## **Back Plunger Type Dial Indicators**

- This series has been developed to eliminate the possibility of reading errors due to miscounting multiple revolutions.
- Back Plunger type dial indicators are suitable for mounting onto leveling machine tool tables or inspection jigs, and for use in small spaces where the graduations of standard dial indicators are difficult to see.
- Mitutoyo's proprietary shock-proofing mechanism provides excellent durability and shock resistance.

**DIMENSIONS** 

• Model **2990A-10** provides 0.001 mm graduation.



## **Holding bar (optional)**

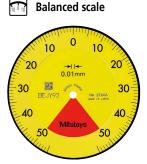
Order No.	øD (mm)	L (mm)
21AAA166	ø6	42
136567	ø6	81
124625	ø6.35	81
21AAA167	ø6.35	42
21AAA168	ø8	42
136568	ø8	81

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

## **Optional Accessory**

• Limit hand (2 pcs.): 21AZB195





Graduation: 0.01 mm. Measuring range: 1 mm 2960A

One revolution

Shockproof

<section-header> Back Plunger



## **Balanced scale**



Graduation: 0.01 mm,

2990A-10

0.1 (0.14)

2 5

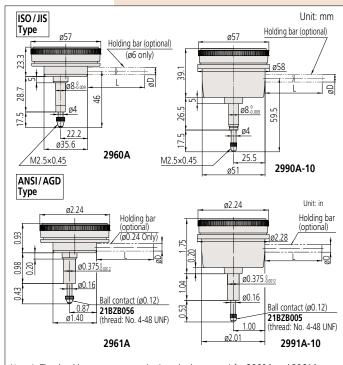
2990A-10

One revolution

🛃 Shockproof

**Back Plunger** 

**→ Jeweled bearing** 



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. For this reason, if you need to install an optional contact point with an outside diameter smaller than 7 mm, use a washer (with outside diameter of at least 7 mm, inside diameter of 3 mm, and thickness of approx. 0.5 mm) placed between the contact point and the spindle.

Note 2: Refer to pages F-57 to F-60 for details of contact points.

50-0-50 1.5 or less

Metric Order No.

2960A

Inch

2990A-10

Metric	ı									] ISO/JIS type
Order No.	Graduation (mm)	Range (range/rev) (mm)	Maximum permissible error (N Indication error			Reneat-	Dial	Measuring		
			1/10 Rev	1/2 Rev	1 Rev	Measuring range	Hysteresis	ability	reading	force (N)
2960A	0.01	1 (1.27)	8	_	_	14	4	3	50-0-50	1.4 or less

Measuring range: 1 mm

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.

Inch ANSI/AGD typ								
Order No.	Graduation (in)	Range (range/rev) (in)	Accuracy (in) First 1 Rev/2.5 Rev/10 Rev Retrace		Repeatbility (in)	Dial reading	Measuring 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.



0.001

2990A-10

Order No.	10 0 10	U	3	₩	
2961A	<b>V</b>	<b>V</b>	~		V
2991A-10	~	~	~	~	v

S

F-55