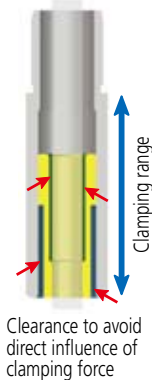


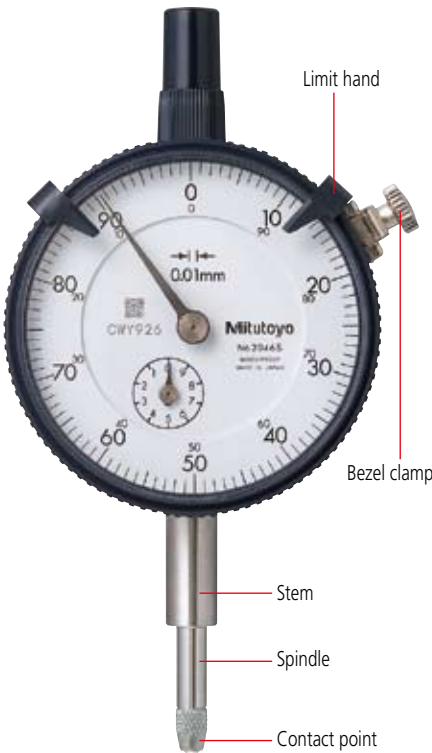
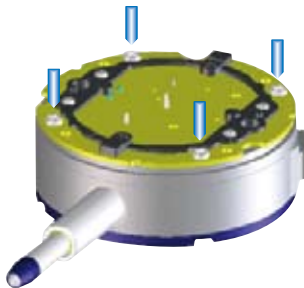
Dial Indicators

FEATURES: S Series (Series 2, 3, 4)

- Revolutionary stem-bush design for trouble-free stem clamping (longer clamping range; maximum clamp torque at the clamping point with M5 screw: 150N-cm)
- 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 retrace error (20%) and 4-screw mounting for increased impact resistance.



Feature icons

Icon	Feature 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 (IP63)
	Waterproof type (IP64)
	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

*Mitutoyo produces ASME-compatible products. Contact us for details.

Dial Indicator

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



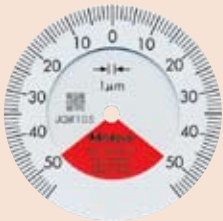
(Refer to page IX for details.)



One revolution type



1929S
1929S-60
1929S-62



1900S-10
1900S-70
1900S-72



1929S

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



Double scale spacing type



Jeweled bearing type



Shockproof type



Dustproof type



Waterproof type

FEATURES

Metric

Order No.	w/ lug	Flat-back						—
1929S	1929SB	—	—	—	—	—	—	—
1929S-60	1929SB-60	—	—	—	—	—	—	—
1929S-62	1929SB-62	—	—	—	—	—	—	—
1900S-10	1900SB-10	—	—	—	—	—	—	—
1900S-70	1900SB-70	—	—	—	—	—	—	—
1900S-72	1900SB-72	—	—	—	—	—	—	—

Inch

Order No.	w/ lug	Flat-back						—
1909S-62	1909SB-62	—	—	—	—	—	—	—
1910S-72	1910SB-72	—	—	—	—	—	—	—

Optional Accessories

- : Backs (See page F-40.)
- : Contact points (See page F-36.)

SPECIFICATIONS

Metric

ISO/JIS type

Graduation	Order No.		Range (range/rev)	Accuracy				Repeatability	Dial reading	Measuring force
	w/ lug	Flat-back		Overall	Retrace	1/10 Rev	1 Rev			
0.01mm	1929S	1929SB	1mm / 1.4mm	±11μm	6μm	7μm	—	5μm	50-0-50	1.4N or less
0.01mm	1929S-60	1929SB-60	1mm / 1.4mm	±11μm	6μm	7μm	—	5μm	50-0-50	2.0N or less
0.01mm	1929S-62	1929SB-62	1mm / 1.4mm	±11μm	6μm	7μm	—	5μm	50-0-50	1.4N or less
0.001mm	1900S-10	1900SB-10	0.1mm / 0.14mm	±6μm	4μm	5μm	—	1μm	50-0-50	1.5N or less
0.001mm	1900S-70	1900SB-70	0.1mm / 0.14mm	±6μm	4μm	5μm	—	1μm	50-0-50	2.0N or less
0.001mm	1900S-72	1900SB-72	0.1mm / 0.14mm	±6μm	4μm	5μm	—	1μm	50-0-50	1.5N or less

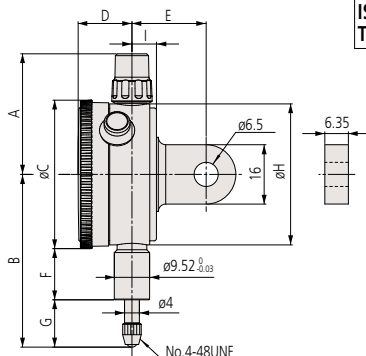
Inch

ANSI/AGD type

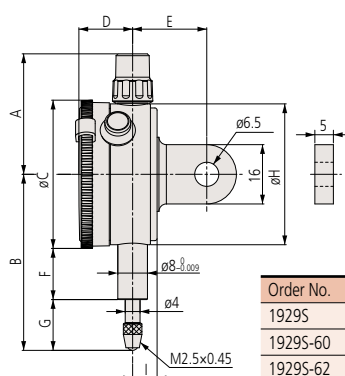
Graduation	Order No.		Range (range/rev)	Accuracy		Repeatability	Dial reading	Measuring force
	w/ lug	Flat-back		First 1 Rev / 2.5 Rev / 10 Rev	Retrace			
.0005"	1909S-62	1909SB-62	.04" / .056"	±.0005" / — / —	.00016"	±.0001"	20-0-20	1.4N or less
.0001"	1910S-72	1910SB-72	.006" / .008"	±.0001" / — / —	.0001"	±.00003"	3-0-3	1.5N or less

DIMENSIONS

ANSI/AGD Type



ISO/JIS Type



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

Order No.	A	B	C	D	E	F	G	H	I
1909S-62	32.5	41.7	40	14.5	19	12.8	8.9	38	6.6
1910S-72	32.5	40.8	40	14.5	19	12.8	8	38	6.6

Order No.	A	B	C	D	E	F	G	H	I
1929S	32.5	47.5	40	14.5	20	13.8	13.7	38	6.6
1929S-60	32.5	55.5	40	14.5	20	12.2	23.3	38	6.6
1929S-62	32.5	47.5	40	14.5	20	13.8	13.7	38	6.6
1900S-10	32.5	53.5	40	14.5	20	16.8	16.7	38	6.6
1900S-70	32.5	54.5	40	14.5	20	12.2	22.3	38	6.6
1900S-72	32.5	53.5	40	14.5	20	16.8	16.7	38	6.6

Unit: mm

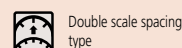
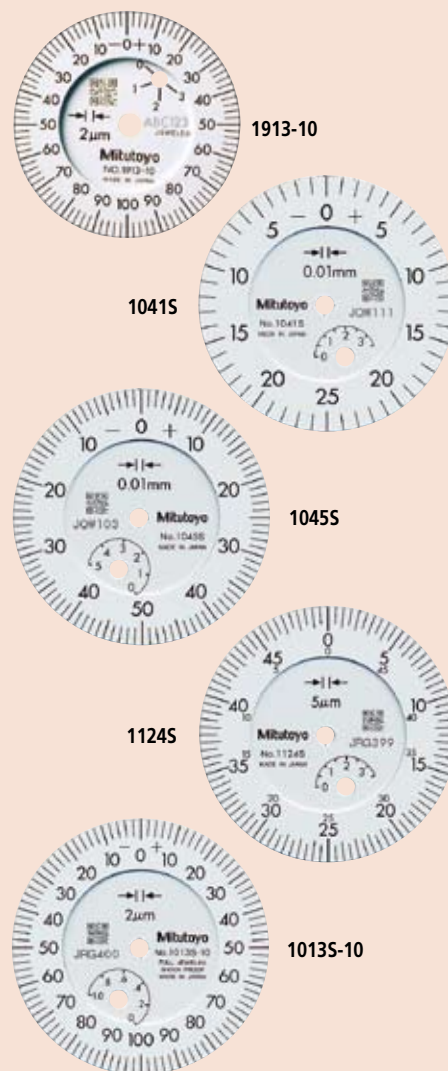
Dial Indicator

SERIES 1 — Compact Type

Mitutoyo's Series 1 dial indicators offer accuracy and durability for shop applications demanding highly accurate measurements where space is limited. The spindle is made of hardened stainless steel for durability, while the rack gear is machine ground for a tighter fit and increased accuracy.



(Refer to page IX for details.)



Double scale spacing type



Jeweled bearing type



Shockproof type



Dustproof type



Waterproof type

SPECIFICATIONS

Metric		ISO/JIS type									
Graduation	Order No.		Range (range/rev)	Accuracy				Repeat- ability	Dial reading	Measuring force	
	w/ lug	Flat-back		Overall	Retrace	1/10 Rev	1 Rev				
0.01mm	1911	1911B	2.5mm (1mm)	±12μm	6μm	7μm	±10μm	5μm	0-50-0	1.8N or less	
0.002mm	1913-10	1913B-10	0.5mm (0.2mm)	±8μm	5μm	6μm	±7μm	2μm	0-100-0	1.8N or less	
0.01mm	1003	1003B	4mm (1mm)	±13μm	6μm	8μm	±11μm	5μm	0-50-0	1.4N or less	
0.01mm	1044S	1044SB	5mm (1mm)	±13μm	6μm	8μm	±11μm	5μm	0-100	1.4N or less	
0.01mm	1045S	1045SB	5mm (1mm)	±13μm	6μm	8μm	±11μm	5μm	0-50-0	1.4N or less	
0.01mm	1044S-15	1044SB-15	5mm (1mm)	±13μm	6μm	8μm	±11μm	5μm	0-100	0.4N or less*	
0.01mm	1044S-60	1044SB-60	5mm (1mm)	±13μm	6μm	8μm	±11μm	5μm	0-100	2.0N or less	
0.01mm	1040S	1040SB	3.5mm (0.5mm)	±13μm	6μm	8μm	±11μm	5μm	0-50	1.4N or less	
0.01mm	1041S	1041SB	3.5mm (0.5mm)	±13μm	6μm	8μm	±11μm	5μm	0-25-0	1.4N or less	
0.005mm	1124S	1124SB	3.5mm (0.5mm)	±13μm	6μm	8μm	±11μm	5μm	0-50	1.4N or less	
0.001mm	1109S-10	1109SB-10	1mm (0.2mm)	±7μm	5μm	5μm	±6μm	1μm	0-100-0	1.5N or less	
0.002mm	1013S-10	1013SB-10	1mm (0.2mm)	±10μm	5μm	7μm	±8μm	1μm	0-100-0	1.5N or less	

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

FEATURES

Metric		ISO/JIS type						
Order No.	w/ lug	Flat-back	Double scale spacing type	Jeweled bearing type	Shockproof type	Dustproof type	Waterproof type	—
1911	1911B	—	—	—	—	—	—	—
1913-10	1913B-10	—	✓	—	—	—	—	—
1003	1003B	—	—	—	—	—	—	—
1044S	1044SB	—	—	—	—	—	—	—
1045S	1045SB	—	—	—	—	—	—	—
1044S-15	1044SB-15	—	✓	—	—	—	—	—
1044S-60	1044SB-60	—	—	✓	—	—	—	—
1040S	1040SB	✓	—	—	—	—	—	—
1041S	1041SB	✓	—	—	—	—	—	—
1124S	1124SB	—	✓	—	—	—	—	—
1109S-10	1109SB-10	—	✓	—	—	—	—	—
1013S-10	1013SB-10	—	✓	—	—	—	—	—

Double scale spacing
type

Jeweled bearing type



Waterproof type



Schockproof type



Dustproof type

FEATURES

Inch

Order No.	w/ lug	Flat-back					
1921	1921B	—	—	—	—	—	—
1923	1923B	—	✓	—	—	—	—
1927-10	1927B-10	—	✓	—	—	—	—
1925-10	1925B-10	—	✓	—	—	—	—
1410S	1410SB	—	—	—	—	—	—
1411S	1411SB	—	—	—	—	—	—
1410S-10	1410SB-10	—	✓	—	—	—	—
1780S	1780SB	—	—	—	—	—	—
1781S	1781SB	—	—	—	—	—	—
1506S	1506SB	—	—	—	—	—	—
1507S	1507SB	—	—	—	—	—	—
1670S	1670SB	—	—	—	—	—	—
1671S	1671SB	—	—	—	—	—	—
1570S	1570SB	—	✓	—	—	—	—
1571S	1571SB	—	✓	—	—	—	—
1470S	1470SB	—	—	—	—	—	—
1471S	1471SB	—	—	—	—	—	—
1802S-10	1802SB-10	—	✓	—	—	—	—
1803S-10	1803SB-10	—	✓	—	—	—	—

SPECIFICATIONS

Inch

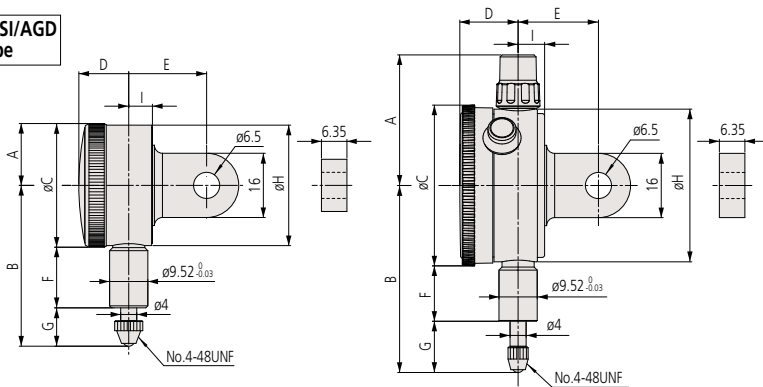
ANSI/AGD type

Graduation	Order No.		Range (range/rev)	Accuracy		Repeat- ability	Dial reading	Measuring force
	w/ lug	Flat-back		First 1 Rev / 2.5 Rev / 10 Rev	Retrace			
.001"	1921	1921B	.1" (.04")	±.001" / ±.001" / —	.0002"	±.0002"	0-20-0	1.8N or less
.0005"	1923	1923B	.05" (.02")	±.0005" / ±.005" / —	.0016"	±.0001"	0-10-0	1.8N or less
.0001"	1927-10	1927B-10	.01" (.004")	±.0002" / ±.0002" / —	.0001"	±.00003"	0-2-0	1.8N or less
.0001"	1925-10	1925B-10	.025" (.01")	±.0002" / ±.0002" / —	.0001"	±.00003"	0-5-0	1.8N or less
.001"	1410S	1410SB	.25" (.1")	±.001" / ±.001" / —	.0002"	±.0002"	0-100	1.4N or less
.001"	1411S	1411SB	.25" (.1")	±.001" / ±.001" / —	.0002"	±.0002"	0-50-0	1.4N or less
.001"	1410S-10	1410SB-10	.25" (.1")	±.001" / ±.001" / —	.0002"	±.0002"	0-100	1.4N or less
.001"	1780S	1780SB	.125" (.05")	±.001" / ±.001" / —	.0002"	±.0002"	0-50	1.4N or less
.001"	1781S	1781SB	.125" (.05")	±.001" / ±.001" / —	.0002"	±.0002"	0-25-0	1.4N or less
.0005"	1506S	1506SB	.125" (.05")	±.0005" / ±.0005" / —	.00016"	±.0001"	0-50	1.4N or less
.0005"	1507S	1507SB	.125" (.05")	±.0005" / ±.0005" / —	.00016"	±.0001"	0-25-0	1.4N or less
.0005"	1670S	1670SB	.1" (.04")	±.0005" / ±.0005" / —	.00016"	±.0001"	0-40	1.4N or less
.0005"	1671S	1671SB	.1" (.04")	±.0005" / ±.0005" / —	.00016"	±.0001"	0-20-0	1.4N or less
.0005"	1570S	1570SB	.075" (.03")	±.0005" / ±.0005" / —	.00016"	±.0001"	0-30	1.4N or less
.0005"	1571S	1571SB	.075" (.03")	±.0005" / ±.0005" / —	.00016"	±.0001"	0-15-0	1.4N or less
.00025"	1470S	1470SB	.05" (.02")	±.00025" / ±.00025" / —	.000125"	±.0001"	0-20	1.4N or less
.00025"	1471S	1471SB	.05" (.02")	±.00025" / ±.00025" / —	.000125"	±.0001"	0-10-0	1.4N or less
.0001"	1802S-10	1802SB-10	.025" (.01")	±.0001" / ±.0001" / —	.0001"	±.00003"	0-10	1.5N or less
.0001"	1803S-10	1803SB-10	.025" (.01")	±.0001" / ±.0001" / —	.0001"	±.00003"	0-5-0	1.4N or less

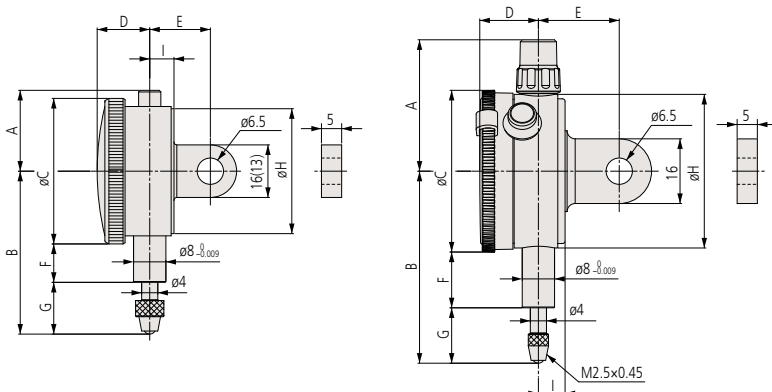
Optional Accessories

- : Backs (See page F-40.)
- : Contact points (See page F-36.)

DIMENSIONS

ANSI/AGD
Type

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

ISO/JIS
Type

Unit: mm

Order No.	A	B	C	D	E	F	G	H	I
1921	15.5	40	31	12.5	19	15	9.5	30	7
1923	15.5	38.3	31	12.5	19	15	7.8	30	7
1925-10	15.5	37.5	31	12.5	19	15	7	30	7
1927-10	15.5	37.2	31	12.5	19	15	6.7	30	7
1410S	32.5	47.6	40	14.5	19	12.8	14.8	38	6.6
1410S-10	32.5	47.6	40	14.5	19	12.8	14.8	38	6.6
1411S	32.5	47.6	40	14.5	19	12.8	14.8	38	6.6
1470S	32.5	42	40	14.5	19	12.8	9.2	38	6.6
1471S	32.5	42	40	14.5	19	12.8	9.2	38	6.6
1506S	32.5	44.4	40	14.5	19	12.8	11.3	38	6.6
1507S	32.5	44.4	40	14.5	19	12.8	11.3	38	6.6
1570S	32.5	42.7	40	14.5	19	12.8	9.9	38	6.6
1571S	32.5	42.7	40	14.5	19	12.8	9.9	38	6.6
1670S	32.5	43.4	40	14.5	19	12.8	10.6	38	6.6
1671S	32.5	43.4	40	14.5	19	12.8	10.6	38	6.6
1780S	32.5	44.1	40	14.5	19	12.8	11.3	38	6.6
1781S	32.5	44.1	40	14.5	19	12.8	11.3	38	6.6
1802S-10	32.5	41.3	40	14.5	19	8.5	9.9	38	6.6
1803S-10	32.5	41.3	40	14.5	19	8.5	9.9	38	6.6

Order No.	A	B	C	D	E	F	G	H	I
1911	15.5	42	31	12.5	19	15	11.5	30	7
1913-10	15.5	39.5	31	12.5	19	15	9	30	7
1003	20	40.3	36	13	15	9.5	12.8	32	6
1013S-10	32.5	49	40	14.5	20	13.8	15.2	38	6.6
1040S	32.5	46	40	14.5	20	13.8	12.2	38	6.6
1041S	32.5	46	40	14.5	20	13.8	12.2	38	6.6
1044S	32.5	47.5	40	14.5	20	13.8	13.7	38	6.6
1044S-15*2	32.5	47.5	40	14.5	20	13.8	13.7	38	6.6
1044S-60	32.5	57	40	14.5	20	12.2	24.8	38	6.6
1045S	32.5	47.5	40	14.5	20	13.8	13.7	38	6.6
1109S-10	32.5	49	40	14.5	20	13.8	15.2	38	6.6
1124S	32.5	46	40	14.5	20	13.8	12.2	38	6.6

*2 Use in a vertical position (contact point downward) for the low measuring force model and the long stroke model.

Dial Indicator

SERIES 2 — Standard Type, 0.01mm Resolution

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

FEATURES

- Standard 0.01mm graduation dial gauges having a bezel with an outside diameter of 57mm. All types come with limit pins and a bezel clamp as standard.
- The bezel 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 bezel 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 crown 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.



(Refer to page IX for details.)



2046S



2046S-60



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

2046SY



2046S-60
2046S-69

2047S



2902S

2310S-10





Shockproof type



Waterproof type



Long stem type



Jeweled bearing type



w/ coaxial revolution counter



Reverse reading type

FEATURES

Metric

Order No.							
w/ lug	Flat-back						
2044S	2044SB	—	—	—	—	—	—
2044S-09	2044SB-09	✓	—	—	—	—	—
2044S-60	2044SB-60	—	✓	—	—	—	—
2045S	2045SB	—	—	—	—	—	—
2046S	2046SB	—	—	—	—	—	—
2046SY	2046SYB	—	—	—	—	—	—
2046SH	2046SHB	—	—	—	—	—	—
—	2046SLB	—	—	✓	—	—	—
2046S-09	2046SB-09	✓	—	—	—	—	—
2046S-60	2046SB-60	—	✓	—	—	—	—
2046S-69	2046SB-69	✓	✓	—	—	—	—
2046S-15	2046SB-15	—	—	—	✓	—	—
2310S-10	2310SB-10	—	—	—	✓	✓	—
2902S	2902SB	—	—	—	—	—	✓
2047S	2047SB	—	—	—	—	—	—

Optional Accessories

- : Backs (See page F-40.)
- : Contact points (See page F-36.)



2044S
2044S-09
2044S-60

2045S



SPECIFICATIONS

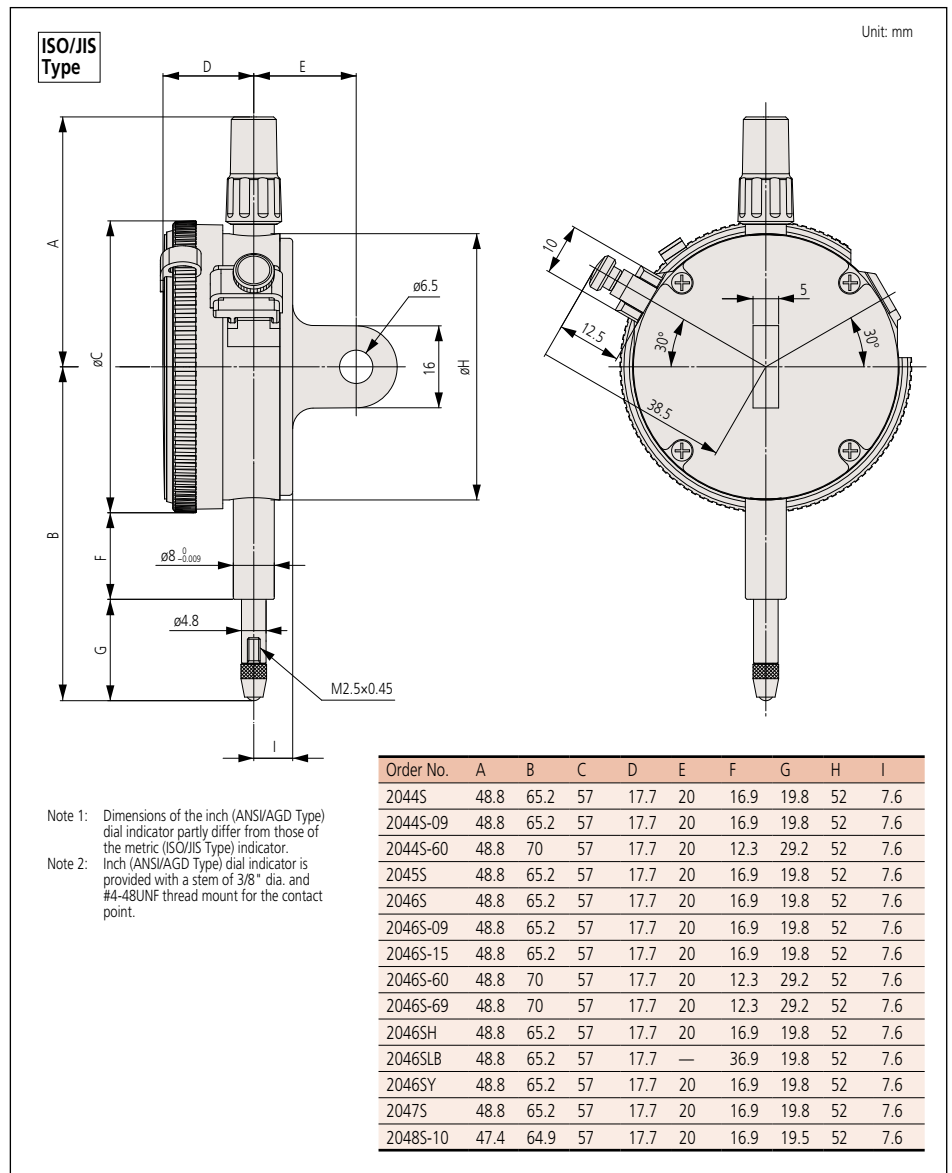
Metric

ISO/JIS type

Graduation	Order No.		Range (range/rev)	Accuracy				Repeat-ability	Dial reading	Measuring force
	w/ lug	Flat-back		Overall	Retrace	1/10 Rev	1 Rev			
0.01mm	2044S	2044SB	5mm (1mm)	±12μm	5μm	8μm	±10μm	5μm	0-100	1.4N or less
0.01mm	2044S-09	2044SB-09	5mm (1mm)	±13μm	5μm	8μm	±10μm	5μm	0-100	1.4N or less
0.01mm	2044S-60	2044SB-60	5mm (1mm)	±12μm	5μm	8μm	±10μm	5μm	0-100	2.5N or less
0.01mm	2045S	2045SB	5mm (1mm)	±12μm	5μm	8μm	±10μm	5μm	0-50-0	1.4N or less
0.01mm	2046S	2046SB	10mm (1mm)	±13μm	5μm	8μm	±10μm	5μm	0-100	1.4N or less
0.01mm	2046SY	2046SYB	10mm (1mm)	±13μm	5μm	8μm	±10μm	5μm	0-100	1.4N or less
0.01mm	2046SH	2046SHB	10mm (1mm)	±8μm	4μm	5μm	±7μm	4μm	0-100	1.4N or less
0.01mm	—	2046SLB	10mm (1mm)	±13μm	5μm	8μm	±10μm	5μm	0-100	1.4N or less
0.01mm	2046S-09	2046SB-09	10mm (1mm)	±15μm	5μm	8μm	±10μm	5μm	0-100	1.4N or less
0.01mm	2046S-60	2046SB-60	10mm (1mm)	±13μm	5μm	8μm	±10μm	5μm	0-100	2.5N or less
0.01mm	2046S-69	2046SB-69	10mm (1mm)	±15μm	5μm	8μm	±10μm	5μm	0-100	2.5N or less
0.01mm	2046S-15	2046SB-15	10mm (1mm)	±13μm	5μm	8μm	±10μm	5μm	0-100	0.8N or less*
0.01mm	2310S-10	2310SB-10	10mm (1mm)	±15μm	5μm	8μm	±10μm	5μm	0-100	1.4N or less
0.01mm	2902S	2902SB	10mm (1mm)	±13μm	5μm	8μm	±10μm	5μm	100-0	1.4N or less
0.01mm	2047S	2047SB	10mm (1mm)	±13μm	5μm	8μm	±10μm	5μm	0-50-0	1.4N or less

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

DIMENSIONS



Dial Indicator

SERIES 2 — Standard Type, 0.001mm Resolution

FEATURES

- Standard 0.01mm graduation dial gauges having a bezel with an outside diameter of $\phi 57\text{mm}$. All types come with limit pins and a bezel clamp.
- 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.
- Secure adhesion between the bezel and crystal as well as the use of an O-ring ensure prevention of water and oil ingress via the front face.
- The spindle is made of high-strength quench-hardened stainless steel which resists arduous use.
- A carbide contact point is used.
- The crown 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.
- A special alloy is used for the sector gears to provide improved wear resistance.
- The indicator uses jeweled bearings, providing excellent indication sensitivity and durability.



2109S-10



2110S-10



2119S-10



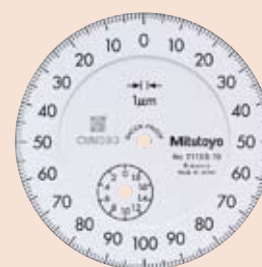
(Refer to page IX for details.)



2109S-10
2109SH-10
2109S-70
2109SLB-10



2110S-10
2110S-70



2113S-10



2118S-10



2119S-10



2124S-10



Shockproof type



Waterproof type



Long stem type



Jeweled bearing type



Double scale spacing type

FEATURES

Metric

Order No.							
w/ lug	Flat-back						
2124S-10	2124SB-10	—	—	—	✓	—	—
2110S-10	2110SB-10	✓	—	—	✓	✓	—
2110S-70	2110SB-70	✓	✓	—	✓	✓	—
2109S-10	2109SB-10	✓	—	—	✓	—	—
2109SH-10	2109SHB-10	✓	—	—	✓	—	—
—	2109SLB-10	✓	—	✓	✓	—	—
2109S-70	2109SB-70	✓	✓	—	✓	—	—
2113S-10	2113SB-10	✓	—	—	✓	—	—
2118S-10	2118SB-10	—	—	—	✓	—	—
2119S-10	2119SB-10	—	—	—	✓	—	—

Optional Accessories

- : Backs (See page F-40.)
 —: Contact points (See page F-36.)

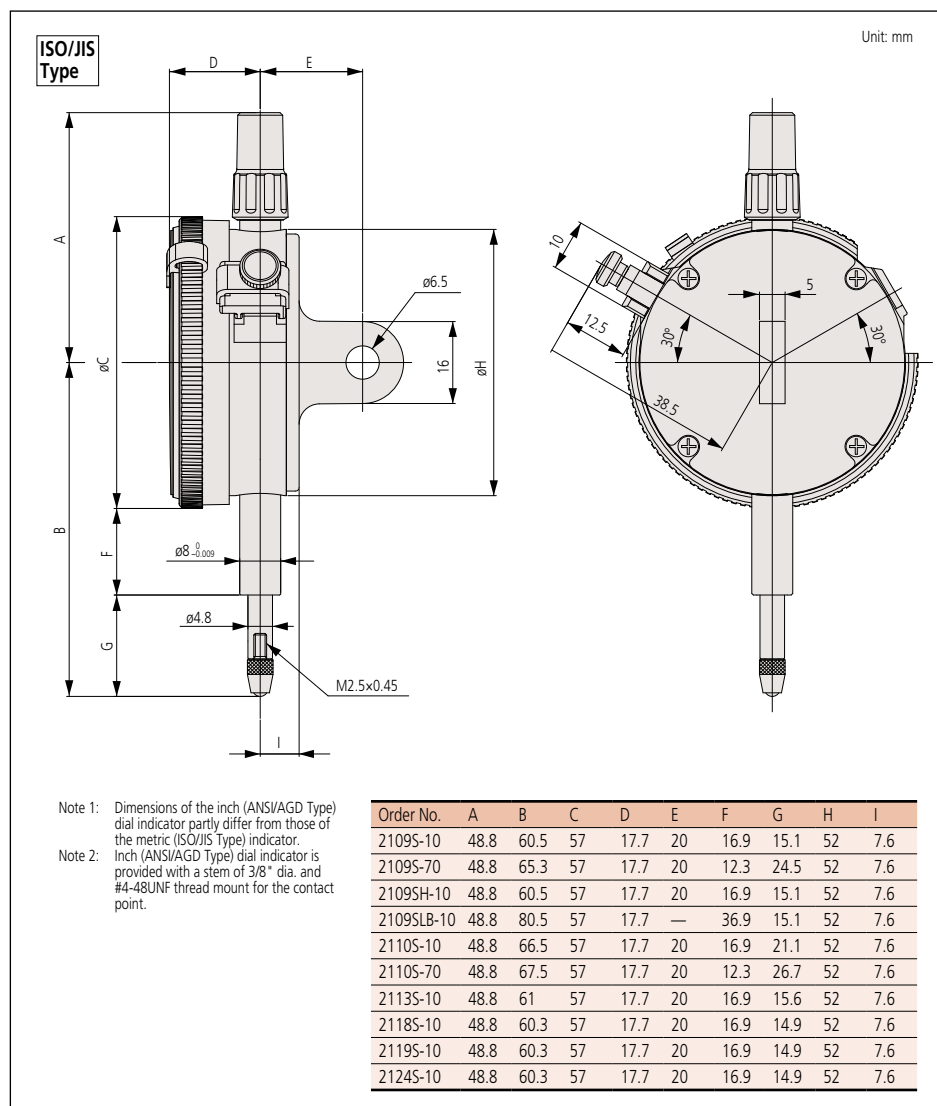
SPECIFICATIONS

Metric

ISO/JIS type

Graduation	Order No.		Range (range/rev)	Accuracy				Repeat-ability	Dial reading	Measuring force
	w/ lug	Flat-back		Overall	Retrace	1/10 Rev	1 Rev			
0.005mm	2124S-10	2124SB-10	5mm (0.5mm)	±12μm	5μm	7μm	±9μm	3μm	0-50	1.5N or less
0.001mm	2110S-10	2110SB-10	1mm (0.1mm)	±5μm	3μm	2.5μm	±4μm	0.5μm	0-100	1.5N or less
0.001mm	2110S-70	2110SB-70	1mm (0.1mm)	±5μm	3μm	2.5μm	±4μm	0.5μm	0-100	2.0N or less
0.001mm	2109S-10	2109SB-10	1mm (0.2mm)	±5μm	3μm	2.5μm	±4μm	0.5μm	0-100-0	1.5N or less
0.001mm	2109SH-10	2109SHB-10	1mm (0.2mm)	±3μm	2μm	2μm	±3μm	0.5μm	0-100-0	1.5N or less
0.001mm	—	2109SLB-10	1mm (0.2mm)	±5μm	3μm	2.5μm	±4μm	0.5μm	0-100-0	1.5N or less
0.001mm	2109S-70	2109SB-70	1mm (0.2mm)	±5μm	3μm	2.5μm	±4μm	0.5μm	0-100-0	2.0N or less
0.001mm	2113S-10	2113SB-10	2mm (0.2mm)	±7μm	3μm	4μm	±6μm	0.5μm	0-100-0	1.5N or less
0.001mm	2118S-10	2118SB-10	5mm (0.2mm)	±10μm	4μm	5μm	±7μm	1μm	0-100-100	1.5N or less
0.001mm	2119S-10	2119SB-10	5mm (0.2mm)	±10μm	4μm	5μm	±7μm	1μm	0-100-0	1.5N or less

DIMENSIONS



Dial Indicator

SERIES 2 — Standard Type, Inch Reading

SPECIFICATIONS

Inch								ANSI/AGD type
Graduation	Order No.		Range (range/rev)	Accuracy		Repeat- ability	Dial reading	Measuring force
	w/ lug	Flat-back		First 1 Rev / 2.5 Rev / 10 Rev	Retrace			
.001"	2780S	2780SB	.125" (.05")	±.001" / ±.001" / —	.0002"	±.0002"	±0-50	1.8N or less
.001"	2781S	2781SB	.125" (.05")	±.001" / ±.001" / —	.0002"	±.0002"	0-25-0	1.8N or less
.001"	2410S	2410SB	.25" (.1")	±.001" / ±.001" / —	.0002"	±.0002"	±0-100	1.8N or less
.001"	2410S-10	2410SB-10	.25" (.1")	±.001" / ±.001" / —	.0002"	±.0002"	±0-100	1.8N or less
.001"	2410S-60	2410SB-60	.25" (.1")	±.001" / ±.001" / —	.0002"	±.0002"	0-100	2.5N or less
.001"	2411S	2411SB	.25" (.1")	±.001" / ±.001" / —	.0002"	±.0002"	0-50-0	1.8N or less
.001"	2411S-10	2411SB-10	.25" (.1")	±.001" / ±.001" / —	.0002"	±.0002"	0-50-0	1.8N or less
.001"	2414S	2414SB	.5" (.1")	±.001" / ±.001" / ±.001"	.0002"	±.0002"	±0-100	1.8N or less
.001"	2414S-10	2414SB-10	.5" (.1")	±.001" / ±.001" / ±.001"	.0002"	±.0002"	±0-100	1.8N or less
.001"	2414S-60	2414SB-60	.5" (.1")	±.001" / ±.001" / ±.001"	.0002"	±.0002"	±0-100	2.5N or less
.001"	2415S	2415SB	.5" (.1")	±.001" / ±.001" / ±.001"	.0002"	±.0002"	0-50-0	1.8N or less
.001"	2415S-10	2415SB-10	.5" (.1")	±.001" / ±.001" / ±.001"	.0002"	±.0002"	0-50-0	1.8N or less
.001"	2415S-60	2415SB-60	.5" (.1")	±.001" / ±.001" / ±.001"	.0002"	±.0002"	0-50-0	2.5N or less
.001"	2914S	2914SB	.5" (.1")	±.001" / ±.001" / ±.001"	.0002"	±.0002"	100-0	1.8N or less
.0005"	2506S	2506SB	.125" (.05")	±.0005" / ±.0005" / —	.00016"	±.0001"	±0-50	1.8N or less
.0005"	2507S	2507SB	.125" (.05")	±.0005" / ±.0005" / —	.00016"	±.0001"	0-25-0	1.8N or less
.0005"	2514S	2514SB	.5" (.05")	±.0005" / ±.0005" / ±.0015"	.00016"	±.0001"	±0-50	1.8N or less
.0005"	2514S-60	2514SB-60	.5" (.05")	±.0005" / ±.0005" / ±.0015"	.00016"	±.0001"	±0-50	2.5N or less
.0005"	2570S-10	2570SB-10	.075" (.03")	±.0005" / ±.0005" / —	.00016"	±.0001"	0-30	1.8N or less
.0005"	2571S-10	2571SB-10	.075" (.03")	±.0005" / ±.0005" / —	.00016"	±.0001"	0-15-0	1.8N or less
.0005"	2576S-70	2576SB-70	.3" (.03")	±.0005" / ±.0005" / ±.001"	.00016"	±.0001"	0-30	2.5N or less
.0005"	2670S	2670SB	.1" (.04")	±.0005" / ±.0005" / —	.00016"	±.0001"	0-40	1.8N or less
.0005"	2671S	2671SB	.1" (.04")	±.0005" / ±.0005" / —	.00016"	±.0001"	0-20-0	1.8N or less
.0005"	2675S	2675SB	.4" (.04")	±.0005" / ±.0005" / ±.0015"	.00016"	±.0001"	0-20-0	1.8N or less
.0005"	2922S	2922SB	.125" (.05")	±.0005" / ±.0005" / —	.00016"	±.0001"	0-25-0	1.8N or less
.00025"	2470S-10	2470SB-10	.05" (.02")	±.00025" / ±.00025" / —	.000125"	±.0001"	0-20	1.8N or less
.00025"	2471S-10	2471SB-10	.05" (.02")	±.00025" / ±.00025" / —	.000125"	±.0001"	0-10-0	1.8N or less
.00025"	2476S-70	2476SB-70	.2" (.02")	±.00025" / ±.00025" / ±.0005"	.000125"	±.0001"	0-20	2.5N or less
.0001"	2356S-10	2356SB-10	.25" (.01")	±.0002" / ±.0002" / ±.0003"	.0001"	±.00003"	0-10	2.0N or less
.0001"	2358S-10	2358SB-10	.5" (.01")	±.0002" / ±.0002" / ±.0003"	.00015"	±.00003"	0-10	2.0N or less
.0001"	2802S-10	2802SB-10	.025" (.01")	±.0001" / ±.0001" / —	.0001"	±.00003"	0-10	2.0N or less
.0001"	2802S-70	2802SB-70	.025" (.01")	±.0001" / ±.0001" / —	.0001"	±.00003"	0-10	2.5N or less
.0001"	2803S-10	2803SB-10	.025" (.01")	±.0001" / ±.0001" / —	.0001"	±.00003"	0-5-0	2.0N or less
.0001"	2803S-70	2803SB-70	.025" (.01")	±.0001" / ±.0001" / —	.0001"	±.00003"	0-5-0	2.5N or less
.0001"	2804S-10	2804SB-10	.05" (.01")	±.0001" / ±.0001" / ±.0002"	.0001"	±.00003"	0-10	2.0N or less
.0001"	2805S-10	2805SB-10	.05" (.01")	±.0001" / ±.0001" / ±.0002"	.0001"	±.00003"	0-5-0	2.0N or less
.0001"	2806S-10	2806SB-10	.1" (.01")	±.0001" / ±.0001" / ±.0003"	.0001"	±.00003"	0-10	2.0N or less
.0001"	2806S-70	2806SB-70	.1" (.01")	±.0001" / ±.0001" / ±.0003"	.0001"	±.00003"	0-10	2.5N or less
.0001"	2905S-10	2905SB-10	.05" (.01")	±.0001" / ±.0001" / ±.0002"	.0001"	±.00003"	10-0	2.0N or less
.0001"	2923S-10	2923SB-10	.05" (.01")	±.0001" / ±.0001" / ±.0002"	.0001"	±.00003"	0-5-0	2.0N or less
.0001"	2937S-10	2937SB-10	.02" (.008")	±.0001" / ±.0001" / —	.0001"	±.00003"	0-4-0	2.0N or less
.0001"	2938S-10	2938SB-10	.02" (.008")	±.0001" / ±.0001" / —	.0001"	±.00003"	0-8	2.0N or less

FEATURES

Inch											
Order No.						—	—				
w/ lug	Flat-back										
2780S	2780SB	—	—	—	—	—	—				
2781S	2781SB	—	—	—	—	—	—				
2410S	2410SB	—	—	—	—	—	—				
2410S-10	2410SB-10	—	—	—	✓	—	—				
2410S-60	2410SB-60	—	✓	—	—	—	—				
2411S	2411SB	—	—	—	—	—	—				
2411S-10	2411SB-10	—	—	—	✓	—	—				
2414S	2414SB	—	—	—	—	—	—				
2414S-10	2414SB-10	—	—	—	✓	—	—				
2414S-60	2414SB-60	—	✓	—	—	—	—				
2415S	2415SB	—	—	—	—	—	—				
2415S-10	2415SB-10	—	—	—	✓	—	—				
2415S-60	2415SB-60	—	✓	—	—	—	—				
2914S	2914SB	—	—	✓	—	—	—				
2506S	2506SB	—	—	—	—	—	—				
2507S	2507SB	—	—	—	—	—	—				
2514S	2514SB	—	—	—	—	—	—				
2514S-60	2514SB-60	—	✓	—	—	—	—				
2570S-10	2570SB-10	—	—	—	✓	—	—				
2571S-10	2571SB-10	—	—	—	✓	—	—				
2576S-70	2576SB-70	—	✓	—	✓	—	—				
2670S	2670SB	—	—	—	—	—	—				
2671S	2671SB	—	—	—	—	—	—				
2675S	2675SB	—	—	—	—	—	—				
2922S	2922SB	—	—	—	—	—	—				
2470S-10	2470SB-10	—	—	—	✓	—	—				
2471S-10	2471SB-10	—	—	—	✓	—	—				
2476S-70	2476SB-70	—	✓	—	✓	—	—				
2356S-10	2356SB-10	—	—	—	✓	—	—				
2358S-10	2358SB-10	—	—	—	✓	—	—				
2802S-10	2802SB-10	✓	—	—	✓	—	—				
2802S-70	2802SB-70	✓	✓	—	✓	—	—				
2803S-10	2803SB-10	✓	—	—	✓	—	—				
2803S-70	2803SB-70	✓	✓	—	✓	—	—				
2804S-10	2804SB-10	✓	—	—	✓	—	—				
2805S-10	2805SB-10	✓	—	—	✓	—	—				
2806S-10	2806SB-10	✓	—	—	✓	—	—				
2806S-70	2806SB-70	✓	✓	—	✓	—	—				
2905S-10	2905SB-10	✓	—	✓	✓	—	—				
2923S-10	2923SB-10	✓	—	—	✓	—	—				
2937S-10	2937SB-10	✓	—	—	✓	—	—				
2938S-10	2938SB-10	✓	—	—	✓	—	—				



(Refer to page IX for details.)

Optional Accessories

- : Backs (See page F-40.)
- : Contact points (See page F-36.)



Shockproof type



Waterproof type



Reverse reading type

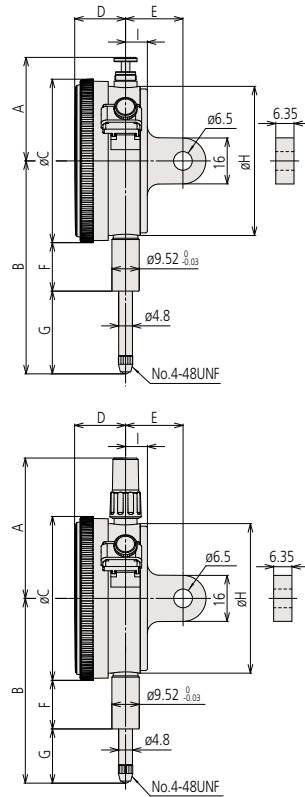


Jeweled bearing type

DIMENSIONS

ANSI/AGD
Type

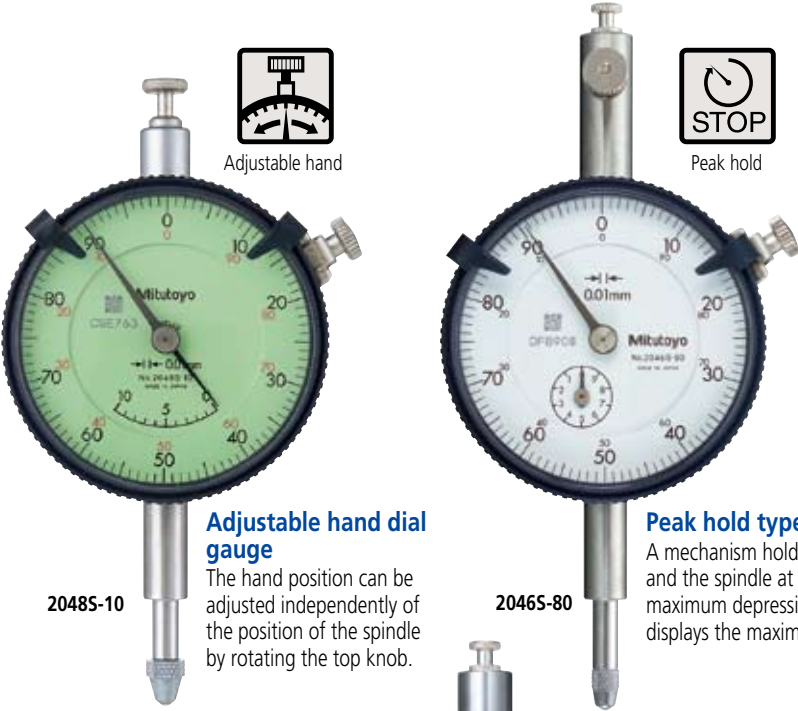
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Order No.	A	B	C	D	E	F	G	H	I
2780S	48.8	54.3	57	17.7	19	13.6	12.2	52	7.6
2781S	48.8	54.3	57	17.7	19	13.6	12.2	52	7.6
2410S	48.8	57.8	57	17.7	19	13.6	15.7	52	7.6
2410S-10	48.8	57.8	57	17.7	19	13.6	15.7	52	7.6
2410S-60	48.8	62.7	57	17.7	19	10.6	23.6	52	7.6
2411S	48.8	57.8	57	17.7	19	13.6	15.7	52	7.6
2411S-10	48.8	57.8	57	17.7	19	13.6	15.7	52	7.6
2414S	38.9	64.1	57	17.7	19	13.6	22	52	7.6
2414S-10	38.9	64.1	57	17.7	19	13.6	22	52	7.6
2414S-60	48.8	69	57	17.7	19	10.6	29.9	52	7.6
2415S	38.9	64.1	57	17.7	19	13.6	22	52	7.6
2415S-10	38.9	64.1	57	17.7	19	13.6	22	52	7.6
2415S-60	48.8	69	57	17.7	19	10.6	29.9	52	7.6
2914S	38.9	64.1	57	17.7	19	13.6	22	52	7.6
2506S	48.8	54.3	57	17.7	19	13.6	12.2	52	7.6
2507S	48.8	54.3	57	17.7	19	13.6	12.2	52	7.6
2514S	38.9	64.1	57	17.7	19	13.6	22	52	7.6
2514S-60	48.8	69	57	17.7	19	10.6	29.9	52	7.6
2570S-10	48.8	52.9	57	17.7	19	13.6	10.8	52	7.6
2571S-10	48.8	52.9	57	17.7	19	13.6	10.8	52	7.6
2576S-70	48.8	63.5	57	17.7	19	10.6	24.4	52	7.6
2670S	48.8	53.6	57	17.7	19	13.6	11.5	52	7.6
2671S	48.8	53.6	57	17.7	19	13.6	11.5	52	7.6
2675S	48.8	61.2	57	17.7	19	13.6	19.1	52	7.6
2922S	48.8	54.3	57	17.7	19	13.6	12.2	52	7.6
2470S-10	48.8	52.2	57	17.7	19	13.6	10.1	52	7.6
2471S-10	48.8	52.2	57	17.7	19	13.6	10.1	52	7.6
2476S-70	48.8	60.9	57	17.7	19	10.6	21.8	52	7.6
2356S-10	48.8	57.2	57	17.7	19	13.6	15.1	52	7.6
2358S-10	38.9	63.6	57	17.7	19	13.6	21.5	52	7.6
2802S-10	48.8	51.4	57	17.7	19	13.6	9.3	52	7.6
2802S-70	48.8	56.3	57	17.7	19	10.6	17.2	52	7.6
2803S-10	48.8	51.4	57	17.7	19	13.6	9.3	52	7.6
2803S-70	48.8	56.3	57	17.7	19	10.6	17.2	52	7.6
2804S-10	48.8	51.7	57	17.7	19	13.6	9.6	52	7.6
2805S-10	48.8	51.7	57	17.7	19	13.6	9.6	52	7.6
2806S-10	48.8	53.4	57	17.7	19	13.6	11.3	52	7.6
2806S-70	48.8	58.3	57	17.7	19	10.6	19.2	52	7.6
2905S-10	48.8	51.7	57	17.7	19	13.6	9.6	52	7.6
2923S-10	48.8	51.7	57	17.7	19	13.6	9.6	52	7.6
2937S-10	48.8	51.3	57	17.7	19	13.6	9.2	52	7.6
2938S-10	48.8	51.3	57	17.7	19	13.6	9.2	52	7.6

Special Dial Indicators

SERIES 2



Adjustable hand



Peak hold

Adjustable hand dial gauge

20485-10

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

Peak hold type dial gauge

20465-80

A mechanism holds the pointer and the spindle at the position of maximum depression and hence displays the maximum value.



Double-face type



2940S

Double-face type dial gauge

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

SPECIFICATIONS

Metric		ISO/JIS type								
Graduation	Order No.		Range (range/rev)	Accuracy				Repeat-ability	Dial reading	Measuring force
	w/ lug	Flat-back		Overall	Retrace	1/10 Rev	1 Rev			
0.01mm	20485-10	20485B-10	10mm (1mm)	±15µm	5µm	8µm	±10µm	5µm	0-100	1.4N or less
0.01mm	20465-80	20465B-80	10mm (1mm)	±15µm	—	8µm	±10µm	—	0-100	5.0N or less
0.01mm	2940S	—	10mm (1mm)	±15µm	5µm	8µm	±10µm	5µm	0-100	3.0N or less

Metric		ANSI/AGD type						
Graduation	Order No.		Range (range/rev)	Accuracy		Repeat-ability	Dial reading	Measuring force
	w/ lug	Flat-back		First 1 Rev / 2.5 Rev / 10 Rev	Retrace			
0.01mm	20485-11	20485B-11	10mm (1mm)	±10µm / ±10µm / ±13µm	3µm	±3µm	±0-100	1.4N or less

Inch						☐ ANSI/AGD type		
Graduation	Order No.		Range (range/rev)	Accuracy		Repeat-ability	Dial reading	Measuring force
	w/ lug	Flat-back		First 1 Rev / 2.5 Rev / 10 Rev	Retrace			
.001"	29155-10	29155B-10	.5" (.1")	±.001" / ±.001" / ±.001	.0002	±.0002	0-100	1.8N or less
.001"	29185-10	29185B-10	.5" (.1")	±.001" / ±.001" / ±.001	.0002	±.0002	0-50-0	1.8N or less



(Refer to page IX for details.)

FEATURES

Metric							
Order No.					—	—	—
w/ lug	Flat-back						
20485-10	20485B-10	✓	—	—	—	—	—
20465-80	20465B-80	—	✓	—	—	—	—
2940S	—	—	—	✓	—	—	—

Metric							
Order No.							
w/ lug	Flat-back				—	—	—
20485-11	20485B-11	✓	—	—	—	—	—

Inch							
Order No.							
w/ lug	Flat-back				—	—	—
29155-10	29155B-10	✓	—	—	—	—	—
29185-10	29185B-10	✓	—	—	—	—	—

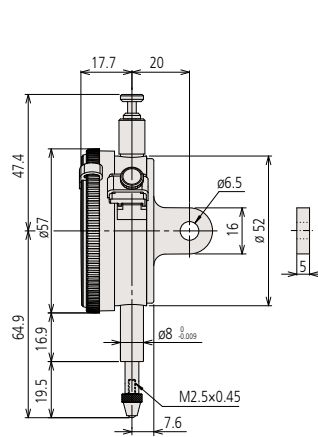
Optional Accessories

- : Backs (See page F-40.)
- : Contact points (See page F-36.)

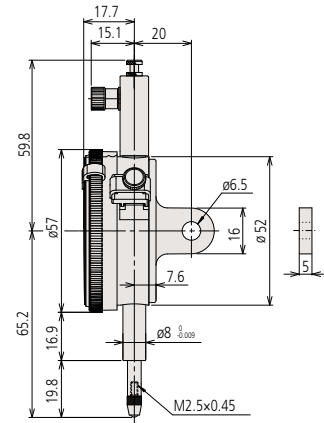
DIMENSIONS

ISO/JIS
Type

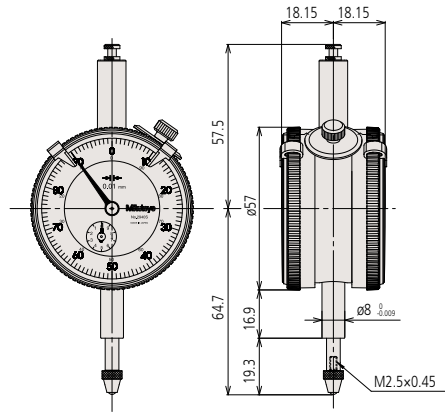
Unit: mm



2048S-10



2046S-80



2046S-80

Dial Indicator

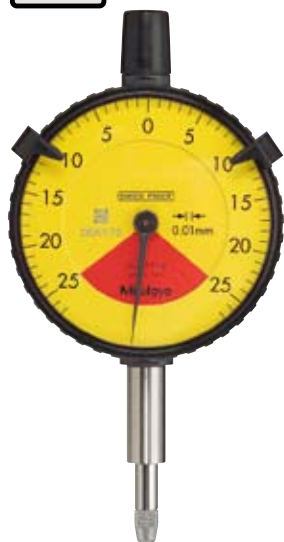
SERIES 2 — Standard One Revolution Type for Error-free Reading

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 multiple revolutions. With one-revolution dial indicators, "within tolerance" and "out-of-tolerance" can never be misinterpreted.

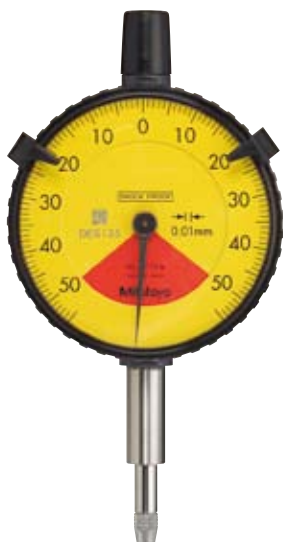
FEATURES

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

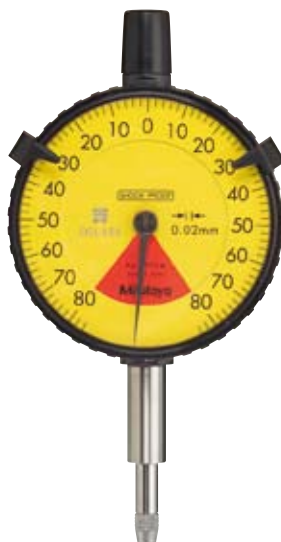
- The crystal is hard coated for durability and scratch resistance.
- Approximately 40% lighter than the conventional dial indicator.
- Provided with an improved resistance to shop floor contaminants such as water and dust.
- Due to the spindle bushing being offset from the stem, spindle movement will 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).



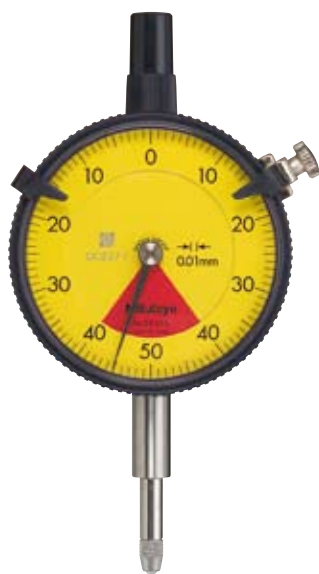
2971



2972



2973



29295



29005-10



2990



(Refer to page IX for details.)



2971

2972



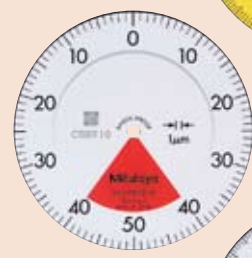
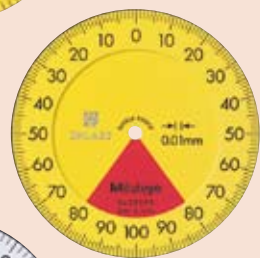
2973

29285



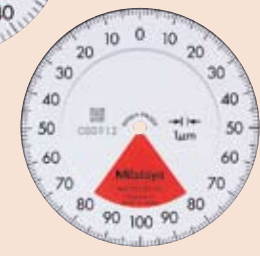
29295
29295-60
29295-62

29595



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

29015-10





Shockproof type



Waterproof type



Dustproof type



Jeweled bearing type

FEATURES

Metric

Order No.						
w/ lug	Flat-back					
2928S	2928SB	—	—	—	—	—
2929S	2929SB	—	✓	—	—	—
2929S-60	2929SB-60	—	—	—	—	—
2929S-62	2929SB-62	—	—	—	—	—
2959S	2959SB	—	—	—	—	—
2900S-10	2900SB-10	—	✓	—	—	—
2900S-70	2900SB-70	—	—	✓	—	—
2900S-72	2900SB-72	✓	—	—	—	—
2901S-10	2901SB-10	✓	—	—	—	—
—	2973	—	✓	—	—	—
—	2971	—	✓	—	—	—
—	2972	—	✓	—	—	—
2990*	—	—	—	—	—	—
—	2960F*	—	—	—	—	—

Inch

Order No.						
w/ lug	Flat-back					
2908S	2908SB	—	—	—	—	—
2908S-62	2908SB-62	—	✓	—	—	—
2909S-62	2909SB-62	—	✓	—	—	—
2910S-10	2910SB-10	—	✓	—	—	—
2910S-72	2910SB-72	—	—	—	—	—
—	2978	—	—	—	—	—
—	2976	—	✓	—	—	—
—	2977	—	—	—	—	—
—	2991*	—	✓	—	—	—

Optional Accessories

- : Backs (See page F-40.)
 — : Contact points (See page F-36.)

SPECIFICATIONS

Metric

ISO/JIS type

Graduation	Order No.		Range (range/rev)	Accuracy				Repeat- ability	Dial reading	Measuring force
	w/ lug	Flat-back		Overall	Retrace	1/10 Rev	1 Rev			
0.1mm	2928S	2928SB	4mm / 10mm	±40μm	20μm	20μm	—	20μm	2-0-2	1.4N or less
0.01mm	2929S	2929SB	0.8mm / 1mm	±9μm	5μm	6μm	—	5μm	40-0-40	1.4N or less
0.01mm	2929S-60	2929SB-60	0.8mm / 1mm	±9μm	5μm	6μm	—	5μm	40-0-40	2.0N or less
0.01mm	2929S-62	2929SB-62	0.8mm / 1mm	±9μm	5μm	6μm	—	5μm	40-0-40	2.0N or less
0.01mm	2959S	2959SB	1.6mm / 2mm	±13μm	6μm	8μm	—	5μm	80-0-80	1.4N or less
0.001mm	2900S-10	2900SB-10	0.08mm / 0.1mm	±3μm	2.5μm	2.5μm	—	0.5μm	40-0-40	1.4N or less
0.001mm	2900S-70	2900SB-70	0.08mm / 0.1mm	±3μm	2.5μm	2.5μm	—	0.5μm	40-0-40	2.0N or less
0.001mm	2900S-72	2900SB-72	0.08mm / 0.1mm	±3μm	2.5μm	2.5μm	—	0.5μm	40-0-40	2.0N or less
0.001mm	2901S-10	2901SB-10	0.16mm / 0.2mm	±4μm	3μm	3μm	—	0.5μm	80-0-80	1.4N or less
0.02mm	2973	—	1.6mm / 2mm	±16μm	6μm	8μm	—	5μm	80-0-80	1.4N or less
0.01mm	2971	—	0.5mm / 0.7mm	±10μm	5μm	7μm	—	5μm	25-0-25	1.4N or less
0.01mm	2972	—	1mm / 1.4mm	±12μm	5μm	7μm	—	5μm	50-0-50	1.4N or less
0.01mm	2990*	—	0.1mm / 0.14mm	±6.5μm	4μm	4μm	—	1μm	50-0-50	1.5N or less
0.001mm	2960F*	—	1mm / 1.27mm	±14μm	7μm	10μm	—	5μm	50-0-50	1.4N or less

*Back plunger type (see page 262.)

Inch

ANSI/AGD type

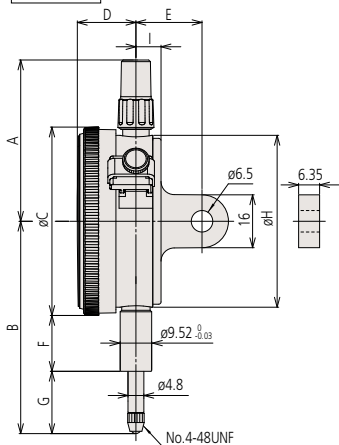
Graduation	Order No.		Range (range/rev)	Accuracy		Repeat- ability	Dial reading	Measuring force
	w/ lug	Flat-back		First 1 Rev / 2.5 Rev / 10 Rev	Retrace			
.001"	2908S	2908SB	.08" / .1"	±.001" / — / —	.0002"	±.0002"	40-0-40	1.8N or less
.001"	2908S-62	2908SB-62	.08" / .1"	±.001" / — / —	.0002"	±.0002"	40-0-40	2.5N or less
.0005"	2909S-62	2909SB-62	.04" / .05"	±.0005" / — / —	.00016"	±.0001"	20-0-20	2.5N or less
.0001"	2910S-10	2910SB-10	.008" / .01"	±.0001" / — / —	.0001"	±.00003"	4-0-4	1.8N or less
.0001"	2910S-72	2910SB-72	.008" / .01"	±.0001" / — / —	.0001"	±.00003"	4-0-4	2.5N or less
.001"	2978	—	.06" / .079"	±.001" / — / —	.0002"	±.0002"	30-0-30	1.4N or less
.0005"	2976	—	.02" / .028"	±.0005" / — / —	.00016"	±.0001"	10-0-10	1.4N or less
.0005"	2977	—	.04" / .055"	±.0005" / — / —	.00016"	±.0001"	20-0-20	1.4N or less
.0001"	2991*	—	.008" / .01"	±.0002" / — / —	.0001"	±.00005"	4-0-4	1.5N or less

*Back plunger type (see page 262.)

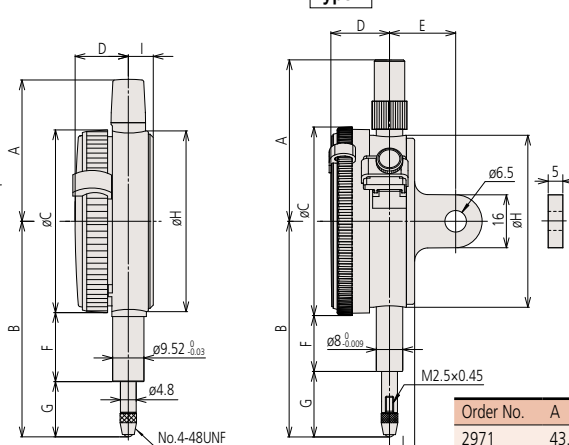
DIMENSIONS

Unit: mm

ANSI/AGD Type



ISO/JIS Type



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

Order No.	A	B	C	D	E	F	G	H	I
2908S	48.8	52.9	57	17.7	19	13.6	10.8	52	7.6
2908S-62	48.8	52.9	57	17.7	19	13.6	10.8	52	7.6
2909S-62	48.8	51.9	57	17.7	19	13.6	9.8	52	7.6
2910S-10	48.8	51.2	57	17.7	19	13.6	9.1	52	7.6
2910S-72	48.8	51.2	57	17.7	19	13.6	9.1	52	7.6
2976	43.2	64.7	55.6	16.2	—	21	15.9	55	7.6
2977	43.2	65	55.6	16.2	—	21	16.2	55	7.6
2978	43.2	65.3	55.6	16.2	—	21	16.5	55	7.6

Order No.	A	B	C	D	E	F	G	H	I
2971	43.2	65.6	55.6	16.2	—	21	16.8	55	7.6
2972	43.2	66.0	55.6	16.2	—	21	17.2	55	7.6
2973	43.2	66.3	55.6	16.2	—	21	17.5	55	7.6
2929S	48.8	65.2	57	17.7	20	12.3	19.2	52	7.6
2929S-62	48.8	65.2	57	17.7	20	16.9	19.8	52	7.6
2929S-60	48.8	70	57	17.7	20	12.3	29.2	52	7.6
2959S	48.8	65.2	57	17.7	20	16.9	19.8	52	7.6
2900S-10	48.8	66	57	17.7	20	16.9	20.6	52	7.6
2900S-72	48.8	66	57	17.7	20	16.9	20.6	52	7.6
2900S-70	48.8	67	57	17.7	20	12.3	26.2	52	7.6
2901S-10	48.8	66.1	57	17.7	20	16.9	20.7	52	7.6
2928S	48.8	65.2	57	17.7	20	16.9	19.8	52	7.6

Dial Indicator

SERIES 2 — Long Stroke Type



2050S



2052S



2330S-10



(Refer to page IX for details.)



2050S-60
2050S
2050S-19



2052S
2052S-19



2330S-10



2320S-10



2952S



Shockproof type



Waterproof type



w/ damper at lowest rest point



Jeweled bearing type



w/ coaxial revolution counter



Reverse reading type

FEATURES

Metric

Order No.							
w/ lug	Flat-back						
2050S	2050SB	—	—	✓	—	—	—
2050S-60	2050SB-60	—	✓	—	—	—	—
2050S-19	2050SB-19	✓	—	✓	✓	—	—
2320S-10	2320SB-10	—	—	✓	✓	✓	—
2052S	2052SB	—	—	✓	—	—	—
2052S-19	2052SB-19	✓	—	✓	✓	—	—
2330S-10	2330SB-10	—	—	✓	✓	✓	—
2952S	2952SB	—	—	✓	—	—	✓

Inch

Order No.							
w/ lug	Flat-back						
2204S	2204SB	—	—	—	—	—	—
2416S	2416SB	—	—	—	—	—	—
2416S-06	2416SB-06	—	—	—	—	—	—
2416S-10	2416SB-10	—	—	—	✓	—	—
2416S-60	2416SB-60	—	✓	—	—	—	—
2417S	2417SB	—	—	—	—	—	—
2424S-19	2424SB-19	✓	—	—	✓	—	✓
2776S	2776SB	—	—	—	—	—	—
2776S-60	2776SB-60	—	✓	—	—	—	—
2904S	2904SB	—	—	✓	—	—	—

Optional Accessories

- : Backs (See page F-40.)
- : Contact points (See page F-36.)

SPECIFICATIONS

Metric

ISO/JIS type

Graduation	Order No.		Range (range/rev)	Accuracy				Repeat-ability	Dial reading	Measuring force
	w/ lug	Flat-back		Overall	Retrace	1/10 Rev	1 Rev			
0.01mm	2050S	2050SB	20mm (1mm)	±20μm	7μm	10μm	±15μm	5μm	0-100	2.0N or less
0.01mm	2050S-60	2050SB-60	20mm (1mm)	±20μm	7μm	10μm	±15μm	5μm	0-100	2.5N or less
0.01mm	2050S-19	2050SB-19	20mm (1mm)	±20μm	7μm	10μm	±15μm	5μm	0-100	2.0N or less
0.01mm	2320S-10	2320SB-10	20mm (1mm)	±20μm	7μm	10μm	±15μm	5μm	0-100	2.0N or less
0.01mm	2052S	2052SB	30mm (1mm)	±25μm	7μm	14μm	±18μm	5μm	0-100	2.5N or less
0.01mm	2052S-19	2052SB-19	30mm (1mm)	±25μm	7μm	14μm	±18μm	5μm	0-100	2.5N or less
0.01mm	2330S-10	2330SB-10	30mm (1mm)	±25μm	7μm	14μm	±18μm	5μm	0-100	2.5N or less
0.01mm	2952S	2952SB	30mm (1mm)	±25μm	7μm	14μm	±18μm	5μm	100-0	2.5N or less

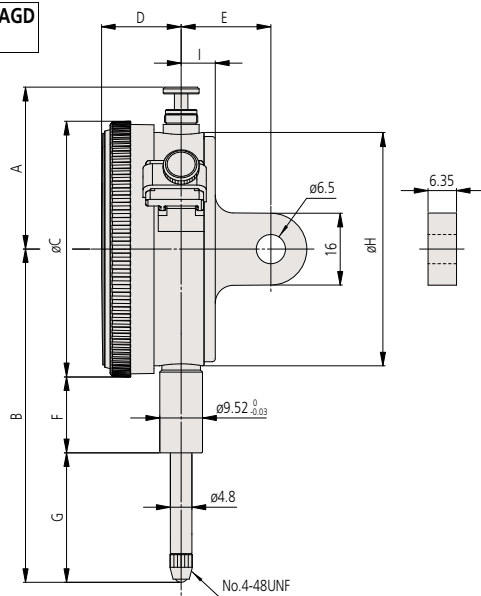
Inch

ANSI/AGD type

Graduation	Order No.		Range (range/rev)	Accuracy		Repeat-ability	Dial reading	Measuring force
	w/ lug	Flat-back		First 1 Rev / 2.5 Rev / 10 Rev	Retrace			
.01"	2204S	2204SB	1" (.1")	±.005" / — / —	.001"	±.002"	0-1000	1.8N or less
.001"	2416S	2416SB	1" (.1")	±.001" / ±.001" / ±.002"	.0002"	±.0002"	±0-100	1.8N or less
.001"	2416S-06	2416SB-06	1" (.1")	±.001" / ±.001" / ±.002"	.0002"	±.0002"	±0-100	1.8N or less
.001"	2416S-10	2416SB-10	1" (.1")	±.001" / ±.001" / ±.002"	.0002"	±.0002"	±0-100	1.8N or less
.001"	2416S-60	2416SB-60	1" (.1")	±.001" / ±.001" / ±.002"	.0002"	±.0002"	±0-100	2.5N or less
.001"	2417S	2417SB	1" (.1")	±.001" / ±.001" / ±.002"	.0002"	±.0002"	0-50-0	1.8N or less
.001"	2424S-19	2424SB-19	2" (.1")	±.001" / ±.001" / ±.002"	.00033"	±.0002"	±0-100	2.5N or less
.0005"	2776S	2776SB	1" (.05")	±.0005" / ±.0005" / ±.0015"	.0002"	±.0001"	±0-50	1.8N or less
.0005"	2776S-60	2776SB-60	1" (.05")	±.0005" / ±.0005" / ±.0015"	.0002"	±.0001"	±0-50	2.5N or less
.001"	2904S	2904SB	1" (.1")	±.001" / ±.001" / ±.002"	.0002"	±.0002"	100-0	1.8N or less

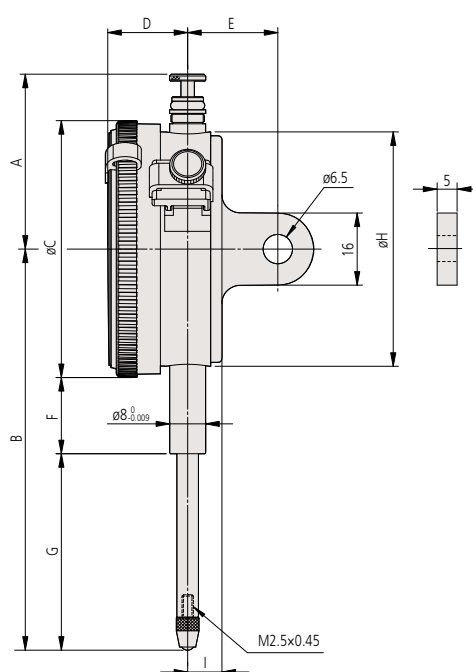
DIMENSIONS

ANSI/AGD Type



Order No.	A	B	C	D	E	F	G	H	I
2204S	40.2	76.8	57	17.7	19	13.6	34.7	52	7.6
2416S	38.9	76.8	57	17.7	19	13.6	34.7	52	7.6
2416S-06	38.9	76.8	57	17.7	19	13.6	34.7	52	7.6
2416S-10	38.9	76.8	57	17.7	19	13.6	34.7	52	7.6
2416S-60	66.8	87.2	57	17.7	19	10.6	48.1	52	7.6
2417S	38.9	76.8	57	17.7	19	13.6	34.7	52	7.6
2424S-19	118	142.5	57	17.7	20.9	54.3	59.7	52	9.5
2776S	38.9	76.8	57	17.7	19	13.6	34.7	52	7.6
2776S-60	66.8	87.2	57	17.7	19	10.6	48.1	52	7.6
2904S	38.9	76.8	57	17.7	19	13.6	34.7	52	7.6

ISO/JIS Type



Order No.	A	B	C	D	E	F	G	H	I
2050S	38.8	75.2	57	17.7	20	16.9	29.8	52	7.6
2050S-60	59.8	87.2	57	17.7	20	12.3	46.4	52	7.6
2050S-19	38.8	75.2	57	17.7	20	16.9	29.8	52	7.6
2320S-10	38.8	75.2	57	17.7	20	16.9	29.8	52	7.6
2052S	38.8	88.7	57	17.7	20	16.9	43.3	52	7.6
2052S-19	38.8	88.7	57	17.7	20	16.9	43.3	52	7.6
2330S-10	38.8	88.7	57	17.7	20	16.9	43.3	52	7.6
2952S	38.8	88.7	57	17.7	20	16.9	43.3	52	7.6

Unit: mm

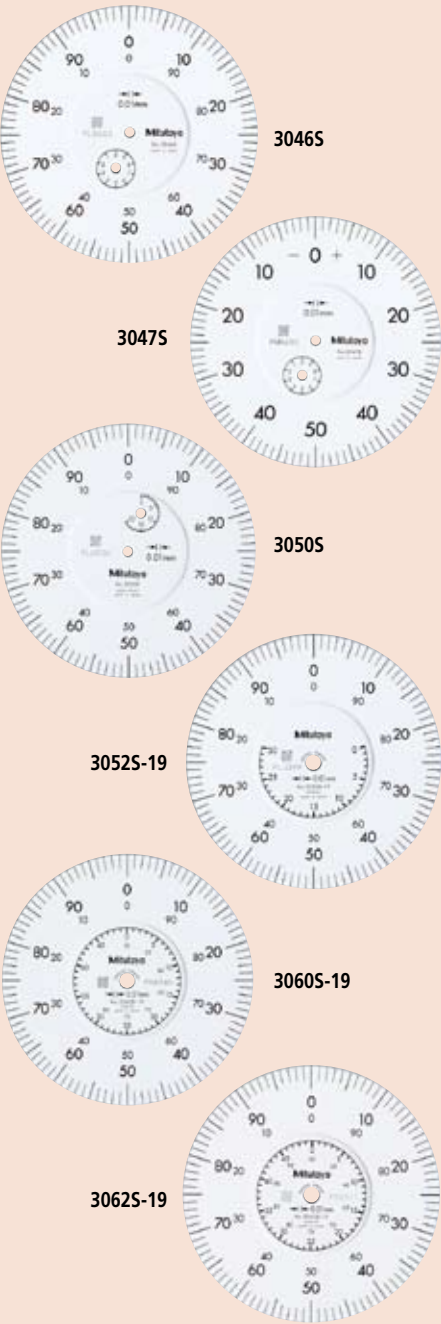
Dial Indicator

SERIES 3, 4 — Large Dial Face and Long Stroke Type

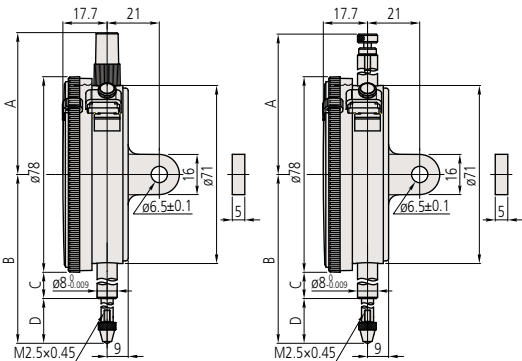
- Dial gauges with a large-diameter dial face to ease reading.
- All types come with limit pins and a bezel clamp as standard.



(Refer to page IX for details.)



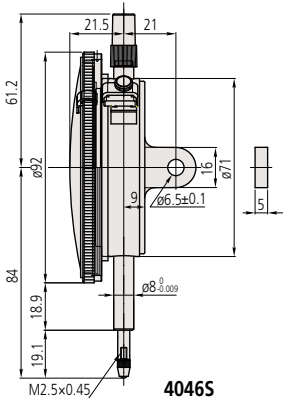
DIMENSIONS



ISO/JIS Type

Unit: mm

Order No.	A	B	C	D
3046S	61.2	75.5	15.9	20.6
3047S	61.2	75.5	15.9	20.6
3050S	52.6	94	25.9	29.1
3052S-19	50.5	104.3	25.9	39.4
3058S-19	81.9	142.3	43.9	59.4
3060S-19	120.9	202.3	73.9	89.4
3062S-19	141.9	243.3	94.9	109.4
3109S-10	61.2	79.3	25.9	14.1



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



Schockproof type



w/ damper at lowest rest point



Jeweled bearing type



w/ coaxial revolution counter

FEATURES

Metric

Order No.	w/ lug	Flat-back					—	—
3046S	3046SB	—	—	—	—	—	—	—
3047S	3047SB	—	—	—	—	—	—	—
3050S	3050SB	—	✓	—	—	—	—	—
3052S-19	3052SB-19	✓	—	✓	✓	—	—	—
3058S-19	3058SB-19	✓	—	✓	✓	—	—	—
3060S-19*	3060SB-19*	✓	—	✓	✓	—	—	—
3062S-19*	3062SB-19*	✓	—	✓	✓	—	—	—
3109S-10	3109SB-10	✓	—	✓	—	—	—	—
4046S	4046SB	—	—	—	—	—	—	—

Metric

Order No.	w/ lug	Flat-back					—	—
3052S-11	3052SB-11	—	—	✓	✓	—	—	—
3058S-11	3058SB-11	—	—	✓	✓	—	—	—

Inch

Order No.	w/ lug	Flat-back					—	—
3414S	3414SB	—	—	—	—	—	—	—
3415S	3415SB	—	—	—	—	—	—	—
3416S	3416SB	—	—	—	—	—	—	—
3417S	3417SB	—	—	—	—	—	—	—
3424S-19	3424SB-19	✓	✓	✓	—	—	—	—
3426S-19	3426SB-19	✓	✓	✓	—	—	—	—
3428S-19	3428SB-19	✓	✓	✓	—	—	—	—
3570S-10	3570SB-10	—	✓	—	—	—	—	—
3571S-10	3571SB-10	—	✓	—	—	—	—	—
3802S-10	3802SB-10	✓	✓	—	—	—	—	—
3803S-10	3803SB-10	✓	✓	—	—	—	—	—
4410S	4410SB	—	—	—	—	—	—	—
4887S-19	4887SB-19	✓	✓	✓	—	—	—	—
4570S-10	4570SB-10	—	✓	—	—	—	—	—
4802S-10	4802SB-10	✓	✓	—	—	—	—	—
4803S-10	4803SB-10	✓	✓	—	—	—	—	—

Optional Accessory

—: Contact points (See page F-36.)

SPECIFICATIONS

Metric

☐ ISO/JIS type

Graduation	Order No.		Range (range/rev)	Accuracy				Repeat-ability	Dial reading	Measuring force
	w/ lug	Flat-back		Overall	Retrace	1/10 Rev	1 Rev			
0.01mm	3046S	3046SB	10mm (1mm)	±15µm	5µm	8µm	±10µm	5µm	0-100	1.4N or less
0.01mm	3047S	3047SB	10mm (1mm)	±15µm	5µm	8µm	±10µm	5µm	0-50-0	1.4N or less
0.01mm	3050S	3050SB	20mm (1mm)	±20µm	7µm	10µm	±15µm	5µm	0-100	2.0N or less
0.01mm	3052S-19	3052SB-19	30mm (1mm)	±25µm	7µm	14µm	±18µm	5µm	0-100	2.5N or less
0.01mm	3058S-19	3058SB-19	50mm (1mm)	±30µm	9µm	15µm	±20µm	5µm	0-100	3.0N or less
0.01mm	3060S-19*	3060SB-19*	80mm (1mm)	±45µm	11µm	—	—	6µm	0-100	3.0N or less
0.01mm	3062S-19*	3062SB-19*	100mm (1mm)	±50µm	15µm	—	—	6µm	0-100	3.2N or less
0.001mm	3109S-10	3109SB-10	1mm (0.2mm)	±6µm	4µm	3µm	±5µm	1µm	0-100-0	1.5N or less
0.01mm	4046S	4046SB	10mm (1mm)	±15µm	6µm	8µm	±10µm	5µm	0-100	1.4N or less

*Use in a vertical position only.

Metric

☐ ANSI/AGD type

Graduation	Order No.		Range (range/rev)	Accuracy		Repeat- ability	Dial reading	Measuring force
	w/ lug	Flat-back		First 1 Rev / 2.5 Rev / 10 Rev	Retrace			
0.01mm	3052S-11	3052SB-11	30mm (1mm)	±10µm / ±10µm / ±15µm	4µm	±3µm	±0-100	2.5N or less
0.01mm	3058S-11	3058SB-11	50mm (1mm)	±15µm / ±15µm / ±20µm	5µm	±3µm	±0-100	3.0N or less

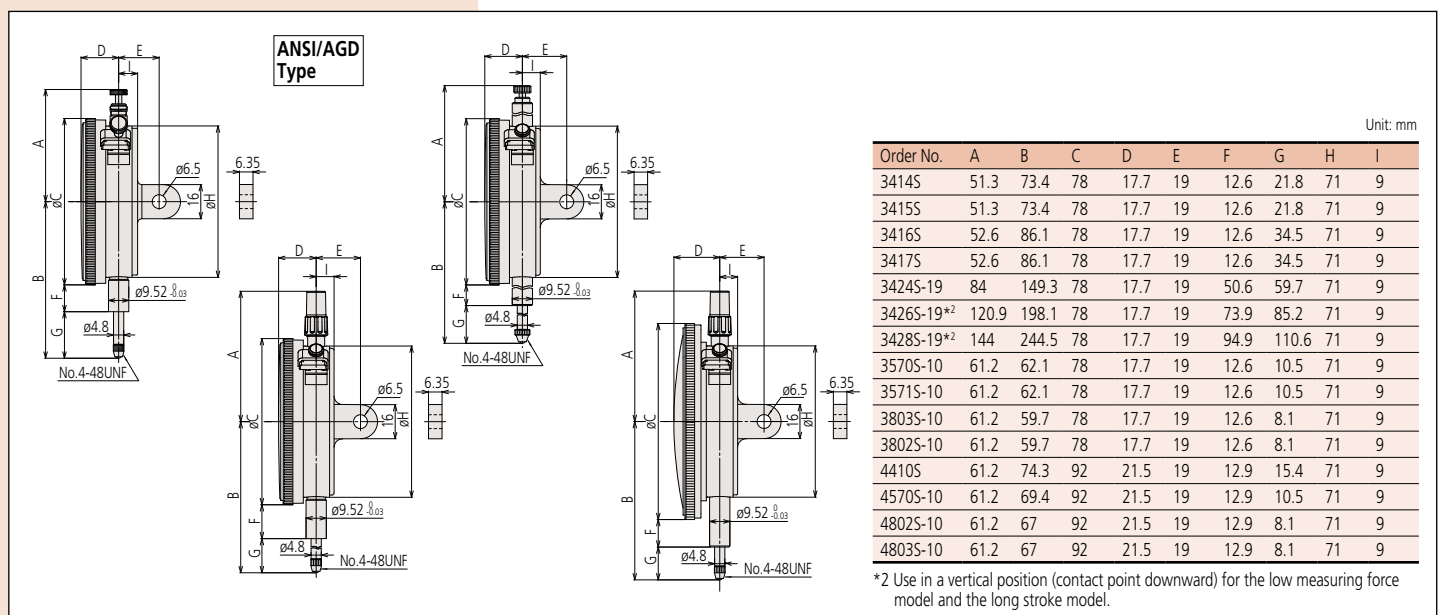
Inch

☐ ANSI/AGD type

Graduation	Order No.		Range (range/rev)	Accuracy		Repeat- ability	Dial reading	Measuring force
	w/ lug	Flat-back		First 1 Rev / 2.5 Rev / 10 Rev	Retrace			
.001"	3414S	3414SB	.5" (.1")	±.001" / ±.001" / ±.001"	.0002"	±.0002"	0-100	1.8N or less
.001"	3415S	3415SB	.5" (.1")	±.001" / ±.001" / ±.001"	.0002"	±.0002"	0-50-0	1.8N or less
.001"	3416S	3416SB	1" (.1")	±.001" / ±.001" / ±.002"	.0002"	±.0002"	±0-100	1.8N or less
.001"	3417S	3417SB	1" (.1")	±.001" / ±.001" / ±.002"	.0002"	±.0002"	0-50-0	1.8N or less
.001"	3424S-19	3424SB-19	2" (.1")	±.001" / ±.001" / ±.002"	.00033"	±.0002"	±0-100	3.0N or less
.001"	3426S-19*	3426SB-19*	3" (.1")	±.001" / ±.001" / ±.002"	.00033"	±.0002"	±0-100	3.0N or less
.001"	3428S-19*	3428SB-19*	4" (.1")	±.001" / ±.001" / ±.002"	.00033"	±.0002"	±0-100	3.2N or less
.0005"	3570S-10	3570SB-10	.075" (.03")	±.0005" / ±.0005" / —	.00016"	±.0001"	0-30	1.8N or less
.0005"	3571S-10	3571SB-10	.075" (.03")	±.0005" / ±.0005" / —	.00016"	±.0001"	0-15-0	1.8N or less
.0001"	3802S-10	3802SB-10	.025" (.01")	±.0001" / ±.0001" / —	.0001"	±.00003"	0-5-0	2.0N or less
.0001"	3803S-10	3803SB-10	.025" (.01")	±.0001" / ±.0001" / —	.0001"	±.00003"	0-10	2.0N or less
.001"	4410S	4410SB	.25" (.1")	±.001" / ±.001" / —	.0002"	±.0002"	±0-100	1.8N or less
.001"	4887S-19*	4887SB-19*	3" (.1")	±.001" / ±.001" / ±.002"	.00033"	±.0002	±0-100	3.0N or less
.0005"	4570S-10	4570SB-10	.075" (.03")	±.0005" / ±.0005" / —	.00016"	±.0001"	0-30	1.8N or less
.0001"	4802S-10	4802SB-10	.025" (.01")	±.0001" / ±.0001" / —	.0001"	±.00003"	0-10	2.0N or less
.0001"	4803S-10	4803SB-10	.025" (.01")	±.0001" / ±.0001" / —	.0001"	±.00003	±0-100	2.0N or less

*Use in a vertical position only.

DIMENSIONS



ANSI/AGD Type Metric Dial Indicator

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

SPECIFICATIONS

Metric		Series 1		ANSI/AGD type				
Graduation	Order No.		Range (range/rev)	Accuracy		Repeat-ability	Dial reading	Measuring force
	w/ lug	Flat-back		First 1 Rev / 2.5 Rev / 10 Rev	Retrace			
0.01mm	1230S-01	1230SB-01	2.5mm (1mm)	±10µm / ±10µm / —	3µm	±2µm	0-100	1.4N or less
0.01mm	1231S-01	1231SB-01	2.5mm (1mm)	±10µm / ±10µm / —	3µm	±2µm	0-50-0	1.4N or less
0.01mm	1044S-01	1044SB-01	5mm (1mm)	±10µm / ±10µm / ±13µm	3µm	±3µm	±0-100	1.4N or less
0.01mm	1045S-01	1045SB-01	5mm (1mm)	±10µm / ±10µm / ±13µm	3µm	±3µm	0-50-0	1.4N or less
0.002mm	1010S-11	1010SB-11	0.5mm (0.2mm)	±2µm / ±2µm / —	2µm	±1µm	0-20	1.5N or less
0.002mm	1011S-11	1011SB-11	0.5mm (0.2mm)	±2µm / ±2µm / —	2µm	±1µm	0-10-0	1.5N or less

Metric		Series 2		ANSI/AGD type				
Graduation	Order No.		Range (range/rev)	Accuracy		Repeat-ability	Dial reading	Measuring force
	w/ lug	Flat-back		First 1 Rev / 2.5 Rev / 10 Rev	Retrace			
0.01mm	2230S-01	2230SB-01	2.5mm (1mm)	±10µm / ±10µm / —	3µm	±3µm	±0-100	1.4N or less
0.01mm	2231S-01	2231SB-01	2.5mm (1mm)	±10µm / ±10µm / —	3µm	±3µm	0-50-0	1.4N or less
0.01mm	2231S-11	2231SB-11	2.5mm (1mm)	±10µm / ±10µm / —	3µm	±3µm	0-50-0	1.4N or less
0.01mm	2046S-01	2046SB-01	10mm (1mm)	±10µm / ±10µm / ±13µm	3µm	±3µm	±0-100	1.4N or less
0.01mm	2046S-11	2046SB-11	10mm (1mm)	±10µm / ±10µm / ±13µm	3µm	±3µm	±0-100	1.4N or less
0.01mm	2046S-61	2046SB-61	10mm (1mm)	±10µm / ±10µm / ±13µm	3µm	±3µm	±0-100	2.5N or less
0.01mm	2048S-11	2048SB-11	10mm (1mm)	±10µm / ±10µm / ±13µm	3µm	±3µm	±0-100	1.4N or less
0.01mm	2047S-01	2047SB-01	10mm (1mm)	±10µm / ±10µm / ±13µm	3µm	±3µm	0-50-0	1.4N or less
0.01mm	2047S-11	2047SB-11	10mm (1mm)	±10µm / ±10µm / ±13µm	3µm	±3µm	0-50-0	1.4N or less
0.01mm	2902S-01	2902SB-01	10mm (1mm)	±10µm / ±10µm / ±13µm	3µm	±3µm	100-0	1.4N or less
0.01mm	2050S-01	2050SB-01	20mm (1mm)	±10µm / ±10µm / ±15µm	4µm	±3µm	±0-100	2.0N or less
0.01mm	2050S-11	2050SB-11	20mm (1mm)	±10µm / ±10µm / ±15µm	4µm	±3µm	±0-100	2.0N or less
0.01mm	2056S-01	2056SB-01	25mm (1mm)	±10µm / ±10µm / ±15µm	4µm	±3µm	±0-100	2.5N or less
0.002mm	2010S-11	2010SB-11	0.5mm (0.2mm)	±3µm / ±3µm / —	2µm	±0.3µm	0-20	1.5N or less
0.002mm	2010S-71	2010SB-71	0.5mm (0.2mm)	±3µm / ±3µm / —	2µm	±0.3µm	0-20	2.5N or less
0.002mm	2011S-11	2011SB-11	0.5mm (0.2mm)	±3µm / ±3µm / —	2µm	±0.3µm	0-10-0	1.5N or less
0.001mm	2900S-73*	2900SB-73*	0.08mm (0.1mm)	±2µm / — / —	2µm	±0.3µm	0-50-0	2.0N or less
0.001mm	2109S-11	2109SB-11	1mm (0.2mm)	±3µm / ±3µm / ±4µm	2µm	±0.3µm	0-10-0	1.5N or less
0.001mm	2119S-11	2119SB-11	5mm (0.2mm)	±7µm / ±7µm / ±8µm	2µm	±0.3µm	0-10-0	1.5N or less

*One revolution type

Metric		Series 3		ANSI/AGD type				
Graduation	Order No.		Range (range/rev)	Accuracy		Repeat-ability	Dial reading	Measuring force
	w/ lug	Flat-back		First 1 Rev / 2.5 Rev / 10 Rev	Retrace			
0.01mm	3052S-11	3052SB-11	30mm (1mm)	±10µm / ±10µm / ±15µm	4µm	±3µm	±0-100	2.5N or less
0.01mm	3058S-11	3058SB-11	50mm (1mm)	±15µm / ±15µm / ±20µm	5µm	±3µm	±0-100	3.0N or less

FEATURES

Metric		Series 1		ANSI/AGD type						
Order No.	w/ lug	Flat-back								
1230S-01	1230SB-01	—	—	—	—	—	—	—	—	—
1231S-01	1231SB-01	—	—	—	—	—	—	—	—	—
1044S-01	1044SB-01	—	—	—	—	—	—	—	—	—
1045S-01	1045SB-01	—	—	—	—	—	—	—	—	—
1010S-11	1010SB-11	—	✓	—	—	—	—	—	—	—
1011S-11	1011SB-11	—	✓	—	—	—	—	—	—	—

Metric		Series 2		ANSI/AGD type						
Order No.	w/ lug	Flat-back								
2230S-01	2230SB-01	—	—	—	—	—	—	—	—	—
2231S-01	2231SB-01	—	—	—	—	—	—	—	—	—
2231S-11	2231SB-11	—	✓	—	—	—	—	—	—	—
2046S-01	2046SB-01	—	—	—	—	—	—	—	—	—
2046S-11	2046SB-11	—	✓	—	—	—	—	—	—	—
2046S-61	2046SB-61	✓	—	—	—	—	—	—	—	—
2048S-11	2048SB-11	—	✓	✓	✓	—	—	—	—	—
2047S-01	2047SB-01	—	—	—	—	—	—	—	—	—
2047S-11	2047SB-11	—	✓	—	—	—	—	—	—	—
2902S-01	2902SB-01	—	—	—	—	—	—	—	—	—
2050S-01	2050SB-01	—	—	—	—	—	—	—	—	—
2050S-11	2050SB-11	—	✓	—	—	—	—	—	—	—
2056S-01	2056SB-01	—	—	—	—	—	—	—	—	—
2010S-11	2010SB-11	—	✓	—	—	—	✓	—	—	—
2010S-71	2010SB-71	✓	✓	—	—	—	—	—	—	—
2011S-11	2011SB-11	—	✓	—	—	—	✓	—	—	—
2900S-73*	2900SB-73*	—	✓	—	—	—	✓	✓	—	—
2109S-11	2109SB-11	—	✓	—	—	—	✓	—	—	—
2119S-11	2119SB-11	—	✓	—	—	—	—	—	—	—

Metric		Series 3		ANSI/AGD type						
Order No.	w/ lug	Flat-back								
3052S-11	3052SB-11	✓	✓	✓	—	—	—	—	—	—
3058S-11	3058SB-11	✓	✓	✓	—	—	—	—	—	—



(Refer to page IX for details.)

Optional Accessories

- : Backs (See page F-40.)
- : Contact points (See page F-36.)



Waterproof type



Jeweled bearing type



Adjustable hand type



w/ coaxial revolution counter



Schockproof type



Dustproof type



Double scale spacing type

Hicator, Signal Hicator

SERIES 524 — High Accuracy One-Revolution Dial Indicator

FEATURES

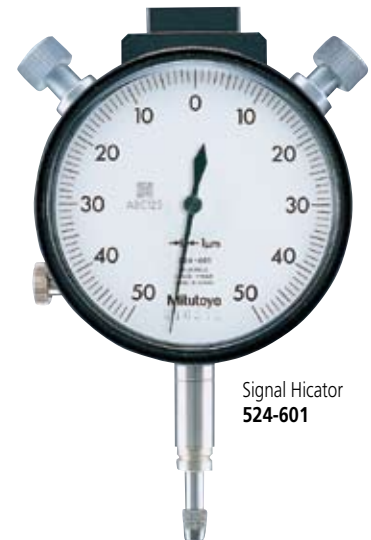
The Hicator is Mitutoyo's ultra-sensitive, one-revolution dial indicator. The spindle is made of highly durable stainless steel, and features jeweled bearings for extreme sensitivity as well as a shock-proof and dust-proof structure.

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

- The Hicator is capable of comparative measurements 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

Optional Accessories

- 524-001: Signal box (100V AC)
- 524-001A: Signal box (120V AC)
- : Backs (See page F-40.)
- : Contact points (See page F-36.)

ABSOLUTE Digimatic Indicator ID-C

SERIES 543 — Signal Output Function Type



FEATURES (See page F-7)

- With the Max/Min Value holding function, the Signal ID-C indicator can output a GO/±NG judgment result against the tolerance values set. Substituting for the traditional mechanical/electrical contact, the judgment is carried out by direct numerical comparison with the peak measurement data obtained. This provides high reliability with no drift of tolerance value setting.

SPECIFICATIONS

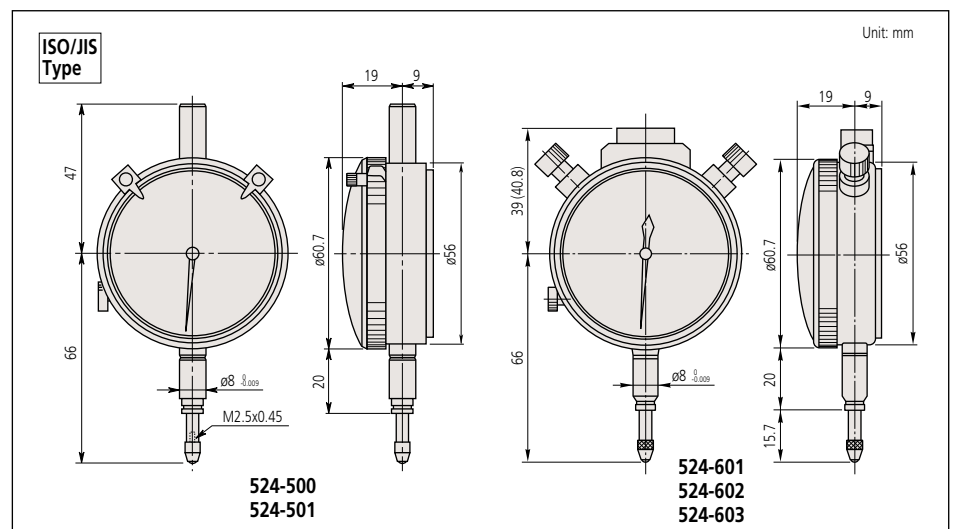
Metric		Hicator						ISO/JIS type
Graduation	Order No.*	Range	Dial reading	Spindle travel	Accuracy	Measuring force	Remarks	
0.001mm	524-501	±0.05mm	50-0-50	3mm	±1μm	1.2N or less	w/ spindle lifting cable	
0.0005mm	524-500	±0.03mm	30-0-30	3mm	±0.5μm	1.2N or less	w/ spindle lifting cable	

*Flat back

Metric		Signal Hicator						ISO/JIS type
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



Back Plunger Type Dial Indicator

SERIES 1 and 2

Mitutoyo's back plunger type dial indicators are built with the measuring plunger (or spindle) protruding from the back of the body instead of the side. 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.
- Model No. 2990 provides 0.001mm resolution.



(Refer to page IX for details.)



1160



1960



1180-6

Holding bar (optional)



2960F



2990

Optional Accessories

- 136567: Holding bar (ø6mm, L=81mm)
 21AAA166: Holding bar (ø6mm, L=42mm)
 136568: Holding bar (ø8mm, L=81mm)
 21AAA168: Holding bar (ø8mm, L=42mm)
 124625: Holding bar (.25" DIA, L=3.19")
 21AAA167: Holding bar (.25" DIA, L=1.65")
 —: Backs (See page F-40.)
 —: Contact points (See page F-36.)



One revolution type



Shockproof type



Jeweled bearing type



Reverse reading type

FEATURES

Metric

Order No.						
1960	✓	✓	—	—	—	—
1160	—	—	—	—	—	—
1162	—	—	✓	—	—	—
1180-6	—	—	—	—	—	—
1180-7	—	—	—	—	—	—
1180-8	—	—	—	—	—	—

Inch

Order No.						
1961	✓	✓	—	—	—	—
1156	—	—	—	—	—	—
1157	—	—	—	—	—	—
1166	—	—	—	—	—	—
1167	—	—	—	—	—	—
1168	—	—	✓	—	—	—

Metric

Order No.						
2960F	✓	✓	—	—	—	—
2990	✓	✓	✓	—	—	—

Inch

Order No.						
2961	✓	✓	—	—	—	—
2991	✓	✓	✓	—	—	—

SPECIFICATIONS

Metric

Series 1

ISO/JIS type

Graduation	Order No.	Range (range/rev)	Accuracy				Dial reading	Measuring force
			Overall	Retrace	1/10 Rev	1 Rev		
0.01mm	1960	1mm / 1.27mm*	±14μm	7μm	10μm	—	50-0-50	1.4N or less
0.01mm	1160	5mm (1mm)	±16μm	7μm	10μm	±14μm	0-100	1.4N or less
0.01mm	1162	5mm (1mm)	±16μm	7μm	10μm	±14μm	100-0	1.4N or less
0.01mm	1180-6	5mm (1mm)	±16μm	7μm	10μm	±14μm	0-100	1.5N or less
0.01mm	1180-7	5mm (1mm)	±16μm	7μm	10μm	±14μm	0-100	1.5N or less
0.01mm	1180-8	5mm (1mm)	±16μm	7μm	10μm	±14μm	0-100	1.5N or less

Inch

Series 1

ANSI/AGD type

Graduation	Order No.	Range (range/rev)	Accuracy				Dial reading	Measuring force
			First 1 Rev / 2.5 Rev / 10 Rev			Retrace		
.001"	1961	.04" / .05"*	±.001" / — / —			.0002"	20-0-20	1.4N or less
.001"	1156	.1" (.1")	±.001" / — / —			.00033"	0-100	2.1N or less
.001"	1157	.1" (.1")	±.001" / — / —			.00033"	0-50-0	2.1N or less
.001"	1166	.2" (.05")	±.001" / ±.001" / ±.001"			.00033"	0-50	1.4N or less
.001"	1167	.2" (.05")	±.001" / ±.001" / ±.001"			.00033"	0-25-0	1.4N or less
.001"	1168	.2" (.05")	±.001" / ±.001" / ±.001"			.00033"	50-0	1.4N or less

*Full stroke

Metric

Series 2

ISO/JIS type

Graduation	Order No.	Range (range/full stroke)	Accuracy				Dial reading	Measuring force
			Overall	Retrace	1/10 Rev	1 Rev		
0.01mm	2960F	1mm / 1.27"	±14μm	7μm	10μm	—	50-0-50	1.4N or less
0.001mm	2990	0.1mm / 0.14"	±6.5μm	4μm	4μm	—	50-0-50	1.5N or less

Inch

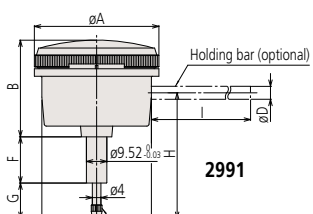
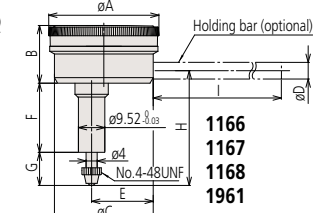
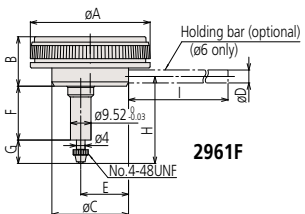
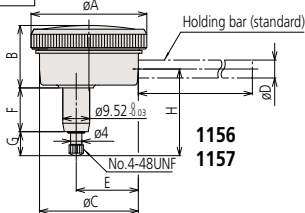
Series 2

ANSI/AGD type

Graduation	Order No.	Range (range/full stroke)	Accuracy				Dial reading	Measuring force
			First 1 Rev / 2.5 Rev / 10 Rev			Retrace		
.0005"	2961F	.04" / .05"	±.001" / — / —			.0002"	20-0-20	1.4N or less
.0001"	2991	.008" / .01"	±.0002" / — / —			.0001"	4-0-4	1.5N or less

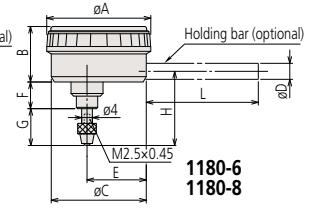
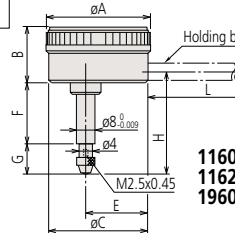
DIMENSIONS

ANSI/AGD Type

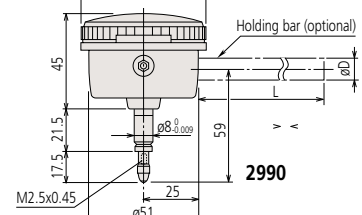
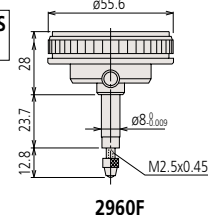


Order No.	A	B	C	D	E	F	G	H	I
1156	41	22	35	6.35	22	15.5	8.5	30.7	81
1157	41	22	35	6.35	22	15.5	8.5	30.7	81
1166	39.6	22	35	—	22	25	13	42	—
1167	39.6	22	35	—	22	25	13	42	—
1168	39.6	22	35	—	22	25	13	42	—
1961	39.6	22	35	—	22	25	10.9	40	—
2961F	55.6	23	35	—	22	25	10.9	40	—
2991	58	40	51	—	25.5	26.5	13.5	55.5	—

ISO/JIS Type



ISO/JIS Type



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