

## Dial Indicators



### SERIES 2 — Long Stroke Type

- Long stroke dial indicators with measuring range of 20 mm or more have a  $\varnothing 57$  mm bezel.
- The indicator is highly durable thanks to its oil- and water-tight design, quenched hardened stainless-steel, carbide contact point, and a grand gear made of wear- and deformation-resistant material.
- Application of an anti-reflective and hard surface coating improves scale visibility along with scratch and chemical resistance.
- The lifting lever (optional) cannot be used with models that are water-proof or which have a measurement range of 30 mm.



### SPECIFICATIONS

Metric		<div><div></div> ISO/JIS type <div></div> ANSI/AGD type</div>									
Code 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				
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 ( $\varnothing 9.5$ ) is larger than that of the stem ( $\varnothing 8$ ).

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

Inch											
Code 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					
2416A	2416AB	0.001	1 (0.1)	$\pm 0.001/\pm 0.001/\pm 0.002$		0.0002	$\pm 0.0002$	$\pm 0-100$	1.8 or less		
2416A-06	2416AB-06	0.001	1 (0.1)	$\pm 0.001/\pm 0.001/\pm 0.002$		0.0002	$\pm 0.0002$	$\pm 0-100$	1.8 or less		
2416A-10	2416AB-10	0.001	1 (0.1)	$\pm 0.001/\pm 0.001/\pm 0.002$		0.0002	$\pm 0.0002$	$\pm 0-100$	1.8 or less		
2417A	2417AB	0.001	1 (0.1)	$\pm 0.001/\pm 0.001/\pm 0.002$		0.0002	$\pm 0.0002$	0-50-0	1.8 or less		
2424A-19	2424AB-19	0.001	2 (0.1)	$\pm 0.001/\pm 0.001/\pm 0.002/\pm 0.003$ (First 20 Rev)		0.00033	$\pm 0.0002$	$\pm 0-100$	2.5 or less		
2776A	2776AB	0.0005	1 (0.05)	$\pm 0.0005/\pm 0.0005/\pm 0.0015/\pm 0.002$ (First 20 Rev)		0.0002	$\pm 0.0001$	$\pm 0-50$	2.5 or less		
2904A	2904AB	0.001	1 (0.1)	$\pm 0.001/\pm 0.001/\pm 0.002$		0.0002	$\pm 0.0002$	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.

## Optional Accessories

- Limit hand (2 pcs.): **21AZB195**



- Bezel clamp: **21AZB148** (for metric type)  
**21RZA065** (for inch type)  
**21RZA067** (for **2424A(B)-19**)

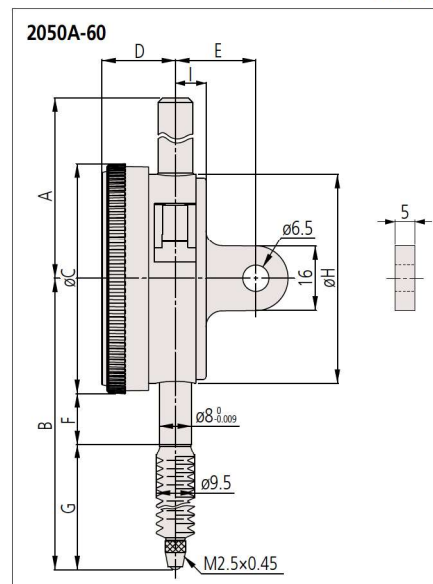
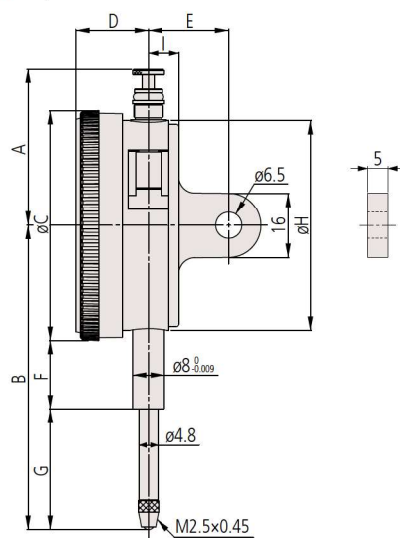


**21AZB148**

## DIMENSIONS

ISO/JIS  
Type

Unit: mm

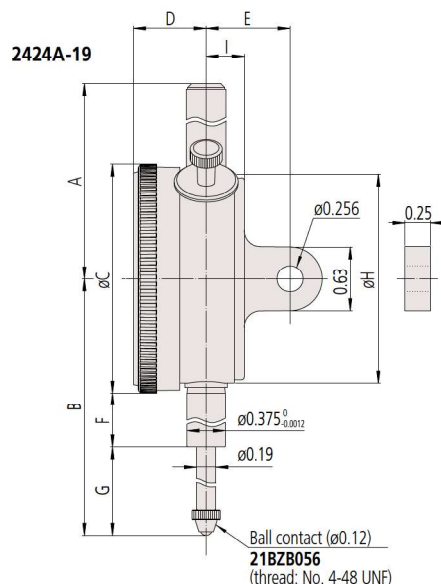


Code No.	A	B	C	D	E	F	G	H	I	Mass (g)	
										w/lug	Flat-back
<b>2050A</b>	38.5	75.2	57	18.1	20	16.9	29.8	52	7.6	149	140
<b>2050A-60</b>	58.2	87.2	57	18.1	20	12.3	46.4	52	7.6	155	146
<b>2050A-19</b>	38.5	75.2	57	18.1	20	16.9	29.8	52	7.6	149	140
<b>2320A-10</b>	38.5	75.2	57	18.1	20	16.9	29.8	52	7.6	150	141
<b>2052A</b>	38.5	88.7	57	18.1	20	16.9	43.3	52	7.6	152	143
<b>2052A-19</b>	38.5	88.7	57	18.1	20	16.9	43.3	52	7.6	152	143
<b>2330A-10</b>	38.5	88.7	57	18.1	20	16.9	43.3	52	7.6	153	144
<b>2952A</b>	38.5	88.7	57	18.1	20	16.9	43.3	52	7.6	152	143

Note: Refer to pages 07-63 to 07-68 for details of contact points.

ANSI/AGD  
Type

Unit: in

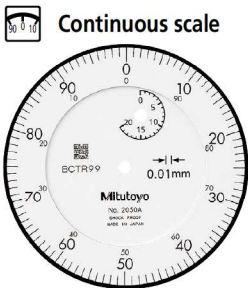


Code No.	A	B	C	D	E	F	G	H	I	Mass (g)	
										w/lug	Flat-back
<b>2416A</b>	1.53	3.02	2.24	0.71	3/4	0.54	1.37	2.05	0.30	164	139
<b>2416A-06</b>	1.53	3.02	2.24	0.71	3/4	0.54	1.37	2.05	0.30	164	139
<b>2416A-10</b>	1.53	3.02	2.24	0.71	3/4	0.54	1.37	2.05	0.30	164	139
<b>2417A</b>	1.53	3.02	2.24	0.71	3/4	0.54	1.37	2.05	0.30	164	139
<b>2424A-19</b>	4.67	5.61	2.24	0.71	5/6	2.14	2.35	2.05	0.37	248	239
<b>2776A</b>	1.53	3.02	2.24	0.71	3/4	0.54	1.37	2.05	0.30	164	139
<b>2904A</b>	1.53	3.02	2.24	0.71	3/4	0.54	1.37	2.05	0.30	164	139

Note: Refer to pages 07-63 to 07-68 for details of contact points.

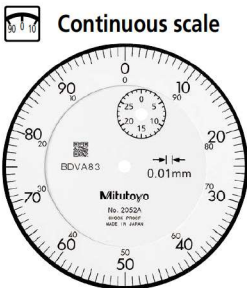
Dial Indicators

SERIES 2 — Long Stroke Type



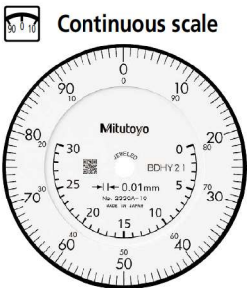
Graduation: 0.01 mm,  
Measuring range: 20 mm

- 2050A
- With damper at lowest rest point
- 2050A-19
- Shockproof
  - Jeweled bearing
  - With damper at lowest rest point
- 2050A-60
- Waterproof



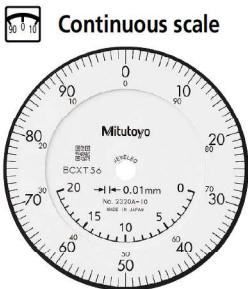
Graduation: 0.01 mm,  
Measuring range: 30 mm

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



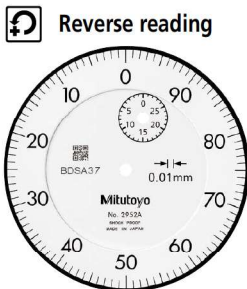
Graduation: 0.01 mm,  
Measuring range: 30 mm

- 2330A-10
- With coaxial revolution counter
  - With damper at lowest rest point
  - Jeweled bearing



Graduation: 0.01 mm,  
Measuring range: 20 mm

- 2320A-10
- With coaxial revolution counter
  - With damper at lowest rest point
  - Jeweled bearing



Graduation: 0.01 mm,  
Measuring range: 30 mm

- 2952A
- With damper at lowest rest point

FEATURES

Metric		ISO/JIS type		ANSI/AGD type	
Code No.		Flat-back	Shockproof	Waterproof	Jeweled bearing
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		✓		✓

Inch		Flat-back	Shockproof	Waterproof	Jeweled bearing
Code No.					
2416A	2416AB	✓			
2416A-06	2416AB-06	✓			
2416A-10	2416AB-10	✓		✓	
2417A	2417AB		✓		
2424A-19	2424AB-19	✓	✓		✓
2776A	2776AB	✓			
2904A	2904AB		✓		