

Back Plunger Type Dial Indicators

SERIES 1 and 2



Mitutoyo's back plunger type dial indicators are built with the measuring spindles on the back of the units. This type of indicator offers the same precision and durability as all other Mitutoyo dial indicators, and operates very effectively with optional holding bars.

- Back plunger type dial gauges are suitable for mounting onto leveling machine tool tables or inspection jigs, and for use in small spaces where the graduations of standard dial gauges are difficult to see.
- Model No. 1960, which uses Mitutoyo's proprietary shock-proofing mechanism, has excellent durability and shock resistance.



One revolution type



Shockproof type



Jeweled bearing type

SPECIFICATIONS

Inch Series 1 Stem 3/8" dia. , #4-48 UNF Thread ANSI/AGD type

Graduation	Range	Range / Rev	Dial reading	Order No.	Accuracy	Measuring force			
.001"	.04"	.05"*	20-0-20	1961	±.001"	1.4N or less	✓	✓	
.001"	.2"	.05"	0-50	1166	±.001"	1.4N or less			
.001"	.2"	.05"	0-25-0	1167	±.001"	1.4N or less			
.001"	.2"	.05"	50-0	1168	±.001"	1.4N or less			✓

*Full stroke

Optional Accessories

- 136567:** Holding bar (ø6mm, L=81mm)
136568: Holding bar (ø8mm, L=81mm)
124625: Holding bar (.25" DIA, L=3.19")

- : Backs (See page F-33.)
 —: Contact points (See page F-34.)

Metric Series 1 Stem ø8mm, M2.5x0.45 Thread ISO/JIS type

Graduation	Range	Range / Rev	Dial reading	Order No.	Accuracy	Measuring force				Remarks
0.01mm	1mm	1.27mm*	50-0-50	1960	±0.014mm	1.4N or less	✓	✓		—
0.01mm	5mm	1mm	0-100	1160	±0.016mm	1.4N or less				—
0.01mm	5mm	1mm	100-0	1162	±0.016mm	1.4N or less			✓	—

Inch Series 2 Stem 3/8" dia. , #4-48 UNF Thread ANSI/AGD type

Graduation	Range	Range/full stroke	Dial reading	Order No.	Accuracy	Measuring force			
.0001"	.008"	.01"	4-0-4	2991	±.0002"	1.5N or less	✓	✓	✓
.0005"	.04"	.05"	20-0-20	2961F	±.0005"	1.8N or less	✓	✓	

Metric Series 2 Stem ø8mm, M2.5x0.45 Thread ISO/JIS type

Graduation	Range	Range/full stroke	Dial reading	Order No.	Accuracy	Measuring force			
0.001mm	0.1mm	0.14mm	50-0-50	2990	±0.0065mm	1.5N or less	✓	✓	✓
0.01mm	1mm	1.27mm	50-0-50	2960F	±0.014mm	1.4N or less	✓	✓	

Back Plunger Type Dial Indicators

SERIES 1 and 2



1960



2960F

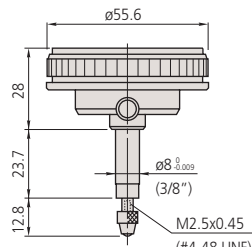
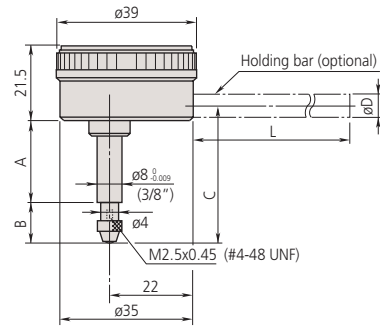


2991

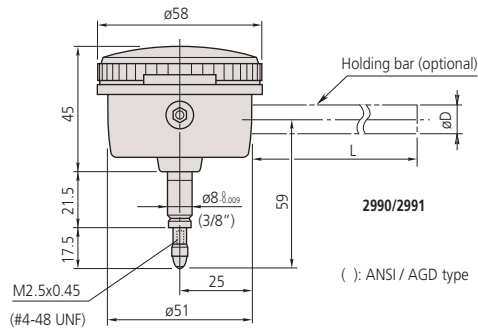
DIMENSIONS

Unit: mm

Order No.	A	B	C
1160	25.0	13.8	43.3
1162	25.0	13.8	43.3
1166	25.0	13.0	42.5
1167	25.0	13.0	42.5
1168	25.0	13.0	42.5
1960	28.7	12.8	46.0
1961	25.0	10.9	40.4



2960F/2961F



2990/2991

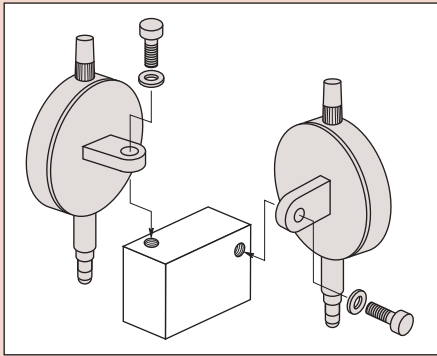
(): ANSI / AGD type

Backs




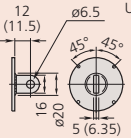

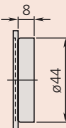

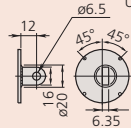

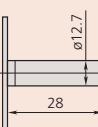

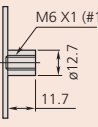

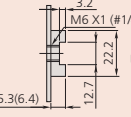
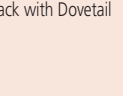
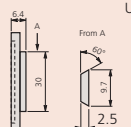

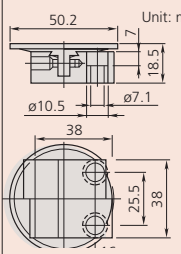
Optional Accessory for Digimatic and Dial Indicators

There are two ways to support Digimatic and dial indicators; by either holding the stem or the lug on the back of the indicator. The back of the indicator may need to be replaced for special applications. A wide variety of backs are available for Mitutoyo Digimatic and dial indicators.

Application



SPECIFICATIONS

Description		Order No.			
		Series 0 (ϕ 31mm) 1003 (ϕ 36mm)	Series 1 (ϕ 41mm)	Series 2 (ϕ 57mm)	Series 3, 4 (ϕ 77, 91mm)
Flat Back 	 Unit: mm a	191559: a=1.0 137906: for 1003 a=1.0	101211: a=2.2 136872: for water-proof type 191559: for 1911, 1913-10	101039: a=2.5 21AZB231: for water-proof of S type	100836: a=3.0
Lug-on-Center Back 	 Unit: mm 12 (11.5) ϕ 6.5 45° 45° 1.6 ϕ 2.0 5 (6.35)	190561: Metric type 190139: Inch type 137905: for 1003	101210: metric type 101307: inch type 190561: for 1911, 1913-10	101040: metric type 101306: inch type 21AZB230: for water-proof of S type	100691: metric type 100797: inch type
Magnetic Back 	 Unit: mm 8 ϕ 44	—	Special order	900928	900929
Back with Offset Lug 	 Unit: mm 12 ϕ 6.5 45° 45° 1.6 ϕ 2.0 6.35	—	Special order	101167	100837
Back with Post 	 Unit: mm ϕ 12.7 28	—	193172	101169	100839
Back with Screw Mount 	 Unit: mm M6 X1 (#1/4 - 28UNF) ϕ 12.7 11.7	—	193173: M6x1, 193174: #1/4-28UNF,	136023: M6x1 101170: #1/4-28UNF	136024: M6x1 100840: #1/4-28UNF
Adjustable Back 	 Unit: mm 3.2 M6 X1 (#1/4 - 28UNF) 22.2 12.7 5.3(6.4)	—	136025: M6x1 129721: #1/4-28UNF	136026: M6x1 101168: 1/4-28UNF	136027: M6x1 100838: #1/4-28UNF
Back with Dovetail 	 Unit: mm 6.4 A 30 From A ϕ 7 9.7 2.5	—	—	900008	Special order
Back with Adjustable Bracket 	 Unit: mm 50.2 7 18.5 ϕ 10.5 ϕ 7.1 38 25.5 38	—	—	901963: Set No. 129902: Dovetail Rack Back 901964: Dovetail bracket for rack back	—

() : ANSI / AGD Type