



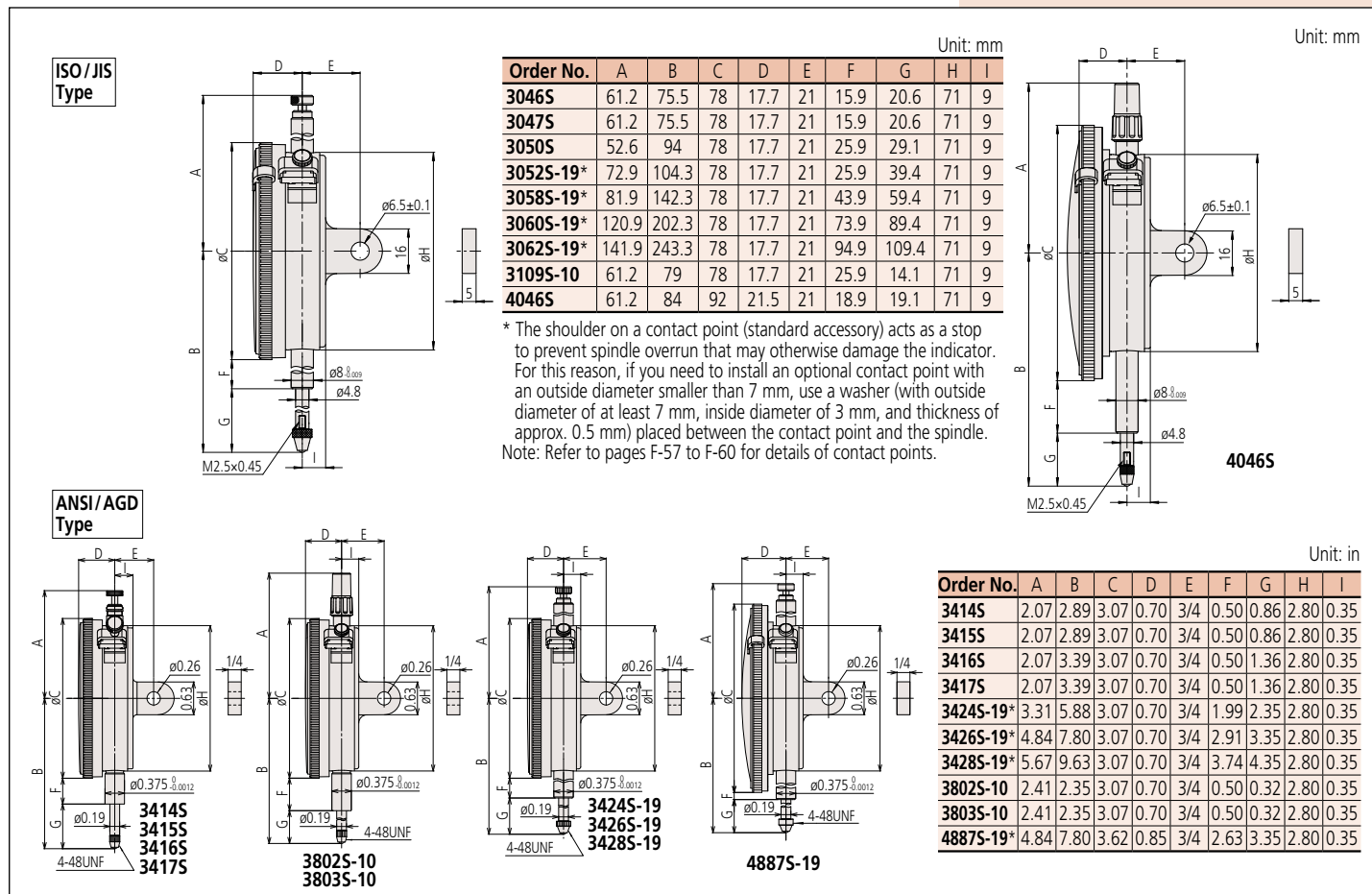
Dial Indicator

Order No.	Range	Graduation	Accuracy
2046S	0-10mm	0.01mm	$\pm 13 \mu\text{m}$
2050S	0-20mm	0.01mm	$\pm 20 \mu\text{m}$
2052S	0-30mm	0.01mm	$\pm 25 \mu\text{m}$
3058S-19	0-50mm	0.01mm	$\pm 30 \mu\text{m}$
2109S-10	0-1mm	0.001mm (0.2MM/REV)	$\pm 5 \mu\text{m}$

Dial Indicators

Comparison measuring instruments which ensure high quality, high accuracy and reliability.

DIMENSIONS



FEATURES

Metric							
Order No.	w/lug	Flat-back	ISO/JIS type	ANSI/AGD type	Flat-back	ISO/JIS type	ANSI/AGD type
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	✓	✓	✓	✓	✓	✓	✓

Inch							
Order No.	w/lug	Flat-back	ISO/JIS type	ANSI/AGD type	Flat-back	ISO/JIS type	ANSI/AGD type
3414S 3414SB	✓	✓	✓	✓	✓	✓	✓
3415S 3415SB	✓	✓	✓	✓	✓	✓	✓
3416S 3416SB	✓	✓	✓	✓	✓	✓	✓
3417S 3417SB	✓	✓	✓	✓	✓	✓	✓
3424S-19 3424SB-19	✓	✓	✓	✓	✓	✓	✓
3426S-19 3426SB-19	✓	✓	✓	✓	✓	✓	✓
3428S-19 3428SB-19	✓	✓	✓	✓	✓	✓	✓
3802S-10 3802SB-10	✓	✓	✓	✓	✓	✓	✓
3803S-10 3803SB-10	✓	✓	✓	✓	✓	✓	✓
4887S-19 4887SB-19	✓	✓	✓	✓	✓	✓	✓

SPECIFICATIONS

Metric												ISO/JIS type	
Order No.		Graduation (mm)	Range (range/rev) (mm)	Maximum permissible error (MPE) (μm)						Dial reading	Measuring force (N)		
w/lug	Flat-back			Indication error				Hysteresis	Repeat- ability				
				1/10 Rev	1/2 Rev	1 Rev	Measuring range						
3046S	3046SB	0.01	10 (1)	5	9	10	15	3	3	±0-100	1.4 or less		
3047S	3047SB	0.01	10 (1)	5	9	10	15	3	3	0-50-0	1.4 or less		
3050S	3050SB	0.01	20 (1)	8	10	15	20	5	4	±0-100	2.0 or less		
3052S-19	3052SB-19	0.01	30 (1)	10	12	15	25	7	5	±0-100	2.5 or less		
3058S-19	3058SB-19	0.01	50 (1)	10	12	15	30	8	5	±0-100	3.0 or less		
3060S-19*1	3060SB-19*1	0.01	80 (1)	12	17	20	45	9	5	±0-100	3.0 or less		
3062S-19*1	3062SB-19*1	0.01	100 (1)	12	17	20	50	9	5	±0-100	3.2 or less		
3109S-10	3109SB-10	0.001	1 (0.2)	2	3.5	4	5	2	0.5	0-100-0	1.5 or less		
4046S	4046SB	0.01	10 (1)	5	9	10	15	3	3	±0-100	1.4 or less		

*1 Use in a vertical orientation (contact point downward) for the long stroke model.

*2 Completed products inspection is performed in the vertical orientation (contact point downward) and the stated accuracy is guaranteed.

Inch		ANSI/AGD type							
Order No.		Graduation (in)	Range (range/rev) (in)	Accuracy*2 (in)		Repeat- ability (in)	Dial reading	Measuring force (N)	
w/lug	Flat-back			First 1 Rev/2.5 Rev/10 Rev					Retrace
3414S	3414SB	0.001	0.5 (0.1)	±0.001/±0.001/±0.001		0.0002	±0.0002	±0-100	1.8 or less
3415S	3415SB	0.001	0.5 (0.1)	±0.001/±0.001/±0.001		0.0002	±0.0002	0-50-0	1.8 or less
3416S	3416SB	0.001	1 (0.1)	±0.001/±0.001/±0.002		0.0002	±0.0002	±0-100	1.8 or less
3417S	3417SB	0.001	1 (0.1)	±0.001/±0.001/±0.002		0.0002	±0.0002	0-50-0	1.8 or less
3424S-19	3424SB-19	0.001	2 (0.1)	±0.001/±0.001/±0.002 /±0.003 (20 Rev)		0.00033	±0.0002	±0-100	3.0 or less
3426S-19*1	3426SB-19*1	0.001	3 (0.1)	±0.001/±0.001/±0.002/±0.003 (20 Rev)/±0.005 (Over 20 Rev)		0.00033	±0.0002	±0-100	3.0 or less
3428S-19*1	3428SB-19*1	0.001	4 (0.1)	±0.001/±0.001/±0.002/±0.003 (20 Rev)/±0.005 (Over 20 Rev)		0.00033	±0.0002	±0-100	3.2 or less
3802S-10	3802SB-10	0.0001	0.025 (0.01)	±0.0001/±0.0001/—		0.0001	±0.00003	0-10	2.0 or less
3803S-10	3803SB-10	0.0001	0.025 (0.01)	±0.0001/±0.0001/—		0.0001	0±.00003	0-5-0	2.0 or less
4887S-19*1	4887SB-19*1	0.001	3 (0.1)	±0.001/±0.001/±0.002/±0.003 (20 Rev)/±0.005 (Over 20 Rev)		0.00033	±0.0002	±0-100	3.0 or less

*1 Use in a vertical orientation (contact point downward) for the long stroke model.

*2 Completed products inspection is performed in the vertical orientation (contact point downward) and the stated accuracy is guaranteed.

Dial Indicators

Comparison measuring instruments which ensure high quality, high accuracy and reliability.

SERIES 3, 4 — Long StrokeType, Large Diameter



Continuous scale



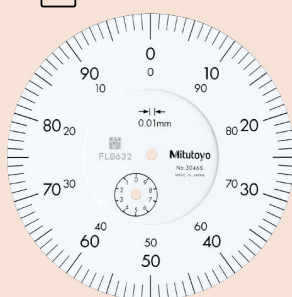
Balanced scale

- Dial indicators with a large-diameter dial face for easy reading.
- Models with longer measuring ranges are also available.
- All types are supplied with limit markers and a bezel clamp as standard.
- The stem and spindle are made of high-strength quench-hardened stainless steel suitable for heavy-duty use.
- A carbide contact point is used.
- 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.

* Can be attached only to
**3046S, 3047S, 3050S,
3109S-10 and 4046S.**



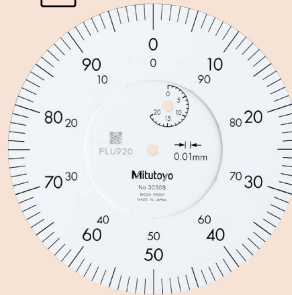
Continuous scale



Graduation: 0.01 mm, Measuring range: 10 mm **3046S**



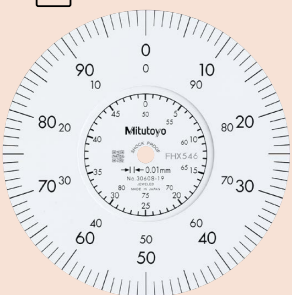
Continuous scale



Graduation: 0.01 mm, Measuring range: 20 mm **3050S**



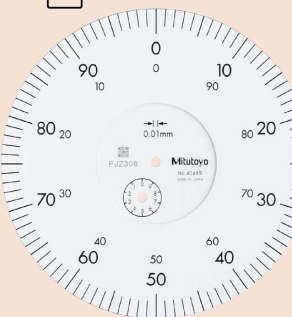
Continuous scale



Graduation: 0.01 mm, Measuring range: 80 mm **3060S-19**



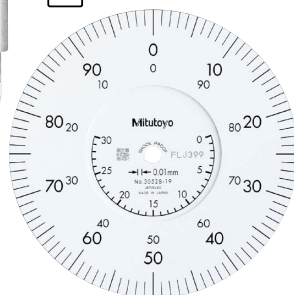
Continuous scale



Graduation: 0.01 mm, Measuring range: 10 mm **4046S**



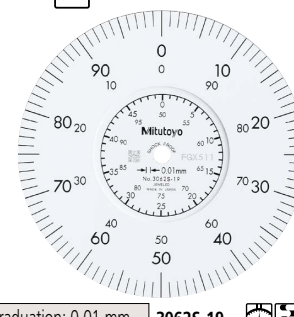
Continuous scale



Graduation: 0.01 mm, Measuring range: 30 mm **3052S-19**



Continuous scale



Graduation: 0.01 mm, Measuring range: 100 mm **3062S-19**



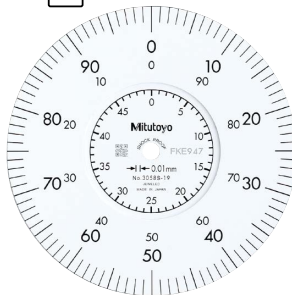
Balanced scale



Graduation: 0.01 mm, Measuring range: 10 mm **3047S**



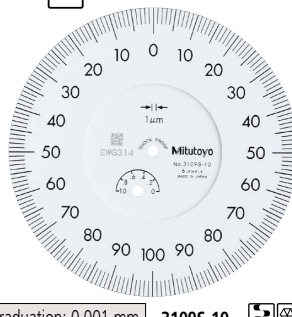
Continuous scale



Graduation: 0.01 mm, Measuring range: 50 mm **3058S-19**



Balanced scale



Graduation: 0.001 mm, Measuring range: 1 mm **3109S-10**



4046S

3058S-19

3109S-10

Dial Indicators

Comparison measuring instruments which ensure high quality, high accuracy and reliability.

FEATURES

Metric									
Order No.	Flat-back	ISO/JIS Type	Flat-back	ISO/JIS Type	Flat-back	ISO/JIS Type	Flat-back	ISO/JIS Type	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	✓							

SPECIFICATIONS

Metric										ISO/JIS type	
Order No.		Graduation (mm)	Range (range/rev) (mm)	Maximum permissible error (MPE) (μm)						Dial reading	Measuring force (N)
w/lug	Flat-back			Indication error				Hysteresis	Repeat-ability		
				1/10 Rev	1/2 Rev	1 Rev	Measuring range				
2050S	2050SB	0.01	20 (1)	8	10	15	20	5	4	±0-100	2.0 or less
2050S-60*	2050SB-60*	0.01	20 (1)	8	10	15	20	5	4	±0-100	2.5 or less
2050S-19	2050SB-19	0.01	20 (1)	8	10	15	20	5	4	±0-100	2.0 or less
2320S-10	2320SB-10	0.01	20 (1)	8	10	15	20	5	4	±0-100	2.0 or less
2052S	2052SB	0.01	30 (1)	10	12	15	25	7	5	±0-100	2.5 or less
2052S-19	2052SB-19	0.01	30 (1)	10	12	15	25	7	5	±0-100	2.5 or less
2330S-10	2330SB-10	0.01	30 (1)	10	12	15	25	7	5	±0-100	2.5 or less
2952S	2952SB	0.01	30 (1)	10	12	15	25	7	5	100-0	2.5 or less

* 2050S-60 and 2050SB-60 are waterproof types that use a rubber bellows to cover the spindle.

Note that the outer diameter of the bellows (ø9.5) is larger than that of the stem (ø8).

Note: Completed products inspection is performed in the vertical orientation (contact point downward) and the stated accuracy is guaranteed.

Inch									
Order No.	Flat-back	ISO/JIS Type	Flat-back	ISO/JIS Type	Flat-back	ISO/JIS Type	Flat-back	ISO/JIS Type	Flat-back
2416S	2416SB	✓							
2416S-06	2416SB-06	✓							
2416S-10	2416SB-10	✓							
2417S	2417SB	✓							
2424S-19	2424SB-19	✓							
2776S	2776SB	✓							
2904S	2904SB	✓							

Inch							ANSI/AGD type		
Order No.		Graduation (in)	Range (range/rev) (in)	Accuracy (in)		Repeat-ability (in)	Dial reading	Measuring force (N)	
w/lug	Flat-back			First 1 Rev/2.5 Rev/10 Rev					Retrace
2416S	2416SB	0.001	1 (0.1)	±0.001/±0.001/±0.002		0.0002	±0.0002	±0-100	1.8 or less
2416S-06	2416SB-06	0.001	1 (0.1)	±0.001/±0.001/±0.002		0.0002	±0.0002	±0-100	1.8 or less
2416S-10	2416SB-10	0.001	1 (0.1)	±0.001/±0.001/±0.002		0.0002	±0.0002	±0-100	1.8 or less
2417S	2417SB	0.001	1 (0.1)	±0.001/±0.001/±0.002		0.0002	±0.0002	0-50-0	1.8 or less
2424S-19	2424SB-19	0.001	2 (0.1)	±0.001/±0.001/±0.002/±0.003 (First 20 Rev)		0.00033	±0.0002	±0-100	2.5 or less
2776S	2776SB	0.0005	1 (0.05)	±0.0005/±0.0005/±0.0015/±0.002 (First 20 Rev)		0.0002	±0.0001	±0-50	2.5 or less
2904S	2904SB	0.001	1 (0.1)	±0.001/±0.001/±0.002		0.0002	±0.0002	100-0	1.8 or less

Note: Completed products inspection is performed in the vertical orientation (contact point downward) and the stated accuracy is guaranteed.

DIMENSIONS

ISO/JIS Type

Unit: mm

ANSI/AGD Type

Order No.	A	B	C	D	E	F	G	H	I	Mass (g)	
										w/lug	Flat-back
2050S	38.8	75.2	57	17.7	20	16.9	29.8	52	7.6	149	140
2050S-60	59.8	87.2	57	17.7	20	12.3	46.4	52	7.6	155	146
2050S-19	38.8	75.2	57	17.7	20	16.9	29.8	52	7.6	149	140
2320S-10	38.8	75.2	57	17.7	20	16.9	29.8	52	7.6	150	141
2052S	38.8	88.7	57	17.7	20	16.9	43.3	52	7.6	152	143
2052S-19	38.8	88.7	57	17.7	20	16.9	43.3	52	7.6	152	143
2330S-10	38.8	88.7	57	17.7	20	16.9	43.3	52	7.6	153	144
2952S	38.8	88.7	57	17.7	20	16.9	43.3	52	7.6	152	143

Order No.	A	B	C	D	E	F	G	H	I	Mass (g)	
										w/lug	Flat-back
2416S	1.53	3.02	2.24	0.70	3/4	0.54	1.37	2.05	0.30	164	139
2416S-06	1.53	3.02	2.24	0.70	3/4	0.54	1.37	2.05	0.30	164	139
2416S-10	1.53	3.02	2.24	0.70	3/4	0.54	1.37	2.05	0.30	164	139
2417S	1.53	3.02	2.24	0.70	3/4	0.54	1.37	2.05	0.30	164	139
2424S-19	4.65	5.61	2.24	0.70	5/6	2.14	2.35	2.05	0.37	248	239
2776S	1.53	3.02	2.24	0.70	3/4	0.54	1.37	2.05	0.30	164	139
2904S	1.53	3.02	2.24	0.70	3/4	0.54	1.37	2.05	0.30	164	139

Note 1: Refer to pages F-57 to F-60 for details of contact points.

Note 2: If the contact point of the waterproof model is replaced, the water resistance cannot be guaranteed.



An inspection certificate is supplied as standard.
Refer to page U-11 for details.

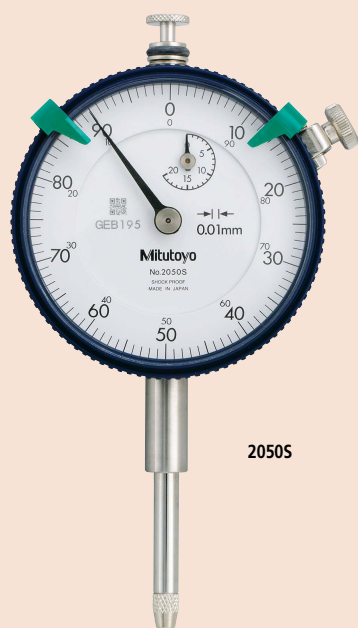
Dial Indicators

Comparison measuring instruments which ensure high quality, high accuracy and reliability.

SERIES 2 — Long Stroke Type

- Long stroke dial indicators with a $\varnothing 57$ mm bezel. All the models are equipped with limit markers and a bezel clamp as standard. (inch models are exception)
- Watertight assembly of bezel and crystal as well as the use of an O-ring prevents water or oil penetration.
- The stem and the spindle are made of high-strength quench-hardened stainless steel suitable for heavy-duty use.
- A carbide contact point is employed.
- The grand gear is made of stainless steel with high resistance to wear and deformation.
- Application of a hard coating on the surface of the crystal makes the gage highly scratch- and chemical-resistant.
- 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 any tools.

* These cannot be used on waterproof models and models with a measuring range of 30 mm.



2050S



Continuous scale



Graduation: 0.01 mm,
Measuring range: 20 mm

2050S

With damper at lowest rest point

2050S-19

Shockproof

Jeweled bearing

With damper at lowest rest point

2050S-60

Waterproof



Continuous scale



Graduation: 0.01 mm,
Measuring range: 30 mm

2052S

With damper at lowest rest point

2052S-19

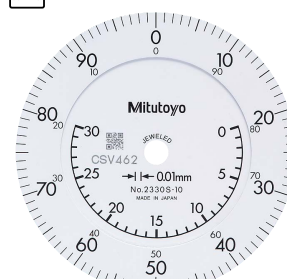
Shockproof

Jeweled bearing

With damper at lowest rest point



Continuous scale



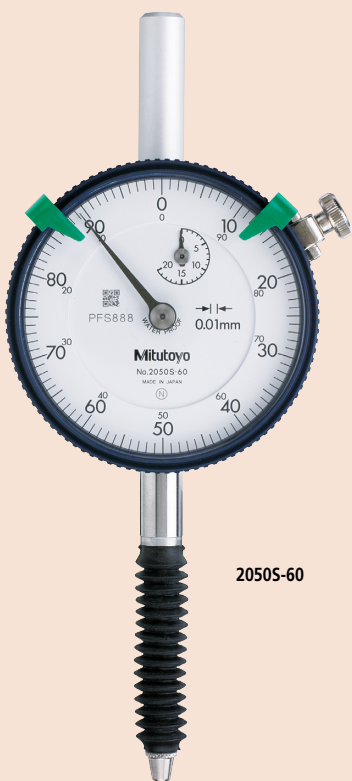
Graduation: 0.01 mm,
Measuring range: 30 mm

2330S-10

With coaxial revolution counter

With damper at lowest rest point

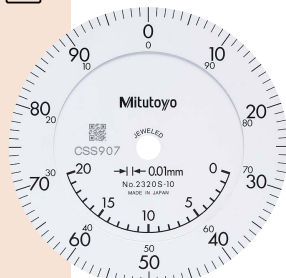
Jeweled bearing



2050S-60



Continuous scale



Graduation: 0.01 mm,
Measuring range: 20 mm

2320S-10

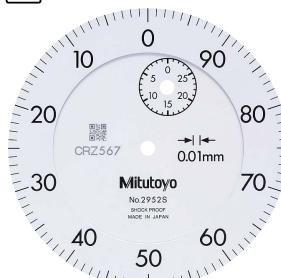
With coaxial revolution counter

With damper at lowest rest point

Jeweled bearing



Reverse reading



Graduation: 0.01 mm,
Measuring range: 30 mm

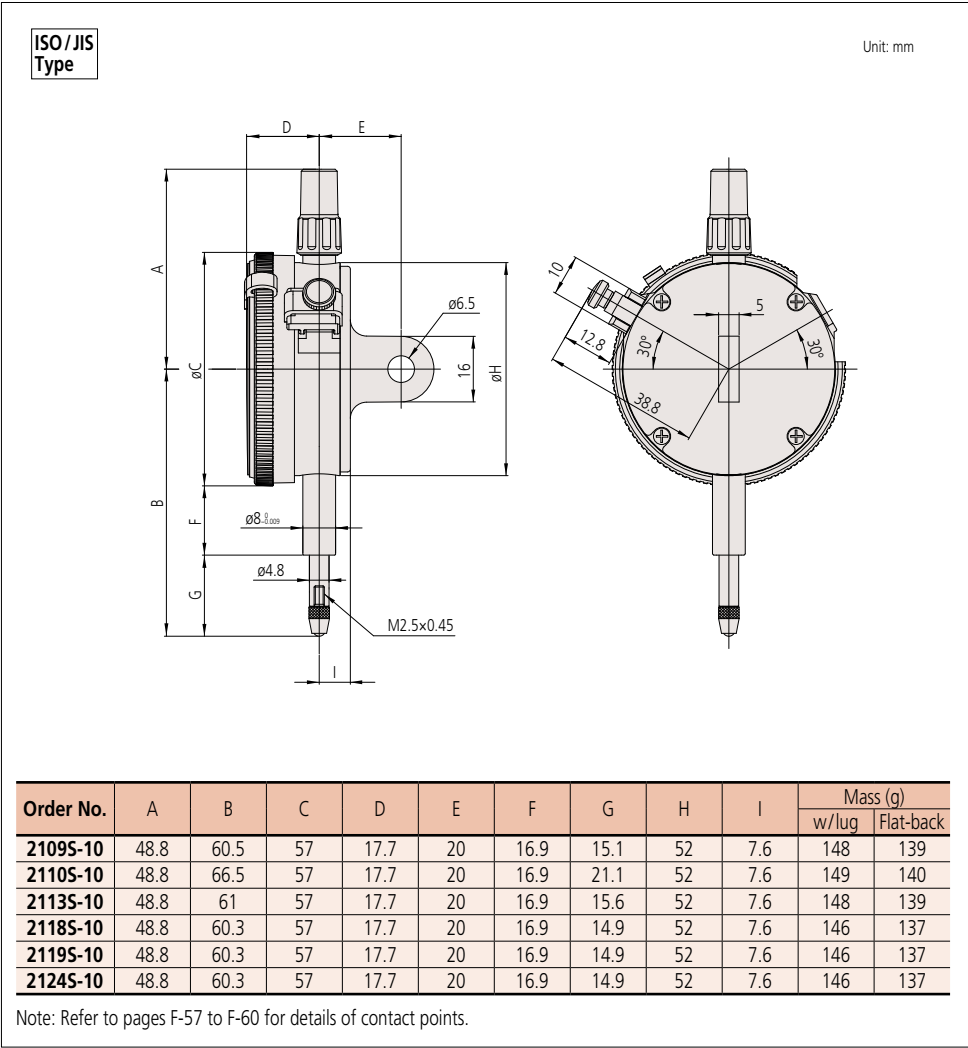
2952S

With damper at lowest rest point

Dial Indicators

Comparison measuring instruments which ensure high quality, high accuracy and reliability.

DIMENSIONS



FEATURES

Metric							
Order No.							
w/lug	Flat-back	ISO	JIS	64	64	64	64
2109S-10	2109SB-10	✓	✓	✓	✓	✓	✓
2110S-10	2110SB-10	✓	✓	✓	✓	✓	✓
2113S-10	2113SB-10	✓	✓	✓	✓	✓	✓
2118S-10	2118SB-10	✓	✓	✓	✓	✓	✓
2119S-10	2119SB-10	✓	✓	✓	✓	✓	✓
2124S-10	2124SB-10	✓	✓	✓	✓	✓	✓

SPECIFICATIONS

Metric										ISO/JIS type	
Order No.		Graduation (mm)	Range (range/rev) (mm)	Maximum permissible error (MPE) (μm)					Dial reading	Measuring force (N)	
w/lug	Flat-back			Indication error				Hysteresis			Repeat-ability
				1/10 Rev	1/2 Rev	1 Rev	Measuring range				
2109S-10	2109SB-10	0.001	1 (0.2)	2	3	4	5	2	0.5	0-100-0	1.5 or less
2110S-10	2110SB-10	0.001	1 (0.1)	2	3	4	5	2	0.5	±0-100	1.8 or less
2113S-10	2113SB-10	0.001	2 (0.2)	2	4	5	7	2	0.5	0-100-0	1.5 or less
2118S-10	2118SB-10	0.001	5 (0.2)	3.5	5	6	10	3	1	0-100-100	1.5 or less
2119S-10	2119SB-10	0.001	5 (0.2)	3.5	5	6	10	3	1	0-100-0	1.5 or less
2124S-10	2124SB-10	0.005	5 (0.5)	5	8	9	12	3	3	±0-50	1.5 or less

Note: Completed products inspection is performed in the vertical orientation (contact point downward) and the stated accuracy is guaranteed.



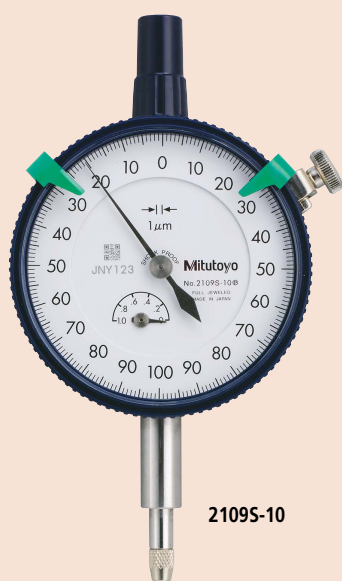
An inspection certificate is supplied as standard.
Refer to page U-11 for details.

Dial Indicators

Comparison measuring instruments which ensure high quality, high accuracy and reliability.

SERIES 2 — Standard Type, 0.001 mm & 0.005 mm Graduation

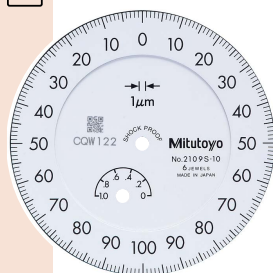
- Standard 0.001 mm and 0.005 mm graduation dial indicators having a bezel with an outside diameter of 57 mm. All types come with limit markers and a bezel clamp.
- The bezel clamp and lifting lever (optional) can be attached to either the right or left side. These parts can be easily installed and removed without tools.
- Watertight assembly of bezel and crystal as well as the use of an O-ring prevents water or oil penetration.
- The stem and spindle are made of high-strength quench-hardened stainless steel suitable for heavy-duty use.
- A carbide contact point is used.
- 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.
- Application of a hard coating on the surface of the crystal makes the gage highly scratch- and chemical-resistant.



2109S-10



Balanced scale



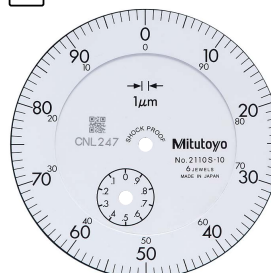
Graduation: 0.001 mm,
Measuring range: 1 mm

2109S-10

- Shockproof type
- Jeweled bearing type



Continuous scale



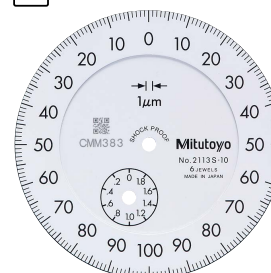
Graduation: 0.001 mm,
Measuring range: 1 mm

2110S-10

- Double scale spacing type
- Shockproof type
- Jeweled bearing type



Balanced scale



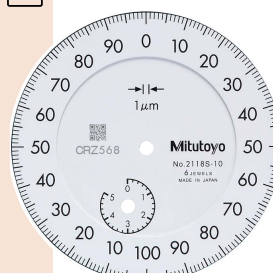
Graduation: 0.001 mm,
Measuring range: 2 mm

2113S-10

- Shockproof type
- Jeweled bearing type



Continuous scale



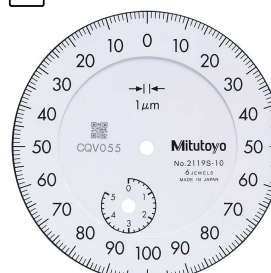
Graduation: 0.001 mm,
Measuring range: 5 mm

2118S-10

- Jeweled bearing



Balanced scale



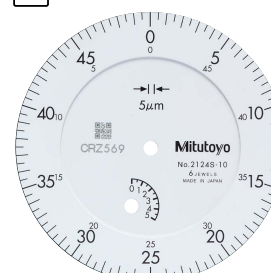
Graduation: 0.001 mm,
Measuring range: 5 mm

2119S-10

- Jeweled bearing



Continuous scale



Graduation: 0.005 mm,
Measuring range: 5 mm

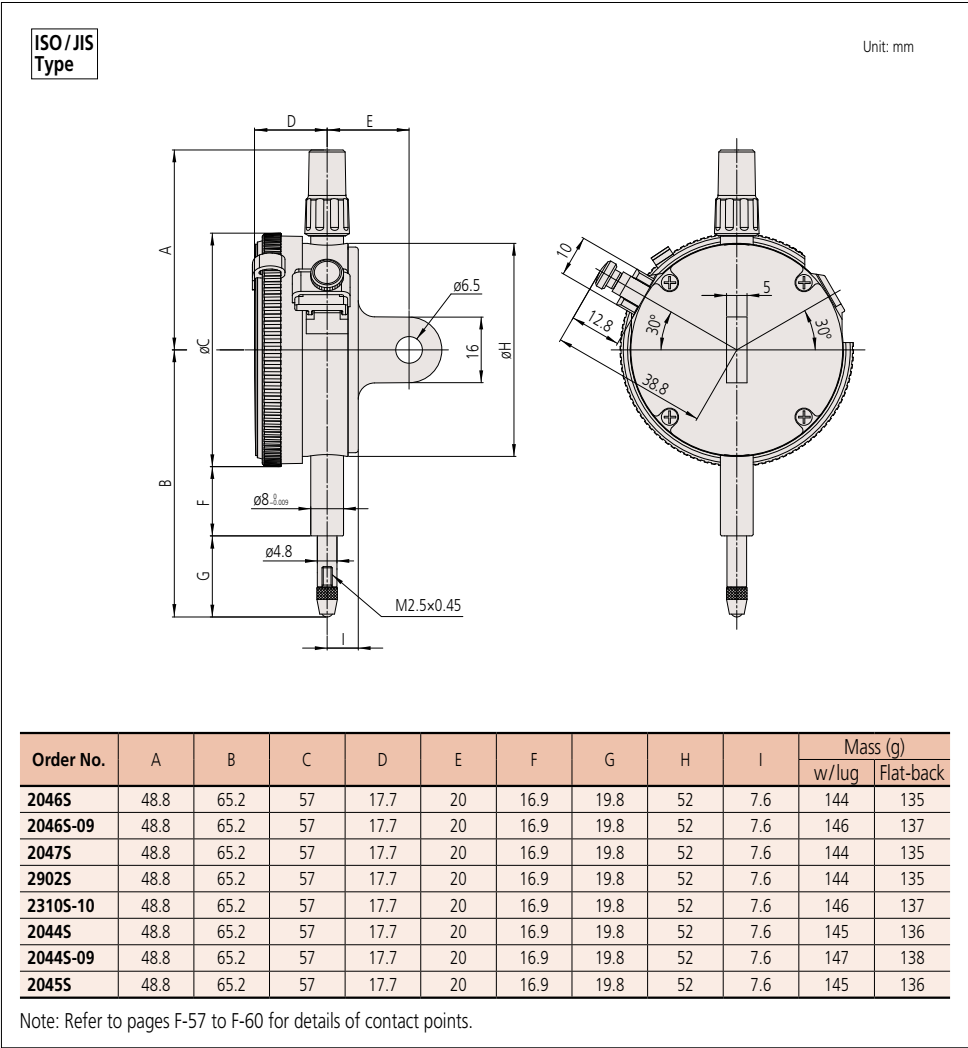
2124S-10

- Jeweled bearing

Dial Indicators

Comparison measuring instruments which ensure high quality, high accuracy and reliability.

DIMENSIONS



FEATURES

Metric									
Order No.									
w/lug	Flat-back	10 1 10	10 1 10	10 1 10	10 1 10	64	10 1 10	10 1 10	10 1 10
2046S	2046SB	✓							
2046S-09	2046SB-09	✓			✓				
2047S	2047SB		✓						
2902S	2902SB			✓					
2310S-10	2310SB-10	✓						✓	✓
2044S	2044SB	✓							
2044S-09	2044SB-09	✓			✓				
2045S	2045SB		✓						

SPECIFICATIONS

Metric												ISO /JIS type	
Order No.		Graduation (mm)	Range (range/rev) (mm)	Maximum permissible error (MPE) (μm)							Dial reading	Measuring force (N)	
w/lug	Flat-back			Indication error				Hysteresis	Repeat- ability				
				1/10 Rev	1/2 Rev	1 Rev	Measuring range						
2046S	2046SB	0.01	10 (1)	5	9	10	13	3	3	±0-100	1.4 or less		
2046S-09	2046SB-09	0.01	10 (1)	5	9	10	15	3	3	±0-100	1.4 or less		
2047S	2047SB	0.01	10 (1)	5	9	10	13	3	3	0-50-0	1.4 or less		
2902S	2902SB	0.01	10 (1)	5	9	10	13	3	3	100-0	1.4 or less		
2310S-10	2310SB-10	0.01	10 (1)	5	9	10	15	3	3	±0-100	1.4 or less		
2044S	2044SB	0.01	5 (1)	5	9	10	12	3	3	±0-100	1.4 or less		
2044S-09	2044SB-09	0.01	5 (1)	5	9	10	12	3	3	±0-100	1.4 or less		
2045S	2045SB	0.01	5 (1)	5	9	10	12	3	3	0-50-0	1.4 or less		

Note: Completed products inspection is performed in the vertical orientation (contact point downward) and the stated accuracy is guaranteed.



An inspection certificate is supplied as standard.
Refer to page U-11 for details.

Dial Indicators

Comparison measuring instruments which ensure high quality, high accuracy and reliability.

SERIES 2 — Standard Type, 0.01 mm Graduation

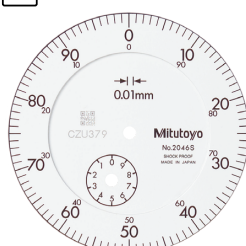
- Standard 0.01 mm graduation dial gages having a bezel with an outside diameter of 57 mm. All types come with limit markers and a bezel clamp as standard.
- The bezel clamp and lifting lever (optional) can be attached to either the right or left side. These parts can be easily installed and removed without tools.
- Watertight assembly of bezel and crystal as well as the use of an O-ring prevents water or oil penetration.
- The stem and spindle are made of high-strength quench-hardened stainless steel suitable for heavy-duty use.
- A carbide contact point is used.
- The grand gear is made of stainless steel with high resistance to wear and deformation.
- Application of a hard coating on the surface of the crystal makes the gage highly scratch- and chemical-resistant.



20465



Continuous scale



Graduation: 0.01 mm,
Measuring range: 10 mm

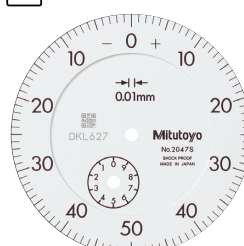
20465

20465-09

Shockproof type



Balanced scale

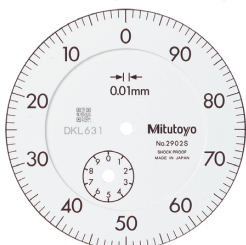


Graduation: 0.01 mm,
Measuring range: 10 mm

20475



Reverse reading type. Suitable for depth and step measurement.



Graduation: 0.01 mm,
Measuring range: 10 mm

29025



Continuous scale



Graduation: 0.01 mm,
Measuring range: 10 mm

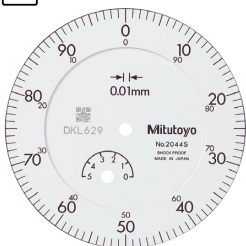
2310S-10

With coaxial revolution counter

Jeweled bearing type



Continuous scale



Graduation: 0.01 mm,
Measuring range: 5 mm

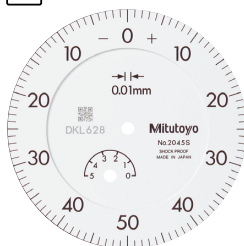
20445

20445-09

Shockproof



Balanced scale



Graduation: 0.01 mm,
Measuring range: 5 mm

20455