Available with extension rods

Dimensions



Order No.	a
7223	ø25
7224	ø40

Order No.	a
7211	63.5
7212	101.6

Order No.	a
7213	63.5
7214	101.6

Order No.	a	b
7220	50	100
7221	75	150

Dial Depth Gages

SERIES 7 — Back Plunger Type



7231

SPECIFICATIONS

Metric

Graduation	Range	Order No.	Spindle stroke	Mass	Remarks
0.01mm	0 - 200mm	7231	5mm	240g	w/Angular base (63.5x16mm)

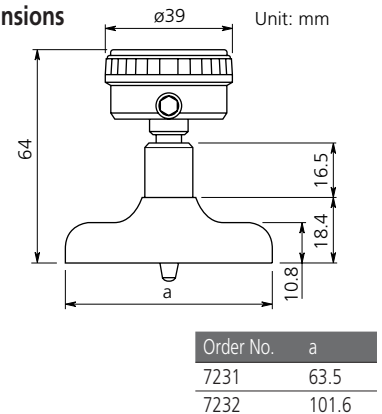
Inch

Graduation	Range	Order No.	Spindle stroke	Mass	Remarks
.001"	0 - 8"	7237	.2"	.53 lbs.	w/Angular base (2.5"x.63")

FEATURES

- Designed with a back plunger type dial indicator for upward facing readings.
- With the supplied extension rods, depths up to 200mm can be measured.
- Either a standard or larger base can be selected for measuring requirements.

Dimensions



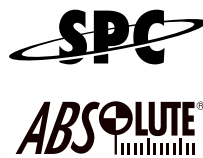
DIAL INDICATORS

Digimatic Depth Gages

SERIES 547



547-217



FEATURES

- Uses IDC Series Digimatic Indicator. This offers many special functions including presetting, GO/±NG judgment, and SPC data output.
- With the supplied extension rods, depths up to 200mm can be measured.

SPECIFICATIONS

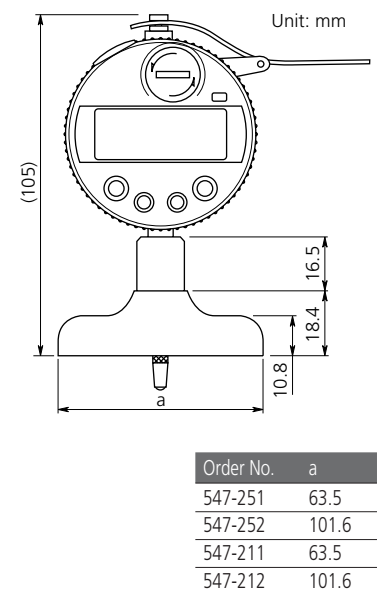
Metric

Graduation	Range	Order No.	Spindle stroke	Mass	Remarks
0.001mm	0 - 200mm	547-251	12mm	295g	w/Angular base (63.5x16mm)
		547-252	12mm	345g	w/Angular base (101.6x16mm)
0.01mm	0 - 200mm	547-211	12mm	280g	w/Angular base (63.5x16mm)
		547-212	12mm	330g	w/Angular base (101.6x16mm)

Inch/Metric

Graduation	Range	Order No.	Spindle stroke	Mass	Remarks
.00005"/	0 - 8"	547-257	.5"	.62 lbs.	w/Angular base (2.5"x.63")
0.001mm	(0 - 200mm)	547-258	.5"	.73 lbs.	w/Angular base (4"x.63")
.0005"/	0 - 8"	547-217	.5"	.62 lbs.	w/Angular base (2.5"x.63")
0.01mm	(0 - 200mm)	547-218	.5"	.73 lbs.	w/Angular base (4"x.63")

Dimensions

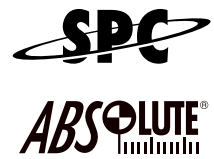


OPTIONAL ACCESSORIES

Order No.	Description
905338	SPC cable (1m)
905409	SPC cable (2m)

Digimatic Thickness Gages

SERIES 547 — with Multiple Functions Including SPC Data Output



547-400



547-300



547-320



547-312



547-361



547-500

SPECIFICATIONS

Metric		Digimatic Thickness Gages (IDC Type)		
LCD resolution	Range	Order No.	Mass	Remarks (Applications)
0.001mm	0 - 12mm	547-401	280g	For paper (film, wire) thickness
0.01mm	0 - 10mm	547-301	220g	Type A: Standard type
		547-321	390g	Type B: Deep throat type
		547-313	240g	Type C: For lens thickness
		547-315	230g	Type D: For groove thickness
		547-360	210g	Type E: For tube thickness

Inch/Metric		Digimatic Thickness Gages (IDC Type)		
LCD resolution	Range	Order No.	Mass	Remarks (Applications)
.00005"/0.001mm	0 - .47" (0 - 12mm)	547-400	.62 lbs.	For paper (film, wire) thickness
.0005"/0.01mm	0 - .4" (0 - 10mm)	547-300	.48 lbs.	Type A: Standard type
		547-320	.86 lbs.	Type B: Deep throat type
		547-312	.53 lbs.	Type C: For lens thickness
		547-316	.51 lbs.	Type D: For groove thickness
		547-361	.46 lbs.	Type E: For tube thickness

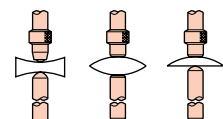
Inch/Metric		Digimatic Thickness Gages (IDS Type)		
LCD resolution	Range	Order No.	Mass	Remarks (Applications)
0.01mm	0 - .47" (0 - 12mm)	547-500	.44 lbs.	Type A: Standard type
		547-520	.81 lbs.	Type B: Deep throat type
		547-512	.48 lbs.	Type C: For lens thickness
		547-516	.46 lbs.	Type D: For groove thickness
		547-561	.42 lbs.	Type E: For tube thickness

The Digimatic Thickness Gages incorporate Mitutoyo's popular IDC and IDS Series Digimatic Indicators to provide error-free LCD readings as well as data output for SPC analysis.

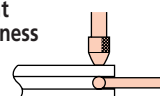
FEATURES

- Wide range of applications with various types of measuring faces (on the spindle and anvil).
- **547-401 (547-400)** is ideally suited for measuring thicknesses of paper, film, wire, sheet metal and similar materials.

Measurements of lens thickness (Type C)



Measurement of tube thickness (Type E)

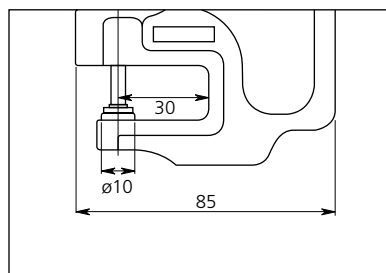


OPTIONAL ACCESSORIES

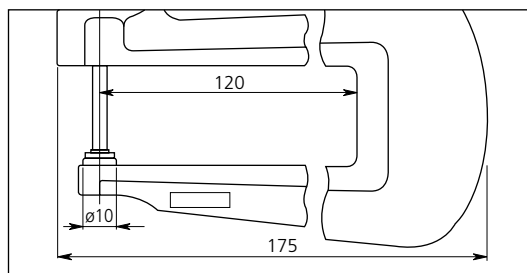
Order No.	Description
905338	SPC cable (1m)
905409	SPC cable (2m)

Dimensions

Standard (Type A)

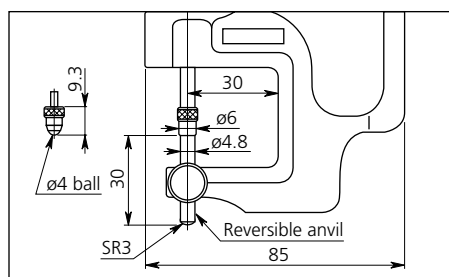


Deep throat (Type B)

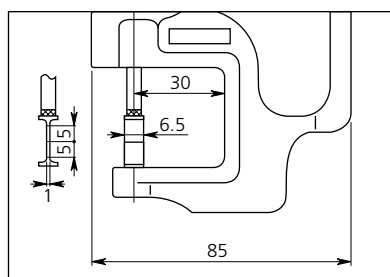


Unit: mm

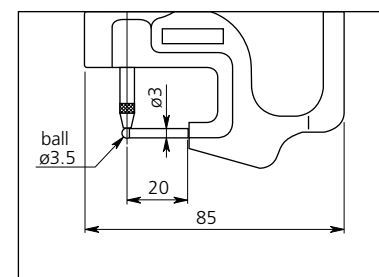
Lens thickness (Type C)



Groove (Type D)



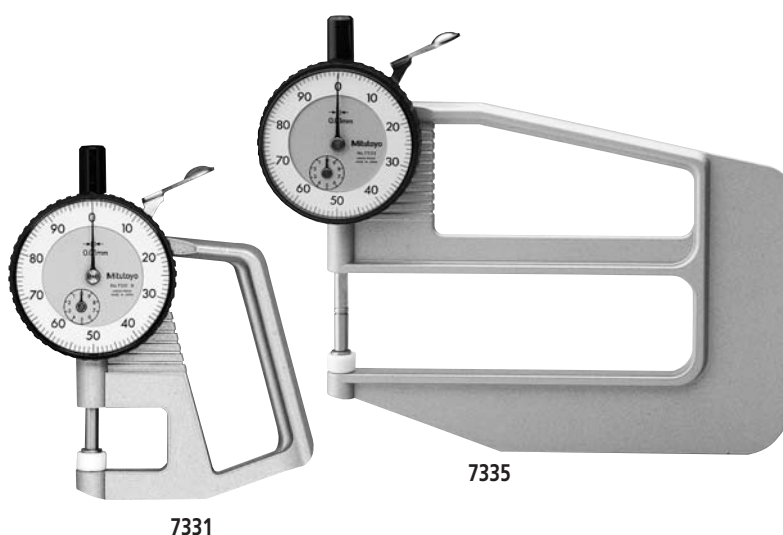
Tube thickness (Type E)



DIAL INDICATORS

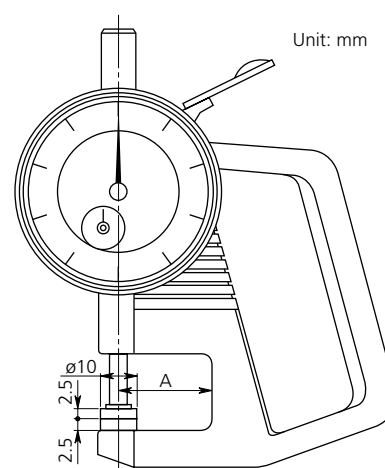
Light-Weight Dial Thickness Gages

SERIES 7



Dimensions

Unit: mm



The Digimatic Thickness Gages incorporate Mitutoyo's popular IDC and IDS Series Digimatic Indicators to provide error-free LCD readings as well as data output for SPC analysis.

SPECIFICATIONS

Metric				
Graduation	Range	Order No.	Mass	Remarks
0.01mm	0 - 10mm	7331	140g	Standard type

Order No.	A
7331	25

Dial Thickness Gages

SERIES 7

DIAL INDICATORS



7301



7321

The Dial 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.

SPECIFICATIONS

Metric

Graduation	Range	Order No.	Mass	Remarks (Applications)
0.001mm	0 - 1mm	7327	230g	Type A: Standard type
0.01mm	0 - 10mm	7301	212g	Type A: Standard type
		7321	371g	Type B: Deep throat type
		7313	224g	Type C: For lens thickness
		7315	217g	Type D: For groove thickness
		7360	199g	Type E: For tube thickness
	0 - 20mm	7305	217g	Type A: Standard type
		7323	371g	Type B: Deep throat type

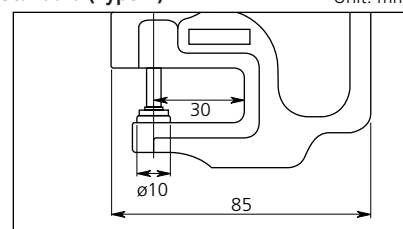
Inch

Graduation	Range	Order No.	Mass	Remarks (Applications)
.0001"	0 - .05"	7326	.5 lbs.	For paper (film, wire) thickness
.001"	0 - .4"	7300	.47 lbs.	Type A: Standard type
		7320	.82 lbs.	Type B: Deep throat type
		7304	.48 lbs.	Type A: Standard type

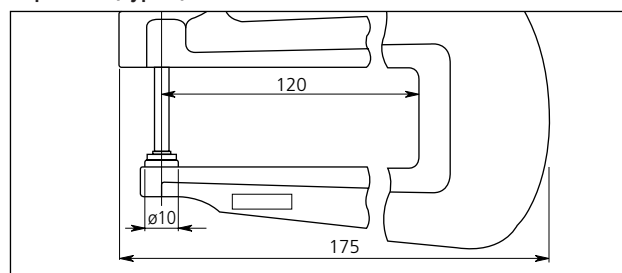
Dimensions

Standard (Type A)

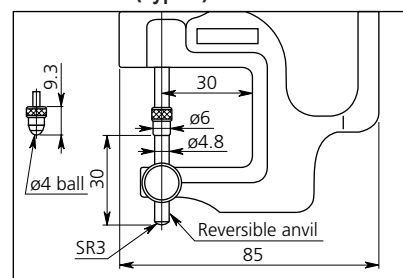
Unit: mm



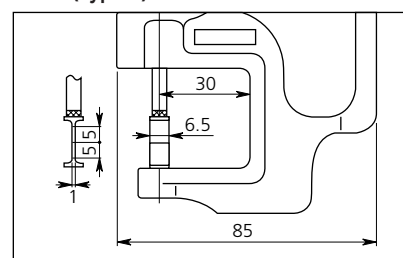
Deep throat (Type B)



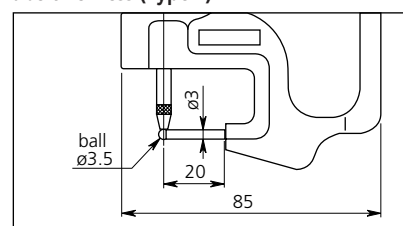
Lens thickness (Type C)



Groove (Type D)

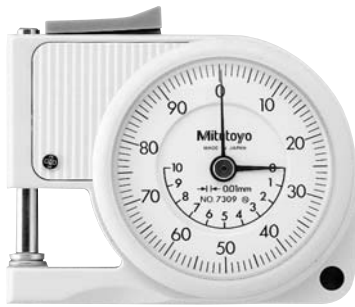


Tube thickness (Type E)



Pocket Thickness Gage

SERIES 7



7309

A very compact thickness gage is designed for carrying convenience and is ideally suited for quick inspection of paper, leather, wire, plastic, sheet metal and similar materials. The spindle is pre-loaded to provide a constant measuring force (2N or less).

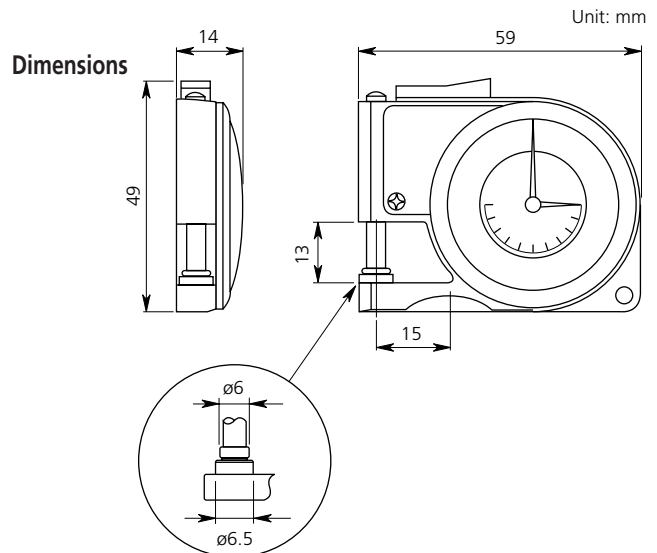
FEATURES

- Measuring faces are hardened, ground and lapped for accuracy.
- Easy adjustment for zero point.

SPECIFICATIONS

Metric				
Graduation	Range	Order No.	Accuracy	Mass
0.01mm	0 - 10mm	7309	±20µm	80g

Inch				
Graduation	Range	Order No.	Accuracy	Mass
.001"	0 - .4"	7308	±.001"	.18 lbs.



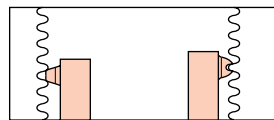
Female Screw Thread Comparators

SERIES 243



243-101

Application



FEATURES

- Quick inspection of pitch diameters of female screw threads can be done by using interchangeable inserts (optional).
- Adjustable measuring jaws for a wide range of I.D. comparison measurements.

SPECIFICATIONS

Metric				
Graduation	Range	Order No.	Probe depth	Mass
0.01mm	25 - 100mm	243-101	20mm	530g
	25 - 200mm	243-102	25mm	700g
	25 - 300mm	243-103	30mm	870g

Interchangeable Inserts Sets (Optional)

Applications	Order No.	Assortment of inserts (pair)
Metric screw, Unified screw	243-800	0.4 - 0.5mm/64 - 48TPI (243-801)
		0.6 - 0.9mm/44 - 28TPI (243-802)
		1 - 1.75mm/24 - 14TPI (243-803)
		2 - 3mm/13 - 9TPI (243-804)
		3.5 - 5mm/8 - 5TPI (243-805)
		5.5 - 7mm/4.5 - 3.5TPI (243-806)
Whitworth screw	243-810	60 - 48TPI (243-811)
		48 - 40TPI (243-812)
		40 - 32TPI (243-813)
		32 - 24TPI (243-814)
		24 - 18TPI (243-815)
		18 - 14TPI (243-816)
		14 - 10TPI (243-817)
		10 - 7TPI (243-818)
		7 - 4.5TPI (243-819)
		4.5 - 3.5TPI (243-820)

Digimatic Caliper Gages

SERIES 209 — Internal, External, and Tube Thickness Types



209-833M



209-837M

SPECIFICATIONS

Metric Digimatic Caliper Gages (Internal Type)

LCD resolution	Range	Order No.	Accuracy	Mass	Remarks
0.005mm	5 - 17.5mm	209-832M	±0.02mm	340g	Ball contact point
0.01mm	10 - 35mm	209-833M	±0.03mm	350g	Ball contact point
	30 - 55mm	209-834M	±0.03mm	350g	Ball contact point
	50 - 75mm	209-835M	±0.03mm	360g	Ball contact point
	70 - 95mm	209-836M	±0.03mm	360g	Ball contact point

Metric Digimatic Caliper Gages (External Type)

LCD resolution	Range	Order No.	Accuracy	Mass	Remarks
0.01mm	0.3 - 25mm	209-837M	±0.02mm	360g	Ball contact point
		209-838M	±0.03mm	360g	Ball contact point

Metric Digimatic Caliper Gages (Tube Thickness Type)

LCD resolution	Range	Order No.	Accuracy	Mass	Remarks
0.005mm	0.2 - 12.5mm	209-868M	±0.02mm	340g	—

Versatile ID or OD measuring gages for holes diameters, groove thickness, tube thickness, and hard-to-reach dimensions. The Digimatic Caliper Gages provide error-free LCD readings as well as data output for SPC analysis.

Technical Data

Display: 7-digit LCD (Character height: 7mm)

Functions: Zero-Set, presetting, data hold, MAX/MIN measurement, SPC data output, auto sleep

Quantizing error: ±1 count

Measuring force: 1.5N or less

Battery: CR-123A or DL-123A (1 pc.)

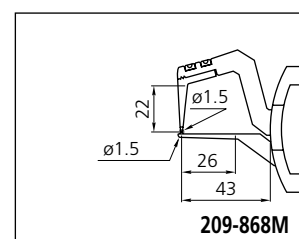
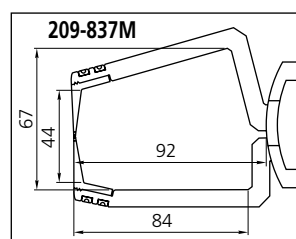
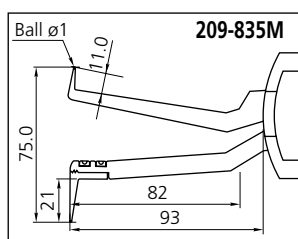
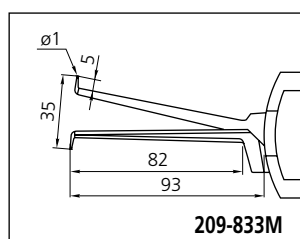
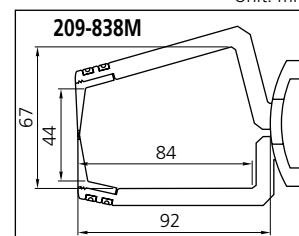
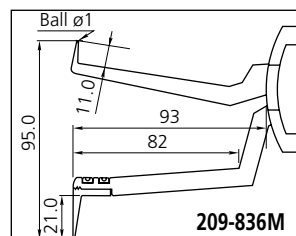
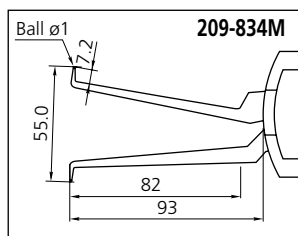
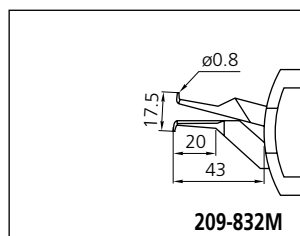
Battery life: Approx. 350 hours

Operating temperature: 10°C to 30°C

OPTIONAL ACCESSORY

Order No.	Description
011055	SPC cable (2m)

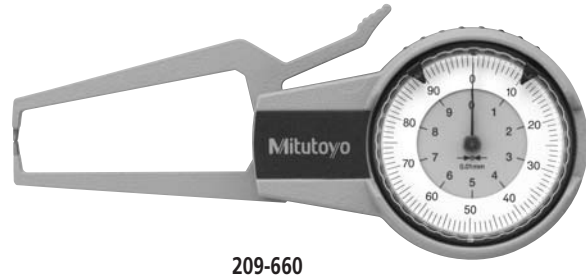
Dimensions



Unit: mm

Dial Caliper Gages

SERIES 209 — Internal, External, and Tube Thickness Types



SPECIFICATIONS

Metric Dial Caliper Gages (Internal Type)

Graduation	Range	Order No.	Accuracy	Mass	Remarks
0.005mm	2.5 - 7.5mm	209-650	±0.01mm	120g	Rounded contact points
	5 - 10mm	209-651	±0.01mm	120g	Ball contact point
0.01mm	5 - 15mm	209-652	±0.02mm	80g	Rounded contact points
	10 - 20mm	209-653	±0.02mm	140g	Ball contact point
	20 - 30mm	209-654	±0.02mm	140g	Ball contact point
	30 - 40mm	209-655	±0.02mm	140g	Ball contact point
	40 - 50mm	209-656	±0.02mm	140g	Ball contact point

Versatile ID or OD measuring gages for holes diameters, groove thickness, tube thickness, and hard-to-reach dimensions.

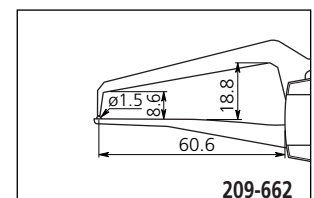
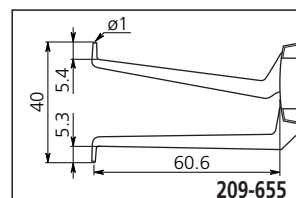
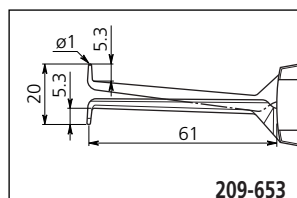
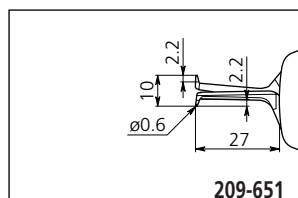
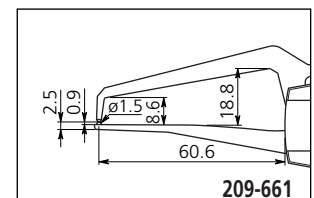
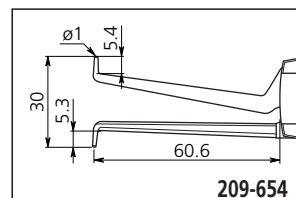
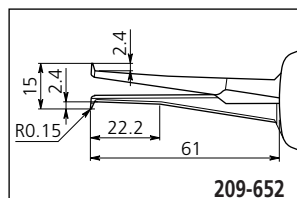
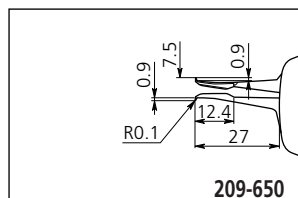
Metric Dial Caliper Gages (External Type)

Graduation	Range	Order No.	Accuracy	Mass	Remarks
0.01mm	0 - 10mm	209-660	±0.02mm	140g	Rounded contact points

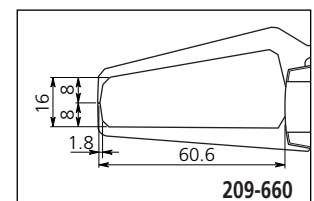
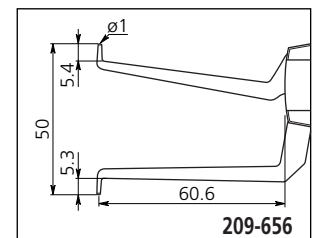
Metric Dial Caliper Gages (Tube Thickness Type)

Graduation	Range	Order No.	Accuracy	Mass	Remarks
0.01mm	0 - 10mm	209-661	±0.02mm	140g	Ball contact points
		209-662	±0.02mm	140g	Ball/rounded contact points

Dimensions

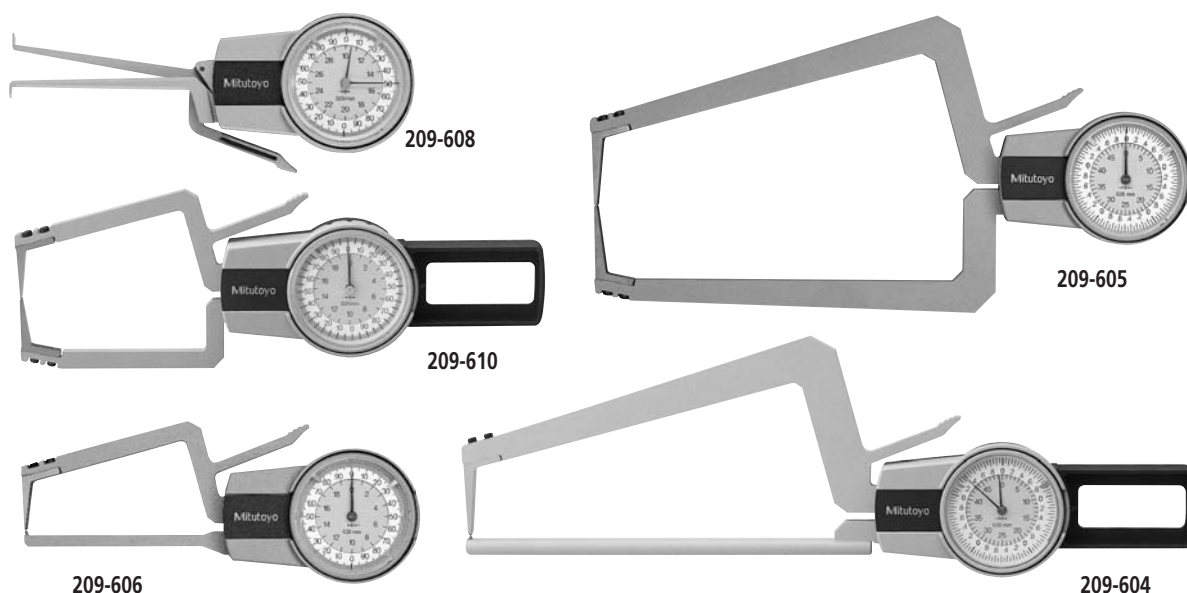


Unit: mm



Dial Caliper Gages

SERIES 209 — Internal, External, and Tube Thickness Types



SPECIFICATIONS

Metric Dial Caliper Gages (Internal Type)					
Graduation	Range	Order No.	Accuracy	Mass	Throat depth
0.01mm	10 - 30mm	209-608	±0.03mm	200g	80mm
	20 - 40mm	209-609	±0.03mm	200g	80mm
	30 - 50mm	209-600	±0.03mm	200g	80mm
	40 - 60mm	209-884	±0.03mm	200g	80mm
	50 - 70mm	209-885	±0.03mm	200g	80mm
	60 - 80mm	209-886	±0.03mm	200g	80mm
	70 - 90mm	209-887	±0.03mm	200g	80mm
	80 - 100mm	209-888	±0.03mm	200g	80mm
0.05mm	16 - 65mm	209-896	±0.05mm	300g	175mm
	40 - 90mm	209-897	±0.05mm	300g	175mm
	70 - 120mm	209-898	±0.05mm	300g	175mm

Metric Dial Caliper Gages (External Type)					
Graduation	Range	Order No.	Accuracy	Mass	Throat depth
0.01mm	0 - 20mm	209-601*	±0.03mm	200g	80mm
		209-605**	±0.03mm	200g	80mm
0.05mm	0 - 50mm	209-602*	±0.05mm	290g	170mm
		209-610**	±0.05mm	310g	170mm

*With ball contact points

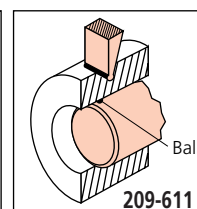
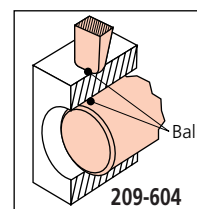
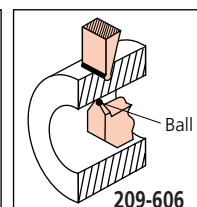
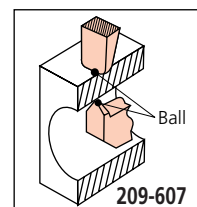
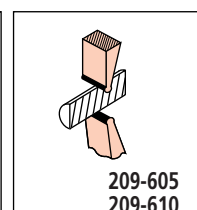
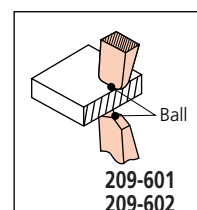
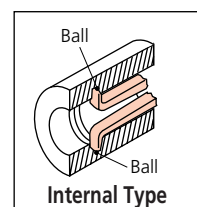
**With rounded contact points

Metric Dial Caliper Gages (Tube Thickness Type)					
Graduation	Range	Order No.	Accuracy	Mass	Throat depth
0.01mm	0 - 20mm	209-607*	±0.03mm	200g	80mm
		209-606**	±0.03mm	200g	80mm
0.05mm	0 - 50mm	209-604*	±0.05mm	310g	170mm
		209-611**	±0.05mm	290g	170mm

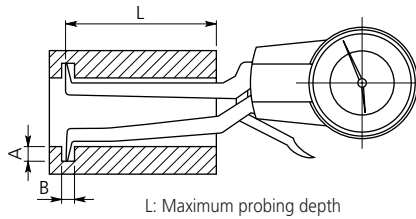
*With ball contact points

**With rounded contact points

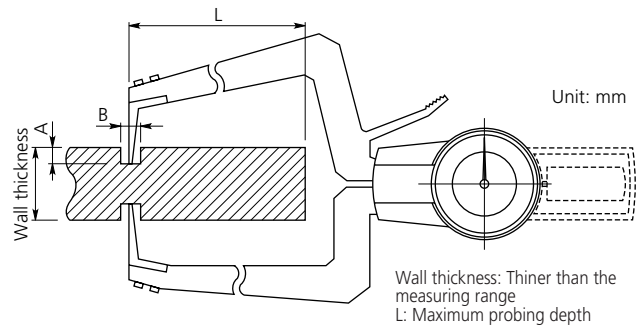
Versatile ID or OD measuring gages for holes diameters, groove thickness, tube thickness, and hard-to-reach dimensions.



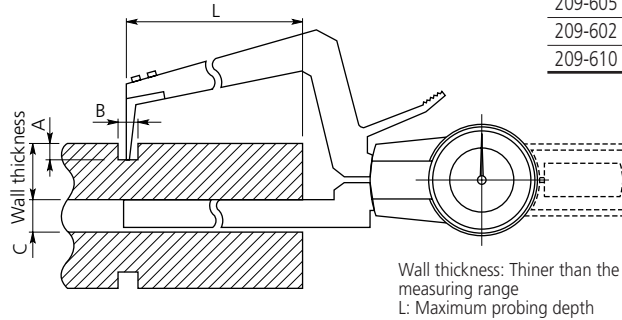
Dimensions



Order No.	L	A	B
209-608	80	4.5	2.0
209-609	80	6.5	2.5
209-600	80	6.5	2.5
209-884	80	9.5	3.0
209-885	80	9.5	3.0
209-886	80	9.5	3.0
209-887	80	9.5	3.0
209-888	80	9.5	3.0
209-896	175	4.5	3.0
209-897	175	9.5	3.0
209-898	175	9.5	3.0



Order No.	L	A	B
209-601	80	10	5
209-605	80	10	5
209-602	170	20	7
209-610	170	20	7

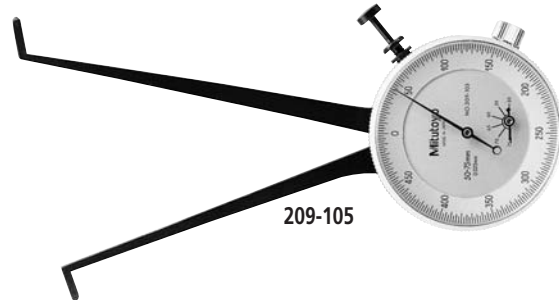
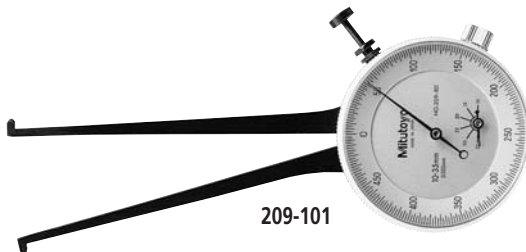


Order No.	L	A	B	C
209-607	80	10	5	10
209-606	80	10	5	10
209-604	170	20	7	12
209-611	170	20	7	12



Dial Caliper Gages

SERIES 209 — Internal Type



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

SPECIFICATIONS

Metric

Graduation	Range	Order No.	Mass	Throat depth
0.025mm	10 - 35mm	209-101	82g	80mm
	30 - 55mm	209-103	82g	80mm
	50 - 75mm	209-105	82g	80mm

Inch

Graduation	Range	Order No.	Mass	Throat depth
.001"	.4" - 1.4"	209-111	.18 lbs.	3.15"
	1.2" - 2.2"	209-113	.18 lbs.	3.15"
	2" - 3"	209-115	.18 lbs.	3.15"

Dimensions

