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**Digimatic Indicator**



**Dial Indicator**



**Dial Test Indicator**



**Dial Indicator  
Application and  
Stand**

## New Products



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# ABSOLUTE Digimatic Indicator ID-S

**SERIES 543 — with Simple Design**

## FEATURES

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



543-683



543-690



## SPECIFICATIONS

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

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

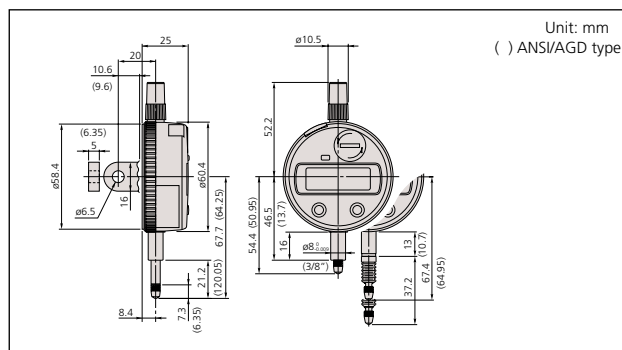
**Inch/Metric** Stem  $\varnothing$  8mm, M2.5 x 0.45 Thread

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

**Metric** Stem  $\varnothing$  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>543-690</b>	<b>543-690B</b>	ID-S112	0.003mm	2.0N or less	—
0.001mm	12.7mm	<b>543-694</b>	<b>543-694B</b>	ID-S112P	0.003mm	2.5N or less	Dust-proof
0.01mm	12.7mm	<b>543-681</b>	<b>543-681B</b>	ID-S1012	0.02mm	2.0N or less	—

## DIMENSIONS



## Technical Data

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

## Function

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

## Optional Accessories

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





**ABSOLUTE**<sup>®</sup>

Absolute System Patented by MITUTOYO

### Technical Data

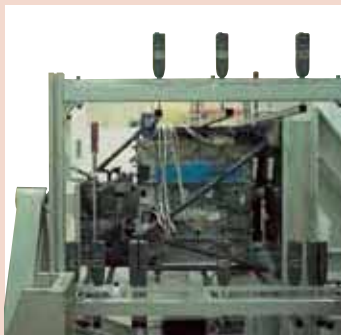
Accuracy: Refer to the list of specifications (excluding quantizing error)  
 Resolution: 0.01mm or .0005"/0.01mm,  
 Display: LCD  
 Length standard: ABSOLUTE electrostatic capacitance type linear encoder  
 Max. response speed: Unlimited  
 Measuring force: Refer to the list of specifications  
 Battery: 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-U

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

### FEATURES

- Slim type digital indicator with low price.
- Large LCD and simple key operation.
- After the initial origin setting, the ID-U no longer needs absolute positioning over the entire battery life; the origin is remembered even after power-off.
- Ideal for installation into measuring devices because of its compact design and long battery life.
- Employing the ABSOLUTE linear encoder, the ID-U always displays the spindle "Absolute Position" from the origin at power-on. Also unlimited response speed eliminates over-speed errors.
- Flat back type only no option for backs.
- SPC data output.



575-121



575-123

### 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

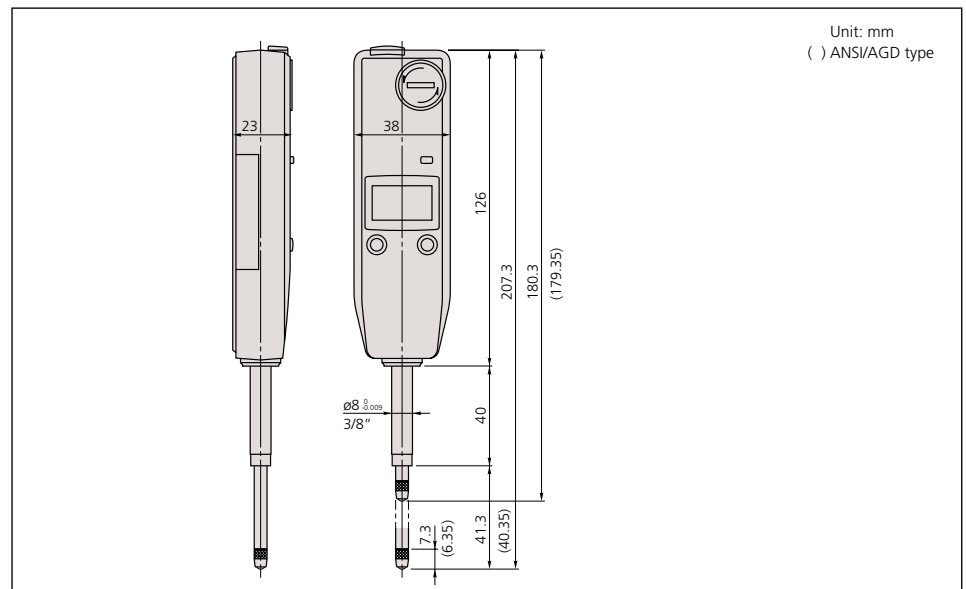
**Inch/Metric** Stem ø 8mm, M2.5 x 0.45 Thread

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 ø 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 Digimatic Indicator ID-C

## SERIES 543 — Standard Type

### FEATURES

- As compact as standard Series 2 dial indicators.
- Large, easy-to-read LCD.
- GO/±NG judgment can be performed by setting upper and lower tolerance limits. The judgment result (GO/±NG) can be displayed in full-size characters.
- The positive/negative count resulting from the spindle's up/down movement can be toggled.
- 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 (excluding quantizing error)  
 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. 5,000 hours under normal use  
 Dust/Water protection level: IP42 or IP53 (dust-proof type)

### Function

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

### Optional Accessories

- 905338:** SPC cable (40" / 1m)
- 905409:** SPC cable (80" / 2m)
- 902011:** Spindle lifting lever (ISO/JIS type)\*
- 902794:** Spindle lifting lever (ANSI/AGD type)\*
- 137693:** Spindle lifting hook\*\*
- 540774:** Spindle lifting cable (stroke: .4" / 10mm)
- 125317:** Spare rubber boot (for dust-proof type)
- 02ACA571:** Auxiliary spindle spring for 25mm/1" models\*\*\*
- 02ACA773:** Auxiliary spindle spring for 50mm/2" models\*\*\*
- : Backs (See page F-33.)
- : Contact points (See page F-34.)

\*Can be used on 12mm/.5" models only.

\*\*Can be used on 25mm/1" or 50mm/2" models.

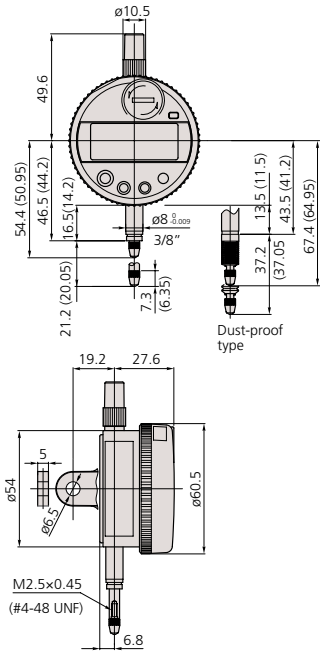
\*\*\*Required when orienting the indicator upside down.



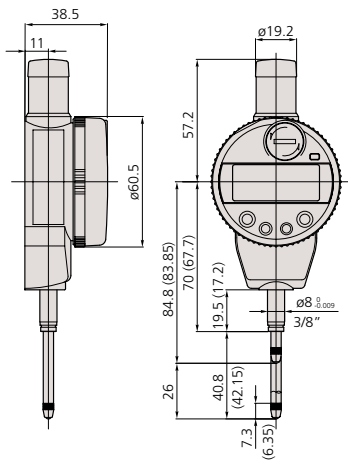
## DIMENSIONS

### .5" / 12.7mm range models

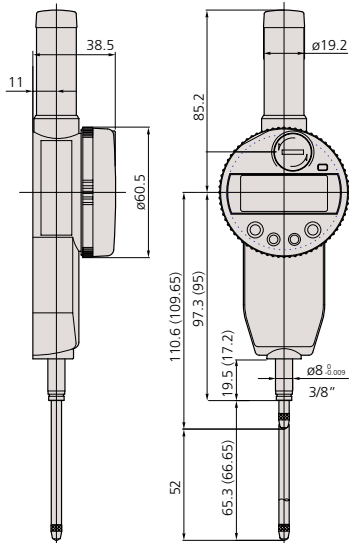
Unit: mm  
( ) ANSI / AGD Type



### 1" / 25.4mm range models



### 2" / 50.8mm range models



## SPECIFICATIONS

### Inch/Metric

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

ISO/JIS type

ANSI/AGD type

Resolution	Range	Order No. (w/ lug, flat-back)		Model	Accuracy	Measuring force	Remarks
.00005"/0.001mm	.5" / 12.7mm	543-252	543-252B	ID-C112EB	.00012"	1.5N or less	—
.00005"/0.001mm	.5" / 12.7mm	543-259	543-259B	ID-C112PE	.00012"	2.0N or less	Dust-proof
.00005"/0.001mm	.5" / 12.7mm	543-256	543-256B	ID-C112CE	.00012"	0.4N - 0.7N	Low measuring force
.00005"/0.001mm	1" / 25.4mm	—	543-452B	ID-C125EB	.00012"	1.8N or less	—
.00005"/0.001mm	2" / 50.8mm	—	543-462B	ID-C150EB	.00025"	2.3N or less	—
.0001"/0.001mm	.5" / 12.7mm	543-253	543-253B	ID-C112T	.00012"	1.5N or less	—
.0001"/0.001mm	1" / 25.4mm	—	543-453B	ID-C125TB	.00012"	1.8N or less	—
.0001"/0.001mm	2" / 50.8mm	—	543-463B	ID-C150TB	.00025"	2.3N or less	—
.0005"/0.01mm	.5" / 12.7mm	543-292	543-292B	ID-C1012HE	.0002"	1.5N or less	—
.0005"/0.01mm	.5" / 12.7mm	543-272	543-272B	ID-C1012E	.0008"	0.9N or less	—
.0005"/0.01mm	.5" / 12.7mm	543-279	543-279B	ID-C1012PE	.0008"	2.0N or less	Dust-proof
.0005"/0.01mm	.5" / 12.7mm	543-276	543-276B	ID-C1012CE	.0008"	0.2N - 0.5N	Low measuring force
.0005"/0.01mm	1" / 25.4mm	—	543-459B	ID-C1025HEB	.0002"	1.8N or less	—
.0005"/0.01mm	1" / 25.4mm	—	543-456B	ID-C1025EB	.0012"	1.8N or less	—
.0005"/0.01mm	2" / 50.8mm	—	543-466B	ID-C1050EB	.0016"	2.3N or less	—

### Inch/Metric

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

Resolution	Range	Order No. (w/ lug, flat-back)		Model	Accuracy	Measuring force	Remarks
.00005"/0.001mm	.5" / 12.7mm	543-251	543-251B	ID-C112M	.00012"	1.5N or less	—
.00005"/0.001mm	.5" / 12.7mm	543-258	543-258B	ID-C112PM	.00012"	2.0N or less	Dust-proof
.00005"/0.001mm	.5" / 12.7mm	543-255	543-255B	ID-C112CMB	.00012"	0.4N - 0.7N	Low measuring force
.00005"/0.001mm	1" / 25.4mm	—	543-451B	ID-C125MB	.00012"	1.8N or less	—
.00005"/0.001mm	2" / 50.8mm	—	543-461B	ID-C150MB	.00025"	2.3N or less	—
.0005"/0.01mm	.5" / 12.7mm	543-291	543-291B	ID-C1012HM	.0002"	1.5N or less	—
.0005"/0.01mm	.5" / 12.7mm	543-271	543-271B	ID-C1012M	.0008"	0.9N or less	—
.0005"/0.01mm	.5" / 12.7mm	543-278	543-278B	ID-C1012PM	.0008"	2.0N or less	Dust-proof
.0005"/0.01mm	.5" / 12.7mm	543-275	543-275B	ID-C1012CM	.0008"	0.2N - 0.5N	Low measuring force
.0005"/0.01mm	1" / 25.4mm	—	543-458B	ID-C1025HMB	.0002"	1.8N or less	—
.0005"/0.01mm	1" / 25.4mm	—	543-455B	ID-C1025MB	.0012"	1.8N or less	—
.0005"/0.01mm	2" / 50.8mm	—	543-465B	ID-C1050MB	.0016"	2.3N or less	—

### Metric

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

Resolution	Range	Order No. (w/ lug, flat-back)		Model	Accuracy	Measuring force	Remarks
0.001mm	12.7mm	543-250	543-250B	ID-C112	0.003mm	1.5N or less	—
0.001mm	12.7mm	543-257	543-257B	ID-C112P	0.003mm	2.0N or less	Dust-proof
0.001mm	12.7mm	543-254	543-254B	ID-C112C	0.003mm	0.4N - 0.7N	Low measuring force
0.001mm	25.4mm	—	543-450B	ID-C125B	0.003mm	1.8N or less	—
0.001mm	50.8mm	—	543-460B	ID-C150B	0.006mm	2.3N or less	—
0.01mm	12.7mm	543-290	543-290B	ID-C1012H	0.005mm	1.5N or less	—
0.01mm	12.7mm	543-270	543-270B	ID-C1012	0.02mm	0.9N or less	—
0.01mm	12.7mm	543-277	543-277B	ID-C1012P	0.002mm	2.0N or less	Dust-proof
0.01mm	12.7mm	543-274	543-274B	ID-C1012C	0.002mm	0.2N - 0.5N	Low measuring force
0.01mm	25.4mm	—	543-457B	ID-C1012HB	0.005mm	1.8N or less	—
0.01mm	25.4mm	—	543-454B	ID-C1025B	0.03mm	1.8N or less	—

# ABSOLUTE Digimatic Indicator ID-C

## SERIES 543 — Calculation Type



### FEATURES

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

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



543-287B

### SPECIFICATIONS

ISO/JIS type    ANSI/AGD type

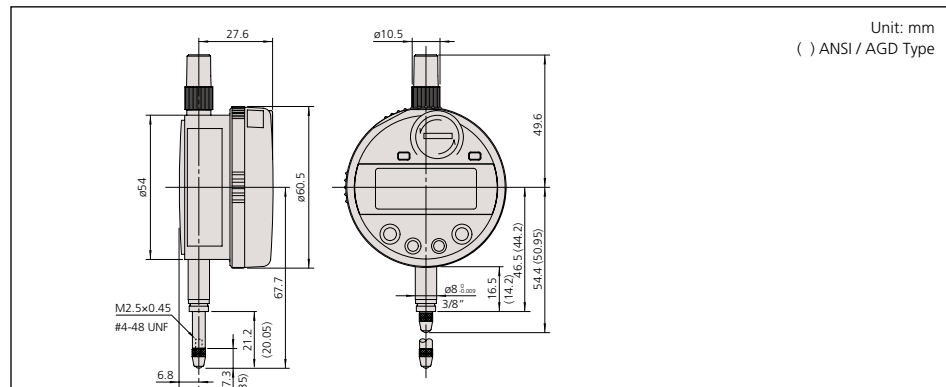
Inch/Metric		Stem dia. 3/8" #4-48 UNF Thread			
Resolution	Range	Order No.*	Model	Accuracy	Measuring Force
.00001" - .05"/ 0.0002 - 1mm (switchable)	.5" / 12.7mm	<b>543-287B</b>	ID-C112REB	.00012"	1.5N or less
	1" / 25.4mm	<b>543-482B</b>	ID-C125REB	.00012"	2.0N or less
	2" / 50.8mm	<b>543-487B</b>	ID-C150REB	.00025"	2.3N or less

Inch/Metric		Stem $\varnothing$ 8mm, M2.5 x 0.45 Thread			
Resolution	Range	Order No.*	Model	Accuracy	Measuring Force
.00001" - .05"/ 0.0002 - 1mm (switchable)	.5" / 12.7mm	<b>543-286B</b>	ID-C112RMB	.00012"	1.5N or less
	1" / 25.4mm	<b>543-481B</b>	ID-C125RMB	.00012"	2.0N or less
	2" / 50.8mm	<b>543-486B</b>	ID-C150RMB	.00025"	2.3N or less

Metric		Stem $\varnothing$ 8mm, M2.5 x 0.45 Thread			
Resolution	Range	Order No.*	Model	Accuracy	Measuring Force
0.0002 - 1mm (switchable)	12.7mm	<b>543-285B</b>	ID-C112RB	0.003mm	1.5N or less
	25.4mm	<b>543-480B</b>	ID-C125RB	0.003mm	2.0N or less
	50.8mm	<b>543-485B</b>	ID-C150RB	0.006mm	2.3N or less

\*Flat back

### DIMENSIONS



### Technical Data

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

### Function

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

### Optional Accessories

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

### APPLICATIONS



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





### Technical Data

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

### Function

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

### Optional Accessories

- 902011: Spindle lifting lever\* (ISO/JIS type)
- 902794: Spindle lifting lever\* (ANSI/AGD type)
- 540774: Spindle lifting cable\* (Stroke: .4" / 10mm)
- 125317: Rubber boot
- : Backs (See page F-33.)
- : Contact points (See page F-34.)

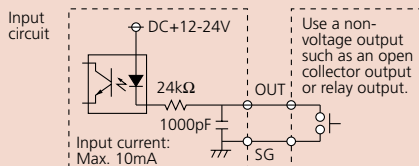
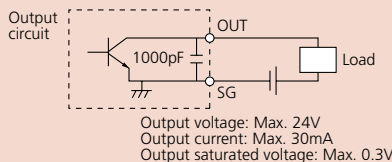
\*When using the spindle lifting lever/cable, IP54 is not guaranteed.

### Output pattern

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

### I/O Specifications

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



# ABSOLUTE Digimatic Indicator ID-C

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

### FEATURES

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



### SPECIFICATIONS

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

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

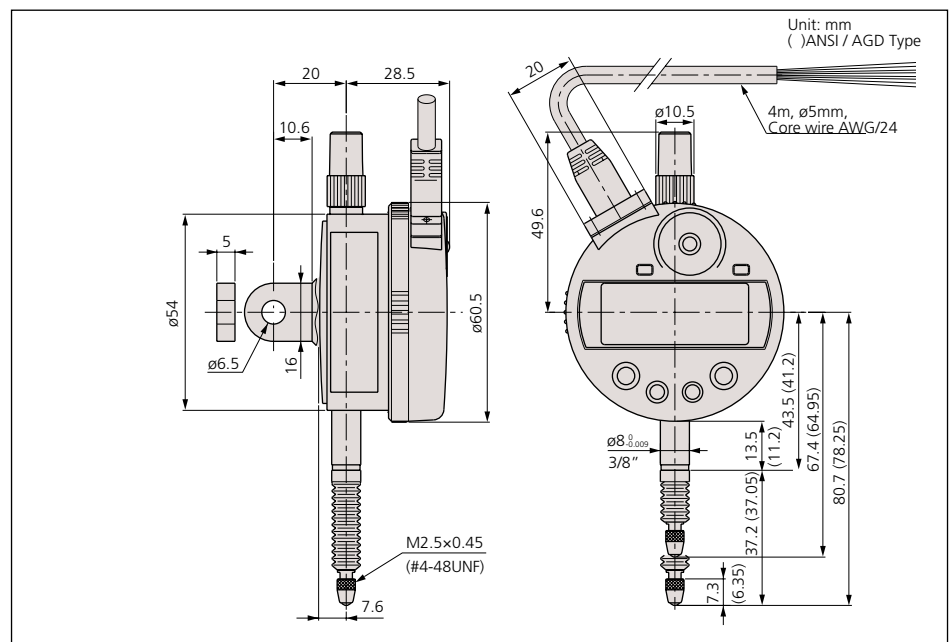
**Inch/Metric** Stem ø 8mm, M2.5 x 0.45 Thread

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

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

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

### DIMENSIONS



# ABSOLUTE Digimatic Indicator ID-C

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

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

## FEATURES

- The maximum, minimum, or runout value can be displayed during measurement.
- GO/±NG judgment is performed by setting the upper and lower tolerances for max., min. and runout values.
- High speed sampling ratio of 50 times/s.
- Employing the ABSOLUTE linear encoder, the Signal ID-C always displays the spindle "Absolute Position" from the origin at power-on.



543-260

## SPECIFICATIONS

ISO/JIS type    ANSI/AGD type

Inch/Metric		Stem dia. 3/8" #4-48 UNF Thread		
Resolution	Range	Order No.*	Model	Accuracy
.00005"/0.001mm	.5" / 12.7mm	543-262	ID-C112AE	.00012"
.00005"/0.001mm	.5" / 12.7mm	543-263	ID-C112AT	.00012"

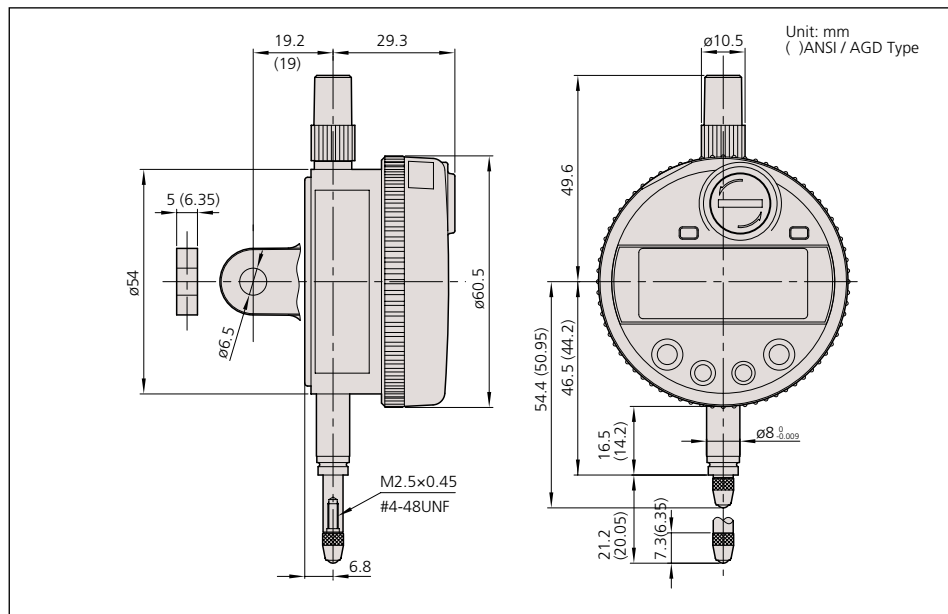
Inch/Metric		Stem ø 8mm, M2.5 x 0.45 Thread		
Resolution	Range	Order No.*	Model	Accuracy
.00005"/0.001mm	.5" / 12.7mm	543-261	ID-C112AM	.00012"

\*Back with lug

Metric		Stem ø 8mm, M2.5 x 0.45 Thread		
Resolution	Range	Order No.*	Model	Accuracy
0.001mm	12.7mm	543-260	ID-C112A	0.003mm

\*Back with lug

## DIMENSIONS



## Technical Data

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

## Function

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

## Optional Accessories

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



### Technical Data

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

### Function

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

### Optional Accessories

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



Installed on bore gage probe (511-127)

# ABSOLUTE Digimatic Indicator ID-C

## SERIES 543 — Specially Designed for Bore Gage Application

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

### FEATURES

- The minimum value holding function provides the easy of detection of hole diameter.
- An analog bar indicator is integrated to enhance the intuition in reading.
- GO/±NG judgment is performed by setting the upper and lower tolerances.
- Up to three sets of master value and upper/lower tolerance value can be memorized.
- Employing the ABSOLUTE linear encoder, the Signal ID-C always displays the spindle "Absolute Position" from the origin at power-on.



543-266B

### SPECIFICATIONS

ISO/JIS type    ANSI/AGD type

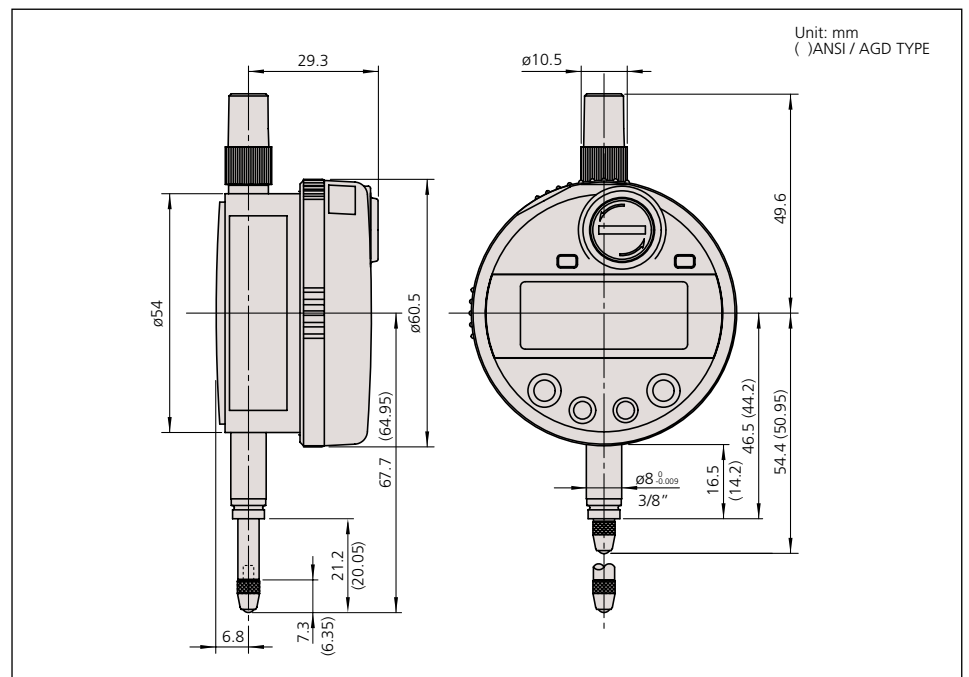
Inch/Metric		Stem dia. 3/8" #4-48 UNF Thread		
Resolution	Range	Order No.*	Model	Accuracy
.00005"/0.001mm	.5" / 12.7mm	<b>543-266B</b>	ID-C112GE	.00012"

\*Back with lug

Metric		Stem ø 8mm, M2.5 x 0.45 Thread		
Resolution	Range	Order No.*	Model	Accuracy
0.001mm	12.7mm	<b>543-264B</b>	ID-C112G	0.003mm

\*Back with lug

### DIMENSIONS



# ABSOLUTE 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 up by 0.5µm / .00002" resolution, remote control functionality via a handheld controller (or an RS-232C interface) and easy runout measurements with the well-established analog bar display.
- The maximum, minimum, or runout value can be displayed during measurement.
- GO/±NG judgment is performed by setting the upper and lower tolerances. If a judgment result is out of tolerance, the display backlighting changes from green to red, so tolerance judgment can be made at a glance.
- With SPC data output.
- With RS-232C input/output



## SPECIFICATIONS

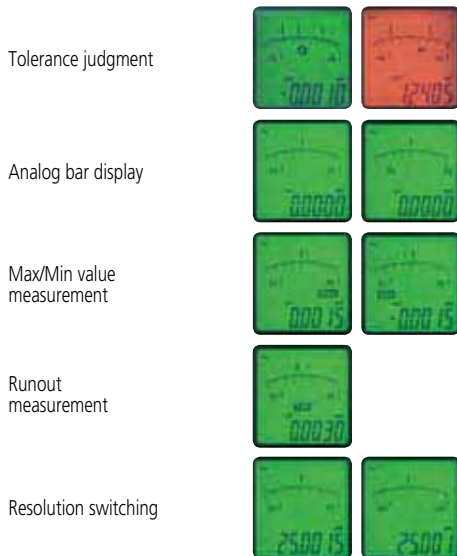
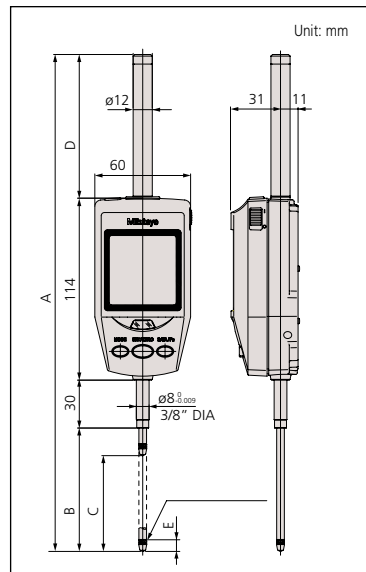
**Inch/Metric** Stem dia. 3/8" #4-48 UNF Thread

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

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

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

## DIMENSIONS



## Technical Data

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

## Function

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

## Standard Accessories

**09EAA119A:** AC Adapter 120v  
**137693:** Lifting Lever

## Optional Accessories

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

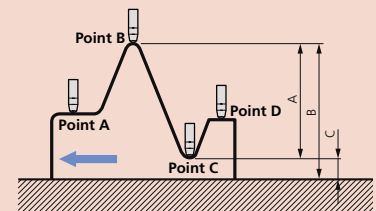
\*Required when orienting the indicator upside down.

## Application

### Difference/Runout measurement

**Example: Indicator travel from points A to D**

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



Order No.	A	B	C	D	E
<b>543-501A</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



### Technical Data

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

### Function

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

### Standard Accessories

526688A: AC Adapter 120V  
 137693: Lifting Lever

### Optional Accessories

936937: SPC cable (40" / 1m)  
 965014: SPC cable (80" / 2m)  
 21EAA131: RS-232C cable (80" / 2m)  
 540774: Spindle lifting cable (stroke: .4" / 10mm)  
 02ACA571: Auxiliary spindle spring for 25mm/1" models\*  
 02ACA773: Auxiliary spindle spring for 50mm/2" models\*  
 264-504-5A: Digimatic Min-processor DP-1VR  
 543-004-1: Digimatic presetter  
 —: Backs (See page F-33.)  
 —: Contact points (See page F-34.)

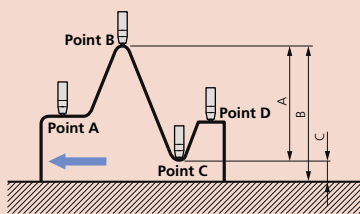
\*Required when orienting the indicator upside down.

### Application

#### Difference/Runout measurement

#### Example: Indicator travel from points A to D

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



# ABSOLUTE Digimatic Indicator ID-F

## SERIES 543 — with Back-lit LCD Screen

### FEATURES

- With the ABSOLUTE Linear Encoder technology, once the measurement reference point has been preset it will not be lost when the power is turned on.
- GO/±NG judgment is performed by setting the upper and lower tolerances. If a judgment result is out of tolerance, the display backlighting changes from green to red, so tolerance judgment can be made at a glance.
- An analog bar indicator has been integrated to handle upper/lower limit approaching and zero approaching. It enhances the ease of operation in the same manner as a dial indicator. The display range of the analog bar can be changed.
- With SPC data output.



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



### SPECIFICATIONS

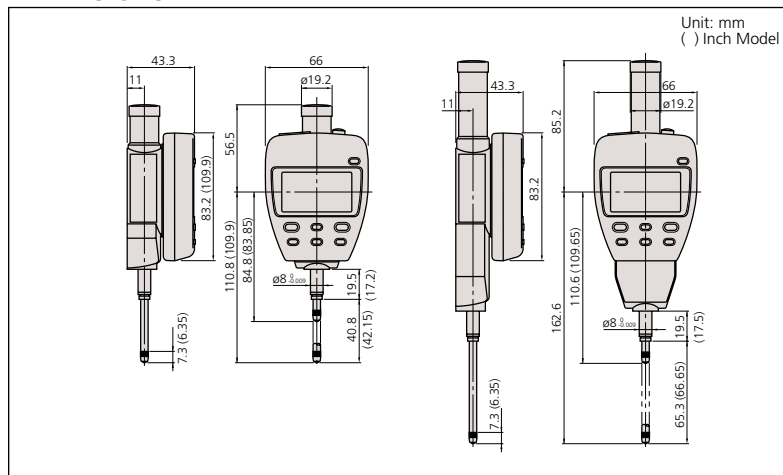
**Inch/Metric** Stem dia. 3/8" #4-48 UNF Thread

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

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

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

### DIMENSIONS





# 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 $\varnothing$ 8mm M2.5 X 0.45 Thread			
Resolution	Range	Order No.	Model No.	Accuracy	Measuring Force
0.01mm	5.0mm	543-580	ID-B1005	0.02mm	2.0N or less
0.001mm	5.0mm	543-585	ID-B105	0.003mm	2.0N or less

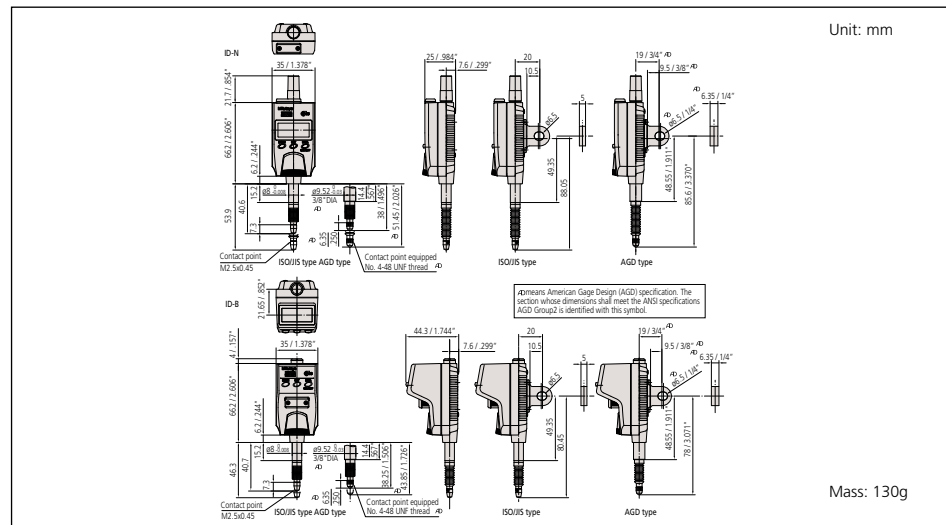
Inch / Metric		Stem dia. 3/8" #4-48 UNF Thread			
Resolution	Range	Order No.	Model No.	Accuracy	Measuring Force
.0005" / 0.01mm	.22" / 5.6mm	543-581	ID-B1005E	.0008" / 0.02mm	2.0N or less
.0005" / 0.01mm	.22" / 5.6mm	543-586	ID-B105E	.00012" / 0.003mm	2.0N or less

## ID-N Digimatic Indicators

Metric		Stem $\varnothing$ 8mm M2.5 X 0.45 Thread			
Resolution	Range	Order No.	Model No.	Accuracy	Measuring Force
0.01mm	5.0mm	543-570	ID-N1012	0.02mm	2.0N or less
0.001mm / 0.01mm	5.0mm	543-575	ID-N112	0.003mm	2.0N or less

Inch / Metric		Stem dia. 3/8" #4-48 UNF Thread			
Resolution	Range	Order No.	Model No.	Accuracy	Measuring Force
.0008" / 0.02mm	.5" / 12.7mm	543-571	ID-N1012E	.0008" / 0.02mm	2.0N or less
.00012" / 0.003mm	.5" / 12.7mm	543-576	ID-N112E	.00012" / 0.003mm	2.0N or less

## DIMENSIONS AND MASS



## Technical Data

Accuracy: Refer to the list of specifications (excluding quantizing error)  
 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, Over-flow error, Tolerance limit setting error

## Optional Accessories

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





## EC Counter

### Technical Data

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

### Standard Accessories

526688A: AC Adapter

## Multi - Unit

### Technical Data

Data input port: 6  
 Functions: MAX/MIN measurement  
 Range (MAX-MIN) measurement  
 Zero-Setting  
 Presetting  
 GO/±NG judgment (Buzzer and LED)  
 GO/±NG signal output  
 Error alarm  
 SPC data output  
 Power supply: 9V DC, 500mA (via AC adaptor)  
 Dimensions (W x D x H): 236 x 120 x 66mm  
 Mass: 1.3kg

### Standard Accessories

526688A: AC adapter

### Optional Accessories

936937: SPC cable for data output (1m)  
 965014: SPC cable for data output (2m)  
 907020: GO/±NG signal output cable (2m)  
 937179T: Foot switch

## Difference / Sum Unit

### Technical Data

Data input port: 2  
 Calculation mode: A+B, A-B, A, B  
 Functions: Zero-Setting  
 SPC data output  
 Power supply: 9V DC, 500mA (via AC adaptor)  
 Dimensions (W x D x H): 76 x 120 x 66mm  
 Mass: 0.55kg

### Standard Accessories

526688A: AC adapter

# 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.

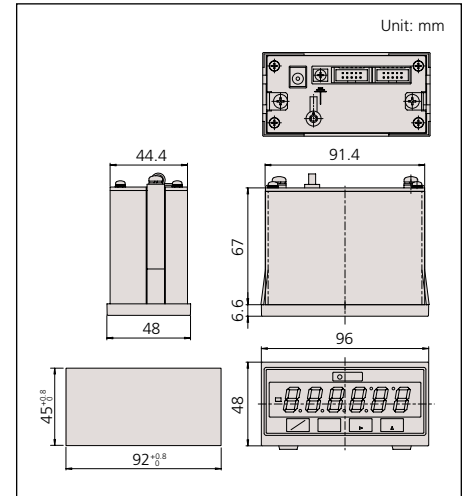


542-007A

### SPECIFICATIONS

Order No.	Description
542-007A	EC Counter

### DIMENSIONS



# Multi-Unit, Difference/Sum Unit

## SERIES 572 — For Multi-gage Measurements



572-052A

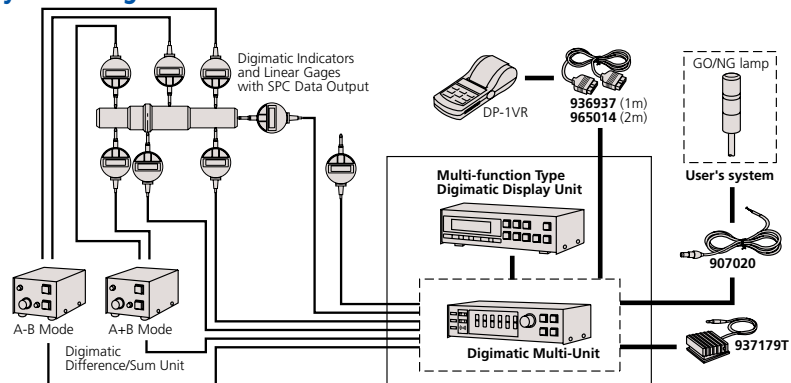


572-041A

### SPECIFICATIONS

Order No.	Description
572-052A	Multi - Unit
572-041A	Difference / Sum Unit

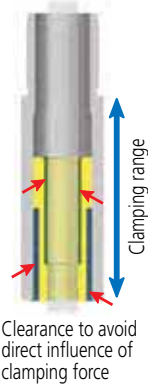
### System Diagram



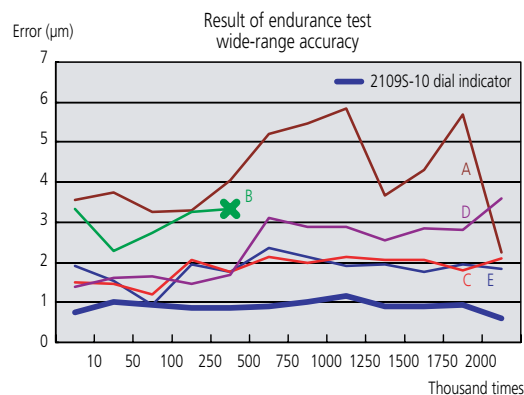
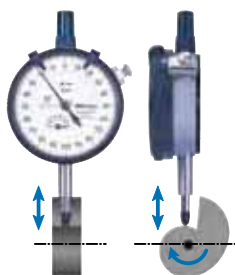
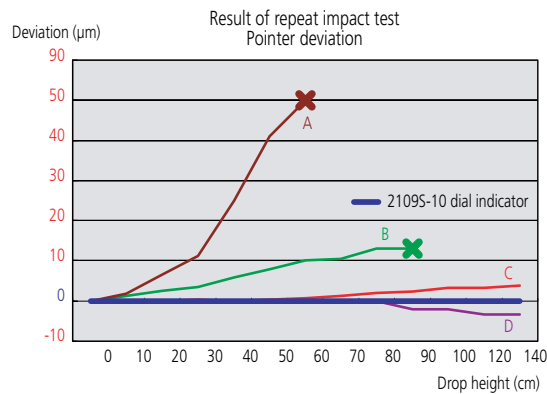
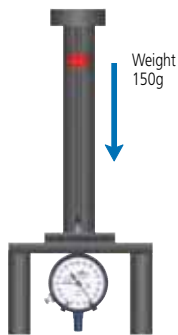
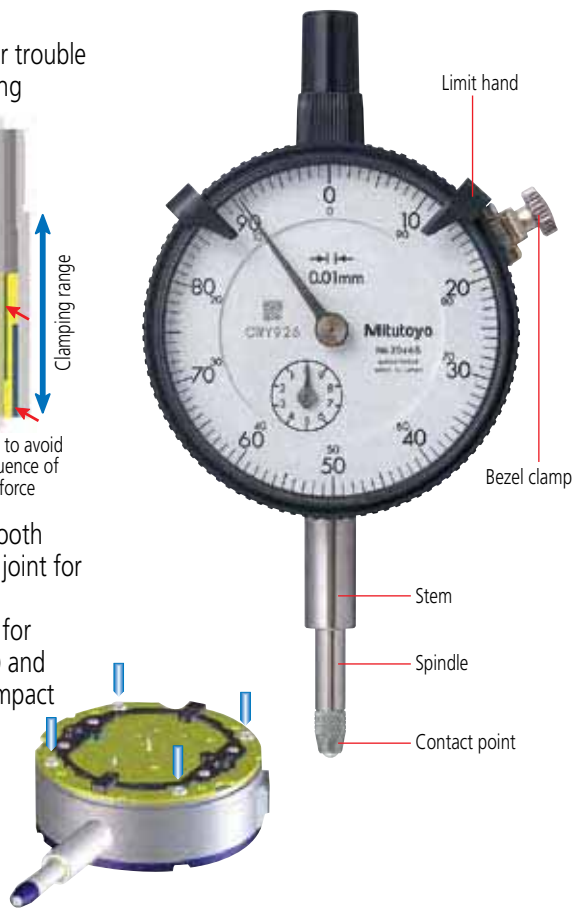
# Dial Indicators

## 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.
- Greater rigidity in the bearing plate for reducing the retracing error (20%) and 4-screw mounting for increasing impact resistance.



## Description of Icon

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

# Dial Indicators

## SERIES 0 - Compact type



1911



1923

### SPECIFICATIONS

Inch				Stem dia. 3/8", #4-48 UNF Thread		ANSI/AGD type		Measuring force	
Graduation	Range	Range/rev	Dial reading	Order No. w/ lug	Order No. Flat-back	Accuracy First 2.5 Rev	Accuracy Overall Accuracy		
.0001"	.01"	.004"	0-2-0	<b>1927-10</b>	<b>1927B-10</b>	±.0002"	±.0002"	1.4N or less	✓
.0001"	.025"	.01"	0-5-0	<b>1925-10</b>	<b>1925B-10</b>	±.0002"	±.0002"	1.4N or less	✓
.0005"	.05"	.02"	0-10-0	<b>1923</b>	<b>1923B</b>	±.0005"	±.0005"	1.4N or less	—
.001"	.1"	.04"	0-20-0	<b>1921</b>	<b>1921B</b>	±.001"	±.001"	1.4N or less	—

Metric				Stem ø 8mm, M2.5 x 0.45 Thread		ISO/JIS type		Measuring force	
Graduation	Range	Range/Rev	Dial reading	Order No. w/ lug	Order No. Flat-back	Accuracy First 2.5 Rev	Accuracy Overall Accuracy		
0.002mm	0.5mm	0.2mm	0-100-0	<b>1913-10</b>	<b>1913B-10</b>	±0.011mm	±0.011mm	1.4N or less	✓
0.01mm	2.5mm	1mm	0-50-0	<b>1911</b>	<b>1911B</b>	±0.011mm	±0.011mm	1.4N or less	—

Jeweled bearing type

### DIMENSIONS

**Inch Model** Unit: Inch

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

**Metric Model** Unit: mm

Order Number	A	B
<b>1911</b>	42	11.5
<b>1913-10</b>	39.5	9

# Dial Indicators

## SERIES 1

### SPECIFICATIONS

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

Graduation	Range	Range / Rev	Dial reading	Order No.		Accuracy		Measuring force	Shockproof	Jeweled bearing
				(W/Lug)	(Flat-back)	First 2.5 Rev	Overall Accuracy			
.0001"	.025"	.01"	0-10	<b>1802F-10</b>	<b>1802FB-10</b>	±.0001"	±.0001"	1.4N or less	✓	✓
.0001"	.025"	.01"	0-5-0	<b>1803F-10</b>	<b>1803FB-10</b>	±.0001"	±.0001"	1.4N or less	✓	✓
.00025"	.05"	.02"	0-20	<b>1470F</b>	<b>1470FB</b>	±.00025"	±.00025"	1.4N or less		
.00025"	.05"	.02"	0-10-0	<b>1471F</b>	<b>1471FB</b>	±.00025"	±.00025"	1.4N or less		
.0005"	.075"	.03"	0-30	<b>1570F-10</b>	<b>1570FB-10</b>	±.0005"	±.0005"	1.4N or less	✓	
.0005"	.075"	.03"	0-15-0	<b>1571F-10</b>	<b>1571FB-10</b>	±.0005"	±.0005"	1.4N or less	✓	
.0005"	.1"	.04"	0-40	<b>1670F</b>	<b>1670FB</b>	±.0005"	±.0005"	1.4N or less		
.0005"	.1"	.04"	0-20-0	<b>1671F</b>	<b>1671FB</b>	±.0005"	±.0005"	1.4N or less		
.0005"	.125"	.05"	0-50	<b>1506F</b>	<b>1506FB</b>	±.0005"	±.0005"	1.4N or less		
.0005"	.125"	.05"	0-25-0	<b>1507F</b>	<b>1507FB</b>	±.0005"	±.0005"	1.4N or less		
.001"	.125"	.05"	0-50	<b>1780F</b>	<b>1780FB</b>	±.001"	±.001"	1.4N or less		
.001"	.125"	.025"	0-25-0	<b>1781F</b>	<b>1781FB</b>	±.001"	±.001"	1.4N or less		
.001"	.25"	.1"	0-100	<b>1410F</b>	<b>1410FB</b>	±.001"	±.001"	1.4N or less		
.001"	.25"	.1"	0-100	<b>1410F-10</b>	<b>1410FB-10</b>	±.001"	±.001"	1.4N or less		✓
.001"	.25"	.1"	0-50-0	<b>1411F</b>	<b>1411FB</b>	±.001"	±.001"	1.4N or less		

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

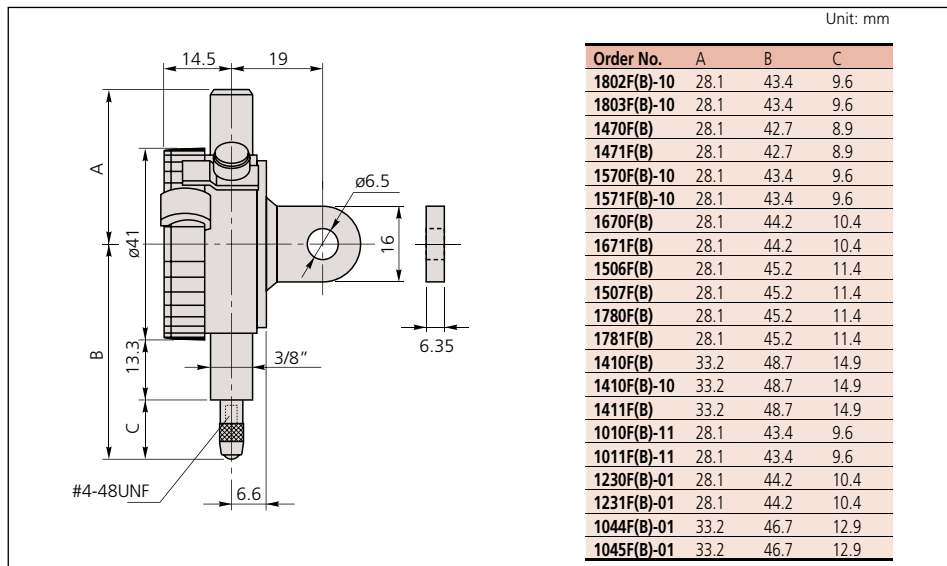
Graduation	Range	Range / Rev	Dial reading	Order No.		Accuracy		Measuring force	Shockproof	Jeweled bearing
				(W/Lug)	(Flat-back)	First 2.5 Rev	Overall Accuracy			
0.002mm	0.5mm	0.2mm	0-20	<b>1010F-11</b>	<b>1010FB-11</b>	±0.002mm	-	1.4N or less	✓	✓
0.002mm	0.5mm	0.2mm	0-10-0	<b>1011F-11</b>	<b>1011FB-11</b>	±0.003mm	-	1.4N or less	✓	✓
0.01mm	2.5mm	1mm	0-100	<b>1230F-01</b>	<b>1230FB-01</b>	±0.01mm	-	1.4N or less		
0.01mm	2.5mm	1mm	0-50-0	<b>1231F-01</b>	<b>1231FB-01</b>	±0.01mm	-	1.4N or less		
0.01mm	5mm	1mm	0-100	<b>1044F-01</b>	<b>1044FB-01</b>	±0.01mm	±0.013mm	1.4N or less		
0.01mm	5mm	1mm	0-50-0	<b>1045F-01</b>	<b>1045FB-01</b>	±0.01mm	±0.013mm	1.4N or less		

 Shockproof type  Jeweled bearing type



1411F

### DIMENSIONS



# Dial Indicators

## SERIES 1



1040F



1013F



1045F



1003

**Metric**

Stem  $\phi$  8mm M2.5 X 0.45 Thread

ISO/JIS type

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



Shockproof type

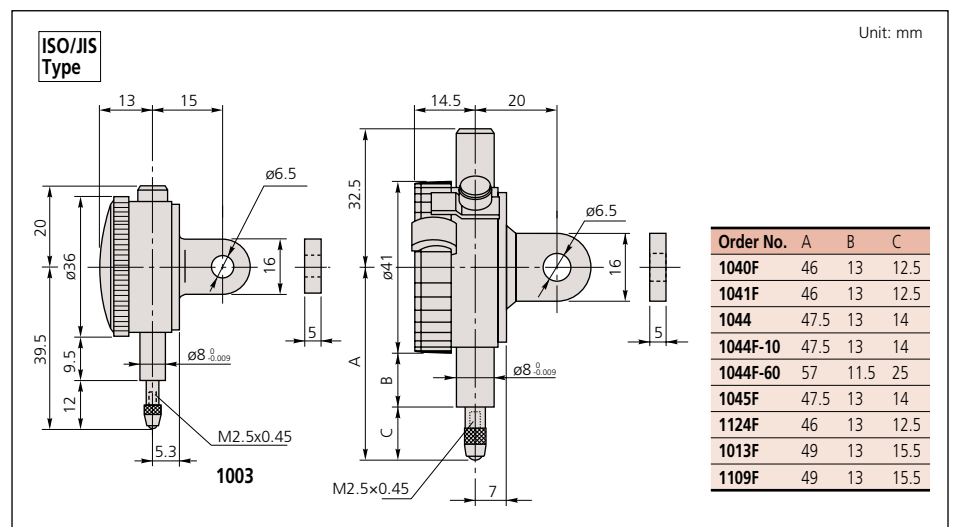


Waterproof type



Jeweled bearing type

## DIMENSIONS



# Dial Indicators

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



One revolution type



1929F-62

Unlike many other dial indicators, the one-revolution dial indicator literally shows the entire spindle travel or range as one sweep of the hand, eliminating the possibility of reading errors due to miscounting the multiple revolutions. With one-revolution dial indicators, "within tolerance" and "out-of-tolerance" can never be misinterpreted. An unique shock-proof mechanism is incorporated, providing improved immunity to shock due to sudden spindle retraction caused by high impact.



Shockproof type



Dustproof type



Waterproof type



Jeweled bearing type

### 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>1910F-72</b>	<b>1910FB-72</b>	±.0001"	1.4N or less	✓	✓	—	—
.0005"	.04" / .055"	20-0-20	<b>1909F-62</b>	<b>1909FB-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>1900F</b>	<b>1900FB</b>	±0.005mm	1.5N or less	✓	—	—	✓
0.001mm	0.1mm / 0.14mm	50-0-50	<b>1900F-60</b>	<b>1900FB-60</b>	±0.006mm	1.5N or less	✓	—	✓	✓
0.001mm	0.1mm / 0.14mm	50-0-50	<b>1900F-62</b>	<b>1900FB-62</b>	±0.006mm	1.5N or less	✓	✓	—	✓
0.01mm	1mm / 1.4mm	50-0-50	<b>1929F</b>	<b>1929FB</b>	±0.011mm	1.4N or less	✓	—	—	—
0.01mm	1mm / 1.4mm	50-0-50	<b>1929F-60</b>	<b>1929FB-60</b>	±0.011mm	1.4N or less	✓	—	✓	—
0.01mm	1mm / 1.4mm	50-0-50	<b>1929F-62</b>	<b>1929FB-62</b>	±0.011mm	1.4N or less	✓	✓	—	—



1929F  
1929F-60  
1929F-62

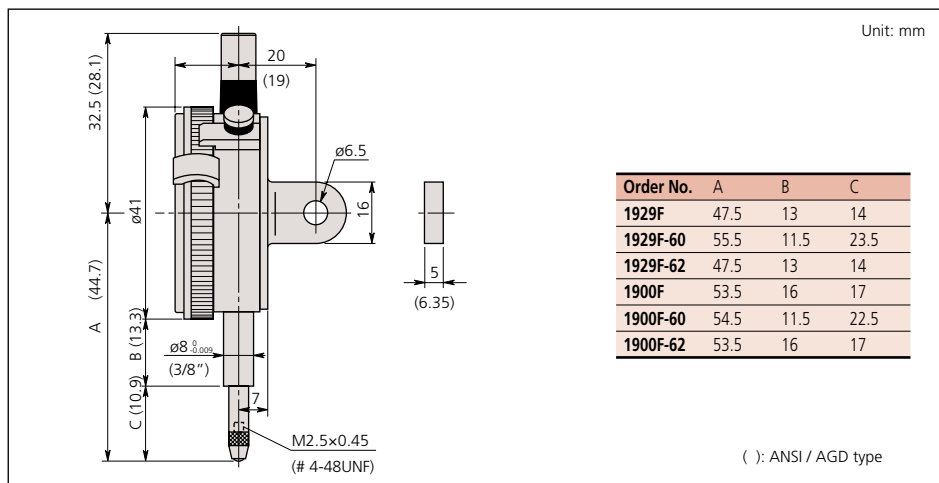


1900F  
1900F-60  
1900F-62

### 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



29005-10



29295  
29295-60  
29295-62



29595



29005-10  
29005-70  
29005-72



29015-10

## SPECIFICATIONS

**Metric**

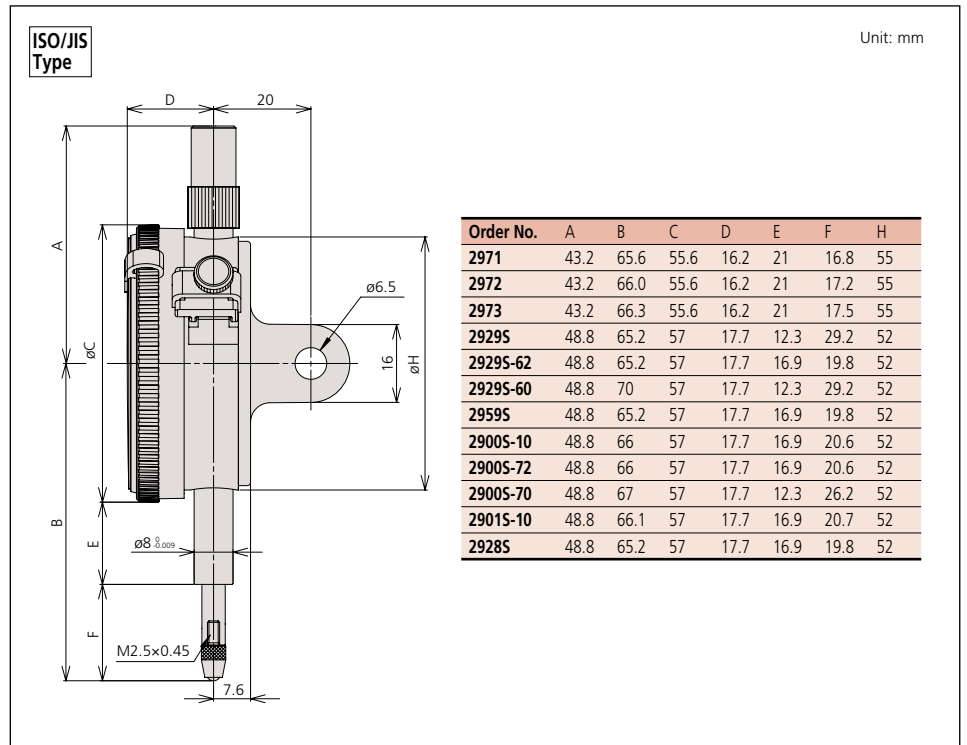
Stem  $\varnothing$  8mm, M2.5 x 0.45 Thread

ISO/JIS type

Graduation	Range (range/full stroke)	Dial reading	Order No.		Accuracy	Measuring force				
			w/ lug	Flat-back						
0.001mm	0.08mm / 0.1mm	40-0-40	<b>29005-10</b>	<b>29005B-10</b>	$\pm 0.003$ mm	1.4N or less	✓	—	—	✓
0.001mm	0.08mm / 0.1mm	40-0-40	<b>29005-70</b>	<b>29005B-70</b>	$\pm 0.003$ mm	2.0N or less	✓	✓	—	✓
0.001mm	0.08mm / 0.1mm	40-0-40	<b>29005-72</b>	<b>29005B-72</b>	$\pm 0.003$ mm	2.0N or less	✓	—	✓	✓
0.001mm	0.16mm / 0.2mm	80-0-80	<b>29015-10</b>	<b>29015B-10</b>	$\pm 0.004$ mm	1.4N or less	✓	—	—	✓
0.01mm	0.8mm / 1mm	40-0-40	<b>29295</b>	<b>29295B</b>	$\pm 0.009$ mm	2.0N or less	✓	—	—	—
0.01mm	0.8mm / 1mm	40-0-40	<b>29295-60</b>	<b>29295B-60</b>	$\pm 0.009$ mm	2.0N or less	✓	✓	—	—
0.01mm	0.8mm / 1mm	40-0-40	<b>29295-62</b>	<b>29295B-62</b>	$\pm 0.009$ mm	2.0N or less	✓	—	✓	—
0.01mm	1.6mm / 2mm	80-0-80	<b>29595</b>	<b>29595B</b>	$\pm 0.013$ mm	1.4N or less	✓	—	—	—
0.01mm	0.5mm / 0.7mm	25-0-25	—	<b>2971*</b>	$\pm 0.010$ mm	1.4N or less	✓	—	✓	—
0.01mm	1mm / 1.4mm	50-0-50	—	<b>2972*</b>	$\pm 0.012$ mm	1.4N or less	✓	—	✓	—
0.02mm	1.6mm / 2mm	80-0-80	—	<b>2973*</b>	$\pm 0.016$ mm	1.4N or less	✓	—	✓	—
0.1mm	4mm / 10mm	2-0-2	<b>29285</b>	<b>29285B</b>	$\pm 0.040$ mm	1.4N or less	✓	—	—	—

\* 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.)

# Dial Indicators

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

### FEATURES

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



One revolution type.

### SPECIFICATIONS

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

ANSVAGD 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	✓	✓	✓
.0001"	.008"	.01"	4-0-4	<b>2910S-72</b>	<b>2910SB-72</b>	±.0001"	2.5N or less	✓	✓	✓
.0005"	.04"	.05"	20-0--20	<b>2909S-62</b>	<b>2909SB-62</b>	±.0005"	2.5N or less	✓	✓	
.0005"	.02"	.028"	10-0-10	—	<b>2976*</b>	±.0005"	1.4N or less	✓	✓	
.0005"	.04"	.055"	20-0-20	—	<b>2977*</b>	±.0005"	1.4N or less	✓	✓	
.001"	.06"	.079"	30-0-30	—	<b>2978*</b>	±.001"	1.4N or less	✓	✓	
.001"	.08"	.1"	40-0-40	<b>2908S</b>	<b>2908SB</b>	±.001"	1.8N or less	✓	✓	
.001"	.08"	.1"	40-0-40	<b>2908S-62</b>	<b>2908SB-62</b>	±.001"	2.5N or less	✓	✓	

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

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

ANSVAGD 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	✓	✓	✓

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

### DIMENSIONS

Unit: inch

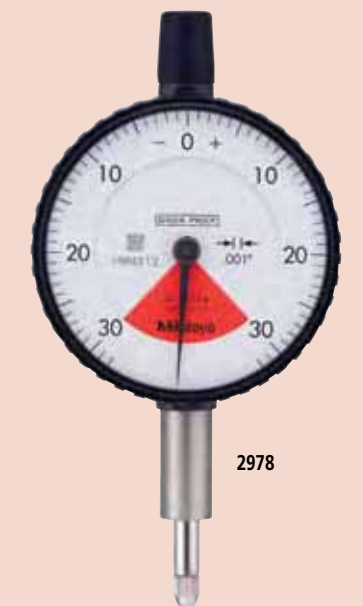
Order No.	A	B	C	D	E	F
<b>2976</b>	1.70	2.55	2.19	.64	.62	.83
<b>2977</b>	1.70	2.56	2.19	.64	.64	.83
<b>2978</b>	1.70	2.57	2.19	.64	.65	.83
<b>2908S</b>	1.92	2.08	2.24	.7	.43	.54
<b>2908S-62</b>	1.92	2.08	2.24	.7	.43	.54
<b>2909S-62</b>	1.92	2.04	2.24	.7	.36	.54
<b>2910S-10</b>	1.92	2.02	2.24	.7	.36	.54
<b>2910S-72</b>	1.92	2.02	2.24	.7	.36	.54
<b>2900S-73</b>	1.92	1.99	2.24	.7	.33	.54



2908S



2909S-62



2978



# Special Dial Indicators

## SERIES 2



Adjustable hand



20485-10

### Adjustable hand dial gauge

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



Peak hold



20465-80

### Peak hold type dial gauge

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



Double-face type



29405

### Double-face type dial gauge

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

## SPECIFICATIONS

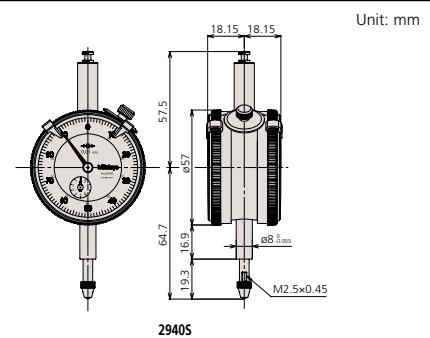
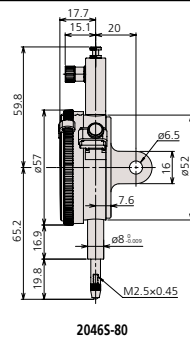
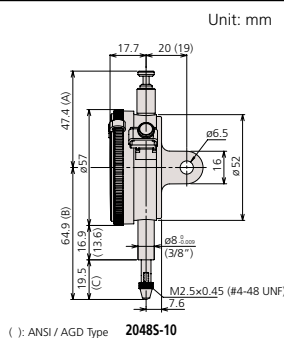
Inch		Stem dia. 3/8" #4-48 UNF Thread						ANSI/AGD type			
Graduation	Range	Range / rev	Dial reading	Order No.		Accuracy		Measuring force	Diamond	Adjustable hand	Peak hold
				w/ lug	Flat-back	First 2.5 Rev	Overall Accuracy				
.001"	.25"	.1"	0-100	29195-10	29195B-10	±.001"	±.001"	1.8N or less	✓	✓	✓
.001"	.25"	.1"	0-50-0	29205-10	29205B-10	±.001"	±.001"	1.8N or less	✓	✓	✓
.001"	.5"	.1"	0-100	29155-10	29155B-10	±.001"	±.001"	1.8N or less	✓	✓	✓
.001"	.5"	.1"	0-50-0	29185-10	29185B-10	±.001"	±.001"	1.8N or less	✓	✓	✓

Metric		Stem dia. 3/8" #4-48 UNF Thread, Yellow Dial Face						ANSI/AGD type			
Graduation	Range	Range / rev	Dial reading	Order No.		Accuracy		Measuring force	Diamond	Adjustable hand	Peak hold
				w/ lug	Flat-back	First 2.5 Rev	Overall				
0.01mm	10mm	1mm	0-100	20485-11	20485B-11	±13μm	±0.013mm	1.4N or less	✓	✓	✓

Metric		Stem ø 8mm, M2.5 x 0.45 Thread						ISO/JIS type				
Graduation	Range	Range / Rev	Dial reading	Order No.		Accuracy	Measuring force	Diamond	Adjustable hand	Peak hold	STOP	Double-face
				w/ lug	Flat-back							
0.01mm	10mm	1mm	0-100	20485-10	20485B-10	±0.015mm	1.4N or less	✓	✓	✓	✓	✓
0.01mm	10mm	1mm	0-100	20465-80	20465B-80	±0.015mm	5.0N or less				✓	
0.01mm	10mm	1mm	0-100	29405	—	±0.015mm	3.0N or less					✓

## DIMENSIONS

Order No.	A	B	C
29155-10, 29185-10	52.2	64.1	22
29195-10, 29205-10	52.2	57.7	15.6
20485-11	47.7	59.5	17.4



# Dial Indicators

## SERIES 2 — Standard Type, Inch Reading

### SPECIFICATIONS

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

Graduation	Range	Range / Rev	Dial Reading	Order No.		Accuracy		Measuring force	Shockproof type	Waterproof type	Reverse reading type	Jeweled bearing type
				w/ lug	Flat-back	First 2.5 Rev	Overall					
.0001"	.02"	.008"	0-4-0	<b>29375-10</b>	<b>29375B-10</b>	±.0001"	±.0001"	2.0N or less	✓			✓
.0001"	.02"	.008"	0-8	<b>29385-10</b>	<b>29385B-10</b>	±.0001"	±.0001"	2.0N or less	✓			✓
.0001"	.025"	.01"	0-10	<b>28025-10</b>	<b>28025B-10</b>	±.0001"	±.0001"	2.5N or less	✓			✓
.0001"	.025"	.01"	0-10	<b>28025-70</b>	<b>28025B-70</b>	±.0001"	±.0001"	2.0N or less	✓	✓		
.0001"	.025"	.01"	0-5-0	<b>28035-10</b>	<b>28035B-10</b>	±.0001"	±.0001"	2.5N or less	✓			✓
.0001"	.025"	.01"	0-5-0	<b>28035-70</b>	<b>28035B-70</b>	±.0001"	±.0001"	2.0N or less	✓	✓		
.0001"	.05"	.01"	0-10	<b>28045-10</b>	<b>28045B-10</b>	±.0001"	±.0002"	2.0N or less	✓			✓
.0001"	.05"	.01"	0-5-0	<b>28055-10</b>	<b>28055B-10</b>	±.0001"	±.0002"	2.0N or less	✓			✓
.0001"	.05"	.01"	10-0	<b>29055-10</b>	<b>29055B-10</b>	±.0001"	±.0002"	2.0N or less	✓		✓	✓
.0001"	.05"	.01"	0-5-0	<b>29235-10</b>	<b>29235B-10</b>	±.0001"	±.0002"	2.0N or less	✓			✓
.0001"	.1"	.01"	0-10	<b>28065-10</b>	<b>28065B-10</b>	±.0001"	±.0003"	2.0N or less	✓			✓
.0001"	.1"	.01"	0-10	<b>28065-70</b>	<b>28065B-70</b>	±.0001"	±.0003"	2.5N or less	✓	✓		
.0001"	.25"	.01"	0-10	<b>23565-10</b>	<b>23565B-10</b>	±.0001"	±.0005"	2.0N or less				✓
.0001"	.5"	.01"	0-10	<b>23585-10</b>	<b>23585B-10</b>	±.0001"	±.0008"	2.0N or less				✓
.00025"	.05"	.02"	0-20	<b>24705-10</b>	<b>24705B-10</b>	±.00025"	±.00025"	1.8N or less				✓
.00025"	.05"	.02"	0-10-0	<b>24715-10</b>	<b>24715B-10</b>	±.00025"	±.00025"	1.8N or less				✓
.0005"	.1"	.04"	0-40	<b>26705</b>	<b>26705B</b>	±.0005"	±.0005"	1.8N or less				
.0005"	.1"	.04"	0-20-0	<b>26715</b>	<b>26715B</b>	±.0005"	±.0005"	1.8N or less				
.0005"	.125"	.05"	0-50	<b>25065</b>	<b>25065B</b>	±.0005"	±.0005"	1.8N or less				
.0005"	.125"	.05"	0-25-0	<b>25075</b>	<b>25075B</b>	±.0005"	±.0005"	1.8N or less				
.0005"	.125"	.05"	0-25-0	<b>29225</b>	<b>29225B</b>	±.0005"	±.0005"	1.8N or less				
.0005"	.4"	.04"	0-20-0	<b>26755</b>	<b>26755B</b>	±.0005"	±.0015"	1.8N or less				
.0005"	.5"	.05"	0-50	<b>25145</b>	<b>25145B</b>	±.0005"	±.0015"	1.8N or less				
.0005"	.5"	.05"	0-50	<b>25145-60</b>	<b>25145B-60</b>	±.0005"	±.0015"	2.5N or less		✓		
.0005"	1"	.05"	0-50	<b>27765</b>	<b>27765B</b>	±.0005"	±.002"	1.8N or less			✓	
.0005"	1"	.05"	0-50	<b>27765-60</b>	<b>27765B-60</b>	±.0005"	±.002"	2.5N or less		✓		
.001"	.125"	.05"	0-50	<b>27805</b>	<b>27805B</b>	±.001"	±.001"	1.8N or less				
.001"	.125"	.05"	0-25-0	<b>27815</b>	<b>27815B</b>	±.001"	±.001"	1.8N or less				
.001"	.25"	.1"	0-100	<b>24105</b>	<b>24105B</b>	±.001"	±.001"	1.8N or less				
.001"	.25"	.1"	0-100	<b>24105-10</b>	<b>24105B-10</b>	±.001"	±.001"	1.8N or less				✓
.001"	.25"	.1"	0-100	<b>24105-60</b>	<b>24105B-60</b>	±.001"	±.001"	2.5N or less		✓		
.001"	.25"	.1"	0-50-0	<b>24115</b>	<b>24115B</b>	±.001"	±.001"	1.8N or less				
.001"	.25"	.1"	0-50-0	<b>24115-10</b>	<b>24115B-10</b>	±.001"	±.001"	1.8N or less				✓
.001"	.25"	.1"	0-100	<b>29195-10</b>	<b>29195B-10</b>	±.001"	±.001"	1.8N or less				✓
.001"	.25"	.1"	0-50-0	<b>29205-10</b>	<b>29205B-10</b>	±.001"	±.001"	1.8N or less				✓
.001"	.5"	.1"	0-100	<b>24145</b>	<b>24145B</b>	±.001"	±.001"	1.8N or less				
.001"	.5"	.1"	0-100	<b>24145-10</b>	<b>24145B-10</b>	±.001"	±.001"	1.8N or less				✓
.001"	.5"	.1"	0-100	<b>24145-60</b>	<b>24145B-60</b>	±.001"	±.001"	2.5N or less		✓		
.001"	.5"	.1"	0-50-0	<b>24155</b>	<b>24155B</b>	±.001"	±.001"	1.8N or less				
.001"	.5"	.1"	0-50-0	<b>24155-10</b>	<b>24155B-10</b>	±.001"	±.001"	1.8N or less				✓
.001"	1"	.1"	0-100	<b>24165</b>	<b>24165B</b>	±.001"	±.002"	1.8N or less				
.001"	1"	.1"	0-100	<b>24165-06*</b>	<b>24165B-06*</b>	±.001"	±.002"	1.8N or less				
.001"	1"	.1"	0-100	<b>24165-10</b>	<b>24165B-10</b>	±.001"	±.002"	1.8N or less				✓
.001"	1"	.1"	0-100	<b>24165-60</b>	<b>24165B-60</b>	±.001"	±.002"	2.5N or less		✓		
.001"	1"	.1"	0-50-0	<b>24175</b>	<b>24175B</b>	±.001"	±.002"	1.8N or less			✓	
.001"	1"	.1"	100-0	<b>29045</b>	<b>29045B</b>	±.001"	±.002"	1.8N or less			✓	
.001"	2"	1"	0-100	<b>24245-19</b>	<b>24245B-19</b>	±.001"	±.003"	2.5N or less	✓			✓
.01"	1"	1"	0-1000	<b>22045</b>	<b>22045B</b>	±.005"	±.005"	1.8N or less				

\* Black Face



Shockproof type



Waterproof type



Reverse reading type



Jeweled bearing type



2416S



28035-10

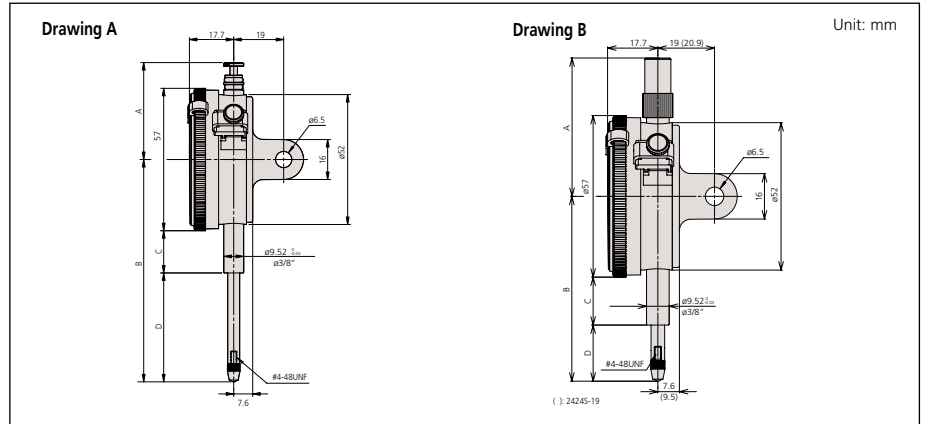
### Optional Accessories

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

# Dial Indicators

## SERIES 2 — Standard Type, Inch Reading

### DIMENSIONS



24245-19



2506S



29235-10

### 2 Group Inch

Order No.	A	B	C	D	Drawing
2204S(B)	38.9	76.8	13.6	34.7	A
2356S(B)-10	48.8	57.2	13.6	15.1	B
2358S(B)-10	38.9	63.6	13.6	21.5	A
2410S(B)	48.8	57.8	13.6	15.7	B
2410S(B)-10	48.8	57.8	13.6	15.7	B
2410S(B)-60	48.8	62.7	10.6	23.6	B
2411S(B)	48.8	57.8	13.6	15.7	B
2411S(B)-10	48.8	57.8	13.6	15.7	B
2414S(B)	38.9	64.1	13.6	22	A
2414S(B)-10	38.9	64.1	13.6	22	A
2414S(B)-60	48.8	66	10.6	26.9	B
2415S(B)	38.9	64.1	13.6	22	A
2415S(B)-10	38.9	64.1	13.6	22	A
2415S(B)-60	48.8	66	10.6	26.9	B
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
2416S(B)-60	66.8	87.2	10.6	48.1	B
2417S(B)	38.9	76.8	13.6	34.7	A
2424S(B)-19	118.5	142.5	54.3	59.7	B
2470S(B)-10	48.8	52.2	13.6	10.1	B
2471S(B)-10	48.8	52.2	13.6	10.1	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
2514S(B)-60	48.8	66	10.6	26.9	B
2570S(B)-10	48.8	52.9	13.6	10.8	B
2571S(B)-10	48.8	52.9	13.6	10.8	B

Order No.	A	B	C	D	Drawing
2576S(B)-70	48.8	63.5	10.6	24.4	B
2670S(B)	48.8	53.6	13.6	11.5	B
2671S(B)	48.8	53.6	13.6	11.5	B
2675S(B)	48.8	61.2	13.6	19.1	B
2776S(B)	38.9	76.8	13.6	34.7	A
2776S(B)-60	66.8	87.2	10.6	48.1	B
2780S(B)	48.8	54.3	13.6	12.2	B
2781S(B)	48.8	54.3	13.6	12.2	B
2802S(B)-10	48.8	51.4	13.6	9.3	B
2802S(B)-70	48.8	56.3	10.6	17.2	B
2803S(B)-10	48.8	51.4	13.6	9.3	B
2803S(B)-70	48.8	56.3	10.6	17.2	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
2806S(B)-10	48.8	53.4	13.6	11.3	B
2806S(B)-70	48.8	58.3	10.6	19.2	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
2919S(B)-10	47.7	57.7	13.6	15.6	A
2920S(B)-10	47.7	57.7	13.6	15.6	A
2922S(B)	48.8	54.3	13.6	12.2	B
2923S(B)-10	48.8	51.7	13.6	9.6	B
2937S(B)-10	48.8	51.3	13.6	9.2	B
2938S(B)-10	48.8	51.3	13.6	9.2	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 gauges having an outer frame with an outside diameter of 57mm. All types come with limit pins and an outer frame clamp as standard.
- The outer clamp and lifting lever (optional) can be attached to either the right or left side. These parts can be easily installed and removed without tools.
- Secured adhesion between the outer frame and crystal as well as the use of an O-ring ensure countermeasures against water and oil permeation via the front face.
- The stem spindle is made of high-strength quench-hardened stainless steel which resists strenuous use.
- A carbide contact point is used.
- The grand gear uses stainless steel that is resistant to wear and deformation.
- Application of a hard coating on the surface of the crystal makes the gauge highly scratch- and chemical-resistant.

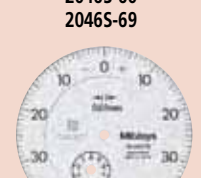
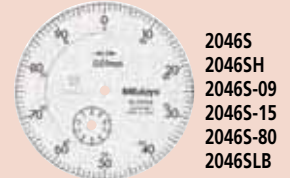
-  Shockproof type
-  Waterproof type
-  Long stem type
-  Jeweled bearing type
-  Double scale spacing type
-  w/ coaxial revolution counter
-  Reverse reading type
-  w/ damper at lowest rest point

### SPECIFICATIONS

**Metric** Stem dia. ø8mm M2.5 x 0.45 Thread ISO/JIS type

Graduation	Range	Range / Rev	Dial reading	Order No.		Accuracy	Measuring force										
				w/ lug	Flat-back												
0.001mm	1mm	(0.1mm)	0-100	<b>2110S-10</b>	<b>2110SB-10</b>	±0.005mm	1.5N or less	✓				✓	✓				
0.001mm	1mm	(0.1mm)	0-100	<b>2110S-70</b>	<b>2110SB-70</b>	±0.005mm	2.0N or less		✓			✓	✓				
0.001mm	1mm	(0.2mm)	0-100-0	<b>2109S-10</b>	<b>2109SB-10</b>	±0.005mm	1.5N or less	✓				✓	✓				
0.001mm	1mm	(0.2mm)	0-100-0	<b>2109SH-10</b>	<b>2109SHB-10</b>	±0.003mm	1.5N or less	✓				✓	✓				
0.001mm	1mm	(0.2mm)	0-100-0	—	<b>2109SLB-10</b>	±0.005mm	1.5N or less	✓		✓		✓	✓				
0.001mm	1mm	(0.2mm)	0-100-0	<b>2109S-70</b>	<b>2109SB-70</b>	±0.005mm	2.0N or less	✓	✓			✓	✓				
0.001mm	2mm	(0.2mm)	0-100-0	<b>2113S-10</b>	<b>2113SB-10</b>	±0.007mm	1.5N or less	✓				✓	✓				
0.001mm	5mm	(0.2mm)	0-100-100	<b>2118S-10</b>	<b>2118SB-10</b>	±0.010mm	1.5N or less					✓	✓				
0.001mm	5mm	(0.2mm)	0-100-0	<b>2119S-10</b>	<b>2119SB-10</b>	±0.010mm	1.5N or less					✓	✓				
0.005mm	5mm	(0.5mm)	0-50	<b>2124S-10</b>	<b>2124SB-10</b>	±0.012mm	1.5N or less					✓	✓				
0.01mm	5mm	(1mm)	0-100	<b>2044S</b>	<b>2044SB</b>	±0.012mm	1.4N or less										
0.01mm	5mm	(1mm)	0-100	<b>2044S-09</b>	<b>2044SB-09</b>	±0.013mm	1.4N or less	✓									
0.01mm	5mm	(1mm)	0-100	<b>2044S-60</b>	<b>2044SB-60</b>	±0.012mm	2.5N or less		✓								
0.01mm	5mm	(1mm)	0-50-0	<b>2045S</b>	<b>2045SB</b>	±0.012mm	1.4N or less									✓	
0.01mm	10mm	(1mm)	0-100	<b>2046S</b>	<b>2046SB</b>	±0.013mm	1.4N or less										
0.01mm	10mm	(1mm)	0-100	<b>2046SY</b>	<b>2046SYB</b>	±0.013mm	1.4N or less										
0.01mm	10mm	(1mm)	0-100	<b>2046SH</b>	<b>2046SHB</b>	±0.08mm	1.4N or less										
0.01mm	10mm	(1mm)	0-100	—	<b>2046SLB</b>	±0.013mm	1.4N or less				✓						
0.01mm	10mm	(1mm)	0-100	<b>2046S-09</b>	<b>2046SB-09</b>	±0.015mm	1.4N or less	✓									
0.01mm	10mm	(1mm)	0-100	<b>2046S-60</b>	<b>2046SB-60</b>	±0.013mm	2.5N or less		✓								
0.01mm	10mm	(1mm)	0-100	<b>2046S-69</b>	<b>2046SB-69</b>	±0.015mm	2.5N or less	✓	✓								
0.01mm	10mm	(1mm)	0-100	<b>2046S-15</b>	<b>2046SB-15</b>	±0.013mm	0.8N or less*					✓					
0.01mm	10mm	(1mm)	0-100	<b>2310S-10</b>	<b>2310SB-10</b>	±0.015mm	1.4N or less					✓		✓			
0.01mm	10mm	(1mm)	100-0	<b>2902S</b>	<b>2902SB</b>	±0.013mm	1.4N or less									✓	
0.01mm	10mm	(1mm)	0-50-0	<b>2047S</b>	<b>2047SB</b>	±0.013mm	1.4N or less										
0.01mm	20mm	(1mm)	0-100	<b>2050S</b>	<b>2050SB</b>	±0.020mm	2.0N or less										✓
0.01mm	20mm	(1mm)	0-100	<b>2050S-60</b>	<b>2050SB-60</b>	±0.020mm	2.5N or less		✓								
0.01mm	20mm	(1mm)	0-100	<b>2050S-19</b>	<b>2050SB-19</b>	±0.020mm	2.0N or less	✓				✓					✓
0.01mm	20mm	(1mm)	0-100	<b>2320S-10</b>	<b>2320SB-10</b>	±0.020mm	2.0N or less					✓		✓			✓
0.01mm	30mm	(1mm)	0-100	<b>2052S</b>	<b>2052SB</b>	±0.025mm	2.5N or less										✓
0.01mm	30mm	(1mm)	0-100	<b>2052S-19</b>	<b>2052SB-19</b>	±0.025mm	2.5N or less	✓				✓					✓
0.01mm	30mm	(1mm)	0-100	<b>2330S-10</b>	<b>2330SB-10</b>	±0.025mm	2.5N or less					✓		✓			✓
0.01mm	30mm	(1mm)	100-0	<b>2952S</b>	<b>2952SB</b>	±0.025mm	2.5N or less									✓	✓

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



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

2046SY

2046S-60  
2046S-69

2047S





# Dial Indicators

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

### SPECIFICATIONS

Metric				Stem dia. 3/8", #4-48 UNF Thread Yellow Dial Face				ANSI/AGD type			
Graduation	Range	Range / Rev	Dial reading	Order No.		Accuracy		Measuring force			
				w/ lug	Flat-back	First 2.5 Rev	Overall				
0.001mm	1mm	0.2mm	0-10-0	<b>2109S-11</b>	<b>2109SB-11</b>	±0.003mm	±0.004mm	1.5N or less		✓	✓
0.001mm	5mm	0.2mm	0-10-0	<b>2119S-11</b>	<b>2119SB-11</b>	±0.007mm	±0.01mm	1.5N or less		✓	
0.002mm	0.5mm	0.2mm	0-20	<b>2010S-11</b>	<b>2010SB-11</b>	±0.003mm	±0.003mm	1.5N or less		✓	✓
0.002mm	0.5mm	0.2mm	0-20	<b>2010S-71</b>	<b>2010SB-71</b>	±0.003mm	±0.003mm	2.5N or less	✓	✓	
0.002mm	0.5mm	0.2mm	0-10-0	<b>2011S-11</b>	<b>2011SB-11</b>	±0.003mm	±0.003mm	1.5N or less		✓	✓
0.002mm	0.5mm	0.2mm	0-10-0	<b>2011S-71</b>	<b>2011SB-71</b>	±0.003mm	±0.003mm	2.5N or less	✓	✓	
0.005mm	5mm	0.5mm	0-25-0	<b>2125S-71</b>	<b>2125SB-71</b>	±0.01mm	±0.012mm	2.5N 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	0-100	<b>2231S-01</b>	<b>2231SB-01</b>	±0.01mm	±0.01mm	1.4N or less			
0.01mm	5mm	1mm	0-100	<b>2044S-01</b>	<b>2044SB-01</b>	±0.01mm	±0.01mm	1.4N or less			
0.01mm	5mm	1mm	0-100	<b>2044S-61</b>	<b>2044SB-61</b>	±0.01mm	±0.01mm	2.5N 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	0-100	<b>2046S-61</b>	<b>2046SB-61</b>	±0.01mm	±0.013mm	2.5N 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	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

Unit: mm

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>2010S-11</b>	48.8	51.4	9.3
<b>2010S-71</b>	48.8	56.3	17.2
<b>2011S-11</b>	48.8	51.4	9.3
<b>2011S-71</b>	48.8	56.3	17.2
<b>2125S-71</b>	48.8	60.7	21.6
<b>2230S-01</b>	48.8	53.6	11.5
<b>2231S-01</b>	48.8	53.6	11.5
<b>2044S-01</b>	48.8	56.1	14.0
<b>2044S-61</b>	48.8	61.0	21.9
<b>2046S-01</b>	48.8	61.1	19.0
<b>2046S-11</b>	48.8	61.1	19.0
<b>2046S-61</b>	48.8	66.0	26.9
<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

( ) : water proof type



# Dial Indicators

## SERIES 3 — Large Dial Face and Long Stroke Type

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



3046S



3047S



3050S



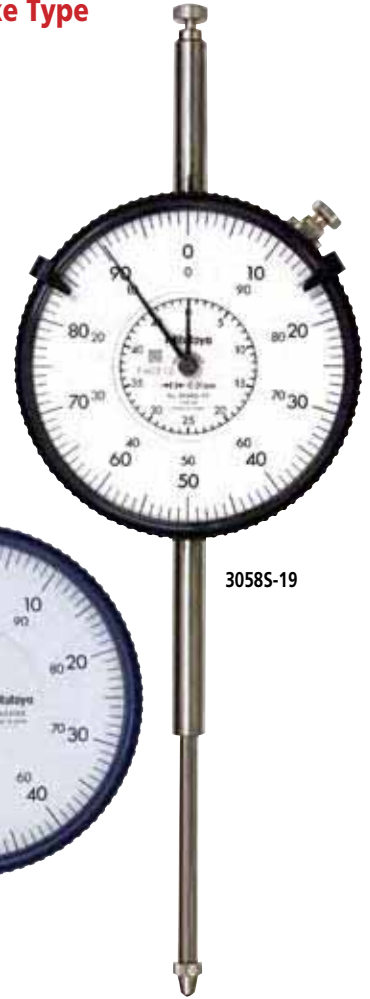
3052S-19



3109S-10



3416S



3058S-19

### DIMENSIONS

Unit: mm

Order No.	A	B	C	D
3052S(B)-11	72.9	102.4	25.9	37.5
3058S(B)-11	81.9	147.1	50.6	57.5
3414S(B)	51.3	73.4	12.6	21.8
3415S(B)	51.3	73.4	12.6	21.8
3416S(B)	51.3	86.1	12.6	34.5
3417S(B)	51.3	86.1	12.6	34.5
3424S(B)-19	84	149.3	50.6	59.7
3426S(B)-19	120.9	198.1	73.9	85.2
3428S(B)-19	141.9	243.9	94.9	110.0
3570S(B)-10	61.2	62.1	12.6	10.5
3571S(B)-10	61.2	62.1	12.6	10.5
3780S(B)	61.2	63.9	12.6	12.3
3781S(B)	61.2	63.9	12.6	12.3
3802S(B)-10	61.2	59.7	12.6	8.1
3803S(B)-10	61.2	59.7	12.6	8.1
3046S(B)	61.2	75.5	15.9	20.6
3047S(B)	61.2	75.5	15.9	20.6
3050S(B)	52.6	94.0	25.9	29.1
3060S(B)-19	120.9	202.3	73.9	89.4
3062S(B)-19	141.9	243.3	94.9	109.4
3109S(B)-10	61.2	79.3	25.9	14.1




( ) : ANSI / AGD Type

# 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	✓	✓	
.0005"	.075"	.03"	0-30	<b>3570S-10</b>	<b>3570SB-10</b>	±.0005"	±.0005"	1.8N or less		✓	
.0005"	.075"	.03"	0-15-0	<b>3571S-10</b>	<b>3571SB-10</b>	±.0005"	±.0005"	1.8N or less		✓	
.001"	.125"	.05"	0-50	<b>3780S</b>	<b>3780SB</b>	±.001"	±.001"	1.8N or less			
.001"	.125"	.05"	0-25-0	<b>3781S</b>	<b>3781SB</b>	±.001"	±.001"	1.8N 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/JIS type

Graduation	Range	Range /rev	Dial reading	Order No.		Accuracy	Measuring Force				
				W/ lug	Flat-back						
0.001mm	1mm	0.2mm	0-10-0	<b>3109S-10</b>	<b>3109SB-10</b>	±0.004mm	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

# Dial Indicators

## SERIES 4 — Large Dial Face

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





















48875-19







4046S

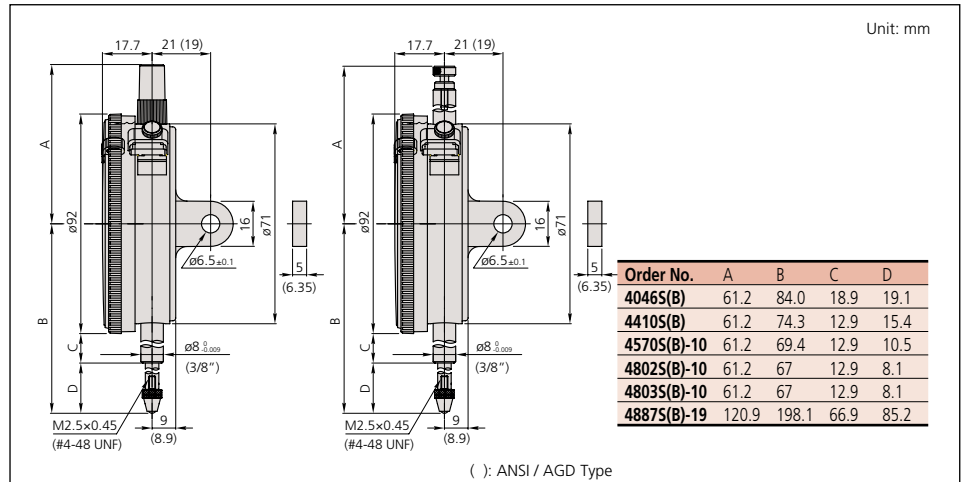
**Inch** Stem 3/8" DIA. #4-48 UNF Thread □ ANSI/AGD type

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>4802S-10</b>	<b>4802SB-10</b>	±.0001"	±.0001"	2.0N or less	  
.0001"	.025"	.01"	0-5-0	<b>4803S-10</b>	<b>4803SB-10</b>	±.0001"	±.0001"	2.0N or less	  
.0005"	.075"	.03"	0-30	<b>4570S-10</b>	<b>4570SB-10</b>	±.0005"	±.0005"	1.8N or less	  
.001"	.25"	.1"	±0-100	<b>4410S</b>	<b>4410SB</b>	±.001"	±.001"	1.8N or less	  
.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



# Back Plunger Type Dial Indicators

## SERIES 1 and 2

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

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



One revolution type



Shockproof type



Jeweled bearing type

## SPECIFICATIONS

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

Graduation	Range	Range / Rev	Dial reading	Order No.	Accuracy	Measuring force			
.001"	.04"	.05"*	20-0-20	<b>1961</b>	±.001"	1.4N or less	✓	✓	
.001"	.1"	.1"	0-100	<b>1156</b>	±.001"	2.1N or less			
.001"	.1"	.1"	0-50-0	<b>1157</b>	±.001"	2.1N or less			
.001"	.2"	.05"	0-50	<b>1166</b>	±.001"	1.4N or less			
.001"	.2"	.05"	0-25-0	<b>1167</b>	±.001"	1.4N or less			
.001"	.2"	.05"	50-0	<b>1168</b>	±.001"	1.4N or less			✓

\*Full stroke

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

Graduation	Range	Range / Rev	Dial reading	Order No.	Accuracy	Measuring force				Remarks
0.01mm	1mm	1.27mm*	50-0-50	<b>1960</b>	±0.014mm	1.4N or less	✓	✓		—
0.01mm	5mm	1mm	0-100	<b>1160</b>	±0.016mm	1.4N or less				—
0.01mm	5mm	1mm	100-0	<b>1162</b>	±0.016mm	1.4N or less			✓	—
0.01mm	5mm	1mm	0-100	<b>1180-6</b>	±0.016mm	1.5N or less				with arm (ø6x42mm)
0.01mm	5mm	1mm	0-100	<b>1180-7</b>	±0.016mm	1.5N or less				with arm (ø6.35x42mm)
0.01mm	5mm	1mm	0-100	<b>1180-8</b>	±0.016mm	1.5N or less				with arm (ø8x42mm)

**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>2991</b>	±.0002"	1.5N or less	✓	✓	✓
.0005"	.04"	.05"	20-0-20	<b>2961</b>	±.0005"	1.8N or less	✓	✓	

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

Graduation	Range	Range/full stroke	Dial reading	Order No.	Accuracy	Measuring force			
0.001mm	0.14"	0.14"	50-0-50	<b>2990</b>	±0.0065mm	1.5N or less	✓	✓	✓
0.01mm	1.27"	1.27"	50-0-50	<b>2960F</b>	±0.014mm	1.4N or less	✓	✓	

## Optional Accessories

- 136567:** Holding bar (ø6mm, L=81mm)  
**21AAA166:** Holding bar (ø6mm, L=42mm) (Standard with 1180-6)  
**136568:** Holding bar (ø8mm, L=81mm)  
**21AAA168:** Holding bar (ø8mm, L=42mm) (Standard with 1180-8)  
**124625:** Holding bar (.25" DIA, L=3.19")  
**21AAA167:** Holding bar (.25" DIA, L=1.65") (Standard with 1180-7)

—: Backs (See page F-33.)

—: Contact points (See page F-34.)



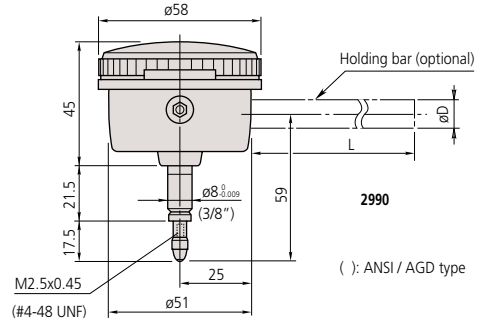
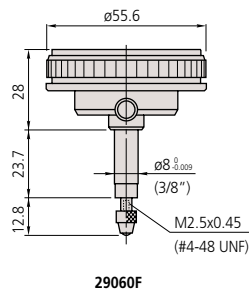
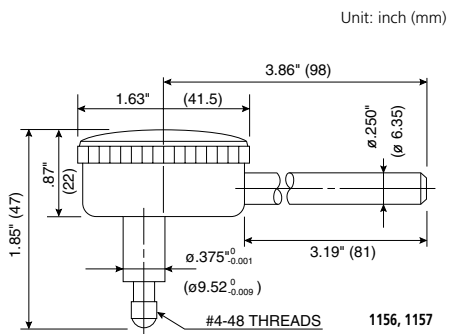
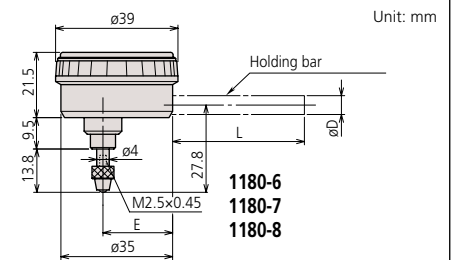
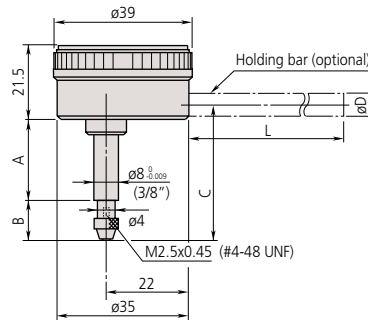
# Back Plunger Type Dial Indicators

SERIES 1 and 2



## DIMENSIONS

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



# Hicators, Signal Hicators

## SERIES 524 — High Accuracy One-Revolution Dial Indicator

### FEATURES

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

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



Hicator  
524-501



Signal Hicator  
524-601

### SPECIFICATIONS

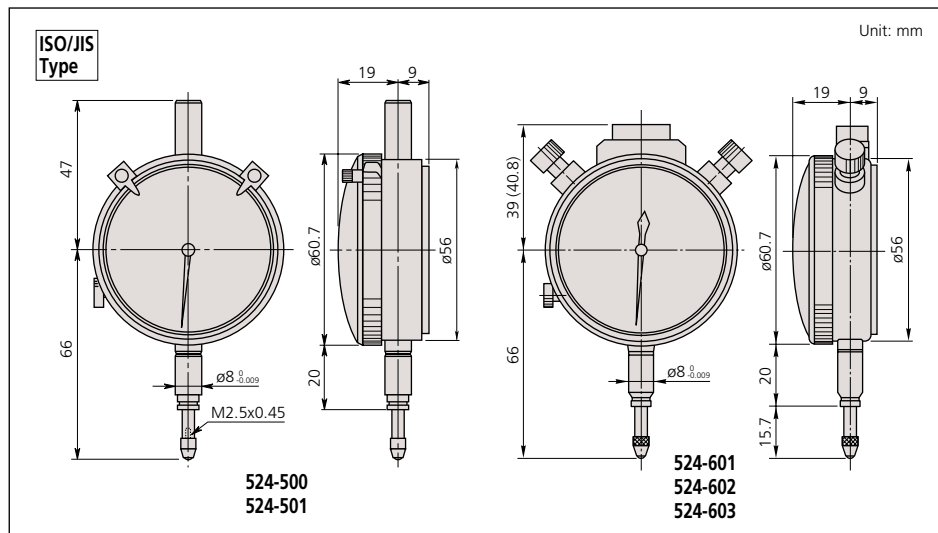
Graduation	Order No.*	Range	Dial reading	Spindle travel	Accuracy	Measuring force	Remarks
0.001mm	524-501	±0.05mm	50-0-50	3mm	±1μm	1.2N or less	w/ spindle lifting cable
0.0005mm	524-500	±0.03mm	30-0-30	3mm	±0.5μm	1.2N or less	w/ spindle lifting cable

\*Flat back

Graduation	Order No.*	Range	Dial reading	Spindle stroke	Accuracy	Measuring force	Remarks
0.01mm	524-603	±0.5mm	50-0-50	3mm	±5μm	1.2N or less	w/ 2m signal cable
0.002mm	524-602	±0.1mm	100-0-100	3mm	±1.5μm	1.2N or less	w/ 2m signal cable
0.001mm	524-601	±0.05mm	50-0-50	3mm	±1μm	1.2N or less	w/ 2m signal cable

\*Flat back

### DIMENSIONS



### Optional Accessories

- 524-001: Signal box (100V AC)
- 524-001A: Signal box (120V AC)
- : Backs (See page F-33.)
- : Contact points (See page F-34.)

### ABSOLUTE Digimatic Indicator ID-C

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



### FEATURES

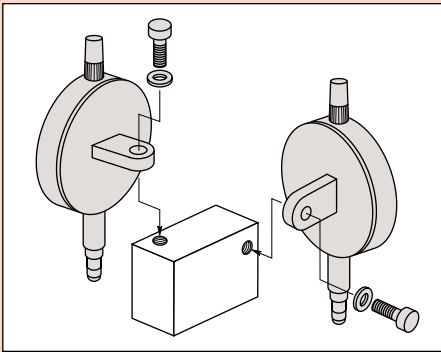
- With the max./min. value holding function, the signal ID-C can output the signal of the GO/±NG judgment result against the peak values set. Substitute for the mechanical/electrical contact, the judgment is carried out by calculating the measurement data obtained. This provides high reliability with no deterioration of the contact point and volume adjustment.

# Backs




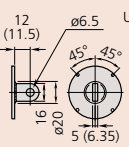

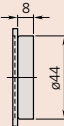

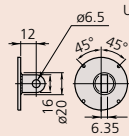



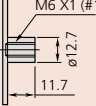

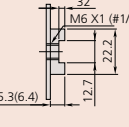

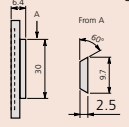

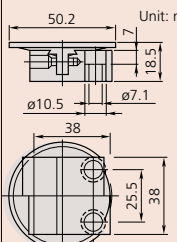
## Optional Accessory for Digimatic and Dial Indicators

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

### Application



### SPECIFICATIONS

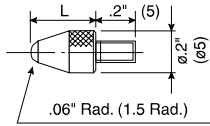
Description	Order No.	Series 0	Series 1	Series 2	Series 3, 4
		( $\phi$ 31mm) 1003 ( $\phi$ 36mm)	( $\phi$ 41mm)	( $\phi$ 57mm)	( $\phi$ 77, 91mm)
Flat Back 	 Unit: mm a	<b>191559:</b> a=1.0 <b>137906:</b> for 1003 a=1.0	<b>101211:</b> a=2.2 <b>136872:</b> for water-proof type <b>191559:</b> for 1911, 1913-10	<b>101039:</b> a=2.5 <b>21AZB231:</b> for water-proof of S type	<b>100836:</b> a=3.0
Lug-on-Center Back 	 Unit: mm 12 (11.5), $\phi$ 6.5, 45°, 45°, 16, $\phi$ 20, 5 (6.35)	<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 water-proof of S type	<b>100691:</b> metric type <b>100797:</b> inch type
Magnetic Back 	 Unit: mm B, $\phi$ 44	—	<b>Special order</b>	<b>900928</b>	<b>900929</b>
Back with Offset Lug 	 Unit: mm 12, $\phi$ 6.5, 45°, 45°, 16, $\phi$ 20, 6.35	—	<b>Special order</b>	<b>101167</b>	<b>100837</b>
Back with Post 	 Unit: mm $\phi$ 12.7, 28	—	<b>193172</b>	<b>101169</b>	<b>100839</b>
Back with Screw Mount 	 Unit: mm M6 X1 (#1/4 - 28UNF), $\phi$ 12.7, 11.7	—	<b>193173:</b> M6x1, <b>193174:</b> #1/4-28UNF,	<b>136023:</b> M6x1 <b>193174:</b> #1/4-28UNF	<b>136024:</b> M6x1 <b>100840:</b> #1/4-28UNF
Adjustable Back 	 Unit: mm 32, M6 X1 (#1/4 - 28UNF), 22.2, 5.3(6.4), 12.7	—	<b>136025:</b> M6x1 <b>129721:</b> #1/4-28UNF	<b>136026:</b> M6x1 <b>101168:</b> 1/4-28UNF	<b>136027:</b> M6x1 <b>100838:</b> #1/4-28UNF
Back with Dovetail 	 Unit: mm 6.4, A, 30, From A, $\phi$ 9, 9.7, 2.5	—	—	<b>900008</b>	<b>Special order</b>
Back with Adjustable Bracket 	 Unit: mm 50.2, 7, 18.5, $\phi$ 10.5, $\phi$ 7.1, 38, 25.5, 38	—	—	<b>901963:</b> Set No. <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

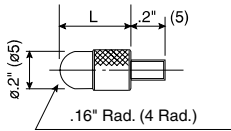


4-48UNF				
L	Carbide	Sapphire	Ruby	Plastic
.28"	—	—	—	902018
.3"	131262	131263	131264	—
.6"	131265	131266	131267	—
1"	131268	131269	131270	—

M2.5 x 0.45mm				
L	Carbide	Sapphire	Ruby	Plastic
7.3mm	901312*	—	—	901994
8mm	120045	120046	120047	—
15mm	120049	120050	120051	—
25mm	120053	120054	120055	—

\*Furnished with standard metric dial indicators.

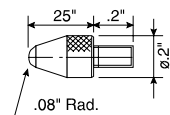
### Shell type point



4-48UNF		M2.5 x 0.45mm	
L	Order No.	L	Order No.
3/32" (.094")	193697	5mm	101386
5/32" (.156")	101184	10mm	101118
1/4" (.25")	21AAA031*	15mm	137393
3/8" (.375")	21AAA032	20mm	101387
1/2" (.5")	101185	25mm	101388
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		

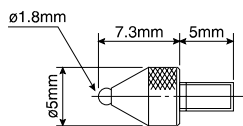
\*Furnished with standard Inch and Metric ANSI Dial Indicators.

### ø.16 Ball Point



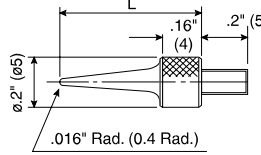
4-48UNF	
Order No.	
900032	

### ø1.8mm Ball Point



M2.5 x 0.45mm	
Order No.	
101122	

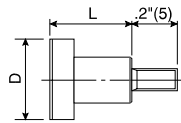
### Needle point



4-48UNF	
L	Order No.
.6"	21AAA030
1"	21AAA046
1 1/2"	21AAA047
2"	21AAA048

M2.5 x 0.45mm	
L	Order No.
15mm	101121
17mm	137413

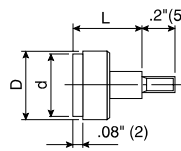
### Flat Point



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

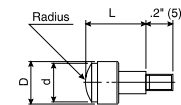
### Flat Point, Carbide Tip



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

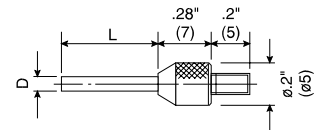
### Spherical Point, Carbide Tip



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

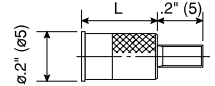
M2.5 x 0.45mm				
D	d	Radius	L	Order No.
ø5.2mm	ø4.3mm	5mm	5mm	120058
ø7mm	ø6.5mm	7mm	10mm	120059
ø10.5mm	ø9.5mm	10mm	10mm	120060

### Needle point, Carbide tipped



4-48UNF			M2.5 x 0.45mm		
D	L	Order No.	D	L	Order No.
ø.018"	.12"	131281	ø0.45mm	2.5mm	120066
ø.04"	.12"	131280	ø1mm	2.5mm	120065
ø.06"	.5"	131279	ø1.5mm	13mm	120064
ø.078"	.04"	131271	ø2mm	1mm	120056
			ø2mm	8mm	137257

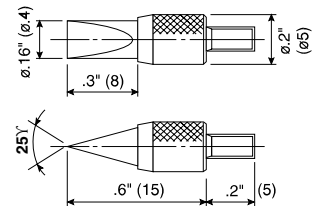
### ø.2" (ø5mm) Flat Point



4-48UNF	
L	Order No.
5/16"	133017
1/2"	21AAA043
3/4"	21AAA044
1"	21AAA045

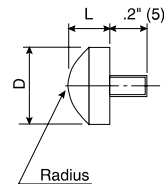
M2.5 x 0.45mm	
L	Order No.
8mm	131365

### Knife edge point, Carbide tipped



4-48UNF		M2.5 x 0.45mm	
Order No.		Order No.	
131282		120067	

### Spherical point



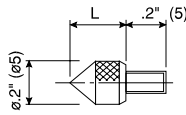
4-48UNF			
D	L	Radius	Order No.
ø.5"	.125"	.28"	101205
ø.375"	.09375"	.35"	101204

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

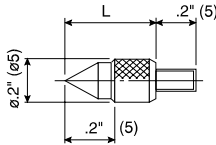
### 60° Conical point



4-48UNF	
L	Order No.
1/2"	101190

M2.5 x 0.45mm	
L	Order No.
10mm	101120

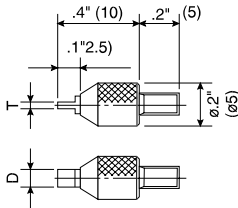
### 90° Conical point



4-48UNF	
L	Order No.
1/4"	101191

M2.5 x 0.45mm	
L	Order No.
5mm	101385

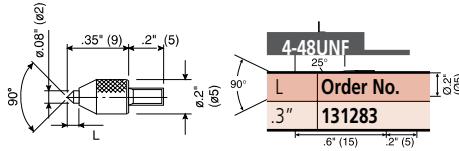
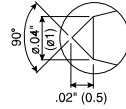
### Blade Point, Carbide Tip



4-48UNF		
D	T	Order No.
.08"	.016"	131276
.08"	.024"	131277
.16"	.04"	131278

M2.5 x 0.45mm		
D	T	Order No.
2mm	0.4mm	120061
2mm	0.6mm	120062
4mm	1mm	120063

### 90° Conical point, Carbide tipped

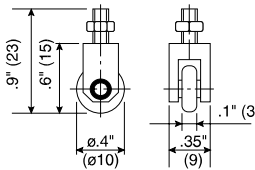


4-48UNF	
L	Order No.
.08"	131272

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

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

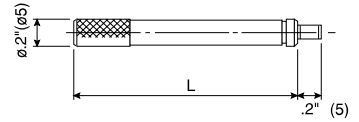
### Roller Point



4-48UNF	
Order No.	Order No.
901991	901954

M2.5 x 0.45mm	
Order No.	Order No.
901991	901954

### Extension Rod

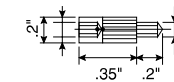


4-48UNF	
L	Order No.
1/2"	139167
1"	301655
2"	301657
4"	301659

M2.5 x 0.45mm	
L	Order No.
10mm	303611
20mm	303612
30mm	303613
100mm	303614

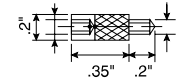
### Point Conversion

M2.5 x 0.45mm 4-48 UNFI



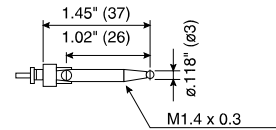
Order No.
21AAA011

4-48 UNFI M2.5 x 0.45mm



Order No.
21AAA012

### Lever Point



4-48UNF	
Order No.	Order No.
900393	900391

M2.5 x 0.45mm	
Order No.	Order No.
900393	900391

### Interchangeable Contact Point Set (4-48 UNF)

Set Order No. 21AZA034

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

### Interchangeable Carbide Contact Point Set (4-48 UNF)

Set Order No. 21AZA035

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

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

Set Order No. 7822



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

# 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.

#### 21AZB149

Use for **S type** Series 2, 3, and 4 dial indicators (up to 10mm/.4").



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



#### 21AZB150

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



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



#### 21AZB151

Lifting lever for **S type** thickness gage.



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

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



### Spindle Lifting Cable

**901975**: with auto-stop function

**540774**: without auto-stop function

Lifting range: 10mm

Cable length: 300mm



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



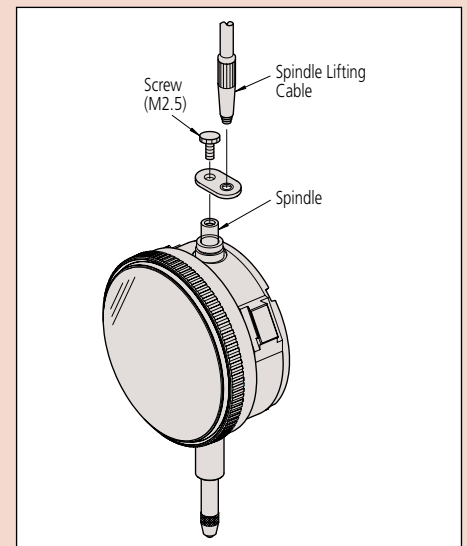
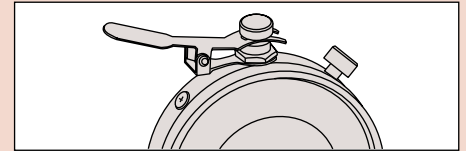
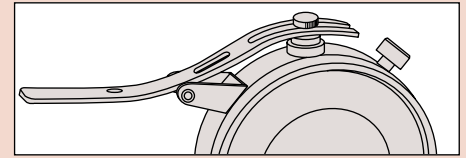
### Spindle Lifting Knob

#### 137693

Applicable spindle diameter; 4.8mm



### Application

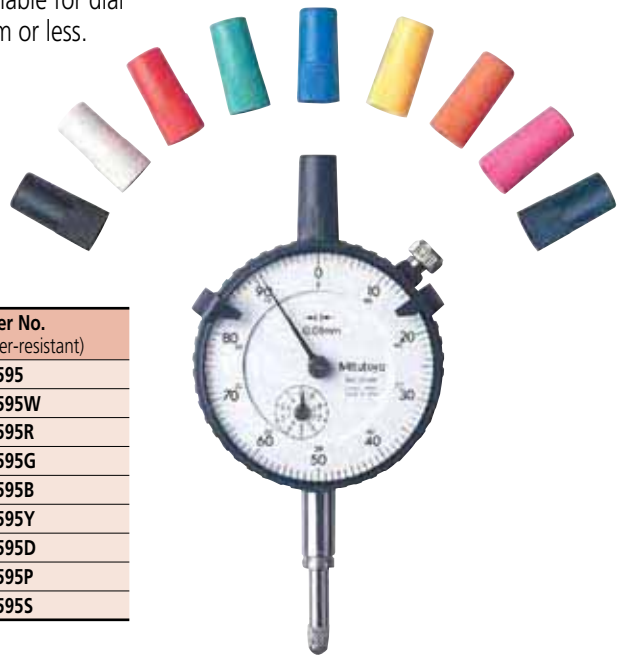




# Color Spindle Caps

## Optional Accessories for Digimatic and Dial Indicators

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



### SPECIFICATIONS

Color	Order No. (normal)	Order No. (water-resistant)
Black	193051	193595
White	193051W	193595W
Red	193051R	193595R
Green	193051G	193595G
Blue	193051B	193595B
Yellow	193051Y	193595Y
Orange	193051D	193595D
Pink	193051P	193595P
Dark blue	193051S	193595S

# Limit Stickers

## Optional Accessories for Digimatic and Dial Indicators

### FEATURES

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



136420: Red (10-sheet/set)



136421: Green (10-sheet/set)

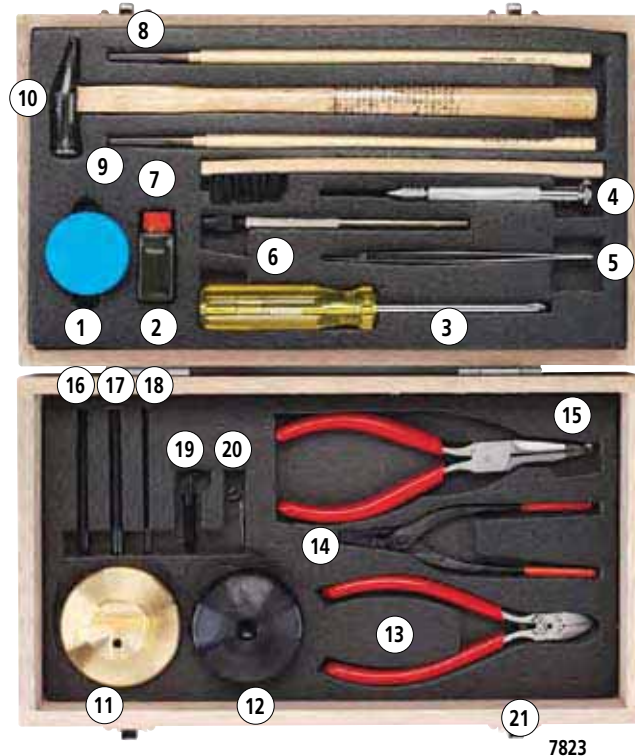


136422: Yellow (10-sheet/set)

# Dial Indicator Repair Tool Kit

## Optional Accessories for Digimatic and Dial Indicators

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



### Order No. 7823

#### Set Configuration

- (1) 901171: Molykote (lubricant)
- (2) 901172: Lubricating oil
- (3) 901173: Screwdriver (Phillips)
- (4) 901174: Screwdriver (Phillips/flat blade)
- (5) 129729: Tweezers
- (6) 901175: Pin-vise
- (7) 901176: Brush
- (8) 901177: Brush
- (9) 901177: Brush
- (10) 901178: Hammer
- (11) 129730: Spindle rest
- (12) 129731: Pin rest
- (13) 901179: Nippers
- (14) 901180: Pliers
- (15) 901181: Hand remover
- (16) 129732: Pin remover
- (17) 129733: Punch
- (18) 129734: Bearing adjuster
- (19) 129735: Pinion rest
- (20) 129736: Reamer ø1
- (21) 901182: Case

### SPECIFICATIONS

Order No.	Description
7823	Dial indicator repair tool kit

7823

# Dial Indicator Crystal Setter

## Optional Accessories for Digimatic and Dial Indicators

### FEATURES

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



With 8 sizes of crystal setting pads

7000

### SPECIFICATIONS

Order No.	Description
7000	Dial indicator crystal setter

### 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

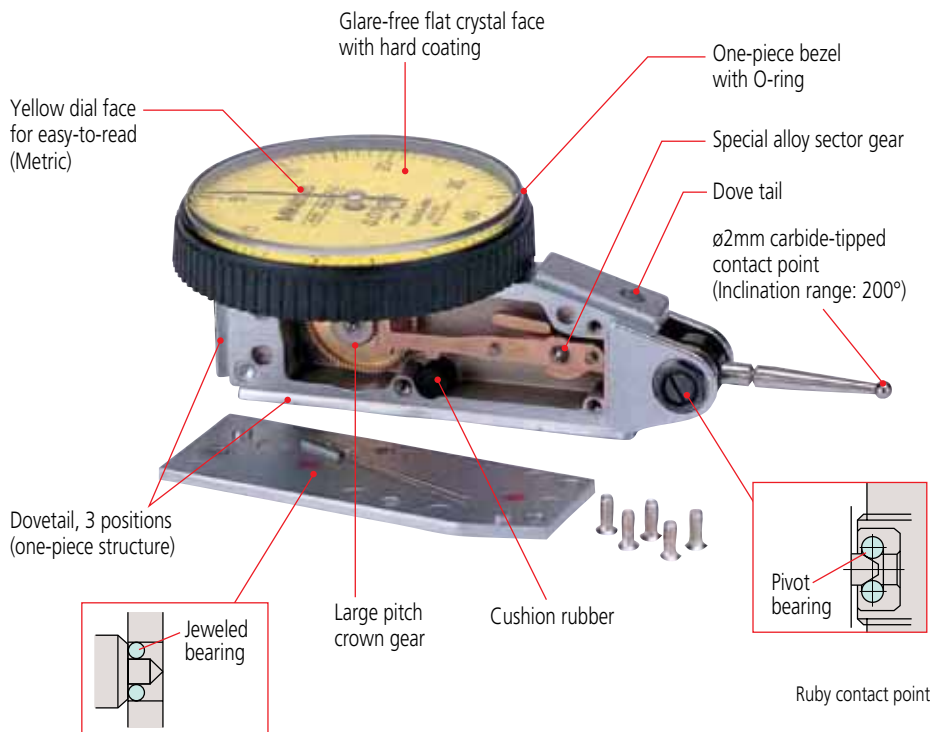
## SERIES 513

### Description of Icon

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

### FEATURES

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



# Dial Test Indicators

## SERIES 513 — Horizontal Type

### FEATURES

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



513-424E



513-404E



513-414E



513-425E



513-403



513-474E

### Optional Accessories

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

### Special Set: No. 513-908 (mm)

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

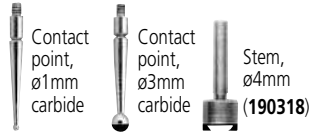
### No. 513-907 (inch)

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

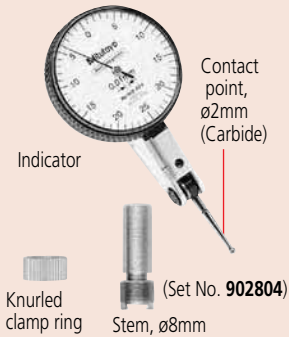


## Set Configuration: Metric Test Indicators

### Full set

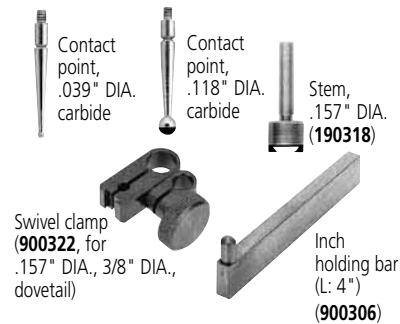


### Basic set

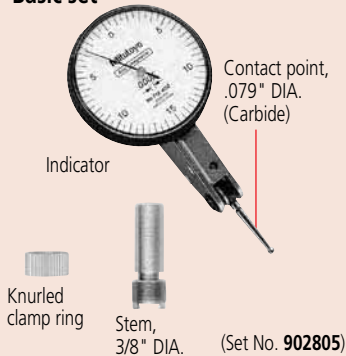


## Set Configuration: Inch Test Indicators

### Full set



### Basic set



Anti-magnet type



Double scale spacing type



Long contact point type



Jeweled bearing type



Compact type



With revolution counter type



## SPECIFICATIONS

### Metric

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

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

### Inch

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

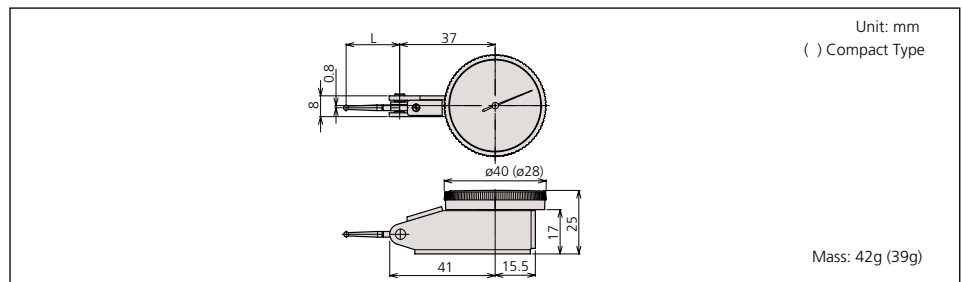
### Metric/inch

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

### Inch/Metric

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

## DIMENSIONS AND MASS



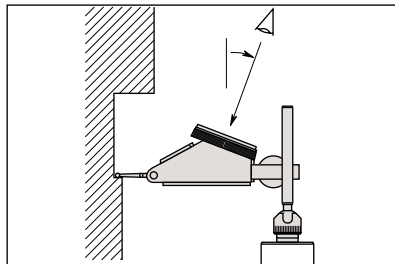


# Dial Test Indicators

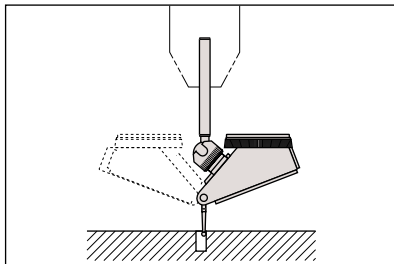
## SERIES 513 — Horizontal (20° Tilted Face), Vertical, and Parallel Types

### FEATURES

- Specially designed for easy viewing of measurements.



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



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



513-444E



513-445E



513-454E  
513-284GE



513-455E



513-452



513-282G



513-444E



513-445E



513-284G



513-442



513-446

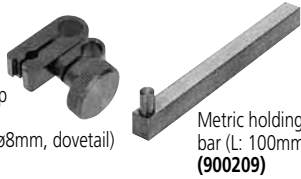
### Optional Accessories

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

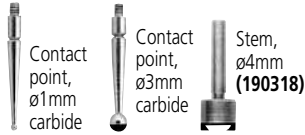
## Set Configuration: Metric

### Full set

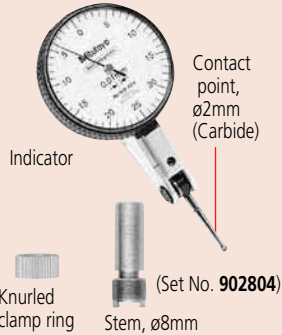
Swivel clamp  
(900321,  
for  $\phi 4\text{mm}$ ,  $\phi 8\text{mm}$ , dovetail)



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



### Basic set

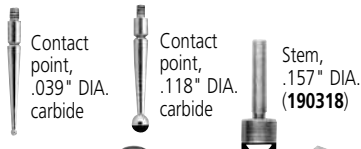


Contact point,  
 $\phi 2\text{mm}$   
(Carbide)

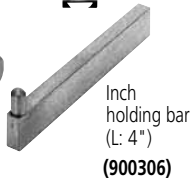
(Set No. 902804)  
Stem,  $\phi 8\text{mm}$

## Set Configuration: Inch

### Full set

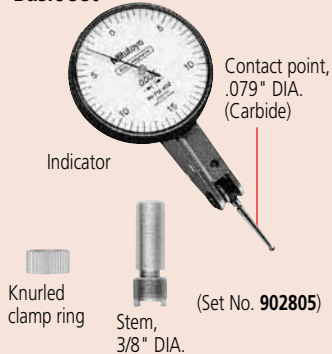


Swivel clamp  
(900322, for  
.157" DIA., 3/8" DIA.,  
dovetail)



(900306)

### Basic set



Contact point,  
.079" DIA.  
(Carbide)

(Set No. 902805)



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			
0.002mm	513-445E	513-445T	0.4mm	5 $\mu\text{m}$	0-100-0	0.3N or less	48	14.7			

### Inch Horizontal (20° tilted face) type

Graduation	Order No.		Range	Accuracy	Dial reading	Measuring force	Mass (g)	L (mm)					Remarks
	Basic set	Full set											
.0005"	513-442	513-442T	.06"	$\pm 0.0005$ "	0-15-0	0.3N or less	48	19.9					—
.0005"	513-442-01	513-442T-01	.06"	$\pm 0.0005$ "	0-15-0	0.3N or less	48	19.9					Blue dial
.0005"	513-442-06	513-442T-06	.06"	$\pm 0.0005$ "	0-15-0	0.3N or less	48	19.9					Black dial
.0005"	513-446	513-446T	.06"	$\pm 0.0005$ "	0-15-0	0.2N or less	48	33.9					—
.0005"	513-446-06	513-446T-06	.06"	$\pm 0.0005$ "	0-15-0	0.2N or less	48	33.9					Black dial
.0001"	513-443	513-443T	.016"	$\pm 0.0002$ "	0-4-0	0.3N or less	48	15					—
.0001"	513-443-06	513-443T-06	.016"	$\pm 0.0002$ "	0-4-0	0.3N or less	48	15					Black dial

### Metric Vertical type

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

### Inch Vertical type

Graduation	Order No.		Range	Accuracy	Dial reading	Measuring force	Mass (g)	L (mm)		
	Basic set	Full set								
.0005"	513-452	513-452T	.03"	$\pm 0.0005$ "	0-15-0	0.3N or less	50	19.9		
.0001"	513-453	513-453T	.008"	$\pm 0.0001$ "	0-4-0	0.3N or less	50	15		

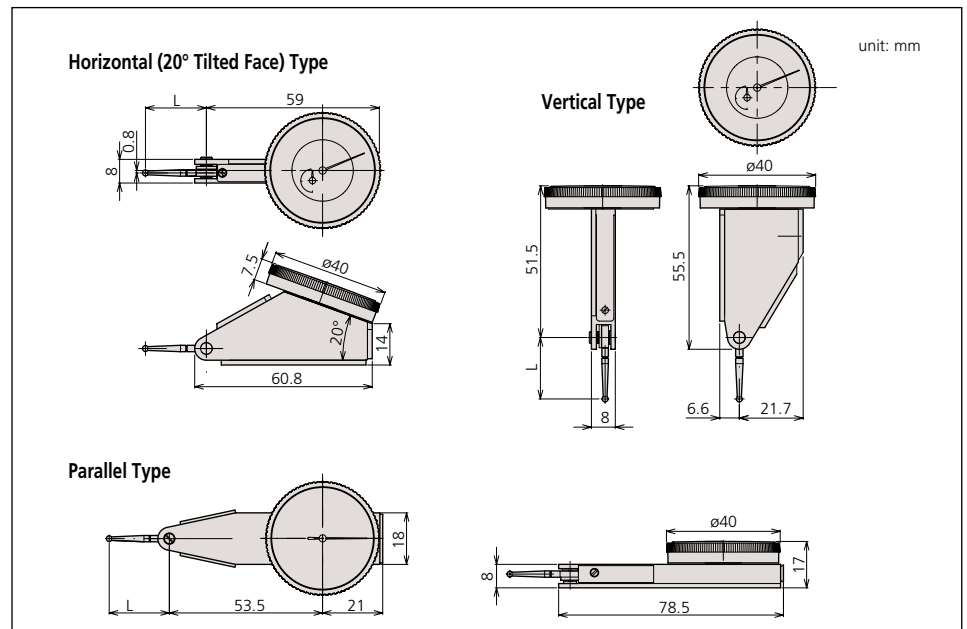
### Metric Parallel type

Graduation	Order No.		Range	Accuracy	Dial reading	Measuring force	Mass (g)	L (mm)		
	Basic set	Full set								
0.01mm	513-284GE	513-284GT	0.8mm	8 $\mu\text{m}$	0-40-0	0.3N or less	68	20.9		

### Inch Parallel type

Graduation	Order No.		Range	Accuracy	Dial reading	Measuring force	Mass (g)	L (mm)		
	Basic set	Full set								
.0005"	513-282G	513-282GT	.03"	$\pm 0.0005$ "	0-15-0	0.3N or less	68	20		

## DIMENSIONS

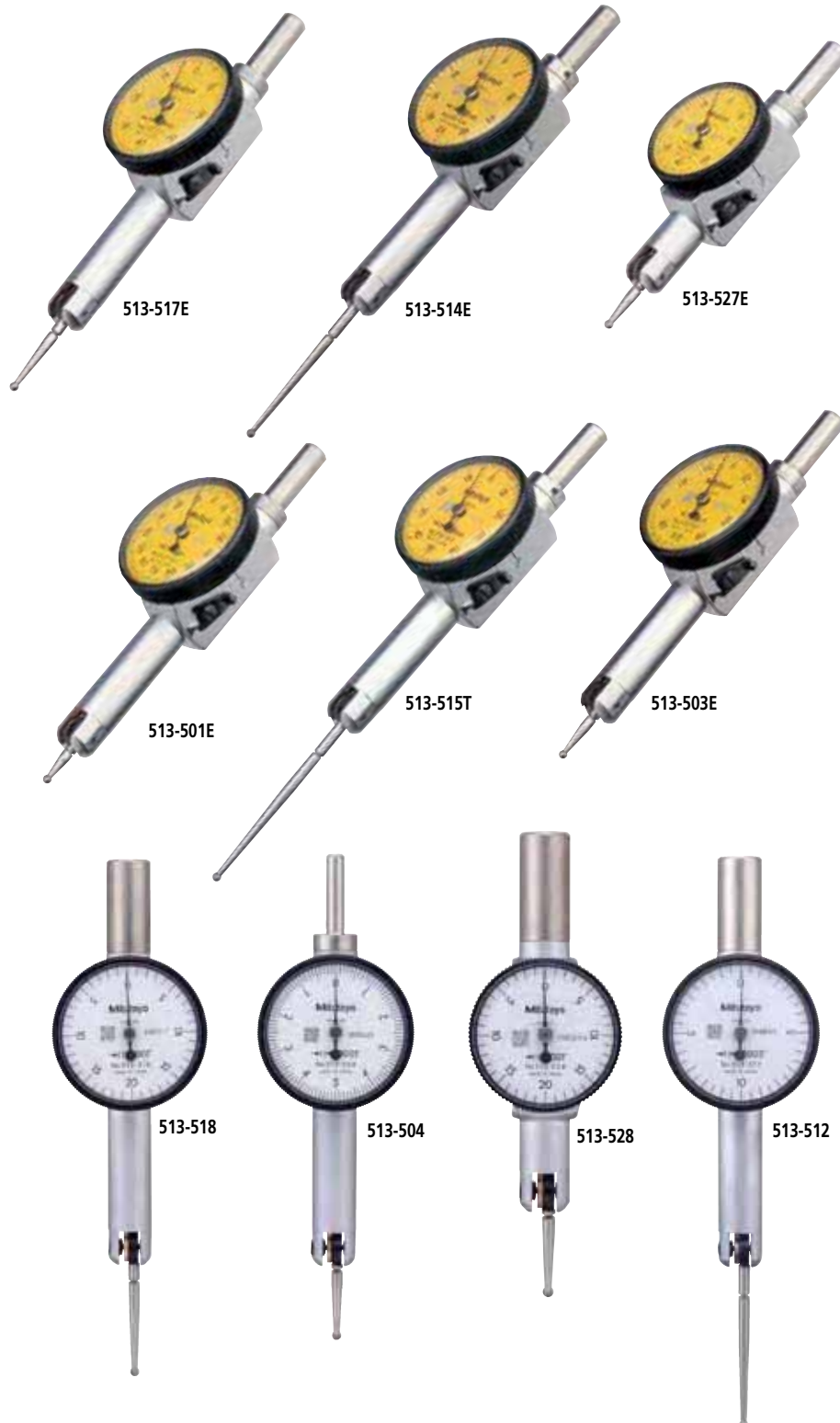


# Pocket Type Dial Test Indicators

## SERIES 513

### FEATURES

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

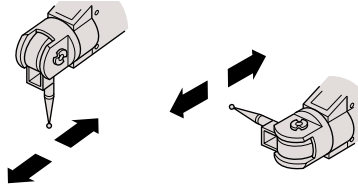


# Dial Test Indicators

## SERIES 513 — Universal Type

### FEATURES

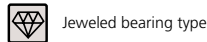
- Universal application to all directions. (Not only the direction of the measuring point, but also the direction of measurement itself can be adjusted 360 degrees without moving the indicator.)



513-304GE

### SPECIFICATIONS

#### Metric

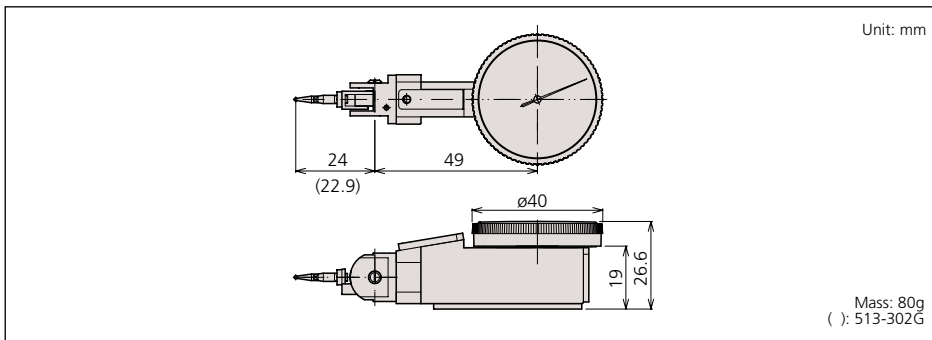


Graduation	Order No.		Range	Accuracy	Dial reading	Measuring force	
	Basic set	Full set					
0.01mm	513-304GE	513-304GT	0.8mm	8µm	0-40-0	0.3N or less	✓

#### Inch

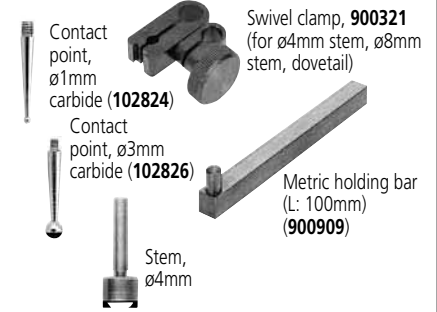
Graduation	Order No.		Range	Accuracy	Dial reading	Measuring force	
	Basic set	Full set					
.0005"	513-302G	513-302GT	.03"	±.0005"	0-15-0	0.3N or less	✓

### DIMENSIONS AND MASS

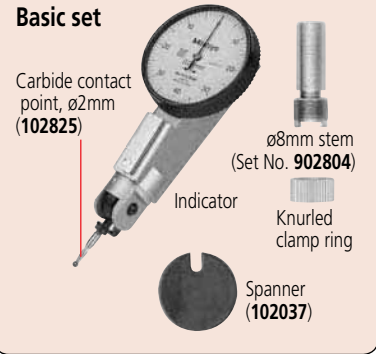


### Set Configuration: Metric

#### Full set

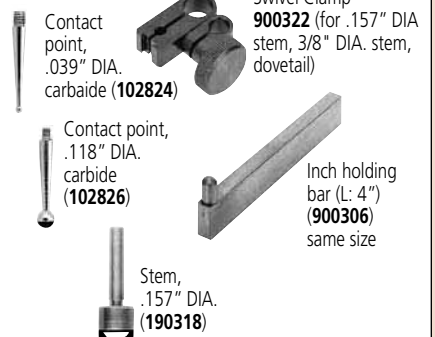


#### Basic set

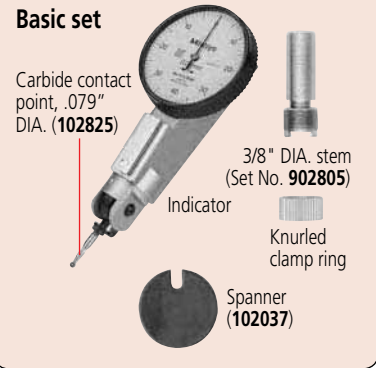


### Set Configuration: Inch

#### Full set



#### Basic set



### Optional Accessories

- : Swivel clamp
- : Holding bar
- : Stem



# Contact Points and Clamp Holders

## Optional Accessories for Dial Test Indicator

### Contact Points

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

### Holding Bars



9 x 9mm    953638 (Length: 50mm)  
900209 (Length: 100mm)



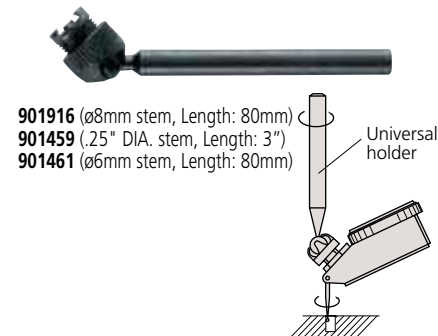
ø8mm    900211 (Length: 115mm)



.25" x .5"    953639 (Length: 2")  
900306 (Length: 4")

### Universal Holder

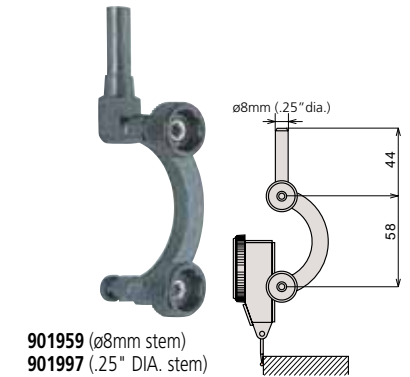
- Allows the indicator to be set at a desired position.



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

### Centering Holder

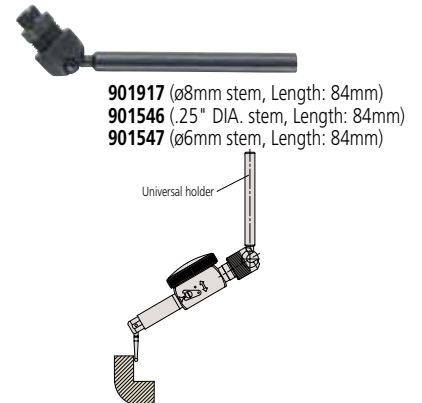
- Allows large diameter cylinders or holes to be centered.



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

### Universal Holder (pocket type)

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



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

# i-Checker

**SERIES 170**



## FEATURES

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

- $\pm(0.2+L/100)\mu\text{m}$  indication accuracy.
- Directly inspects an indicator with a stroke of up to 100mm (4"). The dial test indicator, bore gage and lever-type inductive head can be inspected with optional accessories.

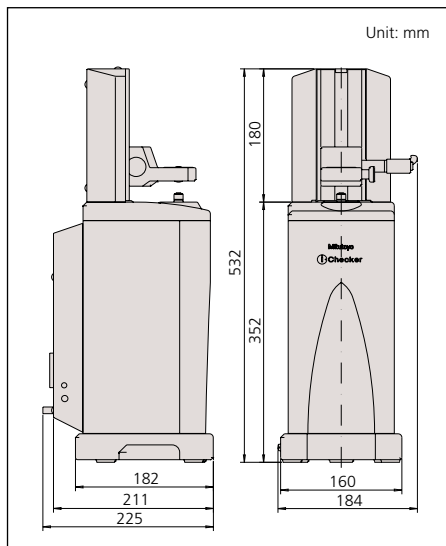
- Adjustment of the measurement position is very easily accomplished because of semi-automatic measurement and full automatic measurement functions.
- Creates and prints out the simple inspection certificate.
- Saves inspection result as CSV file for reusable inspection result by any kind of software.



## SPECIFICATIONS

Order No.	Remarks
170-303A	with $\phi 3/8"$ bush

## DIMENSIONS



## Applicable Indicators

- Dial indicator
  - Test indicator\*
  - Hicor
  - Bore gage\*\*
  - Digimatic indicator\*\*\*
  - Linear gage
- \* requires optional test indicator attachment set  
 \*\* requires optional bore gage accessory  
 \*\*\* requires optional SPC cable for full automatic measurement



Using test indicator attachment set (02ASK000)



Using bore gage accessory set (02ASK110)

## Technical Data

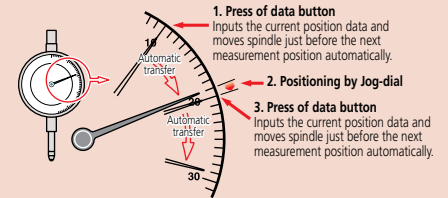
Measuring Range: 100mm/4"  
 Resolution: 0.02 $\mu\text{m}$ /1.24 $\mu\text{in}$   
 Accuracy:  $\pm(0.2+L/100)\mu\text{m}$  in vertical position  
 (at 20°C)  
 $\pm(0.3+2L/100)\mu\text{m}$  in lateral position  
 L = arbitrary length (mm)  
 Drive method: Motor drive  
 Measuring Unit: Reflective-type metal linear encoder  
 Thermal expansion coefficient:  $(8\pm 1)\times 10^{-6}/\text{K}$   
 Measurement: Semi-automatic measurement  
 Method: Fully automatic measurement\*  
 Dimensions: 184 x 225 x 532mm (W x D x H)  
 Operating temperature range: 20°C $\pm$ 3°C  
 Power supply: 100VAC to 240VAC  $\pm$ 10%, 50/60Hz  
 Mass: 20kg

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

## Function

### Inspect your analog indicator semi-automatically!

The pointer of the analog indicator is positioned just before the measuring point automatically via Mitutoyo's Semi-automatic Measurement function. After that, inspection begins simply by adjusting the pointer position with the jog-dial. Because of this function, measurement time is reduced and user fatigue is practically eliminated. Additionally all functions necessary for inspection are combined in the control box so that the operator need not rely on excessive eye movement to adjust the pointer.



### Fully automatic inspection of digital indicator

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



### Create and printout a simplified inspection certificate

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

## Optional Accessories

- 02ASK000: Test indicator attachment set ( $\phi 6\text{mm}$  stem)
- 02ASK180: Test indicator attachment set ( $\phi 8\text{mm}$  stem)
- 02ASK370: Test indicator holder ( $\phi 6\text{mm}$  stem)
- 02ASK380: Test indicator holder ( $\phi 8\text{mm}$  stem)
- 02ASK110: Bore gage accessory set
- 902803:  $\phi 6\text{mm}$  dovetail grooved stem
- 902804:  $\phi 8\text{mm}$  dovetail grooved stem
- 02ASK040: Stem bush  $\phi 6\text{mm}$
- 02ASJ856: Stem bush  $\phi 8\text{mm}$
- 02ASK150: Stem bush  $\phi 8\text{mm}$ , short
- 02ASK050: Bush  $\phi 9.5$  (Requires 02ASK070)
- 02ASK060: Stem bush  $\phi 12\text{mm}$
- 02ASK070: Stem bush  $\phi 15\text{mm}$
- 02ASK080: Stem bush  $\phi 20\text{mm}$
- 02ASK090: Stem bush  $3/8"$
- 02ASK130: Stem bush case
- 02ASK730: Reflector
- 937179T: Foot switch
- PC system



### Optional Accessory

**951498:** Stand for bore gage inspection



# UDT-2 Dial Gage Testers

## SERIES 170

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

### FEATURES

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



170-102M-2

### SPECIFICATIONS

Metric			
Range	Order No.	Graduation	Accuracy
0 - 25mm	<b>170-102M-2</b>	0.001mm	±1µm

Inch			
Range	Order No.	Graduation	Accuracy
0 - 1"	<b>170-101E</b>	.0001"	±.0001"

# Calibration Testers

## SERIES 521

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

### FEATURES

- Universal bracket accepts any dial indicator, dial test indicator, lever head of Mu-Checker without any additional accessory.
- Clamping capacity: ø4mm - ø10mm / .157"-.394" dia.
- Dual color-indexed directional graduations to facilitate measurements.



Calibrating test indicator



521-103

### SPECIFICATIONS

Metric			
Range	Order No.	Graduation	Accuracy
0 - 1mm	<b>521-103</b>	0.0002mm	±0.2µm
0 - 5mm	<b>521-105</b>	0.0002mm	±0.8µm

Inch			
Range	Order No.	Graduation	Accuracy
0 - .05"	<b>521-104</b>	.00001"	±.00001"
0 - .2"	<b>521-106</b>	.00001"	±.00003"

# Thickness Gages

## SERIES 547, 7

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

### FEATURES

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

### Flat Anvil Type

#### Standard Type / Digital



#### Deep Throat Type / Digital



#### Deep Throat Type / Dial

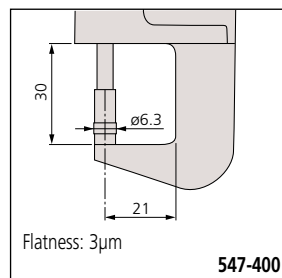


#### High Accuracy Type / Digital



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

### DIMENSIONS



### Technical Data

#### Function of Digital Models

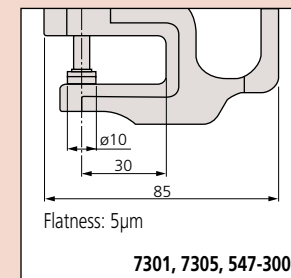
IDS Types

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

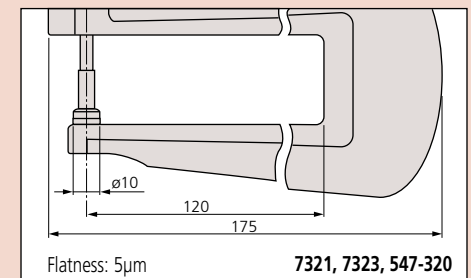
IDC Types

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

### DIMENSIONS



Unit: mm



# Thickness Gages

## SERIES 547, 7

### Optional Accessories

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

### Flat Anvil Type

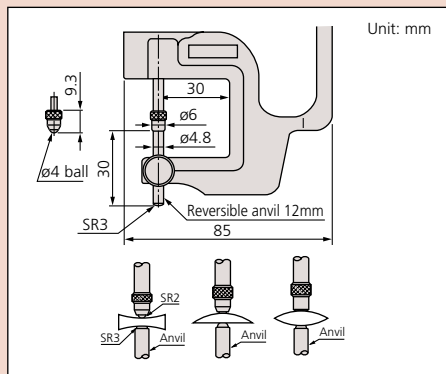
#### SPECIFICATIONS

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

Inch		Dial Type			
Range	Order No.	Graduation	Accuracy	Measuring force	Remarks
0 - .05"	<b>7326S</b>	.00005"	±.0002"	1.4N or less	Fine dial reading, ceramic spindle/anvil
0 - .5"	<b>7300S</b>	.001"	±.001"	1.4N or less	Standard, ceramic spindle/anvil
0 - 1"	<b>7304S</b>	.001"	±.002"	2.0N or less	Standard, ceramic spindle/anvil
0 - 1"	<b>7322S</b>	.001"	±.002"	2.0N or less	Deep throat, ceramic spindle/anvil

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

### DIMENSIONS



### Lens thickness measurement (reverse anvil)



#### SPECIFICATIONS

Inch/Metric		Digital Type			
Range	Order No.	Resolution	Accuracy	Measuring force	Indicator
0 - .47" / 0 - 12mm	<b>547-512</b>	.0005"/0.01mm	±.001"	1.5N or less	Digimatic IDS
0 - .47" / 0 - 12mm	<b>547-312</b>	.0005"/0.01mm	±.001"	1.5N or less	Digimatic IDC

Inch		Dial Type			
Range	Order No.	Graduation	Accuracy	Measuring force	Remarks
0 - .5"	<b>7312S</b>	.001"	±.001"	1.4N or less	Lens thickness

Metric		Dial Type			
Range	Order No.	Graduation	Accuracy	Measuring force	Remarks
0 - 10mm	<b>7313</b>	0.01mm	±15µm	1.4N or less	Lens thickness



# Thickness Gages

**SERIES 547, 7**

## Tube thickness measurement



SPC  
ABSOLUTE  
Model Spec Patent # 481100



## SPECIFICATIONS

**Inch/Metric** Digital Type

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

**Inch** Dial Type

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

**Metric** Dial Type

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

## Groove thickness measurement (Blade anvil type)



SPC  
ABSOLUTE  
Model Spec Patent # 481100



## SPECIFICATIONS

**Inch/Metric** Digital Type

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

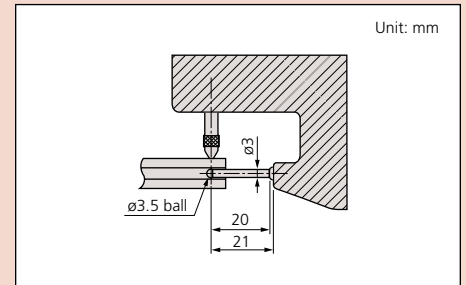
**Inch** Dial Type

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

**Metric** Dial Type

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

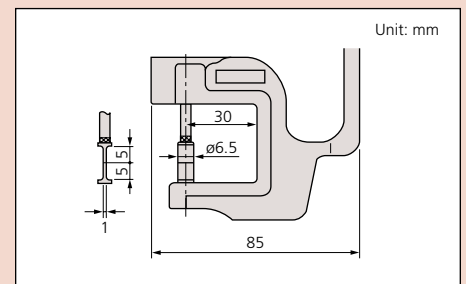
## DIMENSIONS



## Optional Accessories

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

## DIMENSIONS



# Thickness Gages

**SERIES 547, 7**

Universal Type (interchangeable anvils)



547-528

## SPECIFICATIONS

**Inch/Metric** Digital Type

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

**Inch** Dial Type

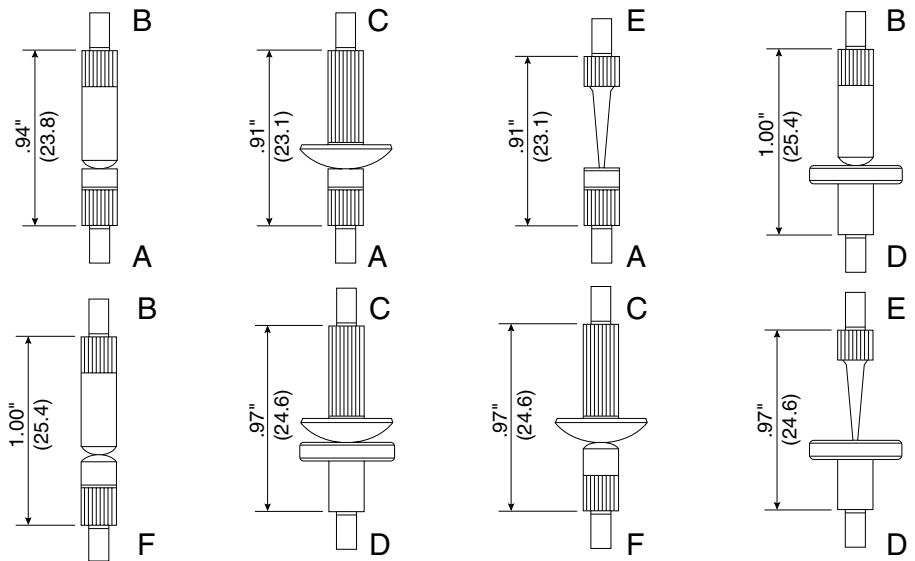
Range	Order No.	Graduation	Accuracy	Measuring force	Remarks
0 - .4"	<b>7328S</b>	.001"	±.001"	1.5N or less	Interchangeable anvils

### Optional Accessories

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

## Standard Accessories

### Recommended Combinations



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

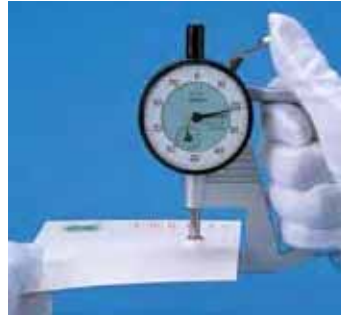
# Light-Weight Dial Thickness Gages

**SERIES 7**



## Application

Measuring paper thickness



Measuring thickness of a human hair

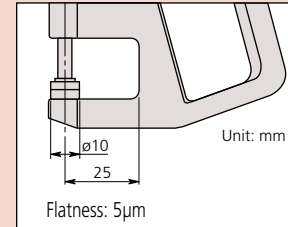


## SPECIFICATIONS

### Metric

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

## DIMENSION



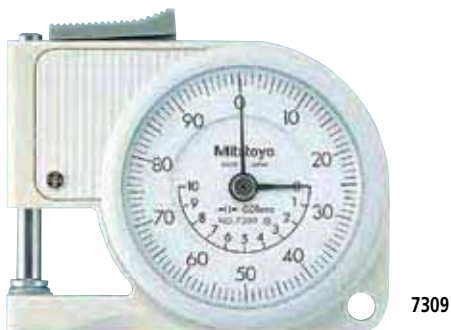
# Pocket Thickness Gages

**SERIES 7**

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

## FEATURES

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



## SPECIFICATIONS

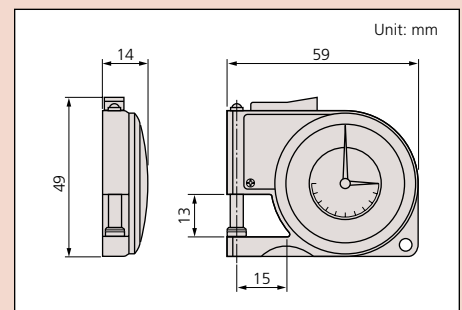
### Metric

Range	Order No.	Dial reading	Accuracy
0 - 10mm	7309	0.01mm	±20µm

### Inch

Range	Order No.	Dial reading	Accuracy
0 - .4"	7308	.001"	±.001"

## DIMENSIONS



# Quick-Mini

## SERIES 700

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

### FEATURES

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

### Technical Data

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

### Function

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



700-118



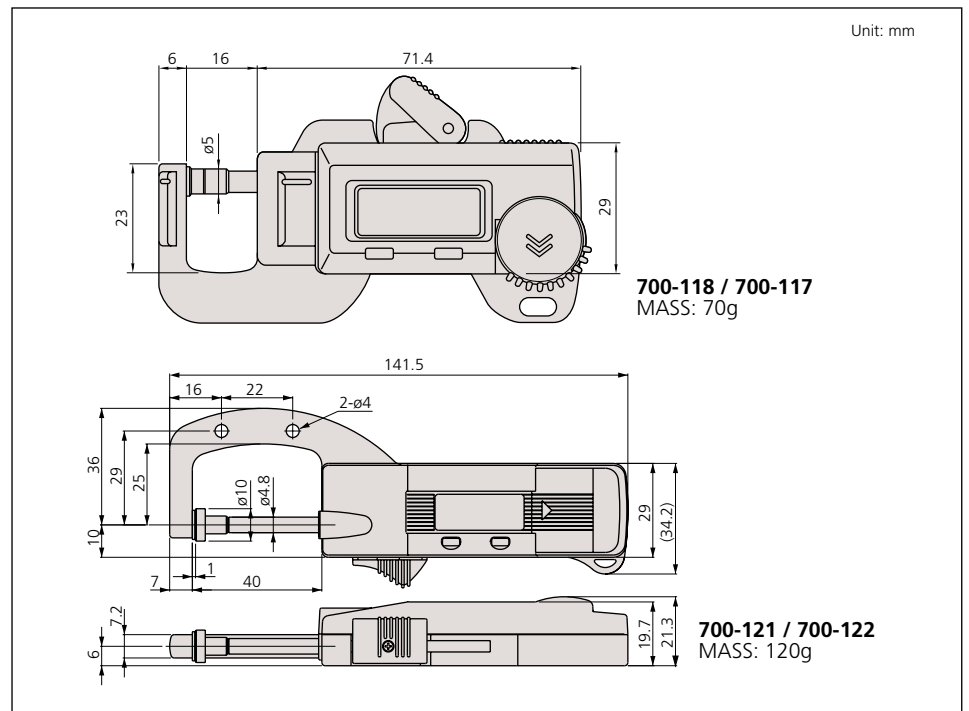
700-122

### SPECIFICATIONS

Metric		
Range	Order No.	Accuracy
0 - 12mm	<b>700-117</b>	±0.02mm
0 - 25mm	<b>700-121</b>	±0.02mm

Inch/Metric		
Range	Order No.	Accuracy
0 - .5"/0 - 12.7mm	<b>700-118</b>	±.001"
0 - 1"/0 - 25.4mm	<b>700-122</b>	±.001"

### DIMENSIONS AND MASS



# Digi-Derm

## SERIES 179 — Electronic Coating Thickness Gage

### FEATURES

- Battery powered for portable use and can also operate on AC power with an optional adapter.
- Measurements are displayed on the clear LCD screen and can be output for SPC data analysis. (Digi-Derm)
- A set of calibration films and a metallic base is provided for each unit.
- Measures the thickness of non-magnetic coating on magnetic substrata or a layer of non-conductive material on non-magnetic substrata.
- Special probe for measuring the coating thickness on the inside wall of bores is optional (732135).

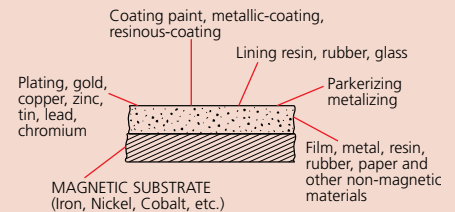


Inch / Metric					
Order No.	Measuring Range	LCD Resolution	Accuracy	Mass	Remarks
179-746	0-.059" (0-1.5mm)	.00005" (0.001mm)	±.00008" ±1 digit (Range: 0-.0039")	500g	Non-magnetic coating on magnetic material
			±2% ±1 digit (Range: .004"-.043")		
			±3% ±1 digit (Range: .043"-.06")		
179-756	0-.039"	.00005"	±.00008" ±1 digit (Range: 0-.0039")	500g	Non-conductive coating on non-magnetic material
	(0-1.0mm)	(0.001mm)	±2% ±1 digit (Range: .0039"-.043")		

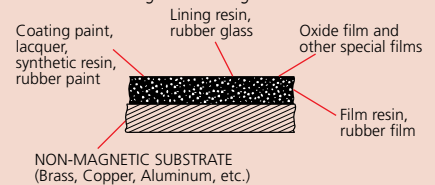


### Application

Non-magnetic coatings on magnetic substrata

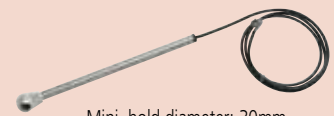


Non-conductive coating on non-magnetic substrata



### Optional Accessories

**0732135\***: Special probe for inside wall of bore  
\*not available for 179-756.



Mini. hold diameter: 30mm  
Max. measuring depth: 200mm

**528041A**: AC adapter for Digital Type (120V AC)

**936937**: SPC cable for Digi-Derm (40" / 1m)

**965014**: SPC cable for Digi-Derm (80" / 2m)

### Consumables

**527599**: Calibration film (25µm, 1 pc.)

**527600**: Calibration film (50µm, 1 pc.)

**527601**: Calibration film (100µm, 1 pc.)

**527602**: Calibration film (250µm, 1 pc.)

**527603**: Calibration film (0.5mm, 1 pc.)

**527604**: Calibration film (1.0mm, 1 pc.)

**527605**: Calibration film (2.0mm, 1 pc.)

**685013**: Calibration film (1.5mm, 1 pc.)

**933038**: Metallic base for calibration film (magnetic)

**937305**: Metallic base for calibration film (non-magnetic)

**945014**: Calibration film set (25µm, 50µm, 100µm,

250µm, 0.5mm, 1.0mm, 1.5mm)

**945049**: Calibration film set (25µm, 50µm, 100µm,

250µm, 0.5mm, 1.0mm)



# MU-Gages

Ultrasonic Micrometer with SPC output

## SERIES 179

### FEATURES

The MU-Gage is an ultrasonic instrument for precise thickness measurement from just one side of a workpiece.



### SPECIFICATIONS

Order No.	179-204	179-205	179-206
Transducer	Standards	Aluminum	High Resolution*
Measuring Range	.040–5.000" 1mm–125mm	.040–4.000" 1mm–102mm	.040–5.000" 1mm–125mm
Resolution	.001"/0.01mm		
Accuracy	±.002"		
Battery	4 pcs. AA Alkaline 300 Hours (80 Hours with backlight)		
Dimensions	W=2.5" x H=4.5" x D=1.25" (64mm x 114mm x 33mm)		
Operating Temp	-18°C to 150°C (0°F to 300°C)		
Mass	.69lbs. (312g)		
Material Type	Glass, Plastic, Steel, Ceramics	Aluminum	Glass, Plastic, Steel, Ceramics

\*Transducer probe has 25% higher sensitivity to small holes pitting than standard type.

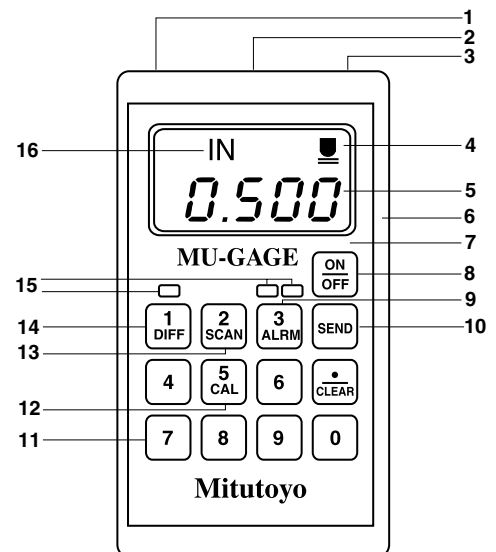
### Standard Accessories

- 64AAA501 Transducer probe for 179-204 (cable length 4 ft.)
- 64AAA502 Transducer probe for 179-205 (cable length 4 ft.)
- 64AAA503 Transducer probe for 179-206 (cable length 4 ft.)
- 64AAA504 Couplant Bottle (4 Oz.)
- 64AAA513 Plastic Case

### Optional Accessories

- 64AAA505 Steel Calibration Block (5 Step)
- 64AAA506 Aluminum Calibration Block (5 Step)
- 64AAA507 Instrument Case with Strap
- 64AAA508 V-Block Transducer Holder
- 64AAA509 SPC Output Connecting Cable (3 ft.)

1. Lemo quick-disconnect transducer connector.
2. Battery charger connect/data port
3. Built-in auto-probe zero block
4. Coupling indicator
5. Backlit LCD indicates modes, measurements and icons
6. Lightweight aluminum case
7. Weather resistant sealed keypad
8. POWER key
9. ALRM key enables alarm LEDs
10. SEND key for transmission of readings
11. Numeric keys
12. Material calibration key
13. SCAN key enables rapid scanning and minimum thickness capture
14. DIFF key enables display of positive or negative difference to preset value
15. Red and green LED indicators
16. Operator selectable Metric or English units







# Digimatic Caliper Gages

## SERIES 209 — External Tube Thickness Measurement Type

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

The Digimatic Caliper Gages provide error-free LCD readings as well as data output for SPC analysis.

External measurement type



### Technical Data

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

Resolution: .001", .0005", or .0002"  
0.01mm, 0.02mm, or 0.005mm

Display: Analog / Digital

Power Supply: AA Battery (1pc)

Battery life: Approx. 350 hours

Measuring Force: 0.5 - 1.5N

Dust/Water protection level: IP63

Provided with inspection certificate.

### Function

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

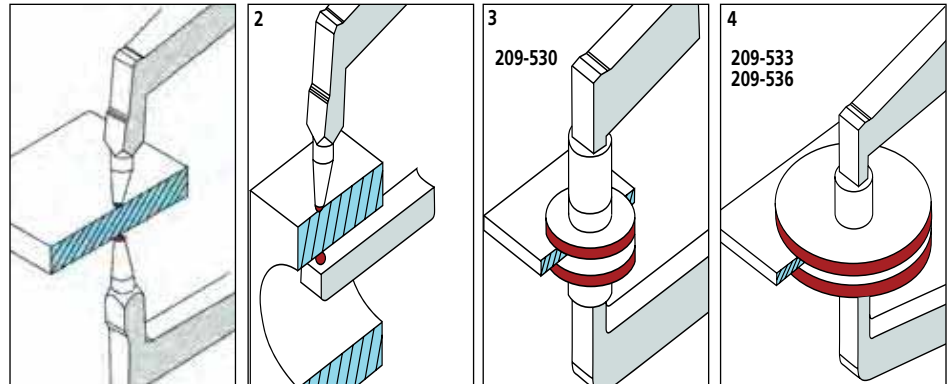
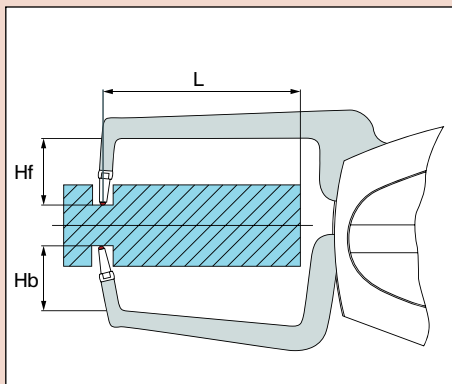
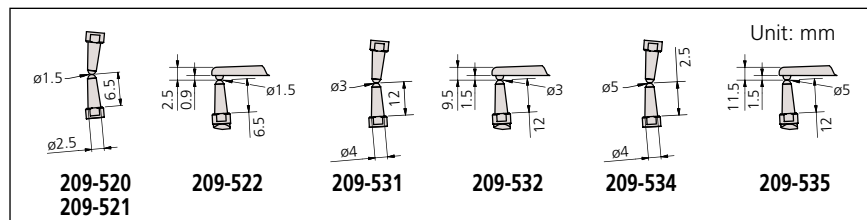
\* Contact type 3,4 does not have max. min. value hold.

### Optional Accessories

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

### SPECIFICATIONS

Inch / Metric		Resolution	Accuracy	Max. Measuring Depth L	Measuring Contact length Hb	Measuring Contact length Hf	Type of Measuring Contact/type of set up	Mass(g)
0-.39"/ 0-10mm	<b>209-520</b>	.0002"/ 0.005mm	.0004"/ 0.01mm	.71"/ 18mm	.63"/ 16mm	.63"/16mm	Ball .059"/ 1.5mm dia. Both / 1	270
0-.78"/ 0-20mm	<b>209-521</b>	.0005"/ 0.01mm	.001"/ 0.02mm	1.97"/ 50mm	.63"/ 16mm	.63"/16mm	Ball .059"/ 1.5mm dia. Both / 1	290
0-.78"/ 0-20mm	<b>209-522</b>	.0005"/ 0.01mm	.001"/ 0.02mm	1.97"/ 50mm	.59"/ 15mm	.035"/0.9mm	Ball .059"/ 1.5mm dia. Both / 2	290
0-1.57"/ 0-40mm	<b>209-531</b>	.001"/ 0.02mm	.002"/ 0.04mm	4.53"/ 115mm	.87"/ 22mm	.87"/22mm	Ball .118"/ 3.0mm dia. Both / 1	380
0-1.57"/ 0-40mm	<b>209-532</b>	.001"/ 0.02mm	.002"/ 0.04mm	4.53"/ 115mm	.87"/ 22mm	.04"/1mm	Ball .118"/ 3.0mm dia. Both / 2	380
0-.39"/ 0-10mm	<b>209-530</b>	.0002"/ 0.005mm	.0004"/ 0.01mm	.709"/ 18mm	.87"/ 22mm	.47"/12mm	Desc .39"/ 10mm dia. Both / 3	270
0-1.57"/ 0-40mm	<b>209-533</b>	.001"/ 0.02mm	.002"/ 0.04mm	4.53"/ 115mm	1.14"/ 29mm	.77"/19.6mm	Desc 1.97"/ 50mm dia. Both / 4	380
0-2.36"/ 0-60mm	<b>209-534</b>	.001"/ 0.02mm	.003"/ 0.06mm	7.08"/ 180mm	1.0"/ 25.3mm	1.0"/25.3mm	Ball .197"/ 5.0mm dia. Both / 1	470
0-2.36"/ 0-60mm	<b>209-535</b>	.001"/ 0.02mm	.003"/ 0.06mm	7.08"/ 180mm	1.0"/ 25.3mm	.15"/3.9mm	Ball .197"/ 5.0mm dia. Both / 2	470
0-2.36"/ 0-60mm	<b>209-536</b>	.001"/ 0.02mm	.004"/ 0.08mm	7.08"/ 180mm	1.06"/ 27mm	.77"/19.5mm	Desc 1.97"/ 50mm dia. Both / 4	470



Ball  $\phi$  1,5 and 3mm for wall thickness

Ball  $\phi$  1,5 and 3mm for min. wall thickness  $\phi$ 3mm / 9mm

Disk  $\phi$ 10mm for flat surfaces

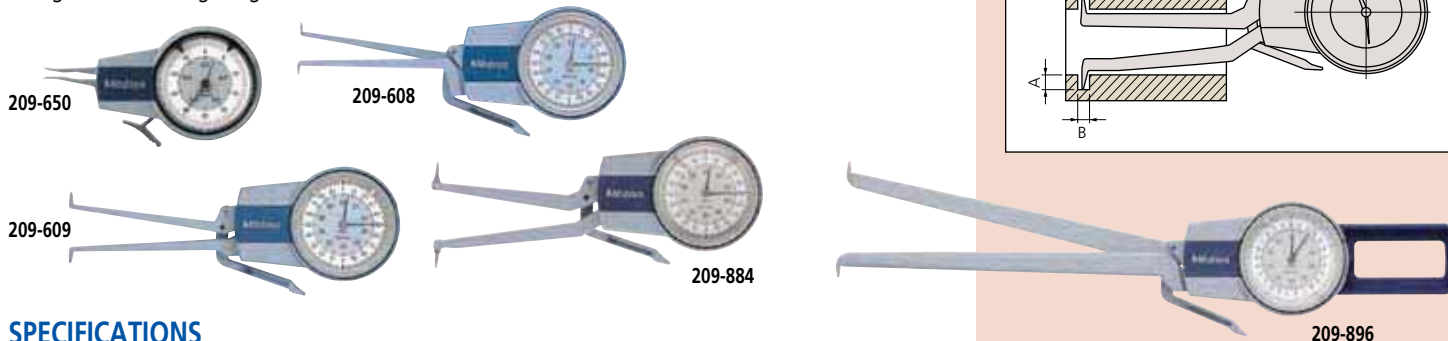
Disk  $\phi$ 50mm for flat surfaces

# Dial Caliper Gages

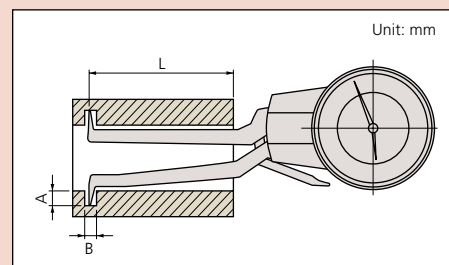
## SERIES 209 — Internal Measurement Type

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

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



## DIMENSIONS



## SPECIFICATIONS

### Inch

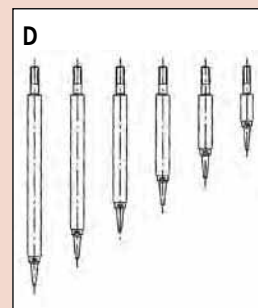
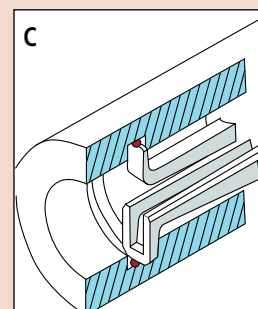
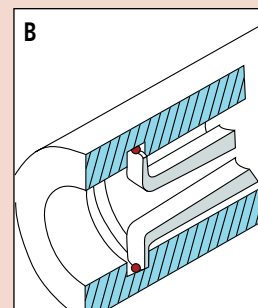
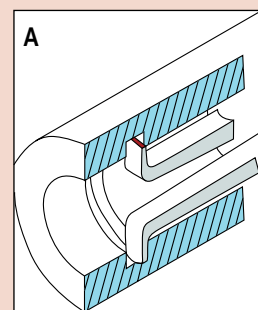
Measuring Range	Order No.	Graduation	Accuracy	Max. Measuring Depth L	Max. Groove Depth A	Min. Groove Width B	Measuring Contact Type	Size (mm)	Mass (g)
.10-.30"	209-730	.0002"	±.0008"	.4"	.28"	.24"	A	R0.1	120
.20-.40"	209-731	.0002"	±.0008"	.87"	.087"	.055"	B	ø0.6	120
.20-.60"	209-732	.0005"	±.001"	1.18"	.067"	.043"	A	R0.6	140
.40-.80"	209-733	.0005"	±.001"	1.97"	.157"	.079"	B	ø1	140
.40-1.4"	209-712	.0005"	±.0015"	3.15"	.18"	.07"	B	ø1	240
.80-1.2"	209-734	.0005"	±.001"	2.05"	.157"	.079"	B	ø1	140
1.0-2.0"	209-713	.0005"	±.0015"	3.15"	.200"	.1"	B	ø1	260
1.2-1.6"	209-735	.0005"	±.001"	2.24"	.177"	.079"	B	ø1	140
1.6-2.0"	209-736	.0005"	±.001"	2.24"	.177"	.079"	B	ø1	140
1.6-2.6"	209-760	.0005"	±.0015"	3.15"	.24"	.1"	B	ø1	300
2.2-3.2"	209-761	.0005"	±.0015"	3.15"	.24"	.1"	B	ø1	300
2.8-3.8"	209-762	.0005"	±.0015"	3.15"	.24"	.1"	B	ø1	310
3.2-4.2"	209-763	.0005"	±.0015"	3.15"	.24"	.1"	B	ø1	310
2.4-5.4"	209-715*	.0005"	±.0015"	3.15"	—	—	D	ø1	310
4.7-7.7"	209-716*	.0005"	±.0015"	3.15"	—	—	D	ø1	330

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

### Metric

Measuring Range	Order No.	Graduation	Accuracy	Max. Measuring Depth L	Max. Groove Depth A	Min. Groove Width B	Measuring Contact Type	Size (mm)	Mass(g)
2.5-7.5mm	209-650	0.005mm	±0.015mm	10mm	0.7mm	0.6mm	A	R0.1	120
5-10mm	209-651	0.005mm	±0.015mm	22mm	1.8mm	1.4mm	B	ø0.6	120
5-15mm	209-652	0.01mm	±0.02mm	23mm	1.7mm	1.1mm	B	ø0.6	140
10-20mm	209-653	0.01mm	±0.02mm	56mm	4.5mm	2.0mm	C	ø1	140
10-30mm	209-608	0.01mm	±0.03mm	80mm	4.5mm	1.8mm	B	ø1	240
15-65mm	209-896	0.05mm	±0.05mm	175mm	4.5mm	2.5mm	B	ø1.5	400
20-30mm	209-654	0.01mm	±0.02mm	56mm	4.5mm	2.0mm	B	ø1	140
20-40mm	209-609	0.01mm	±0.03mm	80mm	6.0mm	2.5mm	B	ø1	260
30-40mm	209-655	0.01mm	±0.02mm	56mm	4.5mm	2.0mm	B	ø1	140
30-50mm	209-600	0.01mm	±0.03mm	80mm	6.0mm	2.5mm	B	ø1	260
40-50mm	209-656	0.01mm	±0.02mm	57mm	4.5mm	2.0mm	B	ø1	140
40-60mm	209-884	0.01mm	±0.03mm	80mm	8mm	2.5mm	B	ø1	300
40-90mm	209-897	0.05mm	±0.05mm	175mm	8mm	2.5mm	B	ø2	440
50-70mm	209-885	0.01mm	±0.03mm	80mm	6mm	2.5mm	B	ø1	300
60-80mm	209-886	0.01mm	±0.03mm	80mm	8mm	2.5mm	B	ø1	310
70-90mm	209-887	0.01mm	±0.03mm	80mm	8mm	2.5mm	B	ø1	290
70-120mm	209-898	0.05mm	±0.05mm	175mm	8mm	3.3mm	B	ø2	440
80-100mm	209-888	0.01mm	±0.03mm	80mm	8mm	2.5mm	B	ø1	310
60-130mm	209-894*	0.01mm	±0.03mm	80mm	—	—	D	ø1	310
120-190mm	209-895	0.01mm	±0.04mm	80mm	—	—	D	ø1	330

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



## Type of Contact Points

**S** Upper / Lower contact point  
R0.4 / R0.4: **209-660, 209-795**  
R0.5 / R0.5: **209-605, 209-787**  
R0.75 / R0.75: **209-610**

**K/K** Upper / Lower contact point  
ø2.0 / ø2.0 ball: **209-602, 209-843, 209-782, 209-788, 209-789**  
ø1.5 / ø1.5 ball: **209-601, 209-657, 209-659, 209-784, 209-791, 209-793**

**R/S** Upper / Lower contact point  
R0.5 / ø1.5 ball: **209-606, 209-786**  
R0.4 / ø1.5 carbide ball: **209-662, 209-796**

**RK/K** Upper / Lower contact point  
ø1.5 / ø1.5 ball: **209-607, 209-785, 209-794**  
ø1.5 / ø1.5 carbide ball: **209-661**

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

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

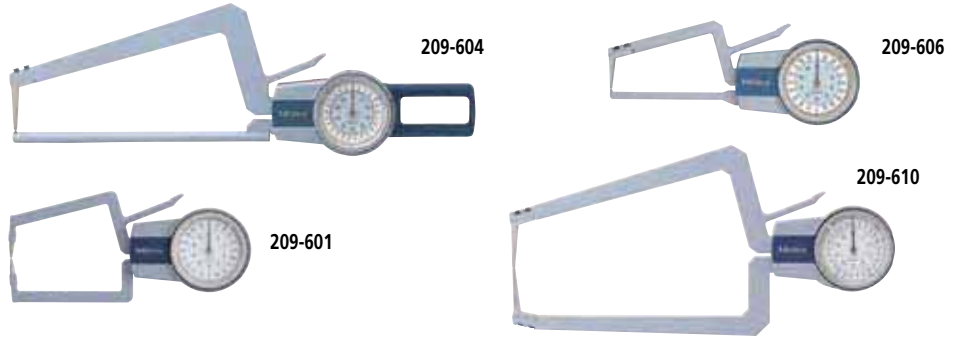
**T** Upper / Lower contact point  
**209-792, 209-658:**

**PR** Upper / Lower contact point  
ø2 / R0.5: **209-709, 209-603**

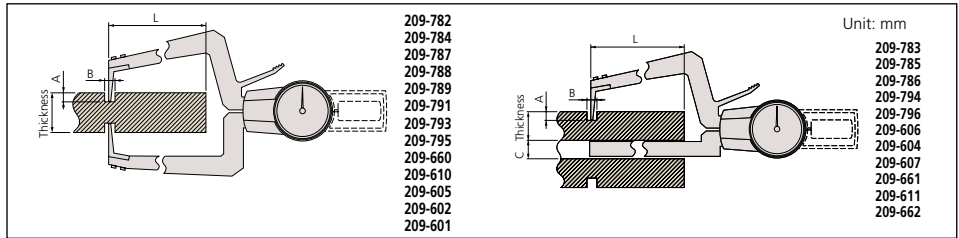
**PK** Upper / Lower contact point  
**209-789, 209-843:**

# Dial Caliper Gages

## SERIES 209 — External Measurement Type



## DIMENSIONS



## SPECIFICATIONS

### Inch

Measuring Range	Order No.	Graduation	Accuracy	Max. Measuring Depth L	Max. Groove Depth A	Min. Groove Width B	Measuring Contact	Weight lb. (g)
0-.2"	<b>209-791</b>	.0002"	±.0008"	1.07"	.31"	.09"	K/K	.26 (120)
0-.2"	<b>209-792</b>	.0002"	±.001"	1.07"	.33"	.04"	T	.26 (120)
0-.4"	<b>209-793</b>	.0005"	±.0008"	2.38"	.32"	.09"	K/K	.31 (140)
0-.4"	<b>209-794</b>	.0005"	±.0008"	2.38"	.35"	.09"	RK/K	.31 (140)
0-.4"	<b>209-795</b>	.0005"	±.001"	2.38"	.32"	.05"	S	.31 (140)
0-.4"	<b>209-796</b>	.0005"	±.0008"	2.38"	.35"	.05"	R/S	.31 (140)
0-.5"	<b>209-789</b>	.005"	±.005"	1.38"	—	—	PK	.09 (40)
0-.5"	<b>209-790</b>	.005"	±.005"	1.32"	—	—	PR	.09 (40)
0-1.0"	<b>209-784</b>	.0005"	±.002"	3.2"	.87"	.14"	K/K	.44 (320)
0-1.0"	<b>209-785</b>	.0005"	±.0015"	3.2"	.87"	.14"	RK/K	.44 (300)
0-1.0"	<b>209-786</b>	.0005"	±.0015"	3.2"	.87"	.14"	R/S	.44 (300)
0-1.0"	<b>209-787</b>	.0005"	±.002"	3.2"	.87"	.14"	S	.44 (320)
0-2.0"	<b>209-782</b>	.001"	±.002"	6.7"	1.26"	.18"	K/K	.64 (560)
0-2.0"	<b>209-783</b>	.001"	±.002"	6.7"	1.26"	.18"	R	.64 (520)
2.0-4.0"	<b>209-788</b>	.001"	±.003"	6.7"	1.26"	.18"	K/K	.68 (580)

### Metric

Measuring Range	Order No.	Graduation	Accuracy	Max. Measuring Depth	Max. Groove Depth	Min. Groove Width	Measuring Contact	Weight (g)
0-5mm	<b>209-657</b>	0.005mm	±0.015mm	26mm	7mm	3mm	K/K	120
0-5mm	<b>209-658</b>	0.005mm	±0.02mm	26mm	—	—	T	120
0-10mm	<b>209-660</b>	0.01mm	±0.02mm	59mm	5.0mm	3.0mm	S	140
0-10mm	<b>209-659</b>	0.01mm	±0.02mm	59mm	5.0mm	3.0mm	K/K	140
0-10mm	<b>209-662</b>	0.01mm	±0.02mm	59mm	4.8mm	2.0mm	R/S	140
0-10mm	<b>209-661</b>	0.01mm	±0.02mm	59mm	4.8mm	2.0mm	RK/K	140
0-20mm	<b>209-605</b>	0.01mm	±0.03mm	80mm	7mm	3.5mm	S	320
0-20mm	<b>209-601</b>	0.01mm	±0.03mm	80mm	7mm	3.5mm	K/K	320
0-20mm	<b>209-606</b>	0.01mm	±0.03mm	80mm	7mm	3.5mm	R/S	300
0-20mm	<b>209-607</b>	0.01mm	±0.03mm	80mm	7mm	3.5mm	RK/K	300
0-10mm	<b>209-843</b>	0.1mm	±0.1mm	36mm	—	—	PK	40
0-10mm	<b>209-603</b>	0.1mm	±0.1mm	33mm	—	—	PR	40
0-50mm	<b>209-602</b>	0.05mm	±0.05mm	170mm	10mm	4.5mm	K/K	560
0-50mm	<b>209-604</b>	0.05mm	±0.05mm	170mm	10mm	4.5mm	R	520
0-50mm	<b>209-610</b>	0.05mm	±0.05mm	170mm	10mm	4.5mm	R	560
0-50mm	<b>209-611</b>	0.05mm	±0.05mm	170mm	10mm	4.5mm	S/R	525



# Dial Caliper Gages

## SERIES 209 — Internal Measurement Type

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

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



209-122



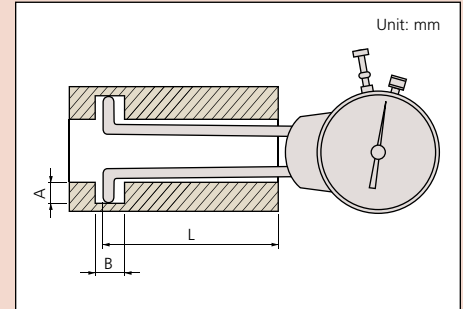
209-152

### SPECIFICATIONS

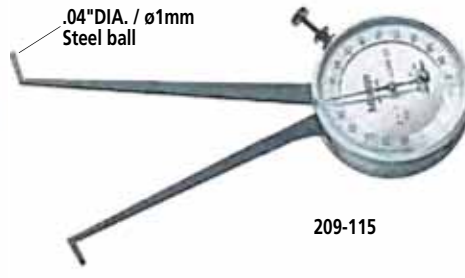
#### Metric

Range	Order No.	Graduation	Dial face	Accuracy	Measuring force	Dimension [L / A (max) / B (min)]		
6 - 18mm	209-122	0.01mm	0-100-100	±40µm	1.2N or less	40mm	1.0mm	2.5mm
10 - 22mm	209-123	0.01mm	0-100-100	±40µm	1.2N or less	40mm	2.0mm	2.5mm
20 - 32mm	209-124	0.01mm	0-100-100	±40µm	1.2N or less	40mm	4.2mm	2.5mm
5 - 15mm	209-152	0.01mm	0-100	±25µm	1.2N or less	30mm	2.0mm	0.7mm
10 - 20mm	209-153	0.01mm	0-100	±25µm	1.2N or less	30mm	5.0mm	0.7mm
10 - 30mm	209-171	0.01mm	0-100-100	±25µm	1.2N or less	65mm	5.2mm	0.7mm
20 - 40mm	209-172	0.01mm	0-100-100	±25µm	1.2N or less	65mm	9.5mm	0.7mm

### DIMENSIONS



209-101



209-115

#### Metric

Order No.	Range	Graduation	Accuracy
209-101	10-35mm	0.025mm	±0.04mm
209-103	30-55mm	0.025mm	±0.04mm
209-105	50-75mm	0.025mm	±0.04mm

#### Inch

Order No.	Range	Graduation	Accuracy
209-111	.4"-1.4"	.001"	±.002"
209-113	1.2"-2.2"	.001"	±.002"
209-115	2.0"-3.0"	.001"	±.002"

### Technical Data

Dial Diameter: 2" / 51mm

### DIMENSIONS

Range	A	B	C	D
10 - 35mm / .4 - 1.4"	4.8mm	2.3mm	4.8mm	2.3mm
30 - 55mm / 1.2 - 2.2"	6.8mm	4.3mm	17.0mm	14.5mm
50 - 75mm / 2.0 - 3.0"	10.0mm	7.6mm	11.5mm	9.8mm

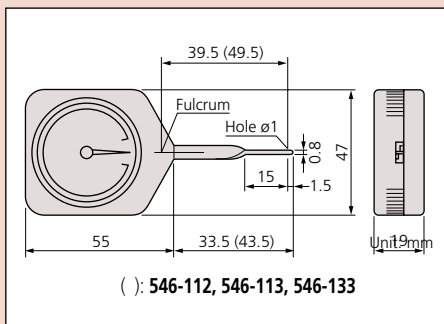
Contact Point Dimensions

## Application

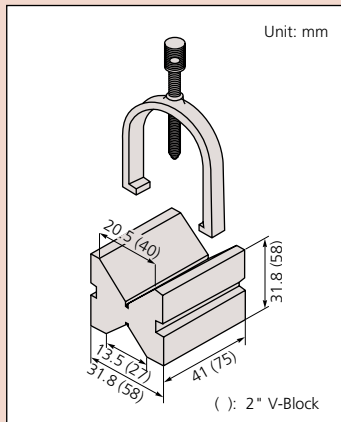
Measuring contact force of relay



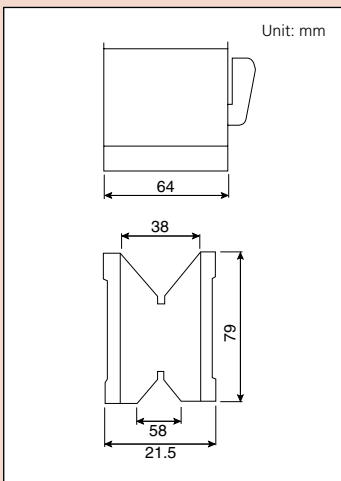
## DIMENSIONS



## DIMENSIONS



## DIMENSIONS



# Dial Tension Gages

## SERIES 546

### FEATURES

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



### SPECIFICATIONS

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

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

# V-Block Sets

## SERIES 181

### FEATURES

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



### SPECIFICATIONS

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

Inch		
Max. workpiece dia.	Order No.	Remarks
1"	181-901	With clamp
2"	181-902	With clamp

# Magnetic V-Block

## SERIES 181

### SPECIFICATIONS

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



# Bench Gages

**SERIES 547, 7**

## FEATURES

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



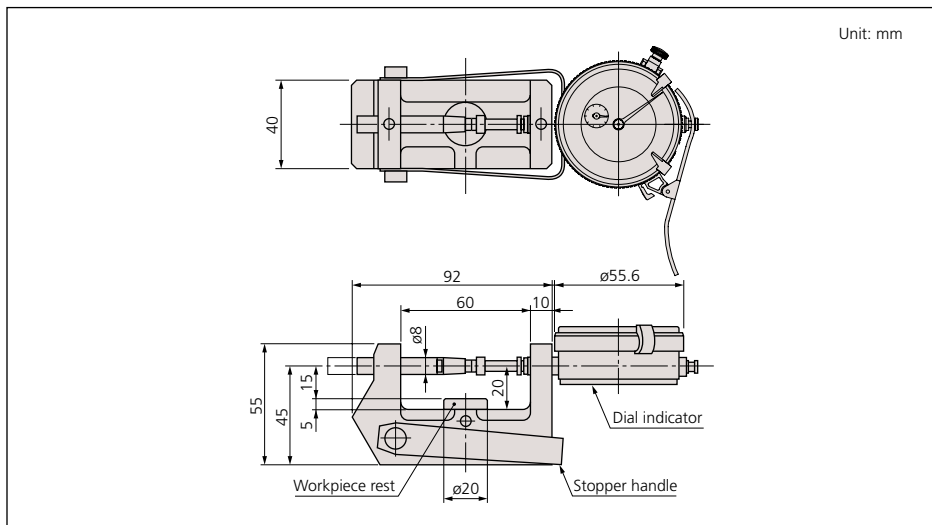
## SPECIFICATIONS

Metric		Digital Type				
Range	Order No.	Resolution	Workpiece height	Accuracy	Measuring force	Remarks (contact point)
12mm	<b>547-064</b>	0.01mm	13mm	$\pm 0.02\text{mm}$	1.5N or less	$\varnothing 6.3\text{mm}$ flat type

Inch/Metric		Digital Type				
Range	Order No.	Resolution	Workpiece height	Accuracy	Measuring force	Remarks (contact point)
.5"	<b>547-066</b>	.0005"/0.01mm	1"	$\pm .001"$	1.5N or less	.248" DIA flat type

Metric		Dial Type				
Range	Order No.	Graduation	Workpiece height	Accuracy	Measuring force	Remarks (contact point)
10mm	<b>7060</b>	0.01mm	20mm	$\pm 0.02\text{mm}$	1.4N or less	$\varnothing 6.3\text{mm}$ flat type

## DIMENSIONS



**SPC**

**ABSOLUTE**  
Absolute System Patented by MITUTOYO



Digital indicator used

## Technical Data of Digital Models

Accuracy: Refer to the list of specifications (excluding quantizing error)  
 Resolution: 0.01mm or .0005"/0.01mm  
 Display: LCD  
 Length standard: ABSOLUTE electrostatic capacitance type linear encoder  
 Max. response speed: Unlimited  
 Contact point:  $\varnothing 6.3\text{mm}$  flat type  
 Measuring force: Refer to the list of specifications  
 Battery: SR44 (1 pc.), **938882**  
 Battery life: Approx. 5,000 hours under normal use

## Function of Digital Models

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

## Optional Accessories

**905338:** SPC cable (1m) for digital models  
**905409:** SPC cable (2m) for digital models



### Technical Data of Digital Models

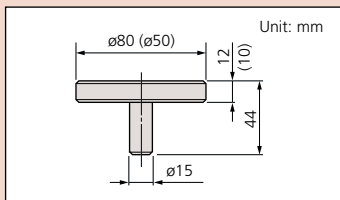
Accuracy: Refer to the list of specifications (excluding quantizing error)  
 Resolution: 0.01mm, 0.001mm, .0005"/0.01mm or .00005"/0.001mm  
 Display: LCD  
 Length standard: ABSOLUTE electrostatic capacitance type linear encoder  
 Max. response speed: Unlimited  
 Contact point: ø3mm carbide flat type (7051: ø6mm flat type)  
 Measuring force: Refer to the list of specifications  
 Battery: SR44 (1 pc.), 938882  
 Battery life: Approx. 5,000 hours under normal use

### Function of Digital Models

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

### Optional Accessories

905338: SPC cable (40" / 1m) for digital models  
 905409: SPC cable (80" / 2m) for digital models  
 902190: ø80mm large diameter anvil  
 903526: ø50mm ceramic anvil



# Upright Gages

## SERIES 547, 7

### FEATURES

- The Digimatic Upright Gage offers multiple functions including GO/±NG judgment, and SPC data output.
- Compact and inexpensive gaging unit that consists of a dial indicator and a stand.
- Suitable for inspecting small parts on the shop floor.
- Anvil size: 40mm or 50mm in diameter.



### SPECIFICATIONS

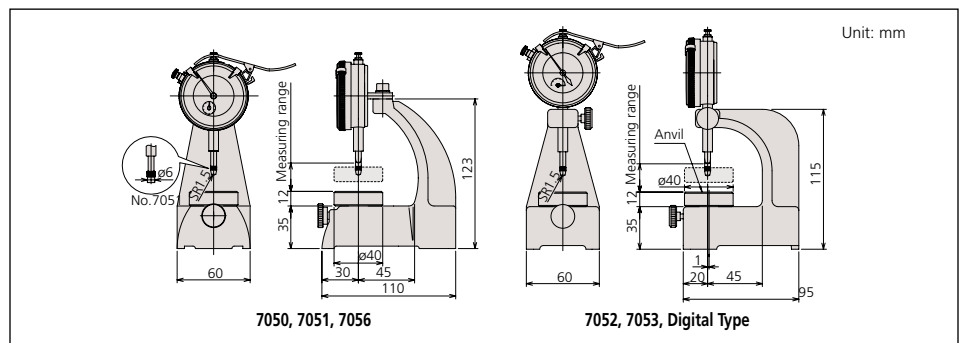
Metric		Digital Type				
Range	Order No.	Resolution	Workpiece height	Accuracy	Measuring force	Remarks (type of anvil)
12mm	547-054	0.01mm	30mm	±0.02m	1.5N or less	ø40mm steel type
12mm	547-053	0.001mm	30mm	±3µm	1.5N or less	ø50mm ceramic type
12mm	547-055	0.001mm	30mm	±3µm	1.5N or less	ø40mm steel type

Inch/Metric		Digital Type				
Range	Order No.	Resolution	Workpiece height	Accuracy	Measuring force	Remarks (type of anvil)
.5"	547-034	.0005"/0.01mm	1.2"	±.001"	1.5N or less	1.57" DIA steel type
.5"	547-033	.00005"/0.001mm	1.2"	±.00015"	1.5N or less	1.97" DIA ceramic type
.5"	547-035	.00005"/0.001mm	1.2"	±.00015"	1.5N or less	1.57" DIA steel type

Metric		Dial Type				
Range	Order No.	Graduation	Workpiece height	Accuracy	Measuring force	Remarks (type of anvil)
10mm	7050	0.01mm	20mm	±0.02m	1.4N or less	ø40mm steel type
10mm	7051	0.01mm	20mm	±0.02m	1.4N or less	ø40mm steel type
10mm	7052	0.01mm	35mm	±0.02m	1.4N or less	ø40mm steel type
1mm	7053	0.001mm	30mm	±3µm	1.5N or less	ø40mm steel type

Inch		Dial Type				
Range	Order No.	Graduation	Workpiece height	Accuracy	Measuring force	Remarks (type of anvil)
1"	7056	.001"	1"	±.002"	1.4N or less	1.57" DIA steel type

### DIMENSIONS

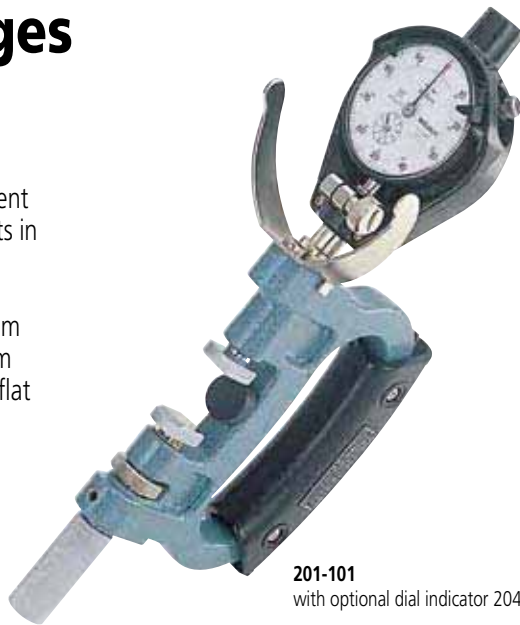


# Dial Snap Gages

## SERIES 201

### FEATURES

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



**201-101**  
with optional dial indicator 2046SB.

### SPECIFICATIONS

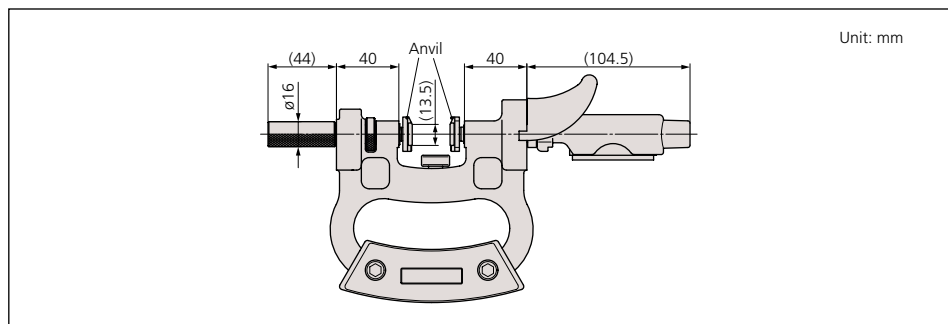
**Metric** Gage stem diameter 8mm

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

**Inch** Gage stem diameter 3/8"

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

### DIMENSIONS



### Technical Data

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



# Snap Gages

## SERIES 201

### Optional Accessories

- Must select measuring indicator
- Stand Order No. **64AAA200**
- SPC output connecting cable  
Order No. **905338** (40"/1m)  
**905409** (80"/2m)

### FEATURES

These versatile, spring-loaded gages can perform a wide variety of precision measuring jobs with speed and efficiency. They can be equipped with many different dial or Digimatic indicators.

Additionally, when Digimatic indicators are used, data output is available for SPC analysis.



**201-806**  
with IDC (643-252B)



**201-803**

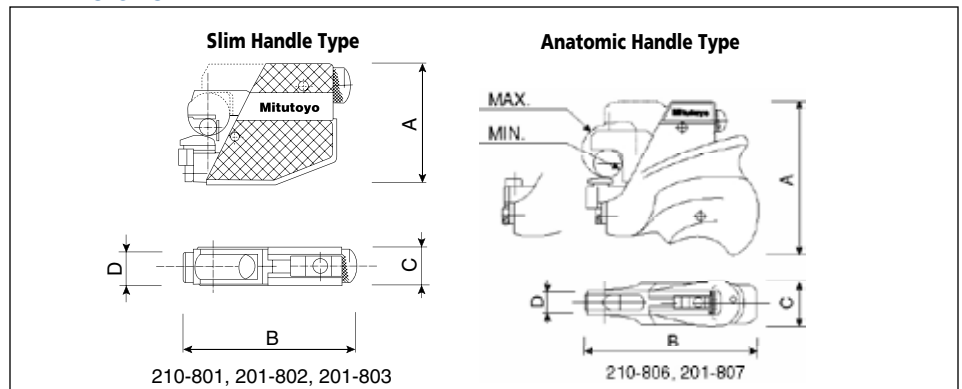


**201-807**  
with Dial Indicator (2803B-10)

### SPECIFICATIONS

Order No.	201-801	201-802	201-803	201-806	201-807
Retooling Range	.12-.20" / 3-5mm	.20-.39" / 5-10mm	.39-.98" / 10-25mm	.98-1.97" / 25-50mm	1.97-3.94" / 50-100mm
Contact Measuring Range		±.0118" / 0.3mm		±.0157" / 0.4mm	±.0197" / 0.5mm
Mechanical Repeatability (s x 2.77)		≤ .00004" / ≤ 0.001mm			
Force of the pushing Device		5-8N			
Mass (without Measuring Instrument)		.750-.926 lb 0.34-.0.42 kg		1.410-1.929 lb 0.64-0.88 kg	1.874-2.392 lb 0.85-1.09 kg
Flatness of Reference Anvil		.0004"/0.01mm			
Fixing Diameter of Measuring Instrument		3/8"			
Dimensions	A	2.83" (72mm)		5.55" (141mm)	6.89" (175mm)
	B	4.02" (102mm)		6.22" (158mm)	7.83" (199mm)
	C	.87" (22mm)		1.57" (40mm)	
	D	.79" (20mm)			

### DIMENSIONS

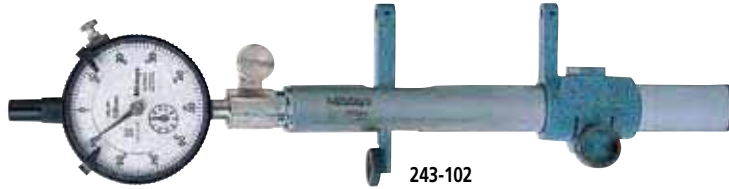


# Female Screw Thread Comparators

## SERIES 243

### FEATURES

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

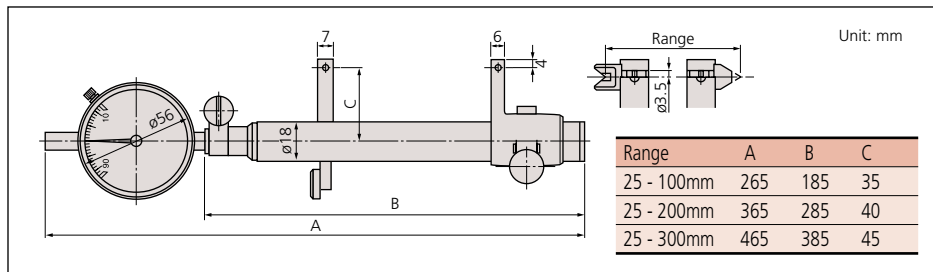


**243-102**  
(including dial indicator)

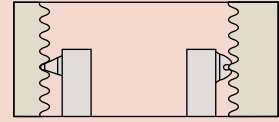
### SPECIFICATIONS

Metric				
Range	Order No.	Graduation	Probe depth	Measuring force
25 - 100mm	<b>243-101</b>	0.01mm	20mm	7N±1N
25 - 200mm	<b>243-102</b>	0.01mm	25mm	7N±1N
25 - 300mm	<b>243-103</b>	0.01mm	30mm	7N±1N

### DIMENSIONS



### Application



### Optional Accessories

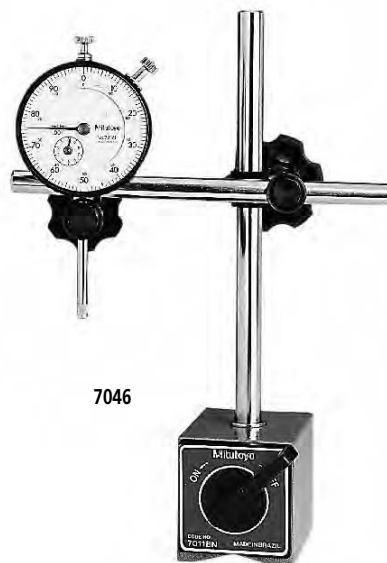
- 243-800:** Interchangeable inserts set for Metric and Unified screws  
 0.4 - 0.5mm / 64 - 48TPI (**243-801**)  
 0.6 - 0.9mm / 44 - 28TPI (**243-802**)  
 1 - 1.75mm / 24 - 14TPI (**243-803**)  
 2 - 3mm / 13 - 9TPI (**243-804**)  
 3.5 - 5mm / 8 - 5TPI (**243-805**)  
 5.5 - 7mm / 4.5 - 3.5TPI (**243-806**)
- 243-810:** Interchangeable inserts set for Whitworth screws  
 60 - 48TPI (**243-811**)  
 48 - 40TPI (**243-812**)  
 40 - 32TPI (**243-813**)  
 32 - 24TPI (**243-814**)  
 24 - 18TPI (**243-815**)  
 18 - 14TPI (**243-816**)  
 14 - 10TPI (**243-817**)  
 10 - 7TPI (**243-818**)  
 7 - 4.5TPI (**243-819**)  
 4.5 - 3.5TPI (**243-820**)

# Dial Indicator & Magnetic Stand Sets

## SERIES 7045, 7046

### SPECIFICATIONS

Order No.	Included in set
<b>7045</b>	<b>7010S, 2804S-10</b> (Graduation: .0001", Range: .05")
<b>7046</b>	<b>7010S, 2416S</b> (Graduation: .001", Range: 1")

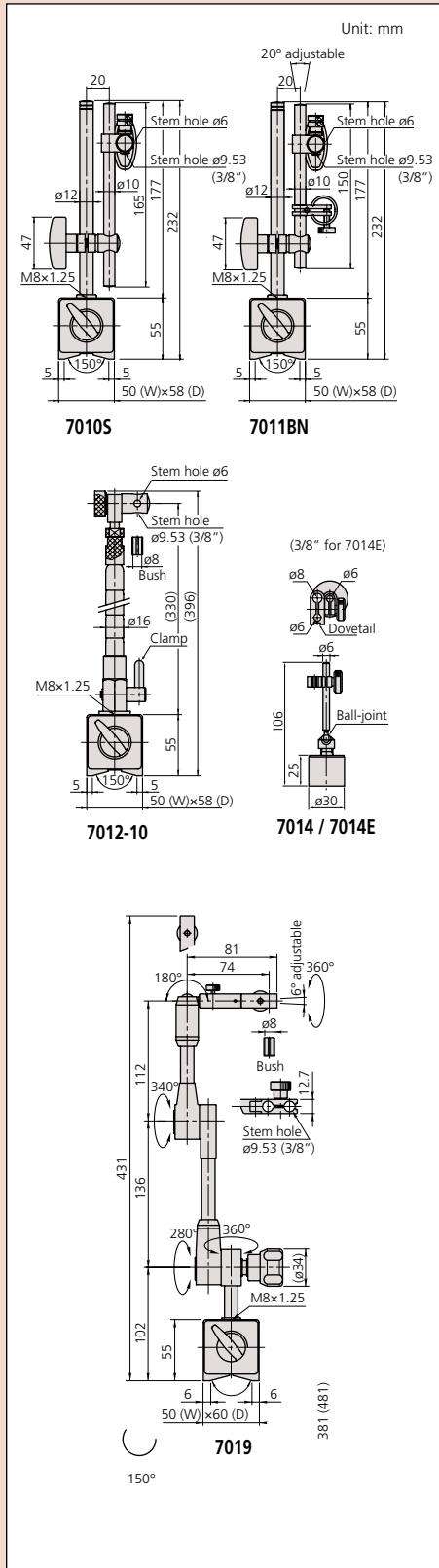


**7046**

# Magnetic Stands

## SERIES 7

### DIMENSIONS



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



### SPECIFICATIONS

Order No.	Description	Applicable holding stem dia.	Dovetail groove	Remarks
7010S	Magnetic stand	ø6mm, ø8mm*, ø9.53mm (3/8")	—	—
7011BN	Magnetic stand	ø6mm, ø8mm*, ø9.53mm (3/8")	—	With fine adjustment
7012-10	Magnetic flexi-stand	ø6mm, ø8mm*, ø9.53mm (3/8")	—	For dial test indicator
7014	Mini magnetic stand	ø6mm, ø8mm	Provided	Without magnet ON/OFF
7014E	Mini magnetic stand	ø6mm, ø8mm*, ø9.53mm (3/8")	Provided	Without magnet ON/OFF
7019	Universal magnetic stand	ø8mm*, ø9.53mm (3/8")	Provided	With hydraulic position lock

\*Supplied with collar 02AZC291

# Dial Gage Stands

## SERIES 7

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

### FEATURES

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



**7003**  
with ø58mm serrated anvil

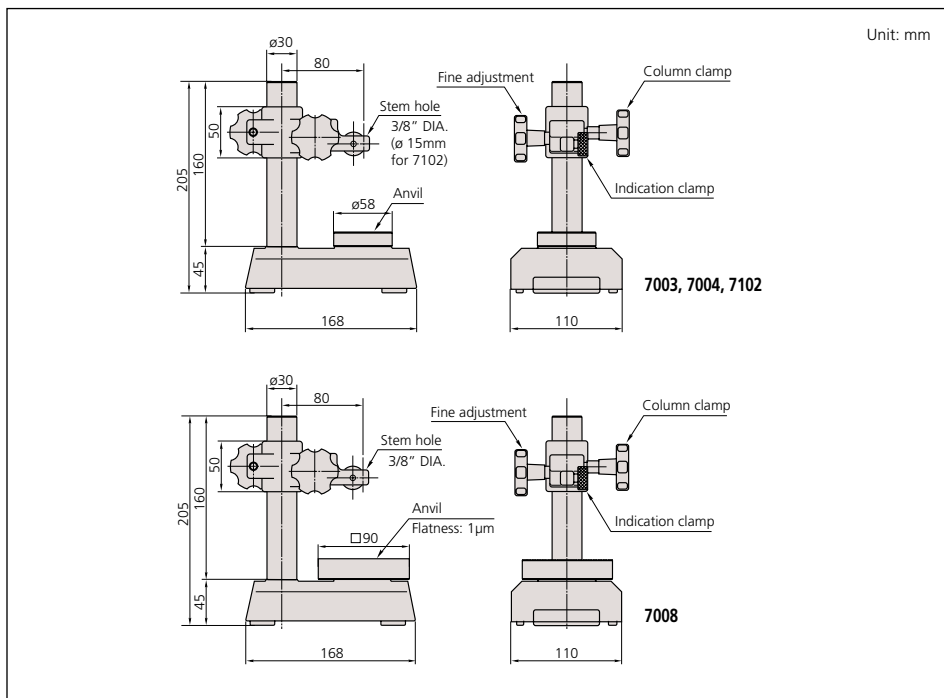
**7004**  
with ø58mm flat anvil

**7008**  
90mm square anvil

### SPECIFICATIONS

Inch			
Order No.	Stem hole	Remarks	Mass (kg)
7003	3/8" DIA	with serrated anvil (101462)	3.95
7004	3/8" DIA	with flat anvil (101461)	3.95
7008	3/8" DIA	with square anvil (58AAA119)	3.95
7102	.591" DIA / ø15mm	with flat anvil (101461)	6.0

### DIMENSIONS



### Optional Accessories

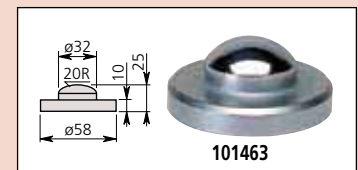
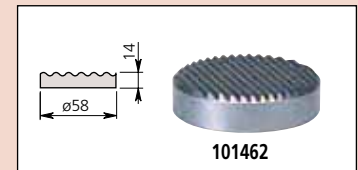
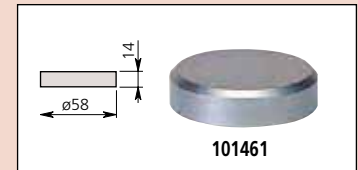
**02AZC291:** Stem Collar OP 3/8", IP 8mm  
(For 7003, 7004, 7012)

**101462:** Hardened steel serrated anvil (flatness: 1µm)

**101463:** Hardened steel domed anvil

**101461:** Hardened steel flat anvil (flatness: 1µm)

**073146:** Hardened Steel Flat Anvil. (For 7008)



# Transfer Stand

## SERIES 519

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

### FEATURES

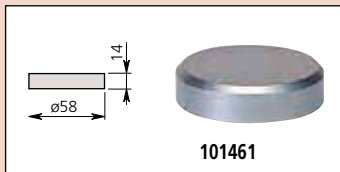
- Vertical travel of the gage holder — Dial Gage Stand: 100mm, Transfer Stand: 335mm
- Fine-adjustment of 1mm available for zero-setting of the indicator.
- With an interchangeable anvil. Domed anvil (**101463**) and Flat anvil (**101461**) are optional.



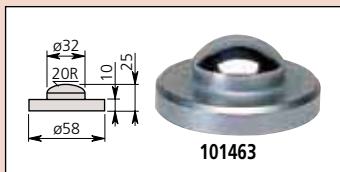
519-109E

### Optional Accessories

- 101461:** Hardened steel flat anvil (flatness: 1μm)  
**101463:** Hardened steel domed anvil  
**390070:** Dovetail attachment used with test indicators  
**58ZAA016:** Fine feed bracket assembly (standard)



101461



101463

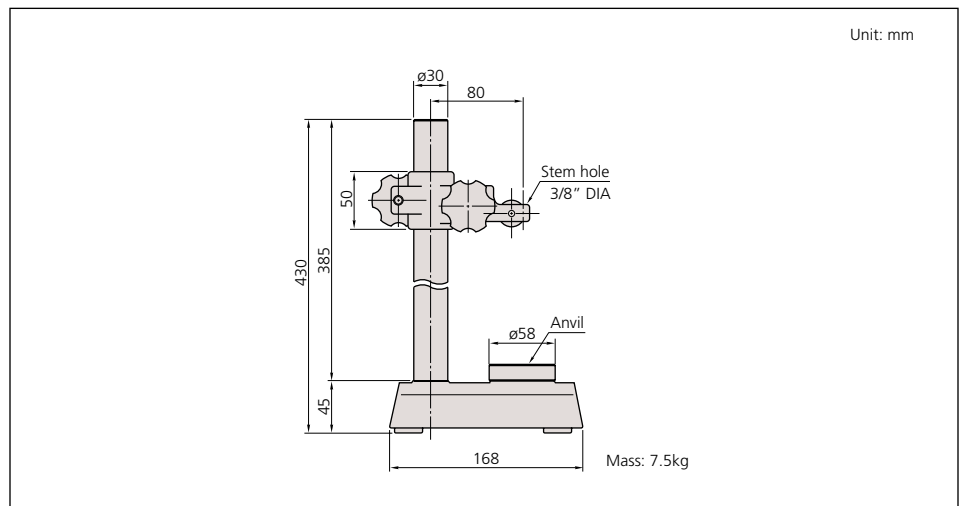


390070

### SPECIFICATIONS

Order No.	Stem hole	Remarks
519-109E	3/8" DIA	with serrated anvil (101462)

### DIMENSIONS AND MASS



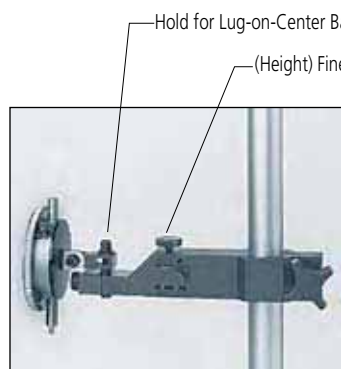


# Precision Granite Stands (with black granite bases)

## SERIES 517

Mitutoyo's Granite Comparator Stands are basic building-blocks for the assembly of special-purpose, precision measuring equipment. By mounting precision measuring in-

struments such as Digimatic indicators, Mu-Checker Cartridge Heads, and Linear Gages onto the stands, it is possible to satisfy all manner of measuring assignment. The rigid granite base is free from burrs, pileups, rust, and deterioration over time.



**517-895**  
(stand only)

**517-898**  
(stand only)

## SPECIFICATIONS

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

## Optional Accessories

**58AAA151:** ø8mm bush\*

**58AAA273:** ø9.53mm (3/8") bush\*

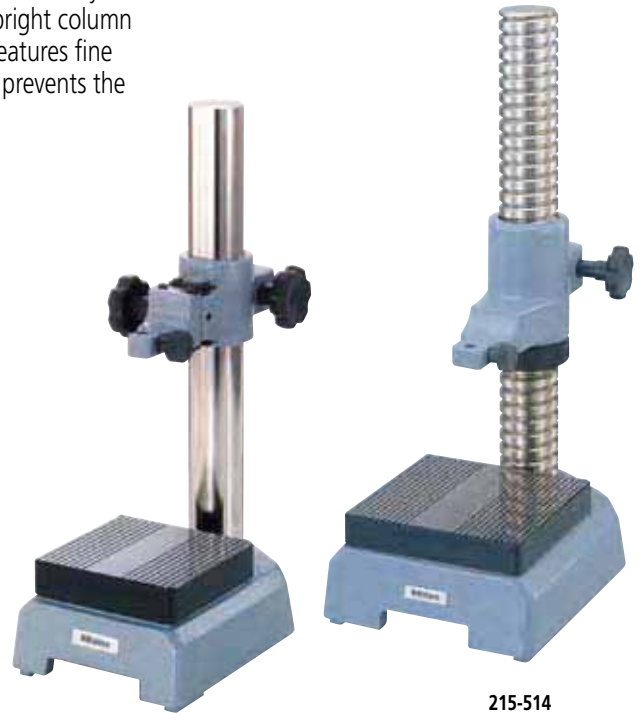
**58AAA276:** ø15mm bush\*

\*Only available for 215-156.

# Comparator Stands

## SERIES 215

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



215-407

215-514

### SPECIFICATIONS

Order No.	Square anvil size (W x D)	Column travel	Stem hole	Mass (kg)	Remarks
215-407	110 x 110mm	200mm / 8"	.375"	10.9	With fine adjustment of 1mm range
215-514	150 x 150mm	250mm / 10"	.375"	22.5	With fine adjustment over the entire travel
215-515	150 x 150mm	250mm / 10"	.375" / .787"	23.0	With fine adjustment over the entire travel

### Optional Accessories

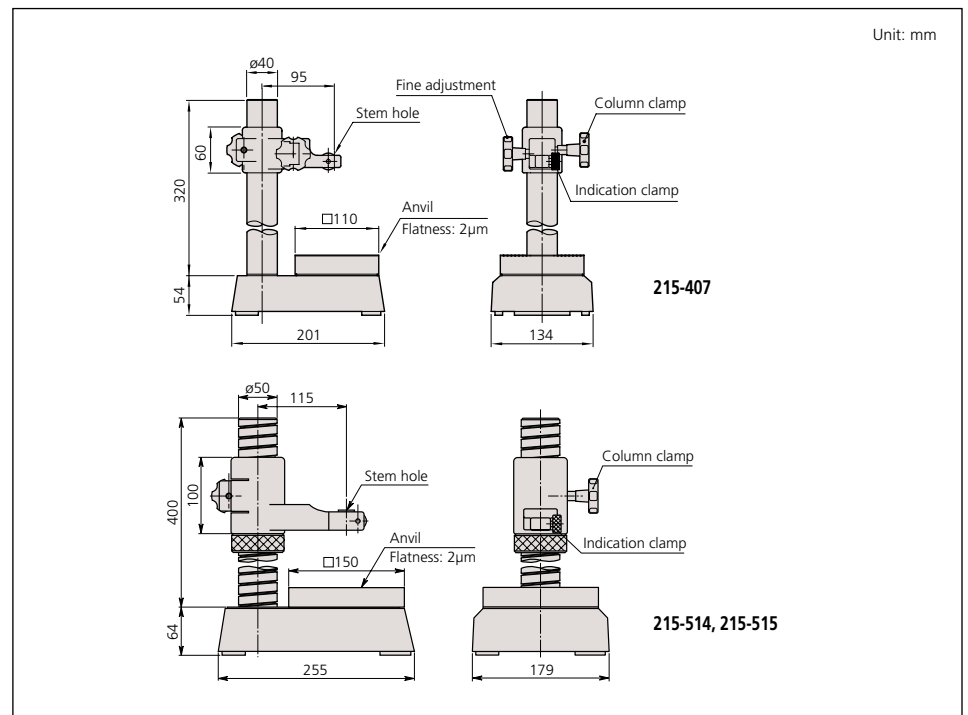
58AAA151:  $\varnothing 8$ mm bush\*

58AAA273:  $\varnothing 9.53$ mm (3/8") bush\*

58AAA276:  $\varnothing 15$ mm bush\*

\*Only available for 215-515.

### DIMENSIONS



# Heavy Duty Comparator Stand

## SERIES 215

The Heavy Duty Comparator Stand has rigid construction and fine adjustments, which makes the stand suitable as a gaging stand for dial indicators, Linear Gages, and probes of Mu-Checkers.

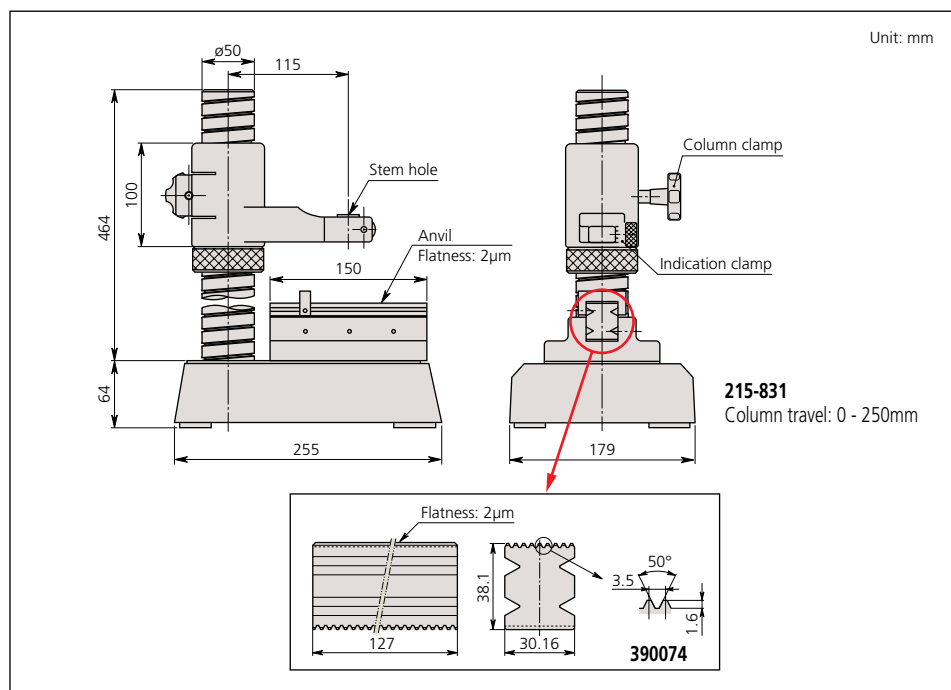


215-831

## SPECIFICATIONS

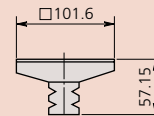
Order No.	Base size (W x D x H)	Column travel	Stem DIA.	Remarks
215-831	255 x 179 x 64mm	250mm	3/8"	With fine adjustment over the entire travel

## DIMENSIONS



## Optional Accessories

- 990015: 101.6 x 101.6mm large square anvil
- 390070: Dovetail attachment
- 390074: Serrated anvil



990015