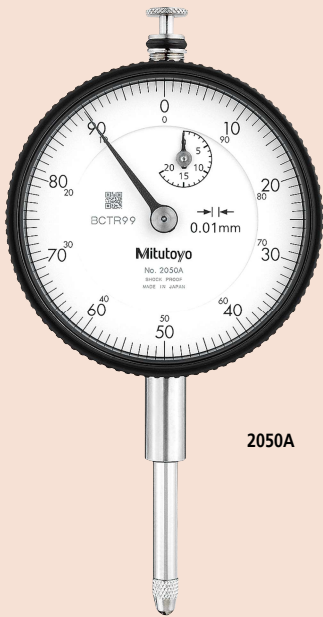




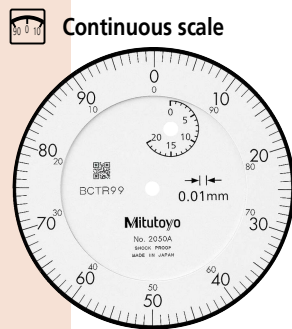
SERIES 2 — Long Stroke Type

- Long stroke dial indicators with a $\varnothing 57$ mm bezel.
- 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 an anti-reflective and hard surface coating improves scale visibility along with scratch and chemical resistance.
- 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 water-proof models and models with a measuring range of 30 mm.



2050A

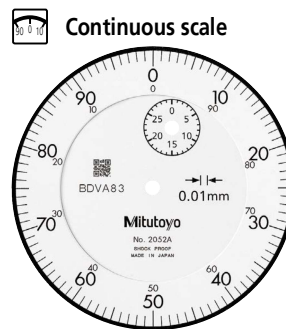


Graduation: 0.01 mm, Measuring range: 20 mm

- With damper at lowest rest point

- 2050A-19
- Shockproof
- Jeweled bearing
- With damper at lowest rest point

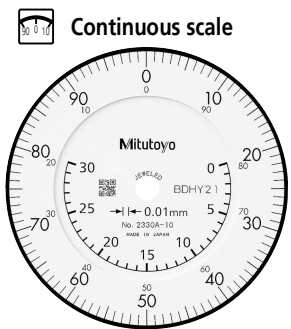
- 2050A-60
- Waterproof



Graduation: 0.01 mm, Measuring range: 30 mm

- With damper at lowest rest point

- 2052A-19
- Shockproof
- Jeweled bearing
- With damper at lowest rest point



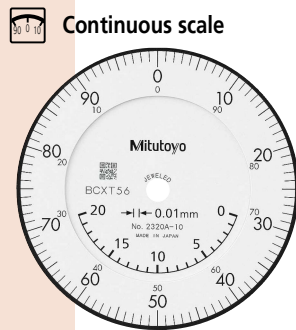
Graduation: 0.01 mm, Measuring range: 30 mm

- With coaxial revolution counter

- With damper at lowest rest point
- Jeweled bearing



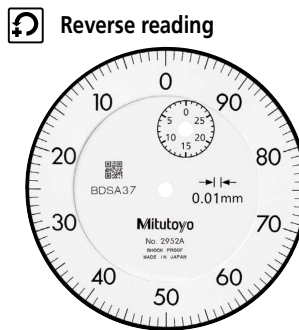
2050A-60



Graduation: 0.01 mm, Measuring range: 20 mm

- With coaxial revolution counter

- With damper at lowest rest point
- Jeweled bearing



Graduation: 0.01 mm, Measuring range: 30 mm

- Reverse reading
- With damper at lowest rest point

Dial Indicators

Optional Accessories

- Limit hand (2 pcs.): **21AZB195**
- Bezel clamp: **21AZB148** (for metric type)
21RZA065 (for inch type)
21RZA067 (for **2424A(B)-19**)

ISO/JIS type

FEATURES

Metric		Features							
Order No.	Flat-back	ISO/JIS	Waterproof	Flat-back	Flat-back	Flat-back	Flat-back	Flat-back	Flat-back
2050A	2050AB	✓							✓
2050A-60	2050AB-60	✓							✓
2050A-19	2050AB-19	✓					✓		✓
2320A-10	2320AB-10	✓						✓	✓
2052A	2052AB	✓						✓	✓
2052A-19	2052AB-19	✓					✓		✓
2330A-10	2330AB-10	✓						✓	✓
2952A	2952AB		✓					✓	✓

SPECIFICATIONS

Metric		Graduation (mm)	Range (range/rev) (mm)	Maximum permissible error (MPE) (μm)						Dial reading	Measuring force (N)
w/lug	Flat-back			Indication error				Hysteresis	Repeatability		
				1/10 Rev	1/2 Rev	1 Rev	Measuring range				
2050A	2050AB	0.01	20 (1)	8	10	15	20	5	4	±0-100	2.0 or less
2050A-60*	2050AB-60*	0.01	20 (1)	8	10	15	20	5	4	±0-100	2.5 or less
2050A-19	2050AB-19	0.01	20 (1)	8	10	15	20	5	4	±0-100	2.0 or less
2320A-10	2320AB-10	0.01	20 (1)	8	10	15	20	5	4	±0-100	2.0 or less
2052A	2052AB	0.01	30 (1)	10	12	15	25	7	5	±0-100	2.5 or less
2052A-19	2052AB-19	0.01	30 (1)	10	12	15	25	7	5	±0-100	2.5 or less
2330A-10	2330AB-10	0.01	30 (1)	10	12	15	25	7	5	±0-100	2.5 or less
2952A	2952AB	0.01	30 (1)	10	12	15	25	7	5	100-0	2.5 or less

* **2050A-60** and **2050AB-60** are water-proof 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		Features							
Order No.	Flat-back	ANSI/AGD	Waterproof	Flat-back	Flat-back	Flat-back	Flat-back	Flat-back	Flat-back
2416A	2416AB	✓							
2416A-06	2416AB-06	✓							
2416A-10	2416AB-10	✓						✓	
2417A	2417AB		✓						
2424A-19	2424AB-19	✓		✓				✓	✓
2776A	2776AB	✓							
2904A	2904AB							✓	

ANSI/AGD type

Inch		Graduation (in)	Range (range/rev) (in)	Accuracy (in)			Repeatability (in)	Dial reading	Measuring force (N)
w/lug	Flat-back			First 1 Rev/2.5 Rev/10 Rev		Retrace			
2416A	2416AB	0.001	1 (0.1)	±0.001/±0.001/±0.002		0.0002	±0.0002	±0-100	1.8 or less
2416A-06	2416AB-06	0.001	1 (0.1)	±0.001/±0.001/±0.002		0.0002	±0.0002	±0-100	1.8 or less
2416A-10	2416AB-10	0.001	1 (0.1)	±0.001/±0.001/±0.002		0.0002	±0.0002	±0-100	1.8 or less
2417A	2417AB	0.001	1 (0.1)	±0.001/±0.001/±0.002		0.0002	±0.0002	0-50-0	1.8 or less
2424A-19	2424AB-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
2776A	2776AB	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
2904A	2904AB	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

2050A-60

Unit: in

ANSI/AGD Type

2424A-19

Order No.	A	B	C	D	E	F	G	H	I	Mass (g)	
	w/lug	Flat-back								w/lug	Flat-back
2050A	38.8	75.2	57	18.1	20	16.9	29.8	52	7.6	149	140
2050A-60	58.2	87.2	57	18.1	20	12.3	31.1	52	7.6	155	146
2050A-19	38.8	75.2	57	18.1	20	16.9	29.8	52	7.6	149	140
2320A-10	38.8	75.2	57	18.1	20	16.9	29.8	52	7.6	150	141
2052A	38.8	88.7	57	18.1	20	16.9	43.3	52	7.6	152	143
2052A-19	38.8	88.7	57	18.1	20	16.9	43.3	52	7.6	152	143
2330A-10	38.8	88.7	57	18.1	20	16.9	43.3	52	7.6	153	144
2952A	38.8	88.7	57	18.1	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								w/lug	Flat-back
2416A	1.53	3.02	2.24	0.71	3/4	0.54	1.37	2.05	0.30	164	139
2416A-06	1.53	3.02	2.24	0.71	3/4	0.54	1.37	2.05	0.30	164	139
2416A-10	1.53	3.02	2.24	0.71	3/4	0.54	1.37	2.05	0.30	164	139
2417A	1.53	3.02	2.24	0.71	3/4	0.54	1.37	2.05	0.30	164	139
2424A-19	4.65	5.61	2.24	0.71	5/6	2.14	2.35	2.05	0.37	248	239
2776A	1.53	3.02	2.24	0.71	3/4	0.54	1.37	2.05	0.30	164	139
2904A	1.53	3.02	2.24	0.71	3/4	0.54	1.37	2.05	0.30	164	139

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

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