

# 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 particularly useful in multipoint measurement.
- Measurement tool with a solar power source. Ready for use from 40 lux illumination.
- Similar in size to Series 2 dial indicators.
- SPC output provided.
- Two large buttons (three on inch/mm models) improve functionality.



## 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

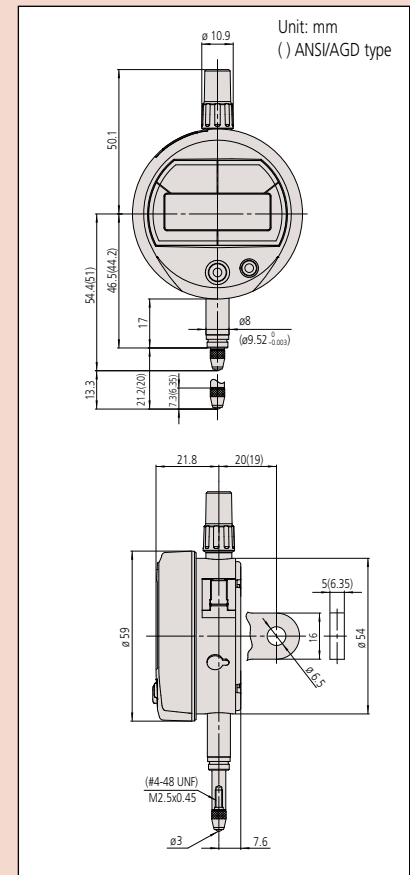
## Optional Accessories

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

## 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





### 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: **543-794B**,  
**543-795B**, **543-796B**)  
 Inspection certificate is included.

### 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)  
**21EZA198:** Spindle lifting lever (ISO/JIS type)  
**21EZA199:** Spindle lifting lever (ANSI/AGD type)  
**540774:** Spindle lifting cable (stroke: .4" / 10mm)  
**21EZA105** Lifting knob (mm)  
**21EZA150** Lifting knob (inch)  
**125317:** Spare rubber boot (for dust-proof type)  
 —: Backs (See page F-33.)  
 —: Contact points (See page F-34.)

# ABSOLUTE Digimatic Indicator ID-S

## SERIES 543 — with Simple Design

### FEATURES

- After the initial zero-setting with the Origin button, the repeated absolute positioning is no longer necessary over entire battery life.
- Unlimited response speed eliminates over-speed errors
- Similar in size to standard Series 2 dial indicators.
- SPC data output.



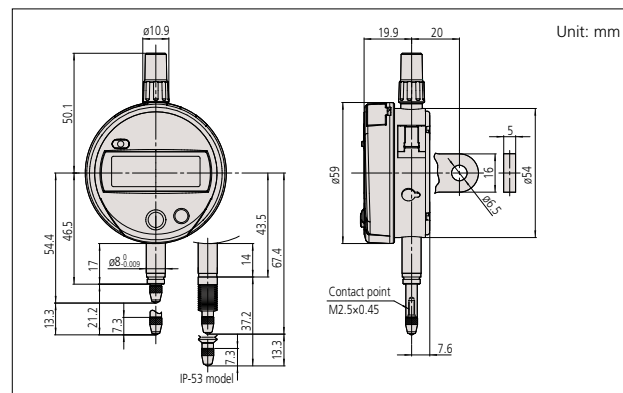
### SPECIFICATIONS

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	<b>543-792</b>	<b>543-792B</b>	ID-S112EX	±.0001"	1.5N or less	—
.00005"/0.001mm	.5" / 12.7mm	<b>543-796</b>	<b>543-796B</b>	ID-S112PEX	±.0001"	2.5N	Dust-proof
.0001"/0.001mm	.5" / 12.7mm	<b>543-793</b>	<b>543-793B</b>	ID-S112TX	±.0001"	1.5N or less	—
.0005"/0.01mm	.5" / 12.7mm	<b>543-783</b>	<b>543-783B</b>	ID-S1012EX	±.0010"	1.5N or less	—

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	<b>543-791</b>	<b>543-791B</b>	ID-S112MX	±.0001"	1.5N or less	—
.00005"/0.001mm	.5" / 12.7mm	<b>543-795</b>	<b>543-795B</b>	ID-S112PMX	±.0001"	2.5N or less	Dust-proof
.0005"/0.01mm	.5" / 12.7mm	<b>543-782</b>	<b>543-782B</b>	ID-S1012MX	±.0008"	1.5N 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	<b>543-790</b>	<b>543-790B</b>	ID-S112X	0.003mm	1.5N or less	—
0.001mm	12.7mm	<b>543-794</b>	<b>543-794B</b>	ID-S112PX	0.003mm	2.5N or less	Dust-proof
0.01mm	12.7mm	<b>543-781</b>	<b>543-781B</b>	ID-S1012X	0.02mm	1.5N or less	—

### DIMENSIONS



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

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

# ABSOLUTE Digimatic Indicator ID-U

**SERIES 575 — With Slim and Simple Design**

## FEATURES

- Slim 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 entire battery life; the origin is remembered even after power-off.
- Ideal for installation into measuring devices because of 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 has no option for backs.
- SPC data output.



## 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	<b>575-123</b>	ID-U1025E	.0008"	1.8N or less

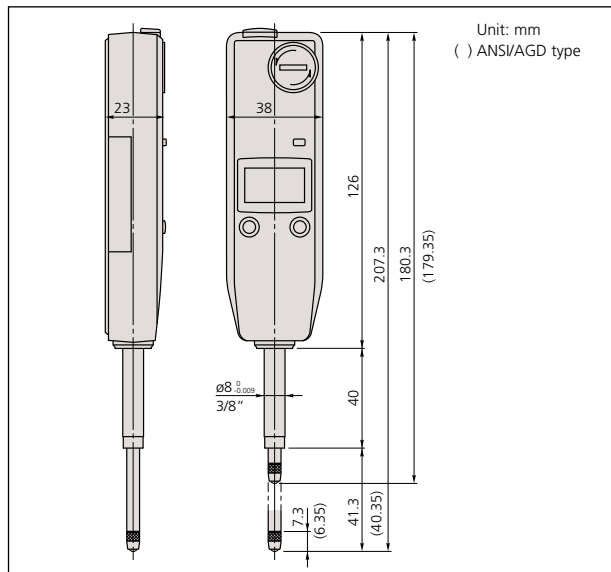
**Inch/Metric** Stem  $\varnothing$  8mm, M2.5 x 0.45 Thread

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

**Metric** Stem  $\varnothing$  8mm, M2.5 x 0.45 Thread

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

## DIMENSIONS



**ABSOLUTE**<sup>®</sup>

Absolute System Patented by MITUTOYO

## Technical Data

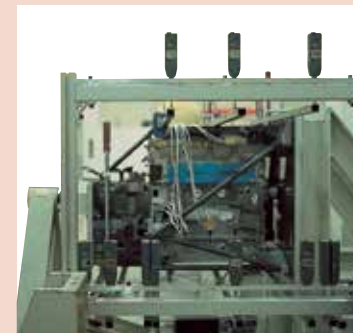
Accuracy: Refer to the list of specifications  
 Resolution: 0.01mm or .0005"/0.01mm,  
 Display: LCD  
 Length standard: ABSOLUTE electrostatic capacitance type linear encoder  
 Max. response speed: Unlimited  
 Measuring force: Refer to the list of specifications  
 Battery: SR44 (1 pc.), **938882**  
 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

### FEATURES

- Similar in size to Series 2 dial indicators.
- Large, easy-to-read LCD.
- Go/no-go judgment can be performed by setting upper and lower tolerance limits. The judgment result (go/no-go) 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.

### 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. 7,000 hours under normal use  
 Dust/Water protection level: IP42  
 Inspection certificate is included

### Function

Origin-set/Preset, Zeroset, go/no-go 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.



543-392  
IP42



543-402  
IP42



543-472B  
IP42



543-492B  
IP42

# 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	<b>543-392</b> <b>543-392B</b>	ID-C112EXB	.0001"	1.5N or less	—
.00005"/0.001mm*	.5" / 12.7mm	<b>543-396</b> <b>543-396B</b>	ID-C112CEX	.0001"	0.4N - 0.7N	Low measuring force
.00005"/0.001mm*	1" / 25.4mm	— <b>543-472B</b>	ID-C125EXB	.0001"	1.8N or less	—
.00005"/0.001mm*	2" / 50.8mm	— <b>543-492B</b>	ID-C150EXB	.0002"	2.3N or less	—
.0005"/0.01mm	.5" / 12.7mm	<b>543-402</b> <b>543-402B</b>	ID-C1012EX	.001"	0.9N or less	—
.0005"/0.01mm	.5" / 12.7mm	<b>543-406</b> <b>543-406B</b>	ID-C1012CEX	.001"	0.2N - 0.5N	Low measuring force
.0005"/0.01mm	1" / 25.4mm	— <b>543-476B</b>	ID-C1025EXB	.001"	1.8N or less	—
.0005"/0.01mm	2" / 50.8mm	— <b>543-496B</b>	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	<b>543-391</b> <b>543-391B</b>	ID-C112MX	.0001"	1.5N or less	—
.00005"/0.001mm*	.5" / 12.7mm	<b>543-395</b> <b>543-395B</b>	ID-C112CMX	.0001"	0.4N - 0.7N	Low measuring force
.00005"/0.001mm*	1" / 25.4mm	— <b>543-471B</b>	ID-C125MXB	.0001"	1.8N or less	—
.00005"/0.001mm*	2" / 50.8mm	— <b>543-491B</b>	ID-C150MXB	.0002"	2.3N or less	—
.0005"/0.01mm	.5" / 12.7mm	<b>543-401</b> <b>543-401B</b>	ID-C1012MX	.001"	0.9N or less	—
.0005"/0.01mm	.5" / 12.7mm	<b>543-405</b> <b>543-405B</b>	ID-C1012CMX	.001"	0.2N - 0.5N	Low measuring force
.0005"/0.01mm	1" / 25.4mm	— <b>543-475B</b>	ID-C1025MXB	.001"	1.8N or less	—
.0005"/0.01mm	2" / 50.8mm	— <b>543-495B</b>	ID-C1050MXB	.0016"	2.3N or less	—

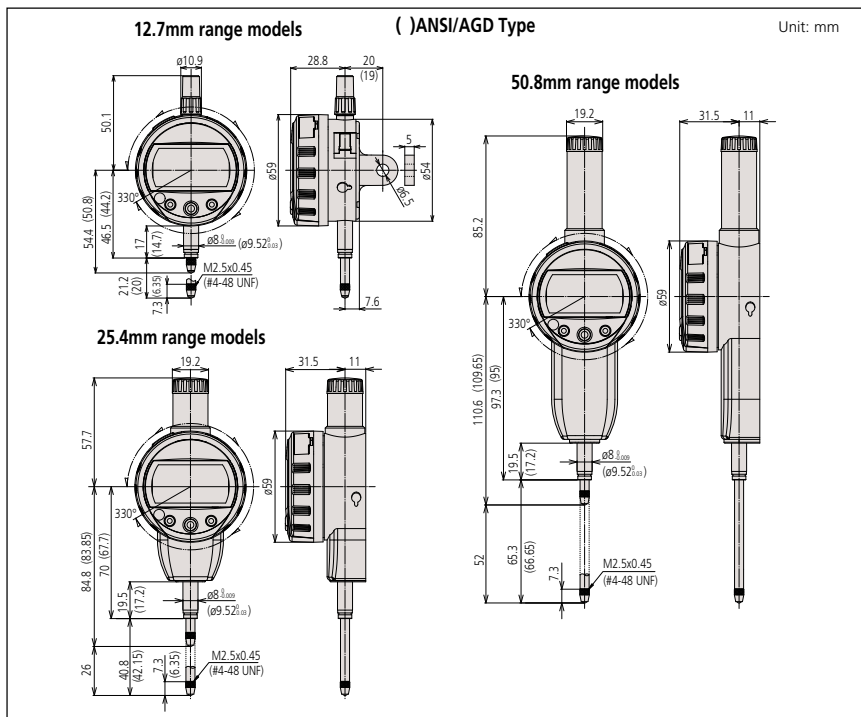
\* Switchable Resolution Type

**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	<b>543-390</b> <b>543-390B</b>	ID-C112X	0.003mm	1.5N or less	—
0.001mm*	12.7mm	<b>543-394</b> <b>543-394B</b>	ID-C112CX	0.003mm	0.4N - 0.7N	Low measuring force
0.001mm*	25.4mm	— <b>543-470B</b>	ID-C125XB	0.003mm	1.8N or less	—
0.001mm*	50.8mm	— <b>543-490B</b>	ID-C150XB	0.006mm	2.3N or less	—
0.01mm	12.7mm	<b>543-400</b> <b>543-400B</b>	ID-C1012X	0.02mm	0.9N or less	—
0.01mm	12.7mm	<b>543-404</b> <b>543-404B</b>	ID-C1012CX	0.02mm	0.2N - 0.5N	Low measuring force
0.01mm	25.4mm	— <b>543-474B</b>	ID-C1025XB	0.03mm	1.8N or less	—
0.01mm	50.8mm	— <b>543-494B</b>	ID-C1050XB	0.04mm	2.3N or less	—

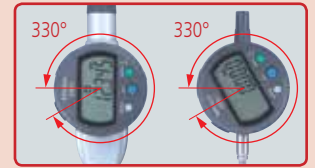
\* Switchable Resolution Type

# 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.



## 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.



### Technical Data

Accuracy: Refer to the list of specifications  
 Resolution: 12 Steps  
 .00005/.0001/.0005"  
 0.001/0.01mm  
 Display: LCD  
 Length standard: ABSOLUTE electrostatic capacitance-type linear encoder  
 Max. response speed: Unlimited  
 Measuring force: Refer to the list of specifications  
 Battery: CR2032 (1 pc.), **05SAA217**  
 Battery life: Approx. 12 months under normal use  
 IP Rating: Equivalent to IP-42<sup>1</sup>

<sup>1</sup> A protection class indication (IP=International Protection) is based on the IEC 60529 / DIN40050 part 1/JIS D0207, C0920. The level indicated is valid only if the output connector cap is installed.

### Function

Key Lock, Parameter Lock, PC-USB Input, Analog Bar, FAST measurement frequency, Preset (up to 3 values), Tolerance Judgment, Peak Detection, Calculation, inch/mm conversion (on inch/metric models only), Counting direction switching, Data Output  
 Alarm: Low voltage, Counting value composition error, Over-flow error, Tolerance limit setting error

### Optional Accessories

- 905338:** Connecting Cable (1m)
- 905409:** Connecting Cable (2m)
- 21EZA313:** Parameter Setting USB Cable
- 21EZA198:** Spindle lifting lever (12.7mm ISO/JIS type)
- 21EZA199:** Spindle lifting lever (12.7mm ASME/AGD type)
- 21EZA105:** Lifting Knob (12.7mm/.5" ISO/JIS Models)
- 21EZA150:** Lifting Knob (12.7mm/.5" ASME/AGD Models)
- 21EZA197:** Lifting Knob (for 25.4/1" mm models)
- 21EZA200:** Lifting Knob (for 50.8/2" mm models)
- 540774:** Spindle lifting cable
- : 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

# ABSOLUTE Digimatic Indicator ID-C

## SERIES 543 — Calculation Type

### FEATURES

- The new Calculation-Type Digimatic Indicator features both a Key-Lock and Parameter-Lock to prevent accidental changing of settings during operation.
- Improved parameter setting software makes easy to set all available parameters, and determine and upload the proper coefficients for calculation. (optional)
- Fast measurement frequency allows the user to increase the number of readings per second from 10 to 50, allowing higher accuracy measurements of TIR and MAX/MIN.
- An analog bar provides easy-to-read values when scanning for Max, Min, and TIR Values.
- 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 the need for conversions.



543-342B

### SPECIFICATIONS

ISO/JIS type      ANSI/AGD type

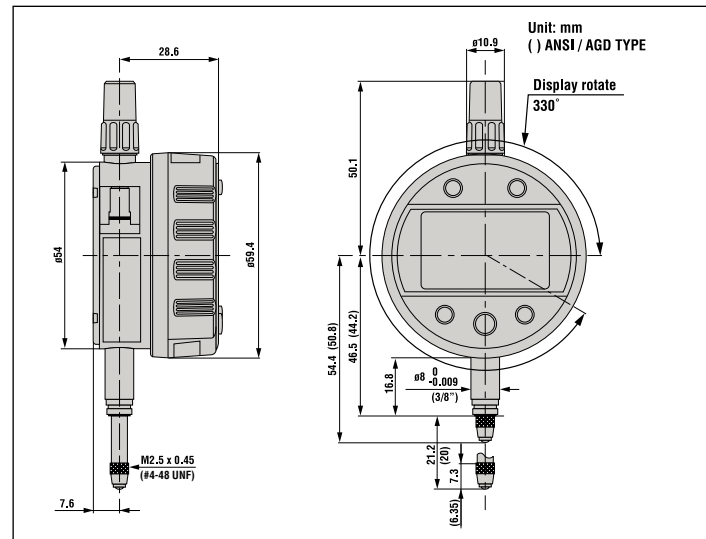
Inch/Metric		Stem dia. 3/8" #4-48 UNF Thread			
Resolution	Range	Order No.*	Model	Accuracy	Measuring Force
.00005/.0001/.0005"	.5"/12.7mm	<b>543-342B</b>	ID-C112REXB	±.00010"/0.003mm	1.5N or less
0.001/0.01mm	1"/25.4mm	<b>543-592B</b>	ID-C125REXB	±.00010"/0.003mm	1.8N or less
Selectable	2"/50.8mm	<b>543-597B</b>	ID-C150REXB	±.00025"/0.006mm	2.3N or less

Inch/Metric		Stem ø 8mm, M2.5 x 0.45 Thread			
Resolution	Range	Order No.*	Model	Accuracy	Measuring Force
.00005/.0001/.0005"	.5"/12.7mm	<b>543-341B</b>	ID-C112RMXB	±.00010"/0.003mm	1.5N or less
0.001/0.01mm	1"/25.4mm	<b>543-591B</b>	ID-C125RMXB	±.00010"/0.003mm	1.8N or less
Selectable	2"/50.8mm	<b>543-596B</b>	ID-C150RMXB	±.00025"/0.006mm	2.3N or less

Metric		Stem ø 8mm, M2.5 x 0.45 Thread			
Resolution	Range	Order No.*	Model	Accuracy	Measuring Force
0.001/0.01mm	.5"/12.7mm	<b>543-340B</b>	ID-C112RXB	0.003mm	1.5N or less
Selectable	1"/25.4mm	<b>543-590B</b>	ID-C125RXB	0.003mm	1.8N or less
	2"/50.8mm	<b>543-595B</b>	ID-C150RXB	0.006mm	2.3N or less

\*Flat back

### DIMENSIONS



# ABSOLUTE Digimatic Indicator ID-C

**SERIES 543 — With Max./Min. Value Holding Function**

## FEATURES

- The new Peak Hold-Type Digimatic Indicator features both a Key-Lock and Parameter-Lock to prevent accidental changing of settings during operation.
- Parameter setting software makes it even easy to set all available parameters.
- An analog bar provides easy-to-read values when scanning for Max, Min and TIR Values.
- The maximum, minimum or runout value can be displayed during measurement.
- Go/no-go 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 when turned on.



543-302B

## SPECIFICATIONS

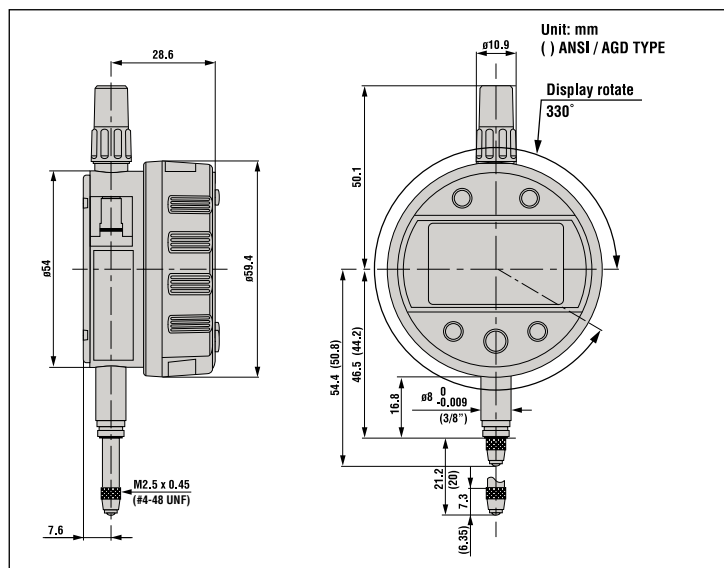
ISO/JIS type    ANSI/AGD type

Resolution	Range	Order No.		Model	Accuracy
		w/lug	Flat-back		
.00005/.0001/.0005" 0.001/0.01mm Selectable	.5"/12.7mm	<b>543-302</b>	<b>543-302B</b>	ID-C112AEX(B)	±.00010"/0.003mm

Resolution	Range	Order No.		Model	Accuracy
		w/lug	Flat-back		
.00005/.0001/.0005" 0.001/0.01mm Selectable	.5"/12.7mm	<b>543-301</b>	<b>543-301B</b>	ID-C112AMX(B)	±.00010"/0.003mm

Resolution	Range	Order No.		Model	Accuracy
		w/lug	Flat-back		
0.001-0.01mm Selectable	12.7mm	<b>543-300</b>	<b>543-300B</b>	ID-C112AX(B)	0.003mm

## DIMENSIONS



## Technical Data

Accuracy: Refer to the list of specifications  
 Resolution: 0.001-0.01mm or .00005-.0005"/  
 0.001-0.01mm  
 Display: LCD  
 Length standard: ABSOLUTE electrostatic capacitance-type  
 linear encoder  
 Max. response speed: Unlimited  
 Measuring force: 1.5N or less  
 Battery: CR2032 (1 pc.), **05SAA217**  
 Battery life: Approx. 12 months under normal use  
 IP Rating: Equivalent to IP-42<sup>1)</sup>

<sup>1)</sup> A protection class indication (IP=International Protection) is based on the IEC 60529/DIN40050 part 1/JIS D0207, C0920. The level indicated is valid only if the output connector cap is installed.

## Function

Key Lock, Parameter Lock, PC-USB Input, Analog Bar, Fast measurement frequency, Preset (up to 3 values), Tolerance Judgment, Peak Detection, Calculation (Ax), inch/mm conversion (on inch/metric models only) Counting direction switching, Data Output  
 Alarm: Low voltage, Counting value composition error, Overflow error, Tolerance limit setting error

## Optional Accessories

- 905338:** Connecting Cable (1m)
- 905409:** Connecting Cable (2m)
- 21EZA313:** Parameter Setting USB Cable
- 21EZA198:** Spindle lifting lever (12.7mm ISO/JIS type)
- 21EZA199:** Spindle lifting lever (12.7mm ASME/AGD type)
- 21EZA105:** Lifting Knob (12.7mm/.5" ISO/JIS models)
- 21EZA150:** Lifting Knob (12.7mm/.5" ASME/AGD models)
- 21EZA197:** Lifting Knob (for 25.4/1" mm models)
- 21EZA200:** Lifting Knob (for 50.8/2" mm models)
- 540774:** Spindle lifting cable
- : Backs (See page F-33.)
- : Contact points (See page F-34.)



### Technical Data

Accuracy: Refer to the list of specifications  
 Resolution: 0.001-0.01mm or .00005-.0005"/0.001-0.01mm  
 Display: LCD  
 Length standard: ABSOLUTE electrostatic capacitance type linear encoder  
 Max. response speed: Unlimited  
 Measuring force: 1.5N or less  
 Battery: CR2032 (1 pc.), **055AA217**  
 Battery life: Approx. 12 months under normal use  
 IP Rating: Equivalent to IP-42<sup>1</sup>

<sup>1</sup> A protection class indication (IP=International Protection) is based on the IEC 60529 /DIN40050 part 1/JIS D0207, C0920. The level indicated is valid only if the output connector cap is installed.

### Function

Key Lock, Parameter Lock, PC-USB Input, Analog Bar, Fast measurement frequency, Preset (up to 3 values), Tolerance Judgment, Peak Detection (Min Only), inch/mm conversion (on inch/metric models only), Data Output  
 Alarm: Low voltage, Counting value composition error, Overflow error, Tolerance limit setting error

### Optional Accessories

- 905338:** Connecting Cable (1m)
  - 905409:** Connecting Cable (2m)
  - 21EZA313:** Parameter Setting USB Cable
- Applicable Gages Series 511 and 526



Installed on optional bore gage probe (511-703)

# ABSOLUTE Digimatic Indicator ID-C

## SERIES 543 — Specially Designed for Bore Gage Application

### FEATURES

- The new Bore Gage-Type Digimatic Indicator features both a Key-Lock and Parameter-Lock to prevent accidental changing of settings during operation.
- Parameter setting software makes it easy to set all available parameters. (optional)
- Fast measurement frequency allows the user to increase the number of readings per second from 10 to 50.
- The minimum value holding function provides the easy detection of hole diameter.
- An analog bar indicator is integrated to enhance the intuition in reading.
- Go/no-go judgment is performed by setting the upper and lower tolerances.
- Up to three sets of master values and upper/lower tolerance values can be memorized.
- Employing the ABSOLUTE linear encoder, the ID-C always displays the spindle Absolute Position from the origin when turned on.



543-310B

### SPECIFICATIONS

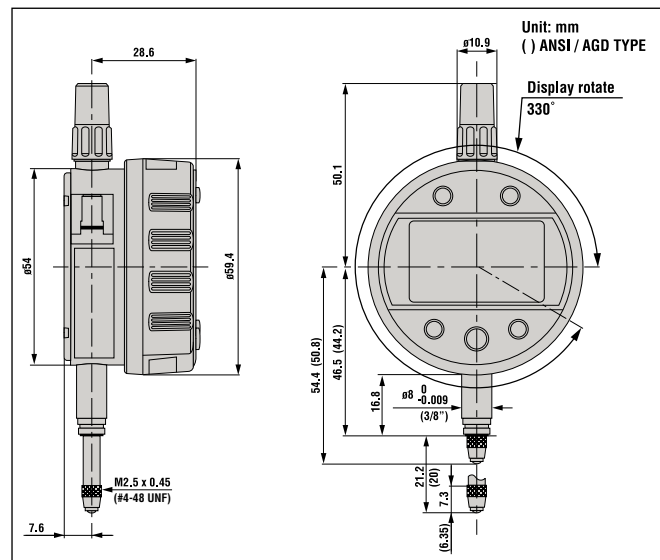
ISO/JIS type    ANSI/AGD type

Inch/Metric		Stem dia. 3/8" #4-48 UNF Thread			
Resolution	Range	Order No.	Model	Accuracy	Measuring Force
.00005/.0001/.0005" 0.001/0.01mm Selectable	.5"/12.7mm	<b>543-312B</b>	ID-C112GEXB	±.00010"/0.003mm	1.5N or less

Inch/Metric		Stem ø 8mm, M2.5 x 0.45 Thread			
Resolution	Range	Order No.	Model	Accuracy	Measuring Force
.00005/.0001/.0005" 0.001/0.01mm Selectable	.5"/12.7mm	<b>543-311B</b>	ID-C112GMXB	±.00010"/0.003mm	1.5N or less

Metric		Stem ø 8mm, M2.5 x 0.45 Thread			
Resolution	Range	Order No.	Model	Accuracy	Measuring Force
0.001/0.01mm Selectable	12.7mm	<b>543-310B</b>	ID-C112GXB	0.003mm	1.5N or less

### DIMENSIONS





# ABSOLUTE Digimatic Indicator ID-C

SERIES 543 — With Green/Red LED and Go/No-go Signal Output Function

**ABSOLUTE**<sup>®</sup>  
Absolute System Patented by MITUTOYO



## FEATURES

- With the max./min. value holding function, the signal ID-C can output the go/no-go 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 such as a sequencer through the NPN open-collector.
- The go/no-go 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 when powered up.
- The Signal ID-C achieves the IP54 protection level to resist dust and contaminants for safe operation in harsh machine shop environments.
- The high-speed detector measures 100 times per second.
- Analog Bar



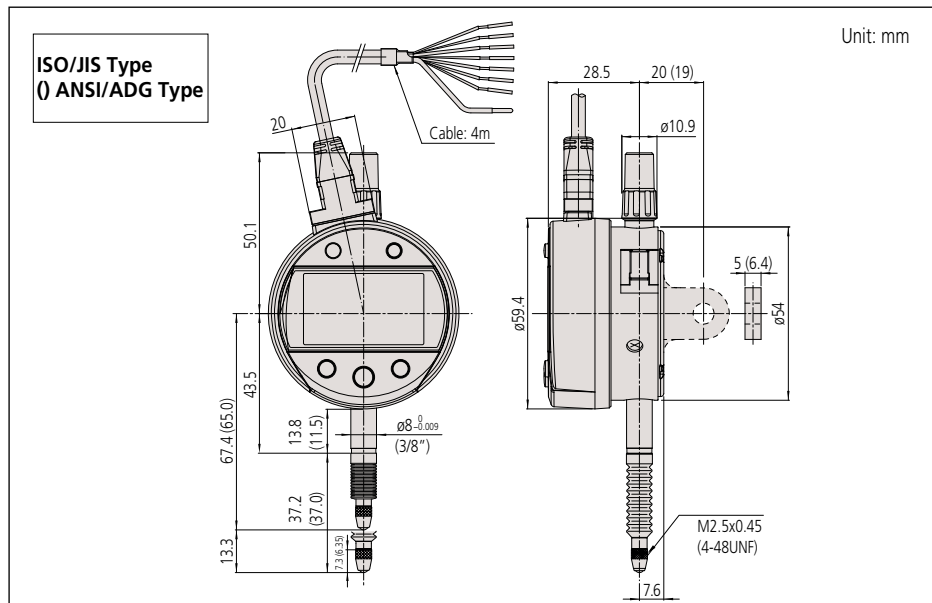
## SPECIFICATIONS

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/.0001/.0005" 0.001/0.01mm	.5" / 12.7mm	<b>543-352</b> <b>543-352B</b>	ID-C112JEX(B)	±.00010/0.003mm	2.5N or less

Inch/Metric		Stem ø 8mm, M2.5 x 0.45 Thread		ISO/JIS type	ANSI/AGD type
Resolution	Range	Order No. (w/ lug, flat-back)	Model	Accuracy	Measuring force
.00005/.0001/.0005" 0.001/0.01mm	.5" / 12.7mm	<b>543-351</b> <b>543-351B</b>	ID-C112JMX(B)	±.00010/0.003mm	2.5N or less

Metric		Stem ø 8mm, M2. x 0.45 Thread		ISO/JIS type	ANSI/AGD type
Resolution	Range	Order No. (w/ lug, flat-back)	Model	Accuracy	Measuring force
0.001/0.01mm	12.7mm	<b>543-350</b> <b>543-350B</b>	ID-C112JX(B)	0.003mm	2.5N or less

## DIMENSIONS



## Technical Data

Accuracy: Refer to the list of specifications  
 Resolution: 0.001mm, .00005"/0.001mm  
 Display: LCD  
 Length standard: ABSOLUTE electrostatic capacitance type linear encoder  
 Max. response speed: Unlimited  
 Measuring force: 2.5N or less  
 Power supply: DC 5-24V±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 (up to 3 values), Zero-Set, Analog-Bar, go/no-go judgment, Max/Min/Runout value holding, Counting direction switching, Power ON/OFF, inch/mm conversion (on inch/metric models only), calibration mode

Internal calculations using the simple formula of [F(x) = Ax] are available.

Alarm: Low voltage, Counting value composition error, Overflow 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.)
- 21EAA194:** Connecting Cable (1m)\*\*
- 21EAA190:** Connecting Cable (2m)\*\*
- 21EZA345:** Digimatic Power Supply Unit\*\*

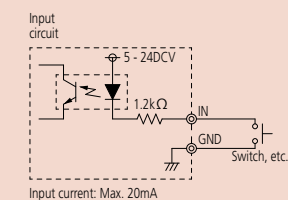
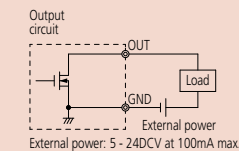
\*When using the spindle lifting lever/cable, IP54 is not guaranteed.  
 \*\* Used only for calibration mode and for automated testing with an i-Checker

## 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.xx" indication

## I/O Specifications

Wire	Signal	I/O	Description
Black	- V (GND)	—	Connected to minus (-) terminal
Red	+ V (GND)	I	Power supply (5-24VDC)
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_REC-ALL ZERO	I	External input terminal: If the relevant terminal is set to the low level, its signal becomes true.
Blue	PEAK_START	I	
Shield	FG	—	Connected to GND





### 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/no-go 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, Overflow error, Tolerance limit setting error

### Standard Accessories

**06AEG180JA:** AC Adapter 120v  
**137693:** Lifting Lever

### Optional Accessories

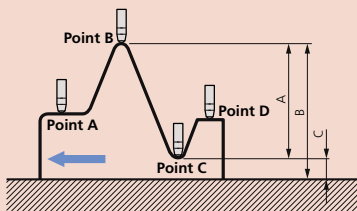
**936937:** SPC cable (40" / 1m)  
**965014:** SPC cable (80" / 2m)  
**21EAA131:** RS-232C cable (80" / 2m)  
**21EZA099:** Remote controller  
**540774:** Spindle lifting cable (stroke: .4" / 10mm)  
**21EZA101:** Spindle lifting knob  
**264-504-5A:** Digimatic Min-processor DP-1VR  
**21EZA152A:**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

### 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
<b>543-561A</b>	251.3	47.3	30.48	60	7.3
<b>543-562A</b>	250.35	46.35	30.48	60	6.35
<b>543-563A</b>	311.3	77.3	60.96	90	7.3
<b>543-564A</b>	310.35	76.35	60.96	90	6.35

# Digimatic Indicator ID-H

## SERIES 543 — High-Accuracy and High-Functional Type

### 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 by 0.5µm / .00002" resolution, remote control functionality via a handheld controller (or an RS-232C interface) and easy runout measurements with the analog bar display.
- The maximum, minimum, or runout value can be displayed during measurement.
- Go/no-go 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.



### SPECIFICATIONS

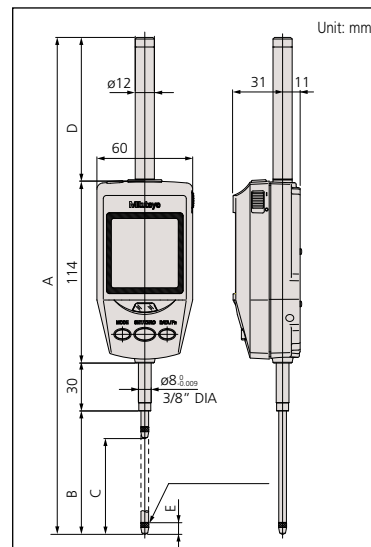
**Inch/Metric** Stem dia. 3/8" #4-48 UNF Thread

Resolution	Range	Order No.	Model	Accuracy
.00002", .00005", .0001", 0.0005mm, 0.001mm	1.2" / 30.4mm	<b>543-562A</b>	ID-H530E	0.0015mm
	2.4" / 60.9mm	<b>543-564A</b>	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	<b>543-561A</b>	ID-H530	0.0015mm
	60.9mm	<b>543-563A</b>	ID-H560	0.0025mm

### DIMENSIONS



Tolerance judgment



Analog bar display



Max/Min value measurement



Runout measurement



Resolution switching



# ABSOLUTE Digimatic Indicator ID-F

SERIES 543 — With Back-lit LCD



## FEATURES

- With ABSOLUTE linear encoder technology, once the measurement reference point has been set it, will not be lost when the power is turned on.
- Go/no-go 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. The display range can be changed.
- With SPC data output.



## SPECIFICATIONS

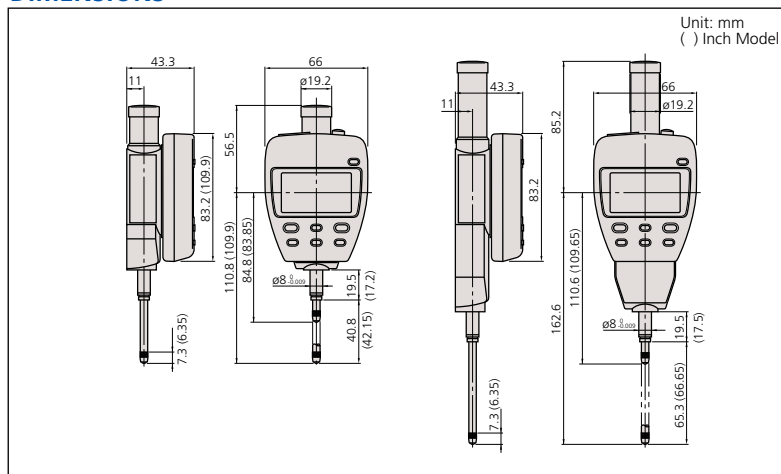
**Inch/Metric** Stem dia. 3/8" #4-48 UNF Thread

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

**Metric** Stem ø 8mm M2.5 X 0.45 Thread

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

## DIMENSIONS



## Technical Data

Accuracy: Refer to the list of specifications  
 Resolution: 0.01mm/0.001mm or .00005"/.0001"/.0005"/.001"/.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/no-go 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, Overflow error, Tolerance limit setting error

## Standard Accessories

**06AEG302JA**: AC Adapter 120v  
**137693**: Lifting Level

## 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.)

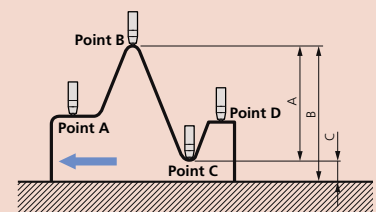
\*Required when orienting the indicator upside down.

## 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.





**Technical Data**

Accuracy: Refer to the list of specifications  
 Resolution: 0.01mm, 0.01mm/0.001mm, .0005"/0.01mm or .0005"/0.0005"/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, Overflow error, Tolerance limit setting error

**Optional Accessories**

- 21EZA105:** Lifting knob (for ISO/JIS model, ID-N only)
  - 21EZA150:** Lifting knob (for AGD model, ID-N only)
  - 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.)



# 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**



**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	<b>543-580</b>	ID-B1005	0.02mm	2.0N or less
0.001mm	5.0mm	<b>543-585</b>	ID-B105	0.003mm	2.0N or less

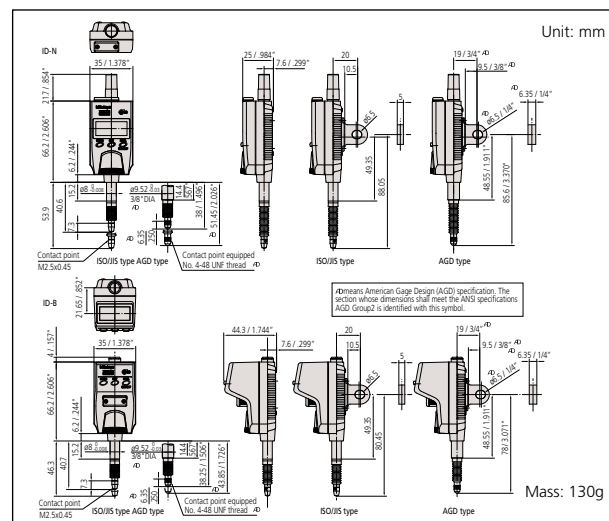
Inch / Metric		Stem dia. 3/8" #4-48 UNF Thread			
Resolution	Range	Order No.	Model No.	Accuracy	Measuring Force
.0005" / 0.01mm	.22" / 5.6mm	<b>543-581</b>	ID-B1005E	.0008" / 0.02mm	2.0N or less
.0005" / 0.01mm .00005" / 0.001mm	.22" / 5.6mm	<b>543-586*</b>	ID-B105E	.00012" / 0.003mm	2.0N or less

**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	<b>543-570</b>	ID-N1012	0.02mm	2.0N or less
0.001mm / 0.01mm	5.0mm	<b>543-575</b>	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	<b>543-571</b>	ID-N1012E	.0008" / 0.02mm	2.0N or less
.0005" / 0.01mm .00005" / 0.001mm	.5" / 12.7mm	<b>543-576*</b>	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.

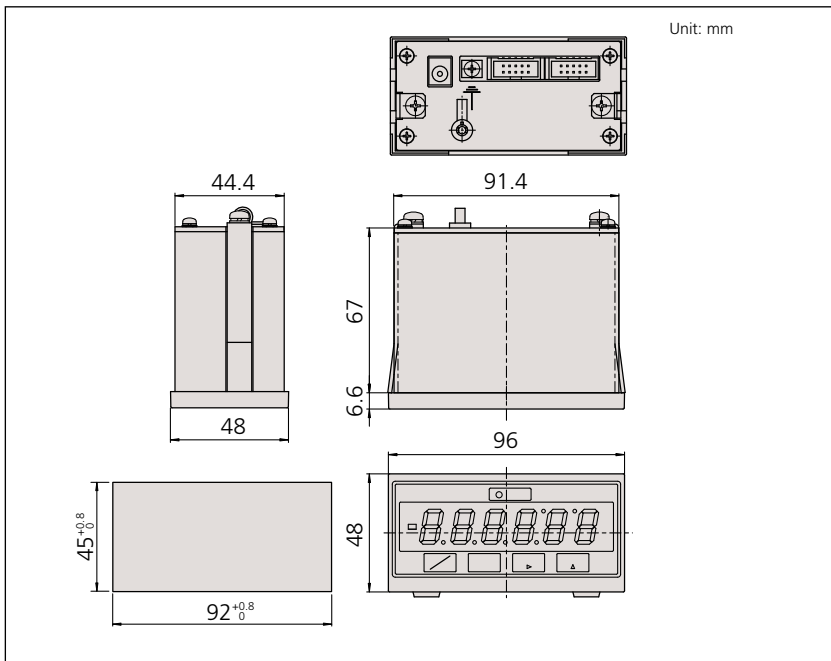


542-007A

### 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, .00005, .0005", .0001"  
 No. of gage input: 1  
 Display: 6-digit LED and a negative [-] sign  
 Function: Preset  
 Go/no-go judgment  
 Output (open-collector): 3-Step limit signal\*, Digimatic  
 External control: Preset, Data hold  
 Power supply: Via AC adaptor  
 Dimensions (W x D x H): 96 x 48 x 84.6mm  
 Mass: 500g  
 \*Requires C162-155 (see Optional Accessories)

#### Standard Accessories

06AEG302JA: AC Adaptor

#### Optional Accessories

936937: SPC cable (40"/1m)  
 965014: SPC cable (80"/1m)  
 214938: PJ-2 (DC Plug)  
 C162-155: Go/no-go judgment cable

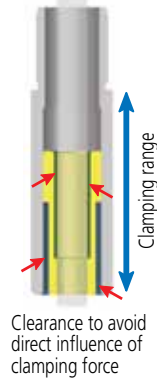
# Dial Indicators

## Description of Icon

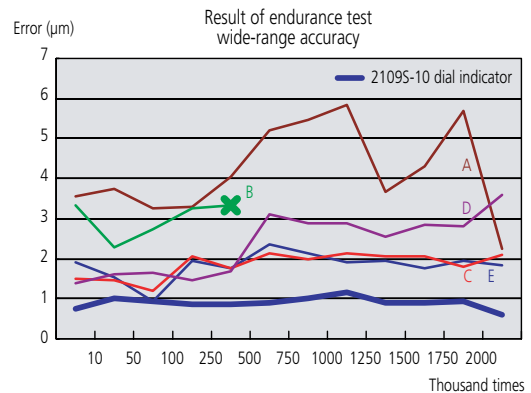
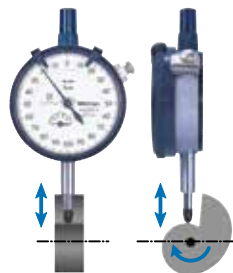
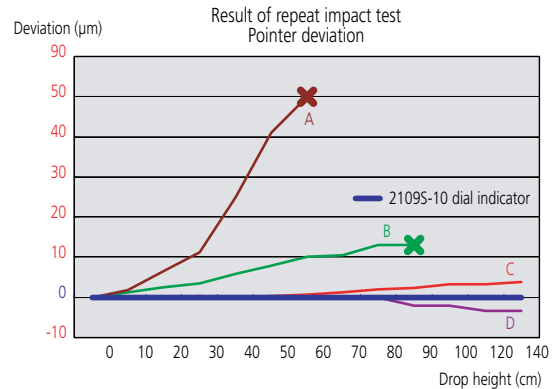
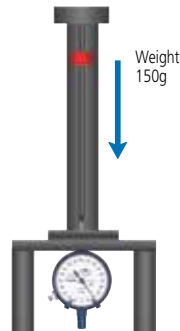
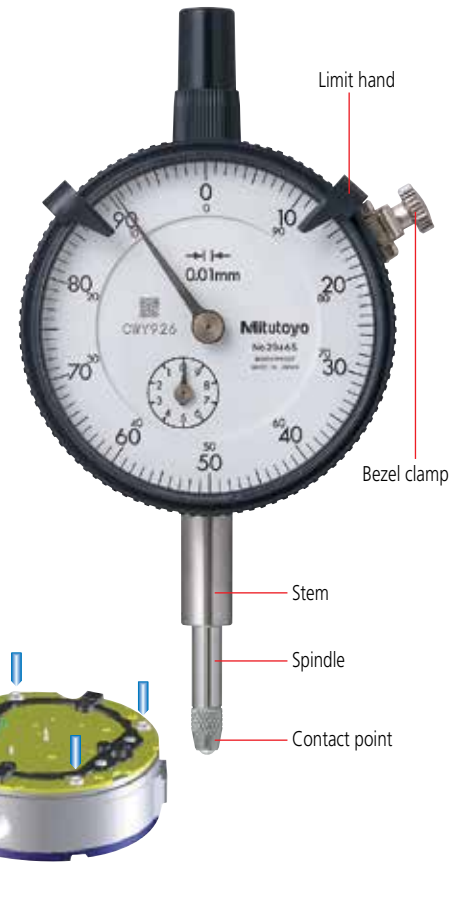
Icon	Description
	Reverse reading type suitable for depth and step measurement
	One revolution type for easy and error-free reading
	Double scale spacing type, easy to read
	Shockproof
	Waterproof
	With damper at lowest rest point
	Jeweled bearing
	Peak retaining
	Long stem
	Dustproof
	With coaxial revolution counter
	Back plunger
	Adjustable hand
	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.



- 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.



# Dial Indicators


## SERIES 0 - Compact type



1911T-10


 Balanced scale




1911T-10  
 Jeweled bearing


 Balanced scale





1913T-10  
 Jeweled bearing

## SPECIFICATIONS

**Inch** Stem dia. 3/8", #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"	0-5-0	<b>1925T-10</b>	<b>1925TB-10</b>	±.0002"	±.0002"	0.3 - 1.8N	✓
.0005"	.05"	.02"	0-10-0	<b>1923T-10</b>	<b>1923TB-10</b>	±.0005"	±.0005"	0.3 - 1.8N	✓
.001"	.1"	.04"	0-20-0	<b>1921T-10</b>	<b>1921TB-10</b>	±.001"	±.001"	0.3 - 1.8N	✓

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

Graduation	Range	Range/Rev	Dial reading	Order No.		Accuracy		Measuring force	
				w/ lug	Flat-back	Any Rev	Overall Accuracy		
0.002mm	0.5mm	0.2mm	0-100-0	<b>1913T-10</b>	<b>1913TB-10</b>	±5µm	±6µm	0.3 - 1.8N	✓
0.01mm	2.5mm	1mm	0-50-0	<b>1911T-10</b>	<b>1911TB-10</b>	±10µm	±12µm	0.3 - 1.8N	✓

 Jeweled bearing

## DIMENSIONS

**Inch Model** Unit: Inch

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

**Metric Model** Unit: mm

Order Number	A	B
1911T-10	42	11.5
1913T-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.		Accuracy		Measuring force	<input type="checkbox"/>	<input type="checkbox"/>
				(W/Lug)	(Flat-back)	First 2.5 Rev	Overall Accuracy			
.0001"	.025"	.01"	0-10	<b>1802S-10</b>	<b>1802SB-10</b>	±.0001"	±.0001"	1.4N or less	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
.0001"	.025"	.01"	0-5-0	<b>1803S-10</b>	<b>1803SB-10</b>	±.0001"	±.0001"	1.4N or less	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
.0005"	.1"	.04"	0-40	<b>1670S</b>	<b>1670SB</b>	±.0005"	±.0005"	1.4N or less	<input type="checkbox"/>	<input type="checkbox"/>
.0005"	.1"	.04"	0-20-0	<b>1671S</b>	<b>1671SB</b>	±.0005"	±.0005"	1.4N or less	<input type="checkbox"/>	<input type="checkbox"/>
.0005"	.125"	.05"	0-50	<b>1506S</b>	<b>1506SB</b>	±.0005"	±.0005"	1.4N or less	<input type="checkbox"/>	<input type="checkbox"/>
.0005"	.125"	.05"	0-25-0	<b>1507S</b>	<b>1507SB</b>	±.0005"	±.0005"	1.4N or less	<input type="checkbox"/>	<input type="checkbox"/>
.001"	.125"	.05"	0-50	<b>1780S</b>	<b>1780SB</b>	±.001"	±.001"	1.4N or less	<input type="checkbox"/>	<input type="checkbox"/>
.001"	.125"	.025"	0-25-0	<b>1781S</b>	<b>1781SB</b>	±.001"	±.001"	1.4N or less	<input type="checkbox"/>	<input type="checkbox"/>
.001"	.25"	.1"	0-100	<b>1410S</b>	<b>1410SB</b>	±.001"	±.001"	1.4N or less	<input type="checkbox"/>	<input type="checkbox"/>
.001"	.25"	.1"	0-100	<b>1410S-10</b>	<b>1410SB-10</b>	±.001"	±.001"	1.4N or less	<input type="checkbox"/>	<input checked="" type="checkbox"/>
.001"	.25"	.1"	0-50-0	<b>1411S</b>	<b>1411SB</b>	±.001"	±.001"	1.4N or less	<input type="checkbox"/>	<input type="checkbox"/>



Shockproof



Jeweled bearing

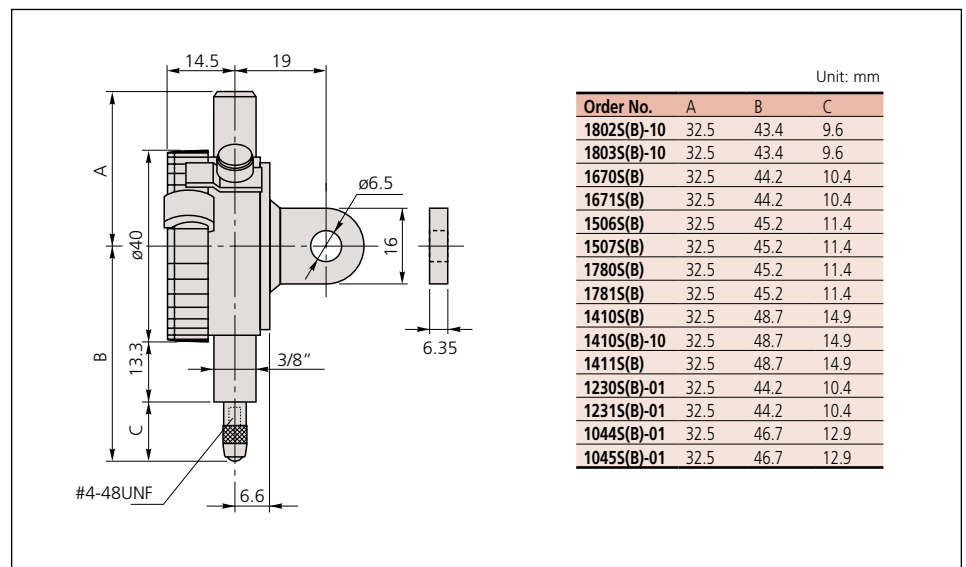
**Metric**

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.		Accuracy		Measuring force
				(W/Lug)	(Flat-back)	First 2.5 Rev	Overall Accuracy	
0.002mm	0.5mm	0.2mm	0-20	<b>1010S-11</b>	<b>1010SB-11</b>	±0.002mm	±0.002mm	1.5N or less
0.002mm	0.5mm	0.2mm	0-10-0	<b>1011S-11</b>	<b>1011SB-11</b>	±0.002mm	±0.002mm	1.5N or less
0.01mm	2.5mm	1mm	0-100	<b>1230S-01</b>	<b>1230SB-01</b>	±0.01mm	-	1.4N or less
0.01mm	2.5mm	1mm	0-50-0	<b>1231S-01</b>	<b>1231SB-01</b>	±0.01mm	-	1.4N or less
0.01mm	5mm	1mm	0-100	<b>1044S-01</b>	<b>1044SB-01</b>	±0.01mm	±0.013mm	1.4N or less
0.01mm	5mm	1mm	0-50-0	<b>1045S-01</b>	<b>1045SB-01</b>	±0.01mm	±0.013mm	1.4N or less

### DIMENSIONS





# Dial Indicators

## SERIES 1



1040S



1013S



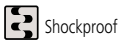
1045S



1109S-10

**Metric** Stem  $\varnothing$  8mm M2.5 X 0.45 Thread ISO/JIS type

Graduation	Range	Range / Rev	Dial reading	Order No.		Accuracy		Measuring force	Shockproof	Waterproof	Jeweled bearing
				(W/Lug)	(Flat-back)	First 2.5 Rev	Overall Accuracy				
0.001mm	1mm	0.2mm	0-100-0	<b>1109S-10</b>	<b>1109SB-10</b>	$\pm 0.001$ mm	$\pm 0.007$ mm	1.5N or less	✓		✓
0.002mm	1mm	0.2mm	0-100-0	<b>1013S-10</b>	<b>1013SB-10</b>	$\pm 0.002$ mm	$\pm 0.01$ mm	1.5N or less	✓		✓
0.005mm	3.5mm	0.5mm	0-50	<b>1124S</b>	<b>1124SB</b>	$\pm 0.005$ mm	$\pm 0.013$ mm	1.4N or less			✓
0.01mm	3.5mm	0.5mm	0-50	<b>1040S</b>	<b>1040SB</b>	$\pm 0.01$ mm	$\pm 0.013$ mm	1.5N or less			
0.01mm	3.5mm	0.5mm	0-25-0	<b>1041S</b>	<b>1041SB</b>	$\pm 0.01$ mm	$\pm 0.013$ mm	1.5N or less			
0.01mm	4mm	1mm	0-50-0	<b>1003T</b>	<b>1003TB</b>	$\pm 0.01$ mm	$\pm 0.013$ mm	0.3 - 1.4N			
0.01mm	5mm	1mm	0-100	<b>1044S</b>	<b>1044SB</b>	$\pm 0.01$ mm	$\pm 0.013$ mm	1.5N or less			
0.01mm	5mm	1mm	0-100	<b>1044S-60</b>	<b>1044SB-60</b>	$\pm 0.01$ mm	$\pm 0.013$ mm	2N or less		✓	
0.01mm	5mm	1mm	0-100	<b>1044S-10</b>	<b>1044SB-10</b>	$\pm 0.01$ mm	$\pm 0.013$ mm	1.4N or less	✓		
0.01mm	5mm	1mm	0-50-0	<b>1045S</b>	<b>1045SB</b>	$\pm 0.01$ mm	$\pm 0.013$ mm	1.4N or less			



Shockproof

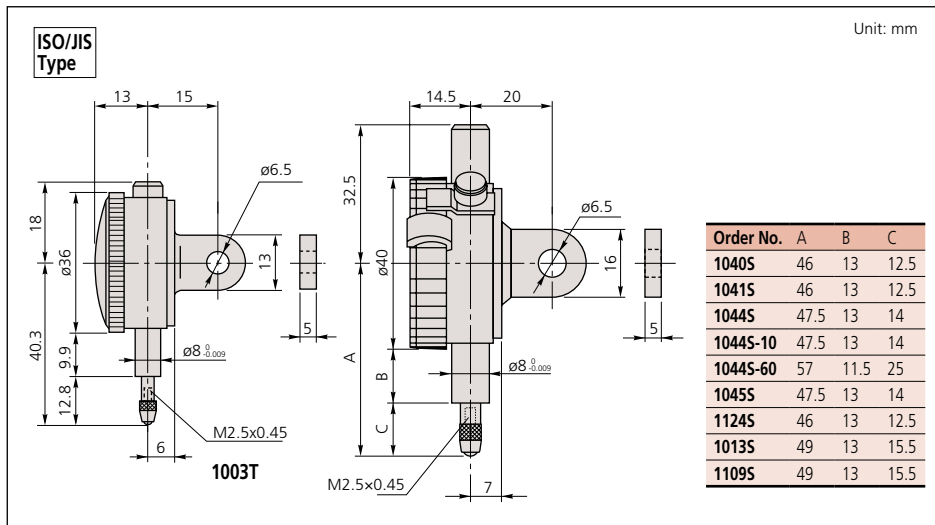


Waterproof



Jeweled bearing

## DIMENSIONS



1044S

### Optional Accessories

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



# Dial Indicators

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



One revolution type



1929S  
1929S-62



1900S-10  
1900S-72



1929S

Unlike many other dial indicators, the one-revolution dial indicator 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't be misinterpreted. Unique shock-proof mechanism provides improved immunity to shock due to sudden spindle retraction caused by high impact.



Shockproof type



Dustproof type



Waterproof type



Jeweled bearing type

### SPECIFICATIONS

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

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

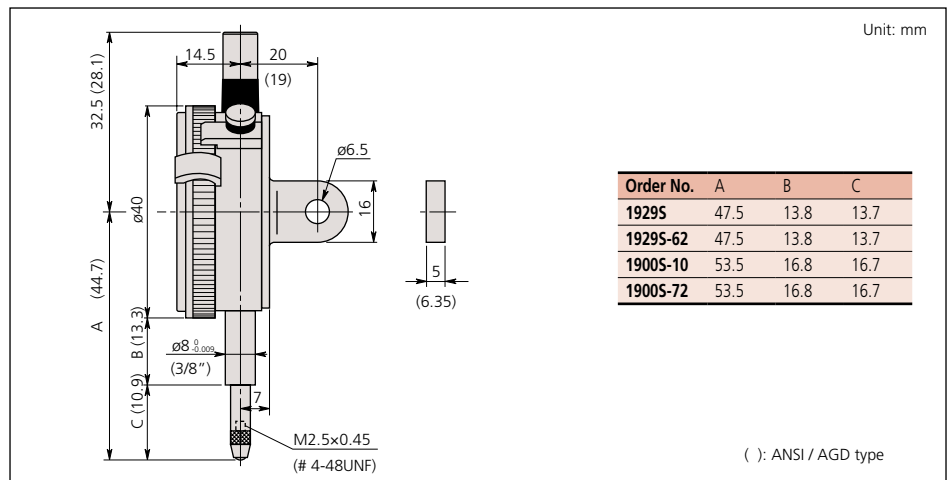
**Metric** Stem  $\phi$  8mm, M2.5 x 0.45 Thread □ ISO/JIS type

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

### Optional Accessories

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

### DIMENSIONS



# 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  $\varnothing$  8mm, M2.5 x 0.45 Thread □ ISO/JIS type

Graduation	Range (range/full stroke)	Dial reading	Order No.		Accuracy	Measuring force	Shockproof	Waterproof	Dustproof	Jeweled bearing
			w/ lug	Flat-back						
0.001mm	0.08mm / 0.1mm	40-0-40	<b>2900S-10</b>	<b>2900SB-10</b>	$\pm 0.003$ mm	1.4N or less	✓	—	—	✓
0.001mm	0.08mm / 0.1mm	40-0-40	<b>2900S-70</b>	<b>2900SB-70</b>	$\pm 0.003$ mm	2.0N or less	✓	✓	—	✓
0.001mm	0.08mm / 0.1mm	40-0-40	<b>2900S-72</b>	<b>2900SB-72</b>	$\pm 0.003$ mm	2.0N or less	✓	—	✓	✓
0.001mm	0.16mm / 0.2mm	80-0-80	<b>2901S-10</b>	<b>2901SB-10</b>	$\pm 0.004$ mm	1.4N or less	✓	—	—	✓
0.01mm	0.8mm / 1mm	40-0-40	<b>2929S</b>	<b>2929SB</b>	$\pm 0.009$ mm	2.0N or less	✓	—	—	—
0.01mm	0.8mm / 1mm	40-0-40	<b>2929S-60</b>	<b>2929SB-60</b>	$\pm 0.009$ mm	2.0N or less	✓	✓	—	—
0.01mm	0.8mm / 1mm	40-0-40	<b>2929S-62</b>	<b>2929SB-62</b>	$\pm 0.009$ mm	2.0N or less	✓	—	✓	—
0.01mm	1.6mm / 2mm	80-0-80	<b>2959S</b>	<b>2959SB</b>	$\pm 0.013$ mm	1.4N or less	✓	—	—	—
0.01mm	0.5mm / 0.7mm	25-0-25	—	<b>2971TB*</b>	$\pm 0.008$ mm	0.4 - 1.4N	✓	—	✓	—
0.01mm	1mm / 1.4mm	50-0-50	—	<b>2972TB*</b>	$\pm 0.008$ mm	0.4 - 1.4N	✓	—	✓	—
0.02mm	1.6mm / 2mm	80-0-80	—	<b>2973TB*</b>	$\pm 0.016$ mm	0.4 - 1.4N	✓	—	✓	—
0.1mm	4mm / 10mm	2-0-2	<b>2928S</b>	<b>2928SB</b>	$\pm 0.040$ mm	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
<b>2971TB</b>	43.2	65.6	57	16.5	19.8	16.8	55
<b>2972TB</b>	43.2	66.0	57	16.5	19.8	17.2	55
<b>2973TB</b>	43.2	66.3	57	16.5	19.8	17.5	55
<b>2929S</b>	48.8	65.2	57	17.7	12.3	29.2	52
<b>2929S-62</b>	48.8	65.2	57	17.7	16.9	19.8	52
<b>2929S-60</b>	48.8	70	57	17.7	12.3	29.2	52
<b>2959S</b>	48.8	65.2	57	17.7	16.9	19.8	52
<b>2900S-10</b>	48.8	66	57	17.7	16.9	20.6	52
<b>2900S-72</b>	48.8	66	57	17.7	16.9	20.6	52
<b>2900S-70</b>	48.8	67	57	17.7	12.3	26.2	52
<b>2901S-10</b>	48.8	66.1	57	17.7	16.9	20.7	52
<b>2928S</b>	48.8	65.2	57	17.7	16.9	19.8	52



### 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

### FEATURES

- Unique shock-proof mechanism provides 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 conventional dial indicator.
- 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/no-go).



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	<b>2910S-10</b>	<b>2910SB-10</b>	±.0001"	1.8N or less	<input checked="" type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>
.0001"	.008"	.01"	4-0-4	<b>2910S-72</b>	<b>2910SB-72</b>	±.0001"	2.5N or less	<input checked="" type="checkbox"/> <input checked="" type="checkbox"/> <input checked="" type="checkbox"/>
.0005"	.04"	.05"	20-0-20	<b>2909S-62</b>	<b>2909SB-62</b>	±.0005"	2.5N or less	<input checked="" type="checkbox"/> <input checked="" type="checkbox"/> <input type="checkbox"/>
.0005"	.02"	.028"	10-0-10	—	<b>2976TB*</b>	±.0005"	0.4 - 1.4N	<input checked="" type="checkbox"/> <input checked="" type="checkbox"/> <input type="checkbox"/>
.0005"	.04"	.055"	20-0-20	—	<b>2977TB*</b>	±.0005"	0.4 - 1.4N	<input checked="" type="checkbox"/> <input checked="" type="checkbox"/> <input type="checkbox"/>
.001"	.06"	.079"	30-0-30	—	<b>2978TB*</b>	±.001"	0.4 - 1.4N	<input checked="" type="checkbox"/> <input checked="" type="checkbox"/> <input type="checkbox"/>

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

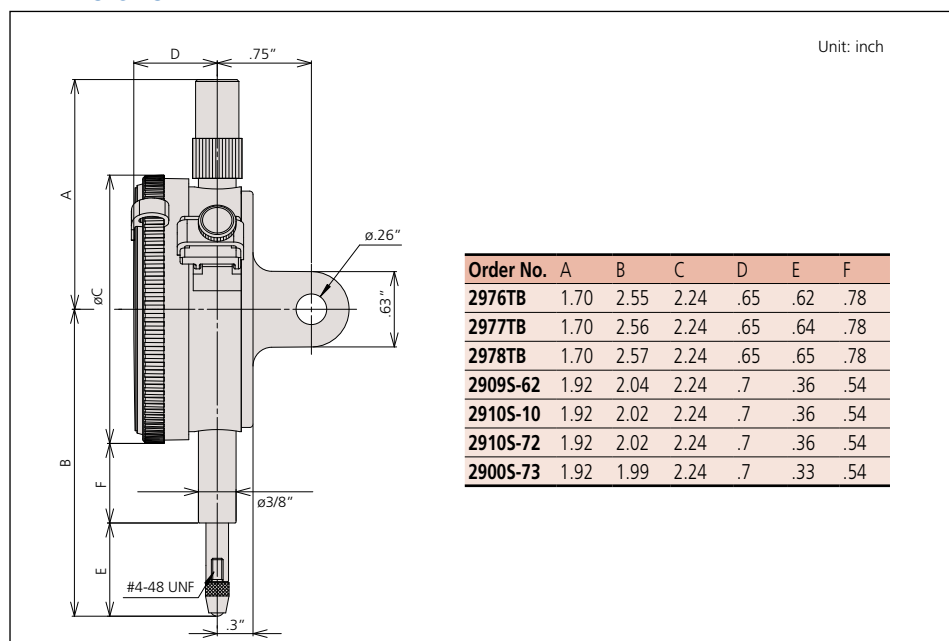
**Metric** Stem 3/8" dia., #4-48 UNF Thread Yellow Dial Face

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	<b>2900S-73</b>	<b>2900SB-73</b>	±0.003mm	2.0N or less	<input checked="" type="checkbox"/> <input checked="" type="checkbox"/> <input checked="" type="checkbox"/>

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

### DIMENSIONS



### Optional Accessories

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

# Special Dial Indicators

## SERIES 2



Adjustable hand



20485-10

### Adjustable hand dial gage

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



Peak hold



20465-80

### Peak hold dial gage

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.

## SPECIFICATIONS

**Inch** Stem dia. 3/8" #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"	.5"	.1"	0-100	<b>29155-10</b>	<b>29155B-10</b>	±.001"	±.001"	1.8N or less	✓	✓	✓
.001"	.5"	.1"	0-50-0	<b>29185-10</b>	<b>29185B-10</b>	±.001"	±.001"	1.8N or less	✓	✓	✓

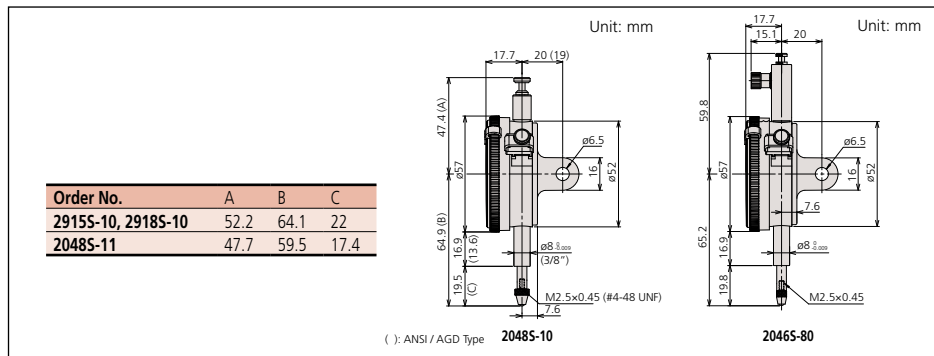
**Metric** Stem dia. 3/8" #4-48 UNF Thread, Yellow Dial Face ANSI/AGD type

Graduation	Range	Range /rev	Dial reading	Order No.		Accuracy		Measuring force			
				w/lug	Flat-back	First 2.5 Rev	Overall				
0.01mm	10mm	1mm	0-100	<b>20485-11</b>	<b>20485B-11</b>	±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.		Accuracy	Measuring force				
				w/lug	Flat-back						
0.01mm	10mm	1mm	0-100	<b>20485-10</b>	<b>20485B-10</b>	±0.015mm	1.4N or less	✓	✓	✓	
0.01mm	10mm	1mm	0-100	<b>20465-80</b>	<b>20465B-80</b>	±0.015mm	5.0N or less				✓

## DIMENSIONS





# 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. #4-48 UNF Thread		ANSI/AGD type							
Graduation	Range	Range /Rev	Dial Reading	Order No.		Accuracy		Measuring force	Shockproof	Reverse Reading	Jeweled Bearing
				w/lug	Flat-back	First 2.5 Rev	Overall				
.0001"	.025"	.01"	0-10	<b>2802S-10</b>	<b>2802SB-10</b>	±.0001"	±.0001"	2.5N or less	✓		✓
.0001"	.025"	.01"	0-5-0	<b>2803S-10</b>	<b>2803SB-10</b>	±.0001"	±.0001"	2.5N or less	✓		✓
.0001"	.05"	.01"	0-10	<b>2804S-10</b>	<b>2804SB-10</b>	±.0001"	±.0002"	2.0N or less	✓		✓
.0001"	.05"	.01"	0-5-0	<b>2805S-10</b>	<b>2805SB-10</b>	±.0001"	±.0002"	2.0N or less	✓		✓
.0001"	.05"	.01"	10-0	<b>2905S-10</b>	<b>2905SB-10</b>	±.0001"	±.0002"	2.0N or less	✓	✓	✓
.0001"	.05"	.01"	0-5-0	<b>2923S-10</b>	<b>2923SB-10</b>	±.0001"	±.0002"	2.0N or less	✓	✓	✓
.0001"	.25"	.01"	0-10	<b>2356S-10</b>	<b>2356SB-10</b>	±.0001"	±.0005"	2.0N or less			✓
.0001"	.5"	.01"	0-10	<b>2358S-10</b>	<b>2358SB-10</b>	±.0001"	±.0008"	2.0N or less			✓
.0005"	.125"	.05"	0-50	<b>2506S</b>	<b>2506SB</b>	±.0005"	±.0005"	1.8N or less			
.0005"	.125"	.05"	0-25-0	<b>2507S</b>	<b>2507SB</b>	±.0005"	±.0005"	1.8N or less			
.0005"	.125"	.05"	0-25-0	<b>2922S</b>	<b>2922SB</b>	±.0005"	±.0005"	1.8N or less		✓	
.0005"	.5"	.05"	0-50	<b>2514S</b>	<b>2514SB</b>	±.0005"	±.0015"	1.8N or less			
.0005"	1"	.05"	0-50	<b>2776S</b>	<b>2776SB</b>	±.0005"	±.002"	2.5N or less			
.001"	.5"	.1"	0-100	<b>2414S</b>	<b>2414SB</b>	±.001"	±.001"	1.8N or less			
.001"	.5"	.1"	100-0	<b>2914S</b>	<b>2914SB</b>	±.001"	±.001"	0.4-1.8N		✓	
.001"	.5"	.1"	0-50-0	<b>2415S</b>	<b>2415SB</b>	±.001"	±.001"	1.8N or less			
.001"	1"	.1"	0-100	<b>2416S</b>	<b>2416SB</b>	±.001"	±.002"	1.8N or less			
.001"	1"	.1"	0-100	<b>2416S-06*</b>	<b>2416SB-06*</b>	±.001"	±.002"	1.8N or less			
.001"	1"	.1"	0-100	<b>2416S-10</b>	<b>2416SB-10</b>	±.001"	±.002"	1.8N or less			✓
.001"	1"	.1"	0-50-0	<b>2417S</b>	<b>2417SB</b>	±.001"	±.002"	1.8N or less			
.001"	1"	.1"	100-0	<b>2904S</b>	<b>2904SB</b>	±.001"	±.002"	1.8N or less		✓	
.001"	2"	1"	0-100	<b>2424S-19</b>	<b>2424SB-19</b>	±.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

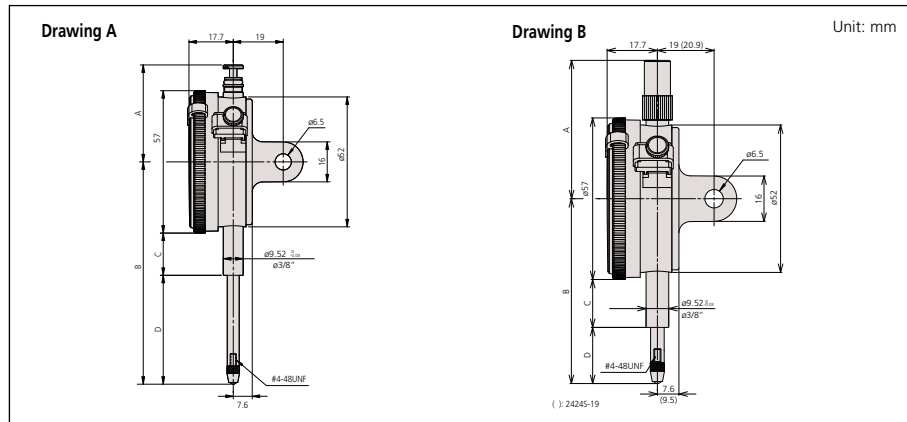


2923S-10



2424S-19

### DIMENSIONS



### 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



# 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 gages 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, protect against water and oil permeation via the front face.
- The stem spindle is made of high-strength quench-hardened stainless steel for longevity.
- 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 gage highly scratch- and chemical-resistant.



### SPECIFICATIONS

Graduation	Range	Range / Rev	Dial reading	Order No.		Accuracy	Measuring Force	ISO/JIS type								
				w/ lug	Flat-back			Shockproof	Waterproof	Long stem	Jeweled bearing	Double scale	Coaxial counter	Reverse reading	Damper	
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	—	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	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).







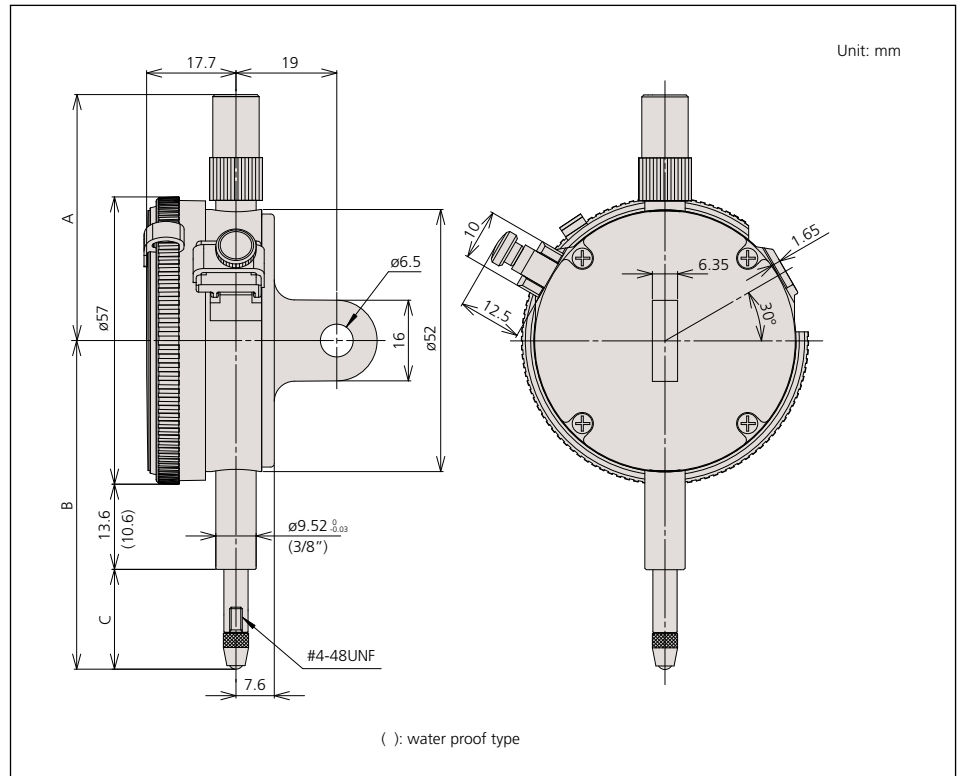
# Dial Indicators

## SERIES 2 — ANSI / AGD Type Metric Dial Indicator

### SPECIFICATIONS

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

### DIMENSIONS



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

#### Optional Accessories

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

# Dial Indicators

## SERIES 3 — Large Dial Face and Long Stroke

- Dial gages with a large-diameter (78mm / 3.07") graduation face for easy reading.



3046S



3047S

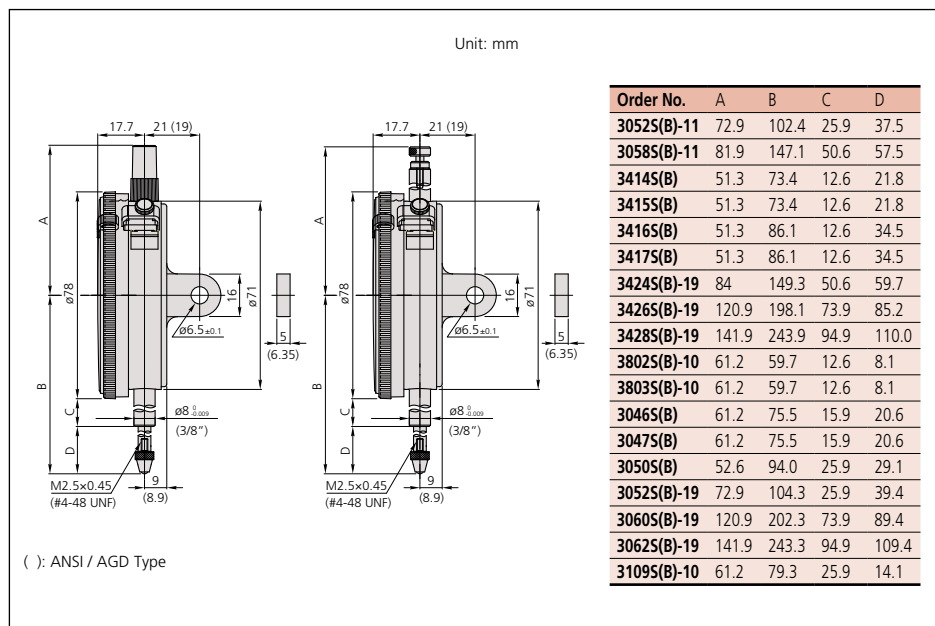


3050S



3052S-19

## DIMENSIONS






# 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	<b>3802S-10</b>	<b>3802SB-10</b>	±.0001"	±.0001"	2.0N or less	✓	✓	
.0001"	.025"	.01"	0-5-0	<b>3803S-10</b>	<b>3803SB-10</b>	±.0001"	±.0001"	2.0N or less	✓	✓	
.001"	.5"	.1"	±0-100	<b>3414S</b>	<b>3414SB</b>	±.001"	±.001"	1.8N or less			
.001"	.5"	.1"	0-50-0	<b>3415S</b>	<b>3415SB</b>	±.001"	±.001"	1.8N or less			
.001"	1"	.1"	±0-100	<b>3416S</b>	<b>3416SB</b>	±.001"	±.002"	1.8N or less			
.001"	1"	.1"	0-50-0	<b>3417S</b>	<b>3417SB</b>	±.001"	±.002"	1.8N or less			
.001"	2"	.1"	±0-100	<b>3424S-19</b>	<b>3424SB-19</b>	±.001"	±.003"	3.0N or less	✓	✓	✓
.001"	3"	.1"	±0-100	<b>3426S-19</b>	<b>3426SB-19</b>	±.001"	±.005"	3.0N or less	✓	✓	✓
.001"	4"	.1"	±0-100	<b>3428S-19</b>	<b>3428SB-19</b>	±.001"	±.005"	3.2N or less	✓	✓	✓

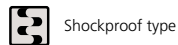
**Metric** Stem 3/8" DIA. #4-48 UNF Thread, Yellow dial face ANSI/AGD type

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	<b>3052S-11</b>	<b>3052SB-11</b>	±0.01mm	±0.03mm	2.5N or less	✓	✓	✓
0.01mm	50mm	1mm	±0-100	<b>3058S-11</b>	<b>3058SB-11</b>	±0.01mm	±0.04mm	3.0N or less	✓	✓	✓

**Metric** Stem ø 8mm M2.5x0.45 Thread ISO/IS type

Graduation	Range	Range /rev	Dial reading	Order No.		Accuracy	Measuring Force				
				W/ lug	Flat-back						
0.001mm	1mm	0.2mm	0-10-0	<b>3109S-10</b>	<b>3109SB-10</b>	±0.005mm	1.5N or less	✓	✓		
0.01mm	10mm	1mm	0-100	<b>3046S</b>	<b>3046SB</b>	±0.015mm	1.4N or less				
0.01mm	10mm	1mm	0-50-0	<b>3047S</b>	<b>3047SB</b>	±0.015mm	1.4N or less				
0.01mm	20mm	1mm	0-100	<b>3050S</b>	<b>3050SB</b>	±0.020mm	2.0N or less				✓
0.01mm	30mm	1mm	0-100	<b>3052S-19</b>	<b>3052SB-19</b>	±0.025mm	2.5N or less	✓	✓	✓	
0.01mm	50mm	1mm	0-100	<b>3058S-19</b>	<b>3058SB-19</b>	±0.035mm	3.0N or less	✓	✓	✓	
0.01mm	80mm	1mm	0-100	<b>3060S-19*</b>	<b>3060SB-19*</b>	±0.045mm	3.0N or less	✓	✓	✓	
0.01mm	100mm	1mm	0-100	<b>3062S-19*</b>	<b>3062SB-19*</b>	±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

### Optional Accessories

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

# Dial Indicators

## SERIES 4 — Large Dial Face

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



4046S



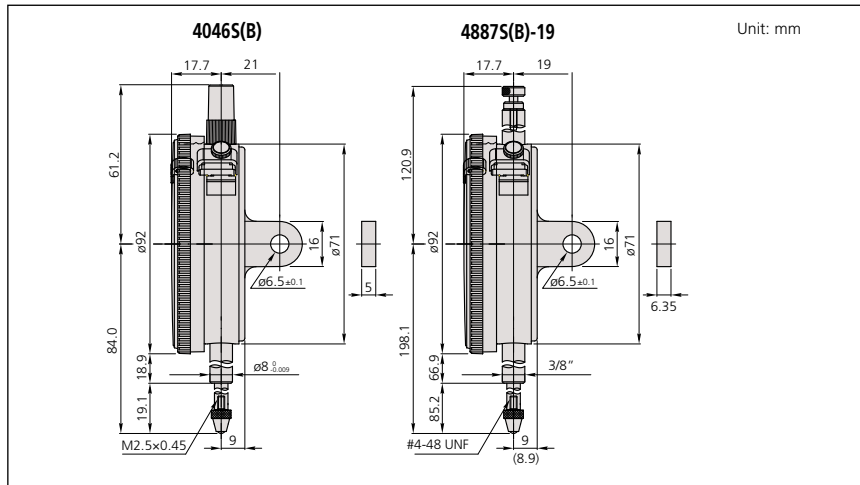
4887S-19

## 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	<b>4887S-19</b>	<b>4887SB-19</b>	±.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	<b>4046S</b>	<b>4046SB</b>	± 0.01mm	± 0.015mm	1.4N or less	

## DIMENSIONS



## Optional Accessories

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

# Back-Plunger Dial Indicators

## SERIES 1 and 2



Mitutoyo's back-plunger 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 effectively with optional holding bars.

- Back-plunger dial gages are suitable for mounting onto leveling machine tool tables or inspection jigs, and for use in small spaces where the graduations of standard dial gages are difficult to see.
- Model No. 1960T, which uses Mitutoyo's proprietary shock-proofing mechanism, has excellent durability and shock resistance.



One revolution type



Shockproof type



Jeweled bearing type

### 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-31.)

—: Contact points (See page F-34.)

### 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	<b>1961T</b>	±.001"	0.4 - 1.4N	✓	✓	
.001"	.2"	.05"	0-50	<b>1166T</b>	±.001"	0.4 - 1.4N			
.001"	.2"	.05"	0-25-0	<b>1167T</b>	±.001"	0.4 - 1.4N			
.001"	.2"	.05"	50-0	<b>1168T</b>	±.001"	0.4 - 1.4N			✓

\*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	<b>1960T</b>	±0.014mm	0.4 - 1.4N	✓	✓		—
0.01mm	5mm	1mm	0-100	<b>1160T</b>	±0.016mm	0.4 - 1.4N				—
0.01mm	5mm	1mm	100-0	<b>1162T</b>	±0.016mm	0.4 - 1.4N			✓	—

\*Full stroke

**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	<b>2991T-10</b>	±.0002"	0.4 - 1.5N	✓	✓	✓
.0005"	.04"	.05"	20-0-20	<b>2961T</b>	±.0005"	0.4 - 1.4N	✓	✓	

**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	<b>2990T-10</b>	±0.005mm	0.4 - 1.5N	✓	✓	✓
0.01mm	1mm	1.27mm	50-0-50	<b>2960T</b>	±0.014mm	0.4 - 1.4N	✓	✓	

# Back-Plunger Dial Indicators

SERIES 1 and 2



2960T

Balanced scale



Graduation: 0.01mm,  
Measuring range: 1mm

2960T

- One revolution
- Shockproof
- Back plunger



2990T-10

Balanced scale

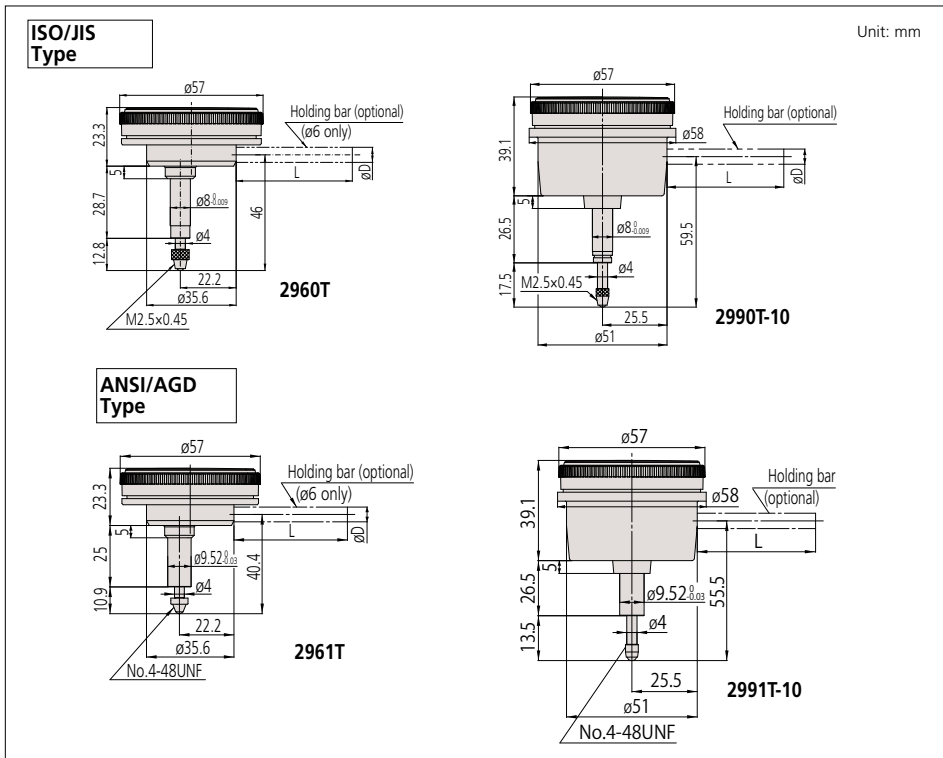


Graduation: 0.01mm,  
Measuring range: 1mm

2990T-10

- One revolution
- Shockproof
- Back plunger
- Jeweled bearing

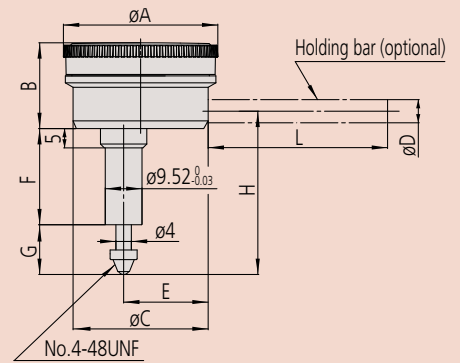
## DIMENSIONS



## DIMENSIONS

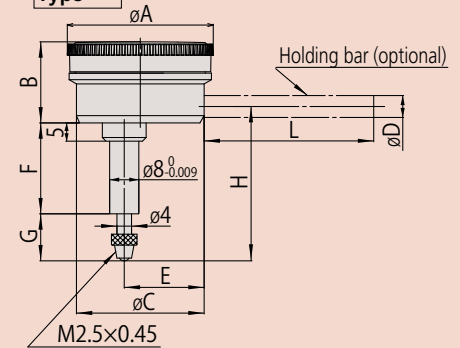
ANSI/AGD Type

Unit: mm



Order No.	A	B	C	E	F	G	H
1166T	40	22.1	35.6	22.2	25	10.9	42
1167T	40	22.1	35.6	22.2	25	10.9	42
1168T	40	22.1	35.6	22.2	25	10.9	42
1961T	40	22.1	35.6	22.2	25	10.9	40

ISO/JIS Type



Order No.	A	B	C	E	F	G	H
1160T	40	22.1	35.6	22.2	25	13.8	43.3
1162T	40	22.1	35.6	22.2	25	13.8	43.3
1960T	40	22.1	35.6	22.2	28.7	12.8	46

Note 1: Refer to pages F-51 to F-54 for contact point details.  
Note 2: Dimensions of the inch (ANSI/AGD Type) dial indicator partly differ from those of the metric (ISO/JIS Type) indicator.

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

## Holding bar (optional)

Order No.	øD	L
21AAA166	ø6mm	42mm
136567	ø6mm	81mm
124625	ø6.35mm	81mm
21AAA167	ø6.35mm	42mm
21AAA168	ø8mm	42mm
136568	ø8mm	81mm

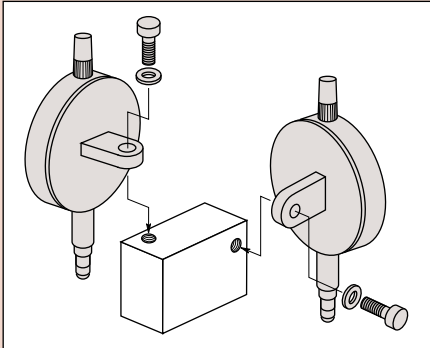
\* øD and L: detail shown in drawing below.

# 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 variety of backs are available for Mitutoyo Digimatic and dial indicators.

### Application



### ID-S (543-6xx only)\*

- 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

\*Includes the required adapter.



### SPECIFICATIONS

Description		Order No.			
		Series 0 (ø31mm) 1003 (ø36mm)	Series 1 (ø41mm)	Series 2 ID-C (all types), ID-F, ID-H ID-S (543-7xx only) (ø57mm)	Series 3, 4 (ø77, 91mm)
Flat Back	Unit: mm	<b>191559:</b> a=1.0 <b>137906:</b> for 1003 a=1.0	<b>101211:</b> a=2.2 <b>136872:</b> for water- proof type <b>191559:</b> for 1911, 1913-10	<b>101039:</b> a=2.5 <b>21AZB231:</b> for waterproof of S type	<b>100836:</b> a=3.0
Lug-on-Center Back	Unit: mm	<b>190561:</b> Metric type <b>190139:</b> Inch type <b>137905:</b> for 1003	<b>101210:</b> metric type <b>101307:</b> inch type <b>190561:</b> for 1911, 1913-10	<b>101040:</b> metric type <b>101306:</b> inch type <b>21AZB230:</b> for waterproof of S type	<b>100691:</b> metric type <b>100797:</b> inch type
Magnetic Back	Unit: mm	—	<b>Special order</b>	<b>900928</b>	<b>900929</b>
Back with Offset Lug	Unit: mm	—	<b>Special order</b>	<b>101167</b>	<b>100837</b>
Back with Post	Unit: mm	—	<b>193172</b>	<b>101169</b>	<b>100839</b>
Back with Screw Mount	Unit: mm	—	<b>193173:</b> M6x1, <b>193174:</b> #1/4-28UNF,	<b>136023:</b> M6x1 <b>101170:</b> #1/4- 28UNF	<b>136024:</b> M6x1 <b>100840:</b> #1/4-28UNF
Adjustable Back	Unit: mm	—	<b>136025:</b> M6x1 <b>129721:</b> #1/4-20UNC	<b>136026:</b> M6x1 <b>101168:</b> #1/4-20UNC	<b>136027:</b> M6x1 <b>100838:</b> #1/4-20UNC
Back with Dovetail	Unit: mm	—	—	<b>900008</b>	<b>Special order</b>
Back with Adjustable Bracket	Unit: mm	—	—	<b>129902:</b> Dovetail Rack Back <b>901964:</b> Dovetail bracket for rack back	—

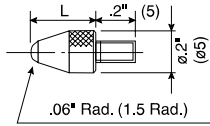
( ) : ANSI / AGD Type



# Contact Points

## Optional Accessories for Digimatic and Dial Indicators and Linear Gages

### ø.118" (ø3mm) Ball point



#### 4-48UNF

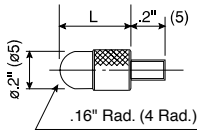
L	Carbide	Sapphire	Ruby	Plastic
.25"	21BZB005*	—	—	—
.28"	—	—	—	902018
.3"	131262	131263	131264	—
.6"	131265	131266	131267	—
1"	131268	131269	131270	—

#### 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 point



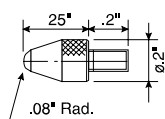
#### 4-48UNF

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

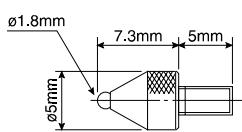
### ø.16 Ball Point



#### 4-48UNF

Order No.
21BZB005

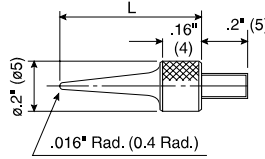
### ø1.8mm Ball Point



#### M2.5 x 0.45mm

Order No.
101122

### Needle point



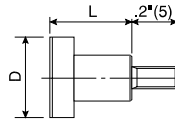
#### 4-48UNF

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

#### M2.5 x 0.45mm

L	Order No.
15mm	101121
17mm	137413

### Flat point



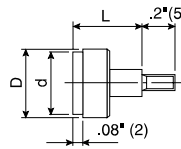
#### 4-48UNF

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



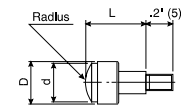
#### 4-48UNF

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
ø10.5mm	ø9.5mm	10mm	120043

### Spherical-point, Carbide tip



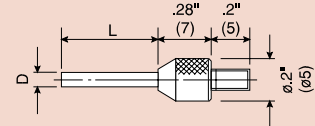
#### 4-48UNF

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



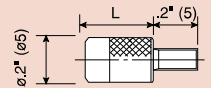
#### 4-48UNF

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



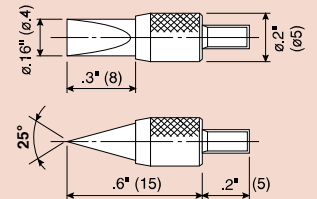
#### 4-48UNF

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



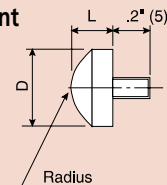
#### 4-48UNF

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

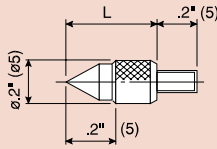
#### M2.5 x 0.45mm

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

# Contact Points

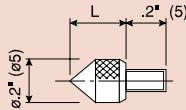
Optional Accessories for Digimatic and Dial Indicators and Linear Gages

## 60° Conical point



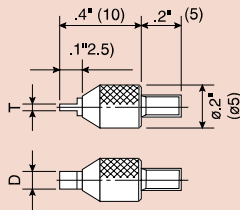
4-48UNF		M2.5 x 0.45mm	
L	Order No.	L	Order No.
1/2"	101190	10mm	101120

## 90° Conical point



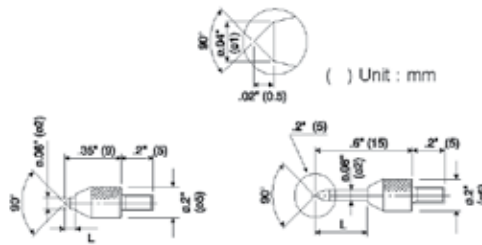
4-48UNF		M2.5 x 0.45mm	
L	Order No.	L	Order No.
1/4"	101191	5mm	101385

## Blade point, Carbide tip



4-48UNF			M2.5 x 0.45mm		
D	T	Order No.	D	T	Order No.
.08"	.016"	131276	2mm	0.4mm	120061
.08"	.024"	131277	2mm	0.6mm	120062
.16"	.04"	131278	4mm	1mm	120063

## 90° Conical point, Carbide tipped

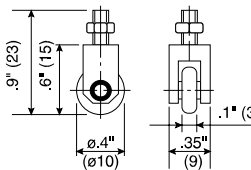


4-48UNF		4-48UNF	
L	Order No.	L	Order No.
.08"	131272	.3"	131283

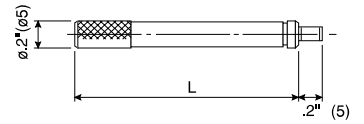
M2.5 x 0.45mm		M2.5 x 0.45mm	
L	Order No.	L	Order No.
2mm	120057	8mm	120068

## Roller Point



4-48UNF		M2.5 x 0.45mm	
Order No.	Order No.	Order No.	Order No.
901991	901954		

## Extension Rod



4-48UNF		M2.5 x 0.45mm	
L	Order No.	L	Order No.
1/2"	139167	10mm	303611
1"	301655	20mm	303612
2"	301657	30mm	303613
4"	301659	100mm	303614

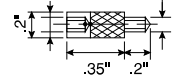
## Point Conversion

M2.5 x 0.45mm 4-48 UNFI



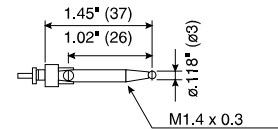
Order No.
21AAA011

4-48 UNFI M2.5 x 0.45mm



Order No.
21AAA012

## Lever Point



4-48UNF		M2.5 x 0.45mm	
Order No.	Order No.	Order No.	Order No.
900393	900393	900391	900391

## 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

# 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 Thickness and Depth Gages

Order No.	Description
21AZB149	Depth gages up to 12.7mm/.5"
21AZB150	Depth gages up to 25mm/1"
21AZB151	S-Type thickness gage



Dove Tail Type Lever Assembly

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
  - 971753**: With release-speed control
- Lifting range: 1" / 25.4mm  
Cable length: 300mm



### Spindle Lifting Pick

- 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

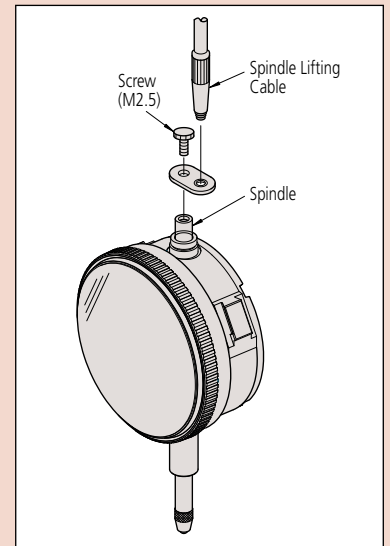
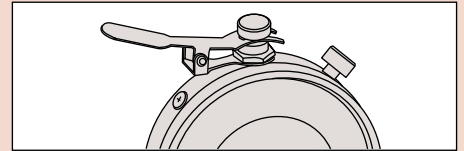
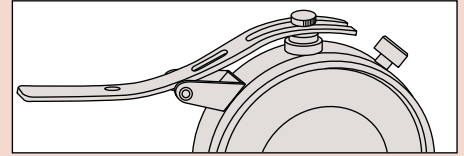


### Spindle Lifting Knob

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



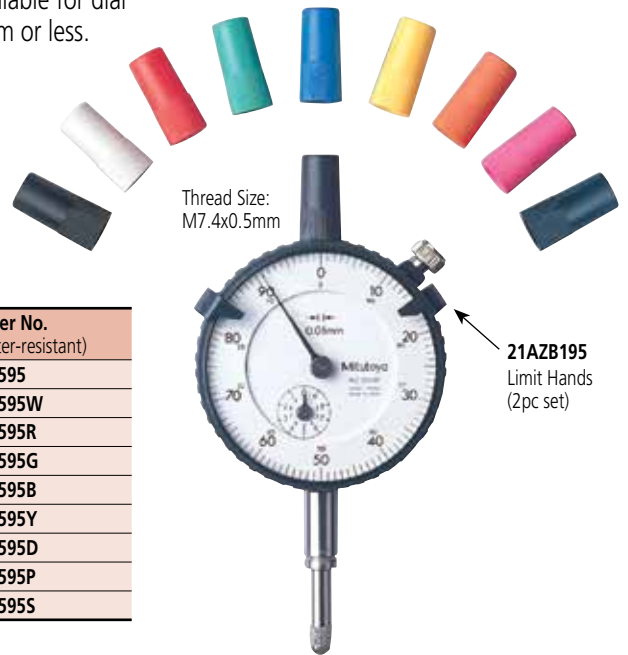
### Application



# 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)

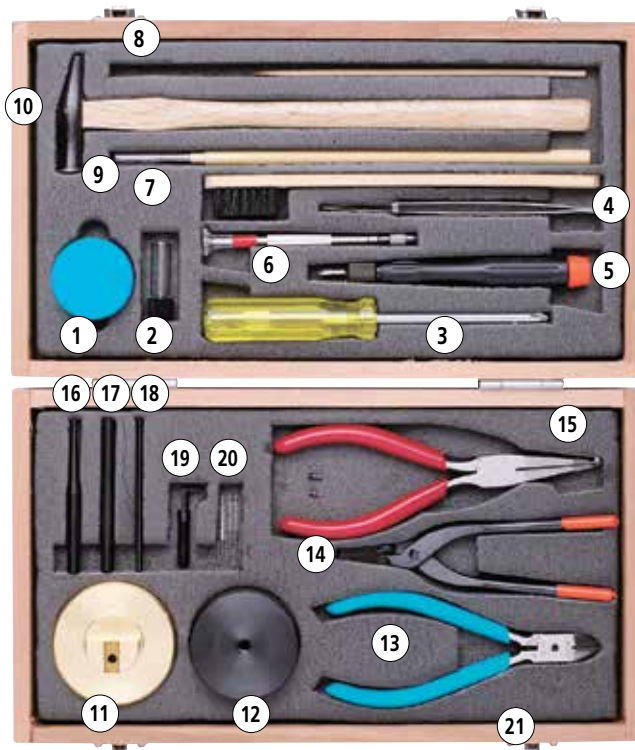


136422: Yellow (10-sheet/set)

# 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, as well as a device that lets you reset the indicator crystals.



7823

### SPECIFICATIONS

Order No.	Description
7823	Dial indicator repair tool kit

# 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.

### SPECIFICATIONS

Order No.	Description
7000	Dial indicator crystal setter



7000

With 8 sizes of crystal setting pads

### 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 $\varnothing 1$            |
|      | 193702:   | Reamer $\varnothing 0.6$          |
|      | 21JAA273: | Reamer $\varnothing 0.5$          |
| (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 Test Indicators

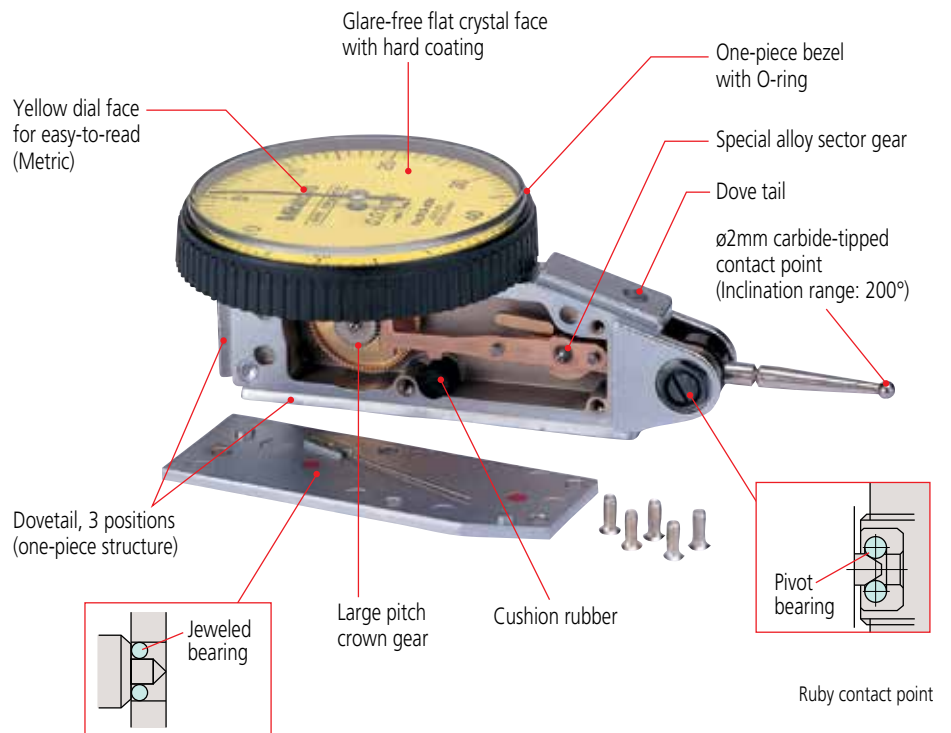
## SERIES 513

### Description of Icon

Icon	Description
	With revolution counter
	Long contact point
	Jeweled bearing
	Double scale spacing, easy to read
	Compact
	Dustproof
	Anti-magnetic

### FEATURES

- Narrow or deep places, which cannot be measured with a normal dial gage, can be easily and accurately measured.
- Proprietary new structure provides 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 for scratch resistance.
- Flat crystal makes gradations easy to read.
- 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 best suited to their needs.
- Vertical: Standard.
- Inclined: Dial face inclined 20°, compared with the vertical type, allows for 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.
- Compact.
- Comes with certificate of inspection.



# 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.
- One-piece bezel and crystal design with O-ring provide resistance to water and dust.
- The glare-free flat crystal face has a scratch-resistant coating.
- High sensitivity and quick response because of jeweled bearings.
- Standard carbide contact point provide.



513-424E



513-404E



513-414E

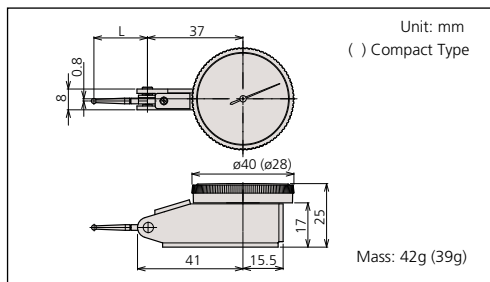


513-403



513-424

### DIMENSIONS AND MASS



### 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

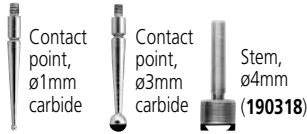


## Set Configuration: Metric Test Indicators

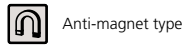
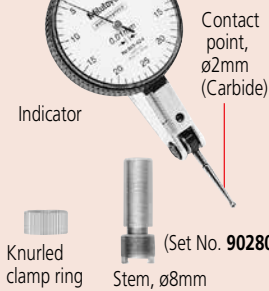
### Full set

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

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



### Basic set



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	513-478E*	—	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	✓	—	—	✓	✓	—
0.01mm	513-475*	—	1mm	10µm	0-50-0	0.2N or Less	44.5	✓	—	—	✓	—	—
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	✓	—	—	✓	—	—
0.01mm	513-471E*	—	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.

## Set Configuration: Inch Test Indicators

### Full set

Contact point,  
.039" DIA.  
carbide

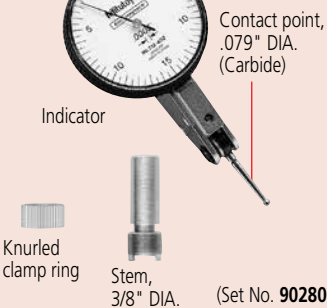
Contact point,  
.118" DIA.  
carbide

Stem,  
.157" DIA.  
(190318)

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

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

### Basic set



### 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"	513-472*	—	.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"	513-473*	—	.008"	±.0001"	0-4-0	0.3N or less	15	✓	—	✓	—	—
.0001"	513-463	—	.008"	±.0001"	0-4-0	0.3N or less	15	✓	—	✓	✓	—

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

### 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	✓	✓	—	—

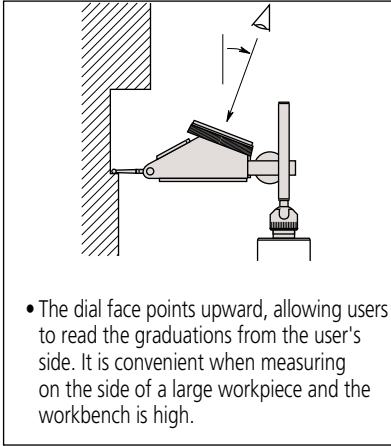


# Dial Test Indicators

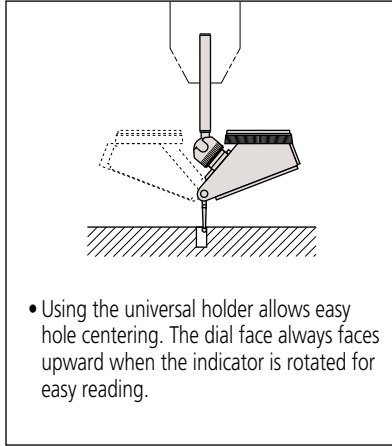
## SERIES 513 — Horizontal (20° Tilted Face), Vertical and Parallel

### FEATURES

- Specially designed for easy viewing of measurements.



- The dial face points 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 for easy reading.



513-444E



513-452



513-282G



513-445E



513-454E  
513-284GE



513-444E



513-445E



513-455E



513-284GE



513-442



513-446

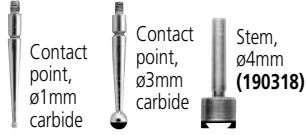
### Optional Accessories

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

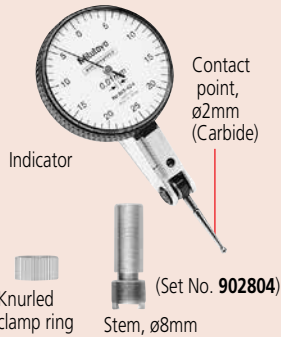
## Set Configuration: Metric

### Full set

Swivel clamp (900321, for  $\varnothing 4\text{mm}$ ,  $\varnothing 8\text{mm}$ , dovetail) Metric holding bar (L: 100mm) (900209)



### Basic set

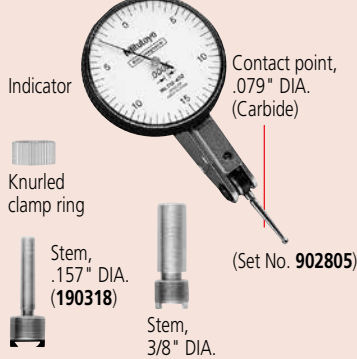


## Set Configuration: Inch

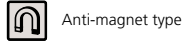
### Full set

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)

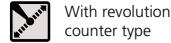
### Basic set



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



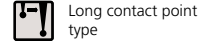
Anti-magnet type



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	10 $\mu\text{m}$	0-40-0	0.3N or less	48	20.9	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
0.002mm	513-445E	513-445T	0.4mm	5 $\mu\text{m}$	0-100-0	0.3N or less	48	14.7	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>

### 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"	$\pm 0.0005"$	0-15-0	0.3N or less	48	19.9	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	—
.0005"	513-442-06	513-442T-06	.06"	$\pm 0.0005"$	0-15-0	0.3N or less	48	19.9	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	Black dial
.0005"	513-446	513-446T	.06"	$\pm 0.0005"$	0-15-0	0.2N or less	48	33.9	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	—
.0005"	513-446-06	513-446T-06	.06"	$\pm 0.0005"$	0-15-0	0.2N or less	48	33.9	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	Black dial
.0001"	513-443	513-443T	.016"	$\pm 0.0002"$	0-4-0	0.3N or less	48	15	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	—
.0001"	513-443-06	513-443T-06	.016"	$\pm 0.0002"$	0-4-0	0.3N or less	48	15	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	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	8 $\mu\text{m}$	0-40-0	0.3N or less	50	20.9	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
0.002mm	513-455E	513-455T	0.2mm	3 $\mu\text{m}$	0-100-0	0.3N or less	50	14.7	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>

### 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"	$\pm 0.0005"$	0-15-0	0.3N or less	50	19.9	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
.0001"	513-453	513-453T	.008"	$\pm 0.0001"$	0-4-0	0.3N or less	50	15	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>

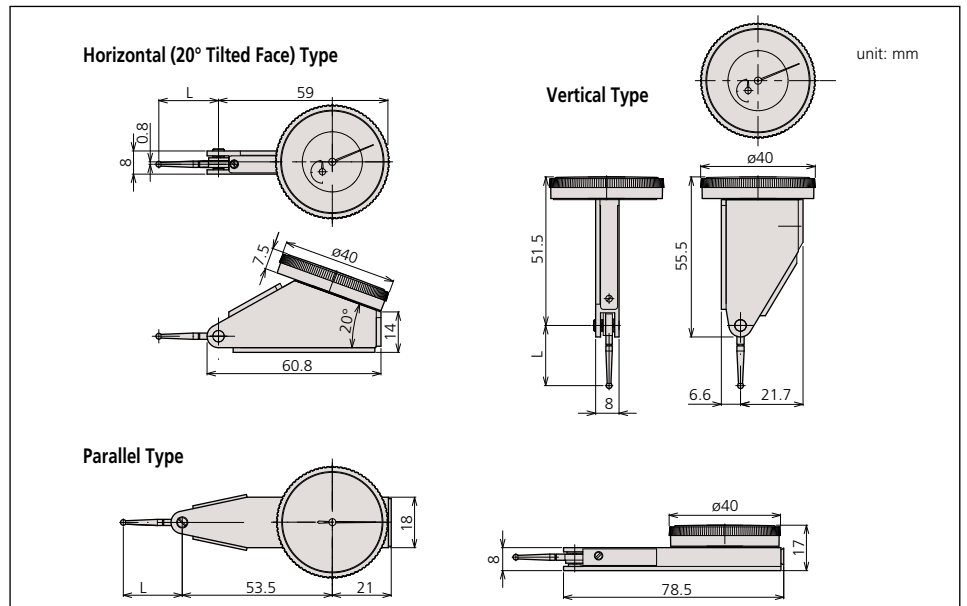
### Metric Parallel type

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	8 $\mu\text{m}$	0-40-0	0.3N or less	68	20.9	<input checked="" type="checkbox"/>

### 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"	$\pm 0.0005"$	0-15-0	0.3N or less	68	20	<input checked="" type="checkbox"/>

## DIMENSIONS

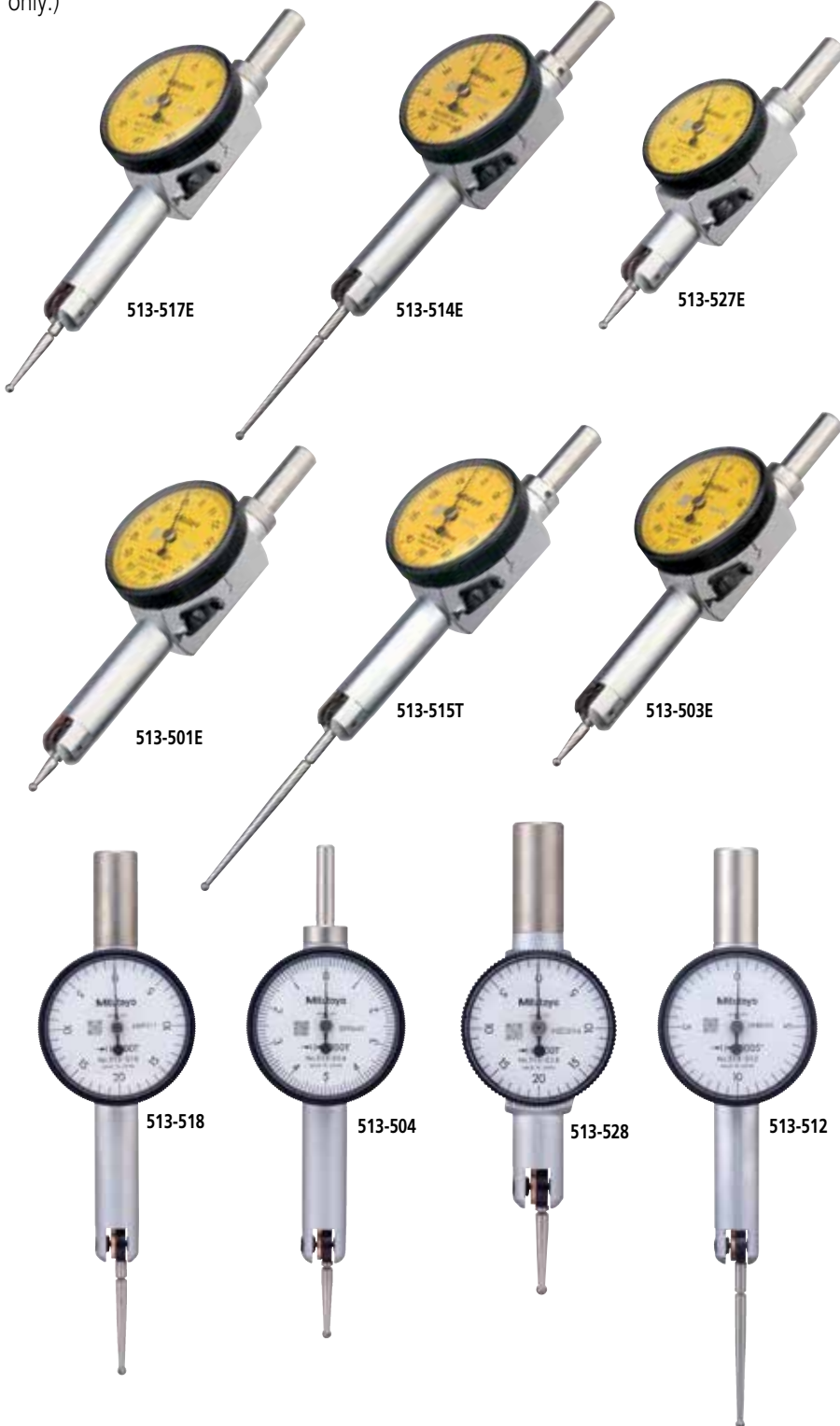


# Pocket Dial Test Indicators

## SERIES 513

### FEATURES

- Jeweled bearings ensure high 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 an O-ring to keep out water / oil.



513-514E



513-517E  
513-527E



513-515T



513-503E

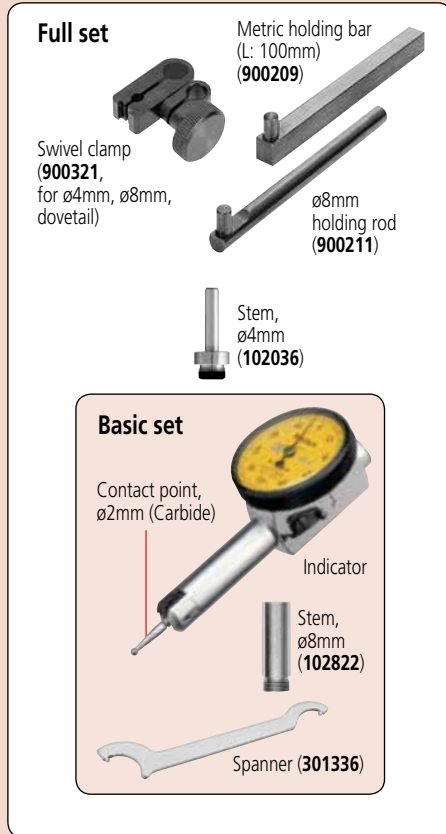


513-501E

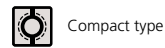
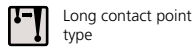
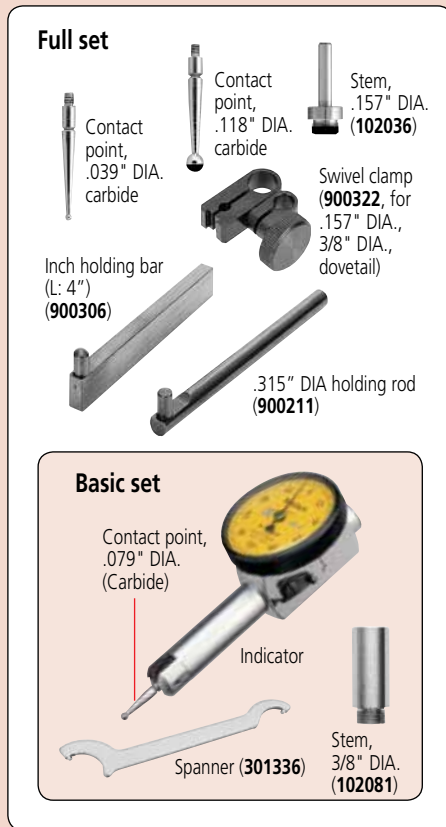
### Optional Accessories

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

## Set Configuration: Metric



## Set Configuration: Inch



## 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

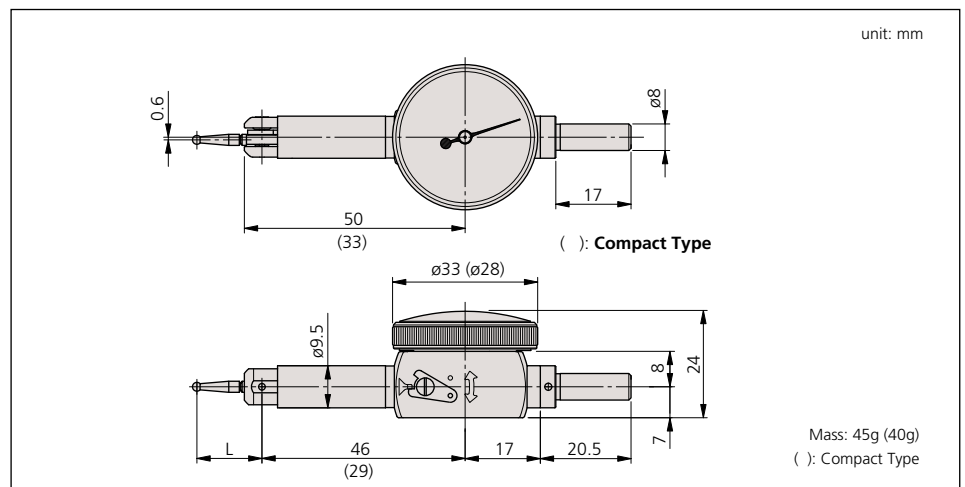
Graduation	Order No.		Range	Accuracy	Dial reading	Measuring force	L (mm)			
	Basic set	Full set								
.001"	513-518	513-518T	.04"	±.001"	0-20-0	0.3N or less	26.5	—	✓	—
.001"	513-528	513-528T	.04"	±.001"	0-20-0	0.3N or less	18.7	—	✓	✓
.0005"	513-512	513-512T	.02"	±.0005"	0-10-0	0.3N or less	37.4	✓	✓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

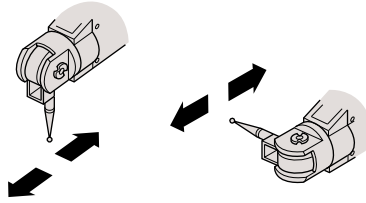


# Dial Test Indicators

## SERIES 513 — Universal Type

### FEATURES

- Universal application for 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



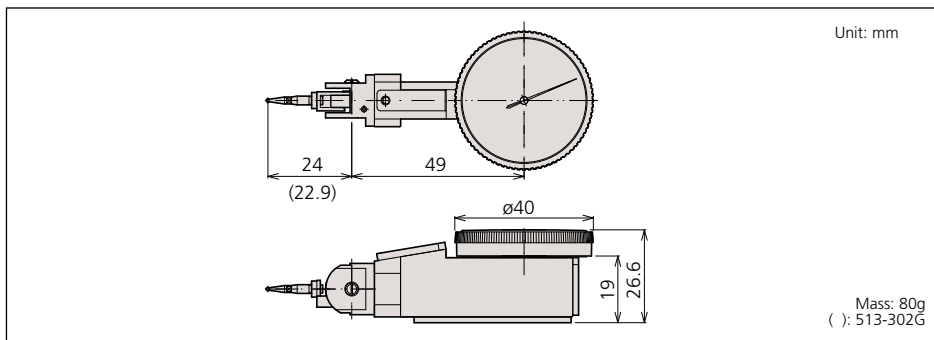
#### Metric

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

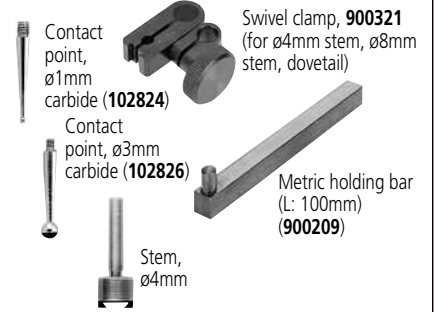
Graduation	Order No.		Range	Accuracy	Dial reading	Measuring force	
	Basic set	Full set					
.0005"	513-302G	513-302GT	.03"	±.0005"	0-15-0	0.3N or less	✓

### DIMENSIONS AND MASS

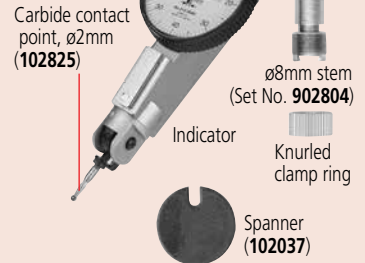


### Set Configuration: Metric

#### Full set

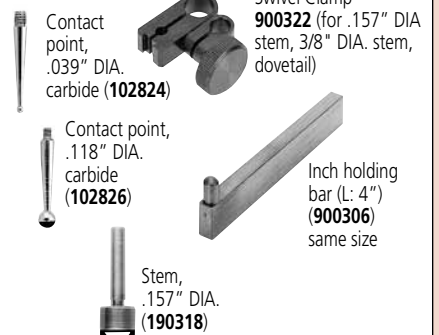


#### Basic set

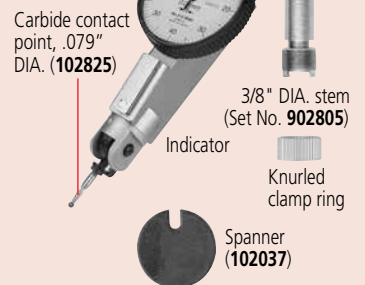


### Set Configuration: Inch

#### Full set



#### Basic set

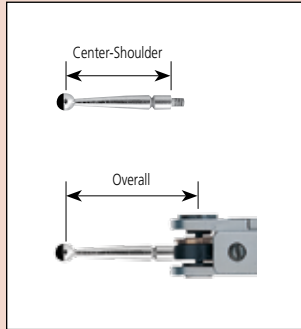


### Optional Accessories

- : Swivel clamp
- : Holding bar
- : Stem

# Contact Points and Clamp Holders

## Optional Accessories for Dial Test Indicator

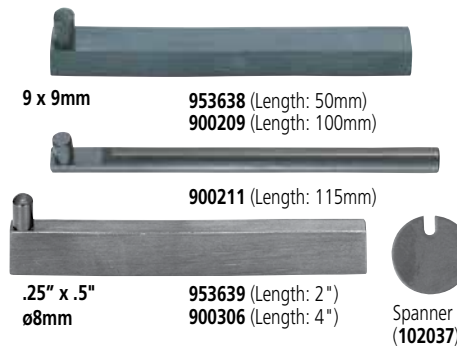


Inch		Part No.							Test Indicator Code No.		
Center-Shoulder	Overall	ø0.5	ø0.7	ø1	ø2	ø3	Ruby Ø2mm				
11.5	15.0	—	—	136076	136075	136077	21CZA213	513-403 513-453	513-443 513-463	513-473 <sup>*3</sup> 513-443-06	
16.4	19.9	—	—	133196	133195	133197	21CZA204	513-402 513-406 513-452	513-442 513-462	513-472 <sup>*3</sup> 513-442-06 513-282G	
30.4	33.9	—	—	136291	136290	136292	21CZA214	513-412 513-446-06	513-446		
15.2	18.7	—	—	131314	103011	131315	—	513-504 <sup>*1</sup>	513-528 <sup>*1</sup>		
23.0	26.5	—	—	103008	103007	103009	—	513-518 <sup>*1</sup>			
33.9	37.4	—	—	131316	131324	131317	—	513-512 <sup>*1</sup>			

Metric		Part No.							Test Indicator Code No.		
Length (mm)	Overall	ø0.5	ø0.7	ø1	ø2	ø3	Ruby Ø2mm				
9.4	12.9	—	—	21CZA044	21CZA036	21CZA045	21CZA212	513-401E	513-471E <sup>*3</sup>		
11.2	14.7	190547	190548	103017	103010	103018	21CZA209	513-405E 513-503E <sup>*1</sup> 513-527E <sup>*1</sup>	513-425E 513-455E 513-475E <sup>*3</sup>	513-445E	
17.4	20.9	190549	190550	103013	103006	103014	21CZA201	513-404E 513-464E 513-284GE	513-444E 513-517E <sup>*1</sup>	513-454E 513-474E <sup>*3</sup>	
18.7	22.2	190654	190653	137558	137557	137559	21CZA210	513-424E 513-478 <sup>*3</sup>	513-426E	513-466E	
41.0	44.5	190656	190655	136235	136013	136236	21CZA211	513-415E	513-515T <sup>*1</sup>		
33.3	36.8	—	—	137746	129949	137747	—	513-414E	513-514E <sup>*1</sup>		
8.6	12.0	—	—	136756	136104	136758	—	513-501E <sup>*1</sup>			
6.5	24.0	—	—	102824	102825	102826	—	513-304GE <sup>*2</sup>	513-302G <sup>*2</sup>		

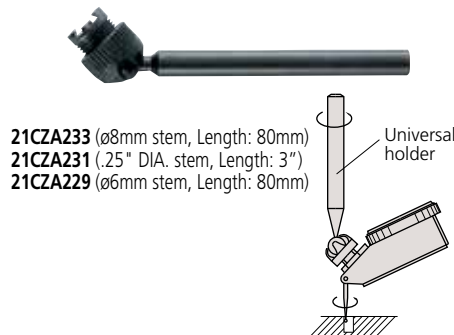
\*1 Denotes Pocket Indicators  
\*2 Denotes Universal Indicator  
\*3 Indicator Ships with Ruby Contact

### Holding Bars (with 6mm mounting pin)



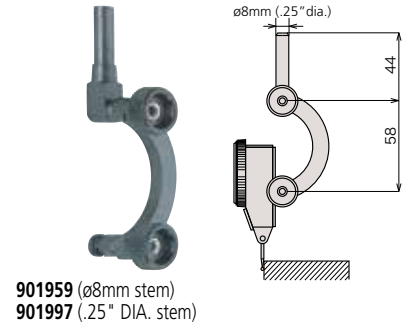
### Universal Holder

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



### Centering Holder

- Allows large diameter cylinders or holes to be centered.



### 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.

