Back Plunger Type Dial Indicators

- The one revolution dial indicator (back plunger type) prevents the possibility of reading errors.
- Back plunger type dial indicators are suitable for mounting onto levelling machine tool tables or inspection jigs, and for use in situations where standard dial indicators are difficult to read.
- Mitutoyo's unique shockproof mechanism provides excellent durability and shock resistance.
- Model **2990A-10** provides 0.001 mm graduation.



SPECIFICATIONS

Ì	Metric								SO/JIS typ	e 🔲 A	NSI/AGD type
ı					Maximum permissible error (MPE) (μm)						
	Code No.	Graduation	Range (range/rev)		Indication				Repeat- ability	Dial	
	couc no.	(mm)	(mm)	1/10 Rev	1/2 Rev	1 Rev	Measuring range	Hysteresis		reading	
Ī	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

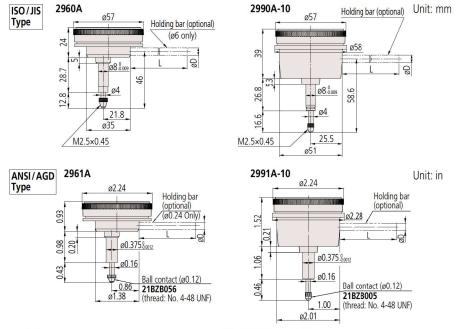
Inch										
an 200 (1)	Graduation	Graduation Range Accuracy (in)				Dial	Measuring			
Code No.	(in)	(range/rev) (in)	First 1 Rev/2.5 Rev/10 Rev	Retrace	Repeatbility (in)	reading	force (N)			
2961A	0.0005	0.04 (0.05)	±0.0005/—/—	0.00016	±0.0001	20-0-20	1.4 or less			
2991A-10	0.0001	0.008 (0.01)	±0.0002/—/—	0.0001	±0.00005	4-0-4	1.5 or less			

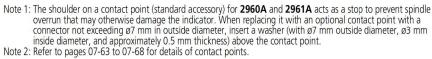
Note 1: Completed products inspection is performed in the vertical orientation (contact point downward) and the stated accuracy is guaranteed.

Note 2: The bezel clamp cannot be used.

DIMENSIONS

Dial Indicators







Holding bar (optional)

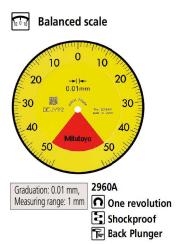
Code No.	øD (mm)	L (mm)
21AAA166	ø6	42
136567	ø6	81
124625	ø6.35	81
21AAA167	ø6.35	42
21AAA168	ø8	42
136568	ø8	81

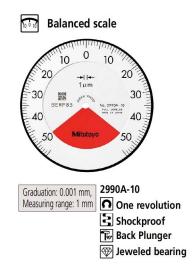
Note: ØD and L: detail shown in drawing below.

Optional Accessory

• Limit hand (2 pcs.) Refer to page 07-41 for details.







FEATURES

Metric		ISO/JIS type ANSI/AGD ty							
Code No.	10 0 10	U	3	₩	90*				
2960A	~	~	~		~				
2990A-10	~	V	~	~	V				
Inch	ř								
Inch Code No.	10 0 10	n	3	₩	1 90•				
	10 TO	n	3		[90*				



Dial Indicators

Back Plunger Type Dial Indicators

- Back plunger type dial indicators are suitable for mounting onto levelling machine tool tables or inspection jigs, and for use in situations where standard dial indicators are difficult to read.
- Models 1960A and 1961A, which use Mitutoyo's proprietary shock-proofing mechanism, have excellent durability and shock resistance.



SPECIFICATIONS

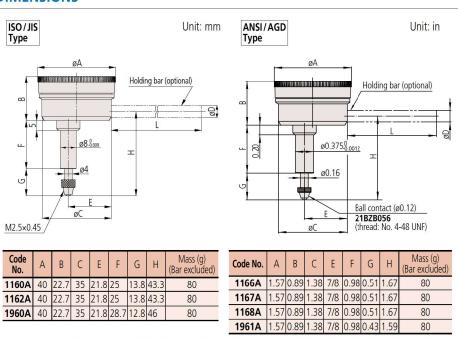
Metric _ ISO/JIS type ANSI/AGD typ										NSI/AGD type		
			D		Maximur	n permissil	ole error (N	/IPE) (µm)				
	Code No.	Graduation	Range (range/rev)		Indication				Repeat-	Dial	Dial Measuring eading force (N)	
	couc no.	(mm)	(mm)	1/10 Rev	1/2 Rev	1 Rev	Measuring range	Hysteresis	ability	reading		
	1960A	0.01	1 (1.27)	8	_	_	14	4	3	50-0-50	1.4 or less	
ĺ	1160A	0.01	5 (1)	8	12	14	16	4	3	±0-100	1.4 or less	
ĺ	1162A	0.01	5 (1)	8	12	14	16	4	3	100-0	1.4 or less	

Į	inch							
Ī			Range	Accuracy (in)		Repeatbility	Dial	Measuring
	Code No.	Graduation (in)	(range/rev) (in)	First 1 Rev/2.5 Rev/10 Rev	Retrace	(in)	reading	force (N)
Ī	1961A	0.001	0.04 (0.05)	±0.001/—/—	0.0002	±0.0002	20-0-20	1.4 or less
	1166A	0.001	0.2 (0.05)	±0.001/±0.001/±0.001	0.00033	±0.0002	±0-50	1.4 or less
	1167A	0.001	0.2 (0.05)	±0.001/±0.001/±0.001	0.00033	±0.0002	0-25-0	1.4 or less
Ī	1168A	0.001	0.2 (0.05)	±0.001/±0.001/±0.001	0.00033	±0.0002	50-0	1.4 or less

Note 1: Completed products inspection is performed in the vertical orientation (contact point downward) and the stated accuracy is guaranteed.

Note 2: The bezel clamp cannot be used.

DIMENSIONS



Note 1: Contact point (standard accessory) for all products in this page has a role as a top dead point stopper. 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, a3 mm inside diameter, and approximately 0.5 mm thickness) above the contact point.

Note 2: Refer to pages 07-63 to 07-68 for details of contact points.







Holding bar (optional)

Code 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 Accessories

• Limit hand (2 pcs.): 21AAB363







Graduation: 0.01 mm, Measuring range: 5 mm

1160A

Back Plunger

Reverse reading



Graduation: 0.01 mm,
Measuring range: 5 mm

1162A

Back Plunger

Balanced scale



FFATURES

ILAION	LJ					
Metric			ISO/JIS	type 🗀	ANSI/	AGD type
Code No.	90 0 10	10 0 10	C	3	Ð	1 90°
1960A		V	~	V		~
1160A	~					~
1162A					~	~
Inch						
Code No.	90 0 10	10 0 10	C	3	C.	1 90°
1961A		V	~	~		~
1166A	~					~
1167A		V				~
1168A					V	~

Back Plunger

