

SINCE 1916

PEACOCK®

PRECISION MEASURING INSTRUMENTS



MODEL 107 IS JAPAN'S FIRST DOMESTICALLY DIAL GAUGE.

***WIDELY USED IN
MANUFACTURING PLANTS***

SINCE 1916

PEACOCK®

TOKYO, JAPAN

Mission Statement

Harmony and Progress

ORIGIN of PEACOCK

The reliable PEACOCK brand is highly acclaimed as being representative of Japan's DIAL GAUGES.

The name originates from a haiku poem by Shiki Masaoka that goes,

“Fanning out its tail in the Spring breeze, see-PEACOCK!”

Founder Kiyonobu Ozaki had been interested in haiku since the upper grades of primary school, and he established this trademark for the brand inspired by the neat image Shiki's poem invoked.

Manufacturing fine products that resemble the subtle pattern on the tail of PEACOCK has enable the company to contribute to society.



ISO 9001 : 2015 / JIS Q 9001 : 2015

We, OZAKI MFG. CO., LTD., received ISO 9001 certification in 1999 and now renewed 2015 edition. We have been supplying high quality measuring instruments with reliable brand "PEACOCK" to our customers not only Japan but also overseas countries.

Management System Certificate



Appendix



COPY

ISO Certification for
DIAL GAUGES, PIC TEST INDICATORS, CYLINDER GAUGES AND
ITS APPLIED DIAL GAUGES.



Contents

| | | | |
|----|----------------------------------|-----------|--|
| 0 | Quick Chart | 15 ~ 20 | |
| 1 | Dial Gauges | 21 ~ 44 | |
| 2 | Lever Type Dial Indicators | 45 ~ 64 | |
| 3 | Cylinder Gauges | 65 ~ 72 | |
| 4 | Inch Scale Dial Indicators | 73 ~ 80 | |
| 5 | Gauge Testers | 81 ~ 84 | |
| 6 | Thickness Gauges | 85 ~ 102 | |
| 7 | Dial Caliper Gauges | 103 ~ 110 | |
| 8 | Applied Dial Gauges | 111 ~ 120 | |
| 9 | Stands | 121 ~ 126 | |
| 10 | Signal Indicators | 127 ~ 132 | |
| 11 | Digital Indicators | 133 ~ 154 | |
| 12 | Parts Drawings | 155 ~ 170 | |

※Design and specifications are subject to change without notice for future improvement.

- Product Weight14

0 Quick Chart

- for Dial Gauge15
- for Lever Type Dial Indicator16-17
- for Cylinder Gauge18-20



1 Dial Gauges

- One Revolution Dial Gauges "Z" Series22-23
- Standard Dial Gauges 0.001, 0.005mm type24-25
- Standard Dial Gauges 0.01mm type26-27
- Long Travel Dial Gauges28-29
- Miniature Dial Gauges30
- Back Plunger Dial Gauges31
- Replaceable Contact Points32-35
- Outer Dimensions36-37
- Outer Dial Plates38
- Accessories38-39
- Backs40
- Repair tools41
- Technical Data42-43
- Marking Service44



2 Lever Type Dial Indicators

- Without Change Lever "PCN" series46-47
- Double Dial Face "W" series47
- One Revolution New Pic Test48-49
- Low Measuring Force "E" series50
- Anti-Magnetic & Non-Electrifying "U" series51
- Large Dial Face "D" series52
- With Change Lever "PC" series53
- With Ruby ball "R" series54
- Without Stem "V" series55
- With Dovetail Stem "DS8V" series56
- Right Angle Contact Point for Pic Test56
- Accessories (Option)57
- Replaceable Contact Points58
- Outer Dimensions59
- Applied Examples60
- Precautions for Handling60
- PK- TEST61-64



3 Cylinder Gauges

- Standard "CC" series66
- Special Length below grip "CC" type66
- Short size "S" series67
- Standard "CG" series (Blind hole type)68
- Special Length below grip "CG" type68
- Dimensions for Feelers and Washers for Cylinder Gauges69
- "R" series Cylinder Gauges70-72

4 Inch Scale Dial Indicators

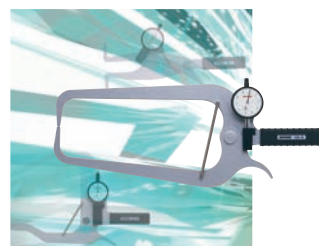
- Dial Gages 0.001" type74-75
- Dial Gages 0.0001" type75
- Metric Graduations 0.01mm76
- Pic Test Indicators77-78
- Dial Bore Gage Sets79
- Dial Thickness Gage80

5 Gauge Testers

- Dial Gauge Tester82
- Cylinder Gauge Tester83

6 Thickness Gauges

- Dial Thickness Gauge 0.01mm type86-87
- Dial Thickness Gauge 0.001mm type88
- Dial Swift Gauge88
- Paper Thickness Gauge89
- Large type Dial Thickness Gauges90
- Roller type Dial Thickness Gauge90
- Dial Sheet Gauges91
- Dial Pipe Gauges92
- Dial Lens Gauge92
- Dial Thickness Gauge Special Order93
- Outer Dimensions94-97
- Dial Upright Gauges98
- Constant Pressure Thickness Gauges
 "FFG" "FFA" "FFD" series99-102



7 Dial Caliper Gauges

- Outside "LA" series104-107
- Inside "LB" series108-109
- Applied examples110



8 Applied Dial Gauges

- Dial Depth Gauges "T" series112
- Outer Dimensions113
- Dial Depth Gauge Round Base Type114
- Dial Inside Gauges "U" series115
- Dial Hole Gauge116
- Lever type Contact Point "XY" series117
- Angle Contact Point "XZ" series117
- Bench Center118



9 Stands

- Dial Gauge Stands122-123
- Magnetic Stands124
- Magnetic Holder125



10 Signal Indicators

- Signal Gauge 0.001, 0.01, 0.05mm type.....128
- Signal Checker128
- Outer Dimensions129
- Signal Gauge Set-Up130
- Connection Diagram131



11 Digital Indicators

- Overview of Digital Gauges & Display Combinations134
- Digital Gauges Integrated Display type135
- Digital Gauges(Cordless type)136-137
- Digital Thickness Gauges138-139
- Digital Upright Gauges139
- Digital Depth Gauges.....140
- Linear Gauges 2, 5mm range141-142
- Linear Gauges 10, 20mm range143-144
- Linear Gauge Rectangular wave out put type143-144
- Linear Gauges 50, 100mm range145-146
- Common Specifications of Linear Gages147
- Digital Counters Compact type148-149
- Deep Hole Bore Gauges150-151
- Combination example152
- Technical Glossary153-154



12 Parts Drawings

- Dial Gauges156-158
- PCN series.....159-161
- PC series161-162
- Thickness Gauges163-164
- Lens Gauge164
- Cylinder Gauges CC series165-168
- Cylinder Gauges CG series169-170

INDEX (Numerical)

| Model No. | Description | Page |
|-----------|---|---------|
| 1 | | |
| 107 | Dial Gauge | 27 |
| 107F | Dial Gauge | 27 |
| 107-HG | Dial Gauge | 27 |
| 107-LL | Dial Gauge | 27 |
| 107-E | Dial Gauge (Low force Type) | 27 |
| 107-BL | Dial Gauge | 27 |
| 107-SWA | Dial Gauge | 27 |
| 107W | Dial Gauge | 27 |
| 107F-RE | Dial Gauge | 27 |
| 107F-T | Dial Gauge | 27 |
| 107-DX | Dial Gauge | 27 |
| 107Z | One Revolution Dial Gauge | 23 |
| 107Z-XB | One Revolution Dial Gauge | 23 |
| 117Z | One Revolution Dial Gauge | 23 |
| 147Z | One Revolution Dial Gauge | 23 |
| 15Z | One Revolution Dial Gauge | 23 |
| 15Z-SWF | One Revolution Dial Gauge | 23 |
| 15DZ | One Revolution Dial Gauge | 23 |
| 17 | Dial Gauge | 27 |
| 17B | One Revolution Dial Gauge | 23 |
| 17Z | One Revolution Dial Gauge | 23 |
| 17Z-SWA | One Revolution Dial Gauge | 23 |
| 18 | Dial Gauge | 23 |
| 196A | Back Plunger Type Dial Gauge | 31 |
| 196A-6 | Back Plunger Type Dial Gauge | 31 |
| 196B | Back Plunger Type Dial Gauge | 31 |
| 196B-T | Back Plunger Type Dial Gauge | 341 |
| 196Z | Back Plunger Type Dial Gauge (One Revolution Type) | 23 · 31 |
| 1200 | Inch Scale Dial Gauge | 75 |
| 1310 | Inch Scale Dial Gauge | 75 |
| 1310B | Inch Scale Dial Gauge | 75 |
| 1330 | Inch Scale Dial Gauge | 75 |
| 1330B | Inch Scale Dial Gauge | 75 |
| 1364 | Inch Scale Dial Gauge | 75 |
| 1364B | Inch Scale Dial Gauge | 75 |
| 1440 | Inch Scale Dial Gauge | 75 |

| Model No. | Description | Page |
|-----------|--|------|
| 1440B | Inch Scale Dial Gauge | 75 |
| 1460 | Inch Scale Dial Gauge | 75 |
| 1460B | Inch Scale Dial Gauge | 75 |
| 1201 | Metric Graduations | 76 |
| 1311 | Metric Graduations | 76 |
| 1331 | Metric Graduations | 76 |
| 1361 | Metric Graduations | 76 |
| 2 | | |
| 207 | Long Travel Dial Gauge | 29 |
| 207S | Long Travel Dial Gauge | 29 |
| 207S-LL | Long Travel Dial Gauge | 29 |
| 207F-T | Long Travel Dial Gauge | 29 |
| 207F-PL | Long Travel Dial Gauge | 29 |
| 207W | Long Travel Dial Gauge | 29 |
| 207WF-T | Long Travel Dial Gauge | 29 |
| 25 | Dial Gauge | 25 |
| 25F-RE | Dial Gauge | 25 |
| 25S | Dial Gauge | 25 |
| 2000 | Inch Scale Test Indicator | 77 |
| 2000B | Inch Scale Test Indicator | 77 |
| 2010 | Inch Scale Test Indicator | 77 |
| 2010B | Inch Scale Test Indicator | 77 |
| 2030 | Inch Scale Test Indicator | 77 |
| 2030B | Inch Scale Test Indicator | 77 |
| 2050 | Inch Scale Test Indicator | 78 |
| 2050B | Inch Scale Test Indicator | 78 |
| 2060 | Inch Scale Test Indicator | 78 |
| 2060B | Inch Scale Test Indicator | 78 |
| 2200 | Inch Scale Test Indicator | 78 |
| 2200B | Inch Scale Test Indicator | 78 |
| 2210 | Inch Scale Test Indicator | 78 |
| 2210B | Inch Scale Test Indicator | 78 |
| 3 | | |
| 307 | Long Travel Dial Gauge | 29 |
| 307S | Long Travel Dial Gauge | 29 |
| 36A | Miniature Dial Gauge | 30 |
| 36B | Miniature Dial Gauge | 30 |
| 36Z | Miniature Dial Gauge (One Revolution Type) | 23 |

| Model No. | Description | Page |
|-----------|--|------|
| 4 | | |
| 47 | Miniature Dial Gauge | 30 |
| 47F | Miniature Dial Gauge | 30 |
| 47Z | Miniature Dial Gauge (One Revolution Type) | 23 |
| 47Z-XB | Miniature Dial Gauge (One Revolution Type) | 23 |
| 47SZ | Miniature Dial Gauge (One Revolution Type) | 23 |
| 4600 | Inch Scale Dial Thickness Gauge | 80 |
| 5 | | |
| 5B | Dial Gauge | 25 |
| 5F | Dial Gauge | 25 |
| 5B-HG | Dial Gauge | 25 |
| 5-SWF | Dial Gauge | 25 |
| 5-DX | Dial Gauge | 25 |
| 55 | Dial Gauge | 25 |
| 55-DX | Dial Gauge | 25 |
| 56 | Dial Gauge | 25 |
| 57 | Dial Gauge | 27 |
| 57F | Dial Gauge | 27 |
| 57B | Dial Gauge | 27 |
| 57-SWA | Dial Gauge | 27 |
| 57S | Miniature Dial Gauge | 30 |
| 5S | Miniature Dial Gauge | 30 |
| 5Z | One Revolution Dial Gauge | 23 |
| 5Z-XB | One Revolution Dial Gauge | 23 |
| 507 | Long Travel Dial Gauge | 29 |
| 509 | Long Travel Dial Gauge | 29 |
| 5710 | Inch Scale Dial Bore Gage Set | 79 |
| 5710B | Inch Scale Dial Bore Gage Set | 79 |
| 5730 | Inch Scale Dial Bore Gage Set | 79 |
| 5730B | Inch Scale Dial Bore Gage Set | 79 |
| 5740 | Inch Scale Dial Bore Gage Set | 79 |
| 5740B | Inch Scale Dial Bore Gage Set | 79 |
| 5750 | Inch Scale Dial Bore Gage Set | 79 |
| 5750B | Inch Scale Dial Bore Gage Set | 79 |
| 5770 | Inch Scale Dial Bore Gage Set | 79 |
| 5770B | Inch Scale Dial Bore Gage Set | 79 |
| 5790 | Inch Scale Dial Bore Gage Set | 79 |
| 5790B | Inch Scale Dial Bore Gage Set | 79 |

| Model No. | Description | Page |
|----------------|---|------|
| 8 | | |
| 809 | Long Travel Dial Gauge | 29 |
| (Alphabetical) | | |
| C | | |
| CC-02 | Cylinder Gauge | 66 |
| CC-01 | Cylinder Gauge | 66 |
| CC-1 | Cylinder Gauge | 66 |
| CC-2 | Cylinder Gauge | 66 |
| CC-3 | Cylinder Gauge | 66 |
| CC-3C | Cylinder Gauge | 66 |
| CC-4 | Cylinder Gauge | 66 |
| CC-5 | Cylinder Gauge | 66 |
| CC-6 | Cylinder Gauge | 66 |
| CC-1S | Short size Cylinder Gauge | 67 |
| CC-2S | Short size Cylinder Gauge | 67 |
| CC-3S | Short size Cylinder Gauge | 67 |
| CC-3CS | Short size Cylinder Gauge | 67 |
| CC-01R | Cylinder Gauge (Large R shape of Contact Point & Feeler type) | 70 |
| CC-1R | Cylinder Gauge (Large R shape of Contact Point & Feeler type) | 70 |
| CC-2R | Cylinder Gauge (Large R shape of Contact Point & Feeler type) | 70 |
| CC-3R | Cylinder Gauge (Large R shape of Contact Point & Feeler type) | 70 |
| CC-3CR | Cylinder Gauge (Large R shape of Contact Point & Feeler type) | 70 |
| CG-01 | Cylinder Gauge (Blind Hole Type) | 68 |
| CG-1 | Cylinder Gauge (Blind Hole Type) | 68 |
| CG-2 | Cylinder Gauge (Blind Hole Type) | 68 |
| CG-3 | Cylinder Gauge (Blind Hole Type) | 68 |
| CG-3C | Cylinder Gauge (Blind Hole Type) | 68 |
| CG-4 | Cylinder Gauge (Blind Hole Type) | 68 |
| CG-5 | Cylinder Gauge (Blind Hole Type) | 68 |
| CG-6 | Cylinder Gauge (Blind Hole Type) | 68 |
| CG-01R | Cylinder Gauge (Blind Hole Type, Large R shape of Contact Point & Feeler type) | 70 |
| CG-1R | Cylinder Gauge (Blind Hole Type, Large R shape of Contact Point & Feeler type) | 70 |
| CG-2R | Cylinder Gauge (Blind Hole Type, Large R shape of Contact Point & Feeler type) | 70 |
| CG-3R | Cylinder Gauge (Blind Hole Type, Large R shape of Contact Point & Feeler type) | 70 |

| Model No. | Description | Page |
|-----------------|--|------------|
| CG-3CR | Cylinder Gauge (Blind Hole Type, Large R shape of Contact Point & Feeler type) -- | 70 |
| CCT-2 | Cylinder Gauge Tester | 83 |
| C-500 | Digital Counter | 149 |
| C-700 | Digital Counter | 149 |
| D | | |
| D-5 | Linear Gauge | 141 |
| D-5S | Linear Gauge | 141 |
| D-5B | Linear Gauge | 150 |
| D-5SB | Linear Gauge | 150 |
| D-10 | Linear Gauge | 143 |
| D-10S | Linear Gauge | 143 |
| DN-10 | Linear Gauge | 143 |
| DN-10S | Linear Gauge | 143 |
| D-20 | Linear Gauge | 143 |
| D-20S | Linear Gauge | 143 |
| DN-20 | Linear Gauge | 143 |
| DN-20S | Linear Gauge | 143 |
| D-50 | Linear Gauge | 145 |
| D-50HT | Linear Gauge (Special) | 146 |
| D-50WA | Linear Gauge (Special) | 146 |
| D-50S | Linear Gauge | 145 |
| D-50SWA | Linear Gauge (Special) | 146 |
| D-100 | Linear Gauge | 145 |
| D-100WA | Linear Gauge (Special) | 146 |
| D-100S | Linear Gauge | 145 |
| D-100SWA | Linear Gauge (Special) | 146 |
| DL-2 | Linear Gauge | 141 |
| DL-2S | Linear Gauge | 141 |
| DGN-125 | Digital Gauge | 136 |
| DGN-125B | Digital Gauge | 136 |
| DGN-255 | Digital Gauge | 136 |
| DGN-257 | Digital Gauge | 136 |
| E | | |
| EMCC-2 | Deep Hole Bore Gauge | 150 |
| EMCC-3 | Deep Hole Bore Gauge | 150 |
| EMCC-4 | Deep Hole Bore Gauge | 150 |
| EMCC-5 | Deep Hole Bore Gauge | 150 |
| EMCC-6 | Deep Hole Bore Gauge | 150 |

| Model No. | Description | Page |
|---------------|---|------------|
| EMCC-L | Extension Rods | 150 |
| F | | |
| FFG-1 | Constant Pressure Thickness Gauge (Compact Handy Type) -- | 99 |
| FFG-2 | Constant Pressure Thickness Gauge (Compact Handy Type) -- | 99 |
| FFG-4 | Constant Pressure Thickness Gauge (Compact Handy Type) -- | 99 |
| FFG-5 | Constant Pressure Thickness Gauge (Compact Handy Type) -- | 99 |
| FFG-6 | Constant Pressure Thickness Gauge (Compact Handy Type) -- | 99 |
| FFG-7 | Constant Pressure Thickness Gauge (Compact Handy Type) -- | 99 |
| FFG-8 | Constant Pressure Thickness Gauge (Compact Handy Type) -- | 99 |
| FFG-9 | Constant Pressure Thickness Gauge (Compact Handy Type) -- | 99 |
| FFG-11 | Constant Pressure Thickness Gauge (Compact Handy Type) -- | 99 |
| FFG-12 | Constant Pressure Thickness Gauge (Compact Handy Type) -- | 99 |
| FFA-1 | Constant Pressure Thickness Gauge (Stand Type) -- | 100 |
| FFA-2 | Constant Pressure Thickness Gauge (Stand Type) -- | 100 |
| FFA-3 | Constant Pressure Thickness Gauge (Stand Type) -- | 100 |
| FFA-4 | Constant Pressure Thickness Gauge (Stand Type) -- | 100 |
| FFA-5 | Constant Pressure Thickness Gauge (Stand Type) -- | 100 |
| FFA-6 | Constant Pressure Thickness Gauge (Stand Type) -- | 100 |
| FFA-7 | Constant Pressure Thickness Gauge (Stand Type) -- | 100 |
| FFA-8 | Constant Pressure Thickness Gauge (Stand Type) -- | 100 |
| FFA-9 | Constant Pressure Thickness Gauge (Stand Type) -- | 100 |
| FFA-10 | Constant Pressure Thickness Gauge (Stand Type) -- | 100 |
| FFA-11 | Constant Pressure Thickness Gauge (Stand Type) -- | 100 |
| FFA-12 | Constant Pressure Thickness Gauge (Stand Type) -- | 100 |
| FFA-13 | Constant Pressure Thickness Gauge (Stand Type) -- | 100 |
| FFD-1 | Constant Pressure Thickness Gauge (Digital Type) -- | 101 |
| FFD-2 | Constant Pressure Thickness Gauge (Digital Type) -- | 101 |
| FFD-3 | Constant Pressure Thickness Gauge (Digital Type) -- | 101 |
| FFD-4 | Constant Pressure Thickness Gauge (Digital Type) -- | 101 |
| FFD-6 | Constant Pressure Thickness Gauge (Digital Type) -- | 101 |
| FFD-7 | Constant Pressure Thickness Gauge (Digital Type) -- | 101 |
| FFD-8 | Constant Pressure Thickness Gauge (Digital Type) -- | 101 |
| FFD-10 | Constant Pressure Thickness Gauge (Digital Type) -- | 101 |
| FFD-13 | Constant Pressure Thickness Gauge (Digital Type) -- | 101 |
| G | | |
| G | Dial Thickness Gauge | 87 |
| G-MT | Dial Thickness Gauge | 87 |
| G-0.4N | Dial Thickness Gauge | 87 |
| G-2.4N | Dial Thickness Gauge | 87 |

| Model No. | Description | Page |
|-----------------|---|------------|
| G-20 | Dial Thickness Gauge | 87 |
| G-30 | Dial Thickness Gauge | 87 |
| G-1A | Dial Thickness Gauge | 87 |
| G-1M | Dial Thickness Gauge | 87 |
| G-2 | Dial Thickness Gauge | 87 |
| G-3 | Dial Thickness Gauge | 87 |
| G-4 | Dial Thickness Gauge | 87 |
| G-6C | Dial Thickness Gauge | 88 |
| G-7C | Dial Thickness Gauge | 88 |
| GL | Dial Lens Gauge | 92 |
| GH-1 | Dial Hole Gauge | 116 |
| G2N-255 | Digital Thickness Gauge | 138 |
| G2N-255M | Digital Thickness Gauge | 138 |
| G2N-257 | Digital Thickness Gauge | 138 |
| G2N-257M | Digital Thickness Gauge | 138 |
| H | | |
| H | Dial Thickness Gauge | 87 |
| H-MT | Dial Thickness Gauge | 87 |
| H-0.4N | Dial Thickness Gauge | 87 |
| H-2.4N | Dial Thickness Gauge | 87 |
| H-20 | Dial Thickness Gauge | 87 |
| H-30 | Dial Thickness Gauge | 87 |
| H-1A | Dial Thickness Gauge | 87 |
| H-2 | Dial Thickness Gauge | 87 |
| H-3 | Dial Thickness Gauge | 87 |
| HR-1 | Dial Thickness Gauge (Roller Type) | 90 |
| J | | |
| J-A | Dial Thickness Gauge (Large Type) | 90 |
| J-B | Dial Thickness Gauge (Large Type) | 90 |
| JAN-255 | Digital Thickness Gauge (Large Type) -- | 139 |
| JAN-257 | Digital Thickness Gauge (Large Type) -- | 139 |
| K | | |
| K-1 | Dial Sheet Gauge | 91 |
| K-2 | Dial Sheet Gauge | 91 |
| K-3 | Dial Sheet Gauge | 91 |
| K-4 | Dial Sheet Gauge | 91 |
| K-7 | Dial Sheet Gauge | 91 |

| Model No. | Description | Page |
|--------------|----------------------------------|------------|
| L | | |
| LA-1 | Outside Dial Caliper Gauge | 105 |
| LA-2 | Outside Dial Caliper Gauge | 105 |
| LA-3 | Outside Dial Caliper Gauge | 105 |
| LA-4 | Outside Dial Caliper Gauge | 105 |
| LA-5 | Outside Dial Caliper Gauge | 105 |
| LA-5S | Outside Dial Caliper Gauge | 105 |
| LA-6 | Outside Dial Caliper Gauge | 105 |
| LA-7 | Outside Dial Caliper Gauge | 105 |
| LA-8 | Outside Dial Caliper Gauge | 105 |
| LA-9 | Outside Dial Caliper Gauge | 105 |
| LA-10 | Outside Dial Caliper Gauge | 105 |
| LA-11 | Outside Dial Caliper Gauge | 107 |
| LA-13 | Outside Dial Caliper Gauge | 107 |
| LA-14 | Outside Dial Caliper Gauge | 107 |
| LA-20 | Outside Dial Caliper Gauge | 107 |
| LA-21 | Outside Dial Caliper Gauge | 107 |
| LA-22 | Outside Dial Caliper Gauge | 107 |
| LA-23 | Outside Dial Caliper Gauge | 107 |
| LA-24 | Outside Dial Caliper Gauge | 107 |
| LA-31 | Outside Dial Caliper Gauge | 107 |
| LB-1 | Inside Dial Caliper Gauge | 109 |
| LB-2 | Inside Dial Caliper Gauge | 109 |
| LB-3 | Inside Dial Caliper Gauge | 109 |
| LB-4 | Inside Dial Caliper Gauge | 109 |
| LB-5 | Inside Dial Caliper Gauge | 109 |
| LB-6 | Inside Dial Caliper Gauge | 109 |
| LB-7 | Inside Dial Caliper Gauge | 109 |
| LB-7S | Inside Dial Caliper Gauge | 109 |
| LB-7V | Inside Dial Caliper Gauge | 109 |
| LB-8 | Inside Dial Caliper Gauge | 109 |
| LB-9 | Inside Dial Caliper Gauge | 109 |
| LB-14 | Inside Dial Caliper Gauge | 109 |
| LH-2 | Inside Dial Caliper Gauge | 109 |
| N | | |
| NB | Dial Gauge Tester | 82 |
| O | | |
| OA | Bench Center | 118 |

| Model No. | Description | Page | Model No. | Description | Page | Model No. | Description | Page | | |
|----------------|--|-----------|-------------------|--|------------|-----------------|---|------------|-----------------|--|
| P | | | PCN-2U | Pic Test Indicator (without Change Lever Type) ... | 51 | PDN-21 | Digital Gauge | 135 | U2FB | Dial Inside Gauge (with Magnic Base Type) ... 115 |
| PC-1A | Pic Test Indicator (Change Lever Type) ... | 53 | PCN-2R | Pic Test Indicator (without Change Lever Type) ... | 54 | PDN-51 | Digital Gauge | 135 | U3HA | Dial Inside Gauge (with Magnic Base Type) ... 115 |
| PC-1AE | Pic Test Indicator (Change Lever Type) ... | 50 | PCN-2V | Pic Test Indicator (without Change Lever Type) ... | 55 | Q | | | U3HB | Dial Inside Gauge (with Magnic Base Type) ... 115 |
| PC-1AR | Pic Test Indicator (Change Lever Type) ... | 54 | PCN-2B | Pic Test Indicator (without Change Lever Type) ... | 47 | Q-1 | Dial Swift Gauge | 88 | X | |
| PC-1AV | Pic Test Indicator (Change Lever Type) ... | 55 | PCN-2BU | Pic Test Indicator (without Change Lever Type) ... | 51 | R | | | XY-1 | Lever Type Contact Point |
| PC-1B | Pic Test Indicator (Change Lever Type) ... | 53 | PCN-2BR | Pic Test Indicator (without Change Lever Type) ... | 54 | R1-A | Dial Upright Gauge | 98 | XY-2 | Lever Type Contact Point |
| PC-1BE | Pic Test Indicator (Change Lever Type) ... | 50 | PCN-2BV | Pic Test Indicator (without Change Lever Type) ... | 55 | R1-B | Dial Upright Gauge | 98 | XZ-1 | Angle Type Contact Point |
| PC-1BR | Pic Test Indicator (Change Lever Type) ... | 54 | PCN-2BD | Pic Test Indicator (without Change Lever Type) ... | 52 | R1-C | Dial Upright Gauge | 98 | XZ-2 | Angle Type Contact Point |
| PC-1BV | Pic Test Indicator (Change Lever Type) ... | 55 | PCN-S | Pic Test Indicator (without Change Lever Type) ... | 47 | R1N-255 | Digital Upright Gauge | 139 | Y | |
| PC-1BW | Pic Test Indicator (Change Lever Type) ... | 47 | PCN-SU | Pic Test Indicator (without Change Lever Type) ... | 51 | R1N-257 | Digital Upright Gauge | 139 | YM-1F | Magnetic Stand |
| PC-1L | Pic Test Indicator (Change Lever Type) ... | 53 | PCN-SD | Pic Test Indicator (without Change Lever Type) ... | 52 | S | | | YM-2F | Magnetic Stand |
| PC-1LE | Pic Test Indicator (Change Lever Type) ... | 50 | PCN-SR | Pic Test Indicator (without Change Lever Type) ... | 54 | SIS-4F | Dial Gauge Stand | 122 | YM-3 | Magnetic Stand |
| PC-1LR | Pic Test Indicator (Change Lever Type) ... | 54 | PCN-SV | Pic Test Indicator (without Change Lever Type) ... | 55 | SIS-6C | Dial Gauge Stand | 123 | YMH-1 | Magnetic Holder |
| PC-1LV | Pic Test Indicator (Change Lever Type) ... | 55 | PCN-5 | Pic Test Indicator (without Change Lever Type) ... | 47 | SIS-7 | Dial Gauge Stand | 123 | | |
| PC-2 | Pic Test Indicator (Change Lever Type) ... | 53 | PCN-5U | Pic Test Indicator (without Change Lever Type) ... | 51 | S-5 | Signal Gauge | 128 | | |
| PC-2R | Pic Test Indicator (Change Lever Type) ... | 54 | PCN-5R | Pic Test Indicator (without Change Lever Type) ... | 54 | S-7 | Signal Gauge | 128 | | |
| PC-2V | Pic Test Indicator (Change Lever Type) ... | 55 | PCN-6 | Pic Test Indicator (without Change Lever Type) ... | 47 | S-9 | Signal Gauge | 128 | | |
| PC-3 | Pic Test Indicator (Change Lever Type) ... | 53 | PCN-6U | Pic Test Indicator (without Change Lever Type) ... | 51 | SC-2A | Signal Checker | 128 | | |
| PC-3L | Pic Test Indicator (Change Lever Type) ... | 53 | PCN-6R | Pic Test Indicator (without Change Lever Type) ... | 54 | T | | | T-1 | Dial Depth Gauge |
| PC-4 | Pic Test Indicator (Change Lever Type) ... | 53 | PCN-6S | Pic Test Indicator (without Change Lever Type) ... | 47 | T-2 | Dial Depth Gauge | 112 | T-2 | Dial Depth Gauge |
| PCN-0 | Pic Test Indicator (without Change Lever Type) ... | 47 | PCN-7A | Pic Test Indicator (without Change Lever Type) ... | 47 | T-3 | Dial Depth Gauge | 112 | T-3 | Dial Depth Gauge |
| PCN-1A | Pic Test Indicator (without Change Lever Type) ... | 47 | PCN-7C | Pic Test Indicator (without Change Lever Type) ... | 47 | T-4 | Dial Depth Gauge | 112 | T-4 | Dial Depth Gauge |
| PCN-1AD | Pic Test Indicator (without Change Lever Type) ... | 52 | PCN-1BZ(A) | Pic Test Indicator (without Change Lever Type) ... | 48 | T-1W | Dial Depth Gauge | 112 | T-1W | Dial Depth Gauge |
| PCN-1AE | Pic Test Indicator (without Change Lever Type) ... | 50 | PCN-1BZ(B) | Pic Test Indicator (without Change Lever Type) ... | 49 | T-2W | Dial Depth Gauge | 112 | T-2W | Dial Depth Gauge |
| PCN-1AU | Pic Test Indicator (without Change Lever Type) ... | 51 | PCN-1LZ(A) | Pic Test Indicator (without Change Lever Type) ... | 48 | T-2B | Dial Depth Gauge | 112 | T-2B | Dial Depth Gauge |
| PCN-1AR | Pic Test Indicator (without Change Lever Type) ... | 54 | PCN-1LZ(B) | Pic Test Indicator (without Change Lever Type) ... | 49 | T-2C | Dial Depth Gauge | 112 | T-2C | Dial Depth Gauge |
| PCN-1AV | Pic Test Indicator (without Change Lever Type) ... | 55 | PCN-2Z(A) | Pic Test Indicator (without Change Lever Type) ... | 48 | T-6A | Dial Depth Gauge | 114 | T-6A | Dial Depth Gauge |
| PCN-1B | Pic Test Indicator (without Change Lever Type) ... | 47 | PCN-2Z(B) | Pic Test Indicator (without Change Lever Type) ... | 49 | T-6B | Dial Depth Gauge | 114 | T-6B | Dial Depth Gauge |
| PCN-1BE | Pic Test Indicator (without Change Lever Type) ... | 50 | PK-SA | PK- TEST | 61 | T2N-255W | Digital Depth Gauge | 140 | T2N-255W | Digital Depth Gauge |
| PCN-1BU | Pic Test Indicator (without Change Lever Type) ... | 51 | PK-SAR | PK- TEST | 61 | T2N-257W | Digital Depth Gauge | 140 | T2N-257W | Digital Depth Gauge |
| PCN-1BR | Pic Test Indicator (without Change Lever Type) ... | 54 | PK-SB | PK- TEST | 61 | U | | | U-1 | Dial Inside Gauge |
| PCN-1BR | Pic Test Indicator (without Change Lever Type) ... | 54 | PK-SBR | PK- TEST | 61 | U-1 | Dial Inside Gauge | 115 | U2HA | Dial Inside Gauge (with Magnic Base Type) ... 115 |
| PCN-1BV | Pic Test Indicator (without Change Lever Type) ... | 55 | PCD-2 | Centricator | 57 | U2HB | Dial Inside Gauge (with Magnic Base Type) ... | 115 | U2FA | Dial Inside Gauge (with Magnic Base Type) ... 115 |
| PCN-1L | Pic Test Indicator (without Change Lever Type) ... | 47 | PCD-3 | Centricator | 57 | | | | | |
| PCN-1LD | Pic Test Indicator (without Change Lever Type) ... | 52 | PCD-4 | Centricator | 57 | | | | | |
| PCN-1LE | Pic Test Indicator (without Change Lever Type) ... | 50 | PG-10 | Paper Thickness Gauge | 89 | | | | | |
| PCN-1LU | Pic Test Indicator (without Change Lever Type) ... | 51 | P-1 | Dial Pipe Gauge | 92 | | | | | |
| PCN-1LR | Pic Test Indicator (without Change Lever Type) ... | 54 | P-2 | Dial Pipe Gauge | 92 | | | | | |
| PCN-1LV | Pic Test Indicator (without Change Lever Type) ... | 55 | P-3 | Dial Pipe Gauge | 92 | | | | | |
| PCN-2 | Pic Test Indicator (without Change Lever Type) ... | 47 | PDS-2 | Dial Gauge Stand | 123 | | | | | |
| PCN-2E | Pic Test Indicator (without Change Lever Type) ... | 50 | PDS-2F | Dial Gauge Stand | 123 | | | | | |

Product Weight (packed with case)

*All the Pic Test Indicators are approx. 150g

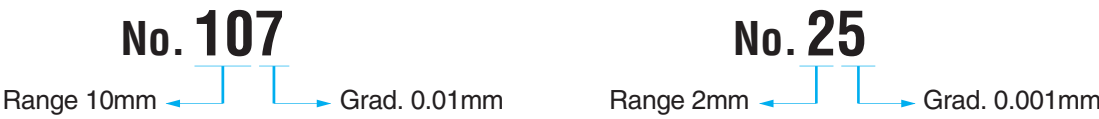
weight: approx grams.

| Model | weight (g) | Model | weight (g) | Model | weight (g) | Model | weight (g) | Model | weight (g) |
|------------|------------|----------------------|------------|--------------------|------------|---------------------|------------|-------------------------|------------|
| Dial Gauge | | 5Z | 165 | H-1A | 280 | Dial Caliper Gauge | | Linear Gauge | |
| 107 | 190 | 5Z-XB | 165 | H-0.4N | 280 | LA-1 | 820 | D-5 | 270 |
| 107F | 150 | 47Z | 110 | H-2.4N | 280 | LA-2 | 1,250 | D-5B | 520 |
| 107-BL | 190 | 47Z-XB | 110 | H-20 | 295 | LA-3 | 2,100 | D-10 | 360 |
| 107F-RE | 170 | 47SZ | 100 | H-30 | 315 | LA-4 | 850 | D-20 | 420 |
| 107W | 220 | 147Z | 100 | H-2 | 780 | LA-5 | 950 | D-50 | 700 |
| 107-SWA | 205 | 15Z | 165 | H-3 | 780 | LA-5S | 900 | D-50HT | 700 |
| 107-T | 190 | 15Z-SWF | 165 | HR-1 | 550 | LA-6 | 750 | D-50WA | 720 |
| 107F-T | 150 | 15DZ | 250 | J-A | 1,600 | LA-8 | 1,060 | D-100 | 900 |
| 107-LL | 195 | 18 | 200 | J-B | 1,300 | LA-9 | 770 | D-100WA | 920 |
| 107F-LL | 155 | 196Z | 110 | PG-10 | 165 | LA-10 | 1,000 | DN-10 | 360 |
| 107-E | 190 | 36Z | 165 | GL | 220 | LA-11 | 780 | DN-20 | 420 |
| 107-DX | 220 | Cylinder Gauge | | P-1 | 200 | LA-13 | 1,800 | D-5S | 270 |
| 107-HG | 190 | CC-02 | 500 | P-2 | 330 | LA-20 | 760 | D-5SB | 520 |
| 57 | 190 | CC-01 | 540 | P-3 | 350 | LA-21 | 1,050 | D-10S | 360 |
| 57F | 150 | CC-1 | 600 | Q-1 | 270 | LA-22 | 1,280 | D-20S | 420 |
| 57B | 150 | CC-2 | 660 | Dial Sheet Gauge | | LA-23 | 1,330 | D-50S | 700 |
| 57-SWA | 205 | CC-3 | 700 | K-1 | 3,120 | LA-24 | 8,900 | D-50SWA | 720 |
| 17 | 190 | CC-3C | 760 | K-2 | 4,750 | LA-31 | 900 | D-100S | 900 |
| 5B | 195 | CC-4 | 1,900 | K-3 | 4,450 | LA-7 | 800 | D-100SWA | 920 |
| 5B-HG | 195 | CC-5 | 2,500 | K-4 | 4,500 | LA-14 | 950 | DN-10S | 360 |
| 5F | 155 | CC-6 | 5,000 | K-7 | 7,800 | LB-1 | 790 | DN-20S | 420 |
| 5-SWF | 210 | CG-01 | 540 | Dial Upright Gauge | | LB-2 | 650 | DL-2 | 260 |
| 5-DX | 220 | CG-1 | 620 | R1-A | 3,350 | LB-3 | 800 | DL-2S | 260 |
| 5S | 120 | CG-2 | 640 | R1-B | 3,250 | LB-4 | 820 | | |
| 25 | 235 | CG-3 | 680 | R1-C | 3,300 | LB-5 | 1,030 | Digital Counter | |
| 25F-RE | 255 | CG-3C | 700 | Dial Depth Gauge | | LB-6 | 810 | C-500 | 1,200 |
| 55 | 225 | CG-4 | 1,900 | T-1 | 700 | LB-8 | 950 | C-700 | 1,200 |
| 55-DX | 180 | CG-5 | 2,500 | T-1W | 395 | LB-9 | 1,050 | Digital Gauge | |
| 25S | 220 | CG-6 | 4,600 | T-2 | 300 | LH-2 | 500 | DGN-125 | 280 |
| 56 | 180 | CC-1S | 560 | T-2W | 325 | LB-7 | 820 | DGN-255 | 280 |
| 207 | 245 | CC-2S | 600 | T-2B | 245 | LB-7S | 770 | DGN-257 | 280 |
| 207F-PL | 300 | CC-3S | 660 | T-2C | 290 | LB-7V | 1,300 | PDN-21 | 400 |
| 207S | 195 | CC-3CS | 720 | T-3 | 300 | LB-14 | 920 | PDN-51 | 700 |
| 207S-LL | 200 | CC-01R | 540 | T-4 | 280 | Tester | | Digital Thickness Gauge | |
| 207W | 220 | CC-1R | 600 | T-6A | 270 | NB | 6,000 | G2N-255 | 420 |
| 207WF-T | 195 | CC-2R | 660 | T-6B | 270 | CCT-2 | 21,000 | G2N-255M | 420 |
| 307 | 320 | CC-3R | 700 | Dial Inside Gauge | | Bench Center | | G2N-257 | 420 |
| 307S | 310 | CC-3CR | 760 | U-1 | 330 | OA | 62,000 | | |
| 507 | 440 | CG-01R | 540 | U2HA | 250 | Others | | G2N-257 | 420 |
| 509 | 440 | CG-1R | 620 | U2HB | 250 | YMH-1 | 340 | JAN-255 | 3,340 |
| 809 | 1,150 | CG-2R | 640 | U2FA | 380 | | | JAN-257 | 3,340 |
| 36A | 135 | CG-3R | 680 | U2FB | 380 | XY-1 | 150 | | |
| 36B | 135 | CG-3CR | 700 | U3HA | 250 | XY-2 | 100 | | |
| 47 | 110 | Dial Thickness Gauge | | U3HB | 250 | XZ-1 | 155 | | |
| 47F | 100 | G | 165 | Stand | | XZ-2 | 155 | Signal Gauge | |
| 57S | 140 | G-1A | 165 | SIS-4F | 5,000 | GH-1 | 300 | S-5 | 280 |
| 57SF | 125 | G-1M | 165 | SIS-6C | 3,650 | | | S-7 | 280 |
| 196A | 115 | G-2 | 370 | SIS-7 | 2,600 | | | S-9 | 280 |
| 196A-6 | 115 | G-3 | 355 | PDS-2 | 7,150 | | | SC-2A | 260 |
| 196B | 110 | G-4 | 320 | PDS-2F | 7,150 | | | | |
| 196B-T | 110 | G-6 | 280 | Magnetic Stand | | | | | |
| 107Z | 160 | G-6C | 300 | YM-1F | 1,760 | | | | |
| 107Z-XB | 160 | G-7C | 280 | YM-2F | 2,220 | Digital Depth Gauge | | | |
| 17B | 190 | G-0.4N | 165 | YM-3 | 1,500 | T2N-255W | 440 | | |
| 17BF | 150 | G-2.4N | 165 | | | T2N-257W | 440 | | |
| 17Z | 160 | G-20 | 180 | | | | | | |
| 17Z-SWA | 160 | G-30 | 200 | | | | | | |
| 117Z | 160 | H | 280 | | | | | | |

Weight of our products (packed with case)

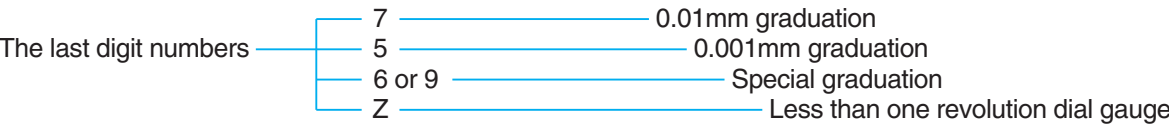
Quick Chart for “PEACOCK” Dial Gauge

We have named our dial gauge by model numbers, which indicate measurement range and graduation, instead of product code numbers.

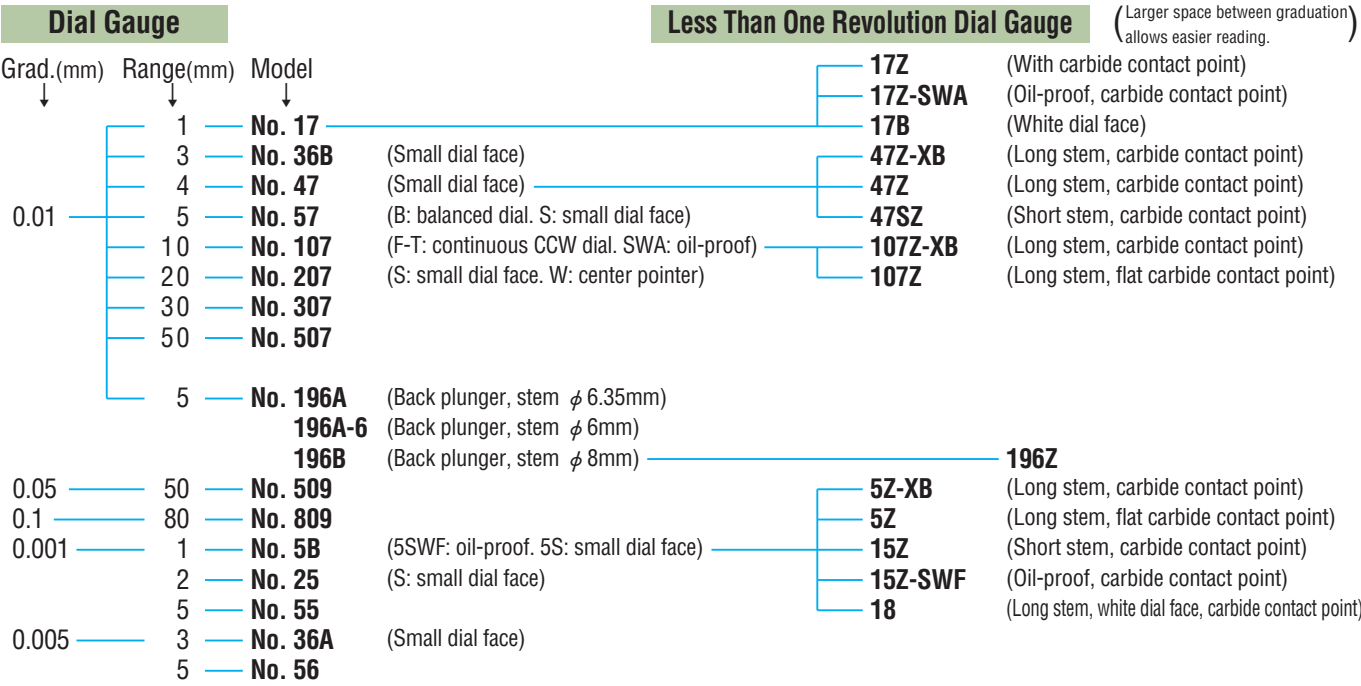


Our model numbers are:

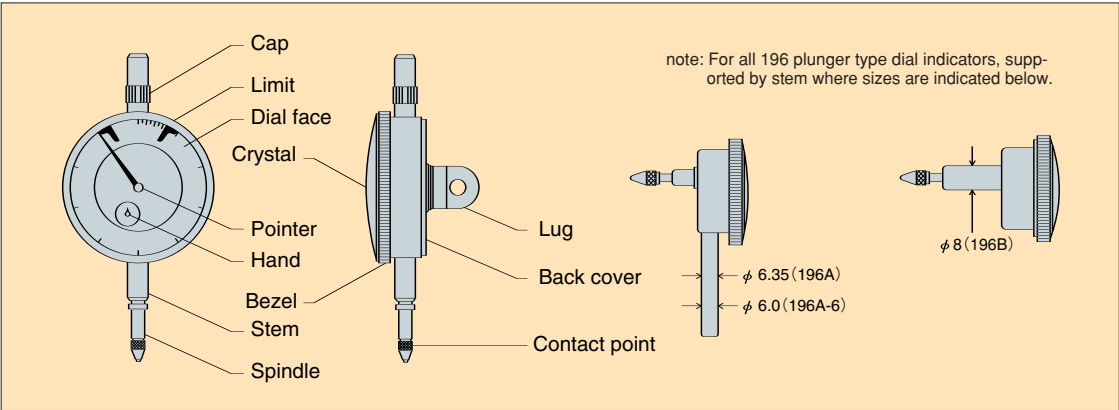
The first and second digit numbers (1, 2, 4, 10, 20, 30, 50, 80) signify measurement ranges.



Exceptions: 1. Model No. 5 signifies 1mm measurement range with 0.001mm graduation.
2. Model No. 196A, 196B signify 5mm measurement range with 0.01mm graduation.



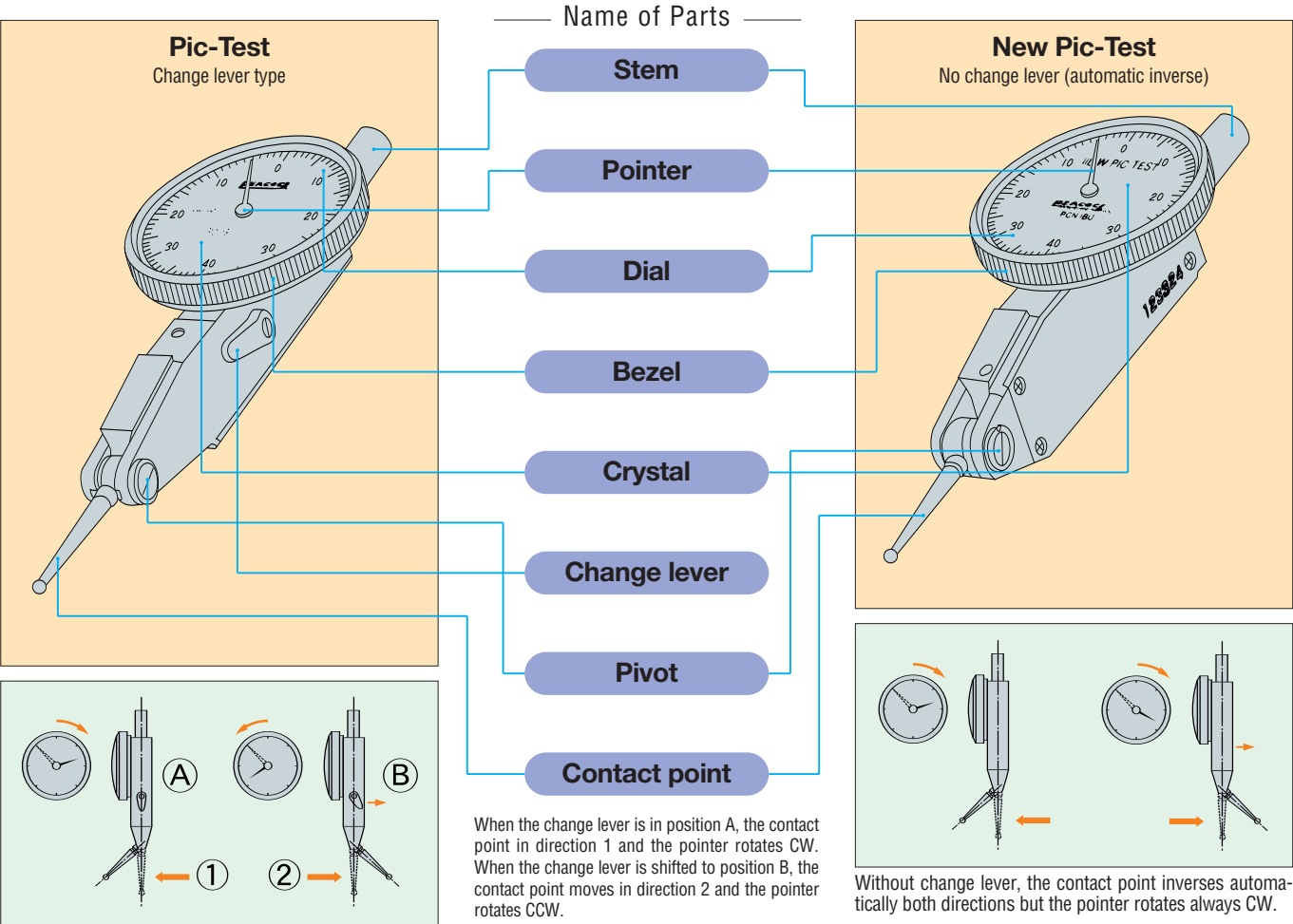
Name of Parts



Quick Chart

Quick Chart for “PEACOCK” Lever-Type Dial Indicators

Lever-type dial indicators are most suitable for alignment and TIR (Total Indicator Run-Out) testing. There are two types of lever-type dial indicators. Pivot bearings are used on all of Peacock's lever-type indicators, which assure exceptional precision over a long period of time.



For particular requirements PC and PCN series are available.
Model numbers ending with U, E, D or W signify particular applications.

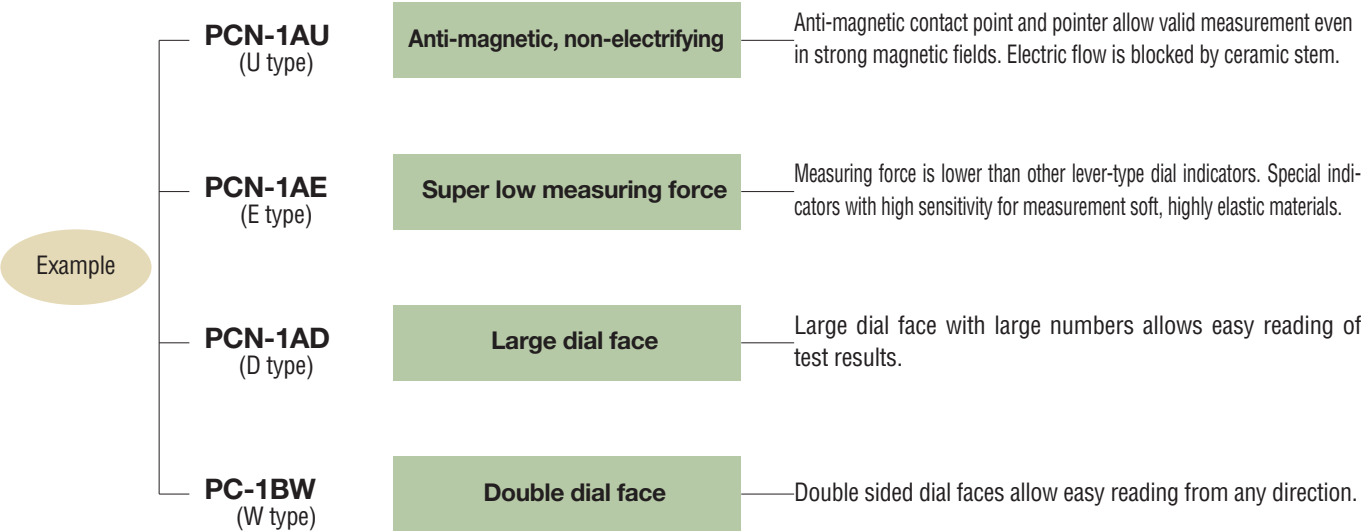


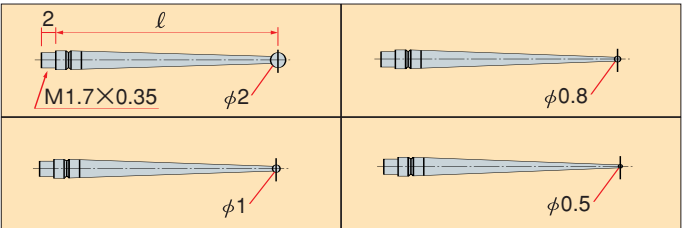
Table for Pic-Test and New Pic-Test

● items are made to order.

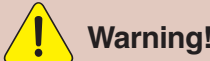
| | Grad (mm) | Range (mm) | Model | Length of contact point (ℓ size) | Indicator types | | | | |
|--------------------------|-----------|------------|------------------|----------------------------------|-----------------|----------------------------|---------|--------|--------------------------|
| | | | | | U | E (measuring force) | D | W | Z |
| PC with change lever | 0.01 | 0.5 | PC-1A | 18.20mm | ● | PC-1AE Less than 0.1N | ● | — | — |
| | | | PC-3 (parallel) | 18.20mm | ● | — | — | — | — |
| | | 0.8 | PC-1B | 19.24mm | ● | PC-1BE Less than 0.1N | — | PC-1BW | — |
| | 0.002 | 1.0 | PC-1L | 39.72mm | ● | PC-1LE Less than 0.1N | — | — | — |
| | | 0.28 | PC-2 | 8.80mm | ● | — | ● | — | — |
| PCN without change lever | 0.01 | | PCN-0 | 17.74mm | — | — | — | — | — |
| | | 0.5 | PCN-1A | 17.74mm | PCN-1AU | PCN-1AE Less than 0.05N | PCN-1AD | — | — |
| | | | PCN-5 (vertical) | 17.74mm | PCN-5U | — | — | — | — |
| | | 0.8 | PCN-1B | 18.63mm | PCN-1BU | PCN-1BE Less than 0.05N | — | — | PCN-1BZ(A) PCN-1BZ(B) |
| | | 1.0 | PCN-1L | 39.00mm | PCN-1LU | PCN-1LE Less than 0.05N | PCN-1LD | — | PCN-1LZ(A) PCN-1LZ(B) |
| | 0.002 | 1.5 | PCN-7A | 17.74mm | — | — | — | — | — |
| | | 0.2 | PCN-2B | 13.00mm | PCN-2BU | — | — | — | — |
| | | 0.28 | PCN-2 | 14.18mm | PCN-2U | PCN-2E Less than 0.1N | PCN-2BD | — | PCN-2Z(A) PCN-2Z(B) |
| | | | PCN-6 (vertical) | 14.18mm | PCN-6U | — | — | — | — |
| | | 0.6 | PCN-7C | 13.00mm | — | — | — | — | — |
| | 0.001 | 0.14 | PCN-S | 8.13mm | PCN-SU | — | — | — | — |
| | | 0.2 | — | 13.00mm | — | — | PCN-SD | — | — |

We can customize Pic-Test and New Pic-Test indicators according to your special needs. Please contact Peacock for details.

Contact Points Ball Size



Contact points with φ 2mm carbide ball are attached to all Pic-Test indicators.
φ 1.0mm, φ 0.8mm, and φ 0.5mm contact points are also available from our stock.



Warning!

Contact points are not interchangeable among different models. Each indicator is assigned a specific contact point length as shown in the table below. Not using proper contact point for assigned model will result in inaccuracy.

Lengths of contact points with φ 2mm carbide ball (actual size)

| | | | |
|---------|---------------------------------------|---------|---|
| 8.13mm | PCN-S PCN-SU | 18.20mm | PC-1A PC-1AE PC-3 |
| 8.80mm | PC-2 PC-4 | 18.63mm | PCN-1B PCN-1BU PCN-1BE |
| 13.00mm | PCN-2B PCN-SD PCN-2BU | 19.24mm | PC-1B PC-1BE PC-1BW |
| 14.18mm | PCN-2 PCN-2U PCN-2E | 39.00mm | PCN-1L PCN-1LU PCN-1LE PCN-1LD |
| 17.74mm | PCN-0 PCN-1A PCN-1AU PCN-1AE | 39.72mm | PC-1L PC-1LE PC-1LW |

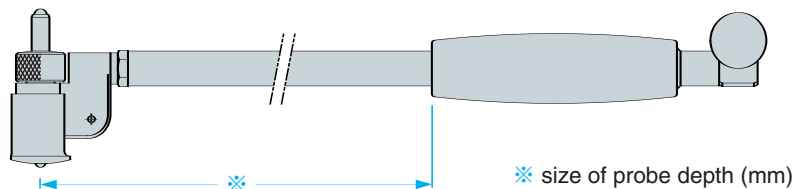
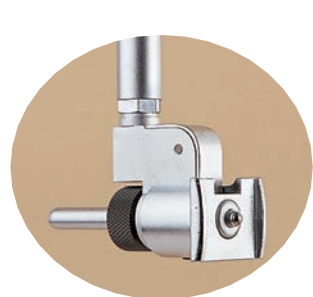
※ φ2mm Ruby ball are available for PC-1A, PC-1B,PC-1L, PC-2, PCN-1A, PCN-1B, PCN-1L, PCN-2, PCN-2B and PCN-S

Quick Chart for “PEACOCK” Cylinder Gauges

For Both Blind Hole And Deep Bore Measuring

Select the best fitted probe length according to the measuring depth.

- CC Series (standard)
- CG Series (blind hole)



※ size of probe depth (mm)

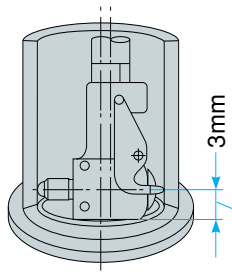
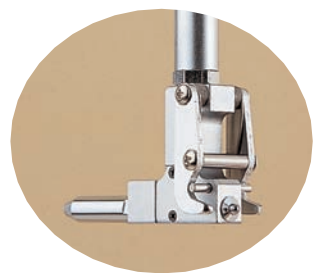
Recommendation Use the cylinder gauge vertically with a probe depth of 400mm or longer.

CC Series

| Model | Measurement inner dia | Probe depth (mm) | | | | | | | | | | | | | | |
|-------|-----------------------|------------------|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|------|------|------|
| | | 50 | 100 | 150 | 200 | 250 | 300 | 400 | 500 | 600 | 700 | 800 | 900 | 1000 | 1500 | 2000 |
| CC-02 | φ 6~φ 10 | ● | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| CC-01 | φ 10~φ 18 | ● | ● | — | ● | — | ● | — | — | — | — | — | — | — | — | — |
| CC-1 | φ 18~φ 35 | 1.● | ● | ● | ● | — | ● | ● | ● | — | — | — | — | — | — | — |
| CC-2 | φ 35~φ 60 | 2.● | ● | ● | ● | — | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● |
| CC-3 | φ 50~φ 100 | 3.● | ● | ● | ● | — | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● |
| CC-3C | φ 50~φ 150 | 4.● | ● | ● | ● | — | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● |
| CC-4 | φ 100~φ 160 | ● | ● | — | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● |
| CC-5 | φ 160~φ 250 | ● | ● | — | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● |
| CC-6 | φ 250~φ 400 | ● | ● | — | ● | — | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● |

● More than L=600mm for CC-2 can not measure from 35 to 44mm and can measure from 45 to 60mm ID.

- are standard probe depth sizes
● are short type standard items. (Please order by model no.)
1. CC-1S (φ 18 ~ φ 35)
 2. CC-2S (φ 35 ~ φ 60)
 3. CC-3S (φ 50 ~ φ 100)
 4. CC-3CS (φ 50 ~ φ 150)



3mm

Measuring is possible up to 3mm from the bottom of a cylinder.
(CG-6 can measure up to 4.5mm)

CG Series

| Model | Measurement inner dia | Probe depth (mm) | | | | | | | | | | | | | | |
|-------|-----------------------|------------------|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|------|---|---|
| | | 50 | 100 | 150 | 200 | 250 | 300 | 400 | 500 | 600 | 700 | 800 | 900 | 1000 | | |
| CG-01 | φ 10~φ 18 | ● | ● | ● | ● | ● | ● | — | — | — | — | — | — | — | — | — |
| CG-1 | φ 18~φ 35 | ● | ● | ● | ● | ● | ● | ● | ● | — | — | — | — | — | — | — |
| CG-2 | φ 35~φ 60 | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● |
| CG-3 | φ 50~φ 100 | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● |
| CG-3C | φ 50~φ 150 | ● | ● | ● | ● | — | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● |
| CG-4 | φ 100~φ 160 | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● |
| CG-5 | φ 160~φ 250 | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● |
| CG-6 | φ 250~φ 400 | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● |

● are standard probe depth sizes

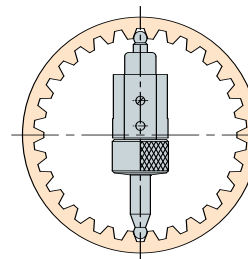
Cylinder Gauges for Measuring Spline and Internal Gears

Easy and precise measurement of an **OVER PIN DIAMETER**, **LARGE** and **SMALL** diameter of **SPLINE** by our custom-manufactured Cylinder Gauges.

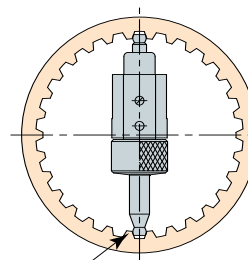
- Measuring OVER PIN diameter...Please specify diameters of over pin and balls.
- Measuring Large/Small diameter of the SPLINE...we will add a guide plate for accurate measurement by the shape of your work-piece.

Measuring OVER PIN Diameter

- Please specify diameters of Over pin and Balls.

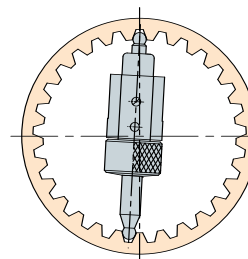


Even tooth



Even tooth

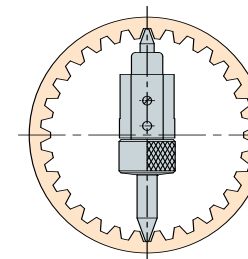
- We cut both tips of the balls when interference with Large diameter.



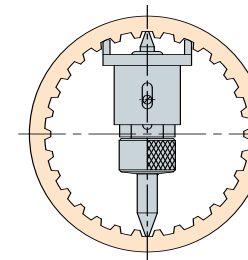
Odd tooth

Measuring Large Diameter

- Please specify large diameter (φ D), width and height of face.
(We design contact points that do not touch either gear surface.)

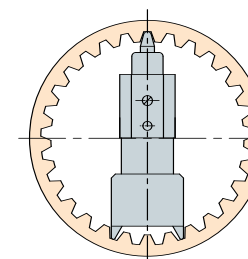


Even tooth



Even tooth

- In case the root diameter is wide, we will add guide plate.

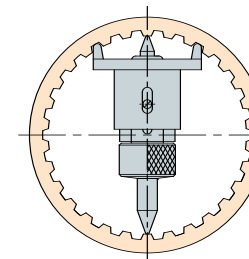


Odd tooth

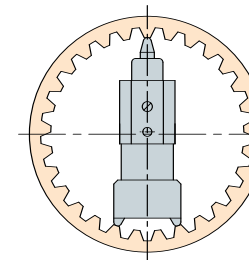
- If the root of the face is not in the symmetry, the measurement points will across at any position. This is the reference of measurement by set a Master.

Measuring Small Diameter

- Please specify small diameter and height of face.
(We design contact point guides on both sides of contact point.)



Even tooth



Odd tooth

- If the root of the face is not in the symmetry, the measurement points will across at any position. This is the reference of measurement by set a Master.

For Inquiries:

We provide quotes based on submitted workpiece drawings or actual workpiece examples. There is no minimum quantity required. Please specify what you want to measure, workpiece materials and tolerance. See page 20.
(Please contact us directly or call a sales representative in your area.)

Request for Special Designed Cylinder Gauge

Measurement for Internal Gear Only
(Helical Gear is not acceptable as unstable.)

Date: _____

Name: _____

For your measurement, please check ☒

☐ Major Diameter

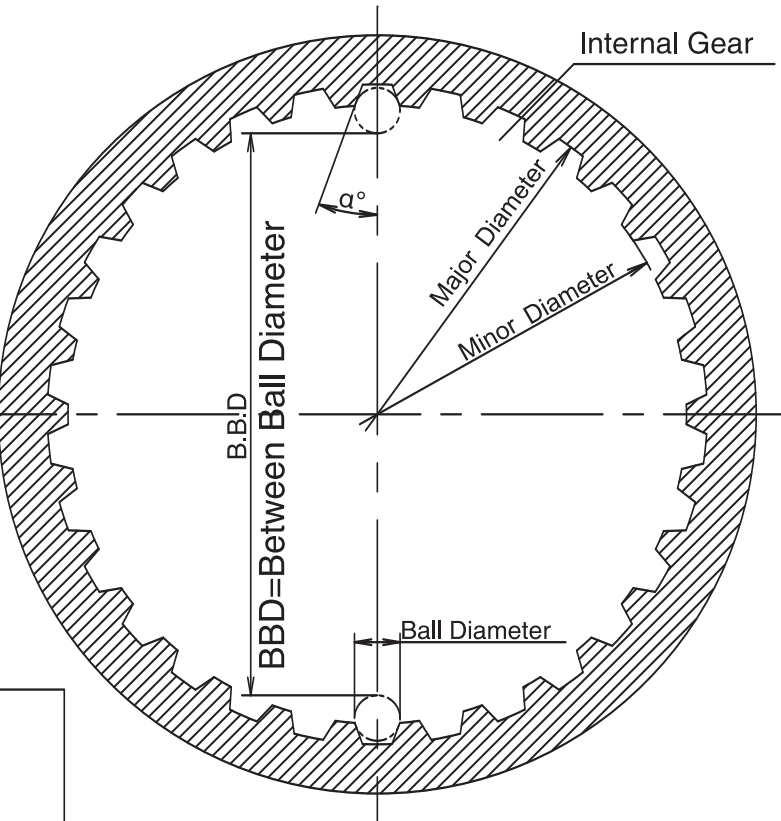
☐ Minor Diameter

☐ B.B.D=Between Ball Diameter or
O.P.D= Over Pin Diameter

Depth of measurement work-piece

_____ mm

Remark:



Specifications for BBD

| B.B.D | | Tolerance |
|----------------|------------------|---|
| Ball Diameter | $S\phi$ | Ball Cut <input type="checkbox"/> Yes (cut) <input type="checkbox"/> No |
| Major Diameter | | Tolerance |
| Minor Diameter | | Tolerance |
| Pressure Angle | $\alpha^\circ =$ | |
| No.of teeth | | Z |

Specifications for Major Diameter and Minor Diameter

| B.B.D | | Tolerance |
|----------------|--|------------------|
| Ball Diameter | | $S\phi =$ |
| Major Diameter | | Tolerance |
| Minor Diameter | | Tolerance |
| Pressure Angle | | $\alpha^\circ =$ |
| No.of Teeth | | Z |

※Conversion Table for Odd tooth is unready.

In case ball cut is necessary, we can provide the Master.

Master Production ☐ Yes ☐ No

Please enclose the Specification table with clear Tolerance for your measurement work-piece at the time of request.

OZAKI MFG. CO., LTD. TOKYO, JAPAN
URL: <http://www.peacockozaki.jp/eng.htm>
Tel: +81 3 3966 1109
Fax: +81 3 3558 1868





1

Dial Gauges

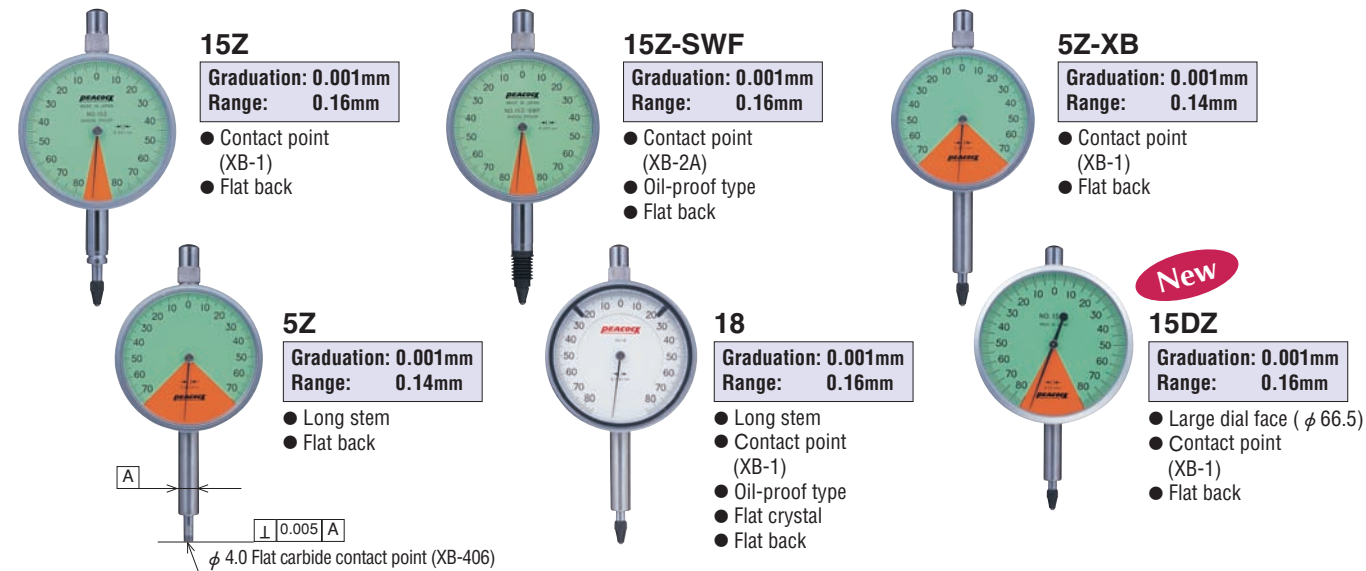
- One Revolution Dial Gauges
- Standard Dial Gauges
(0.01mm, 0.005mm, 0.001mm)
- Long Travel Dial Gauges
(0.01mm, 0.05mm, 0.1mm)
- Miniature Dial Gauges
(0.001mm, 0.005mm, 0.01mm)
- Back Plunger Type Dial Gauges
- Accessories
- Technical Data
- Marking Service

One Revolution Dial Gauges

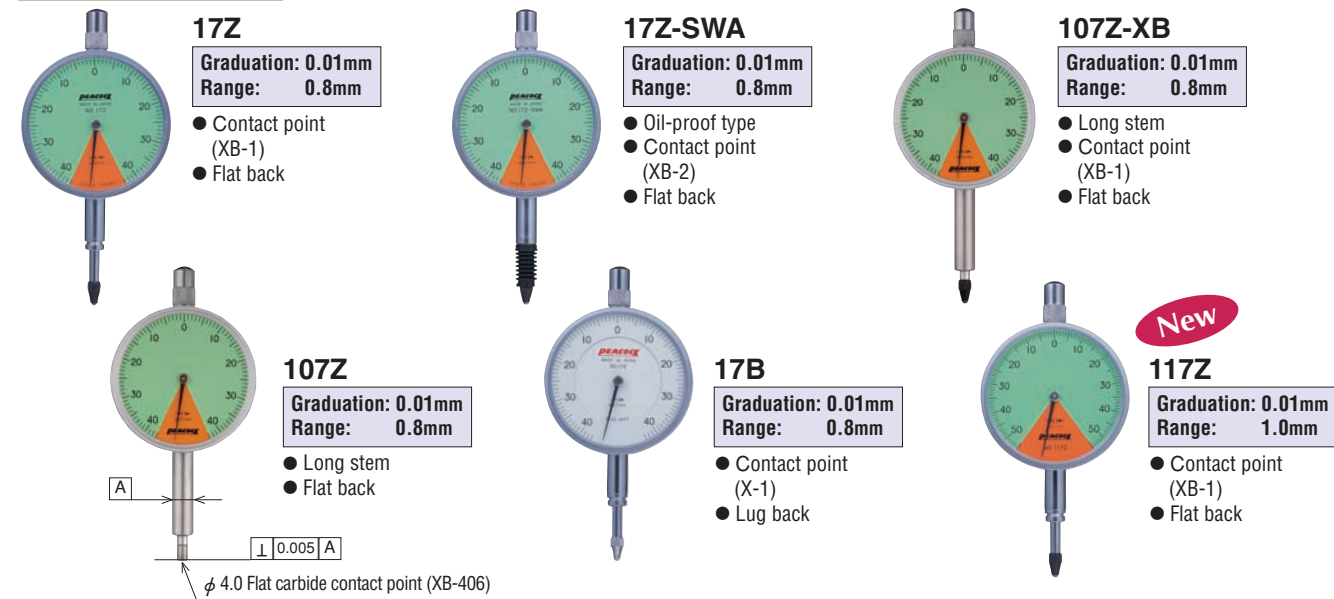
0.001mm and 0.01mm Z series

- 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)

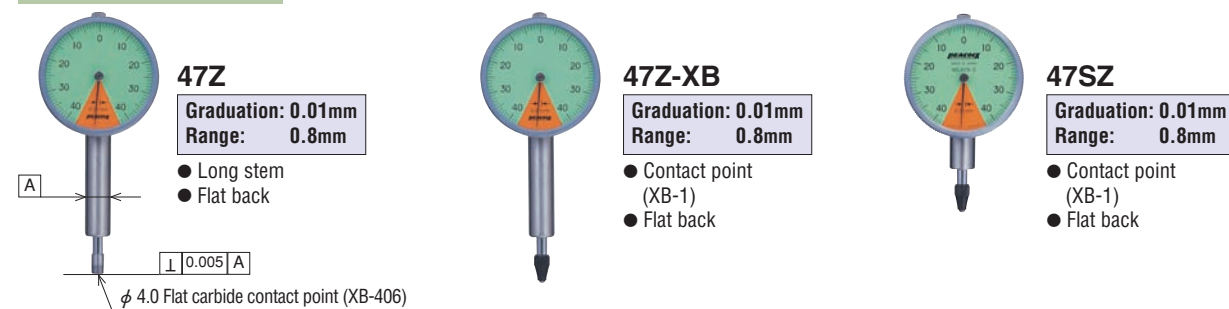
0.001mm Type



0.01mm Type



Miniature Type

**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)

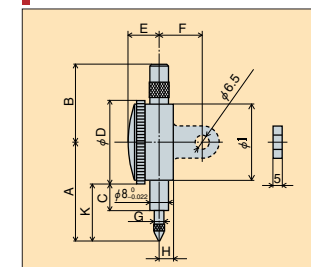
Specifications

| 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 |

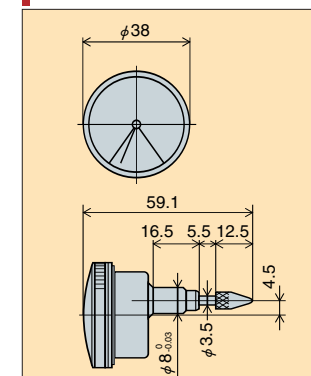
Note- All Dial Indications (except for 196Z) listed above have flat back as standard.

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 | | 30 | | | | | | | 36 |
| 5Z-XB | 5Z-XBL | 69.4 | | | | | | | | | 42.9 |
| 5Z | 5ZL | 66.4 | | 29 | 55 | 16.8 | | | | | 39.9 |
| 18 | 18L | 69.4 | | | | | | | | | 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 |
| 117Z | 117ZL | 65 | 41.5 | 18.5 | (20) | 7.6 | 38.5 | | | | |
| 15DZ | 15DZL | 69.4 | 41.5 | 23.7 | | | 66.5 | 15.5 | 36 | | |
| 47Z | 47ZL | 58.9 | 20 | 30 | 36 | 13 | (15) | 4 | 5.8 | 32 | 40.9 |
| 47Z-XB | 47Z-XBL | 61.9 | | 9.7 | | | | 43.9 | | | |
| 47SZ | 47SZL | 41.1 | | | | | | 23.1 | | | |
| 147Z | 147ZL | 41.1 | | 41.5 | 18.5 | 53 | | 14.5 | (20) | | 4 |
| 36Z | 36ZL | 60 | 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 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

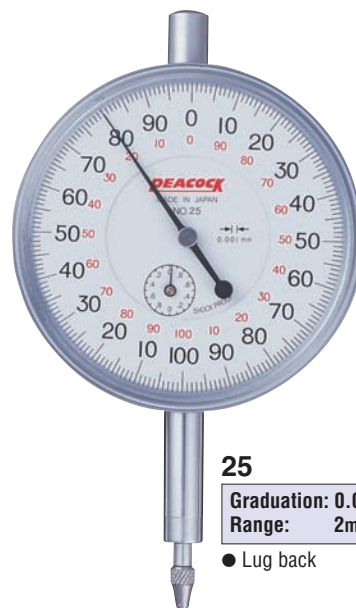
- Flat back



5-SWF

Graduation: 0.001mm
Range: 1mm

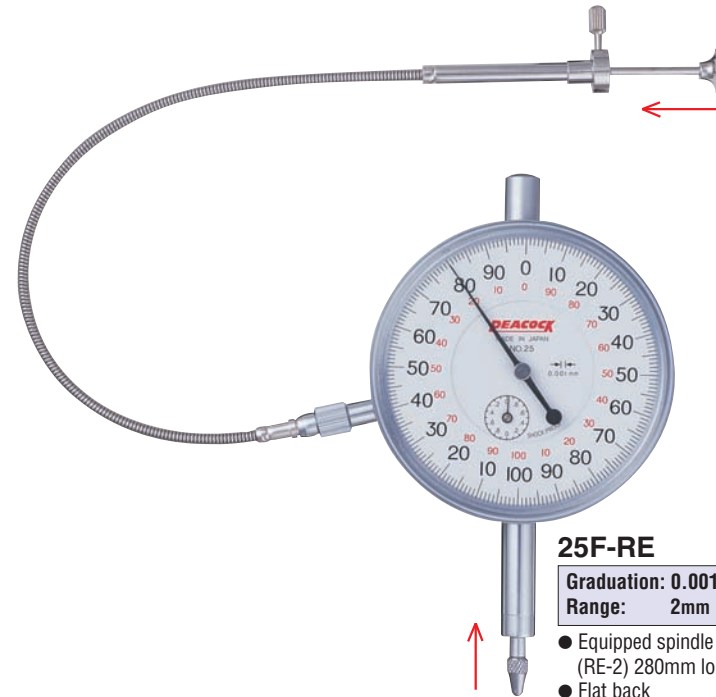
- Oil-proof type
- Contact point (X-2A)
- Lug back



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

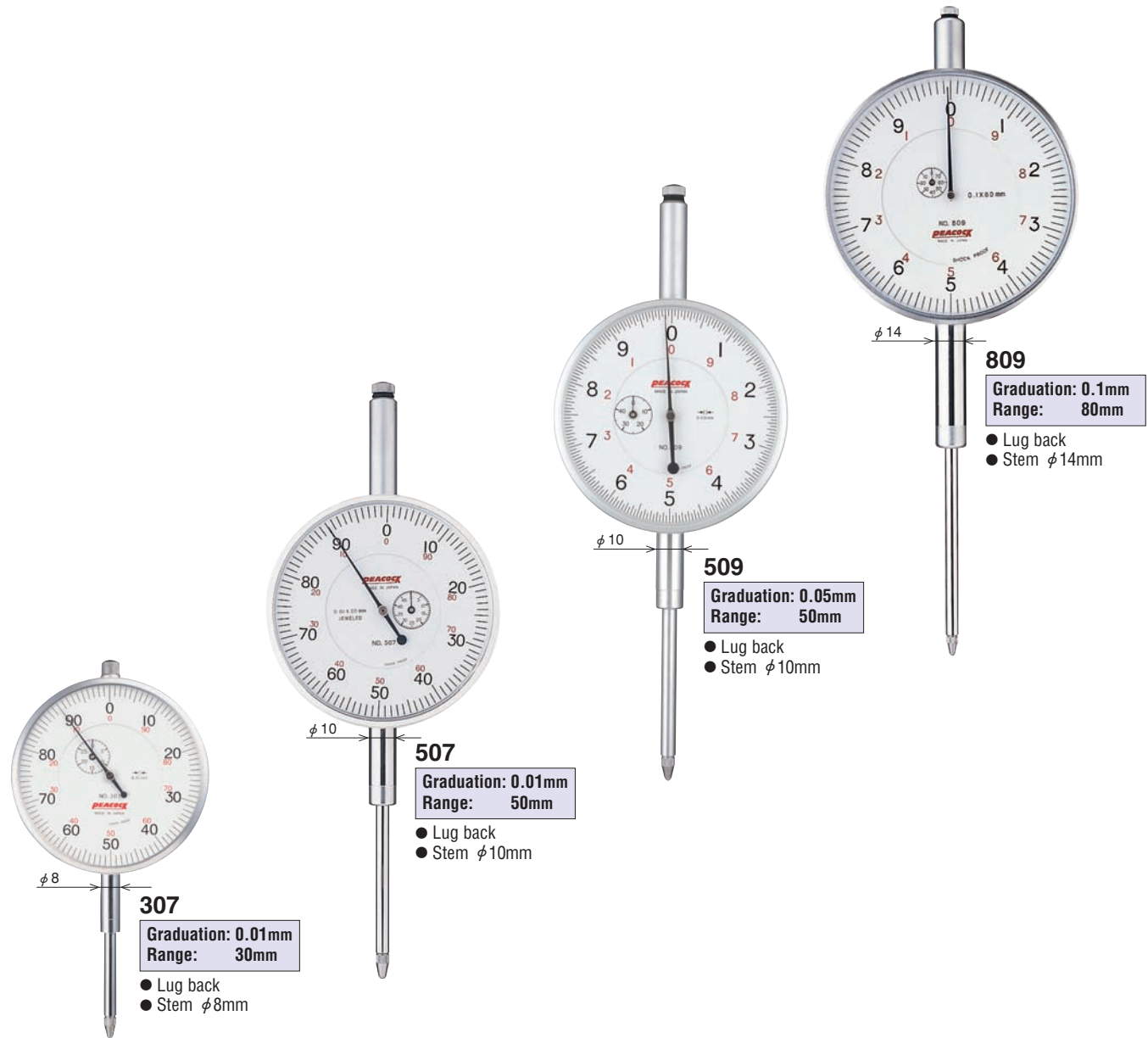
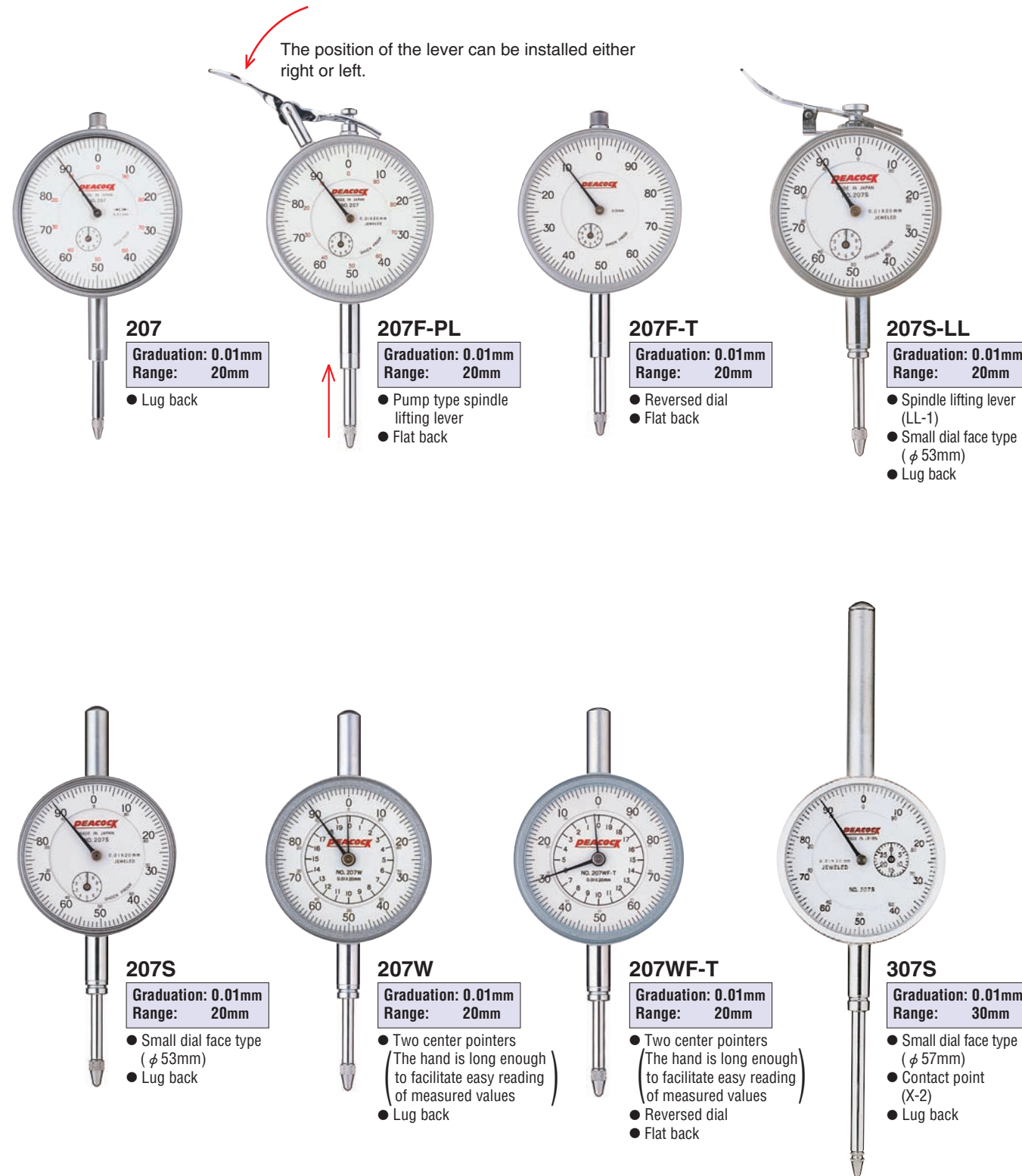
| Model | Graduation (mm) | Range (mm) | Reading | Indication error | | | | | Retrace error | Repeatability | Measuring force less than (N) |
|---------|-----------------|------------|--------------------|------------------|----------------|----------------|-----------------|-----------------------|---------------|---------------|-------------------------------|
| | | | | 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)

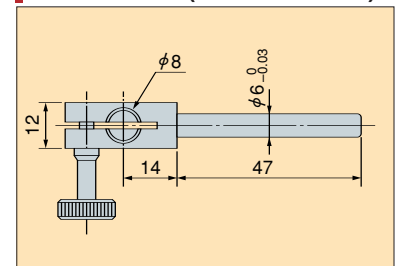


196B-T

Graduation: 0.01mm
Range: 5mm

- Stem $\phi 8\text{mm}$
- Reversed dial
- Contact point (X-112)

Dimensions (Holder for 196B)



Specifications

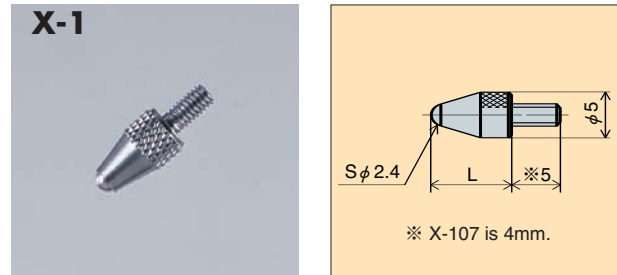
| Model | Graduation (mm) | Range (mm) | Reading | Indication error | | | | | Retrace error | Repeatability | Measuring force less than (N) |
|--------|-----------------|------------|--------------|------------------|----------------|----------------|-----------------|-----------------------|---------------|---------------|-------------------------------|
| | | | | 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)

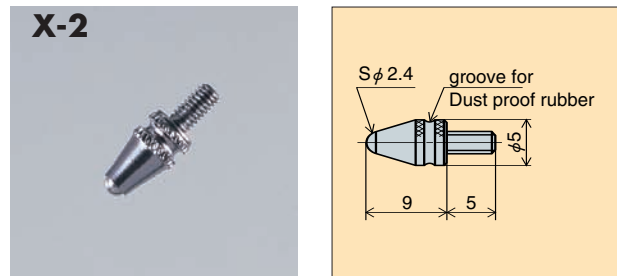
for Dial Indicators and Linear Gauges

● Ball Contact Point



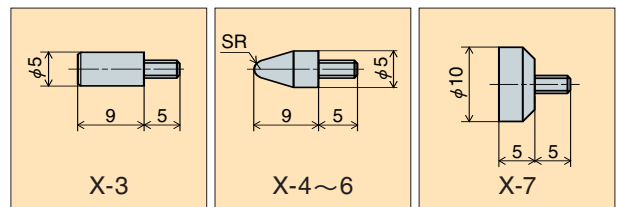
| Part No. | L (mm) | Material |
|----------|--------|----------|
| X-1 | 9 | Steel |
| X-103 | 3.5 | Steel |
| X-105 | 5 | Steel |
| X-107 | 7.5 | Steel |
| X-112 | 12.5 | Steel |
| X-125 | 25 | Steel |
| XB-1 | 9 | Carbide |
| XB-115 | 15 | Carbide |
| XB-125 | 25 | Carbide |
| XB-130 | 30 | Carbide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

● Ball Contact Point for Oil Proof type



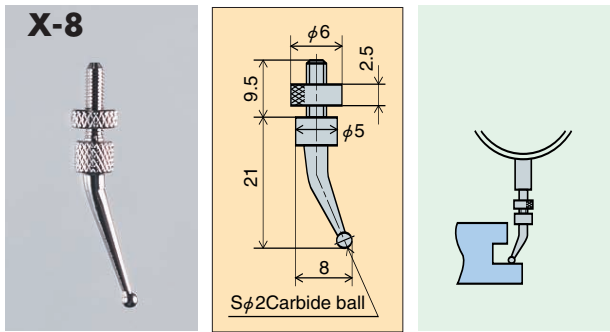
| Part No. | L (mm) | Material |
|----------|--------|----------|
| X-2 | 9 | Steel |
| XB-2 | 9 | Carbide |
| XC-2 | 9 | Ruby |
| X-2A | 12 | Steel |
| XB-2A | 12 | Carbide |

● Special Contact Point



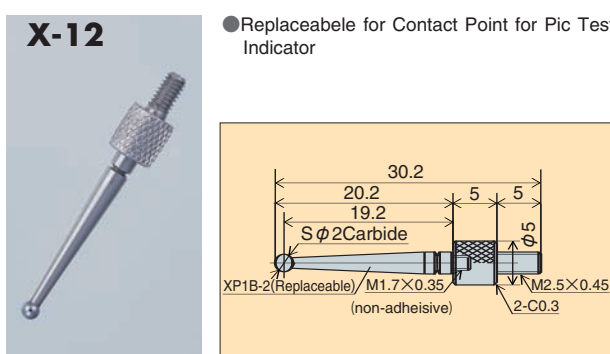
| Part No. | Material |
|----------|----------|
| X-3 | NSB |
| X-4 | Copper |
| X-5 | Bakelite |
| X-6 | Teflon |
| X-7 | Teflon |

● Offset Contact Point



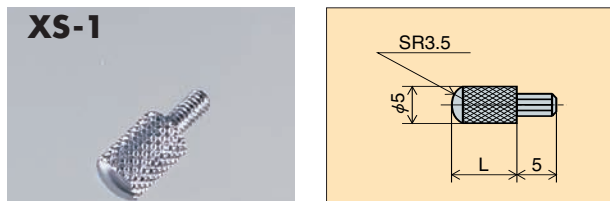
| Part No. | Material |
|----------|----------|
| X-8 | Carbide |

● Special Contact Point



| Part No. | Material |
|----------|----------|
| X-12 | Carbide |

● Spherical Contact Point



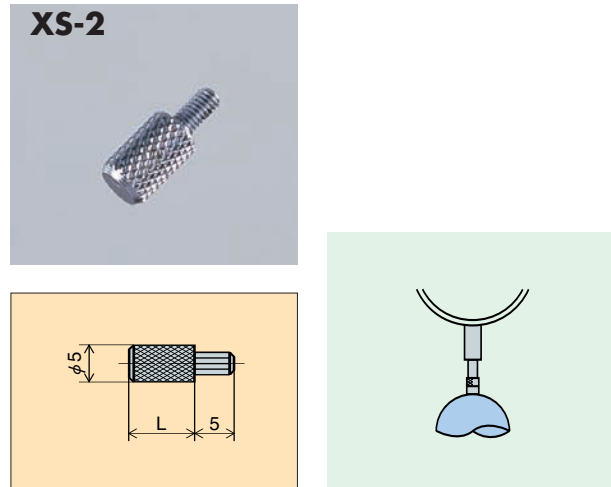
XS-1 series

| 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

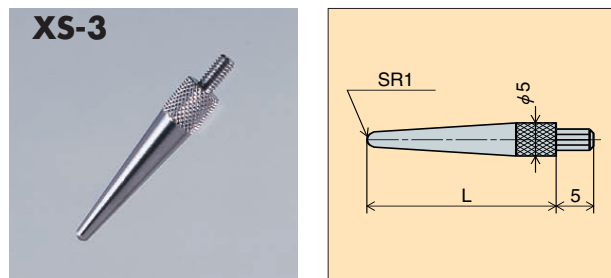
● Flat Contact Point



XS-2series

| 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 |

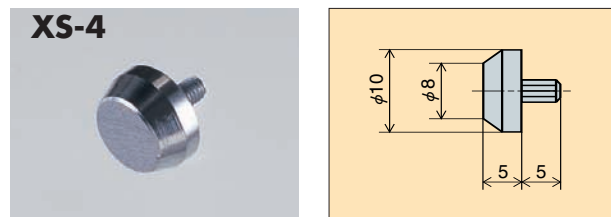
● Taper Contact Point



XS-3series

| 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 |

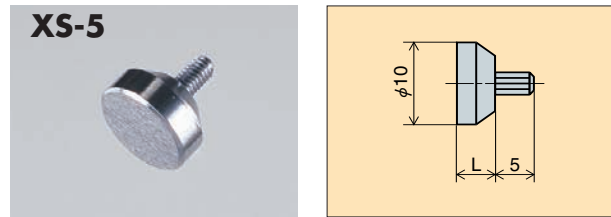
● Plain Contact Point



XS-4series

| Part No. | Material |
|----------|----------|
| XS-4 | SKS3 |

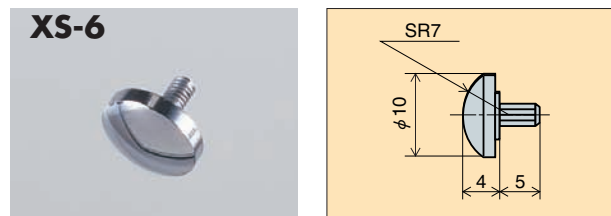
● Flat Contact Point



XS-5series

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

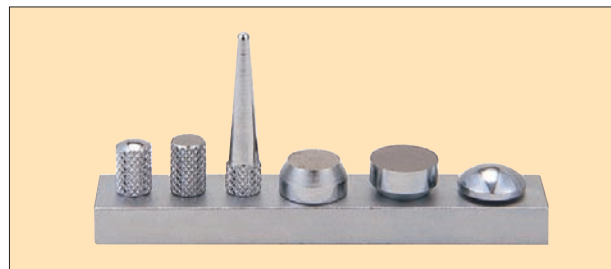
● Button type Contact Point



XS-6series

| Part No. | Material |
|----------|----------|
| XS-6 | SKS 3 |

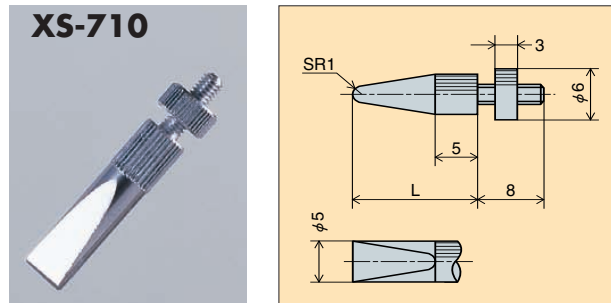
● Contact Point set XS



※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



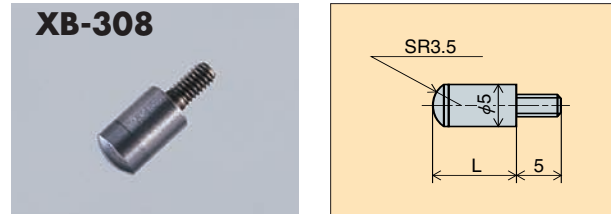
| Part No. | L (mm) | Material |
|----------|--------|----------|
| XS-710 | 10 | SKS3 |
| XS-715 | 15 | SKS3 |
| XS-720 | 20 | SKS3 |
| XS-725 | 25 | SKS3 |
| XS-730 | 30 | SKS3 |

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

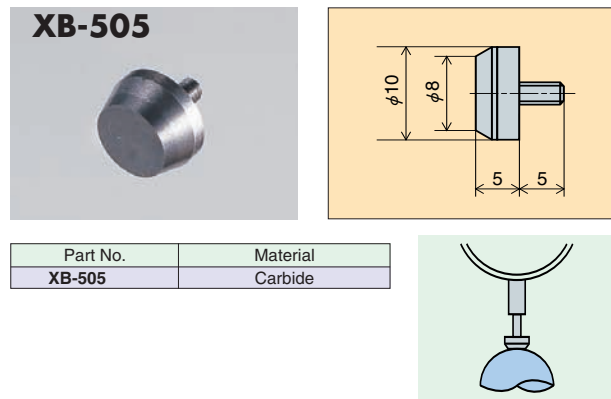
XB-408



| 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

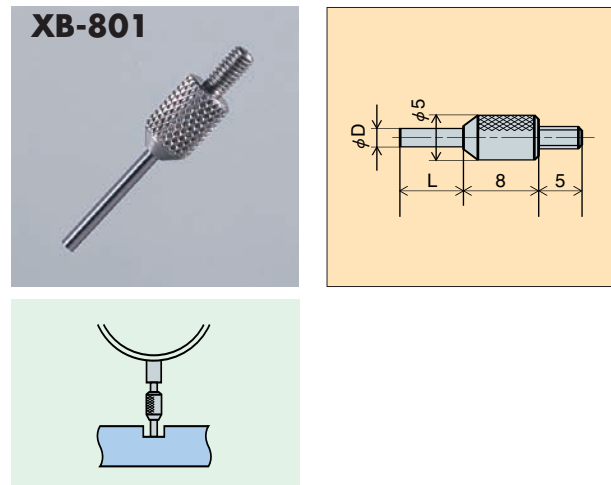
XB-505



| Part No. | Material |
|----------|----------|
| XB-505 | Carbide |

● Needle Type Contact Point

XB-801



● Carbide Flat Contact Point

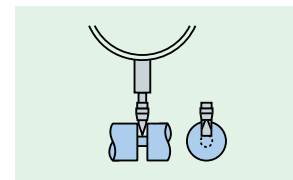
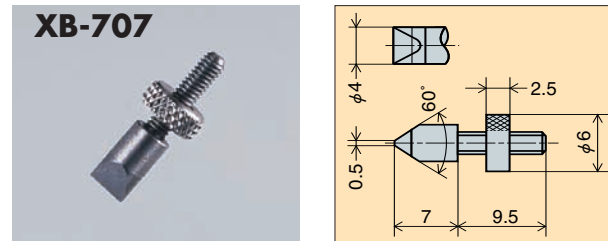
XB-605



| Part No. | Material |
|----------|----------|
| XB-605 | Carbide |

● Carbide Knife-edge Contact Point

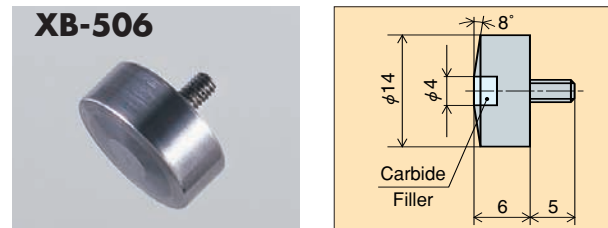
XB-707



| 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 |

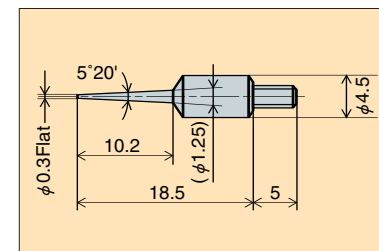
| Part No. | φ D (mm) | L (mm) | Material |
|----------|----------|--------|----------|
| XS-800 | 1 | 2 | SKS3 |
| XS-801 | 1.5 | 12 | SKS3 |
| XS-802 | 2 | 7 | SKS3 |
| XS-803 | 2 | 12 | SKS3 |
| XS-804 | 1 | 20 | SKH |
| XS-805 | 1.5 | 20 | SKH |
| XS-806 | 2 | 20 | SKH |
| XS-807 | 1 | 40 | SKH |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

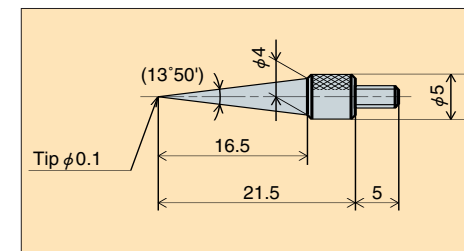
● Needle Contact Point

XT-2C



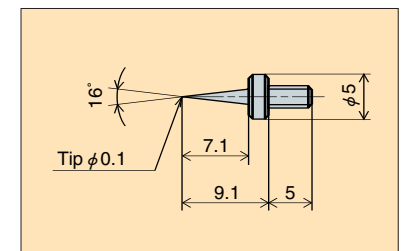
| Part No. | Material |
|----------|----------|
| XT-2C | SK 3 |

XT-3



| Part No. | Material |
|----------|----------|
| XT-3 | SK 3 |

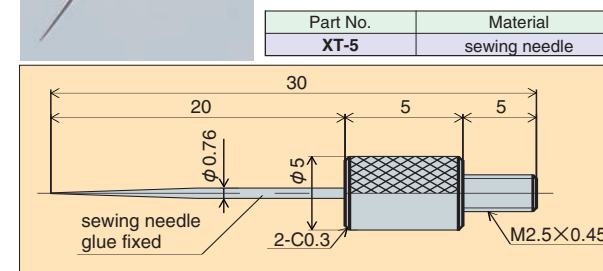
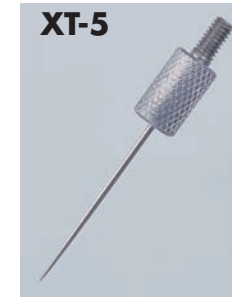
XT-4



| Part No. | Material |
|----------|----------|
| XT-4 | SK 3 |

● Needle Contact Point

XT-5



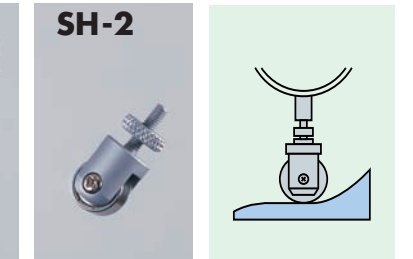
| Part No. | Material |
|----------|---------------|
| XT-5 | sewing needle |

● Roller Contact Point

SH-1



SH-2



| Part No. | Material |
|----------|----------|
| SH-1 | SUJ2 |

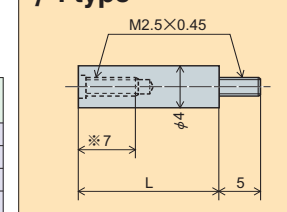
| Part No. | Material |
|----------|----------|
| SH-2 | SUJ2 |

● Contact Point Joint

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

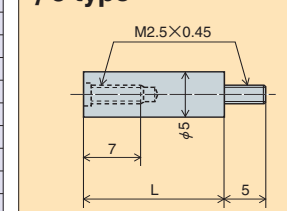
| L (mm) | φ 4 type | φ 5 type |
|--------|----------|----------|
| 6 | XJ-406 | |
| 10 | XJ-410 | XJ-510 |
| 15 | XJ-415 | |
| 20 | XJ-420 | XJ-520 |
| 25 | XJ-425 | |
| 30 | XJ-430 | XJ-530 |
| 35 | XJ-435 | |
| 40 | XJ-440 | XJ-540 |
| 45 | XJ-445 | |
| 50 | XJ-450 | XJ-550 |
| 55 | XJ-455 | |
| 60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

φ4 type



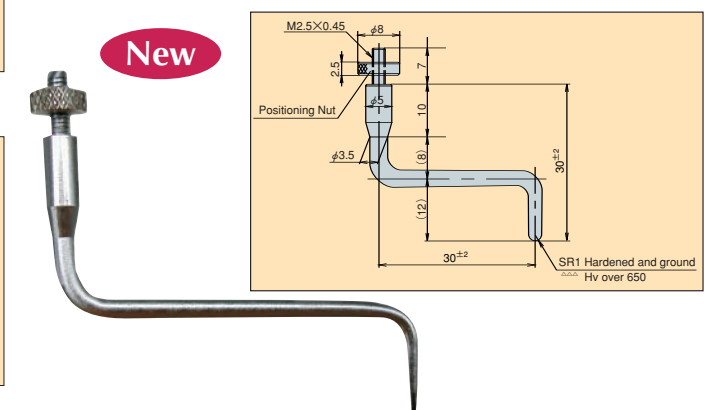
※Length of the thread screw of XJ-406 is 5mm.

φ5 type

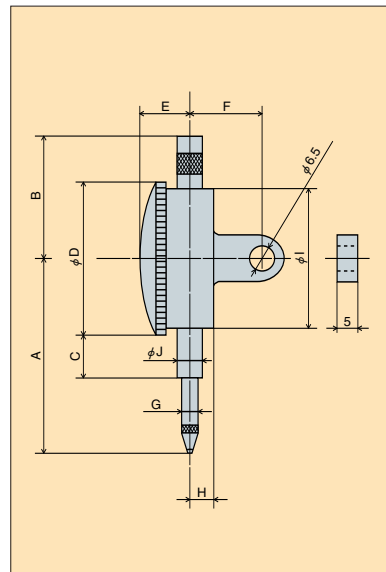


Offset Contact Point No. X-13

● Unique Contact Point not existing before! It is possible to make a measurement of an object that used to be impossible to measure.



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)

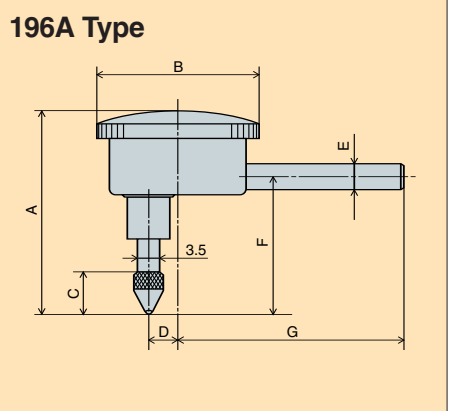
| Model | A | B | C | D | E | F | G | H | I | J |
|---------|----|------|------|------|------|----|---|-----|----|-------------------|
| 107-HG | 65 | 41.5 | 18.5 | 53 | 14.5 | 20 | 4 | 6.5 | 49 | $8.0^{0}_{-0.03}$ |
| 107-DX | 65 | 50.7 | 17 | 55.7 | 14.5 | 20 | 5 | 7 | 52 | $8.0^{0}_{-0.03}$ |
| 107 | 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 | $14.0^{0}_{-0.03}$ |

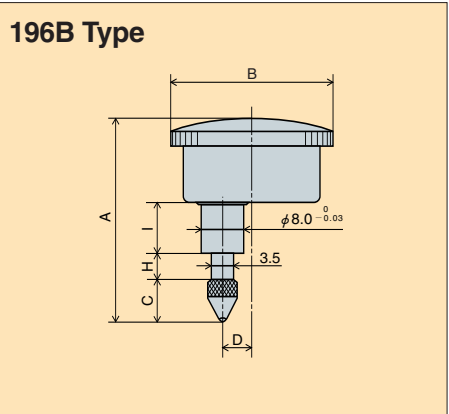
Miniature 0.01mm 0.005mm (mm)

| 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 |



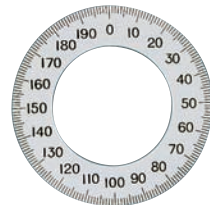
Back Plunger 0.01mm (mm)

| 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 |

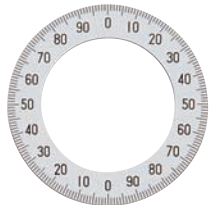
Accessories for Dial Gauges

Outer dial plates

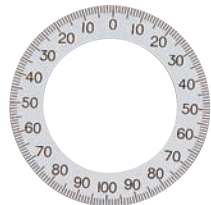
0.001mm type



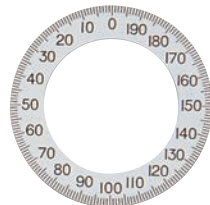
Continuous Dial A
(0-100-200)



Continuous Dial B
(0-100-100)

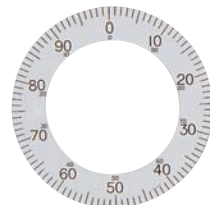


Balanced dial
(0-100-0)

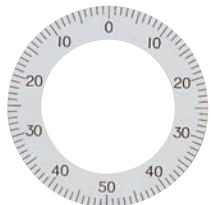


Reversed dial A
(±200-100-0)

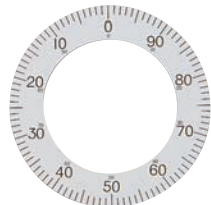
0.01mm type



Continuous Dial A
(0-50-100)



Balanced dial
(0-50-0)



Reversed dial A
(±100-50-0)

Color Caps



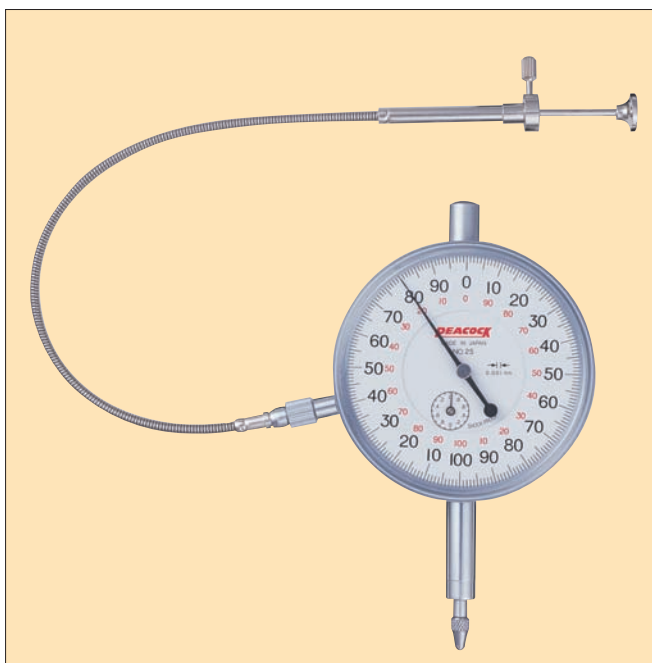
To manage the measurement by dial gauges, caps with five different colors are available. They are attachable to standard dial gauges. (No. 5, 107, 15, 17, 18, 55, 56 and 25S)

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

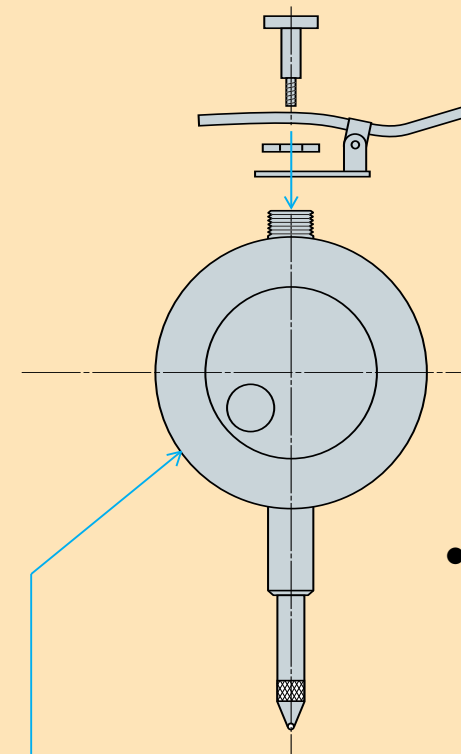
Easily attachable adhesive limits A type



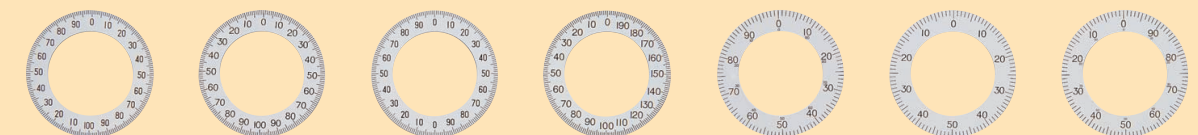
Examples of adhesive limits stickers



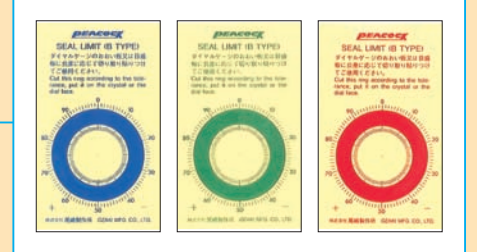
Spindle Lifting Lever (LL-1)



Outer dial plates



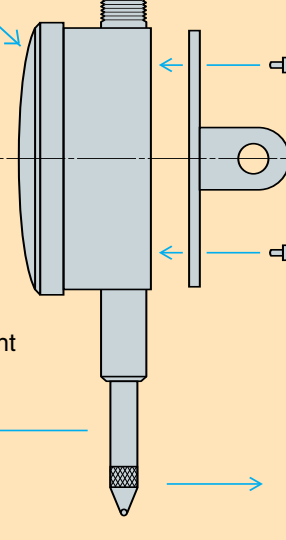
Easily attachable adhesive limits B type



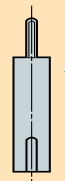
Color caps



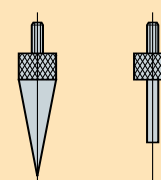
Backs



Contact point joint



Replaceable contact points



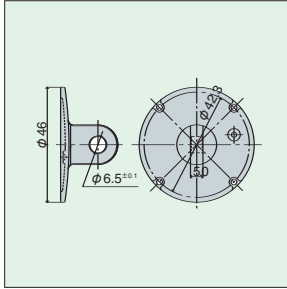
● Backs

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

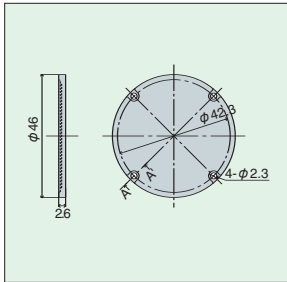


| Part No. | Outer dia. | Dial Gauge installable |
|----------|------------|--|
| GB-1A | 46.0 | 107. 107Z. 17Z. 57. 17. 17B. 5Z. 15Z. 207S. 207W. 18. 5B |
| GB-125 | 59.5 | 25. 55. 207 |
| GB-1307 | 69.8 | 307 |
| GB-1507 | 76.7 | 507. 509 |
| GB-1809 | 105.0 | 809 |
| GB-147 | 30.7 | 47. 47Z. 47SZ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

2 Flat back

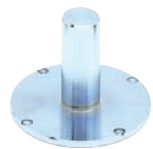


GB-3A

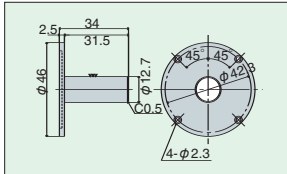


| | | |
|---------|-------|--|
| GB-3A | 46.0 | 107. 107Z. 17Z. 57. 17. 17B. 5Z. 15Z. 207S. 207W. 18. 5B |
| GB-325 | 59.5 | 25. 207. 55 |
| GB-3307 | 69.8 | 307 |
| GB-3507 | 76.7 | 507. 509 |
| GB-3809 | 105.0 | 809 |
| GB-347 | 30.7 | 47. 47SZ. 47Z |
| GB-336 | 35.8 | 5S. 36A. 36B |
| GB-357S | 35.3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

3 Post back

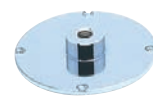


GB-4A

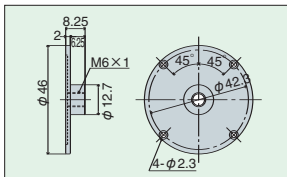


| | | |
|--------|------|--|
| GB-4A | 46.0 | 107. 107Z. 17Z. 57. 17. 17B. 5Z. 15Z. 207S. 207W. 18. 5B |
| GB-447 | 30.7 | 47. 47Z. 47SZ |

4 Screw back

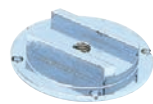


GB-5A

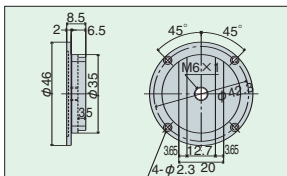


| | | |
|---------|------|---|
| GB-5A | 46.0 | 107. 107Z. 57. 17. 5B. 5Z. 17B. 15Z. 207S. 207W. 18 |
| GB-547 | 30.7 | 47. 47Z. 47SZ |
| GB-536 | 35.8 | 5S. 36A. 36B |
| GB-557S | 35.3 | 57S |

5 Adjustable back



GB-6A

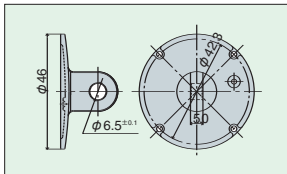


| | | |
|---------|------|----------------------------|
| GB-6A | 46.0 | 107. 107Z. 57. 17. 5B. 5Z. |
| GB-625 | 59.5 | 25. 55. 207 |
| GB-647 | 30.7 | 47. 47Z. 47SZ |
| GB-636 | 35.8 | 5S. 36A. 36B |
| GB-657S | 35.3 | 57S |

6 Lug back with lever



GB-7A



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

Repair Tools

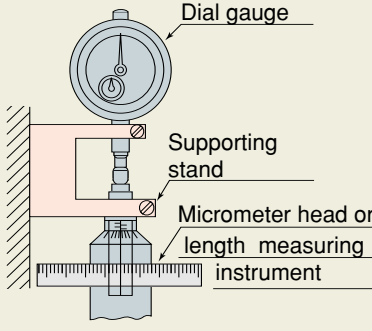
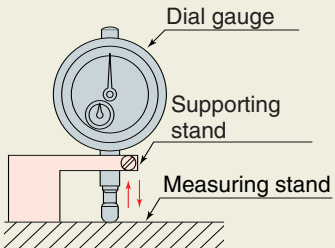
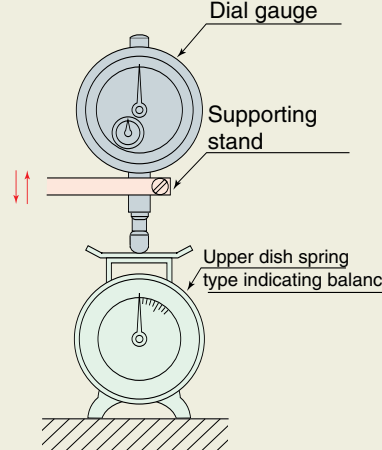
● The tools in the table below are available either in a set or individually.

| | | | |
|---|--|---|--|
| 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 a 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. <ul style="list-style-type: none"> ● 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 φ20 ② φ21.5 ③ φ24.5 ④ φ30 ⑤ φ33 ⑥ φ36 ⑦ φ40.5 ⑧ φ43 | | | |

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. |  | <p>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.</p> <p>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.</p> |
| 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). | | |
| 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

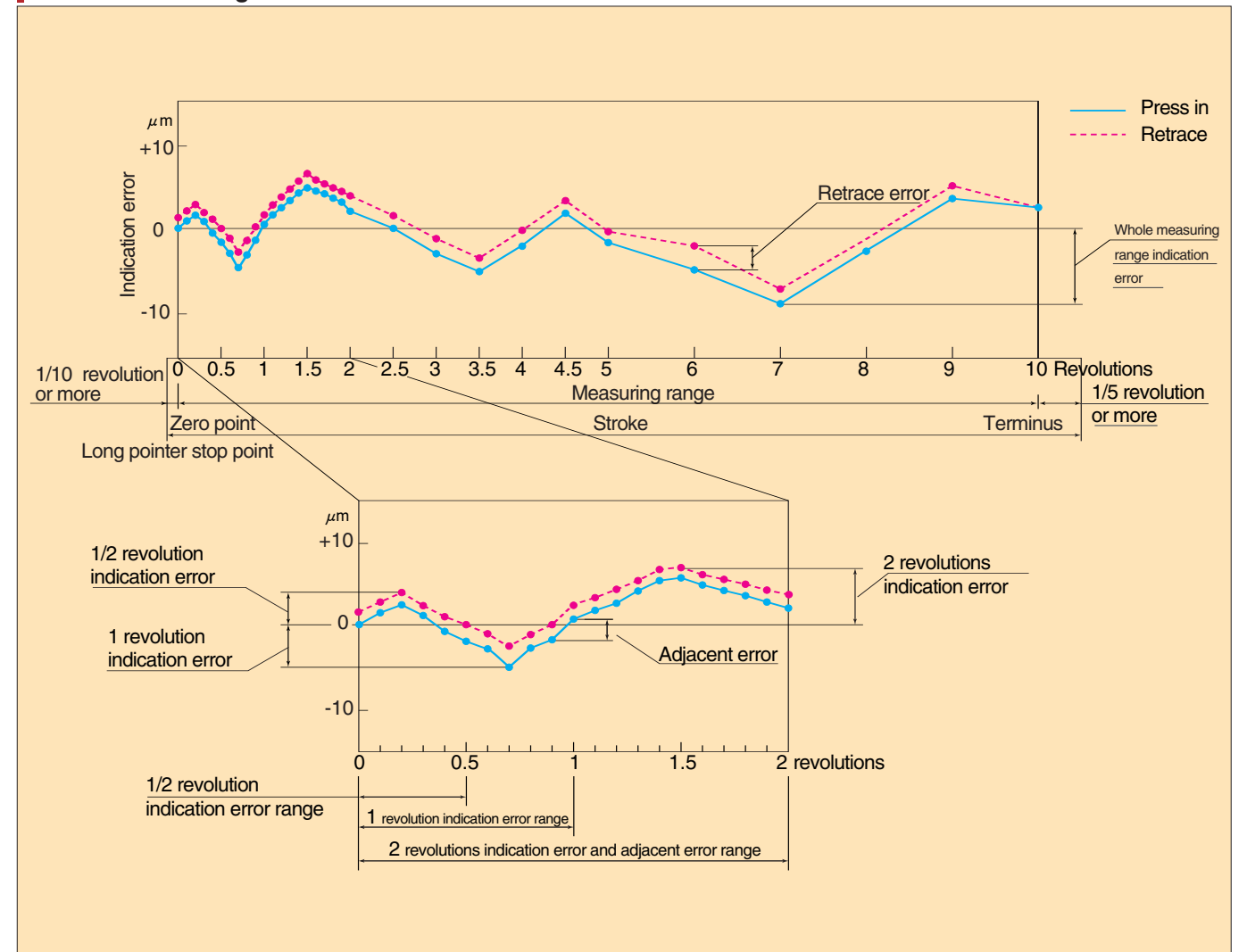
(unit: μm)

| | | 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

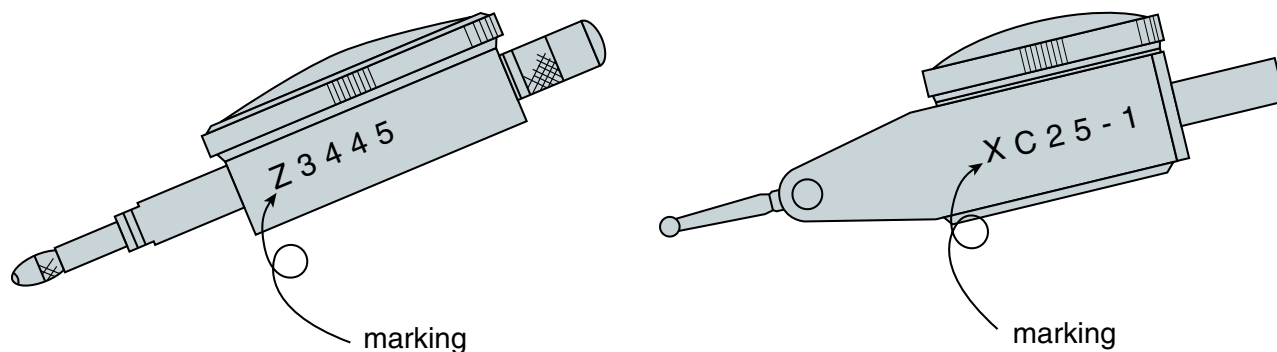
1



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

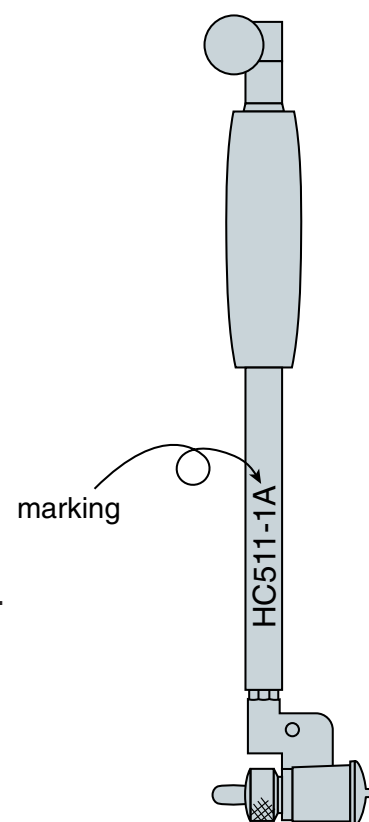
• Numeric characters (10)

0 1 2 3 4 5 6 7 8 9

• Symbols (18)

+ - × ÷ ± = () < > [] ¥ : . , . .

• Standard font (Helvetica)



SECTION 2



2

Lever Type Dial Indicators Pic Test • New Pic Test

- PCN Series
- W Series
- Z Series
- E Series
- U Series
- D Series
- PC Series
- R Series **"NEW"**
- V Series
- DS8V Series **"NEW"**
- Accessories
- PK-TEST

Lever Type Dial Indicators NEW PIC TEST

Without change lever PCN series

The New Pic Test is a lever type dial indicators used in all over the world. It is a measuring instrument used for measurements of restricted areas, and the outside/inside, groove width and centering with the dial gauge installed to the lathe or the milling cutting machine for measurements with the gauges held on the height gauges.

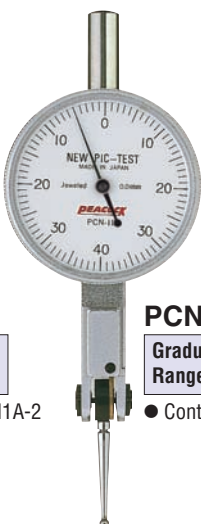
- **Without change lever (Automatic inverse type)**
The lever type dial gauge of this type has no change lever, the contact point inverses automatically in normal or reverse direction as desired and pointer turns always CW to improve the measuring efficiency.
- **Miniature Bearing Used**
The miniature bearing used as a bearing at the pivot of the contact point to show good indication stability without any effect by rod play.
- **O-ring used**
Oil resistance is enhanced by seating the O-ring in the turning section of the outer frame.



PCN-0
Graduation: 0.01mm
Range: 0.5mm
● Small dial face (φ 29)
● Contact Point No. XN1A-2



PCN-1A
Graduation: 0.01mm
Range: 0.5mm
● Contact Point No. XN1A-2



PCN-1B
Graduation: 0.01mm
Range: 0.8mm
● Contact Point No. XN1B-2



PCN-1L
Graduation: 0.01mm
Range: 1.0mm
● Contact Point No. XN1L-2 (L = 42.8mm)



PCN-2
Graduation: 0.002mm
Range: 0.28mm
● Contact Point No. XN2-2



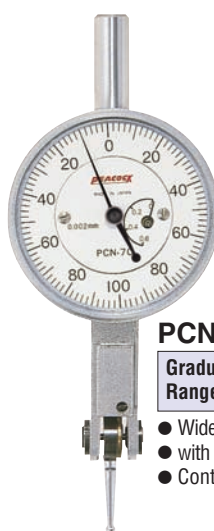
PCN-2B
Graduation: 0.002mm
Range: 0.2mm
● Contact Point No. XN2B-2



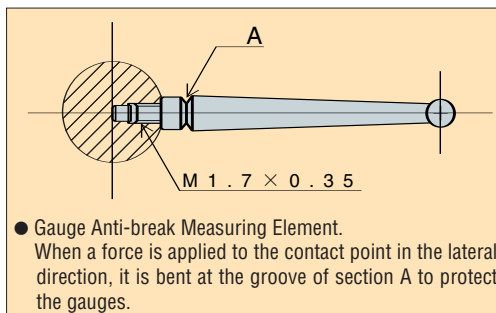
PCN-S
Graduation: 0.001mm
Range: 0.14mm
● High accuracy
● Contact Point No. XNS-2



PCN-7A
Graduation: 0.01mm
Range: 1.5mm
● Wide measuring range
● with Shorter Pointer
● Contact Point No. XN1A-2



PCN-7C
Graduation: 0.002mm
Range: 0.6mm
● Wide measuring range
● with Shorter Pointer
● Contact Point No. XN2B-2



- Gauge Anti-break Measuring Element.
When a force is applied to the contact point in the lateral direction, it is bent at the groove of section A to protect the gauges.

※ The contact point can simply replaced (See page P58).

Vertical



PCN-5
Graduation: 0.01mm
Range: 0.5mm
● Contact Point No. XN1A-2

Vertical



PCN-6
Graduation: 0.002mm
Range: 0.28mm
● Contact Point No. XN2-2

New

Vertical



PCN-6S
Graduation: 0.001mm
Range: 0.14mm
● Contact Point No. XNS-2

Specifications

| Model | Graduation (mm) | Range (mm) | Reading | Accuracy MPE (μm) | | | | | Measuring force less than(N) |
|--------|-----------------|------------|-------------|-------------------|--------|-----------------------------|------------|---------------|------------------------------|
| | | | | 10 Scale | 1 Rev. | Wide-range Forward accuracy | Hysteresis | Repeatability | |
| PCN-0 | 0.01 | 0.5 | 0 - 25 - 0 | 5 | — | 6 | 4 | 3 | 0.3 |
| PCN-1A | 0.01 | 0.5 | 0 - 25 - 0 | 5 | — | 6 | 4 | 3 | 0.3 |
| PCN-1B | 0.01 | 0.8 | 0 - 40 - 0 | 5 | — | 9 | 4 | 3 | 0.3 |
| PCN-1L | 0.01 | 1.0 | 0 - 50 - 0 | 5 | — | 10 | 5 | 3 | 0.3 |
| PCN-2 | 0.002 | 0.28 | 0 - 140 - 0 | 2 | — | 4 | 3 | 1 | 0.3 |
| PCN-2B | 0.002 | 0.2 | 0 - 100 - 0 | 2 | — | 4 | 3 | 1 | 0.3 |
| PCN-S | 0.001 | 0.14 | 0 - 70 - 0 | 2 | — | 4 | 3 | 1 | 0.3 |
| PCN-7A | 0.01 | 1.5 | 0 - 25 - 0 | 5 | 10 | 16 | 5 | 3 | 0.3 |
| PCN-7C | 0.002 | 0.6 | 0 - 100 - 0 | 2 | 5 | 7 | 4 | 1 | 0.3 |
| PCN-5 | 0.01 | 0.5 | 0 - 25 - 0 | 5 | — | 6 | 4 | 3 | 0.3 |
| PCN-6 | 0.002 | 0.28 | 0 - 140 - 0 | 2 | — | 4 | 3 | 1 | 0.3 |
| PCN-6S | 0.001 | 0.14 | 0 - 70 - 0 | 2 | — | 4 | 3 | 1 | 0.3 |

Special Type Test Indicators

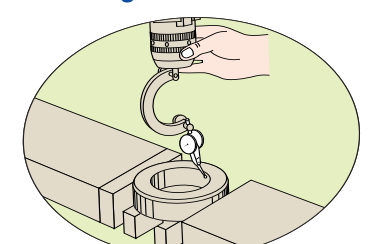
Double Dial Type W series

- The conventional lever type dial gauge used to have some unreadable points when aligning with it, which has made it impossible to do the accurate aligning till now. The double dial type Pic Test has two dials at both sides, making it possible to cover said unreadable points by conventional Pic Tests.



PC-1BW
Graduation: 0.01mm
Range: 0.8mm
● Change lever type
● Contact Point No. XP1B-2

Alignment work



With Dual dial type, readings can be made easily even if gauges is turned 180 deg.

Specifications

| Model | Graduation (mm) | Range (mm) | Reading | Accuracy MPE (μm) | | | | | Measuring force less than(N) |
|--------|-----------------|------------|------------|-------------------|--------|-----------------------------|------------|---------------|------------------------------|
| | | | | 10 Scale | 1 Rev. | Wide-range Forward accuracy | Hysteresis | Repeatability | |
| PC-1BW | 0.01 | 0.8 | 0 - 40 - 0 | 5 | — | 9 | 4 | 3 | 0.4 |

Special Type Test Indicators

One Revolution Z series (without change lever type)

The dial face is easy to read with light yellow and blue (dead zone)

● Gauge Anti-break Measuring Element

When a force is applied to the contact point in the lateral direction, it is bent at the groove of section A to protect the gauge. The contact point can simply be replaced (adopted in all the PCN and PC).

● Dial face with colored limit

To check out of tolerance detection and testing easier.

● Dust and Oil resistant O-ring (inside bezel)

Oil resistance is enhanced by seating the O-ring in the turning section of the outer frame.

● $\phi 6$ mm SK quenched stem

● Super sensitive miniature bearing used

The miniature bearing is used as a bearing at the pivot of the contact point to show stable indication without any effect by rod play.

● No clutch (automatic inverse type)

The Pic Test Indicator of this type has no bias lever, the contact point inverse automatically in the normal or reverse direction as desired and the pointer turns always CW to improve the measuring efficiency.

"A" type Downward



PCN-1BZ(A)
Graduation: 0.01mm
Range: 0.6mm
● Contact Point No. XN1B-2



PCN-1LZ(A)
Graduation: 0.01mm
Range: 0.8mm
● Contact Point No. XN1L-2



PCN-2Z(A)
Graduation: 0.002mm
Range: 0.2mm
● High accuracy
● Contact Point No. XN2-2

Specifications

| Model | Graduation (mm) | Range (mm) | Movable Range (mm) | Accuracy MPE (μ m) | | | | | Measuring force less than(N) |
|------------|-----------------|------------|--------------------|-------------------------|--------|-----------------------------|------------|---------------|------------------------------|
| | | | | 10 Scale | 1 Rev. | Wide-range Forward accuracy | Hysteresis | Repeatability | |
| PCN-1BZ(A) | 0.01 | 0.6 | 0.7 | 5 | — | 9 | 4 | 3 | 0.3 |
| PCN-1LZ(A) | 0.01 | 0.8 | 0.9 | 5 | — | 10 | 5 | 3 | 0.3 |
| PCN-2Z(A) | 0.002 | 0.2 | 0.24 | 2 | — | 4 | 3 | 1 | 0.3 |

"B" type Upward



PCN-1BZ(B)
Graduation: 0.01mm
Range: 0.6mm
● Contact Point No. XN1B-2



PCN-1LZ(B)
Graduation: 0.01mm
Range: 0.8mm
● Contact Point No. XN1L-2

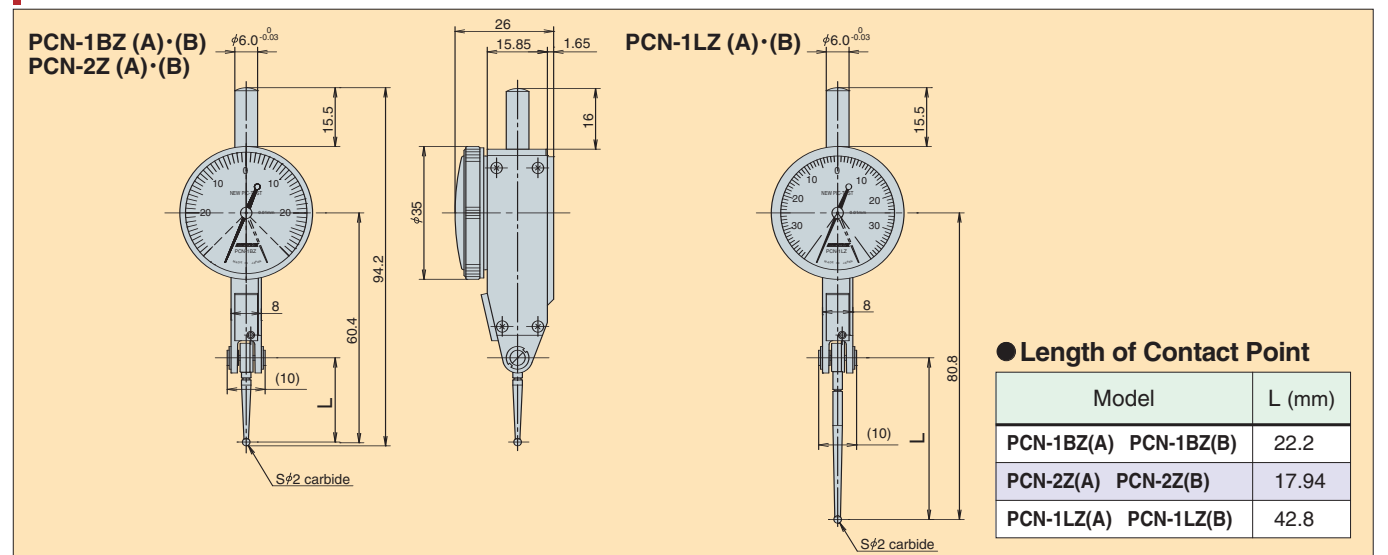


PCN-2Z(B)
Graduation: 0.002mm
Range: 0.2mm
● High accuracy
● Contact Point No. XN2-2

Specifications

| Model | Graduation (mm) | Range (mm) | Movable Range (mm) | Accuracy MPE (μ m) | | | | | Measuring force less than(N) |
|------------|-----------------|------------|--------------------|-------------------------|--------|-----------------------------|------------|---------------|------------------------------|
| | | | | 10 Scale | 1 Rev. | Wide-range Forward accuracy | Hysteresis | Repeatability | |
| PCN-1BZ(B) | 0.01 | 0.6 | 0.7 | 5 | — | 9 | 4 | 3 | 0.3 |
| PCN-1LZ(B) | 0.01 | 0.8 | 0.9 | 5 | — | 10 | 5 | 3 | 0.3 |
| PCN-2Z(B) | 0.002 | 0.2 | 0.24 | 2 | — | 4 | 3 | 1 | 0.3 |

Dimensions

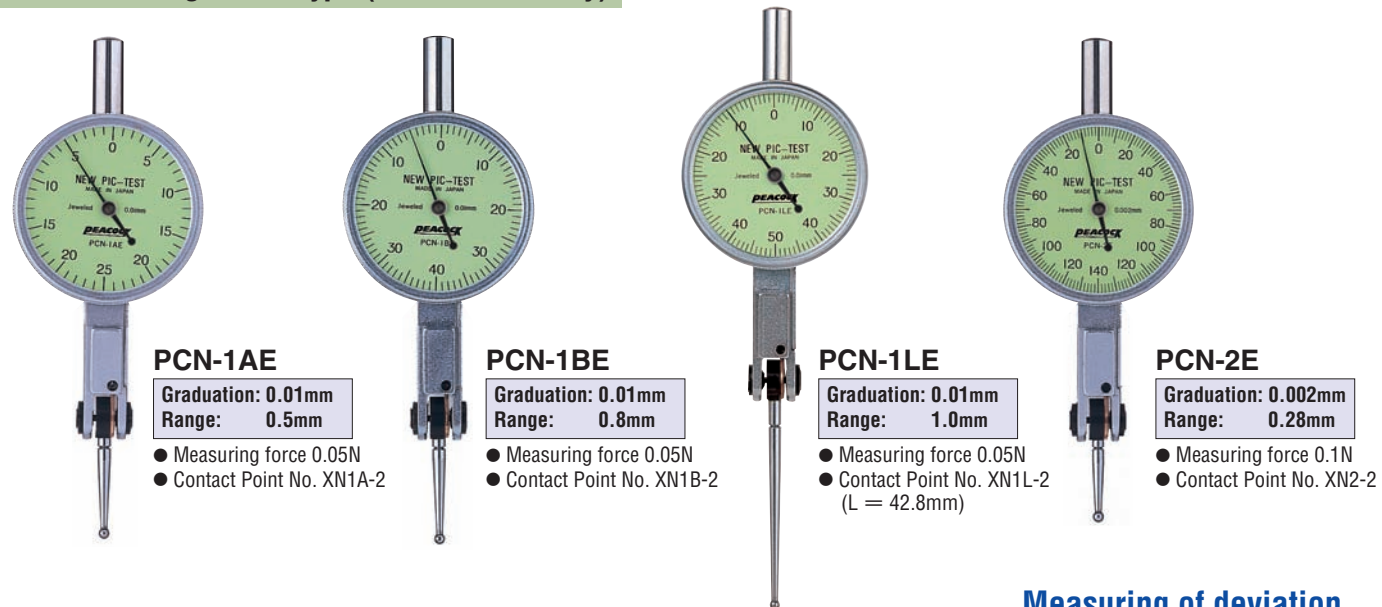


Special Type Test Indicators

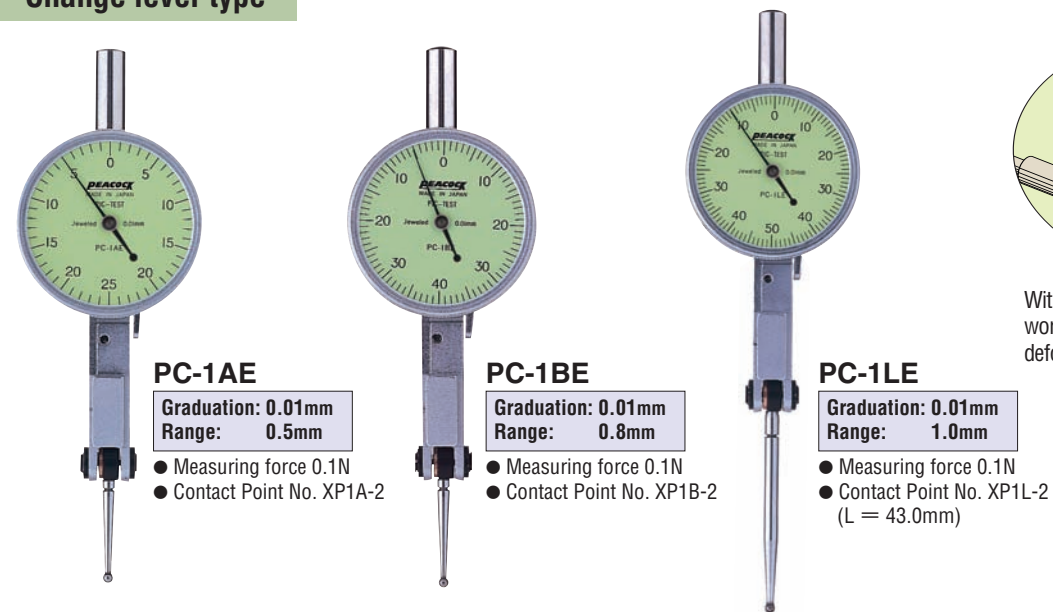
Super low measuring force E series

Lever dial gauge that is suitable for flaw-free measure of an object under measurement and for measurement of plastic products with a low measuring force.
A measuring force is 0.05N, 0.1N or less that is lower than a 0.4N measuring force in the conventional dial gauges.
Specifications and outer dimensions are the same as those of standard PC and PCN types, except a measuring force.

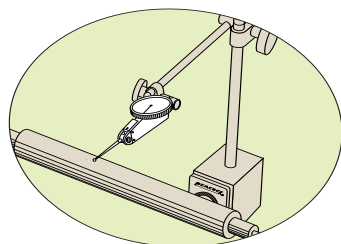
Without change lever type (CW rotation only)



Change lever type



Measuring of deviation on rubber roller



With extra low measuring force, work piece can be measured without deforming it.

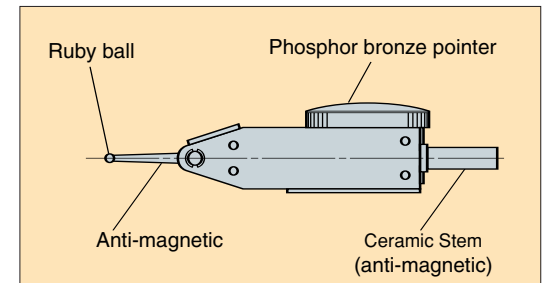
Specifications

| Model | Graduation (mm) | Range (mm) | Reading | Accuracy MPE (μm) | | | | | Measuring force less than(N) |
|---------|-----------------|------------|-------------|-------------------|--------|-----------------------------|------------|---------------|------------------------------|
| | | | | 10 Scale | 1 Rev. | Wide-range Forward accuracy | Hysteresis | Repeatability | |
| PCN-1AE | 0.01 | 0.5 | 0 - 25 - 0 | 5 | — | 6 | 4 | 3 | 0.05 |
| PCN-1BE | 0.01 | 0.8 | 0 - 40 - 0 | 5 | — | 9 | 4 | 3 | 0.05 |
| PCN-1LE | 0.01 | 1.0 | 0 - 50 - 0 | 5 | — | 10 | 5 | 3 | 0.05 |
| PCN-2E | 0.002 | 0.28 | 0 - 140 - 0 | 2 | — | 4 | 3 | 1 | 0.1 |
| PC-1AE | 0.01 | 0.5 | 0 - 25 - 0 | 5 | — | 6 | 4 | 3 | 0.1 |
| PC-1BE | 0.01 | 0.8 | 0 - 40 - 0 | 5 | — | 9 | 4 | 3 | 0.1 |
| PC-1LE | 0.01 | 1.0 | 0 - 50 - 0 | 5 | — | 10 | 5 | 3 | 0.1 |

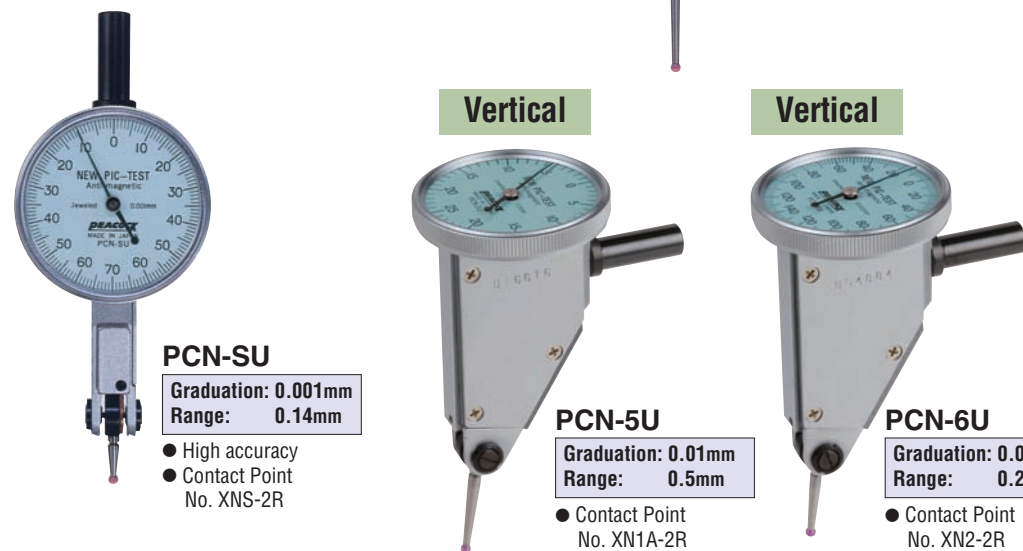
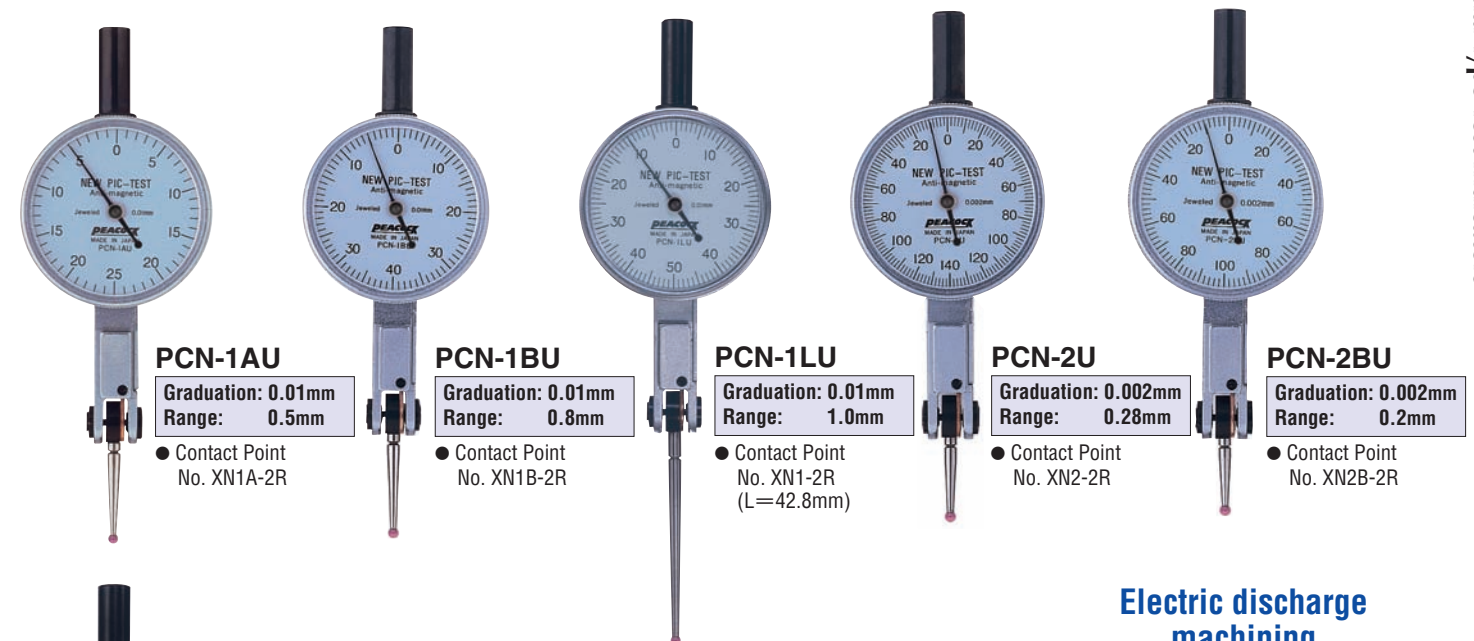
Special Type Test Indicators

Non-electrifying & Complete Anti-magnetic U series

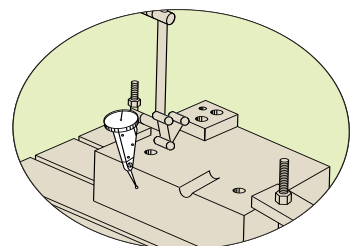
When non-electrifying type of Pic Test or New Pic Test is used, electric flow is blocked at the ceramic stem, even of a magnetic stand is electrified. Thus, you can continue your work without any problem.
The dial face is light blue color and easy to read.
Specifications and outer dimensions are the same as those of standard PCN types, except the portion of stems.



Without change lever type (CW rotation only)



Electric discharge machining



Ceramic stem is supported by a magnetic stand.
Electric current is isolated by the ceramic stem.
It is thus possible to measure the work piece without electrifying it.

Specifications

| Model | Graduation (mm) | Range (mm) | Reading | Accuracy MPE (μm) | | | | | Measuring force less than(N) |
|---------|-----------------|------------|-------------|-------------------|--------|-----------------------------|------------|---------------|------------------------------|
| | | | | 10 Scale | 1 Rev. | Wide-range Forward accuracy | Hysteresis | Repeatability | |
| PCN-1AU | 0.01 | 0.5 | 0 - 25 - 0 | 5 | — | 6 | 4 | 3 | 0.3 |
| PCN-1BU | 0.01 | 0.8 | 0 - 40 - 0 | 5 | — | 9 | 4 | 3 | 0.3 |
| PCN-1LU | 0.01 | 1.0 | 0 - 50 - 0 | 5 | — | 10 | 5 | 3 | 0.3 |
| PCN-2U | 0.002 | 0.28 | 0 - 140 - 0 | 2 | — | 4 | 3 | 1 | 0.3 |
| PCN-2BU | 0.002 | 0.2 | 0 - 100 - 0 | 2 | — | 4 | 3 | 1 | 0.3 |
| PCN-SU | 0.001 | 0.14 | 0 - 70 - 0 | 2 | — | 4 | 3 | 1 | 0.3 |
| PCN-5U | 0.01 | 0.5 | 0 - 25 - 0 | 5 | — | 6 | 4 | 3 | 0.3 |
| PCN-6U | 0.002 | 0.28 | 0 - 140 - 0 | 2 | — | 4 | 3 | 1 | 0.3 |

Special Type Test Indicators

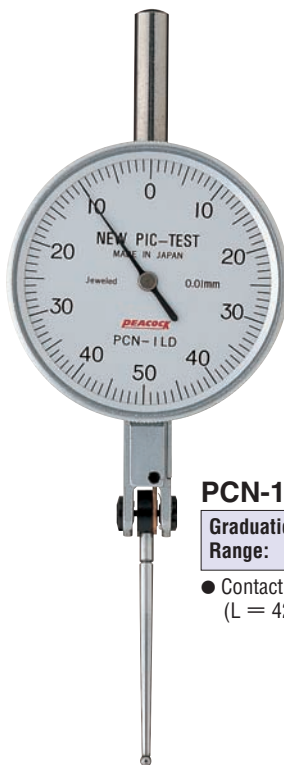
Large dial face D series

The dial plate size of PCN-1A, PCN-1L, PCN-2B, and PCN-S models has been enlarged, with easy reading due to the larger scale spacing, as a result.
Screw type long stems are standard for these large dial face test indicators.

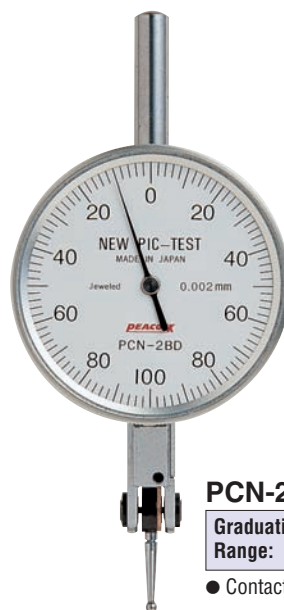
Without change lever type (CW rotation only)



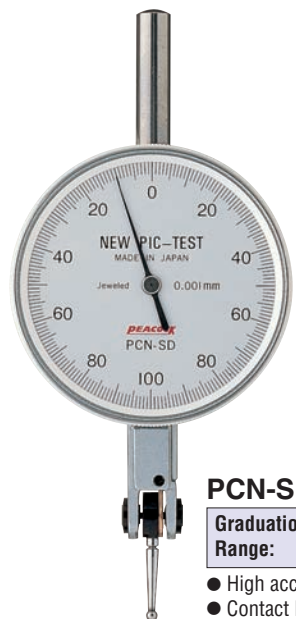
PCN-1AD
Graduation: 0.01mm
Range: 0.5mm
● Contact Point No. XN1A-2



PCN-1LD
Graduation: 0.01mm
Range: 1mm
● Contact Point No. XN1L-2 (L = 42.8mm)

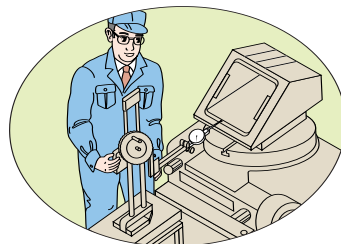


PCN-2BD
Graduation: 0.002mm
Range: 0.2mm
● Contact Point No. XN2B-2



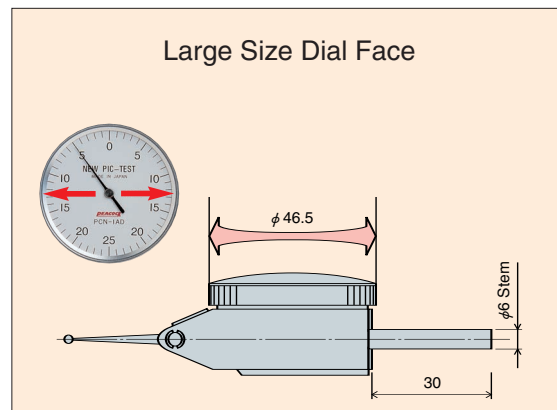
PCN-SD
Graduation: 0.001mm
Range: 0.2mm
● High accuracy
● Contact Point No. XN2B-2

Easy to read



An enlarge dial face with bigger scale intervals enables easy reading by user of all ages.

Large Size Dial Face



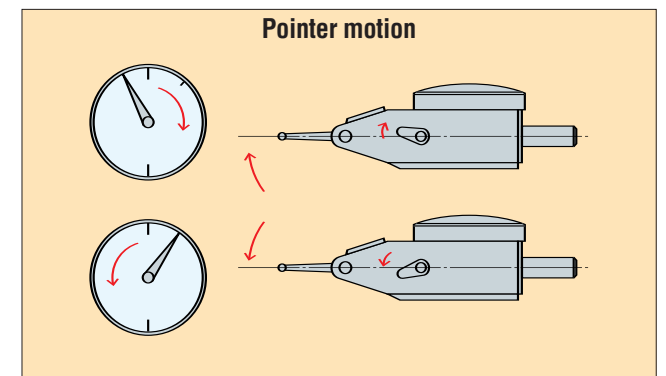
Specifications

| Model | Graduation (mm) | Range (mm) | Reading | Accuracy MPE (μm) | | | | | Measuring force less than(N) |
|---------|-----------------|------------|-------------|-------------------|--------|-----------------------------|------------|---------------|------------------------------|
| | | | | 10 Scale | 1 Rev. | Wide-range Forward accuracy | Hysteresis | Repeatability | |
| PCN-1AD | 0.01 | 0.5 | 0 - 25 - 0 | 5 | — | 6 | 4 | 3 | 0.3 |
| PCN-1LD | 0.01 | 1.0 | 0 - 50 - 0 | 5 | — | 10 | 5 | 3 | 0.3 |
| PCN-2BD | 0.002 | 0.2 | 0 - 100 - 0 | 2 | — | 4 | 3 | 1 | 0.3 |
| PCN-SD | 0.001 | 0.2 | 0 - 100 - 0 | 2 | — | 4 | 3 | 1 | 0.3 |

Lever Type Dial Indicators PIC TEST

Change lever type PC series

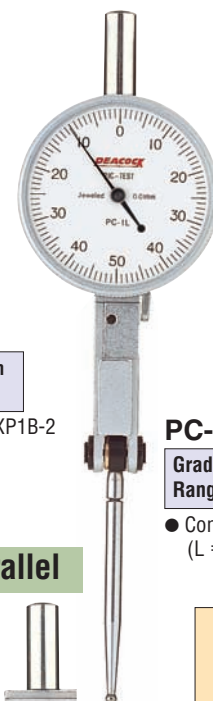
- Miniature Bearing Used
The miniature bearing used as a bearing at the pivot of the contact point to show good indication stability without any effect by rod play.
- O-ring used
Oil resistance is enhanced by seating the O-ring in the turning section of the outer frame.



PC-1A
Graduation: 0.01mm
Range: 0.5mm
● Contact Point No. XP1A-2



PC-1B
Graduation: 0.01mm
Range: 0.8mm
● Contact Point No. XP1B-2



PC-1L
Graduation: 0.01mm
Range: 1.0mm
● Contact Point No. XP1L-2 (L = 43.0mm)



PC-2
Graduation: 0.002mm
Range: 0.28mm
● Contact Point No. XP2-2



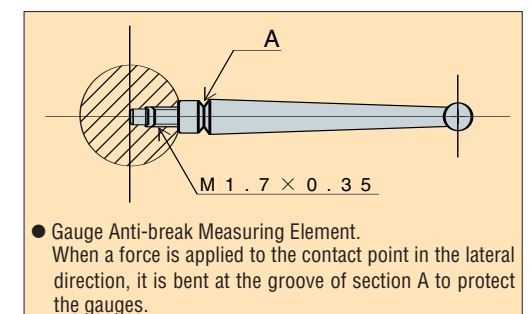
PC-3
Graduation: 0.01mm
Range: 0.5mm
● Contact Point No. XP1A-2



PC-3L
Graduation: 0.01mm
Range: 1.0mm
● Contact Point No. XP1L-2



PC-4
Graduation: 0.002mm
Range: 0.28mm
● Contact Point No. XP2-2



● Gauge Anti-break Measuring Element.
When a force is applied to the contact point in the lateral direction, it is bent at the groove of section A to protect the gauges.

※ The contact point can simply be replaced (See page P58).

Specifications

| Model | Graduation (mm) | Range (mm) | Reading | Accuracy MPE (μm) | | | | | Measuring force less than(N) |
|-------|-----------------|------------|-------------|-------------------|--------|-----------------------------|------------|---------------|------------------------------|
| | | | | 10 Scale | 1 Rev. | Wide-range Forward accuracy | Hysteresis | Repeatability | |
| PC-1A | 0.01 | 0.5 | 0 - 25 - 0 | 5 | — | 6 | 4 | 3 | 0.4 |
| PC-1B | 0.01 | 0.8 | 0 - 40 - 0 | 5 | — | 9 | 4 | 3 | 0.4 |
| PC-1L | 0.01 | 1.0 | 0 - 50 - 0 | 5 | — | 10 | 5 | 3 | 0.4 |
| PC-2 | 0.002 | 0.28 | 0 - 140 - 0 | 2 | — | 4 | 3 | 1 | 0.4 |
| PC-3 | 0.01 | 0.5 | 0 - 25 - 0 | 5 | — | 6 | 4 | 3 | 0.4 |
| PC-3L | 0.01 | 1.0 | 0 - 50 - 0 | 5 | — | 10 | 5 | 3 | 0.4 |
| PC-4 | 0.002 | 0.28 | 0 - 140 - 0 | 2 | — | 4 | 3 | 1 | 0.4 |

PIC TEST/NEW PIC TEST PC · PCN

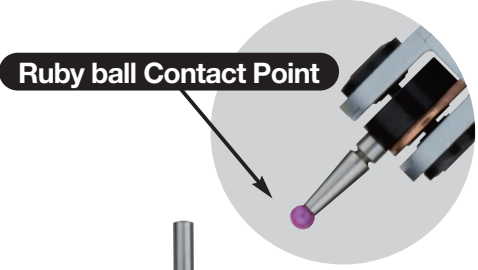
New

PIC TEST/NEW PIC TEST with Ruby ball Contact Point "R" series

(Contact Point ball dia. 2mm Only)

- Excellent wear resistance
- Non-electrifying and Anti-magnetic
- Can be used on Electrical Discharge Machine

Horizontal



Ruby ball Contact Point

PC-1AR
Graduation: 0.01mm
Range: 0.5mm
● Change Lever type
● Contact Point No. XP1A-2R

PC-1BR
Graduation: 0.01mm
Range: 0.8mm
● Change Lever type
● Contact Point No. XP1B-2R

PC-1LR
Graduation: 0.01mm
Range: 1.0mm
● Change Lever type
● Contact Point No. XP1L-2R

PC-2R
Graduation: 0.002mm
Range: 0.28mm
● Change Lever type
● High accuracy
● Contact Point No. XP2-2R

PCN-1AR
Graduation: 0.01mm
Range: 0.5mm
● Without Change Lever type
● Contact Point No. XN1A-2R

PCN-1BR
Graduation: 0.01mm
Range: 0.8mm
● Without Change Lever type
● Contact Point No. XN1B-2R

PCN-1LR
Graduation: 0.01mm
Range: 1.0mm
● Without Change Lever type
● Contact Point No. XN1L-2R

PCN-2R
Graduation: 0.002mm
Range: 0.28mm
● Without Change Lever type
● High accuracy
● Contact Point No. XN2-2R

PCN-2BR
Graduation: 0.002mm
Range: 0.2mm
● Without Change Lever type
● High accuracy
● Contact Point No. XN2B-2R

PCN-SR
Graduation: 0.001mm
Range: 0.14mm
● Without Change Lever type
● High accuracy
● Contact Point No. XNS-2R

PCN-5R
Graduation: 0.01mm
Range: 0.5mm
● Without Change Lever type
● Contact Point No. XN1A-2R

PCN-6R
Graduation: 0.002mm
Range: 0.28mm
● Without Change Lever type
● High accuracy
● Contact Point No. XN2-2R

Vertical

Specifications

| Model | Graduation (mm) | Range (mm) | Reading | Accuracy MPE (μm) | | | | | Measuring force less than(N) |
|---------|-----------------|------------|-------------|-------------------|--------|-----------------------------|------------|---------------|------------------------------|
| | | | | 10 Scale | 1 Rev. | Wide-range Forward accuracy | Hysteresis | Repeatability | |
| PC-1AR | 0.01 | 0.5 | 0 - 25 - 0 | 5 | — | 6 | 4 | 3 | 0.4 |
| PC-1BR | 0.01 | 0.8 | 0 - 40 - 0 | 5 | — | 9 | 4 | 3 | 0.4 |
| PC-1LR | 0.01 | 1.0 | 0 - 50 - 0 | 5 | — | 10 | 5 | 3 | 0.4 |
| PC-2R | 0.002 | 0.28 | 0 - 140 - 0 | 2 | — | 4 | 3 | 1 | 0.4 |
| PCN-1AR | 0.01 | 0.5 | 0 - 25 - 0 | 5 | — | 6 | 4 | 3 | 0.3 |
| PCN-1BR | 0.01 | 0.8 | 0 - 40 - 0 | 5 | — | 9 | 4 | 3 | 0.3 |
| PCN-1LR | 0.01 | 1.0 | 0 - 50 - 0 | 5 | — | 10 | 5 | 3 | 0.3 |
| PCN-2R | 0.002 | 0.28 | 0 - 140 - 0 | 2 | — | 4 | 3 | 1 | 0.3 |
| PCN-2BR | 0.002 | 0.2 | 0 - 100 - 0 | 2 | — | 4 | 3 | 1 | 0.3 |
| PCN-SR | 0.001 | 0.14 | 0 - 70 - 0 | 2 | — | 4 | 3 | 1 | 0.3 |
| PCN-5R | 0.01 | 0.5 | 0 - 25 - 0 | 5 | — | 6 | 4 | 3 | 0.3 |
| PCN-6R | 0.002 | 0.28 | 0 - 140 - 0 | 2 | — | 4 | 3 | 1 | 0.3 |

Special Type Test Indicators

Without fixed Stem "V" series

- **Without fixed stem**
This is suited for users, who do not mount the indicator by fixed Stem.
- **Dovetail Stems are available**
Mount the indicator by Dovetail on 3 positions on the body. Dovetail Stem, DS-4 (φ4), DS-6 (φ6) and DS-8 (φ8) are available as optional accessories.
- **Miniature Bearing used**
The miniature bearing used as a bearing at the pivot of the contact point to show good indication stability.
- **Contact Point for Gauge anti-breakage**
All of our pic test indicator has gauge anti-breakage contact point.
- **O-ring used**
Oil resistance is enhanced by seating the O-ring between inner and outer frames.

PC-1AV
Graduation: 0.01mm
Range: 0.5mm
● Change Lever type
● Contact Point No. XP1A-2

PC-1BV
Graduation: 0.01mm
Range: 0.8mm
● Change Lever type
● Contact Point No. XP1B-2

PC-1LV
Graduation: 0.01mm
Range: 1.0mm
● Change Lever type
● Contact Point No. XP1L-2

PC-2V
Graduation: 0.002mm
Range: 0.28mm
● Change Lever type
● High accuracy
● Contact Point No. XP2-2

PCN-1AV
Graduation: 0.01mm
Range: 0.5mm
● Without Change Lever type
● Contact Point No. XN1A-2

PCN-1BV
Graduation: 0.01mm
Range: 0.8mm
● Without Change Lever type
● Contact Point No. XN1B-2

PCN-1LV
Graduation: 0.01mm
Range: 1.0mm
● Without Change Lever type
● Contact Point No. XN1L-2

PCN-2V
Graduation: 0.002mm
Range: 0.28mm
● Without Change Lever type
● High accuracy
● Contact Point No. XN2-2

PCN-2BV
Graduation: 0.002mm
Range: 0.2mm
● Without Change Lever type
● High accuracy
● Contact Point No. XN2B-2

PCN-SV
Graduation: 0.001mm
Range: 0.14mm
● Without Change Lever type
● High accuracy
● Contact Point No. XNS-2

Specifications

| Model | Graduation (mm) | Range (mm) | Reading | Accuracy MPE (μm) | | | | | Measuring force less than(N) |
|---------|-----------------|------------|-------------|-------------------|--------|-----------------------------|------------|---------------|------------------------------|
| | | | | 10 Scale | 1 Rev. | Wide-range Forward accuracy | Hysteresis | Repeatability | |
| PC-1AV | 0.01 | 0.5 | 0 - 25 - 0 | 5 | — | 6 | 4 | 3 | 0.4 |
| PC-1BV | 0.01 | 0.8 | 0 - 40 - 0 | 5 | — | 9 | 4 | 3 | 0.4 |
| PC-1LV | 0.01 | 1.0 | 0 - 50 - 0 | 5 | — | 10 | 5 | 3 | 0.4 |
| PC-2V | 0.002 | 0.28 | 0 - 140 - 0 | 2 | — | 4 | 3 | 1 | 0.4 |
| PCN-1AV | 0.01 | 0.5 | 0 - 25 - 0 | 5 | — | 6 | 4 | 3 | 0.3 |
| PCN-1BV | 0.01 | 0.8 | 0 - 40 - 0 | 5 | — | 9 | 4 | 3 | 0.3 |
| PCN-1LV | 0.01 | 1.0 | 0 - 50 - 0 | 5 | — | 10 | 5 | 3 | 0.3 |
| PCN-2V | 0.002 | 0.28 | 0 - 140 - 0 | 2 | — | 4 | 3 | 1 | 0.3 |
| PCN-2BV | 0.002 | 0.2 | 0 - 100 - 0 | 2 | — | 4 | 3 | 1 | 0.3 |
| PCN-SV | 0.001 | 0.14 | 0 - 70 - 0 | 2 | — | 4 | 3 | 1 | 0.3 |

PIC TEST / NEW PIC TEST PC • PCN

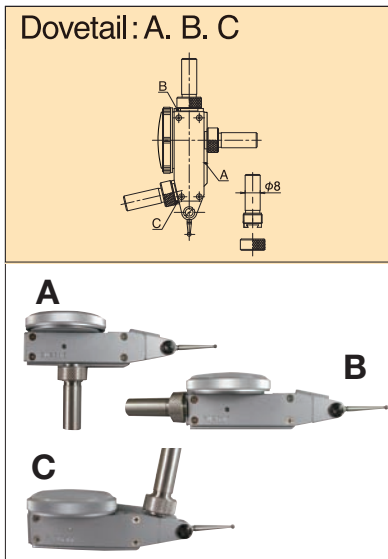
"DS8V" series

- We can provide all of our PIC TEST/NEW PIC TEST with $\phi 8$ mm Dovetail Stem to meet with your holding device.
(except Model PC-1BW, PC-1LW)



Set in Case

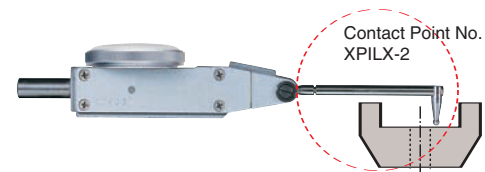
Example



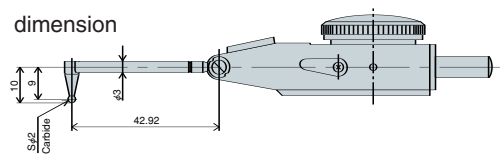
Right Angle Contact Point for PIC TEST (PAT.No.3065810)

Unique Contact Point not existing before! Contact Point Part No. XPILX-2

A Contact Point end bent at a right has made it possible to make a measurement of an object that used to be impossible to measure! Set the Contact Point so that it is horizontal and perpendicular to work.



The Contact Point enable a measurement of a recessed portion located at the back of a project portion that would not be possible by the use of an existing Contact Point.



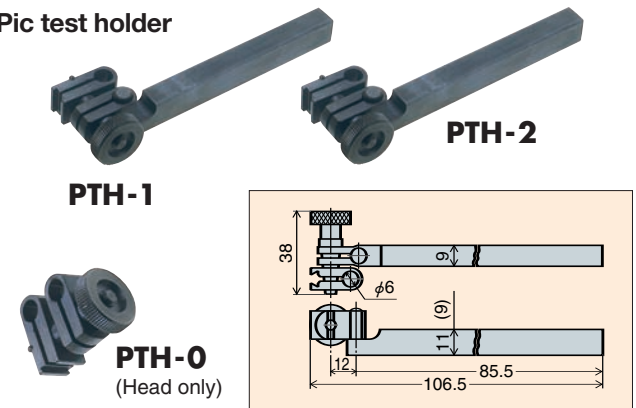
Also makes it possible to measure the parallelism and run-out of grooves on different levels.

Accessories (Option)

● Replaceable contact point (carbide ball)

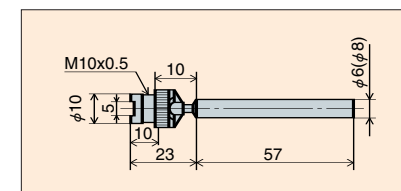


● Pic test holder



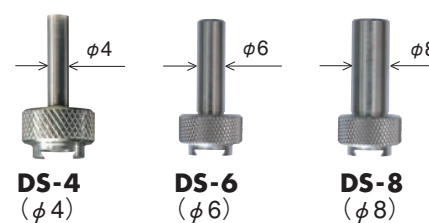
PTH-1 • 2 () PTH-2

● Universal holder

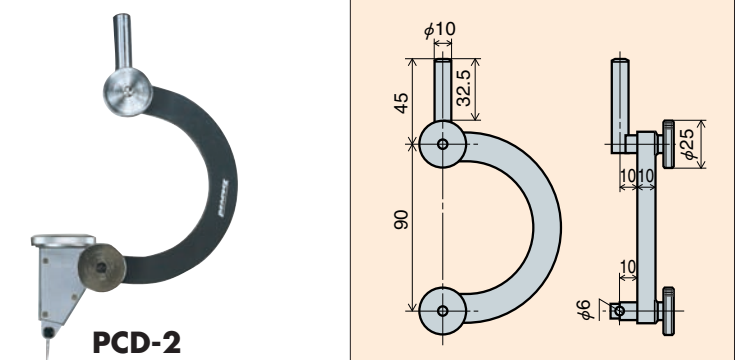


PTH-3 • 4 () PTH-4

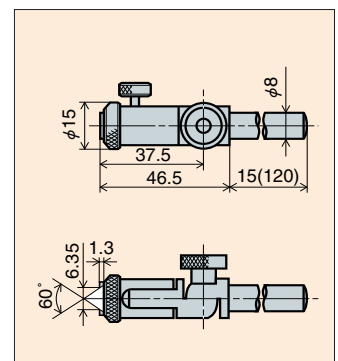
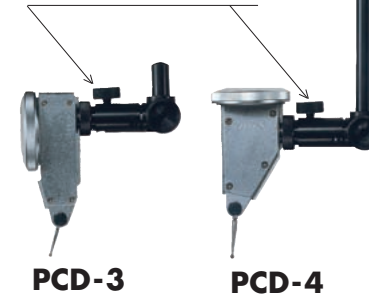
● Dovetail stem



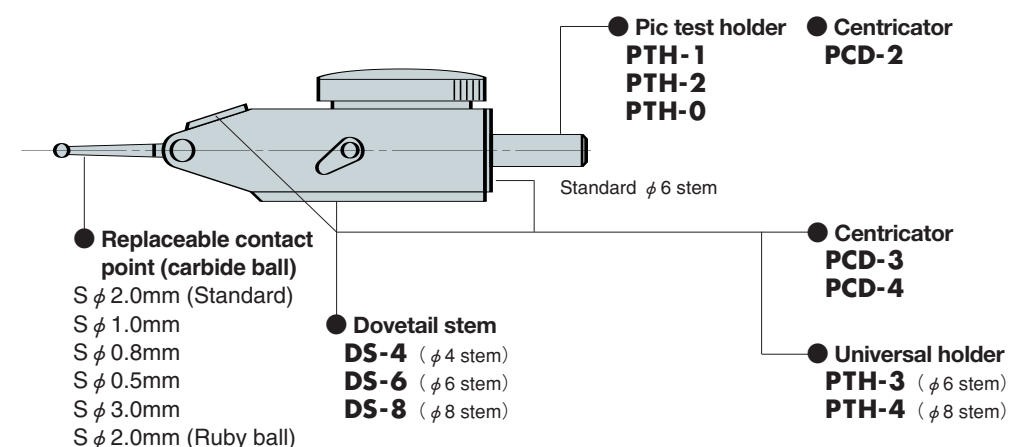
● Centricator (Pic Test Indicators supplied on request)



with fine adjustment

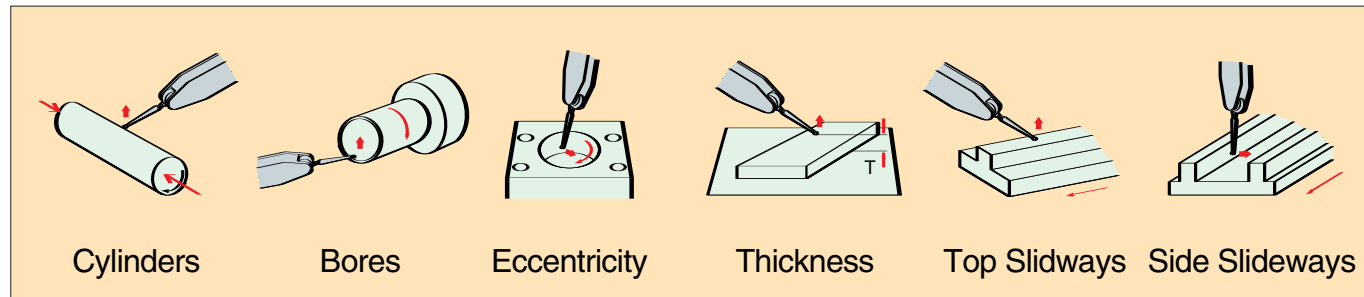


() PCD-4



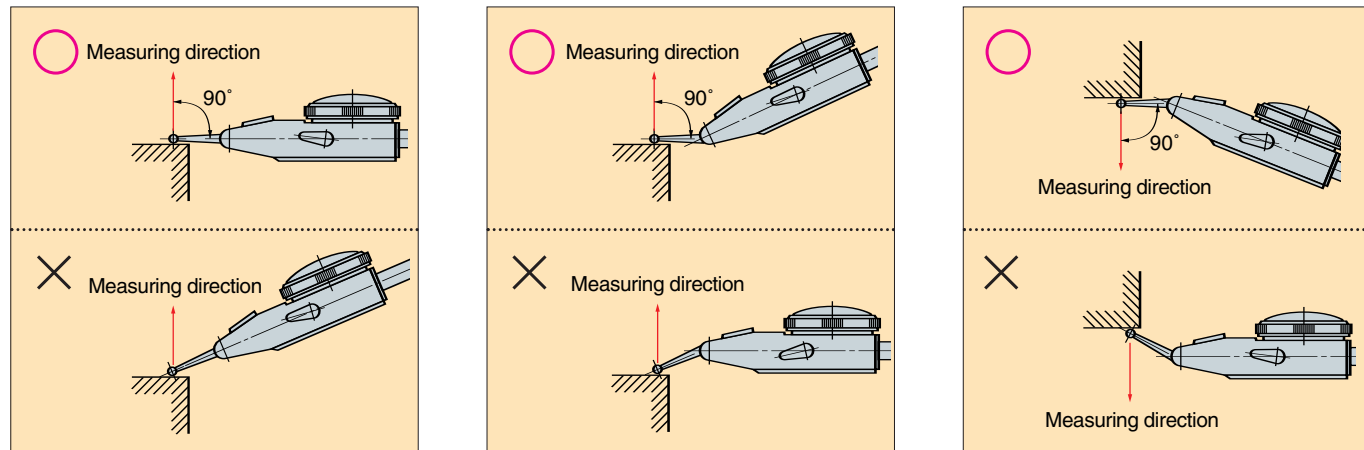
Dimensions of Lever Type Dial Indicators

Applied Examples



Precautions for Handling

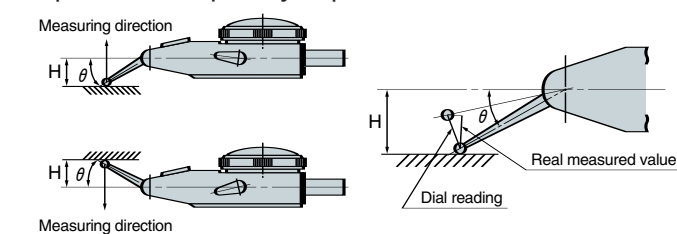
- Dial gauges shall be used by being fixed to a rigid retainer to prevent the influence of flexure or the like. In measurement, the measuring direction shall be made perpendicular to the center line of the measuring probe.



- In case they are not perpendicular, a correction by the following formula is necessary:** Due to various measuring direction, the contact point sometimes can not be angled perpendicular to the measuring device.

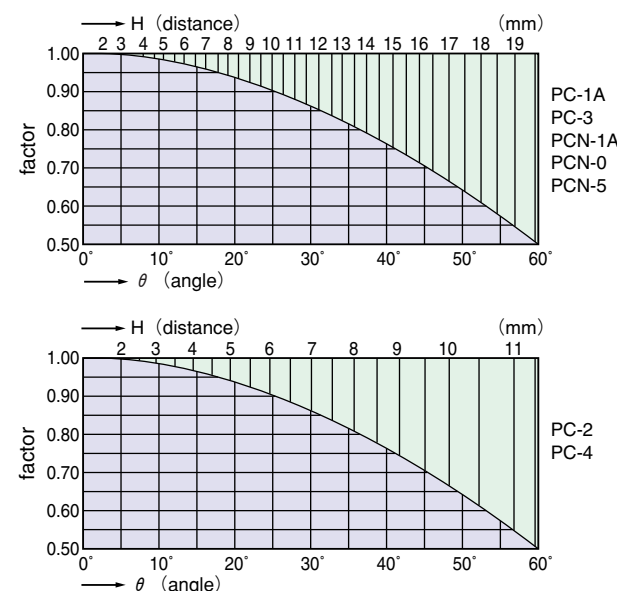
Examples the diagrams below, where the measuring probe is set at a non-perpendicular angles and the distance between the pivot of the contact point and the measuring device is signified by the letter H:

Displacement = quantity of pointer movement x COS θ



Example:
Using a PC-1A indicator, suppose the degree of angle is 30° and the Pic Test reading is 0.05mm. The factor for the PC-1A indicator from the graph is 0.87.
 $0.05\text{mm} \times 0.87 = 0.0435 = 0.043\text{mm}$

- When modification is not necessary:** If the measuring tolerance is 10% and the graph factor is above 0.9, modification by calculation is unnecessary.



Lever type Dial Indicator

New

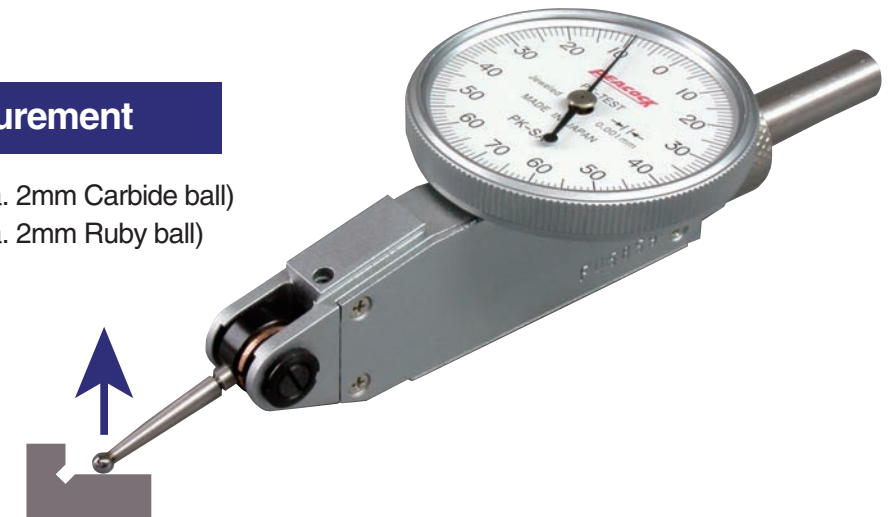
PK-TEST

World's first 0.001mm Graduation Lever type Indicator with Long Contact Point (14.18mm).

- It is possible to enable the longer contact point by New Mechanism. (Utility Model Registration No.3206149)
- Longer Contact Point can be reached your measurement work-piece.
- Contact Point is selectable "Carbide ball" or "Ruby ball".

Upward direction measurement

Model No. PK-SA (with dia. 2mm Carbide ball)
Model No. PK-SAR (with dia. 2mm Ruby ball)



Downward direction measurement

Model No. PK-SB (with dia. 2mm Carbide ball)
Model No. PK-SBR (with dia. 2mm Ruby ball)

Specifications

| Model | Contact Point | Direction of Measurement | Graduation (mm) | Range (mm) | Wide-range forward accuracy (μm) | 10 scale indication error (μm) | Hysteresis (μm) | Repeatability (μm) | Accessory |
|--------|---------------|--------------------------|-----------------|------------|----------------------------------|--------------------------------|-----------------|--------------------|----------------------------|
| PK-SA | Carbide | Upward | 0.001 | 0.14 | 4.0 | 2.0 | 3.0 | 1.0 | Dovetail Stem φ 6mm (DS-6) |
| PK-SAR | Ruby | | | | | | | | |
| PK-SB | Carbide | Downward | 0.001 | 0.14 | 4.0 | 2.0 | 3.0 | 1.0 | Dovetail Stem φ 6mm (DS-6) |
| PK-SBR | Ruby | | | | | | | | |

Please purchase PK series after checking the direction of your measurement.
(PK series has no change Lever and no function to change direction automatically.)

Lever type Dial Indicator

PK-TEST

Certificate of Inspection is attached.

We attach Certificate of Inspection at the time of inspection.

| CERTIFICATE OF INSPECTION 検査成績書 | |
|---------------------------------------|-----------------------------|
| Product Name : PK-TEST | Measuring range : 0.5mm |
| Model : PC-1A | Scale interval : 0.01mm |
| Serial No. : F10082 | Temperature : 20°C~27°C |
| Inspection standard : JIS B 7533-2015 | Relative humidity : 40%~70% |
| 最大許容誤差 Terrible error unit : μ m | 測定誤差 Error |
| 全周長範囲内指示誤差 Accuracy | 0.0 |
| 10分度指示誤差 1/10 rev. | 0.0 |
| 1分度指示誤差 1 rev. | 0.0 |
| 2分度指示誤差 2 rev. | 0.0 |
| 繰返し精度 Repeatability | 0.7 |
| 判定 Judgment | 合格 Passed |

最良は指針停止点から0.05mm離れた位置を基点として行きと戻りを測定した結果です。

行き
戻り

0.00 0.10 0.20 0.30 0.40 0.50mm

OZAKI MFG. CO., LTD.

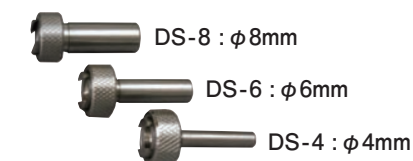
Attached Certificate of Inspection cannot be used as Calibration Certificate.
Apply for Calibration Certificate when you Purchase products.

Crystal is formed by press-molding special acrylic plate.

Special acrylic plate is superior to injection molding material in "Oil-proof", "Chemical resistance" and "Transparency" and it is formed by a press work as convex R shape.

Hold by Dovetail Stem.

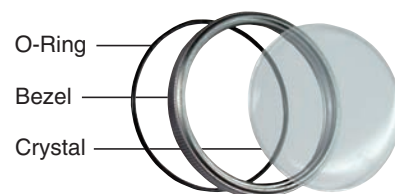
Dovetail Stem can be hold by 3 positions dovetail groove. (Upper, Lower and Back side positions.)
There are 3 kinds of diameter ϕ 4, ϕ 6 and ϕ 8mm. (PK series is including ϕ 6mm as standard but you can choose ϕ 4 or ϕ 8mm.)



3 positions dovetail groove.

Protect "Crystal" by Bezel made of Metal.

Bezel is made of Metal, it prevents "Crystal" from damage and deformation.
Even if a scratch is generated on Crystal, it is easy to exchange only "Crystal".
There is no aged deterioration on Bezel made of Metal and even if using for a long time. it would be easy to turn Bezel and adjust Zero setting smoothly.



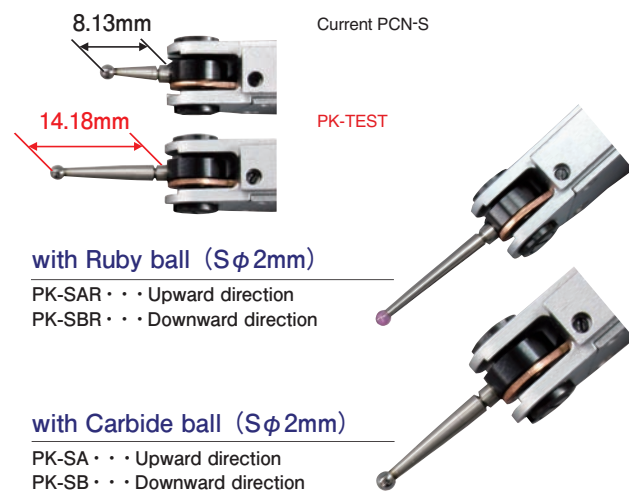
Even if using for long hours, white color of Dial Plate is comfort on the eyes.

Dial Plate based on white color allows an easy view of Pointer and reducing fatigue of the eyes.



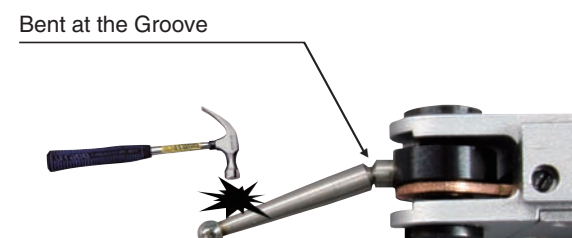
Contact Point gets Longer.

PK-TEST enables 6.05mm longer than the conventional 0.001mm Graduation type.



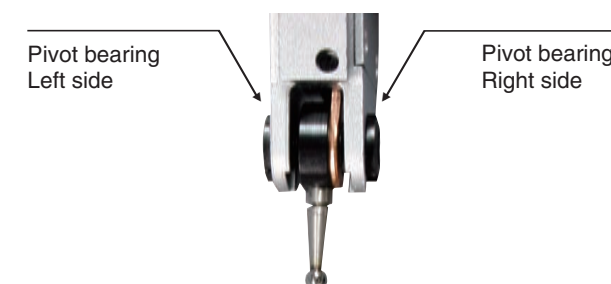
Contact Point with groove of anti-break.

When a force is applied to Contact Point, it is bent at the groove to protect body and only exchange broken Contact Point. (Apply to all our Pic Test Indicators)



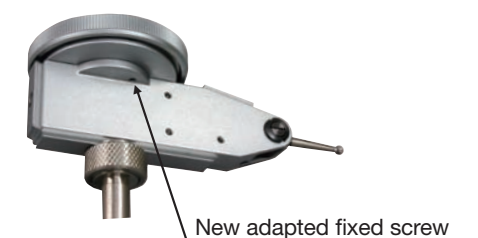
Lever supporting point is used with Pivot bearing with both left and right side

Unique structure using Pivot bearing used with both side of left and right is high reliable and keeps high repeatability even if using for a long time.
(Apply to all Pic Test indicators)



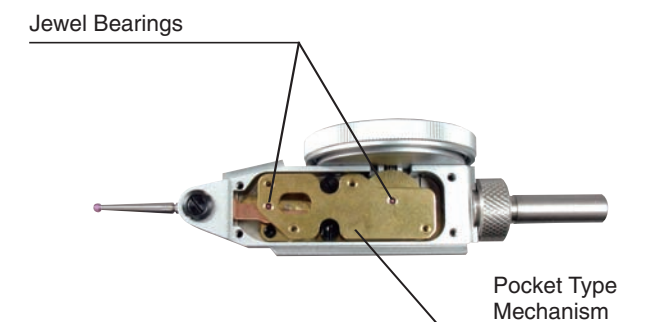
Prevent looseness by 3 points screws.

In PK series, adapt new body and base metal for 3 points fixing screws, which more strengthens the fixing force.



Mechanism with easy maintenance even using for a long time.

It is possible to repair by the same movement method of a clock and keeping durability of bearing due to Jewel.
(Apply to all Pic Test Indicators)

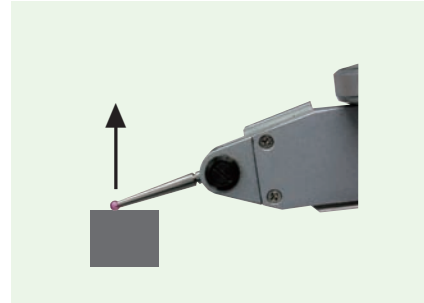


Lever type Dial Indicator

PK-TEST

Upward Measurement

PK-SA
PK-SAR



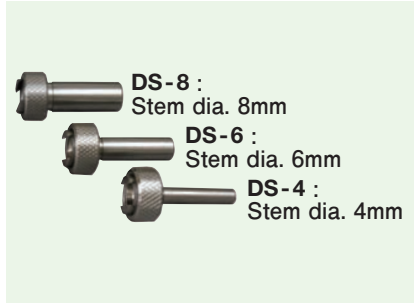
Contact Point (Carbide)

for PK-SA
for PK-SB



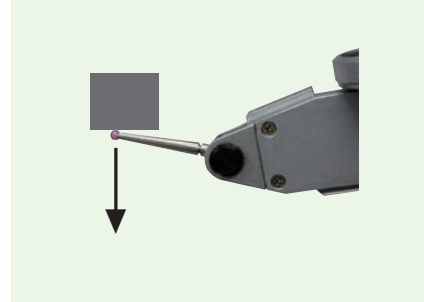
Dovetail Stem

Standard Accessory : DS-6
Option : DS-4 and DS-8



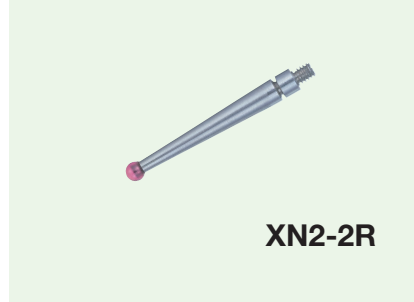
Downward Measurement

PK-SB
PK-SBR



Contact Point (Ruby)

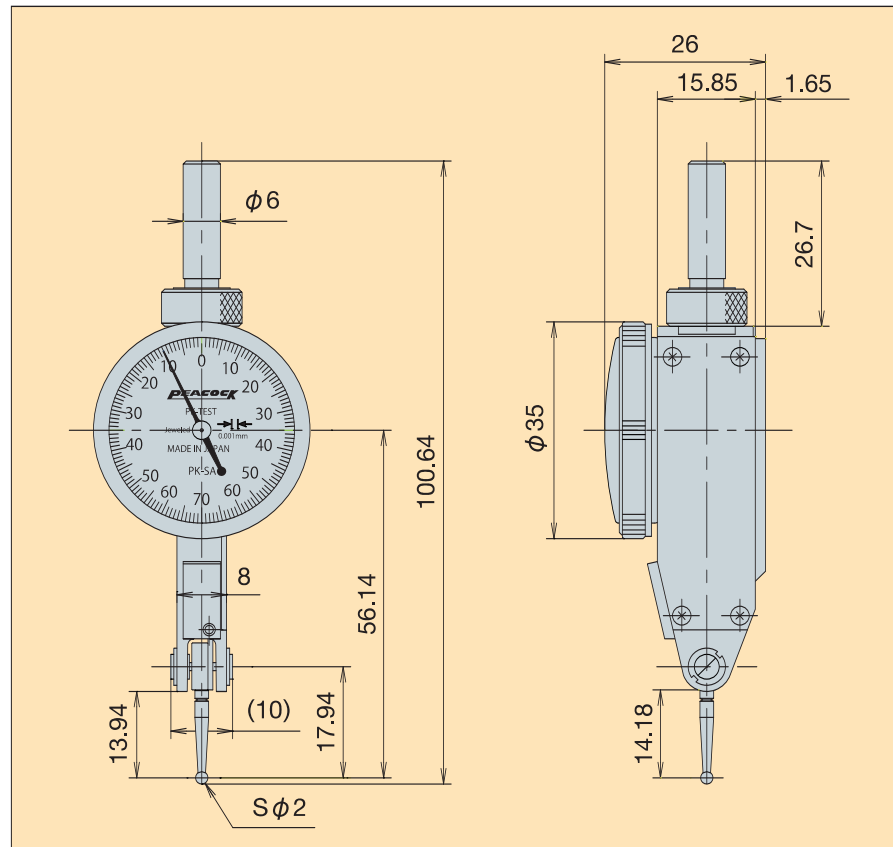
for PK-SAR
for PK-SBR



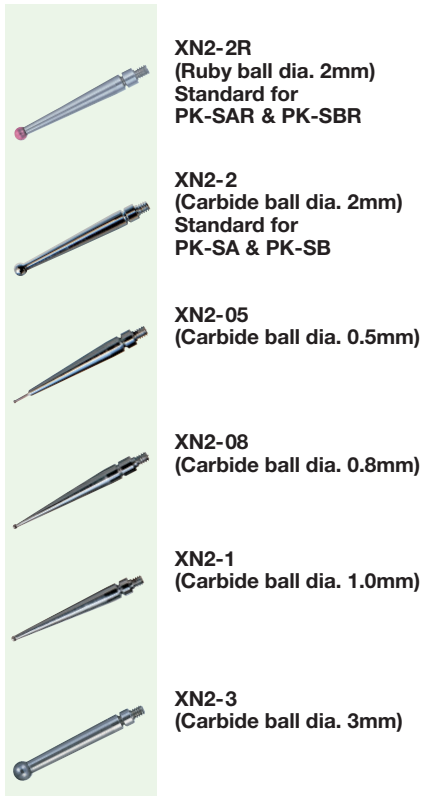
Mounting Position of Dovetail Stem



Dimensions



Replaceable Contact Points



SECTION 3



Cylinder Gauges

- Standard Cylinder Gauges
CC Series
CG Series
- Special Cylinder Gauges
S Series
- "R" Series

3

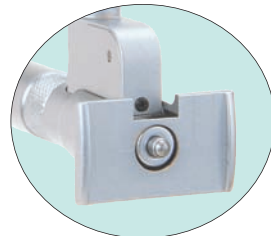
Standard Cylinder Gauges

JIS B 7515

CC series

Peacock offers a complete line of Dial Bore Gauges with interchangeable anvils and necessary accessories to perform close tolerance measurements of holes, taper and roundness.

- Dial gauge mounting knob is very simple of and sure avoiding demerit of collet-system.
- The contact point is tungsten carbide ball.
- The standard ball tipped at the replacement rod is made of steel.
The sintered hard-alloy ball is also available to tip.
- Wide range accuracy.....5 μ m or less
Adjacent error.....2 μ m or less
Repeated accuracy.....2 μ m or less
- Effective measuring range is 0.5 mm (CC-02 CC-01)
- Effective measuring range is 1.2 mm (CC-1 to CC-6)



CC-2 head details



Specifications

| Model | Range (mm) | Length below grip (mm) | Number of Feelers (mm) | Thickness of Washers (mm) |
|-------|------------|------------------------|------------------------|---------------------------|
| CC-02 | 6 ~ 10 | 50 | Intervals 0.5 mm x 9 | — |
| CC-01 | 10 ~ 18 | 100 | Intervals 1 mm x 9 | 0.5 mm |
| CC-1 | 18 ~ 35 | 150 | Intervals 2 mm x 9 | 0.5, 1 mm each |
| CC-2 | 35 ~ 60 | 150 | Intervals 5 mm x 6 | 1,2,3 mm each |
| CC-3 | 50 ~ 100 | 150 | Intervals 5 mm x 11 | 1,2,3 mm each |
| CC-3C | 50 ~ 150 | 150 | Intervals 5 mm x 11 | 1,2,3 mm each |
| CC-4 | 100 ~ 160 | 250 | Intervals 10 mm x 7 | 1,2,3,4 mm each |
| CC-5 | 160 ~ 250 | 250 | Intervals 10 mm x 10 | 1,2,3,4 mm each |
| CC-6 | 250 ~ 400 | 400 | Intervals 10 mm x 16 | 1,2,3,4 mm each |

※Dial gauge is not furnished and supplied only on request. Suitable dial gauges are 17Z, 57B (0.01mm) and 15Z, 5F (0.001mm).

● List of special length below grip (available on request)

| | L=50 (mm) | L=100 (mm) | L=200 (mm) | L=300 (mm) | L=400 (mm) | L=500 (mm) | L=600 (mm) | L=700 (mm) | L=800 (mm) | L=900 (mm) | L=1000 (mm) | L=1500 (mm) | L=2000 (mm) |
|-------|-----------|------------|------------|------------|------------|------------|------------|------------|------------|------------|-------------|-------------|-------------|
| CC-01 | ● | standard | ● | ● | — | — | — | — | — | — | — | — | — |
| CC-1 | CC-1S | ● | ● | ● | ● | ● | — | — | — | — | — | — | — |
| CC-2 | CC-2S | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● |
| CC-3 | CC-3S | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● |
| CC-3C | CC-3CS | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● |
| CC-4 | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● |
| CC-5 | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● |
| CC-6 | ● | ● | ● | ● | standard | ● | ● | ● | ● | ● | ● | ● | ● |

● More than L=600mm for CC-2 can not measure from 35 to 44mm and can measure from 45 to 60mm ID.

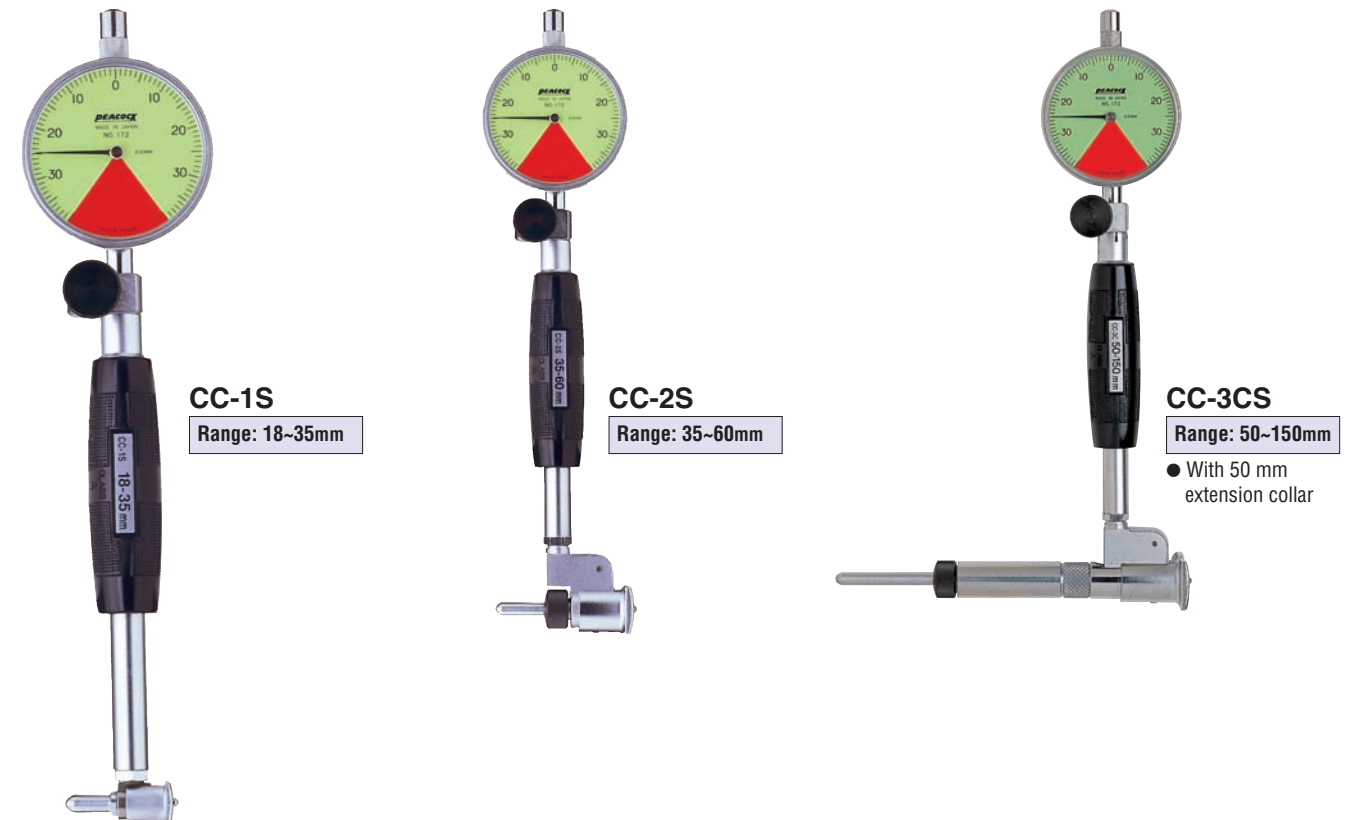
Short Size Cylinder Gauges

S series

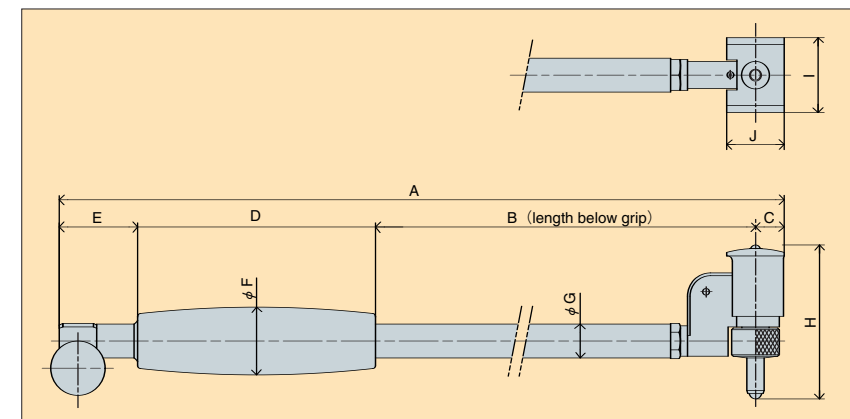
This is a compact cylinder gauge with a length below grip of 50 mm.

It is used when a standard item is too long to measure the object or a shorter length of below grip is required for conveniently.

Specifications are same as standard model.



Outer Dimension



Dimension

| Model | A | B | C | D | E | F | G | H | I | J |
|--------|-------|-------|------|-----|----|----|----|---------|-----|------|
| CC-1 | 249 | 150 | 5.75 | 70 | 23 | 20 | 10 | 18~35 | 13 | 11.5 |
| CC-2 | 251.5 | 150 | 8.5 | 70 | 23 | 20 | 10 | 35~60 | 22 | 17 |
| CC-3 | 253 | 150 | 9 | 70 | 23 | 20 | 10 | 50~100 | 30 | 18 |
| CC-3C | 253 | 150 | 9 | 70 | 23 | 20 | 10 | 50~150 | 30 | 18 |
| CC-4 | 370 | 250 | 12 | 85 | 23 | 25 | 13 | 100~160 | 50 | 24 |
| CC-5 | 391.5 | 251.5 | 14 | 100 | 26 | 25 | 16 | 160~250 | 70 | 28 |
| CC-6 | 540 | 400 | 14 | 100 | 26 | 25 | 16 | 250~400 | 100 | 28 |
| CC-1S | 150 | 50 | 5.75 | 70 | 23 | 20 | 10 | 18~35 | 13 | 11.5 |
| CC-2S | 151.5 | 50 | 8.5 | 70 | 23 | 20 | 10 | 35~60 | 22 | 17 |
| CC-3S | 152 | 50 | 9 | 70 | 23 | 20 | 10 | 50~100 | 30 | 18 |
| CC-3CS | 152 | 50 | 9 | 70 | 23 | 20 | 10 | 50~150 | 30 | 18 |



Standard Cylinder Gauges



Short Size Cylinder Gauges

Cylinder Gauges (Blind Hole Type)

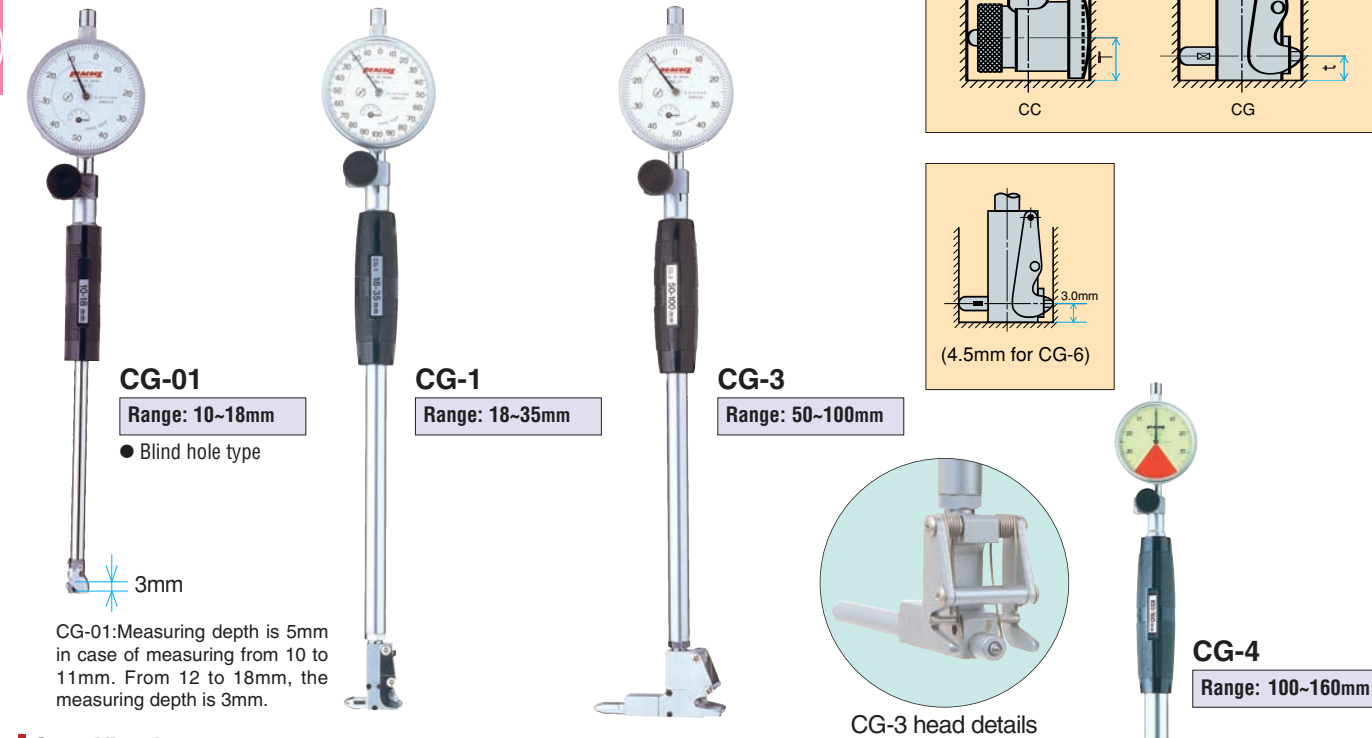
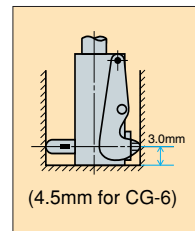
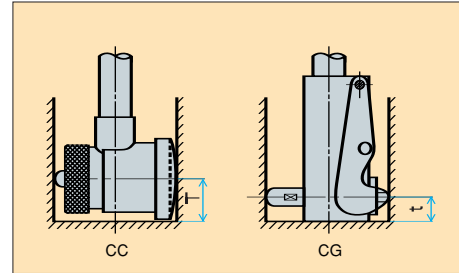
CG series

If using a CC type cylinder gauge for blind hole bore diameter, its guide plate interrupt the measurement at a point deeper than "T", as shown in the figure below.

In such case, the CG type with modified guide plate is suitable for measurement of the diameter to the point as deep as "t".

- Wide range accuracy...5 μ m or less
- Adjacent error...2 μ m or less
- Repeated accuracy...2 μ m or less
- Effective measuring range is 0.5 mm (CG-01)
- Effective measuring range is 1.2 mm (CG-1 to CG-6)

Applied Example



Specifications

| Model | Range (mm) | Length below grip (mm) | Number of Feelers (mm) | Thickness of Washers (mm) |
|-------|------------|------------------------|------------------------|---------------------------|
| CG-01 | 10 ~ 18 | 100 | Intervals 1 mm x 9 | 0.5 mm each |
| CG-1 | 18 ~ 35 | 150 | Intervals 2 mm x 9 | 0.5, 1 mm each |
| CG-2 | 35 ~ 60 | 150 | Intervals 5 mm x 6 | 0.5, 1, 2, 3 mm each |
| CG-3 | 50 ~ 100 | 150 | Intervals 5 mm x 11 | 0.5, 1, 2, 3 mm each |
| CG-3C | 50 ~ 150 | 150 | Intervals 5 mm x 11 | 0.5, 1, 2, 3 mm each |
| CG-4 | 100 ~ 160 | 250 | Intervals 10 mm x 7 | 1, 2, 3, 4 mm each |
| CG-5 | 160 ~ 250 | 250 | Intervals 10 mm x 10 | 1, 2, 3, 4 mm each |
| CG-6 | 250 ~ 400 | 400 | Intervals 10 mm x 16 | 1, 2, 3, 4 mm each |

※ Dial gauge is not furnished and supplied only on request. Suitable dial gauges are 17Z, 57B (0.01mm) and 15Z, 5F (0.001mm).

※ CG-3C includes 50 mm extension collar.

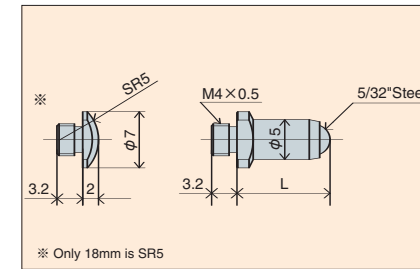
※ In general, it is the range from the origin, that is the position where the plunger is pushed in by 0.1 mm, to the position where the plunger is pushed in further by 1.2 mm.

List of special length below grip (available on request)

| | L=50 (mm) | L=100 (mm) | L=150 (mm) | L=200 (mm) | L=250 (mm) | L=300 (mm) | L=400 (mm) | L=500 (mm) | L=600 (mm) | L=700 (mm) | L=800 (mm) | L=900 (mm) | L=1000 (mm) |
|-------|-----------|------------|------------|------------|------------|------------|------------|------------|------------|------------|------------|------------|-------------|
| CG-01 | ○ | standard | ○ | ○ | ○ | ○ | | | | | | | |
| CG-1 | ○ | ○ | standard | ○ | ○ | ○ | ○ | ○ | | | | | |
| CG-2 | ○ | ○ | standard | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ |
| CG-3 | ○ | ○ | standard | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ |
| CG-3C | ○ | ○ | standard | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ |
| CG-4 | ○ | ○ | ○ | ○ | standard | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ |
| CG-5 | ○ | ○ | ○ | ○ | standard | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ |
| CG-6 | ○ | ○ | ○ | ○ | ○ | ○ | standard | ○ | ○ | ○ | ○ | ○ | ○ |

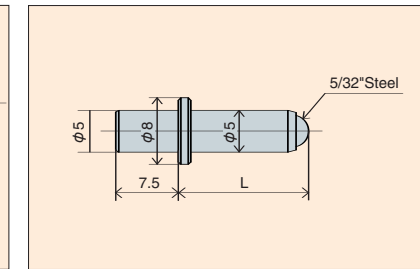
Dimensions for Feeler and Washer for Cylinder Gauges

CC-1 Feeler



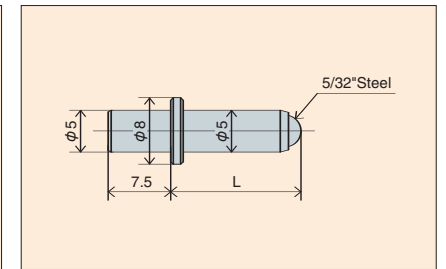
| Model | Size (mm) | L (mm) |
|-------------|-----------|--------|
| CC-1 Feeler | *18 | 2 |
| | 20 | 4 |
| | 22 | 6 |
| | 24 | 8 |
| | 26 | 10 |
| | 28 | 12 |
| | 30 | 14 |
| | 32 | 16 |
| | 34 | 18 |

CC-2 Feeler



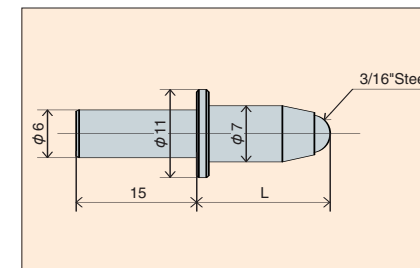
| Model | Size (mm) | L (mm) |
|-------------|-----------|--------|
| CC-2 Feeler | 35 | 5 |
| | 40 | 10 |
| | 45 | 15 |
| | 50 | 20 |
| | 55 | 25 |
| | 60 | 30 |

CC-3·3C Feeler



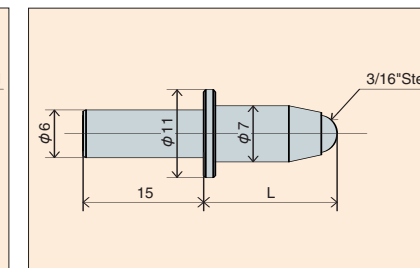
| Model | Size (mm) | L (mm) |
|----------------|-----------|--------|
| CC-3·3C Feeler | 50 | 5 |
| | 55 | 10 |
| | 60 | 15 |
| | 65 | 20 |
| | 70 | 25 |
| | 75 | 30 |
| | 80 | 35 |
| | 85 | 40 |
| | 90 | 45 |
| | 95 | 50 |
| | 100 | 55 |

CC-4 Feeler



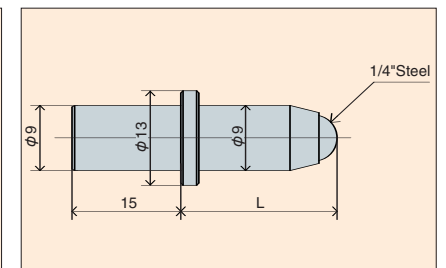
| Model | Size (mm) | L (mm) |
|-------------|-----------|--------|
| CC-4 Feeler | 100 | 10 |
| | 110 | 20 |
| | 120 | 30 |
| | 130 | 40 |
| | 140 | 50 |
| | 150 | 60 |
| | 160 | 70 |

CC-5 Feeler



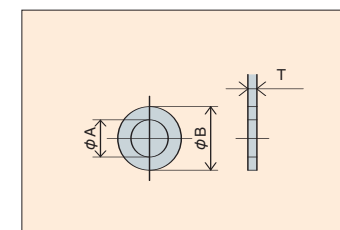
| Model | Size (mm) | L (mm) |
|-------------|-----------|--------|
| CC-5 Feeler | 160 | 10 |
| | 170 | 20 |
| | 180 | 30 |
| | 190 | 40 |
| | 200 | 50 |
| | 210 | 60 |
| | 220 | 70 |
| | 230 | 80 |
| | 240 | 90 |
| | 250 | 100 |

CC-6 Feeler



| Model | Size (mm) | L (mm) |
|-------------|-----------|--------|
| CC-6 Feeler | 250 | 10 |
| | 260 | 20 |
| | 270 | 30 |
| | 280 | 40 |
| | 290 | 50 |
| | 300 | 60 |
| | 310 | 70 |
| | 320 | 80 |
| | 330 | 90 |
| | 340 | 100 |
| | 350 | 110 |
| | 360 | 120 |
| | 370 | 130 |
| | 380 | 140 |
| | 390 | 150 |
| | 400 | 160 |

CC-1~6 Washer



| Model | T (mm) | A (mm) | B (mm) |
|---------|------------|--------|--------|
| CC-1 | 0.5, 1 | 4.1 | 7 |
| CC-2 | 1, 2, 3 | 5.1 | 8 |
| CC-3·3C | 1, 2, 3 | 5.1 | 8 |
| CC-4 | 1, 2, 3, 4 | 6.1 | 10 |
| CC-5 | 1, 2, 3, 4 | 6.1 | 10 |
| CC-6 | 1, 2, 3, 4 | 9.1 | 13 |

Cylinder Gauges

CC•CG-R series

Do you have any trouble when measuring internal diameter?

If so, we offer more radii of Contact Point & Feeler for Cylinder Gauges "R" Series.

- Wide range accuracy...5 μ m or less
- Adjacent error...2 μ m or less
- Repeated accuracy...2 μ m or less

CC-1R



CC-3R



Specifications for CC-"R" series

| Model | Range | Length below grip | Number of feelers | Thickness of washers | Extension collar |
|--------|----------|-------------------|--------------------|----------------------|------------------|
| CC-01R | 10~ 18mm | 100mm | Intervals 0.5mm× 9 | 0.5mm | — |
| CC-1R | 18~ 35mm | 150mm | Intervals 2mm× 9 | 0.5, 1mm each | — |
| CC-2R | 35~ 60mm | 150mm | Intervals 5mm× 6 | 1, 2, 3mm each | — |
| CC-3R | 50~100mm | 150mm | Intervals 5mm× 11 | 1, 2, 3mm each | — |
| CC-3CR | 50~150mm | 150mm | Intervals 5mm× 11 | 1, 2, 3mm each | 50mm |

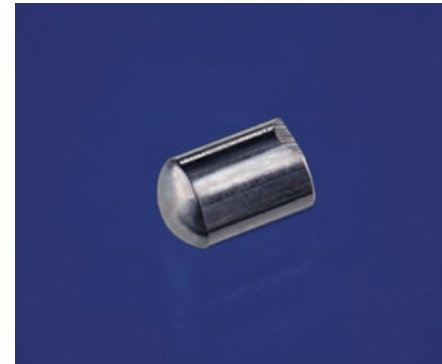
Specifications for CG-"R" series

| Model | Range | Length below grip | Number of feelers | Thickness of washers | Extension collar |
|--------|----------|-------------------|--------------------|----------------------|------------------|
| CG-01R | 10~ 18mm | 100mm | Intervals 0.5mm× 9 | 0.5mm | — |
| CG-1R | 18~ 35mm | 150mm | Intervals 2mm× 9 | 0.5, 1mm each | — |
| CG-2R | 35~ 60mm | 150mm | Intervals 5mm× 6 | 0.5, 1, 2, 3mm each | — |
| CG-3R | 50~100mm | 150mm | Intervals 5mm× 11 | 0.5, 1, 2, 3mm each | — |
| CG-3CR | 50~150mm | 150mm | Intervals 5mm× 11 | 0.5, 1, 2, 3mm each | 50mm |

Note: CG-01, in case 10~11mm measurement, the measuring depth is 5mm but 11~18mm is 3mm measuring depth.

Contact Point Hv700±50 (Tip heat treatment and hardened)

CC-01R
CG-01R



CC-1R · CG-1R · CG-2R
CG-3R · CG-3CR



CC-2R · CC-3R
CC-3CR



Feeler Hv700±50 (Tip heat treatment and hardened)

CC-01R
CG-01R



CC-1R

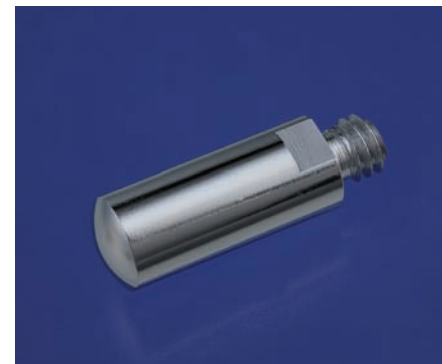


CC-2R · CC-3R
CC-3CR



Feeler Hv700±50 (Tip heat treatment and hardened)

CG-1R

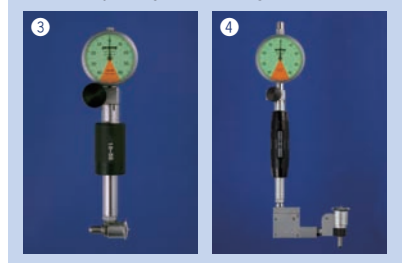


CG-2R · CG-3R
CG-3CR



"R" Series Cylinder Gauges can be made Special Production as following:

- 1 Long Size of Length below grip Cylinder Gauge
- 2 Short Size of Length below grip Cylinder Gauge
- 3 Short Size of the overall length Cylinder Gauge
- 4 L-shaped Cylinder Gauge



Dimensions for Feeler and Washer for R series Cylinder Gauges:

CC-01R Feeler

Size 10mm Size 11~18mm

CC-1R Feeler

Size 18mm Size 20~34mm

CC-2R Feeler

Size 20~34mm

CC-3R • CC-3CR Feeler

Size 20~34mm

CG-01R Feeler

Size 10mm Size 11~18mm

CG-1R Feeler

Size 18mm Size 20~34mm

CG-2R Feeler

Size 20~34mm

CG-3R • CG-3CR Feeler

Size 20~34mm

R type Washer

| Size (mm) | L (mm) | Size (mm) | L (mm) |
|-----------|--------|-----------|--------|
| 10 | 1.5 | 15 | 6.5 |
| 11 | 2.5 | 16 | 7.5 |
| 12 | 3.5 | 17 | 8.5 |
| 13 | 4.5 | 18 | 9.5 |
| 14 | 5.5 | | |

| Size (mm) | L (mm) | Size (mm) | L (mm) |
|-----------|--------|-----------|--------|
| 18 | 2 | 28 | 12 |
| 20 | 4 | 30 | 14 |
| 22 | 6 | 32 | 16 |
| 24 | 8 | 34 | 18 |
| 26 | 10 | | |

| Size (mm) | L (mm) | Size (mm) | L (mm) |
|-----------|--------|-----------|--------|
| 35 | 5 | 50 | 20 |
| 40 | 10 | 55 | 25 |
| 45 | 15 | 60 | 30 |

| Size (mm) | L (mm) | Size (mm) | L (mm) |
|-----------|--------|-----------|--------|
| 50 | 5 | 80 | 35 |
| 55 | 10 | 85 | 40 |
| 60 | 15 | 90 | 45 |
| 65 | 20 | 95 | 50 |
| 70 | 25 | 100 | 55 |
| 75 | 30 | | |

| Size (mm) | L (mm) | Size (mm) | L (mm) |
|-----------|--------|-----------|--------|
| 10 | 1.5 | 15 | 6.5 |
| 11 | 2.5 | 16 | 7.5 |
| 12 | 3.5 | 17 | 8.5 |
| 13 | 4.5 | 18 | 9.5 |
| 14 | 5.5 | | |

| Size (mm) | L (mm) | Size (mm) | L (mm) |
|-----------|--------|-----------|--------|
| 18 | 2 | 28 | 12 |
| 20 | 4 | 30 | 14 |
| 22 | 6 | 32 | 16 |
| 24 | 8 | 34 | 18 |
| 26 | 10 | | |

| Size (mm) | L (mm) | Size (mm) | L (mm) |
|-----------|--------|-----------|--------|
| 35 | 5 | 50 | 20 |
| 40 | 10 | 55 | 25 |
| 45 | 15 | 60 | 30 |

| Size (mm) | L (mm) | Size (mm) | L (mm) |
|-----------|--------|-----------|--------|
| 50 | 5 | 80 | 35 |
| 55 | 10 | 85 | 40 |
| 60 | 15 | 90 | 45 |
| 65 | 20 | 95 | 50 |
| 70 | 25 | 100 | 55 |
| 75 | 30 | | |

| Model | T | A | B |
|----------------|-----------------|-----|-----|
| CC01-R | 0.5 | 3.1 | 4.5 |
| CC-1R | 0.5 • 1 | 4.1 | 7 |
| CC-2R | 1 • 2 • 3 | 5.1 | 8 |
| CC-3R • CC-3CR | 1 • 2 • 3 | 5.1 | 8 |
| CG01-R | 0.5 | 3.1 | 4.5 |
| CG-1R | 0.5 • 1 | 4.1 | 5 |
| CG-2R | 0.5 • 1 • 2 • 3 | 4.1 | 6 |
| CG-3R • CG-3CR | 0.5 • 1 • 2 • 3 | 4.1 | 6 |

SECTION 4



Inch Scale Dial Indicators

- Dial Gages
- Dial Gages (Metric)
- Pic Test Indicators
- Dial Bore Gage Sets
- Dial Thickness Gage

4

Dial Gages

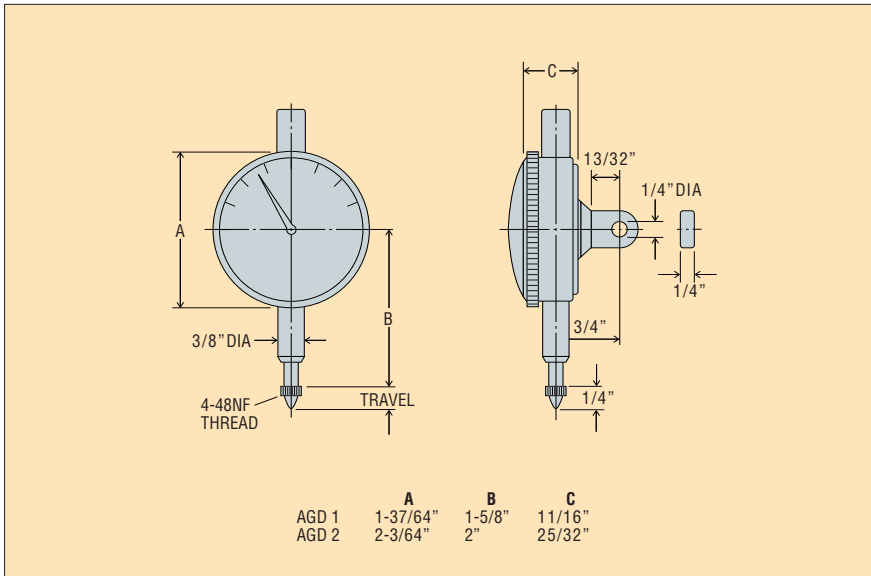
0.001"

- Easy-reading distinct graduations.
- Inch models have standard black needles and white dial faces or new high visibility orange needles and black faces. Metric models have yellow dial faces. (see page 76)
- Hard, satin-chrome finish.
- Superior quality of spindle rack, pinions and gear trains ensure longevity.
- Meets or exceeds applicable US federal specifications.
- Conforms to AGD specifications.

Dimensions



1200
Graduation: 0.001"
Range: 0.2"
● Lug back



| | | | |
|-------|----------|--------|--------|
| | A | B | C |
| AGD 1 | 1-37/64" | 1-5/8" | 11/16" |
| AGD 2 | 2-3/64" | 2" | 25/32" |



1330
Graduation: 0.001"
Range: 1.0"
● Lug back



1330B
Graduation: 0.001"
Range: 1.0"
● Lug back



1310
Graduation: 0.001"
Range: 0.50"
● Lug back



1310B
Graduation: 0.001"
Range: 0.50"
● Lug back

0.001"



1364
Graduation: 0.001"
Range: 2.0"
● Lug back



1364B
Graduation: 0.001"
Range: 2.0"
● Lug back

0.0001"



1440
Graduation: 0.0001"
Range: 0.05"
● Lug back



1440B
Graduation: 0.0001"
Range: 0.05"
● Lug back



1460
Graduation: 0.0001"
Range: 0.05"
● Flat back

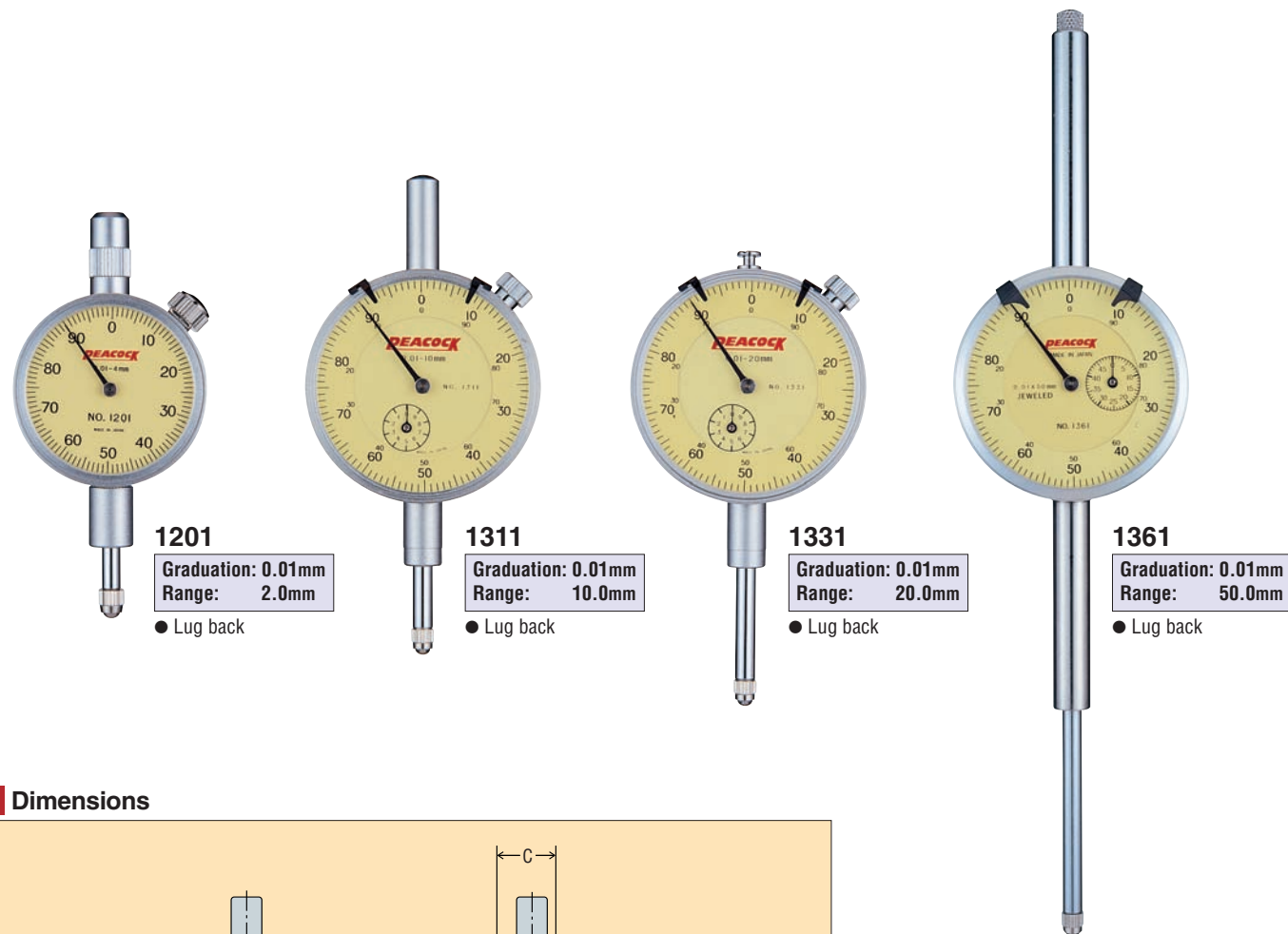


1460B
Graduation: 0.0001"
Range: 0.05"
● Flat back

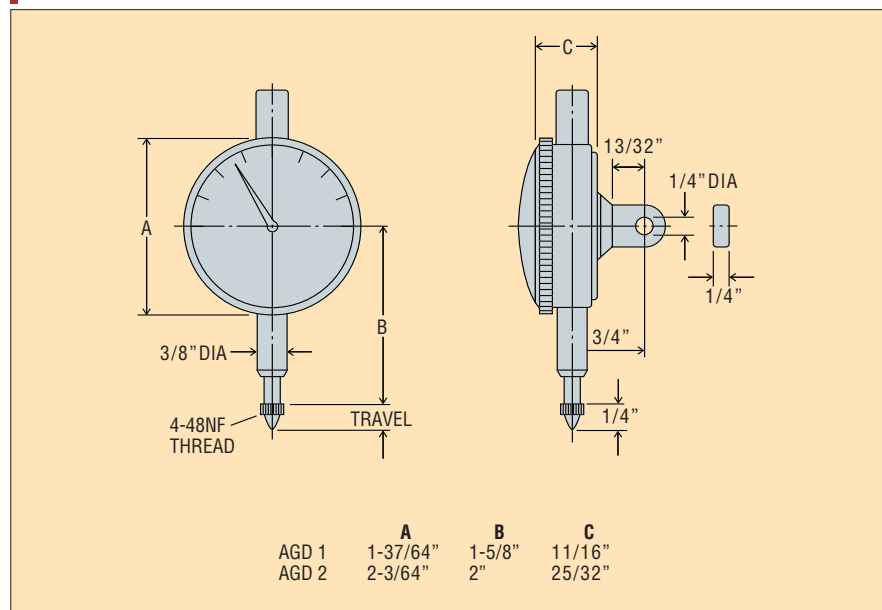
Specifications

| White face Model No. | Black face Model No. | Measuring range | Graduation | Reading | Wide range forward accuracy | Retrace error | Measuring force (less than) | Back Config. | AGD |
|----------------------|----------------------|-----------------|------------|-----------|-----------------------------|---------------|-----------------------------|--------------|-----|
| 1200 | — | .20" | .001" | ±0-50-100 | .0008" | .0003" | 1.4N | Lug | 1 |
| 1330 | 1330B | 1.0" | .001" | ±0-50-100 | .002" | .0004" | 2.0N | Lug | 2 |
| 1310 | 1310B | .50" | .001" | ±0-50-100 | .001" | .0003" | 1.8N | Lug | 2 |
| 1364 | 1364B | 2.0" | .001" | ±0-50-100 | .004" | .0004" | 2.5N | Lug | 2 |
| 1440 | 1440B | .05" | .0001" | ±0-5-10 | .0003" | .0002" | 1.5N | Lug | 2 |
| 1460 | 1460B | .05" | .0001" | 0-5-0 | .0003" | .0002" | 1.5N | Flat | 2 |

4 Metric Graduations 0.01mm



Dimensions



Specifications

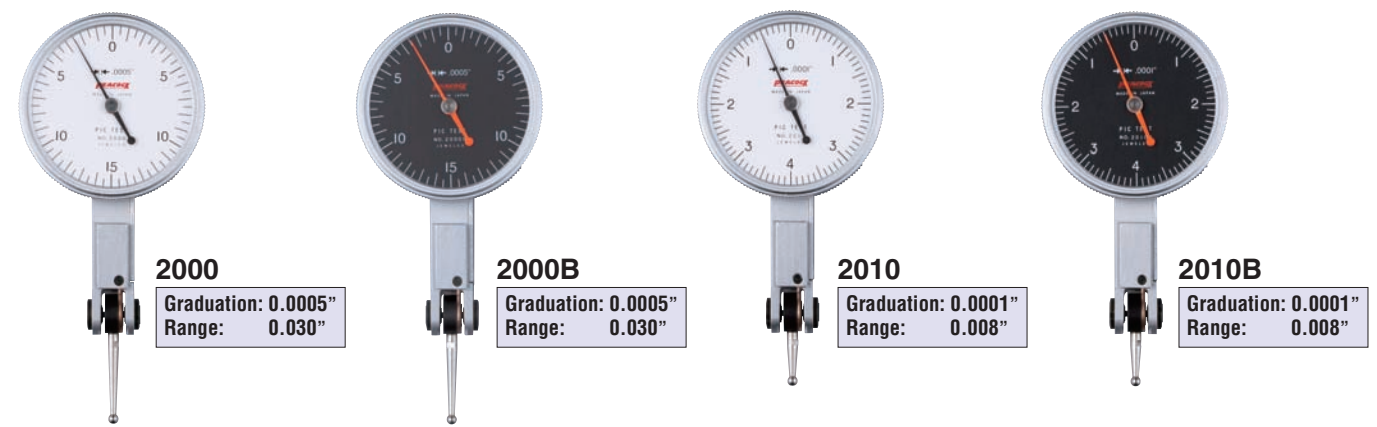
| Model No. | Measuring range | Graduation | Reading | Wide range forward accuracy | Retrace error | Measuring force (less than) | Back Config. | AGD |
|-----------|-----------------|------------|-----------|-----------------------------|---------------|-----------------------------|--------------|-----|
| 1201 | 4.0mm | 0.01mm | ±0-50-100 | 12 μm | 3 μm | 1.4N | Lug | 1 |
| 1311 | 10.0mm | 0.01mm | ±0-50-100 | 15 μm | 3 μm | 1.4N | Lug | 2 |
| 1331 | 20.0mm | 0.01mm | ±0-50-100 | 25 μm | 4 μm | 2.2N | Lug | 2 |
| 1361 | 50.0mm | 0.01mm | ±0-50-100 | 50 μm | 5 μm | 2.5N | Lug | 2 |

Pic Test Indicators

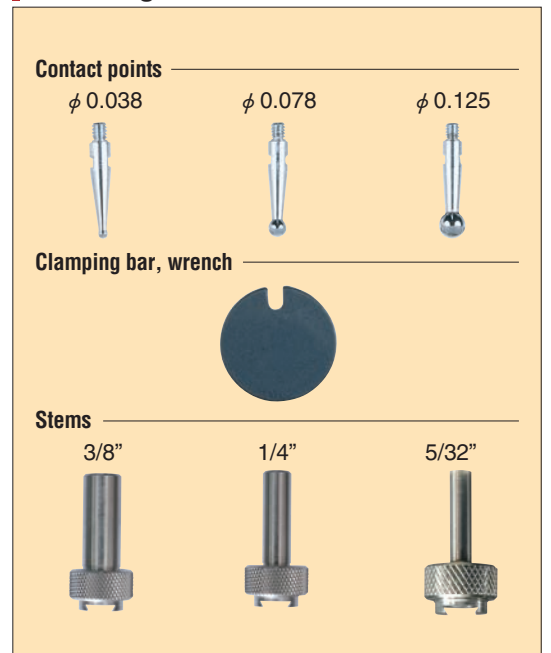
- Auto-reversing.
- Comes complete with .038", .078", .125" dia hardchromed contact points, Clamping bars, wrench and three stems: 3/8", 1/4" and 5/32".
- 180° swing on point and shaft.
- Fully jeweled movements.

- White face models have black needles, numbers and graduations. Black face models have bright, fluorescent orange needles with white numbers and graduations.
- Dial diameter is 1-3/8".
- Universal positioning capability.
- Dovetails on top, back & front.
- Excellent rigid
- Non-magnetic

Horizontal Type



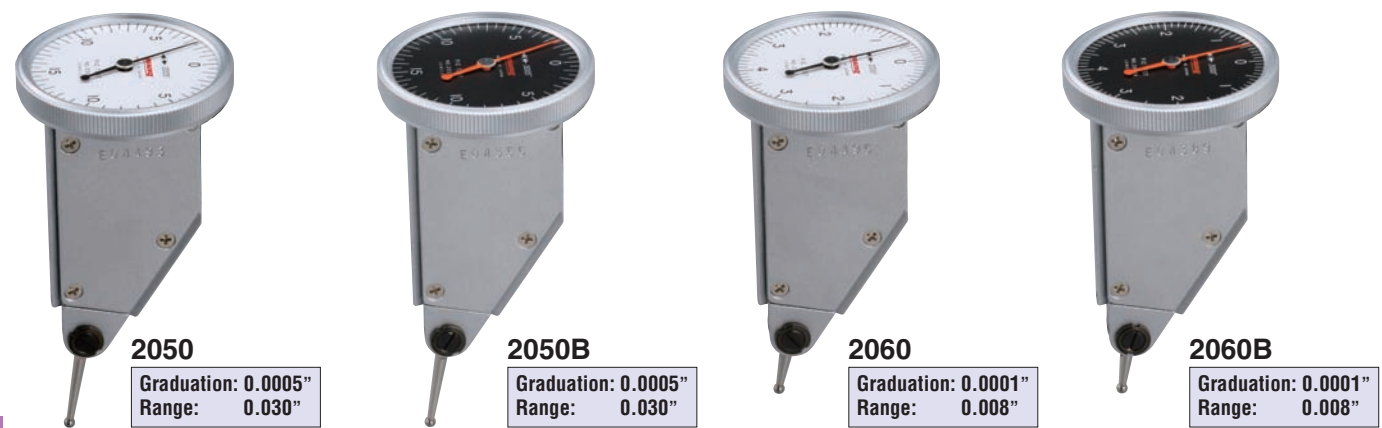
Set Configurations



Specifications

| White face Model No. | Black face Model No. | Measuring range | Graduation | Reading | Wide range forward accuracy | Backward error | Measuring force (less than) | Contact point length |
|----------------------|----------------------|-----------------|------------|---------|-----------------------------|----------------|-----------------------------|----------------------|
| 2000 | 2000B | .030" | .0005" | 0-15-0 | .0005" | .0003" | 0.3N | .750" |
| 2010 | 2010B | .008" | .0001" | 0-4-0 | .0003" | .0002" | 0.3N | .375" |
| 2030 | 2030B | .040" | .0005" | 0-20-0 | .0010" | .0003" | 0.3N | 1.750" |

Vertical Type

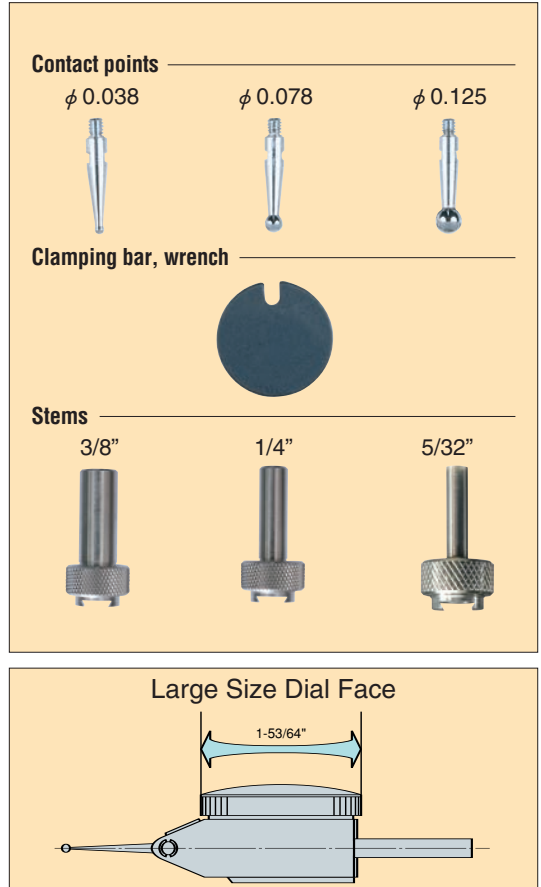


Large Size Dial Face Type

The dial plate size of 2200, 2200B, 2210, and 2210B models has been enlarged, with easy reading due to the larger scale spacing, as a result.



Set Configurations



Specifications

| White face Model No. | Black face Model No. | Measuring range | Graduation | Reading | Wide range forward accuracy | Backward error | Measuring force (less than) | Contact point length |
|----------------------|----------------------|-----------------|------------|---------|-----------------------------|----------------|-----------------------------|----------------------|
| 2050 | 2050B | .030" | .0005" | 0-15-0 | .0005" | .0003" | 0.3N | .750" |
| 2060 | 2060B | .008" | .0001" | 0-4-0 | .0003" | .0002" | 0.3N | .375" |
| 2200 | 2200B | .030" | .0005" | 0-15-0 | .0005" | .0003" | 0.3N | .750" |
| 2210 | 2210B | .008" | .0001" | 0-4-0 | .0003" | .0002" | 0.3N | .375" |

Dial Bore Gage Sets

- Each set includes a high quality ADG2 Dial indicator with .0001" graduations. High precision, combined with ultra smooth movement, makes this the set for the most demanding users.
- Set comes complete with protective cover and fitted case.
- For close tolerance measurements of hole sizes, ID taper dimensions and roundness.
- Each set includes a reference chart, clearly specifying Spacer and Feeler sizes, for each measurement range.



5730 complete set



Specifications

| White face Model No. | Black face Model No. | Range | Wide range accuracy | Adjacent error | Repeated error | Length below Grip | Number of Feeler | Number of Spacer |
|----------------------|----------------------|------------|---------------------|----------------|----------------|-------------------|------------------|------------------|
| 5710 | 5710B | .250-.400" | .0002" | .00008" | .00008" | 1-31/32" | 8 | — |
| 5730 | 5730B | .370-.750" | .0002" | .00008" | .00008" | 3-15/16" | 10 | 1 |
| 5740 | 5740B | .750-1.50" | .0002" | .00008" | .00008" | 5-29/32" | 8 | 2 |
| 5750 | 5750B | 1.50-2.50" | .0002" | .00008" | .00008" | 5-29/32" | 6 | 2 |
| 5770 | 5770B | 2.00-6.00" | .0002" | .00008" | .00008" | 5-29/32" | 11 | 2 |
| 5790 | 5790B | 6.00-10.0" | .0002" | .00008" | .00008" | 9-29/32" | 9 | 4 |

Dial Thickness Gage

- Designed for quick and accurate measurement of small parts, sheet metal, paper, fabric, etc.
- Convenient, one-handed operation.
- Preloaded spindle for consistent measuring pressure.
- Adjustable zero setting with bezel.
- Baked enamel finish.
- Distinct, fine graduations for easy reading.
- Spindle made of hardened steel.



Specifications

| Model No | Range | Graduation | Throat depth | Accuracy | Measuring force (less than) |
|----------|-------|------------|--------------|----------|-----------------------------|
| 4600 | .50" | .001" | .78" | .0010" | 1.8N |



● For measuring thickness of paper

SECTION

5



Gauge Testers

- NB
- CCT-2

5

Gauge Tester

(Dial Indicator Testing Equipment)

Dial Gauge Tester Model NB

- This is a calibration tester having a high precision micrometer with the minimum scale of 1 μ m. It can be used in order to calibrate dial gauges as well as other displacement gauges.
- The stancion is vertically adjustable according to the type of gauges and reading is done while looking at the scale plate and the cursor line.



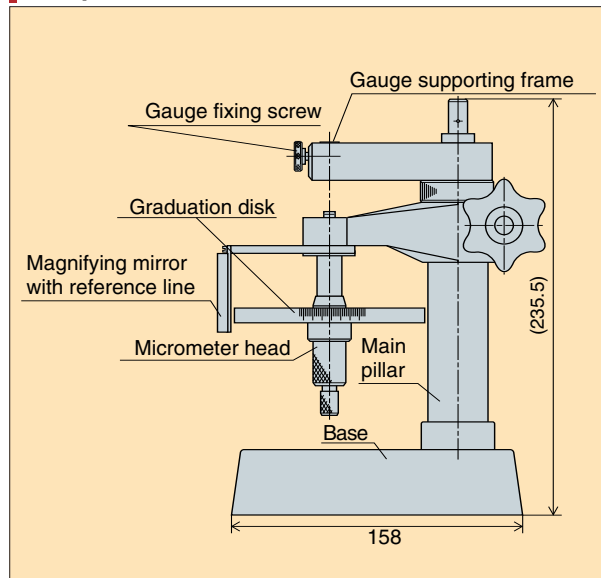
● Lever-type dial gauge



● Back plunger type dial gauge



Component Names



Specifications

| Model | Micrometer head | | Forward Accuracy (μ m) | Feed per revolution (mm) | Spindle tip | Gauge fixing dimension (mm) |
|-------|------------------|------------------------|-----------------------------|--------------------------|--------------|-----------------------------|
| | Graduation (mm) | Measurement Range (mm) | | | | |
| NB | 0.001(1 μ m) | 20 | under ± 1 | 0.5/rev. | Carbide chip | 8mm dia. 10mm dia. |

Gauge Tester

(Cylinder Gauge Testing Equipment)

Cylinder Gauge Tester Model CCT-2

- This is a calibration tester used exclusively for cylinder gauges having a high precision micrometer with the minimum scale of 1 μ m.
- An outer cylinder is held erectly so that deflection may not affect the measurements and a center rod for pressing is provided on the moving bed in order to prevent from errors due to the difference of measuring force.



● Inspection of dial gauges is also possible.



Cylinder gauges to be possibly inspected

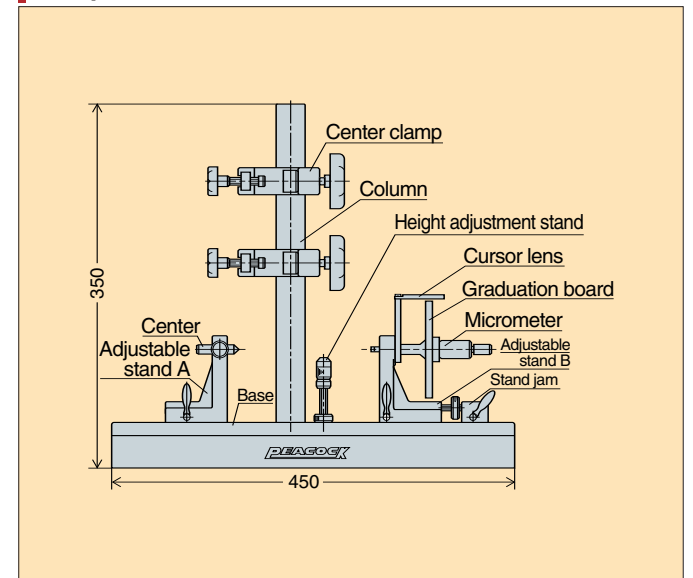
- All the cylinder gauges of JIS B 7515 Standards
- All the CC and CG models of "PEACOCK"

| | | | |
|----------------|----------------|------------------|------------------|
| ϕ 6~10mm | ϕ 18~35mm | ϕ 50~100mm | ϕ 160~250mm |
| ϕ 10~18mm | ϕ 35~60mm | ϕ 100~160mm | ϕ 250~400mm |

Specifications

| Model | Micrometer head | | Forward Accuracy (μ m) | Feed per revolution (mm) | Spindle tip |
|-------|-----------------|------------------------|-----------------------------|--------------------------|--------------|
| | Graduation (mm) | Measurement Range (mm) | | | |
| CCT-2 | 0.001 | 20 | under ± 1 | 0.5/rev. | Carbide chip |

Component Names



MEMO

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SECTION 6



Thickness Gauges

- Dial Thickness Gauges (0.01mm, 0.001mm)
- Dial Swift Gauge
- Paper Thickness Gauge
- Dial Thickness Gauges (Large Type) (0.01mm, 0.05mm)
- Dial Thickness Gauge (Roller Type)
- Dial Sheet Gauges (0.01mm, 0.05mm)
- Dial Pipe Gauges
- Dial Lens Gauge
- Dial Upright Gauges
- Constant Pressure Thickness Gauge

Dial Thickness Gauges

0.01mm type

These thickness gauges are especially handy for measuring thickness of small parts, metal, rubber, vinyl, paper, foil and other sheet material.

- The objects to be measured is clamped by simple lever operation. The measured values are read directly on the dial gauge.
- Since the anvil and the contact point are adjusted for parallelism, accurate measured values are obtained.



G
Graduation: 0.01mm
Range: 0~10mm

- ϕ 10mm flat contact point and anvil (Ceramic)



G-0.4N
Graduation: 0.01mm
Range: 0~10mm

- Measuring force initial pressure 0.4N



G-2.4N
Graduation: 0.01mm
Range: 0~10mm

- Measuring force final pressure 2.4N



G-20
Graduation: 0.01mm
Range: 0~10mm

- ϕ 20mm flat contact point and anvil (Metal)



G-30
Graduation: 0.01mm
Range: 0~10mm

- ϕ 30mm flat contact point and anvil (Metal)



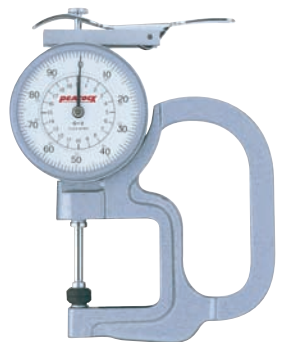
G-1A
Graduation: 0.01mm
Range: 0~10mm

- ϕ 5mm flat contact point and anvil (Metal)



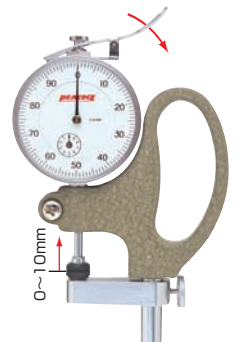
G-1M
Graduation: 0.01mm
Range: 0~10mm

- ϕ 6mm flat contact point and anvil (Ceramic)



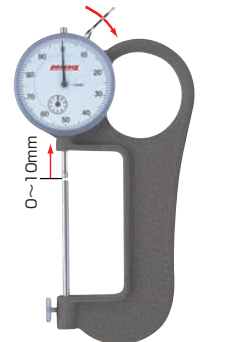
G-2
Graduation: 0.01mm
Range: 0~20mm

- ϕ 10mm flat contact point and anvil (Ceramic)



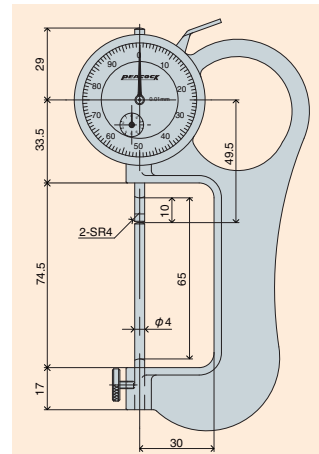
G-3
Graduation: 0.01mm
Range: 30mm

- ϕ 10mm flat contact point and anvil (Ceramic)
- Anvil side is adjustable
- More than 10mm range is comparative measurement.

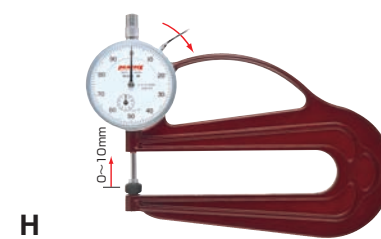


G-4
Graduation: 0.01mm
Range: 65mm

- Spherical contact point
- Anvil side is adjustable
- More than 10mm range is comparative measurement.



- The frame on the anvil side is cut, which to be flush contact point, anvil and frame.



H
Graduation: 0.01mm
Range: 0~10mm

- ϕ 10mm flat contact point and anvil (Ceramic)



H-0.4N
Graduation: 0.01mm
Range: 0~10mm

- Measuring force initial pressure 0.4N



H-2.4N
Graduation: 0.01mm
Range: 0~10mm

- Measuring force final pressure 2.4N



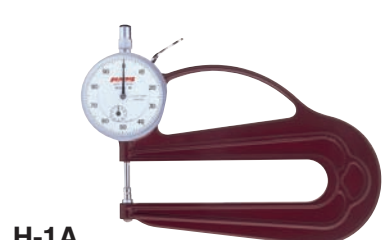
H-20
Graduation: 0.01mm
Range: 0~10mm

- ϕ 20mm flat contact point and anvil (Metal)



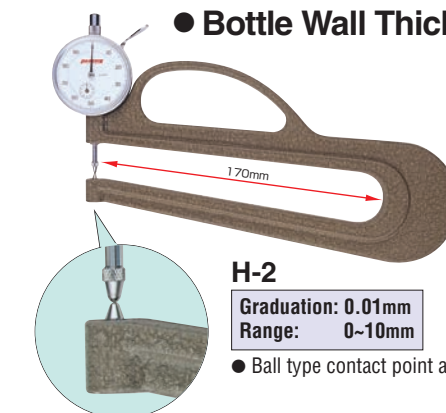
H-30
Graduation: 0.01mm
Range: 0~10mm

- ϕ 30mm flat contact point and anvil (Metal)



H-1A
Graduation: 0.01mm
Range: 0~10mm

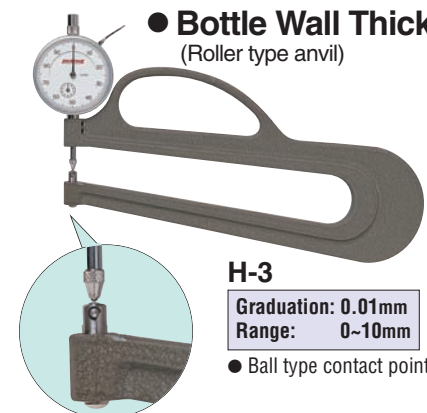
- ϕ 5mm flat contact point and anvil (Metal)



● Bottle Wall Thickness Gauge

H-2
Graduation: 0.01mm
Range: 0~10mm

- Ball type contact point and anvil



● Bottle Wall Thickness Gauge (Roller type anvil)

H-3
Graduation: 0.01mm
Range: 0~10mm

- Ball type contact point and roller type anvil

Specifications

| Model | Graduation (mm) | Range (mm) | Throat depth (mm) | Accuracy (μ m) | Contact Point | | Measuring force less than(N) |
|---------------|-----------------|------------|-------------------|---------------------|---------------|------------------------|------------------------------|
| | | | | | Dia (mm) | Parallelism (μ m) | |
| G | 0.01 | 0~10 | 20 | ± 20 | 10 | 5 | 1.8 |
| G-0.4N | 0.01 | 0~10 | 20 | ± 20 | 10 | 5 | Initial pressure 0.4N |
| G-2.4N | 0.01 | 0~10 | 20 | ± 20 | 10 | 5 | Final pressure 2.4N |
| G-MT | 0.01 | 0~10 | 20 | ± 20 | 10 (Metal) | 5 | 1.8 |
| G-1A | 0.01 | 0~10 | 20 | ± 20 | 5 | 5 | 1.8 |
| G-1M | 0.01 | 0~10 | 20 | ± 20 | 6 | 5 | 1.8 |
| G-2 | 0.01 | 0~20 | 33 | ± 22 | 10 | 5 | 2.0 |
| ※ G-3 | 0.01 | 30 | 20 | ± 20 | 10 | 5 | 1.8 |
| ※ G-4 | 0.01 | 65 | 30 | ± 20 | Spherical | — | 1.8 |
| G-20 | 0.01 | 0~10 | 20 | ± 20 | 20 (Metal) | 15 | 1.8 |
| G-30 | 0.01 | 0~10 | 20 | ± 20 | 30 (Metal) | 20 | 1.8 |
| H | 0.01 | 0~10 | 120 | ± 20 | 10 | 5 | 1.8 |
| H-0.4N | 0.01 | 0~10 | 120 | ± 20 | 10 | 5 | Initial pressure 0.4N |
| H-2.4N | 0.01 | 0~10 | 120 | ± 20 | 10 | 5 | Final pressure 2.4N |
| H-MT | 0.01 | 0~10 | 120 | ± 20 | 10 (Metal) | 5 | 1.8 |
| H-1A | 0.01 | 0~10 | 120 | ± 20 | 5 | 5 | 1.8 |
| H-2 | 0.01 | 0~10 | 170 | ± 20 | Ball type | — | 1.8 |
| H-3 | 0.01 | 0~10 | 170 | ± 20 | Ball type | — | 1.8 |
| H-20 | 0.01 | 0~10 | 120 | ± 20 | 20 (Metal) | 15 | 1.8 |
| H-30 | 0.01 | 0~10 | 120 | ± 20 | 30 (Metal) | 20 | 1.8 |

※ G-3/G-4 : Measuring range of dial gauge is 10mm.

Dial Thickness Gauges

0.001mm type PAT. No. 3052674

- New thickness gauges with 0.001mm graduations.
- Newly developed special frame minimizes inspecting errors resulting from thermal changes. Zero reference point will remain accurate even after many hours of use or extreme swings in temperature.



G-6C
Graduation: 0.001mm
Range: 0~1mm
● ϕ 5mm flat contact point and anvil (Metal)



G-7C
Graduation: 0.001mm
Range: 0~5mm
● ϕ 5mm flat contact point and anvil (Metal)

Specifications

| Model | Graduation (mm) | Range (mm) | Throat depth (mm) | Accuracy (μ m) | Contact Point | | Measuring force less than (N) |
|-------|-----------------|------------|-------------------|---------------------|---------------|------------------------|-------------------------------|
| | | | | | Dia (mm) | Parallelism (μ m) | |
| G-6C | 0.001 | 0~1 | 20 | ± 5 | 5 | 3 | 1.8 |
| G-7C | 0.001 | 0~5 | 20 | ± 10 | 5 | 3 | 1.8 |

Dial Swift Gauge

The dial swift gauge is used for the same purpose as an ordinary micrometer to measure outside sizes.

- The spindle is always pulled upward by the force of the spring. The knob at the top of the gauge is pushed down by finger to clamp an object in measurement.
- It will show its power for measurement of thickness, heights and diameters.



Q-1
Graduation: 0.05mm
Range: 0~25mm

Specifications

| Model | Graduation (mm) | Range (mm) | Throat depth (mm) | Accuracy (μ m) | Contact Point | |
|-------|-----------------|------------|-------------------|---------------------|---------------|------------------------|
| | | | | | Dia (mm) | Parallelism (μ m) |
| Q-1 | 0.05 | 0~25 | 30 | ± 100 | 5.5 | 10 |

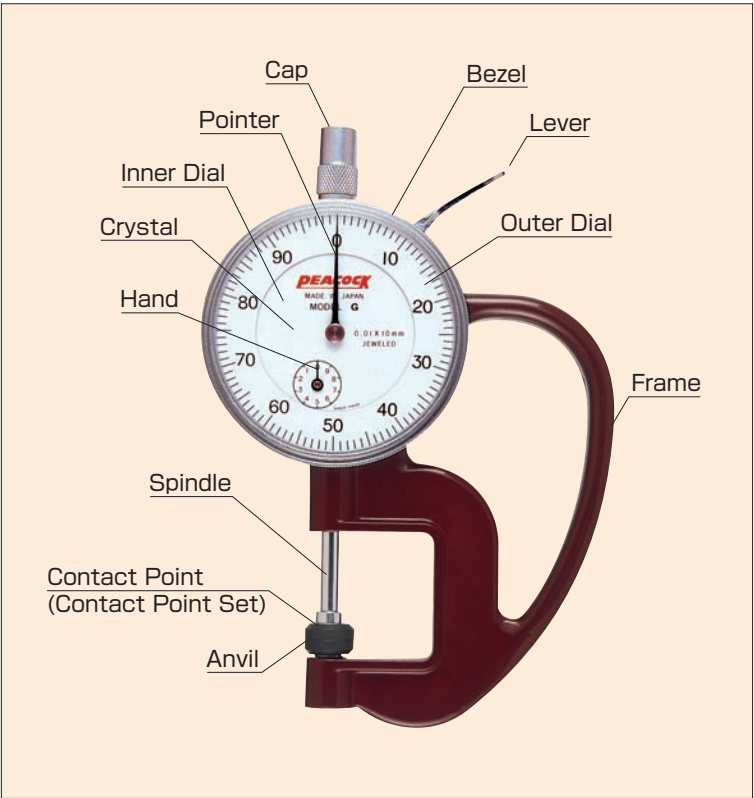
Paper Thickness Gauge

- μ m unit on the dial Plate suitable for paper thickness measurement.



PG-10
Graduation: 0.01mm
Range: 0~10mm
● Throat Depth 20mm
● Accuracy $\pm 20\mu$ m
● Contact Point dia. 10mm
● Parallelism 5μ m
● Measuring force less than 1.8N

Name of each Parts

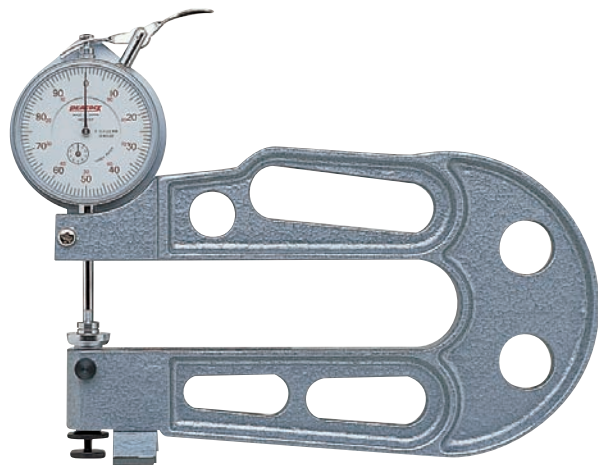


How to adjust setting 0 of Pointer.

- Normally, Pointer and Hand without inserting a work-piece point to 0. There is a possibility the Pointer is not on 0 position due to temperature fluctuation. In this case, set Pointer to 0 by rotating the Bezel.

Dial Thickness Gauges (Large type)

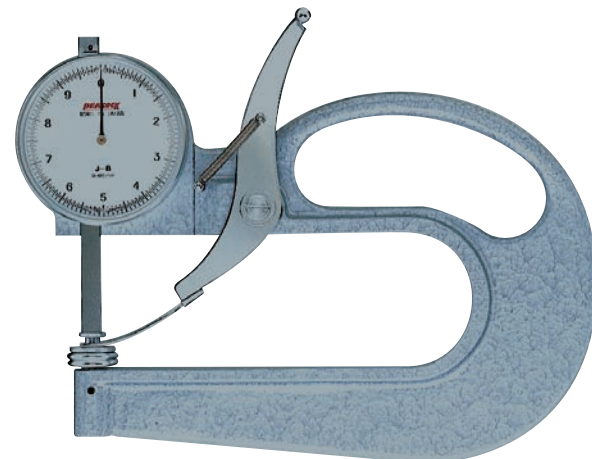
These large thickness gauges having extended throat depth to measure at the center of wide sheets.



J-A

Graduation: 0.01mm
Range: 0~20mm

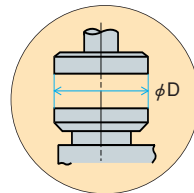
- The gauge sits by stand
- ϕ 10mm flat contact point and ϕ 20mm anvil (Metal)



J-B

Graduation: 0.05mm
Range: 0~35mm

- ϕ 20mm flat contact point and anvil (Metal)



Custom order available

Optional ϕ 30,40 and 50mm contact points and anvils are available.
Please specify material for contact point and anvil, either Metal (SK) material or aluminum (AL).

Specifications

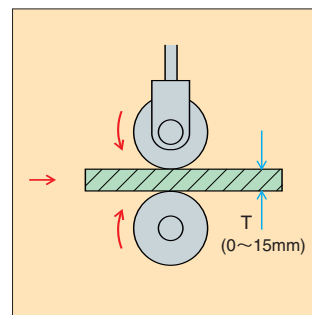
| Model | Graduation (mm) | Range (mm) | Throat depth (mm) | Accuracy (μ m) | Contact Point | | Measuring force less than (N) |
|-------|-----------------|------------|-------------------|---------------------|---------------|------------------------|-------------------------------|
| | | | | | Dia (mm) | Parallelism (μ m) | |
| J-A | 0.01 | 0~20 | 150 | ± 22 | 10 | 5 | 2.0 |
| J-B | 0.05 | 0~35 | 140 | ± 100 | 20 | 25 | 3.0 |

Dial Thickness Gauge Roller type

Special gauges for measuring of horizontally sliding a gauge with an object to be in inspected laid since the contact point and anvil are made with the roller. Convenient to continuously measuring thickness of thin objects, paper, rubber and film etc.



HR-1



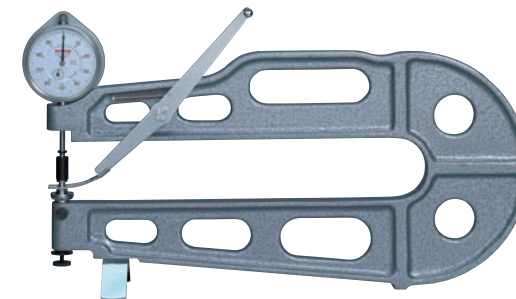
Specifications

| Model | Graduation (mm) | Range (mm) | Throat depth (mm) | Accuracy (μ m) | Roller contact points | | | Measuring force less than (N) |
|-------|-----------------|------------|-------------------|---------------------|-----------------------|------------|------------------------|-------------------------------|
| | | | | | OD (mm) | Width (mm) | Parallelism (μ m) | |
| HR-1 | 0.01 | 0~15 | 70 | ± 22 | 22 | 7 | 10 | 2.0 |

Dial Sheet Gauges

0.01mm and 0.05mm

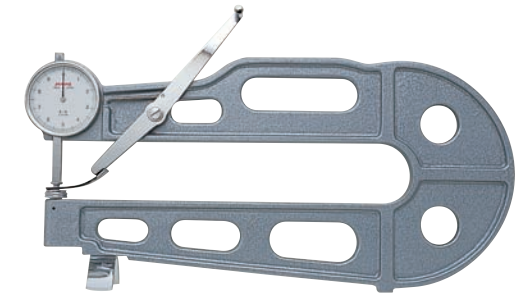
- The sheet gauges can measure wide sheets since the throat depth of this gauges having 300, 500 and 690mm.



K-1

Graduation: 0.01mm
Range: 0~20mm

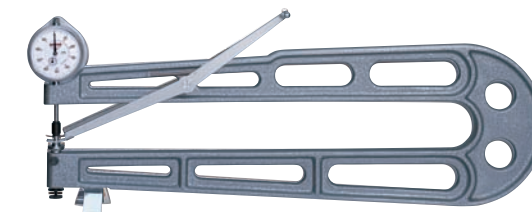
- ϕ 10mm flat contact point and ϕ 20mm anvil (Metal)



K-2

Graduation: 0.05mm
Range: 0~35mm

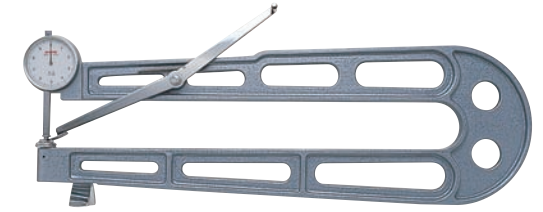
- ϕ 20mm flat contact point and anvil (Metal)



K-3

Graduation: 0.01mm
Range: 0~20mm

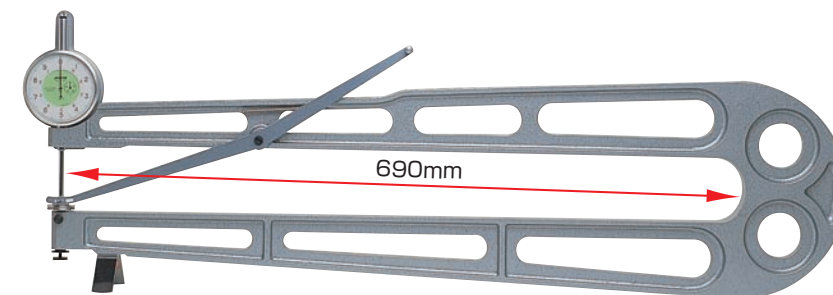
- ϕ 10mm flat contact point and ϕ 20mm anvil (Metal)



K-4

Graduation: 0.05mm
Range: 0~50mm

- ϕ 25mm flat contact point and anvil (Metal)



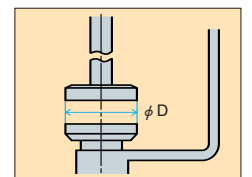
K-7 (Production on request)

Graduation: 0.05mm
Range: 0~50mm

- ϕ 30mm flat contact point and anvil (Metal)

Custom order available

Optional ϕ 30,40 and 50mm contact points and anvils are available.
Please specify material for contact point and anvil, either Metal (SK) material or aluminum (AL).



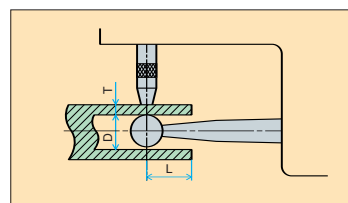
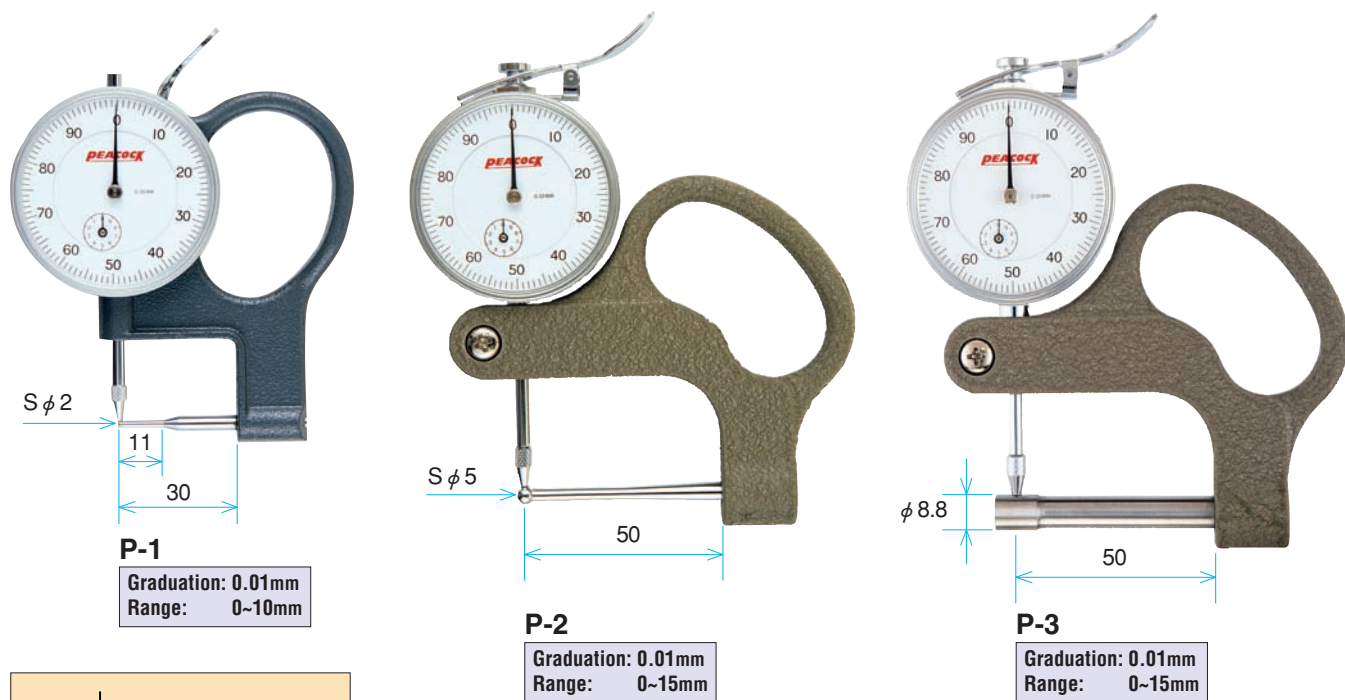
Specifications

| Model | Graduation (mm) | Range (mm) | Throat depth (mm) | Accuracy (μ m) | Contact Point | | Measuring force less than (N) |
|-------|-----------------|------------|-------------------|---------------------|---------------|------------------------|-------------------------------|
| | | | | | Dia (mm) | Parallelism (μ m) | |
| K-1 | 0.01 | 0~20 | 300 | ± 22 | 10 | 10 | 2.0 |
| K-2 | 0.05 | 0~35 | 300 | ± 100 | 20 | 25 | 3.0 |
| K-3 | 0.01 | 0~20 | 500 | ± 22 | 10 | 10 | 3.0 |
| K-4 | 0.05 | 0~50 | 500 | ± 100 | 25 | 25 | 3.0 |
| K-7 | 0.05 | 0~50 | 690 | ± 100 | 30 | 25 | 3.0 |

※ Model K-7 is production on request.

Dial Pipe Gauges

Special gauges for measuring wall thickness of pipes.

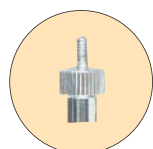


Specifications

| Model | Graduation (mm) | Range (mm) | Accuracy (μm) | Pipe size measurable (mm) | | | Measuring force less than (N) |
|-------|-----------------|------------|---------------|---------------------------|--------------------------|---------|-------------------------------|
| | | | | Minimum bore D | Maximum wall thickness T | Depth L | |
| P-1 | 0.01 | 0~10 | ±20 | 2.5 | 10 | 10 | 1.8 |
| P-2 | 0.01 | 0~15 | ±22 | 5.1 | 15 | 50 | 1.8 |
| P-3 | 0.01 | 0~15 | ±22 | 9.0 | 15 | 50 | 1.8 |

Dial Lens Gauge

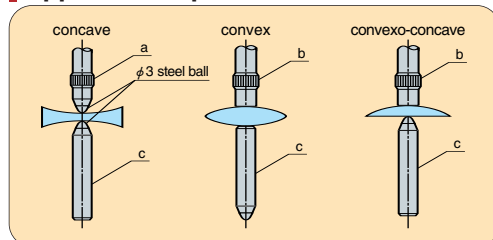
The dial lens gauge can measure convex, concave, convexo-concave and any other lenses in the same gauge by replacing the two contact points and the anvil.



Replaceable Flat contact point (Standard accessory)



Applied examples



GL
Graduation: 0.01mm
Range: 10mm

Specifications

| Model | Graduation (mm) | Range (mm) | Accuracy (μm) | Throat depth (mm) | maximum lens diameter measurable (mm) | maximum lens thickness measurable (mm) | Measuring force less than (N) |
|-------|-----------------|------------|---------------|-------------------|---------------------------------------|--|-------------------------------|
| GL | 0.01 | 10 | ±20 | 30 | φ 59 | ※ 20 | 1.8 |

※ Anvil side is adjustable.

Dial Thickness Gauge (Special Order)

● Snap type (Spindle is manually pushed down)

We manufacture with low or high measuring force according to your needs.

- Maximum Measuring force under 2.4N (240gf)
- Minimum Measuring force over 0.4N (40gf)

Please specify the desired Measuring force.

● Lever type (example of use)

● For measuring thickness of hair

● For measuring thickness of paper

● For different applications, the shape of the contact point and anvil can be special ordered.

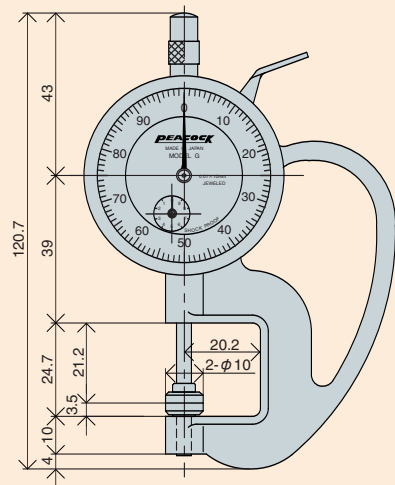
- Dial face with personal logo
- Special order dial faces

Examples of modification for contact point and anvil

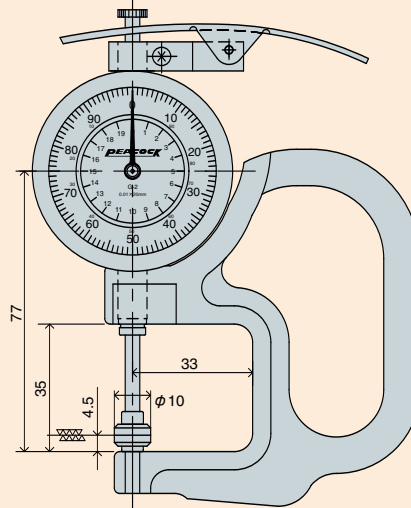
- 1 Both Contact Point and Anvil needle type
- 2 Both Contact Point and Anvil ball type
- 3 Both Contact Point and Anvil are 20mm diameter flat type (also available in φ 25 and 30mm)
- 4 Both Contact Point and Anvil are horizontal blade type
- 5 Both Contact Point and Anvil are vertical blade type
- 6 Needle type Contact Point and Flat type Anvil.
- 7 Ball type Contact Point and Flat type Anvil.

Dial Thickness Gauges / Dial Lens Gauge / Dial Pipe Gauges

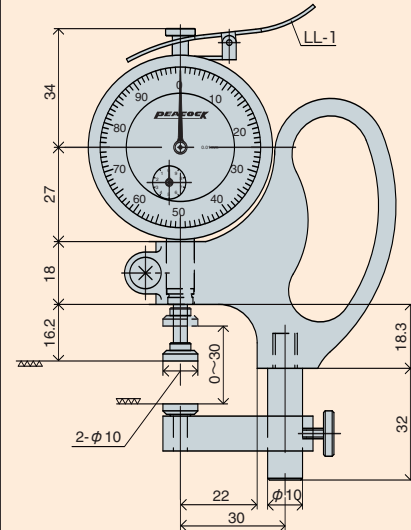
6



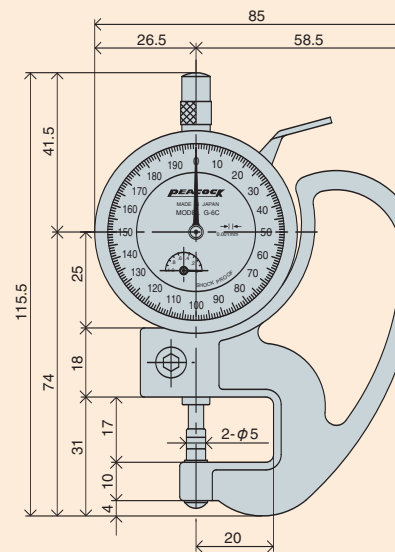
G/G-0.4N/G-2.4N



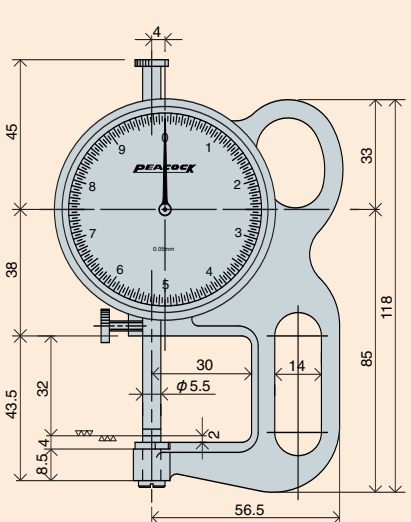
G-2



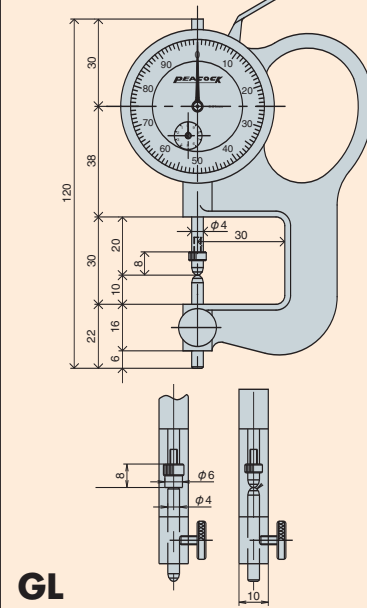
G-3



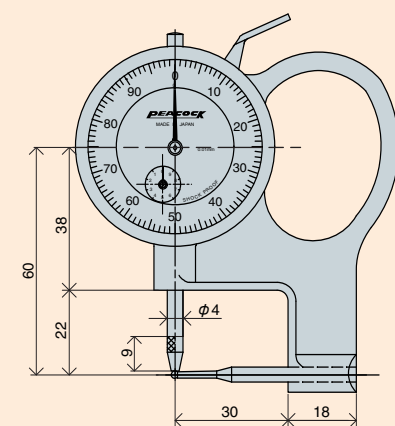
G-6C



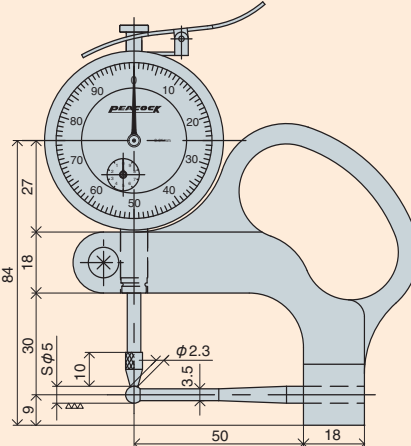
Q-1



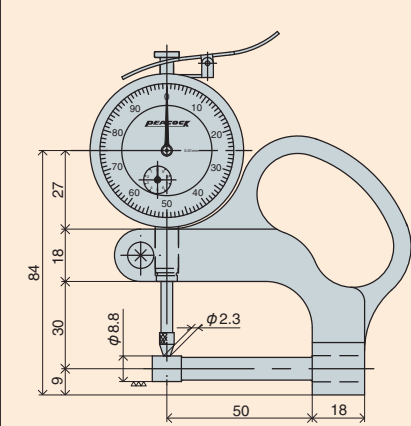
GL



P-1



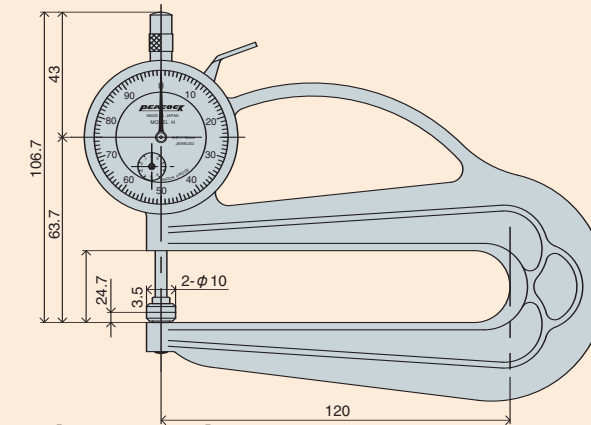
P-2



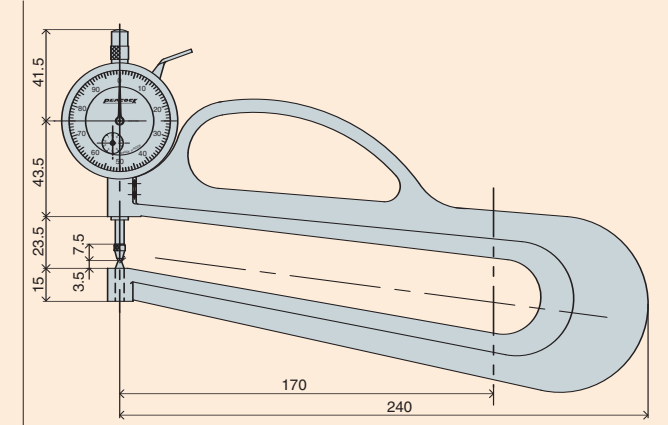
P-3

Dial Thickness Gauges / Dial Lens Gauge / Dial Pipe Gauges

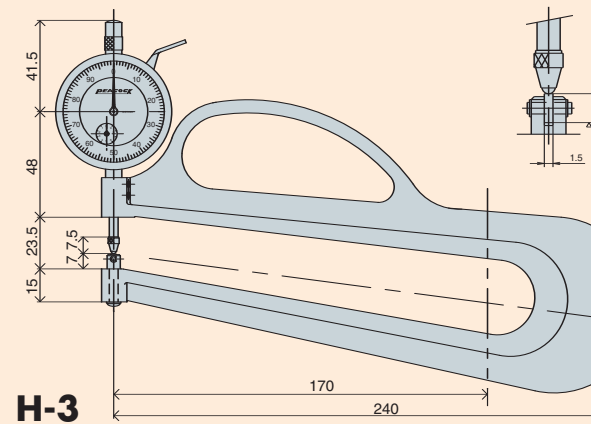
6



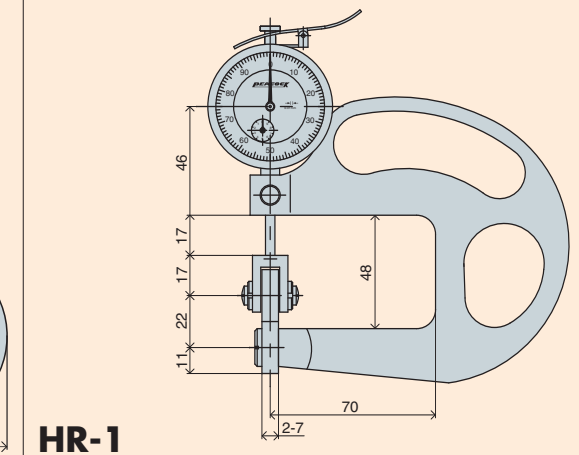
H/H-0.4N/H-2.4N



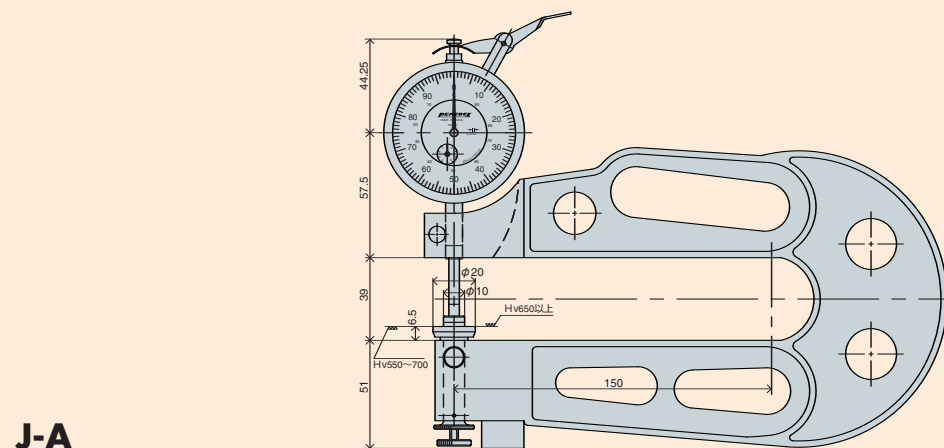
H-2



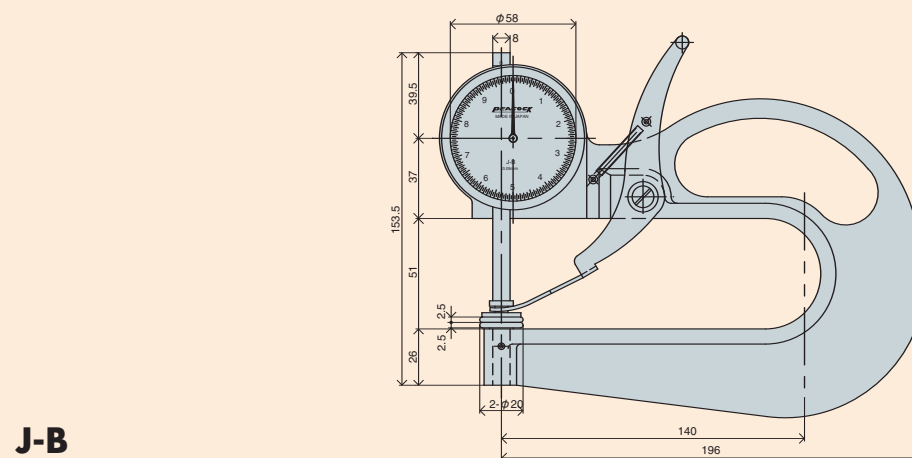
H-3



HR-1



J-A



J-B



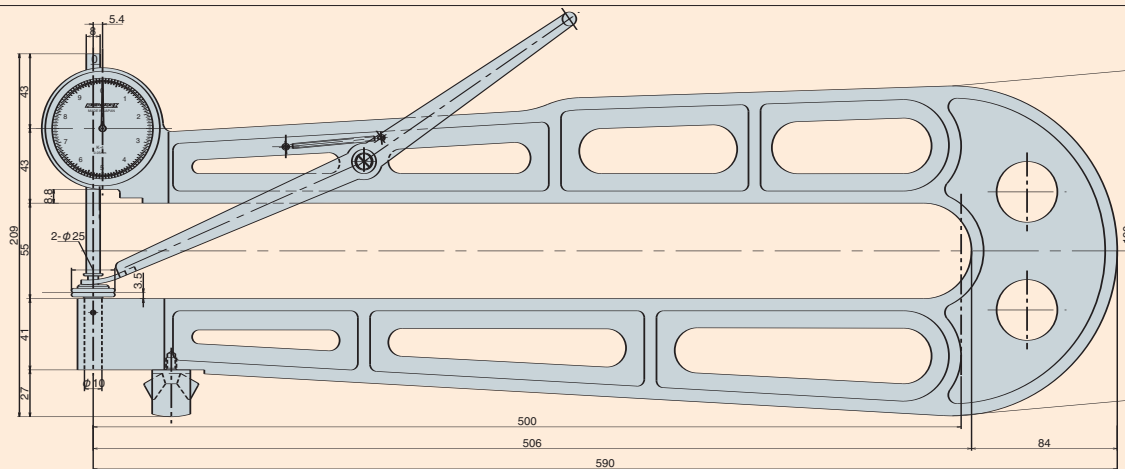
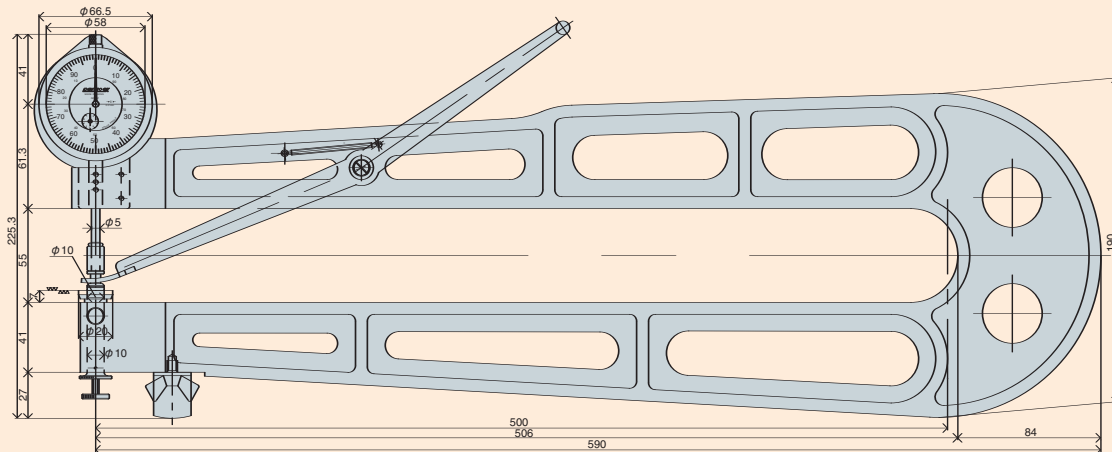
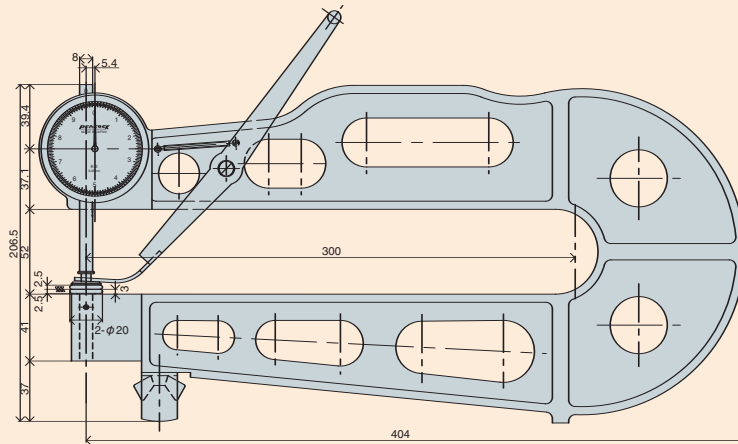
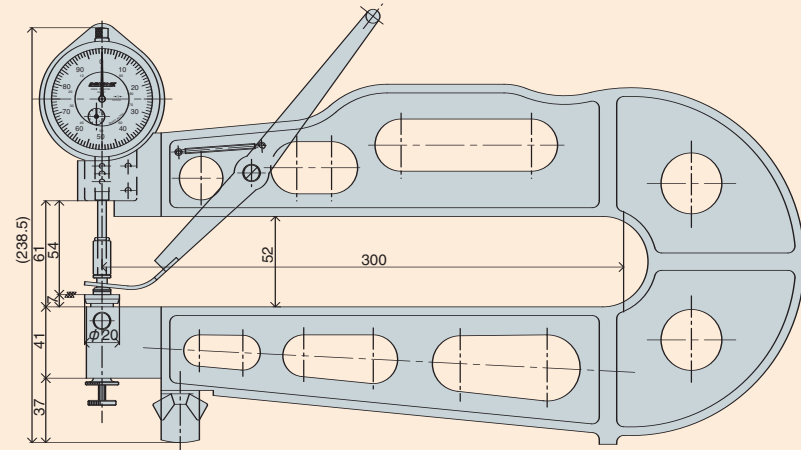
Dial Thickness Gauges / Dial Lens Gauge / Dial Pipe Gauges

Dial Sheet Gauges

6



Dial Sheet Gauges

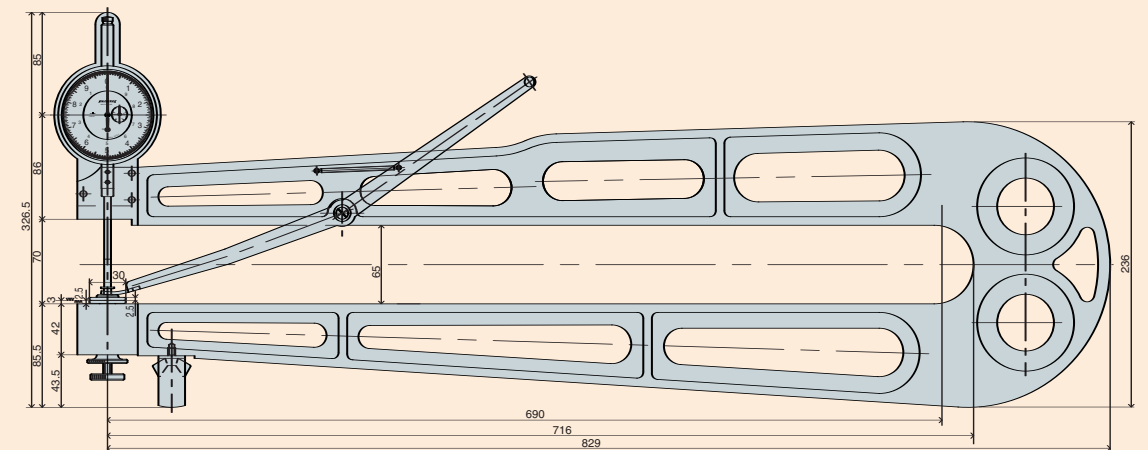


Dial Sheet Gauges

6



Dial Sheet Gauges



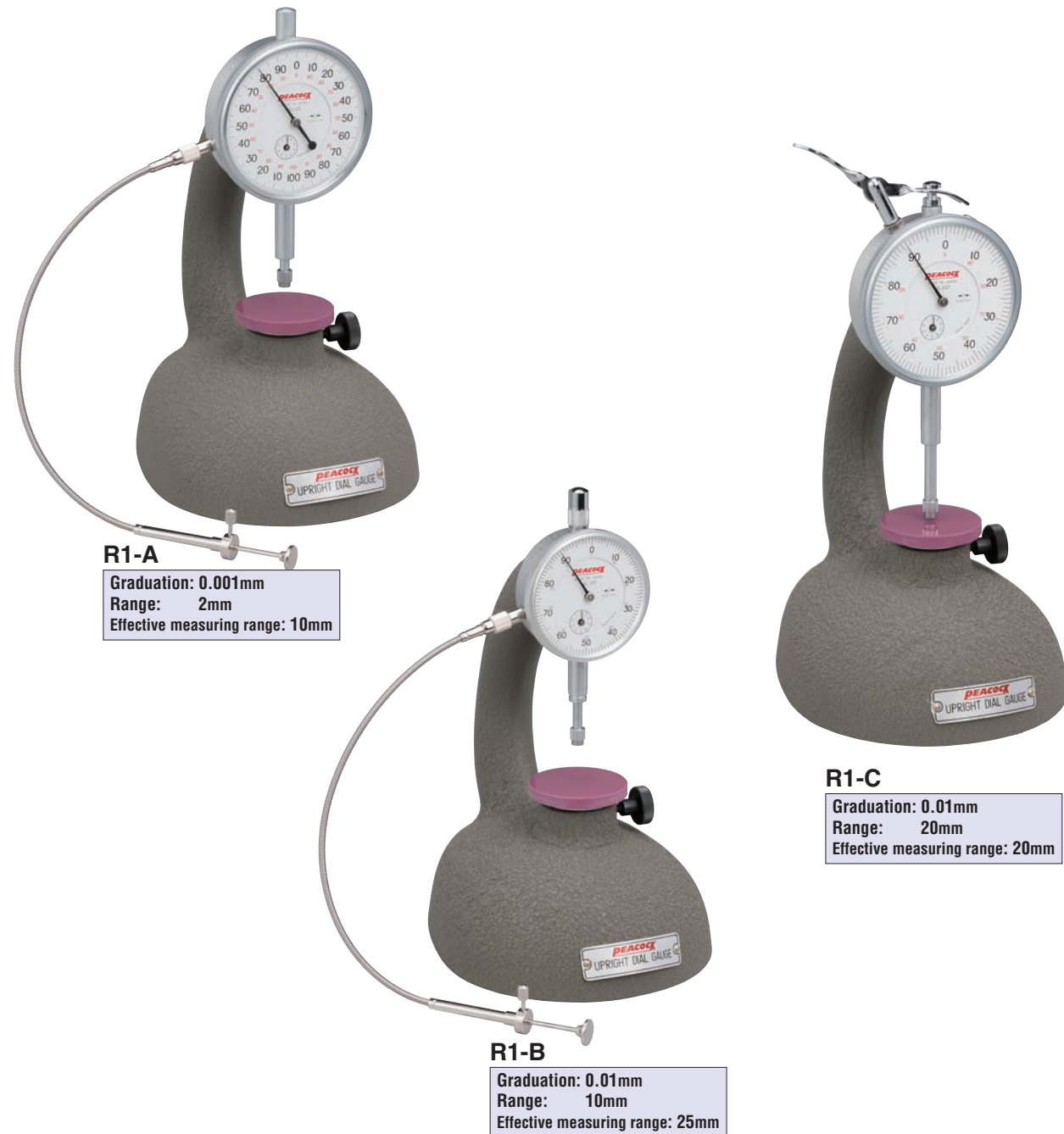
MEMO

Dial Upright Gauges

R series

Best suited for measuring precision parts and testing materials like rubber, leather, fabric and plastic etc. Rubber, leather, urethane and film can be easily measured by this system.

- The table of R1 series are adjustable up and down by the nut installed side way.
- The dial gauge is affixed to the body.



Specifications

| Model | Dial Indicator (standard attachments) | | | Indication error (μm) | Table diameter (mm) | Contact point dia. (mm) | Measuring force less than (N) | Measuring depth (mm) | Effective measuring range (mm) | Total height (mm) |
|-------|---------------------------------------|------------|-----------------|-----------------------|---------------------|-------------------------|-------------------------------|----------------------|--------------------------------|-------------------|
| | Gauge installed | Range (mm) | Graduation (mm) | | | | | | | |
| R1-A | 25F-RE | 2 | 0.001 | ±7 | 40 | 5 | 1.5 | 55 | 10 | 191 |
| R1-B | 107F-RE | 10 | 0.01 | ±15 | 40 | 5 | 1.4 | 55 | 25 | 190 |
| R1-C | 207F-PL | 20 | 0.01 | ±22 | 40 | 5 | 2.0 | 55 | 20 | 210 |

Constant Pressure Thickness Gauges (Special Order)

- Constant Pressure Thickness Gauges can be made to comply with JIS by attaching exact weights that create the specific pressures needed to measure different materials.
- Three types (FFG. FFA. FFD series) are available to meet your measurement.

Compact Handy type FFG series (PAT.No.3073347)



| Measuring material | JIS No. | Applied Model |
|--|---------|---------------|
| Shrink package film | Z1709 | FFG-1 |
| Polyethylene package film | Z1702 | FFG-1 |
| Ethylene film | K6783 | FFG-1 |
| Polyvinyl chloride film | K6732 | FFG-2 |
| Sheet Rubber | K6328 | FFG-4 |
| Vulcanized rubber / Thermoplastic rubber (Hardness 35IRHD less) | K6250A | FFG-5 |
| Vulcanized rubber / Thermoplastic rubber (Hardness 35IRHD less) | K6250A | FFG-6 |
| Vulcanized rubber / Thermoplastic rubber (Hardness 35IRHD more) | K6250A | FFG-7 |
| Vulcanized rubber / Thermoplastic rubber (Hardness 35IRHD more) | K6250A | FFG-8 |
| Urethane form | K6402 | FFG-9 |
| Common fabric (basic / fuzzy material) | L1096 | FFG-11 |
| Adhesive interlined cloth (common weave / common knit / non-woven) | L1086 | FFG-11 |
| Stockinet (common knit) | L1018 | FFG-11 |
| Unwoven / interlined cloth (old standard) | L1085 | FFG-12 |
| Adhesive interlined cloth (non-woven) | L1086 | FFG-12 |

Specifications

| Model | Graduation (mm) | Range (mm) | Indication error (μm) | Throat depth (mm) | Contact Point dia (ømm) | Anvil dia (ømm) | Measuring force N(gf) | Parallelism (μm) |
|--------|-----------------|------------|-----------------------|-------------------|-------------------------|-----------------|-------------------------------|------------------|
| FFG-1 | 0.001 | 2 | ±10 | 24 | 5 | 30 | 1.25±0.15 (125±15) | 5 |
| FFG-2 | 0.001 | 2 | ±10 | 24 | 5 | 30 | less than 0.8 (less than 80) | 5 |
| FFG-4 | 0.01 | 10 | ±22 | 24 | 10 | 30 | less than 0.8 (less than 80) | 7 |
| FFG-5 | 0.01 | 7 | ±22 | 24 | 5 (19.625mm²) | 30 | 0.2±0.04 (20±4) | 5 |
| FFG-6 | 0.01 | 10 | ±22 | 24 | 8 (50.24mm²) | 30 | 0.51±0.1 (51±10) | 7 |
| FFG-7 | 0.01 | 10 | ±22 | 24 | 5 (19.625mm²) | 30 | 0.44±0.1 (44±10) | 5 |
| FFG-8 | 0.01 | 10 | ±22 | 24 | 8 (50.24mm²) | 30 | 1.13±0.26 (113±26) | 7 |
| FFG-9 | 0.01 | 10 | ±22 | 24 | 35.7 (10cm²) | 40 | less than 0.37 (less than 37) | 25 |
| FFG-11 | 0.01 | 10 | ±22 | 24 | 25.2 (5cm²) | 30 | less than 0.35 (less than 35) | 20 |
| FFG-12 | 0.01 | 10 | ±22 | 24 | 16 (2cm²) | 30 | less than 0.4 (less than 40) | 15 |

Constant Pressure Thickness Gauges (Order)

Stand type FFA series



FFA-7

| Measuring material | JIS No. | Applied Model |
|--|---------|---------------|
| Shrink package film | Z1709 | FFA-1 |
| Polyethylene package film | Z1702 | FFA-1 |
| Ethylene film | K6783 | FFA-1 |
| Polyvinyl chloride film | K6732 | FFA-2 |
| Leather | K6550 | FFA-3 |
| Artificial leather | K6505 | FFA-3 |
| Sheet rubber | K6328 | FFA-4 |
| Vulcanized rubber / Thermoplastic rubber (Hardness 35IRHD less) | K6250A | FFA-5 |
| Vulcanized rubber / Thermoplastic rubber (Hardness 35IRHD less) | K6250A | FFA-6 |
| Vulcanized rubber / Thermoplastic rubber (Hardness 35IRHD more) | K6250A | FFA-7 |
| Vulcanized rubber / Thermoplastic rubber (Hardness 35IRHD more) | K6250A | FFA-8 |
| Urethane form | K6402 | FFA-9 |
| Common fabric (basic / fuzzy material) | L1096 | FFA-10 |
| Adhesive interlined cloth (common weave / common knit / non-woven) | L1086 | FFA-10 |
| Common fabric (basic / fuzzy material) | L1096 | FFA-11 |
| Adhesive interlined cloth (common weave / common knit / non-woven) | L1086 | FFA-11 |
| Stockinet (common knit) | L1018 | FFA-11 |
| Unwoven / interlined cloth (old standard) | L1085 | FFA-12 |
| Adhesive interlined cloth (non-woven) | L1086 | FFA-12 |
| Tensile properties of plastics | K7113 | FFA-13 |

Specifications

| Model | Graduation (mm) | Range (mm) | Indication error (μm) | Throat depth (mm) | Contact Point dia (ømm) | Anvil dia (ømm) | Spindle lifting | Stand type | Measuring force N(gf) | Parallelism (μm) |
|--------|-----------------|------------|-----------------------|-------------------|-------------------------|-----------------|-----------------|----------------|--------------------------------|------------------|
| FFA-1 | 0.001 | 2 | ±8 | 55 | 5 | 40 | Lever | R1 type | 1.25±0.15 (125±15) | 5 |
| FFA-2 | 0.001 | 2 | ±8 | 55 | 5 | 40 | Release | R1 type | less than 0.8 (less than 80) | 5 |
| FFA-3 | 0.01 | 10 | ±20 | 55 | 10 | 50 | Lever | SIS-6C special | 3.93±0.1 (393±10) | 10 |
| FFA-4 | 0.01 | 10 | ±20 | 55 | 10 | 50 | Release | SIS-6C | less than 0.8 (less than 80) | 7 |
| FFA-5 | 0.01 | 7 | ±20 | 55 | 5 (19.625mm²) | 50 | Release | SIS-6C | 0.2±0.04 (20±4) | 5 |
| FFA-6 | 0.01 | 10 | ±20 | 55 | 8 (50.24mm²) | 50 | Release | SIS-6C | 0.51±0.1 (51±10) | 7 |
| FFA-7 | 0.01 | 10 | ±20 | 55 | 5 (19.625mm²) | 50 | Release | SIS-6C | 0.44±0.1 (44±10) | 5 |
| FFA-8 | 0.01 | 10 | ±20 | 55 | 8 (50.24mm²) | 50 | Lever | SIS-6C | 1.13±0.26 (113±26) | 7 |
| FFA-9 | 0.01 | 10 | ±20 | 55 | 35.7 (10cm²) | 50 | Release | SIS-6C | less than 0.37 (less than 37) | 25 |
| FFA-10 | 0.01 | 10 | ±20 | 55 | 11.3 (1cm²) | 50 | Lever | SIS-6C | less than 2.4 (less than 240) | 10 |
| FFA-11 | 0.01 | 10 | ±20 | 55 | 25.2 (5cm²) | 50 | Release | SIS-6C | less than 0.35 (less than 35) | 20 |
| FFA-12 | 0.01 | 10 | ±20 | 55 | 16 (2cm²) | 50 | Release | SIS-6C | less than 0.4 (less than 40) | 15 |
| FFA-13 | 0.01 | 10 | ±20 | 55 | 10 (78.5cm²) | 50 | Lever | SIS-6C | less than 1.57 (less than 157) | 7 |

Digital type FFD series (with data output)



FFD-1

| Measuring material | JIS No. | Applied Model |
|--|---------|---------------|
| Shrink package film | Z1709 | FFD-1 |
| Polyethylene package film | Z1702 | FFD-1 |
| Ethylene film | K6783 | FFD-1 |
| Polyvinyl chloride film | K6732 | FFD-2 |
| Leather | K6550 | FFD-3 |
| Artificial leather | K6505 | FFD-3 |
| Sheet rubber | K6328 | FFD-4 |
| Vulcanized rubber / Thermoplastic rubber (Hardness 35IRHD less) | K6250A | FFD-6 |
| Vulcanized rubber / Thermoplastic rubber (Hardness 35IRHD more) | K6250A | FFD-7 |
| Vulcanized rubber / Thermoplastic rubber | K6250A | FFD-8 |
| Common fabric (basic / fuzzy material) | L1096 | FFD-10 |
| Adhesive interlined cloth (common weave / common knit / non-woven) | L1086 | FFD-10 |
| Tensile properties of plastics | K7113 | FFD-13 |

Specifications

| Model | Range (mm) | Indication error (μm) | Graduation (mm) | Display | Power supply | Data output | Throat depth (mm) | Contact Point dia (ømm) | Anvil dia (ømm) | Measuring force N(gf) | Parallelism (μm) | | |
|--------|------------|-----------------------|-----------------|---------|---|-------------|-------------------|-------------------------|-----------------|--------------------------------|------------------|--|--|
| FFD-1 | 20 | ±4 | 0.001 | 5digit | AC Adapter <div>100V to 240V</div> | RS-232C | 55 | 5 | 40 | 1.25±0.15 (125±15) | 5 | | |
| FFD-2 | 20 | ±4 | 0.001 | | | | 55 | 5 | 40 | less than 0.8 (less than 80) | 5 | | |
| FFD-3 | 20 | ±20 | 0.01 | 4digit | | | 55 | 10 | 50 | 3.93±0.1 (393±10) | 10 | | |
| FFD-4 | 20 | ±20 | 0.01 | | | | 55 | 10 | 50 | less than 0.8 (less than 80) | 10 | | |
| FFD-6 | 20 | ±20 | 0.01 | | | | 55 | 8 (50.24mm²) | 50 | 0.51±0.1 (51±10) | 10 | | |
| FFD-7 | 20 | ±20 | 0.01 | | | | 55 | 5 (19.625mm²) | 50 | 0.44±0.1 (44±10) | 10 | | |
| FFD-8 | 20 | ±20 | 0.01 | | | | 55 | 8 (50.24mm²) | 50 | 1.13±0.26 (113±26) | 10 | | |
| FFD-10 | 20 | ±20 | 0.01 | | | | 55 | 11.3 (1cm²) | 50 | less than 2.4 (less than 240) | 10 | | |
| FFD-13 | 20 | ±20 | 0.01 | | | | 55 | 10 (78.5mm²) | 50 | less than 1.57 (less than 157) | 10 | | |



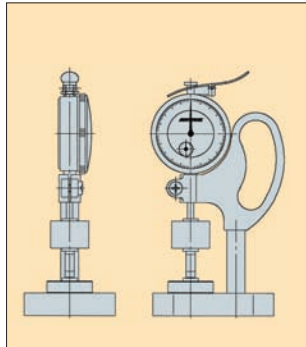
Constant Pressure Thickness Gauges (Special Order)



Constant Pressure Thickness Gauges (Special Order)

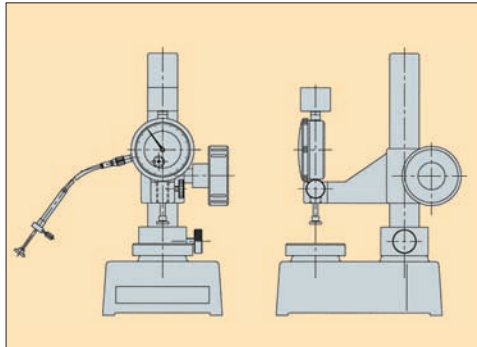
Special Order Available

FFG Series



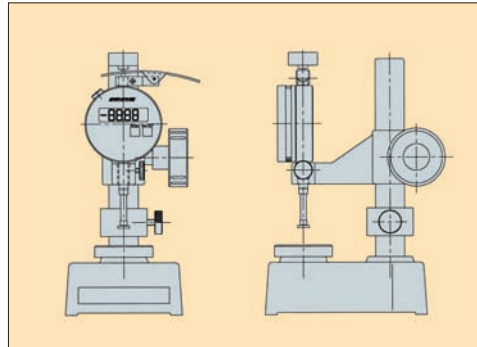
Handy type

FFA Series



Stand type

FFD Series



Digital type

Please specify what you want to measure as following:

1. Material of measurement work-piece:

2. JIS Standard No. or its equivalent standard:

3. Resolution: 0.01mm, 0.001mm

4. Measuring force:

5. Diameter of Contact Point (ex. $\phi 5$, $\phi 10$ mm)

6. Type of Constant Pressure Thickness Gauge

Please check ☒

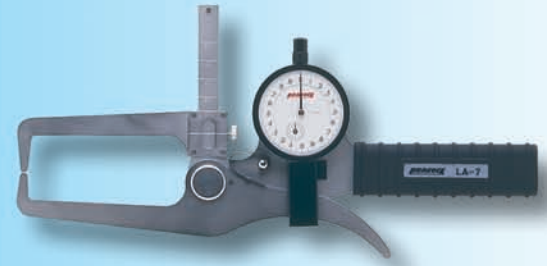
☐ FFG Handy type

☐ FFA Stand type

☐ FFD Digital type

7. Other requirement:

SECTION 7



Dial Caliper Gauges

- LA Series -Outside-
- LB Series -Inside-

Dial Calipers

LA series (Outside measuring of ODs and thicknesses)

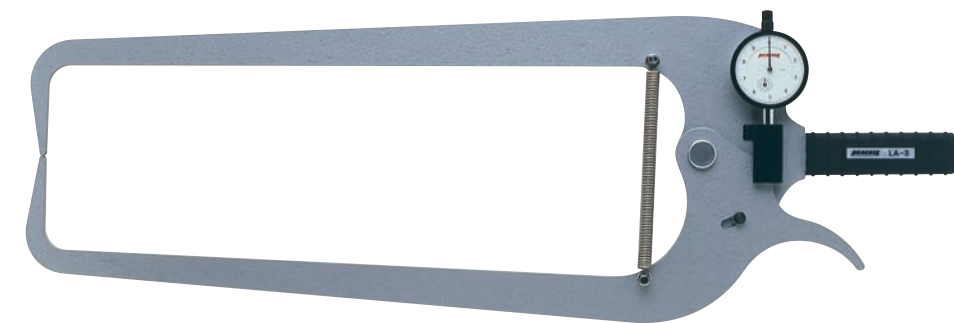
The dial caliper gauge show its great power in measurement of inside and outside sizes, wall thickness, groove width and hole diameters and any other shapes and sections that is not apparently accessible.



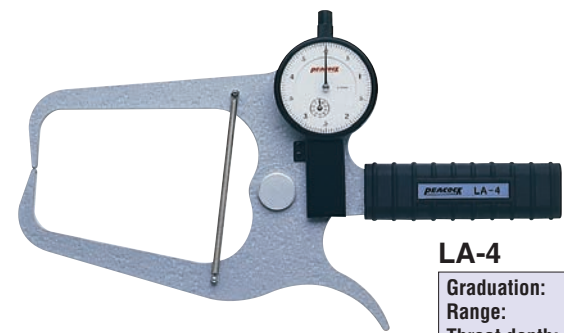
LA-1
Graduation: 0.1mm
Range: 0~80mm
Throat depth: 120mm



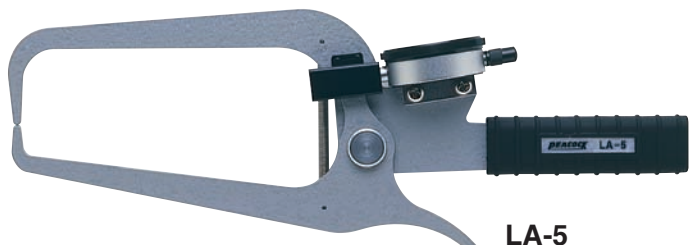
LA-2
Graduation: 0.1mm
Range: 0~80mm
Throat depth: 240mm



LA-3
Graduation: 0.1mm
Range: 0~80mm
Throat depth: 400mm



LA-4
Graduation: 0.05mm
Range: 0~50mm
Throat depth: 90mm



LA-5
Graduation: 0.05mm
Range: 0~50mm
Throat depth: 150mm



LA-6
Graduation: 0.01mm
Range: 0~10mm
Throat depth: 60mm



LA-8
Graduation: 0.1mm
Range: 0~80mm
Throat depth: 130mm

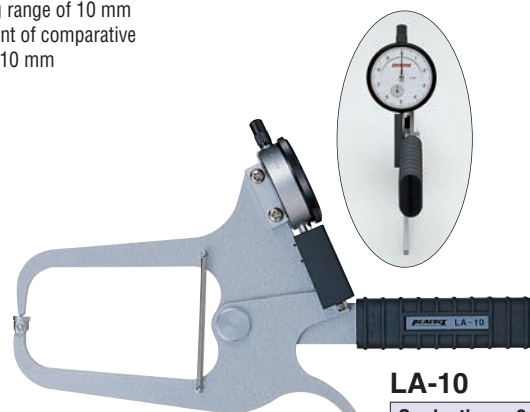


LA-7
Graduation: 0.01mm
Range: 0~60mm
Throat depth: 85mm

- Adjustable frame
- The LA-7 can measure an absolute value in a measuring range of 10 mm
- It allows measurement of comparative values in more than 10 mm



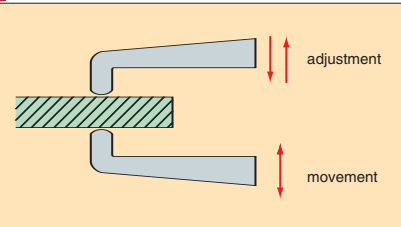
LA-9
Graduation: 0.1mm
Range: 0~30mm
Throat depth: 100mm



LA-10
Graduation: 0.01mm
Range: 0~20mm
Throat depth: 100mm

- The tip of the bottom frame $\phi 10\text{mm}$ Flat Rocking Contact Point.

Applied Example – outside –



Note: Throat Depth is changed by Measuring Range.
Contact us more detailed information.

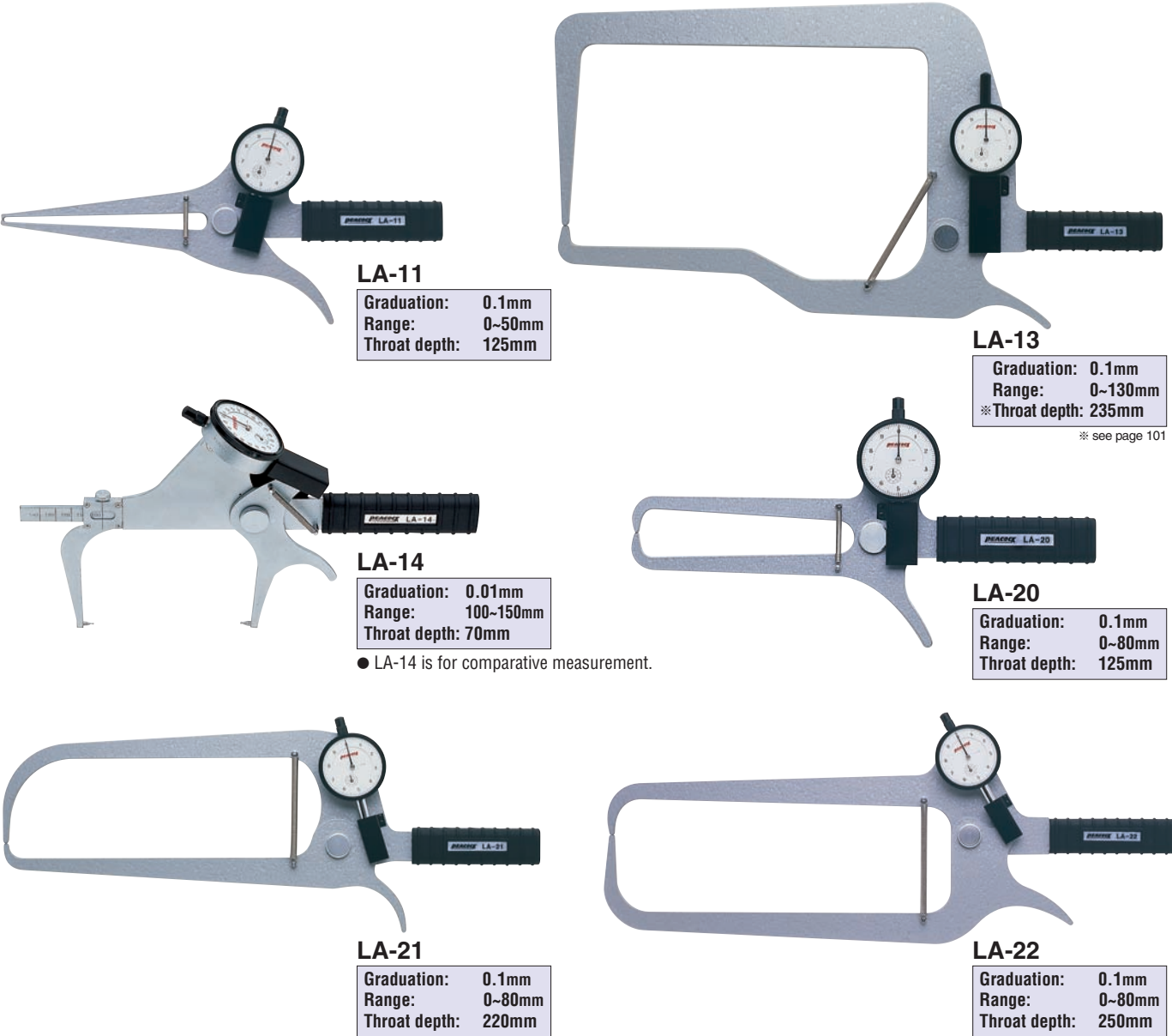
Ex. LA-13

| Range | Throat Depth |
|---------|--------------|
| 0~ 50mm | 235mm |
| 0~ 60mm | 125mm |
| 0~ 80mm | 102mm |
| 0~100mm | 91mm |
| 0~130mm | 86mm |

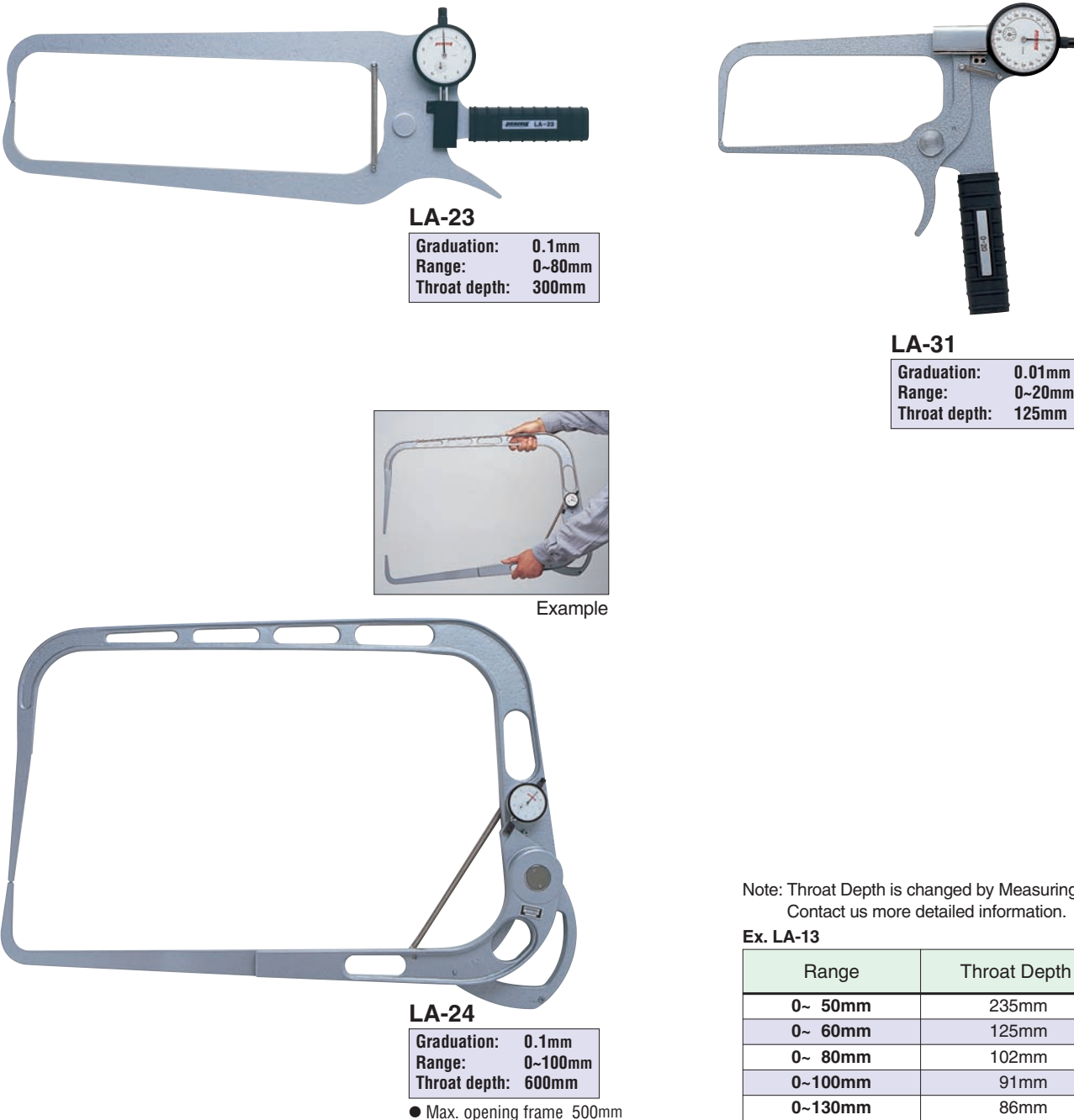
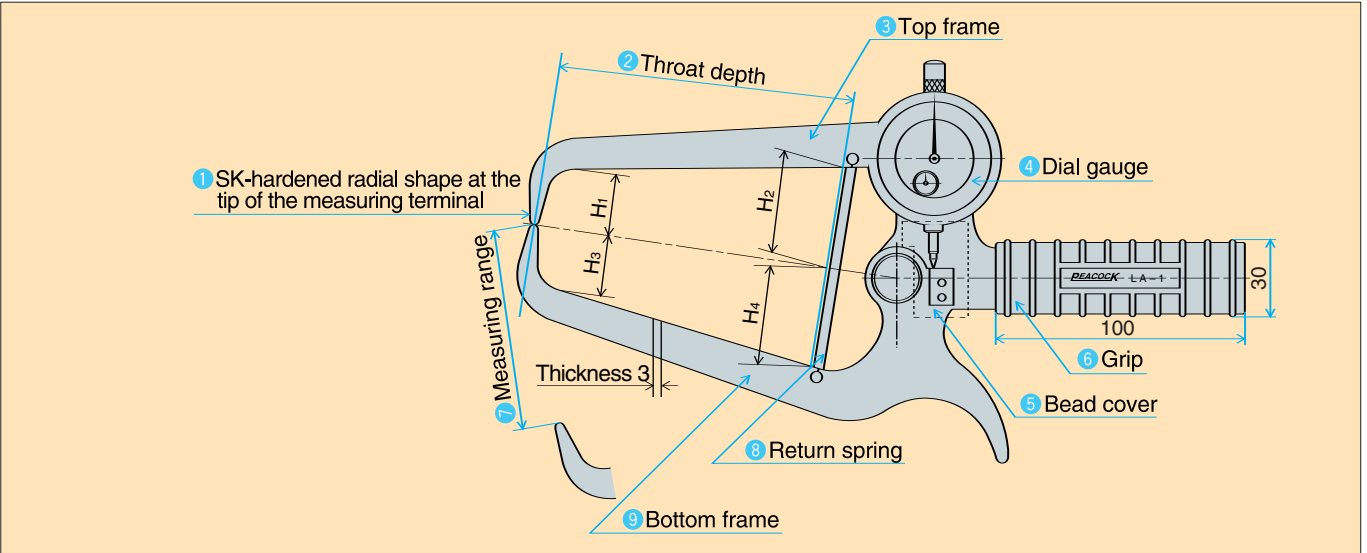
Specifications

| Model | Graduation (mm) | Range (mm) | Indication error (mm) | Throat depth (mm) | Dimensions (mm) <small>see page 100</small> | | | |
|-------|-----------------|------------|-----------------------|-------------------|---|----|-----|----|
| | | | | | H1 | H2 | H3 | H4 |
| LA-1 | 0.1 | 0~80 | ±0.2 | 120 | 25 | 40 | 25 | 40 |
| LA-2 | 0.1 | 0~80 | ±0.2 | 240 | 48 | 57 | 48 | 57 |
| LA-3 | 0.1 | 0~80 | ±0.2 | 400 | 60 | 60 | 58 | 79 |
| LA-4 | 0.05 | 0~50 | ±0.15 | 90 | 30 | 40 | 30 | 40 |
| LA-5 | 0.05 | 0~50 | ±0.15 | 150 | 38 | 57 | 15 | 21 |
| LA-5S | 0.05 | 0~10 | ±0.15 | 120 | 1.5 | 10 | 34 | 34 |
| LA-6 | 0.01 | 0~10 | ±0.03 | 60 | 2.5 | 18 | 2.5 | 18 |
| LA-7 | 0.01 | 0~60 | ±0.03 | 85 | 20 | 20 | 15 | 15 |
| LA-8 | 0.1 | 0~80 | ±0.2 | 130 | — | — | — | — |
| LA-9 | 0.1 | 0~30 | ±0.2 | 100 | 2 | 12 | 2 | 12 |
| LA-10 | 0.01 | 0~20 | ±0.03 | 100 | 28 | 28 | 28 | 28 |

Dial Calipers



Name of parts



Note: Throat Depth is changed by Measuring Range.
Contact us more detailed information.

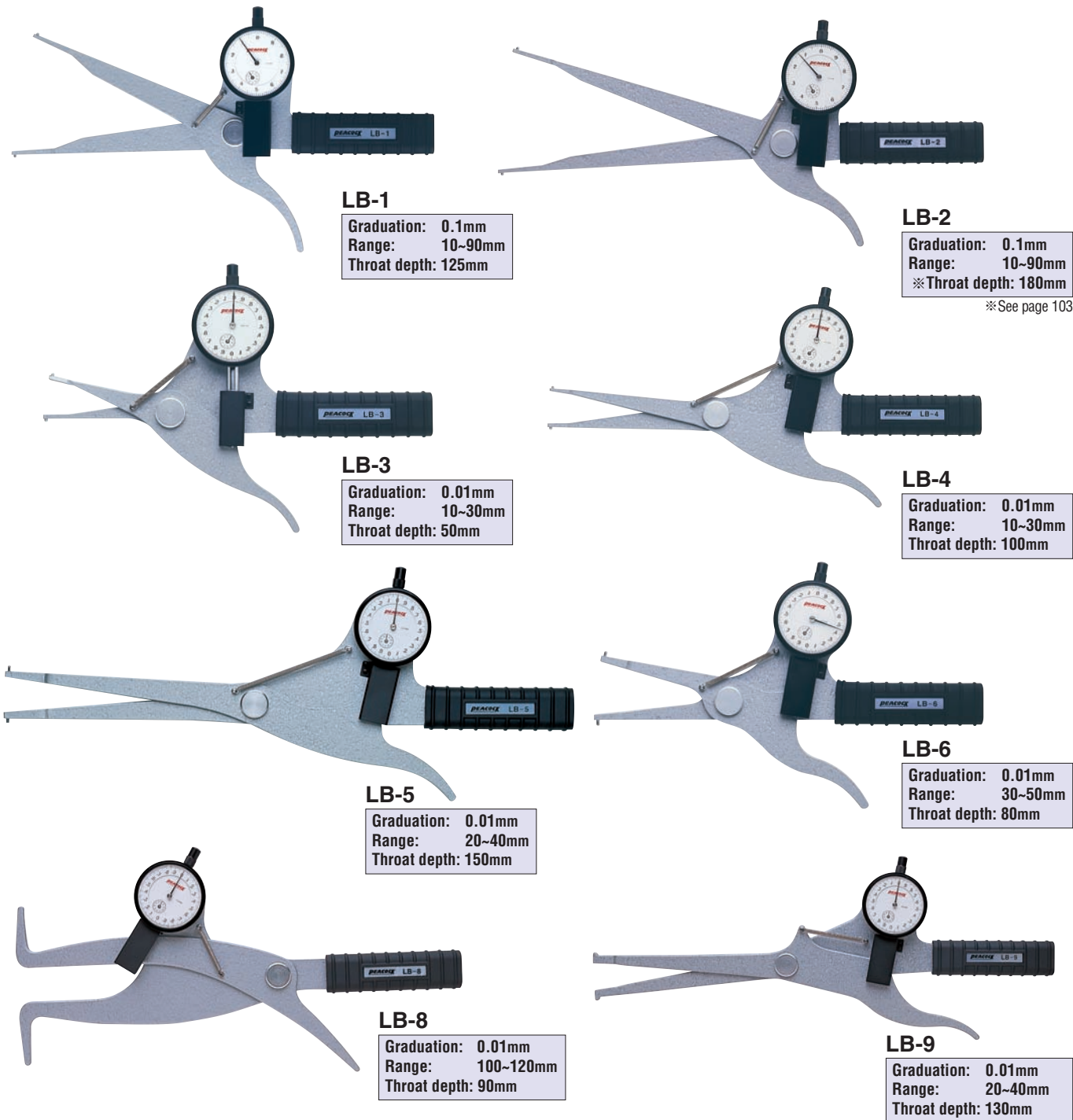
Ex. LA-13

| Range | Throat Depth |
|---------|--------------|
| 0~ 50mm | 235mm |
| 0~ 60mm | 125mm |
| 0~ 80mm | 102mm |
| 0~100mm | 91mm |
| 0~130mm | 86mm |

Specifications

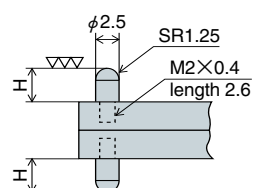
| Model | Graduation (mm) | Range (mm) | Indication error (mm) | Throat depth (mm) | Dimensions (mm) <small>see page 100</small> | | | |
|-------|-----------------|------------|-----------------------|-------------------|---|-----|-----|-----|
| | | | | | H1 | H2 | H3 | H4 |
| LA-11 | 0.1 | 0~50 | ±0.2 | 125 | 2 | 5.5 | 2 | 5.5 |
| LA-13 | 0.1 | 0~130 | ±0.3 | 235 | 134 | 134 | 15 | 37 |
| LA-14 | 0.01 | 100~150 | ±0.03 | 70 | — | — | — | — |
| LA-20 | 0.1 | 0~80 | ±0.2 | 125 | 17 | 11 | 17 | 11 |
| LA-21 | 0.1 | 0~80 | ±0.2 | 220 | 66 | 69 | 12 | 10 |
| LA-22 | 0.1 | 0~80 | ±0.2 | 250 | 28 | 23 | 62 | 62 |
| LA-23 | 0.1 | 0~80 | ±0.2 | 300 | 45 | 50 | 48 | 43 |
| LA-24 | 0.1 | 0~100 | ±0.4 | 600 | 300 | 300 | 100 | 100 |
| LA-31 | 0.01 | 0~20 | ±0.03 | 125 | 60 | 63 | — | — |

LB series (Inside measuring of ID and groove widths)



Dimensions for contact point

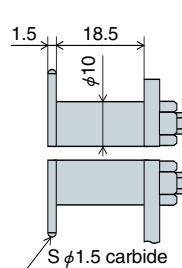
(LB-1 · 2 · 3 · 4 · 5 · 6 · 7, LH-2)



material : SK hardened

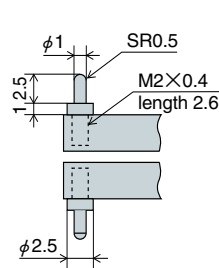
※ Hmm (height of contact point)
3, 4, 5, 6, 7, 8, 9, 10mm type are
available as options. Order pair as 1 set (2pcs).

(LB-7V)

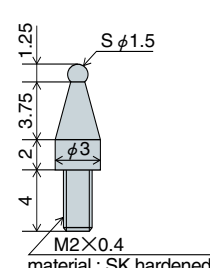


S φ1.5 carbide

(LB-7S)

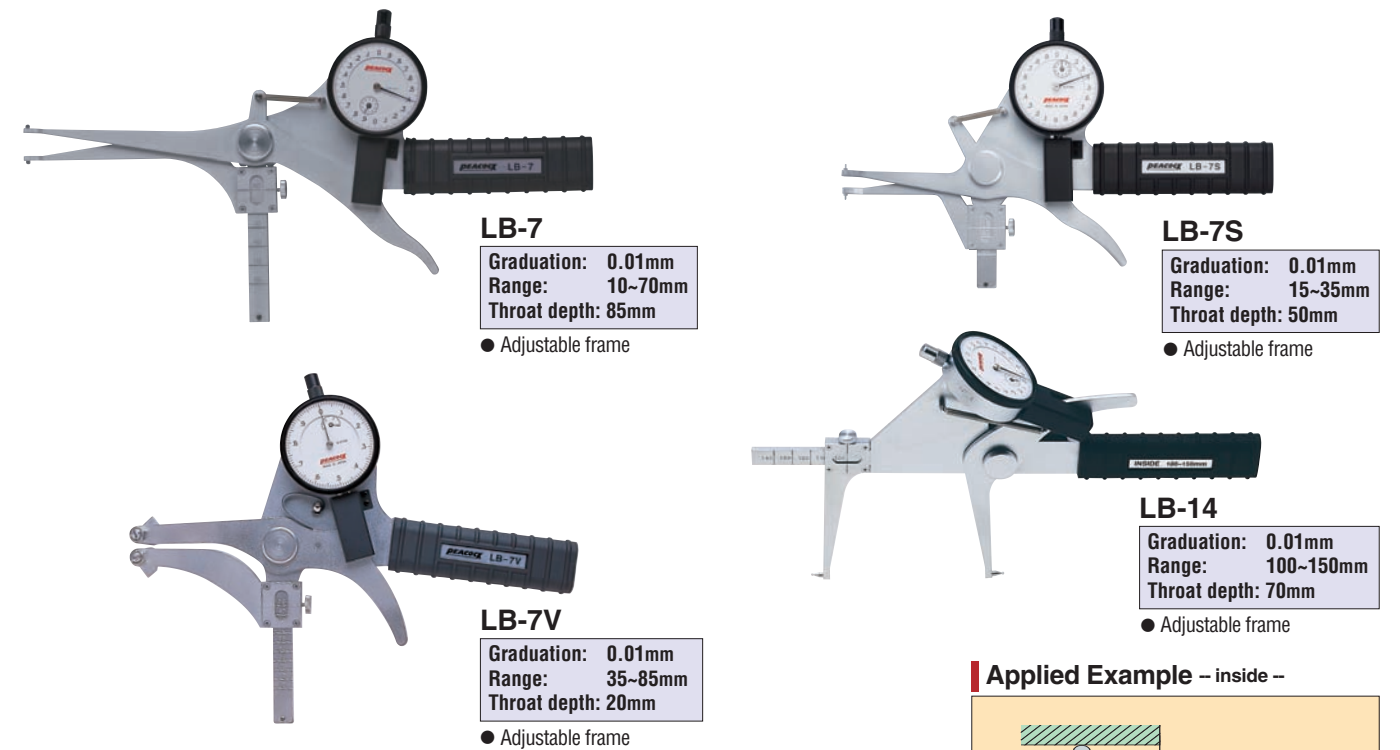


(LA-14 · LB-14)

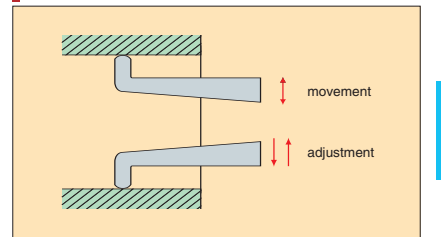


material : SK hardened

Adjustable type



Applied Example – inside –



Note: Throat Depth is changed by Measuring Range.
Contact us more detailed information.

Ex. LB-2

| Range | Throat Depth |
|-------|--------------|
| 10mm | up to 20mm |
| 15mm | up to 45mm |
| 20mm | up to 70mm |
| 30mm | up to 84mm |
| 90mm | up to 180mm |

Handy type



Specifications

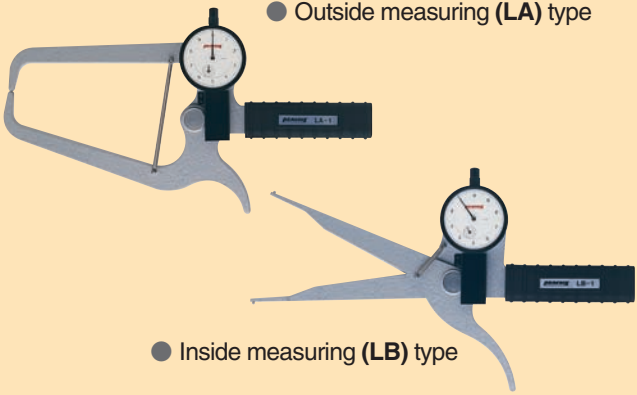
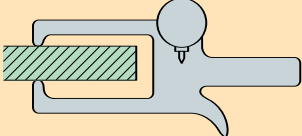
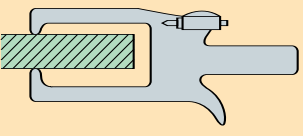
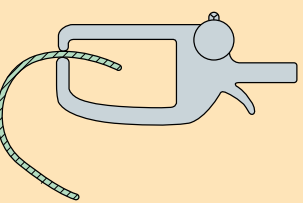
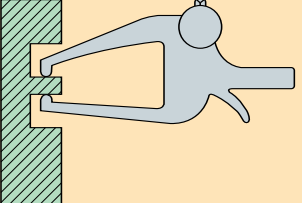
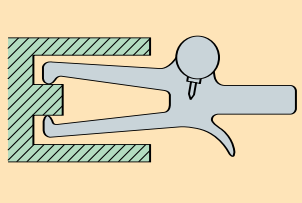
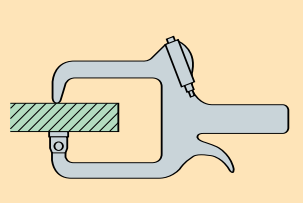
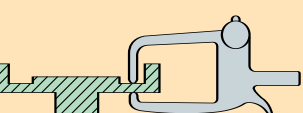

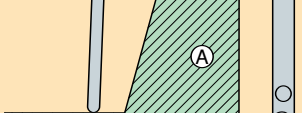
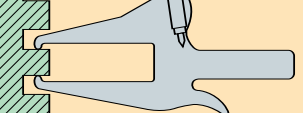
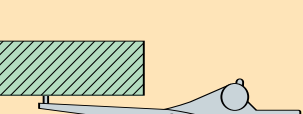
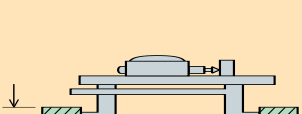
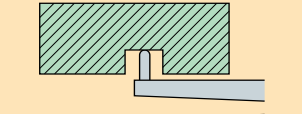
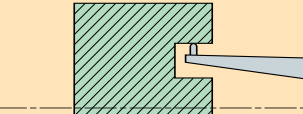
| Model | Graduation (mm) | Range (mm) | Indication error (mm) | Throat depth (mm) | Height of contact point (mm) |
|--------|-----------------|------------|-----------------------|-------------------|---------------------------------------|
| LB-1 | 0.1 | 10~90 | ±0.2 | 125 | 2 |
| LB-2 | 0.1 | 10~90 | ±0.2 | 180 | 2 |
| LB-3 | 0.01 | 10~30 | ±0.03 | 50 | 2 |
| LB-4 | 0.01 | 10~30 | ±0.03 | 100 | 2 |
| LB-5 | 0.01 | 20~40 | ±0.03 | 150 | 4 |
| LB-6 | 0.01 | 30~50 | ±0.03 | 80 | 4 |
| LB-7 | 0.01 | 10~70 | ±0.03 | 85 | 2 |
| LB-7S | 0.01 | 15~35 | ±0.03 | 50 | 3.5 |
| LB-7V | 0.01 | 35~85 | ±0.03 | 20 | 6.5 |
| LB-8 | 0.01 | 100~120 | ±0.03 | 90 | 30 (SK hardened, one unit with frame) |
| LB-9 | 0.01 | 20~40 | ±0.03 | 130 | 2 (SK hardened, one unit with frame) |
| LB-14 | 0.01 | 100~150 | ±0.03 | 70 | 7 |
| ※ LH-2 | 0.01 | 10~120 | ±0.03 | 50 | 2 |

※ For LH-2, the range of accuracy is 10 to 20mm. In case of 20mm or more, check the tolerance with Master Gauge.



"PEACOCK" Caliper Gauges are quite useful for such measurements of O.D. or I.D. thickness and diameter which appear so difficult to measure.

Examples

| | | | |
|---|---|--|--|
|  <p>● Outside measuring (LA) type</p> <p>● Inside measuring (LB) type</p> | |  <p>● Measuring thickness at the back end of a projecting workpiece LA-1~4 LA-13 LA-20~23</p> |  <p>● Measuring thickness at the back end of a projecting workpiece ● Dial upward type LA-5 LA-5S</p> |
|  <p>● Measuring thickness of a cup, hat or helmet LA type</p> |  <p>● Measuring thickness or OD in a narrow, confined place LA type</p> |  <p>● Measuring center OD of a boss LA-11</p> |  <p>● Floating type: lower contact point has a flat 10mm diameter LA-10</p> |
|  <p>● Measuring thickness by hurdling a projecting area LA type</p> |  <p>● Measuring thickness by hurdling a projecting area LA-8</p> |  <p>● Measuring thickness of a large workpiece or part. A: workpiece sizes up to 500mm are accessible (LA-24).</p> |  <p>● Measuring thickness or OD in a narrow, confined place LA-9 LA-11</p> |
|  <p>● Measuring ID or groove width LB-1~6</p> |  <p>● Measuring ID of a very shallow hole A: approximately 2mm lip is sufficient (LB-7V)</p> |  <p>● Measuring ID or an O-ring groove LB-1~6</p> |  <p>● Measuring ID by straddling the center boss LB-7 LB-14</p> |

SECTION 8

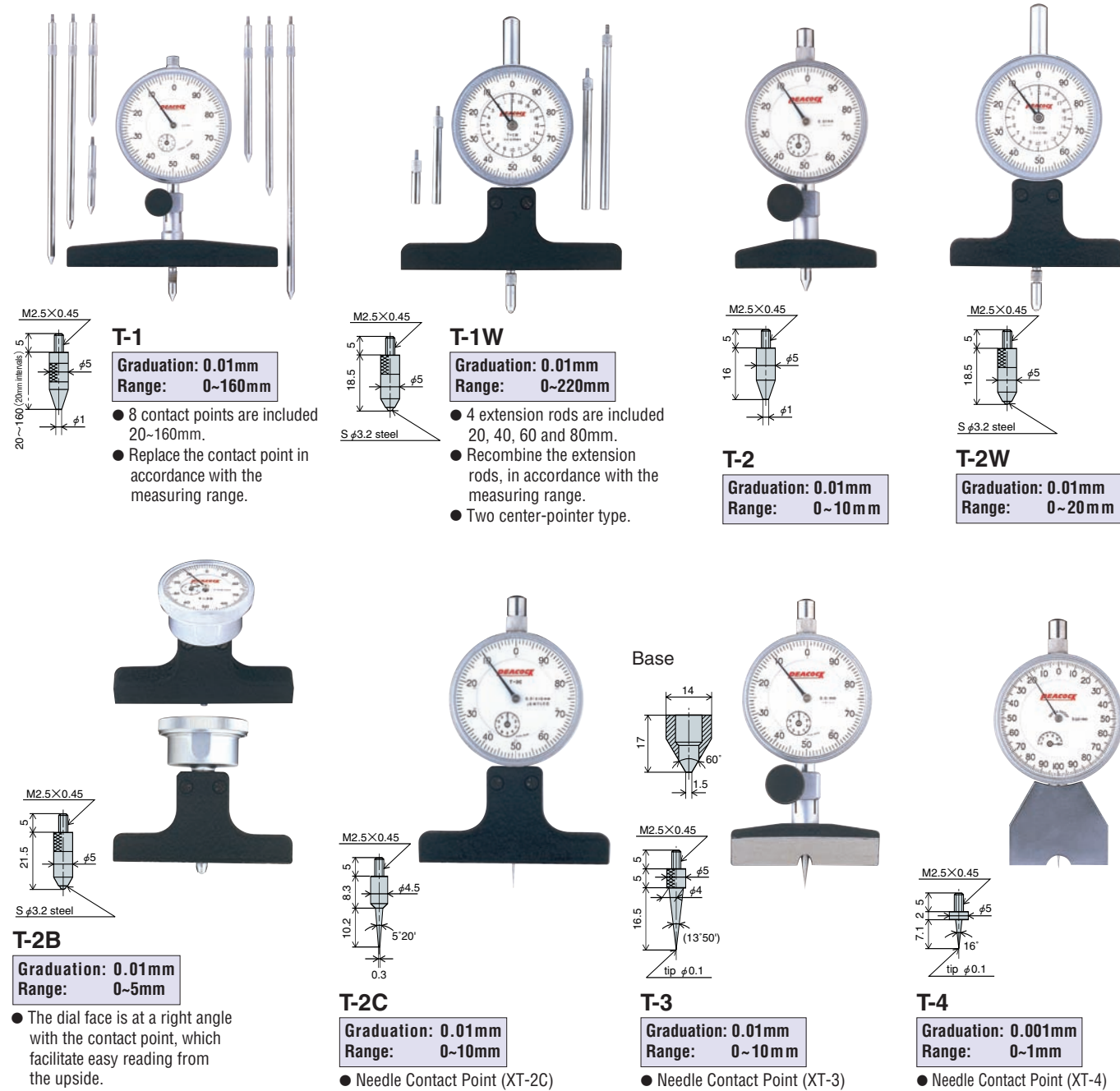


Applied Dial Gauges

- Dial Depth Gauges
- Dial Inside Gauges
- Dial Hole Gauge
- Applied Contact Points
- Bench Center

Dial Depth Gauges

It measure a depth from top bottom of bottomed holes, a depth of narrow grooves, a value of step height of stepped surfaces and a depth of types engraved in matrices.
The dial gauge furnished offers a correct measured value since it can measure an object under measurement with a given measuring force.



Specifications

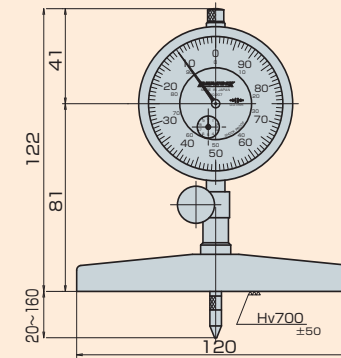
| Model | Range (mm) | Accuracy (μm) | Dial Gauge | | | | Base | |
|-------|------------|---------------|-----------------|-----------------|------------|-------------------------------|-------------|-----------------------|
| | | | Gauge installed | Graduation (mm) | Range (mm) | Measuring force less than (N) | Length (mm) | Width (mm) |
| T-1 | 0~160 | ±20 | 207F-T | 0.01 | 20 | 2.0 | 120 | 14 |
| T-1W | 0~220 | ±20 | 207WF-T | 0.01 | 20 | 2.0 | 100 | 11 |
| T-2 | 0~10 | ±15 | 107F-T | 0.01 | 10 | 1.4 | 60 | 14 |
| T-2W | 0~20 | ±20 | 207WF-T | 0.01 | 20 | 2.0 | 75 | 11 |
| T-2B | 0~5 | ±20 | 196B-T | 0.01 | 5 | 1.4 | 75 | 11 |
| T-2C | 0~10 | ±15 | 107F-T | 0.01 | 10 | 1.4 | 75 | 11 |
| T-3 | 0~10 | ±15 | 107F-T | 0.01 | 10 | 1.4 | 60 | Shown in above figure |
| T-4 | 0~1 | ±5 | ※5F | 0.001 | 1 | 1.5 | 40 | 10 |

※ 5F with Reversed Inner Dial

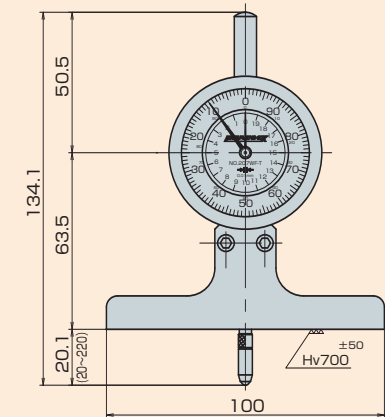
※ Base is hardened and polished.

Outer Dimensions

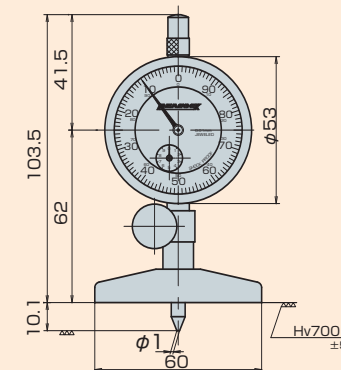
T-1



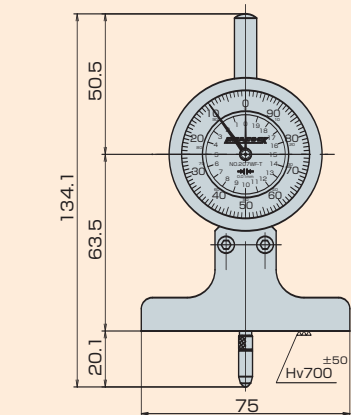
T-1W



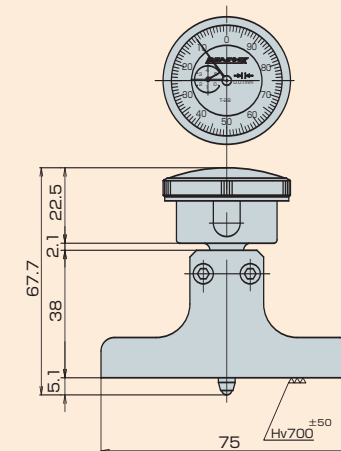
T-2



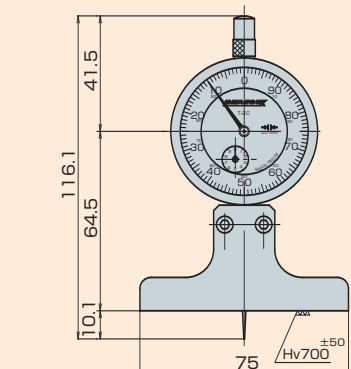
T-2W



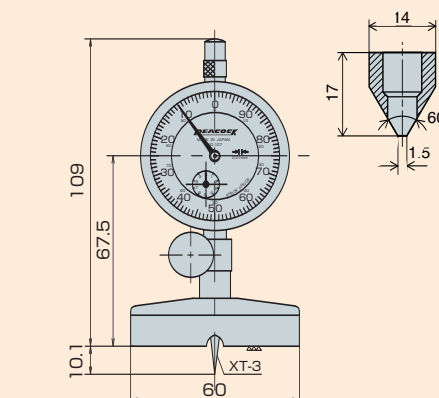
T-2B



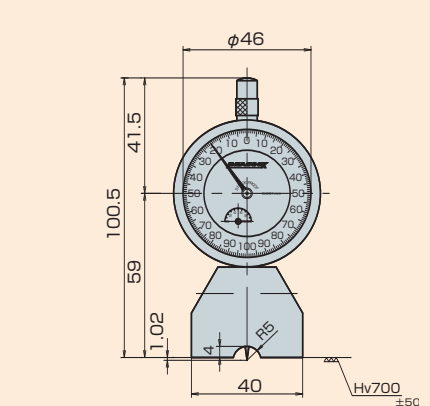
T-2C



T-3

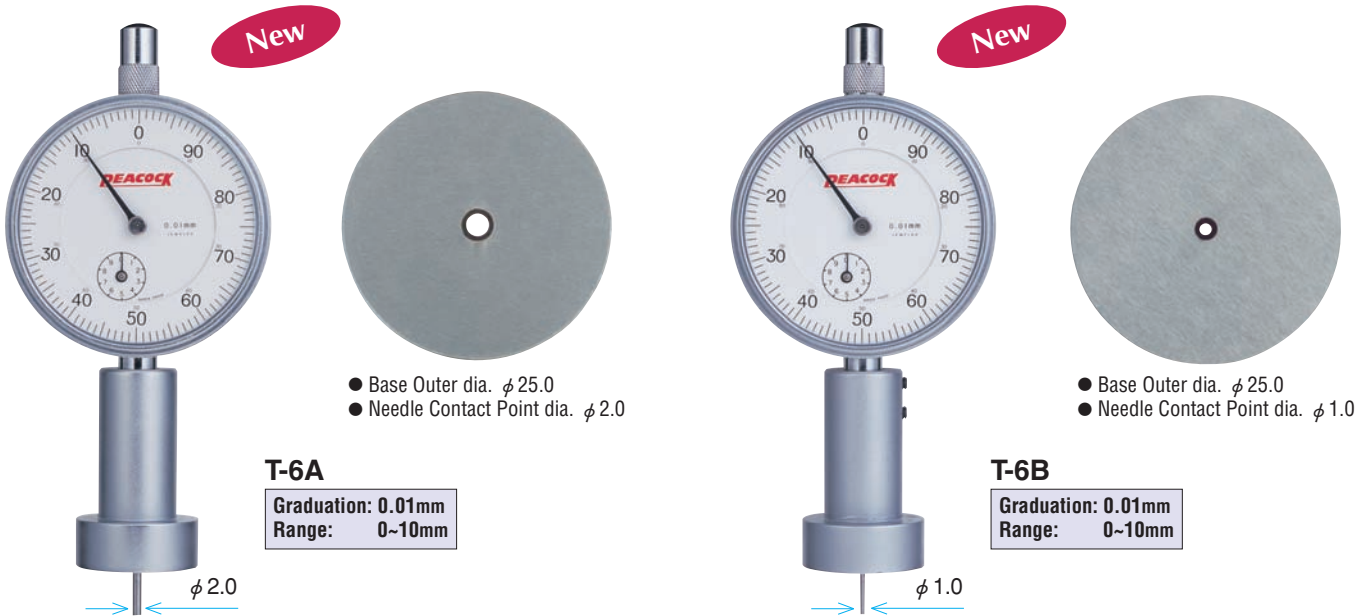


T-4



Dial Depth Gauge

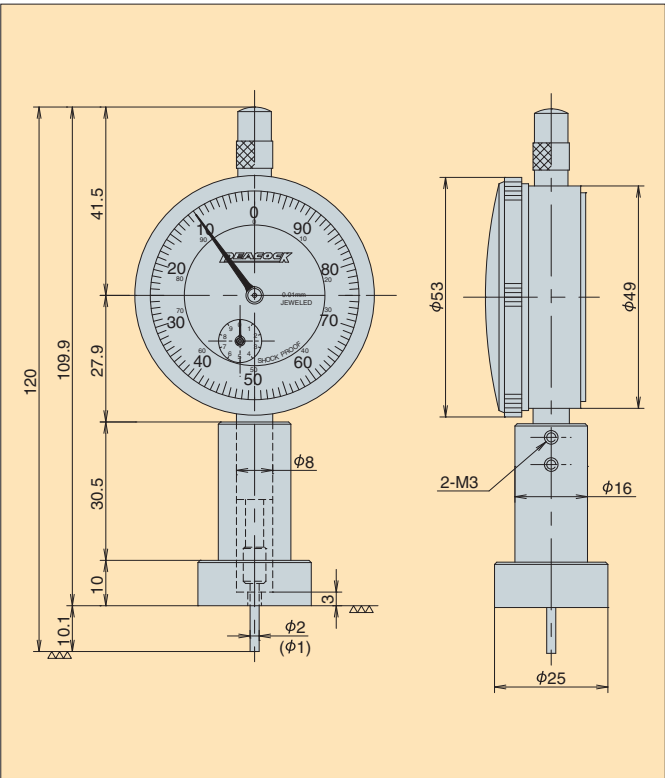
Round Base type



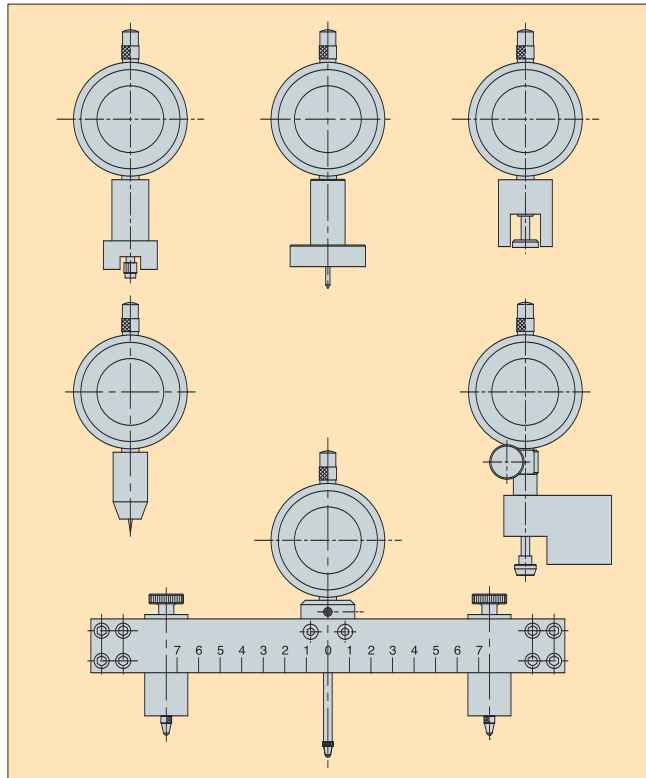
Specifications

| Model | Range (mm) | Accuracy (μ m) | Dial Gauge | | | | Base | |
|-------|------------|---------------------|-----------------|-----------------|------------|-------------------------------|-------------|------------|
| | | | Gauge installed | Graduation (mm) | Range (mm) | Measuring force less than (N) | Length (mm) | Width (mm) |
| T-6A | 0~10 | ± 15 | 107F-T | 0.01 | 10 | 1.4 | — | — |
| T-6B | 0~10 | ± 15 | 107F-T | 0.01 | 10 | 1.4 | — | — |

Dimensions (※ () are T-6B)

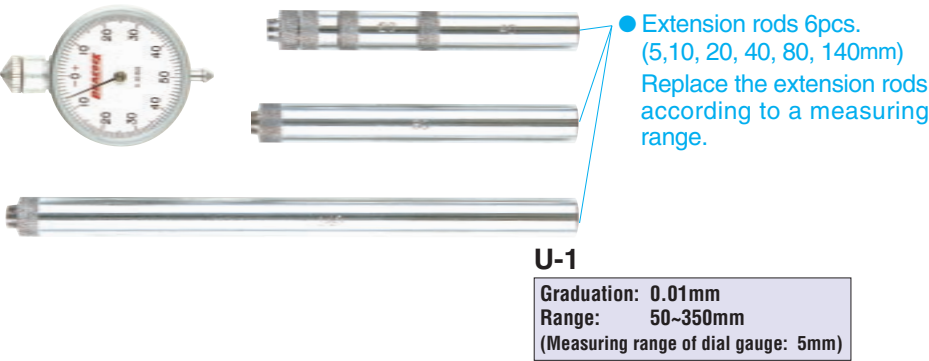


Custom order available

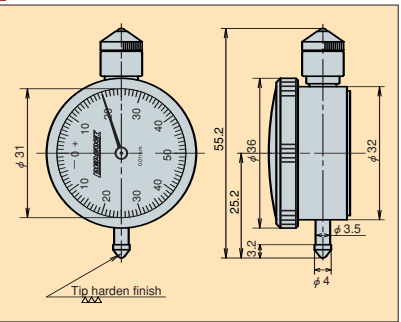


Dial Inside Gauge

- Capable of continuously measuring comparatively large bores or inside wall surface with a given measuring force using flexibility of the dial gauge.

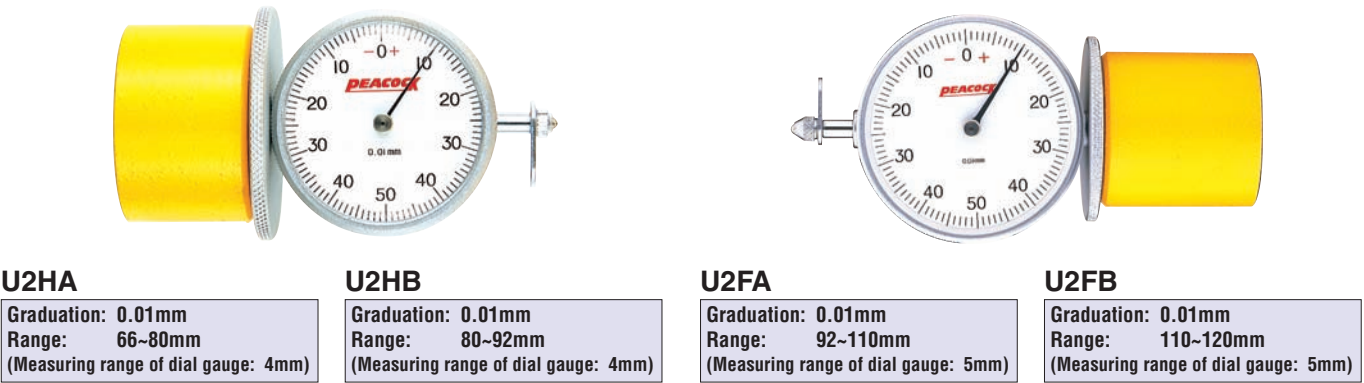


Outer dimension

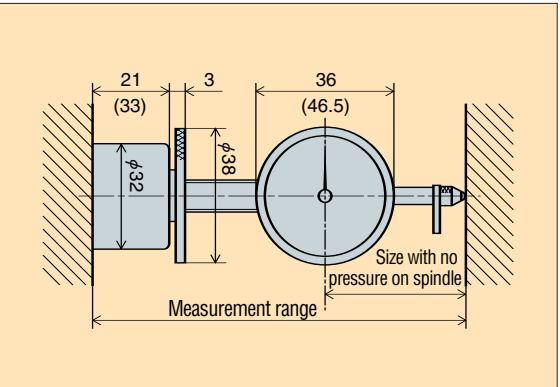


With Magnetic Base

The gauge proper can be secured to the measuring position by the magnet base.



Dimensions (※ () are U2FA·U2FB)



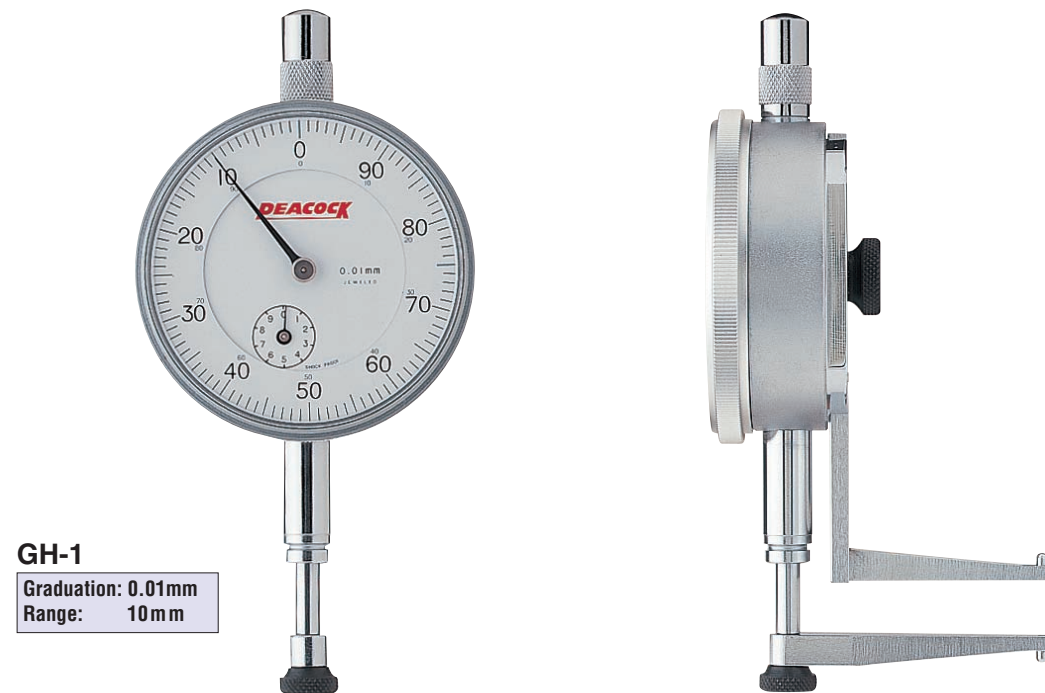
Specifications

| Model | Graduation (mm) | Range (mm) | Reading | Indication error | | | | | Magnetic Power (kg) | Measuring force less than (N) |
|-------|-----------------|------------|------------|----------------------------------|----------------|--------------|---------------|-----------------------|---------------------|-------------------------------|
| | | | | 1/10 revolution (Adjacent error) | 1/2 revolution | 1 revolution | 2 revolutions | Whole measuring range | | |
| U-1 | 0.01 | 50~350 | 0 - 50 - 0 | 9 | — | ± 13 | — | ± 20 | — | 2.0 |
| U2HA | 0.01 | 66~80 | 0 - 50 - 0 | 9 | — | ± 13 | — | ± 15 | 8~10kg | 1.4 |
| U2HB | 0.01 | 80~92 | 0 - 50 - 0 | 9 | — | ± 13 | — | ± 15 | | 1.4 |
| U2FA | 0.01 | 92~110 | 0 - 50 - 0 | 9 | — | ± 13 | — | ± 20 | | 2.0 |
| U2FB | 0.01 | 110~120 | 0 - 50 - 0 | 9 | — | ± 13 | — | ± 20 | | 2.0 |
| U3HA | 0.01 | 66~80 | 0 - 50 - 0 | 9 | — | ± 13 | — | ± 20 | | 1.4 |
| U3HB | 0.01 | 80~92 | 0 - 50 - 0 | 9 | — | ± 13 | — | ± 20 | | 1.4 |

Dial Hole Gauge

The Dial Hole Gauge is used for measurement of a bore diameter or groove width.

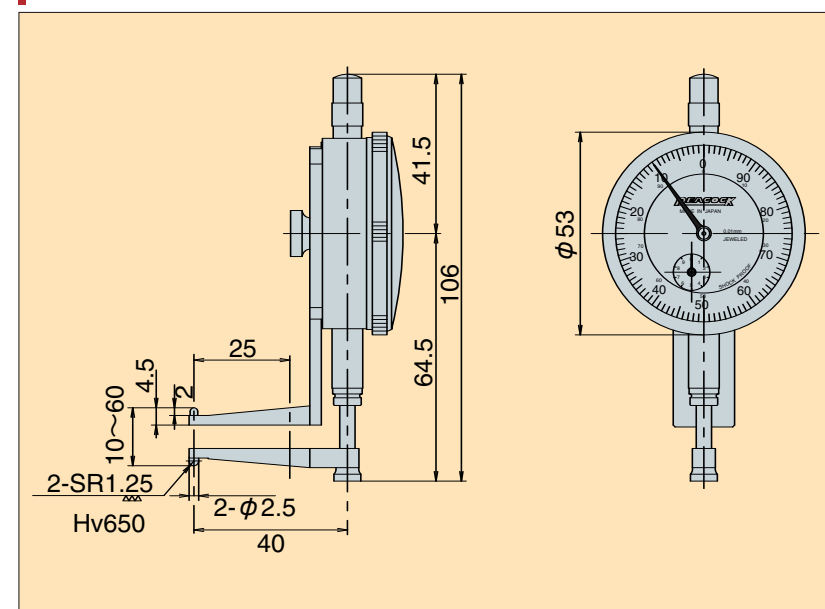
- Adjustable upper frame may be changed as desired, thus securing a wide measuring range.
- The contact point has an outer dia of 2 mm and a height of 2 mm.
(R 1mm ball, M1.7 x 0.35mm.)



Specifications

| Model | Dial Gauge | | | | | Measurable bore ID (mm) | Measurable depth less than (mm) |
|-------|-----------------|------------|---------------|-----------|-------------------------------|-------------------------|---------------------------------|
| | Graduation (mm) | Range (mm) | Accuracy (μm) | Reading | Measuring force less than (N) | | |
| GH-1 | 0.01 | 10 | ±20 | ±100-50-0 | 1.4 | 10~50 | 25 |

Dimensions

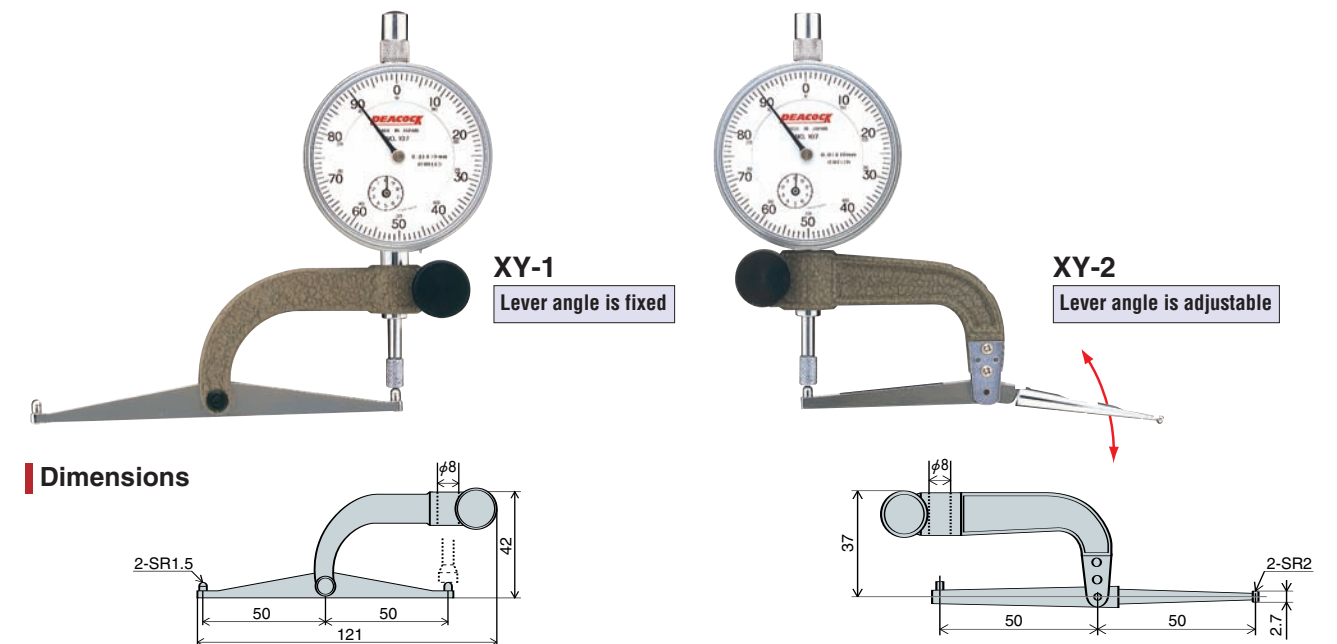


Applied Contact Points

Lever type Contact Points

Dial Gauges supplied on request (Recommend a Dial Gauge with Lug Back and install it to a Magnet Stand.)

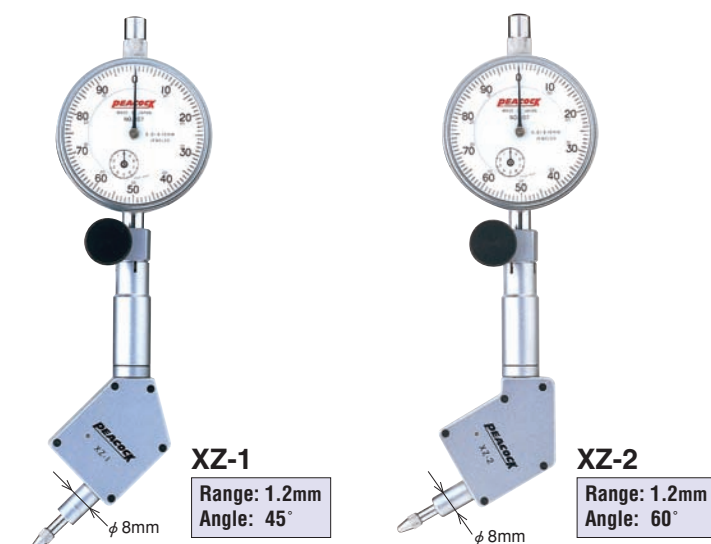
- This instrument have a 50mm length of lever and used to measure depth of holes.
The flat contact point (XS-2) is installed to the dial gauge to hold the back when used.



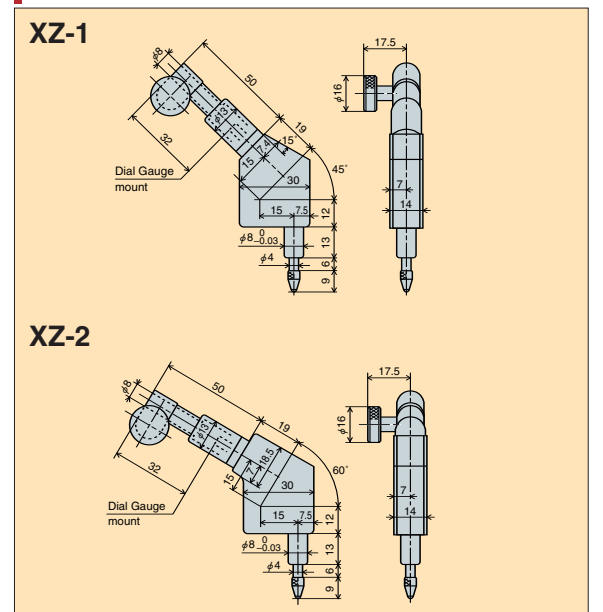
Angle Contact Points

Dial Gauges supplied on request (Recommend a Dial Gauge with Flat Back due to light weight.)

- The contact point is tilted in its moving direction by the cam, and it includes two types; tilted to 45° and 60°.
The contact point is convenient for measurement on locations where it is impossible to straightforwardly install the dial gauge and to use it for a jig.
Hold the φ8 stem when used.



Exterior dimensions



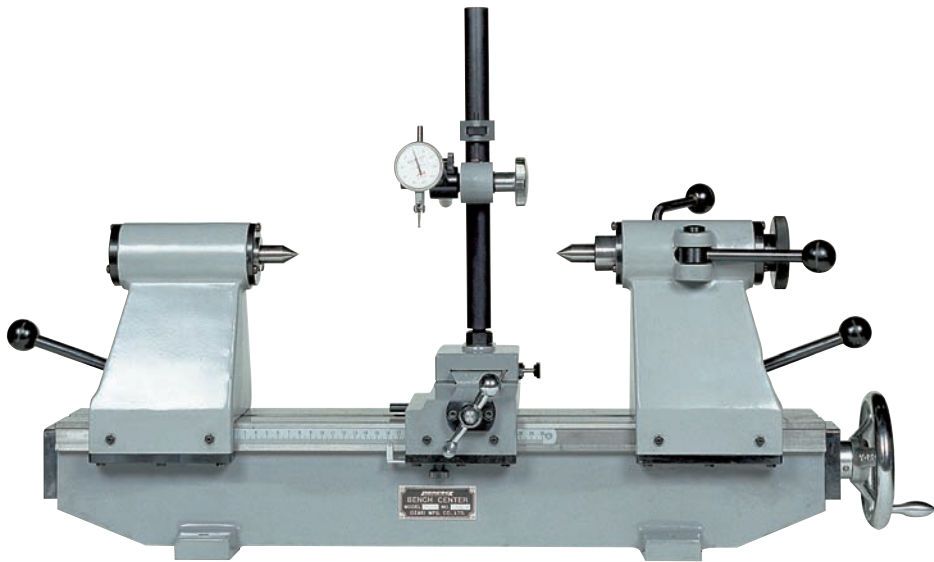
Specifications

| Model | Angle | Range (mm) | Moving distance (mm) | Measuring force less than (N) |
|-------|-------|------------|----------------------|-------------------------------|
| XZ-1 | 45° | 1.2 | 5 | 1.4 |
| XZ-2 | 60° | 1.2 | 5 | 1.4 |

● Angle 90° is available on request.

Bench Center

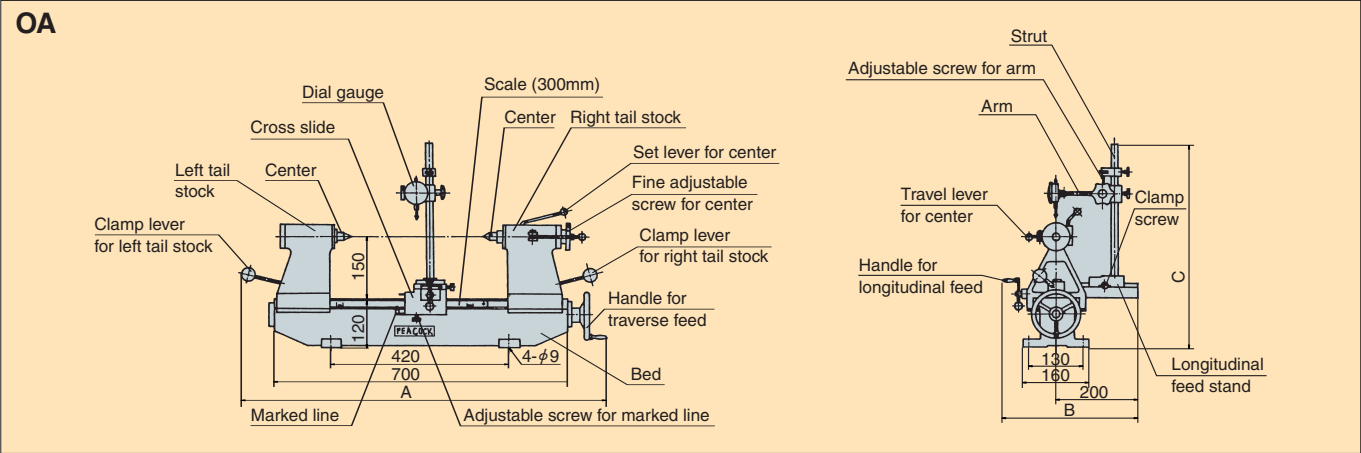
High-accuracy eccentricity tester used to measure eccentricity of articles over a wide range of rotary cutting tools, arbors, crankshafts, gears, piston heads or grinding stones and to check circles for roundness. (dial gauges are not furnished)



OA
Max. Center distance: 300mm



Dimensions (OA)



Specifications

| Model | Center distance (mm) | Max. work capacity dia. (mm) | Use center | Overall dimensions | | | Approx. weight (kg) | Feed gear | |
|-------|----------------------|------------------------------|------------|--------------------|-------------|--------|---------------------|----------------|----------------|
| | | | | (A) mm | (B) mm | (C) mm | | Right and left | Back and forth |
| OA | 300 | 230 | MT No. 2 | Approx. 875 | Approx. 335 | 500 | 51 | Screw feed | Screw feed |

OVER LOAD GAUGE for TIRE CURING MACHINE

For passenger vehicle tires and those for truck and bus tires
(Made to order)

We, "PEACOCK" make OVER LOAD GAUGES for TIRE CURING MACHINES that applied our Dial Gauge.

Example pictures of Over Load Gauge for TIRE CURING MACHINE

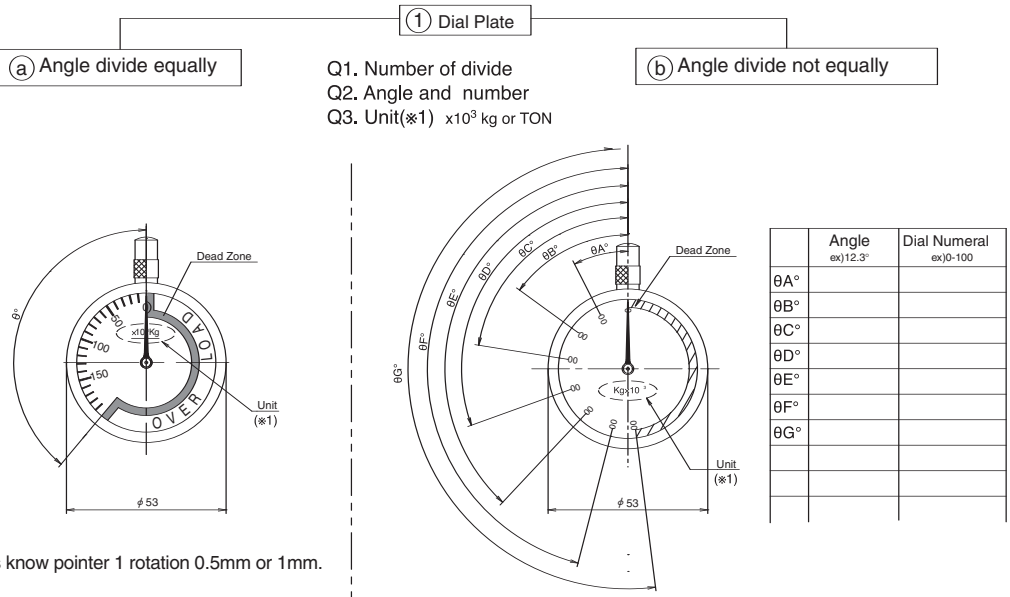
0-300TON
with Back Plate & Dust Proof Rubber
(Spec. Pointer 1 rotation: 0.5mm)



0-1000TON
with Dust Proof Rubber
(Spec. Pointer 1 rotation: 0.5mm)

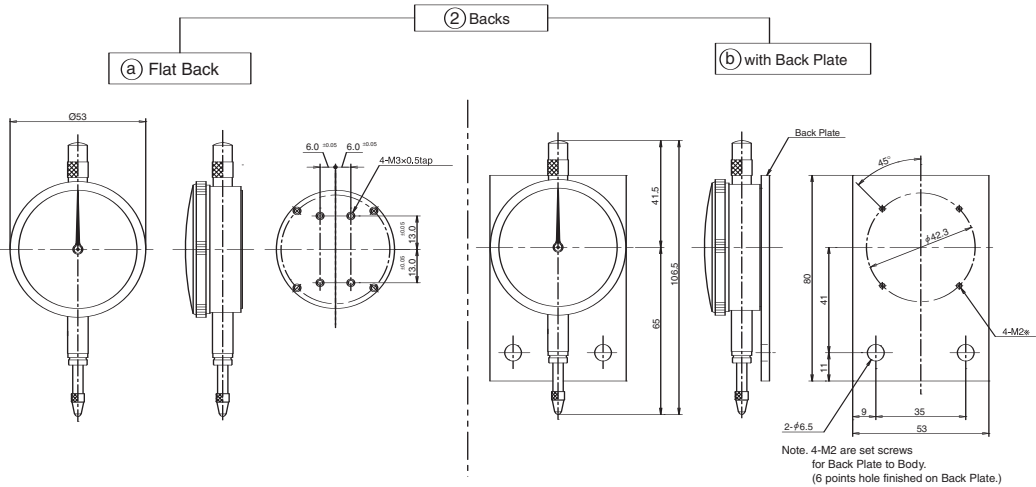


1. For making the Dial Plate, please let us know the angle for range of graduation to meet with the Tightening force (TON) .
*see diagram as under. Example Spec. Pointer 1 rotation: 1mm



*Please let us know pointer 1 rotation 0.5mm or 1mm.

2. We provide the Over Load Gauge with Back Plate to meet with your Tire Curing Machine.
Dust Proof Rubber can be installed to the Spindle of Over Load Gauge.



Please contact your local "PEACOCK" distributor for your further inquiry or write to us at:

peacock-tokyo@peacockozaki.jp

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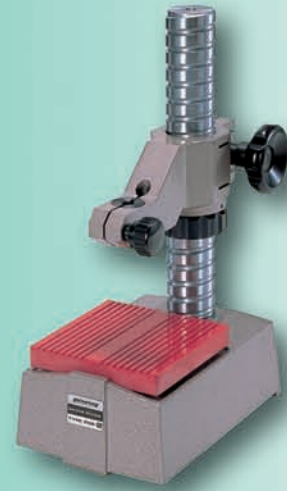
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SECTION 9



Stands

- Dial Gauge Stands
- Magnetic Stands
- Magnetic Holder

Dial Gauge Stands

New

Stand designed for precision measurement of standard dial gauges, lever dial gauges and lever electric micrometers, rigid in construction and easy in fine adjustment of gauge indication by the original fine adjusting device.

SIS-4F

- With fine adjustment
(Dial Gauge and Pic Test Indicator are not furnished.)

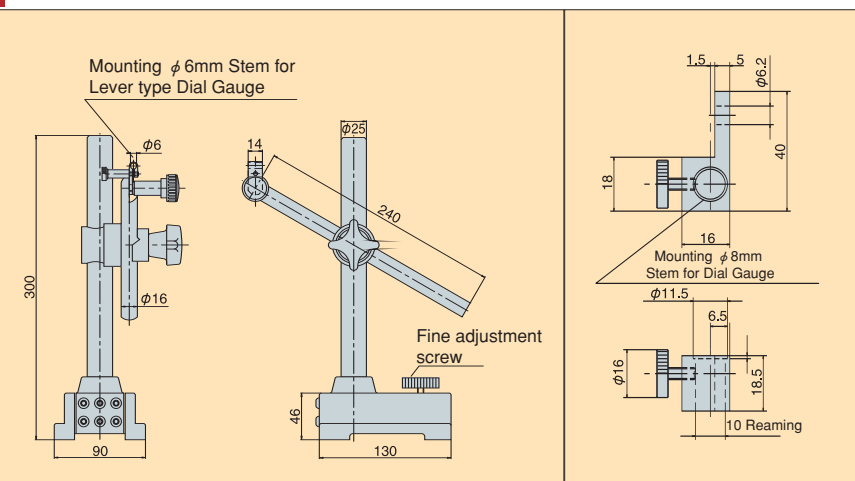


Mounting example for Dial Gauge
(ϕ 8mm Stem)



Mounting example for Pic Test Indicator
(ϕ 6mm Stem)

Dimensions



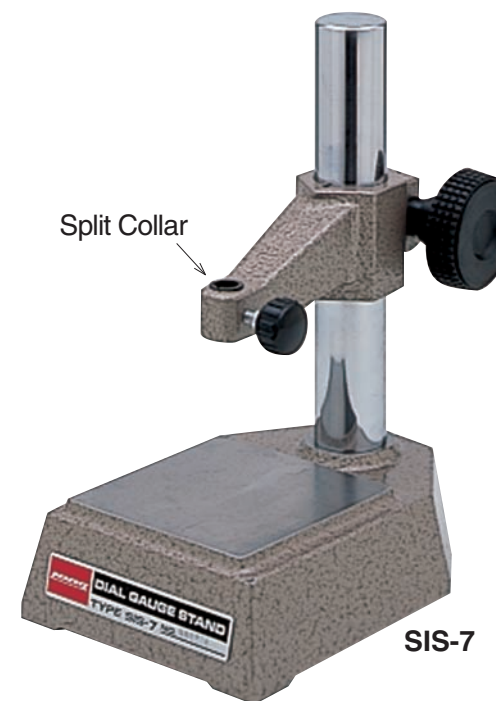
Attachment

(For Mounting a Dial Gauge)

Specifications

| Model | Base | | | Main column | | Support column | | Weight (kg) | Included attachments |
|--------|-------------|-------------|------------|---------------|-------------|----------------|-------------|-------------|---|
| | Height (mm) | Length (mm) | Width (mm) | Diameter (mm) | Length (mm) | Diameter (mm) | Length (mm) | | |
| SIS-4F | 46 | 130 | 90 | 25 | 250 | 16 | 240 | 5.2 | 1. for Dial Gauges 2. for Lever type Dial Indicators |

Economy-wise popular stand

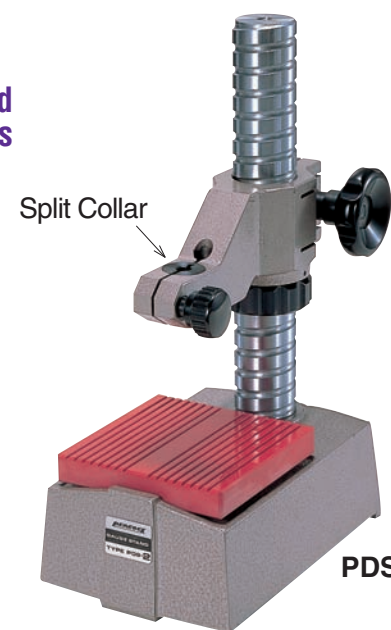


Specifications

| Model | Table surface | Table size | Effective moving range | Allowable measuring depth | Stem installed |
|--------|------------------------------|---------------|------------------------|---------------------------|----------------------------|
| SIS-6C | Quench-hardened and polished | 50mm diameter | 0 to about 100 mm | Approximately 62.5mm | ϕ 8mm (※ ϕ 10mm) |
| SIS-7 | Ground cast iron surface | 74×74mm | 0 to about 100 mm | Approximately 52mm | |

※ ϕ 10mm can be installed when split collar is removed.

The stand is designed for standard dial gauges and digital linear gauges and is rigid and easy to work.



Specifications

| Model | Table surface | Table size | Effective moving range | Allowable measuring depth | Stem installed |
|--------|-------------------------|------------|------------------------|---------------------------|----------------------------|
| PDS-2 | Ceramic with grooves | 100×100mm | 0 to about 100 mm | Approximately 60mm | ϕ 8mm (※ ϕ 20mm) |
| PDS-2F | Ceramic without grooves | 100×100mm | 0 to about 100 mm | Approximately 60mm | |

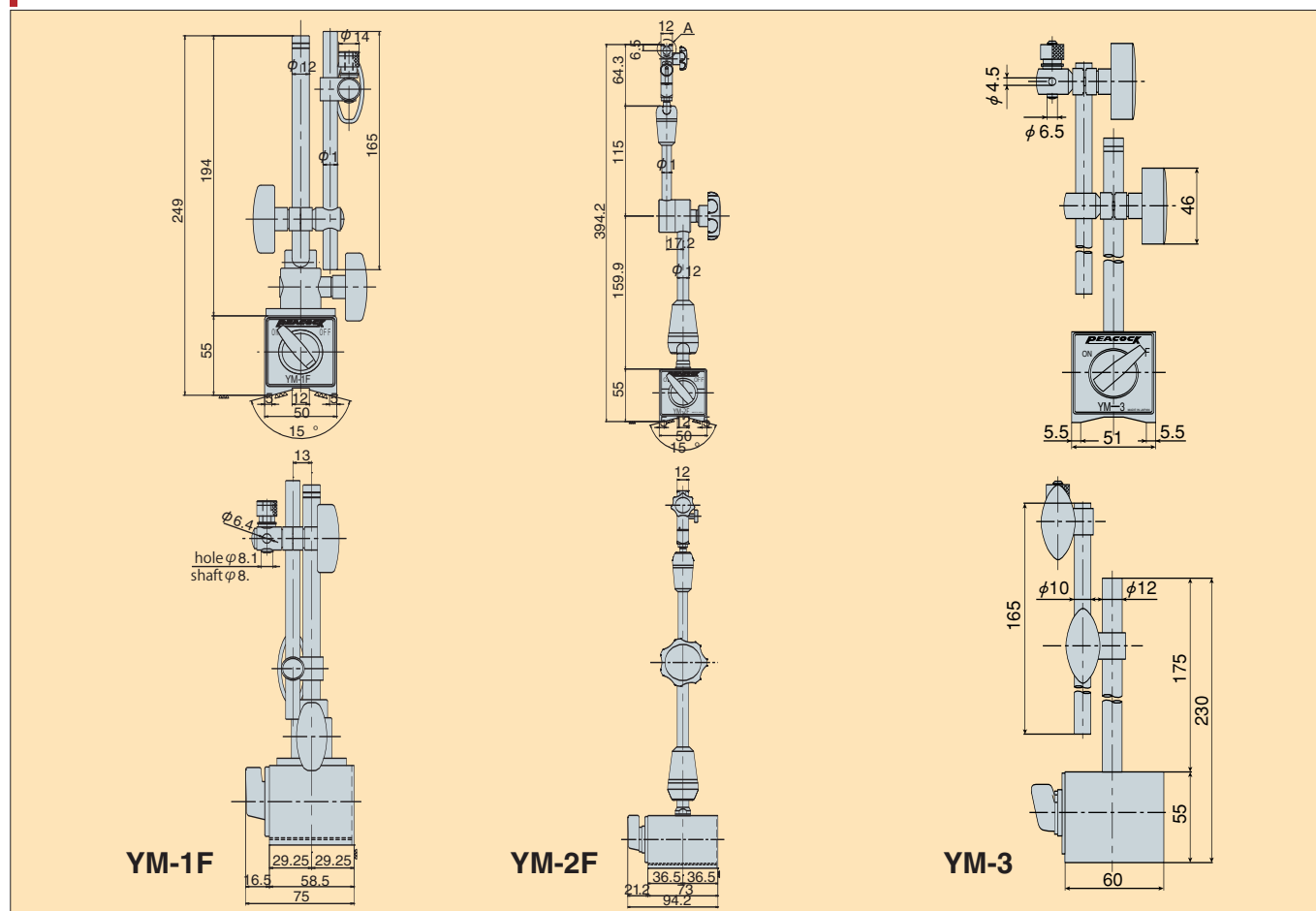
※ ϕ 20mm can be installed when split collar is removed.

Magnetic Stands

The stand using a powerful magnet features simple and stable holding at any place, easy handling, compactness and reasonable price.
Either lever dial gauge (held by ϕ 6 mm stem) or standard dial gauge (held by back lug) is attachable to all types of these magnetic stands.
The dial gauges are not furnished.



Dimensions



Magnetic Holder

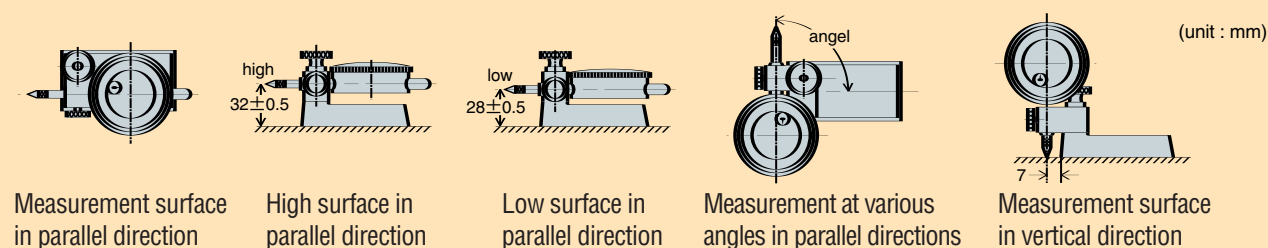
The magnetic holder holds a dial gauge using the attractive force of the magnet fit in the base. It has features of being compact, simple to handle and stable in holding.

- The YMH-1 is for general dial gauges.



YMH-1
(Dial Gauge is not furnished)
● Magnetic Power 10kgs

Examples (YMH-1)



Specifications

| Model | Base (mm) | | | Magnetic power (kgs) | Suitable indicators |
|-------|-----------|--------|--------|----------------------|-------------------------|
| | Width | Length | Height | | |
| YMH-1 | 37 | 100 | 18 | 10 | For general dial gauges |

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SECTION 10



Signal Indicators

- Signal Gauges
- Signal Checker
- Signal Gauge Set-Up
- Signal Gauge Connections Diagram

Signal Gauges/Signal Checker

0.001mm, 0.01mm and 0.05mm Type

S-5

- With its high resolution of 0.001mm scale, it is most suitable for judgement of the values measured on finished parts with high accuracy.



S-5

Graduation: 0.001mm
Measurement range: 0.1(±0.05)mm

S-7

- With its resolution of 0.01mm scale, it is generally used. Its pointer is in an anti-shock structure so as to give stable discriminating signals.



S-7

Graduation: 0.01mm
Measurement range: 1.0(±0.5)mm

S-9

- With its most gross scale of 0.05mm, it is applicable to select grossly worked parts and as cast parts at the low-cost.



S-9

Graduation: 0.05mm
Measurement range: 3.0(±1.5)mm

SC-2A

- Once its tolerance is set, a dial gauge is dismantled before using it so that its endurance is really improved. With its large tolerance setting range of 3mm, it is most suitable for judgement of the measured values in a wide tolerance range.



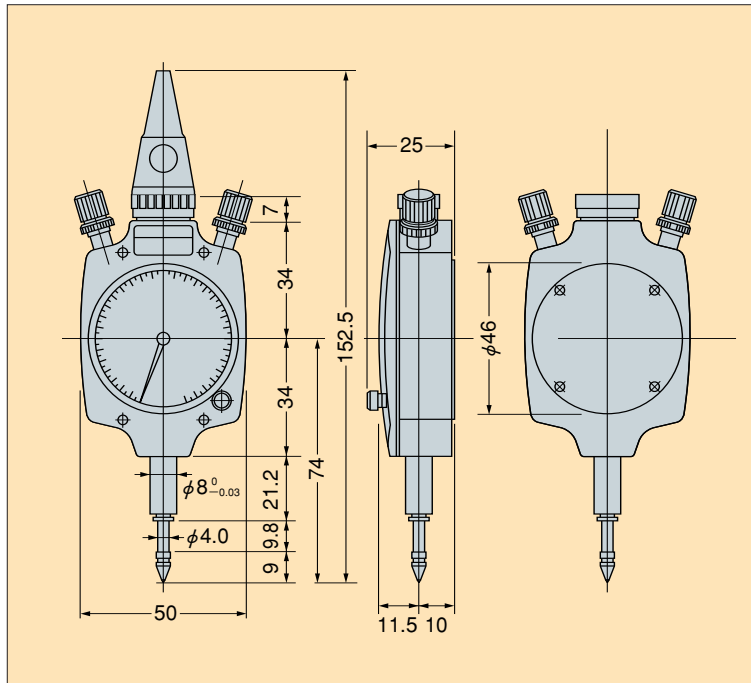
SC-2A

Measurement range: 3mm

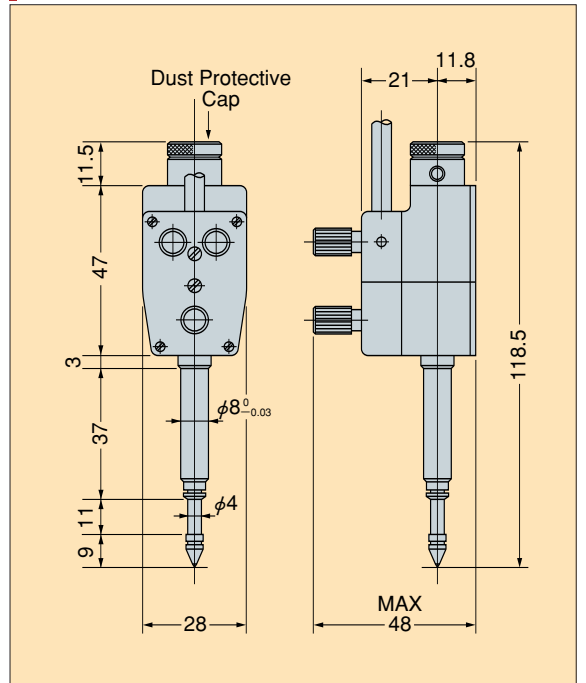
Specifications

| Model | S-5 | S-7 | S-9 | SC-2A |
|-----------------------------|---|---------------|---------------|---|
| Spindle Movable Range | 3mm | 3mm | 4mm | 10mm |
| Graduation | 0.001mm | 0.01mm | 0.05mm | ※ In SC-2A type, the minimum readable value depends on a dial gauge to be attached. |
| Tolerance Setting Range | 0.1 (±0.05) mm | 1.0 (±0.5) mm | 3.0 (±1.5) mm | 3mm |
| Accuracy | ±0.002mm | ±0.005mm | ±0.025mm | ±0.005mm |
| Measuring Force | Less than 1.2N (120gf) | | | |
| Contact capacity | MAX DC24V 20mA | | | |
| Number of judgement Stages | Three stages of -NG, OK and +NG | | | |
| Cord length | 2m | | | |
| Contact point | X-2 | | | |
| Stem diameter | φ 8 ^{+0.03} mm | | | |
| Operating temperature range | 0~60°C | | | |
| Options | Code Length 5m 10m / Back cover with Lug (GB-1A) | | | Code Length 5m 10m |
| Dial indicator for setting | | | | Model 107F, 5F |
| Weight | 180g | | | 150g |
| Cable signal table | <div style="display: flex; justify-content: space-between;"> <div> S-5, S-7, S-9 <p>① ---COM (blue) black ---NG with ① and ② at ON ② ---NG (red) ---+NG with ① and ③ at ON ③ ---+NG (white) OK with ①, ②, and ③ at OFF</p> </div> <div> SC-2A <p>① ---COM (blue) black ---NG with ①, ②, and ③ at OFF ② ---OK (red) OK with ① and ② at ON ③ ---+NG (white) ---+NG with ①, ②, and ③ at ON</p> </div> </div> | | | |
| Caution | <ul style="list-style-type: none"> When the current of 10 to 20 mA is used to drive a photocoupler, etc., the contact may be worn a little earlier. In SC-2A type, the COM terminal is body-grounded (If leak current is found in other devices, put a gauge into floating status before mounting it). In SC-2A type, a spindle can be set in a range from its free status to 3mm. Although it may be movable in excess of this limit, you cannot set it in such an excessive level in order to protect the spindle. In SC-2A type, when a dial gauge is dismantled after setting the tolerance, never forget to mount a dust protective cap. | | | |

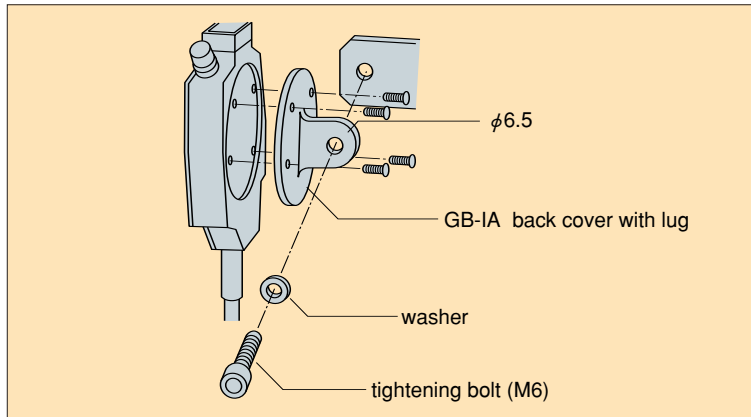
Outer Dimension S-5, S-7 & S-9



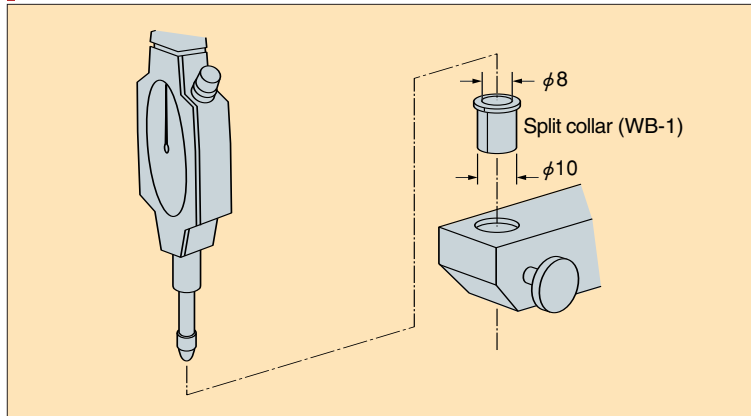
Outer Dimension SC-2A



GB-1A Example of mounted back cover with lug (option)



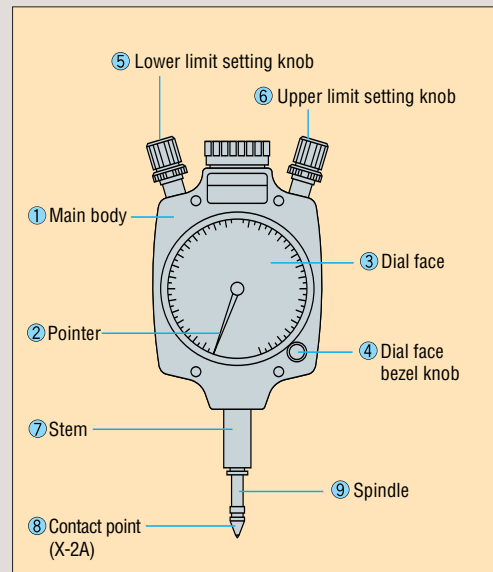
Example of supported stem



Signal Gauge Set-Up

How to Use

● Signal Gauge (S-5, S-7, S-9)

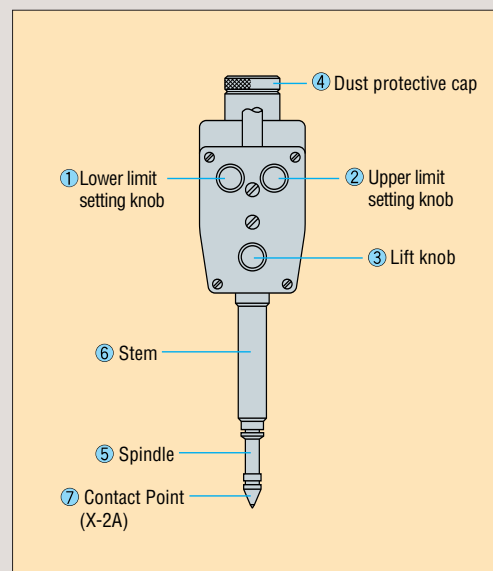


● Instructions

- Prepare a judgement master (standard sample) and hold a signal gauge on a stand, etc.
- Adjust and fix the position of judgement master so that a gauge pointer indicates zero, and move the contact point ⑧ up and down several times so as to confirm the pointer's stable position.
- When setting a lower limit of tolerance value, remove the master and turn the lower limit setting knob ⑤ so as to adjust a pointer at a certain graduation.
- When setting an upper limit of tolerance value, turn the upper limit setting knob ⑥ so as to adjust a pointer at a certain graduation while fully pushing up the contact point ⑧.
- After setting the upper and lower limit, move the spindle ⑨ up and down several times to confirm that a pointer's indication is within the tolerance value.

※ Stem or back cover with lug is used to support the gauge.

● Signal Checker (SC-2A)

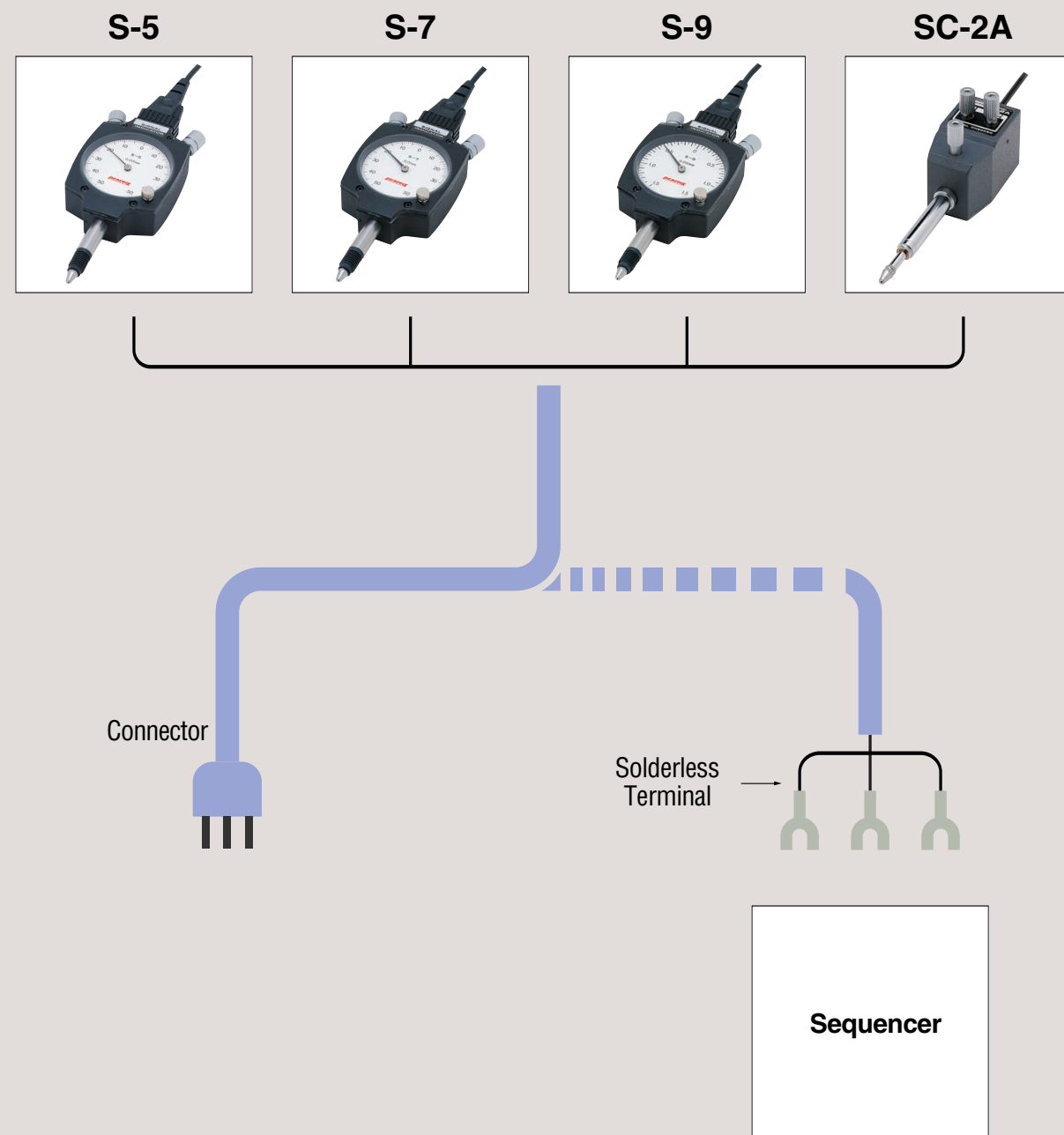


● Instructions

- Prepare a judgement master (standard sample) and hold a signal gauge on a stand, etc.
- Prepare a dial gauge for setting tolerance value No.107 (0.01mm to 10mm) and remove the dust protective cap ④ by a hexagon wrench attached to the gauge.
- Turning the lift knob ③ allows the spindle ⑤ to move up and down. The pointer of dial gauge moves according to its movement.
- Connect this checker with a signal box or a controller.
- Prepare a judgement master (standard sample), on which push this checker to the position where the lower limit of tolerance value can be set, and fix it by a supporting device.
- Set the indicator of dial gauge at zero of a dial and turn the lower limit setting knob ① fully in the clockwise direction.
- Set the upper limit of tolerance value at a certain position while turning the lift knob ③ in the clockwise direction.
- Turn the upper limit setting knob ② in order to adjust the indications (signals) of signal box or controller to the switching position of OK and +NG at the upper limit of tolerance value.
- Remove the master and turn the lift knob ③ in the counter clockwise direction to set the lower limit of tolerance value.
- Turn the lower limit setting knob ① to adjust the indications (signals) of signal box or controller to the switching position of OK and -NG at the lower limit of tolerance value.
- Move the spindle ⑤ up and down several times by the lift knob ③ to check the right adjustment.
- After your setting, turn the lift knob ③ in the counter clockwise direction until the spindle ⑤ is fully pushed down.
- When you use this checker without dial gauge, never forget to mount the dust protective cap ④ on it.

※ Stem is used to support this checker.

Signal Gauge Connections Diagram



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SECTION 11



Digital Indicators

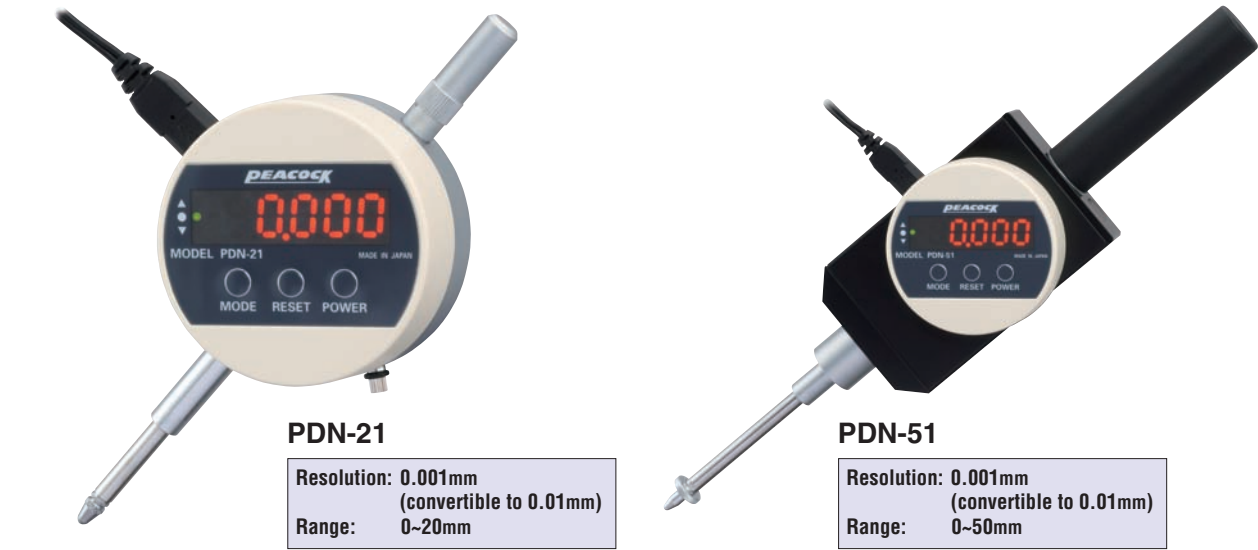
- Digital Gauge
- Linear Gauge
- Digital Counter
- Deep Hole Bore Gauge
- Technical Glossary

Overview of Digital Gauges & Display Combinations

| Measuring range | Resolution | 0.001mm (0.01m) | 0.01mm | 0.001mm |
|----------------------------|------------|--|---|---|
| 2mm | | — | DL-2 (Lever Type)  | DL-2S (Lever Type)  |
| 5mm | | — | D-5  | D-5S  |
| 10mm (12.5mm) (25mm) | | DGN-255 DGN-257 (0.01mm) DGN-125 (Convertible to 0.01mm)  | D-10 DN-10  | D-10S DN-10S  |
| 20mm | | PDN-21 0.001mm (Convertible to 0.01mm)  | D-20 DN-20  | D-20S DN-20S  |
| 50mm | | PDN-51 0.001mm (Convertible to 0.01mm)  | D-50 D-50HT  | D-50S  |
| 100mm | | — | D-100  | D-100S  |
| Counter | | — | C-500  | C-700  -----> Personal Computer |

Digital Gauges

Integrated Display Type



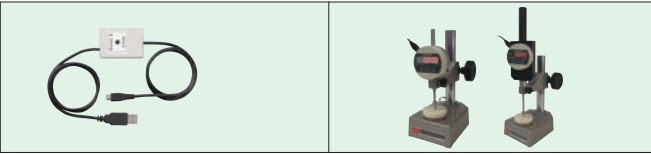
Options (for PDN-21)

● Flat Back No. GB-3D20 ● Finger Lever No. LL-D20 ● Release No. RE-4 ● Lifting Lever No. LL-PD



Options (for PDN-21 and PDN-51)

● Input Adapter No. IF-21 ● Gauge Stand No. SIS-6C

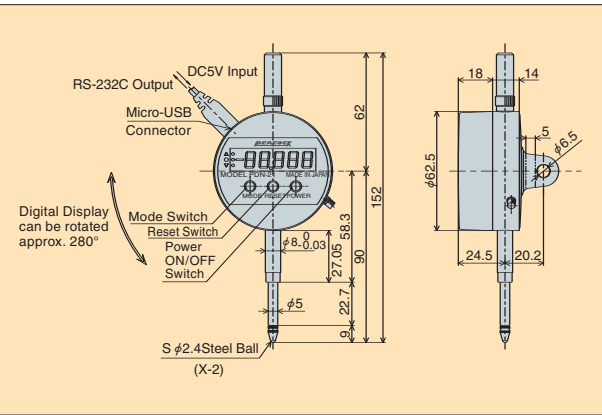


IF-21 can input a measuring data directly to a cell of the spreadsheet such as EXCEL by converting the keyboard signal. The driver is unnecessary as USB terminal connection.

Specifications

| Model | PDN-21 | PDN-51 |
|--------------------------------------|--|---|
| Range | 20mm | 50mm |
| Resolution | Convertible 0.01mm and 0.001mm (Set 0.001mm at the time of shipment) | |
| Accuracy (excluding quantized error) | 0.001mm Display: 0.003mm 0.01mm Display: 0.01mm | 0.001mm Display: 0.004mm 0.01mm Display: 0.01mm |
| Measuring force | Less than 1.5N (Without Spring: less than 0.31N) | Less than 3.0N (Without Spring: less than 1.0N) |
| Response speed | 1000mm / sec. | |
| Contact Point | X-2 (M2.5 x 0.45) | X-9 (M2.5 x 0.45) |
| Display rotation | 280° | |
| Power Supply | AC100 - 240 V±10% 50/60Hz (AC Adapter) | |
| Operating temperature | 0~40°C (no condensation) | |
| Accessories | ● AC Adapter | ● AC Adapter ● Finger Lever No. LL-D50 |
| Functions | PDN-21 and PDN-51 | ● Convertible 0.01mm and 0.001mm ● Judgement: Three Stage of -NG, OK and +NG (OK : Green, +NG : Red, -NG : Red) ● Counting Direction Conversion |
| Data Output | RS-232C | |
| Options | for PDN-21 | ● Release No. RE-4 ● Lifting Lever No. LL-PD |
| | for PDN-21 and PDN-51 | ● Input Adapter No. IF-21 |

Dimensions (PDN-21 PDN-CC PDN-PP)



Digital Gauges

New

Cordless Type

- The batteries in these digital gauges have a service life of approximately 3000 hours under normal use.
- Digital display can be rotated (approx. 270°) to easily legible positions.
- Very compact, and long 25mm stroke. (DGN-255, DGN-257)
- RS-232C data output capability.
- No warm-up required. Switch on, and it's immediately ready to use.
- Clear LCD display.



DGN-255
Range: 25mm
Resolution: 0.001mm



DGN-257
Range: 25mm
Resolution: 0.01mm



DGN-125
Range: 12.5mm
Resolution: 0.001 / 0.01mm
Switchable
Min, Max, Delta function etc.

Specifications

| Type | Simple type | | Multifunction type | |
|--|---|---|--------------------------------|----------|
| Model No. | DGN-255 | DGN-257 | DGN-125 | DGN-125B |
| Range | 25mm | 25mm | 12.5mm | |
| Resolution | 0.001mm | 0.01mm | 0.001/0.01mm Switchable | |
| Indicator error (*excluding quantized error) | 0.003mm | 0.01mm | 0.003mm | |
| Display (mm) | 6 digit 999.999 with (–symbol) | 6 digit 9999.99 with (–symbol) | 6 digit 999.999 with (–symbol) | |
| Measuring force (upright position) | Less than 1.2N | | Less than 1.0N | |
| Mounting method | Supported by ϕ 8mm Stem, (Lug back No. GB-1DX is optional) | | | |
| Contact Point | SR2.0mm with Steel ball M2.5 x 0.45 L=7mm No.X-14 | | | |
| Operating temperature | +5°C to +40°C | | | |
| Common Specifications | ● Battery | CR-2032 | | |
| | ● Data Output | RS-232C (by cable KB-232C or KB-USB) | | |
| | ● Change Polarity | Pushing up the Spindle | | |
| | ● Change Unit | mm/inch | | |
| | ● Low Battery | Light up "B" | | |
| | ● Display rotatable | Max 270° | | |
| | ● Power Saving | Automatic Switch off | | |
| for only DGN-125, DGN-125B | ★ Minimum Value | Hold the Minimum Value (Min) | | |
| | ★ Maximum Value | Hold the Maximum Value (Max) | | |
| | ★ Measurement Value | 0.001mm/0.01mm Selectable | | |
| | ★ Min + Max | Hold the Minimum Value + Maximum Value (Delta) | | |
| | ★ Multiplication Display | Calculated Display at set multiple (Mult) | | |
| | ★ Judgement | LED display -NG OK+NG (Tol) | | |
| Options | ◆ Spindle Pull-up | Lifting Lever (LL-205), Finger Lever (LL-D20), Release (RE-205) | | |
| | ◆ Back with Lug | Mounting Vertical /Horizontal direction (GB-1DX) hole ϕ 6.5mm | | |
| | ◆ Contact Point | All the replaceable Contact Point for Dial Gauges can be installed | | |
| | ◆ Signal Cable | RS-232C Cable (KB-232C), USB Cable (KB-USB) | | |
| | ◆ Input Adapter | A Data input to EXCEL (IF-21B) | | |
| for only DGN-125B | ★ Wireless communications | Bluetooth 4.0 type, Working distance is within 5m. System requirements Windows 10 uploaded | | |

Digital Gauges

Optional accessories

Lifting Lever
LL-205



Release
RE-205



Finger Lever
LL-D20



Lug Back
GB-1DX



USB Cable
KB-USB



Foot Switch
SW-1



Battery
CR2032



Data Communication

Cable and Input Adapter (Option)

RS-232C Cable
KB-232C

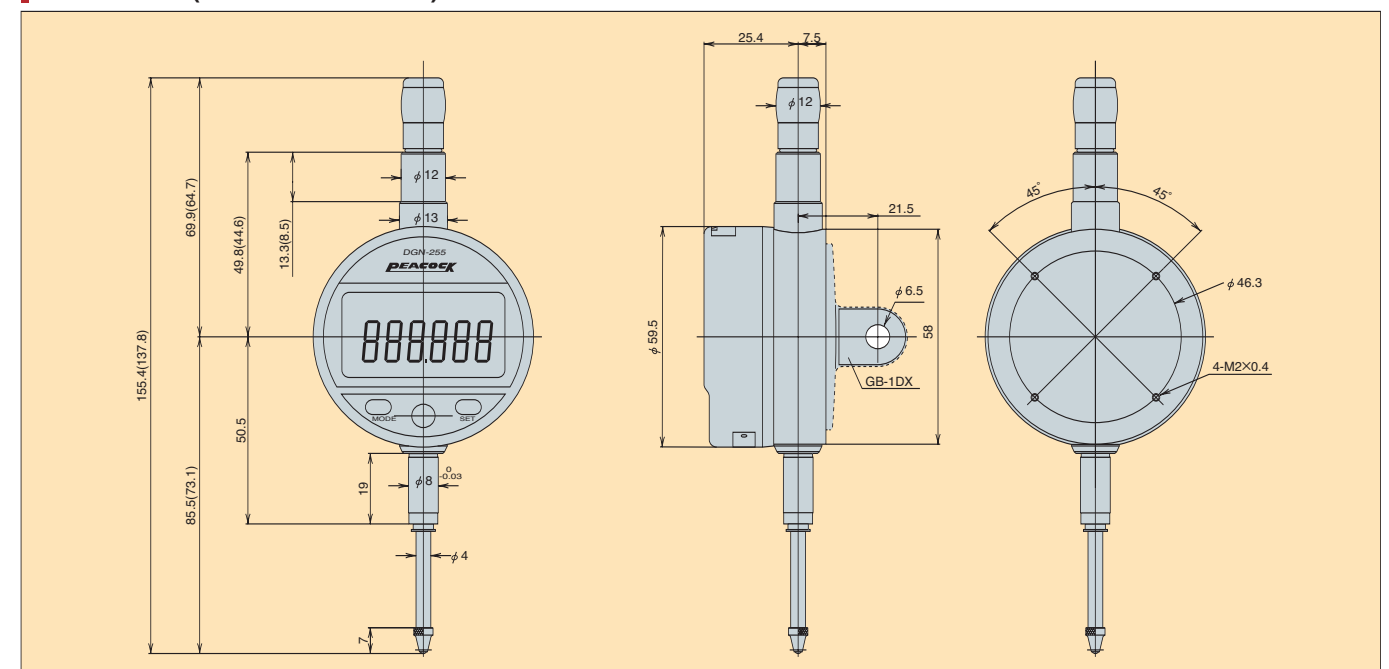


Input Adapter
IF-21B



IF-21B with KB-232C can transfer a data to a spreadsheet such as EXCEL of your PC

Dimensions (DGN-255 DGN-257)



() indicates DGN-125

Digital Thickness Gauges

Dimensions (G2N-255 G2N-257)

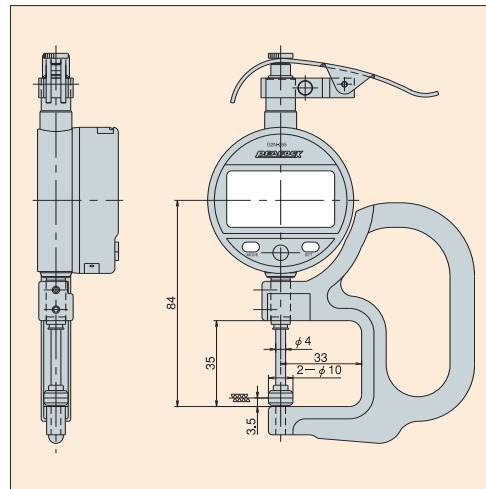


New

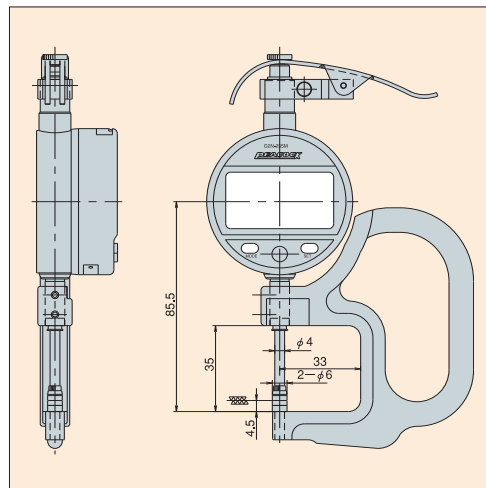
G2N-255

Range: 20mm
Resolution: 0.001mm

Dimensions (G2N-255 / G2N-257)



Dimensions (G2N-255M / G2N-257M)



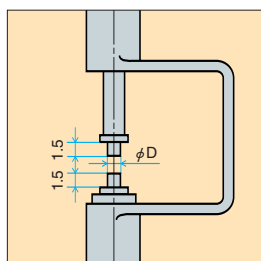
Specifications

| MODEL | G2N-255 | G2N-255M | G2N-257 | G2N-257M |
|--------------------------------------|----------------|----------|-----------------|----------|
| Digital Gauge | DGN-255 | DGN-255 | DGN-257 | DGN-257 |
| Contact Point / Anvil | φ10mm | φ6mm | φ10mm | φ6mm |
| Contact Point Parallelism | less than 5 μm | | less than 10 μm | |
| Resolution | 0.001mm | | 0.01mm | |
| Accuracy (excluding quantized error) | ±0.008mm | | ±0.02mm | |
| Measuring range | 0-20mm | | | |
| Measuring force | less than 1.2N | | | |
| Measuring depth | 33mm | | | |

Dial Thickness Gauge (Special Order)

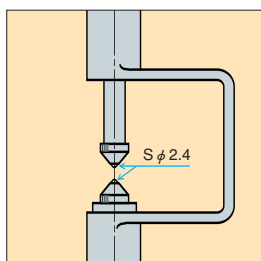
For different Applications, the shape of the contact point and anvil can be special ordered.

Both Contact Point and Anvil needle type

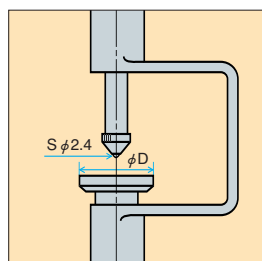


Please specify φ D

Both Contact Point and Anvil ball type

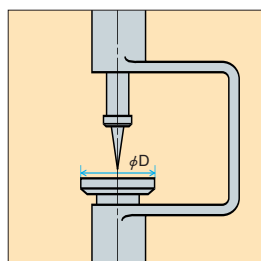


Ball type Contact Point and Flat type Anvil.



D = 10mm diameter
(also available in φ 20, 25 and 30mm)

Needle type Contact Point and Flat type Anvil.



D = 10mm diameter
(also available in φ 20, 25 and 30mm)

Digital Thickness Gauges

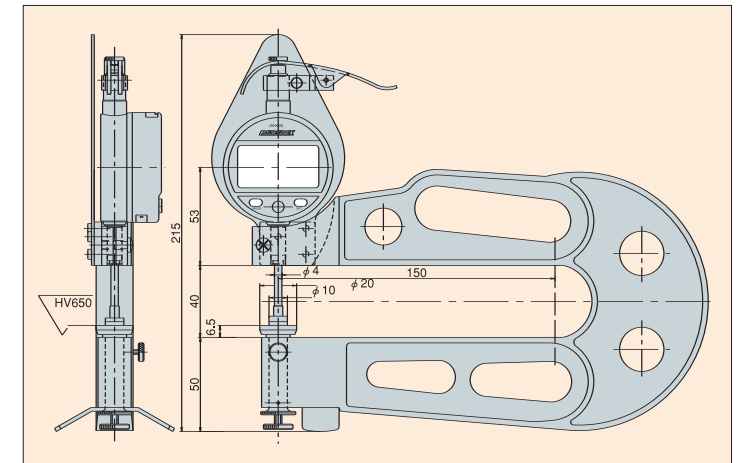


New

JAN-255

Range: 20mm
Resolution: 0.001mm

Dimensions (JAN-255 / JAN-257)



Specifications

| MODEL | JAN-255 | JAN-257 |
|--------------------------------------|-----------------|-----------------|
| Digital Gauge | DGN-255 | DGN-257 |
| Resolution | 0.001mm | 0.01mm |
| Accuracy (excluding quantized error) | ±0.01mm | ±0.02mm |
| Contact Point Parallelism | less than 5 μm | less than 10 μm |
| Measuring range | 0-20mm | |
| Measuring force | less than 1.2N | |
| Measuring depth | 150mm | |
| Contact Point / Anvil | φ 10mm / φ 20mm | |

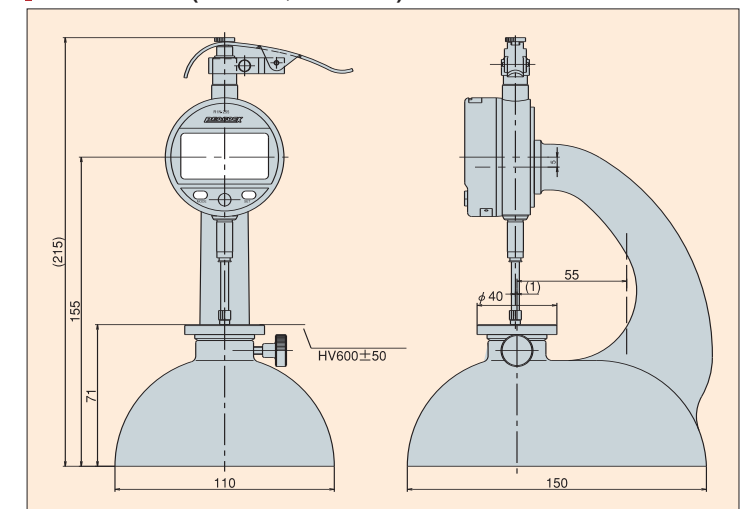
Digital Upright Gauges



R1N-255

Range: 0-20mm
Resolution: 0.001mm

Dimensions (R1N-255 / R1N-257)



Specifications

| MODEL | R1N-255 | R1N-257 |
|--------------------------------------|--------------------------------|---------|
| Digital Gauge | DGN-255 | DGN-257 |
| Resolution | 0.001mm | 0.01mm |
| Accuracy (excluding quantized error) | ±0.004mm | ±0.02mm |
| Measuring range | 0-20mm | |
| Measuring force | less than 1.2N | |
| Measuring depth | 55mm | |
| Contact Point / Anvil | φ 5mm (SUS) / φ 40mm (Ceramic) | |

Digital Depth Gauges

Linear Gauges

Measurement range(0~5mm)

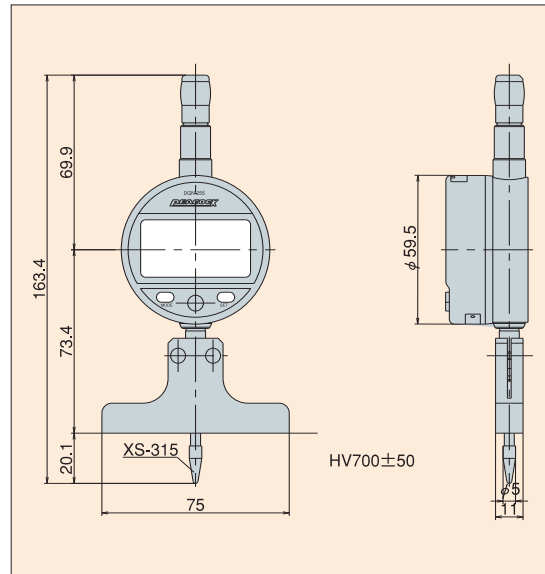


New

T2N-255W

Range: 20mm
Resolution: 0.001mm

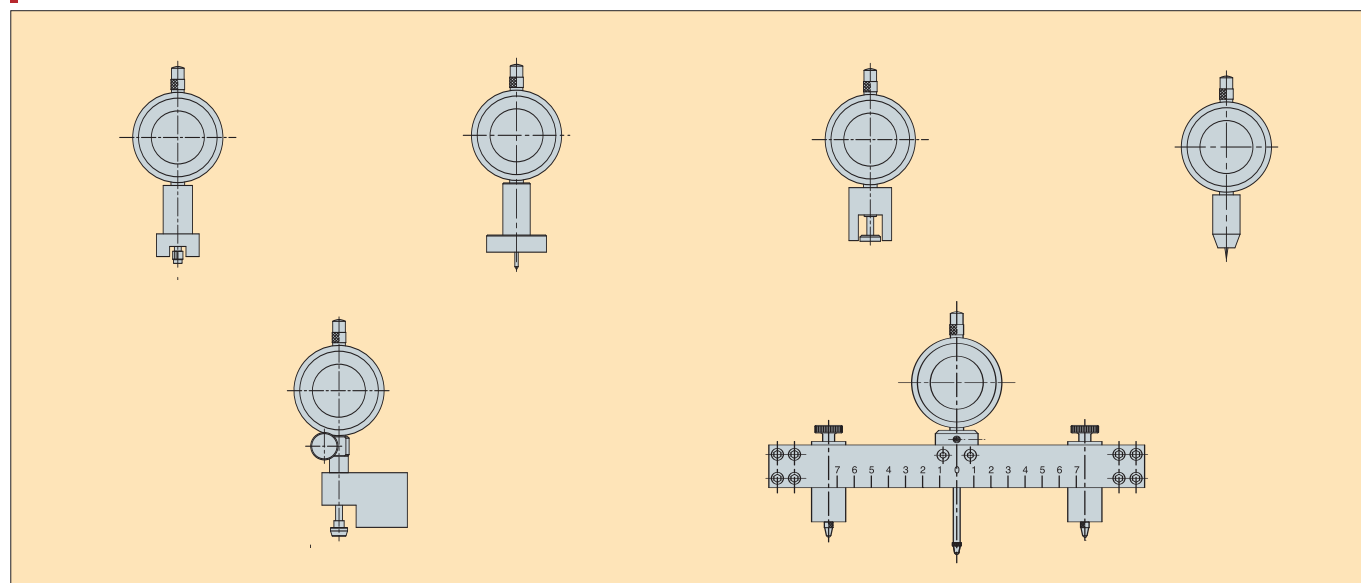
Dimensions (T2N-255W / T2N-257W)



Specifications

| MODEL | T2N-255W | T2N-257W |
|--------------------------------------|-----------------------------|----------|
| Digital Gauge | DGN-255 | DGN-257 |
| Resolution | 0.001mm | 0.01mm |
| Accuracy (excluding quantized error) | ±0.004mm | ±0.02mm |
| Measuring range | 0-20mm | |
| Base (L x W) | 75mm x 11mm | |
| Base Parallelism | less than 5μm | |
| Contact Point | XS-315 Spherical type (SR1) | |

Custom order available



Lever Type

- Best suited for deviation measurement.

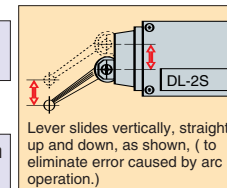


DL-2

Resolution: 0.01mm
Range: 0~2mm

DL-2S

Resolution: 0.001mm
Range: 0~2mm



Pencil Type

- Best suited for confined conditions.



D-5

Resolution: 0.01mm
Range: 0~5mm

D-5S

Resolution: 0.001mm
Range: 0~5mm

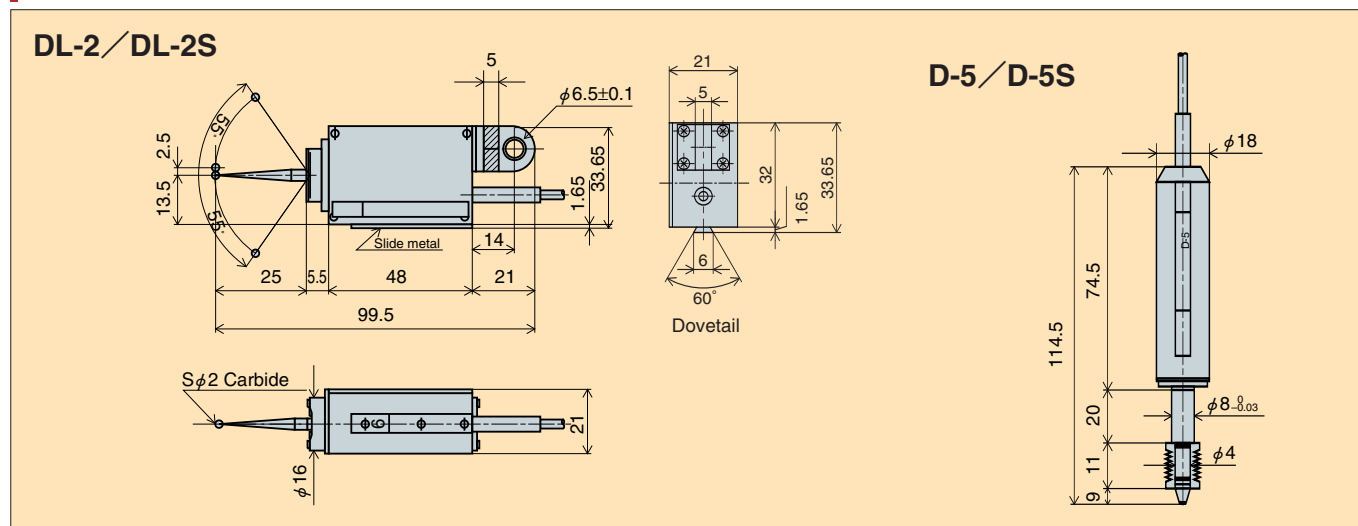
Contact Point (X-2)

Specifications

| Model | DL-2 | DL-2S | D-5 | D-5S |
|--------------------------------------|---|---------|---|---------|
| Range | ※ 2mm | | 5mm | |
| Resolution | 0.01mm | 0.001mm | 0.01mm | 0.001mm |
| Accuracy (excluding quantized error) | 0.01mm | 0.002mm | 0.005mm | 0.002mm |
| Measuring force | Less than 0.6N | | Less than 0.5N | |
| Mounting method | φ 6.5mm hole on lug or dovetail at bottom | | φ 8mm stem | |
| Contact point | S φ 2mm carbide | | S φ 2.4mm steel (X-2) | |
| Weight | 180g | | 160g | |
| Cable length | 2m (Standard) Option ● Extension cables of 2, 3, 5 and 10 meters are available (see page P.143) | | | |
| Operating temperature | 0~40°C | | | |
| Output signal | 90° phase difference, 20μm pitch (R03-PB8M Tajimi connector) | | | |
| Featuares | ● Lever type probe is best recommended for measuring TIR or narrow space. ● Contact point easy adjustable to any desired position. | | ● Pencil type is especially made for setting up in extremely confined conditions. ● Dust proof rubber attached. Gauge suitable for use in dusty and moist environment. | |
| Compatible standard counters | C-500 C-700 | | | |
| Options | _____ | | ● Customer must specify if application is up-side-down. The measuring force changes when the gauge is inverted. | |

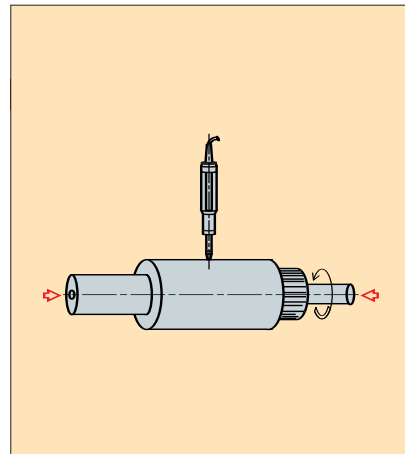
※ Lever moves linearly, unlike the arc movement in a lever type dial indicator.

Dimensions

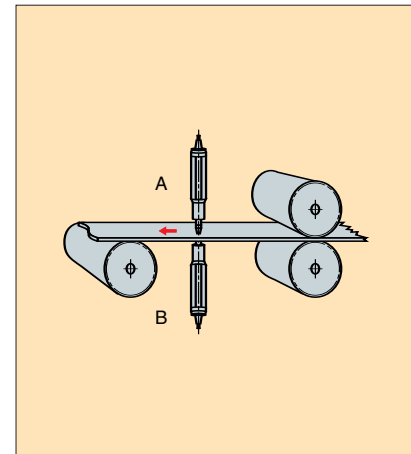


Examples

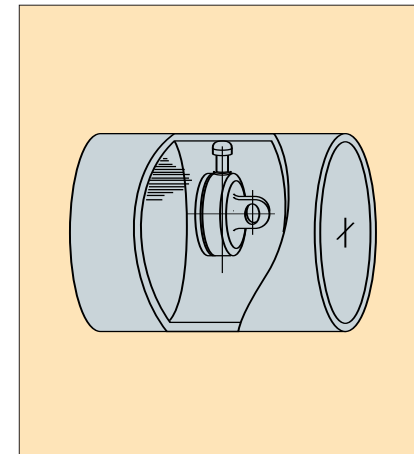
- Testing TIR (Total Indicator Run-out) of a cylinder



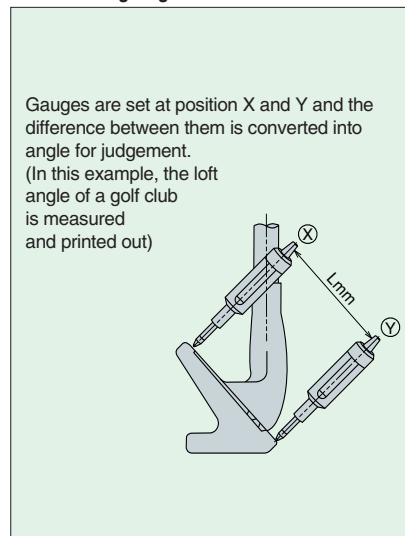
- Multi-point testing of a thick board



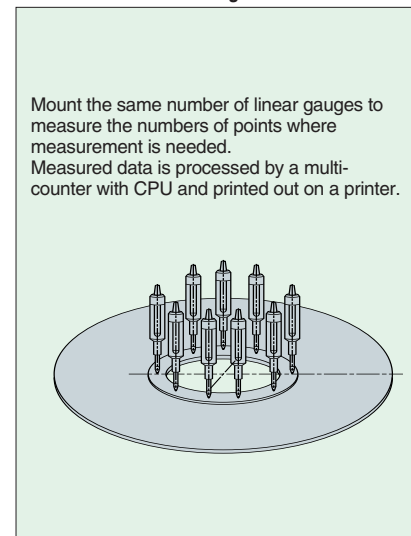
- Internal surface measurement of a cylinder



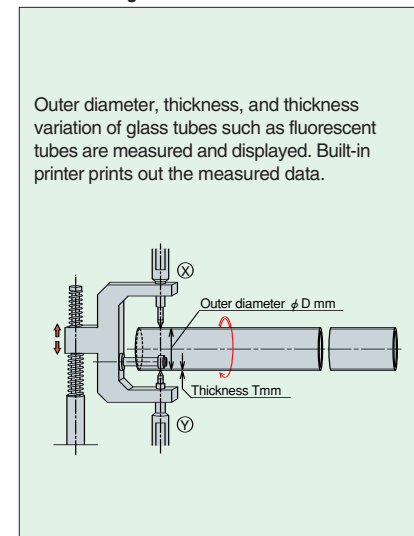
- Measuring Angles



- Multi-Point Measuring



- Measuring Glass Tubes



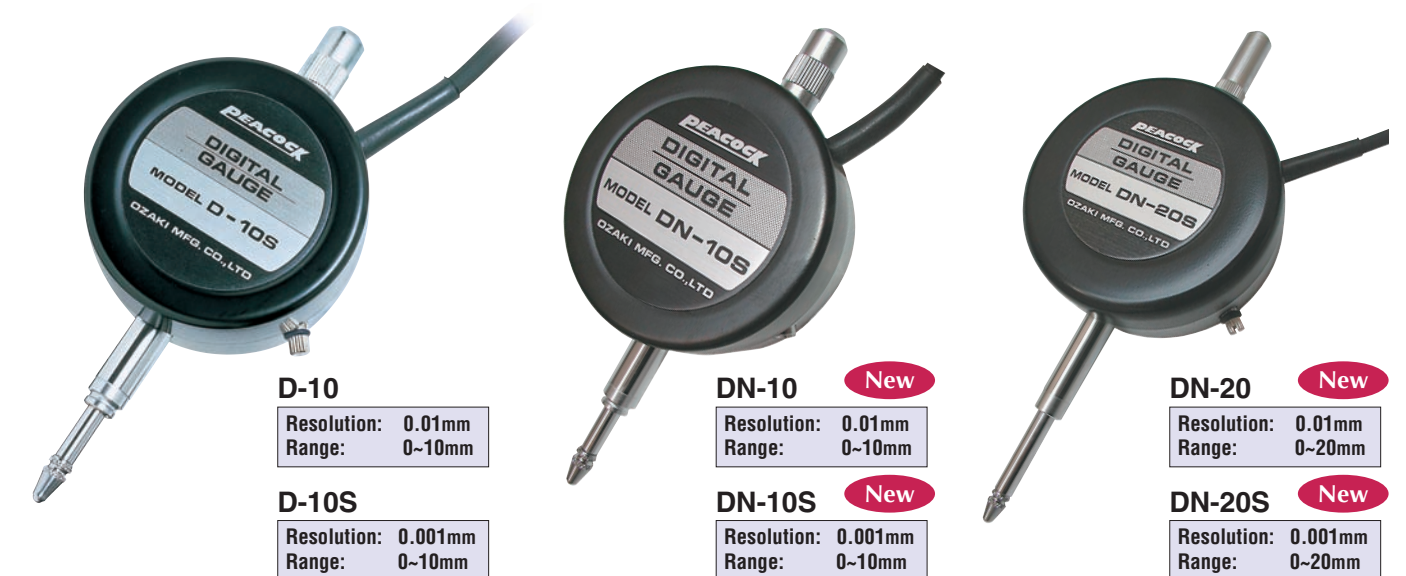
※Features
DN-10 DN-10S DN-20 DN-20S
●1 Recommended for locations where cable extension (10 to 50 meters) is necessary.
●2 Recommended for use in electrically noisy environments.
Notes of wiring : A signal wire should be duct wiring apart from other power lines.

Measurement range (0~10mm, 0~20mm)

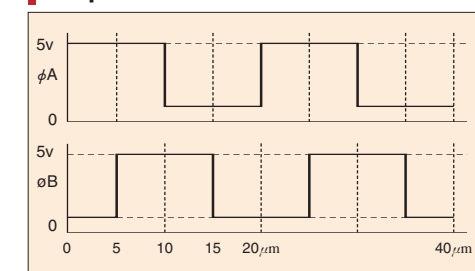
- 10mm and 20mm measurement ranges are the easiest to use.
- Used in conjunction with digital counters, these gauges can be set up in places where dial gauges are now being used.
- Set the gauge by either stem or lug back.
- For lifting spindle, both lever and release types are available.

Rectangular wave output type

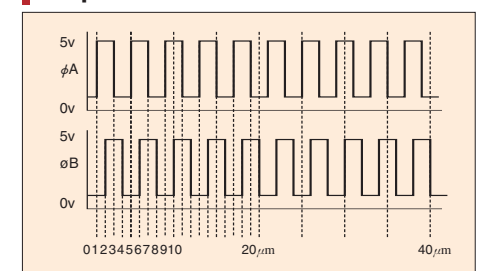
- DN-10 • DN-10S • DN-20 • DN-20S**
- For use in electrically noisy environments.
 - For applications requiring extra long cables. (10 to 50 meters are available)



Output wave-form (DN-10 • DN-20)



Output wave-form (DN-10S • DN-20S)

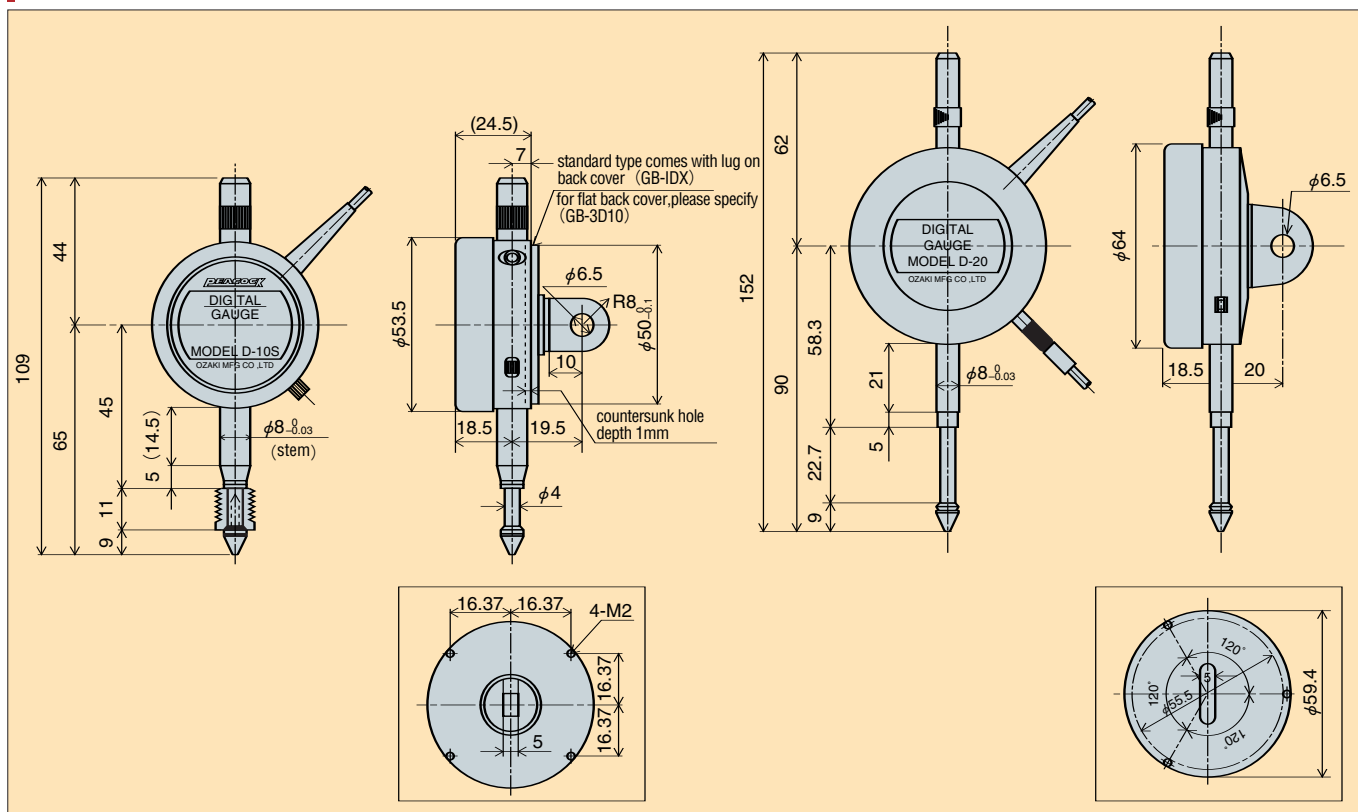


Specifications

| Model | D-10 | D-10S | DN-10 | DN-10S | D-20 | D-20S | DN-20 | DN-20S |
|--------------------------------------|---|---------|--------|---------|---|---------|--------|---------|
| Range | 10mm | | | | 20mm | | | |
| Resolution | 0.01mm | 0.001mm | 0.01mm | 0.001mm | 0.01mm | 0.001mm | 0.01mm | 0.001mm |
| Accuracy (excluding quantized error) | 0.005mm | 0.002mm | 0.01mm | 0.002mm | 0.005mm | 0.003mm | 0.01mm | 0.003mm |
| Measuring force | Less than 1.0N | | | | Less than 1.5N | | | |
| Cable length | 2m | | | | | | | |
| Mounting method | φ 8mm stem or 6.5mm hole on lug back | | | | | | | |
| Contact point | M2.5 × 0.45 S φ 2.4mm steel (X-2) | | | | | | | |
| Operating temperature | 0~40°C | | | | | | | |
| Weight | 220g | | | | 300g | | | |
| Output Signal | 90° phase difference, 20μm pitch (R03-PB8M Tajimi connector) Rectangular wave (Low=0V High=8V) | | | | | | | |
| Compatible standard counters | C-500 C-700 | | | | | | | |
| Options | ● Release (RE-4) Lifting lever (LL-1) ● Dust proof rubber (BG-10) ● Flat back (GB3-D10), screws (S-110) ● Customer must specify if application is up-side-down. The measuring force changes when the gauge is inverted. | | | | ● Release (RE-4) ● Flat back (GB3-D20) ● Customer must specify if application is up-side-down. The measuring force changes when the gauge is inverted. | | | |

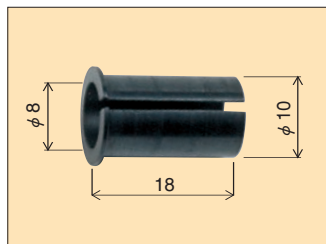
※Features
DN-10 DN-10S DN-20 DN-20S
●1 Recommended for locations where cable extension (10 to 50 meters) is necessary.
●2 Recommended for use in electrically noisy environments.
Notes of wiring : A signal wire should be duct wiring apart from other power lines.

Dimensions (D-10/D-10S/D-20/D-20S/DN-10/DN-10S/DN-20/DN-20S)



Optional accessories

Split collar (WB-1)



Split collar above is used on the $\phi 8\text{mm}$ stem during mounting to prevent malfunction due over tightening.
Securing by means of screw directly in stem may result in malfunction.

Dust proof rubber (BG-10)



Compressible dust proof rubber fits all D-5, D-5S, D-10S, DN-10, DN-10S gauges.
(Stroke under 10mm)

Release (RE-4)



Lifting lever (LL-1)



Extension Cable



2, 3, 5 and 10 meters are standard length.

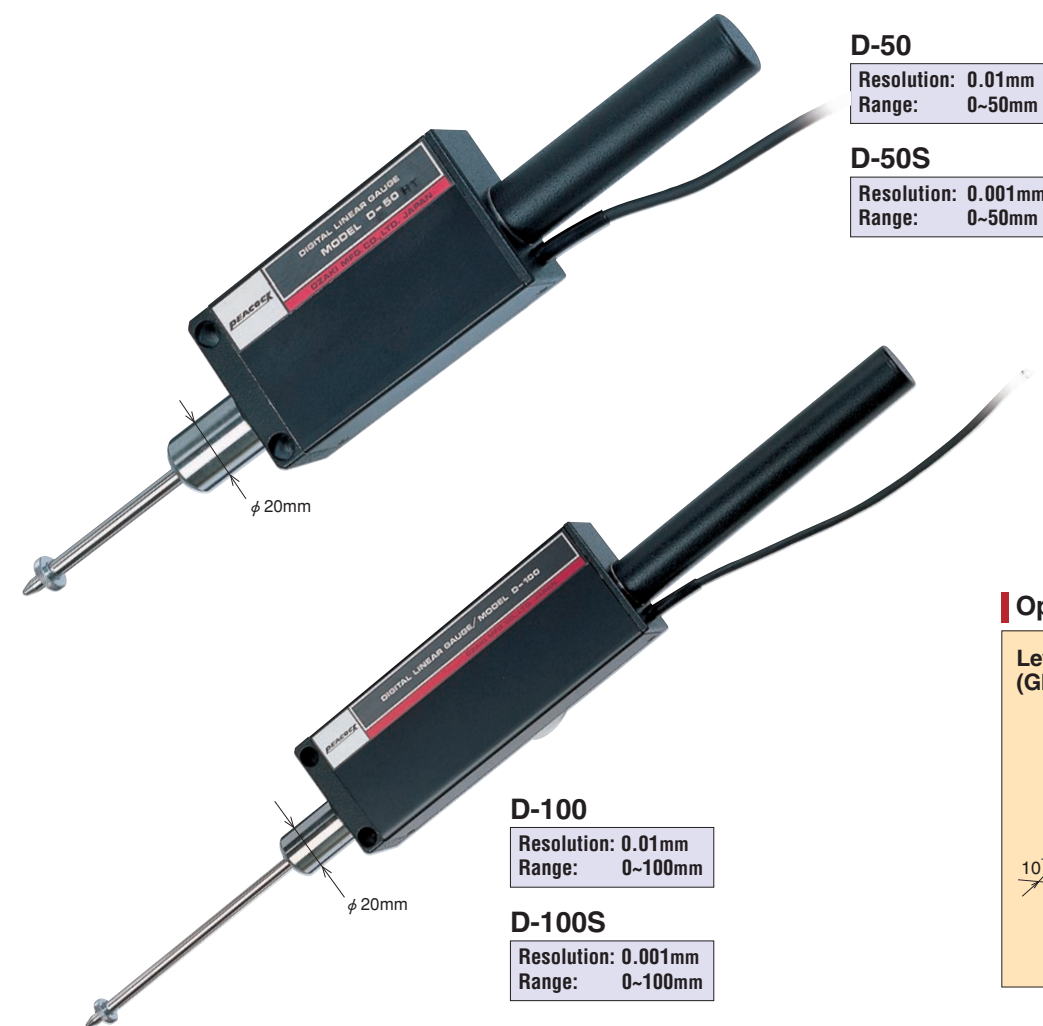
Extension cable with metal sheathing



2 and 3 meters are standard length.
(made to order)

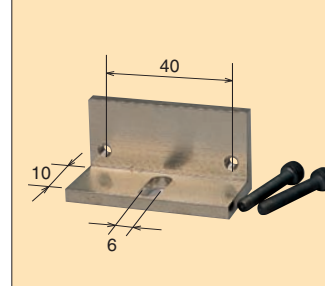
Measurement Range (0~50mm, 0~100mm)

- With very sturdy ϕ 20mm stem.
- Ultra-high precision achievable with exclusive gauge stand (PDS-2)



Option

**Level mounting clamp
(GB-50)**



Specifications

| Model | D-50 | D-50S | D-100 | D-100S |
|--------------------------------------|--|---------|----------------|---------|
| Range | 50mm | | 100mm | |
| Resolution | 0.01mm | 0.001mm | 0.01mm | 0.001mm |
| Accuracy (excluding quantized error) | 0.01mm | 0.004mm | 0.01mm | 0.005mm |
| Measuring force | Less than 3.0N | | Less than 3.5N | |
| Cable length | 2m | | | |
| Mounting method | φ 20mm stem or fastening by M4 screws at two positions | | | |
| Contact point | M2.5 × 0.45 S φ 2.4mm steel (X-9) | | | |
| Operating temperature | 0~40°C | | | |
| Weight | 450g | | 520g | |
| Output signal | 90° phase difference, 20μm pitch (R03-PB8M Tajimi connector) | | | |
| Compatible standard counters | C-500 C-700 | | | |
| Accessories | ● Finger lever for lifting spindle (LL-D50) ……1 pc | | | |
| Features | ● If Spindle inner spring is removed, measuring force will be that of spindle itself (only when in upright position) ● D-50, D-50S ……1.0N (100gf) D-100, D-100S ……1.1N (110gf) ● Recommended Gauge stand is PDS-2 | | | |
| Option | ● Level mounting clamp (GB-50) see page 141 ● Customer must specify if application is up-side-down. The measuring force changes when the gauge is inverted. | | | |

Special Gauges

For High Temperature Applications D-50HT (0.01mm Resolution)



This special gauge can be used up to +65°C temperature.
0.01mm (0.005mm) Resolution
(D-50S is not suited for high temperature)

For Dusty Applications D-50WA D-50SWA

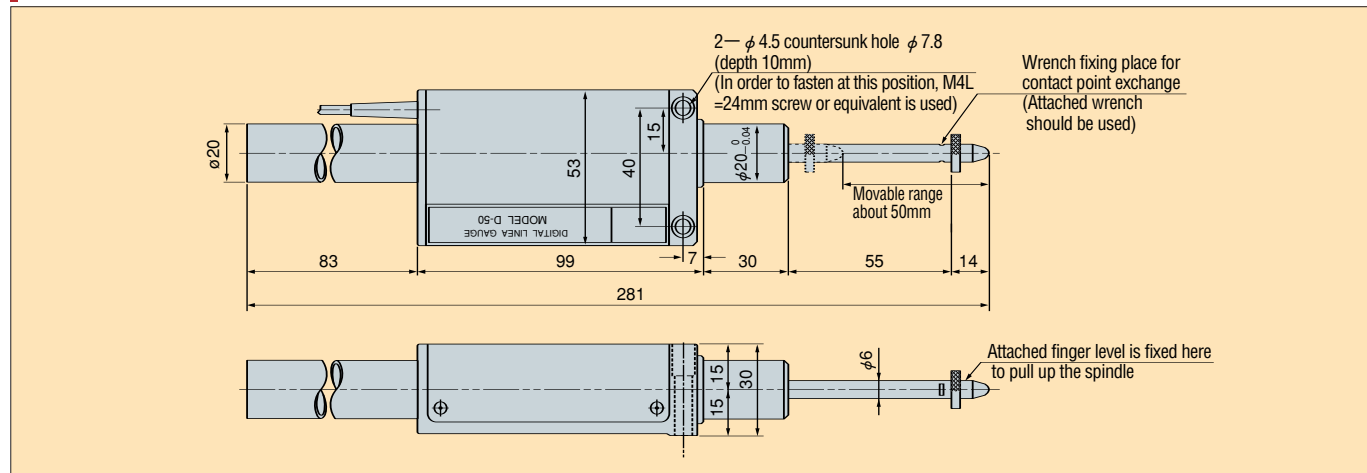


Dust-proof rubber protects spindle. Equivalent to IP-54. (Protection against oil & water is not available)

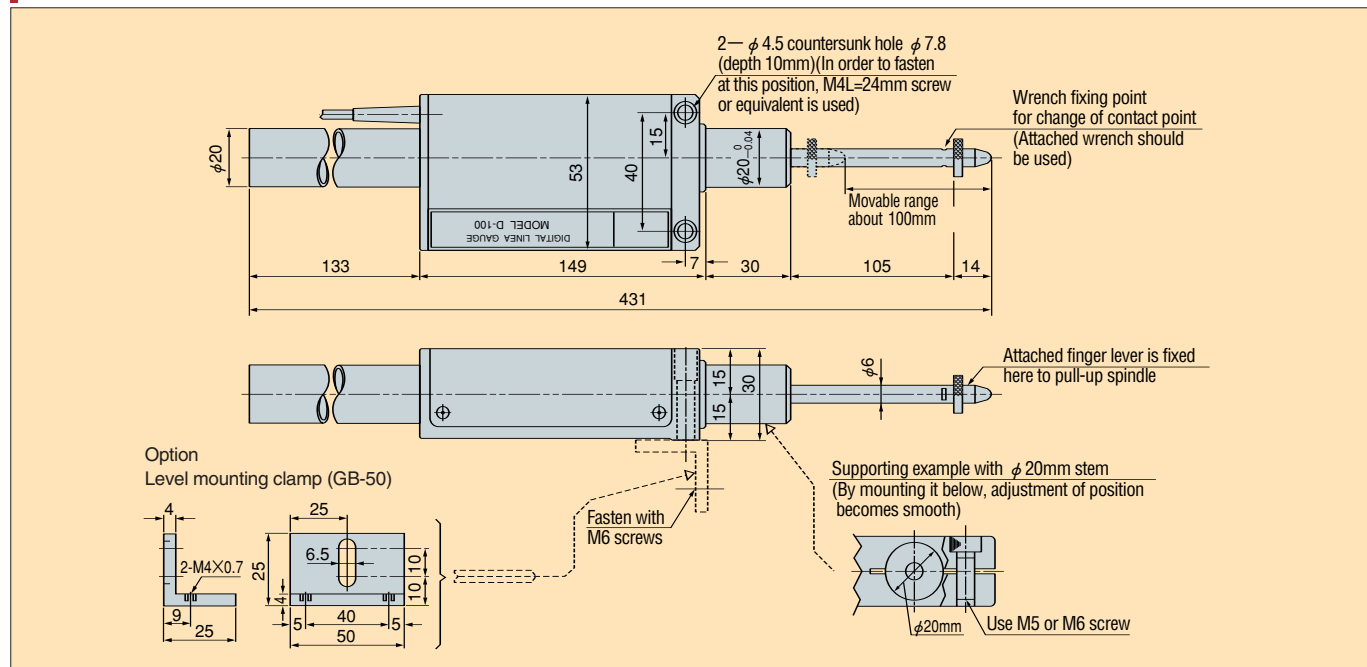
For Dusty Applications D-100WA D-100SWA



Dimensions (D-50 / D-50S / D-50HT)



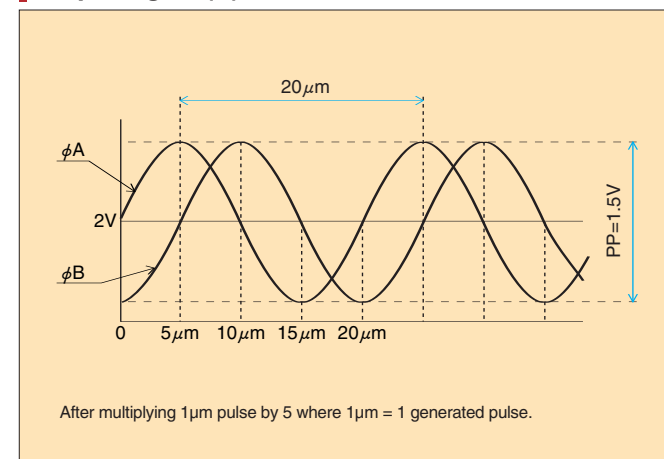
Dimensions (D-100 / D-100S)



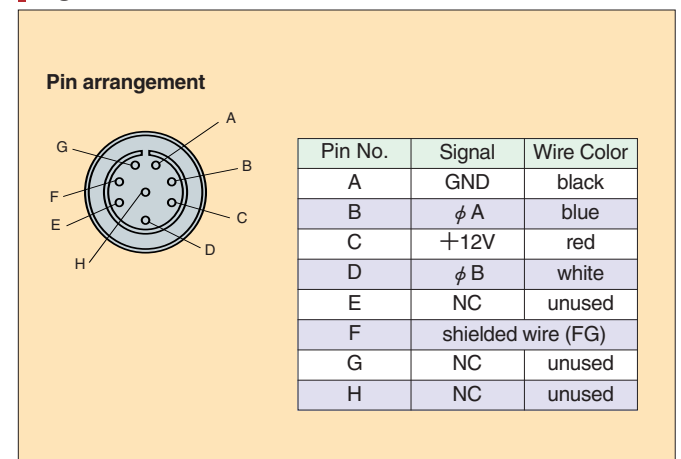
Common Specifications of Linear Gauges

| Items | | Common specifications |
|---------------------------------------|-------------------|---|
| Type of gauges | Output signal (A) | DL-2S, D-5S, D-10S, D-20S, D-50S, D-100S |
| | Output signal (B) | DL-2, D-5, D-10, D-20, D-50, D-100, D-5UZ |
| Displacement transducer type | | Glass linear scale (scale pitch 20μm) (D-10SS・D-10HS: pitch 8μm) |
| Power supply | | +12DCV ±5% (consumed current 40mA) |
| Signal cable length | | 2m (2,3,5 and 10m extension cables are available) 4 core shield cable & oil proof type |
| Output connector, Receiver connector | | Gauge side (R03-PB8M) Counter side (R03-R8F) Tajimi connectors |
| Output signal (A) 1μm resolution | | 2 phase signal with 90° phase difference, 20μm pitch, sinusoidal wave-form |
| Output signal (B) 5μm/10μm resolution | | 2 phase signal with 90° phase difference, 20μm pitch, approximate sinusoidal wave-form |
| Output signal (C) 5μm/10μm resolution | | 2 phase signal with 90° phase difference, 20μm pitch, square wave-form (gauges: DN-10, DN-20) |
| Operating temperature | | 0~40°C (except for high temperature type) |
| Output Frequency | | 0~50KHz |
| Contact point | | M2.5 x 0.45 (contact points for dial gauge can be used) |

Output signal (A) wave-form (1μm resolution)



Signal Connector R03-PB8M (manufactured by Tajimi)



New Type

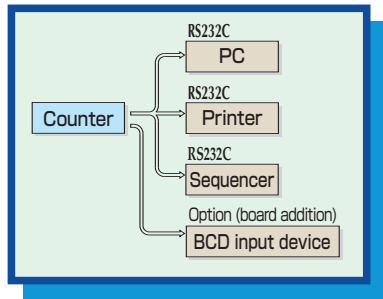
Multi-type
User friendliness combined
with multi-functionality.

C-700

The diagram illustrates a beam balance. A circular gauge at the left end is labeled "G.A.U.G.E." and "10-853". The beam is pivoted at its center. The left pan is positioned at a distance of $2L$ from the pivot, and the right pan is at a distance of L . The right pan contains a weight and is connected to a spring.

A technical diagram of a ball bearing. It shows a cross-section of the bearing with a central shaft. The outer ring is labeled with dimensions Δt (thickness) and ϕD (outer diameter). The inner ring is labeled with dimensions ϕd (inner diameter) and Δt (thickness). The balls are labeled with dimensions ϕd_2 (ball diameter) and Δt (thickness). The cage is labeled with dimensions ϕd_1 (cage diameter) and Δt (thickness). The cage is also labeled with 'CAGE' and 'Balls'.

(Standard function of RS-232C, optional function of BCD)



A diagram of a digital depth gauge. The gauge has a circular dial with a needle and is labeled "GAGE 0-100". It is connected to a digital display unit showing "200.0000". The gauge is positioned over a block with a "200mm" scale.

The diagram illustrates the use of a magnetic flux meter. A probe with a coil is connected to a digital meter. The meter displays a reading of 0.050. Below the meter, a graph shows a fluctuating waveform with a peak labeled 0.050 and a zero line.

The diagram shows a pressure transducer (a circular gauge with a needle and a pressure port) connected to a digital display unit. The display unit has a digital screen showing '0095' and several control buttons labeled '+NG', 'OK', '-NG', and 'P-P'. Below the display, there is a graph showing a fluctuating signal with labels 'MAX', '0', and 'MIN'.

Specifications of Digital Counters

| Model | | Model No. C-500 | | Model No. C-700 | | | | | | |
|--|---|---|--|-----------------|-------|---|---|--------|--------|--|
| Displayed digits | * Selection of 10 μm * Selection of 1 μm | — 9999.99~00.00~9999.99 — 999.999~0.000~999.999 High-luminance LED display with 7segments (red) | | | | | | | | |
| Display | | | | | | | | | | |
| Power supply voltage & power consumption | | AC100V~AC240V · 9VA or lower | | | | | | | | |
| Operating temperature | | 0~+40℃ | | | | | | | | |
| Compatible Linear Gauges | | | | | | | | | | |
| Selection of 10 μm display | | DL-2 | D-5 | D-10 | D-20 | D-50 | D-100 | DN-10 | DN-20 | |
| Selection of 1 μm display | | DL-2S | D-5S | D-10S | D-20S | D-50S | D-100S | DN-10S | DN-20S | |
| Accessories | | ◆AC power cord (2m): One cord ◆Metal fittings for panel installation: Two units (to be used for installation in panel and securing stand fittings) ◆Stand fittings: One unit (to be used when counter is used as desktop device) | | | | | | | | |
| Terminal block functions (Rear panel) | | ◆Terminal block: Screwless terminal block ◆Usable electric cables: AWG22-28 ◆Length of peeled wire of cables: 8~9mm ◆Pin alignment | | | | | | | | |
| | * 1 | St/Sp | Controls "START" and "STOP" of MAX, MIN. P-P measurement mode. | | | | | | | |
| | * 2 | React | Controls "SUSPEND" and "START" of P-P measurement mode. | | | | | | | |
| | 3 | Latch | Controls "LATCH" and "CANCEL" of measured value. | | | | | | | |
| | 4 | Reset | External "RESET" "PRESET" (Function available only in Model No. C-700) | | | | | | | |
| | 5 | Alarm | Error signal output | | | | | | | |
| | * 6 | —NG | Outputs -NG based on OK±NG judgment (red LED). | | | | | | | |
| | * 7 | OK | Outputs OK based on OK±NG judgment (green LED). | | | | | | | |
| | * 8 | +NG | Outputs +NG based on OK±NG judgment (orange LED). | | | | | | | |
| | 9 | GND | GND | | | | | | | |
| (1):NG output in first stage (2):NG output in second stage | | | | | | | | | | |
| * marked numbers indicate functions available only in Model No.C-700 | | | | | | | | | | |
| Dip sw setting functions (Printed circuit board) | | Dip (1) | | | | Dip (2) | | | | |
| | SW 1 | Select 1 μm or 10 μm | | | | SW 1 | Settings by Manufacturer | | | |
| | SW 2 | Select direction of counting. | | | | SW 2 | Select whether or not to include default values for OK ±NG judgment. | | | |
| | SW 3 | Select activation or non activation of error output. | | | | SW 3 | Select either "orthogonal" or "sine" for input waveform. | | | |
| | SW 4 | Select activation or non activation of overflow. | | | | SW 4 | Select either 400msec or 100msec for RESET time. | | | |
| Data output (RS-232C) D-Sub9P plug INCH screw | | ◆Pin Alignment | | | | | | | | |
| | | 1 | NC | — | | ◆Communication mode: Half-duplex asynchronous communication | | | | |
| | | 2 | Rxd | in← | | ◆Communication speed: 9600bps | | | | |
| | | 3 | Txd | →out | | ◆Format: 7Bit ASCII | | | | |
| | | 4 | NC | — | | ◆Parity: even number | | | | |
| | | 5 | SG | — | | ◆Stop bit: 1Bit | | | | |
| | | 6 | NC | — | | ◆RTS/CTS: Returned when not in use. | | | | |
| | | 7 | RTS | →out | | ◆Reception command: Transmission request ASCII [T] [t] : Reset ASCII [R] [r] | | | | |
| | | 8 | CTS | in← | | ◆Connection cables: Cross cables (not included) | | | | |
| | | 9 | NC | — | | | | | | |
| Options * BCD output board | | ◆CB-BCD Can not be used in combination with RS-232C output. | | | | | | | | |
| Display functions | | ◆1/1 display: Displays the measured value as is. ◆1/2 display: Displays the measured value after halving it. ◆×2 display: Displays the measured value after doubling it. ◆INCH display: Displays the value after converting it into inches. Note: With 1 μm display and ×2 display, the lowest digit will be displayed as an even number. | | | | | | | | |
| Presetting display function | | ◆Zero setting only | | | | | ◆Can display preset values | | | |
| Measurement mode function [MAX] [MIN] [P-P] | | | | | | | ◆Current value display ◆Maximum value(Max) ◆Minimum value(Min) ◆Deflection(P-P) | | | |
| } RESET action is taken by ST of the ST/SP control terminal. | | | | | | | | | | |
| OK±NG judgment function (Refer to terminal output circuit) | | | | | | | ◆Current value mode: +NG OK —NG ◆Maximum value mode: OK +NG(1) +NG(2) ◆Minimum value mode: OK —NG(1) —NG(2) ◆Deflection mode: OK NG(1) NG(2) | | | |
| Dimensions & weight | | ◆144(W)×72(H)×160(D)mm | | | | | ◆950g | | | |

Start/stop measurement.ST/SP

Suspend/start measurement.REACT

DATA

DATA HOLD

Measuring

Suspending

ZERO RESET

ZERO RESET

Pin No.1 ST/SP
Pin No.2 REACT
Pin No.3 LATCH
Pin No.4 RESET

OUT

GND

GND

Inside counter

Open collector output
Voltage: Max DC20V
Current: MAX 20mA

Deep Hole Bore Gauge-EMCC Series

- The EMCC Series can easily measure the inside diameter of deep bore with high accuracy, which has been precision-machined.
- The EMCC Series advances a detector having an automatic alignment mechanism in line with the inside diameter.
- Measurement is possible up to the length of 10M by using an additional extension rod.



Compatible Counter C-500



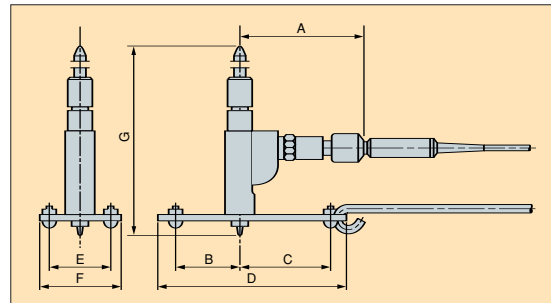
EMCC-3

Specifications

| Model | | EMCC-2 | EMCC-3 | EMCC-4 | EMCC-5 | EMCC-6 |
|--|-----|--|------------------|--------------------|-------------------|-------------------|
| Measuring range (ID) | | 35 ~ 60mm | 50 ~ 100mm | 100 ~ 160mm | 160 ~ 250mm | 250 ~ 400mm |
| Measuring depth | | 70mm ~ 10M | 90mm ~ 10M | 120mm ~ 10M | 130mm ~ 10M | 150mm ~ 10M |
| Number of feeler | | Intervals 5mm×6 | Intervals 5mm×11 | Intervals 10mm×7 | Intervals 10mm×10 | Intervals 10mm×16 |
| Thickness of washers | | 1,2,3mm each | | 1,2,3,4mm each | | |
| Contact Point | | L=33mm (flat type) | | L=44mm (flat type) | | |
| Contact point's travel and measuring force | | 1.4mm / less than 2.0N | | | | |
| Extension rods | | EMCC-L (1 meter rod×10 rods = 10 meters)sold separately | | | | |
| Compatible linear gauges | | ● When Resolution is 10μm, use D-5B ● When Resolution is 1μm, use D-5SB | | | | |
| Compatible counters | | ● C-500 | | | | |
| Operations | | ● Test completes only after receiving reference from a master and inserting the micrometer head through a workpiece. ● Automatic centering mechanism requires no manual "shaking" to center up the micrometer head. | | | | |
| Functions | | ● Workpiece has to be horizontally level (No test can be performed with the workpiece perpendicular). | | | | |
| Dimensions (mm) | A | 70 | 71 | 77 | 77 | 77 |
| | B | 20 | 30 | 40 | 45 | 50 |
| | C | 30 | 40 | 55 | 60 | 70 |
| | D | 62 | 82 | 115 | 125 | 140 |
| | E | 15 | 20 | 38 | 58 | 88 |
| | F | 22 | 30 | 50 | 70 | 100 |
| | G | MIN | 35 | 50 | 100 | 160 |
| | MAX | 60 | 100 | 160 | 250 | 400 |

※ To make up a complete working unit, it requires an EMCC (2-6), an EMCC-L (extension rod set), a linear gauge and a counter.

Dimensions



Gauge Sensor

| Model | D-5B | D-5SB |
|------------------------------|--|---------|
| Resolution | 0.01mm | 0.001mm |
| Accuracy | 0.01mm | 0.002mm |
| Cable length | 10 meters | |
| Screw pitch of Contact Point | M2.5 ×0.45 | |
| Measuring force | Less than 0.5N | |
| Remarks | Specifications are according to D-5 D-5S | |

Features

- **The inside diameter of extremely deep can be measured. (Max. 10M)**
The inside diameter of the deep hole that was not able to be measured so far can be easily measured with our development of automatic brought to an center position and added to extension rods to the Linear Gauge..
- **High performance**
It is possible to measure with high performance as our Linear gauge is used for the detector. (0.01mm, 0.001mm)
- **Easy operation**
Due to our development of our automatic brought to an center position, the measurement operation is easier than a general inside diameter measuring instruments as only insert the cylinder detector in the hole of measurement work-piece.
- **Efficient measurement**
Since the easy operation, it is efficient of the measurement for an inspection of the mass production.
- **Excellent indication stability**
It is necessary to shakes the general cylinder gauge for reads a minimum measurement. However, our EMCC can get the excellent stability of the indication as only insert the detector to the hole of measurement work-piece.
- **Low measuring force**
The work-piece is not so damaged as the measuring force of contact point is 2.0N compared with a general cylinder gauges (5.0~6.0N)
- **Data record**
Digital counter have the RS-232C output so that the measuring data can be processed.

The main usage

Internal diameter measurement of extremely deep hole
Hydraulic Cylinder, Air Cylinder, Cylinder of Extruder, High accuracy Pipe, Mold for Pipe etc.

Extension Rods (1M x 10 pcs) as Optional

To insert or pull-out the detector to the hole of measurement work-piece.

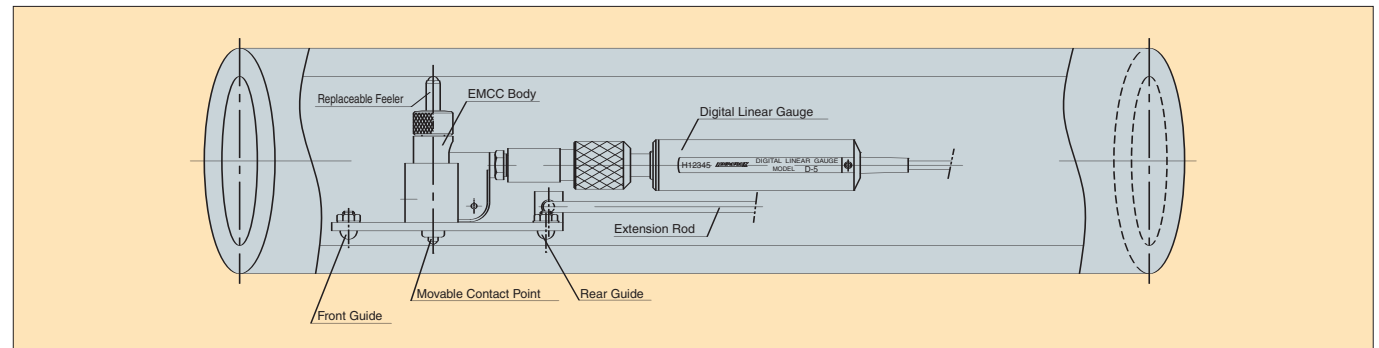
Display Counter

Data displayed by Digitally
Selection of a resolution (0.01mm or 0.001mm)

*see page 149 for more detailed information

| Model No. | C-500 |
|------------------|---|
| Range of Display | At the 0.01mm Selection -9999.99~00.00~9999.99 |
| | At the 0.001mm Selection -999.999~0.000~999.999 |
| Resolution | 0.001mm / 0.01mm Selectable |
| Quantized error | ±1 count |
| Data output | RS-232C |
| Power supply | AC100V~AC240 · less 9VA |
| Weight | 950g |

Measurement figure



Combination example

11



- Linear Gauge No. D-50S
- Digital Counter No. C-700
- Gauge Stand No. PDS-2

※As for more detailed specifications, refer to page 123, 145 and 148.

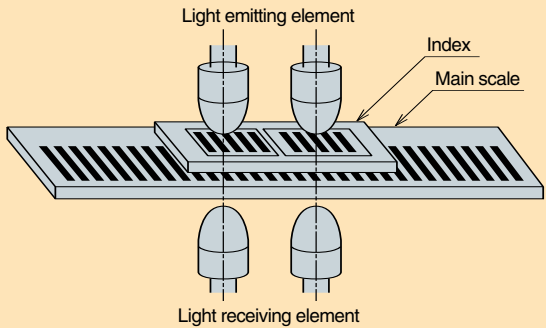


Combination example

Technical Glossary

11

● What is a "Linear Scale"?



As illustrated on the left, a optical glass with vacuum deposition of chrome metal (opaque) at a constant pitch is called a linear scale (scale pitch of 20, 16 or 8μm is used)

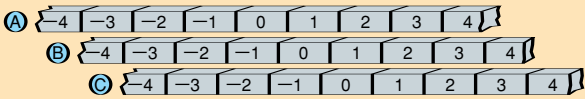
The opposite scale to this linear scale is called an Index scale. This is designed to sense two phases of signal mutually having 90° degree phase difference for the purpose of discriminating shift direction of the scale.

The light intensity of the light emitter is detected by the photo receptor located directly opposite.

When a linear scale moves, the photo receptor will receives variation of light and shade.

Linear displacement can be measured by counting these electric signals with a counter. (Counting them by 20μm pitch will give 5μm display resolution and electrically dividing the wave results in 1μm display resolution)

● About "Quantizing error"

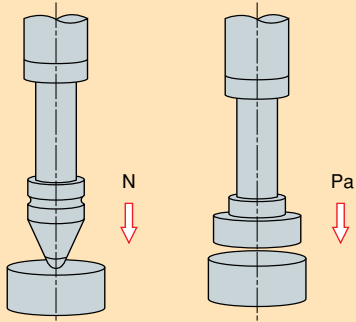


In quantization(displacement under the minimum display digit shall be defined as 0 or 1), the point "0" has a width similar to the other numeric values; including "0" closest to "1" and also "0" closest to "-1". Therefore, ±1 count error is generated in the minimum display digit. (The value "0" is displayed after setting a linear gauge and then pressing the "Reset" switch.)

The counter "C-5" resolves the quantizing error in 1/100mm digit by setting the display value of the minimum digit to 5μm display. (If you need to resolve the quantizing error in 1/1000mm display type, please use "C-5SS" with 0.0005mm display.)

A's zero reference was taken at the B's zero closer to -1.
C's zero reference was taken at the B's zero closer to +1

● Difference between "Measuring Force" and "Measuring Pressure"



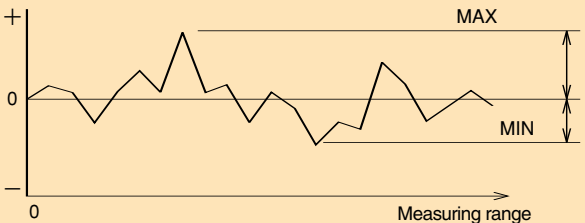
■ "Measuring Force"

Pressure of a contact point pressing a workpiece is defined as measuring force. Generally, as the spindle back spring is integrated in a gauge, it indicate the state in which the spindle is possibly pressed into a workpiece. (A weighted gauge can get a constant measuring force at any position) Unit.....N(newton)

■ "Measuring Pressure"

It is the value indicating the force of contact point pressing a workpiece in a unit area. (measuring force per unit layer). After specifying the area (diameter) of contact point to be in contact to a workpiece, the measuring force to be pressed in a unit area is defined as measuring pressure. (When it is necessary to specify measuring pressure, a type with an attached weight is usually used since there is no change in the measuring force, even in the stroke of a spindle.) Unit 1Pa = 0.101972 × 10⁻⁵kgf/mm²

● Expression of accuracy



Accuracy is the difference between the zero reference point and the greatest deviation across the entire measurement range. +Xμm represents the combined + error Xμm and - error Xμm allowed.

Xμm represents an absolute value: if an error of Xμm occurs in +, - error is not allowed (0μm). Accordingly, if an error of Xμm occurs in -, + error is not allowed (0μm). Thus, Xμm error allowance is harder to achieve than +Xμm error allowance. (In this catalog, we use absolute value, Xμm.)

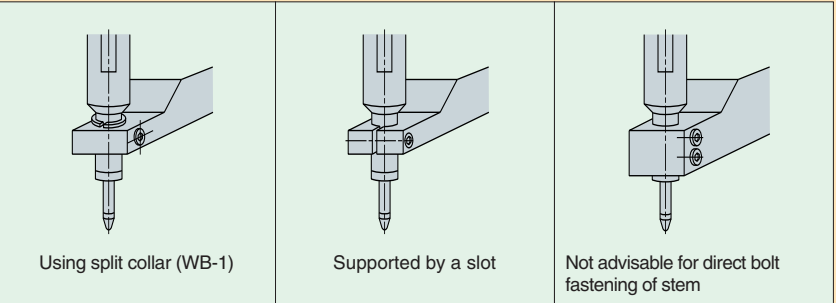
■ Accuracy of Lever-type Linear Gauges (DL-2, DL-2S)

These DL-2 and DL-2S linear gauges are used in applications very similar to lever-type dial indicators. Their accuracy is represented every 0.5mm interval, not over the entire measurement range.
0~0.5mm 0.5mm~1.0mm
1.0~1.5mm 1.5~2.0mm
The entire measurement range is divided into 4 sections. The largest deviation among these 4 sections will determine accuracy.



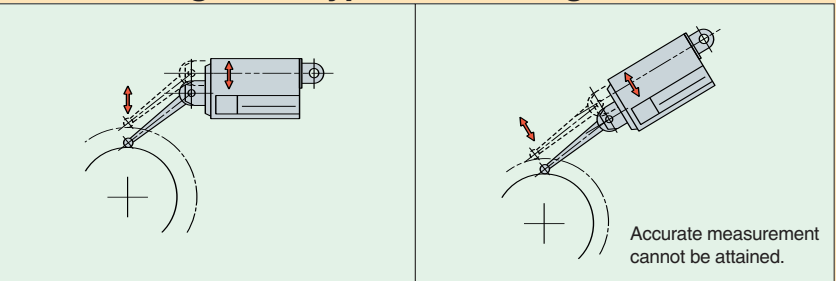
Technical Glossary

● Methods of Supporting Stem



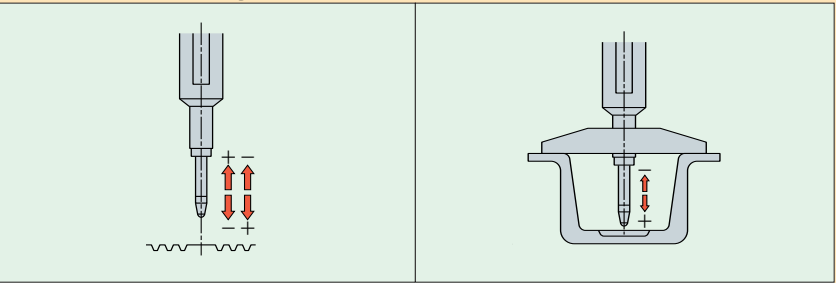
There are 2 methods for mounting of a linear gauge, namely by 'stem' or "lug".
As illustrated on the left, please secure a stem by a split collar or a slot. (If a stem is secured directly by a screw or screws, the spindle may not move smoothly.)
Please use split collar WB-1 designed exclusively for ϕ 8mm stem.

● Positioning Lever-type Linear Gauges



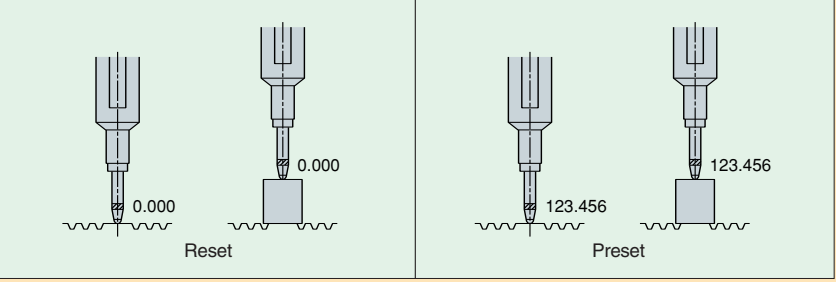
As illustrated on the left for a lever type linear gauge, the lever moves linearly, different from a lever type dial indicator.
Lever type dial indicator can be freely set on a work-piece because of its arc movement.
However, lever type linear gauge should be set on a workpiece extensively at right angle. (Since no deviation from arc is generated, the measuring range is set to 2mm wide.)

● About Polarity Conversion



When you need the reversed value to be read, for example, in case of depth measurement, "—" count should be set in the direction of pulling up of a spindle.
In standard counters, you will find this switch on the back panel.

● Reset / Preset



Linear gauges can be reset to zero at any position in the measuring range.
Counters with preset function can be set a desired value at a desired position.
Since values are displayed based on the preset value as a reference, it is suitable for managing the measured values by their absolute values.

● Protection Classifications

Example of protection classes based on IEC529(DIN40050)(First=protection classes for solid 0 to 6, Second=protection classes for liquid 0 to 8)

IP-54 Protection Class

| Type | Class | Specifications |
|--|----------------------------|---|
| Represents human body, protection and protection against foreign objects | 5: Protection against dust | Provides protection against dust. |
| Represents protection against water | 4: Splash proof type | No harmful result caused by water splashed from all directions (water splashproof). |

IP-66 Protection Class

| Type | Class | Specifications |
|---|-------------------------|---|
| Represents human body, protection and protection against foreign object | 6: Anti-dust seal type | Provides complete anti-dust protection against dust invasion. |
| Represents protection against water | 6: Full waterproof type | Protection that eliminates any water invasion including direct water jet from all directions (completely waterproof). |

SECTION 12

Parts Drawings

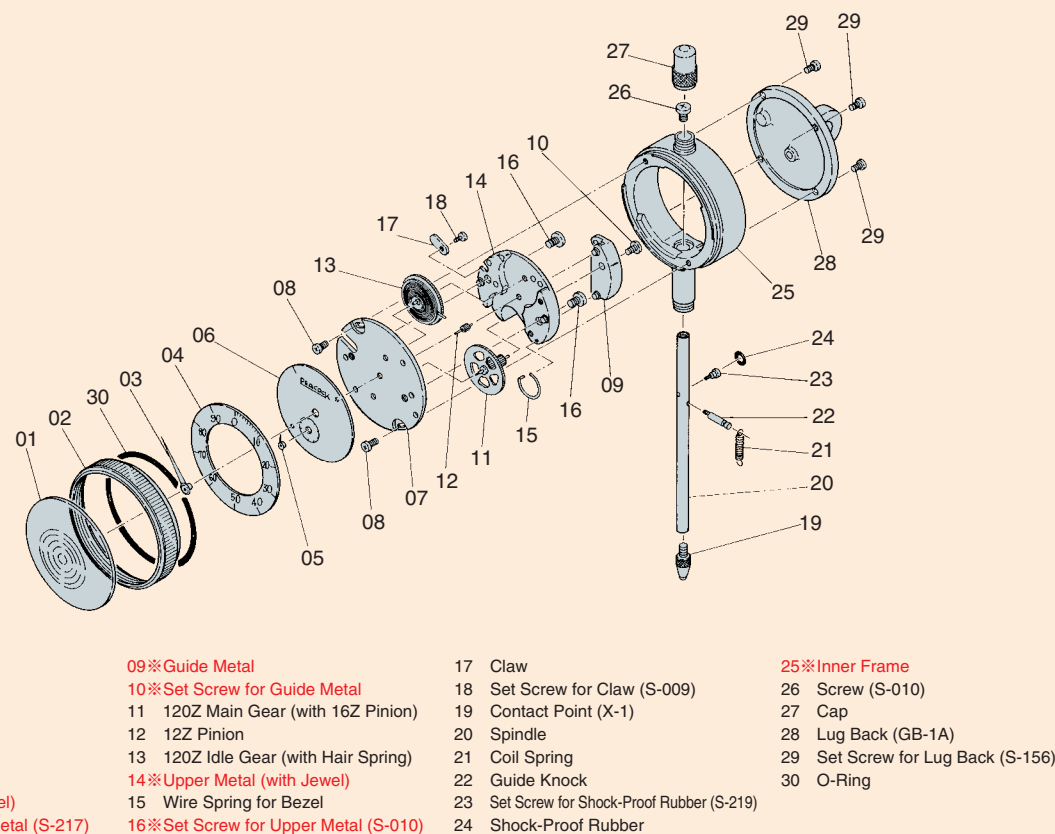
- Dial Gauge
- New Pic Test
- Pic Test
- Dial Thickness Gauge
- Dial Lens Gauge
- Cylinder Gauge



Parts Drawings

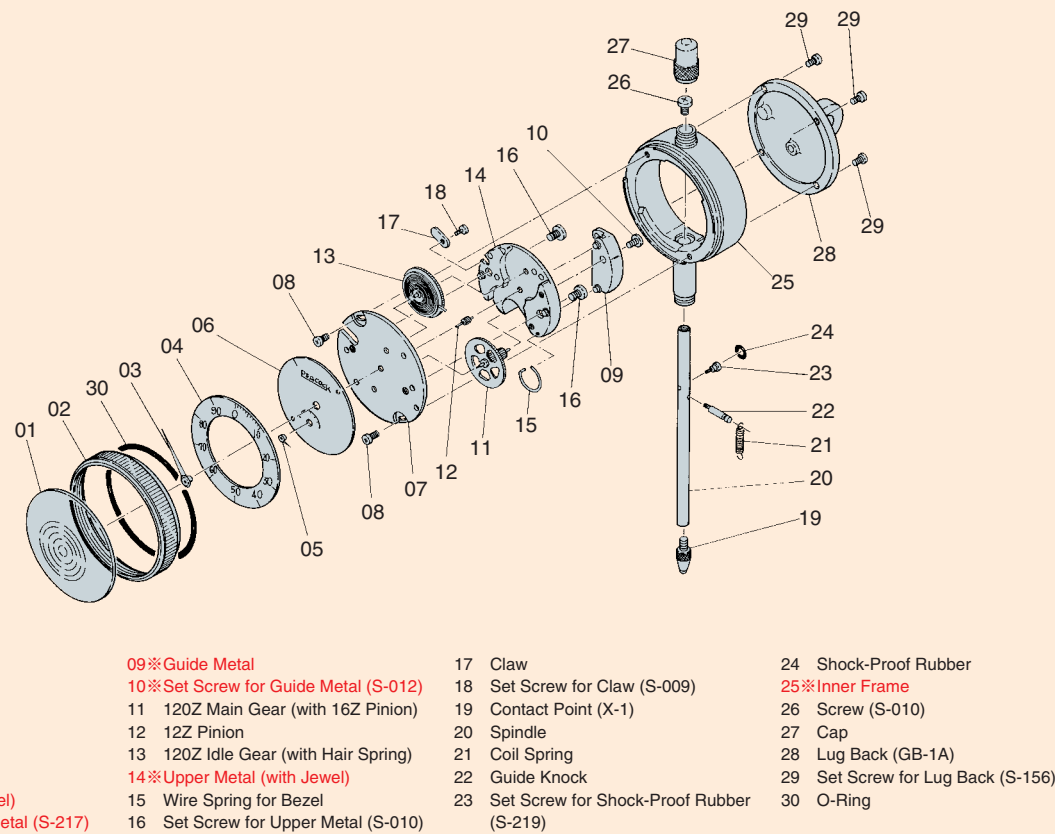
Dial Gauges

Dial Gauge
107



*mark are not for sell.

Dial Gauge
57

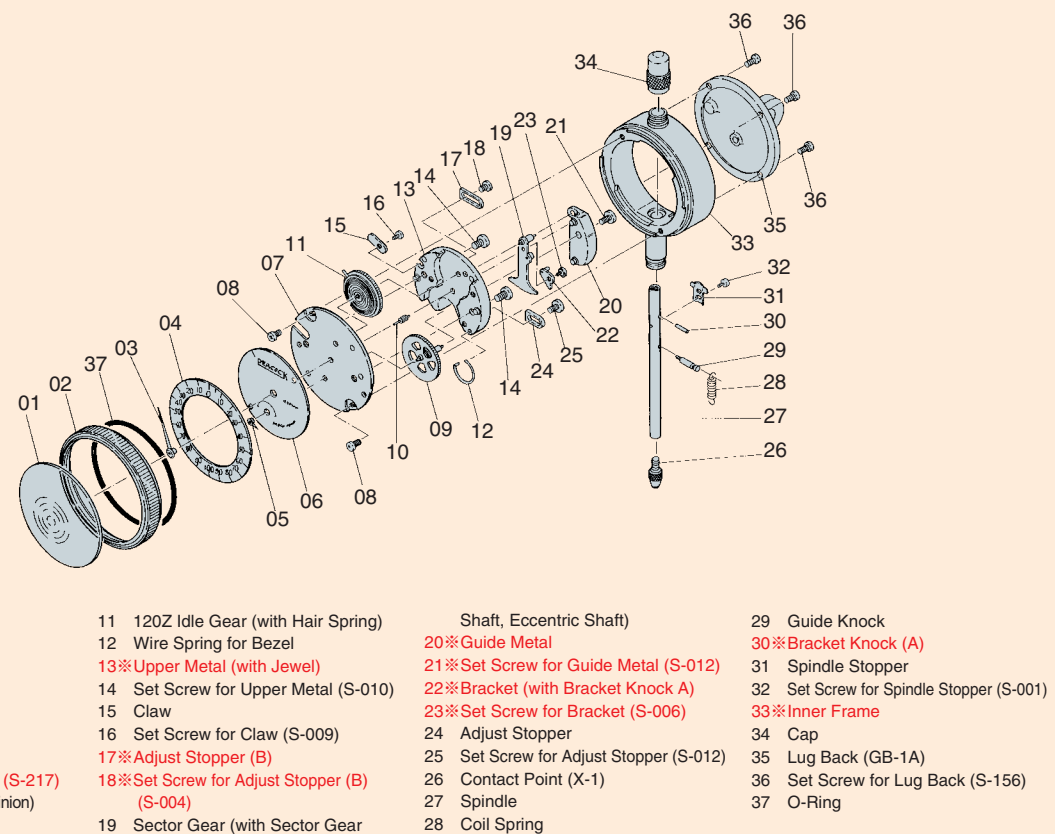


*mark are not for sell.

Parts Drawings

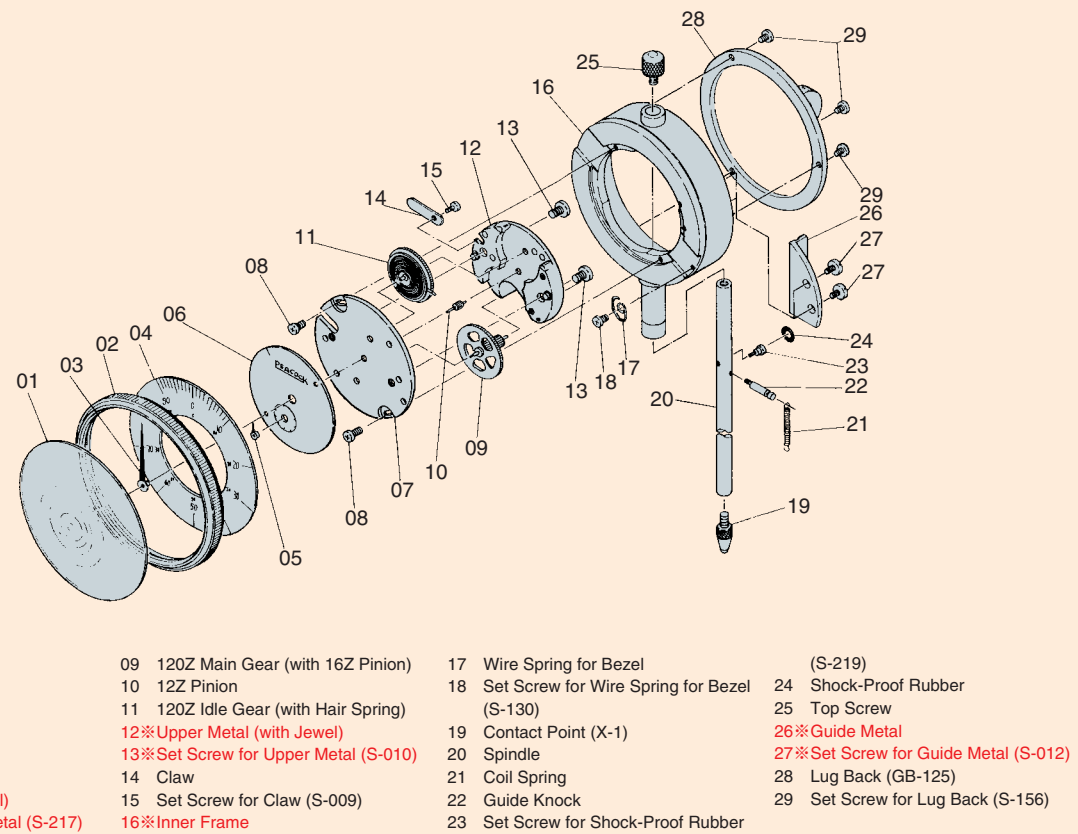
Dial Gauges

Dial Gauge
5B



*mark are not for sell.

Dial Gauge
207

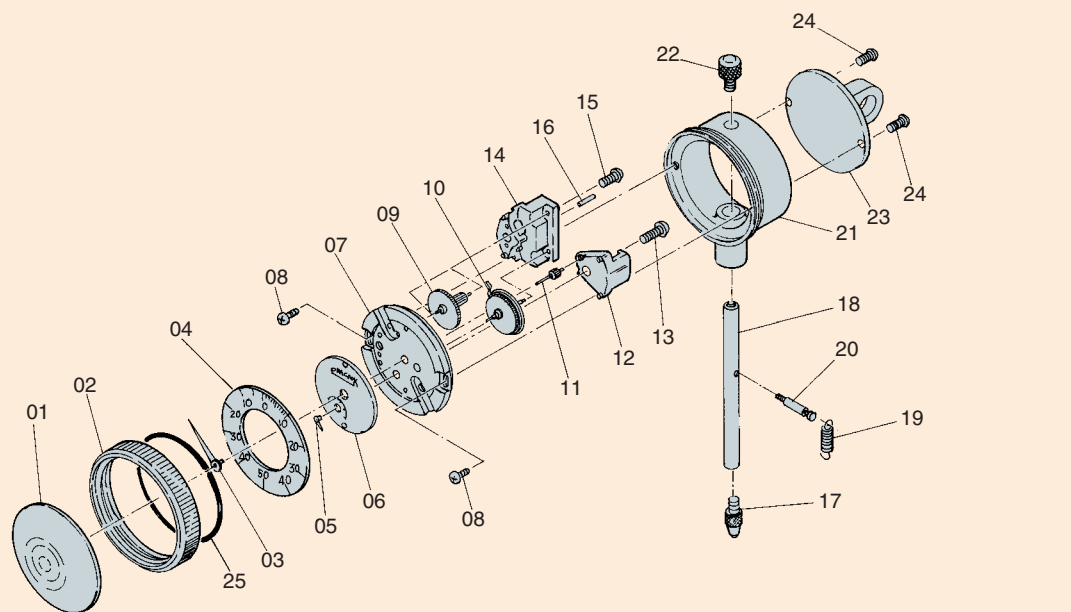


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Parts Drawings

Dial Gauge

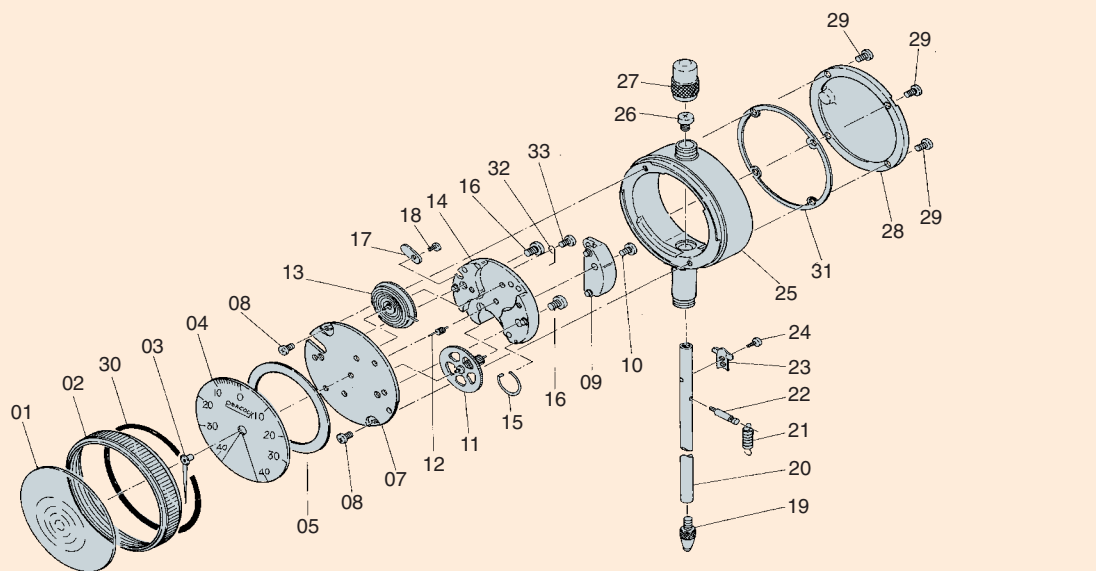
Dial Gauge 47



- | | | | |
|-----------------------------|--|--|-----------------------------------|
| 01 Crystal | 08**Set Screw for Base Metal (S-009) | 14**Square Metal (with Jewel) | 20 Guide Knock |
| 02 Bezel | 09 70Z Main Gear (with 14Z Pinion) | 15**Set Screw for Square Metal (S-156) | 21**Inner Frame |
| 03 Pointer | 10 70Z Idle Gear (70Z Gear Shaft, Hair Spring) | 16 Knock for Hair Spring | 22 Top Screw |
| 04 Outer Dial | 11 10Z Pinion | 17 Contact Point (X-107) | 23 Lug Back (GB-147) |
| 05 Hand | 12**Center Metal (with Jewel) | 18 Spindle | 24 Set Screw for Lug Back (S-005) |
| 06 Inner Dial | 13**Set Screw for Center Metal (S-165) | 19 Coil Spring | 25 O-Ring |
| 07**Base Metal (with Jewel) | | | |

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Dial Gauge 17Z



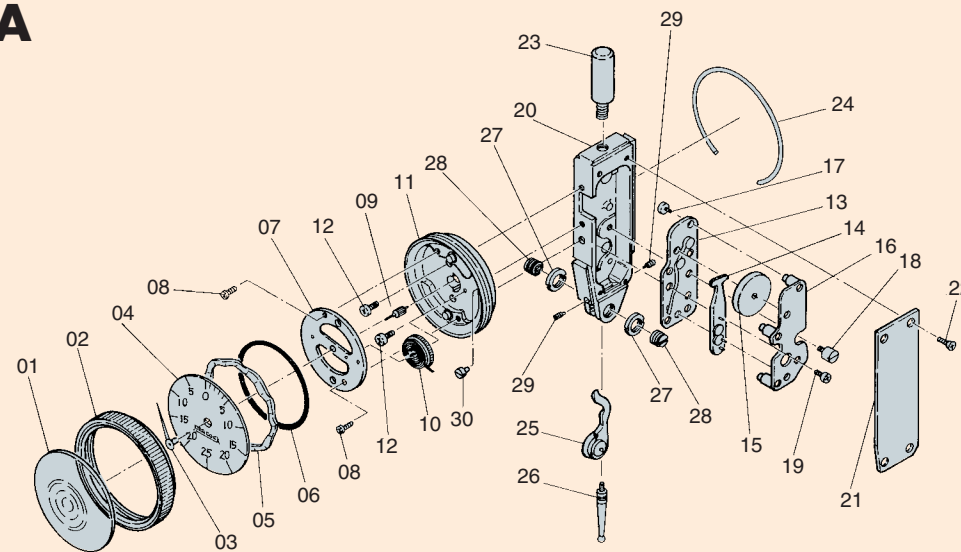
- | | | | |
|--------------------------------------|--------------------------------------|----------------------------------|--------------------------------------|
| 01 Crystal | 11 120Z Main Gear (with 16Z Pinion) | 18 Set Screw for Claw (S-009) | 27 Cap |
| 02 Bezel | 12 12Z Pinion | 19 Contact Point (XB-1) | 28 Flat Back (GB-3A) |
| 03 Pointer | 13 120Z Idle Gear Assy | 20 Spindle | 29 Set Screw for Flat Back (S-156) |
| 04 Dial | 14**Upper Metal (with Jewel) | 21 Coil Spring | 30 O-Ring |
| 05 Plate Spring | 15 Wire Spring for Bezel | 22 Guide Knock | 31**Packing for Flat Back |
| 07**Base Metal (with Jewel) | 16 Set Screw for Upper Metal (S-010) | 23**Spindle Stopper | 32 Stop Spring |
| 08 Set Screw for Base Metal (S-217) | 17 Claw | 24 Set Screw for Stopper (S-001) | 33 Set Screw for Stop Spring (S-217) |
| 09**Guide Metal | | 25**Inner Frame | |
| 10 Set Screw for Guide Metal (S-012) | | 26 Screw (S-010) | |

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Parts Drawings

PCN series

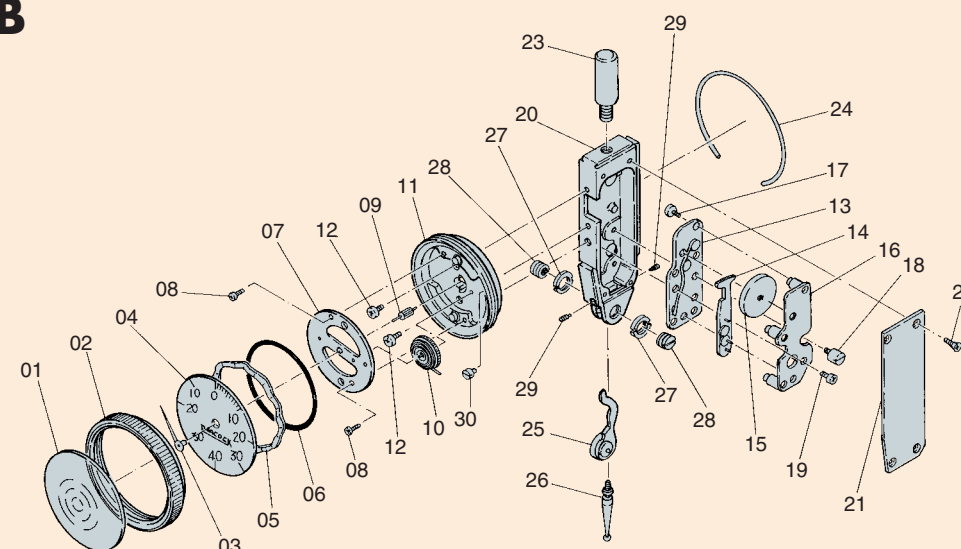
New Pic Test PCN-1A



- | | | | |
|--------------------------------|--------------------------------------|--|---|
| 01 Crystal | 09 10Z Pinion | 17**Set Screw for Metal Column (S-179) | 24 Wire Spring |
| 02 Bezel | 10 60Z Idle Gear (with Hair Spring) | 18**Stopper Screw (S-092) | 25 Lever with Bearing |
| 03 Pointer | 11**Base Metal (with Jewel) | 19**Set Screw for Lower Plate (S-045) | 26 Contact Point (XN1A-2) |
| 04 Dial | 12**Set Screw for Base Metal (S-171) | 20**Main Body | 27 Nut for Pivot (2pcs./set) |
| 05 Plate Spring | 13**Lower Plate Assy | 21**Side Cover | 28 Pivot with Miniature Bearing (2pcs./set) |
| 06 O-Ring | 14 Sector Gear Assy | 22 Set Scerw for Side Cover (S-185) | 29 Adjustment Screw (S-014) |
| 07 Metal (with Jewel) | 15 Crown Gear (with 26Z Pinion) | 23 Stem | 30 Hair Spring Column |
| 08 Set Screw for Metal (S-132) | 16**Upper Plate Assy | | |

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New Pic Test PCN-1B



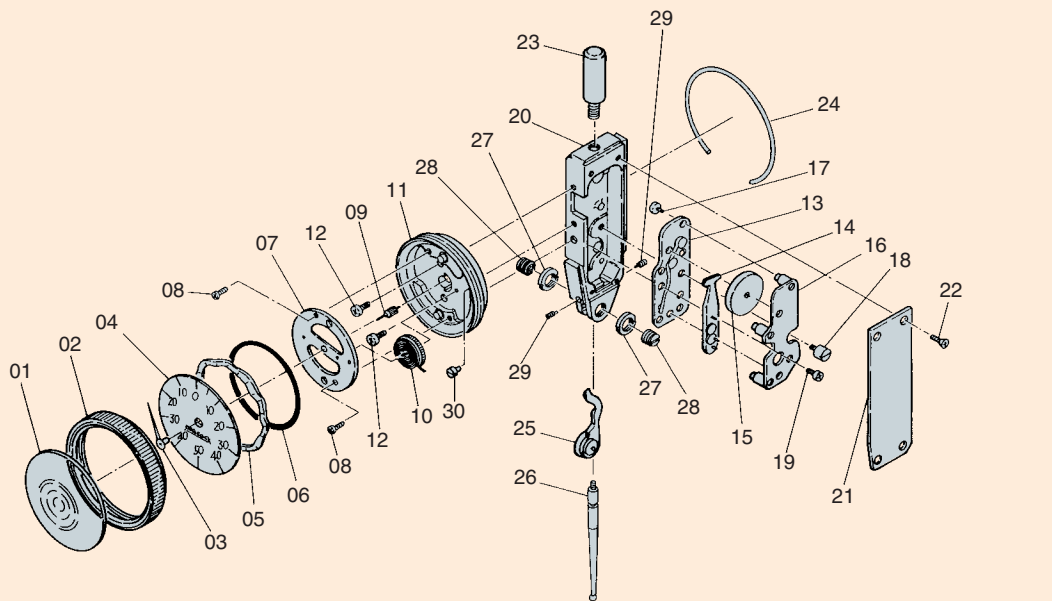
- | | | | |
|--------------------------------|--------------------------------------|--|---|
| 01 Crystal | 09 10Z Pinion | 17**Set Screw for Metal Column (S-179) | 24 Wire Spring |
| 02 Bezel | 10 60Z Idle Gear (with Hair Spring) | 18**Stopper Screw (S-092) | 25 Lever with Bearing |
| 03 Pointer | 11**Base Metal (with Jewel) | 19**Set Screw for Lower Plate (S-045) | 26 Contact Point (XN1B-2) |
| 04 Dial | 12**Set Screw for Base Metal (S-171) | 20**Main Body | 27 Nut for Pivot (2pcs./set) |
| 05 Plate Spring | 13**Lower Plate Assy | 21**Side Cover | 28 Pivot with Miniature Bearing (2pcs./set) |
| 06 O-Ring | 14 Sector Gear Assy | 22 Set Scerw for Side Cover (S-185) | 29 Adjustment Screw (S-014) |
| 07 Metal (with Jewel) | 15 Crown Gear (with 38Z Pinion) | 23 Stem | 30 Hair Spring Column |
| 08 Set Screw for Metal (S-132) | 16**Upper Plate Assy | | |

**mark are not for sell.

Parts Drawings

PCN series

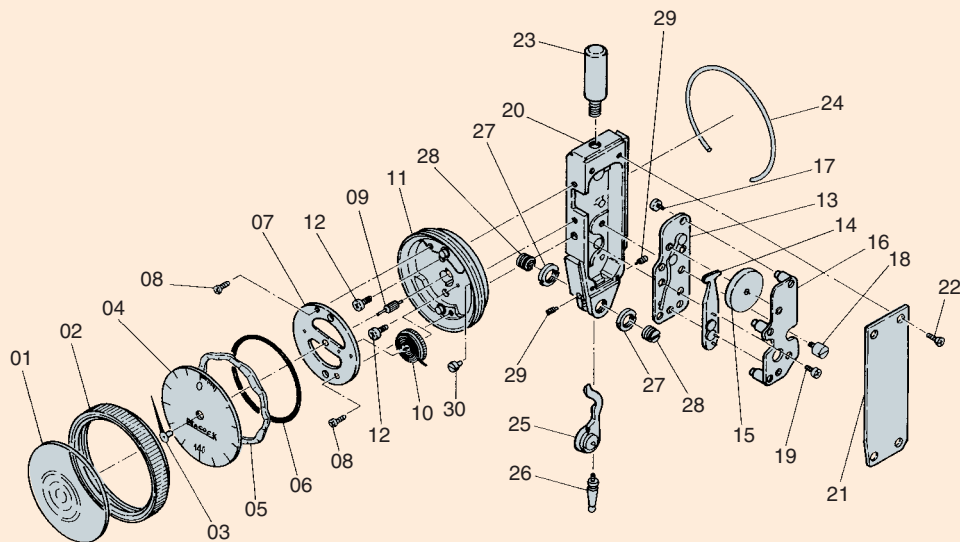
New Pic Test PCN-1L



- | | | | |
|--------------------------------|--------------------------------------|--|---|
| 01 Crystal | 09 10Z Pinion | 17**Set Screw for Metal Column (S-179) | 24 Wire Spring |
| 02 Bezel | 10 60Z Idle Gear (with Hair Spring) | 18**Stopper Screw (S-092) | 25 Lever with Bearing |
| 03 Pointer | 11**Base Metal (with Jewel) | 19**Set Screw for Lower Plate (S-045) | 26 Contact Point (XN1L-2) |
| 04 Dial | 12**Set Screw for Base Metal (S-171) | 20**Main Body | 27 Nut for Pivot (2pcs./set) |
| 05 Plate Spring | 13**Lower Plate Assy | 21**Side Cover | 28 Pivot with Miniature Bearing (2pcs./set) |
| 06 O-Ring | 14 Sector Gear Assy | 22 Set Scerw for Side Cover (S-185) | 29 Adjustment Screw (S-014) |
| 07 Metal (with Jewel) | 15 Crown Gear (with 26Z Pinion) | 23 Stem | 30 Hair Spring Column |
| 08 Set Screw for Metal (S-132) | 16**Upper Plate Assy | | |

**mark are not for sell.

New Pic Test PCN-2



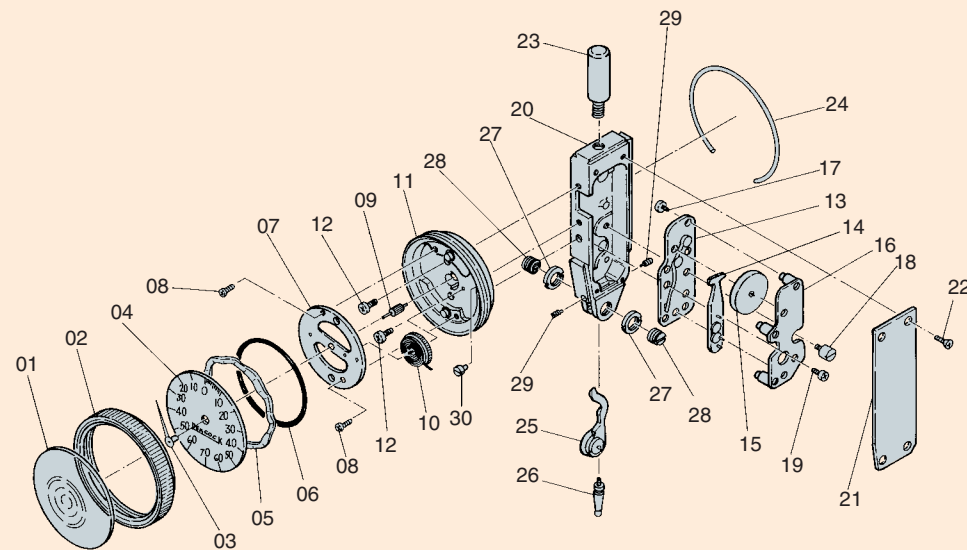
- | | | | |
|--------------------------------|--------------------------------------|--|---|
| 01 Crystal | 09 10Z Pinion | 17**Set Screw for Metal Column (S-179) | 24 Wire Spring |
| 02 Bezel | 10 60Z Idle Gear (with Hair Spring) | 18**Stopper Screw (S-092) | 25 Lever with Bearing |
| 03 Pointer | 11**Base Metal (with Jewel) | 19**Set Screw for Lower Plate (S-045) | 26 Contact Point (XN2-2) |
| 04 Dial | 12**Set Screw for Base Metal (S-171) | 20**Main Body | 27 Nut for Pivot (2pcs./set) |
| 05 Plate Spring | 13**Lower Plate Assy | 21**Side Cover | 28 Pivot with Miniature Bearing (2pcs./set) |
| 06 O-Ring | 14 Sector Gear Assy | 22 Set Scerw for Side Cover (S-185) | 29 Adjustment Screw (S-014) |
| 07 Metal (with Jewel) | 15 Crown Gear (with 18Z Pinion) | 23 Stem | 30 Hair Spring Column |
| 08 Set Screw for Metal (S-132) | 16**Upper Plate Assy | | |

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Parts Drawings

PCN series PC series

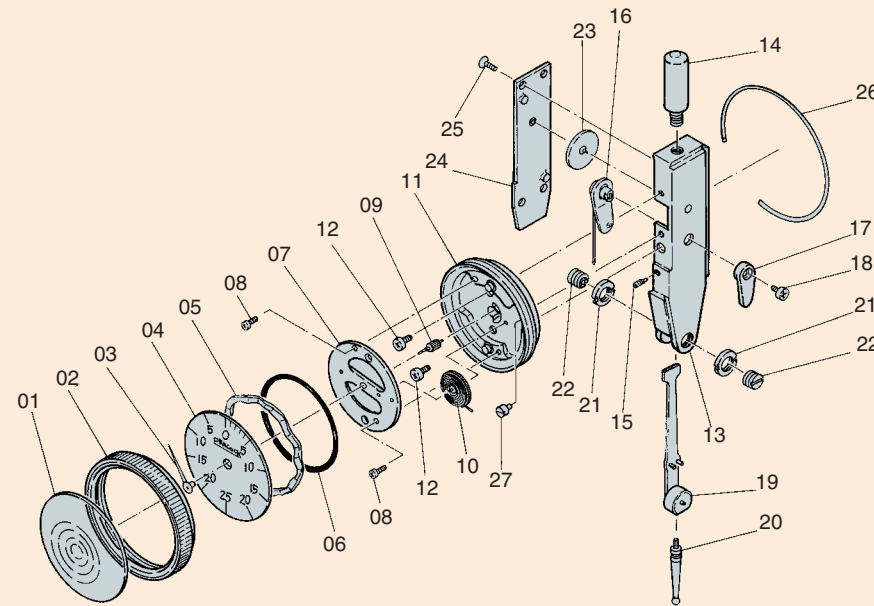
New Pic Test PCN-S



- | | | | |
|--------------------------------|--------------------------------------|--|---|
| 01 Crystal | 09 10Z Pinion | 17**Set Screw for Metal Column (S-179) | 24 Wire Spring |
| 02 Bezel | 10 60Z Idle Gear (with Hair Spring) | 18**Stopper Screw (S-092) | 25 Lever with Bearing |
| 03 Pointer | 11**Base Metal (with Jewel) | 19**Set Screw for Lower Plate (S-045) | 26 Contact Point (XNS-2) |
| 04 Dial | 12**Set Screw for Base Metal (S-171) | 20**Main Body | 27 Nut for Pivot (2pcs./set) |
| 05 Plate Spring | 13**Lower Plate Assy | 21**Side Cover | 28 Pivot with Miniature Bearing (2pcs./set) |
| 06 O-Ring | 14 Sector Gear Assy | 22 Set Scerw for Side Cover (S-185) | 29 Adjustment Screw (S-014) |
| 07 Metal (with Jewel) | 15 Crown Gear (with 14Z Pinion) | 23 Stem | 30 Hair Spring Column |
| 08 Set Screw for Metal (S-132) | 16**Upper Plate Assy | | |

**mark are not for sell.

Pic Test PC-1A



- | | | | |
|--------------------------------|--------------------------------------|---|-------------------------------------|
| 01 Crystal | 09 10Z Pinion | 17 Clutch Lever | 24**Side Cover |
| 02 Bezel | 10 60Z Idle Gear (with Hair Spring) | 18 Set Screw for Clutch Lever (S-179) | 25 Set Screw for Side Cover (S-163) |
| 03 Pointer | 11**Base Metal (with Jewel) | 19 Sector Gear Assy | 26 Wire Spring |
| 04 Dial | 12**Set Screw for Base Metal (S-171) | 20 Contact Point (XP1A-2) | 27 Hair Spring Column |
| 05 Plate Spring | 13**Main Body | 21 Nut for Pivot (2pcs./set) | |
| 06 O-Ring | 14 Stem | 22 Pivot with Miniature Bearing (2pcs./set) | |
| 07 Metal (with Jewel) | 15**Stopper Screw (S-164) | 23 Crown Gear (with 14Z Pinion) | |
| 08 Set Screw for Metal (S-132) | 16**Spring for Clutch Lever Assy | | |

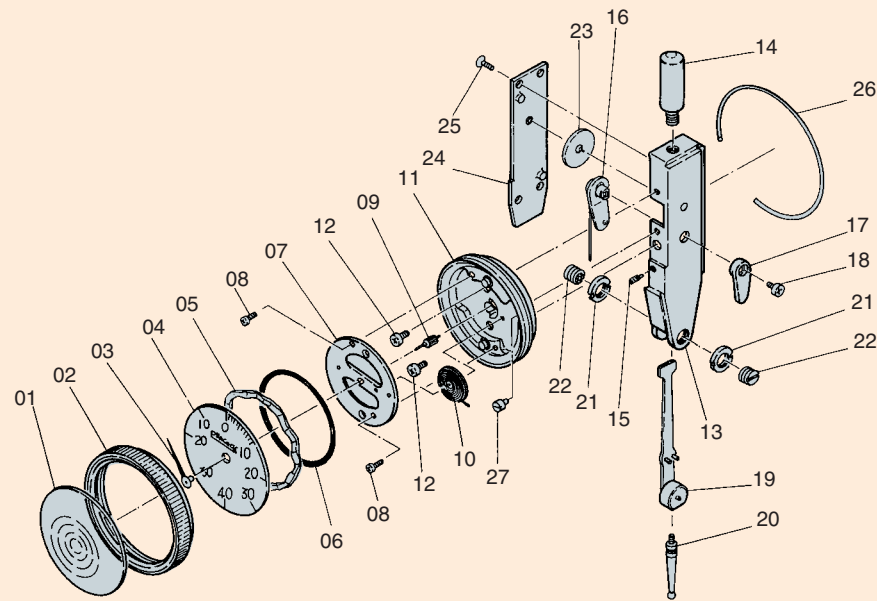
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Parts Drawings

PC series

Pic Test

PC-1B

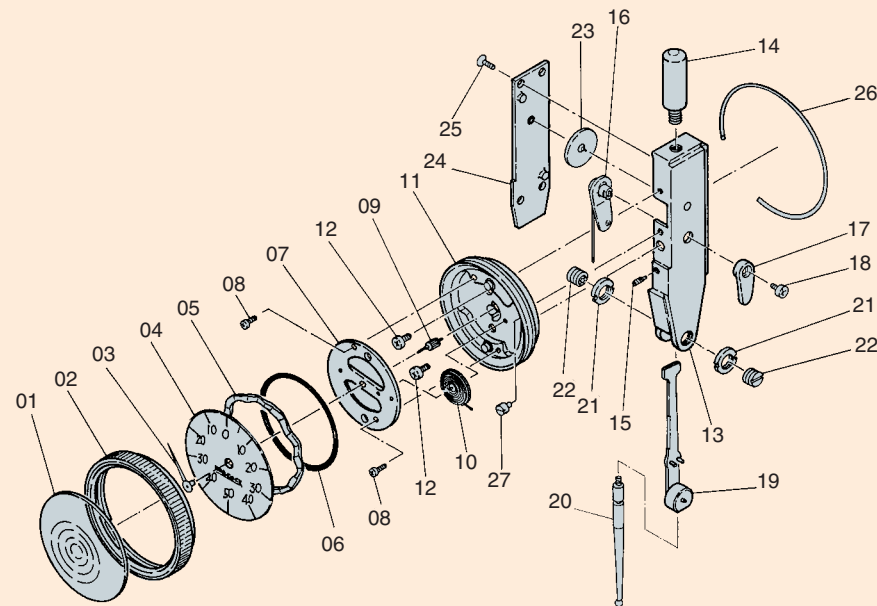


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|--------------------------------|--------------------------------------|--|-------------------------------------|
| 01 Crystal | 09 10Z Pinion | 17 Clutch Lever | 24**Side Cover |
| 02 Bezel | 10 60Z Idle Gear (with Hair Spring) | 18 Set Screw for Clutch Lever (S-179) | 25 Set Screw for Side Cover (S-163) |
| 03 Pointer | 11**Base Metal (with Jewel) | 19 Sector Gear Assy | 26 Wire Spring |
| 04 Dial | 12**Set Screw for Base Metal (S-171) | 20 Contact Point (XP1B-2) | 27 Hair Spring Column |
| 05 Plate Spring | 13**Main Body | 21 Nut for Pivot (2pcs./set) | |
| 06 O-Ring | 14 Stem | 22 Pivot Assy with Miniature Bearing (2pcs./set) | |
| 07 Metal (with Jewel) | 15**Stopper Screw (S-164) | 23 Crown Gear (with 21Z Pinion) | |
| 08 Set Screw for Metal (S-132) | 16**Spring for Clutch Lever Assy | | |

**mark are not for sell.

Pic Test

PC-1L



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|--------------------------------|--------------------------------------|--|-------------------------------------|
| 01 Crystal | 09 10Z Pinion | 17 Clutch Lever | 24**Side Cover |
| 02 Bezel | 10 60Z Idle Gear (with Hair Spring) | 18 Set Screw for Clutch Lever (S-179) | 25 Set Screw for Side Cover (S-163) |
| 03 Pointer | 11**Base Metal (with Jewel) | 19 Sector Gear Assy | 26 Wire Spring |
| 04 Dial | 12**Set Screw for Base Metal (S-171) | 20 Contact Point (XP1L-2) | 27 Hair Spring Column |
| 05 Plate Spring | 13**Main Body | 21 Nut for Pivot (2pcs./set) | |
| 06 O-Ring | 14 Stem | 22 Pivot Assy with Miniature Bearing (2pcs./set) | |
| 07 Metal (with Jewel) | 15**Stopper Screw (S-164) | 23 Crown Gear (with 14Z Pinion) | |
| 08 Set Screw for Metal (S-132) | 16**Spring for Clutch Lever Assy | | |

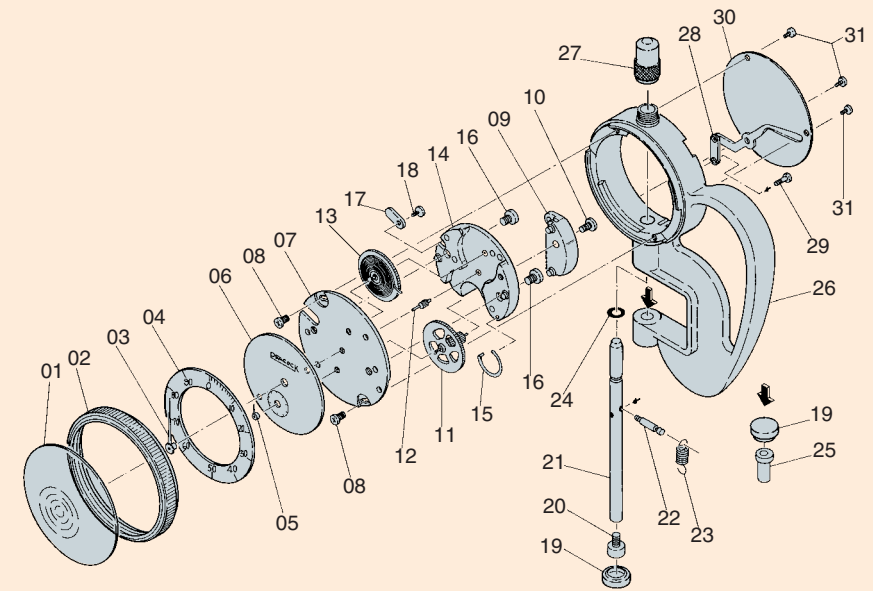
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Parts Drawings

Dial Thickness Gauge

Dial Thickness Gauge

G

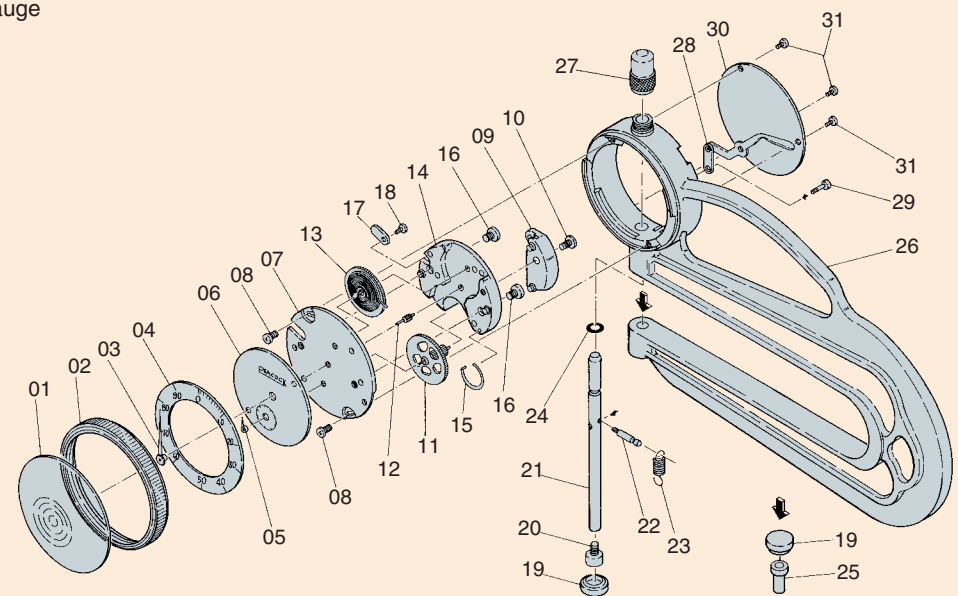


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|--------------------------------------|---------------------------------------|--------------------------------|-----------------------------------|
| 01 Crystal | 09**Guide Metal | 17**Claw | 25 Anvil base |
| 02 Bezel | 10**Set Screw for Guide Metal (S-012) | 18**Set Screw for Claw (S-009) | 26**Frame |
| 03 Pointer | 11**120Z Main Gear (with 16Z Pinion) | 19 Anvil | 27**Cap |
| 04 Outer Dial | 12**12Z Pinion | 20 Contact Point Base | 28 Lever (with Lift Knock device) |
| 05 Hand | 13**120Z Idle Gear (with Hair Spring) | 21 Spindle | 29 Set Screw for Lift (S-064) |
| 06 Inner Dial | 14**Upper Metal (with Jewel) | 22**Guide Knock | 30 Back |
| 07**Base Metal (with Jewel) | 15**Wire Spring for Bezel | 23 Coil Spring | 31 Set Screw for Back (S-128) |
| 08**Set Screw for Base Metal (S-217) | 16**Set Screw for Upper Metal (S-010) | 24**Shock-Proof Rubber | |

**mark are not for sell.

Dial Thickness Gauge

H



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|---------------------------------|---------------------------------------|--------------------------------|-----------------------------------|
| 01 Crystal | 09**Guide Metal | 17**Claw | 25 Anvil base |
| 02 Bezel | 10**Set Screw for Guide Metal (S-012) | 18**Set Screw for Claw (S-009) | 26**Frame |
| 03 Pointer | 11**120Z Main Gear (with 16Z Pinion) | 19 Anvil | 27**Cap |
| 04 Outer Dial | 12**12Z Pinion | 20 Contact Point Base | 28 Lever (with Lift Knock device) |
| 05 Hand | 13**120Z Idle Gear (with Hair Spring) | 21 Spindle | 29 Set Screw for Lift (S-064) |
| 06 Inner Dial | 14**Upper Metal (with Jewel) | 22**Guide Knock | 30 Back |
| 07**Base Metal (with Jewel) | 15**Wire Spring for Bezel | 23 Coil Spring | 31 Set Screw for Back (S-128) |
| 08**Set Screw for Metal (S-217) | 16**Set Screw for Upper Metal (S-010) | 24**Shock-Proof Rubber | |

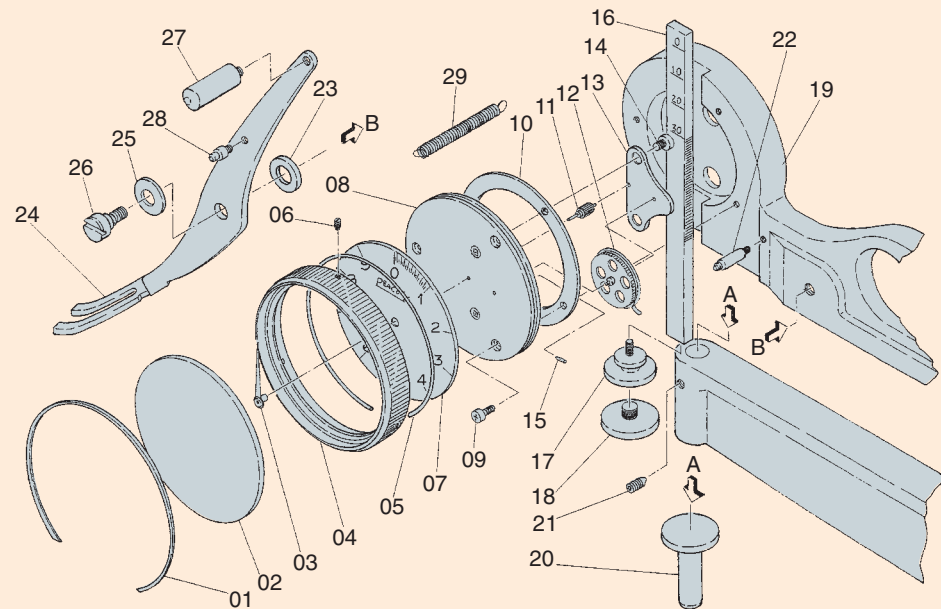
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Parts Drawings

Dial Thickness Gauge Dial Lens Gauge

Dial Thickness Gauge

J-B

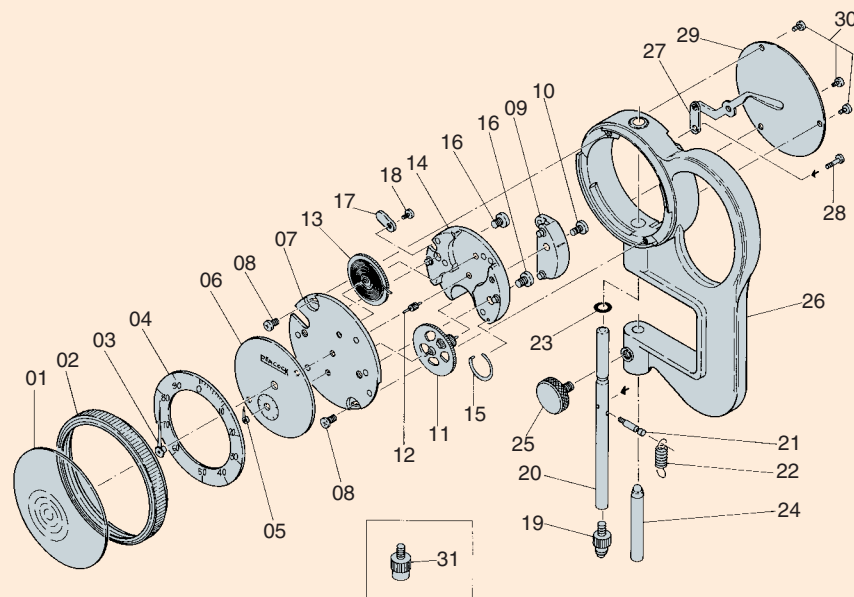


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|--------------------------------|-----------------------------------|---------------------------|----------------------------|
| 01 Spring for Crystal | 09**Set Screw for Metal (S-007) | 17 Base for Contact Point | 25 Washer |
| 02 Crystal | 10**Ring for Metal | 18 Contact Point | 26 Lever Axis |
| 03 Pointer | 11**16Z Pinion | 19**Frame | 27 Finger Rack |
| 04 Bezel | 12**100Z Gear Assy | 20 Anvil | 28 Spring Pillar (Shorter) |
| 05 Teflon Ring | 13**Upper Metal | 21 Set Screw for Anvil | 29 Return Spring for Lever |
| 06 Set Screw for Bezel (S-200) | 14**Screw for Upper Metal (S-010) | 22 Spring Pillar (Longer) | |
| 07 Dial | 15**Knock for Hair Spring | 23 Washer for Lever | |
| 08**Metal Assy | 16 Spindle | 24 Lever | |

**mark are not for sell.

Dial Lens Gauge

GL



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|--------------------------------------|---------------------------------------|--------------------------------|-----------------------------------|
| 01 Crystal | 09**Guide Metal | 17**Claw | 25 Knob for Anvil |
| 02 Bezel | 10**Set Screw for Guide Metal (S-012) | 18**Set Screw for Claw (S-009) | 26**Frame |
| 03 Pointer | 11**120Z Main Gear (with 16Z Pinion) | 19 Contact Point (R-Type) | 27 Lever (with Lift Knock device) |
| 04 Outer Dial | 12**12Z Pinion | 20 Spindle | 28 Set Screw for Lift (S-064) |
| 05 Hand | 13**120Z Idle Gear (with Hair Spring) | 21**Guide Knock | 29 Back |
| 06 Inner Dial | 14**Upper Metal (with Jewel) | 22 Coil Spring | 30 Set Screw for Back (S-128) |
| 07**Base Metal (with Jewel) | 15**Wire Spring for Bezel | 23**Shock-Proof Rubber | 31 Contact Point (Flat Type) |
| 08**Set Screw for Base Metal (S-217) | 16**Set Screw for Upper Metal (S-010) | 24 Anvil | |

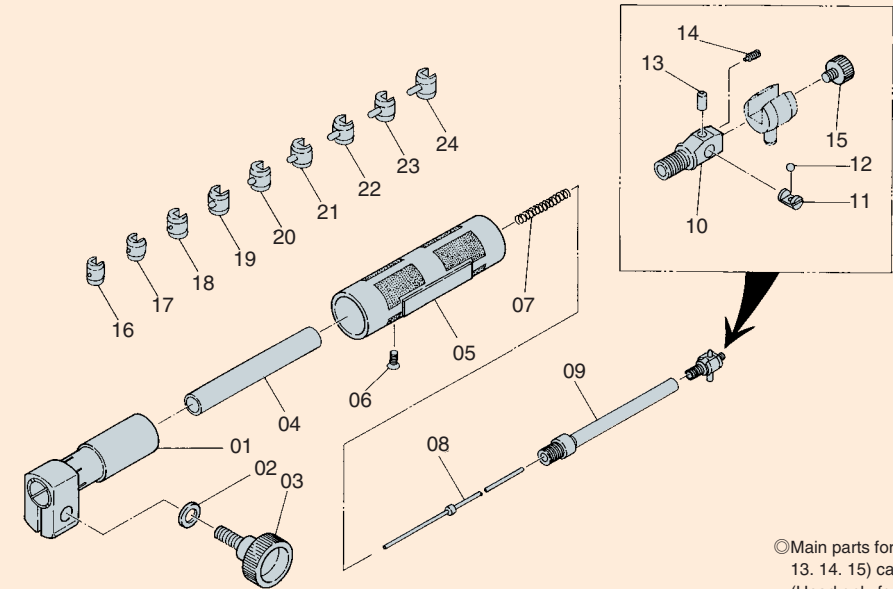
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Parts Drawings

Cylinder Gauges

Cylinder Gauge

CC-02



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|--------------------------------|----------------------------------|--------------------------|------------------|
| 01 Indicator Holder | 07 Coil Spring | 13 Contact Point | 19 Feeler 7.5mm |
| 02 Washer | 08 Spindle (with Spindle Collar) | 14 Guide Screw | 20 Feeler 8.0mm |
| 03 Knob Screw | 09**Sleeve A | 15 Lock Screw for Feeler | 21 Feeler 8.5mm |
| 04**Sleeve B | 10**Head | 16 Feeler 6.0mm | 22 Feeler 9.0mm |
| 05**Grip | 11 Race | 17 Feeler 6.5mm | 23 Feeler 9.5mm |
| 06**Set Screw for Grip (S-027) | 12 Transmission Ball | 18 Feeler 7.0mm | 24 Feeler 10.0mm |

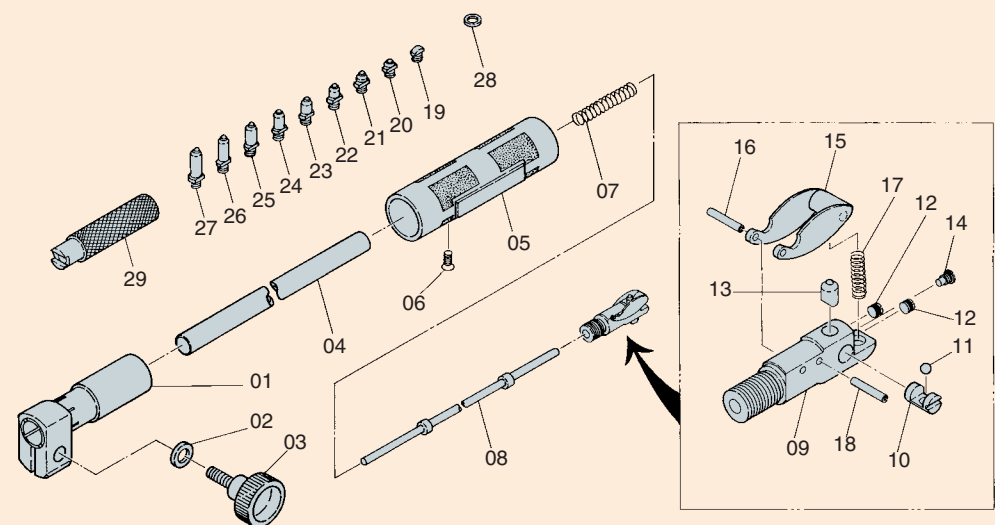
◎Main parts for Body (part no. 10. 11. 12. 13. 14. 15) can be sold as a set. (Head only for CC-02)

◎Parts no. 02 and 03 are sold as a set.

**mark are not for sell.

Cylinder Gauge

CC-01



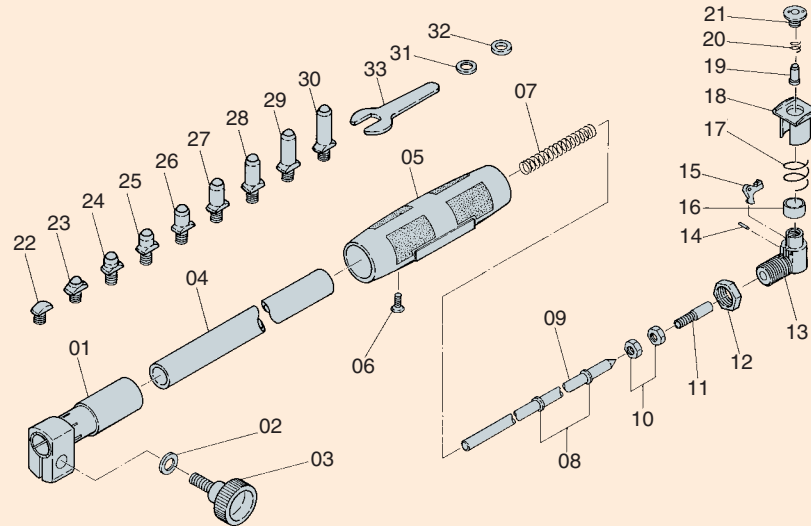
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|----------------------------------|--|-----------------|--|
| 01 Indicator Holder | 11 Transmission Ball | 20 Feeler 11mm | ◎Main parts for Body (part no. 09. 10. 11. 12. 13. 14. 15. 16. 17. 18) can be sold as a set. (Head only for CC-01) |
| 02 Washer | 12 Set Screw for Transmission Ball (S-049) | 21 Feeler 12mm | |
| 03 Knob Screw | 13 Contact Point | 22 Feeler 13mm | ◎Parts no. 02 and 03 are sold as a set. |
| 04**Sleeve | 14 Guide Screw | 23 Feeler 14mm | |
| 05**Grip | 15 Guide (with Guide Bush) | 24 Feeler 15mm | |
| 06**Set Screw for Grip (S-023) | 16 Rivet | 25 Feeler 16mm | |
| 07 Coil Spring | 17 Return Spring | 26 Feeler 17mm | |
| 08 Spindle (with Spindle Collar) | 18 Check Pin | 27 Feeler 18mm | |
| 09**Head | 19 Feeler 10mm | 28 Washer 0.5mm | |
| 10 Race | | 29 Spanner | |

**mark are not for sell.

Parts Drawings

Cylinder Gauges

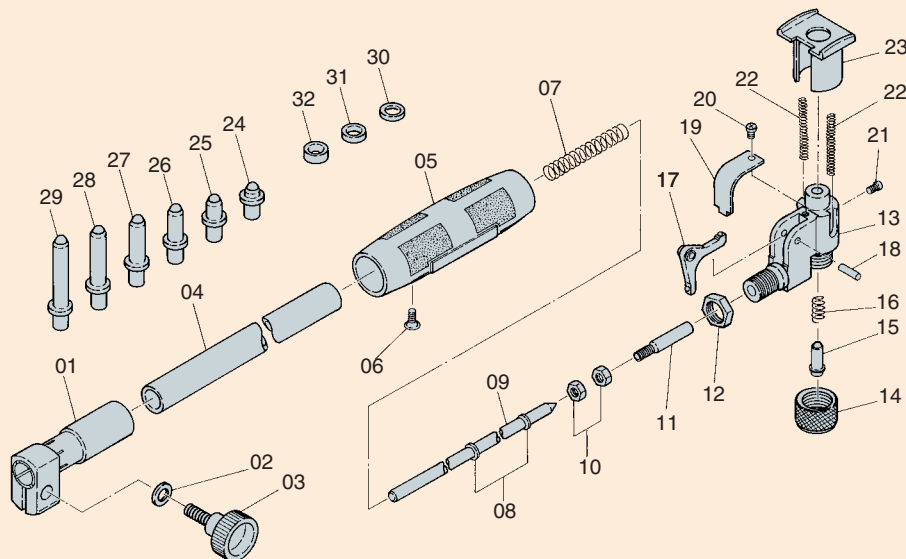
Cylinder Gauge CC-1



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|---|---------------------|------------------|-----------------|---|
| 01 Indicator Holder | 09 Spindle Rod | 18 Guide | 27 Feeler 28mm | ◎Main parts for Body (part no. 10. 11. 12. 13. 14. 15. 16. 17. 18. 19. 20. 21) can be sold as a set. (Head only for CC-1) |
| 02 Washer | 10 Stop Nut | 19 Contact Point | 28 Feeler 30mm | |
| 03 Knob Screw | 11 Spindle | 20 Buffer Spring | 29 Feeler 32mm | |
| 04**Sleeve | 12 Hex Nut | 21 Lock Nut | 30 Feeler 34mm | |
| 05**Grip | 13**Head | 22 Feeler 18mm | 31 Washer 0.5mm | ◎Parts no. 02 and 03 are sold as a set. ◎Parts no. 14 and 15 are sold as a set. |
| 06**Set Screw for Grip (S-021) | 14 Transmission Pin | 23 Feeler 20mm | 32 Washer 1mm | |
| 07 Coil Spring | 15 Transmission | 24 Feeler 22mm | 33 Spanner | |
| 08 Spindle Collar (with E type Stop Ring) | 16**Collar | 25 Feeler 24mm | | |
| | 17 Return Spring | 26 Feeler 26mm | | |

*mark are not for sell.

Cylinder Gauge CC-2



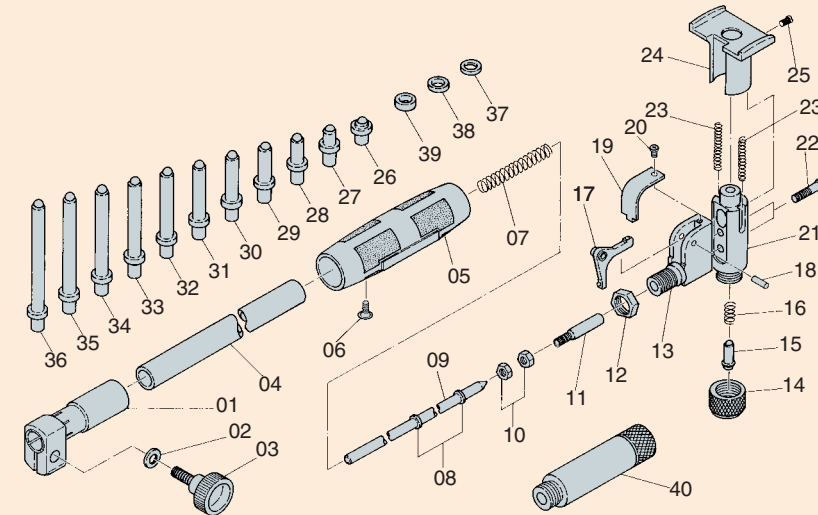
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|---|--------------------|--------------------------------------|----------------|---|
| 01 Indicator Holder | 09 Spindle Rod | 18 Transmission Pin | 27 Feeler 50mm | ◎Main parts for Body (part no. 10. 11. 12. 13. 14. 15. 16. 17. 18. 19. 20. 21. 22. 23) can be sold as a set. (Head only for CC-2) |
| 02 Washer | 10 Stop Nut | 19**Head Cover | 28 Feeler 55mm | |
| 03 Knob Screw | 11 Spindle | 20**Set Screw for Head Cover (S-008) | 29 Feeler 60mm | |
| 04**Sleeve | 12 Hex Nut | 21 Set Screw for Guide (S-042) | 30 Washer 1mm | |
| 05**Grip | 13**Head | 22 Return Spring | 31 Washer 2mm | ◎Parts no. 02 and 03 are sold as a set. ◎Parts no. 17 and 18 are sold as a set. |
| 06**Set Screw for Grip (S-021) | 14 Feeler Lock Nut | 23 Guide | 32 Washer 3mm | |
| 07 Coil Spring | 15 Contact Point | 24 Feeler 35mm | | |
| 08 Spindle Collar (with E type Stop Ring) | 16 Buffer Spring | 25 Feeler 40mm | | |
| | 17 Transmission | 26 Feeler 45mm | | |

*mark are not for sell.

Parts Drawings

Cylinder Gauges

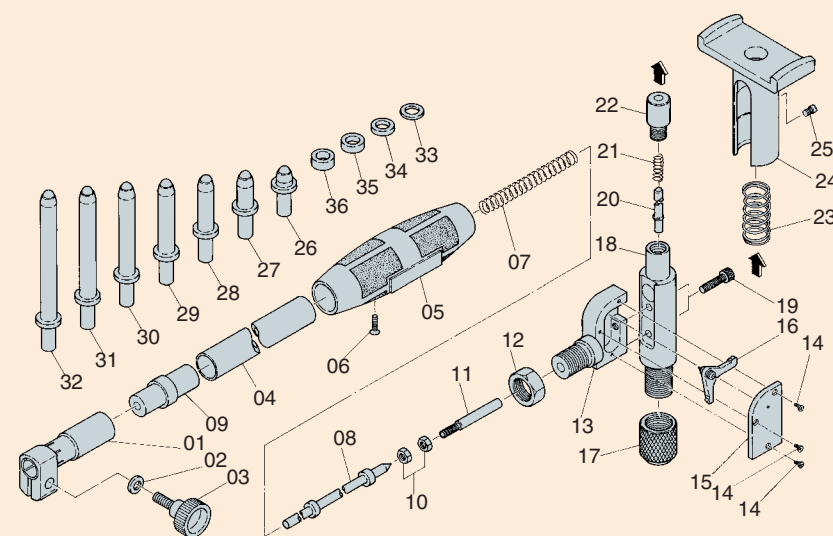
Cylinder Gauge CC-3C



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|---|--------------------------------------|---------------------------------|-----------------|--|
| 01 Indicator Holder | 11 Spindle | 22**Lock Screw for Head (S-025) | 31 Feeler 75mm | ◎Main parts for Body (part no. 10. 11. 12. 13. 14. 15. 16. 17. 18. 19. 20. 21. 22. 23. 24. 25) can be sold as a set. (Head only for CC-3C) |
| 02 Washer | 12 Hex Nut | 23 Return Spring | 32 Feeler 80mm | |
| 03 Knob Screw | 13**Head A | 24 Guide | 33 Feeler 85mm | |
| 04**Sleeve | 14 Feeler Lock Nut | 25 Set Screw for Guide (S-042) | 34 Feeler 90mm | |
| 05**Grip | 15 Contact Point | 26 Feeler 50mm | 35 Feeler 95mm | ◎Parts no. 02 and 03 are sold as a set. ◎Parts no. 17 and 18 are sold as a set. |
| 06**Set Screw for Grip (S-021) | 16 Buffer Spring | 27 Feeler 55mm | 36 Feeler 100mm | |
| 07 Coil Spring | 17 Transmission | 28 Feeler 60mm | 37 Washer 1mm | |
| 08 Spindle Collar (with E type Stop Ring) | 18 Transmission Pin | 29 Feeler 65mm | 38 Washer 2mm | |
| 09 Spindle Rod | 19**Head Cover | 30 Feeler 70mm | 39 Washer 3mm | |
| 10 Stop Nut | 20**Set Screw for Head Cover (S-008) | | 40 Adapter 50mm | |
| | 21**Head B | | | |

*mark are not for sell.

Cylinder Gauge CC-4



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|--------------------------------------|---|--------------------------------|-----------------|---|
| 01 Indicator Holder | 11 Spindle | 20 Contact Point | 29 Feeler 130mm | ◎Main parts for Body (part no. 10. 11. 12. 13. 14. 15. 16. 17. 18. 19. 20. 21. 22. 23. 24. 25) can be sold as a set. (Head only for CC-4) |
| 02 Washer | 12 Hex Nut | 21 Buffer Spring | 30 Feeler 140mm | |
| 03 Knob Screw | 13**Head A | 22**Lock Nut | 31 Feeler 150mm | |
| 04**Sleeve | 14**Set Screw for Side Cover (S-017) | 23 Return Spring | 32 Feeler 160mm | |
| 05**Grip | 15**Side Cover | 24 Guide | 33 Washer 1mm | ◎Parts no. 02 and 03 are sold as a set. |
| 06**Set Screw for Grip (S-028) | 16 Transmission (with Transmission Pin) | 25 Set Screw for Guide (S-043) | 34 Washer 2mm | |
| 07 Coil Spring | 17 Feeler Lock Nut | 26 Feeler 100mm | 35 Washer 3mm | |
| 08 Spindle Rod (with Spindle Collar) | 18**Head B | 27 Feeler 110mm | 36 Washer 4mm | |
| 09**Joint | 19**Lock Screw for Head (S-207) | 28 Feeler 120mm | | |
| 10 Stop Nut | | | | |

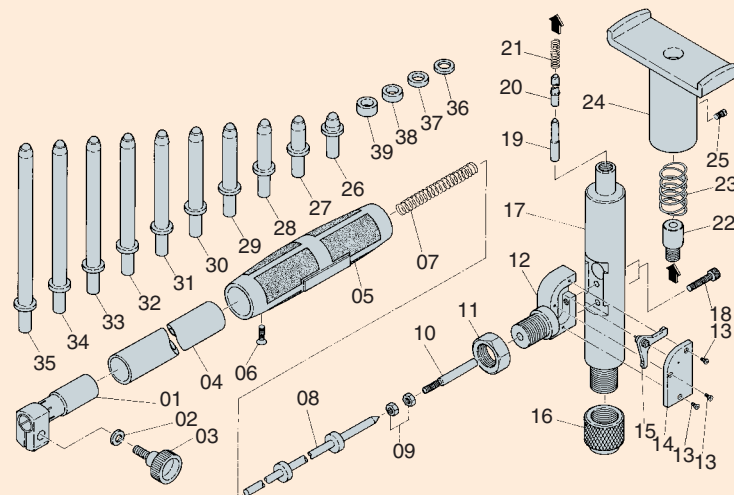
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Parts Drawings

Cylinder Gauges

Cylinder Gauge

CC-5



◎Main parts for Body (part no. 09. 10. 11. 12. 13. 14. 15. 16. 17. 18. 19. 20. 21. 22. 23. 24. 25) can be sold as a set. (Head only for CC-5)

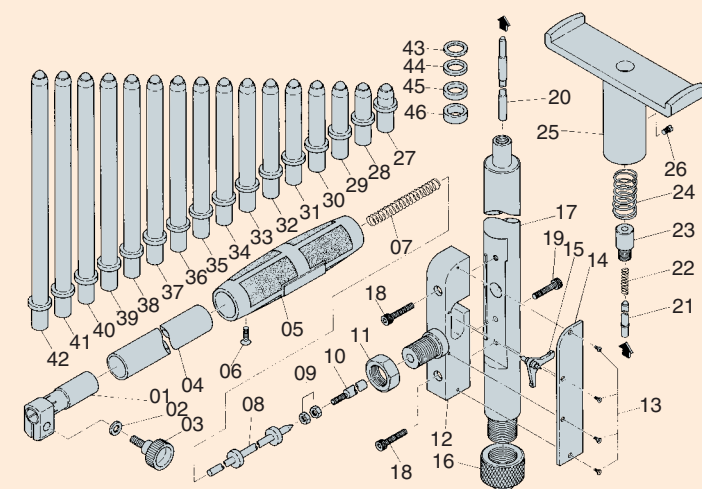
◎Parts no. 02 and 03 are sold as a set.

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|--------------------------------------|---|---------------------------------|--------------------------------|-----------------|
| 01 Indicator Holder | 09 Stop Nut | 16 Feeler Lock Nut | 24 Guide | 32 Feeler 220mm |
| 02 Washer | 10 Spindle | 17**Head B | 25 Set Screw for Guide (S-043) | 33 Feeler 230mm |
| 03 Knob Screw | 11 Hex Nut | 18**Lock Screw for Head (S-208) | 26 Feeler 160mm | 34 Feeler 240mm |
| 04**Sleeve | 12**Head A | | 27 Feeler 170mm | 35 Feeler 250mm |
| 05**Grip | 13**Set Screw for Side Cover (S-017) | | 28 Feeler 180mm | 36 Washer 1mm |
| 06**Set Screw for Grip (S-031) | 14**Side Cover | | 29 Feeler 190mm | 37 Washer 2mm |
| 07 Coil Spring | 15 Transmission (with Transmission Pin) | | 30 Feeler 200mm | 38 Washer 3mm |
| 08 Spindle Rod (with Spindle Collar) | | | 31 Feeler 210mm | 39 Washer 4mm |

**mark are not for sell.

Cylinder Gauge

CC-6



◎Main parts for Body (part no. 09. 10. 11. 12. 13. 14. 15. 16. 17. 18. 19. 20. 21. 22. 23. 24. 25. 26) can be sold as a set. (Head only for CC-6)

◎Parts no. 02 and 03 are sold as a set.

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|--------------------------------------|---|-----------------------------------|-----------------|-----------------|
| 01 Indicator Holder | 11 Hex Nut | 19**Lock Screw for Head B (S-208) | 28 Feeler 260mm | 39 Feeler 370mm |
| 02 Washer | 12**Head A | | 29 Feeler 270mm | 40 Feeler 380mm |
| 03 Knob Screw | 13**Set Screw for Side Cover (S-017) | | 30 Feeler 280mm | 41 Feeler 390mm |
| 04**Sleeve | 14**Side Cover | | 31 Feeler 290mm | 42 Feeler 400mm |
| 05**Grip | 15 Transmission (with Transmission Pin) | | 32 Feeler 300mm | 43 Washer 1mm |
| 06**Set Screw for Grip (S-031) | 16 Feeler Lock Nut | | 33 Feeler 310mm | 44 Washer 2mm |
| 07 Coil Spring | 17**Head B | | 34 Feeler 320mm | 45 Washer 3mm |
| 08 Spindle Rod (with Spindle Collar) | 18**Lock Screw for Head A (S-209) | | 35 Feeler 330mm | 46 Washer 4mm |
| 09 Stop Nut | | | 36 Feeler 340mm | |
| 10 Spindle | | | 37 Feeler 350mm | |
| | | | 38 Feeler 360mm | |

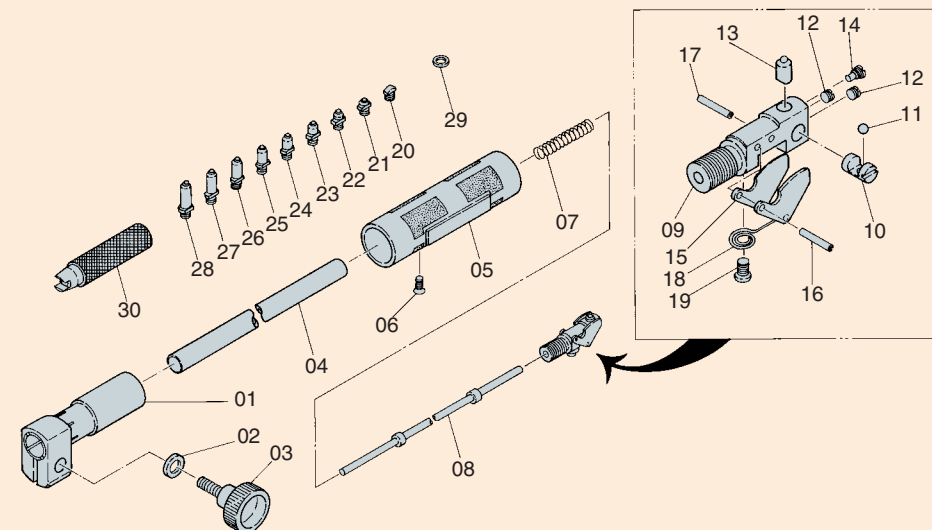
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Parts Drawings

Cylinder Gauges

Cylinder Gauge

CG-01



◎Main parts for Body (part no. 09. 10. 11. 12. 13. 14. 15. 16. 17. 18. 19) can be sold as a set. (Head only for CG-01)

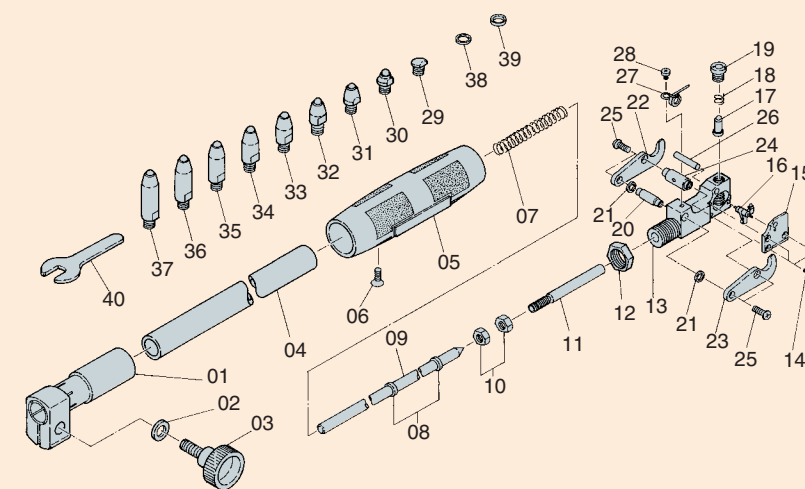
◎Parts no. 02 and 03 are sold as a set.

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|----------------------------------|------------------------------------|-----------------|
| 01 Indicator Holder | 11 Transmission Ball | 21 Feeler 11mm |
| 02 Washer | 12 Set Screw for Transmission Ball | 22 Feeler 12mm |
| 03 Knob Screw | 13 Feeler 13mm | 23 Feeler 13mm |
| 04**Sleeve | 14 Guide Screw | 24 Feeler 14mm |
| 05**Grip | 15 Guide (with Guide Bush) | 25 Feeler 15mm |
| 06**Set Screw for Grip (S-023) | 16 Rivet | 26 Feeler 16mm |
| 07 Coil Spring | 17 Check Pin | 27 Feeler 17mm |
| 08 Spindle (with Spindle Collar) | 18 Return Spring | 28 Feeler 18mm |
| 09**Head | 19 Fixed Screw for Return Spring | 29 Washer 0.5mm |
| 10 Race | 20 Feeler 10mm | 30 Spanner |

**mark are not for sell.

Cylinder Gauge

CG-1



◎Main parts for Body (part no. 10. 11. 12. 13. 14. 15. 16. 17. 18. 19. 20. 21. 22. 23. 24. 25. 26. 27. 28) can be sold as a set. (Head only for CG-1)

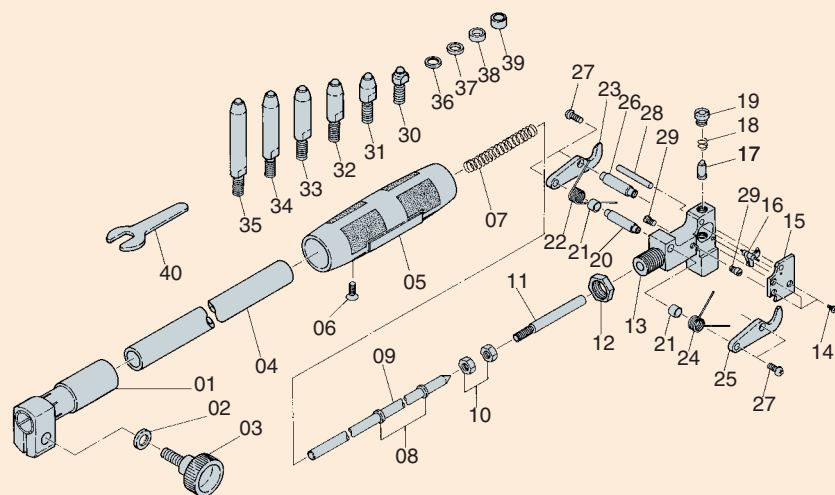
◎Parts no. 02 and 03 are sold as a set.

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|---|--------------------------------------|--------------------------------|-----------------|
| 01 Indicator Holder | 13**Head | Fulcrum (S-111) | 38 Washer 0.5mm |
| 02 Washer | 14**Set Screw for Side Cover (S-017) | 26**Check Pin | 39 Washer 1mm |
| 03 Knob Screw | 15**Side Cover | 27 Return Spring | 40 Spanner |
| 04**Sleeve | 16 Transmission Assy | 28 Set Screw for Return Spring | |
| 05**Grip | 17 Contact Point | 29 Feeler 18mm | |
| 06**Set Screw for Grip (S-021) | 18 Buffer Spring | 30 Feeler 20mm | |
| 07 Coil Spring | 19 Lock Nut | 31 Feeler 22mm | |
| 08 Spindle Collar (with E type Stop Ring) | 20**Column for Fulcrum | 32 Feeler 24mm | |
| 09 Spindle Rod | 21**Column for Fulcrum Collar | 33 Feeler 26mm | |
| 10 Stop Nut | 22**Guide A | 34 Feeler 28mm | |
| 11 Spindle | 23**Guide B | 35 Feeler 30mm | |
| 12 Hex Nut | 24**Coupling Column | 36 Feeler 32mm | |
| | 25**Set Screw for Column for | 37 Feeler 34mm | |

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Cylinder Gauge

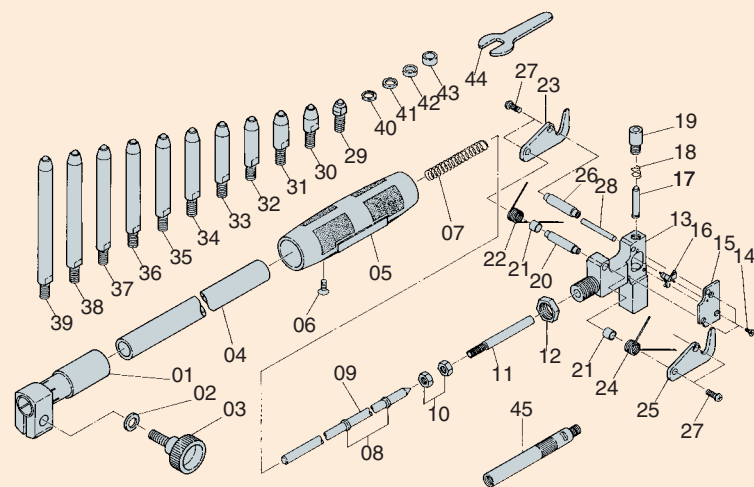
CG-2



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|-------------------------------------|--------------------------------------|----------------------------------|--|
| 01 Indicator Holder | 13**Head | 26**Coupling Column | 37 Washer 1mm |
| 02 Washer | 14**Set Screw for Side Cover (S-017) | 27**Set Screw for Column for | 38 Washer 2mm |
| 03 Knob Screw | 15**Side Cover | Fulcrum (S-111) | 39 Washer 3mm |
| 04**Sleeve | 16 Transmission Assy | 28**Check Pin | 40 Spanner |
| 05**Grip | 17 Contact Point | 29**Stop Screw for Return Spring | |
| 06**Set Screw for Grip (S-021) | 18 Buffer Spring | (S-020) | ◎Main parts for Body (part no. 10. 11. |
| 07 Coil Spring | 19 Lock Nut | 30 Feeler 35mm | 12. 13. 14. 15. 16. 17. 18. 19. 20. |
| 08 Spindle Collar (with E type Stop | 20**Column for Fulcrum | 31 Feeler 40mm | 21. 22. 23. 24. 25. 26. 27. 28. 29) |
| Ring) | 21**Column for Fulcrum Collar | 32 Feeler 45mm | can be sold as a set. |
| 09 Spindle Rod | 22**Return Spring A | 33 Feeler 50mm | (Head only for CG-2) |
| 10 Stop Nut | 23**Guide A | 34 Feeler 55mm | |
| 11 Spindle | 24**Return Spring B | 35 Feeler 60mm | ◎Part no. 02 and 03 are sold as a |
| 12 Hex Nut | 25**Guide B | 36 Washer 0.5mm | set |

Cylinder Gauge

CG-3C



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|---|-------------------------------------|-----------------------------|--|
| 01 Indicator Holder | 14※Set Screw for Side Cover (S-017) | 27※Set Screw for Column for | 40 Washer 0.5mm |
| 02 Washer | 15※Side Cover | Fulcrum (S-111) | 41 Washer 1mm |
| 03 Knob Screw | 16 Transmission Assy | 28※Check Pin | 42 Washer 2mm |
| 04※Sleeve | 17 Contact Point | 29 Feeler 50mm | 43 Washer 3mm |
| 05※Grip | 18 Buffer Spring | 30 Feeler 55mm | 44 Spanner |
| 06※Set Screw for Grip (S-021) | 19 Lock Nut | 31 Feeler 60mm | 45 Adapter 50mm |
| 07 Coil Spring | 20※Column for Fulcrum | 32 Feeler 65mm | ◎Main parts for Body (part no. 10. 11. |
| 08 Spindle Collar (with E type Stop Ring) | 21※Column for Fulcrum Collar | 33 Feeler 70mm | 12. 13. 14. 15. 16. 17. 18. 19. 20. |
| | 22※Return Spring A | 34 Feeler 75mm | 21. 22. 23. 24. 25. 26. 27. 28) can |
| 09 Spindle Rod | 23※Guide A | 35 Feeler 80mm | be sold as a set. |
| 10 Stop Nut | 24※Return Spring B | 36 Feeler 85mm | (Head only for CG-3C) |
| 11 Spindle | 25※Guide B | 37 Feeler 90mm | |
| 12 Hex Nut | 26※Coupling Column | 38 Feeler 95mm | ◎Parts no. 02 and 03 are sold as a |
| 13※Head | | 39 Feeler 100mm | set. |

≡ SINCE 1916 ≡



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Specifications and appearance are subject to change without notice due to improvement