



Dial Gauges


- One Revolution Dial Gauges
- Standard Dial Gauges
(0.01mm, 0.005mm, 0.001mm)
- Long Travel Dial Gauges
(0.01mm, 0.05mm, 0.1mm)
- Miniature Dial Gauges
(0.001mm, 0.005mm, 0.01mm)
- Back Plunger Type Dial Gauges
- Accessories
- Technical Data
- Marking Service

One Revolution Dial Gauges

0.001mm and 0.01mm Z series


- These are high-accuracy dial gauges with the pointer giving less than a full turn that can resist rigorous continuous measurement. The long stem is made of stainless steel, is high in strength and is malfunction-free due to fastening. The dial faces except No. 18 and 17B are easy to read with green and orange (dead zone)

0.001mm Type




15Z
Graduation: 0.001mm
Range: 0.16mm

- Contact point (XB-1)
- Flat back



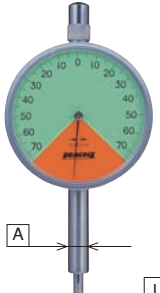
15Z-SWF
Graduation: 0.001mm
Range: 0.16mm

- Contact point (XB-2A)
- Oil-proof type
- Flat back



5Z-XB
Graduation: 0.001mm
Range: 0.14mm


- Contact point (XB-1)
- Flat back



5Z
Graduation: 0.001mm
Range: 0.14mm


- Long stem
- Flat back

φ 4.0 Flat carbide contact point (XB-406)



18
Graduation: 0.001mm
Range: 0.16mm


- Long stem
- Contact point (XB-1)
- Oil-proof type
- Flat crystal
- Flat back



15DZ
Graduation: 0.001mm
Range: 0.16mm


- Large dial face (φ 66.5)
- Contact point (XB-1)
- Flat back

0.01mm Type




17Z
Graduation: 0.01mm
Range: 0.8mm

- Contact point (XB-1)
- Flat back




17Z-SWA
Graduation: 0.01mm
Range: 0.8mm

- Oil-proof type
- Contact point (XB-2)
- Flat back



107Z-XB
Graduation: 0.01mm
Range: 0.8mm


- Long stem
- Contact point (XB-1)
- Flat back



107Z
Graduation: 0.01mm
Range: 0.8mm


- Long stem
- Flat back

φ 4.0 Flat carbide contact point (XB-406)



17B
Graduation: 0.01mm
Range: 0.8mm

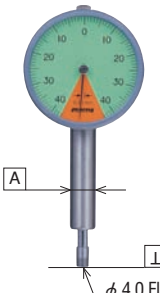
- Contact point (X-1)
- Lug back



117Z
Graduation: 0.01mm
Range: 1.0mm

- Contact point (XB-1)
- Flat back


Miniature Type



47Z
Graduation: 0.01mm
Range: 0.8mm

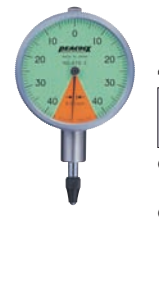
- Long stem
- Flat back

φ 4.0 Flat carbide contact point (XB-406)



47Z-XB
Graduation: 0.01mm
Range: 0.8mm

- Contact point (XB-1)
- Flat back



47SZ
Graduation: 0.01mm
Range: 0.8mm

- Contact point (XB-1)
- Flat back



- New**
147Z
Graduation: 0.01mm
Range: 1.0mm
- Small dial face (φ 36)
 - Contact point (XB-1)
 - Flat back



- New**
36Z
Graduation: 0.005mm
Range: 0.4mm
- Contact point (XB-1)
 - Flat back



- 196Z**
Graduation: 0.01mm
Range: 0.8mm
- Stem φ 8mm
 - Pointer giving less than one revolution
 - Contact point (X-112)

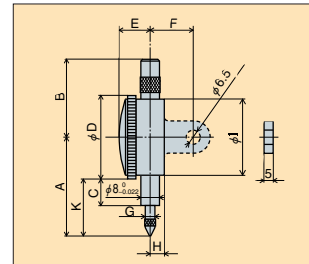
Specifications

Model	Graduation (mm)	Range (mm) (Free stroke)	Reading	Indication error (unit: μm)					Retrace error	Repeatability	Measuring force less than (N)
				1/10 revolution	1/2 revolution	One revolution	Two revolutions	Whole measuring range			
15Z	0.001	0.16 (3.0)	80 - 0 - 80	±2.5	±3	±4	—	—	3	0.5	1.5
15Z-SWF	0.001	0.16 (3.0)	80 - 0 - 80	±2.5	±3	±4	—	—	3	0.5	1.5
5Z-XB	0.001	0.14 (3.0)	70 - 0 - 70	±2.5	±3	±4	—	—	3	0.5	1.5
5Z	0.001	0.14 (3.0)	70 - 0 - 70	±2.5	±3	±4	—	—	3	0.5	1.5
18	0.001	0.16 (3.0)	80 - 0 - 80	±2.5	±3	±4	—	—	3	0.5	1.5
17Z	0.01	0.8 (7.0)	40 - 0 - 40	8	±9	±10	—	—	5	5	1.4
17Z-SWA	0.01	0.8 (7.0)	40 - 0 - 40	8	±9	±10	—	—	5	5	1.4
107Z-XB	0.01	0.8 (7.0)	40 - 0 - 40	8	±9	±10	—	—	5	5	1.4
107Z	0.01	0.8 (7.0)	40 - 0 - 40	8	±9	±10	—	—	5	5	1.4
17B	0.01	0.8 (10.0)	40 - 0 - 40	8	±9	±10	—	—	5	5	1.4
15DZ	0.001	0.16 (3.0)	80 - 0 - 80	±2.5	±3	±4	—	—	3	0.7	1.5
117Z	0.01	1.0 (7.0)	50 - 0 - 50	8	±9	±10	—	—	5	5	1.4
47Z	0.01	0.8 (4.0)	40 - 0 - 40	9	—	±13	—	—	6	5	1.4
47Z-XB	0.01	0.8 (4.0)	40 - 0 - 40	9	—	±13	—	—	6	5	1.4
47SZ	0.01	0.8 (4.0)	40 - 0 - 40	9	—	±13	—	—	6	5	1.4
196Z	0.01	0.8 (4.0)	40 - 0 - 40	10	±12	±15	—	—	6	5	1.4
147Z	0.01	1.0 (4.0)	50 - 0 - 50	9	—	±13	—	—	6	5	1.4
36Z	0.005	0.4 (3.0)	20 - 0 - 20	—	—	±10	—	—	5	5	1.4

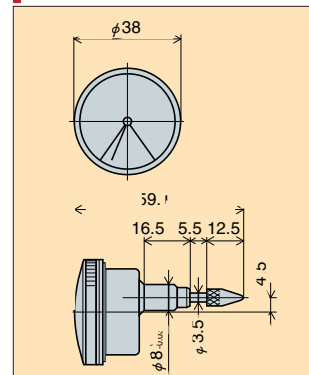
Note- All Dial Indications (except for 196Z) listed above have flat back as standard.

Note- Lug back Model No. : 47ZL, 47Z-XBL, 47SZL, 147ZL, 36ZL.

Dimensions



Dimensions 196Z



Sizes

Model		A	B	C	D	E	F	G	H	I	K		
Flat back type	Lug back type												
15Z	15ZL	60	41.5	18.5	53	14.5	(20)	4	6.5	49	33.5		
15Z-SWF	15Z-SWFL	62.5										36	
5Z-XB	5Z-XBL	69.4		30								42.9	
5Z	5ZL	66.4										39.9	
18	18L	69.4		29	55	16.8					41.9		
17Z	17ZL	65		18.5	53	14.5					38.5		
17Z-SWA	17Z-SWAL	65										38.5	
107Z-XB	107Z-XBL	69.4									30		42.9
107Z	107ZL	66.4							39.9				
17BF	17B	65		40.5	18.5		20(—)	38.5					
117Z	117ZL	65	41.5	18.5		(20)	38.5						
15DZ	15DZL	69.4	41.5	23.7	66.5	15.5		7.6	36				
47Z	47ZL	58.9	20	30	36	13	(15)	4	5.8	32	40.9		
47Z-XB	47Z-XBL	61.9											43.9
47SZ	47SZL	41.1		9.7							3.5	6.5	23.1
147Z	147ZL	41.1											23.1
36Z	36ZL	60	41.5	18.5	53	14.5	(20)	4		49	33.5		

Note- () indicates the model number of lug back and its size. Both lug back and flat back share the same size except for the items listed under column F.

Standard Dial Gauges

JIS B 7503

0.001mm and 0.005mm

Dial Gauges are widely used manufacturing plants.

- The stem, made of SK quench hardened with strength, is malfunction-free due to fastening.
- The shock-proof mechanism prevents gears from damage due to shocks arisen by abruptly pushing up the spindle.
- The turning section of the outer frame sealed by the O-ring and the back inside sealed by the packing are water-proof and dust-proof in construction.
- The back is increased in strength by four screws, and the lug can be turned 90 degrees in the installation way.

<HG>

High Precision Type



5B-HG
Graduation: 0.001mm
Range: 1mm
● Indication error $\pm 3\mu\text{m}$
● Retrace error 2 μm
● Includes accuracy certification
● Lug back



5-DX
Graduation: 0.001mm
Range: 1mm
● Durable type (Spindle $\phi 5\text{mm}$)
● Lug back



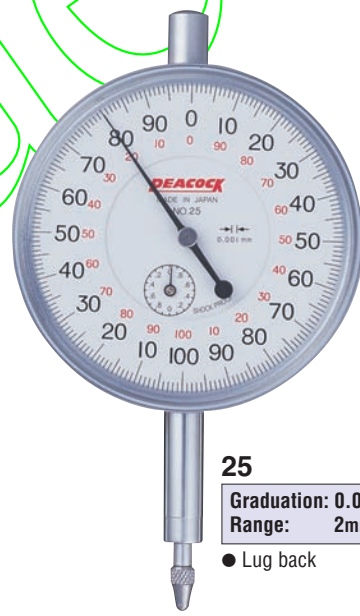
5B
Graduation: 0.001mm
Range: 1mm
● Lug back



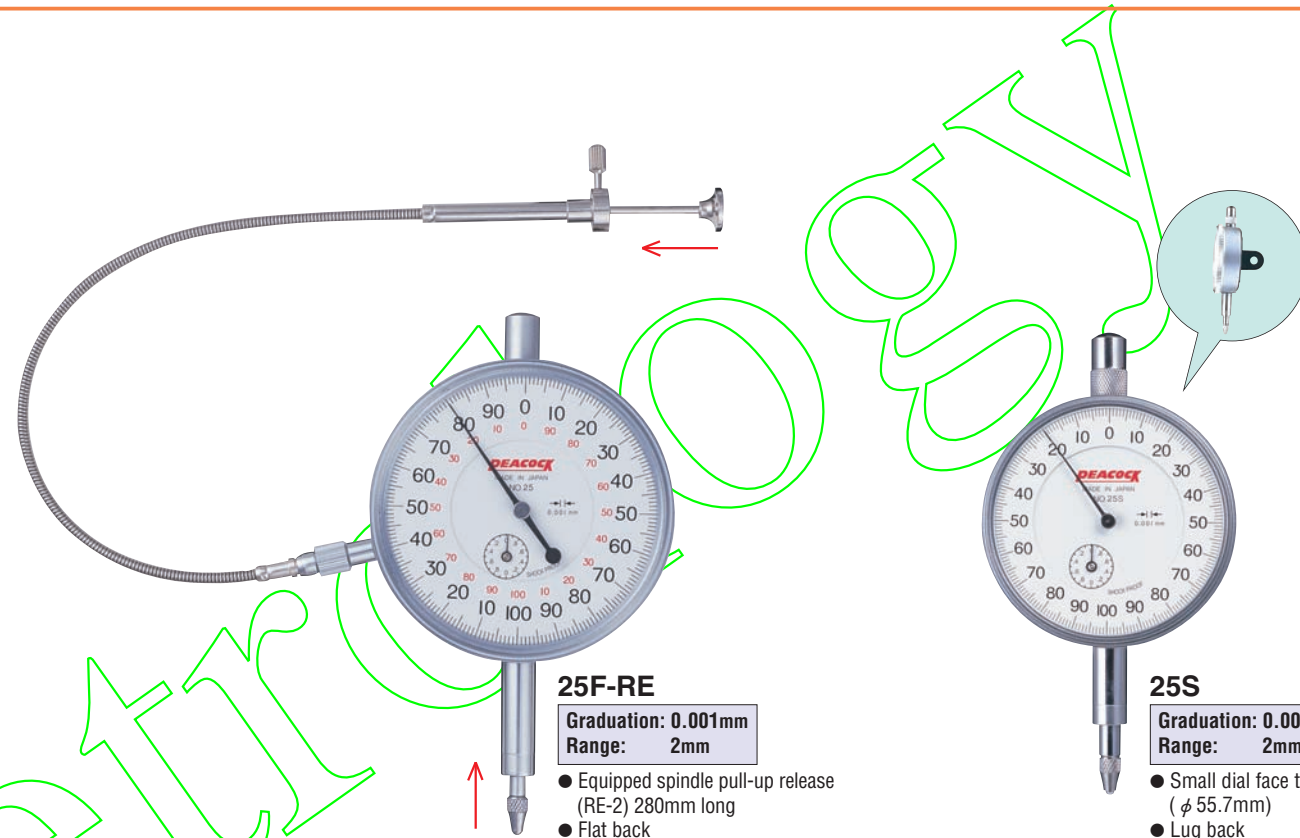
5F
Graduation: 0.001mm
Range: 1mm
● Flat back



5-SWF
Graduation: 0.001mm
Range: 1mm
● Oil-proof type
● Contact point (X-2A)
● Lug back



25
Graduation: 0.001mm
Range: 2mm
● Lug back



25F-RE
Graduation: 0.001mm
Range: 2mm
● Equipped spindle pull-up release (RE-2) 280mm long
● Flat back



25S
Graduation: 0.001mm
Range: 2mm
● Small dial face type ($\phi 55.7\text{mm}$)
● Lug back



55
Graduation: 0.001mm
Range: 5mm
● Lug back



55-DX
Graduation: 0.001mm
Range: 5mm
● Small dial face type ($\phi 57\text{mm}$)
● Lug back



56
Graduation: 0.005mm
Range: 5mm
● Lug back

Specifications

Model	Graduation (mm)	Range (mm)	Reading	Indication error					Retrace error	Repeatability	Measuring force less than (N)
				1/10 revolution	1/2 revolution	One revolution	Two revolutions	Whole measuring range			
5B-HG	0.001	1	0 - 100 - 0	2	± 2	± 3	± 3	± 3	2	0.5	1.5
5-DX	0.001	1	0 - 100 - 0	2.5	± 3	± 4	± 4	± 5	3	0.5	1.5
5B	0.001	1	0 - 100 - 0	2.5	± 3	± 4	± 4	± 5	3	0.5	1.5
5F	0.001	1	0 - 100 - 0	2.5	± 3	± 4	± 4	± 5	3	0.5	1.5
5-SWF	0.001	1	0 - 100 - 0	2.5	± 3	± 4	± 4	± 5	3	0.5	1.5
25	0.001	2	$\pm 0 - 100 - 100$	4	± 5	± 6	± 6	± 7	3	0.5	1.5
25F-RE	0.001	2	$\pm 0 - 100 - 100$	4	± 5	± 6	± 6	± 7	3	0.5	1.5
25S	0.001	2	0 - 100 - 0	4	± 5	± 6	± 6	± 7	3	0.5	1.5
55	0.001	5	0 - 100 - 0	5	± 6	± 7	± 8	± 10	4	1	1.5
55-DX	0.001	5	0 - 100 - 0	5	± 6	± 7	± 8	± 10	4	1	1.5
56	0.005	5	0 - 25 - 50	6	± 10	± 10	± 12	± 12	5	5	1.5

(unit: μm)

Standard Dial Gauges

JIS B 7503


0.01mm

Dial Gauges are widely used manufacturing plants.

- The stem, made of SK quench hardened with strength, is malfunction-free due to fastening.
- The shock-proof mechanism prevents gears from damage due to shocks arisen by abruptly pushing up the spindle.
- The turning section of the outer frame sealed by the O-ring and the back inside sealed by the packing are waterproof and dust-proof in construction.
- The back is increased in strength by four screws, and the lug can be turned 90 degrees in the installation way.


<HG>

High Precision Type




107-HG
Graduation: 0.01mm
Range: 10mm

- Indication error $\pm 10\mu\text{m}$
- Retrace error $4\mu\text{m}$
- Includes accuracy certification
- Lug back




107-DX
Graduation: 0.01mm
Range: 10mm

- Durable type (Spindle $\phi 5\text{mm}$)
- Lug back




107
Graduation: 0.01mm
Range: 10mm

- Lug back




107F
Graduation: 0.01mm
Range: 10mm

- Flat back




107-SWA
Graduation: 0.01mm
Range: 10mm

- Oil-proof type
- Flat crystal
- Contact point (X-2A)
- Lug back




107-BL
Graduation: 0.01mm
Range: 10mm

- Spindle pull-up back lever
- Lug back




107F-RE
Graduation: 0.01mm
Range: 10mm

- Spindle pull-up release (RE-1) 280 mm long
- Flat back




107-LL
Graduation: 0.01mm
Range: 10mm

- Spindle lifting lever (LL-1)
- Lug back




107W
Graduation: 0.01mm
Range: 10mm

- Two center pointers (The hand is long enough to facilitate easy reading of measured values.)
- Lug back




107F-T
Graduation: 0.01mm
Range: 10mm

- Reversed dial
- Flat back




107-E
Graduation: 0.01mm
Range: 10mm

- Low-measuring force (initial pressure 0.4N)
- Lug back




17
Graduation: 0.01mm
Range: 1mm

- Balanced dial
- Lug back




57-SWA
Graduation: 0.01mm
Range: 5mm

- Oil-proof type
- Flat crystal
- Contact point (X-2)
- Lug back




57
Graduation: 0.01mm
Range: 5mm

- Lug back



57F
Graduation: 0.01mm
Range: 5mm

- Flat back



57B
Graduation: 0.01mm
Range: 5mm

- Balanced dial
- Flat back

Specifications

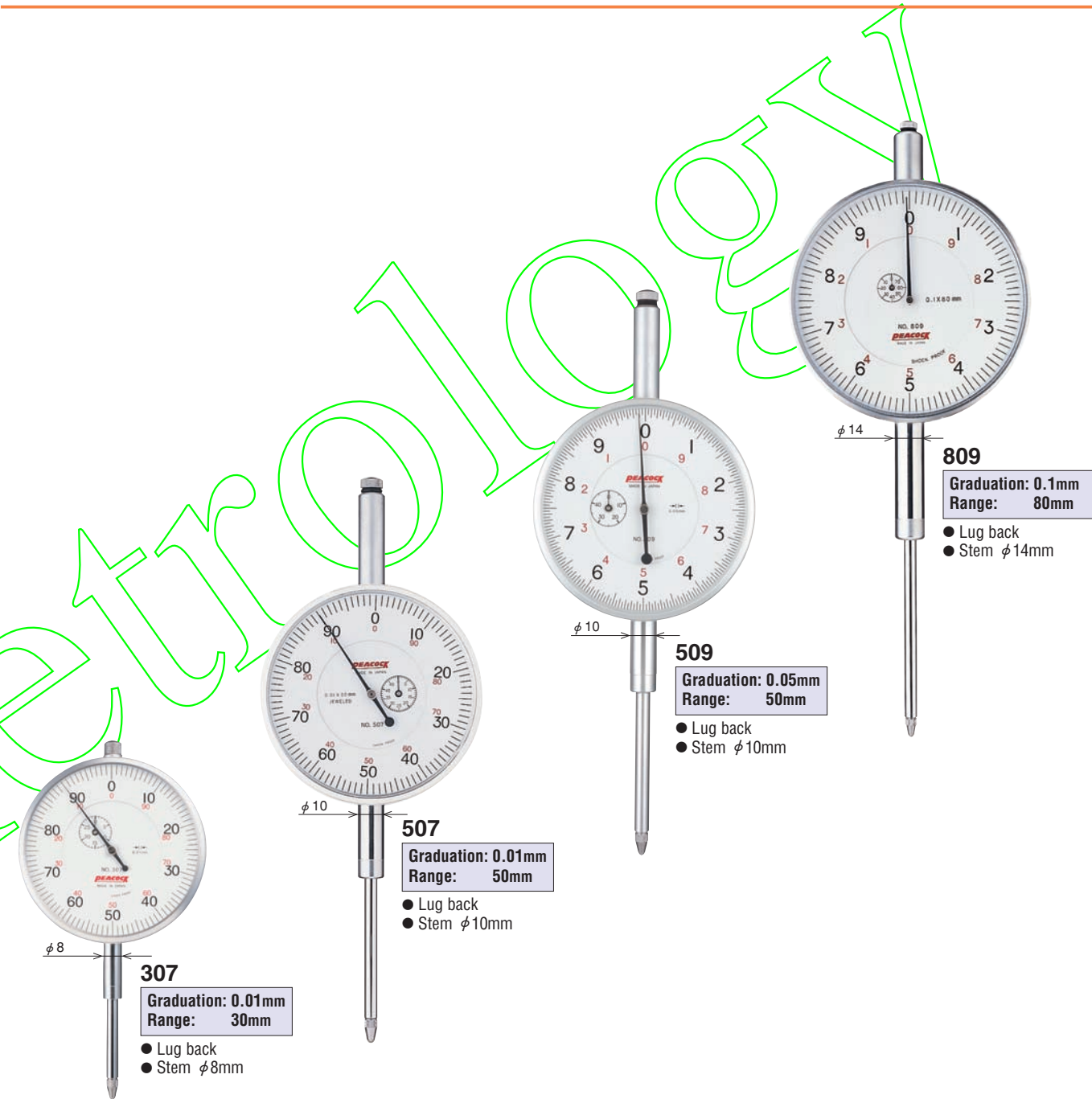
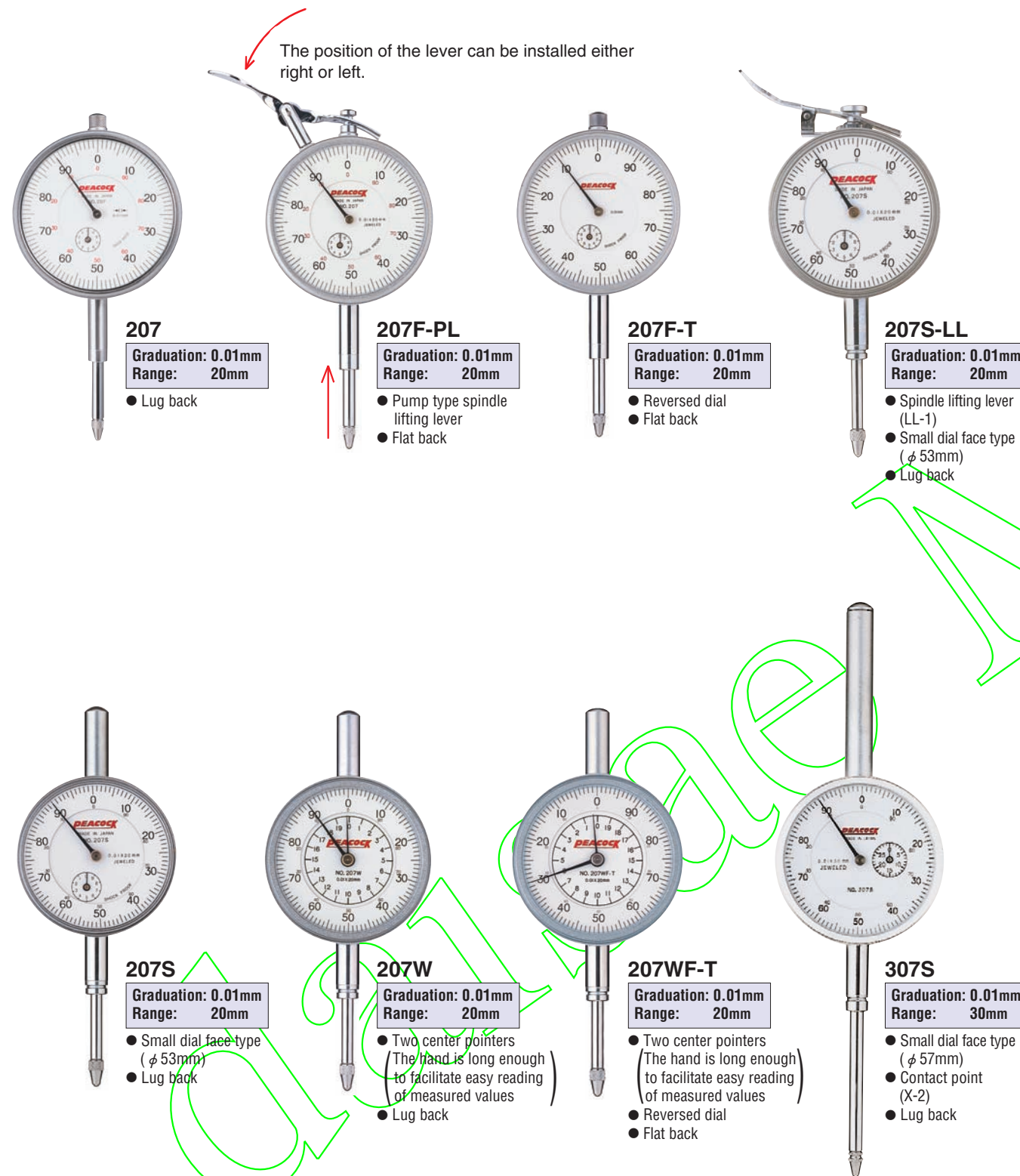
Model	Graduation (mm)	Range (mm)	Reading	Indication error					Retrace error	Repeatability	Measuring force less than (N)
				1/10 revolution	1/2 revolution	One revolution	Two revolutions	Whole measuring range			
107-HG	0.01	10	$\pm 0 - 50 - 100$	6	± 7	± 8	± 10	± 10	4	5	1.4
107-DX	0.01	10	$\pm 0 - 50 - 100$	8	± 9	± 10	± 15	± 15	5	5	1.4
107	0.01	10	$\pm 0 - 50 - 100$	8	± 9	± 10	± 15	± 15	5	5	1.4
107F	0.01	10	$\pm 0 - 50 - 100$	8	± 9	± 10	± 15	± 15	5	5	1.4
107-SWA	0.01	10	$\pm 0 - 50 - 100$	8	± 9	± 10	± 15	± 15	5	5	1.4
107-BL	0.01	10	$\pm 0 - 50 - 100$	8	± 9	± 10	± 15	± 15	5	5	1.4
107F-RE	0.01	10	$\pm 0 - 50 - 100$	8	± 9	± 10	± 15	± 15	5	5	1.4
107-LL	0.01	10	$\pm 0 - 50 - 100$	8	± 9	± 10	± 15	± 15	5	5	1.4
107W	0.01	10	$\pm 0 - 50 - 100$	8	± 9	± 10	± 15	± 15	5	5	1.4
107F-T	0.01	10	$\pm 100 - 50 - 0$	8	± 9	± 10	± 15	± 15	5	5	1.4
107-E	0.01	10	$\pm 0 - 50 - 100$	8	± 9	± 10	± 15	± 15	5	5	initial pressure 0.4
17	0.01	1	$0 - 50 - 0$	8	± 9	± 10	—	—	5	5	1.4
57-SWA	0.01	5	$\pm 0 - 50 - 100$	8	± 9	± 10	± 15	± 15	5	5	1.4
57	0.01	5	$\pm 0 - 50 - 100$	8	± 9	± 10	± 15	± 15	5	5	1.4
57F	0.01	5	$\pm 0 - 50 - 100$	8	± 9	± 10	± 15	± 15	5	5	1.4
57B	0.01	5	$0 - 50 - 0$	8	± 9	± 10	± 15	± 15	5	5	1.4

Long Travel Dial Gauges

0.01mm, 0.05mm and 0.1mm

Dial Gauges are widely used manufacturing plants.

- The stem, made of SK quench hardened with strength, is malfunction-free due to fastening.
- The shock-proof mechanism prevents gears from damage due to shocks arisen by abruptly pushing up the spindle.
- The turning section of the outer frame sealed by the O-ring and the back inside sealed by the packing are water-proof and dust-proof in construction.
- The back is increased in strength by four screws, and the lug can be turned 90 degrees in the installation way.



Specifications

Model	Graduation (mm)	Range (mm)	Reading	Indication error					Retrace error	Repeatability	Measuring force less than (N)
				1/10 revolution	1/2 revolution	One revolution	Two revolutions	Whole measuring range			
207	0.01	20	±0 - 50 - 100	10	—	±15	—	±20	7	5	2.0
207F-PL	0.01	20	±0 - 50 - 100	10	—	±15	—	±20	7	5	2.0
207F-T	0.01	20	±100 - 50 - 0	10	—	±15	—	±20	7	5	2.0
207S-LL	0.01	20	±0 - 50 - 100	10	—	±15	—	±20	7	5	2.0
207S	0.01	20	±0 - 50 - 100	10	—	±15	—	±20	7	5	2.0
207W	0.01	20	±0 - 50 - 100	10	—	±15	—	±20	7	5	2.0
207WF-T	0.01	20	±100 - 50 - 0	10	—	±15	—	±20	7	5	2.0
307S	0.01	30	±0 - 50 - 100	14	—	±18	—	±25	7	5	2.2
307	0.01	30	±0 - 50 - 100	14	—	±18	—	±25	7	5	2.2
507	0.01	50	±0 - 50 - 100	15	—	±20	—	±35	9	5	2.5
509	0.05	50	±0 - 5 - 10	30	—	±100	—	±100	10	20	2.5
809	0.1	80	±0 - 5 - 10	50	—	±100	—	±100	—	35	2.5

(unit: μm)

Miniature Dial Gauges

0.001mm, 0.005mm and 0.01mm

- These compact size dial gauges are equipped with small dial faces. They are especially useful for measuring jigs, in restricted areas.

JMAS 2003



- 5S**
Graduation: 0.001mm
Range: 1mm
- Contact point (X-107)
 - Flat back
 - Dial dia. $\phi 40.8\text{mm}$



- 47**
Graduation: 0.01mm
Range: 4mm
- Contact point (X-107)
 - Lug back
 - Dial dia. $\phi 36\text{mm}$



- 47F**
Graduation: 0.01mm
Range: 4mm
- Contact point (X-107)
 - Flat back
 - Dial dia. $\phi 36\text{mm}$



- 57S**
Graduation: 0.01mm
Range: 5mm
- Contact point (X-105)
 - Lug back
 - Dial dia. $\phi 39\text{mm}$



- 36A**
Graduation: 0.005mm
Range: 3mm
- Contact point (X-107)
 - Lug back
 - Dial dia. $\phi 40.8\text{mm}$



- 36B**
Graduation: 0.01mm
Range: 3mm
- Contact point (X-107)
 - Lug back
 - Dial dia. $\phi 40.8\text{mm}$

Specifications

Model	Graduation (mm)	Range (mm)	Reading	Indication error					Retrace error	Repeatability	Measuring force less than (N)
				1/10 revolution	1/2 revolution	One revolution	Two revolutions	Whole measuring range			
5S	0.001	1	$\pm 0 - 100 - 100$	5	± 6	± 7	± 8	± 10	4	5	1.5
47	0.01	4	0 - 50 - 0	9	—	± 13	—	± 15	6	5	1.4
47F	0.01	4	0 - 50 - 0	9	—	± 13	—	± 15	6	5	1.4
57S	0.01	5	$\pm 0 - 50 - 100$	9	—	± 13	—	± 15	6	5	1.4
36A	0.005	3	$\pm 0 - 25 - 50$	9	—	± 13	—	± 15	6	5	1.4
36B	0.01	3	0 - 25 - 50	9	—	± 13	—	± 15	6	5	1.4

(unit: μm)

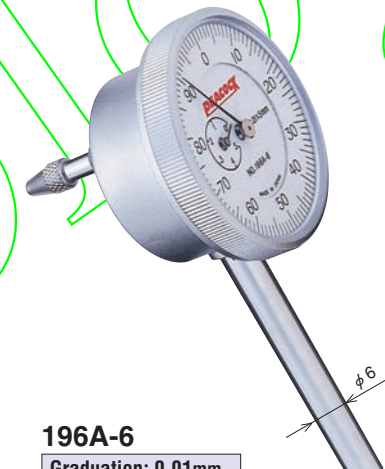
Back Plunger Type Dial Gauges

0.01mm

- The back plunger dial gauge is characterized with easy handling since the spindle having the contact point moves in the direction perpendicular to the dial face and the gauge is more compact.
- The dial gauge of this type is convenient for use in achieving a parallelism of the table of the machine tool, with measuring jigs, in restricted areas and on locations where scale reading is difficult.



- 196A**
Graduation: 0.01mm
Range: 5mm
- Stem $\phi 6.35\text{mm}$
 - Contact point (X-1)



- 196A-6**
Graduation: 0.01mm
Range: 5mm
- Stem $\phi 6\text{mm}$
 - Contact point (X-1)



- 196Z**
Graduation: 0.01mm
Range: 0.8mm
- Stem $\phi 8\text{mm}$
 - Pointer giving less than one revolution
 - Contact point (X-112)

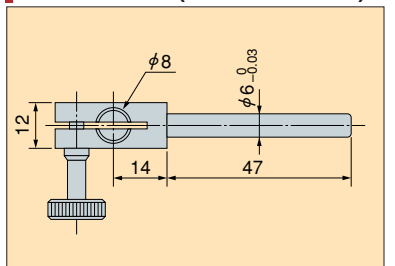


- 196B**
Graduation: 0.01mm
Range: 5mm
- Stem $\phi 8\text{mm}$
 - Contact point (X-112)



- 196B-T**
Graduation: 0.01mm
Range: 5mm
- Stem $\phi 8\text{mm}$
 - Reversed dial
 - Contact point (X-112)

Dimensions (Holder for 196B)



Specifications

Model	Graduation (mm)	Range (mm)	Reading	Indication error					Retrace error	Repeatability	Measuring force less than (N)
				1/10 revolution	1/2 revolution	One revolution	Two revolutions	Whole measuring range			
196A	0.01	5	0 - 50 - 100	10	± 12	± 15	± 20	± 20	6	5	1.4
196A-6	0.01	5	0 - 50 - 100	10	± 12	± 15	± 20	± 20	6	5	1.4
196Z	0.01	0.8	40 - 0 - 40	10	± 12	± 15	—	—	6	5	1.4
196B	0.01	5	0 - 50 - 100	10	± 12	± 15	± 20	± 20	6	5	1.4
196B-T	0.01	5	100 - 50 - 0	10	± 12	± 15	± 20	± 20	6	5	1.4

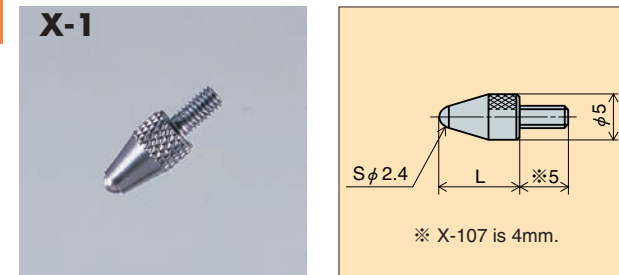
※ Dial dia. $\phi 38\text{mm}$ (All Back Plunger type Dial Gauges)

Replaceable Contact Point

(Screw pitch M2.5 × 0.45mm)

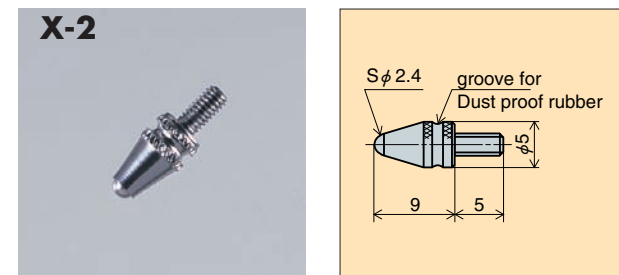
for Dial Indicators and Linear Gauges

● Ball Contact Point



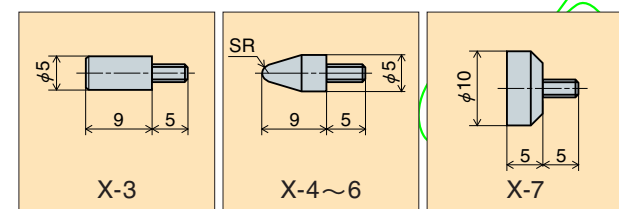
Part No.	L (mm)	Material
X-1	9	Steel
X-103	3.5	Steel
X-105	5	Steel
X-107	7.5	Steel
X-112	12.5	Steel
X-125	25	Steel
XB-1	9	Carbide
XB-115	15	Carbide
XB-125	25	Carbide
XB-130	30	Carbide
XC-1	9	Ruby
XC-125	25	Ruby

● Ball Contact Point for Oil Proof type



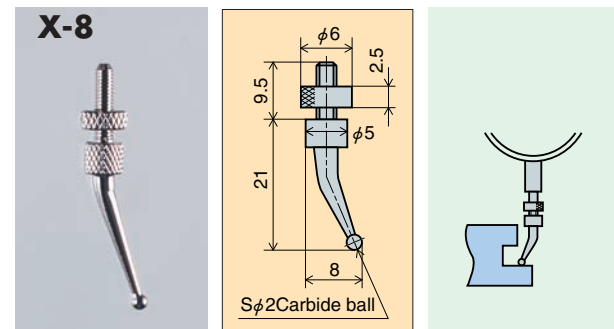
Part No.	L (mm)	Material
X-2	9	Steel
XB-2	9	Carbide
XC-2	9	Ruby
X-2A	12	Steel
XB-2A	12	Carbide

● Special Contact Point



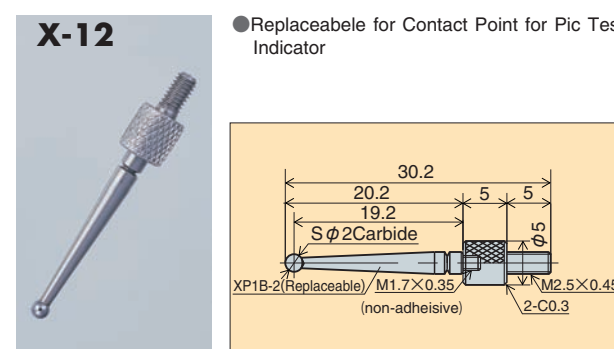
Part No.	Material
X-3	NSB
X-4	Copper
X-5	Bakelite
X-6	Teflon
X-7	Teflon

● Offset Contact Point



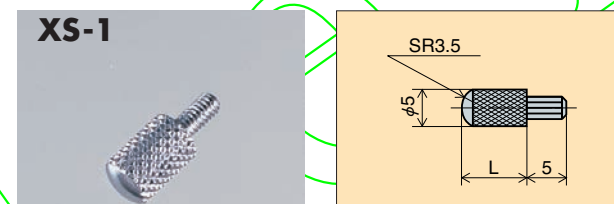
Part No.	Material
X-8	Carbide

● Special Contact Point



Part No.	Material
X-12	Carbide

● Spherical Contact Point



XS-1 series

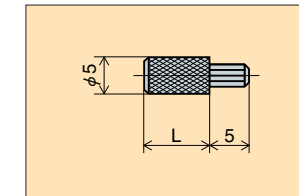
Part No.	L (mm)	Material
XS-1	8	SKS3
XS-105	5	SKS3
XS-110	10	SKS3
XS-115	15	SKS3
XS-120	20	SKS3
XS-125	25	SKS3
XS-130	30	SKS3

Replaceable Contact Point

(Screw pitch M2.5 × 0.45mm)

for Dial Indicators and Linear Gauges

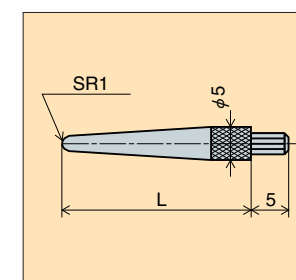
● Flat Contact Point



XS-2 series

Part No.	L (mm)	Material
XS-2	8	SKS3
XS-205	5	SKS3
XS-210	10	SKS3
XS-215	15	SKS3
XS-220	20	SKS3
XS-225	25	SKS3
XS-230	30	SKS3

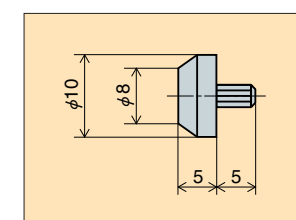
● Taper Contact Point



XS-3 series

Part No.	L (mm)	Material
XS-3	25	SKS3
XS-310	10	SKS3
XS-315	15	SKS3
XS-320	20	SKS3
XS-330	30	SKS3

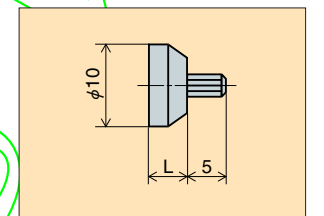
● Plain Contact Point



XS-4 series

Part No.	Material
XS-4	SKS3

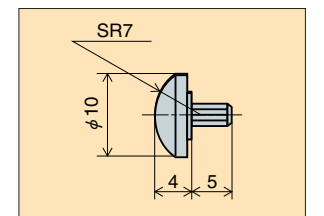
● Flat Contact Point



XS-5 series

Part No.	L (mm)	Material
XS-5	5	SKS3
XS-510	10	SKS3

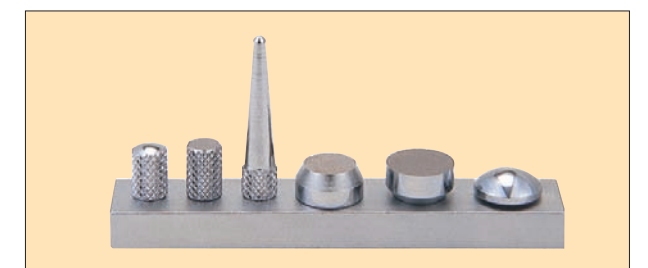
● Button type Contact Point



XS-6 series

Part No.	Material
XS-6	SKS 3

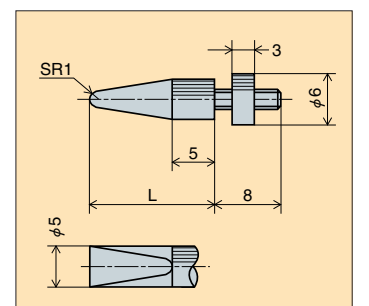
● Contact Point set XS



※XS is provided with setting table for XS-1 to XS-6 contact points, and a case. Each type sold separately.

Part No.	Material
XS	SKS3

● Knife-edge Contact Point



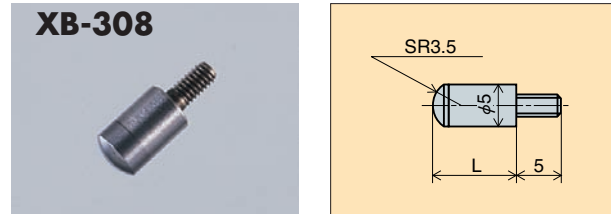
Part No.	L (mm)	Material
XS-710	10	SKS3
XS-715	15	SKS3
XS-720	20	SKS3
XS-725	25	SKS3
XS-730	30	SKS3

Replaceable Contact Point (Screw pitch M2.5 × 0.45mm)

for Dial Indicators and Linear Gauges

● Carbide Spherical Contact Point

XB-308



Part No.	L (mm)	Material
XB-305	5	Carbide
XB-308	8	Carbide

● Carbide Flat Contact Point

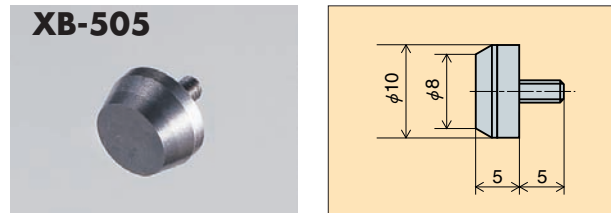
XB-408



Part No.	φ D (mm)	L (mm)	Material
XB-405	5	5	Carbide
XB-406	4	6	Carbide
XB-408	5	8	Carbide

● Carbide Plain Contact Point

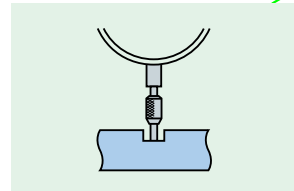
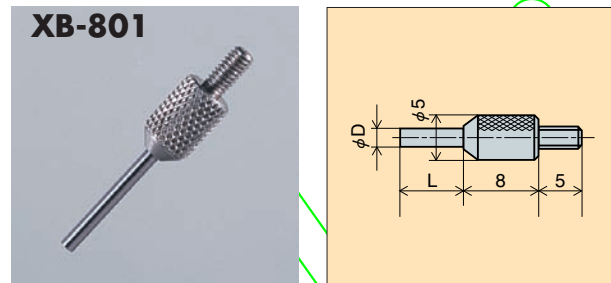
XB-505



Part No.	Material
XB-505	Carbide

● Needle Type Contact Point

XB-801



● Carbide Flat Contact Point

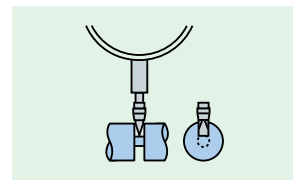
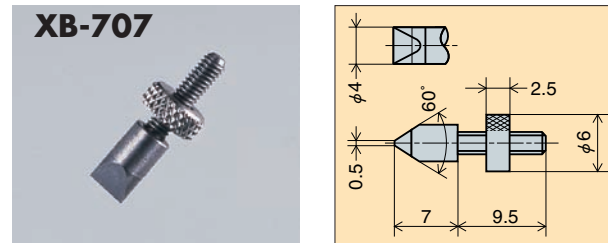
XB-605



Part No.	Material
XB-605	Carbide

● Carbide Knife-edge Contact Point

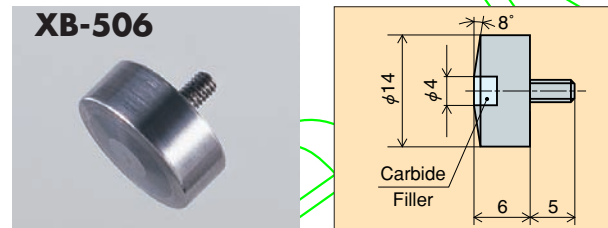
XB-707



Part No.	Material
XB-707	Carbide

● Carbide Plain Contact Point

XB-506



Part No.	Material
XB-506	Carbide

Part No.	φ D (mm)	L (mm)	Material
XB-800	1	2	Carbide
XB-801	1.5	12	Carbide
XB-802	2	7	Carbide
XB-803	2	12	Carbide
XB-804	1	20	Carbide
XB-805	1.5	20	Carbide
XB-806	2	20	Carbide
XB-807	1	40	Carbide
XB-808	1.5	40	Carbide
XB-809	2	40	Carbide

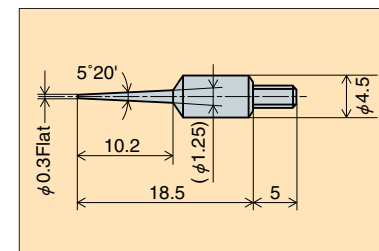
Part No.	φ D (mm)	L (mm)	Material
XS-800	1	2	SKS3
XS-801	1.5	12	SKS3
XS-802	2	7	SKS3
XS-803	2	12	SKS3
XS-804	1	20	SKH
XS-805	1.5	20	SKH
XS-806	2	20	SKH
XS-807	1	40	SKH
XS-808	1.5	40	SKH
XS-809	2	40	SKH

Replaceable Contact Point (Screw pitch M2.5 × 0.45mm)

for Dial Indicators and Linear Gauges

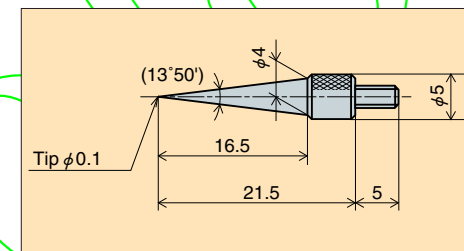
● Needle Contact Point

XT-2C



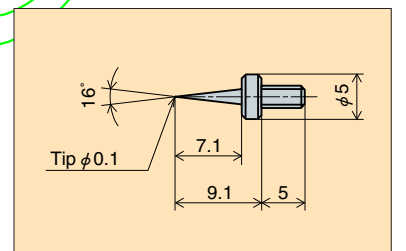
Part No.	Material
XT-2C	SK 3

XT-3



Part No.	Material
XT-3	SK 3

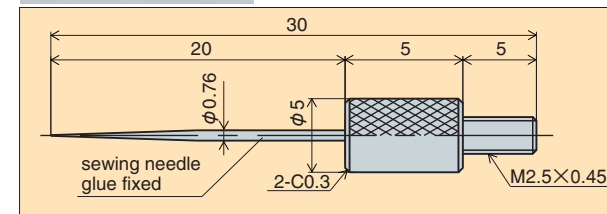
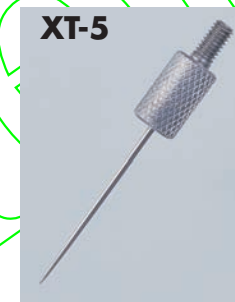
XT-4



Part No.	Material
XT-4	SK 3

● Needle Contact Point

XT-5



Part No.	Material
XT-5	sewing needle

● Contact Point Joint

To extend the contact point, simply add the contact point joint.

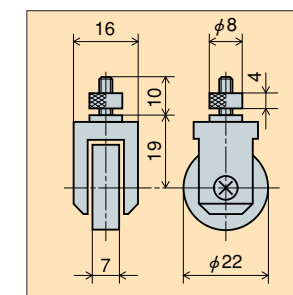
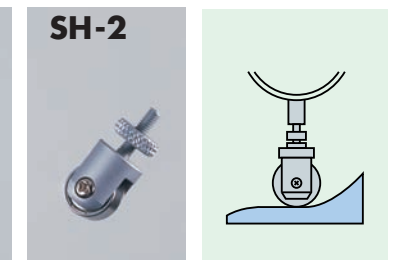
L (mm)	φ 4 type	φ 5 type
6	XJ-406	
10	XJ-410	XJ-510
15	XJ-415	
20	XJ-420	XJ-520
25	XJ-425	
30	XJ-430	XJ-530
35	XJ-435	
40	XJ-440	XJ-540
45	XJ-445	
50	XJ-450	XJ-550
55	XJ-455	
60	XJ-460	XJ-560
65	XJ-465	
70	XJ-470	
75	XJ-475	
80	XJ-480	
90	XJ-490	
100	XJ-400	

● Roller Contact Point

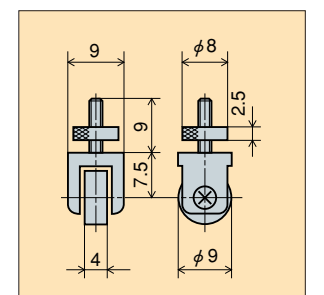
SH-1



SH-2

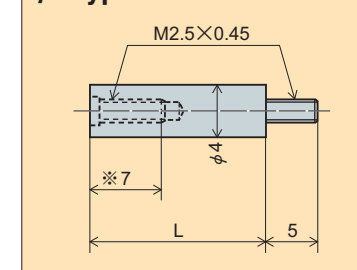


Part No.	Material
SH-1	SUJ2

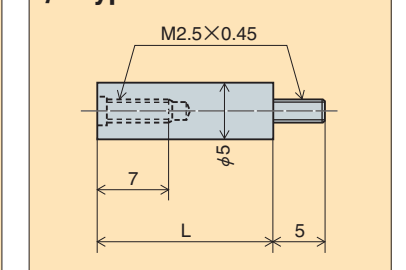


Part No.	Material
SH-2	SUJ2

φ4 type

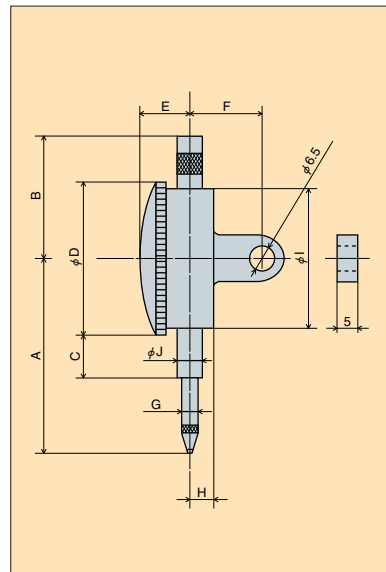


φ5 type



※Length of the thread screw of XJ-406 is 5mm.

Dimensions of Dial Gauges



Standard 0.001mm 0.005mm (mm)

Model	A	B	C	D	E	F	G	H	I	J
5B-HG	60	41.5	18.5	53	14.5	20	4	6.5	49	8.0 ⁰ _{-0.022}
5-DX	60	42.6	17	55.7	14.5	20	5	7	52	8.0 ⁰ _{-0.03}
5B	60	41.5	18.5	53	14.5	20	4	6.5	49	8.0 ⁰ _{-0.022}
5F	60	41.5	18.5	53	14.5	—	4	6.5	49	8.0 ⁰ _{-0.022}
5-SWF	63	41.5	17.5	55	15	20	4	6.5	49	8.0 ⁰ _{-0.022}
25	72	42	25	66.5	14.5	20	4	7.5	62.5	8.0 ⁰ _{-0.03}
25F-RE	72	41	25	66.5	14.5	—	4	7.5	62.5	8.0 ⁰ _{-0.03}
25S	60	42.6	17	55.7	14.5	20	5	7	52	8.0 ⁰ _{-0.03}
55	73	52	25	66	17	20	4.5	7	62.5	8.0 ⁰ _{-0.03}
55-DX	62	44.5	17	57	17	19.5	4.5	6.5	52	8.0 ⁰ _{-0.03}
56	62	44.5	17	57	17	19.5	4.5	6.5	52	8.0 ⁰ _{-0.03}

Standard 0.01mm (mm)

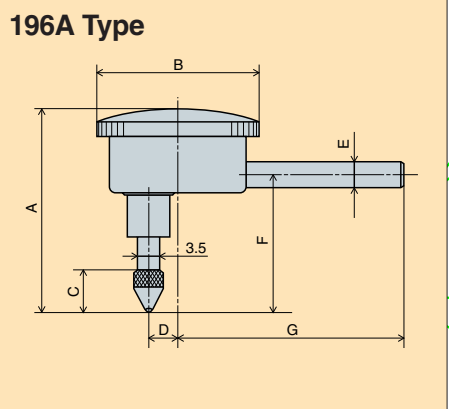
Model	A	B	C	D	E	F	G	H	I	J
107-HG	65	41.5	18.5	53	14.5	20	4	6.5	49	8.0 ⁰ _{-0.03}
107-DX	65	50.7	17	55.7	14.5	20	5	7	52	8.0 ⁰ _{-0.03}
107	65	41.5	18.5	53	14.5	20	4	6.5	49	8.0 ⁰ _{-0.03}
107F	65	41.5	18.5	53	14.5	—	4	6.5	49	8.0 ⁰ _{-0.03}
107-SWA	68	41.5	17.5	55	15	20	4	6.5	49	8.0 ⁰ _{-0.03}
107-BL	65	41.5	18.5	53	14.5	—	4	6.5	49	8.0 ⁰ _{-0.03}
107F-RE	65	41.5	18.5	53	14.5	20	4	6.5	49	8.0 ⁰ _{-0.03}
107-LL	65	—	18.5	53	14.5	20	4	6.5	49	8.0 ⁰ _{-0.03}
107W	65	41.5	17.5	55	17	20	4	6.5	49	8.0 ⁰ _{-0.03}
107F-T	65	41.5	18.5	53	14.5	—	4	6.5	49	8.0 ⁰ _{-0.03}
107-E	65	41.5	18.5	53	14.5	20	4	6.5	49	8.0 ⁰ _{-0.03}
17	65	41.5	18.5	53	14.5	20	4	6.5	49	8.0 ⁰ _{-0.03}
57-SWA	65	41.5	18.5	55	15	20	4	6.5	49	8.0 ⁰ _{-0.03}
57	65	41.5	18.5	53	14.5	20	4	6.5	49	8.0 ⁰ _{-0.03}
57F	65	41.5	18.5	53	14.5	—	4	6.5	49	8.0 ⁰ _{-0.03}
57B	65	41.5	18.5	53	14.5	—	4	6.5	49	8.0 ⁰ _{-0.03}

Long Travel 0.01mm 0.005mm 0.1mm (mm)

Model	A	B	C	D	E	F	G	H	I	J
207	90	41	25	66.5	14.5	20	5	7.5	62.5	8.0 ⁰ _{-0.03}
207F-PL	90	41	25	66.5	14.5	—	5	7.5	62.5	8.0 ⁰ _{-0.03}
207F-T	90	41	25	66.5	14.5	—	5	7.5	62.5	8.0 ⁰ _{-0.03}
207S-LL	75	50.5	18.5	53	14.5	20	4	6.5	49	8.0 ⁰ _{-0.03}
207S	75	50.5	18.5	53	14.5	20	4	6.5	49	8.0 ⁰ _{-0.03}
207W	75	50.5	17.5	55	17	20	4	6.5	49	8.0 ⁰ _{-0.03}
207WF-T	75	50.5	17.5	55	17	—	4	6.5	49	8.0 ⁰ _{-0.03}
307S	107	89	22	57	17.5	20	5	7	52	8.0 ⁰ _{-0.03}
307	102	46	22.8	75.5	17.5	21	5	8	72.5	8.0 ⁰ _{-0.03}
507	128	81.5	26.7	81.5	17.5	21.5	5.5	8.5	78.5	10.0 ⁰ _{-0.03}
509	128	81.5	26.7	81.5	17.5	21.5	5.5	8.5	78.5	10.0 ⁰ _{-0.03}
809	201.5	86.5	54	112	24	22.5	6	10	108	14.0 ⁰ _{-0.03}

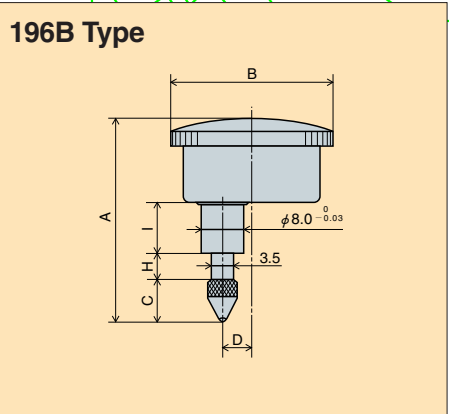
Miniature 0.01mm 0.005mm (mm)

Model	A	B	C	D	E	F	G	H	I	J
5S	43.2	30.5	12.9	40.8	12.5	—	4	5.1	37	8.0 ⁰ _{-0.03}
47	39.6	20	9.7	36	13	15	3.5	5.8	32	8.0 ⁰ _{-0.03}
47F	39.6	20	9.7	36	13	—	3.5	5.8	32	8.0 ⁰ _{-0.03}
57S	41.3	27.4	10	39	14	19	4	5.1	36.5	8.0 ⁰ _{-0.03}
36A	46.2	30.5	12.9	40.8	12.5	19	4	5.1	37	8.0 ⁰ _{-0.03}
36B	46.2	30.5	12.9	40.8	12.5	19	4	5.1	37	8.0 ⁰ _{-0.03}



Back Plunger 0.01mm (mm)

Model	A	B	C	D	E	F	G
196A	44	38	9	4.5	6.35	28.1	57
196A-6	44	38	9	4.5	6	28.1	57



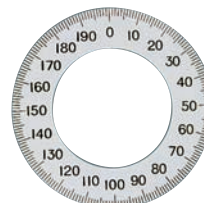
Back Plunger 0.01mm (mm)

Model	A	B	C	D	E	F	G	H	I
196B	58.5	38	12.5	4.5	—	—	—	5.5	16.5
196B-T	58.5	38	12.5	4.5	—	—	—	5.5	16.5
196Z	58.5	38	12.5	4.5	—	—	—	5.5	16.5

Accessories for Dial Gauges

Outer dial plates

0.001mm type



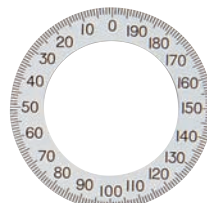
Continuous Dial A
(0-100-200)



Continuous Dial B
(0-100-100)

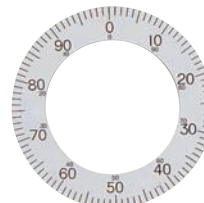


Balanced dial
(0-100-0)

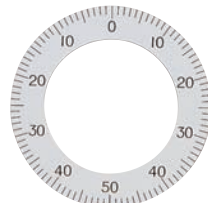


Reversed dial A
(±200-100-0)

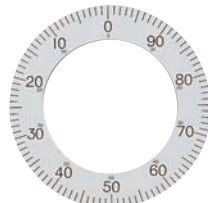
0.01mm type



Continuous Dial A
(0-50-100)



Balanced dial
(0-50-0)



Reversed dial A
(±100-50-0)

Color Caps



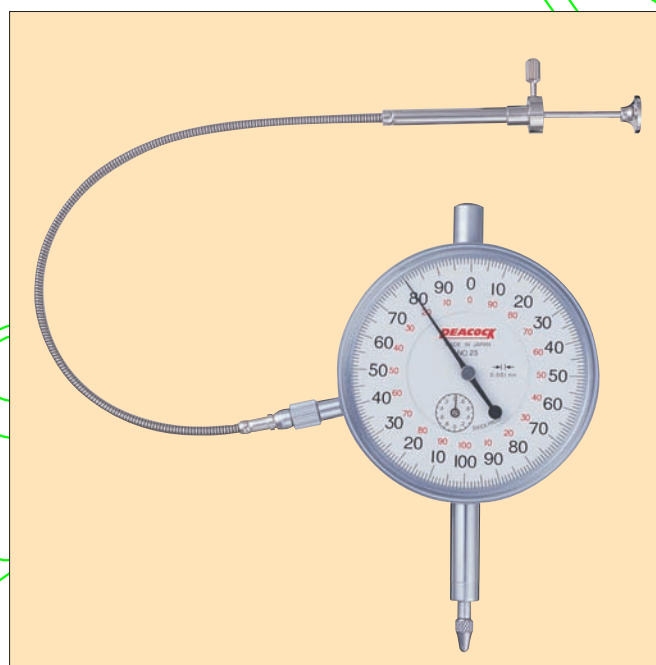
To manage the measurement by dial gauges, caps with five different colors are available. They are attachable to standard dial gauges. (No. 5, 107, 15, 17, 18, 55, 56 and 25S)

Spindle Lifting Lever (LL-1)



Part No.	Dial Gauge installable
LL-1	107, 107F, 57, 57B, 57F, 17, 17B, 207S, 5B, 5F, 55, 55DX, 25S, 56, 17Z, 15Z, 107W

Spindle pull-up Release



Part No.	Dial Gauge installable
RE-1 (Total length:275mm)	107F-RE, R1-B.
RE-2 (Total length:287mm)	25F-RE, R1-A.

(Applicable Models)

5B-HG, 5B, 5F, 5-SWF

- We can manufacture outer dials for other 0.001mm dial indicators. (examples: 25, 55, 55-DX)
- We can manufacture outer dials with counter clock wise numbering.

(Applicable Models)

107-HG, 107, 107F, 107-SWA, 107-BL, 107F-RE, 107-LL, 17, 57-SWA, 57, 57F.

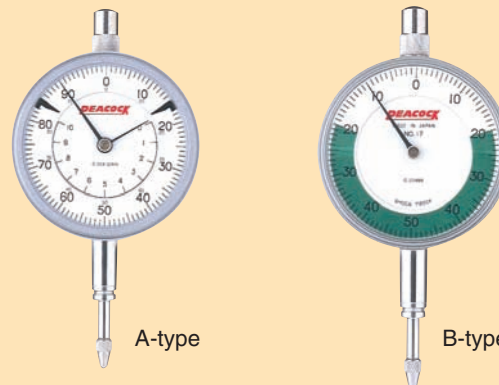
- We can manufacture outer dials for other 0.01mm dial indicators. (examples: 47, 57S, 36B)

Various accessories

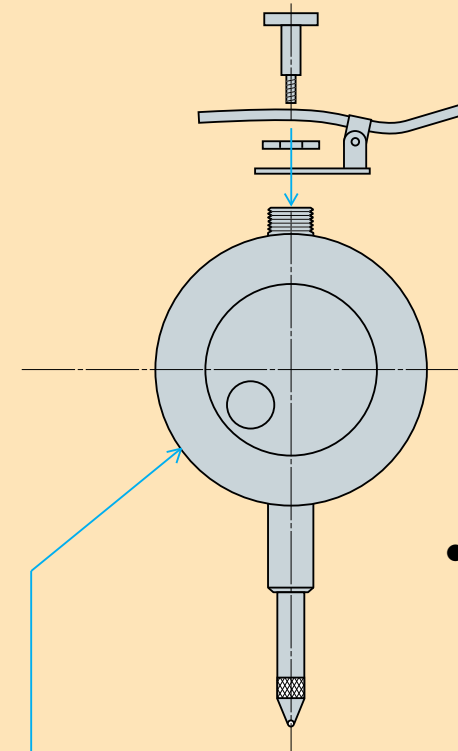
Easily attachable adhesive limits A type



Examples of adhesive limits stickers



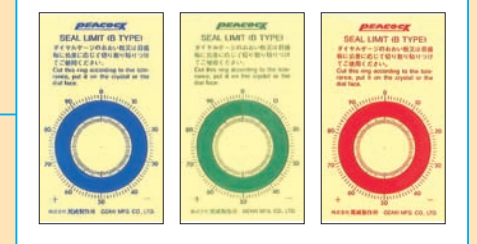
Spindle Lifting Lever (LL-1)



Outer dial plates



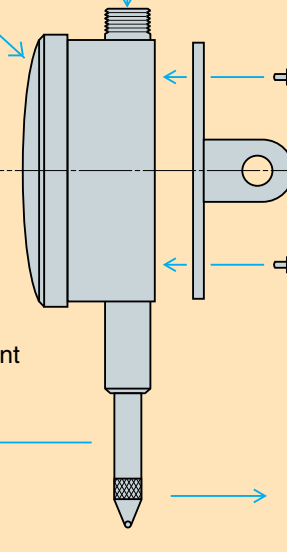
Easily attachable adhesive limits B type



Color caps



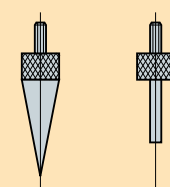
Backs



Contact point joint



Replaceable contact points



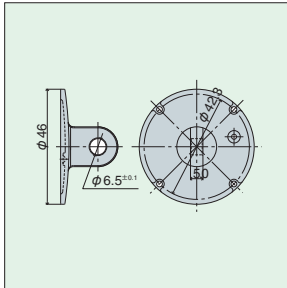
● Backs

The method of holding the dial gauge comes in two types; holding the stem and holding the lug of the back. However, the back may be replaced for convenience of holding.

1 Center lug back



GB-1A

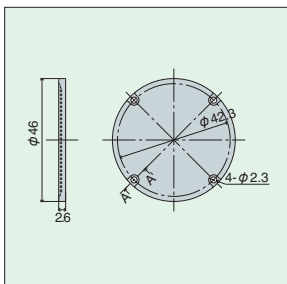


Part No.	Outer dia.	Dial Gauge installable
GB-1A	46.0	107. 107Z. 17Z. 57. 17. 17B. 5Z. 15Z. 207S. 207W. 18. 5B
GB-125	59.5	25. 55. 207
GB-1307	69.8	307
GB-1507	76.7	507. 509
GB-1809	105.0	809
GB-147	30.7	47. 47Z. 47SZ
GB-136	35.8	5S. 36A. 36B
GB-157S	35.3	57S
GB-1DX	50.2	55DX. 56. 107DX. 307S. 25S

2 Flat back

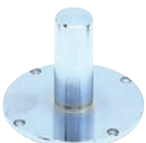


GB-3A

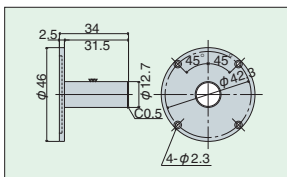


GB-3A	46.0	107. 107Z. 17Z. 57. 17. 17B. 5Z. 15Z. 207S. 207W. 18. 5B
GB-325	59.5	25. 207. 55
GB-3307	69.8	307
GB-3507	76.7	507. 509
GB-3809	105.0	809
GB-347	30.7	47. 47SZ. 47Z
GB-336	35.8	5S. 36A. 36B
GB-357S	35.3	57S
GB-3DX	50.2	55DX. 56. 107DX. 307S. 25S

3 Post back

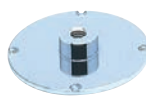


GB-4A

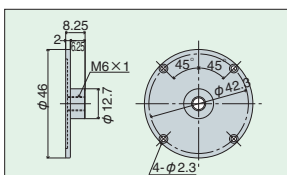


GB-4A	46.0	107. 107Z. 17Z. 57. 17. 17B. 5Z. 15Z. 207S. 207W. 18. 5B
GB-447	30.7	47. 47Z. 47SZ

4 Screw back

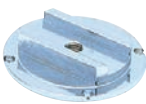


GB-5A

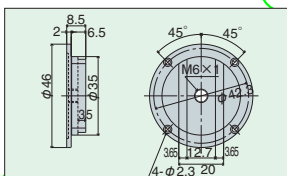


GB-5A	46.0	107. 107Z. 57. 17. 5B. 5Z. 17B. 15Z. 207S. 207W. 18
GB-547	30.7	47. 47Z. 47SZ
GB-536	35.8	5S. 36A. 36B
GB-557S	35.3	57S

5 Adjustable back



GB-6A

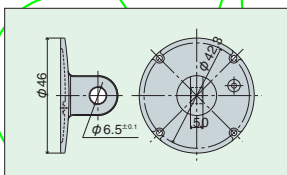


GB-6A	46.0	107. 107Z. 57. 17. 5B. 5Z.
GB-625	59.5	25. 55. 207
GB-647	30.7	47. 47Z. 47SZ
GB-636	35.8	5S. 36A. 36B
GB-657S	35.3	57S

6 Lug back with lever



GB-7A



GB-7A	46.0	107. 107Z. 57. 17. 5B. 5Z. 17B. 15Z. 17Z. 18. 207S
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Repair Tools

● The tools in the table below are available either in a set or individually.

1 Case



Width × Depth × Height
225mm × 180mm × 170mm

2 Pointer drawer



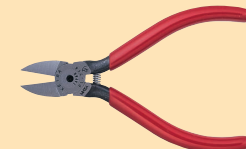
This is used to draw out a pointer. Insert the tip of this tool under the pointer, and push the spindle center with thread. The pointer can be drawn out easily.

In this case, the center of pointer drawer should match with the spindle center.

example



3 Hand drawer



This is used to draw out a hand of gauge. Extend a piece of thin paper between the hand and the dial face. Insert the tip of the tool under the hand, and draw it out in accordance with the principles of the lever.

4 Plus and minus driver set (six in a set)



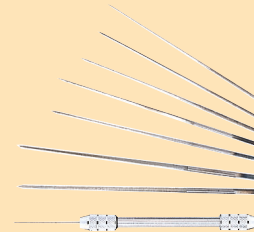
⊖ No.2 (1.4mmW) ⊖ No.5 (2.9mmW)
⊖ No.3 (2mmW) ⊕ No.0 (4mmW)
⊖ No.4 (2.4mmW) ⊕ No.1 (5mmW)
Select a driver which is suitable for the width of thread head and that of the slot. In particular, please avoid fastening or loosening a large thread using a small driver.

5 Driver with handle



This is used to fasten a thread which may be, at first, fastened with small driver, but finally requires to be fastened sufficiently.
(For example, fastening of attaching screw of bottom board.)

6 Reamer and reamer holder



This is used to enlarge holes for pointer, hand, or spindle center. Stand the reamer in a right angle with the plane, and bore the hole lightly, relaxing your finger as possible as you can.

7 Clock oil



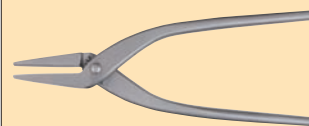
This is an oil to be lubricated in the course of assembly.

8 Tweezers



This is used to handle small parts such as hair spring, pointer or small thread.

9 Pliers



This is used to fasten or loosen a pin or knock.

10 Washing brush



This is used to remove sticks such as old oil cake and dusts with washing.

11 Blower



This is used, in the course of assembly, to remove dusts stuck to the dial face and so on. When the brush at the tip is removed, this can be used as a pump to blow off dusts. Do not breathe upon the apparatus to blow off dusts.

12 Lubrication brush



This is used, in the course of assembly, to lubricate into the spindle center. Use care to lubricate only a small amount of oil.

13 Crystal press fitter



This is to replace crystals.

Set a crystal on the pad. Then press the fitter from the above to reduce the outer diameter, and fit the crystal into the outer frame.

- Cover plate installer is for pressing the cover plate into either the outer frame of a plunger-type dial indicator or a lever-type dial indicator.
- Includes 8 types of changeable frames.
- Changeable frame examples:
 - ③ and ④: for lever-type dial indicators PC and PCN
 - ④ and ⑤: for small dial indicators
 - ⑥ and ⑦: for standard type 0.001mm and 0.01mm dial indicators
 - ⑦ and ⑧: for long stroke dial indicators

● Changeable frame sizes (mm):

① φ 20 ② φ 21.5 ③ φ 24.5 ④ φ 30 ⑤ φ 33 ⑥ φ 36 ⑦ φ 40.5 ⑧ φ 43

Technical Data

Dial Indicators JIS B 7503: 1997 (Japan Industrial Standards)

Methods of measuring of performance

No.	Item	Measuring method	Illustration	Measuring instrument
1	Indication error	Holding the plunger of the dial gauge vertically and downward, carry out the following procedure setting the reading of dial gauge at the zero point.		Micrometer head or length measuring instrument of 0.5μm or under in scale interval and instrumental error of ±1μm and supporting stand for the dial gauge of 0.001mm and 0.002mm in scale interval and 2mm or under in measuring range.
2	Adjacent error	Press in the plunger 1/10 by 1/10 revolution up to two revolutions from the zero point, 1/2 by 1/2 revolution up to five revolutions and 1 by 1 revolution up to the end point of the measuring range after exceeding five revolutions and, returning back the plunger in the same state, read the same measuring points as in the pressing in direction. Obtain the error from the error diagram made as a result of the reading in both directions(see Attached Fig.1).		For other dial gauges from the above, micrometer head or length measuring instruments of 1μm or under in scale interval and ±1μm in instrumental error and measuring stand.
3	Retrace error	Pressing in the plunger in the same state, read the same measuring points as in the pressing in direction. Obtain the error from the error diagram made as a result of the reading in both directions(see Attached Fig.1).		
4	Repeatability	Applying the contact point vertically on the upper surface of the measuring stand, obtain the maximum difference between the indications at every times when the plunger is operated rapidly and slowly five times at an arbitrary position in the measuring range.		Measuring stand. Supporting stand.
5	Measuring Force	Hold the dial gauge whose plunger is placed vertically and downward, transfer the plunger up-and-downward continuously and slowly to measure the measuring forces at the zero point, center and end point of the measuring range.		Supporting stand. Upper dish spring type indicating balance (2g or under in scale interval) or force meter (0.02 N or under in sensitivity).

Dial Indicators JIS B 7503: 1997 (Japan Industrial Standards)

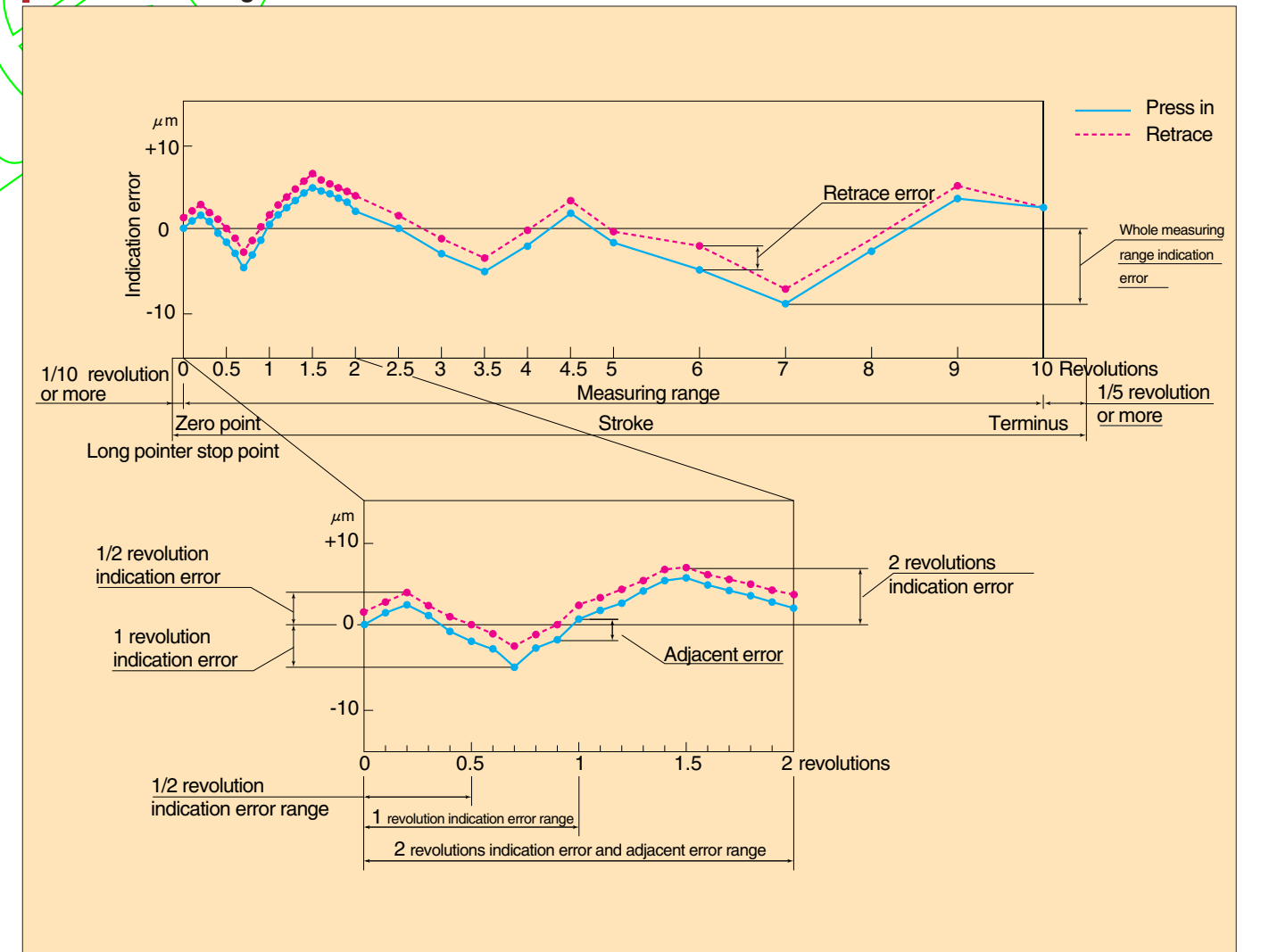
Maximum allowable error of indication

		Scale interval and measuring range					
		0.01mm	0.002mm		0.001mm		
Measuring range		10mm max.	2mm max.	Over 2mm, and less than 10mm	1mm max.	Over 1mm, and less than 2mm	Over 2mm, and less than 5mm
Retrace Error		5	3	4	3	3	4
Repeatability		5	0.5	1	0.5	0.5	1
Indication error	1/10 revolution (1)	8	4	5	2.5	4	5
	1/2 revolution	±9	±5	±6	±3	±5	±6
	One revolution	±10	±6	±7	±4	±6	±7
	Two revolutions	±15	±6	±8	±4	±6	±8
	Whole measuring range	±15	±7	±12	±5	±7	±10

Note: (1) Adjacent error.

Remark: The value in this table shall be at 20°C.

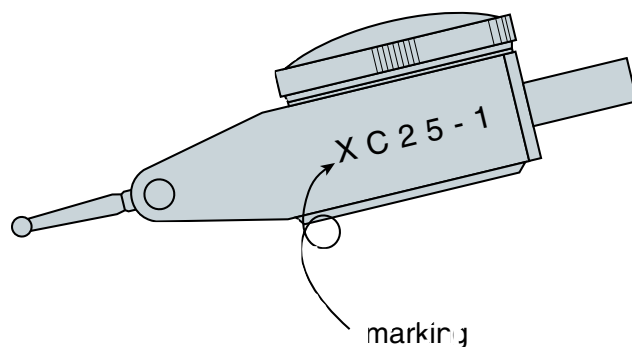
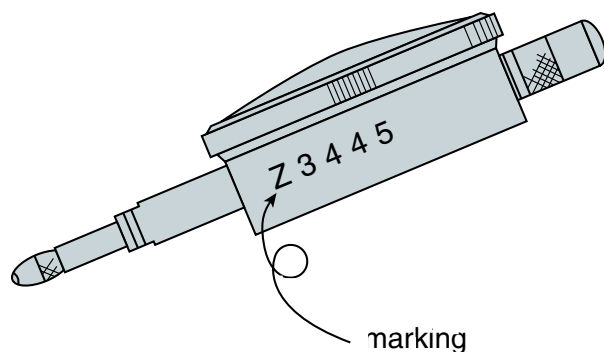
Indication error diagram



Marking Service

To all our valued customers :

When you purchase any new PEACOOK gauges from us, we now offer an optional value adding free making services of Control Numbers directly onto gauges for your ISO needs; any other control needs and for planned future needs.



● Marking is made by an ultrasonic method.

Character size, spacing between characters and its direction can specifically be set under the following ranges :

Character size (height) — 1.0 to 10 mm

(at intervals of 0.1mm, at variable step)

max. 10 characters

Numbers of characters — • Alphabet-Capital letters (26)

Characters of making — A B C D E F X Y Z

• Alphabet-Small letters (26)

a b c d e f x y z

• Numeric characters (10)

0 1 2 3 4 5 6 7 8 9

• Symbols (18)

+ - × / ± = () < > [] * : . , . .

• Standard font (Helvetica)

