

Dial Indicators

Dial Indicators

Mitutoyo Dial Indicators have long been used by many of our customers. In full recognition of their needs, we have devoted ourselves to the research and development necessary to produce high-quality and high-accuracy dial indicators. Due to the recent re-acknowledgement of the importance of measurement technologies, the demands on dial indicators are many and varied: installation in measuring jigs, mounting in countless types of precision equipment, etc. We offer numerous models with various types of dial faces, measuring ranges, graduation styles and environmental resistance ratings. The stems, which ensure the fixture reliability, and the spindles, which are the basis of accuracy, have excellent resistance against harsh use thanks to the hardened stainless steel construction. 0.01 mm resolution dial indicators have a main gear made of stainless steel with high resistance to wear and deformation. 0.001 mm graduation dial indicators employ a sector gear made of a special alloy in order to further increase the resistance to wear.

Many models employ an O-ring to ensure airtightness between the outer frame and the bezel in order to prevent water or oil penetration from the front.

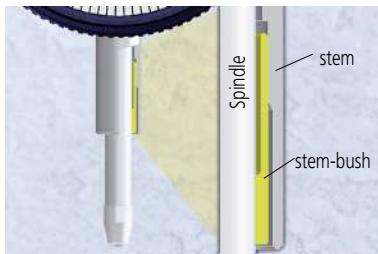
Mitutoyo Dial Indicators are manufactured and inspected according to JIS B 7503:2017. (Inspection orientation: vertical)

Important factors in choosing a dial indicator: the size (bezel diameter), resolution (graduation) and measuring range. Use the table on the right to help choose a suitable model for your application.

FEATURES: A Series (SERIES 2, 3, 4)



- No through screw-holes on the frame for high oil- and dust-resistance. The bezel clamp (optional) can be attached either to the right or left side.
- Improved impact- and oil-resistant materials are employed in the bezel. Easier reading is due to the improved shape of the crystal face.



- Revolutionary stem-bush design for trouble-free stem clamping (longer clamping range; maximum tightening torque at the clamping point with M5 screw: 150 N·cm).



- The spindle lifting lever (optional: 21EZA198) can be attached to either the right or left side providing high operability and smooth movement. This lever can be easily installed and removed.



- The optional limit hands (1) can be moved without interfering with the optional bezel clamp (2).

- Application of anti-stain and anti-reflective coating improves scale visibility.



<Conventional model>



<New model>

Parts of a dial indicator



Feature icons

Icon	Feature description
	Continuous scale
	Balanced scale
	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
	Waterproof (IP63)
	Waterproof (IP64)
	With damper at top rest point
	With damper at lowest rest point
	Jeweled bearing
	Peak retaining
	Dustproof
	With coaxial revolution counter
	Back Plunger
	Adjustable hand

Note: Mitutoyo produces ASME-compatible products. Contact us for details.

Dial Indicators



SERIES 2 — Standard Type, 0.01 mm Graduation

- This model is the most popular Mitutoyo indicator with excellent accuracy and durability. Standard 0.01 mm graduation dial indicators have a bezel with an outside diameter of 57 mm.
- 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.



2046A

SPECIFICATIONS

Metric		ISO/JIS type							
Order No.	Graduation (mm)	Range (range/rev) (mm)	Accuracy (μm)			Hysteresis	Repeatability	Dial reading	Measuring force (N)
w/lug	Flat-back	1/10 Rev	1/2 Rev	1 Rev	Measuring range				
2046A	2046AB	0.01	10 (1)	5	9	10	13	3	$\pm 0-100$ 1.4 or less
2046A-09	2046AB-09	0.01	10 (1)	5	9	10	15	3	$\pm 0-100$ 1.4 or less
2047A	2047AB	0.01	10 (1)	5	9	10	13	3	0-50-0 1.4 or less
2902A	2902AB	0.01	10 (1)	5	9	10	13	3	100-0 1.4 or less
2310A-10	2310AB-10	0.01	10 (1)	5	9	10	15	3	$\pm 0-100$ 1.4 or less
2044A	2044AB	0.01	5 (1)	5	9	10	12	3	$\pm 0-100$ 1.4 or less
2044A-09	2044AB-09	0.01	5 (1)	5	9	10	12	3	$\pm 0-100$ 1.4 or less
2045A	2045AB	0.01	5 (1)	5	9	10	12	3	0-50-0 1.4 or less

DIMENSIONS

ISO/JIS Type		Unit: mm										
Order No.		A	B	C	D	E	F	G	H	I	Mass (g)	
											w/lug	Flat-back
2046A		47.2	65.2	57	18.1	20	16.9	19.8	52	7.6	144	135
2046A-09		47.2	65.2	57	18.1	20	16.9	19.8	52	7.6	146	137
2047A		47.2	65.2	57	18.1	20	16.9	19.8	52	7.6	144	135
2902A		47.2	65.2	57	18.1	20	16.9	19.8	52	7.6	144	135
2310A-10		47.2	65.2	57	18.1	20	16.9	19.8	52	7.6	146	137
2044A		47.2	65.2	57	18.1	20	16.9	19.8	52	7.6	145	136
2044A-09		47.2	65.2	57	18.1	20	16.9	19.8	52	7.6	147	138
2045A		47.2	65.2	57	18.1	20	16.9	19.8	52	7.6	145	136

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



Get a Quote

Dial Indicators

Optional Accessories

- Limit hand (2 pcs.): 21AZB195

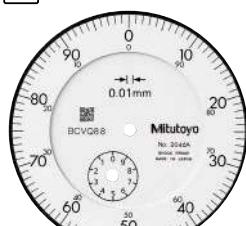


- Bezel clamp: 21AZB148



SERIES 2 — Standard Type, 0.01 mm Graduation

Continuous scale



Graduation: 0.01 mm,
Measuring range: 10 mm

2046A

With damper at
top rest point

2046A-09

Shockproof

Reverse reading type. Suitable
for depth and step measurement.



Graduation: 0.01 mm,
Measuring range: 10 mm

2902A

With damper at
top rest point

Continuous scale



Graduation: 0.01 mm,
Measuring range: 5 mm

2044A

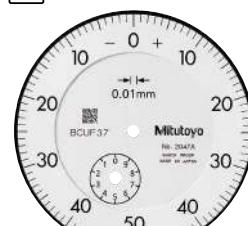
With damper at
top rest point

2044A-09

With damper at
top rest point

Shockproof

Balanced scale

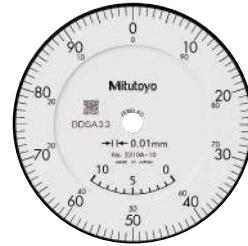


Graduation: 0.01 mm,
Measuring range: 10 mm

2047A

With damper at
top rest point

Continuous scale



Graduation: 0.01 mm,
Measuring range: 10 mm

2310A-10

With coaxial
revolution counter

Jeweled bearing

Balanced scale



Graduation: 0.01 mm,
Measuring range: 5 mm

2045A

With damper at
top rest point

FEATURES

Metric

ISO/JIS type

Order No.	90 0 10	10 0 10	10 0 20	64	100 0 10	100 0 20
2046A	2046AB	✓				✓
2046A-09	2046AB-09	✓			✓	
2047A	2047AB		✓	✓		✓
2902A	2902AB		✓			✓
2310A-10	2310AB-10	✓				✓
2044A	2044AB	✓				✓
2044A-09	2044AB-09	✓		✓		
2045A	2045AB		✓	✓		✓

Dial Indicators

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

- Standard 0.001 mm and 0.005 mm graduation dial indicators have a bezel with an outside diameter of 57 mm. These indicators provide excellent accuracy and durability.
- 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 indicator uses jeweled bearings, providing excellent indication sensitivity and durability.



SPECIFICATIONS

Metric		Stem ø8mm, M2.5x0.45 Thread										ISO/JIS type	
Order No.		Graduation (mm)	Range (range/rev) (mm)	Accuracy (µm)				Hysteresis	Repeatability	Dial reading	Measuring force (N)		
w/lug	Flat-back			1/10 Rev	1/2 Rev	1 Rev	Measuring range						
2109A-10	2109AB-10	0.001	1 (0.2)	2	3	4	5	2	0.5	0-100-0	1.5 or less		
2110A-10	2110AB-10	0.001	1 (0.1)	2	3	4	5	2	0.5	±0-100	1.8 or less		
2113A-10	2113AB-10	0.001	2 (0.2)	2	4	5	7	2	0.5	0-100-0	1.5 or less		
2118A-10	2118AB-10	0.001	5 (0.2)	3.5	5	6	10	3	1	0-100-100	1.5 or less		
2119A-10	2119AB-10	0.001	5 (0.2)	3.5	5	6	10	3	1	0-100-0	1.5 or less		
2124A-10	2124AB-10	0.005	5 (0.5)	5	8	9	12	3	3	±0-50	1.5 or less		

DIMENSIONS

ISO/JIS Type

Unit: mm

The drawing shows a front view of the dial indicator with various dimensions labeled: A (height), B (width), C (depth), D (stem length), E (bezel height), F (contact point height), G (scale height), H (scale width), and I (stem diameter). A side view dimension of 5 is also indicated.

Order No.	A	B	C	D	E	F	G	H	I	Mass (g)	
										w/lug	Flat-back
2109A-10	47.2	60.5	57	18.1	20	16.9	15.1	52	7.6	148	139
2110A-10	47.2	66.5	57	18.1	20	16.9	21.1	52	7.6	149	140
2113A-10	47.2	61	57	18.1	20	16.9	15.6	52	7.6	148	139
2118A-10	47.2	60.7	57	18.1	20	16.9	15.3	52	7.6	146	137
2119A-10	47.2	60.7	57	18.1	20	16.9	15.3	52	7.6	146	137
2124A-10	47.2	60.7	57	18.1	20	16.9	15.3	52	7.6	146	137

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



Optional Accessories

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



- Bezel clamp: **21AZB148** (for metric type)
21RZA065* (for inch type)

*Included with ANSI/AGD models



21AZB148



Need Support?

Dial Indicators

Optional Accessories

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



- Bezel clamp: **21AZB148** (for metric type)
21RZA065* (for inch type)

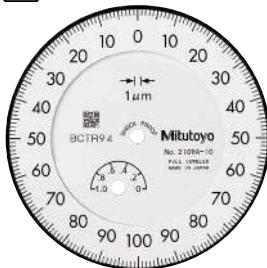
*Included with ANSI/AGD models



21AZB148

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

Balanced scale



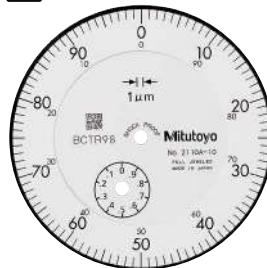
Graduation: 0.001 mm,
Measuring range: 1 mm

2109A-10

Shockproof

Jeweled bearing

Continuous scale



Graduation: 0.001 mm,
Measuring range: 1 mm

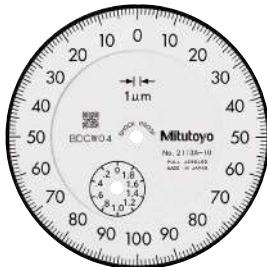
2110A-10

Double scale spacing

Shockproof

Jeweled bearing

Balanced scale



Graduation: 0.001 mm,
Measuring range: 2 mm

2113A-10

Shockproof

Jeweled bearing

Continuous scale

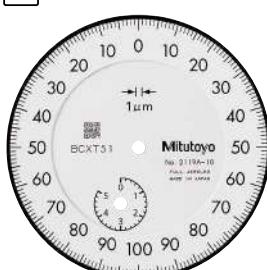


Graduation: 0.001 mm,
Measuring range: 5 mm

2118A-10

Jeweled bearing

Balanced scale

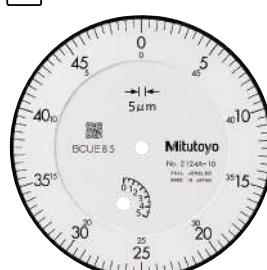


Graduation: 0.001 mm,
Measuring range: 5 mm

2119A-10

Jeweled bearing

Continuous scale



Graduation: 0.005 mm,
Measuring range: 5 mm

2124A-10

Jeweled bearing

FEATURES

Metric

ISO/JIS type

	Order No.						
w/lug	Flat-back			<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	
2109A-10	2109AB-10						
2110A-10	2110AB-10	<input checked="" type="checkbox"/>					
2113A-10	2113AB-10	<input checked="" type="checkbox"/>					
2118A-10	2118AB-10	<input checked="" type="checkbox"/>				<input checked="" type="checkbox"/>	
2119A-10	2119AB-10		<input checked="" type="checkbox"/>			<input checked="" type="checkbox"/>	
2124A-10	2124AB-10	<input checked="" type="checkbox"/>				<input checked="" type="checkbox"/>	

Dial Indicators

SERIES 2 — Water-proof Type, 0.01 mm & 0.001 mm Graduation

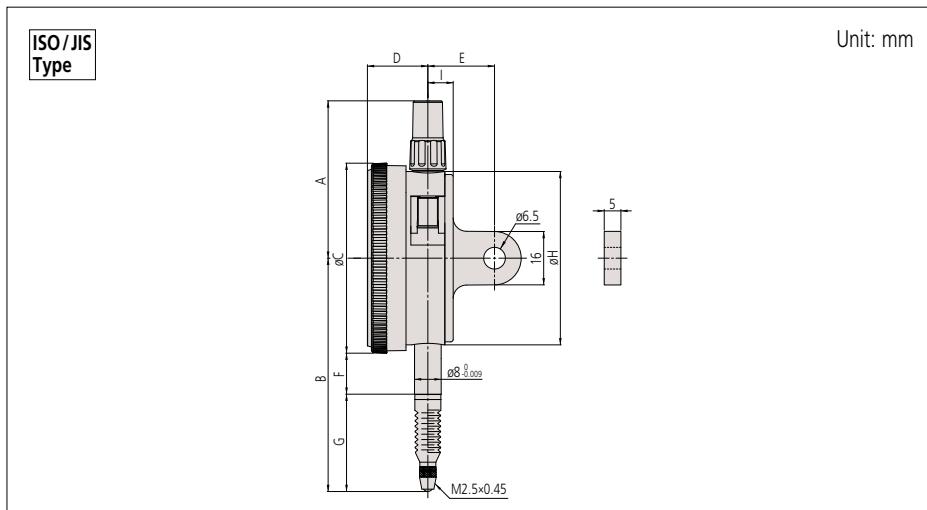
- Standard 0.01 mm and 0.001 mm graduation dial indicators have a highly water-resistant bezel with an outside diameter of 57 mm.
- O-rings and rubber bellows are used to prevent water and oil penetration.
- Excellent in accuracy and durability.
- The indicator is highly durable thanks to its oil- and 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.



SPECIFICATIONS

Metric		ISO/JIS type								
Order No.	Graduation (mm)	Range (range/rev) (mm)	Accuracy (μm)				Hysteresis	Repeatability	Dial reading	Measuring force (N)
			1/10 Rev	1/2 Rev	1 Rev	Measuring range				
2046A-60	0.01	10 (1)	5	9	10	13	3	3	$\pm 0-100$	2.5 or less
2044A-60	0.01	5 (1)	5	9	10	12	3	3	$\pm 0-100$	2.5 or less
2109A-70	0.001	1 (0.2)	2	3	4	5	2	0.5	0-100-0	2.0 or less
2110A-70	0.001	1 (0.1)	2	3	4	5	2	0.5	$\pm 0-100$	2.0 or less

DIMENSIONS



Order No.	A	B	C	D	E	F	G	H	I	Mass (g)	
										w/lug	Flat-back
2046A-60	47.2	74.7	57	18.1	20	12.3	33.9	52	7.6	147	138
2044A-60	47.2	70	57	18.1	20	12.3	29.2	52	7.6	147	138
2109A-70	47.2	65.3	57	18.1	20	12.3	24.5	52	7.6	149	140
2110A-70	47.2	67.5	57	18.1	20	12.3	26.7	52	7.6	150	141

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

IP 64



Optional Accessories

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



- Bezel clamp: **21AZB148** (for metric type)
21RZA065* (for inch type)

*Included with ANSI/AGD models



21AZB148



Need Service?

Dial Indicators

SERIES 2 — Water-proof Type, 0.01 mm & 0.001 mm Graduation

Optional Accessories

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



- Bezel clamp: **21AZB148** (for metric type)
21RZA065* (for inch type)

*Included with ANSI/AGD models



21AZB148

Continuous scale



Graduation: 0.01 mm,
Measuring range: 10 mm

2046A-60

- Waterproof
- With damper at top rest point

Continuous scale



Graduation: 0.01 mm,
Measuring range: 5 mm

2044A-60

- Waterproof
- With damper at top rest point

Balanced scale



Graduation: 0.001 mm,
Measuring range: 1 mm

2109A-70

- Waterproof
- Shockproof
- Jeweled bearing

Continuous scale



Graduation: 0.001 mm,
Measuring range: 1 mm

2110A-70

- Double scale spacing
- Shockproof
- Jeweled bearing

FEATURES

Metric

ISO/JIS type

Order No.	w/lug	Flat-back						
2046A-60	2046AB-60	✓			✓	✓		
2044A-60	2044AB-60	✓			✓	✓		
2109A-70	2109AB-70		✓	✓	✓		✓	
2110A-70	2110AB-70	✓		✓	✓		✓	✓

Dial Indicators

SERIES 2 — Standard Type, Inch Reading

SPECIFICATIONS

Inch		Stem $\varnothing 3/8"$, #4-48 UNF				ANSI/AGD type		
Order No.		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			
2414A	2414AB	0.001	0.5 (0.1)	$\pm 0.001/\pm 0.001/\pm 0.001$	0.0002	± 0.0002	$\pm 0-100$	1.8 or less
2415A	2415AB	0.001	0.5 (0.1)	$\pm 0.001/\pm 0.001/\pm 0.001$	0.0002	± 0.0002	0-50-0	1.8 or less
2914A	2914AB	0.001	0.5 (0.1)	$\pm 0.001/\pm 0.001/\pm 0.001$	0.0002	± 0.0002	100-0	1.8 or less
2506A	2506AB	0.0005	0.125 (0.05)	$\pm 0.0005/\pm 0.0005/-$	0.00016	± 0.0001	$\pm 0-50$	1.8 or less
2507A	2507AB	0.0005	0.125 (0.05)	$\pm 0.0005/\pm 0.0005/-$	0.00016	± 0.0001	0-25-0	1.8 or less
2514A	2514AB	0.0005	0.5 (0.05)	$\pm 0.0005/\pm 0.0005/\pm 0.0015$	0.00016	± 0.0001	$\pm 0-50$	1.8 or less
2922A	2922AB	0.0005	0.125 (0.05)	$\pm 0.0005/\pm 0.0005/-$	0.00016	± 0.0001	0-25-0	1.8 or less
2356A-10	2356AB-10	0.0001	0.25 (0.01)	$\pm 0.0002/\pm 0.0002/\pm 0.0003/\pm 0.0004$ (First 20rev)/ ± 0.0005 (Over 20rev)	0.0001	± 0.00003	0-10	2.0 or less
2358A-10	2358AB-10	0.0001	0.5 (0.01)	$\pm 0.0002/\pm 0.0002/\pm 0.0003/\pm 0.0004$ (First 20rev)/ ± 0.0008 (Over 20rev)	0.00015	± 0.00003	0-10	2.0 or less
2802A-10	2802AB-10	0.0001	0.025 (0.01)	$\pm 0.0001/\pm 0.0001/-$	0.0001	± 0.00003	0-10	2.0 or less
2803A-10	2803AB-10	0.0001	0.025 (0.01)	$\pm 0.0001/\pm 0.0001/-$	0.0001	± 0.00003	0-5-0	2.0 or less
2804A-10	2804AB-10	0.0001	0.05 (0.01)	$\pm 0.0001/\pm 0.0001/\pm 0.0002$	0.0001	± 0.00003	0-10	2.0 or less
2805A-10	2805AB-10	0.0001	0.05 (0.01)	$\pm 0.0001/\pm 0.0001/\pm 0.0002$	0.0001	± 0.00003	0-5-0	2.0 or less
2905A-10	2905AB-10	0.0001	0.05 (0.01)	$\pm 0.0001/\pm 0.0001/\pm 0.0002$	0.0001	± 0.00003	10-0	2.0 or less
2923A-10	2923AB-10	0.0001	0.05 (0.01)	$\pm 0.0001/\pm 0.0001/\pm 0.0002$	0.0001	± 0.00003	0-5-0	2.0 or less

FEATURES

Order No.							
w/lug	Flat-back						
2414A	2414AB			✓		✓	
2415A	2415AB				✓	✓	
2914A	2914AB	✓				✓	
2506A	2506AB			✓		✓	
2507A	2507AB				✓	✓	
2514A	2514AB			✓		✓	
2922A	2922AB				✓	✓	
2356A-10	2356AB-10			✓	✓		✓
2358A-10	2358AB-10			✓	✓		✓
2802A-10	2802AB-10	✓		✓	✓		
2803A-10	2803AB-10	✓		✓		✓	
2804A-10	2804AB-10	✓		✓	✓		
2805A-10	2805AB-10	✓		✓		✓	
2905A-10	2905AB-10	✓	✓	✓			
2923A-10	2923AB-10	✓		✓		✓	



2416A



2358A-10



2923A-10

Optional Accessories

- Limit hand (2 pcs.): 21AZB195



- Bezel clamp: 21AZB148 (for metric type)
21RZA065* (for inch type)

*Included with ANSI/AGD models



21AZB148

Dial Indicators

SERIES 2 — Standard Type, Inch Reading

Optional Accessories

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



- Bezel clamp: **21AZB148** (for metric type)
21RZA065* (for inch type)

*Included with ANSI/AGD models

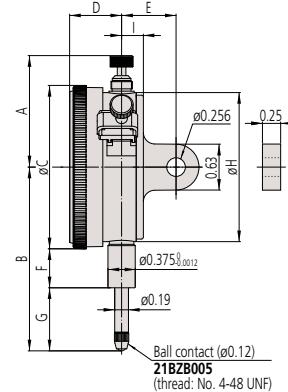


21AZB148

DIMENSIONS

ANSI/AGD
Type

Unit: in



Order No.	A	B	C	D	E	F	G	H	I	Mass (g)	
										w/lug	Flat-back
2414A	1.53	2.52	2.24	0.71	3/4	0.54	0.87	2.05	0.30	164	139
2415A	1.53	2.52	2.24	0.71	3/4	0.54	0.87	2.05	0.30	164	139
2914A	1.53	2.52	2.24	0.71	3/4	0.54	0.87	2.05	0.30	164	139
2506A	1.86	2.14	2.24	0.71	3/4	0.54	0.48	2.05	0.30	164	139
2507A	1.86	2.14	2.24	0.71	3/4	0.54	0.48	2.05	0.30	164	139
2514A	1.53	2.52	2.24	0.71	3/4	0.54	0.87	2.05	0.30	164	139
2922A	1.86	2.14	2.24	0.71	3/4	0.54	0.48	2.05	0.30	164	139
2356A-10	1.86	2.25	2.24	0.71	3/4	0.54	0.59	2.05	0.30	163	138
2358A-10	1.53	2.50	2.24	0.71	3/4	0.54	0.85	2.05	0.30	164	139
2802A-10	1.86	2.02	2.24	0.71	3/4	0.54	0.37	2.05	0.30	164	139
2803A-10	1.86	2.02	2.24	0.71	3/4	0.54	0.37	2.05	0.30	164	139
2804A-10	1.86	2.04	2.24	0.71	3/4	0.54	0.38	2.05	0.30	166	141
2805A-10	1.86	2.04	2.24	0.71	3/4	0.54	0.38	2.05	0.30	166	141
2905A-10	1.86	2.04	2.24	0.71	3/4	0.54	0.38	2.05	0.30	164	139
2923A-10	1.86	2.04	2.24	0.71	3/4	0.54	0.38	2.05	0.30	164	139



Need Calibration?

Dial Indicators

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

- The one revolution dial indicator prevents the possibility of reading errors.
- Proprietary Mitutoyo shock-proof mechanism is incorporated, providing improved resistance to shock due to sudden spindle retraction caused by impact.
- 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 red dead zone in the middle of the dial face is separated from the bezel and doesn't cover the graduations. Therefore, users can always see the range where accuracy is not guaranteed even if the bezel is rotated.



2900A-10



One revolution type Back Plunger dial gages are also available. (Refer to pages F-58 to F-59 for details.)



2990A-10

Optional Accessories

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



- Bezel clamp: **21AZB148** (for metric type)
21RZA065* (for inch type)

*Included with ANSI/AGD models



21AZB148

SPECIFICATIONS

Inch		Stem ø3/8", #4-48 UNF		Accuracy (in)		ANSI/AGD type		ISO/JIS type	
Order No.		Graduation (in)	Range (range/rev) (in)	First 1 Rev	2.5 Rev/10 Rev	Retrace	Repeatability (in)	Dial reading	Measuring force (N)
2909A-62	2909AB-62	0.0005	0.04/0.05	±0.0005	—/—	0.00016	±0.0001	20-0-20	2.5 or less
2910A-10	2910AB-10	0.0001	0.008/0.01	±0.0001	—/—	0.0001	±0.00003	4-0-4	1.8 or less

Metric		Stem ø8mm, M2.5x0.45 Thread		Accuracy (µm)							
Order No.		Graduation (mm)	Range (range/rev) (mm)	1/10 Rev	1/2 Rev	1 Rev	Measuring range	Hysteresis	Repeatability	Dial reading	Measuring force (N)
2928A	2928AB	0.1	4 (5)	20	—	—	40	20	20	2-0-2	1.4 or less
2929A	2929AB	0.01	0.8 (1)	5	—	—	8	3	3	40-0-40	1.4 or less
2929A-62	2929AB-62	0.01	0.8 (1)	5	—	—	8	3	3	40-0-40	2.0 or less
2959A	2959AB	0.01	1.6 (2)	5	—	—	10	3	3	80-0-80	1.4 or less
2900A-10	2900AB-10	0.001	0.08 (0.1)	2	—	—	3	2	0.5	40-0-40	1.5 or less
2900A-72	2900AB-72	0.001	0.08 (0.1)	2	—	—	3	2	0.5	40-0-40	2.0 or less
2901A-10	2901AB-10	0.001	0.16 (0.2)	2	—	—	4	2	0.5	80-0-80	1.5 or less

Special specifications

Upon request, we can manufacture custom types with changed graduation numbers, graduation lines, dead zones, etc. Please contact your nearest M³ Solution Center for more information.

Dial Indicators

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

Optional Accessories

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



- Bezel clamp: **21AZB148** (for metric type)
21RZA065* (for inch type)

*Included with ANSI/AGD models

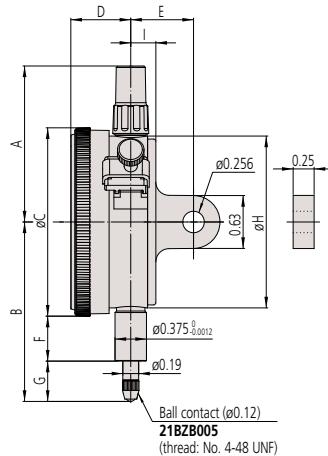


21AZB148

DIMENSIONS

ANSI/AGD Type

Unit: in

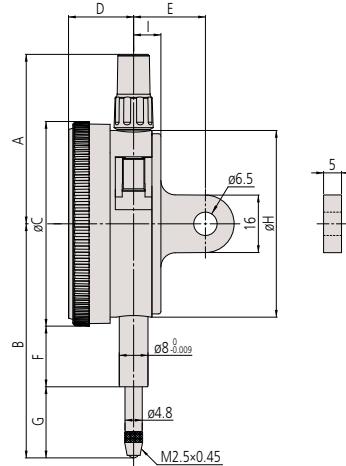


Order No.	A	B	C	D	E	F	G	H	I	Mass (g)	
										w/lug	Flat-back
2909A-62	1.86	2.04	2.24	0.71	3/4	0.54	0.39	2.05	0.30	163	138
2910A-10	1.86	2.02	2.24	0.71	3/4	0.54	0.36	2.05	0.30	164	139

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

ISO/JIS Type

Unit: mm



Order No.	A	B	C	D	E	F	G	H	I	Mass (g)	
										w/lug	Flat-back
2928A	47.2	65.2	57	18.1	20	16.9	19.8	52	7.6	145	136
2929A	47.2	65.2	57	18.1	20	16.9	19.8	52	7.6	145	136
2929A-62	47.2	65.2	57	18.1	20	16.9	19.8	52	7.6	145	136
2959A	47.2	65.2	57	18.1	20	16.9	19.8	52	7.6	145	136
2900A-10	47.2	66	57	18.1	20	16.9	20.6	52	7.6	149	140
2900A-72	47.2	66	57	18.1	20	16.9	20.6	52	7.6	149	140
2901A-10	47.2	66.1	57	18.1	20	16.9	20.7	52	7.6	149	140

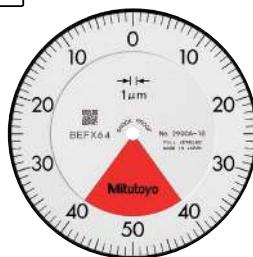
Note: Refer to pages F-63 to F-68 for details of contact points.



Find Training

Dial Indicators

Balanced scale



Graduation: 0.001 mm,
Measuring range: 0.08 mm

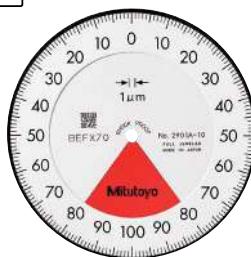
2900A-10

- One revolution
- Shockproof
- Jeweled bearing

2900A-72

- One revolution
- Shockproof
- Dustproof
- Jeweled bearing

Balanced scale



Graduation: 0.001 mm,
Measuring range: 0.16 mm

2901A-10

- One revolution
- Shockproof
- Jeweled bearing

Optional Accessories

- Limit hand (2 pcs.): 21AZB195



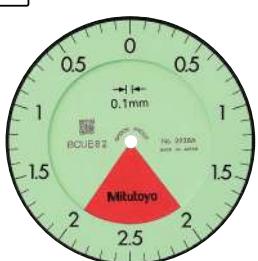
- Bezel clamp: 21AZB148 (for metric type)
21RZA065* (for inch type)

*Included with ANSI/AGD models



21AZB148

Balanced scale

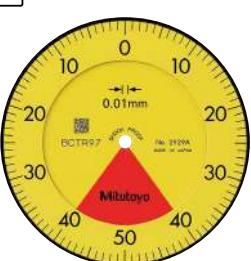


Graduation: 0.1 mm,
Measuring range: 4 mm

2928A

- One revolution
- Shockproof

Balanced scale



Graduation: 0.01 mm,
Measuring range: 0.8 mm

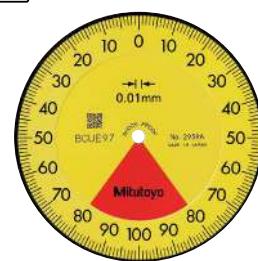
2929A

- One revolution
- Shockproof

2929A-62

- One revolution
- Shockproof
- Dustproof

Balanced scale



Graduation: 0.01 mm,
Measuring range: 1.6 mm

2959A

- One revolution
- Shockproof

FEATURES

Inch ANSI/AGD type ISO/JIS type

Order No.							
w/lug	Flat-back			<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
2909A-62	2909AB-62	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>			

Order No.							
w/lug	Flat-back			<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
2928A	2928AB	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>			
2929A	2929AB	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>			
2929A-62	2929AB-62	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>		<input checked="" type="checkbox"/>	
2959A	2959AB	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>			
2900A-10	2900AB-10	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>			<input checked="" type="checkbox"/>
2900A-72	2900AB-72	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>		<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
2901A-10	2901AB-10	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>		<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>



Find a Distributor

IP 64



Dial Indicators

Optional Accessories

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



- Bezel clamp: **21AZB148** (for metric type)
21RZA065* (for inch type)

*Included with ANSI/AGD models



21AZB148

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

- The one revolution dial indicator with improved water resistance prevents the possibility of reading errors.
- Proprietary Mitutoyo shock-proof mechanism is incorporated, providing improved resistance to shock due to sudden spindle retraction caused by impact.
- It is highly durable thanks to a hardened stainless-steel stem and spindle, carbide probe, and a large gear made of wear- and deformation-resistant materials.
- Application of an anti-reflective and hard surface coating improves scale visibility along with scratch and chemical resistance.
- The red dead zone in the middle of the dial face is separated from the bezel and doesn't cover the graduations. Therefore, users can always see the range where accuracy is not guaranteed even if the bezel is rotated.



2929A-60

SPECIFICATIONS

Inch		Stem ø3/8", #4-48 UNF			ANSI/AGD type		ISO/JIS type		
Order No.		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				
2910A-72	2910AB-72	0.0001	0.008/0.01	±0.0001/—/—	0.0001	±0.00003	4-0-4	2.5 or less	

Metric		Stem ø8mm, M2.5x0.45 Thread									
Order No.		Graduation (mm)	Range (range/rev) (mm)	Accuracy (µm)				Hysteresis	Repeatability	Dial reading	Measuring force (N)
w/lug	Flat-back			1/10 Rev	1/2 Rev	1 Rev	Measuring range				
2929A-60	2929AB-60	0.01	0.8(1)	5	—	—	8	3	3	40-0-40	2.0 or less
2900A-70	2900AB-70	0.001	0.08 (0.1)	2	—	—	3	2	0.5	40-0-40	2.0 or less

Special specifications

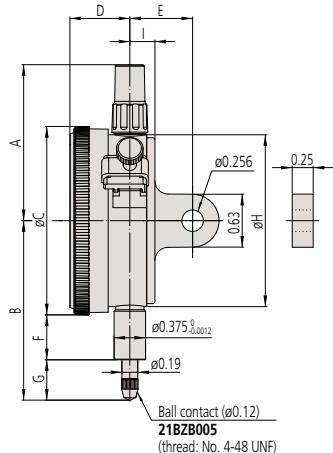
Upon request, we can manufacture custom types with changed graduation numbers, graduation lines, dead zones, etc. Please contact your nearest M³ Solution Center for more information.

Dial Indicators

DIMENSIONS

ANSI/AGD
Type

Unit: in

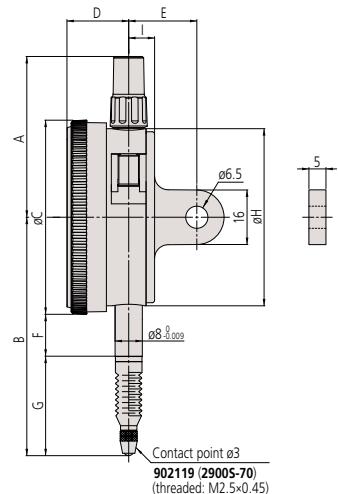


Order No.	A	B	C	D	E	F	G	H	I	Mass (g)	
										w/lug	Flat-back
2910A-72	1.86	2.02	2.24	0.71	3/4	0.54	0.36	2.05	0.30	150	141

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

F
ISO/JIS
Type

Unit: mm



Order No.	A	B	C	D	E	F	G	H	I	Mass (g)	
										w/lug	Flat-back
2929A-60	47.2	70	57	18.1	20	12.3	29.2	52	7.6	146	137
2900A-70	47.2	67	57	18.1	20	12.3	26.2	52	7.6	150	141

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

Optional Accessories

- Limit hand (2 pcs.): 21AZB195



- Bezel clamp: 21AZB148 (for metric type)
21RZA065* (for inch type)

*Included with ANSI/AGD models



21AZB148



Got Questions?

Dial Indicators

Optional Accessories

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



- Bezel clamp: **21AZB148** (for metric type)
21RZA065* (for inch type)

*Included with ANSI/AGD models



21AZB148

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

Balanced scale



Graduation: 0.001 mm,
Measuring range: 0.08 mm

2900A-70

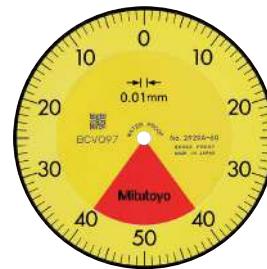
One revolution

Shockproof

Waterproof

Jeweled bearing

Balanced scale



Graduation: 0.01 mm,
Measuring range: 0.8 mm

2929A-60

One revolution

Shockproof

Waterproof

FEATURES

Inch ANSI/AGD type ISO/JIS type

Order No.		<input type="checkbox"/> w/lug	<input type="checkbox"/> Flat-back	<input checked="" type="checkbox"/>					
2910A-72	2910AB-72			✓	✓	✓		✓	✓

Metric

Order No.		<input type="checkbox"/> w/lug	<input type="checkbox"/> Flat-back	<input checked="" type="checkbox"/>					
2929A-60	2929AB-60			✓	✓	✓	✓		
2900A-70	2900AB-70			✓	✓	✓	✓	✓	✓

Dial Indicators



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

- The one revolution dial indicator (lightweight type) prevents the possibility of reading errors.
- Proprietary Mitutoyo shock-proof mechanism is incorporated, providing improved resistance to shock due to sudden spindle retraction caused by impact.
- Lightweight type (70 g).
- It is highly durable thanks to a hardened stainless-steel stem and spindle, carbide probe, and a large gear made of wear- and deformation-resistant materials.
- Application of an anti-reflective and hard surface coating improves scale visibility along with scratch and chemical resistance.
- The red dead zone in the middle of the dial face is separated from the bezel and doesn't cover the graduations. Therefore, users can always see the range where accuracy is not guaranteed even if the bezel is rotated.



2972AB

Optional Accessory

- Limit hand (2 pcs.): 21AZB195



SPECIFICATIONS

Inch		Stem ø3/8", #4-48 UNF		ANSI/AGD type		ISO/JIS type	
Order No.		Graduation (in)		Accuracy (in)		Repeatability (in)	Dial reading
w/lug	Flat-back			First 1 Rev/2.5 Rev/10 Rev	Retrace		Measuring force (N)
—	2976AB	0.0005	0.02 (0.028)	±0.0005/-/-	0.00016	±0.0001	10-0-10 1.4 or less
—	2977AB	0.0005	0.04 (0.055)	±0.0005/-/-	0.00016	±0.0001	20-0-20 1.4 or less
—	2978AB	0.001	0.06 (0.079)	±0.001/-/-	0.0002	±0.0002	30-0-30 1.4 or less

Metric		Stem ø8mm, M2.5x0.45 Thread		Accuracy (µm)				Hysteresis	Repeatability	Dial reading	Measuring force (N)
Order No.		Graduation (mm)	Range (range/rev) (mm)	1/10 Rev	1/2 Rev	1 Rev	Measuring range				
w/lug	Flat-back										
—	2971AB	0.01	0.5 (0.7)	5	—	—	8	3	3	25-0-25	1.4 or less
—	2972AB	0.01	1 (1.4)	5	—	—	8	3	3	50-0-50	1.4 or less
—	2973AB	0.02	1.6 (2)	8	—	—	16	6	5	80-0-80	1.4 or less

Special specifications

Upon request, we can manufacture custom types with changed graduation numbers, graduation lines, dead zones, etc. Please contact your nearest M³ Solution Center for more information.

Dial Indicators

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

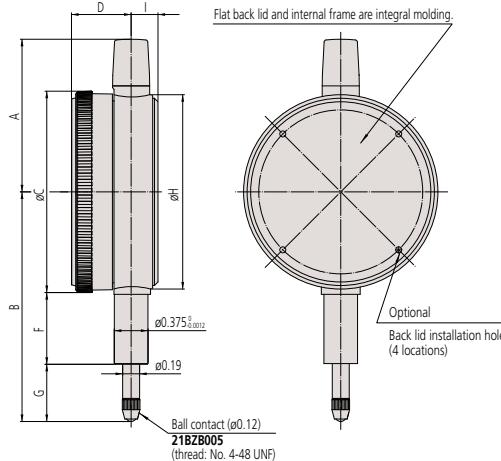
Optional Accessory

- Limit hand (2 pcs.): 21AZB195



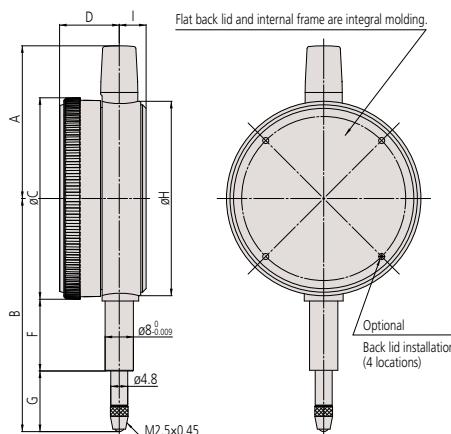
DIMENSIONS

ANSI / AGD
Type

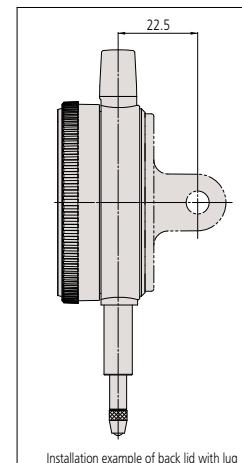


Unit: in

ISO / JIS
Type



Unit: mm



Installation example of back lid with lug

Note 1: When installing an optional back (refer to pages F-69 to F-70 for details) 4 retaining screws must also be obtained (546666: Self-tapping screw only for plastic).

Do not apply a tightening torque of more than 20 N·cm in order to avoid stripping the screw threads.

Note 2: An optional lifting lever, release or bezel clamp cannot be installed.

Inch

Order No.	A	B	C	D	F	G	H	I	Mass (g)
2976AB	1.70	2.55	2.24	0.67	0.80	0.63	2.17	0.30	70
2977AB	1.70	2.56	2.24	0.67	0.80	0.64	2.17	0.30	
2978AB	1.70	2.57	2.24	0.67	0.80	0.65	2.17	0.30	

Metric

Order No.	A	B	C	D	F	G	H	I	Mass (g)
2971AB	43.2	65.6	57	16.9	20.3	16.8	55	7.6	70
2972AB	43.2	66	57	16.9	20.3	17.2	55	7.6	
2973AB	43.2	66.3	57	16.9	20.3	17.5	55	7.6	

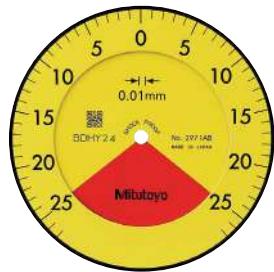
Note: Refer to pages F-63 to F-68 for details of contact points.



Talk to Sales

Dial Indicators

 Balanced scale



Graduation: 0.01 mm,
Measuring range: 0.5 mm

2971AB

One revolution
 Shockproof
 Dustproof

 Balanced scale



Graduation: 0.01 mm,
Measuring range: 1 mm

2972AB

One revolution
 Shockproof
 Dustproof

Optional Accessory

- Limit hand (2 pcs.): 21AZB195



 Balanced scale



Graduation: 0.02 mm,
Measuring range: 1.6 mm

2973AB

One revolution
 Shockproof
 Dustproof

FEATURES

Inch ANSI/AGD type ISO/JIS type

Order No.					
w/lug	Flat-back				
—	2976AB	✓	✓	✓	✓
—	2977AB	✓	✓	✓	✓
—	2978AB	✓	✓	✓	✓

Metric

Order No.					
w/lug	Flat-back				
—	2971AB	✓	✓	✓	✓
—	2972AB	✓	✓	✓	✓
—	2973AB	✓	✓	✓	✓



Need Repair?



Dial Indicators

Optional Accessory

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



SERIES 2 — Long Stroke Type

- Long stroke dial indicators with measuring range of 20 mm or more have a Ø57 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

Inch		Stem Ø3/8", #4-48 UNF			ANSI/AGD type		ISO/JIS type	
Order No.	Graduation (in)	Range (range/rev) (in)	Accuracy (in)			Retrace	Dial reading	Measuring force (N)
			First 1 Rev	2.5 Rev	10 Rev			
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

Metric

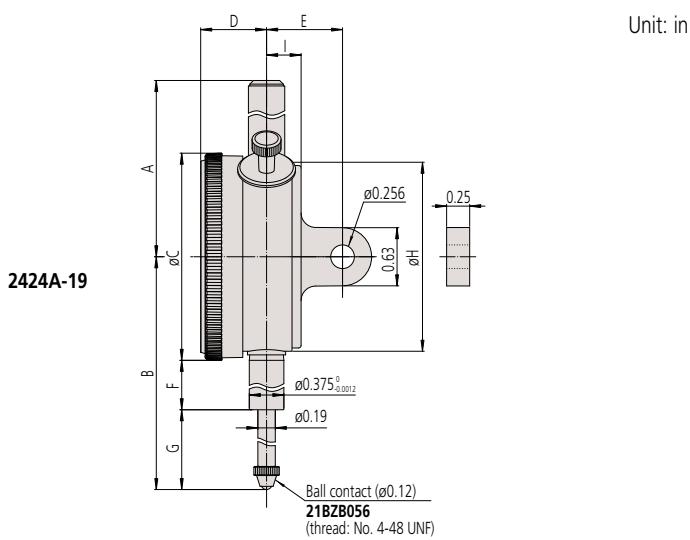
Metric		Stem Ø8mm, M2.5x0.45 Thread			Accuracy (µm)				Hysteresis	Repeat-ability	Dial reading	Measuring force (N)
Order No.	Graduation (mm)	Range (range/rev) (mm)	1/10 Rev	1/2 Rev	1 Rev	Measuring range						
			w/lug	Flat-back								
2050A	2050AB	0.01	20 (1)	8	10	15	20	5	4	±0-100	2.0 or less	
2050A-60*	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).

Dial Indicators

DIMENSIONS

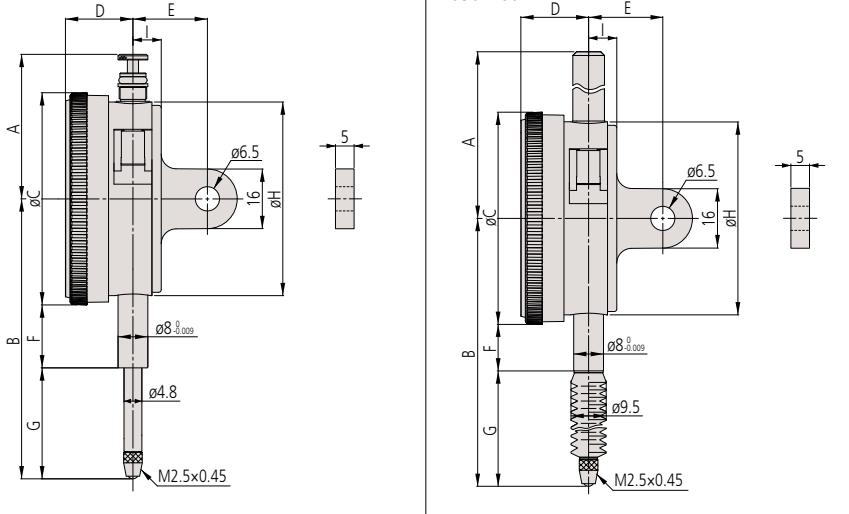
ANSI/AGD
Type



Order No.	A	B	C	D	E	F	G	H	I	Mass (g)	
										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	4.67	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-63 to F-68 for details of contact points.

ISO/JIS
Type



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

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

Optional Accessories

- Limit hand (2 pcs.): 21AZB195



- Bezel clamp: 21AZB148 (for metric type)

21RZA065* (for inch type)

21RZA067 (included with 2424A(B)-19)

*Included with ANSI/AGD models



21AZB148



Where to Buy

Dial Indicators

Optional Accessory

- Limit hand (2 pcs.): 21AZB195



SERIES 2 — Long Stroke Type

Continuous scale



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

Continuous scale



Graduation: 0.01 mm,
Measuring range: 30 mm

2052A

With damper at lowest rest point

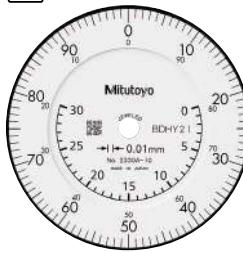
2052A-19

Shockproof

Jeweled bearing

With damper at lowest rest point

Continuous scale



Graduation: 0.01 mm,
Measuring range: 30 mm

2330A-10

With coaxial revolution counter

With damper at lowest rest point

Jeweled bearing

Continuous scale



Graduation: 0.01 mm,
Measuring range: 20 mm

2320A-10

With coaxial revolution counter

With damper at lowest rest point

Jeweled bearing

Reverse reading



Graduation: 0.01 mm,
Measuring range: 30 mm

2952A

With damper at lowest rest point

FEATURES

Inch

Order No.

w/lug Flat-back

2416A

2416AB

2416A-06

2416AB-06

2416A-10

2416AB-10

2417A

2417AB

2424A-19

2424AB-19

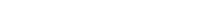
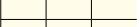
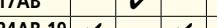
2776A

2776AB

2904A

ANSI/AGD type

ISO/JIS type



Metric

Order No.

w/lug Flat-back

2050A

2050AB

2050A-60

2050AB-60

2050A-19

2050AB-19

2320A-10

2320AB-10

2052A

2052AB

2052A-19

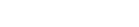
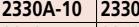
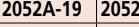
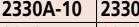
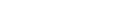
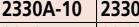
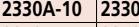
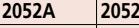
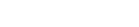
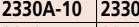
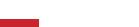
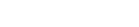
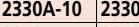
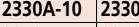
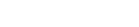
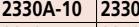
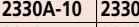
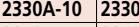
2052AB-19

2330A-10

2330AB-10

2952A

2952AB



Dial Indicators



Metric Dial Indicators — ANSI / AGD Type

SPECIFICATIONS

Metric		SERIES 1		Stem $\varnothing 3/8"$, #4-48 UNF		ANSI/AGD type		
Order No.		Graduation (mm)	Range (range/rev) (mm)	Accuracy (μm)		Repeatability (μm)	Dial reading	Measuring force (N)
w/lug	Flat-back			First 1 Rev/2.5 Rev/10 Rev	Retrace			
1230A-01	1230AB-01	0.01	2.5 (1)	$\pm 10/\pm 10/-$		3	± 2	0-100 1.4 or less
1231A-01	1231AB-01	0.01	2.5 (1)	$\pm 10/\pm 10/-$		3	± 2	0-50-0 1.4 or less
1044A-01	1044AB-01	0.01	5 (1)	$\pm 10/\pm 10/\pm 13$		3	± 3	$\pm 0-100$ 1.4 or less
1045A-01	1045AB-01	0.01	5 (1)	$\pm 10/\pm 10/\pm 13$		3	± 3	0-50-0 1.4 or less
1010A-11	1010AB-11	0.002	0.5 (0.2)	$\pm 2/\pm 2/-$		2	± 1	0-20 1.5 or less
1011A-11	1011AB-11	0.002	0.5 (0.2)	$\pm 2/\pm 2/-$		2	± 1	0-10-0 1.5 or less

Metric		SERIES 2		Stem $\varnothing 3/8"$, #4-48 UNF		ANSI/AGD type		
Order No.		Graduation (mm)	Range (range/rev) (mm)	Accuracy (μm)		Repeatability (μm)	Dial reading	Measuring force (N)
w/lug	Flat-back			First 1 Rev/2.5 Rev/10 Rev	Retrace			
2231A-01	2231AB-01	0.01	2.5 (1)	$\pm 10/\pm 10/-$		3	± 3	0-50-0 1.4 or less
2046A-01	2046AB-01	0.01	10 (1)	$\pm 10/\pm 10/\pm 13$		3	± 3	$\pm 0-100$ 1.4 or less
2046A-11	2046AB-11	0.01	10 (1)	$\pm 10/\pm 10/\pm 13$		3	± 3	$\pm 0-100$ 1.4 or less
2047A-01	2047AB-01	0.01	10 (1)	$\pm 10/\pm 10/\pm 13$		3	± 3	0-50-0 1.4 or less
2047A-11	2047AB-11	0.01	10 (1)	$\pm 10/\pm 10/\pm 13$		3	± 3	0-50-0 1.4 or less
2902A-01	2902AB-01	0.01	10 (1)	$\pm 10/\pm 10/\pm 13$		3	± 3	100-0 1.4 or less
2050A-01	2050AB-01	0.01	20 (1)	$\pm 10/\pm 10/\pm 15/\pm 20$ (20 Rev)		4	± 3	$\pm 0-100$ 2.0 or less
2056A-01	2056AB-01	0.01	25 (1)	$\pm 10/\pm 10/\pm 15/\pm 20$ (20 Rev)/ ± 25 (Over 20 Rev)		4	± 3	$\pm 0-100$ 2.5 or less
2109A-11	2109AB-11	0.001	1 (0.2)	$\pm 3/\pm 3/\pm 4$		2	± 0.3	0-10-0 1.5 or less
2119A-11	2119AB-11	0.001	5 (0.2)	$\pm 7/\pm 7/\pm 8/\pm 10$ (20 Rev)/ ± 10 (Over 20 Rev)		2.5	± 0.3	0-10-0 1.5 or less

FEATURES

Metric		ANSI/AGD type							
Order No.									
w/lug	Flat-back								
1230A-01	1230AB-01								
1231A-01	1231AB-01								
1044A-01	1044AB-01								
1045A-01	1045AB-01								
1010A-11	1010AB-11			✓				✓	
1011A-11	1011AB-11			✓				✓	
Metric		ANSI/AGD type							
Order No.									
w/lug	Flat-back								
2231A-01	2231AB-01								
2046A-01	2046AB-01								
2046A-11	2046AB-11			✓					
2047A-01	2047AB-01								
2047A-11	2047AB-11			✓					
2902A-01	2902AB-01							✓	
2050A-01	2050AB-01								
2056A-01	2056AB-01								
2109A-11	2109AB-11			✓				✓	
2119A-11	2119AB-11			✓					

Optional Accessories

- Backs (See pages F-69 to F-70)
- Contact points (See pages F-63 to F-68)



Get a Quote



Dial Indicators

SERIES 2 — Special Dial Indicators

Adjustable hand dial indicator

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



2048A-10

SPECIFICATIONS

Metric

Order No.	Graduation (mm)	Range (range/rev) (mm)	Accuracy (μm)				Hysteresis	Repeatability	Dial reading	Measuring force (N)	
			1/10 Rev	1/2 Rev	1 Rev	Measuring range					
2048A-10	2048AB-10	0.01	10 (1)	5	9	10	15	3	3	± 0.100	1.4 or less

DIMENSIONS

ISO / JIS Type		Unit: mm									
Order No.	A	B	C	D	E	F	G	H	I	Mass (g)	
2048A-10	47.4	64.9	57	18.1	20	16.9	19.5	52	7.6	144	w/lug

Dial Indicators



SERIES 2 — Special Dial Indicators

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

Note: Clearance of peak hold: Push the nut in the direction of the arrow indicated in the dimensional drawing for 2046A-80.



2046A-80

SPECIFICATIONS

Metric		Stem ø8mm, M2.5x0.45 Thread							ISO/JIS type	
Order No.		Graduation (mm)	Range (range/rev) (mm)	Accuracy (µm)			Hysteresis	Repeatability	Dial reading	Measuring force (N)
w/lug	Flat-back			1/10 Rev	1/2 Rev	1 Rev	Measuring range	—	—	±0-100
2046A-80	2046AB-80	0.01	10 (1)	5	9	10	15	—	—	5.0 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									
Order No.		A	B	C	D	E	F	G	H	I	Mass (g)
		w/lug	Flat-back								
2046A-80		55.8	65.2	57	18.1	20	16.9	19.8	52	7.6	158
											149

Continuous scale

Graduation: 0.01 mm,
Measuring range: 10 mm



2046A-80

Peak retaining

FEATURES

Metric

Order No.		0.01 mm	10 mm	Peak retaining	STOP	Diamond
w/lug	Flat-back					
2046A-80	2046AB-80	✓			✓	



Need Support?



Dial Indicators



Holding bar (optional)

Order No.	øD (mm)	L (mm)
21AAA166	ø6	42
136567	ø6	81
124625	ø6.35	81
21AAA167	ø6.35	42
21AAA168	ø8	42
136568	ø8	81

Note: øD and L: detail shown in drawing below.

Optional Accessory

- Limit hand (2 pcs.)

Refer to page F-41 for details.

Back Plunger Type Dial Indicators SERIES 2

- The one revolution dial indicator (back plunger type) prevents the possibility of reading errors.
- Back plunger type dial indicators are suitable for mounting onto leveling machine tool tables or inspection jigs, and for use in situations where standard dial indicators are difficult to read.
- Proprietary Mitutoyo shockproof mechanism provides excellent durability and shock resistance.
- Model **2990A-10** provides 0.001 mm graduation.
- The red dead zone in the middle of the dial face is separated from the bezel and doesn't cover the graduations. Therefore, users can always see the range where accuracy is not guaranteed even if the bezel is rotated.



2960A

SPECIFICATIONS

Inch ■ Stem ø3/8", #4-48 UNF

ANSI/AGD type

ISO/JIS type

Order No.	Graduation (in)	Range (range/rev) (in)	Accuracy (in)		Repeatability (in)	Dial reading	Measuring force (N)
			First 1 Rev/2.5 Rev/10 Rev	Retrace			
2961A	0.0005	0.04 (0.05)	±0.0005/-/-	0.00016	±0.0001	20-0-20	1.4 or less
2991A-10	0.0001	0.008 (0.01)	±0.0002/-/-	0.0001	±0.00005	4-0-4	1.5 or less

Metric ■ Stem ø8mm, M2.5x0.45 Thread

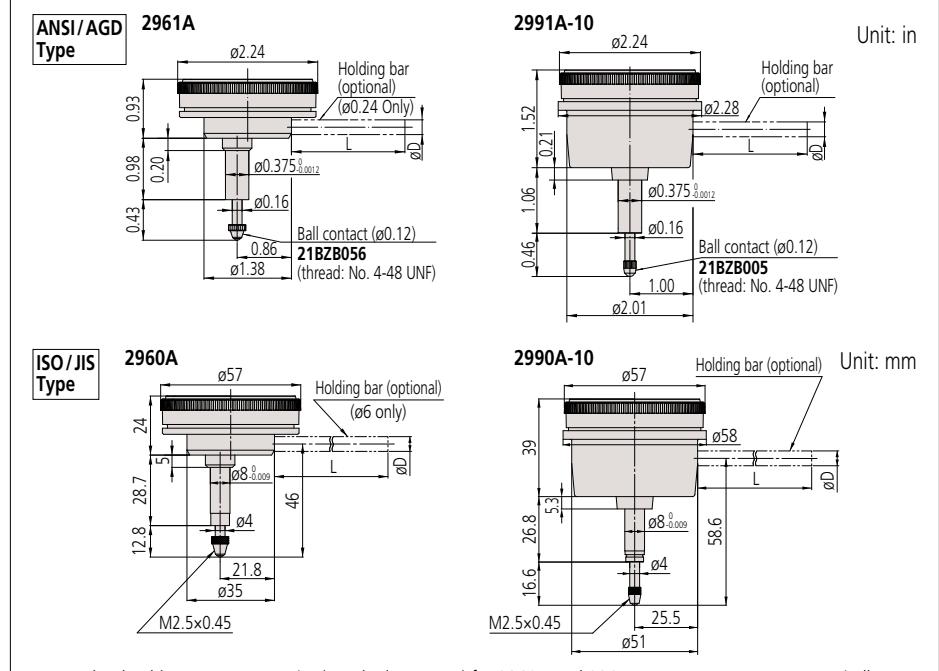
ANSI/AGD type

ISO/JIS type

Order No.	Graduation (mm)	Range (range/rev) (mm)	Accuracy (μm)				Hysteresis	Repeatability	Dial reading	Measuring force (N)
			1/10 Rev	1/2 Rev	1 Rev	Measuring range				
2960A	0.01	1 (1.27)	8	—	—	14	4	3	50-0-50	1.4 or less
2990A-10	0.001	0.1 (0.14)	2.5	—	—	5	2	1	50-0-50	1.5 or less

Note 1: The bezel clamp cannot be used.

DIMENSIONS



Note 1: The shoulder on a contact point (standard accessory) for **2960A** and **2961A** acts as a stop to prevent spindle overrun that may otherwise damage the indicator. When replacing it with an optional contact point with a connector not exceeding ø7 mm in outside diameter, insert a washer (with ø7 mm outside diameter, ø3 mm inside diameter, and approximately 0.5 mm thickness) above the contact point.

Note 2: Refer to pages F-63 to F-68 for details of contact points.

Special specifications

Upon request, we can manufacture custom types with changed graduation numbers, graduation lines, dead zones, etc. Please contact your nearest M³ Solution Center for more information.