Digimatic Indicators

Dial Indicators

Dial Test Indicators

Dial Indicator Applications and Stands

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Mitutoyo

ABSOLUTE Solar Digimatic Indicator ID-S

543 Series – With Simple Design

FEATURES

- Mitutoyo's unique ABSOLUTE sensor automatically restores the last origin position when the indicator is turned on. This allows quick-start operation, which is especially useful in multipoint measurement.
- Measurement tool with a solar power source. Ready for use from 40 lux illumination.
- As compact as Series 2 dial indicators.
- SPC Output provided
- Two large buttons (three on inch/mm models) improve functionality

543-502B
ID-S112ESB

543-500
ID-S112S

SPECIFICATIONS

Inch/Metric with 3/8" dia. Stem, #4-48UNF Thread

Order	Model	Range	Resolution	Accuracy	Stem Diameter	Measuring Force	Back Type
543-502	ID-S112ES	.5"/12.7mm	.00005"/0.001mm	.0001"/0.003mm	3/8" (ANSI/AGD)	1.5N or less	Lug Back
543-502B	ID-S112ESB	.5"/12.7mm	.00005"/0.001mm	.0001"/0.003mm	3/8" (ANSI/AGD)	1.5N or less	Flat Back
543-507	ID-S1012ES	.5"/12.7mm	.0005"/0.01mm	.001"/0.02mm	3/8" (ANSI/AGD)	1.5N or less	Lug Back
543-507B	ID-S1012ESB	.5"/12.7mm	.0005"/0.01mm	.001"/0.02mm	3/8" (ANSI/AGD)	1.5N or less	Flat Back

Metric with 8mm dia. Stem, M2.5x.45 Thread

Order	Model	Range	Resolution	Accuracy	Stem Diameter	Measuring Force	Back Type
543-500	ID-S112S	12.7mm	0.001mm	0.003mm	8mm (ISO)	1.5N or less	Lug Back
543-500B	ID-S112SB	12.7mm	0.001mm	0.003mm	8mm (ISO)	1.5N or less	Flat Back
543-505	ID-S1012S	12.7mm	0.01mm	0.02mm	8mm (ISO)	1.5N or less	Lug Back
543-505B	ID-S1012SB	12.7mm	0.01mm	0.02mm	8mm (ISO)	1.5N or less	Flat Back

Inch/Metric with 8mm dia. Stem, M2.5x.45 Thread

Order	Model	Range	Resolution	Accuracy	Stem Diameter	Measuring Force	Back Type
543-501	ID-S112MS	.5"/12.7mm	.00005"/0.001mm	.0001"/0.003mm	8mm (ISO)	1.5N or less	Lug Back
543-501B	ID-S112MSB	.5"/12.7mm	.00005"/0.001mm	.0001"/0.003mm	8mm (ISO)	1.5N or less	Flat Back
543-506	ID-S1012MS	.5"/12.7mm	.0005"/0.01mm	.001"/0.02mm	8mm (ISO)	1.5N or less	Lug Back
543-506B	ID-S1012MSB	.5"/12.7mm	.0005"/0.01mm	.001"/0.02mm	8mm (ISO)	1.5N or less	Flat Back

Technical Data

Accuracy: Refer to the list of specifications
Resolution: 0.01mm, 0.001mm, .00005"/0.001mm, or .0005"/0.01mm
Display: LCD
Length Standard: ABSOLUTE electrostatic capacitance type linear encoder
Max. Response Speed: Unlimited
Measuring Force: Refer to the list of specifications
Battery: Solar Battery*
Dust/Water Protection Level: IP42
*can be used continuously above 40 lux

Function

Origin Set, Counting Direction Switching, in/mm conversion

Optional Accessories

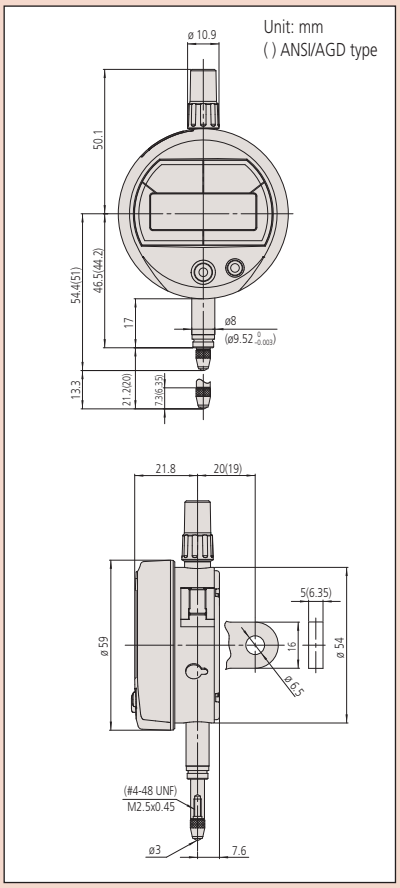
21EZA198	Lifting lever (mm)
21EZA199	Lifting lever (inch)
540774	Lifting cable
21EZA105	Lifting knob (mm)
21EZA150	Lifting knob (inch)
905338	SPC cable (1m)
905409	SPC cable (2m)

All Mitutoyo Series 2 standard backs

About the charge function:

Reserve capacity allows a fully charged ID-S Solar to be used for about 3.5 hours under light conditions below the minimum level. The charging time differs depending on the environment, but it usually takes about 1.5 hours for a fully discharged ID-S Solar to fully recharge under light conditions of 500 lux.

DIMENSIONS



ABSOLUTE Digimatic Indicator ID-S

SERIES 543 — with Simple Design

SPC

ABSOLUTE®
Absolute System Patented by MITUTOYO

Technical Data

Accuracy: Refer to the list of specifications
Resolution: 0.01mm, 0.001mm, .0005"/0.01mm, .0001"/0.001mm or .00005"/0.001mm
Display: LCD
Length standard: ABSOLUTE electrostatic capacitance type linear encoder
Max. response speed: Unlimited
Measuring force: Refer to the list of specifications
Battery: SR44 (1 pc.), **938882**
Battery life: Approx. 20,000 hours under normal use
Dust/Water protection level: IP42 (IP53: **543-694**, **543-695**, **543-696**)

Function

Origin-set, Zeroset, Counting direction switching, Power ON/OFF, Data output,
inch/mm conversion (on inch/metric models only)
Alarm: Low voltage, Counting value composition error, Over-flow error

Optional Accessories

905338: SPC cable (40" / 1m)
905409: SPC cable (80" / 2m)
903424: Spindle lifting lever (ISO/JIS type)
903425: Spindle lifting lever (ANSI/AGD type)
540774: Spindle lifting cable (stroke: .4" / 10mm)
125317: Spare rubber boot (for dust-proof type)
02ACB420: Lug-on-center back for ISO/JIS type
02ACB430: Lug-on-center back for AGD type
02ACB440: Flat back
02ACB610: Back with post
02ACB620: Adjustable back for AGD type
02ACB630: Adjustable back (ISO/JIS type)
02ACB640: Back with offset lug
02ACB650: Magnetic back
02ACB660: Back with screw mount for AGD type
02ACB670: Back with screw mount (ISO/JIS type)
02ACB680: Back with adjustable bracket
———: Contact points (See page F-34.)

FEATURES

- As compact as standard Series 2 dial indicators.
- After the initial zero-setting with the ORIGIN button, the repeated absolute positioning is no longer necessary over the entire battery life.
- Employing the ABSOLUTE linear encoder, the ID-S always displays the spindle "Absolute Position" from the origin at power-on. Also unlimited response speed eliminates over-speed errors.
- SPC data output.

543-683B

543-690

SPECIFICATIONS

Inch/Metric Stem dia. 3/8", #4-48 UNF Thread — ISO/JIS type / ANSI/AGD type

Resolution	Range	Order No.		Model	Accuracy	Measuring force	Remarks
		w/ lug back	w/ flat-back				
.00005"/0.001mm	.5" / 12.7mm	**543-692**	**543-692B**	ID-S112E	.00012"	2.0N	—
.00005"/0.001mm	.5" / 12.7mm	**543-696**	**543-696B**	ID-S112PE	.00012"	2.5N	Dust-proof
.0001"/0.001mm	.5" / 12.7mm	**543-693**	**543-693B**	ID-S112T	.00012"	2.0N	—
.0005"/0.01mm	.5" / 12.7mm	**543-683**	**543-683B**	ID-S1012E	.0008"	2.0N	—

Inch/Metric Stem ø 8mm, M2.5 x 0.45 Thread

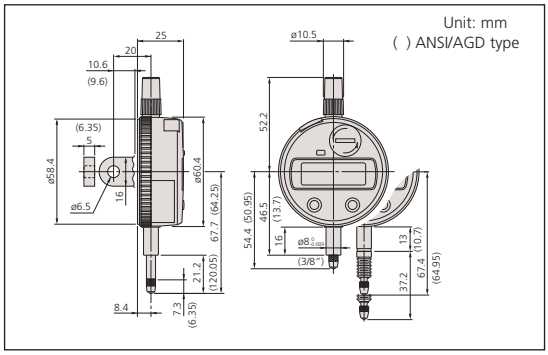
Resolution	Range	Order No.		Model	Accuracy	Measuring force	Remarks
		w/ lug back	w/ flat-back				
.00005"/0.001mm	.5" / 12.7mm	**543-691**	**543-691B**	ID-S112M	.00012"	2.0N or less	—
.00005"/0.001mm	.5" / 12.7mm	**543-695**	**543-695B**	ID-S112PM	.00012"	2.5N or less	Dust-proof
.0005"/0.01mm	.5" / 12.7mm	**543-682**	**543-682B**	ID-S1012M	.0008"	2.0N or less	—

Metric Stem ø 8mm, M2.5 x 0.45 Thread

Resolution	Range	Order No.		Model	Accuracy	Measuring force	Remarks
		w/ lug back	w/ flat-back				
0.001mm	12.7mm	**543-690**	**543-690B**	ID-S112	0.003mm	2.0N or less	—
0.001mm	12.7mm	**543-694**	**543-694B**	ID-S112P	0.003mm	2.5N or less	Dust-proof
0.01mm	12.7mm	**543-681**	**543-681B**	ID-S1012	0.02mm	2.0N or less	—

DIMENSIONS

Unit: mm
( ) ANSI/AGD type



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ABSOLUTE Digimatic Indicator ID-U

SERIES 575 — with Slim and Simple Design

FEATURES

- Slim type digital indicator with low price.
- Large LCD and simple key operation.
- After the initial origin setting, the ID-U 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 it's compact design and long battery life.
- Employing the ABSOLUTE linear encoder, the ID-U always displays the spindle "Absolute Position" from the origin at power-on. Also unlimited response speed eliminates over-speed errors.
- Flat back type only no option for backs.
- SPC data output.

575-121

IP42

575-123

SPC

ABSOLUTE®
Absolute System Patented by MITUTOYO

SPECIFICATIONS

Inch/Metric Stem dia. 3/8", #4-48 UNF Thread — ISO/JIS type / ANSI/AGD type

Resolution	Range	Order No.	Model	Accuracy	Measuring force
.0005"/0.01mm	1" / 25.4mm	**575-123**	ID-U1025E	.0008"	1.8N or less

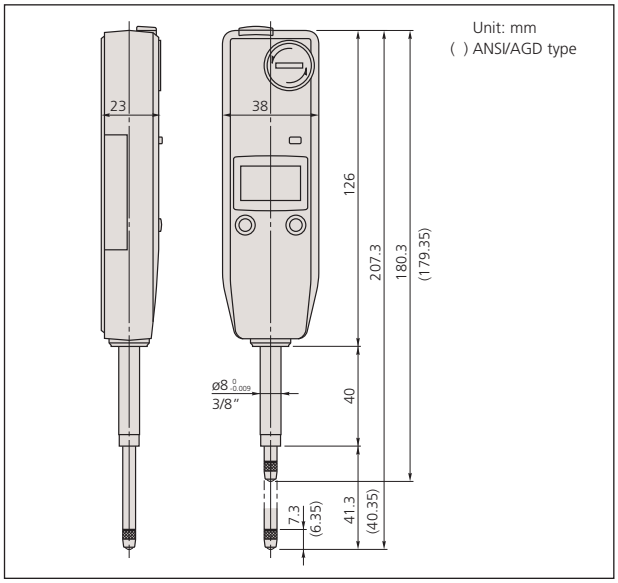
Inch/Metric Stem ø 8mm, M2.5 x 0.45 Thread

Resolution	Range	Order No.	Model	Accuracy	Measuring force
.0005"/0.01mm	1" / 25.4mm	**575-122**	ID-U1025M	.0008"	1.8N or less

Metric Stem ø 8mm, M2.5 x 0.45 Thread

Resolution	Range	Order No.	Model	Accuracy	Measuring force
0.01mm	25.4mm	**575-121**	ID-U1025	0.02mm	1.8N or less

DIMENSIONS



Technical Data

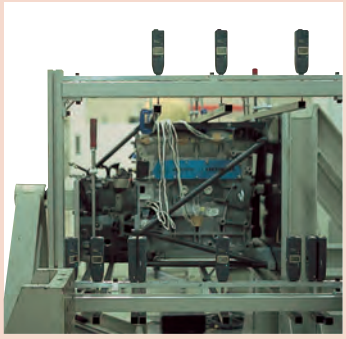
Accuracy: Refer to the list of specifications
Resolution: 0.01mm or .0005"/0.01mm,
Display: LCD
Length standard: ABSOLUTE electrostatic capacitance type linear encoder
Max. response speed: Unlimited
Measuring force: Refer to the list of specifications
Battery: SR44 (1 pc.), **938882**
Battery life: Approx. 20,000 hours under normal use
Dust/Water protection level: IP42

Function

Origin-set, Zeroset, Counting direction switching, Power ON/OFF, Data output,
inch/mm conversion (on inch/metric models only)
Alarm: Low voltage, Counting value composition error, Over-flow error

Optional Accessories

905338: SPC cable (40" / 1m)
905409: SPC cable (80" / 2m)
540774: Spindle lifting cable (stroke: .4" / 10mm)
———: Contact points (See page F-34.)



Application example

ABSOLUTE Digimatic Indicator ID-C

SERIES 543 — Standard Type

SPC

ABSOLUTE®
Absolute System Patented by MITUTOYO

Technical Data

Accuracy: Refer to the list of specifications

Resolution:		
	0.01mm type	0.01mm
	0.001mm type*	0.001mm/0.01mm
	.0005"/0.01mm type	.0005"/0.01mm
	.00005"/0.001mm type*	.0005"/.0001"/.00005" /0.01mm/0.001mm

* Switchable resolution

Display: LCD
Length standard: ABSOLUTE electrostatic capacitance type linear encoder
Max. response speed: Unlimited
Measuring force: Refer to the list of specifications
Battery: SR44 (1 pc.), **938882**
Battery life: Approx. 5,000 hours under normal use
Dust/Water protection level: IP42 or IP53 (dust-proof type)

Function

Origin-set/Preset, Zeroset, GO/±NG judgment, Counting direction switching, Power ON/OFF, Data output, inch/mm conversion (on inch/metric models only)
Alarm: Low voltage, Counting value composition error, Over-flow error, Tolerance limit setting error
Internal calculations using the simple formula of [F(x) = Ax)] are available.

Optional Accessories

905338: SPC cable (40" / 1m)
905409: SPC cable (80" / 2m)
21EZA198: Spindle lifting lever (ISO/JIS type)*
21EZA199: Spindle lifting lever (ANSI/AGD type)*
21EZA105: Spindle lifting knob (12.7mm/.5"ISO/JIS type)**
21EZA150: Spindle lifting knob(12.7mm/.5"ANSI/AGD type)**
21EZA197: Spindle lifting knob (25.4mm/1", 50.8mm/2" models)
21EZA200: Spindle lifting knob (50.8mm/2")
540774: Spindle lifting cable (stroke: (1"/ 25.4mm)
02ACA571: Auxiliary spindle spring for 25mm/1" models***
02ACA773: Auxiliary spindle spring for 50mm/2" models***
———: Backs (See page F-33.)
———: Contact points (See page F-34.)

*Can be used on 12mm/.5" models only.
**Not available for low measuring force models.
***Required when orienting gage upside down.

FEATURES

- As compact as standard Series 2 dial indicators.
- Large, easy-to-read LCD.
- 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.
- Internal calculations using the simple formula of [F(x) = Ax)] are available.
- Employing the ABSOLUTE linear encoder, the ID-C always displays the spindle "Absolute Position" from the origin at power-on. Also unlimited response speed eliminates over-speed errors.
- The ID-C indicator face can be rotated 330° to an appropriate angle for easy reading.
- With SPC data output.

543-392

543-402

543-472B

543-492B

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SPECIFICATIONS

Inch/Metric Stem dia. 3/8", #4-48 UNF Thread — ISO/JIS type — ANSI/AGD type

Resolution	Range	Order No. (w/lug, flat-back)		Model	Accuracy	Measuring force	Remarks
.00005"/0.001mm*	.5" / 12.7mm	**543-392**	**543-392B**	ID-C112EXB	.0001"	1.5N or less	—
.00005"/0.001mm*	.5" / 12.7mm	**543-396**	**543-396B**	ID-C112CEX	.0001"	0.4N - 0.7N	Low measuring force
.00005"/0.001mm*	1" / 25.4mm	—	**543-472B**	ID-C125EXB	.0001"	1.8N or less	—
.00005"/0.001mm*	2" / 50.8mm	—	**543-492B**	ID-C150EXB	.0002"	2.3N or less	—
.0005"/0.01mm	.5" / 12.7mm	**543-402**	**543-402B**	ID-C1012EX	.001"	0.9N or less	—
.0005"/0.01mm	.5" / 12.7mm	**543-406**	**543-406B**	ID-C1012CEX	.001"	0.2N - 0.5N	Low measuring force
.0005"/0.01mm	1" / 25.4mm	—	**543-476B**	ID-C1025EXB	.001"	1.8N or less	—
.0005"/0.01mm	2" / 50.8mm	—	**543-496B**	ID-C112CEXB	.0016"	2.3N or less	—

* Switchable Resolution Type

Inch/Metric Stem ø 8mm, M2.5 x 0.45 Thread

Resolution	Range	Order No. (w/lug, flat-back)		Model	Accuracy	Measuring force	Remarks
.00005"/0.001mm*	.5" / 12.7mm	**543-391**	**543-391B**	ID-C112MX	.0001"	1.5N or less	—
.00005"/0.001mm*	.5" / 12.7mm	**543-395**	**543-395B**	ID-C112CMX	.0001"	0.4N - 0.7N	Low measuring force
.00005"/0.001mm*	1" / 25.4mm	—	**543-471B**	ID-C125MXB	.0001"	1.8N or less	—
.00005"/0.001mm*	2" / 50.8mm	—	**543-491B**	ID-C150MXB	.0002"	2.3N or less	—
.0005"/0.01mm	.5" / 12.7mm	**543-401**	**543-401B**	ID-C1012MX	.001"	0.9N or less	—
.0005"/0.01mm	.5" / 12.7mm	**543-405**	**543-405B**	ID-C1012CMX	.001"	0.2N - 0.5N	Low measuring force
.0005"/0.01mm	1" / 25.4mm	—	**543-475B**	ID-C1025MXB	.001"	1.8N or less	—
.0005"/0.01mm	2" / 50.8mm	—	**543-495B**	ID-C1050MXB	.0016"	2.3N or less	—

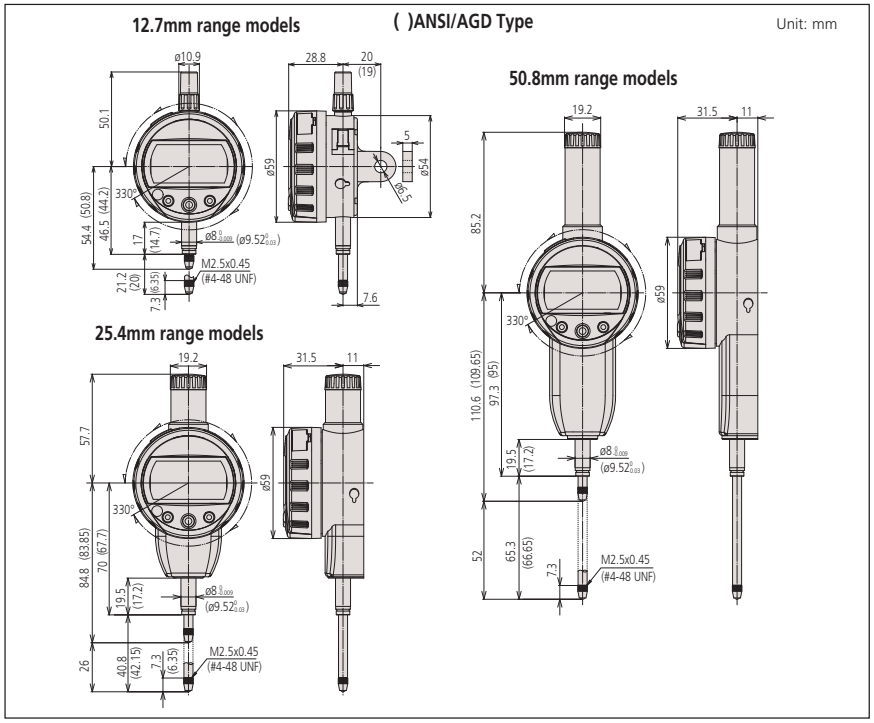
* Switchable Resolution Type

Metric Stem ø 8mm, M2.5 x 0.45 Thread

Resolution	Range	Order No. (w/lug, flat-back)		Model	Accuracy	Measuring force	Remarks
0.001mm*	12.7mm	**543-390**	**543-390B**	ID-C112X	0.003mm	1.5N or less	—
0.001mm*	12.7mm	**543-394**	**543-394B**	ID-C112CX	0.003mm	0.4N - 0.7N	Low measuring force
0.001mm*	25.4mm	—	**543-470B**	ID-C125XB	0.003mm	1.8N or less	—
0.001mm*	50.8mm	—	**543-490B**	ID-C150XB	0.006mm	2.3N or less	—
0.01mm	12.7mm	**543-400**	**543-400B**	ID-C1012X	0.02mm	0.9N or less	—
0.01mm	12.7mm	**543-404**	**543-404B**	ID-C1012CX	0.02mm	0.2N - 0.5N	Low measuring force
0.01mm	25.4mm	—	**543-474B**	ID-C1025XB	0.03mm	1.8N or less	—

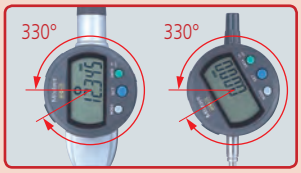
* Switchable Resolution Type

DIMENSIONS



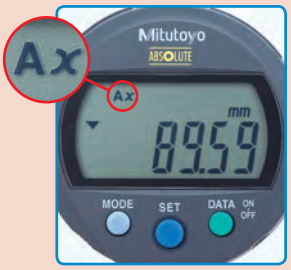
330° Rotary display

The display can be rotated 330°, allowing use at a position where you can easily read the measurement value.



Calculation: f(x) = Ax

Mounting the **ID-C** on a measuring jig and setting the multiplying factor 'A' (to any value) allows direct measurement without using a conversion table and improves measurement efficiency.



Application example

Function locking

Ensures reliability of measurement by locking the settings to prevent preset function settings from being changed by mistake.

Setting measuring force on low measuring force models

•543-404/404B/405/405B/406/406B

Spindle orientation	Spring	Weight (approximately 0.1N)	Maximum measuring force
Pointing vertically downward	Yes	Yes	0.5N
	Yes	No	0.4N
	No	Yes	0.3N
	No	No	0.2N
Horizontal	Yes	No	0.2N

Note) Operation using configurations other than shown above is not guaranteed.

•543-394/394B/395/395B/396/396B

Spindle orientation	Spring	Weight (approximately 0.1N)	Maximum measuring force
Pointing vertically downward	Yes	Yes	0.7N
	Yes	No	0.6N
	No	Yes	0.4N
	No	No	Not guaranteed
Horizontal	Not guaranteed		

Note) Operation using configurations other than shown above is not guaranteed.

ABSOLUTE Digimatic Indicator ID-C

SERIES 543 — Calculation Type

Technical Data

Accuracy: Refer to the list of specifications
Resolution: 0.0002mm - 1mm or
.00001" - .05"/0.0002mm - 1mm
Display: LCD
Length standard: ABSOLUTE electrostatic capacitance type linear encoder
Max. response speed: Unlimited
Measuring force: 1.5N or less
Battery: SR44 (1 pc.), **938882**
Battery life: Approx. 12 months under normal use

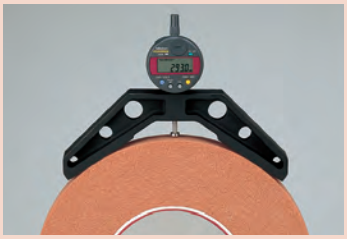
Function

Origin-set/Preset, Zeroset, GO/±NG judgment, Counting direction switching, Power ON/OFF, Data output, inch/mm conversion (on inch/metric models only)
Alarm: Low voltage, Counting value composition error, Over-flow error, Tolerance limit setting error

Optional Accessories

905338: SPC cable (40" / 1m)
905409: SPC cable (80" / 2m)
902011: Spindle lifting lever (ISO/JIS type)
540774: Spindle lifting cable (Stroke: .4" / 10mm)
———: Backs (See page F-33.)
———: Contact points (See page F-34.)

APPLICATIONS



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

FEATURES

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.

- 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.

543-287B

SPECIFICATIONS

ISO/JIS type ANSI/AGD type

Inch/Metric Stem dia. 3/8" #4-48 UNF Thread

Resolution	Range	Order No.*	Model	Accuracy	Measuring Force
.00001" - .05"/ 0.0002 - 1mm (switchable)	.5" / 12.7mm	**543-287B**	ID-C112REB	.00012"	1.5N or less
	1" / 25.4mm	**543-482B**	ID-C125REB	.00012"	2.0N or less
	2" / 50.8mm	**543-487B**	ID-C150REB	.00025"	2.3N or less

Inch/Metric Stem ø 8mm, M2.5 x 0.45 Thread

Resolution	Range	Order No.*	Model	Accuracy	Measuring Force
.00001" - .05"/ 0.0002 - 1mm (switchable)	.5" / 12.7mm	**543-286B**	ID-C112RMB	.00012"	1.5N or less
	1" / 25.4mm	**543-481B**	ID-C125RMB	.00012"	2.0N or less
	2" / 50.8mm	**543-486B**	ID-C150RMB	.00025"	2.3N or less

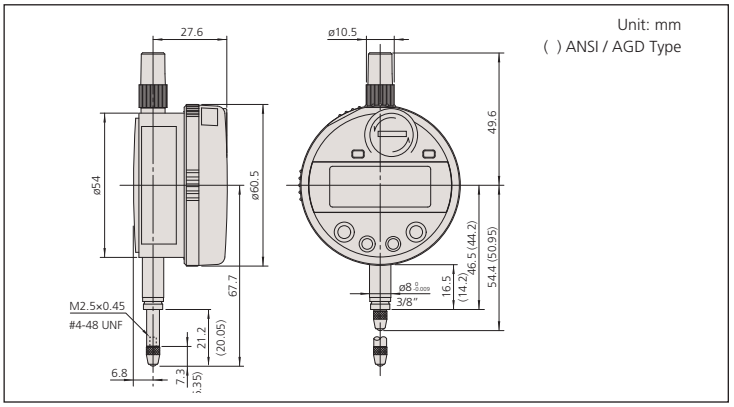
Metric Stem ø 8mm, M2.5 x 0.45 Thread

Resolution	Range	Order No.*	Model	Accuracy	Measuring Force
0.0002 - 1mm (switchable)	12.7mm	**543-285B**	ID-C112RB	0.003mm	1.5N or less
	25.4mm	**543-480B**	ID-C125RB	0.003mm	2.0N or less
	50.8mm	**543-485B**	ID-C150RB	0.006mm	2.3N or less

*Flat back

DIMENSIONS

Unit: mm
( ) ANSI / AGD Type



ABSOLUTE Digimatic Indicator ID-C

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

FEATURES

- With the max./min. value holding function, the signal ID-C 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.
- 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 "<, O, >" signs on LCD.
- Employing the ABSOLUTE linear encoder, the Signal ID-C always displays the spindle "Absolute Position" from the origin at power-on.
- The Signal ID-C achieves the IP54 protection level to resist dust and contaminants for safe operation in harsh machine shop environments.

SPECIFICATIONS

Inch/Metric Stem dia. 3/8" #4-48 UNF Thread ISO/JIS type ANSI/AGD type

Resolution	Range	Order No. (w/ lug, flat-back)		Model	Accuracy	Measuring force
.00005"/0.001mm	.5" / 12.7mm	**543-282**	**543-282B**	ID-C112JE	.00012"	2.0N or less
.0005"/0.01mm	.5" / 12.7mm	**543-283**	**543-283B**	ID-C112JT	.00012"	2.0N or less

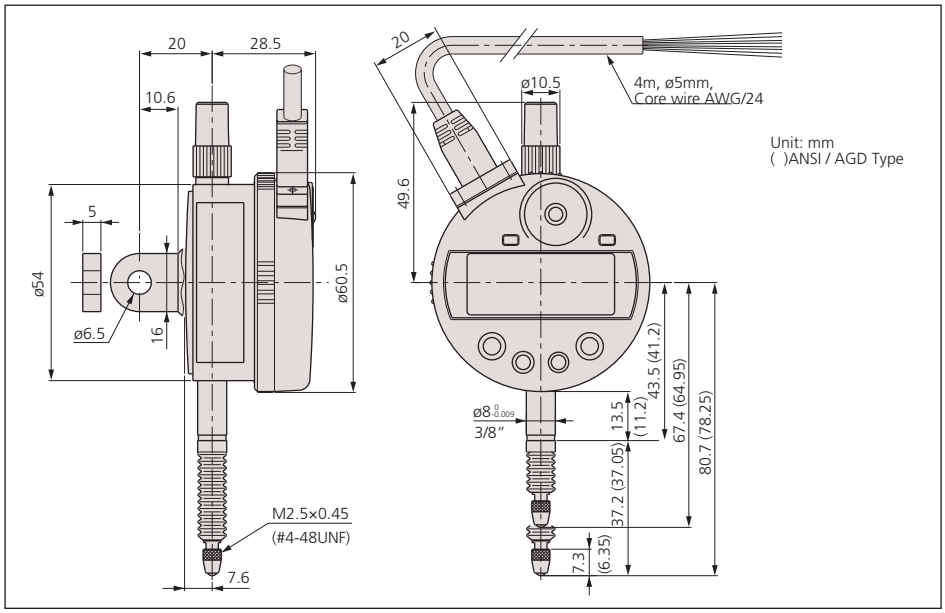
Inch/Metric Stem ø 8mm, M2.5 x 0.45 Thread

Resolution	Range	Order No. (w/ lug, flat-back)		Model	Accuracy	Measuring force
.00005"/0.001mm	.5" / 12.7mm	**543-281**	**543-281B**	ID-C112JM	.00012"	2.0N or less

Metric Stem ø 8mm, M2. x 0.45 Thread

Resolution	Range	Order No. (w/ lug, flat-back)		Model	Accuracy	Measuring force
0.001mm	12.7mm	**543-280**	**543-280B**	ID-C112J	0.003mm	2.0N or less

DIMENSIONS



IP54

ABSOLUTE®
Absolute System Patented by MITUTOYO

Technical Data

Accuracy: Refer to the list of specifications
Resolution: 0.001mm, .00005"/0.001mm or .0001"/0.001mm
Display: LCD
Length standard: ABSOLUTE electrostatic capacitance type linear encoder
Max. response speed: Unlimited
Measuring force: 2.0N or less
Power supply: DC 12 - 24V±10%
Dust/Water protection level: IP54

Function

Data output (–NG/OK/NG signal, NPN open collector), Remote control (hold-preset, preset-recall, zero-set), Origin-set/Preset, Zeroset, GO/±NG judgment, Max/Min/ Runout value holding, Counting direction switching, Power ON/OFF, inch/mm conversion (on inch/metric models only)
Alarm: Low voltage, Counting value composition error, Over-flow error, Tolerance limit setting error

Optional Accessories

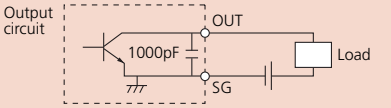
902011: Spindle lifting lever* (ISO/JIS type)
902794: Spindle lifting lever* (ANSI/AGD type)
540774: Spindle lifting cable* (Stroke: .4" / 10mm)
125317: Rubber boot
———: Backs (See page F-33.)
———: Contact points (See page F-34.)
*When using the spindle lifting lever/cable, IP54 is not guaranteed.

Output pattern

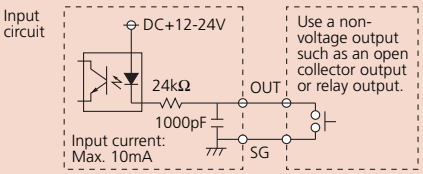
Wire	– NG	OK	+ NG	Composition error
Orange (– NG)	Low	High	High	High
Green (OK)	High	Low	High	High
Brown (+ NG)	High	High	Low	High
LED	Red	Green	Red	Red (blinking)
LCD	<	O	>	"x.xxE" indication

I/O Specifications

Wire	Signal	I/O	Description
Black	– V (GND)	—	Connected to minus (-) terminal
Red	+ V (GND)	I	Power supply (12 - 24VDC)
Orange	– NG	O	Tolerance judgment result output: Only the terminal corresponding to a judgment result is set to the below level.
Green	OK	O	
Brown	+ NG	O	
Yellow	PRESET_RECALL ZERO	I	External input terminal: If the relevant terminal is set to the low level, its signal becomes true.
Blue	HOLD_RESET	I	
Shield	FG	—	Connected to GND



Output voltage: Max. 24V
Output current: Max. 30mA
Output saturated voltage: Max. 0.3V



ABSOLUTE Digimatic Indicator ID-C

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

With max./min. value holding function model of the ID-C Series Digimatic Indicators.

543-260

FEATURES

- The maximum, minimum, or runout value can be displayed during measurement.
- 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.
- Employing the ABSOLUTE linear encoder, the Signal ID-C always displays the spindle "Absolute Position" from the origin at power-on.

SPECIFICATIONS

ISO/JIS type ANSI/AGD type

Inch/Metric Stem dia. 3/8" #4-48 UNF Thread

Resolution	Range	Order No.*	Model	Accuracy
.00005"/0.001mm	.5" / 12.7mm	**543-262**	ID-C112AE	.00012"
.0001"/0.001mm	.5" / 12.7mm	**543-263**	ID-C112AT	.00012"

Inch/Metric Stem ø 8mm, M2.5 x 0.45 Thread

Resolution	Range	Order No.*	Model	Accuracy
.00005"/0.001mm	.5" / 12.7mm	**543-261**	ID-C112AM	.00012"

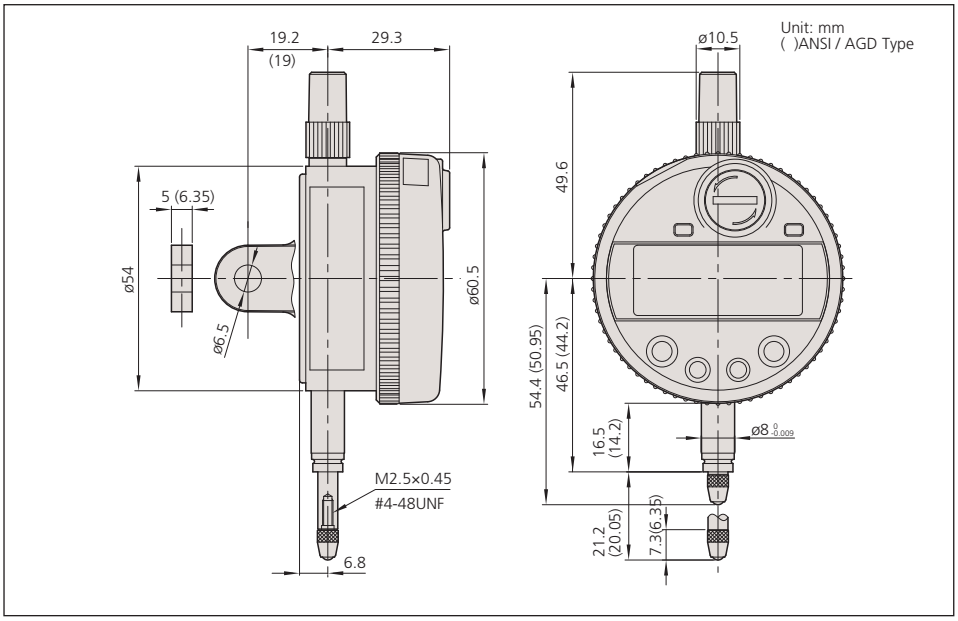
*Back with lug

Metric Stem ø 8mm, M2.5 x 0.45 Thread

Resolution	Range	Order No.*	Model	Accuracy
0.001mm	12.7mm	**543-260**	ID-C112A	0.003mm

*Back with lug

DIMENSIONS



Technical Data

Accuracy: Refer to the list of specifications
Resolution: 0.001mm, .00005"/0.001mm or .0001"/0.001mm
Display: LCD
Length standard: ABSOLUTE electrostatic capacitance type linear encoder
Max. response speed: Unlimited
Measuring force: 1.5N or less
Battery: SR44 (2 pcs.), **938882**
Battery life: Approx. 800 - 1300 hours under normal use
Dust/Water protection level: IP42

Function

Origin-set/Preset, Zeroset, GO/±NG judgment, Max/Min/Runout value holding, Counting direction switching, Power ON/OFF, Data output, inch/mm conversion (on inch/metric models only)
Alarm: Low voltage, Counting value composition error, Over-flow error, Tolerance limit setting error

Optional Accessories

905338: SPC cable (40" / 1m)
905409: SPC cable (80" / 2m)
902011: Spindle lifting lever (ISO/JIS type)
902794: Spindle lifting lever (ANSI/AGD type)
540774: Spindle lifting cable (stroke: .4" / 10mm)
———: Backs (See page F-33.)
———: Contact points (See page F-34.)

ABSOLUTE Digimatic Indicator ID-C

SERIES 543 — Specially Designed for Bore Gage Application

This ID-C Series Digimatic Indicators are exclusively designed for ID measurement.

543-266B

FEATURES

- The minimum value holding function provides the easy of detection of hole diameter.
- 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.
- Employing the ABSOLUTE linear encoder, the Signal ID-C always displays the spindle "Absolute Position" from the origin at power-on.

SPECIFICATIONS

ISO/JIS type ANSI/AGD type

Inch/Metric Stem dia. 3/8" #4-48 UNF Thread

Resolution	Range	Order No.*	Model	Accuracy
.00005"/0.001mm	.5" / 12.7mm	**543-266B**	ID-C112GE	.00012"
.0001"/0.001mm	.5" / 12.7mm	**543-267B**	ID-C112G	.00012"

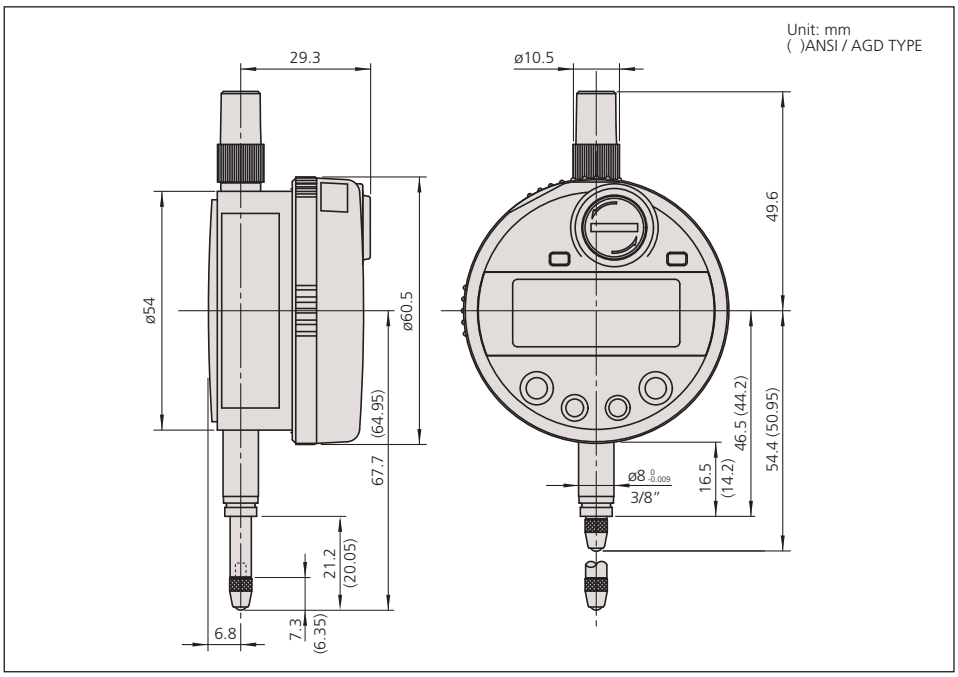
*Back with lug

Metric Stem ø 8mm, M2.5 x 0.45 Thread

Resolution	Range	Order No.*	Model	Accuracy
0.001mm	12.7mm	**543-264B**	ID-C112G	0.003mm

*Back with lug

DIMENSIONS



SPC

ABSOLUTE®
Absolute System Patented by MITUTOYO

Technical Data

Accuracy: Refer to the list of specifications
Resolution: 0.001mm or .00005"/0.001mm
Display: LCD
Length standard: ABSOLUTE electrostatic capacitance type linear encoder
Max. response speed: Unlimited
Measuring force: 1.5N or less
Battery: SR44 (2 pcs.), **938882**
Battery life: Approx. 2000 hours under normal use
Dust/Water protection level: IP42

Function

Origin-set/Preset, Zeroset, GO/±NG judgment, Power ON/OFF, Data output, inch/mm conversion (on inch/metric models only)
Alarm: Low voltage, Counting value composition error, Over-flow error, Tolerance limit setting error

Optional Accessories

905338: SPC cable (40" / 1m)
905409: SPC cable (80" / 2m)
Applicable Gages Series 511 and 526

Installed on bore gage probe (**511-127**)

ABSOLUTE Digimatic Indicator ID-H

SERIES 543 — High Accuracy and High Functional Type

SPC

Mitutoyo guarantees the product quality
PROPRIETARY INSPECTION CERTIFICATE
Mitutoyo guarantees the product quality

Technical Data

Accuracy: Refer to the list of specifications
Resolution: 0.0005mm/0.001mm or .00002"/.00005" /.0001"/0.0005mm/0.001mm
Display: LCD
Length standard: Linear encoder
Max. response speed: 1000mm/s
Measuring force: 2.0N/2.5N* or less (*60mm range models)
Power supply: 6V DC (via AC adaptor)

Function

Origin-set/Preset, Zeroset, GO/±NG judgment, Max/Min value hold, Runout measurement, Resolution switching, Counting direction switching, Power ON/OFF, Data output, inch/mm conversion (on inch/metric models only)
Alarm: Low voltage, Counting value composition error, Over-flow error, Tolerance limit setting error

Standard Accessories

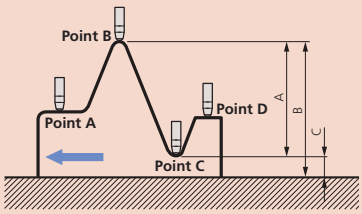
06AEG302JA: AC Adapter 120v
137693: Lifting Lever

Optional Accessories

936937: SPC cable (40" / 1m)
965014: SPC cable (80" / 2m)
21EAA131: RS-232C cable (80" / 2m)
21EZA099: Remote controller
540774: Spindle lifting cable (stroke: .4" / 10mm)
21EZA101: Spindle lifting knob
264-504-5A: Digimatic Min-processor DP-1VR
543-004A: Digimatic presetter
21EZA152A: FREE PARAMETER SETTING SOFTWARE
———: Backs (See page F-33.)
———: Contact points (See page F-34.)
*Required when orienting the indicator upside down.

Application

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



Order No.	A	B	C	D	E
543-561A	251.3	47.3	30.48	60	7.3
543-562A	250.35	46.35	30.48	60	6.35
543-563A	311.3	77.3	60.96	90	7.3
543-564A	310.35	76.35	60.96	90	6.35

FEATURES

- This new-generation digital indicator offers the excellent accuracy and functionality expected from this class of indicator. Take advantage of its high accuracy backed up by 0.5µm / .00002" resolution, remote control functionality via a handheld controller (or an RS-232C interface) and easy runout measurements with the well-established analog bar display.
- The maximum, minimum, or runout value can be displayed during measurement.
- 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.
- With SPC data output.
- With RS-232C input/output

21EZA099
Remote controller (optional)

543-561A

543-564A

SPECIFICATIONS

Inch/Metric Stem dia. 3/8" #4-48 UNF Thread

Resolution	Range	Order No.*	Model	Accuracy
.00002", .00005", .0001", 0.0005mm, 0.001mm	1.2" / 30.4mm	**543-562A**	ID-H530E	0.0015mm
	2.4" / 60.9mm	**543-564A**	ID-H560E	0.0025mm

Metric Stem ø 8mm M2.5 X 0.45 Thread

Resolution	Range	Order No.*	Model	Accuracy
0.0005mm, 0.001mm	30.4mm	**543-561A**	ID-H530	0.0015mm
	60.9mm	**543-563A**	ID-H560	0.0025mm

Tolerance judgment

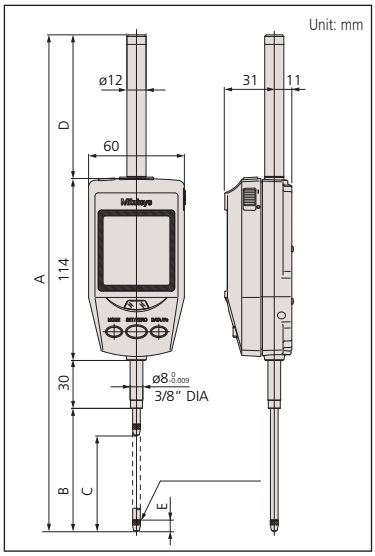
Analog bar display

Max/Min value measurement

Runout measurement

Resolution switching

DIMENSIONS



Mitutoyo

ABSOLUTE Digimatic Indicator ID-F

SERIES 543 — with Back-lit LCD Screen

FEATURES

- 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.
- 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 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.
- With SPC data output.

543-552A

543-558A

SPECIFICATIONS

Inch/Metric Stem dia. 3/8" #4-48 UNF Thread

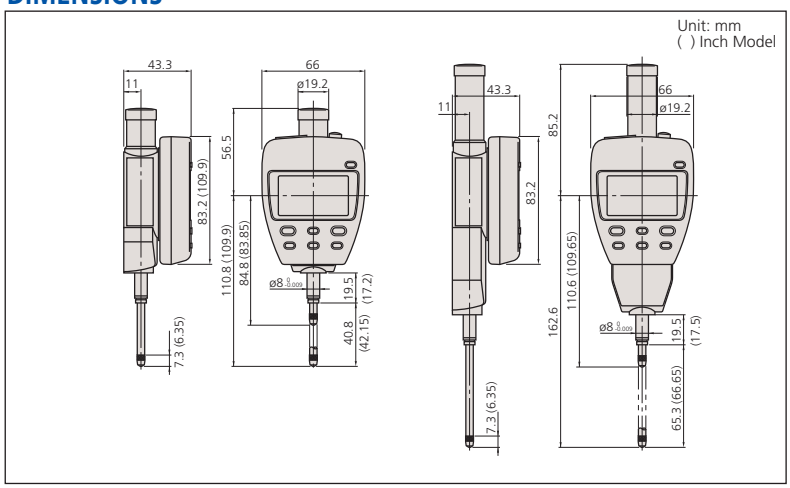
Resolution	Range	Order No.*	Model	Accuracy
.00005", .0001", .0005", .001", 0.001mm, 0.01mm	1" / 25.4mm	**543-552A**	ID-F125E	.00012"
	2" / 50.8mm	**543-558A**	ID-F150HE	.00012"

Metric Stem ø 8mm M2.5 X 0.45 Thread

Resolution	Range	Order No.*	Model	Accuracy
0.001mm, 0.01mm	25mm	**543-551A**	ID-F125	0.003mm
	50mm	**543-557A**	ID-F150H	0.003mm

DIMENSIONS

Unit: mm
( ) Inch Model



Technical Data

Accuracy: Refer to the list of specifications
Resolution: 0.01mm/0.001mm or .00005"/.0001"/.0005"/.001"/0.001mm/0.01mm
Display: LCD
Length standard: ABSOLUTE electrostatic capacitance type linear encoder
Max. response speed: Unlimited
Measuring force: 1.8N/2.3N* or less (*50mm range models)
Power supply: 9V DC (via AC adaptor)

Function

Origin-set/Preset, Zeroset, GO/±NG judgment, Max/Min value hold, Runout measurement, Resolution switching, Counting direction switching, Power ON/OFF, Data output, inch/mm conversion (on inch/metric models only)
Alarm: Low voltage, Counting value composition error, Over-flow error, Tolerance limit setting error

Standard Accessories

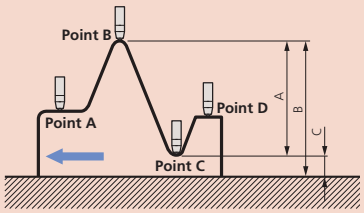
06AEG180JA: AC Adapter 120v
137693: Lifting Leve

Optional Accessories

936937: SPC cable (40" / 1m)
965014: SPC cable (80" / 2m)
540774: Spindle lifting cable (stroke: .4" / 10mm)
02ACA571: Auxiliary spindle spring for 25mm/1" models*
02ACA773: Auxiliary spindle spring for 50mm/2" models*
264-504-5A: Digimatic Min-processor DP-1VR
543-004-1: Digimatic presetter
———: Backs (See page F-33.)
———: Contact points (See page F-34.)
*Required when orienting the indicator upside down.

Application

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



ABSOLUTE Digimatic Indicator ID-N / B

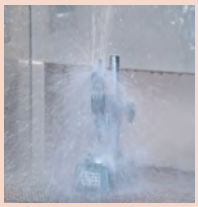
SERIES 543 — with Dust/Water Protection Conforming to IP66

FEATURES

- Proven ABSOLUTE sensor.
- Rated to IP66 water- and dust-proofing standard and oil resistance improved.
- Slim body design is advantageous for multi-point measurements.
- Improvement in workability with the LCD readout-rotation function.
- Back plunger design (ID-B).
- Built-in tolerance judgment function.
- Switchable resolution*.
- Waterproof data output connector.
- Built-in hold/preset function

Slim type ID-N
543-576

Back plunger type ID-B
543-586



Technical Data

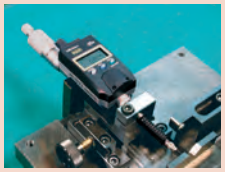
Accuracy: Refer to the list of specifications
Resolution: 0.01mm, 0.01mm/0.001mm, .0005"/0.01mm or .0005"/.00005"/0.01mm/0.001mm
Display: LCD
Length standard: ABSOLUTE electrostatic capacitance type linear encoder
Max. response speed: Unlimited
Measuring force: 2.5N (2.0N: Back plunger type)
Battery: SR44 (1 pc.), **938882**
Battery life: Approx. 7000 hours under normal use
Dust/Water protection level: IP66

Function

Zero-setting, Presetting, Direction switching, Tolerance judgment, Display hold, Data output, inch/mm conversion (on inch/metric models only)
Alarm: Low voltage, Counting value composition error, Over-flow error, Tolerance limit setting error

Optional Accessories

21EZA105: Lifting knob (for ISO/JIS model)
21EZA150: Lifting knob (for AGD model)
21EZA145: Lug (for JIS/ISO model)
21EZA146: Lug (for AGD model)
02ACA376: Rubber boot (for ID-N, NBR)
238774: Rubber boot (for ID-N, silicon)
125317: Rubber boot (for ID-B, NBR)
21EAA212: Rubber boot (for ID-B, silicon)
21EAA194: SPC cable (40" / 1m)
21EAA190: SPC cable (80" / 2m)
21EAA210: Bifurcated connecting cable with zero-setting terminal (40" / 1m)
21EAA211: Bifurcated connecting cable with zero-setting terminal (80" / 2m)
——: Contact points (See page F-34.)



ID-B Digimatic Indicators

SPECIFICATIONS

Metric Stem ø 8mm M2.5 X 0.45 Thread

Resolution	Range	Order No.	Model No.	Accuracy	Measuring Force
0.01mm	5.0mm	**543-580**	ID-B1005	0.02mm	2.0N or less
0.001mm	5.0mm	**543-585**	ID-B105	0.003mm	2.0N or less

Inch / Metric Stem dia. 3/8" #4-48 UNF Thread

Resolution	Range	Order No.	Model No.	Accuracy	Measuring Force
.0005" / 0.01mm	.22" / 5.6mm	**543-581**	ID-B1005E	.0008" / 0.02mm	2.0N or less
.0005" / 0.01mm .00005" / 0.001mm	.22" / 5.6mm	**543-586***	ID-B105E	.00012" / 0.003mm	2.0N or less

ID-N Digimatic Indicators

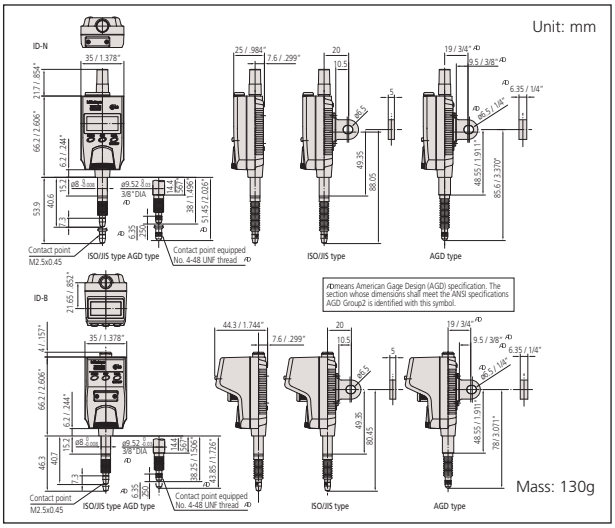
Metric Stem ø 8mm M2.5 X 0.45 Thread

Resolution	Range	Order No.	Model No.	Accuracy	Measuring Force
0.01mm	5.0mm	**543-570**	ID-N1012	0.02mm	2.0N or less
0.001mm / 0.01mm	5.0mm	**543-575**	ID-N112	0.003mm	2.0N or less

Inch / Metric Stem dia. 3/8" #4-48 UNF Thread

Resolution	Range	Order No.	Model No.	Accuracy	Measuring Force
.0005" / 0.01mm	.5" / 12.7mm	**543-571**	ID-N1012E	.0008" / 0.02mm	2.0N or less
.0005" / 0.01mm .00005" / 0.001mm	.5" / 12.7mm	**543-576***	ID-N112E	.00012" / 0.003mm	2.0N or less

DIMENSIONS AND MASS



EC Counter

SERIES 542 — Low-cost, Assembly, Type Display Unit

FEATURES

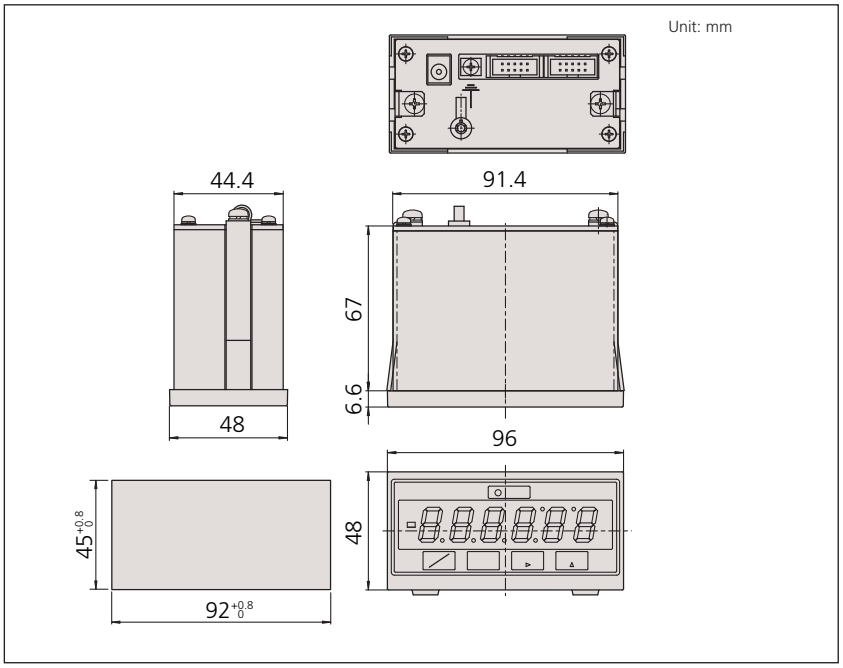
- Employed the DIN size (96 X 48mm) and mount-on-panel configuration, which greatly facilitates the incorporation into a system.
- Possible to produce either tolerance judgment output or Digimatic output.

542-007A

SPECIFICATIONS

Order No.	Description
542-007A	EC Counter

DIMENSIONS



EC Counter

Technical Data

Applicable gage: LGD, LGS, All SPC output gages
Resolution: 0.001mm, 0.01mm
No. of gage input: 1
Display: 6-digit LED and a negative [-] sign
Function: Preset
GO/±NG judgment
Output (open-collector): 3-step limit signal, Normal signal
External control: Preset, Data hold
Power supply: Via AC adaptor
Dimensions (W x D x H): 96 x 48 x 84.6mm
Mass: 500g

Standard Accessories

06AEG302JA: AC Adapter
936937: SPC cable (40"/1m)
965014: SPC cable (80"/1m)
214938: PJ-2 (DC Plug)
C162-155: GO/±NG judgement cable

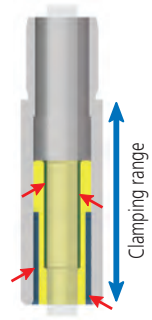
Dial Indicators

Description of Icon

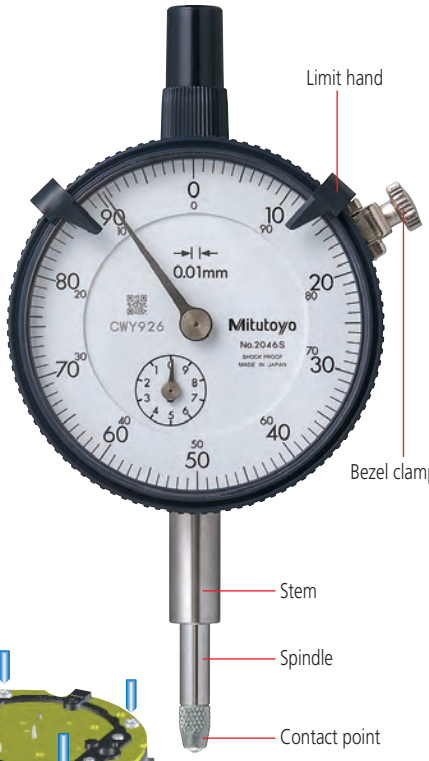
Icon	Description
	Reverse reading type suitable for depth and step measurement.
	One revolution type for easy and error-free reading
	Double scale spacing type, easy-on-the-eyes
	Shockproof type
	Waterproof type
	With damper at lowest rest point
	Jeweled bearing type
STOP	Peak retaining type
2X	Long stem type
	Dustproof type
	With coaxial revolution counter
90°	Back plunger type
	Adjustable hand type
	Double-face type

FEATURES: S Series

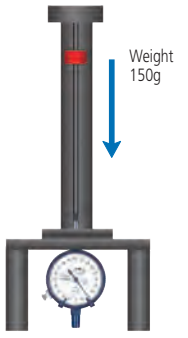
- Revolutionary stem-bush design for trouble free stem clamping (longer clamping range).
- No through screw-hole on the frame for high dust-resistance.

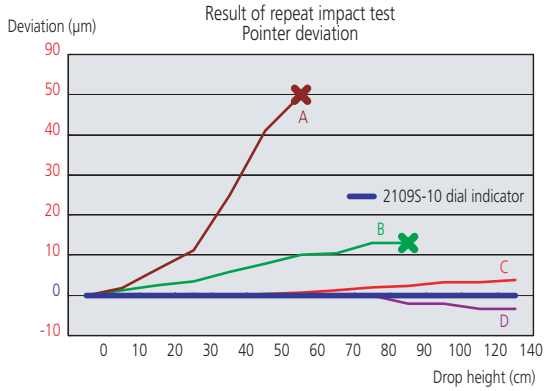


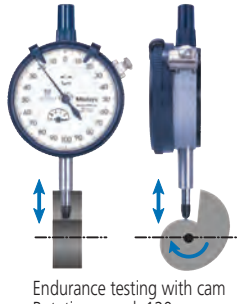
Clearance to avoid direct influence of clamping force



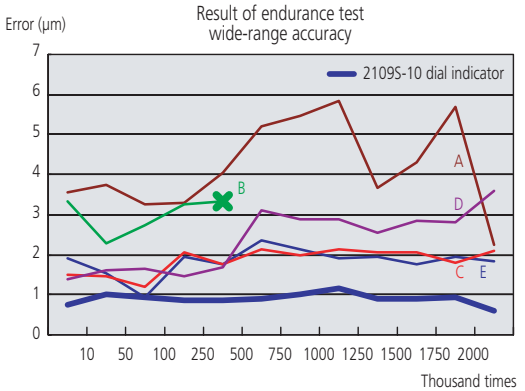
- Involute curved lifting lever for smooth movement of spindle and dovetail joint for tool-less connection.
- Grater rigidity in the bearing plate for reducing the retracing error (20%) and 4-screw mounting for increasing impact resistance.





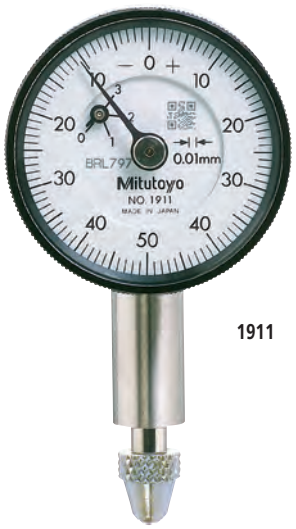


Endurance testing with cam
Rotation speed: 120rpm



Dial Indicators

SERIES 0 - Compact type



1911

1923

1911

1913-10

SPECIFICATIONS

Inch Stem dia. 3/8", #4-48 UNF Thread — ANSI/AGD type

Graduation	Range	Range/rev	Dial reading	Order No. w/ lug	Order No. Flat-back	Accuracy First 2.5 Rev	Accuracy Overall Accuracy	Measuring force	Jeweled
.0001"	.01"	.004"	0-2-0	**1927-10**	**1927B-10**	±.0002"	±.0002"	1.4N or less	✔
.0001"	.025"	.01"	0-5-0	**1925-10**	**1925B-10**	±.0002"	±.0002"	1.4N or less	✔
.0005"	.05"	.02"	0-10-0	**1923**	**1923B**	±.0005"	±.0005"	1.4N or less	—
.001"	.1"	.04"	0-20-0	**1921**	**1921B**	±.001"	±.001"	1.4N or less	—

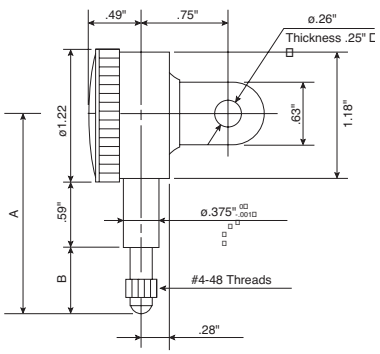
Metric Stem ø 8mm, M2.5 x 0.45 Thread — ISO/JIS type

Graduation	Range	Range/Rev	Dial reading	Order No. w/ lug	Order No. Flat-back	Accuracy First 2.5 Rev	Accuracy Overall Accuracy	Measuring force	Jeweled
0.002mm	0.5mm	0.2mm	0-100-0	**1913-10**	**1913B-10**	±0.011mm	±0.011mm	1.4N or less	✔
0.01mm	2.5mm	1mm	0-50-0	**1911**	**1911B**	±0.011mm	±0.011mm	1.4N or less	—

Jeweled bearing type

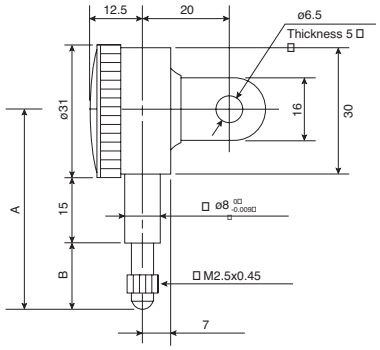
DIMENSIONS

Inch Model Unit: Inch



Order Number	A	B
1927-10	1.46"	.26"
1925-10	1.48"	.28"
1923	1.51"	.31"
1921	1.58"	.37"

Metric Model Unit: mm

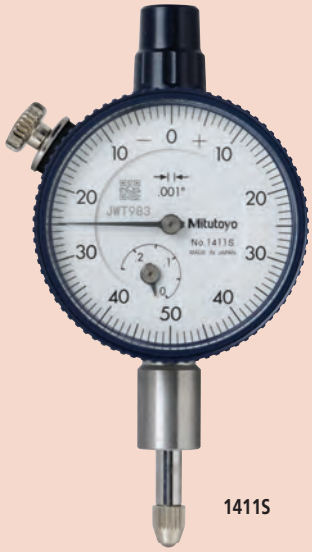


Order Number	A	B
1911	42	11.5
1913-10	39.5	9

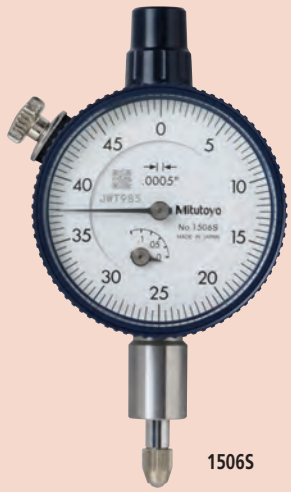
Dial Indicators

SERIES 1

1803S-10



1411S



1506S

SPECIFICATIONS

Inch Stem dia. 3/8" #4-48 UNF Thread ANSI/AGD type

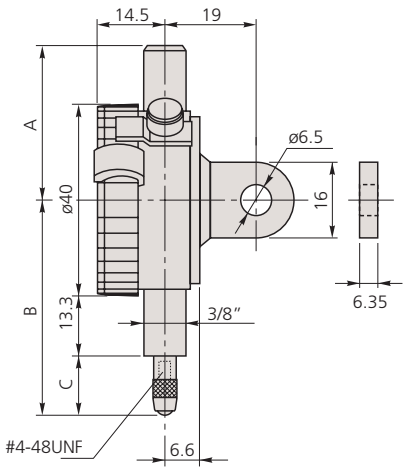
Graduation	Range	Range / Rev	Dial reading	Order No. (W/Lug)	Order No. (Flat-back)	Accuracy First 2.5 Rev	Accuracy Overall Accuracy	Measuring force	Shockproof	Jeweled bearing
.0001"	.025"	.01"	0-10	**1802S-10**	**1802SB-10**	±.0001"	±.0001"	1.4N or less	✔	✔
.0001"	.025"	.01"	0-5-0	**1803S-10**	**1803SB-10**	±.0001"	±.0001"	1.4N or less	✔	✔
.0005"	.1"	.04"	0-40	**1670S**	**1670SB**	±.0005"	±.0005"	1.4N or less		
.0005"	.1"	.04"	0-20-0	**1671S**	**1671SB**	±.0005"	±.0005"	1.4N or less		
.0005"	.125"	.05"	0-50	**1506S**	**1506SB**	±.0005"	±.0005"	1.4N or less		
.0005"	.125"	.05"	0-25-0	**1507S**	**1507SB**	±.0005"	±.0005"	1.4N or less		
.001"	.125"	.05"	0-50	**1780S**	**1780SB**	±.001"	±.001"	1.4N or less		
.001"	.125"	.025"	0-25-0	**1781S**	**1781SB**	±.001"	±.001"	1.4N or less		
.001"	.25"	.1"	0-100	**1410S**	**1410SB**	±.001"	±.001"	1.4N or less		
.001"	.25"	.1"	0-100	**1410S-10**	**1410SB-10**	±.001"	±.001"	1.4N or less		✔
.001"	.25"	.1"	0-50-0	**1411S**	**1411SB**	±.001"	±.001"	1.4N or less		

Shockproof type Jeweled bearing type

Metric Metric - ANSI Standard Stem dia. 3/8"#4-48 UNF Thread yellow dial face ANSI/AGD type

Graduation	Range	Range /Rev	Dial reading	Order No. (W/Lug)	Order No. (Flat-back)	Accuracy First 2.5 Rev	Accuracy Overall Accuracy	Measuring force
0.002mm	0.5mm	0.2mm	0-20	**1010S-11**	**1010SB-11**	±0.002mm	±0.002mm	1.5N or less
0.002mm	0.5mm	0.2mm	0-10-0	**1011S-11**	**1011SB-11**	±0.002mm	±0.002mm	1.5N or less
0.01mm	2.5mm	1mm	0-100	**1230S-01**	**1230SB-01**	±0.01mm	-	1.4N or less
0.01mm	2.5mm	1mm	0-50-0	**1231S-01**	**1231SB-01**	±0.01mm	-	1.4N or less
0.01mm	5mm	1mm	0-100	**1044S-01**	**1044SB-01**	±0.01mm	±0.013mm	1.4N or less
0.01mm	5mm	1mm	0-50-0	**1045S-01**	**1045SB-01**	±0.01mm	±0.013mm	1.4N or less

DIMENSIONS



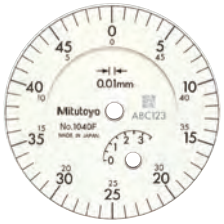
Unit: mm

Order No.	A	B	C
1802S(B)-10	32.5	43.4	9.6
1803S(B)-10	32.5	43.4	9.6
1670S(B)	32.5	44.2	10.4
1671S(B)	32.5	44.2	10.4
1506S(B)	32.5	45.2	11.4
1507S(B)	32.5	45.2	11.4
1780S(B)	32.5	45.2	11.4
1781S(B)	32.5	45.2	11.4
1410S(B)	32.5	48.7	14.9
1410S(B)-10	32.5	48.7	14.9
1411S(B)	32.5	48.7	14.9
1230S(B)-01	32.5	44.2	10.4
1231S(B)-01	32.5	44.2	10.4
1044S(B)-01	32.5	46.7	12.9
1045S(B)-01	32.5	46.7	12.9

Mitutoyo

Dial Indicators

SERIES 1



1040S

1013S

1045S

1109S-10

Metric Stem ø 8mm M2.5 X 0.45 Thread

ISO/JIS type

Graduation	Range	Range / Rev	Dial reading	Order No. (W/Lug)	Order No. (Flat-back)	Accuracy First 2.5 Rev	Accuracy Overall Accuracy	Measuring force	Shockproof	Waterproof	Jeweled bearing
0.001mm	1mm	0.2mm	0-100-0	**1109S-10**	**1109SB-10**	±0.001mm	±0.007mm	1.5N or less	✔		✔
0.002mm	1mm	0.2mm	0-100-0	**1013S-10**	**1013SB-10**	±0.002mm	±0.01mm	1.5N or less	✔		✔
0.005mm	3.5mm	0.5mm	0-50	**1124S**	**1124SB**	±0.005mm	±0.013mm	1.4N or less			✔
0.01mm	3.5mm	0.5mm	0-50-0	**1040S**	**1040SB**	±0.01mm	±0.013mm	1.5N or less			
0.01mm	3.5mm	0.5mm	0-25-0	**1041S**	**1041SB**	±0.01mm	±0.013mm	1.5N or less			
0.01mm	4mm	1mm	0-50-0	**1003**	**1003B**	±0.01mm	±0.013mm	1.5N or less			
0.01mm	5mm	1mm	0-100	**1044S**	**1044SB**	±0.01mm	±0.013mm	1.5N or less			
0.01mm	5mm	1mm	0-100	**1044S-60**	**1044SB-60**	±0.01mm	±0.013mm	2N or less		✔	
0.01mm	5mm	1mm	0-100	**1044S-10**	**1044SB-10**	±0.01mm	±0.013mm	.4N or less	✔		
0.01mm	5mm	1mm	0-50	**1045S**	**1045SB**	±0.01mm	±0.013mm	1.4N or less			

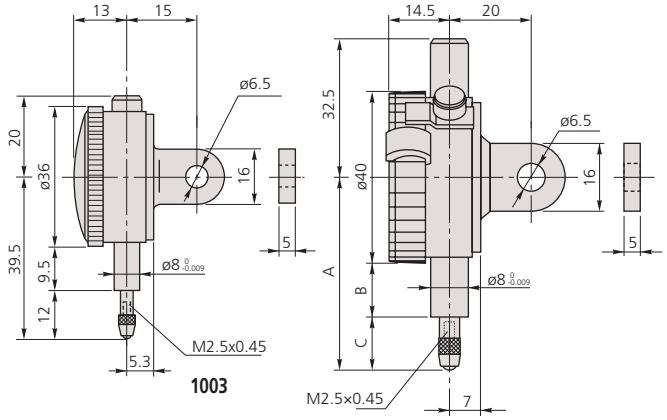
Shockproof type Waterproof type Jeweled bearing type

1003

DIMENSIONS

Unit: mm

ISO/JIS Type



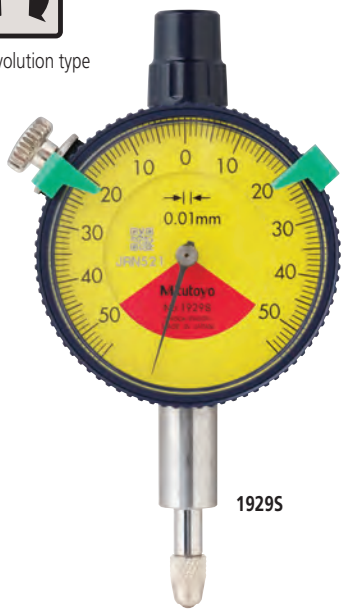
Order No.	A	B	C
1040S	46	13	12.5
1041S	46	13	12.5
1044S	47.5	13	14
1044S-10	47.5	13	14
1044S-60	57	11.5	25
1045S	47.5	13	14
1124S	46	13	12.5
1013S	49	13	15.5
1109S	49	13	15.5

1044S

Dial Indicators

SERIES 1 — Compact One Revolution Type for Error-free Reading

One revolution type

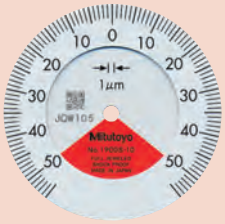


1929S

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
An unique shock-proof mechanism is incorporated, providing improved immunity to shock due to sudden spindle retraction caused by high impact.

Shockproof type
Dustproof type
Waterproof type
Jeweled bearing type

1929S
1929S-62



1900S-10
1900S-72

SPECIFICATIONS

Inch

Stem dia. 3/8", #4-48 UNF Thread

ANSI/AGD type

Graduation	Range (range/full stroke)	Dial reading	Order No. w/lug	Order No. Flat-back	Accuracy	Measuring force			—	—
.0001"	.006" / .0079"	3-0-3	**1910S-72**	**1910SB-72**	±.0001"	1.4N or less	✔	✔	—	—
.0005"	.04" / .055"	20-0-20	**1909S-62**	**1909SB-62**	±.0005"	1.4N or less	✔	✔	—	—

Metric

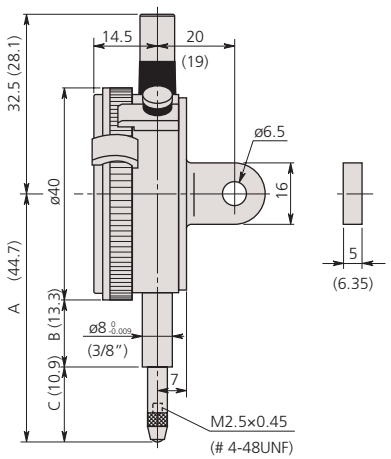
Stem ø 8mm, M2.5 x 0.45 Thread

ISO/JIS type

Graduation	Range (range/full stroke)	Dial reading	Order No. w/lug	Order No. Flat-back	Accuracy	Measuring force				
0.001mm	0.1mm / 0.14mm	50-0-50	**1900S-10**	**1900SB-10**	±0.005mm	1.5N or less	✔	—	—	✔
0.001mm	0.1mm / 0.14mm	50-0-50	**1900S-72**	**1900SB-72**	±0.006mm	1.5N or less	✔	✔	—	✔
0.01mm	1mm / 1.4mm	50-0-50	**1929S**	**1929SB**	±0.011mm	1.4N or less	✔	—	—	—
0.01mm	1mm / 1.4mm	50-0-50	**1929S-62**	**1929SB-62**	±0.011mm	1.4N or less	✔	✔	—	—

DIMENSIONS

Unit: mm



Order No.	A	B	C
1929S	47.5	13.8	13.7
1929S-62	47.5	13.8	13.7
1900S-10	53.5	16.8	16.7
1900S-72	53.5	16.8	16.7

( ): ANSI / AGD type

Optional Accessories

———: Backs (See page F-33.)
———: Contact points (See page F-34.)

Dial Indicators

SERIES 2 — Standard One Revolution Type for Error-free Reading

One revolution type.

Shockproof type | Waterproof type | Dustproof type | Jeweled bearing type

SPECIFICATIONS

Metric Stem ø 8mm, M2.5 x 0.45 Thread

ISO/JIS type

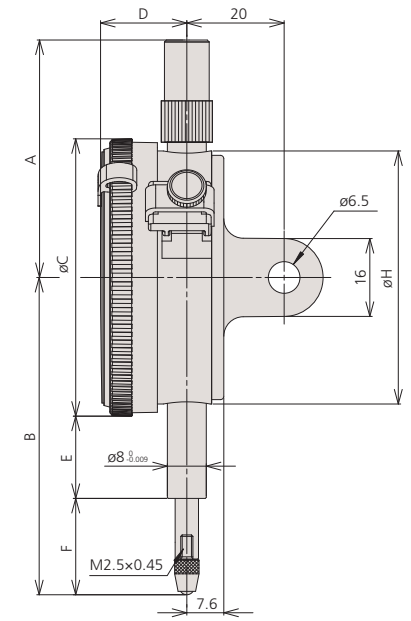
Graduation	Range (range/full stroke)	Dial reading	Order No. w/ lug	Order No. Flat-back	Accuracy	Measuring force				
0.001mm	0.08mm / 0.1mm	40-0-40	**2900S-10**	**2900SB-10**	±0.003mm	1.4N or less	✔	—	—	✔
0.001mm	0.08mm / 0.1mm	40-0-40	**2900S-70**	**2900SB-70**	±0.003mm	2.0N or less	✔	✔	—	✔
0.001mm	0.08mm / 0.1mm	40-0-40	**2900S-72**	**2900SB-72**	±0.003mm	2.0N or less	✔	—	✔	✔
0.001mm	0.16mm / 0.2mm	80-0-80	**2901S-10**	**2901SB-10**	±0.004mm	1.4N or less	✔	—	—	✔
0.01mm	0.8mm / 1mm	40-0-40	**2929S**	**2929SB**	±0.009mm	2.0N or less	✔	—	—	—
0.01mm	0.8mm / 1mm	40-0-40	**2929S-60**	**2929SB-60**	±0.009mm	2.0N or less	✔	✔	—	—
0.01mm	0.8mm / 1mm	40-0-40	**2929S-62**	**2929SB-62**	±0.009mm	2.0N or less	✔	—	✔	—
0.01mm	1.6mm / 2mm	80-0-80	**2959S**	**2959SB**	±0.013mm	1.4N or less	✔	—	—	—
0.01mm	0.5mm / 0.7.mm	25-0-25	—	**2971***	±0.010mm	1.4N or less	✔	—	✔	—
0.01mm	1mm / 1.4mm	50-0-50	—	**2972***	±0.012mm	1.4N or less	✔	—	✔	—
0.02mm	1.6mm / 2mm	80-0-80	—	**2973***	±0.016mm	1.4N or less	✔	—	✔	—
0.1mm	4mm / 10mm	2-0-2	**2928S**	**2928SB**	±0.040mm	1.4N or less	✔	—	—	—

* Flat back type only. (Lug-on-center back is not available.)

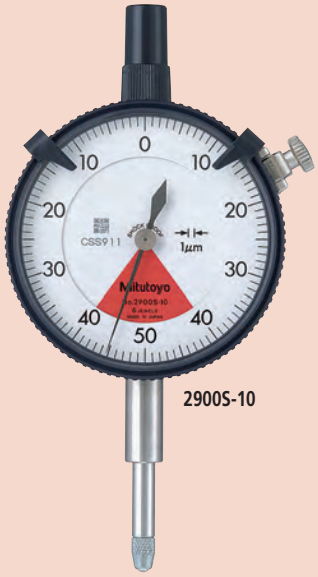
DIMENSIONS

ISO/JIS Type

Unit: mm

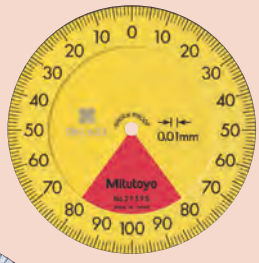


Order No.	A	B	C	D	E	F	H
2971	43.2	65.6	55.6	16.2	21	16.8	55
2972	43.2	66.0	55.6	16.2	21	17.2	55
2973	43.2	66.3	55.6	16.2	21	17.5	55
2929S	48.8	65.2	57	17.7	12.3	29.2	52
2929S-62	48.8	65.2	57	17.7	16.9	19.8	52
2929S-60	48.8	70	57	17.7	12.3	29.2	52
2959S	48.8	65.2	57	17.7	16.9	19.8	52
2900S-10	48.8	66	57	17.7	16.9	20.6	52
2900S-72	48.8	66	57	17.7	16.9	20.6	52
2900S-70	48.8	67	57	17.7	12.3	26.2	52
2901S-10	48.8	66.1	57	17.7	16.9	20.7	52
2928S	48.8	65.2	57	17.7	16.9	19.8	52



2900S-10

2929S
2929S-60
2929S-62



2959S

2900S-10
2900S-70
2900S-72

2901S-10

Optional Accessories

———: Backs (See page F-33.)
———: Contact points (See page F-34.)

Dial Indicators

SERIES 2 — Standard One Revolution Type for Error-free Reading

PROPRIETARY INSPECTION CERTIFICATE
Mitutoyo guarantees the product quality.

2909S-62

2978

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).

One revolution type.

SPECIFICATIONS

Inch Stem 3/8" dia. , #4-48 UNF Thread — ANSI/AGD type

Graduation	Range	Range/full stroke	Dial reading	Order No.		Accuracy	Measuring force			
				w/ lug	Flat-back					
.0001"	.008"	.01"	4-0-4	**2910S-10**	**2910SB-10**	±.0001"	1.8N or less	✔		✔
.0001"	.008"	.01"	4-0-4	**2910S-72**	**2910SB-72**	±.0001"	2.5N or less	✔	✔	✔
.0005"	.04"	.05"	20-0-20	**2909S-62**	**2909SB-62**	±.0005"	2.5N or less	✔	✔	
.0005"	.02"	.028"	10-0-10	—	**2976***	±.0005"	1.4N or less	✔	✔	
.0005"	.04"	.055"	20-0-20	—	**2977***	±.0005"	1.4N or less	✔	✔	
.001"	.06"	.079"	30-0-30	—	**2978***	±.001"	1.4N or less	✔	✔	

*Flat back type only. (Lug-on-center back is not available.)

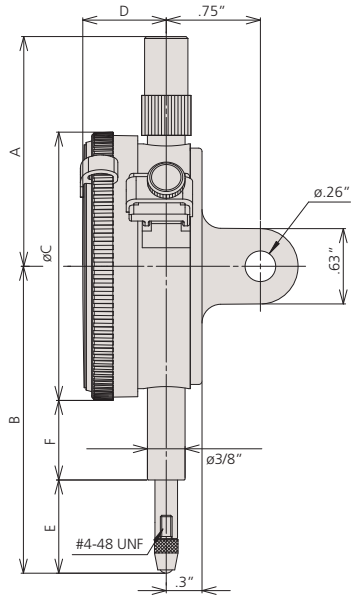
Metric Stem 3/8" dia. , #4-48 UNF Thread Yellow Dial Face — ANSI/AGD type

Graduation	Range	Range/full stroke)	Dial reading	Order No.		Accuracy	Measuring force			
				w/ lug	Flat-back					
0.001mm	0.08mm	0.1mm	40-0-40	**2900S-73**	**2900SB-73**	±0.003mm	2.0N or less	✔	✔	✔

*Flat back type only. (Lug-on-center back is not available.)

DIMENSIONS

Unit: inch



Order No.	A	B	C	D	E	F
2976	1.70	2.55	2.19	.64	.62	.83
2977	1.70	2.56	2.19	.64	.64	.83
2978	1.70	2.57	2.19	.64	.65	.83
2909S-62	1.92	2.04	2.24	.7	.36	.54
2910S-10	1.92	2.02	2.24	.7	.36	.54
2910S-72	1.92	2.02	2.24	.7	.36	.54
2900S-73	1.92	1.99	2.24	.7	.33	.54

Mitutoyo

Special Dial Indicators

SERIES 2

Adjustable hand

2048S-10

Adjustable hand dial gauge

The hand position can be adjusted independently of the vertical movement of the spindle by rotating the top knob.

Peak hold

2046S-80

Peak hold type dial gauge

A mechanism that stops the pointer and the spindle at the depressed position where the spindle is depressed makes the pointer stop and display the maximum value.

Double-face type

2940S

Double-face type dial gauge

The displacement of the spindle can be read from either the front or rear face.

SPECIFICATIONS

Inch — Stem dia. 3/8" #4-48 UNF Thread — ANSI/AGD type

Graduation	Range	Range /rev	Dial reading	Order No. w/lug	Order No. Flat-back	Accuracy First 2.5 Rev	Accuracy Overall Accuracy	Measuring force	◆		
.001″	.5″	.1″	0-100	**2915S-10**	**2915SB-10**	±.001″	±.001″	1.8N or less	✔	✔	✔
.001″	.5″	.1″	0-50-0	**2918S-10**	**2918SB-10**	±.001″	±.001″	1.8N or less	✔	✔	✔

Metric — Stem dia. 3/8" #4-48 UNF Thread, Yellow Dial Face — ANSI/AGD type

Graduation	Range	Range /rev	Dial reading	Order No. w/lug	Order No. Flat-back	Accuracy First 2.5 Rev	Accuracy Overall	Measuring force	◆		
0.01mm	10mm	1mm	0-100	**2048S-11**	**2048SB-11**	±13µm	±0.013mm	1.4N or less	✔	✔	✔

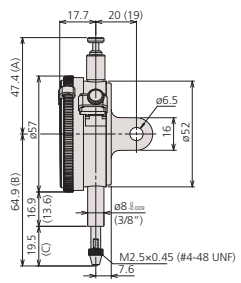
Metric — Stem ø 8mm, M2.5 x 0.45 Thread — ISO/JIS type

Graduation	Range	Range /rev	Dial reading	Order No. w/lug	Order No. Flat-back	Accuracy	Measuring force	◆			STOP	
0.01mm	10mm	1mm	0-100	**2048S-10**	**2048SB-10**	±0.015mm	1.4N or less	✔	✔	✔		
0.01mm	10mm	1mm	0-100	**2046S-80**	**2046SB-80**	±0.015mm	5.0N or less				✔	
0.01mm	10mm	1mm	0-100	**2940S**	—	±0.015mm	3.0N or less					✔

DIMENSIONS

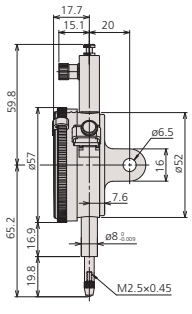
Unit: mm

Order No.	A	B	C
2915S-10, 2918S-10	52.2	64.1	22
2048S-11	47.7	59.5	17.4



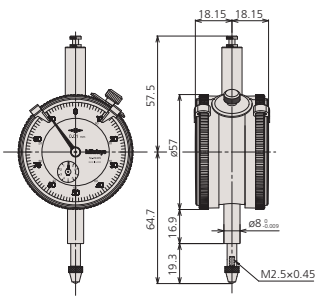
( ): ANSI / AGD Type

2048S-10



2046S-80

Unit: mm



2940S

Dial Indicators

SERIES 2 — Standard Type, Inch Reading

2416S

2803S-10

Optional Accessories

———: Backs (See page F-33.)
———: Contact points (See page F-34.)

SPECIFICATIONS

Inch Stem 3/8" dia. ø8mm #4-48 UNF Thread ANSI/AGD type

Graduation	Range	Range /Rev	Dial Reading	Order No.		Accuracy		Measuring force			
				w/lug	Flat-back	First 2.5 Rev	Overall				
.0001"	.025"	.01"	0-10	**2802S-10**	**2802SB-10**	±.0001"	±.0001"	2.5N or less	✔		✔
.0001"	.025"	.01"	0-5-0	**2803S-10**	**2803SB-10**	±.0001"	±.0001"	2.5N or less	✔		✔
.0001"	.05"	.01"	0-10	**2804S-10**	**2804SB-10**	±.0001"	±.0002"	2.0N or less	✔		✔
.0001"	.05"	.01"	0-5-0	**2805S-10**	**2805SB-10**	±.0001"	±.0002"	2.0N or less	✔		✔
.0001"	.05"	.01"	10-0	**2905S-10**	**2905SB-10**	±.0001"	±.0002"	2.0N or less	✔	✔	✔
.0001"	.05"	.01"	0-5-0	**2923S-10**	**2923SB-10**	±.0001"	±.0002"	2.0N or less	✔		✔
.0001"	.25"	.01"	0-10	**2356S-10**	**2356SB-10**	±.0001"	±.0005"	2.0N or less			✔
.0001"	.5"	.01"	0-10	**2358S-10**	**2358SB-10**	±.0001"	±.0008"	2.0N or less			✔
.0005"	.125"	.05"	0-50	**2506S**	**2506SB**	±.0005"	±.0005"	1.8N or less			
.0005"	.125"	.05"	0-25-0	**2507S**	**2507SB**	±.0005"	±.0005"	1.8N or less			
.0005"	.125"	.05"	0-25-0	**2922S**	**2922SB**	±.0005"	±.0005"	1.8N or less			
.0005"	.5"	.05"	0-50	**2514S**	**2514SB**	±.0005"	±.0015"	1.8N or less			
.0005"	1"	.05"	0-50	**2776S**	**2776SB**	±.0005"	±.002"	2.5N or less			
.001"	.5"	.1"	0-100	**2414S**	**2414SB**	±.001"	±.001"	1.8N or less			
.001"	.5"	.1"	0-50-0	**2415S**	**2415SB**	±.001"	±.001"	1.8N or less			
.001"	1"	.1"	0-100	**2416S**	**2416SB**	±.001"	±.002"	1.8N or less			
.001"	1"	.1"	0-100	**2416S-06***	**2416SB-06***	±.001"	±.002"	1.8N or less			
.001"	1"	.1"	0-100	**2416S-10**	**2416SB-10**	±.001"	±.002"	1.8N or less			✔
.001"	1"	.1"	0-50-0	**2417S**	**2417SB**	±.001"	±.002"	1.8N or less			
.001"	1"	.1"	100-0	**2904S**	**2904SB**	±.001"	±.002"	1.8N or less		✔	
.001"	2"	1"	0-100	**2424S-19**	**2424SB-19**	±.001"	±.003"	2.5N or less	✔		✔

* Black Face

Shockproof type Reverse reading type Jeweled bearing type

Dial Indicators

SERIES 2 — Standard Type, Inch Reading

2506S

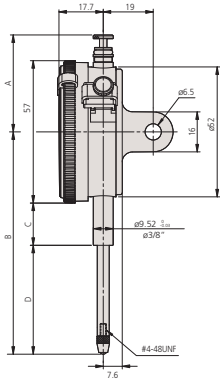
2923S-10

2424S-19

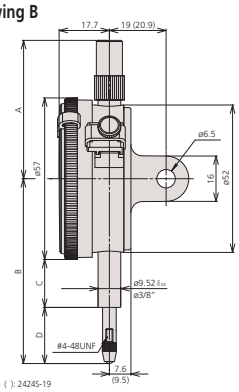
DIMENSIONS

Unit: mm

Drawing A



Drawing B



2 Group Inch

Order No.	A	B	C	D	Drawing
2356S(B)-10	48.8	57.2	13.6	15.1	B
2358S(B)-10	38.9	63.6	13.6	21.5	A
2414S(B)	38.9	64.1	13.6	22	A
2415S(B)	38.9	64.1	13.6	22	A
2416S(B)	38.9	76.8	13.6	34.7	A
2416S(B)-06	38.9	76.8	13.6	34.7	A
2416S(B)-10	38.9	76.8	13.6	34.7	A
2417S(B)	38.9	76.8	13.6	34.7	A
2424S(B)-19	118.5	142.5	54.3	59.7	B
2506S(B)	48.8	54.3	13.6	12.2	B
2507S(B)	48.8	54.3	13.6	12.2	B
2514S(B)	38.9	64.1	13.6	22	A

Order No.	A	B	C	D	Drawing
2776S(B)	38.9	76.8	13.6	34.7	A
2802S(B)-10	48.8	51.4	13.6	9.3	B
2803S(B)-10	48.8	51.4	13.6	9.3	B
2804S(B)-10	48.8	51.7	13.6	9.6	B
2805S(B)-10	48.8	51.7	13.6	9.6	B
2904S(B)	38.9	76.8	13.6	34.7	A
2905S(B)-10	48.8	51.7	13.6	9.6	B
2914S(B)	38.9	64.1	13.6	22	A
2915S(B)-10	52.2	63.3	13.6	21.2	A
2918S(B)-10	52.2	63.3	13.6	21.2	A
2922S(B)	48.8	54.3	13.6	12.2	B
2923S(B)-10	48.8	51.7	13.6	9.6	B

2046S

2046S-60

Dial Indicators

SERIES 2 — Metric Standard Type

Series 2 dial indicators are Mitutoyo's most popular, and have the widest application.

FEATURES

- Standard 0.01mm graduation dial gauges having an outer frame with an outside diameter of 57mm. All types come with limit pins and an outer frame clamp as standard.
- The outer clamp and lifting lever (optional) can be attached to either the right or left side. These parts can be easily installed and removed without tools.
- Secured adhesion between the outer frame and crystal as well as the use of an O-ring ensure countermeasures against water and oil permeation via the front face.
- The stem spindle is made of high-strength quench-hardened stainless steel which resists strenuous use.
- A carbide contact point is used.
- The grand gear uses stainless steel that is resistant to wear and deformation.
- Application of a hard coating on the surface of the crystal makes the gauge highly scratch- and chemical-resistant.

Shockproof type | Waterproof type | Long stem type | Jeweled bearing type
Double scale spacing type | w/ coaxial revolution counter | Reverse reading type | w/ damper at lowest rest point

2046S
2046SH
2046S-09
2046S-15
2046S-80
2046SLB

2046SY

2046S-60
2046S-69

2047S

SPECIFICATIONS

Metric — Stem dia. ø8mm M2.5 x 0.45 Thread

ISO/JIS type

Graduation	Range	Range / Rev	Dial reading	Order No. w/ lug	Order No. Flat-back	Accuracy	Measuring force								
0.001mm	1mm	(0.1mm)	0-100	**2110S-10**	**2110SB-10**	±0.005mm	1.5N or less	✔			✔	✔			
0.001mm	1mm	(0.1mm)	0-100	**2110S-70**	**2110SB-70**	±0.005mm	2.0N or less	✔	✔		✔	✔			
0.001mm	1mm	(0.2mm)	0-100-0	**2109S-10**	**2109SB-10**	±0.005mm	1.5N or less	✔			✔				
0.001mm	1mm	(0.2mm)	0-100-0	—	**2109SLB-10**	±0.005mm	1.5N or less	✔		✔	✔				
0.001mm	1mm	(0.2mm)	0-100-0	**2109S-70**	**2109SB-70**	±0.005mm	2.0N or less	✔	✔		✔				
0.001mm	2mm	(0.2mm)	0-100-0	**2113S-10**	**2113SB-10**	±0.007mm	1.5N or less	✔			✔				
0.001mm	5mm	(0.2mm)	0-100-100	**2118S-10**	**2118SB-10**	±0.010mm	1.5N or less				✔				
0.001mm	5mm	(0.2mm)	0-100-0	**2119S-10**	**2119SB-10**	±0.010mm	1.5N or less				✔				
0.005mm	5mm	(0.5mm)	0-50	**2124S-10**	**2124SB-10**	±0.012mm	1.5N or less				✔				
0.01mm	5mm	(1mm)	0-100	**2044S**	**2044SB**	±0.012mm	1.4N or less								
0.01mm	5mm	(1mm)	0-100	**2044S-09**	**2044SB-09**	±0.013mm	1.4N or less	✔							
0.01mm	5mm	(1mm)	0-100	**2044S-60**	**2044SB-60**	±0.012mm	2.5N or less		✔						
0.01mm	5mm	(1mm)	0-50-0	**2045S**	**2045SB**	±0.012mm	1.4N or less							✔	
0.01mm	10mm	(1mm)	0-100	**2046S**	**2046SB**	±0.013mm	1.4N or less								
0.01mm	10mm	(1mm)	0-100	**2046SY**	**2046SYB**	±0.013mm	1.4N or less								
0.01mm	10mm	(1mm)	0-100	**2046SH**	**2046SHB**	±0.08mm	1.4N or less								
0.01mm	10mm	(1mm)	0-100	—	**2046SLB**	±0.013mm	1.4N or less			✔					
0.01mm	10mm	(1mm)	0-100	**2046S-09**	**2046SB-09**	±0.015mm	1.4N or less	✔							
0.01mm	10mm	(1mm)	0-100	**2046S-60**	**2046SB-60**	±0.013mm	2.5N or less		✔						
0.01mm	10mm	(1mm)	0-100	**2046S-69**	**2046SB-69**	±0.015mm	2.5N or less	✔	✔						
0.01mm	10mm	(1mm)	0-100	**2046S-15**	**2046SB-15**	±0.013mm	0.8N or less*				✔				
0.01mm	10mm	(1mm)	0-100	**2310S-10**	**2310SB-10**	±0.015mm	1.4N or less				✔		✔		
0.01mm	10mm	(1mm)	100-0	**2902S**	**2902SB**	±0.013mm	1.4N or less							✔	
0.01mm	10mm	(1mm)	0-50-0	**2047S**	**2047SB**	±0.013mm	1.4N or less								
0.01mm	20mm	(1mm)	0-100	**2050S**	**2050SB**	±0.020mm	2.0N or less								✔
0.01mm	20mm	(1mm)	0-100	**2050S-60**	**2050SB-60**	±0.020mm	2.5N or less		✔						
0.01mm	20mm	(1mm)	0-100	**2050S-19**	**2050SB-19**	±0.020mm	2.0N or less	✔			✔				✔
0.01mm	20mm	(1mm)	0-100	**2320S-10**	**2320SB-10**	±0.020mm	2.0N or less				✔		✔		✔
0.01mm	30mm	(1mm)	0-100	**2052S**	**2052SB**	±0.025mm	2.5N or less								✔
0.01mm	30mm	(1mm)	0-100	**2052S-19**	**2052SB-19**	±0.025mm	2.5N or less	✔			✔				✔
0.01mm	30mm	(1mm)	0-100	**2330S-10**	**2330SB-10**	±0.025mm	2.5N or less				✔		✔		✔
0.01mm	30mm	(1mm)	100-0	**2952S**	**2952SB**	±0.025mm	2.5N or less							✔	✔

*Use in a vertical position only (contact point downward).

Mitutoyo

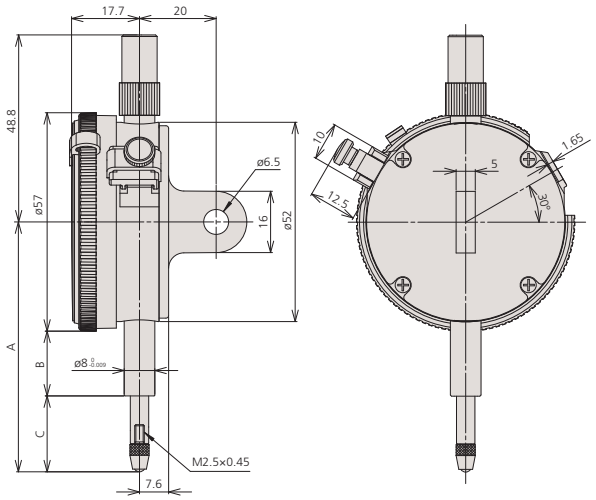
Dial Indicators

SERIES 2 — Metric Standard Type

DIMENSIONS

ISO/JIS Type

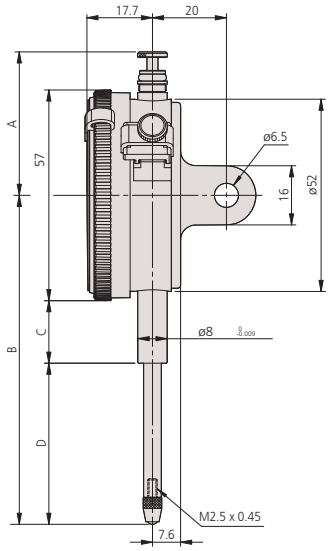
Unit: mm



Order No.	A	B	C
2124S-10	60.3	16.9	14.9
2110S-10	66.5	16.9	21.1
2110S-70	67.5	12.3	26.7
2109S-10	60.5	16.9	15.1
2109S-70	65.3	12.3	24.5
2113S-10	61	16.9	15.6
2118S-10	60.3	16.9	14.9
2119S-10	60.3	16.9	14.9
2044S	65.2	16.9	19.8
2044S-09	65.2	16.9	19.8
2044S-60	70	12.3	29.2
2045S	65.2	16.9	19.8
2046S	65.2	16.9	19.8
2046SH	65.2	16.9	19.8
2046SLB	85.2	36.9	19.8
2046S-09	65.2	16.9	19.8
2046S-60	70	12.3	29.2
2046S-69	70	12.3	29.2
2046S-15	65.2	16.9	19.8
2310S-10	65.2	16.9	19.8
2902S	65.2	16.9	19.8
2047S	65.2	16.9	19.8

ISO/JIS Type

Unit: mm



Order No.	A	B	C	D
2050S	38.8	75.2	16.9	29.8
2050S-60	59.8	87.2	12.3	46.4
2050S-19	38.8	75.2	16.9	29.8
2320S-10	38.8	75.2	16.9	29.8
2052S	38.8	88.7	16.9	43.3
2052S-19	38.8	88.7	16.9	43.3
2330S-10	38.8	88.7	16.9	43.3
2952S	38.8	88.7	16.9	43.3

Mitutoyo guarantees the product quality.
PROPRIETARY INSPECTION CERTIFICATE
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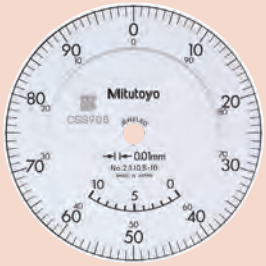
2902S



2310S-10

2044S
2044S-60
2044S-09

2045S

Optional Accessories

———: Backs (See page F-33.)
———: Contact points (See page F-34.)

Dial Indicators

SERIES 2 — ANSI / AGD Type Metric Dial Indicator

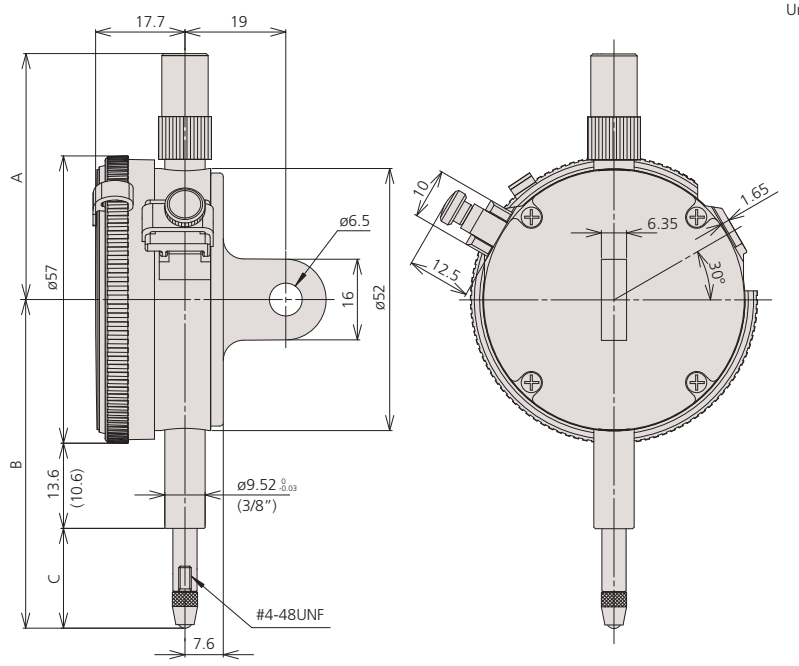
SPECIFICATIONS

Metric Stem dia. 3/8", #4-48 UNF Thread Yellow Dial Face ANSI/AGD type

Graduation	Range	Range / Rev	Dial reading	Order No. w/ lug	Order No. Flat-back	Accuracy First 2.5 Rev	Accuracy Overall	Measuring force				
0.001mm	1mm	0.2mm	0-100-0	**2109S-11**	**2109SB-11**	±0.003mm	±0.004mm	1.5N or less	✔	✔		
0.001mm	5mm	0.2mm	0-100-0	**2119S-11**	**2119SB-11**	±0.007mm	±0.01mm	1.5N or less	✔			
0.01mm	2.5mm	1mm	0-100	**2230S-01**	**2230SB-01**	±0.01mm	±0.01mm	1.4N or less				
0.01mm	2.5mm	1mm	0-50-0	**2231S-01**	**2231SB-01**	±0.01mm	±0.01mm	1.4N or less				
0.01mm	5mm	1mm	0-100	**2044S-01**	**2044SB-01**	±0.01mm	±0.01mm	1.4N or less				
0.01mm	10mm	1mm	0-100	**2046S-01**	**2046SB-01**	±0.01mm	±0.013mm	1.4N or less				
0.01mm	10mm	1mm	0-100	**2046S-11**	**2046SB-11**	±0.01mm	±0.013mm	1.4N or less	✔			
0.01mm	10mm	1mm	0-50-0	**2047S-01**	**2047SB-01**	±0.01mm	±0.013mm	1.4N or less				
0.01mm	10mm	1mm	0-50-0	**2047S-11**	**2047SB-11**	±0.01mm	±0.013mm	1.4N or less	✔			
0.01mm	10mm	1mm	100-0	**2902S-01**	**2902SB-01**	±0.01mm	±0.013mm	1.4N or less				
0.01mm	20mm	1mm	0-100	**2050S-01**	**2050SB-01**	±0.01mm	±0.02mm	2.0N or less				
0.01mm	20mm	1mm	0-100	**2050S-11**	**2050SB-11**	±0.01mm	±0.02mm	2.0N or less	✔			
0.01mm	25mm	1mm	0-100	**2056S-01**	**2056SB-01**	±0.01mm	±0.025mm	2.5N or less				

DIMENSIONS

Unit: mm



( ): water proof type

Order No.	A	B	C
2109S-11	48.8	51.4	9.3
2119S-11	48.8	55.8	13.7
2230S-01	48.8	53.6	11.5
2231S-01	48.8	53.6	11.5
2044S-01	48.8	56.1	14.0
2046S-01	48.8	61.1	19.0
2046S-11	48.8	61.1	19.0
2047S-01	48.8	61.1	19.0
2902S-01	48.8	61.1	19.0
2050S-01	38.8	71.1	29.0
2050S-11	38.8	71.1	29.0
2056S-01	38.8	76.1	34.0

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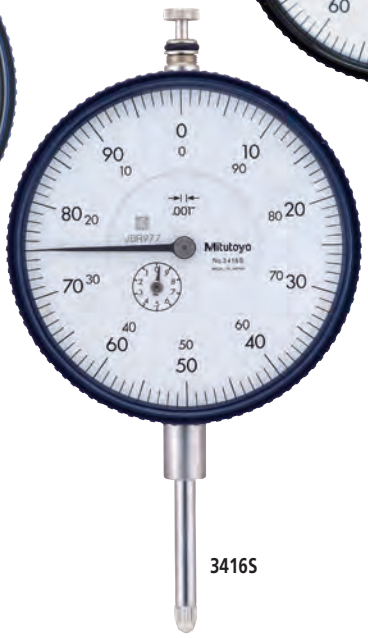
Dial Indicators

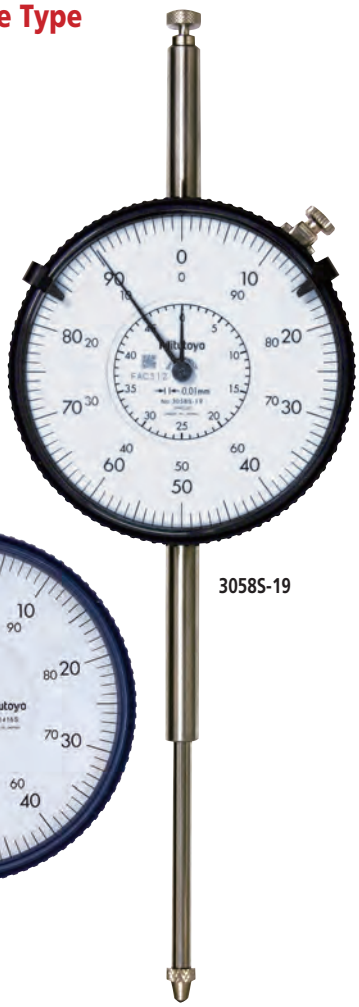
SERIES 3 — Large Dial Face and Long Stroke Type

- Dial gages with a large-diameter (78mm / 3.07") graduation face to ease reading.
- All types come with limit pins and an outer frame clamp as standard.

3109S-10



3416S



3058S-19

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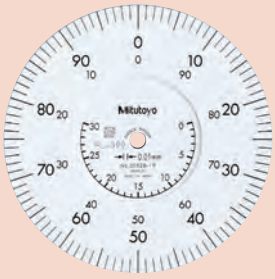
3046S

3047S

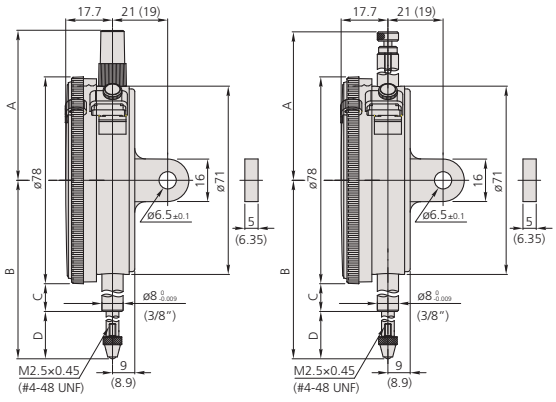
3050S



3052S-19

DIMENSIONS

Unit: mm



( ): ANSI / AGD Type

Order No.	A	B	C	D
3052S(B)-11	72.9	102.4	25.9	37.5
3058S(B)-11	81.9	147.1	50.6	57.5
3414S(B)	51.3	73.4	12.6	21.8
3415S(B)	51.3	73.4	12.6	21.8
3416S(B)	51.3	86.1	12.6	34.5
3417S(B)	51.3	86.1	12.6	34.5
3424S(B)-19	84	149.3	50.6	59.7
3426S(B)-19	120.9	198.1	73.9	85.2
3428S(B)-19	141.9	243.9	94.9	110.0
3802S(B)-10	61.2	59.7	12.6	8.1
3803S(B)-10	61.2	59.7	12.6	8.1
3046S(B)	61.2	75.5	15.9	20.6
3047S(B)	61.2	75.5	15.9	20.6
3050S(B)	52.6	94.0	25.9	29.1
3052S(B)-19	72.9	104.3	25.9	39.4
3060S(B)-19	120.9	202.3	73.9	89.4
3062S(B)-19	141.9	243.3	94.9	109.4
3109S(B)-10	61.2	79.3	25.9	14.1

Dial Indicators

SERIES 3 — Large Dial Face

SPECIFICATIONS

Inch

Stem 3/8" DIA. #4-48 UNF Thread

ANSI/AGD type

Graduation	Range	Range /rev	Dial reading	Order No.		Accuracy		Measuring force			
				W/ lug	Flat-back	First 2.5 Rev	Overall accuracy				
.0001"	.025"	.01"	0-10	**3802S-10**	**3802SB-10**	±.0001"	±.0001"	2.0N or less	✔	✔	
.0001"	.025"	.01"	0-5-0	**3803S-10**	**3803SB-10**	±.0001"	±.0001"	2.0N or less	✔	✔	
.001"	.5"	.1"	±0-100	**3414S**	**3414SB**	±.001"	±.001"	1.8N or less			
.001"	.5"	.1"	0-50-0	**3415S**	**3415SB**	±.001"	±.001"	1.8N or less			
.001"	1"	.1"	±0-100	**3416S**	**3416SB**	±.001"	±.002"	1.8N or less			
.001"	1"	.1"	0-50-0	**3417S**	**3417SB**	±.001"	±.002"	1.8N or less			
.001"	2"	.1"	±0-100	**3424S-19**	**3424SB-19**	±.001"	±.003"	3.0N or less	✔	✔	✔
.001"	3"	.1"	±0-100	**3426S-19**	**3426SB-19**	±.001"	±.005"	3.0N or less	✔	✔	✔
.001"	4"	.1"	±0-100	**3428S-19**	**3428SB-19**	±.001"	±.005"	3.2N or less	✔	✔	✔

Metric

Stem 3/8" DIA. #4-48 UNF Thread, Yellow dial face

ANSI/AGD type

Graduation	Range	Range /rev	Dial reading	Order No.		Accuracy		Measuring Force			
				W/ lug	Flat-back	First 2.5 Rev	Overall accuracy				
0.01mm	30mm	1mm	±0-100	**3052S-11**	**3052SB-11**	±0.01mm	±0.03mm	2.5N or less	✔		
0.01mm	50mm	1mm	±0-100	**3058S-11**	**3058SB-11**	±0.01mm	±0.04mm	3.0N or less	✔		✔

Metric

Stem ø 8mm M2.5x0.45 Thread

ISO/JIS type

Graduation	Range	Range /rev	Dial reading	Order No.		Accuracy	Measuring Force				
				W/ lug	Flat-back						
0.001mm	1mm	0.2mm	0-10-0	**3109S-10**	**3109SB-10**	±0.004mm	1.5N or less	✔	✔		
0.01mm	10mm	1mm	0-100	**3046S**	**3046SB**	±0.015mm	1.4N or less				
0.01mm	10mm	1mm	0-50-0	**3047S**	**3047SB**	±0.015mm	1.4N or less				
0.01mm	20mm	1mm	0-100	**3050S**	**3050SB**	±0.020mm	2.0N or less				✔
0.01mm	30mm	1mm	0-100	**3052S-19**	**3052SB-19**	±0.025mm	2.5N or less	✔	✔	✔	
0.01mm	50mm	1mm	0-100	**3058S-19**	**3058SB-19**	±0.035mm	3.0N or less	✔	✔	✔	
0.01mm	80mm	1mm	0-100	**3060S-19***	**3060SB-19***	±0.045mm	3.0N or less	✔	✔	✔	
0.01mm	100mm	1mm	0-100	**3062S-19***	**3062SB-19***	±0.050mm	3.2N or less	✔	✔	✔	

*use in a vertical position only

Shockproof type

w/ coaxial revolution counter

w/ damper at lowest rest point

Jeweled bearing type

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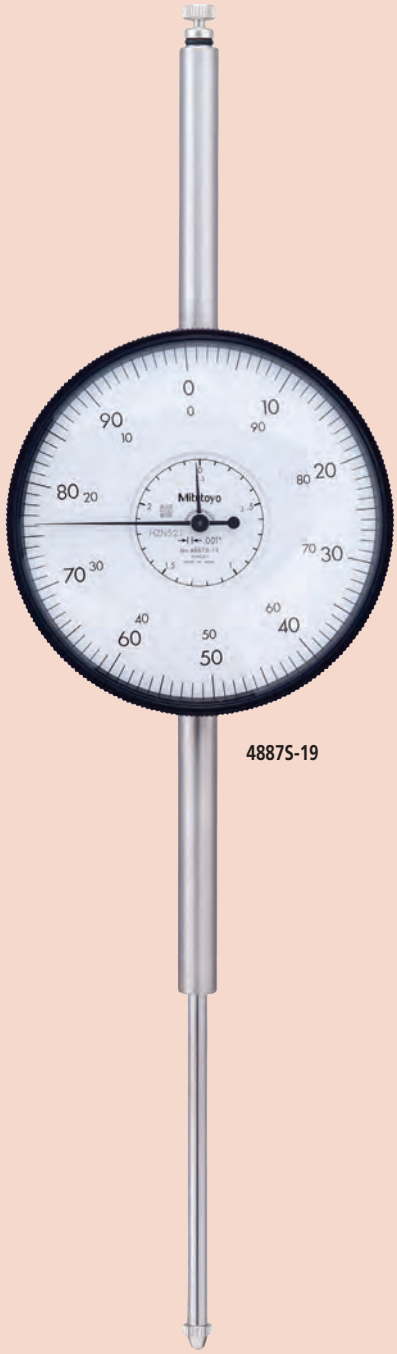
Dial Indicators

SERIES 4 — Large Dial Face

- Dial gauges with a large-diameter (92mm / 3.62") graduation face to ease reading.
- All types come with limit pins and an outer frame clamp as standard.

4046S



4887S-19

SPECIFICATIONS

Inch

Stem 3/8" DIA. #4-48 UNF Thread

ANSI/AGD type

Graduation	Range	Range /rev	Dial reading	Order No.		Accuracy		Measuring Force			
				W/ lug	Flat-back	First 2.5 Rev	Overall accuracy				
.001"	3"	.1"	±0-100	**4887S-19**	**4887SB-19**	±.001"	±.005"	3.0N or less	✔	✔	✔

Metric

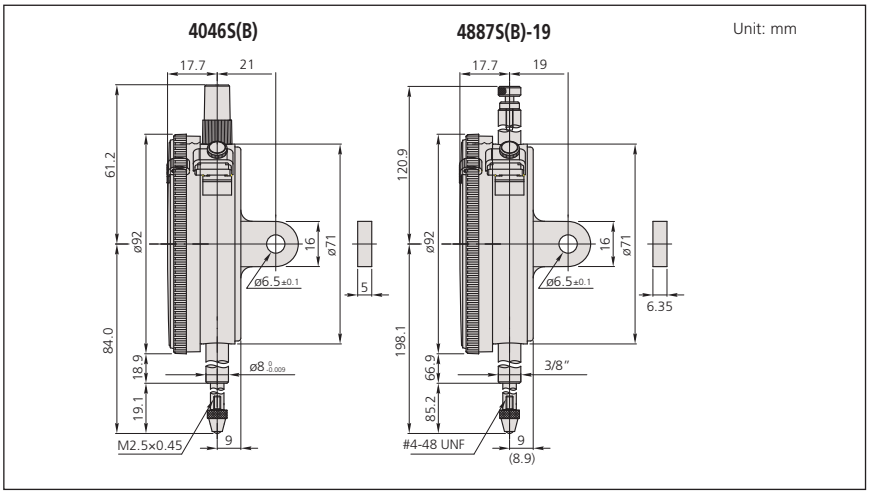
Stem ø 8mm M2.5x0.45 Thread

ISO/JIS type

Graduation	Range	Range /rev	Dial reading	Order No.		Accuracy		Measuring force		
				W/ lug	Flat-back	First 2.5 Rev	Overall accuracy			
0.01mm	10mm	1mm	0-100	**4046S**	**4046SB**	± 0.01mm	± 0.015mm	1.4N or less	✔	✔

DIMENSIONS

Unit: mm



Back Plunger Type Dial Indicators

SERIES 1 and 2

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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.

- Back plunger type dial gauges are suitable for mounting onto leveling machine tool tables or inspection jigs, and for use in small spaces where the graduations of standard dial gauges are difficult to see.
- Model No. 1960, which uses Mitutoyo's proprietary shock-proofing mechanism, has excellent durability and shock resistance.

One revolution type Shockproof type Jeweled bearing type

SPECIFICATIONS

Inch Series 1 Stem 3/8" dia. , #4-48 UNF Thread ANSI/AGD type

Graduation	Range	Range / Rev	Dial reading	Order No.	Accuracy	Measuring force			
.001″	.04″	.05″*	20-0-20	**1961**	±.001″	1.4N or less	✔	✔	
.001″	.2″	.05″	0-50	**1166**	±.001″	1.4N or less			
.001″	.2″	.05″	0-25-0	**1167**	±.001″	1.4N or less			
.001″	.2″	.05″	50-0	**1168**	±.001″	1.4N or less			✔

*Full stroke

Metric Series 1 Stem ø8mm, M2.5x0.45 Thread ISO/JIS type

Graduation	Range	Range / Rev	Dial reading	Order No.	Accuracy	Measuring force				Remarks
0.01mm	1mm	1.27mm*	50-0-50	**1960**	±0.014mm	1.4N or less	✔	✔		—
0.01mm	5mm	1mm	0-100	**1160**	±0.016mm	1.4N or less				—
0.01mm	5mm	1mm	100-0	**1162**	±0.016mm	1.4N or less			✔	—

Inch Series 2 Stem 3/8" dia. , #4-48 UNF Thread ANSI/AGD type

Graduation	Range	Range/full stroke	Dial reading	Order No.	Accuracy	Measuring force			
.0001″	.008″	.01″	4-0-4	**2991**	±.0002″	1.5N or less	✔	✔	✔
.0005″	.04″	.05″	20-0-20	**2961F**	±.0005″	1.8N or less	✔	✔	

Metric Series 2 Stem ø8mm, M2.5x0.45 Thread ISO/JIS type

Graduation	Range	Range/full stroke	Dial reading	Order No.	Accuracy	Measuring force			
0.001mm	0.1mm	0.14mm	50-0-50	**2990**	±0.0065mm	1.5N or less	✔	✔	✔
0.01mm	1mm	1.27mm	50-0-50	**2960F**	±0.014mm	1.4N or less	✔	✔	

Optional Accessories

136567: Holding bar (ø6mm, L=81mm)
136568: Holding bar (ø8mm, L=81mm)
124625: Holding bar (.25″ DIA, L=3.19″)

———: Backs (See page F-33.)
———: Contact points (See page F-34.)

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Back Plunger Type Dial Indicators

SERIES 1 and 2

1960

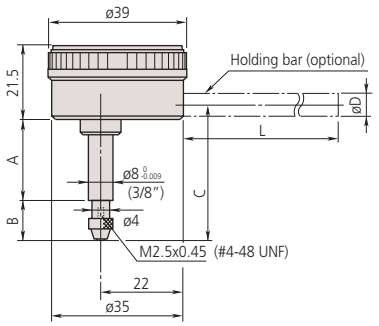
2960F

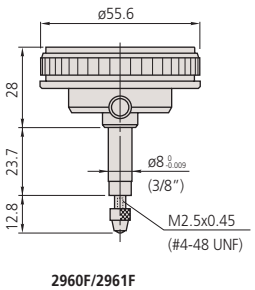
2991

DIMENSIONS

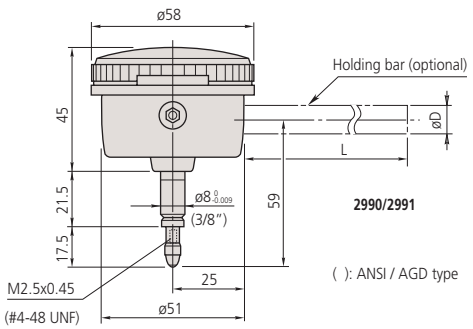
Unit: mm

Order No.	A	B	C
1160	25.0	13.8	43.3
1162	25.0	13.8	43.3
1166	25.0	13.0	42.5
1167	25.0	13.0	42.5
1168	25.0	13.0	42.5
1960	28.7	12.8	46.0
1961	25.0	10.9	40.4





2960F/2961F



2990/2991

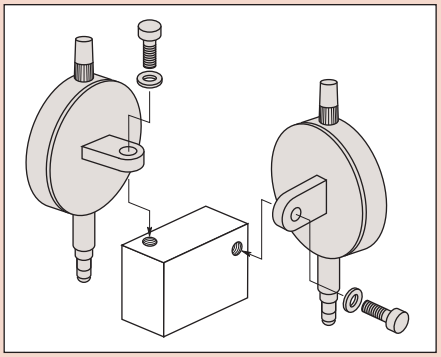
( ): ANSI / AGD type

Backs

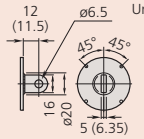
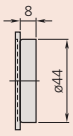
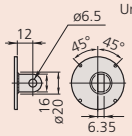
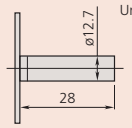
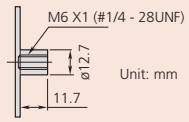
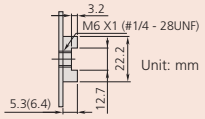
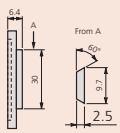
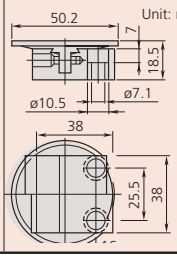
Optional Accessory for Digimatic and Dial Indicators

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.

Application



SPECIFICATIONS

Description		Order No.			
		Series 0 (ø31mm) 1003 (ø36mm)	Series 1 (ø41mm)	Series 2 (ø57mm)	Series 3, 4 (ø77, 91mm)
Flat Back	Unit: mm	**191559**: a=1.0 **137906**: for 1003 a=1.0	**101211**: a=2.2 **136872**: for water-proof type **191559**: for 1911, 1913-10	**101039**: a=2.5 **21AZB231**: for water-proof of S type	**100836**: a=3.0
Lug-on-Center Back	Unit: mm 	**190561**: Metric type **190139**: Inch type **137905**: for 1003	**101210**: metric type **101307**: inch type **190561**: for 1911, 1913-10	**101040**: metric type **101306**: inch type **21AZB230**: for water-proof of S type	**100691**: metric type **100797**: inch type
Magnetic Back	Unit: mm 	—	**Special order**	**900928**	**900929**
Back with Offset Lug	Unit: mm 	—	**Special order**	**101167**	**100837**
Back with Post	Unit: mm 	—	**193172**	**101169**	**100839**
Back with Screw Mount		—	**193173**: M6x1, **193174**: #1/4-28UNF,	**136023**: M6x1 **101170**: #1/4-28UNF	**136024**: M6x1 **100840**: #1/4-28UNF
Adjustable Back		—	**136025**: M6x1 **129721**: #1/4-28UNF	**136026**: M6x1 **101168**: 1/4-28UNF	**136027**: M6x1 **100838**: #1/4-28UNF
Back with Dovetail	Unit: mm 	—	—	**900008**	**Special order**
Back with Adjustable Bracket	Unit: mm 	—	—	**901963**: Set No. **129902**: Dovetail Rack Back **901964**: Dovetail bracket for rack back	—

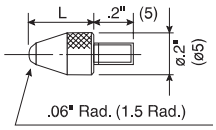
( ): ANSI / AGD Type

Mitutoyo

Contact Points

Optional Accessories for Digimatic and Dial Indicators and Linear Gages

ø.118" (ø3mm)Ball Point



4-48UNF

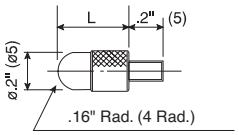
L	Carbide	Sapphire	Ruby	Plastic
.25"	**21BZB005***	—	—	—
.28"	—	—	—	**902018**
.3"	**131262**	**131263**	**131264**	—
.6"	**131265**	**131266**	**131267**	—
1"	**131268**	**131269**	**131270**	—

M2.5 x 0.45mm

L	Carbide	Sapphire	Ruby	Plastic
7.3mm	**901312***	—	—	**901994**
8mm	**120045**	**120046**	**120047**	—
15mm	**120049**	**120050**	**120051**	—
25mm	**120053**	**120054**	**120055**	—

*Furnished with standard metric dial indicators.

Shell type point



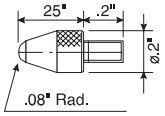
4-48UNF

L	Order No.
3/32"(.094")	**193697**
5/32"(.156")	**101184**
1/4"(.25")	**21AAA031**
3/8"(.375")	**21AAA032**
1/2"(.5")	**101185**
5/8"(.625")	**21AAA033**
3/4"(.75")	**101186**
7/8"(.875")	**21AAA034**
1"	**101187**
1 1/4"(1.25")	**21AAA035**
1 1/2"(1.5")	**21AAA036**
1 3/4"(1.75")	**21AAA037**
2"	**21AAA038**
2 1/4"(2.25")	**21AAA039**
2 1/2"(2.5")	**21AAA040**
2 3/4"(2.75")	**21AAA041**
3"	**21AAA042**

M2.5 x 0.45mm

L	Order No.
5mm	**101386**
10mm	**101118**
15mm	**137393**
20mm	**101387**
25mm	**101388**
30mm	**21AAA254**

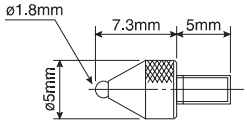
ø.16 Ball Point



4-48UNF

Order No.
900032

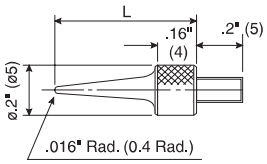
ø1.8mm Ball Point



M2.5 x 0.45mm

Order No.
101122

Needle point



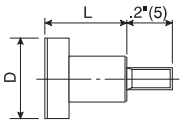
4-48UNF

L	Order No.
.6"	**21AAA030**
1"	**21AAA046**
11/2"	**21AAA047**
2"	**21AAA048**

M2.5 x 0.45mm

L	Order No.
15mm	**101121**
17mm	**137413**

Flat Point



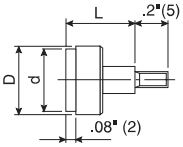
4-48UNF

D	L	Order No.
Ø1/2"	3/8"	**101188**
Ø3/8"	3/8"	**101189**

M2.5 x 0.45mm

D	L	Order No.
Ø10mm	10mm	**101117**

Flat Point, Carbide Tip



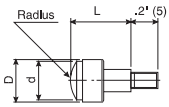
4-48UNF

D	d	L	Order No.
Ø.2"	Ø.17"	.2"	**131259**
Ø.27"	Ø.25"	.4"	**131260**
Ø.41"	Ø.37"	.4"	**131261**

M2.5 x 0.45mm

D	d	L	Order No.
Ø5.2mm	Ø4.3mm	5mm	**120041**
Ø7mm	Ø6.5mm	10mm	**120042**
,10.5mm	Ø9.5mm	10mm	**120043**

Spherical Point, Carbide Tip



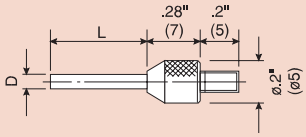
4-48UNF

D	d	Radius	L	Order No.
ø.2"	ø.17"	.2"	.2"	**131273**
ø.27"	ø.16"	.16"	.4"	**131274**
ø.41"	ø.37"	.4"	.4"	**131275**

M2.5 x 0.45mm

D	d	Radius	L	Order No.
ø5.2mm	ø4.3mm	5mm	5mm	**120058**
ø7mm	ø6.5mm	7mm	10mm	**120059**
ø10.5mm	ø9.5mm	10mm	10mm	**120060**

Needle point, Carbide tipped



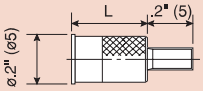
4-48UNF

D	L	Order No.
ø.018"	.12"	**131281**
ø.04"	.12"	**131280**
ø.06"	.5"	**131279**
ø.078"	.04"	**131271**

M2.5 x 0.45mm

D	L	Order No.
ø0.45mm	2.5mm	**120066**
ø1mm	2.5mm	**120065**
ø1.5mm	13mm	**120064**
ø2mm	1mm	**120056**
ø2mm	8mm	**137257**

ø.2" (ø5mm) Flat Point



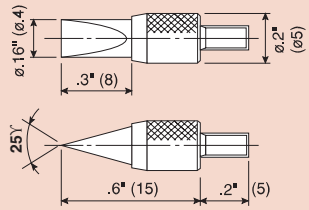
4-48UNF

L	Order No.
5/16"	**133017**
1/2"	**21AAA043**
3/4	**21AAA044**
1	**21AAA045**

M2.5 x 0.45mm

L	Order No.
8mm	**131365**

Knife edge point, Carbide tipped



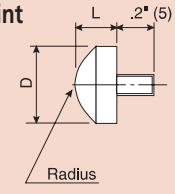
4-48UNF

Order No.
131282

M2.5 x 0.45mm

Order No.
120067

Spherical point



4-48UNF

D	L	Radius	Order No.
ø.5"	.125"	.28"	**101205**
ø.375"	.09375"	.35"	**101204**

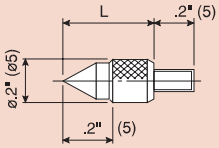
M2.5 x 0.4 5mm

D	L	Radius	Order No.
ø10mm	5mm	7mm	**101119**

Contact Points

Optional Accessories for Digimatic and Dial Indicators and Linear Gages

60° Conical point



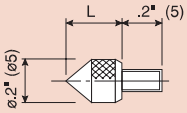
4-48UNF

L	Order No.
1/2"	101190

M2.5 x 0.45mm

L	Order No.
10mm	101120

90° Conical point



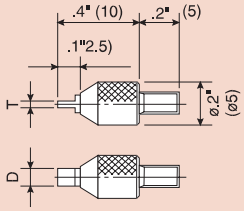
4-48UNF

L	Order No.
1/4"	101191

M2.5 x 0.45mm

L	Order No.
5mm	101385

Blade Point, Carbide Tip



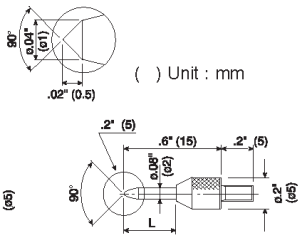
4-48UNF

D	T	Order No.
.08"	.016"	131276
.08"	.024"	131277
.16"	.04"	131278

M2.5 x 0.45mm

D	T	Order No.
2mm	0.4mm	120061
2mm	0.6mm	120062
4mm	1mm	120063

90° Conical point, Carbide tipped



4-48UNF

L	Order No.
.08"	131272

4-48UNF

L	Order No.
.3"	131283

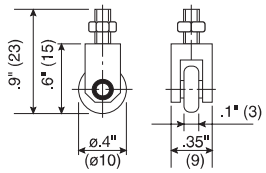
M2.5 x 0.45mm

L	Order No.
2mm	120057

M2.5 x 0.45mm

L	Order No.
8mm	120068

Roller Point



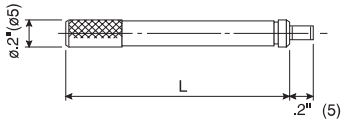
4-48UNF

Order No.
901991

M2.5 x 0.45mm

Order No.
901954

Extension Rod



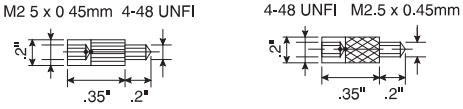
4-48UNF

L	Order No.
1/2"	139167
1"	301655
2"	301657
4"	301659

M2.5 x 0.45mm

L	Order No.
10mm	303611
20mm	303612
30mm	303613
100mm	303614

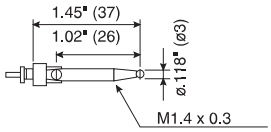
Point Conversion



Order No.
21AAA011

Order No.
21AAA012

Lever Point



4-48UNF

Order No.
900393

M2.5 x 0.45mm

Order No.
900391

Interchangeable Contact Point Set (4-48 UNF)

Set Order No. **21AZA034**

Individual No.	Description
101184	Shell Type Point 5/32"
101185	Shell Type Point 1/2"
101186	Shell Type Point 3/4"
101187	Shell Type Point 1"
101188	Flat Point ø1/2"
101189	Flat Point ø3/8"
101190	60° Conical Point
101191	90° Conical Point
101204	Spherical Point ø3/8"
21AAA030	Needle Point .6"

Interchangeable Carbide Contact Point Set (4-48 UNF)

Set Order No. **21AZA035**

Individual No.	Description
131260	Flat Point ø1/4"
131274	Spherical Point ø1/4"
131279	Needle Point ø.06" 1/2" Long
131262	Ballpoint ø.118"
131271	Needle Point ø.078" .04" Long

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

Set Order No. **7822**

Individual No.	Description
131365	Flat Point (ø5mm)
101117	Flat Point (ø10mm)
101121	Needle Point
101119	Spherical Point
101118	Shell Type Point
101387	Shell Type Point

Mitutoyo

Spindle Lifting Lever and Cable

Optional Accessories for Digimatic and Dial Indicators

Spindle Lifting Lever

- 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.

Applicable S-Type Gages

Order No.	Description
21AZB149	2,3, and 4 series up to (.5" / 12.7mm)
21AZB150	2,3, and 4 series up to (.5" / 12.7mm up to 1" / 25.4mm)
21AZB151	S-Type thickness gage

Dove Tail Type Lever Assy

Order No.	Lever up to .5" / 12.7mm	Screw	Screw Thread
21EZA198	21AZB149	101171	M2.5
21EZA199	21AZB149	101047	4/48 UNF

ANSI Screw **101047**
JIS Screw **101171**

Spindle Lifting Cable

901975: with auto-stop function
540774: without auto-stop function
Lifting range: 1" / 25.4mm
Cable length: 300mm

Spindle Lifting Knob

137693
Applicable spindle diameter; 4.8mm

Use for Series 1 dial indicators.(up 5mm / .25")

Set Order No.	Lever	Screw	Screw Thread
21BZA610	900527	101047	4-48 UNF
21BZA205	900527	101171	M2.5 x 0.45

Use for Series 2 dial indicators (up to 10mm/.4")

Set Order No.	Lever	Screw	Screw Thread
902794	900525	101047	4-48 UNF
902011	900525	101171	M2.5 x 0.45

Use for Series 2 dial indicators (up to 10mm/.4") and 1 Group S-Type

Set Order No.	Lever	Screw	Screw Thread
21BZA613	21BZA612	101047	4-48 UNF
902100	21BZA612	101171	M2.5 x 0.45

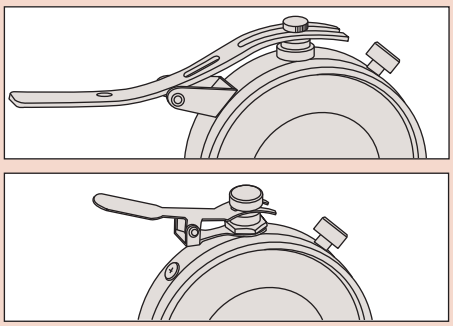
Use for Series 2 dial indicators (up to 20mm/.8")
and Series 3 and 4 dial indicators (up to 10mm/.4")

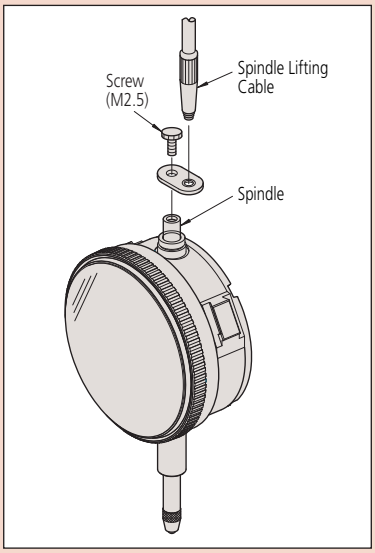
Set Order No.	Lever	Screw	Screw Thread
903425	903307	192753	4-48 UNF
903424	903307	192686	M2.5 x 0.45

Spindle Lifting Knob

Set Order No.	Range
21EZA197	For 1" range
21EZA200	For 2" range

Application

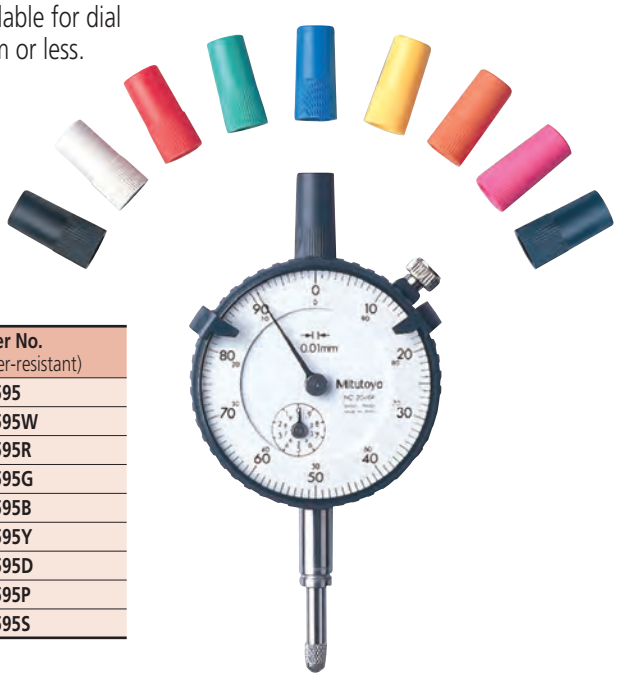




Color Spindle Caps

Optional Accessories for Digimatic and Dial Indicators

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



SPECIFICATIONS

Color	**Order No.** (normal)	**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**
Dark blue	**193051S**	**193595S**

Limit Stickers

Optional Accessories for Digimatic and Dial Indicators

FEATURES

- Stuck on the dial face or crystal of a Series 2 dial indicator (55.6mm or 57mm bezel dia.) to indicate tolerance limits.

136420: Red (10-sheet/set)

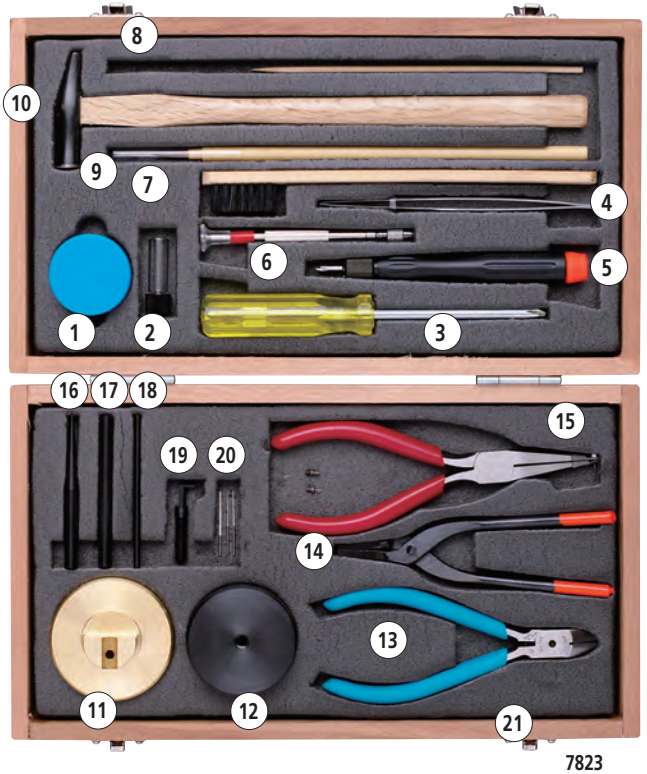
136421: Green (10-sheet/set)

136422: Yellow (10-sheet/set)

Dial Indicator Repair Tool Kit

Optional Accessories for Digimatic and Dial Indicators

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.



7823

SPECIFICATIONS

Order No.	Description
7823	Dial indicator repair tool kit

Order No. 7823

Set Configuration

(1)	**901171**:	Molykote (lubricant)
(2)	**21JAA313**:	Lubricating oil
(3)	**901173**:	Screwdriver (Phillips)
(4)	**901174**:	Screwdriver (Phillips/flat blade)
(5)	**129729**:	Tweezers
(6)	**901175**:	Pin-vise
(7)	**901176**:	Brush
(8)	**21JAA314**:	Stick
(9)	**901177**:	Brush
(10)	**901178**:	Hammer
(11)	**129730**:	Spindle rest
(12)	**129731**:	Pin rest
(13)	**901179**:	Nippers
(14)	**901180**:	Pliers
(15)	**901181**:	Hand remover
(16)	**129732**:	Pin remover
(17)	**129733**:	Punch
(18)	**129734**:	Bearing adjuster
(19)	**129735**:	Pinion rest
(20)	**129736**:	Reamer ø1
	193702:	Reamer ø0.6
	21JAA273:	Reamer ø0.5
(21)	**901182**:	Case

Optional Accessories For Hand Remover

126630:	Interchangeable Pin, 0.8mm DIA.
126630B:	Interchangeable Pin, 0.5mm DIA.
126630C:	Interchangeable Pin, 1.6mm DIA.

Dial Indicator Crystal Setter

Optional Accessories for Test and Dial Indicators

FEATURES

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

7000

With 8 sizes of crystal setting pads

SPECIFICATIONS

Order No.	Description
7000	Dial indicator crystal setter

Dial Test Indicators

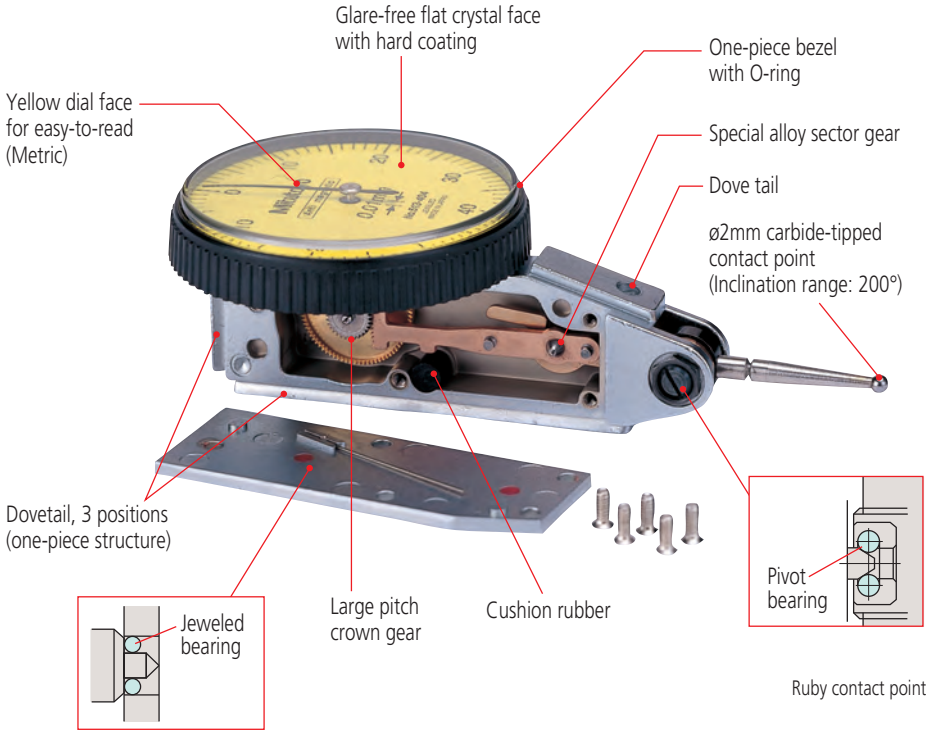
SERIES 513

Description of Icon

Icon	Description
	With revolution counter type
	Long contact point type
	Jeweled bearing type
	Double scale spacing type, easy-on-the-eyes
	Compact type
	Dustproof type
	Anti-magnetic type

FEATURES

- Narrow or deep places, which cannot be measured with a normal dial gauge, can be easily and accurately measured.
- Mitutoyo's proprietary new structure permits smooth pointer operation.
- Use of a hard frame body provides excellent rigidity and durability.
- Non-magnetic pointer and contact point permit secure operation even in environments with magnetism.
- Use of a clear and concise wide dial face allows excellent visibility.
- The surface of the crystal is hard-coated, to make it scratch-resistant.
- Flat crystal makes gradations easy to read. Moreover, the unified structure of the outer frame prevents oil and water from permeating via the front face.
- Six types are available: vertical, inclined, perpendicular, horizontal, universal, and pocketable, allowing users to select the model most suited to their needs.
- Vertical: Standard
- Inclined: Dial face inclined 20°, compared with the vertical type, allows easy reading.
- Perpendicular: Best suited for centering holes.
- Horizontal: The graduations can be read from the front, with the probe on the tip of the horizontal conical rod abutting the workpiece.
- Universal: The direction of the probe movement can be freely changed.
- Pocketable: Compact type



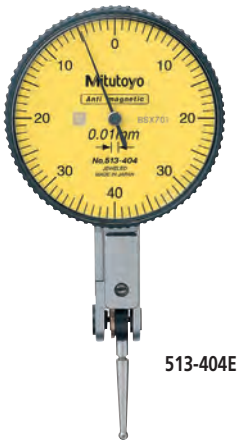
Dial Test Indicators

SERIES 513 — Horizontal Type

FEATURES

- Performs easy and accurate measurement of narrow or recessed areas, plus inside and outside diameters that dial indicators cannot access.
- No-clutch structure for automatic reversal of measuring direction.
- Resistant to water and dust thanks to the one-piece bezel and "crystal" design with O-ring.
- The glare-free flat crystal face has a scratch-resistant coating.
- High-sensitivity and quick-response because of jeweled bearings.
- A carbide contact point is provided as standard.

513-424E



513-404E

513-414E

513-403

513-474E

Optional Accessories

———: Swivel clamp
———: Holding bar
———: Stem
———: Contact points

Special Set: No. 513-908 (mm)

513-404E: Dial test indicator
7014: Mini magnetic stand

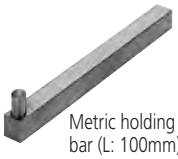
No. 513-907 (inch)

513-402: Dial test indicator
7014E: Mini magnetic stand

Set Configuration: Metric Test Indicators

Full set

Swivel clamp (**900321**, for ø4mm, ø8mm, dovetail)



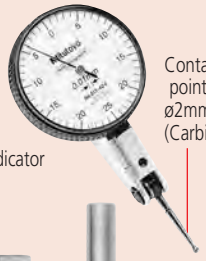
Metric holding bar (L: 100mm) (**900209**)

Contact point, ø1mm carbide

Contact point, ø3mm carbide

Stem, ø4mm (**190318**)

Basic set



Contact point, ø2mm (Carbide)

Indicator

Knurled clamp ring

Stem, ø8mm

(Set No. **902804**)

Set Configuration: Inch Test Indicators

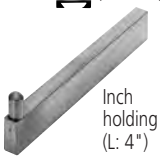
Full set

Contact point, .039" DIA. carbide

Contact point, .118" DIA. carbide

Stem, .157" DIA. (**190318**)

Swivel clamp (**900322**, for .157" DIA., 3/8" DIA., dovetail)



Inch holding bar (L: 4") (**900306**)

Basic set

Contact point, .079" DIA. (Carbide)

Indicator

Knurled clamp ring

Stem, 3/8" DIA.

(Set No. **902805**)

Anti-magnet type

Double scale spacing type

Long contact point type

Jeweled bearing type

Compact type

With revolution counter type

513-466E

513-464E

513-463

SPECIFICATIONS

Metric

Graduation	Order No.		Range	Accuracy	Dial reading	Measuring force	L (mm)						
	Basic set	Full set											
0.01mm	**513-424E**	**513-424T**	0.5mm	5µm	0-25-0	0.3N or less	22.3	✔	✔	—	✔	—	—
0.01mm	**513-414E**	**513-414T**	0.5mm	10µm	0-25-0	0.2N or less	36.8	✔	✔	✔	✔	—	—
0.01mm	**513-466E**	—	0.5mm	5µm	0-25-0	0.3N or less	22.3	✔	✔	—	✔	✔	—
0.01mm	**513-404E**	**513-404T**	0.8mm	8µm	0-40-0	0.3N or less	20.9	✔	—	—	✔	—	—
0.01mm	**513-474E***	—	0.8mm	8µm	0-40-0	0.3N or less	20.9	✔	—	—	✔	—	—
0.01mm	**513-464E**	—	0.8mm	8µm	0-40-0	0.3N or less	20.9	✔	—	—	✔	✔	—
0.01mm	**513-415E**	**513-415T**	1mm	10µm	0-50-0	0.2N or less	44.5	✔	—	✔	✔	—	—
0.01mm	**513-426E**		1.5mm	8µm	0-25-0	0.4N or less	22.3	✔	✔	—	✔	—	✔
0.002mm	**513-405E**	**513-405T**	0.2mm	3µm	0-100-0	0.3N or less	14.7	✔	—	—	✔	—	—
0.002mm	**513-465E**	—	0.2mm	3µm	0-100-0	0.3N or less	14.7	✔	—	—	✔	✔	—
0.002mm	**513-425E**	—	0.6mm	6µm	0-100-0	0.4N or less	14.7	✔	—	—	✔	—	✔
0.001mm	**513-401E**	—	0.14mm	3µm	0-70-0	0.3N or less	12.8	✔	—	—	✔	—	—

*provided with a ø2mm ruby contact point as a substitute for ø2mm carbide contact point.

Inch

Graduation	Order No.		Range	Accuracy	Dial reading	Measuring force	L (mm)						
	Basic set	Full set											
.0005"	**513-402**	**513-402T**	.03"	±.0005"	0-15-0	0.3N or less	19.9	✔	—	✔	—	—	—
.0005"	**513-412**	**513-412T**	.03"	±.0005"	0-15-0	0.2N or less	33.9	✔	✔	✔	—	—	—
.0005"	**513-462**	—	.03"	±.0005"	0-15-0	0.3N or less	19.9	✔	—	✔	✔	—	—
.0001"	**513-403**	**513-403T**	.008"	±.0001"	0-4-0	0.3N or less	15	✔	—	✔	—	—	—
.0001"	**513-463**	—	.008"	±.0001"	0-4-0	0.3N or less	15	✔	—	✔	✔	—	—

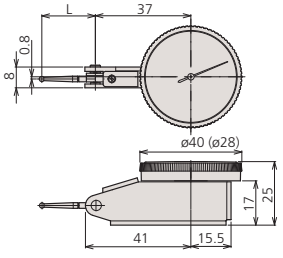
Metric/inch

Graduation	Order No.		Range	Accuracy	Dial reading	Measuring force	L (mm)						
	Basic set	Full set											
0.002mm, .0001"	**513-409**	**513-409T**	0.2mm, .0075"	3µm	0-10-0, 0-38-0	0.3N or less	14.7	✔	✔	—	—	—	—

Inch/Metric

Graduation	Order No.		Range	Accuracy	Dial reading	Measuring force	L (mm)						
	Basic set	Full set											
.0005", 0.01mm	**513-406**	**513-406T**	.03", 0.7mm	±.0005"	0-15-0, 0-35-0	0.3N or less	19.9	✔	✔	—	—	—	—

DIMENSIONS AND MASS



Unit: mm
( ) Compact Type

Mass: 42g (39g)

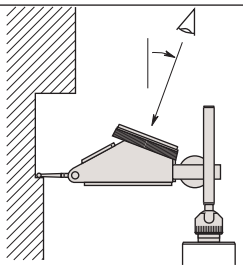
Mitutoyo

Dial Test Indicators

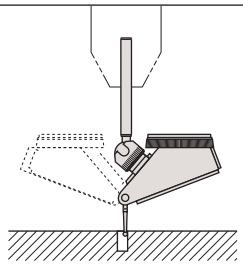
SERIES 513 — Horizontal (20° Tilted Face), Vertical, and Parallel Types

FEATURES

- Specially designed for easy viewing of measurements.



- The dial face obliquely faces upward, allowing users to read the graduations from the user's side. It is convenient when measuring on the side of a large workpiece and the workbench is high.



- Using the universal holder allows easy hole centering. The dial face always faces upward when the indicator is rotated, which makes reading easy.

513-452

513-282G

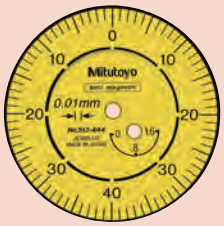
513-444E

513-445E

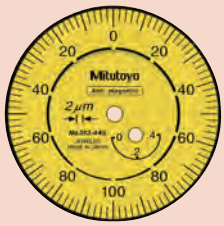
513-284G

513-442

513-446

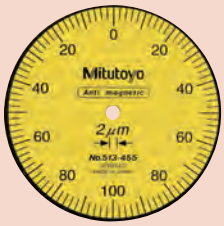


513-444E



513-445E

513-454E
513-284GE



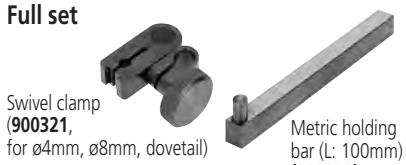
513-455E

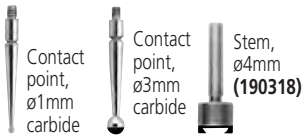
Optional Accessories

———: Swivel clamp
———: Holding bar
———: Stem
———: Contact points

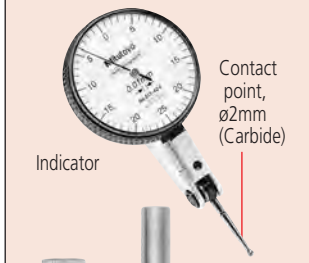
Set Configuration: Metric

Full set



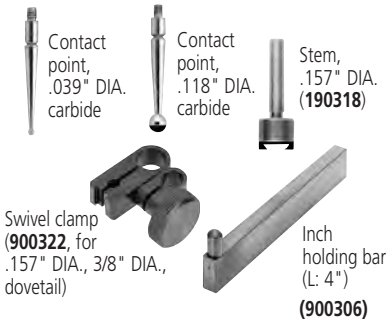


Basic set

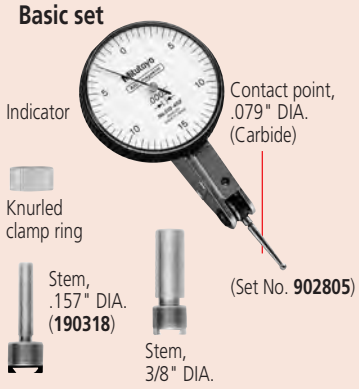


Set Configuration: Inch

Full set



Basic set



Basic set for 20° Tilted face type.
Also supplied .039" and .118"Contact points

Anti-magnet type | With revolution counter type | Jeweled bearing type | Long contact point type

SPECIFICATIONS

Metric Horizontal (20° tilted face) type

Graduation	Order No.		Range	Accuracy	Dial reading	Measuring force	Mass (g)	L (mm)			
	Basic set	Full set									
0.01mm	**513-444E**	**513-444T**	1.6mm	10μm	0-40-0	0.3N or less	48	20.9	✔	✔	✔
0.002mm	**513-445E**	**513-445T**	0.4mm	5μm	0-100-0	0.3N or less	48	14.7	✔	✔	✔

Inch Horizontal (20° tilted face) type

Graduation	Order No.		Range	Accuracy	Dial reading	Measuring force	Mass (g)	L (mm)					Remarks
	Basic set	Full set											
.0005"	**513-442**	**513-442T**	.06"	±.0005"	0-15-0	0.3N or less	48	19.9	✔	✔	✔	—	—
.0005"	**513-442-01**	**513-442T-01**	.06"	±.0005"	0-15-0	0.3N or less	48	19.9	✔	✔	✔	—	Blue dial
.0005"	**513-442-06**	**513-442T-06**	.06"	±.0005"	0-15-0	0.3N or less	48	19.9	✔	✔	✔	—	Black dial
.0005"	**513-446**	**513-446T**	.06"	±.0005"	0-15-0	0.2N or less	48	33.9	✔	✔	✔	✔	—
.0005"	**513-446-06**	**513-446T-06**	.06"	±.0005"	0-15-0	0.2N or less	48	33.9	✔	✔	✔	✔	Black dial
.0001"	**513-443**	**513-443T**	.016"	±.0002"	0-4-0	0.3N or less	48	15	✔	✔	✔	—	—
.0001"	**513-443-06**	**513-443T-06**	.016"	±.0002"	0-4-0	0.3N or less	48	15	✔	✔	✔	—	Black dial

Metric Vertical type

Graduation	Order No.		Range	Accuracy	Dial reading	Measuring force	Mass (g)	L (mm)		
	Basic set	Full set								
0.01mm	**513-454E**	**513-454T**	0.8mm	8μm	0-40-0	0.3N or less	50	20.9	✔	✔
0.002mm	**513-455E**	**513-455T**	0.2mm	3μm	0-100-0	0.3N or less	50	14.7	✔	✔

Inch Vertical type

Graduation	Order No.		Range	Accuracy	Dial reading	Measuring force	Mass (g)	L (mm)		
	Basic set	Full set								
.0005"	**513-452**	**513-452T**	.03"	±.0005"	0-15-0	0.3N or less	50	19.9	✔	✔
.0001"	**513-453**	**513-453T**	.008"	±.0001"	0-4-0	0.3N or less	50	15	✔	✔

Metric Parallel type

Graduation	Order No.		Range	Accuracy	Dial reading	Measuring force	Mass (g)	L (mm)	
	Basic set	Full set							
0.01mm	**513-284GE**	**513-284GT**	0.8mm	8μm	0-40-0	0.3N or less	68	20.9	✔

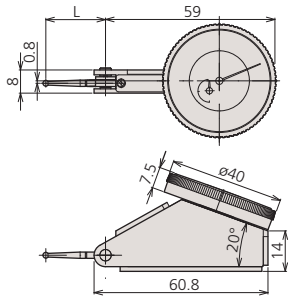
Inch Parallel type

Graduation	Order No.		Range	Accuracy	Dial reading	Measuring force	Mass (g)	L (mm)	
	Basic set	Full set							
.0005"	**513-282G**	**513-282GT**	.03"	±.0005"	0-15-0	0.3N or less	68	20	✔

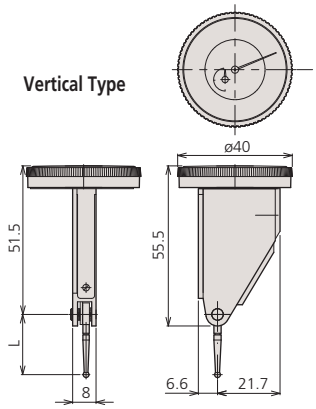
DIMENSIONS

unit: mm

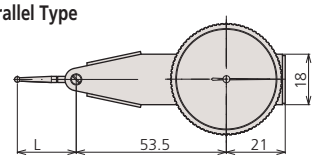
Horizontal (20° Tilted Face) Type

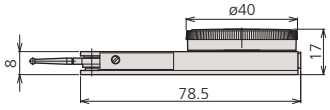


Vertical Type



Parallel Type





Mitutoyo

Pocket Type Dial Test Indicators

SERIES 513

FEATURES

- Jeweled bearings assure higher sensitivity and accuracy.
- Reversible measuring direction.
- Two holding bars are supplied. (Full sets only.)
- Fully adjustable bezel/dial face.
- Contact point is adjustable within 220°.
- Bezel is sealed with on O-ring to keep out water / oil.

513-517E

513-514E

513-527E

513-501E

513-515T

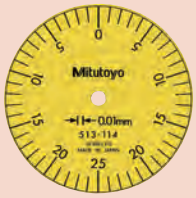
513-503E

513-518

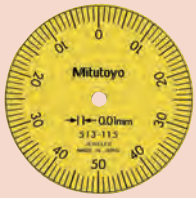
513-504

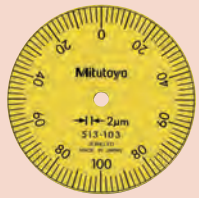
513-528

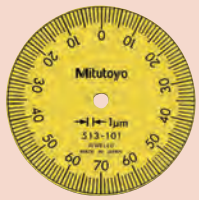
513-512


513-514E

513-517E
513-527E


513-515T


513-503E

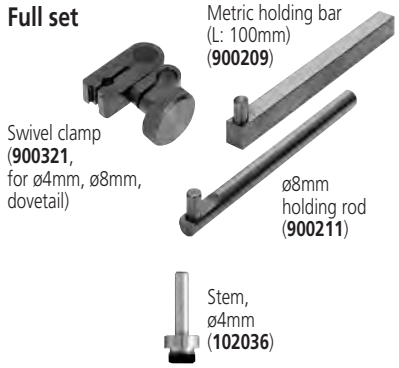

513-501E

Optional Accessories

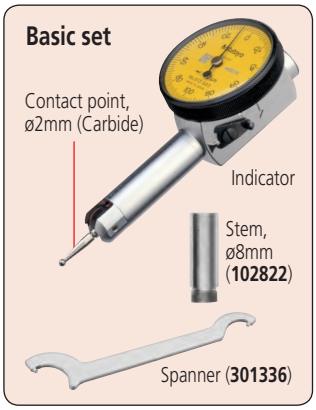
———: Swivel clamp
———: Holding bar
———: Stem
———: Contact points

Set Configuration: Metric

Full set

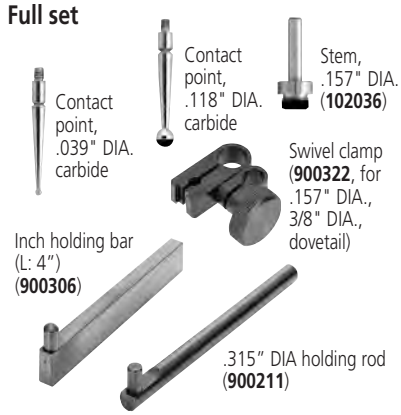


Basic set

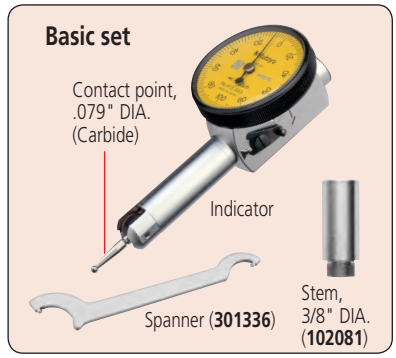


Set Configuration: Inch

Full set



Basic set



Long contact point type | Jeweled bearing type | Compact type

SPECIFICATIONS

Metric

Graduation	Order No.		Range	Accuracy	Dial reading	Measuring force	L (mm)			
	Basic set	Full set								
0.01mm	**513-514E**	**513-514T**	0.5mm	10µm	0-25-0	0.3N or less	36.8	✔	✔	—
0.01mm	**513-517E**	**513-517T**	0.8mm	8µm	0-40-0	0.3N or less	20.9	—	✔	—
0.01mm	**513-527E**	**513-527T**	0.8mm	8µm	0-40-0	0.3N or less	14.7	—	✔	✔
0.01mm	—	**513-515T**	1mm	10µm	0-50-0	0.3N or less	44.5	✔	✔	—
0.002mm	**513-503E**	**513-503T**	0.2mm	3µm	0-100-0	0.3N or less	14.7	—	✔	—
0.001mm	**513-501E**	**513-501T**	0.14mm	3µm	0-70-0	0.4N or less	12	—	✔	—

Inch

Graduation	Order No.		Range	Accuracy	Dial reading	Measuring force	L (mm)			
	Basic set	Full set								
.001"	**513-518**	**513-518T**	.04"	±.001"	0-20-0	0.3N or less	26.5	—	✔	—
.001"	**513-528**	**513-528T**	.04"	±.001"	0-20-0	0.3N or less	18.7	—	✔	✔
.0005"	**513-512**	**513-512T**	.02"	±.0005"	0-10-0	0.3N or less	37.4	✔	✔	—
.0001"	**513-504**	**513-504T**	.01"	±.0002"	0-5-0	0.3N or less	18.7	—	✔	—

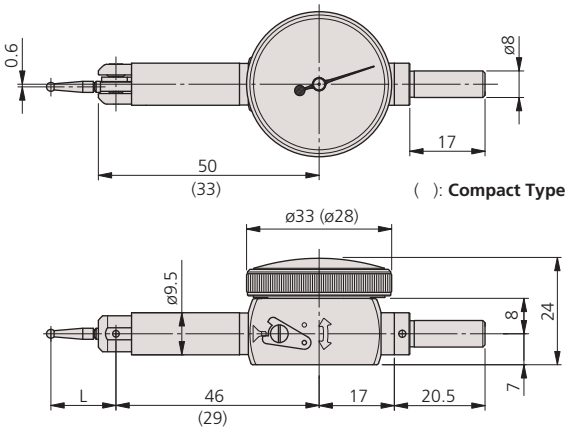
Optional Contact Points

Pocket Type

Order No.		1mm	2mm	3mm	0.5mm	0.7mm
513-501E		136756	136104	136758	—	—
513-503E	**513-527E**	103017	103010	103018	190547	190548
513-504	**513-528**	131314	103011	131315	—	—
513-512		131316	131324	131317	—	—
513-514E		137746	129949	137747	—	—
513-515T		136235	136013	136236	190656	190655
513-517E		103013	103006	103014	190549	190550
513-518		103008	103007	103009	—	—

DIMENSIONS AND MASS

unit: mm



Mass: 45g (40g)
( ): Compact Type

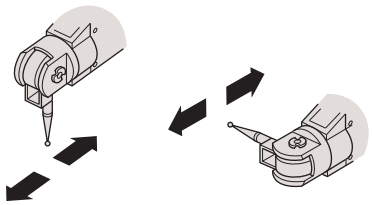
Mitutoyo

Dial Test Indicators

SERIES 513 — Universal Type

FEATURES

- Universal application to all directions. (Not only the direction of the measuring point, but also the direction of measurement itself can be adjusted 360 degrees without moving the indicator.)



513-304GE

SPECIFICATIONS

Jeweled bearing type

Metric

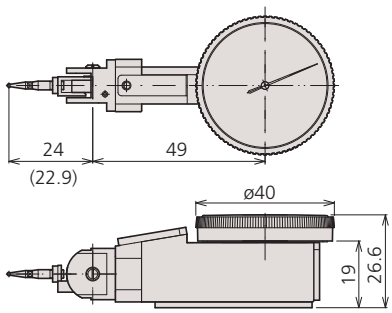
Graduation	Order No.		Range	Accuracy	Dial reading	Measuring force	
	Basic set	Full set					
0.01mm	**513-304GE**	**513-304GT**	0.8mm	8μm	0-40-0	0.3N or less	✔

Inch

Graduation	Order No.		Range	Accuracy	Dial reading	Measuring force	
	Basic set	Full set					
.0005"	**513-302G**	**513-302GT**	.03"	±.0005"	0-15-0	0.3N or less	✔

DIMENSIONS AND MASS

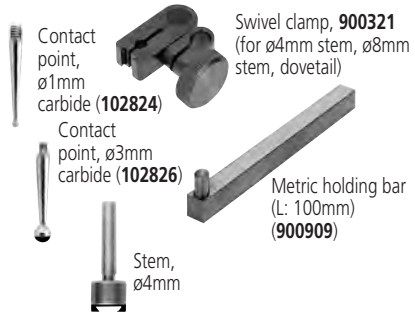
Unit: mm



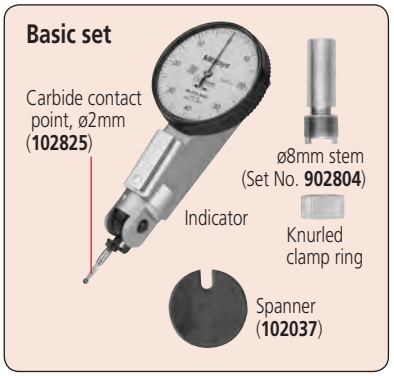
Mass: 80g
( ): 513-302G

Set Configuration: Metric

Full set

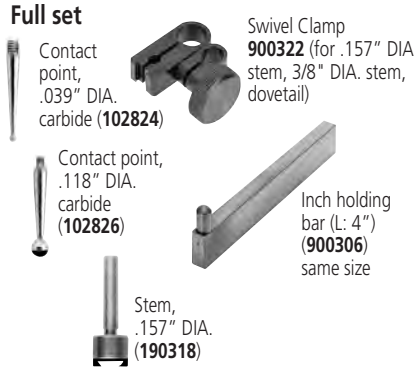


Basic set

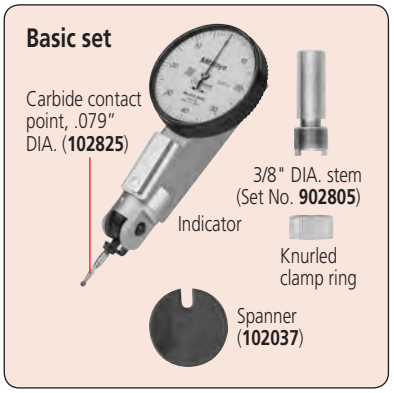


Set Configuration: Inch

Full set



Basic set



Optional Accessories

———: Swivel clamp
———: Holding bar
———: Stem

Contact Points and Clamp Holders

Optional Accessories for Dial Test Indicator

Contact Points

Order No.		1mm	2mm	3mm	0.5mm	0.7mm
513-401E		21CZA044	21CZA036	21CZA045		
513-405E **513-465E** **513-455E**	**513-425E** **513-445E** **513-409**	103017	103010	103018	190547	190548
513-404E **513-444E** **513-284GE**	**513-464E** **513-454E**	103013	103006	103014	190549	190550
513-424E **513-426E**	**513-466E**	137558	137557	137559	190654	190653
513-415E		136235	136013	136236	190656	190655
513-414E		137746	129949	137747		
513-402 **513-406** **513-442-01** **513-452**	**513-462** **513-442** **513-442-06** **513-282G**	133196	133195	133197		
513-403 **513-443** **513-453**	**513-463** **513-443-06**	136076	136075	136077		
513-412 **513-446-06**	**513-446**	136291	136290	136292		

Holding Bars

9 x 9mm

953638 (Length: 50mm)
900209 (Length: 100mm)

ø8mm

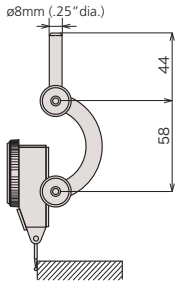
900211 (Length: 115mm)

.25" x .5"

953639 (Length: 2")
900306 (Length: 4")

Centering Holder

- Allows large diameter cylinders or holes to be centered.

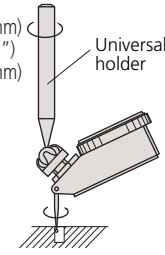


901959 (ø8mm stem)
901997 (.25" DIA. stem)

Universal Holder

- Allows the indicator to be set at a desired position.

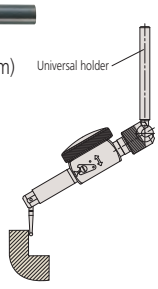
901916 (ø8mm stem, Length: 80mm)
901459 (.25" DIA. stem, Length: 3")
901461 (ø6mm stem, Length: 80mm)



Universal Holder (pocket type)

- Since the Dial Test Indicator can be swiveled to a desired angle, the holder is useful for centering workpieces and installing workpieces on a milling machine.

901917 (ø8mm stem, Length: 84mm)
901546 (.25" DIA. stem, Length: 84mm)
901547 (ø6mm stem, Length: 84mm)



i-Checker

SERIES 170 – Inspection Instrument for Dial Indicator

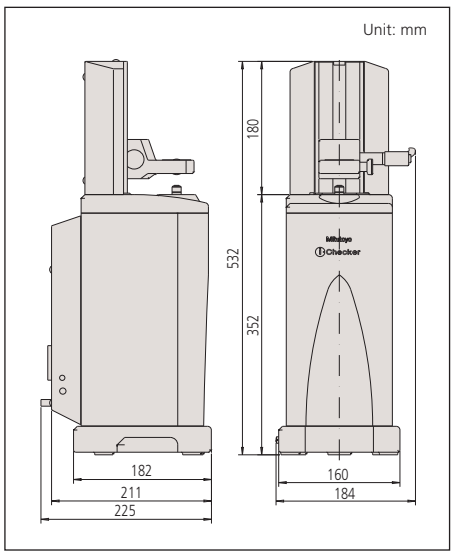
The i-Checker is specially designed to calibrate dial indicators, dial test indicators, and other electronic comparison gage heads with a stroke of up to 100mm (4").

- ±(0.2+L/100)µm indication accuracy.
- 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 fully automatic measurement functions.
- Creates and prints out a simple inspection certificate.
- Saves inspection results as a CSV file for analysis by software.

SPECIFICATIONS

Order No.	Remarks
170-311	with ø8mm bush
170-312A	with ø3/8" bush

DIMENSIONS



Applicable Indicators

- Dial indicator
- Hicator
- Digimatic indicator***
- Test indicator*
- Bore gage**
- Linear gage

* requires optional test indicator attachment set.
* Contact the nearest Mitutoyo sales office for testable indicators.
** requires optional bore gage accessory.
*** requires optional SPC cable for fully automatic measurement.

Using test indicator attachment set (**02ASK000**)

Technical Data

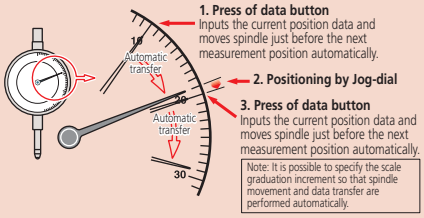
Measuring Range:	100mm/4"
Resolution:	0.02µm/0.8µin
Accuracy:	±(0.2+L/100)µm in vertical position
(at 20°C)	±(0.3+2L/100)µm in lateral position
	L = arbitrary length (mm)
Drive method:	Electric motor
Measuring Unit:	Reflective-type glass linear encoder
Thermal expansion coefficient:	(8±1)X10^{-6}/K
Measurement method:	Semi-automatic / Fully automatic*
Dimensions:	184 x 225 x 532mm (W x D x H)
Operating temperature range:	20°C±3°C
Power supply:	100VAC to 240VAC ±10%, 50/60Hz
Mass:	20kg/44.1lbs

* Automatic 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.

Functions

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 unnecessary 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. Furthermore, that data can be saved as a CSV file.

Optional Accessories

02ASK000: Test indicator attachment set (ø6mm stem)
02ASK180: Test indicator attachment set (ø8mm stem)
02ASK370: Test indicator holder (ø6mm stem)
02ASK380: Test indicator holder (ø8mm stem)
02ASL310: Accessory for Bore gages
902803: ø6mm dovetail grooved stem
902804: ø8mm dovetail grooved stem
02ASK040: Stem bush ø6mm
02ASJ856: Stem bush ø8mm
02ASK150: Stem bush ø8mm, short
02ASL150: Stem bush ø10, short
02ASK050: Bush ø9.5 (Requires **02ASK070**)
02ASK060: Stem bush ø12mm
02ASK070: Stem bush ø15mm
02ASK080: Stem bush ø20mm
02ASK710: Stem bush ø28mm
02ASK090: Stem bush 3/8"
02ASK130: Stem bush case
02ASK730: Reflector
937179T: Foot switch

UDT-2 Dial Gage Testers

SERIES 170

The UDT-2 Dial Gage Tester consists of a specially designed 0-1" / 0-25mm micrometer head, with a large disc, and rigid holding fixtures. Gage tester to calibrate measuring accuracy of dial indicators, dial test indicators and dial bore gage.

170-102-10

FEATURES

- Clamping stem diameter—
  170-102-10: 6mm and 8mm,
  170-101-10: .25" and .375"
- With the optional stand (**12AAK824**), inspection of Dial Bore Gages becomes possible to perform.

Optional Accessory

21AKK824: Stand for bore gage inspection

SPECIFICATIONS

Metric

Range	Order No.	Graduation	Accuracy
0 - 25mm	**170-102-10**	0.001mm	±1µm

Inch

Range	Order No.	Graduation	Accuracy
0 - 1"	**170-101-10**	.0001"	±.0001"

Calibration Testers

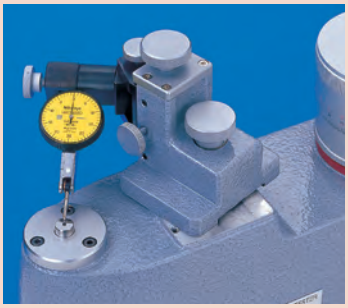
SERIES 521

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 / .157"-.394" dia.
- Dual color-indexed directional graduations to facilitate measurements.

521-103


Calibrating test indicator

SPECIFICATIONS

Metric

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

Inch

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

Thickness Gages

SERIES 547, 7

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

FEATURES

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

Flat Anvil Type

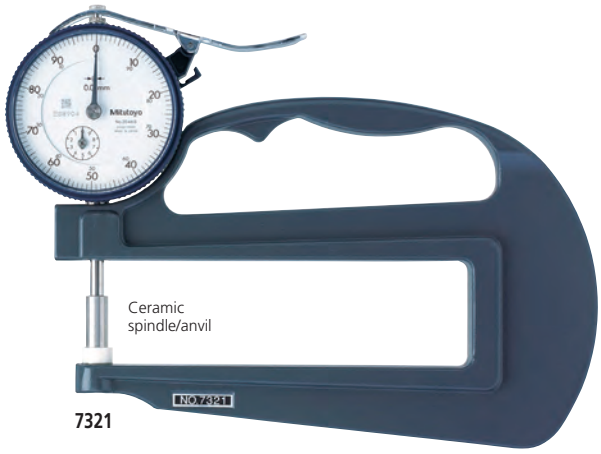
Standard Type / Digital

547-300S

Deep Throat Type / Digital

547-320S

Deep Throat Type / Dial

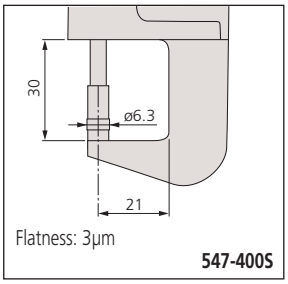


7321

High Accuracy Type / Digital

547-400S

DIMENSIONS



Flatness: 3µm

547-400S

Technical Data

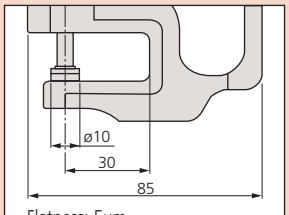
Function of Digital Models

IDS Types
- ON/OFF
- Inch / mm Conversion
- Origin
- ±Direction Changeover
- SPC Output
- Battery Life: 20,000 hrs
- Power Supply: Silver Oxide Cell (SR-44 1pc.)

IDC Types
- ON/OFF
- Inch / mm Conversion
- Zero / ABS
- ±Direction Changeover
- SPC Output
- Battery Life: 5,000 hrs
- Power Supply: Silver Oxide Cell (SR-44 1pc.)
- Preset
- Provides GO / ±NG Judgement
- Face Rotates 330°

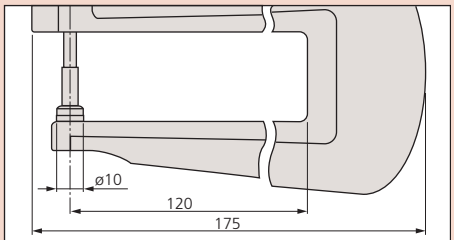
DIMENSIONS

Unit: mm



Flatness: 5µm

7301, 7305, 547-300S



Flatness: 5µm

7321, 7323, 547-320S

Thickness Gages

SERIES 547, 7

Flat Anvil Type

Optional Accessories

905338: SPC cable (40" / 1m) for digital type
905409: SPC cable (80" / 2m) for digital type
902794: Spindle lifting lever for IDS digimatic type (stroke .5" / 12.7mm)
21AZB149: Spindle lifting lever for digimatic and dial thickness gage (stroke .5" / 12.7mm)
21AZB150: Spindle lifting lever for dial indicator (stroke 1" / 25.4mm)

SPECIFICATIONS

Inch/Metric Digital Type

Range	Order No.	Resolution	Accuracy	Measuring force	Indicator
0 - .47" / 0 - 12mm	**547-500**	.0005"/0.01mm	±.001"	1.5N or less	Digimatic IDS
0 - .47" / 0 - 12mm	**547-520**	.0005"/0.01mm	±.001"	1.5N or less	Digimatic IDS
0 - .47" / 0 - 12mm	**547-526**	.0001"/0.001mm	±.0002"	1.5N or less	Digimatic IDS
0 - .4" / 0 - 10mm	**547-300S**	.0005"/0.01mm	±.001"	1.5N or less	Digimatic IDC
0 - .4" / 0 - 10mm	**547-320S**	.0005"/0.01mm	±.001"	1.5N or less	Digimatic IDC
0 - .47" / 0 - 12mm	**547-400S**	.00005"/0.001mm	±.00015"	3.5N or less	Digimatic IDC

Inch Dial Type

Range	Order No.	Graduation	Accuracy	Measuring force	Remarks
0 - .05"	**7326S**	.0001"	±.0002"	1.4N or less	Fine dial reading, ceramic spindle/anvil
0 - .5"	**7300S**	.001"	±.001"	1.4N or less	Standard, ceramic spindle/anvil
0 - 1"	**7304S**	.001"	±.002"	2.0N or less	Standard, ceramic spindle/anvil
0 - 1"	**7322S**	.001"	±.002"	2.0N or less	Deep throat, ceramic spindle/anvil

Metric Dial Type

Range	Order No.	Graduation	Accuracy	Measuring force	Remarks
0 - 1mm	**7327**	0.001mm	±5µm	1.4N or less	Fine dial reading, ceramic spindle/anvil
0 - 10mm	**7301**	0.01mm	±15µm	1.4N or less	Standard, ceramic spindle/anvil
0 - 20mm	**7305**	0.01mm	±20µm	2.0N or less	Standard, ceramic spindle/anvil
0 - 10mm	**7321**	0.01mm	±15µm	1.4N or less	Deep throat, ceramic spindle/anvil
0 - 20mm	**7323**	0.01mm	±22µm	2.0N or less	Deep throat, ceramic spindle/anvil

Lens thickness measurement (reverse anvil)

547-312S

SPC
ABSOLUTE

7313

SPECIFICATIONS

Inch/Metric Digital Type

Range	Order No.	Resolution	Accuracy	Measuring force	Indicator
0 - .47" / 0 - 12mm	**547-512**	.0005"/0.01mm	±.001"	1.5N or less	Digimatic IDS
0 - .47" / 0 - 12mm	**547-312S**	.0005"/0.01mm	±.001"	1.5N or less	Digimatic IDC

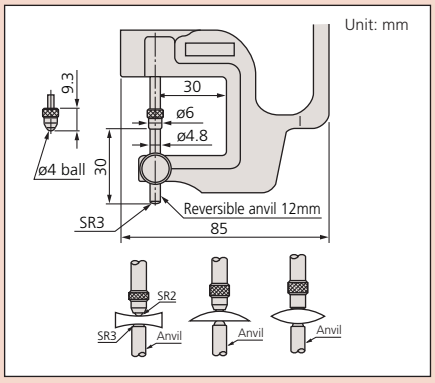
Inch Dial Type

Range	Order No.	Graduation	Accuracy	Measuring force	Remarks
0 - .5"	**7312S**	.001"	±.001"	1.4N or less	Lens thickness

Metric Dial Type

Range	Order No.	Graduation	Accuracy	Measuring force	Remarks
0 - 10mm	**7313**	0.01mm	±15µm	1.4N or less	Lens thickness

DIMENSIONS



Mitutoyo

Thickness Gages

SERIES 547, 7

Tube thickness measurement

547-361S

7360

SPECIFICATIONS

Inch/Metric Digital Type

Range	Order No.	Resolution	Accuracy	Measuring force	Indicator
0 - .47″ / 0 - 10mm	**547-561**	.0005″/0.01mm	±.001″	1.5N or less	Digimatic IDS
0 - .47″ / 0 - 12mm	**547-361S**	.0005″/0.01mm	±.001″	1.5N or less	Digimatic IDC

Inch Dial Type

Range	Order No.	Graduation	Accuracy	Measuring force	Remarks
0 - .5″	**7361S**	.001"	±.001″	1.4N or less	Tube thickness

Metric Dial Type

Range	Order No.	Graduation	Accuracy	Measuring force	Remarks
0 - 10mm	**7360**	0.01mm	±15µm	1.4N or less	Tube thickness

Groove thickness measurement (Blade anvil type)

547-316S

7315

SPECIFICATIONS

Inch/Metric Digital Type

Range	Order No.	Resolution	Accuracy	Measuring force	Indicator
0 - .47″ / 0 - 12mm	**547-516**	.0005″/0.01mm	±.001″	1.5N or less	Digimatic IDS
0 - .47″ / 0 - 10mm	**547-316S**	.0005″/0.01mm	±.001″	1.5N or less	Digimatic IDC

Inch Dial Type

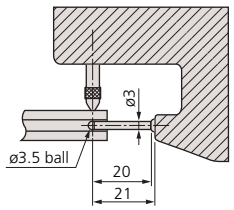
Range	Order No.	Graduation	Accuracy	Measuring force	Remarks
0 - .5″	**7316S**	.001"	±.001″	1.4N or less	Groove thickness

Metric Dial Type

Range	Order No.	Graduation	Accuracy	Measuring force	Remarks
0 - 10mm	**7315**	0.01mm	±15µm	1.4N or less	Groove thickness

DIMENSIONS

Unit: mm

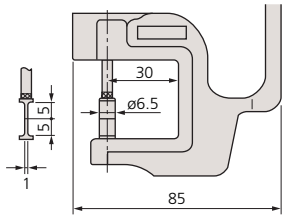


Optional Accessories

905338: SPC cable (40" / 1m) for digital type
905409: SPC cable (80" / 2m) for digital type
902794: Spindle lifting lever for IDS digimatic type (stroke .5" / 12.7mm)
21AZB149: Spindle lifting lever for digimatic and dial thickness gage (stroke .5" / 12.7mm)
21AZB150: Spindle lifting lever for dial indicator (stroke 1" / 25.4mm)

DIMENSIONS

Unit: mm



Thickness Gages

SERIES 547, 7

Universal Type (interchangeable anvils)

547-528

SPECIFICATIONS

Inch/Metric Digital Type

Range	Order No.	Resolution	Accuracy	Measuring force	Indicator
0 - .47" / 0 - 12mm	**547-528**	.0005"/0.01mm	±.001"	1.5N or less	Digimatic IDS

Inch Dial Type

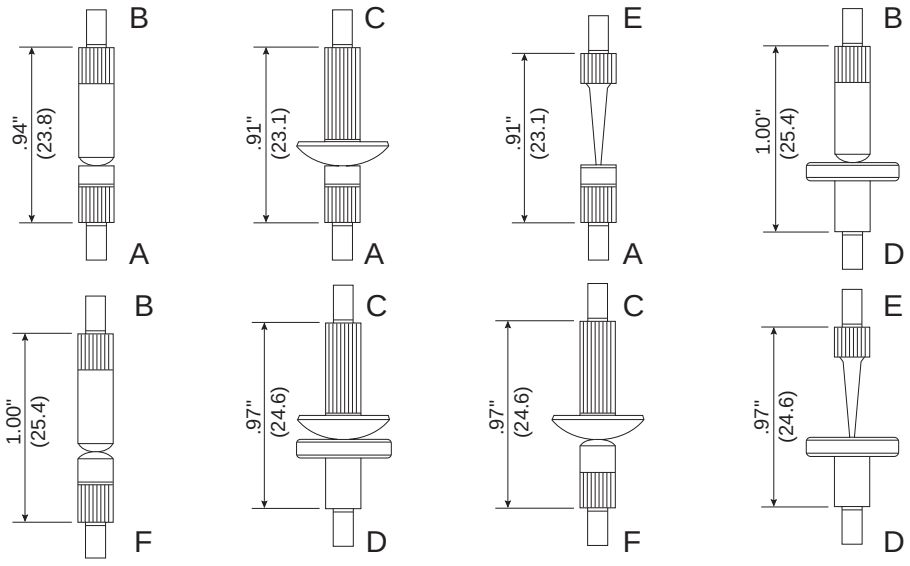
Range	Order No.	Graduation	Accuracy	Measuring force	Remarks
0 - .4"	**7328S**	.001"	±.001"	1.5N or less	Interchangeable anvils

Optional Accessories

905338: SPC cable (40" / 1m) for digital type
905409: SPC cable (80" / 2m) for digital type
902011: Spindle lifting lever for metric dial type (stroke 10mm)
902794: Spindle lifting lever for digital and inch dial type (stroke .4" / 10mm)

Standard Accessories

Recommended Combinations



A. 133017	Flat Point	ø.20
B. 21AAA033	Shell Point	.16" Radius
C. 21BZA767	Spherical Point	.36" Radius
D. 101188	Flat Point	ø.50
E. 21AAA030	Needle Point	.016" Radius
F. 21AAA032	Shell Point	.16" Radius

Mitutoyo

Quick-Mini

SERIES 700

A compact comparator designed for carrying convenience, it is very suited for quick inspection of paper thickness, leather, wires, plastic parts, etc. The digital display provides error-free reading with 0.01mm / .0005" resolution.

FEATURES

- Measuring force less than 2N.
- Supplied in fitted plastic case.

700-118-20

Technical Data

Accuracy:	Refer to the list of specifications.
Resolution:	0.01mm or .0005"/0.01mm
Display:	LCD
Battery:	SR44 (1 pc.), **938882**
Battery life:	Approx. 2 years under normal use

Function

Zero-setting, Data hold, Power ON/OFF, inch/mm conversion (on inch/metric models only)

SPECIFICATIONS

Metric

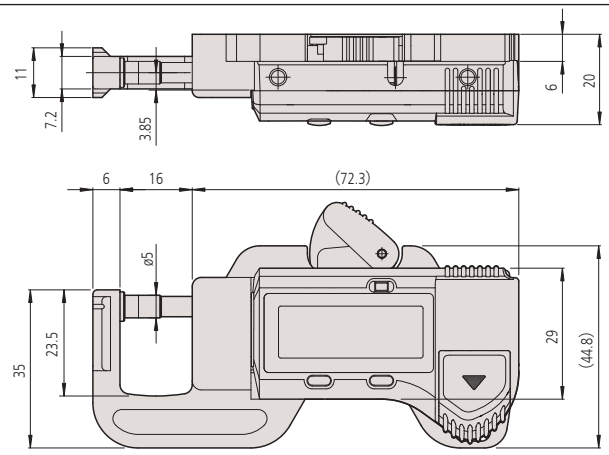
Range	Order No.	Accuracy
0 - 12mm	**700-119-20**	±0.02mm

Inch/Metric

Range	Order No.	Accuracy
0 - .5"/0 - 12.7mm	**700-118-20**	±.001"

DIMENSIONS AND MASS

Unit: mm



700-118-20 / 700-119-20
MASS: 70g

Digimatic Caliper Gages

SERIES 209 — Internal Tube Thickness Measurement Type

Versatile ID 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.

Internal measurement type

209-552

Technical Data

Accuracy:	Refer to the list of specifications
Resolution:	.001", .0005", or .0002" 0.01mm, 0.02mm, or 0.005mm
Display:	LCD Analog / Digital
Power Supply:	AA Battery (1pc)
Battery life:	Approx. 350 hours
Measuring Force:	0.7 - 1.7N

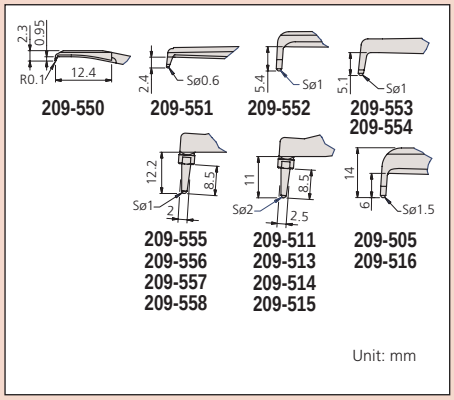
Dust/Water protection level: IP67
Provided with inspection certificate.

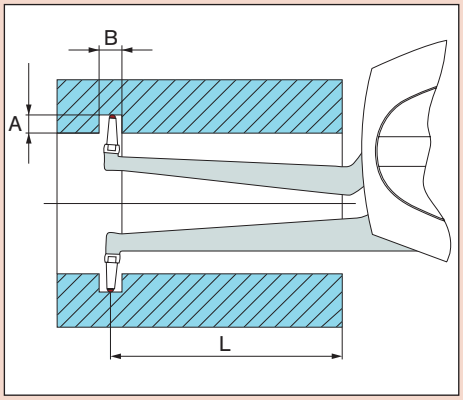
Function

Zeroset, Preset, Auto power OFF, Inch/Metric, conversion
Data hold, Max/Min value holding, Data output

Optional Accessories

21JAA300D: SPC cable kit (80" / 2m)
for **209-505, 209-511, 209-513, 209-514, 209-515, 209-516, 209-517**

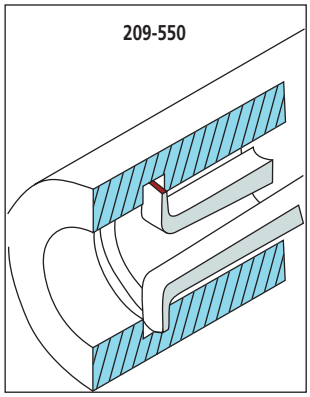




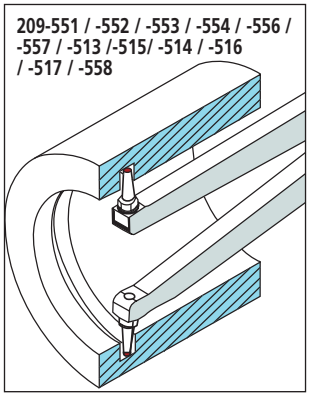
SPECIFICATIONS

Inch / Metric

Range	Order No.	Resolution	Accuracy	Max. Measuring Depth L	Max. Groove Depth A	Min. Groove Width B	Type of Measuring Contact	Mass(g)
.10 - .49"/ 2.5 - 12.5mm	**209-550**	.0002"/ 0.005mm	.0008"/ 0.015mm	.47"/ 12mm	.027"/ 0.7mm	.023"/ 0.5mm	Chisel R .0039"/ 0.1mm	225
.20 - .59"/ 5 - 15mm	**209-551**	.0002"/ 0.005mm	.0008"/ 0.015mm	1.37"/ 35mm	.09"/ 2.3mm	.032"/ 0.8mm	Ball .024"/ 0.6mm dia.	230
.39 - 1.18"/ 10 - 30mm	**209-552**	.0005"/ 0.01mm	.0015"/ 0.03mm	3.3"/ 85mm	.19"/ 5.2mm	.06"/ 1.2mm	Ball .04"/ 1mm dia.	250
.79 - 1.58"/ 20 - 40mm	**209-553**	.0005"/ 0.01mm	.0015"/ 0.03mm	3.3"/ 85mm	.26"/ 7mm	.06"/ 1.2mm	Ball .04"/ 1mm dia.	250
1.18 - 1.97"/ 30 - 50mm	**209-554**	.0005"/ 0.01mm	.0015"/ 0.03mm	3.3"/ 85mm	.26"/ 7mm	.06"/ 1.2mm	Ball .04"/ 1mm dia.	255
1.58 - 2.36"/ 40 - 60mm	**209-555**	.0005"/ 0.01mm	.0015"/ 0.03mm	3.3"/ 85mm	.31"/ 8.3mm	.06"/ 1.2mm	Ball .04"/ 1mm dia.	265
1.97 - 2.75"/ 50 - 70mm	**209-556**	.0005"/ 0.01mm	.0015"/ 0.03mm	3.3"/ 85mm	.31"/ 8.3mm	.06"/ 1.2mm	Ball .04"/ 1mm dia.	265
2.36 - 3.15"/ 60 - 80mm	**209-557**	.0005"/ 0.01mm	.0015"/ 0.03mm	3.3"/ 85mm	.31"/ 8.3mm	.06"/ 1.2mm	Ball .04"/ 1mm dia.	270
2.75 - 3.54"/ 70 -90mm	**209-558**	.0005"/ 0.01mm	.0015"/ 0.03mm	3.3"/ 85mm	.31"/ 8.3mm	.06"/ 1.2mm	Ball .04"/ 1mm dia.	270
.60-2.17"/ 15-55mm	**209-505**	.001"/ 0.02mm	.002"/ 0.04mm	4.49"/115mm	.177"/ 5mm	.10"/1.8mm	Ball .059"/ 1.5mm dia.	360
1.38-2.95"/ 35-75mm	**209-511**	.001"/ 0.02mm	.002"/ 0.04mm	4.49"/115mm	.315"/ 8mm	.157"/2.2mm	Ball .079"/ 2.0mm dia.	380
2.17-3.74"/ 55-95mm	**209-513**	.001"/ 0.02mm	.002"/ 0.04mm	4.49"/115mm	.315"/ 8mm	.157"/2.2mm	Ball .079"/ 2.0mm dia.	380
2.95-4.52"/ 75-115mm	**209-514**	.001"/ 0.02mm	.002"/ 0.04mm	4.49"/115mm	.315"/ 8mm	.157"/2.2mm	Ball .079"/ 2.0mm dia.	380
3.75 - 5.32"/ 95 - 135mm	**209-515**	.001"/ 0.02mm	.002"/ 0.04mm	4.49"/ 115mm	.315"/ 8mm	.157"/ 2.2mm	Ball .079"/ 2mm dia.	380
.60-2.95"/ 15-75mm	**209-516**	.001"/ 0.02mm	.003"/ 0.06mm	6.89"/175mm	.196"/ 5mm	.07"/1.8mm	Ball .059"/ 1.5mm dia.	440
1.57-3.94"/ 40-100mm	**209-517**	.001"/ 0.02mm	.003"/ 0.06mm	7.77"/195mm	.315"/ 8mm	.086"/2.2mm	Ball .079"/ 2.0mm dia.	440



Edge R 0.1 mm



Ball ø 0.6mm, ø 1mm, ø 1.5mm and ø 2mm

Mitutoyo

Digimatic Caliper Gages

SERIES 209 — External Tube Thickness Measurement Type

Versatile 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.

External measurement type

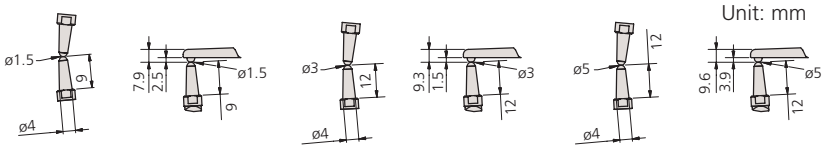
209-572

SPECIFICATIONS

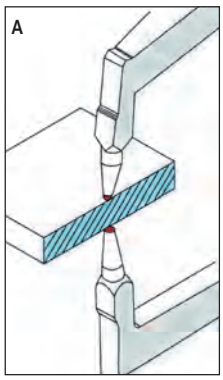
Inch / Metric

Range	Order No.	Resolution	Accuracy	Max. Measuring Depth L	Measuring Contact length Hb	Measuring Contact length Hf	Type of Measuring Contact/type of set up	Mass(g)
0 - .39"/ 0 - 10mm	**209-570**	.0002"/ 0.005mm	.0008"/ 0.05mm	1.37"/ 35mm	.75" / 19.1mm	.73"/ 18.6mm	Ball .059"/1.5mm dia. Both/ A	240
0 - .39"/ 0 - 10mm	**209-571**	.0002"/ 0.005mm	.001"/ 0.02mm	1.37"/ 35mm	.85"/ 21.7mm	.58"/ 14.8mm	Desc .24"/ 6mm dia. Both/ C	175
0 - .78"/ 0 - 20mm	**209-572**	.0005"/ 0.01mm	.0015"/ 0.03mm	3.2"/ 85mm	.97"/ 24.7mm	.97"/ 24.6mm	Ball .059"/1.5mm dia. Both/ A	280
0 - .78"/ 0 - 20mm	**209-573**	.0005"/ 0.01mm	.0015"/ 0.03mm	3.2"/ 80mm	.97"/ 24.7mm	.10"/ 2.5mm	Ball .059"/1.5mm dia. Both/ B	270
0-1.57"/ 0-40mm	**209-531**	.001"/ 0.02mm	.002"/ 0.04mm	4.33"/ 115mm	.98"/ 24.9mm	.1"/25.4mm	Ball .118"/ 3.0mm dia. Both / A	380
0-1.57"/ 0-40mm	**209-532**	.001"/ 0.02mm	.002"/ 0.04mm	4.33"/ 100mm	.98"/ 32mm	.059"/3.5mm	Ball .118"/ 3.0mm dia. Both / B	380
0-1.57"/ 0-40mm	**209-533**	.001"/ 0.02mm	.002"/ 0.04mm	4.33"/ 115mm	1.14"/ 30mm	.77"/19.4mm	Desc 1.97"/ 50mm dia. Both / D	380
0-2.36"/ 0-60mm	**209-534**	.001"/ 0.02mm	.003"/ 0.06mm	7.48"/ 190mm	.98"/ 25mm	.98"/25mm	Ball .197"/ 5.0mm dia. Both / A	470
0-2.36"/ 0-60mm	**209-535**	.001"/ 0.02mm	.003"/ 0.06mm	5.9"/ 150mm	.98"/ 25mm	.13"/3.5mm	Ball .197"/ 5.0mm dia. Both / B	470
0-2.36"/ 0-60mm	**209-536**	.001"/ 0.02mm	.004"/ 0.08mm	7.48"/ 190mm	1.06"/ 27mm	.77"/19.5mm	Desc 1.97"/ 50mm dia. Both / D	470

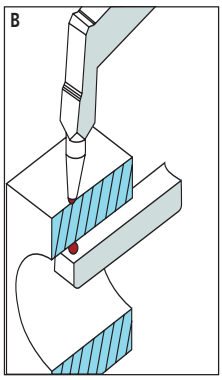
Unit: mm



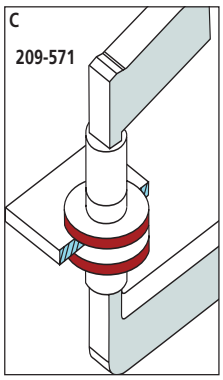
209-570 **209-573** **209-531** **209-532** **209-534** **209-535**



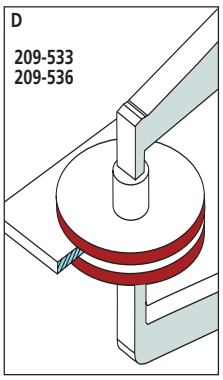
Ball ø 1.5 and 3mm for wall thickness



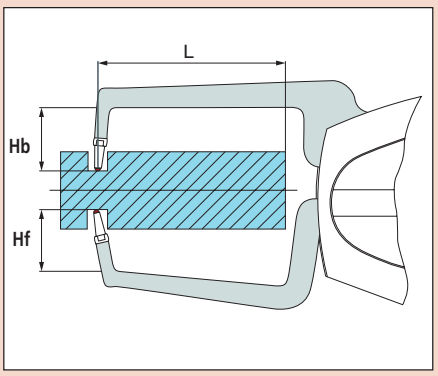
Ball ø 1.5 and 3mm for min. wall thickness ø3mm / 9mm



Disk ø6mm for flat surfaces



Disk ø50mm for flat surfaces



Technical Data

Accuracy:	Refer to the list of specifications
Resolution:	.001", .0005", or .0002" 0.01mm, 0.02mm, or 0.005mm
Display:	Analog / Digital
Power Supply:	AA Battery (1pc)
Battery life:	Approx. 350 hours
Measuring Force:	0.5 - 1.5N
Dust/Water protection level:	IP67

Provided with inspection certificate.

Function

Zeroset, Preset, Auto power OFF, Inch/Metric conversion, Data hold, Max/Min value holding, Data output
* Contact type 3, 4 does not have max. min. value hold.

Optional Accessories

21JAA300D: SPC cable kit (80" / 2m)

Dial Caliper Gages

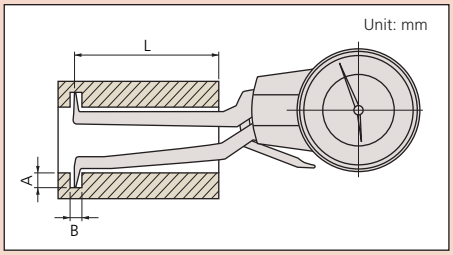
SERIES 209 — Internal Measurement Type

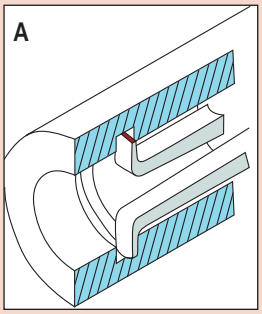
These Dial Caliper Gages are used only as comparison gages, and should be used along with a Setting Ring or a micrometer.

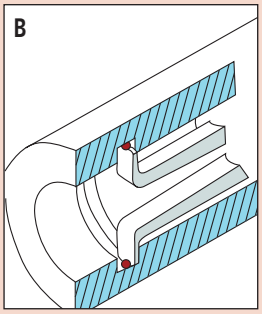
The caliper is spring loaded and makes point contact at constant measuring pressure.

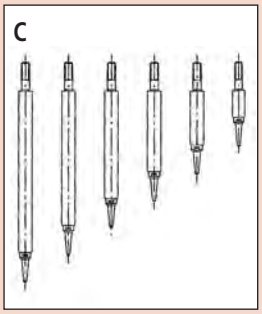
IP65

DIMENSIONS









SPECIFICATIONS

Inch

Measuring Range	Order No.	Graduation	Accuracy	Max. Measuring Depth L	Max. Groove Depth A	Min. Groove Width B	Measuring Contact Type	Size (mm)	Mass (g)
.10 - .50"	**209-350**	.0002"	± .0008"	.47"	.027"	.023"	A	R0.1	200
.20 - .60"	**209-351**	.0002"	± .0008"	1.37"	.09"	.032"	B	ø0.6	200
.40 - 1.2"	**209-352**	.0005"	± .0015"	3.3"	.19"	.06"	B	ø1	200
.80 - 1.6"	**209-354**	.0005"	± .0015"	3.3"	.26"	.06"	B	ø1	200
1.2 - 2"	**209-355**	.0005"	± .0015"	3.3"	.26"	.06"	B	ø1	200
1.6 - 2.4"	**209-356**	.0005"	± .0015"	3.3"	.31"	.06"	B	ø1	200
2 - 2.8"	**209-357**	.0005"	± .0015"	3.3"	.31"	.06"	B	ø1	200
2.4 - 3.2"	**209-358**	.0005"	± .0015"	3.3"	.31"	.06"	B	ø1	250
2.8 - 3.6"	**209-359**	.0005"	± .0015"	3.3"	.31"	.06"	B	ø1	250
3.2 - 4"	**209-360**	.0005"	± .0015"	3.3"	.31"	.06"	B	ø1	250
2 - 4"	**209-361***	.0005"	± .0015"	3.3"	.31"	.06"	C	ø1	250
3.6 - 5.6"	**209-362***	.0005"	± .0015"	3.3"	.31"	.06"	C	ø1	250
5.2 - 7.2"	**209-363***	.0005"	± .0015"	3.3"	.31"	.06"	C	ø1	250

*Interchangeable contact points (additional anvil 4 pcs.) with ball point .04" dia.

Metric

Measuring Range	Order No.	Graduation	Accuracy	Max. Measuring Depth L	Max. Groove Depth A	Min. Groove Width B	Measuring Contact Type	Size (mm)	Mass(g)
2.5 - 12.5mm	**209-300**	0.005mm	±0.015mm	12mm	0.7mm	0.5mm	A	R0.1	155
5 - 15mm	**209-301**	0.005mm	±0.015mm	35mm	2.3mm	0.8mm	B	ø0.6	160
10 - 30mm	**209-302**	0.01mm	±0.03mm	85mm	5.2mm	1.2mm	B	ø1	180
20 - 40mm	**209-303**	0.01mm	±0.03mm	85mm	7mm	1.2mm	B	ø1	180
30 - 50mm	**209-304**	0.01mm	±0.03mm	85mm	7mm	1.2mm	B	ø1	185
40 - 60mm	**209-305**	0.01mm	±0.03mm	85mm	8.3mm	1.2mm	B	ø1	195
50 - 70mm	**209-306**	0.01mm	±0.03mm	85mm	8.3mm	1.2mm	B	ø1	195
60 - 80mm	**209-307**	0.01mm	±0.03mm	85mm	8.3mm	1.2mm	B	ø1	200
70 - 90mm	**209-308**	0.01mm	±0.03mm	85mm	8.3mm	1.2mm	B	ø1	200
80 - 100mm	**209-309**	0.01mm	±0.03mm	85mm	8.3mm	1.2mm	B	ø1	200
50 - 100mm	**209-310***	0.01mm	±0.03mm	85mm	8.3mm	1.2mm	C	ø1	220
90 - 140mm	**209-311***	0.01mm	±0.03mm	85mm	8.3mm	1.2mm	C	ø1	230
130 - 180mm	**209-312***	0.01mm	±0.03mm	85mm	8.3mm	1.2mm	C	ø1	240
15-65mm	**209-896**	0.05mm	±0.05mm	175mm	5mm	1.8mm	B	ø1.5	400
40-90mm	**209-897**	0.05mm	±0.05mm	175mm	8mm	2.2mm	B	ø2	440
70-120mm	**209-898**	0.05mm	±0.05mm	175mm	8mm	2.2mm	B	ø2	440

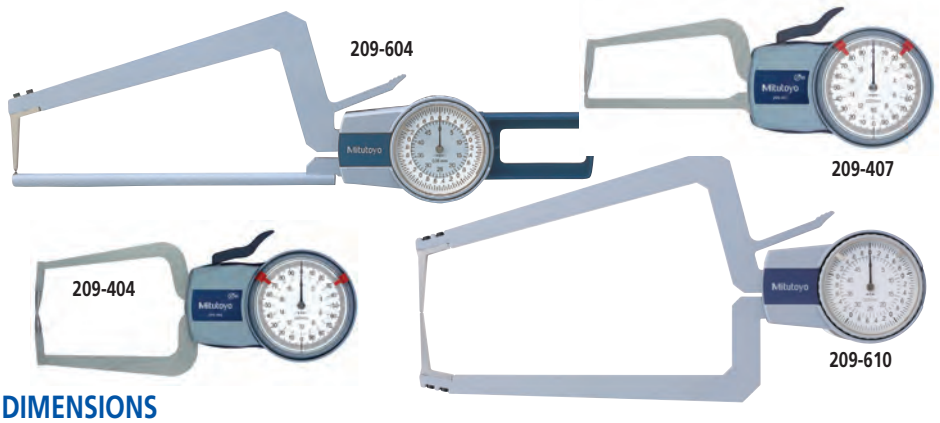
*Interchangeable contact point (additional anvil 5pcs.) with ball point 1mm dia

Mitutoyo

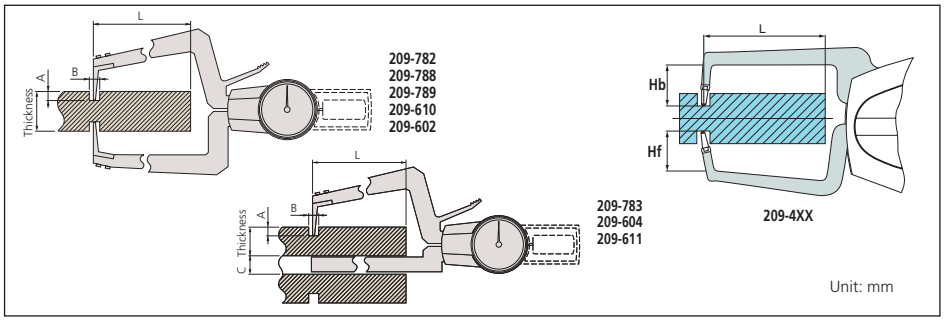
Dial Caliper Gages

SERIES 209 — External Measurement Type

IP65



DIMENSIONS



SPECIFICATIONS

Inch

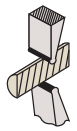
Measuring Range	Order No.	Graduation	Accuracy	Max. Measuring Depth L	Max.Groove Depth A/Hb	Min. Groove B/Hf	Measuring Contact Type	Size (mm)	Mass (g)
0 - .40"	**209-450**	.0002"	± .0008"	1.37"	.75"	.75"	K/K	ø1.5	170
0 - .40"	**209-451**	.0002"	±- .001"	1.37"	.85"	.58"	T	ø6	175
0 - .40"	**209-452**	.0002"	± .0008"	1.37"	.75"	.035"	RK/K	ø1.5	165
0 - .40"	**209-453**	.0002"	± .0008"	1.37"	.75"	.035"	R/S	Chisel R0.4, ø1.5	165
0- .50"	**209-789**	.005"	± .005"	1.38"	-	-	PK	ø2, Chisel R0.5	40
0- .50"	**209-790**	.005"	± .005"	1.38"	-	-	PR	ø2	40
0 - .80"	**209-454**	.0005"	±- .0015"	3.2"	.97"	.97"	S	Chisel R0.4	210
0 - .80"	**209-455**	.0005"	± .0015"	3.2"	.97"	.97"	K/K	ø1.5	210
0 - .80"	**209-456**	.0005"	± .0015"	3.2"	.97"	.10"	RK/K	ø1.5	200
0 - .80"	**209-457**	.0005"	± .0015"	3.2"	.97"	.10"	R/S	Chisel R0.4, ø1.5	200
0 - 2.0"	**209-782**	.001"	± .002"	6.7"	1.26"	.18"	K/K	ø2	560
0 - 2.0"	**209-783**	.001"	± .002"	6.7"	1.26"	.18"	R	ø2.5	520
2.0 - 4.0"	**209-788**	.001"	± .003"	6.7"	1.26"	.18"	K/K	ø2	580

Metric

Measuring Range	Order No.	Graduation	Accuracy	Max. Measuring Depth L	Max. Groove Depth A/Hb	Min. Groove B/Hf	Measuring Contact	Size (mm)	Mass (g)
0 - 10mm	**209-402**	0.005mm	±0.015mm	35mm	19.1mm	18.6mm	K/K	ø1.5	240
0 - 10mm	**209-403**	0.005mm	±0.02mm	35mm	21.7mm	14.8mm	T	ø6	175
0 - 20mm	**209-404**	0.01mm	±0.03mm	85mm	7mm	24.6mm	K/K	ø1.5	210
0 - 20mm	**209-405**	0.01mm	±0.03mm	85mm	7mm	24.6mm	S	R 0.4	210
0 - 20mm	**209-406**	0.01mm	±0.03mm	80mm	7mm	2.5mm	R/S	Chisel R0.4, ø1.5	200
0 - 20mm	**209-407**	0.01mm	±0.03mm	80mm	7mm	2.5mm	RK/K	ø1.5	200
0 - 10mm	**209-843**	0.1mm	±0.1mm	36mm	-	-	PK	ø2, Chisel R0.5	40
0 - 10mm	**209-603**	0.1mm	±0.1mm	33mm	-	-	PR	ø2	40
0 - 50mm	**209-602**	0.05mm	±0.05mm	170mm	10mm	4.5mm	K/K	ø2	560
0 - 50mm	**209-604**	0.05mm	±0.05mm	170mm	10mm	4.5mm	PR	ø2, Chisel R0.5	520
0 - 50mm	**209-610**	0.05mm	±0.05mm	170mm	10mm	4.5mm	R	ø2.5	560
0 - 50mm	**209-611**	0.05mm	±0.05mm	170mm	10mm	4.5mm	S/R	ø2, Chisel R0.75	525

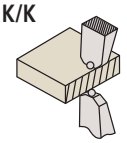
Type of Contact Points

S



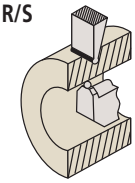
Upper / Lower contact point
R0.4 / R0.4: **209-454, 209-405**
R0.75 / R0.75: **209-610**

K/K



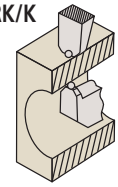
Upper / Lower contact point
ø2.0 / ø2.0 ball: **209-602, 209-782, 209-788, 209-789**
ø1.5 / ø1.5 ball: **209-450, 209-455, 209-402, 209-404**

R/S



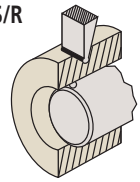
R0.4 / ø1.5 carbide ball: **209-406, 209-453**

RK/K



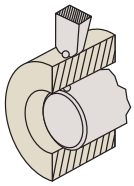
Upper / Lower contact point
ø1.5 / ø1.5 ball: **209-407, 209-452, 209-456**

S/R



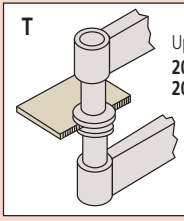
Upper / Lower contact point
R0.75 / ø2 ball: **209-611**

R



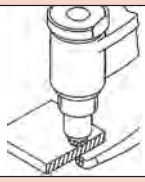
Upper / Lower contact point
ø2 / ø2.5 ball: **209-604, 209-783**

T



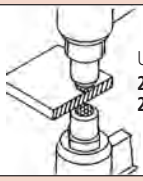
Upper / Lower contact point
209-451:
209-403:

PR



Upper / Lower contact point
ø2 / R0.5: **209-790, 209-603**

PK



Upper / Lower contact point
209-789:
209-843:

Dial Caliper Gages

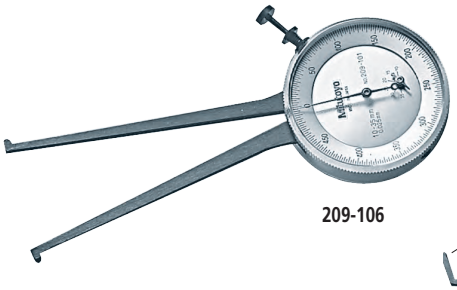
SERIES 209 — Internal Measurement Type

These Dial Caliper Gages are used only as comparison gages, and should be used along with a Setting Ring or a micrometer.

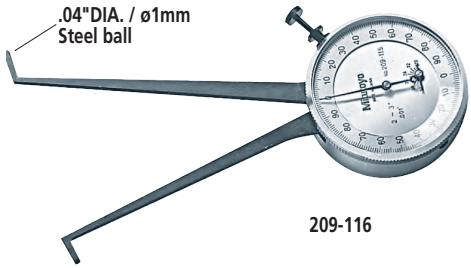
The caliper is spring loaded and makes point contact at constant measuring pressure.

Technical Data

Dial Diameter: 2" / 50mm
Measuring Force: 2.0N or less
Repeatability: .001" / 0.025mm



209-106



209-116

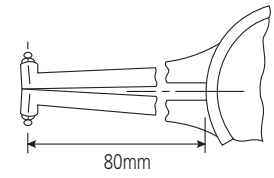
Metric Yellow Dial Face

Order No.	Range	Graduation	Accuracy
209-106	10–35mm	0.025mm	±0.075mm
209-107	30–55mm	0.025mm	±0.075mm
209-108	50–75mm	0.025mm	±0.075mm

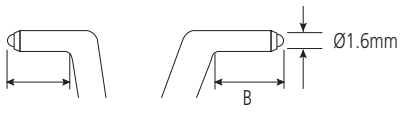
Inch

Order No.	Range	Graduation	Accuracy
209-116	.4"–1.4"	.001"	±.003"
209-117	1.2"–2.2"	.001"	±.003"
209-118	2.0"–3.0"	.001"	±.003"

DIMENSIONS



Range	A	B	Mass(g)
10 - 35mm / .4 - 1.4"	2.6mm	2.6mm	85
30 - 55mm / 1.2 - 2.2"	8.5mm	7.5mm	85
50 - 75mm / 2.0 - 3.0"	8.5mm	7.5mm	85



Mitutoyo

Dial Tension Gages

SERIES 546

FEATURES

- Can measure dynamic tension in Newton (N) units.
- Dial Tension Gages are widely used to determine the contact force of other measuring instruments as well as that of electrical relays, micro-switches, valves and precision springs.
- Convenient peak-hold type gages are also available.

546-112
Standard type

546-119
Standard type

546-137
Peak hold type

SPECIFICATIONS

Standard

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

Peak hold

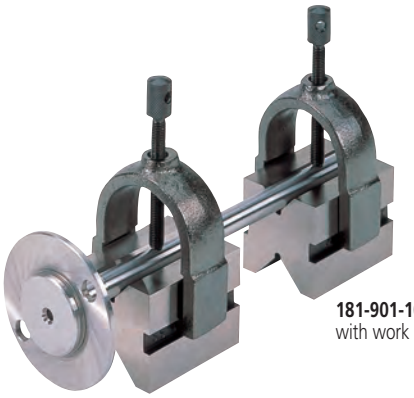
Range	Order No.	Graduation
10mN - 100mN	**546-133**	5mN
30mN - 300mN	**546-134**	10mN
0.06N - 0.5N	**546-135**	0.02N
0.1N - 1N	**546-136**	0.05N
0.15N - 1.5N	**546-137**	0.05N
0.3N - 3N	**546-138**	0.1N
0.6N - 5N	**546-139**	0.2N

V-Block Sets

SERIES 181

FEATURES

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



181-901-10
with work piece

SPECIFICATIONS

Inch

Max. workpiece dia.	Order No.	Thread Size	Remarks	Mass(g)
1″	**181-901-10**	UNC 1/4″-20	With clamp	750
2″	**181-904-10**	5/16″-18NC	With clamp	3600

Magnetic V-Block

SERIES 181

SPECIFICATIONS

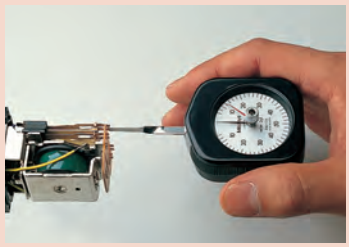
Metric

Max. workpiece dia.	Order No.	Magnetic Pull	Remarks
2″	**181-146**	60 kg	1 Piece

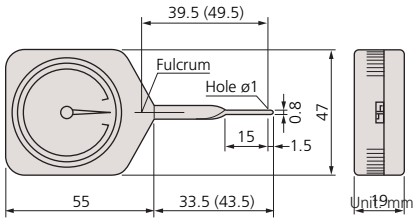
181-146

Application

Measuring contact force of relay

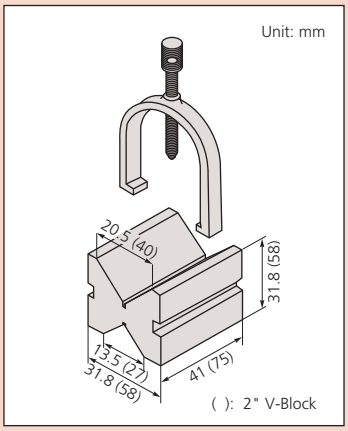


DIMENSIONS



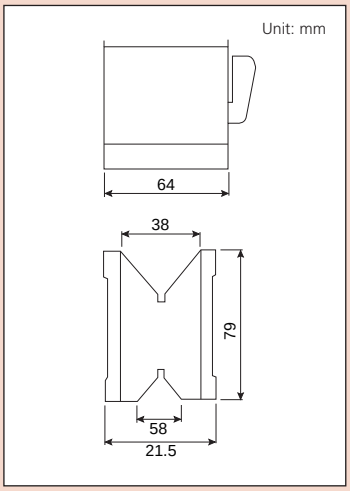
( ): **546-112, 546-113, 546-133**

DIMENSIONS



( ): 2" V-Block

DIMENSIONS



Dial Snap Gages

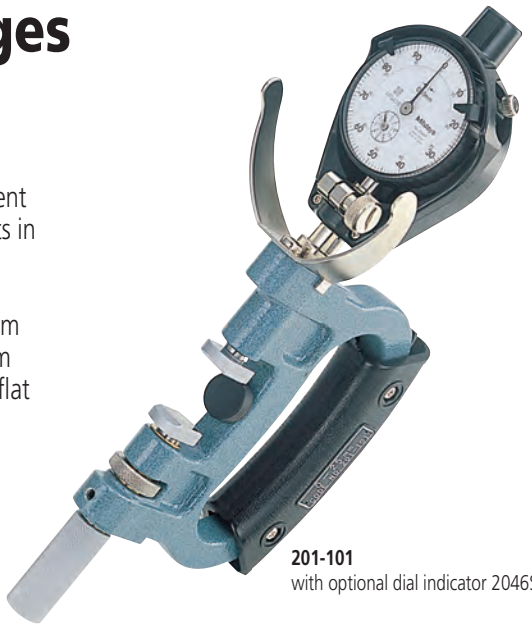
SERIES 201

Technical Data

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

FEATURES

- Designed for quick GO/NG judgment of diameters of cylinders and shafts in machining processes.
- Dial indicator is optional.
- Anvil retracting stroke: .078″ / 2mm
- Anvil positioning range: 1″ / 25mm
- Wide (.53 x .47″ / 13.5 x 12mm), flat carbide anvils.
- Both front edges of the anvil are chamfered for easy insertion.



201-101
with optional dial indicator 2046SB.

SPECIFICATIONS

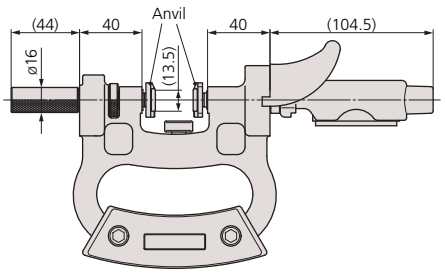
Metric Gage stem diameter 8mm

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

Inch Gage stem diameter 3/8"

Range	Order No.	Parallelism	Measuring force	Recommended dial indicator (optional)
0 - 1″	**201-151**	.00025″ or less	15N±3N	**2803SB-10** (.0001″ reading)
1 - 2″	**201-152**	.00025″ or less	15N±3N	**2803SB-10** (.0001″ reading)
2 - 3″	**201-153**	.00025″ or less	15N±3N	**2803SB-10** (.0001″ reading)
3 - 4″	**201-154**	.00025″ or less	15N±3N	**2803SB-10** (.0001″ reading)
4 - 5″	**201-155**	.00025″ or less	15N±3N	**2803SB-10** (.0001″ reading)
5 - 6″	**201-156**	.00025″ or less	15N±3N	**2803SB-10** (.0001″ reading)
6 - 7″	**201-157**	.00025″ or less	15N±3N	**2803SB-10** (.0001″ reading)
7 - 8″	**201-158**	.00025″ or less	15N±3N	**2803SB-10** (.0001″ reading)
8 - 9″	**201-159**	.00025″ or less	15N±3N	**2803SB-10** (.0001″ reading)
9 - 10″	**201-160**	.00025″ or less	15N±3N	**2803SB-10** (.0001″ reading)
10 - 11″	**201-161**	.00025″ or less	15N±3N	**2803SB-10** (.0001″ reading)
11 - 12″	**201-162**	.00025″ or less	15N±3N	**2803SB-10** (.0001″ reading)

DIMENSIONS



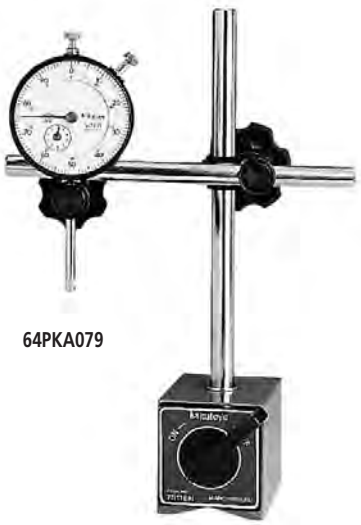
Unit: mm

Mitutoyo

Dial/Test Indicator & Magnetic Stand Sets

SERIES 7

513-907



64PKA079

SPECIFICATIONS

Set No.	Included in set
64PKA078	2804S-10, 7010S
64PKA079	2416S, 7010S
513-907	513-402, 7014E
513-908	513-404E, 7014

*Supplied with collar **02AZC291**

Magnetic Stands

SERIES 7

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

7010S

7011BN

7033B

7014 / 7014E
No magnet force ON/OFF

7012-10

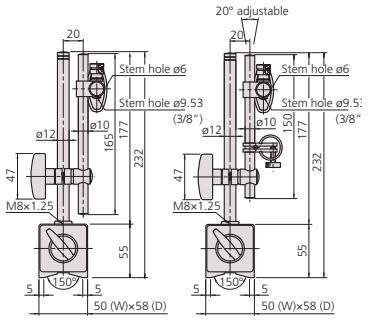
SPECIFICATIONS

Order No.	Description	Applicable holding stem dia.	Dovetail groove	Remarks
7010S	Magnetic stand	ø6mm, ø8mm*, ø9.53mm (3/8")	—	—
7011BN	Magnetic stand	ø6mm, ø8mm*, ø9.53mm (3/8")	—	With fine adjustment
7012-10	Magnetic flexi-stand	ø6mm, ø8mm*, ø9.53mm (3/8")	—	For dial test indicator
7014	Mini magnetic stand	ø6mm, ø8mm	Provided	Without magnet ON/OFF
7014E	Mini magnetic stand	ø6mm, ø8mm*, ø9.53mm (3/8")	Provided	Without magnet ON/OFF
7033B	Universal magnetic stand	ø6mm, ø8mm, ø9.53mm (3/8")	Provided	With mechanical locking sytem

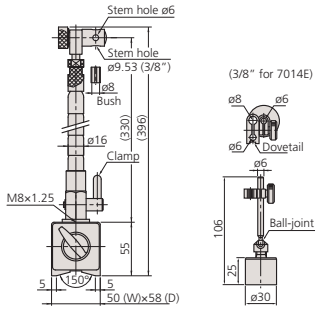
*Supplied with collar **02AZC291**

DIMENSIONS

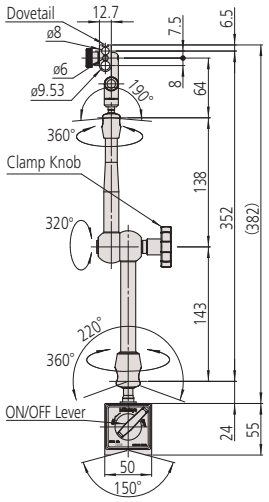
Unit: mm



7010S 7011BN



7012-10 7014 / 7014E



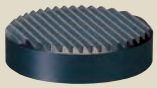
7033B

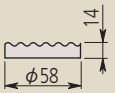
Dial Gage Stands

SERIES 7

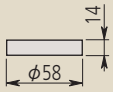
Optional Accessories

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

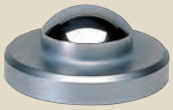


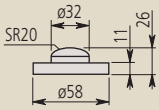


No.101462
Hardened steel



No.101461
Hardened steel





No.101463
Hardened steel

FEATURES

- Dial Gage Stands are designed for comparison measurements of size using a dial indicator or Digimatic Indicator.
- Anvil of 7001-10 and 7002-10: ø58mm
  Anvil of 7007-10: 90mm square
- Vertical fine adjustment is available with one-touch control thanks to the parallel spring suspension.

7001-10
(with ø58mm serrated anvil)

7002-10
(with ø58mm flat anvil)

7007-10
(with 90mm square anvil)

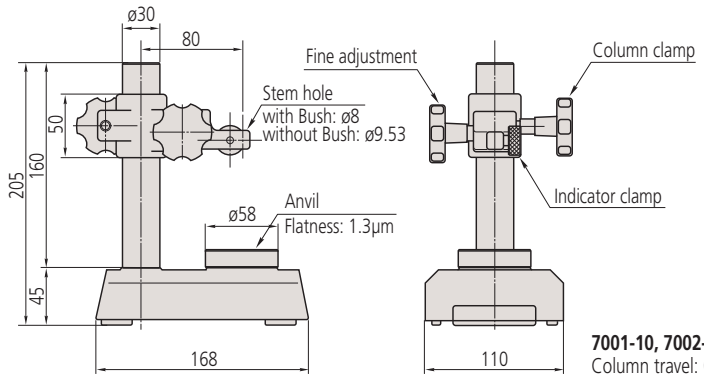
SPECIFICATIONS

Metric

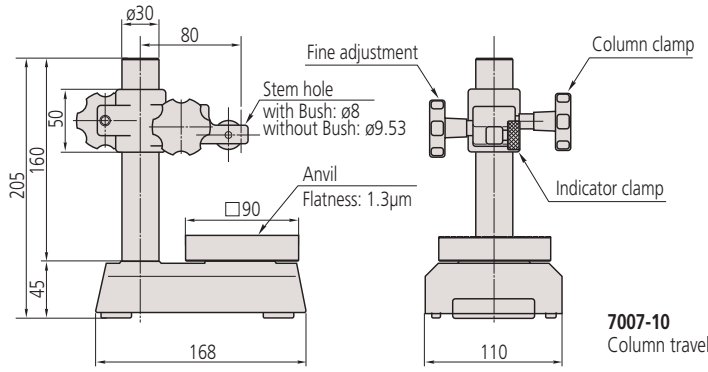
Order No.	Stem hole	Remarks	Mass(g)
7001-10	ø8mm, ø9.53mm	With serrated anvil (**101462**)	4
7002-10	ø8mm, ø9.53mm	With flat anvil (**101461**)	4
7007-10	ø8mm, ø9.53mm	With square anvil	5

DIMENSIONS

Unit: mm



7001-10, 7002-10
Column travel: 0 - 95mm



7007-10
Column travel: 0 - 90mm

Mitutoyo

Transfer Stands

SERIES 519

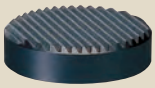
FEATURES

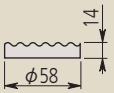
- Transfer Stands are designed for comparison measurements of size using a dial indicator or Digimatic Indicator.

519-109-10
(with a serrated anvil)

Optional Accessories

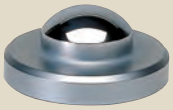
101461: Hardened steel flat anvil
101463: Hardened steel domed anvil

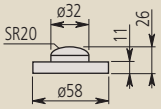




No.101462
Hardened steel

No.101461
Hardened steel





No.101463
Hardened steel

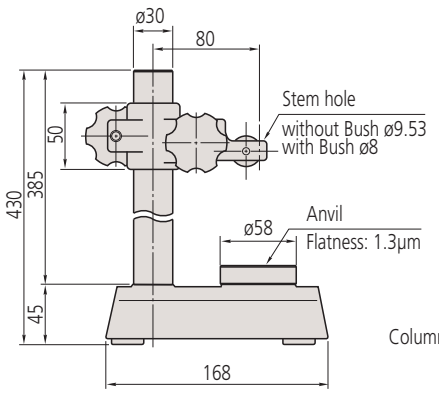
SPECIFICATIONS

Metric

Order No.	Stem hole	Remarks
519-109-10	ø8mm, ø9.53mm	With serrated anvil (**101462**)

DIMENSIONS

Unit: mm



Column travel: 0 - 320mm

Granite Comparator Stands

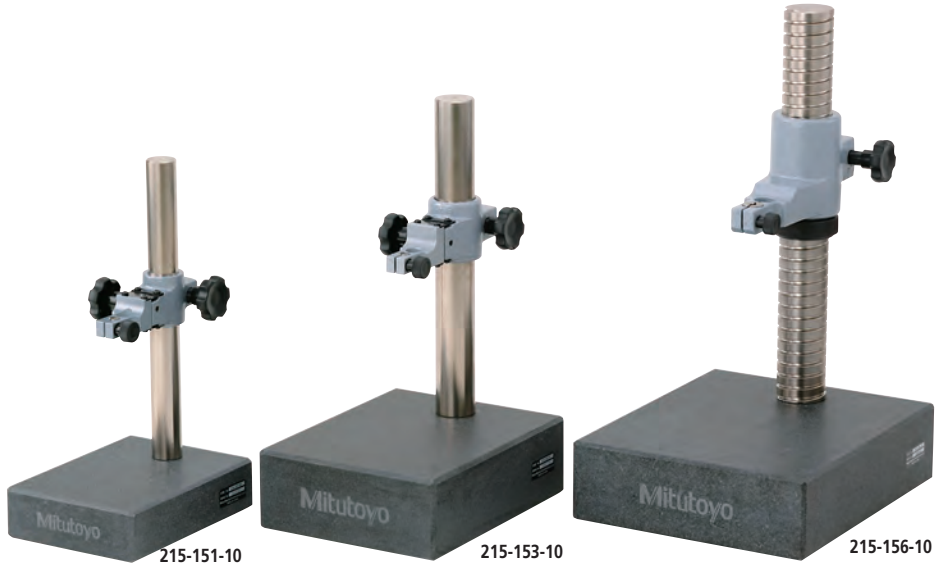
SERIES 215

FEATURES

- The base is made of black granite that stays free of burrs and pileups due to its fine-grain composition.
- Easy maintenance due to the non-rusting base.
- The rigid granite base is free from burrs and pileups due to its fine-grain composition and less viscousness compared with casting iron: the flatness is always accurate and the workpiece is free from damage.

Optional Accessories

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



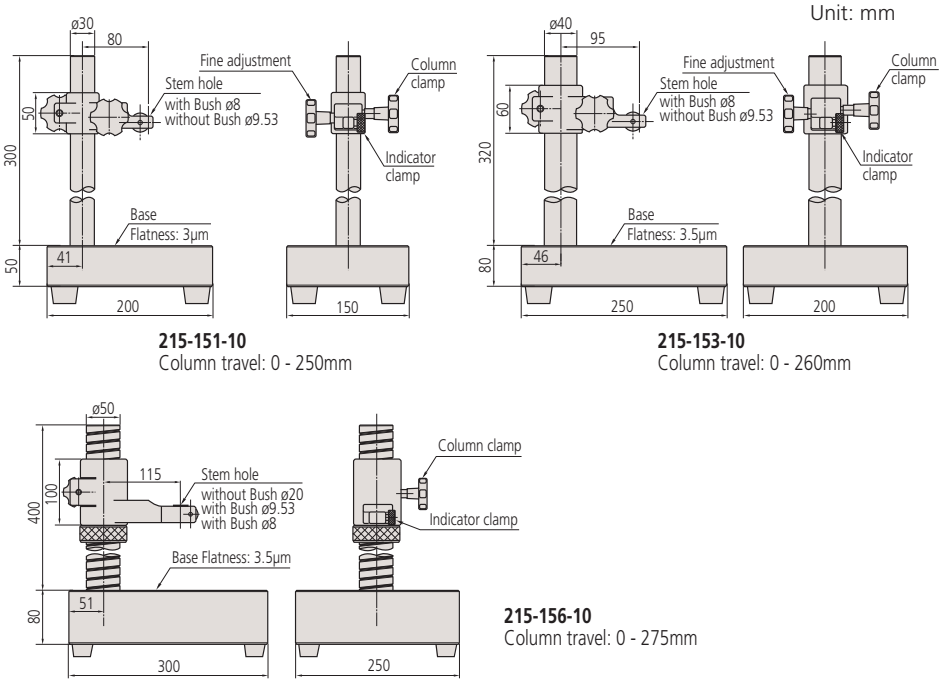
215-151-10 **215-153-10** **215-156-10**

SPECIFICATIONS

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

DIMENSIONS

Unit: mm



215-151-10
Column travel: 0 - 250mm

215-153-10
Column travel: 0 - 260mm

215-156-10
Column travel: 0 - 275mm

Comparator Stands

SERIES 215

FEATURES

- Comparator Stands have a very stable, cast-iron which enables precise measurement.
- The partially serrated anvil prevents very flat workpieces from wringing to it and the 2.3µm flatness (or better) promotes accurate measurement.
- The **215-505-10** model has a threaded column which enables easy and precise coarse adjustment.
- Serrated anvils 110×110mm are supplied with **215-405-10**, and 150×150mm with **215-505-10** models.

215-405-10

Application example using Digimatic Indicator ID-H.

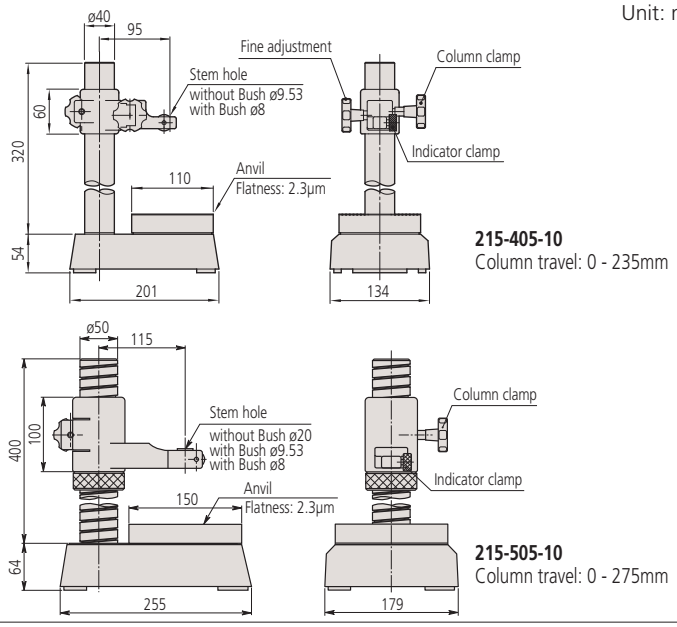
SPECIFICATIONS

Order No.	Square anvil size (W x D)	Column travel	Stem hole	Remarks
215-405-10	110 x 110mm	235mm	ø8mm, ø9.53mm	With fine adjustment of 1mm range
215-505-10	150 x 150mm	275mm	ø8mm, ø9.53mm, ø20mm	With fine adjustment over the entire travel

* Perpendicularity of the mounting hole to the anvil: less than 0.4mm/100mm

DIMENSIONS

Unit: mm



Optional Accessories

21JAA329: ø8mm bush*
21JAA330: ø9.53mm (3/8") bush*
21JAA331: ø15mm bush*
* Only available for **215-505-10**.

Precision Granite Stands (with black granite bases)

SERIES 517

FEATURES

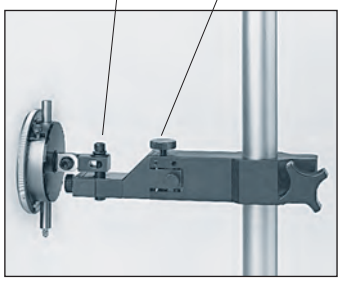
Mitutoyo's Granite Comparator Stands are basic building-blocks for the assembly of special-purpose, precision measuring equipment. By mounting precision measuring instruments such as Digimatic indicators, Mu-Checker Cartridge Heads, and Linear Gages onto the stands, it is possible to satisfy all manner of measuring assignment. The rigid granite base is free from burrs, pileups, rust, and deterioration over time.

517-895
(stand only)

517-898
(stand only)

Optional Accessories

58AAA151: ø8mm bush*
58AAA273: ø9.53mm (3/8") bush*
58AAA276: ø15mm bush*
*Only available for **215-156**.

SPECIFICATIONS

Order No.	Base	Column Diameter	Column Height	Throat Clearance	Table Flatness	Table Thickness	Weight
517-890	6 x 8"	1.181"	6"	4.375"	.0001"	2"	18 lbs
517-891	6 x 8"	1.181"	8"	4.375"	.0001"	2"	19 lbs
517-892	6 x 8"	1.181"	12"	4.375"	.0001"	2"	20 lbs
517-893	6 x 8"	1.181"	18"	4.375"	.0001"	2"	21 lbs
517-895	8 x 12"	1.181"	6"	5.8"	.0001"	2"	29 lbs
517-896	8 x 12"	1.181"	8"	5.8"	.0001"	2"	30 lbs
517-897	8 x 12"	1.181"	12"	5.8"	.0001"	2"	31 lbs
517-898	8 x 12"	1.181"	18"	5.8"	.0001"	2"	32 lbs
517-899	8 x 12"	1.181"	24"	5.8"	.0001"	2"	35 lbs