



# GAUGE

|                       |
|-----------------------|
| BLOCK GAUGE           |
| PIN GAUGE             |
| PIN VISE              |
| PIN GAUGE ACCESSORIES |
| RING GAUGE            |
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| LIMIT GAUGE           |
| THICKNESS GAUGE       |
| TAPER GAUGE           |
| WELDING GAUGE         |
| OTHER GAUGES          |

# PIN GAUGE LIST

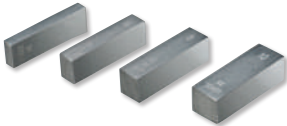
| Product Photo | Steel                 | Set | Individual | Steel                  | Set | Individual | Steel                                                        | Individual | MTO | Steel                              | Set | Individual |
|---------------|-----------------------|-----|------------|------------------------|-----|------------|--------------------------------------------------------------|------------|-----|------------------------------------|-----|------------|
|               |                       |     |            |                        |     |            |                                                              |            |     |                                    |     |            |
|               | Steel Pin Gauge       |     |            | Steel Pin Gauge        |     |            | Steel Pin Gauge                                              |            |     | Maintenance Line Pin Gauge         |     |            |
|               | AA series             |     |            | SA series              |     |            | AAH series                                                   |            |     | AML series                         |     |            |
|               | The most popular type |     |            | High precision quality |     |            | New standard product with diameter accuracy of $\pm 0.5 \mu$ |            |     | Wear-line for checking wear status |     |            |
| Product Name  | Steel Pin Gauge       |     |            | Steel Pin Gauge        |     |            | Steel Pin Gauge                                              |            |     | Maintenance Line Pin Gauge         |     |            |
| Series        | AA series             |     |            | SA series              |     |            | AAH series                                                   |            |     | AML series                         |     |            |
| Features      | The most popular type |     |            | High precision quality |     |            | New standard product with diameter accuracy of $\pm 0.5 \mu$ |            |     | Wear-line for checking wear status |     |            |
| Material      | Steel                 |     |            | Steel                  |     |            | Steel                                                        |            |     | Steel                              |     |            |
| Catalog Page  | 41 ~ 42               |     |            | 43                     |     |            | 43                                                           |            |     | 44                                 |     |            |

|               |                                                                                                                                         |                                                                                                                                         |                                                                                                                           |                                                                                                                            |                                  |
|---------------|-----------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------|----------------------------------|
| Product Photo | <div>Steel</div> <div>Set</div> <div>Individual</div>  | <div>Steel</div> <div>Set</div> <div>Individual</div>  | <div>Steel</div> <div>Individual</div>  | <div>Steel</div> <div>Individual</div>  |                                  |
|               | Product Name                                                                                                                            | Steel Pin Gauge                                                                                                                         | Steel Pin Gauge                                                                                                           | Steel Pin Gauge with Center Hole                                                                                           | Master Gauge                     |
|               | Series                                                                                                                                  | AH • AP • AAP • AS series                                                                                                               | PM • PG series                                                                                                            | AC series                                                                                                                  | —                                |
|               | Features                                                                                                                                | For high use applications                                                                                                               | Plus (+) or Minus (-) tolerance                                                                                           | Suitable for measuring runout of work                                                                                      | Actual value marked on pin gauge |
|               | Material                                                                                                                                | Steel                                                                                                                                   | Steel                                                                                                                     | Steel                                                                                                                      | Steel                            |
| Catalog Page  | 45                                                                                                                                      | 46                                                                                                                                      | 47                                                                                                                        | 47                                                                                                                         |                                  |

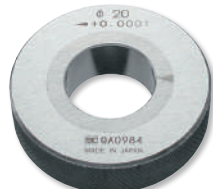
| Product Photo | Steel                                                 | Set | Individual | Steel                                                             | Set | Individual | Carbide                           | Set | Individual | Carbide                           | Set | Individual |
|---------------|-------------------------------------------------------|-----|------------|-------------------------------------------------------------------|-----|------------|-----------------------------------|-----|------------|-----------------------------------|-----|------------|
|               |                                                       |     |            |                                                                   |     |            |                                   |     |            |                                   |     |            |
|               | Steel Pin Gauge (with handle)                         |     |            | Steel Pin Gauge (for Gear Measurement)                            |     |            | Carbide Pin Gauge                 |     |            | Carbide Pin Gauge (with Handle)   |     |            |
|               | AG series                                             |     |            | OP series                                                         |     |            | TAA series                        |     |            | TAG series                        |     |            |
|               | The handle protects pin gauge from skin oil and salts |     |            | For over ping diameter measurement of internal and external gears |     |            | High durability and high hardness |     |            | High durability and high hardness |     |            |
| Product Name  | Steel Pin Gauge (with handle)                         |     |            | Steel Pin Gauge (for Gear Measurement)                            |     |            | Carbide Pin Gauge                 |     |            | Carbide Pin Gauge (with Handle)   |     |            |
| Series        | AG series                                             |     |            | OP series                                                         |     |            | TAA series                        |     |            | TAG series                        |     |            |
| Features      | The handle protects pin gauge from skin oil and salts |     |            | For over ping diameter measurement of internal and external gears |     |            | High durability and high hardness |     |            | High durability and high hardness |     |            |
| Material      | Gauge: Steel                                          |     |            | Steel                                                             |     |            | Carbide                           |     |            | Gauge: Carbide                    |     |            |
| Catalog Page  | 48                                                    |     |            | 49                                                                |     |            | 50                                |     |            | 50                                |     |            |

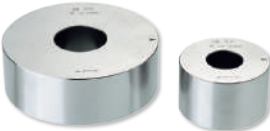
|               |                                                                                                                                                       |                                                                                                                                                       |                                                                                                                                                   |                                                                                                                                                    |                                            |
|---------------|-------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------|
| Product Photo | <div>Ceramic</div> <div><div>Set</div><div>Individual</div></div>  | <div>Ceramic</div> <div><div>Set</div><div>Individual</div></div>  | <div>Steel</div> <div><div></div><div>Individual</div></div>  | <div>Steel</div> <div><div></div><div>Individual</div></div>  |                                            |
|               | Product Name                                                                                                                                          | Ceramic Pin Gauge                                                                                                                                     | Ceramic Pin Gauge (with handle)                                                                                                                   | Thread Pin Gauge RA type                                                                                                                           | Thread Pin Gauge THP                       |
|               | Series                                                                                                                                                | CAA series                                                                                                                                            | CAG series                                                                                                                                        | Model No. RA-                                                                                                                                      | Model No. THP-                             |
|               | Features                                                                                                                                              | Rust and corrosion free                                                                                                                               | Rust and corrosion free                                                                                                                           | Firmly fixed to the workpiece with tapered thread                                                                                                  | For indicating the center of threaded hole |
|               | Material                                                                                                                                              | Ceramic (Zirconia)                                                                                                                                    | Ceramic (Zirconia)                                                                                                                                | Stainless steel (SUS303)                                                                                                                           | Stainless steel (SUS303)                   |
| Catalog Page  | 51                                                                                                                                                    | 51                                                                                                                                                    | 58                                                                                                                                                | 59                                                                                                                                                 |                                            |

## BLOCK GAUGE LIST

|               |                                                                                                                            |                                                                                                                                         |                                                                                                                                          |                                                                                                                                             |                                   |
|---------------|----------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------|
| Product Photo | <div>Carbide</div> <div>Individual</div>  | <div>Steel</div> <div>Set</div> <div>Individual</div>  | <div>Steel</div> <div>Set</div> <div>Individual</div>  | <div>Ceramic</div> <div>Set</div> <div>Individual</div>  |                                   |
|               | Product Name                                                                                                               | Carbide Block Gauge                                                                                                                     | Block Gauge (Grade 0 eq.)                                                                                                                | Block Gauge (Grade 1 eq.)                                                                                                                   | Ceramic Block Gauge (Grade 0 eq.) |
|               | Series                                                                                                                     | BTK0- / BTK- / BT0-                                                                                                                     | GBS0- / GB0-                                                                                                                             | GBS1- / GB1-                                                                                                                                | BC- / BC0-                        |
|               | Features                                                                                                                   | Niigata Seiki's own super high precision standard "Grade K0"                                                                            | High accuracy, class 0 eq. model                                                                                                         | High cost performance model                                                                                                                 | Rust and corrosion free           |
|               | Material                                                                                                                   | Carbide                                                                                                                                 | High Carbon high chromium steel                                                                                                          | High Carbon high chromium steel                                                                                                             | Ceramic (Zirconia)                |
| Catalog Page  | 32                                                                                                                         | 33 ~ 34                                                                                                                                 | 35 ~ 39                                                                                                                                  | 40                                                                                                                                          |                                   |

## RING GAUGE LIST

|               |                                                                                                                           |                                                                                                                                          |                                                                                                                              |                                                                                                                               |                                   |
|---------------|---------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------|-----------------------------------|
| Product Photo | <div>Steel</div> <div>Individual</div>  | <div>Steel</div> <div>Individual</div> <div>MTO</div>  | <div>Ceramic</div> <div>Individual</div>  | <div>Carbide</div> <div>Individual</div>  |                                   |
|               | Product Name                                                                                                              | Steel Ring Gauge                                                                                                                         | Steel Ring Gauge (Large size)                                                                                                | Ceramic Ring Gauge                                                                                                            | Carbide Ring Gauge                |
|               | Features                                                                                                                  | A wide range of sized are in stock                                                                                                       | Up to 520mm manufactualbe                                                                                                    | Rust and corrosion free                                                                                                       | High durability and high hardness |
|               | Material                                                                                                                  | Alloy tool steel                                                                                                                         | Alloy tool steel                                                                                                             | Ceramic (Zirconia)                                                                                                            | Gauge: Carbide                    |
|               | Catalog Page                                                                                                              | 62                                                                                                                                       | 63                                                                                                                           | 64                                                                                                                            | 64                                |

|               |                                                                                                                                           |                                                                                                                                                                                 |                                                                                                                      |                                                                                                                       |                                               |
|---------------|-------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------|-----------------------------------------------|
| Product Photo | <div>Steel</div> <div>Individual</div> <div>MTO</div>  | <div>Steel</div> <div>Carbide</div> <div>Individual</div> <div>MTO</div> <div>Ceramic</div>  | <div>Steel</div> <div>MTO</div>  | <div>Steel</div> <div>MTO</div>  |                                               |
|               | Product Name                                                                                                                              | Steel Ring Gauge with Maintenance line                                                                                                                                          | Ring Gauge with Protective Cover                                                                                     | Steel Ring Gauge (OD model)                                                                                           | Multiple-step Gauge                           |
|               | Features                                                                                                                                  | Maintenance line for gauge ware out                                                                                                                                             | No-slip and easy to handle                                                                                           | For quick calibration of micrometers or 0 adjustment                                                                  | 5 · 10 · 15 · 20 · 25mm pitch integrated type |
|               | Material                                                                                                                                  | Alloy tool steel                                                                                                                                                                | Gauge: Steel / Carbide / Ceramic                                                                                     | Alloy tool steel                                                                                                      | Alloy tool steel                              |
|               | Catalog Page                                                                                                                              | 65                                                                                                                                                                              | 65                                                                                                                   | 65                                                                                                                    | 66                                            |

| Product Photo | Steel                                                       | MTO | Steel                                                       | MTO | Steel                          | MTO |
|---------------|-------------------------------------------------------------|-----|-------------------------------------------------------------|-----|--------------------------------|-----|
|               |                                                             |     |                                                             |     |                                |     |
|               | Multiple-step Gauge (OD model)                              |     | Step Gauge (ID model)                                       |     | Cut Out Gauge                  |     |
|               | For OD measurement. Size combination is arranged on request |     | For ID measurement. Size combination is arranged on request |     | For use with fixing to the jig |     |
|               | Alloy tool steel                                            |     | Alloy tool steel                                            |     | Alloy tool steel               |     |
| Catalog Page  | 66                                                          |     | 66                                                          |     | 66                             |     |



BLOCK GAUGE

PIN GAUGE

PIN VISE

PIN GAUGE ACCESSORIES

RING GAUGE

PLUG GAUGE

LIMIT GAUGE

THICKNESS GAUGE

TAPER GAUGE

WELDING GAUGE

OTHER GAUGES

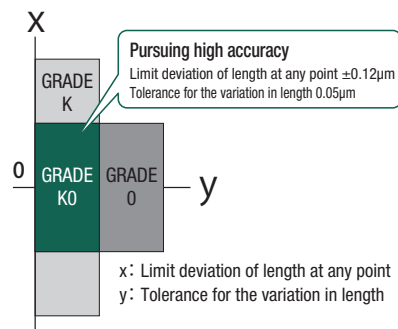
## CARBIDE BLOCK GAUGE



HOW TO MOVE

Niigata Seiki's own super high precision standard "Grade K0" carbide block gauges.  
JIS standard "Grade K" and "Grade 0" are also available.

"Grade K0" has been designed for high precision by combining Grade K and Grade 0.



## USE

- For master reference of general measurement work or measuring instruments

## MATERIAL

- Carbide

## FEATURES

- Niigata Seiki's own super high precision standard "Grade K0", which pursues **higher precision of both Grade K and Grade 0 of JIS standard**. We guarantee high accuracy beyond the highest accuracy of JIS standard, with a combination of Grade K dimensional deviation and Grade 0 tolerance (Grade K0).
- Resistant to wear and corrosion, and long-lasting high accuracy
- Provided with plastic case
- Provided with inspection report

## SPECIFICATIONS

- Section size: 30(0~−0.3)×9(−0.05~0.2)mm
  - Coefficient of thermal expansion:  $4.5 \times 10^{-6}/K$
- ※ Calibration and custom size production are NOT available

- What is Limit deviation of length at any point?  
Tolerances of difference from dimensions
- What is Tolerance for the variation in length?  
Tolerance of the difference between the maximum and minimum dimensions (tolerance of parallelism)

## ◆ GRADE K0

- Limit deviation of length at any point:  $\pm 0.12 \mu m$   
Tolerance for the variation in length  $0.05 \mu m$

| Order No. | Model No. | Size (mm) |
|-----------|-----------|-----------|
| 153502    | BTK0-100  | 1.00      |
| 153503    | BTK0-110  | 1.10      |
| 153504    | BTK0-120  | 1.20      |
| 153505    | BTK0-130  | 1.30      |
| 153506    | BTK0-140  | 1.40      |
| 153507    | BTK0-150  | 1.50      |
| 153508    | BTK0-160  | 1.60      |
| 153509    | BTK0-170  | 1.70      |
| 153510    | BTK0-180  | 1.80      |
| 153511    | BTK0-190  | 1.90      |
| 153512    | BTK0-200  | 2.00      |
| 153513    | BTK0-300  | 3.00      |
| 153514    | BTK0-400  | 4.00      |
| 153515    | BTK0-500  | 5.00      |
| 153516    | BTK0-600  | 6.00      |
| 153517    | BTK0-700  | 7.00      |
| 153518    | BTK0-800  | 8.00      |
| 153519    | BTK0-900  | 9.00      |
| 153520    | BTK0-1000 | 10.00     |

## ◆ GRADE K

- Limit deviation of length at any point:  $\pm 0.20 \mu m$   
Tolerance for the variation in length  $0.05 \mu m$

| Order No. | Model No. | Size (mm) |
|-----------|-----------|-----------|
| 153522    | BTK-100   | 1.00      |
| 153523    | BTK-110   | 1.10      |
| 153524    | BTK-120   | 1.20      |
| 153525    | BTK-130   | 1.30      |
| 153526    | BTK-140   | 1.40      |
| 153527    | BTK-150   | 1.50      |
| 153528    | BTK-160   | 1.60      |
| 153529    | BTK-170   | 1.70      |
| 153530    | BTK-180   | 1.80      |
| 153531    | BTK-190   | 1.90      |
| 153532    | BTK-200   | 2.00      |
| 153533    | BTK-300   | 3.00      |
| 153534    | BTK-400   | 4.00      |
| 153535    | BTK-500   | 5.00      |
| 153536    | BTK-600   | 6.00      |
| 153537    | BTK-700   | 7.00      |
| 153538    | BTK-800   | 8.00      |
| 153539    | BTK-900   | 9.00      |
| 153540    | BTK-1000  | 10.00     |

## ◆ GRADE 0

- Limit deviation of length at any point:  $\pm 0.12 \mu m$   
Tolerance for the variation in length  $0.10 \mu m$

| Order No. | Model No. | Size (mm) |
|-----------|-----------|-----------|
| 153542    | BT0-100   | 1.00      |
| 153543    | BT0-110   | 1.10      |
| 153544    | BT0-120   | 1.20      |
| 153545    | BT0-130   | 1.30      |
| 153546    | BT0-140   | 1.40      |
| 153547    | BT0-150   | 1.50      |
| 153548    | BT0-160   | 1.60      |
| 153549    | BT0-170   | 1.70      |
| 153550    | BT0-180   | 1.80      |
| 153551    | BT0-190   | 1.90      |
| 153552    | BT0-200   | 2.00      |
| 153553    | BT0-300   | 3.00      |
| 153554    | BT0-400   | 4.00      |
| 153555    | BT0-500   | 5.00      |
| 153556    | BT0-600   | 6.00      |
| 153557    | BT0-700   | 7.00      |
| 153558    | BT0-800   | 8.00      |
| 153559    | BT0-900   | 9.00      |
| 153560    | BT0-1000  | 10.00     |

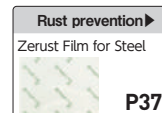


# BLOCK GAUGE SET (GRADE 0)

High accuracy, class 0 model



HOW TO MOVE



GBS0-32

## USE

- As reference standard and for general measurement work
- As spacer and prefinished sub-assembly components

## MATERIAL

- High carbon high chromium steel

## FEATURES

- Conforms to JIS (Grade 0)
- Provided with inspection report

## SPECIFICATIONS

- Section size: 10mm or under: 30(0~-0.3)×9(-0.05~-0.2)mm  
Over 10mm: 35(0~-0.3)×9(-0.05~-0.2)mm
- Coefficient of thermal expansion:  $11.5 \times 10^{-6} / K$
- ※ Calibration and custom size production are NOT available

## SPECIFICATIONS

| Size (mm) |          | Grade 0        |                            |
|-----------|----------|----------------|----------------------------|
| Over      | Or under | Tolerance (μm) | Dimensional deviation (μm) |
| —         | 10       | ± 0.12         | 0.10                       |
| 10        | 25       | ± 0.14         | 0.10                       |
| 25        | 50       | ± 0.2          | 0.10                       |
| 50        | 75       | ± 0.25         | 0.12                       |
| 75        | 100      | ± 0.3          | 0.12                       |

| Order No. | Model No. | Pieces per set | Step (mm) | Nominal Size (mm) | Number of pieces | Weight |
|-----------|-----------|----------------|-----------|-------------------|------------------|--------|
| 150293    | GBS0-103  | 103            |           | 1.005             | 1                | 3.1kg  |
|           |           |                | 0.01      | 1.01·1.02...1.49  | 49               |        |
|           |           |                | 0.5       | 0.5·1.0...24.5    | 49               |        |
|           |           |                | 25        | 25·50·75·100      | 4                |        |
| 150292    | GBS0-76   | 76             |           | 1.005             | 1                | 1.81kg |
|           |           |                | 0.01      | 1.01·1.02...1.49  | 49               |        |
|           |           |                | 0.5       | 0.5·1.0...9.5     | 19               |        |
|           |           |                | 10        | 10·20·30·40       | 4                |        |
| 150291    | GBS0-47   | 47             |           | 1.005             | 1                | 1.94kg |
|           |           |                | 0.01      | 1.01·1.02...1.09  | 9                |        |
|           |           |                | 0.1       | 1.1·1.2...1.9     | 9                |        |
|           |           |                | 1.0       | 1·2·3...24        | 24               |        |
| 150290    | GBS0-32   | 32             | 25        | 25·50·75·100      | 4                | 0.75kg |
|           |           |                |           | 1.005             | 1                |        |
|           |           |                | 0.01      | 1.01·1.02...1.09  | 9                |        |
|           |           |                | 0.1       | 1.1·1.2...1.9     | 9                |        |
|           |           |                | 1.0       | 1·2·3...9         | 9                |        |
|           |           |                | 10        | 10·20·30          | 3                |        |
|           |           |                |           | 60                | 1                |        |



BLOCK GAUGE

PIN GAUGE

PIN VISE

PIN GAUGE ACCESSORIES

RING GAUGE

PLUG GAUGE

LIMIT GAUGE

THICKNESS GAUGE

TAPER GAUGE

WELDING GAUGE

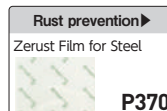
OTHER GAUGES

## BLOCK GAUGE (GRADE 0)

High accuracy, class 0 model



HOW TO MOVE



## USE

- As reference standard and for general measurement work
- As spacer and prefinished sub-assembly components

## MATERIAL

- High carbon high chromium steel

## FEATURES

- Conforms to JIS (Grade 0)
- Provided with inspection report

## SPECIFICATIONS

- Section size: 10mm or under: 30(0~-0.3)×9(-0.05~-0.2)mm  
Over 10mm: 35(0~-0.3)×9(-0.05~-0.2)mm
- Coefficient of thermal expansion:  $11.5 \times 10^{-6} / K$
- ※ Calibration and custom size production are NOT available

## SPECIFICATIONS

| Size (mm) |          | Grade 0        |                            |
|-----------|----------|----------------|----------------------------|
| Over      | Or under | Tolerance (μm) | Dimensional deviation (μm) |
| —         | 10       | ± 0.12         | 0.10                       |
| 10        | 25       | ± 0.14         | 0.10                       |
| 25        | 50       | ± 0.20         | 0.10                       |
| 50        | 75       | ± 0.25         | 0.12                       |
| 75        | 100      | ± 0.30         | 0.12                       |
| 125       |          | ± 0.40         | 0.14                       |
| 150       |          | ± 0.40         | 0.14                       |
| 175       |          | ± 0.50         | 0.16                       |
| 200       |          | ± 0.50         | 0.16                       |
| 250       |          | ± 0.60         | 0.16                       |
| 300       |          | ± 0.70         | 0.18                       |
| 400       |          | ± 0.90         | 0.20                       |
| 500       |          | ± 1.10         | 0.25                       |
| 600       |          | ± 1.30         | 0.25                       |

## BLOCK GAUGE

## PIN GAUGE

## PIN VISE

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## PLUG GAUGE

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## THICKNESS GAUGE

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## OTHER GAUGES

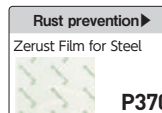
| Order No. | Model No. | Size (mm) | Order No. | Model No. | Size (mm) | Order No. | Model No. | Size (mm) |
|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|
| 150294    | GB0-05    | 0.5       | 150335    | GB0-139   | 1.39      | 150376    | GB0-1450  | 14.50     |
| 150295    | GB0-10    | 1.0       | 150336    | GB0-140   | 1.40      | 150377    | GB0-1500  | 15.00     |
| 150296    | GB0-1-005 | 1.005     | 150337    | GB0-141   | 1.41      | 150378    | GB0-1550  | 15.50     |
| 150297    | GB0-101   | 1.01      | 150338    | GB0-142   | 1.42      | 150379    | GB0-1600  | 16.00     |
| 150298    | GB0-102   | 1.02      | 150339    | GB0-143   | 1.43      | 150380    | GB0-1650  | 16.50     |
| 150299    | GB0-103   | 1.03      | 150340    | GB0-144   | 1.44      | 150381    | GB0-1700  | 17.00     |
| 150300    | GB0-104   | 1.04      | 150341    | GB0-145   | 1.45      | 150382    | GB0-1750  | 17.50     |
| 150301    | GB0-105   | 1.05      | 150342    | GB0-146   | 1.46      | 150383    | GB0-1800  | 18.00     |
| 150302    | GB0-106   | 1.06      | 150343    | GB0-147   | 1.47      | 150384    | GB0-1850  | 18.50     |
| 150303    | GB0-107   | 1.07      | 150344    | GB0-148   | 1.48      | 150385    | GB0-1900  | 19.00     |
| 150304    | GB0-108   | 1.08      | 150345    | GB0-149   | 1.49      | 150386    | GB0-1950  | 19.50     |
| 150305    | GB0-109   | 1.09      | 150346    | GB0-150   | 1.50      | 150387    | GB0-2000  | 20.00     |
| 150306    | GB0-110   | 1.10      | 150347    | GB0-160   | 1.60      | 150388    | GB0-2050  | 20.50     |
| 150307    | GB0-111   | 1.11      | 150348    | GB0-170   | 1.70      | 150389    | GB0-2100  | 21.00     |
| 150308    | GB0-112   | 1.12      | 150349    | GB0-180   | 1.80      | 150390    | GB0-2150  | 21.50     |
| 150309    | GB0-113   | 1.13      | 150350    | GB0-190   | 1.90      | 150391    | GB0-2200  | 22.00     |
| 150310    | GB0-114   | 1.14      | 150351    | GB0-200   | 2.00      | 150392    | GB0-2250  | 22.50     |
| 150311    | GB0-115   | 1.15      | 150352    | GB0-250   | 2.50      | 150393    | GB0-2300  | 23.00     |
| 150312    | GB0-116   | 1.16      | 150353    | GB0-300   | 3.00      | 150394    | GB0-2350  | 23.50     |
| 150313    | GB0-117   | 1.17      | 150354    | GB0-350   | 3.50      | 150395    | GB0-2400  | 24.00     |
| 150314    | GB0-118   | 1.18      | 150355    | GB0-400   | 4.00      | 150396    | GB0-2450  | 24.50     |
| 150315    | GB0-119   | 1.19      | 150356    | GB0-450   | 4.50      | 150397    | GB0-2500  | 25.00     |
| 150316    | GB0-120   | 1.20      | 150357    | GB0-500   | 5.00      | 150398    | GB0-3000  | 30.00     |
| 150317    | GB0-121   | 1.21      | 150358    | GB0-550   | 5.50      | 150399    | GB0-4000  | 40.00     |
| 150318    | GB0-122   | 1.22      | 150359    | GB0-600   | 6.00      | 150400    | GB0-5000  | 50.00     |
| 150319    | GB0-123   | 1.23      | 150360    | GB0-650   | 6.50      | 150401    | GB0-6000  | 60.00     |
| 150320    | GB0-124   | 1.24      | 150361    | GB0-700   | 7.00      | 150402    | GB0-7000  | 70.00     |
| 150321    | GB0-125   | 1.25      | 150362    | GB0-750   | 7.50      | 150403    | GB0-7500  | 75.00     |
| 150322    | GB0-126   | 1.26      | 150363    | GB0-800   | 8.00      | 150404    | GB0-8000  | 80.00     |
| 150323    | GB0-127   | 1.27      | 150364    | GB0-850   | 8.50      | 150405    | GB0-9000  | 90.00     |
| 150324    | GB0-128   | 1.28      | 150365    | GB0-900   | 9.00      | 150406    | GB0-10000 | 100.00    |
| 150325    | GB0-129   | 1.29      | 150366    | GB0-950   | 9.50      | 150407    | GB0-12500 | 125       |
| 150326    | GB0-130   | 1.30      | 150367    | GB0-1000  | 10.00     | 150408    | GB0-15000 | 150       |
| 150327    | GB0-131   | 1.31      | 150368    | GB0-1050  | 10.50     | 150409    | GB0-17500 | 175       |
| 150328    | GB0-132   | 1.32      | 150369    | GB0-1100  | 11.00     | 150410    | GB0-20000 | 200       |
| 150329    | GB0-133   | 1.33      | 150370    | GB0-1150  | 11.50     | 150411    | GB0-25000 | 250       |
| 150330    | GB0-134   | 1.34      | 150371    | GB0-1200  | 12.00     | 150412    | GB0-30000 | 300       |
| 150331    | GB0-135   | 1.35      | 150372    | GB0-1250  | 12.50     | 150413    | GB0-40000 | 400       |
| 150332    | GB0-136   | 1.36      | 150373    | GB0-1300  | 13.00     | 150414    | GB0-50000 | 500       |
| 150333    | GB0-137   | 1.37      | 150374    | GB0-1350  | 13.50     | 150415    | GB0-60000 | 600       |
| 150334    | GB0-138   | 1.38      | 150375    | GB0-1400  | 14.00     |           |           |           |

# BLOCK GAUGE SET (GRADE 1)

High cost performance model



HOW TO MOVE



GBS1-32

## USE

- As reference standard and for general measurement work
- As spacer and prefinished sub-assembly components

## MATERIAL

- High carbon high chromium steel

## FEATURES

- Conforms to JIS (Grade 1)
- Provided with inspection report

## SPECIFICATIONS

- Section size: 10mm or under: 30(0~-0.3)×9(-0.05~-0.2)mm  
Over 10mm and less than 100mm: 35(0~-0.3)×9(-0.05~-0.2)mm

- Coefficient of thermal expansion:  $11.5 \times 10^{-6} / K$

※ Calibration and custom size production are NOT available

## SPECIFICATIONS

| Size (mm) |          | Grade 1        |                            |
|-----------|----------|----------------|----------------------------|
| Over      | Or under | Tolerance (μm) | Dimensional deviation (μm) |
| —         | 10       | ± 0.20         | 0.16                       |
| 10        | 25       | ± 0.30         | 0.16                       |
| 25        | 50       | ± 0.40         | 0.18                       |
| 50        | 75       | ± 0.50         | 0.18                       |
| 75        | 100      | ± 0.60         | 0.20                       |

| Order No. | Model No. | Pieces per set | Step (mm) | Nominal Size (mm) | Number of pieces | Weight |
|-----------|-----------|----------------|-----------|-------------------|------------------|--------|
| 150801    | GBS1-103  | 103            |           | 1.005             | 1                | 3.1kg  |
|           |           |                | 0.01      | 1.01·1.02...1.49  | 49               |        |
|           |           |                | 0.5       | 0.5·1.0...24.5    | 49               |        |
|           |           |                | 25        | 25·50·75·100      | 4                |        |
| 150802    | GBS1-76   | 76             |           | 1.005             | 1                | 1.81kg |
|           |           |                | 0.01      | 1.01·1.02...1.49  | 49               |        |
|           |           |                | 0.5       | 0.5·1.0...9.5     | 19               |        |
|           |           |                | 10        | 10·20·30·40       | 4                |        |
|           |           |                | 25        | 50·75·100         | 3                |        |
| 150804    | GBS1-47   | 47             |           | 1.005             | 1                | 1.94kg |
|           |           |                | 0.01      | 1.01·1.02...1.09  | 9                |        |
|           |           |                | 0.1       | 1.1·1.2...1.9     | 9                |        |
|           |           |                | 1         | 1·2·3...24        | 24               |        |
|           |           |                | 25        | 25·50·75·100      | 4                |        |
| 150806    | GBS1-32   | 32             |           | 1.005             | 1                | 0.75kg |
|           |           |                | 0.01      | 1.01·1.02...1.09  | 9                |        |
|           |           |                | 0.1       | 1.1·1.2...1.9     | 9                |        |
|           |           |                | 1         | 1·2·3...9         | 9                |        |
|           |           |                | 10        | 10·20·30          | 3                |        |
|           |           |                |           | 60                | 1                |        |



BLOCK GAUGE

PIN GAUGE

PIN VISE

PIN GAUGE ACCESSORIES

RING GAUGE

PLUG GAUGE

LIMIT GAUGE

THICKNESS GAUGE

TAPER GAUGE

WELDING GAUGE

OTHER GAUGES

## BLOCK GAUGE (GRADE 1)



HOW TO MOVE

Rust prevention▶

Zerust Film for Steel



P370

## USE

- As reference standard and for general measurement work
- As spacer and prefinished sub-assembly components

## MATERIAL

- High carbon high chromium steel

## FEATURES

- Conforms to JIS (Grade 1)
- Provided with inspection report

## SPECIFICATIONS

- Section size: 10mm or under: 30(0~-0.3)×9(-0.05~-0.2)mm  
Over 10mm: 35(0~-0.3)×9(-0.05~-0.2)mm

- Coefficient of thermal expansion:  $11.5 \times 10^{-6} / ^\circ\text{K}$

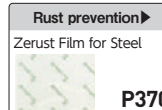
※ Calibration and custom size production are NOT available

## SPECIFICATIONS

| Size (mm) |          | Grade 1        |                            |
|-----------|----------|----------------|----------------------------|
| Over      | Or under | Tolerance (μm) | Dimensional Deviation (μm) |
| —         | 10       | ± 0.20         | 0.16                       |
| 10        | 25       | ± 0.30         | 0.16                       |
| 25        | 50       | ± 0.40         | 0.18                       |
| 50        | 75       | ± 0.50         | 0.18                       |
| 75        | 100      | ± 0.60         | 0.20                       |
| 100       | 150      | ± 0.80         | 0.20                       |
| 150       | 200      | ± 1.00         | 0.25                       |
| 200       | 250      | ± 1.20         | 0.25                       |
| 250       | 300      | ± 1.40         | 0.25                       |
| 300       | 400      | ± 1.80         | 0.30                       |
| 400       | 500      | ± 2.20         | 0.35                       |
| 500       | 600      | ± 2.60         | 0.40                       |

|                       | Order No. | Model No. | Size (mm) | Order No. | Model No. | Size (mm) | Order No. | Model No. | Size (mm) |
|-----------------------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|
| BLOCK GAUGE           | 150810    | GB1-05    | 0.5       | 150862    | GB1-132   | 1.32      | 153024    | GB1-174   | 1.74      |
|                       | 150820    | GB1-10    | 1.0       | 150863    | GB1-133   | 1.33      | 153025    | GB1-175   | 1.75      |
|                       | 150822    | GB1-1-001 | 1.001     | 150864    | GB1-134   | 1.34      | 153026    | GB1-176   | 1.76      |
| PIN GAUGE             | 150823    | GB1-1-002 | 1.002     | 150865    | GB1-135   | 1.35      | 153027    | GB1-177   | 1.77      |
|                       | 150824    | GB1-1-003 | 1.003     | 150866    | GB1-136   | 1.36      | 153028    | GB1-178   | 1.78      |
|                       | 150825    | GB1-1-004 | 1.004     | 150867    | GB1-137   | 1.37      | 153029    | GB1-179   | 1.79      |
| PIN VISE              | 150826    | GB1-1-005 | 1.005     | 150868    | GB1-138   | 1.38      | 153030    | GB1-180   | 1.80      |
|                       | 150827    | GB1-1-006 | 1.006     | 150869    | GB1-139   | 1.39      | 153031    | GB1-181   | 1.81      |
|                       | 150828    | GB1-1-007 | 1.007     | 150870    | GB1-140   | 1.40      | 153032    | GB1-182   | 1.82      |
| PIN GAUGE ACCESSORIES | 150829    | GB1-1-008 | 1.008     | 150871    | GB1-141   | 1.41      | 153033    | GB1-183   | 1.83      |
|                       | 150830    | GB1-1-009 | 1.009     | 150872    | GB1-142   | 1.42      | 153034    | GB1-184   | 1.84      |
|                       | 150831    | GB1-101   | 1.01      | 150873    | GB1-143   | 1.43      | 153035    | GB1-185   | 1.85      |
| RING GAUGE            | 150832    | GB1-102   | 1.02      | 150874    | GB1-144   | 1.44      | 153036    | GB1-186   | 1.86      |
|                       | 150833    | GB1-103   | 1.03      | 150875    | GB1-145   | 1.45      | 153037    | GB1-187   | 1.87      |
|                       | 150834    | GB1-104   | 1.04      | 150876    | GB1-146   | 1.46      | 153038    | GB1-188   | 1.88      |
| PLUG GAUGE            | 150835    | GB1-105   | 1.05      | 150877    | GB1-147   | 1.47      | 153039    | GB1-189   | 1.89      |
|                       | 150836    | GB1-106   | 1.06      | 150878    | GB1-148   | 1.48      | 153040    | GB1-190   | 1.90      |
|                       | 150837    | GB1-107   | 1.07      | 150879    | GB1-149   | 1.49      | 153041    | GB1-191   | 1.91      |
| LIMIT GAUGE           | 150838    | GB1-108   | 1.08      | 150880    | GB1-150   | 1.50      | 153042    | GB1-192   | 1.92      |
|                       | 150839    | GB1-109   | 1.09      | 153001    | GB1-151   | 1.51      | 153043    | GB1-193   | 1.93      |
|                       | 150840    | GB1-110   | 1.10      | 153002    | GB1-152   | 1.52      | 153044    | GB1-194   | 1.94      |
| THICKNESS GAUGE       | 150841    | GB1-111   | 1.11      | 153003    | GB1-153   | 1.53      | 153045    | GB1-195   | 1.95      |
|                       | 150842    | GB1-112   | 1.12      | 153004    | GB1-154   | 1.54      | 153046    | GB1-196   | 1.96      |
|                       | 150843    | GB1-113   | 1.13      | 153005    | GB1-155   | 1.55      | 153047    | GB1-197   | 1.97      |
| TAPER GAUGE           | 150844    | GB1-114   | 1.14      | 153006    | GB1-156   | 1.56      | 153048    | GB1-198   | 1.98      |
|                       | 150845    | GB1-115   | 1.15      | 153007    | GB1-157   | 1.57      | 153049    | GB1-199   | 1.99      |
|                       | 150846    | GB1-116   | 1.16      | 153008    | GB1-158   | 1.58      | 150885    | GB1-200   | 2.00      |
| WELDING GAUGE         | 150847    | GB1-117   | 1.17      | 153009    | GB1-159   | 1.59      | 153050    | GB1-201   | 2.01      |
|                       | 150848    | GB1-118   | 1.18      | 153010    | GB1-160   | 1.60      | 153051    | GB1-202   | 2.02      |
|                       | 150849    | GB1-119   | 1.19      | 153011    | GB1-161   | 1.61      | 153052    | GB1-203   | 2.03      |
| OTHER GAUGES          | 150850    | GB1-120   | 1.20      | 153012    | GB1-162   | 1.62      | 153053    | GB1-204   | 2.04      |
|                       | 150851    | GB1-121   | 1.21      | 153013    | GB1-163   | 1.63      | 153054    | GB1-205   | 2.05      |
|                       | 150852    | GB1-122   | 1.22      | 153014    | GB1-164   | 1.64      | 153055    | GB1-206   | 2.06      |
|                       | 150853    | GB1-123   | 1.23      | 153015    | GB1-165   | 1.65      | 153056    | GB1-207   | 2.07      |
|                       | 150854    | GB1-124   | 1.24      | 153016    | GB1-166   | 1.66      | 153057    | GB1-208   | 2.08      |
|                       | 150855    | GB1-125   | 1.25      | 153017    | GB1-167   | 1.67      | 153058    | GB1-209   | 2.09      |
|                       | 150856    | GB1-126   | 1.26      | 153018    | GB1-168   | 1.68      | 153059    | GB1-210   | 2.10      |
|                       | 150857    | GB1-127   | 1.27      | 153019    | GB1-169   | 1.69      | 153060    | GB1-211   | 2.11      |
|                       | 150858    | GB1-128   | 1.28      | 153020    | GB1-170   | 1.70      | 153061    | GB1-212   | 2.12      |
|                       | 150859    | GB1-129   | 1.29      | 153021    | GB1-171   | 1.71      | 153062    | GB1-213   | 2.13      |
|                       | 150860    | GB1-130   | 1.30      | 153022    | GB1-172   | 1.72      | 153063    | GB1-214   | 2.14      |
|                       | 150861    | GB1-131   | 1.31      | 153023    | GB1-173   | 1.73      | 153064    | GB1-215   | 2.15      |





Please refer to page 36 for detailed specifications and tolerance

| Order No. | Model No. | Size (mm) | Order No. | Model No. | Size (mm) | Order No. | Model No. | Size (mm) |
|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|
| 153065    | GB1-216   | 2.16      | 153113    | GB1-265   | 2.65      | 153161    | GB1-314   | 3.14      |
| 153066    | GB1-217   | 2.17      | 153114    | GB1-266   | 2.66      | 153162    | GB1-315   | 3.15      |
| 153067    | GB1-218   | 2.18      | 153115    | GB1-267   | 2.67      | 153163    | GB1-316   | 3.16      |
| 153068    | GB1-219   | 2.19      | 153116    | GB1-268   | 2.68      | 153164    | GB1-317   | 3.17      |
| 153069    | GB1-220   | 2.20      | 153117    | GB1-269   | 2.69      | 153165    | GB1-318   | 3.18      |
| 153070    | GB1-221   | 2.21      | 153118    | GB1-270   | 2.70      | 153166    | GB1-319   | 3.19      |
| 153071    | GB1-222   | 2.22      | 153119    | GB1-271   | 2.71      | 153167    | GB1-320   | 3.20      |
| 153072    | GB1-223   | 2.23      | 153120    | GB1-272   | 2.72      | 153168    | GB1-321   | 3.21      |
| 153073    | GB1-224   | 2.24      | 153121    | GB1-273   | 2.73      | 153169    | GB1-322   | 3.22      |
| 153074    | GB1-225   | 2.25      | 153122    | GB1-274   | 2.74      | 153170    | GB1-323   | 3.23      |
| 153075    | GB1-226   | 2.26      | 153123    | GB1-275   | 2.75      | 153171    | GB1-324   | 3.24      |
| 153076    | GB1-227   | 2.27      | 153124    | GB1-276   | 2.76      | 153172    | GB1-325   | 3.25      |
| 153077    | GB1-228   | 2.28      | 153125    | GB1-277   | 2.77      | 153173    | GB1-326   | 3.26      |
| 153078    | GB1-229   | 2.29      | 153126    | GB1-278   | 2.78      | 153174    | GB1-327   | 3.27      |
| 153079    | GB1-230   | 2.30      | 153127    | GB1-279   | 2.79      | 153175    | GB1-328   | 3.28      |
| 153080    | GB1-231   | 2.31      | 153128    | GB1-280   | 2.80      | 153176    | GB1-329   | 3.29      |
| 153081    | GB1-232   | 2.32      | 153129    | GB1-281   | 2.81      | 153177    | GB1-330   | 3.30      |
| 153082    | GB1-233   | 2.33      | 153130    | GB1-282   | 2.82      | 153178    | GB1-331   | 3.31      |
| 153083    | GB1-234   | 2.34      | 153131    | GB1-283   | 2.83      | 153179    | GB1-332   | 3.32      |
| 153084    | GB1-235   | 2.35      | 153132    | GB1-284   | 2.84      | 153180    | GB1-333   | 3.33      |
| 153085    | GB1-236   | 2.36      | 153133    | GB1-285   | 2.85      | 153181    | GB1-334   | 3.34      |
| 153086    | GB1-237   | 2.37      | 153134    | GB1-286   | 2.86      | 153182    | GB1-335   | 3.35      |
| 153087    | GB1-238   | 2.38      | 153135    | GB1-287   | 2.87      | 153183    | GB1-336   | 3.36      |
| 153088    | GB1-239   | 2.39      | 153136    | GB1-288   | 2.88      | 153184    | GB1-337   | 3.37      |
| 153089    | GB1-240   | 2.40      | 153137    | GB1-289   | 2.89      | 153185    | GB1-338   | 3.38      |
| 153090    | GB1-241   | 2.41      | 153138    | GB1-290   | 2.90      | 153186    | GB1-339   | 3.39      |
| 153091    | GB1-242   | 2.42      | 153139    | GB1-291   | 2.91      | 153187    | GB1-340   | 3.40      |
| 153092    | GB1-243   | 2.43      | 153140    | GB1-292   | 2.92      | 153188    | GB1-341   | 3.41      |
| 153093    | GB1-244   | 2.44      | 153141    | GB1-293   | 2.93      | 153189    | GB1-342   | 3.42      |
| 153094    | GB1-245   | 2.45      | 153142    | GB1-294   | 2.94      | 153190    | GB1-343   | 3.43      |
| 153095    | GB1-246   | 2.46      | 153143    | GB1-295   | 2.95      | 153191    | GB1-344   | 3.44      |
| 153096    | GB1-247   | 2.47      | 153144    | GB1-296   | 2.96      | 153192    | GB1-345   | 3.45      |
| 153097    | GB1-248   | 2.48      | 153145    | GB1-297   | 2.97      | 153193    | GB1-346   | 3.46      |
| 153098    | GB1-249   | 2.49      | 153146    | GB1-298   | 2.98      | 153194    | GB1-347   | 3.47      |
| 150886    | GB1-250   | 2.50      | 153147    | GB1-299   | 2.99      | 153195    | GB1-348   | 3.48      |
| 153099    | GB1-251   | 2.51      | 150887    | GB1-300   | 3.00      | 153196    | GB1-349   | 3.49      |
| 153100    | GB1-252   | 2.52      | 153148    | GB1-301   | 3.01      | 150888    | GB1-350   | 3.50      |
| 153101    | GB1-253   | 2.53      | 153149    | GB1-302   | 3.02      | 153197    | GB1-351   | 3.51      |
| 153102    | GB1-254   | 2.54      | 153150    | GB1-303   | 3.03      | 153198    | GB1-352   | 3.52      |
| 153103    | GB1-255   | 2.55      | 153151    | GB1-304   | 3.04      | 153199    | GB1-353   | 3.53      |
| 153104    | GB1-256   | 2.56      | 153152    | GB1-305   | 3.05      | 153200    | GB1-354   | 3.54      |
| 153105    | GB1-257   | 2.57      | 153153    | GB1-306   | 3.06      | 153201    | GB1-355   | 3.55      |
| 153106    | GB1-258   | 2.58      | 153154    | GB1-307   | 3.07      | 153202    | GB1-356   | 3.56      |
| 153107    | GB1-259   | 2.59      | 153155    | GB1-308   | 3.08      | 153203    | GB1-357   | 3.57      |
| 153108    | GB1-260   | 2.60      | 153156    | GB1-309   | 3.09      | 153204    | GB1-358   | 3.58      |
| 153109    | GB1-261   | 2.61      | 153157    | GB1-310   | 3.10      | 153205    | GB1-359   | 3.59      |
| 153110    | GB1-262   | 2.62      | 153158    | GB1-311   | 3.11      | 153206    | GB1-360   | 3.60      |
| 153111    | GB1-263   | 2.63      | 153159    | GB1-312   | 3.12      | 153207    | GB1-361   | 3.61      |
| 153112    | GB1-264   | 2.64      | 153160    | GB1-313   | 3.13      | 153208    | GB1-362   | 3.62      |



BLOCK GAUGE

PIN GAUGE

PIN VISE

PIN GAUGE ACCESSORIES

RING GAUGE

PLUG GAUGE

LIMIT GAUGE

THICKNESS GAUGE

TAPER GAUGE

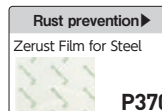
WELDING GAUGE

OTHER GAUGES

## BLOCK GAUGE (GRADE 1)



HOW TO MOVE



Please refer to page 36 for detailed specifications and tolerance

| Order No. | Model No. | Size (mm) | Order No. | Model No. | Size (mm) | Order No. | Model No. | Size (mm) |
|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|
| 153209    | GB1-363   | 3.63      | 153257    | GB1-412   | 4.12      | 153305    | GB1-461   | 4.61      |
| 153210    | GB1-364   | 3.64      | 153258    | GB1-413   | 4.13      | 153306    | GB1-462   | 4.62      |
| 153211    | GB1-365   | 3.65      | 153259    | GB1-414   | 4.14      | 153307    | GB1-463   | 4.63      |
| 153212    | GB1-366   | 3.66      | 153260    | GB1-415   | 4.15      | 153308    | GB1-464   | 4.64      |
| 153213    | GB1-367   | 3.67      | 153261    | GB1-416   | 4.16      | 153309    | GB1-465   | 4.65      |
| 153214    | GB1-368   | 3.68      | 153262    | GB1-417   | 4.17      | 153310    | GB1-466   | 4.66      |
| 153215    | GB1-369   | 3.69      | 153263    | GB1-418   | 4.18      | 153311    | GB1-467   | 4.67      |
| 153216    | GB1-370   | 3.70      | 153264    | GB1-419   | 4.19      | 153312    | GB1-468   | 4.68      |
| 153217    | GB1-371   | 3.71      | 153265    | GB1-420   | 4.20      | 153313    | GB1-469   | 4.69      |
| 153218    | GB1-372   | 3.72      | 153266    | GB1-421   | 4.21      | 153314    | GB1-470   | 4.70      |
| 153219    | GB1-373   | 3.73      | 153267    | GB1-422   | 4.22      | 153315    | GB1-471   | 4.71      |
| 153220    | GB1-374   | 3.74      | 153268    | GB1-423   | 4.23      | 153316    | GB1-472   | 4.72      |
| 153221    | GB1-375   | 3.75      | 153269    | GB1-424   | 4.24      | 153317    | GB1-473   | 4.73      |
| 153222    | GB1-376   | 3.76      | 153270    | GB1-425   | 4.25      | 153318    | GB1-474   | 4.74      |
| 153223    | GB1-377   | 3.77      | 153271    | GB1-426   | 4.26      | 153319    | GB1-475   | 4.75      |
| 153224    | GB1-378   | 3.78      | 153272    | GB1-427   | 4.27      | 153320    | GB1-476   | 4.76      |
| 153225    | GB1-379   | 3.79      | 153273    | GB1-428   | 4.28      | 153321    | GB1-477   | 4.77      |
| 153226    | GB1-380   | 3.80      | 153274    | GB1-429   | 4.29      | 153322    | GB1-478   | 4.78      |
| 153227    | GB1-381   | 3.81      | 153275    | GB1-430   | 4.30      | 153323    | GB1-479   | 4.79      |
| 153228    | GB1-382   | 3.82      | 153276    | GB1-431   | 4.31      | 153324    | GB1-480   | 4.80      |
| 153229    | GB1-383   | 3.83      | 153277    | GB1-432   | 4.32      | 153325    | GB1-481   | 4.81      |
| 153230    | GB1-384   | 3.84      | 153278    | GB1-433   | 4.33      | 153326    | GB1-482   | 4.82      |
| 153231    | GB1-385   | 3.85      | 153279    | GB1-434   | 4.34      | 153327    | GB1-483   | 4.83      |
| 153232    | GB1-386   | 3.86      | 153280    | GB1-435   | 4.35      | 153328    | GB1-484   | 4.84      |
| 153233    | GB1-387   | 3.87      | 153281    | GB1-436   | 4.36      | 153329    | GB1-485   | 4.85      |
| 153234    | GB1-388   | 3.88      | 153282    | GB1-437   | 4.37      | 153330    | GB1-486   | 4.86      |
| 153235    | GB1-389   | 3.89      | 153283    | GB1-438   | 4.38      | 153331    | GB1-487   | 4.87      |
| 153236    | GB1-390   | 3.90      | 153284    | GB1-439   | 4.39      | 153332    | GB1-488   | 4.88      |
| 153237    | GB1-391   | 3.91      | 153285    | GB1-440   | 4.40      | 153333    | GB1-489   | 4.89      |
| 153238    | GB1-392   | 3.92      | 153286    | GB1-441   | 4.41      | 153334    | GB1-490   | 4.90      |
| 153239    | GB1-393   | 3.93      | 153287    | GB1-442   | 4.42      | 153335    | GB1-491   | 4.91      |
| 153240    | GB1-394   | 3.94      | 153288    | GB1-443   | 4.43      | 153336    | GB1-492   | 4.92      |
| 153241    | GB1-395   | 3.95      | 153289    | GB1-444   | 4.44      | 153337    | GB1-493   | 4.93      |
| 153242    | GB1-396   | 3.96      | 153290    | GB1-445   | 4.45      | 153338    | GB1-494   | 4.94      |
| 153243    | GB1-397   | 3.97      | 153291    | GB1-446   | 4.46      | 153339    | GB1-495   | 4.95      |
| 153244    | GB1-398   | 3.98      | 153292    | GB1-447   | 4.47      | 153340    | GB1-496   | 4.96      |
| 153245    | GB1-399   | 3.99      | 153293    | GB1-448   | 4.48      | 153341    | GB1-497   | 4.97      |
| 150889    | GB1-400   | 4.00      | 153294    | GB1-449   | 4.49      | 153342    | GB1-498   | 4.98      |
| 153246    | GB1-401   | 4.01      | 150890    | GB1-450   | 4.50      | 153343    | GB1-499   | 4.99      |
| 153247    | GB1-402   | 4.02      | 153295    | GB1-451   | 4.51      | 150891    | GB1-500   | 5.00      |
| 153248    | GB1-403   | 4.03      | 153296    | GB1-452   | 4.52      | 153344    | GB1-501   | 5.01      |
| 153249    | GB1-404   | 4.04      | 153297    | GB1-453   | 4.53      | 153345    | GB1-502   | 5.02      |
| 153250    | GB1-405   | 4.05      | 153298    | GB1-454   | 4.54      | 153346    | GB1-503   | 5.03      |
| 153251    | GB1-406   | 4.06      | 153299    | GB1-455   | 4.55      | 153347    | GB1-504   | 5.04      |
| 153252    | GB1-407   | 4.07      | 153300    | GB1-456   | 4.56      | 153348    | GB1-505   | 5.05      |
| 153253    | GB1-408   | 4.08      | 153301    | GB1-457   | 4.57      | 153349    | GB1-506   | 5.06      |
| 153254    | GB1-409   | 4.09      | 153302    | GB1-458   | 4.58      | 153350    | GB1-507   | 5.07      |
| 153255    | GB1-410   | 4.10      | 153303    | GB1-459   | 4.59      | 153351    | GB1-508   | 5.08      |
| 153256    | GB1-411   | 4.11      | 153304    | GB1-460   | 4.60      | 153352    | GB1-509   | 5.09      |

# BLOCK GAUGE (GRADE 1)



Please refer to page 36 for detailed specifications and tolerance

| Order No. | Model No. | Size (mm) | Order No. | Model No. | Size (mm) | Order No. | Model No. | Size (mm) |
|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|
| 153353    | GB1-510   | 5.10      | 153401    | GB1-559   | 5.59      | 150903    | GB1-1000  | 10.00     |
| 153354    | GB1-511   | 5.11      | 153402    | GB1-560   | 5.60      | 150905    | GB1-1050  | 10.50     |
| 153355    | GB1-512   | 5.12      | 153403    | GB1-561   | 5.61      | 150906    | GB1-1100  | 11.00     |
| 153356    | GB1-513   | 5.13      | 153404    | GB1-562   | 5.62      | 150907    | GB1-1150  | 11.50     |
| 153357    | GB1-514   | 5.14      | 153405    | GB1-563   | 5.63      | 150908    | GB1-1200  | 12.00     |
| 153358    | GB1-515   | 5.15      | 153406    | GB1-564   | 5.64      | 150909    | GB1-1250  | 12.50     |
| 153359    | GB1-516   | 5.16      | 153407    | GB1-565   | 5.65      | 150911    | GB1-1300  | 13.00     |
| 153360    | GB1-517   | 5.17      | 153408    | GB1-566   | 5.66      | 150912    | GB1-1350  | 13.50     |
| 153361    | GB1-518   | 5.18      | 153409    | GB1-567   | 5.67      | 150913    | GB1-1400  | 14.00     |
| 153362    | GB1-519   | 5.19      | 153410    | GB1-568   | 5.68      | 150914    | GB1-1450  | 14.50     |
| 153363    | GB1-520   | 5.20      | 153411    | GB1-569   | 5.69      | 150915    | GB1-1500  | 15.00     |
| 153364    | GB1-521   | 5.21      | 153412    | GB1-570   | 5.70      | 150916    | GB1-1550  | 15.50     |
| 153365    | GB1-522   | 5.22      | 153413    | GB1-571   | 5.71      | 150917    | GB1-1600  | 16.00     |
| 153366    | GB1-523   | 5.23      | 153414    | GB1-572   | 5.72      | 150918    | GB1-1650  | 16.50     |
| 153367    | GB1-524   | 5.24      | 153415    | GB1-573   | 5.73      | 150919    | GB1-1700  | 17.00     |
| 153368    | GB1-525   | 5.25      | 153416    | GB1-574   | 5.74      | 150920    | GB1-1750  | 17.50     |
| 153369    | GB1-526   | 5.26      | 153417    | GB1-575   | 5.75      | 150921    | GB1-1800  | 18.00     |
| 153370    | GB1-527   | 5.27      | 153418    | GB1-576   | 5.76      | 150922    | GB1-1850  | 18.50     |
| 153371    | GB1-528   | 5.28      | 153419    | GB1-577   | 5.77      | 150923    | GB1-1900  | 19.00     |
| 153372    | GB1-529   | 5.29      | 153420    | GB1-578   | 5.78      | 150924    | GB1-1950  | 19.50     |
| 153373    | GB1-530   | 5.30      | 153421    | GB1-579   | 5.79      | 150925    | GB1-2000  | 20.00     |
| 153374    | GB1-531   | 5.31      | 153422    | GB1-580   | 5.80      | 150927    | GB1-2050  | 20.50     |
| 153375    | GB1-532   | 5.32      | 153423    | GB1-581   | 5.81      | 150928    | GB1-2100  | 21.00     |
| 153376    | GB1-533   | 5.33      | 153424    | GB1-582   | 5.82      | 150929    | GB1-2150  | 21.50     |
| 153377    | GB1-534   | 5.34      | 153425    | GB1-583   | 5.83      | 150930    | GB1-2200  | 22.00     |
| 153378    | GB1-535   | 5.35      | 153426    | GB1-584   | 5.84      | 150931    | GB1-2250  | 22.50     |
| 153379    | GB1-536   | 5.36      | 153427    | GB1-585   | 5.85      | 150933    | GB1-2300  | 23.00     |
| 153380    | GB1-537   | 5.37      | 153428    | GB1-586   | 5.86      | 150934    | GB1-2350  | 23.50     |
| 153381    | GB1-538   | 5.38      | 153429    | GB1-587   | 5.87      | 150935    | GB1-2400  | 24.00     |
| 153382    | GB1-539   | 5.39      | 153430    | GB1-588   | 5.88      | 150936    | GB1-2450  | 24.50     |
| 153383    | GB1-540   | 5.40      | 153431    | GB1-589   | 5.89      | 150937    | GB1-2500  | 25.00     |
| 153384    | GB1-541   | 5.41      | 153432    | GB1-590   | 5.90      | 150939    | GB1-3000  | 30.00     |
| 153385    | GB1-542   | 5.42      | 153433    | GB1-591   | 5.91      | 150940    | GB1-4000  | 40.00     |
| 153386    | GB1-543   | 5.43      | 153434    | GB1-592   | 5.92      | 150941    | GB1-5000  | 50.00     |
| 153387    | GB1-544   | 5.44      | 153435    | GB1-593   | 5.93      | 150942    | GB1-6000  | 60.00     |
| 153388    | GB1-545   | 5.45      | 153436    | GB1-594   | 5.94      | 150944    | GB1-7000  | 70.00     |
| 153389    | GB1-546   | 5.46      | 153437    | GB1-595   | 5.95      | 150945    | GB1-7500  | 75.00     |
| 153390    | GB1-547   | 5.47      | 153438    | GB1-596   | 5.96      | 150946    | GB1-8000  | 80.00     |
| 153391    | GB1-548   | 5.48      | 153439    | GB1-597   | 5.97      | 150947    | GB1-9000  | 90.00     |
| 153392    | GB1-549   | 5.49      | 153440    | GB1-598   | 5.98      | 150948    | GB1-10000 | 100.00    |
| 150893    | GB1-550   | 5.50      | 153441    | GB1-599   | 5.99      | 150949    | GB1-12500 | 125       |
| 153393    | GB1-551   | 5.51      | 150894    | GB1-600   | 6.00      | 150950    | GB1-15000 | 150       |
| 153394    | GB1-552   | 5.52      | 150895    | GB1-650   | 6.50      | 150794    | GB1-17500 | 175       |
| 153395    | GB1-553   | 5.53      | 150896    | GB1-700   | 7.00      | 150795    | GB1-20000 | 200       |
| 153396    | GB1-554   | 5.54      | 150897    | GB1-750   | 7.50      | 150796    | GB1-25000 | 250       |
| 153397    | GB1-555   | 5.55      | 150899    | GB1-800   | 8.00      | 150797    | GB1-30000 | 300       |
| 153398    | GB1-556   | 5.56      | 150900    | GB1-850   | 8.50      | 150798    | GB1-40000 | 400       |
| 153399    | GB1-557   | 5.57      | 150901    | GB1-900   | 9.00      | 150799    | GB1-50000 | 500       |
| 153400    | GB1-558   | 5.58      | 150902    | GB1-950   | 9.50      | 150800    | GB1-60000 | 600       |

## CERAMIC BLOCK GAUGE SET (GRADE 0)



HOW TO MOVE

Free from rust and corrosion, and easy maintenance



BC-032

## USE

- As reference standard and for general measurement work
- As spacer and prefinished sub-assembly components

## MATERIAL

- Ceramic (Zirconia)

## FEATURES

- Abrasion resistant
- Free from rust and corrosion, and easy maintenance
- Ceramic material is less susceptible to abrasion and aged deterioration than steel
- Non-magnetic
- Conforms to JIS (Grade 0)
- Provided with inspection report

## SPECIFICATIONS

- Section size: 10mm or under: 30(0~-0.3)×9(-0.05~-0.2)mm  
Over 10mm and less than 100mm: 35(0~-0.3)×9(-0.05~-0.2)mm
- Coefficient of thermal expansion:  $(9.5 \pm 1) \times 10^{-6} / K$
- Young's modulus: Approx. 206GPa ● Poisson's ratio: 0.3
- ※ Calibration and custom size production are NOT available

## SPECIFICATIONS

| Size (mm) |          | Grade 0               |                                   |
|-----------|----------|-----------------------|-----------------------------------|
| Over      | Or under | Tolerance ( $\mu m$ ) | Dimensional Deviation ( $\mu m$ ) |
| —         | 10       | $\pm 0.12$            | 0.10                              |
| 10        | 25       | $\pm 0.14$            | 0.10                              |
| 25        | 50       | $\pm 0.20$            | 0.10                              |
| 50        | 75       | $\pm 0.25$            | 0.12                              |
| 75        | 100      | $\pm 0.30$            | 0.12                              |

## Comparison between steel and ceramic materials

| Material                         |             | Ceramics (Zirconia) | Steel    |
|----------------------------------|-------------|---------------------|----------|
| Item                             |             |                     |          |
| Hardness                         | HV          | 1,250               | 800 Over |
| Coefficient of thermal expansion | $10^{-6}/K$ | 9.5                 | 11.5     |
| Specific Gravity                 |             | 6                   | 7.8      |
| Heat conductivity                | W/m·K       | 3                   | 54.4     |

※ Values in the table are for reference only.  
Please contact us for detailed product values.

## SET Item

| Order No. | Model No. | Pieces per set | Step (mm) | Nominal Size (mm) | Number of piece | Weight |
|-----------|-----------|----------------|-----------|-------------------|-----------------|--------|
| 150770    | BC-032    | 32             | —         | 1.005             | 1               | 950g   |
|           |           |                | 0.01      | 1.01·1.02...1.09  | 9               |        |
|           |           |                | 0.1       | 1.1·1.2...1.9     | 9               |        |
|           |           |                | 1         | 1·2·3...9         | 9               |        |
|           |           |                | 10        | 10·20·30          | 3               |        |
| 150771    | BC-047    | 47             | —         | 50                | 1               | 2.25kg |
|           |           |                | —         | 1.005             | 1               |        |
|           |           |                | 0.01      | 1.01·1.02...1.09  | 9               |        |
|           |           |                | 0.1       | 1.1·1.2...1.9     | 9               |        |
|           |           |                | 1         | 1·2·3...24        | 24              |        |
|           |           |                | 25        | 25·50·75·100      | 4               |        |

## SINGLE Item

| Order No. | Model No. | Size (mm) |
|-----------|-----------|-----------|
| 150720    | BC0-100   | 1         |
| 150721    | BC0-1-005 | 1.005     |
| 150722    | BC0-101   | 1.01      |
| 150723    | BC0-102   | 1.02      |
| 150724    | BC0-103   | 1.03      |
| 150725    | BC0-104   | 1.04      |
| 150726    | BC0-105   | 1.05      |
| 150727    | BC0-106   | 1.06      |
| 150728    | BC0-107   | 1.07      |
| 150729    | BC0-108   | 1.08      |
| 150730    | BC0-109   | 1.09      |
| 150731    | BC0-110   | 1.1       |
| 150732    | BC0-120   | 1.2       |
| 150733    | BC0-130   | 1.3       |
| 150734    | BC0-140   | 1.4       |
| 150735    | BC0-150   | 1.5       |
| 150736    | BC0-160   | 1.6       |
| 150737    | BC0-170   | 1.7       |
| 150738    | BC0-180   | 1.8       |
| 150739    | BC0-190   | 1.9       |
| 150740    | BC0-200   | 2         |
| 150741    | BC0-300   | 3         |
| 150742    | BC0-400   | 4         |
| 150743    | BC0-500   | 5         |
| 150744    | BC0-600   | 6         |

| Order No. | Model No. | Size (mm) |
|-----------|-----------|-----------|
| 150745    | BC0-700   | 7         |
| 150746    | BC0-800   | 8         |
| 150747    | BC0-900   | 9         |
| 150748    | BC0-1000  | 10        |
| 150749    | BC0-1100  | 11        |
| 150750    | BC0-1200  | 12        |
| 150751    | BC0-1300  | 13        |
| 150752    | BC0-1400  | 14        |
| 150753    | BC0-1500  | 15        |
| 150754    | BC0-1600  | 16        |
| 150755    | BC0-1700  | 17        |
| 150756    | BC0-1800  | 18        |
| 150757    | BC0-1900  | 19        |
| 150758    | BC0-2000  | 20        |
| 150759    | BC0-2100  | 21        |
| 150760    | BC0-2200  | 22        |
| 150761    | BC0-2300  | 23        |
| 150762    | BC0-2400  | 24        |
| 150763    | BC0-2500  | 25        |
| 150764    | BC0-3000  | 30        |
| 150765    | BC0-5000  | 50        |
| 150766    | BC0-6000  | 60        |
| 150767    | BC0-7500  | 75        |
| 150768    | BC0-10000 | 100       |



# STEEL PIN GAUGE SET AA SERIES

The most standard and popular type pin gauge. Available from 1pc.  
JCSS calibration is also available.

**SUB-ZERO (Cryogenic hardened) TREATMENT**  
※ 2,700mm or over



φ 0.200 ~ 10.000mm  
**0.001 step  
IN STOCK**

## FEATURES

- The most popular type
- Custom made Pin Gauges are available on request
- Individual pin gauges are also available (plastic case included)
- Aluminum Pin Vise is included with AA-0A to AA-9B.  
Pin Vise is included with AA-0E to AA-6F.
- For above 1.000mm, nominal size is marked on gauge
- Provide with individual pin gauge stand  
By setting the most frequently used sizes on the stand, you can save time and effort in searching for them.  
(AA-00~6B)
- With certificate of compliance

| AA series (0.010mm step) |           |                                    |              |                   |                         |
|--------------------------|-----------|------------------------------------|--------------|-------------------|-------------------------|
| Order No.                | Model No. | Nominal Size (mm)                  | Pins per set | Aluminum Pin Vise | Weight (Including case) |
| 201000                   | AA-00     | 0.06 • 0.07 • 0.08 ..... 0.290     | 24           |                   | 0.90kg                  |
| 201001                   | AA-0A     | 0.200 • 0.210 • 0.220 ..... 0.500  | 31           | APV-0A            | 0.95kg                  |
| 201002                   | AA-0B     | 0.500 • 0.510 • 0.520 ..... 1.000  | 51           | APV-0B            | 1.02kg                  |
| 201011                   | AA-1A     | 1.000 • 1.010 • 1.020 ..... 1.500  | 51           | APV-1A            | 1.03kg                  |
| 201012                   | AA-1B     | 1.500 • 1.510 • 1.520 ..... 2.000  | 51           | APV-1B            | 1.06kg                  |
| 201021                   | AA-2A     | 2.000 • 2.010 • 2.020 ..... 2.500  | 51           | APV-2A            | 1.09kg                  |
| 201022                   | AA-2B     | 2.500 • 2.510 • 2.520 ..... 3.000  | 51           | APV-2B            | 1.13kg                  |
| 201031                   | AA-3A     | 3.000 • 3.010 • 3.020 ..... 3.500  | 51           | APV-3A            | 1.18kg                  |
| 201032                   | AA-3B     | 3.500 • 3.510 • 3.520 ..... 4.000  | 51           | APV-3B            | 1.23kg                  |
| 201041                   | AA-4A     | 4.000 • 4.010 • 4.020 ..... 4.500  | 51           | APV-4A            | 1.29kg                  |
| 201042                   | AA-4B     | 4.500 • 4.510 • 4.520 ..... 5.000  | 51           | APV-4B            | 1.37kg                  |
| 201051                   | AA-5A     | 5.000 • 5.010 • 5.020 ..... 5.500  | 51           | APV-5A            | 1.44kg                  |
| 201052                   | AA-5B     | 5.500 • 5.510 • 5.520 ..... 6.000  | 51           | APV-5B            | 1.53kg                  |
| 201061                   | AA-6A     | 6.000 • 6.010 • 6.020 ..... 6.500  | 51           | APV-6A            | 1.63kg                  |
| 201062                   | AA-6B     | 6.500 • 6.510 • 6.520 ..... 7.000  | 51           | APV-6B            | 1.73kg                  |
| 201071                   | AA-7A     | 7.000 • 7.010 • 7.020 ..... 7.500  | 51           | APV-7A            | 2.33kg                  |
| 201072                   | AA-7B     | 7.500 • 7.510 • 7.520 ..... 8.000  | 51           | APV-7B            | 2.45kg                  |
| 201081                   | AA-8A     | 8.000 • 8.010 • 8.020 ..... 8.500  | 51           | APV-8A            | 2.58kg                  |
| 201082                   | AA-8B     | 8.500 • 8.510 • 8.520 ..... 9.000  | 51           | APV-8B            | 2.71kg                  |
| 201091                   | AA-9A     | 9.000 • 9.010 • 9.020 ..... 9.500  | 51           | APV-9A            | 2.85kg                  |
| 201092                   | AA-9B     | 9.500 • 9.510 • 9.520 ..... 10.000 | 51           | APV-9B            | 3.00kg                  |
| 201101                   | AA-10A    | 10.000 • 10.01 • 10.02 ..... 10.50 | 51           |                   | 3.12kg                  |
| 201102                   | AA-10B    | 10.50 • 10.51 • 10.52 ..... 11.00  | 51           |                   | 3.29kg                  |
| 201111                   | AA-11A    | 11.00 • 11.01 • 11.02 ..... 11.50  | 51           |                   | 3.46kg                  |
| 201112                   | AA-11B    | 11.50 • 11.51 • 11.52 ..... 12.00  | 51           |                   | 3.64kg                  |
| 201121                   | AA-12A    | 12.00 • 12.01 • 12.02 ..... 12.50  | 51           |                   | 3.83kg                  |
| 201122                   | AA-12B    | 12.50 • 12.51 • 12.52 ..... 13.00  | 51           |                   | 4.03kg                  |
| 201131                   | AA-13A    | 13.00 • 13.01 • 13.02 ..... 13.50  | 51           |                   | 4.24kg                  |
| 201132                   | AA-13B    | 13.50 • 13.51 • 13.52 ..... 14.00  | 51           |                   | 4.45kg                  |
| 201141                   | AA-14A    | 14.00 • 14.01 • 14.02 ..... 14.50  | 51           |                   | 4.67kg                  |
| 201142                   | AA-14B    | 14.50 • 14.51 • 14.52 ..... 15.00  | 51           |                   | 4.90kg                  |
| 201151                   | AA-15A    | 15.00 • 15.01 • 15.02 ..... 15.50  | 51           |                   | 5.14kg                  |
| 201152                   | AA-15B    | 15.50 • 15.51 • 15.52 ..... 16.00  | 51           |                   | 5.38kg                  |
| 201161                   | AA-16A    | 16.00 • 16.01 • 16.02 ..... 16.50  | 51           |                   | 5.79kg                  |
| 201162                   | AA-16B    | 16.50 • 16.51 • 16.52 ..... 17.00  | 51           |                   | 6.05kg                  |
| 201171                   | AA-17A    | 17.00 • 17.01 • 17.02 ..... 17.50  | 51           |                   | 6.32kg                  |
| 201172                   | AA-17B    | 17.50 • 17.51 • 17.52 ..... 18.00  | 51           |                   | 6.60kg                  |
| 201181                   | AA-18A    | 18.00 • 18.01 • 18.02 ..... 18.50  | 51           |                   | 6.88kg                  |
| 201182                   | AA-18B    | 18.50 • 18.51 • 18.52 ..... 19.00  | 51           |                   | 7.18kg                  |
| 201191                   | AA-19A    | 19.00 • 19.01 • 19.02 ..... 19.50  | 51           |                   | 7.48kg                  |
| 201192                   | AA-19B    | 19.50 • 19.51 • 19.52 ..... 20.00  | 51           |                   | 7.78kg                  |

Sizes available: 0.05 ~ 41.00mm (Please contact us with request)

JCSS Calibration available



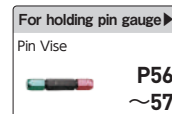
HOW TO MOVE



P47



P52 ~55



P56 ~57



P370

## SPECIFICATIONS

[Standard stock]

| Nominal Size (mm) | Step (mm) | Length (mm) | Tolerance (μm) | Out of Roundness (μm) | Diameter Inequality (μm) | Hardness (HV) |
|-------------------|-----------|-------------|----------------|-----------------------|--------------------------|---------------|
| 0.05              | 0.01 step | 5           | ±0.5           | 0.5                   | 0.5                      | More than 720 |
| 0.06 ... 0.09     |           | 10          |                |                       |                          |               |
| 0.10 ... 0.19     |           | 40          |                |                       |                          |               |
| 0.200 ... 0.999   | 0.001step | 50          | ±0.8           | 0.8                   | 1.3                      | More than 650 |
| 1.000 ... 2.699   |           |             |                |                       |                          |               |
| 2.700 ... 10.000  |           |             |                |                       |                          |               |
| 10.01 ... 20.00   | 0.01 step | 50          | ±1.5           | 0.8                   | 1.3                      | More than 650 |
| 20.01 ... 30.00   |           |             | ±2             | 1.6                   | 1.6                      |               |
| 30.01 ... 41.00   |           |             | ±3             | 3                     | 3                        |               |

※ 5mm from each edge is not precision guaranteed ※ 30.01 ~ 41.00 are custom made  
Pin gauges are slightly chamfered on both edge at the following level;  
φ 1mm...Approx. 0.03mm φ 3mm...Approx. 0.1mm φ 5mm...Approx. 0.2mm  
φ 7mm...Approx. 0.25mm φ 10mm...Approx. 0.3mm

| AA series (0.005mm step) |           |                                    |              |                   |                         |
|--------------------------|-----------|------------------------------------|--------------|-------------------|-------------------------|
| Order No.                | Model No. | Nominal Size (mm)                  | Pins per set | Aluminum Pin Vise | Weight (Including case) |
| 202005                   | AA-0E     | 0.500 • 0.505 • 0.510 ..... 0.750  | 51           | PV-0B             | 1.12kg                  |
| 202006                   | AA-0F     | 0.750 • 0.755 • 0.760 ..... 1.000  | 51           | PV-0B             | 1.12kg                  |
| 202103                   | AA-1C     | 1.000 • 1.005 • 1.010 ..... 1.250  | 51           | PV-1A             | 1.13kg                  |
| 202104                   | AA-1D     | 1.250 • 1.255 • 1.260 ..... 1.500  | 51           | PV-1A             | 1.14kg                  |
| 202105                   | AA-1E     | 1.500 • 1.505 • 1.510 ..... 1.750  | 51           | PV-1B             | 1.15kg                  |
| 202106                   | AA-1F     | 1.750 • 1.755 • 1.760 ..... 2.000  | 51           | PV-1B             | 1.17kg                  |
| 202203                   | AA-2C     | 2.000 • 2.005 • 2.010 ..... 2.250  | 51           | PV-2A             | 1.18kg                  |
| 202204                   | AA-2D     | 2.250 • 2.255 • 2.260 ..... 2.500  | 51           | PV-2A             | 1.20kg                  |
| 202205                   | AA-2E     | 2.500 • 2.505 • 2.510 ..... 2.750  | 51           | PV-2B             | 1.22kg                  |
| 202206                   | AA-2F     | 2.750 • 2.755 • 2.760 ..... 3.000  | 51           | PV-2B             | 1.24kg                  |
| 202303                   | AA-3C     | 3.000 • 3.005 • 3.010 ..... 3.250  | 51           | PV-3A             | 1.27kg                  |
| 202304                   | AA-3D     | 3.250 • 3.255 • 3.260 ..... 3.500  | 51           | PV-3A             | 1.30kg                  |
| 202305                   | AA-3E     | 3.500 • 3.505 • 3.510 ..... 3.750  | 51           | PV-3B             | 1.33kg                  |
| 202306                   | AA-3F     | 3.750 • 3.755 • 3.760 ..... 4.000  | 51           | PV-3B             | 1.36kg                  |
| 202403                   | AA-4C     | 4.000 • 4.005 • 4.010 ..... 4.250  | 51           | PV-4A             | 1.39kg                  |
| 202404                   | AA-4D     | 4.250 • 4.255 • 4.260 ..... 4.500  | 51           | PV-4A             | 1.42kg                  |
| 202405                   | AA-4E     | 4.500 • 4.505 • 4.510 ..... 4.750  | 51           | PV-4B             | 1.46kg                  |
| 202406                   | AA-4F     | 4.750 • 4.755 • 4.760 ..... 5.000  | 51           | PV-4B             | 1.50kg                  |
| 202503                   | AA-5C     | 5.000 • 5.005 • 5.010 ..... 5.250  | 51           | PV-5A             | 1.54kg                  |
| 202504                   | AA-5D     | 5.250 • 5.255 • 5.260 ..... 5.500  | 51           | PV-5A             | 1.58kg                  |
| 202505                   | AA-5E     | 5.500 • 5.505 • 5.510 ..... 5.750  | 51           | PV-5B             | 1.62kg                  |
| 202506                   | AA-5F     | 5.750 • 5.755 • 5.760 ..... 6.000  | 51           | PV-5B             | 1.67kg                  |
| 202603                   | AA-6C     | 6.000 • 6.005 • 6.010 ..... 6.250  | 51           | PV-6A             | 1.71kg                  |
| 202604                   | AA-6D     | 6.250 • 6.255 • 6.260 ..... 6.500  | 51           | PV-6A             | 1.76kg                  |
| 202605                   | AA-6E     | 6.500 • 6.505 • 6.510 ..... 6.750  | 51           | PV-6B             | 1.81kg                  |
| 202606                   | AA-6F     | 6.750 • 6.755 • 6.760 ..... 7.000  | 51           | PV-6B             | 1.87kg                  |
| 202703                   | AA-7C     | 7.000 • 7.005 • 7.010 ..... 7.250  | 51           |                   | 2.26kg                  |
| 202704                   | AA-7D     | 7.250 • 7.255 • 7.260 ..... 7.500  | 51           |                   | 2.32kg                  |
| 202705                   | AA-7E     | 7.500 • 7.505 • 7.510 ..... 7.750  | 51           |                   | 2.38kg                  |
| 202706                   | AA-7F     | 7.750 • 7.755 • 7.760 ..... 8.000  | 51           |                   | 2.44kg                  |
| 202803                   | AA-8C     | 8.000 • 8.005 • 8.010 ..... 8.250  | 51           |                   | 2.50kg                  |
| 202804                   | AA-8D     | 8.250 • 8.255 • 8.260 ..... 8.500  | 51           |                   | 2.57kg                  |
| 202805                   | AA-8E     | 8.500 • 8.505 • 8.510 ..... 8.750  | 51           |                   | 2.64kg                  |
| 202806                   | AA-8F     | 8.750 • 8.755 • 8.760 ..... 9.000  | 51           |                   | 2.71kg                  |
| 202903                   | AA-9C     | 9.000 • 9.005 • 9.010 ..... 9.250  | 51           |                   | 2.78kg                  |
| 202904                   | AA-9D     | 9.250 • 9.255 • 9.260 ..... 9.500  | 51           |                   | 2.85kg                  |
| 202905                   | AA-9E     | 9.500 • 9.505 • 9.510 ..... 9.750  | 51           |                   | 2.93kg                  |
| 202906                   | AA-9F     | 9.750 • 9.755 • 9.760 ..... 10.000 | 51           |                   | 3.00kg                  |

BLOCK GAUGE

PIN GAUGE

PIN VISE

PIN GAUGE ACCESSORIES

RING GAUGE

PLUG GAUGE

LIMIT GAUGE

THICKNESS GAUGE

TAPER GAUGE

WELDING GAUGE

OTHER GAUGES

STEEL PIN GAUGES REFILL SET **NEW!**JCSS Calibration  
available

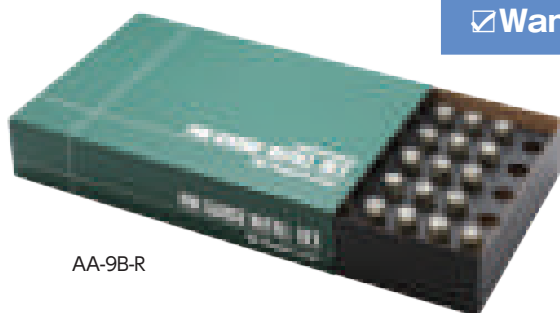
HOW TO MOVE

Changed the pin gauge of "STEEL PIN GAUGE SET AA Series" to a paper box.

The price is lower than that of conventional pin gauge sets, and the plastic used has been greatly reduced.

**Recommended for**

- ✓ Sites where a plastic case is not required
- ✓ Easy switchable only the contents of the set case
- ✓ Want to promote plastic reduction

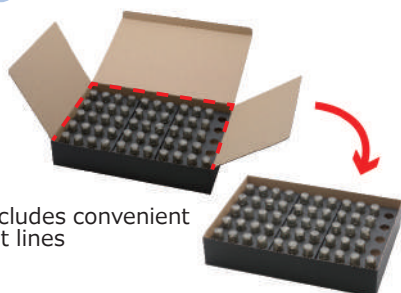


AA-9B-R



For gauge size accuracy and specifications,  
please refer to  
"STEEL PIN GAUGE SET AA Series" ⇒P41

**01** It can be used as a storage box if you cut off the inner box's lid along the cut lines



Includes convenient  
cut lines

**02** Easy pick and carry with the size you need to the site



**03** Just fit for the B5 or B4 size drawer, and you can put it in a drawer and carry it directly

**USE**

- For those who already have a set case and want to update the contents, or for workers on sites that do not require a set case.
- AA series pin gauges only are available at a lower price than conventional sets.

**FEATURES**

- It can be used as a Stand-up storage box if you cut off the inner box's lid along the cut lines
- Easy pick and carry with the size you need to the site
- Just fit for the B5 or B4 size drawer, and you can put it in a drawer and carry it directly
- By not using a case for the set, plastic was greatly reduced

**FEATURES**

- All pin gauges come in each plastic case
- With certificate of conformance
- ※ Pin Vise is not included

| Order No.          | Model No. | Nominal Size (mm)                  | Step (mm)  | Pins per set | Inside box Size (mm)                 | Weight ("inside box" included) |
|--------------------|-----------|------------------------------------|------------|--------------|--------------------------------------|--------------------------------|
| <b>NEW!</b> 202001 | AA-0A-R   | 0.200 • 0.210 • 0.220 ..... 0.500  | 0.010 step | 31           | W253×D180×H68mm<br>(B5 considerable) | 255g                           |
| <b>NEW!</b> 202002 | AA-0B-R   | 0.500 • 0.510 • 0.520 ..... 1.000  |            | 51           |                                      | 345g                           |
| <b>NEW!</b> 202011 | AA-1A-R   | 1.000 • 1.010 • 1.020 ..... 1.500  |            | 51           |                                      | 355g                           |
| <b>NEW!</b> 202012 | AA-1B-R   | 1.500 • 1.510 • 1.520 ..... 2.000  |            | 51           |                                      | 385g                           |
| <b>NEW!</b> 202021 | AA-2A-R   | 2.000 • 2.010 • 2.020 ..... 2.500  |            | 51           |                                      | 415g                           |
| <b>NEW!</b> 202022 | AA-2B-R   | 2.500 • 2.510 • 2.520 ..... 3.000  |            | 51           |                                      | 455g                           |
| <b>NEW!</b> 202031 | AA-3A-R   | 3.000 • 3.010 • 3.020 ..... 3.500  |            | 51           |                                      | 505g                           |
| <b>NEW!</b> 202032 | AA-3B-R   | 3.500 • 3.510 • 3.520 ..... 4.000  |            | 51           |                                      | 555g                           |
| <b>NEW!</b> 202041 | AA-4A-R   | 4.000 • 4.010 • 4.020 ..... 4.500  |            | 51           |                                      | 615g                           |
| <b>NEW!</b> 202042 | AA-4B-R   | 4.500 • 4.510 • 4.520 ..... 5.000  |            | 51           |                                      | 695g                           |
| <b>NEW!</b> 202051 | AA-5A-R   | 5.000 • 5.010 • 5.020 ..... 5.500  |            | 51           |                                      | 765g                           |
| <b>NEW!</b> 202052 | AA-5B-R   | 5.500 • 5.510 • 5.520 ..... 6.000  |            | 51           |                                      | 855g                           |
| <b>NEW!</b> 202061 | AA-6A-R   | 6.000 • 6.010 • 6.020 ..... 6.500  |            | 51           |                                      | 955g                           |
| <b>NEW!</b> 202062 | AA-6B-R   | 6.500 • 6.510 • 6.520 ..... 7.000  |            | 51           |                                      | 1055g                          |
| <b>NEW!</b> 202071 | AA-7A-R   | 7.000 • 7.010 • 7.020 ..... 7.500  |            | 51           | W360×D255×H68mm<br>(B4 considerable) | 1.40kg                         |
| <b>NEW!</b> 202072 | AA-7B-R   | 7.500 • 7.510 • 7.520 ..... 8.000  |            | 51           |                                      | 1.53kg                         |
| <b>NEW!</b> 202081 | AA-8A-R   | 8.000 • 8.010 • 8.020 ..... 8.500  |            | 51           |                                      | 1.66kg                         |
| <b>NEW!</b> 202082 | AA-8B-R   | 8.500 • 8.510 • 8.520 ..... 9.000  |            | 51           |                                      | 1.79kg                         |
| <b>NEW!</b> 202091 | AA-9A-R   | 9.000 • 9.010 • 9.020 ..... 9.500  |            | 51           |                                      | 1.93kg                         |
| <b>NEW!</b> 202092 | AA-9B-R   | 9.500 • 9.510 • 9.520 ..... 10.000 |            | 51           |                                      | 2.08kg                         |

## STEEL PIN GAUGE SET SA SERIES

JCSS Calibration available



HOW TO MOVE

High precision model.

JCSS calibration is also available.

SUB-ZERO (Cryogenic hardened) TREATMENT  
※ 2,700mm or over

## FEATURES

- High precision quality pin gauge
  - With certificate of compliance
  - Individual pin gauges are also available (plastic case included)
- ※ Pin Vise is not included

For storage and maintenance▶  
Pin Gauge Accessories  
 **P52**  
~55

For holding pin gauge▶  
Pin Vise  
 **P56**  
~57

Rust prevention▶  
Zerust Film for Steel  
 **P370**

## SPECIFICATIONS

| Nominal Size (mm) | Step (mm) | Length (mm) | Tolerance (μm) | Out of Roundness (μm) | Diameter Inequality (μm) | Hardness (HV) |
|-------------------|-----------|-------------|----------------|-----------------------|--------------------------|---------------|
| 0.100… 0.999      | 0.001step | 40          | ±0.3           | 0.3                   | 0.3                      | More than 720 |
| 1.000… 2.699      |           | 50          |                |                       |                          | More than 650 |
| 2.700… 7.010      |           |             | ±0.5           | 0.5                   | 0.5                      |               |
| 7.011…10.000      |           |             |                |                       |                          | More than 650 |

※ 5mm from each edge is not precision guaranteed (Length 30mm over)  
(0.001mm step)

| Order No. | Model No. | Nominal size (mm) | Pins per set | Weight (Including case) | Order No. | Model No. | Nominal size (mm) | Pins per set | Weight (Including case) |
|-----------|-----------|-------------------|--------------|-------------------------|-----------|-----------|-------------------|--------------|-------------------------|
| 201203    | SA-03     | 0.297 ..... 0.310 | 14           | 870g                    | 201237    | SA-37     | 3.697 ..... 3.710 | 14           | 930g                    |
| 201204    | SA-04     | 0.397 ..... 0.410 | 14           | 870g                    | 201238    | SA-38     | 3.797 ..... 3.810 | 14           | 930g                    |
| 201205    | SA-05     | 0.497 ..... 0.510 | 14           | 870g                    | 201239    | SA-39     | 3.897 ..... 3.910 | 14           | 930g                    |
| 201206    | SA-06     | 0.597 ..... 0.610 | 14           | 870g                    | 201240    | SA-40     | 3.997 ..... 4.010 | 14           | 940g                    |
| 201207    | SA-07     | 0.697 ..... 0.710 | 14           | 870g                    | 201241    | SA-41     | 4.097 ..... 4.110 | 14           | 940g                    |
| 201208    | SA-08     | 0.797 ..... 0.810 | 14           | 870g                    | 201242    | SA-42     | 4.197 ..... 4.210 | 14           | 940g                    |
| 201209    | SA-09     | 0.897 ..... 0.910 | 14           | 870g                    | 201243    | SA-43     | 4.297 ..... 4.310 | 14           | 950g                    |
| 201210    | SA-10     | 0.997 ..... 1.010 | 14           | 870g                    | 201244    | SA-44     | 4.397 ..... 4.410 | 14           | 950g                    |
| 201211    | SA-11     | 1.097 ..... 1.110 | 14           | 870g                    | 201245    | SA-45     | 4.497 ..... 4.510 | 14           | 960g                    |
| 201212    | SA-12     | 1.197 ..... 1.210 | 14           | 870g                    | 201246    | SA-46     | 4.597 ..... 4.610 | 14           | 960g                    |
| 201213    | SA-13     | 1.297 ..... 1.310 | 14           | 870g                    | 201247    | SA-47     | 4.697 ..... 4.710 | 14           | 960g                    |
| 201214    | SA-14     | 1.397 ..... 1.410 | 14           | 880g                    | 201248    | SA-48     | 4.797 ..... 4.810 | 14           | 970g                    |
| 201215    | SA-15     | 1.497 ..... 1.510 | 14           | 880g                    | 201249    | SA-49     | 4.897 ..... 4.910 | 14           | 970g                    |
| 201216    | SA-16     | 1.597 ..... 1.610 | 14           | 880g                    | 201250    | SA-50     | 4.997 ..... 5.010 | 14           | 980g                    |
| 201217    | SA-17     | 1.697 ..... 1.710 | 14           | 880g                    | 201251    | SA-51     | 5.097 ..... 5.110 | 14           | 980g                    |
| 201218    | SA-18     | 1.797 ..... 1.810 | 14           | 880g                    | 201252    | SA-52     | 5.197 ..... 5.210 | 14           | 980g                    |
| 201219    | SA-19     | 1.897 ..... 1.910 | 14           | 880g                    | 201253    | SA-53     | 5.297 ..... 5.310 | 14           | 990g                    |
| 201220    | SA-20     | 1.997 ..... 2.010 | 14           | 880g                    | 201254    | SA-54     | 5.397 ..... 5.410 | 14           | 990g                    |
| 201221    | SA-21     | 2.097 ..... 2.110 | 14           | 890g                    | 201255    | SA-55     | 5.497 ..... 5.510 | 14           | 1.00kg                  |
| 201222    | SA-22     | 2.197 ..... 2.210 | 14           | 890g                    | 201256    | SA-56     | 5.597 ..... 5.610 | 14           | 1.00kg                  |
| 201223    | SA-23     | 2.297 ..... 2.310 | 14           | 890g                    | 201257    | SA-57     | 5.697 ..... 5.710 | 14           | 1.01kg                  |
| 201224    | SA-24     | 2.397 ..... 2.410 | 14           | 890g                    | 201258    | SA-58     | 5.797 ..... 5.810 | 14           | 1.01kg                  |
| 201225    | SA-25     | 2.497 ..... 2.510 | 14           | 890g                    | 201259    | SA-59     | 5.897 ..... 5.910 | 14           | 1.02kg                  |
| 201226    | SA-26     | 2.597 ..... 2.610 | 14           | 900g                    | 201260    | SA-60     | 5.997 ..... 6.010 | 14           | 1.02kg                  |
| 201227    | SA-27     | 2.697 ..... 2.710 | 14           | 900g                    | 201261    | SA-61     | 6.097 ..... 6.110 | 14           | 1.03kg                  |
| 201228    | SA-28     | 2.797 ..... 2.810 | 14           | 900g                    | 201262    | SA-62     | 6.197 ..... 6.210 | 14           | 1.03kg                  |
| 201229    | SA-29     | 2.897 ..... 2.910 | 14           | 900g                    | 201263    | SA-63     | 6.297 ..... 6.310 | 14           | 1.04kg                  |
| 201230    | SA-30     | 2.997 ..... 3.010 | 14           | 910g                    | 201264    | SA-64     | 6.397 ..... 6.410 | 14           | 1.05kg                  |
| 201231    | SA-31     | 3.097 ..... 3.110 | 14           | 910g                    | 201265    | SA-65     | 6.497 ..... 6.510 | 14           | 1.05kg                  |
| 201232    | SA-32     | 3.197 ..... 3.210 | 14           | 910g                    | 201266    | SA-66     | 6.597 ..... 6.610 | 14           | 1.06kg                  |
| 201233    | SA-33     | 3.297 ..... 3.310 | 14           | 910g                    | 201267    | SA-67     | 6.697 ..... 6.710 | 14           | 1.06kg                  |
| 201234    | SA-34     | 3.397 ..... 3.410 | 14           | 920g                    | 201268    | SA-68     | 6.797 ..... 6.810 | 14           | 1.07kg                  |
| 201235    | SA-35     | 3.497 ..... 3.510 | 14           | 920g                    | 201269    | SA-69     | 6.897 ..... 6.910 | 14           | 1.07kg                  |
| 201236    | SA-36     | 3.597 ..... 3.610 | 14           | 920g                    | 201270    | SA-70     | 6.997 ..... 7.010 | 14           | 1.49kg                  |

Sizes available: 0.100 ~ 10.000mm (Please contact us with request)

## STEEL PIN GAUGE AAH SERIES Individual

JCSS Calibration available



MTO product

High accuracy than the AA series and more affordable than the SA series.

New standard pin gauge with diameter accuracy of  $\pm 0.5 \mu$ .



## FEATURES

- New standard pin gauge with diameter accuracy of  $\pm 0.5 \mu$
- Plastic case included

Sizes available: 1.000 ~ 7.000mm (Please contact us with request)

## SPECIFICATIONS

| Nominal Size (mm) | Step (mm) | Length (mm) | Tolerance (μm) | Out of Roundness (μm) | Diameter Inequality (μm) | Hardness (HV) |
|-------------------|-----------|-------------|----------------|-----------------------|--------------------------|---------------|
| 1.000... 2.690    | 0.010step | 50          | ±0.5           | 0.5                   | 0.5                      | More than 720 |
| 2.700... 7.000    |           |             |                |                       |                          | More than 650 |

※ 5mm from each edge is not precision guaranteed (Length 30mm over)



# MAINTENANCE LINE PIN GAUGE AML SERIES

JCSS Calibration available



HOW TO MOVE

For those concerned about gauge wear

**SUB-ZERO (Cryogenic hardened) TREATMENT**

Master for calibration using length measuring machine ▶  
Master Gauge  
P47

For storage and maintenance ▶  
Pin Gauge Accessories  
P52 ~55

For holding pin gauge ▶  
Pin Vise  
P56 ~57

Rust prevention ▶  
Zerust Film for Steel  
P370



**Wear-line**  
for checking wear status  
Tip wear is easy to see

When line disappears, wear is more than approx. 1μm



## MATERIAL

- Steel

## FEATURES

- Wear-line on both ends of pin gauge, able to see gauge wear
- When line disappears, wear is more than approx. 1μm
- With certificate of compliance
- Individual pin gauges are also available (plastic case included)

## ACCESSORIES

- Aluminum Pin vise included

## SPECIFICATIONS

[Standard stock]

| Size (mm)      | Step (mm)  | Length (mm) | Tolerance (μm) | Roundness (μm) | Diameter Inequality (μm) | Hardness (HV) |
|----------------|------------|-------------|----------------|----------------|--------------------------|---------------|
| 3.000...10.000 | 0.010 step | 50          | ±0.8           | 0.5            | 0.8                      | More than 650 |

※ 5mm from each edge is not precision guaranteed (Length 30mm over)

## SET Item

| Order No. | Model No. | Nominal Size (mm)                  | Step (mm)  | Pins per Set | Aluminum Pin vise | Weight (Including case) |
|-----------|-----------|------------------------------------|------------|--------------|-------------------|-------------------------|
| 370031    | AML-3A    | 3.000 • 3.010 • 3.020 ..... 3.500  | 0.010 step | 51           | APV-3A            | 1.18kg                  |
| 370032    | AML-3B    | 3.500 • 3.510 • 3.520 ..... 4.000  |            | 51           | APV-3B            | 1.23kg                  |
| 370041    | AML-4A    | 4.000 • 4.010 • 4.020 ..... 4.500  |            | 51           | APV-4A            | 1.29kg                  |
| 370042    | AML-4B    | 4.500 • 4.510 • 4.520 ..... 5.000  |            | 51           | APV-4B            | 1.37kg                  |
| 370051    | AML-5A    | 5.000 • 5.010 • 5.020 ..... 5.500  |            | 51           | APV-5A            | 1.44kg                  |
| 370052    | AML-5B    | 5.500 • 5.510 • 5.520 ..... 6.000  |            | 51           | APV-5B            | 1.53kg                  |
| 370061    | AML-6A    | 6.000 • 6.010 • 6.020 ..... 6.500  |            | 51           | APV-6A            | 1.63kg                  |
| 370062    | AML-6B    | 6.500 • 6.510 • 6.520 ..... 7.000  |            | 51           | APV-6B            | 1.73kg                  |
| 370071    | AML-7A    | 7.000 • 7.010 • 7.020 ..... 7.500  |            | 51           | APV-7A            | 2.33kg                  |
| 370072    | AML-7B    | 7.500 • 7.510 • 7.520 ..... 8.000  |            | 51           | APV-7B            | 2.45kg                  |
| 370081    | AML-8A    | 8.000 • 8.010 • 8.020 ..... 8.500  |            | 51           | APV-8A            | 2.58kg                  |
| 370082    | AML-8B    | 8.500 • 8.510 • 8.520 ..... 9.000  |            | 51           | APV-8B            | 2.71kg                  |
| 370091    | AML-9A    | 9.000 • 9.010 • 9.020 ..... 9.500  |            | 51           | APV-9A            | 2.85kg                  |
| 370092    | AML-9B    | 9.500 • 9.510 • 9.520 ..... 10.000 |            | 51           | APV-9B            | 3.00kg                  |

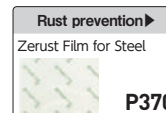
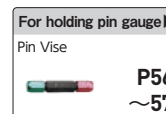
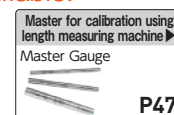
0.001 step pin gauges are also available on request. Sizes available: 3.00 ~ 10.00mm (Please contact us with request)

## STEEL PIN GAUGE SET AH • AP • AAP • AS SERIES

JCSS Calibration  
available

HOW TO MOVE

Pin gauge set that consists of frequently-used sizes. JCSS calibration is also available.

**SUB-ZERO (Cryogenic hardened) TREATMENT**  
※ 2,700mm or over

## FEATURES

- Pin gauge set consists of frequently used sizes
- Same specifications as AA series
- Custom made pin gauge sets are available on request
- With certificate of compliance
- Individual pin gauges are also available (plastic case included)
- ※ Pin Vise is not included



## AP series

(0.100mm step)

| Order No. | Model No. | Nominal size (mm)                  | Pin per set | Weight (including case) |
|-----------|-----------|------------------------------------|-------------|-------------------------|
| 201601    | AP-1      | 1.000 • 1.100 • 1.200 ..... 5.000  | 41          | 1.08kg                  |
| 201602    | AP-2      | 5.000 • 5.100 • 5.200 ..... 10.000 | 51          | 2.38kg                  |
| 201603    | AP-3      | 10.000 • 10.10 • 10.20 ..... 15.00 | 51          | 3.97kg                  |
| 201604    | AP-4      | 15.00 • 15.10 • 15.20 ..... 20.00  | 51          | 5.98kg                  |

## AS series

(0.010mm step)

Consist of pin gauge in the range of  $\pm 0.05\text{mm}$  based on integer number size

| Model No. | Nominal size (mm)                              | Pin per set |
|-----------|------------------------------------------------|-------------|
| AS-1      | 0.950 • 0.960 ..... 1.000 ..... 1.040 • 1.050  | 55          |
|           | 1.950 • 1.960 ..... 2.000 ..... 2.040 • 2.050  |             |
|           | 2.950 • 2.960 ..... 3.000 ..... 3.040 • 3.050  |             |
|           | 3.950 • 3.960 ..... 4.000 ..... 4.040 • 4.050  |             |
|           | 4.950 • 4.960 ..... 5.000 ..... 5.040 • 5.050  |             |
| AS-2      | 5.950 • 5.960 ..... 6.000 ..... 6.040 • 6.050  | 55          |
|           | 6.950 • 6.960 ..... 7.000 ..... 7.040 • 7.050  |             |
|           | 7.950 • 7.960 ..... 8.000 ..... 8.040 • 8.050  |             |
|           | 8.950 • 8.960 ..... 9.000 ..... 9.040 • 9.050  |             |
|           | 9.950 • 9.960 ..... 10.000 ..... 10.04 • 10.05 |             |
| AS-3      | 10.95 • 10.96 ..... 11.00 ..... 11.04 • 11.05  | 55          |
|           | 11.95 • 11.96 ..... 12.00 ..... 12.04 • 12.05  |             |
|           | 12.95 • 12.96 ..... 13.00 ..... 13.04 • 13.05  |             |
|           | 13.95 • 13.96 ..... 14.00 ..... 14.04 • 14.05  |             |
|           | 14.95 • 14.96 ..... 15.00 ..... 15.04 • 15.05  |             |
| AS-4      | 15.95 • 15.96 ..... 16.00 ..... 16.04 • 16.05  | 55          |
|           | 16.95 • 16.96 ..... 17.00 ..... 17.04 • 17.05  |             |
|           | 17.95 • 17.96 ..... 18.00 ..... 18.04 • 18.05  |             |
|           | 18.95 • 18.96 ..... 19.00 ..... 19.04 • 19.05  |             |
|           | 19.95 • 19.96 ..... 20.00 ..... 20.04 • 20.05  |             |
| ASP-1     | 0.450 • 0.460 ..... 0.500 ..... 0.540 • 0.550  | 55          |
|           | 1.450 • 1.460 ..... 1.500 ..... 1.540 • 1.550  |             |
|           | 2.450 • 2.460 ..... 2.500 ..... 2.540 • 2.550  |             |
|           | 3.450 • 3.460 ..... 3.500 ..... 3.540 • 3.550  |             |
|           | 4.450 • 4.460 ..... 4.500 ..... 4.540 • 4.550  |             |
| ASP-2     | 5.450 • 5.460 ..... 5.500 ..... 5.540 • 5.550  | 55          |
|           | 6.450 • 6.460 ..... 6.500 ..... 6.540 • 6.550  |             |
|           | 7.450 • 7.460 ..... 7.500 ..... 7.540 • 7.550  |             |
|           | 8.450 • 8.460 ..... 8.500 ..... 8.540 • 8.550  |             |
|           | 9.450 • 9.460 ..... 9.500 ..... 9.540 • 9.550  |             |
| ASP-3     | 10.45 • 10.46 ..... 10.50 ..... 10.54 • 10.55  | 55          |
|           | 11.45 • 11.46 ..... 11.50 ..... 11.54 • 11.55  |             |
|           | 12.45 • 12.46 ..... 12.50 ..... 12.54 • 12.55  |             |
|           | 13.45 • 13.46 ..... 13.50 ..... 13.54 • 13.55  |             |
|           | 14.45 • 14.46 ..... 14.50 ..... 14.54 • 14.55  |             |
| ASP-4     | 15.45 • 15.46 ..... 15.50 ..... 15.54 • 15.55  | 55          |
|           | 16.45 • 16.46 ..... 16.50 ..... 16.54 • 16.55  |             |
|           | 17.45 • 17.46 ..... 17.50 ..... 17.54 • 17.55  |             |
|           | 18.45 • 18.46 ..... 18.50 ..... 18.54 • 18.55  |             |
|           | 19.45 • 19.46 ..... 19.50 ..... 19.54 • 19.55  |             |

## AH series

(0.050mm step)

| Order No. | Model No. | Nominal size (mm)               | Pin per set | Weight (including case) |
|-----------|-----------|---------------------------------|-------------|-------------------------|
| 201500    | AH-0      | 0.200 • 0.250 • 0.300 ... 1.000 | 17          | 0.88kg                  |
| 201501    | AH-1      | 1.000 • 1.050 • 1.100 ... 3.500 | 51          | 1.07kg                  |
| 201502    | AH-2      | 3.500 • 3.550 • 3.600 ... 6.000 | 51          | 1.72kg                  |
| 201503    | AH-3      | 6.000 • 6.050 • 6.100 ... 8.500 | 51          | 2.30kg                  |
| 201504    | AH-4      | 8.500 • 8.550 • 8.600 ... 11.00 | 51          | 2.97kg                  |
| 201505    | AH-5      | 11.00 • 11.05 • 11.10 ... 13.50 | 51          | 3.84kg                  |
| 201506    | AH-6      | 13.50 • 13.55 • 13.60 ... 16.00 | 51          | 4.91kg                  |
| 201507    | AH-7      | 16.00 • 16.05 • 16.10 ... 18.50 | 51          | 5.92kg                  |
| 201508    | AH-8      | 18.50 • 18.55 • 18.60 ... 20.00 | 31          | 4.77kg                  |

## AAP series

(0.010mm step)

Consist of intermediate nominal size pin gauges of AA Series

| Order No. | Model No. | Nominal size (mm)               | Pin per set | Weight (including case) |
|-----------|-----------|---------------------------------|-------------|-------------------------|
| 201302    | AAP-0B    | 0.505 • 0.515 • 0.525... 1.005  | 51          | 0.99kg                  |
| 201311    | AAP-1A    | 1.005 • 1.015 • 1.025... 1.505  | 51          | 1.00kg                  |
| 201312    | AAP-1B    | 1.505 • 1.515 • 1.525... 2.005  | 51          | 1.03kg                  |
| 201321    | AAP-2A    | 2.005 • 2.015 • 2.025... 2.505  | 51          | 1.06kg                  |
| 201322    | AAP-2B    | 2.505 • 2.515 • 2.525... 3.005  | 51          | 1.10kg                  |
| 201331    | AAP-3A    | 3.005 • 3.015 • 3.025... 3.505  | 51          | 1.15kg                  |
| 201332    | AAP-3B    | 3.505 • 3.515 • 3.525... 4.005  | 51          | 1.20kg                  |
| 201341    | AAP-4A    | 4.005 • 4.015 • 4.025... 4.505  | 51          | 1.26kg                  |
| 201342    | AAP-4B    | 4.505 • 4.515 • 4.525... 5.005  | 51          | 1.34kg                  |
| 201351    | AAP-5A    | 5.005 • 5.015 • 5.025... 5.505  | 51          | 1.42kg                  |
| 201352    | AAP-5B    | 5.505 • 5.515 • 5.525... 6.005  | 51          | 1.50kg                  |
| 201361    | AAP-6A    | 6.005 • 6.015 • 6.025... 6.505  | 51          | 1.60kg                  |
| 201362    | AAP-6B    | 6.505 • 6.515 • 6.525... 7.005  | 51          | 2.08kg                  |
| 201371    | AAP-7A    | 7.005 • 7.015 • 7.025... 7.505  | 51          | 2.29kg                  |
| 201372    | AAP-7B    | 7.505 • 7.515 • 7.525... 8.005  | 51          | 2.41kg                  |
| 201381    | AAP-8A    | 8.005 • 8.015 • 8.025... 8.505  | 51          | 2.54kg                  |
| 201382    | AAP-8B    | 8.505 • 8.515 • 8.525... 9.005  | 51          | 2.67kg                  |
| 201391    | AAP-9A    | 9.005 • 9.015 • 9.025... 9.505  | 51          | 2.81kg                  |
| 201392    | AAP-9B    | 9.505 • 9.515 • 9.525... 10.005 | 51          | 2.97kg                  |

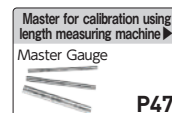


## STEEL PIN GAUGE SET PM • PG SERIES

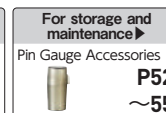
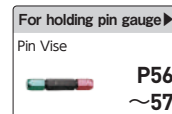
Available from 1pc. Either plus [+] or minus [-] tolerance set.

**SUB-ZERO (Cryogenic hardened) TREATMENT**  
※ 2,700mm or over

HOW TO MOVE



P47

P52  
~55P56  
~57

P370

## PM series⊕⊖

## FEATURES

- Pin Gauges with tolerance of 0 to plus 2μm or 0 to minus 2μm based on nominal size
- For over 1.000mm, nominal size and P (for Plus) or M (for Minus) is marked on gauges
- Please indicate "plus" or "minus" when ordering
- Sets from PM-0B to PM-6B are with a pin vise.
- With certificate of compliance
- Individual Pin Gauges are also available



## SPECIFICATIONS

[Standard stock]

| Size<br>(mm) | Step<br>(mm) | Length<br>(mm) | Tolerance<br>( μ m)  | Out of<br>Roundness<br>( μ m) | Diameter<br>Inequality<br>( μ m) | Hardness<br>(HV) |
|--------------|--------------|----------------|----------------------|-------------------------------|----------------------------------|------------------|
| 0.20… 0.99   | 0.01 step    | 40             | Plus or Minus<br>0~2 | 1.0                           | 1.0                              | More than 720    |
| 1.00… 2.69   |              | 50             |                      |                               |                                  |                  |
| 2.70…10.00   |              |                |                      |                               |                                  | More than 650    |

※5mm from each edge is not precision guaranteed (Length 30mm over)  
(0.01mm step)

| Model No. | Nominal size (mm)      |       |       | Pins per set | Pin Vise | Weight (including case) |
|-----------|------------------------|-------|-------|--------------|----------|-------------------------|
| PM-0A     | 0.20 • 0.21 • 0.22 ... | 0.50  | 0.50  | 31           | —        | 0.95kg                  |
| PM-0B     | 0.50 • 0.51 • 0.52 ... | 1.00  | 1.00  | 51           | PV-0B    | 1.02kg                  |
| PM-1A     | 1.00 • 1.01 • 1.02 ... | 1.50  | 1.50  | 51           | PV-1A    | 1.03kg                  |
| PM-1B     | 1.50 • 1.51 • 1.52 ... | 2.00  | 2.00  | 51           | PV-1B    | 1.06kg                  |
| PM-2A     | 2.00 • 2.01 • 2.02 ... | 2.50  | 2.50  | 51           | PV-2A    | 1.09kg                  |
| PM-2B     | 2.50 • 2.51 • 2.52 ... | 3.00  | 3.00  | 51           | PV-2B    | 1.13kg                  |
| PM-3A     | 3.00 • 3.01 • 3.02 ... | 3.50  | 3.50  | 51           | PV-3A    | 1.18kg                  |
| PM-3B     | 3.50 • 3.51 • 3.52 ... | 4.00  | 4.00  | 51           | PV-3B    | 1.18kg                  |
| PM-4A     | 4.00 • 4.01 • 4.02 ... | 4.50  | 4.50  | 51           | PV-4A    | 1.18kg                  |
| PM-4B     | 4.50 • 4.51 • 4.52 ... | 5.00  | 5.00  | 51           | PV-4B    | 1.18kg                  |
| PM-5A     | 5.00 • 5.01 • 5.02 ... | 5.50  | 5.50  | 51           | PV-5A    | 1.18kg                  |
| PM-5B     | 5.50 • 5.51 • 5.52 ... | 6.00  | 6.00  | 51           | PV-5B    | 1.18kg                  |
| PM-6A     | 6.00 • 6.01 • 6.02 ... | 6.50  | 6.50  | 51           | PV-6A    | 1.18kg                  |
| PM-6B     | 6.50 • 6.51 • 6.52 ... | 7.00  | 7.00  | 51           | PV-6B    | 1.18kg                  |
| PM-7A     | 7.00 • 7.01 • 7.02 ... | 7.50  | 7.50  | 51           | —        | 1.53kg                  |
| PM-7B     | 7.50 • 7.51 • 7.52 ... | 8.00  | 8.00  | 51           | —        | 1.53kg                  |
| PM-8A     | 8.00 • 8.01 • 8.02 ... | 8.50  | 8.50  | 51           | —        | 1.53kg                  |
| PM-8B     | 8.50 • 8.51 • 8.52 ... | 9.00  | 9.00  | 51           | —        | 1.53kg                  |
| PM-9A     | 9.00 • 9.01 • 9.02 ... | 9.50  | 9.50  | 51           | —        | 1.53kg                  |
| PM-9B     | 9.50 • 9.51 • 9.52 ... | 10.00 | 10.00 | 51           | —        | 1.53kg                  |

## PG series⊕⊖

## FEATURES

- Pin Gauges with tolerance of +2 to +5μm or -2 to -5μm based on nominal size
- Please indicate "plus" or "minus" when ordering
- With certificate of compliance
- Individual Pin Gauges are also available

※ Pin Vise is not included  
※ PG-00 and PG-3 differ in size step

## SPECIFICATIONS

[Standard stock]

| Nominal size (mm) | Step (mm)  | Length (mm) | Tolerance (μm)    | Out of Roundness (μm) | Diameter Inequality (μm) | Hardness (HV) |
|-------------------|------------|-------------|-------------------|-----------------------|--------------------------|---------------|
| 0.100 ... 0.190   | 0.010 step | 20          | Plus or Minus 2~5 | 1.5                   | 1.5                      | More than 720 |
| 0.200 ... 0.290   |            | 40          |                   |                       |                          |               |
| 0.300 ... 0.975   |            | 50          |                   |                       |                          |               |
| 1.000 ... 2.675   | 0.025 step | 50          | ※                 | 1.5                   | 1.5                      | More than 650 |
| 2.700 ... 12.975  |            |             |                   |                       |                          |               |
| 13.000 ... 19.000 | 0.1 step   |             | ※                 |                       |                          |               |

※The tolerance of 13.000~19.000 Pin Gauges is with Plus or Minus 1~5μm

※5mm from each edge is not precision guaranteed  
(Length 30mm over)

| Model No. | Nominal size                 |        |        | Step       | Pins per set | Weight (including case) |
|-----------|------------------------------|--------|--------|------------|--------------|-------------------------|
| PG-00     | 0.100 • 0.110 • 0.120 ...    | 0.290  | 0.290  | 0.010 step | 20           | 0.89kg                  |
| PG-0      | 0.300 • 0.325 • 0.350 ...    | 1.525  | 1.525  |            | 50           | 0.99kg                  |
| PG-1      | 1.550 • 1.575 • 1.600 ...    | 6.275  | 6.275  | 0.025 step | 190          | 2.52kg                  |
| PG-2A     | 6.300 • 6.325 • 6.350 ...    | 9.775  | 9.775  |            | 140          | 4.31kg                  |
| PG-2B     | 9.800 • 9.825 • 9.850 ...    | 12.525 | 12.525 |            | 110          | 5.73kg                  |
| PG-2C     | 12.550 • 12.575 • 12.600 ... | 12.975 | 12.975 |            | 18           | 2.20kg                  |
| PG-3      | 13.000 • 13.100 • 13.200 ... | 19.000 | 19.000 | 0.100 step | 61           | 6.29kg                  |

## STEEL PIN GAUGE WITH CENTER HOLE AC SERIES

Suitable for measuring run out of work

**SUB-ZERO (Cryogenic hardened) TREATMENT**



|                                                                                             |                                                                                   |
|---------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|
| <b>Master for calibration using length measuring machine▶</b><br>Master Gauge<br><b>P47</b> | <b>For storage and maintenance▶</b><br>Pin Gauge Accessories<br><b>P52</b><br>~55 |
| <b>For holding pin gauge▶</b><br>Pin Vise<br><b>P56</b><br>~57                              | <b>Rust prevention▶</b><br>Zerust Film for Steel<br><b>P370</b>                   |

**FEATURES** ● Smooth and easy measurement of run out

- For checking surface deflection of gear wheel and measuring run out of gear wheel and pulley
- For measuring squareness between hole and side face
- Nominal size is marked on gauge
- Individual Pin Gauges are also available (plastic case included)

### SPECIFICATIONS

[Standard stock]

| Nominal size (mm) | Step (mm) | Length (mm) | Tolerance (μm) | Out of Roundness (μm) | Diameter Inequality (μm) | Runout Tolerance (μm) | Center hole Angle | Center hole Diameter (mm) | Hardness (HV) |
|-------------------|-----------|-------------|----------------|-----------------------|--------------------------|-----------------------|-------------------|---------------------------|---------------|
| 2.00... 2.99      | 0.01 step | 50          | ±2.0           | 1.0                   | 1.0                      | Within 2.0            | 60°               | 1.3                       | More than 650 |
| 3.00... 3.99      |           |             |                |                       |                          |                       |                   | 1.8                       |               |
| 4.00... 6.99      |           |             |                |                       |                          |                       |                   | 2.4                       |               |
| 7.00... 10.00     |           |             |                |                       |                          |                       |                   | 4.0                       |               |

※5mm from each edge is not precision guaranteed (Length 30mm over)

## MASTER GAUGE

Actual value of the measuring point is marked on pin gauge !  
Can be used as a measurement master.

**SUB-ZERO (Cryogenic hardened) TREATMENT**

※ 2,700mm or over



### MATERIAL

- steel

### FEATURES

- Actual value of the measuring point is marked on pin gauge
- Plastic case included

### SPECIFICATIONS

[Standard stock]

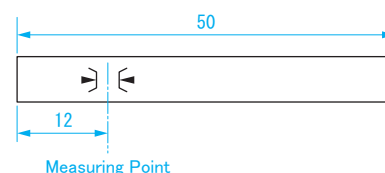
| Nominal size (mm) | Step (mm) | Length (mm) | Uncertainty (μm) | Hardness (HV) |
|-------------------|-----------|-------------|------------------|---------------|
| 1.00... 2.69      | 0.01 step | 50          | 0.4              | More than 720 |
| 2.70... 6.00      |           |             |                  | More than 650 |

JCSS Calibration available

|                                                                                   |                                                                 |
|-----------------------------------------------------------------------------------|-----------------------------------------------------------------|
| <b>For storage and maintenance▶</b><br>Pin Gauge Accessories<br><b>P52</b><br>~55 | <b>Rust prevention▶</b><br>Zerust Film for Steel<br><b>P370</b> |
|-----------------------------------------------------------------------------------|-----------------------------------------------------------------|

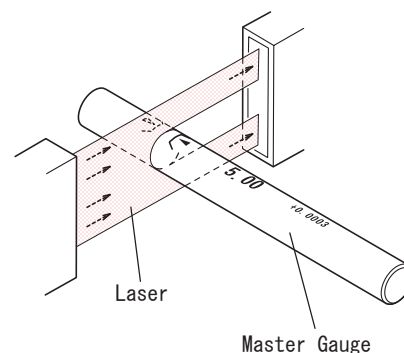
### ● DIMENSIONS

Units: mm



Measuring Point

### ● Example of use



Master Gauge

When measuring the actual dimensions of the outside diameter of a specific area with a laser outside diameter measuring instrument, the boundary is not covered by the laser beam, thus improving the zero-point adjustment accuracy of the laser outside diameter measuring instrument

## STEEL PIN GAUGE SET WITH HANDLE AG SERIES

Available from 1pc. Handle enables indirect contact with hand and gauge to avoid thermal expansion.

**SUB-ZERO (Cryogenic hardened) TREATMENT**  
※ 2,700mm or over



HOW TO MOVE

Rust prevention▶

Zerust Film for Steel



P370



## FEATURES

- AA series Pin Gauge with plastic handle
- Easy to handle for measuring
- Less affected by temperature
- The handle protects Pin Gauges from skin oil and salts
- Size is marked on each plastic handle
- With certificate of compliance
- Individual pin gauges are also available

## SPECIFICATIONS

[Standard stock]

| Nominal size<br>(mm) | Step<br>(mm) | Length (mm)     |                   | Tolerance<br>(μ m) | Out of<br>Roundness<br>(μ m) | Diameter<br>Inequality<br>(μ m) | Hardness<br>(HV) |
|----------------------|--------------|-----------------|-------------------|--------------------|------------------------------|---------------------------------|------------------|
|                      |              | Gauge<br>Length | Overall<br>Length |                    |                              |                                 |                  |
| 0.07… 0.09           | 0.01 step    | 3               | 41                | ± 0.5              | 0.5                          | 0.5                             | More than<br>720 |
| 0.10… 0.29           |              |                 |                   | ± 0.8              |                              |                                 |                  |
| 0.30… 0.49           |              |                 | 10                |                    |                              |                                 |                  |
| 0.50… 0.99           |              | 20              | 58                |                    |                              |                                 |                  |
| 1.00… 2.69           |              | 30              | 71                |                    |                              |                                 |                  |
| 2.70… 5.00           |              |                 |                   |                    |                              |                                 | More than<br>650 |
| 5.01…10.00           |              |                 |                   | 76                 |                              |                                 |                  |

※ Exceptionally, for 1.00mm Pin Gauge in Set No. AG-0B -- Gauge Length: 20mm / Overall Length: 58mm

※ 5mm from each edge is not precision guaranteed (Length 30mm over)

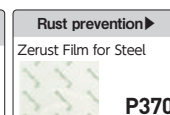
(0.01mm step)

| Order No. | Model No. | Nominal size (mm) |       | Pins per set | Weight (including case) |
|-----------|-----------|-------------------|-------|--------------|-------------------------|
| 203001    | AG-0A     | 0.20•0.21•0.22... | 0.50  | 31           | 0.92kg                  |
| 203002    | AG-0B     | 0.50•0.51•0.52... | 1.00  | 51           | 0.99kg                  |
| 203011    | AG-1A     | 1.00•1.01•1.02... | 1.50  | 51           | 1.08kg                  |
| 203012    | AG-1B     | 1.50•1.51•1.52... | 2.00  | 51           | 1.10kg                  |
| 203021    | AG-2A     | 2.00•2.01•2.02... | 2.50  | 51           | 1.13kg                  |
| 203022    | AG-2B     | 2.50•2.51•2.52... | 3.00  | 51           | 1.17kg                  |
| 203031    | AG-3A     | 3.00•3.01•3.02... | 3.50  | 51           | 1.22kg                  |
| 203032    | AG-3B     | 3.50•3.51•3.52... | 4.00  | 51           | 1.28kg                  |
| 203041    | AG-4A     | 4.00•4.01•4.02... | 4.50  | 51           | 1.34kg                  |
| 203042    | AG-4B     | 4.50•4.51•4.52... | 5.00  | 51           | 1.41kg                  |
| 203051    | AG-5A     | 5.00•5.01•5.02... | 5.50  | 51           | 1.82kg                  |
| 203052    | AG-5B     | 5.50•5.51•5.52... | 6.00  | 51           | 1.91kg                  |
| 203061    | AG-6A     | 6.00•6.01•6.02... | 6.50  | 51           | 2.00kg                  |
| 203062    | AG-6B     | 6.50•6.51•6.52... | 7.00  | 51           | 2.10kg                  |
| 203071    | AG-7A     | 7.00•7.01•7.02... | 7.50  | 51           | 2.21kg                  |
| 203072    | AG-7B     | 7.50•7.51•7.52... | 8.00  | 51           | 2.33kg                  |
| 203081    | AG-8A     | 8.00•8.01•8.02... | 8.50  | 51           | 2.51kg                  |
| 203082    | AG-8B     | 8.50•8.51•8.52... | 9.00  | 51           | 2.64kg                  |
| 203091    | AG-9A     | 9.00•9.01•9.02... | 9.50  | 51           | 2.79kg                  |
| 203092    | AG-9B     | 9.50•9.51•9.52... | 10.00 | 51           | 2.94kg                  |

Sizes available: 0.07 ~ 10.00mm (Please contact us with request)

## STEEL PIN GAUGE FOR GEAR MEASUREMENT OP SERIES

Available from 1pc. Must-have item for gear wheel measurement.

**SUB-ZERO (Cryogenic hardened) TREATMENT**  
※ 2,700mm or over

## FEATURES

- For quick and accurate over-pin diameter measurement of internal and external gears (magnetize the pin for easy handling)
- OP series gauge is for measuring over pin diameter of gears and involute splines. Each module is a set of two pins each for measuring external gear over-pin-diameter, and internal gear over-pin-diameter.
- Individual pin gauges are also available (plastic case included)
- Custom made pin gauges are available upon request

To determine proper pin gauge, please note the following

- 1) For inside diameter or outside diameter
- 2) Module or diametrical pitch
- 3) Number of teeth
- 4) Pressure angle
- 5) Profile shift coefficient
- 6) Torsion angle

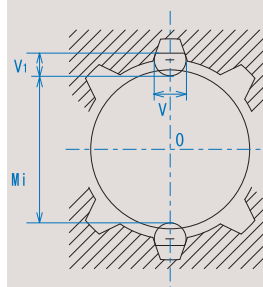
## SPECIFICATIONS

|                                 |                                                                                 |
|---------------------------------|---------------------------------------------------------------------------------|
| Dimensional deviation (V and U) | 0.90mm~10.00mm : $\pm 1 \mu\text{m}$<br>10.01mm~20.00mm : $\pm 1.5 \mu\text{m}$ |
| Out of Roundness                | 0.90mm~10.00mm : $1 \mu\text{m}$<br>10.01mm~20.00mm : $1.5 \mu\text{m}$         |
| Diameter Inequality             | 0.90mm~10.00mm : $2 \mu\text{m}$<br>10.01mm~20.00mm : $3 \mu\text{m}$           |
| Length                          | 50mm                                                                            |
| Hardness                        | 0.90mm~ 2.69mm : More than HV720<br>2.70mm~20.00mm : More than HV650            |

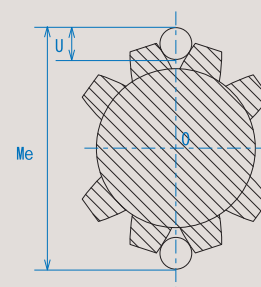
※ 5mm from each edge is not precision guaranteed (Length 30mm over)

## How To Measure

■ For inside diameter



■ For outside diameter



Over-pin diameter is measured by measuring the diameter after placing two pin gauges in opposite grooves of the gear as shown above

## OP-1

| Module (mm) | Inner dia. (hole) pin diameter (V) × groove height (Vt) (mm) | Outer (axis) pin diameter (U) (mm) |
|-------------|--------------------------------------------------------------|------------------------------------|
| 0.5         | 1.00 × 0.84                                                  | 0.90                               |
| 1.0         | 2.00 × 1.68                                                  | 1.80                               |
| 1.25        | 2.50 × 2.10<br>2.40 × 2.00 ※ 1                               | 2.25<br>—                          |
| 1.667       | 3.333 × 2.80                                                 | 3.00                               |
| 2.5         | 5.00 × 4.26                                                  | 4.50                               |
| 5.0         | 10.00 × 8.40                                                 | 9.00                               |
| 10.0        | 20.00 × 16.80                                                | 18.00                              |

※ 1 Module 1.25 is used for tooth 8 · 12

## OP-2

| Module (mm) | Inner dia. (hole) pin diameter (V) × groove height (Vt) (mm) | Outer (axis) pin diameter (U) (mm) |
|-------------|--------------------------------------------------------------|------------------------------------|
| 0.75        | 1.50 × 1.20<br>—                                             | 1.35<br>1.40 ※ 2                   |
| 1.5         | 3.00 × 2.52                                                  | 2.70                               |
| 2.0         | 4.00 × 3.36                                                  | 3.60                               |
| 3.0         | 6.00 × 5.04 ※ 1                                              | 5.40                               |
| 3.75        | 7.50 × 6.30<br>—                                             | 6.75<br>7.00 ※ 3                   |
| 4.5         | 9.00 × 7.56                                                  | 8.10                               |
| 6.0         | 12.00 × 10.08                                                | 10.80                              |
| 7.5         | 15.00 × 12.60                                                | 13.50                              |

※ 2 Module 0.75 is used for tooth 6 · 7 · 8 · 9 · 10 · 11

※ 3 Module 3.75 is used for tooth 6 · 7 · 8 · 9 · 10 · 11

## OP-3

This is combination set of OP-1 and OP-2  
(Please refer to the table above for sizes.)

BLOCK GAUGE

PIN GAUGE

PIN VISE

PIN GAUGE ACCESSORIES

RING GAUGE

PLUG GAUGE

LIMIT GAUGE

THICKNESS GAUGE

TAPER GAUGE

WELDING GAUGE

OTHER GAUGES



## CARBIDE PIN GAUGE SET TAA • TAG SERIES

JCSS Calibration  
available  
(TAA series)



HOW TO MOVE

Available from 1pc. Made of highly-durable material.

High resistance to thermal expansion and outstanding economy.

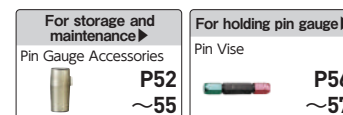
JCSS calibration is also available. (TAA series •  $\phi$  0.50 ~ 20.00mm)

## MATERIAL

- Gauge: Carbide

## FEATURES

- About 20-30 times more durable than Steel Pin Gauge
- The coefficient of thermal expansion is small ( $1/2$  of steel,  $5 \times 10^{-6}/K$ ) so the changes due to temperature are small
- Less likely to be damaged due to high hardness
- Even if broken, dimension does not change (no burrs on broken edges)
- Economical - longer span of periodic calibration compared to steel gauge
- For above 1.00mm, nominal size is marked on gauge
- With certificate of compliance
- Individual pin gauges are also available (plastic case included for TAA series)



## TAA series

(0.20 ~ 20.00mm)

## TAG series (with Handle) (0.20~10.00mm)



※TAA series Pin Gauge with plastic handle

## SPECIFICATIONS

[Standard stock]

| Nominal size<br>(mm) | Step<br>(mm) | Length<br>(mm) | Tolerance<br>( $\mu$ m) | Out of<br>Roundness<br>( $\mu$ m) | Diameter<br>Inequality<br>( $\mu$ m) | Hardness<br>(HV)  |
|----------------------|--------------|----------------|-------------------------|-----------------------------------|--------------------------------------|-------------------|
| 0.20... 0.99         | 0.01step     | 30             | $\pm 1$                 | 0.8                               | 0.8                                  | More than<br>1300 |
| 1.00... 2.99         |              | 38             |                         |                                   |                                      |                   |
| 3.00...10.00         |              | 50             | $\pm 1.5$               | 1.3                               | 1.3                                  |                   |
| 10.01...20.00        |              |                |                         |                                   |                                      |                   |

※ 5mm from each edge is not precision guaranteed (Length 30mm over)

## SPECIFICATIONS

[Standard stock]

| Nominal size (mm) | Step (mm) | Length (mm)  |                | Tolerance ( $\mu$ m) | Out of Roundness ( $\mu$ m) | Diameter Inequality ( $\mu$ m) | Hardness (HV)  |
|-------------------|-----------|--------------|----------------|----------------------|-----------------------------|--------------------------------|----------------|
|                   |           | Gauge Length | Overall Length |                      |                             |                                |                |
| 0.20... 0.99      | 0.01step  | 25           | 63             | $\pm 1$              | 0.8                         | 0.8                            | More than 1300 |
| 1.00... 2.99      |           | 28           | 69             |                      |                             |                                |                |
| 3.00... 5.00      |           | 30           | 71             |                      |                             |                                |                |
| 5.01... 10.00     |           | 30           | 76             |                      |                             |                                |                |

※ 5mm from each edge is not precision guaranteed (Length 30mm over)

(0.01mm step)

| Order No. | Model No. | Nominal size (mm)       | Pins per set | Weight (Including case) |
|-----------|-----------|-------------------------|--------------|-------------------------|
| 204002    | TAA-0B    | 0.50•0.51•0.52... 1.00  | 51           | 0.99kg                  |
| 204011    | TAA-1A    | 1.00•1.01•1.02... 1.50  | 51           | 1.01kg                  |
| 204012    | TAA-1B    | 1.50•1.51•1.52... 2.00  | 51           | 1.05kg                  |
| 204021    | TAA-2A    | 2.00•2.01•2.02... 2.50  | 51           | 1.09kg                  |
| 204022    | TAA-2B    | 2.50•2.51•2.52... 3.00  | 51           | 1.15kg                  |
| 204031    | TAA-3A    | 3.00•3.01•3.02... 3.50  | 51           | 1.29kg                  |
| 204032    | TAA-3B    | 3.50•3.51•3.52... 4.00  | 51           | 1.39kg                  |
| 204041    | TAA-4A    | 4.00•4.01•4.02... 4.50  | 51           | 1.50kg                  |
| 204042    | TAA-4B    | 4.50•4.51•4.52... 5.00  | 51           | 1.63kg                  |
| 204051    | TAA-5A    | 5.00•5.01•5.02... 5.50  | 51           | 1.78kg                  |
| 204052    | TAA-5B    | 5.50•5.51•5.52... 6.00  | 51           | 1.94kg                  |
| 204061    | TAA-6A    | 6.00•6.01•6.02... 6.50  | 51           | 2.11kg                  |
| 204062    | TAA-6B    | 6.50•6.51•6.52... 7.00  | 51           | 2.30kg                  |
| 204071    | TAA-7A    | 7.00•7.01•7.02... 7.50  | 51           | 2.99kg                  |
| 204072    | TAA-7B    | 7.50•7.51•7.52... 8.00  | 51           | 3.20kg                  |
| 204081    | TAA-8A    | 8.00•8.01•8.02... 8.50  | 51           | 3.44kg                  |
| 204082    | TAA-8B    | 8.50•8.51•8.52... 9.00  | 51           | 3.68kg                  |
| 204091    | TAA-9A    | 9.00•9.01•9.02... 9.50  | 51           | 3.95kg                  |
| 204092    | TAA-9B    | 9.50•9.51•9.52... 10.00 | 51           | 4.22kg                  |

(0.01mm step)

| Order No. | Model No. | Nominal size (mm)       | Pins per set | Weight (Including case) |
|-----------|-----------|-------------------------|--------------|-------------------------|
| 205002    | TAG-0B    | 0.50•0.51•0.52... 1.00  | 51           | 0.99kg                  |
| 205011    | TAG-1A    | 1.00•1.01•1.02... 1.50  | 51           | 1.09kg                  |
| 205012    | TAG-1B    | 1.50•1.51•1.52... 2.00  | 51           | 1.12kg                  |
| 205021    | TAG-2A    | 2.00•2.01•2.02... 2.50  | 51           | 1.17kg                  |
| 205022    | TAG-2B    | 2.50•2.51•2.52... 3.00  | 51           | 1.22kg                  |
| 205031    | TAG-3A    | 3.00•3.01•3.02... 3.50  | 51           | 1.36kg                  |
| 205032    | TAG-3B    | 3.50•3.51•3.52... 4.00  | 51           | 1.46kg                  |
| 205041    | TAG-4A    | 4.00•4.01•4.02... 4.50  | 51           | 1.58kg                  |
| 205042    | TAG-4B    | 4.50•4.51•4.52... 5.00  | 51           | 1.71kg                  |
| 205051    | TAG-5A    | 5.00•5.01•5.02... 5.50  | 51           | 2.18kg                  |
| 205052    | TAG-5B    | 5.50•5.51•5.52... 6.00  | 51           | 2.34kg                  |
| 205061    | TAG-6A    | 6.00•6.01•6.02... 6.50  | 51           | 2.52kg                  |
| 205062    | TAG-6B    | 6.50•6.51•6.52... 7.00  | 51           | 2.71kg                  |
| 205071    | TAG-7A    | 7.00•7.01•7.02... 7.50  | 51           | 2.91kg                  |
| 205072    | TAG-7B    | 7.50•7.51•7.52... 8.00  | 51           | 3.13kg                  |
| 205081    | TAG-8A    | 8.00•8.01•8.02... 8.50  | 51           | 3.41kg                  |
| 205082    | TAG-8B    | 8.50•8.51•8.52... 9.00  | 51           | 3.66kg                  |
| 205091    | TAG-9A    | 9.00•9.01•9.02... 9.50  | 51           | 3.92kg                  |
| 205092    | TAG-9B    | 9.50•9.51•9.52... 10.00 | 51           | 4.19kg                  |

# CERAMIC PIN GAUGE SET CAA • CAG SERIES

JCSS Calibration  
available  
(CAA series)



HOW TO MOVE

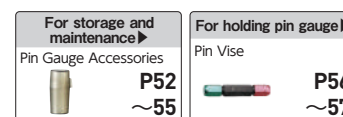
Available from 1pc. Made of highly-durable material with free from rust.  
Excellent workability and economy.  
JCSS calibration is also available. (CAA series •  $\phi$  0.50 ~ 20.00mm)

## MATERIAL

- Gauge: Ceramic (Zirconia)

## FEATURES

- Strong against abrasion
- Free from rust and corrosion, and easy maintenance
- Ceramic material is less susceptible to abrasion and aged deterioration than steel
- Non-magnetic
- For above 1.50mm, nominal size is laser marked on gauge
- With certificate of compliance
- Individual pin gauges are also available  
(plastic case included for CAA series)



## Comparison between carbide and steel materials

| Material                         |             | Ceramics<br>(Zirconia) | Cemented<br>Carbide | Steel   |
|----------------------------------|-------------|------------------------|---------------------|---------|
| Item                             |             |                        |                     |         |
| Specific Gravity                 |             | 6                      | 14.8                | 7.8     |
| Hardness                         | HV          | 1,250                  | 1,300               | 650~720 |
| Bending strength                 | MPa         | 1,000                  | 1,960               | 1,960   |
| Young's Modulus                  | GPa         | 200                    | 610                 | 205     |
| Coefficient of thermal expansion | $10^{-6}/K$ | 9.5                    | 5.5                 | 11.5    |
| Heat conductivity                | W/m·K       | 3                      | 79.5                | 54.4    |

※Values in the table are for reference only. Please contact us for detailed product values.

## CAA series (0.20 ~ 20.00mm)



## CAG Series (with Handle) (0.20 ~ 10.00mm)



※CAA series Pin Gauge with plastic handle

## SPECIFICATIONS [Standard stock]

| Nominal size<br>(mm) | Step<br>(mm) | Length<br>(mm) | Tolerance<br>( $\mu$ m) | Out of<br>Roundness<br>( $\mu$ m) | Diameter<br>Inequality<br>( $\mu$ m) | Hardness<br>(HV)     |
|----------------------|--------------|----------------|-------------------------|-----------------------------------|--------------------------------------|----------------------|
| 0.20... 2.99         | 0.01 step    | 38             | $\pm 1$                 | 0.8                               | 0.8                                  | More<br>than<br>1250 |
| 3.00...10.00         |              | 50             |                         |                                   |                                      |                      |
| 10.01...20.00        |              |                | $\pm 1.5$               | 1.3                               | 1.3                                  |                      |

※ 5mm from each edge is not precision guaranteed (Length 30mm over)

※ Length can be changed without any prior notice due to improvement of product

(0.01mm step)

| Order No. | Model No. | Nominal size (mm)      | Pins per set | Weight (Including case) |
|-----------|-----------|------------------------|--------------|-------------------------|
| 206002    | CAA-0B    | 0.50•0.51•0.52... 1.00 | 51           | 0.98kg                  |
| 206011    | CAA-1A    | 1.00•1.01•1.02... 1.50 | 51           | 0.99kg                  |
| 206012    | CAA-1B    | 1.50•1.51•1.52... 2.00 | 51           | 1.01kg                  |
| 206021    | CAA-2A    | 2.00•2.01•2.02... 2.50 | 51           | 1.02kg                  |
| 206022    | CAA-2B    | 2.50•2.51•2.52... 3.00 | 51           | 1.05kg                  |
| 206031    | CAA-3A    | 3.00•3.01•3.02... 3.50 | 51           | 1.11kg                  |
| 206032    | CAA-3B    | 3.50•3.51•3.52... 4.00 | 51           | 1.15kg                  |
| 206041    | CAA-4A    | 4.00•4.01•4.02... 4.50 | 51           | 1.20kg                  |
| 206042    | CAA-4B    | 4.50•4.51•4.52... 5.00 | 51           | 1.25kg                  |
| 206051    | CAA-5A    | 5.00•5.01•5.02... 5.50 | 51           | 1.31kg                  |
| 206052    | CAA-5B    | 5.50•5.51•5.52... 6.00 | 51           | 1.38kg                  |
| 206061    | CAA-6A    | 6.00•6.01•6.02... 6.50 | 51           | 1.45kg                  |
| 206062    | CAA-6B    | 6.50•6.51•6.52... 7.00 | 51           | 1.53kg                  |
| 206071    | CAA-7A    | 7.00•7.01•7.02... 7.50 | 51           | 2.09kg                  |
| 206072    | CAA-7B    | 7.50•7.51•7.52... 8.00 | 51           | 2.18kg                  |
| 206081    | CAA-8A    | 8.00•8.01•8.02... 8.50 | 51           | 2.28kg                  |
| 206082    | CAA-8B    | 8.50•8.51•8.52... 9.00 | 51           | 2.38kg                  |
| 206091    | CAA-9A    | 9.00•9.01•9.02... 9.50 | 51           | 2.49kg                  |
| 206092    | CAA-9B    | 9.50•9.51•9.52...10.00 | 51           | 2.60kg                  |

## SPECIFICATIONS [Standard stock]

| Nominal size (mm) | Step (mm) | Length (mm)<br>Gauge Length Overall Length | Tolerance ( $\mu$ m) | Out of Roundness ( $\mu$ m) | Diameter Inequality ( $\mu$ m) | Hardness (HV)  |
|-------------------|-----------|--------------------------------------------|----------------------|-----------------------------|--------------------------------|----------------|
| 0.20... 0.29      | 0.01 step | 3 41                                       | $\pm 1$              | 0.8                         | 0.8                            | More than 1250 |
| 0.30... 0.49      |           | 10 48                                      |                      |                             |                                |                |
| 0.50... 0.99      |           | 28 66                                      |                      |                             |                                |                |
| 1.00... 2.99      |           | 28 69                                      |                      |                             |                                |                |
| 3.00... 5.00      |           | 30 71                                      |                      |                             |                                |                |
| 5.01...10.00      |           | 30 76                                      |                      |                             |                                |                |

※ 5mm from each edge is not precision guaranteed (Length 30mm over)

※ Length can be changed without any prior notice due to improvement of product

(0.01mm step)

| Order No. | Model No. | Nominal size (mm)      | Pins per set | Weight (Including case) |
|-----------|-----------|------------------------|--------------|-------------------------|
| 206302    | CAG-0B    | 0.50•0.51•0.52... 1.00 | 51           | 0.98kg                  |
| 206311    | CAG-1A    | 1.00•1.01•1.02... 1.50 | 51           | 1.07kg                  |
| 206312    | CAG-1B    | 1.50•1.51•1.52... 2.00 | 51           | 1.08kg                  |
| 206321    | CAG-2A    | 2.00•2.01•2.02... 2.50 | 51           | 1.10kg                  |
| 206322    | CAG-2B    | 2.50•2.51•2.52... 3.00 | 51           | 1.12kg                  |
| 206331    | CAG-3A    | 3.00•3.01•3.02... 3.50 | 51           | 1.18kg                  |
| 206332    | CAG-3B    | 3.50•3.51•3.52... 4.00 | 51           | 1.22kg                  |
| 206341    | CAG-4A    | 4.00•4.01•4.02... 4.50 | 51           | 1.27kg                  |
| 206342    | CAG-4B    | 4.50•4.51•4.52... 5.00 | 51           | 1.33kg                  |
| 206351    | CAG-5A    | 5.00•5.01•5.02... 5.50 | 51           | 1.71kg                  |
| 206352    | CAG-5B    | 5.50•5.51•5.52... 6.00 | 51           | 1.78kg                  |
| 206361    | CAG-6A    | 6.00•6.01•6.02... 6.50 | 51           | 1.85kg                  |
| 206362    | CAG-6B    | 6.50•6.51•6.52... 7.00 | 51           | 1.93kg                  |
| 206371    | CAG-7A    | 7.00•7.01•7.02... 7.50 | 51           | 2.01kg                  |
| 206372    | CAG-7B    | 7.50•7.51•7.52... 8.00 | 51           | 2.10kg                  |
| 206381    | CAG-8A    | 8.00•8.01•8.02... 8.50 | 51           | 2.25kg                  |
| 206382    | CAG-8B    | 8.50•8.51•8.52... 9.00 | 51           | 2.35kg                  |
| 206391    | CAG-9A    | 9.00•9.01•9.02... 9.50 | 51           | 2.46kg                  |
| 206392    | CAG-9B    | 9.50•9.51•9.52...10.00 | 51           | 2.58kg                  |

## PIN GAUGE CASE

Can be sold cases only.

You can choose from two types of inner cases, printed or non-printed of the dimensions of the storage space.



PCS-1  
(NON-PRINTED)



PCS-1P  
(PRINTED)

Removable lid for  
use as tray



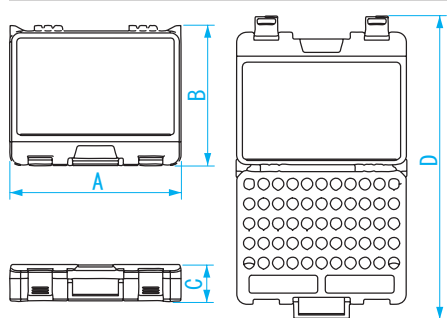
Stands



Stacks



# ● DIMENSIONS



Units: mm

| Model No.       | A   | B   | C  | D*    |
|-----------------|-----|-----|----|-------|
| PCS-1, PCS-1P   | 290 | 206 | 71 | (460) |
| PCS-2, PCS-2P   | 325 | 265 | 71 | (578) |
| PCS-2W, PCS-2WP | 325 | 265 | 71 | (578) |

※ Reference only

| Order No. | Model No. | Applicable pin gauge set                                                                                                          | Inner Board | No. of Slots |
|-----------|-----------|-----------------------------------------------------------------------------------------------------------------------------------|-------------|--------------|
| 992015    | PCS-1     | ■ STEEL<br>AA-00 ~ AA-6B<br>AH-0 ~ AH-2<br>AP-1<br>AA-0E ~ AA-6F<br>AAP-0B ~ AAP-6A<br>PG-00 ⊕⊕<br>PG-0 ⊕⊕<br>PM-0B ⊕⊕ ~ PM-6B ⊕⊕ | NON-PRINTED | 55           |
| 992017    | PCS-1P    | ■ CARBIDE<br>TAA-0B ~ TAA-6B<br>■ CERAMIC<br>CAA-0B ~ CAA-6B                                                                      | PRINTED     |              |
| 992016    | PCS-2     | ■ STEEL<br>AA-7A ~ AA-15B<br>AH-3 ~ AH-6<br>AP-2 ~ AP-3<br>AA-7C ~ AA-9F<br>AAP-6B ~ AAP-9B<br>PG-2C ⊕⊕<br>PM-7A ⊕⊕ ~ PM-9B ⊕⊕    | NON-PRINTED | 55           |
| 992018    | PCS-2P    | ■ CARBIDE<br>TAA-7A ~ TAA-9B<br>■ CERAMIC<br>CAA-7A ~ CAA-9B                                                                      | PRINTED     |              |
| 992019    | PCS-2W    | ■ STEEL<br>AA-16A ~ AA-19B<br>AH-7 ~ AH-8<br>AP-4                                                                                 | NON-PRINTED | 55           |
| 992020    | PCS-2WP   | ※PCS-2W and PCS-2WP<br>cannot be stored with plastic<br>case for individual pin gauge                                             | PRINTED     |              |

## PIN GAUGE CASE

Can be sold cases only.

For Pin gauge set with shank, you can choose from two types of inner cases, printed or non-printed of the dimensions of the storage space.



W-PG1(+)  
(PRINTED)



W-PG2B(+)  
(PRINTED)



W-PG3(+)  
(PRINTED)



W-4  
(NON-PRINTED)



W-4P  
(PRINTED)

| Order No. | Model No. | Standard                        | Applicable pin gauge set                                     | Inner       | No. of slots | Weight | Size<br>(Approx: W × D × H) |
|-----------|-----------|---------------------------------|--------------------------------------------------------------|-------------|--------------|--------|-----------------------------|
| 217100    | W-PG1(+)  | For PG-1                        | ■ STEEL PG-1⊕                                                | PRINTED     | 190          | 1.50kg | 325 × 265 × 71mm            |
| 217101    | W-PG1(−)  |                                 | ■ STEEL PG-1⊖                                                |             |              |        |                             |
| 217210    | W-PG2A(+) | For PG-2A                       | ■ STEEL PG-2A⊕                                               | PRINTED     | 140          | 1.46kg | 325 × 265 × 71mm            |
| 217211    | W-PG2A(−) |                                 | ■ STEEL PG-2A⊖                                               |             |              |        |                             |
| 217221    | W-PG2B(+) | For PG-2B                       | ■ STEEL PG-2B⊕                                               | PRINTED     | 110          | 1.45kg | 325 × 265 × 71mm            |
| 217222    | W-PG2B(−) |                                 | ■ STEEL PG-2B⊖                                               |             |              |        |                             |
| 217300    | W-PG3(+)  | For PG-3                        | ■ STEEL PG-3⊕                                                | PRINTED     | 61           | 1.38kg | 325 × 265 × 71mm            |
| 217301    | W-PG3(−)  |                                 | ■ STEEL PG-3⊖                                                |             |              |        |                             |
| 992324    | W-4       | Pin gauge<br>with handle: Small | ■ STEEL<br>AG-0A ~ AG-4B                                     | NON-PRINTED | 55           | 0.82kg | 300 × 185 × 91mm            |
| 992304    | W-4P      |                                 | ■ CARBIDE<br>TAG-0A ~ TAG-4B<br>■ CERAMIC<br>CAG-0A ~ CAG-4B | PRINTED     |              |        |                             |
| 992325    | W-5       | Pin gauge<br>with handle: Large | ■ STEEL<br>AG-5A ~ AG-9B                                     | NON-PRINTED | 55           | 1.02kg | 330 × 212 × 87mm            |
| 992305    | W-5P      |                                 | ■ CARBIDE<br>TAG-5A ~ TAG-9B<br>■ CERAMIC<br>CAG-5A ~ CAG-9B | PRINTED     |              |        |                             |



BLOCK  
GAUGE

PIN  
GAUGE

PIN  
VISE

PIN  
GAUGE  
ACCESSORIES

RING  
GAUGE

PLUG  
GAUGE

LIMIT  
GAUGE

THICKNESS  
GAUGE

TAPER  
GAUGE

WELDING  
GAUGE

OTHER  
GAUGES



## PLASTIC CASE FOR INDIVIDUAL PIN GAUGE

Easy to distinguish pin gauges material by color. For storing individual pin gauges.

MATERIAL ●ABS

|                           |                                                                                   |                                                                                   |                                                                                   |                                                                                     |                                                                                     |
|---------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|
| Appearance                |  |  |  |  |  |
| Order No.                 | 217941                                                                            | 217942                                                                            | 217943                                                                            | 217944                                                                              | 217945                                                                              |
| Model No.                 | PC-S-SM                                                                           | PC-S-GR                                                                           | PC-S-OR                                                                           | PC-S-BL                                                                             | PC-S-MW                                                                             |
| Size                      | S                                                                                 |                                                                                   |                                                                                   |                                                                                     |                                                                                     |
| Material & Series         | Steel                                                                             | Carbide                                                                           | Ceramic                                                                           | Maintenance Line                                                                    | PM Series                                                                           |
| Applicable Pin Gauge Size | ~ 6.999                                                                           |                                                                                   |                                                                                   |                                                                                     |                                                                                     |
| Applicable Pin Gauge Case | PCS-1                                                                             |                                                                                   |                                                                                   |                                                                                     |                                                                                     |

|                           |                                                                                    |                                                                                    |                                                                                    |                                                                                      |                                                                                      |
|---------------------------|------------------------------------------------------------------------------------|------------------------------------------------------------------------------------|------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------|
| Appearance                |  |  |  |  |  |
| Order No.                 | 217951                                                                             | 217952                                                                             | 217953                                                                             | 217954                                                                               | 217955                                                                               |
| Model No.                 | PC-M-SM                                                                            | PC-M-GR                                                                            | PC-M-OR                                                                            | PC-M-BL                                                                              | PC-M-MW                                                                              |
| Size                      | M                                                                                  |                                                                                    |                                                                                    |                                                                                      |                                                                                      |
| Material & Series         | Steel                                                                              | Carbide                                                                            | Ceramic                                                                            | Maintenance Line                                                                     | PM Series                                                                            |
| Applicable Pin Gauge Size | 7.000 ~ 15.99                                                                      |                                                                                    |                                                                                    |                                                                                      |                                                                                      |
| Applicable Pin Gauge Case | PCS-2                                                                              |                                                                                    |                                                                                    |                                                                                      |                                                                                      |

|                           |                                                                                     |                                                                                     |                                                                                      |                                                                                       |
|---------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------|
| Appearance                |  |  |  |  |
| Order No.                 | 217961                                                                              | 217962                                                                              | 217963                                                                               | 217966                                                                                |
| Model No.                 | PC-L-SM                                                                             | PC-L-GR                                                                             | PC-L-OR                                                                              | PC-LL-SM                                                                              |
| Size                      | L                                                                                   |                                                                                     |                                                                                      | LL                                                                                    |
| Material & Series         | Steel                                                                               | Carbide                                                                             | Ceramic                                                                              | Steel                                                                                 |
| Applicable Pin Gauge Size | 16.00 ~ 21.99                                                                       |                                                                                     |                                                                                      | 22.00 ~ 30.00                                                                         |

## PIN GAUGE CABINET

Pin gauge storage cabinet can store up to 10 pin gauge sets

All drawers can be locked at once

**Lock**

**Handle**

Handle can be mounted either right side or left side

**Caster**

Applicable case : PCS-1, PCS-2

### USE

- For storage of pin gauge set

### MATERIAL

- SPCC (cold rolled steel)

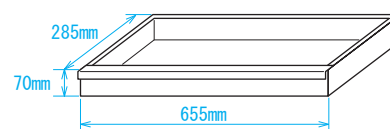
### FEATURES

- Deep drawer can store SK pin gauge carrying case

### SPECIFICATIONS

- Applicable case: PCS-1, PCS-2
- ※ Remove the cover case when storing
- Number of drawers: 5
- (2 sets each drawer, total of 10 sets can be stored)

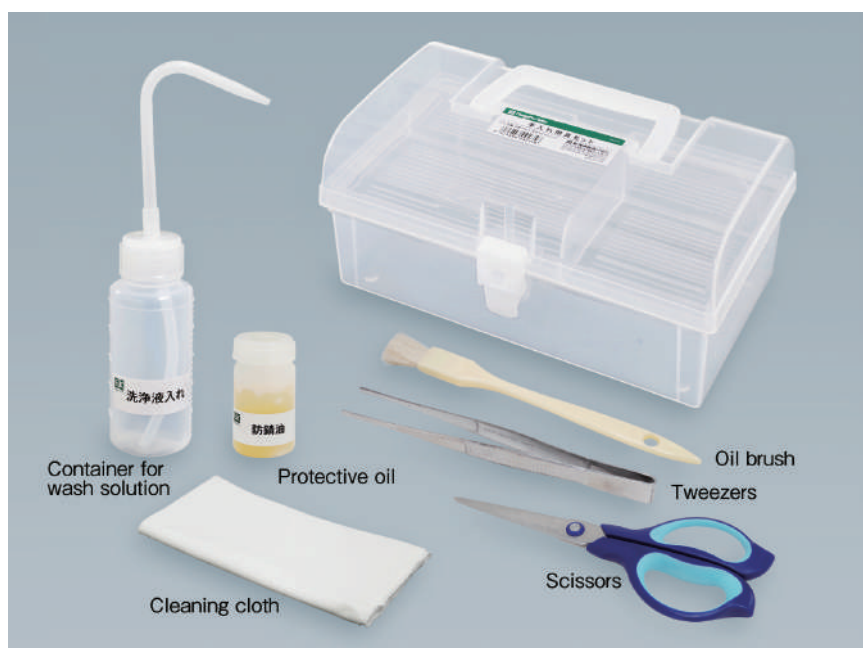
[Drawer dimensions (removed)]



※ Pin gauges are not included

| Order No. | Model No. | Product Dimensions (mm) | Weight |
|-----------|-----------|-------------------------|--------|
| 217930    | P-5C      | W825×D350×H630          | 36kg   |

## MAINTENANCE KIT



### USE

- For pin gauge maintenance

### FEATURES

- Provide with plastic case for easy to carry

| Order No. | Product Dimensions (mm) | Weight |
|-----------|-------------------------|--------|
| 992101    | W225×D135×H110          | 470g   |



HOW TO MOVE

## ALUMINUM PIN VISE

0.5mm of wide holding range on both sides

### USE

- GO/NOGO pin gauge holder - double ended

### MATERIAL

- Body: Aluminum

### FEATURES

- With special made resin collet. **Aluminum Pin Vise is strong against deformation but soft for Pin Gauge.**
- Aluminum pin vise can be used as limit gauge by holding pin gauges at both GO (green) and NOGO (red) sides

### SPECIFICATIONS

- Holding range: 0.5mm
- ※With exception of APV-0A: 0.3mm

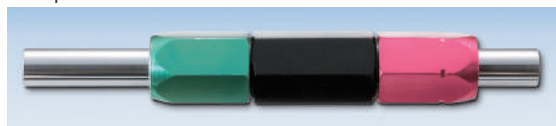


APV-17A

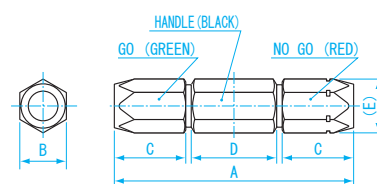


APV-6A

Example use



### ● DIMENSIONS



Units: mm

| Model No.     | A   | B  | C  | D  | E    |
|---------------|-----|----|----|----|------|
| APV-0A ~ 6B   | 91  | 14 | 23 | 40 | 16   |
| APV-7A ~ 9B   | 90  | 17 | 26 | 34 | 19.5 |
| APV-10A ~ 12B | 105 | 21 | 31 | 39 | 24   |
| APV-13A ~ 15B | 111 | 24 | 31 | 45 | 27.5 |
| APV-16A ~ 19B | 117 | 28 | 32 | 48 | 32   |

| Order No. | Model No. | Pin Gauge size(mm) | Weight |
|-----------|-----------|--------------------|--------|
| 216001    | APV-0A    | 0.200~ 0.500       | 30g    |
| 216002    | APV-0B    | 0.500~ 1.000       | 30g    |
| 216011    | APV-1A    | 1.000~ 1.500       | 30g    |
| 216012    | APV-1B    | 1.500~ 2.000       | 30g    |
| 216021    | APV-2A    | 2.000~ 2.500       | 30g    |
| 216022    | APV-2B    | 2.500~ 3.000       | 30g    |
| 216031    | APV-3A    | 3.000~ 3.500       | 30g    |
| 216032    | APV-3B    | 3.500~ 4.000       | 30g    |
| 216041    | APV-4A    | 4.000~ 4.500       | 30g    |
| 216042    | APV-4B    | 4.500~ 5.000       | 30g    |
| 216051    | APV-5A    | 5.000~ 5.500       | 30g    |
| 216052    | APV-5B    | 5.500~ 6.000       | 30g    |
| 216061    | APV-6A    | 6.000~ 6.500       | 30g    |
| 216062    | APV-6B    | 6.500~ 7.000       | 30g    |
| 216071    | APV-7A    | 7.000~ 7.500       | 40g    |
| 216072    | APV-7B    | 7.500~ 8.000       | 40g    |
| 216081    | APV-8A    | 8.000~ 8.500       | 40g    |
| 216082    | APV-8B    | 8.500~ 9.000       | 40g    |
| 216091    | APV-9A    | 9.000~ 9.500       | 40g    |
| 216092    | APV-9B    | 9.500~ 10.000      | 40g    |

| Order No. | Model No. | Pin Gauge size(mm) | Weight |
|-----------|-----------|--------------------|--------|
| 216101    | APV-10A   | 10.000~10.50       | 65g    |
| 216102    | APV-10B   | 10.50 ~11.00       | 65g    |
| 216111    | APV-11A   | 11.00 ~11.50       | 65g    |
| 216112    | APV-11B   | 11.50 ~12.00       | 65g    |
| 216121    | APV-12A   | 12.00 ~12.50       | 65g    |
| 216122    | APV-12B   | 12.50 ~13.00       | 65g    |
| 216131    | APV-13A   | 13.00 ~13.50       | 80g    |
| 216132    | APV-13B   | 13.50 ~14.00       | 80g    |
| 216141    | APV-14A   | 14.00 ~14.50       | 80g    |
| 216142    | APV-14B   | 14.50 ~15.00       | 80g    |
| 216151    | APV-15A   | 15.00 ~15.50       | 80g    |
| 216152    | APV-15B   | 15.50 ~16.00       | 80g    |
| 216161    | APV-16A   | 16.00 ~16.50       | 110g   |
| 216162    | APV-16B   | 16.50 ~17.00       | 110g   |
| 216171    | APV-17A   | 17.00 ~17.50       | 110g   |
| 216172    | APV-17B   | 17.50 ~18.00       | 110g   |
| 216181    | APV-18A   | 18.00 ~18.50       | 110g   |
| 216182    | APV-18B   | 18.50 ~19.00       | 110g   |
| 216191    | APV-19A   | 19.00 ~19.50       | 110g   |
| 216192    | APV-19B   | 19.50 ~20.00       | 110g   |

## SINGLE OPEN-END ALUMINUM PIN VISE

0.5mm of wide holding range. Specialized in holding function.

### USE

- Pin gauge holder

### MATERIAL

- Body: Aluminum

### FEATURES

- With special made resin collet.

**Aluminum Pin Vise is strong against deformation but soft for Pin Gauge.**

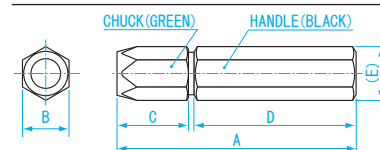
### SPECIFICATIONS

- Holding range: 0.5mm
- ※With exception of APV-0A-S: 0.3mm



APV-6A-S

### ● DIMENSIONS



Units: mm

| Model No.       | A  | B  | C  | D  | E    |
|-----------------|----|----|----|----|------|
| APV-0A-S ~ 6B-S | 86 | 14 | 23 | 60 | 16   |
| APV-7A-S ~ 9B-S | 87 | 17 | 26 | 59 | 19.5 |

| Order No. | Model No. | Pin Gauge size(mm) | Weight |
|-----------|-----------|--------------------|--------|
| 217001    | APV-0A-S  | 0.200~ 0.500       | 35g    |
| 217002    | APV-0B-S  | 0.500~ 1.000       | 35g    |
| 217011    | APV-1A-S  | 1.000~ 1.500       | 35g    |
| 217012    | APV-1B-S  | 1.500~ 2.000       | 35g    |
| 217021    | APV-2A-S  | 2.000~ 2.500       | 35g    |
| 217022    | APV-2B-S  | 2.500~ 3.000       | 35g    |
| 217031    | APV-3A-S  | 3.000~ 3.500       | 35g    |
| 217032    | APV-3B-S  | 3.500~ 4.000       | 35g    |
| 217041    | APV-4A-S  | 4.000~ 4.500       | 35g    |
| 217042    | APV-4B-S  | 4.500~ 5.000       | 35g    |

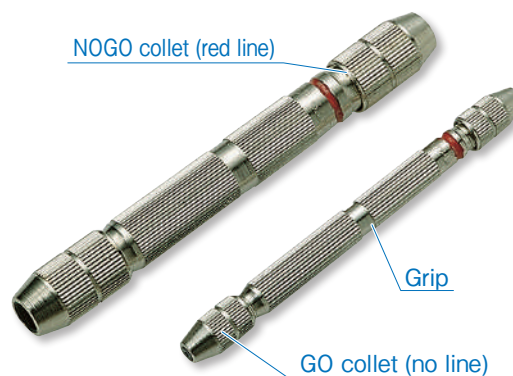
| Order No. | Model No. | Pin Gauge size(mm) | Weight |
|-----------|-----------|--------------------|--------|
| 217051    | APV-5A-S  | 5.000~ 5.500       | 35g    |
| 217052    | APV-5B-S  | 5.500~ 6.000       | 35g    |
| 217061    | APV-6A-S  | 6.000~ 6.500       | 35g    |
| 217062    | APV-6B-S  | 6.500~ 7.000       | 35g    |
| 217071    | APV-7A-S  | 7.000~ 7.500       | 43g    |
| 217072    | APV-7B-S  | 7.500~ 8.000       | 43g    |
| 217081    | APV-8A-S  | 8.000~ 8.500       | 43g    |
| 217082    | APV-8B-S  | 8.500~ 9.000       | 43g    |
| 217091    | APV-9A-S  | 9.000~ 9.500       | 43g    |
| 217092    | APV-9B-S  | 9.500~ 10.000      | 43g    |



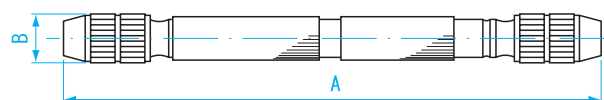
HOW TO MOVE

## PIN VISE

Can be used as limit gauge by installing two different size pin gauges.  
This is a significant cost savings over a limit plug gauge.



### DIMENSIONS



Units: mm

| Model No.  | A   | B  |
|------------|-----|----|
| PV-0A ~ 2B | 98  | 9  |
| PV-3A ~ 4B | 104 | 11 |
| PV-5A ~ 6B | 114 | 14 |
| PV-7A ~ 9B | 135 | 17 |

### USE

- GO/NOGO pin gauge holder - double ended

### MATERIAL

- Chrome plated brass

### FEATURES

- Pin vise can be used as limit gauge by holding pin gauges at both GO (no line) and NOGO (red line) sides

### SPECIFICATIONS

- Holding range: 0.5mm

※With exception of PV-0A: 0.3mm

| Order No. | Model No. | Pin Gauge Size (mm) | Part No. |      |        | Weight |
|-----------|-----------|---------------------|----------|------|--------|--------|
|           |           |                     | Ring     | Grip | Collet |        |
| 219001    | PV-0A     | 0.200 ~ 0.500       | B1       | B2   | B00    | 30g    |
| 219002    | PV-0B     | 0.500 ~ 1.000       | B1       | B2   | B01    | 30g    |
| 219011    | PV-1A     | 1.000 ~ 1.500       | B1       | B2   | B3     | 30g    |
| 219012    | PV-1B     | 1.500 ~ 2.000       | B1       | B2   | B4     | 30g    |
| 219021    | PV-2A     | 2.000 ~ 2.500       | B1       | B2   | B5     | 30g    |
| 219022    | PV-2B     | 2.500 ~ 3.000       | B1       | B2   | B6     | 30g    |
| 219031    | PV-3A     | 3.000 ~ 3.500       | B7       | B8   | B9     | 40g    |
| 219032    | PV-3B     | 3.500 ~ 4.000       | B7       | B8   | B10    | 40g    |
| 219041    | PV-4A     | 4.000 ~ 4.500       | B7       | B8   | B11    | 40g    |
| 219042    | PV-4B     | 4.500 ~ 5.000       | B7       | B8   | B12    | 40g    |
| 219051    | PV-5A     | 5.000 ~ 5.500       | B13      | B14  | B15    | 70g    |
| 219052    | PV-5B     | 5.500 ~ 6.000       | B13      | B14  | B16    | 80g    |
| 219061    | PV-6A     | 6.000 ~ 6.500       | B13      | B14  | B17    | 80g    |
| 219062    | PV-6B     | 6.500 ~ 7.000       | B13      | B14  | B18    | 80g    |
| 219071    | PV-7A     | 7.000 ~ 7.500       | B19      | B20  | B21    | 110g   |
| 219072    | PV-7B     | 7.500 ~ 8.000       | B19      | B20  | B22    | 110g   |
| 219081    | PV-8A     | 8.000 ~ 8.500       | B19      | B20  | B23    | 110g   |
| 219082    | PV-8B     | 8.500 ~ 9.000       | B19      | B20  | B24    | 110g   |
| 219091    | PV-9A     | 9.000 ~ 9.500       | B19      | B20  | B25    | 110g   |
| 219092    | PV-9B     | 9.500 ~ 10.000      | B19      | B20  | B26    | 110g   |

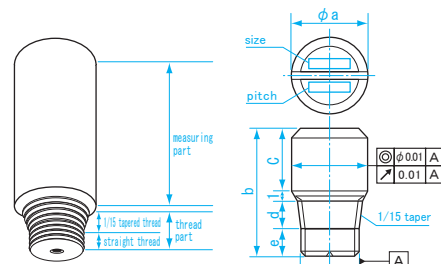


## THREAD PIN GAUGE RA

Suitable when screw holes on workpiece is not chamfered



### ● DIMENSIONS



### FEATURES

- Threaded portion has 1/15 taper starting at half way point to secure gauge to workpiece
- For measuring threaded hole which is difficult to measure with the existing thread pin gauge (e.g. threaded hole which is difficult to chamfer the opening or processed obliquely to work surface)
- Also suitable for deburring process

※ Dimensions are subject to change without notice

|          |                                                                                     |
|----------|-------------------------------------------------------------------------------------|
| Accuracy | Runout between measurement part and thread part : Model No. RA○○-1...within 0.01mm  |
|          | Runout between measurement part and thread part : Model No. RA○○-2...within 0.015mm |
| Material | Runout between measurement part and thread part : Model No. RA○○-3...within 0.02mm  |
|          | Accuracy of $\phi a$ : within $\pm 0.005\text{mm}$                                  |
|          | Screw : equivalent for JIS for the second grade                                     |

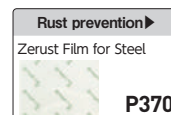
Material Stainless Steel (SUS303)

### <Size List>

| Order No. | Model No. | Size        | a (mm) | b (mm) | c (mm) | d (mm) | e (mm) |
|-----------|-----------|-------------|--------|--------|--------|--------|--------|
| 250014    | RA204-1   | M2 × P0.4   | 3      | 10.0   | 4.5    | 2.50   | 2.00   |
| 250015    | RA204-2   | M2 × P0.4   |        | 25.5   | 20.0   |        |        |
| 250016    | RA204-3   | M2 × P0.4   |        | 35.5   | 30.0   |        |        |
| 250017    | RA305-1   | M3 × P0.5   | 4      | 12.0   | 5.0    | 3.50   | 2.50   |
| 250018    | RA305-2   | M3 × P0.5   |        | 27.0   | 20.0   |        |        |
| 250019    | RA305-3   | M3 × P0.5   |        | 37.0   | 30.0   |        |        |
| 250020    | RA407-1   | M4 × P0.7   | 5      | 14.0   | 6.0    | 3.50   | 3.50   |
| 250021    | RA407-2   | M4 × P0.7   |        | 28.0   | 20.0   |        |        |
| 250022    | RA407-3   | M4 × P0.7   |        | 38.0   | 30.0   |        |        |
| 250023    | RA508-1   | M5 × P0.8   | 6      | 16.0   | 7.0    | 4.00   | 4.00   |
| 250024    | RA508-2   | M5 × P0.8   |        | 29.0   | 20.0   |        |        |
| 250025    | RA508-3   | M5 × P0.8   |        | 39.0   | 30.0   |        |        |
| 250026    | RA610-1   | M6 × P1.0   | 7      | 18.0   | 8.0    | 4.00   | 5.00   |
| 250027    | RA610-2   | M6 × P1.0   |        | 30.0   | 20.0   |        |        |
| 250028    | RA610-3   | M6 × P1.0   |        | 40.0   | 30.0   |        |        |
| 250029    | RA8125-1  | M8 × P1.25  | 9      | 19.0   | 8.5    | 4.50   | 7.00   |
| 250030    | RA8125-2  | M8 × P1.25  |        | 30.5   | 20.0   |        |        |
| 250031    | RA8125-3  | M8 × P1.25  |        | 40.5   | 30.0   |        |        |
| 250032    | RA1015-1  | M10 × P1.5  | 11     | 21.0   | 8.5    | 5.50   | 6.00   |
| 250033    | RA1015-2  | M10 × P1.5  |        | 32.5   | 20.0   |        |        |
| 250034    | RA1015-3  | M10 × P1.5  |        | 42.5   | 30.0   |        |        |
| 250035    | RA1215-1  | M12 × P1.5  | 13     | 23.0   | 8.5    | 6.50   | 7.00   |
| 250036    | RA1215-2  | M12 × P1.5  |        | 34.5   | 20.0   |        |        |
| 250037    | RA1215-3  | M12 × P1.5  |        | 44.5   | 30.0   |        |        |
| 250038    | RA12175-1 | M12 × P1.75 | 15     | 23.0   | 8.5    | 6.50   | 7.00   |
| 250039    | RA12175-2 | M12 × P1.75 |        | 34.5   | 20.0   |        |        |
| 250040    | RA12175-3 | M12 × P1.75 |        | 44.5   | 30.0   |        |        |
| 250041    | RA1415-1  | M14 × P1.5  | 17     | 23.5   | 8.5    | 6.50   | 7.50   |
| 250042    | RA1415-2  | M14 × P1.5  |        | 35.0   | 20.0   |        |        |
| 250043    | RA1415-3  | M14 × P1.5  |        | 45.0   | 30.0   |        |        |
| 250044    | RA1615-1  | M16 × P1.5  | 19     | 23.5   | 8.5    | 7.00   | 8.00   |
| 250045    | RA1615-2  | M16 × P1.5  |        | 35.0   | 20.0   |        |        |
| 250046    | RA1615-3  | M16 × P1.5  |        | 45.0   | 30.0   |        |        |
| 250047    | RA1815-1  | M18 × P1.5  | 19     | 24.5   | 8.5    | 7.00   | 8.00   |
| 250048    | RA1815-2  | M18 × P1.5  |        | 36.0   | 20.0   |        |        |
| 250049    | RA1815-3  | M18 × P1.5  |        | 46.0   | 30.0   |        |        |

# THREAD PIN GAUGE

Enables easy threaded hole centering and locating

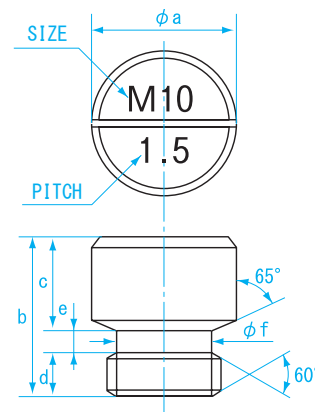


## FEATURES

- Easy handling with simple tool
- Enables to indicate the center of threaded hole
- More accurate, economical and easier than other gauges
- Made with stainless steel, prevents the thread pin gauge from rust
- Tapered bottom of the measurement area secures fit with work and allows high accuracy measurement



## ● DIMENSIONS



|          |                                                                                                                                                                             |
|----------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Accuracy | Runout between measuring head and screw: Below 0.01mm<br>Accuracy of measuring head (size: a): Below $\pm 0.005\text{mm}$<br>Screw: equivalent for JIS for the second grade |
| Material | Stainless steel (SUS303)                                                                                                                                                    |

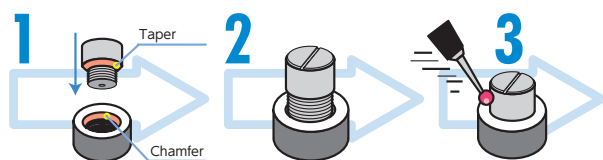
## <Size List>

| Order No. | Model No. | Size        | a (mm) | b (mm) | c (mm) | d (mm) | e (mm) | f (mm) |
|-----------|-----------|-------------|--------|--------|--------|--------|--------|--------|
| 360204    | THP-0204  | M2 × P0.4   | 4      | 9.5    |        | 3      | 0.5    | 1.44   |
| 360305    | THP-0305  | M3 × P0.5   | 5      |        | 6      |        |        | 2.30   |
| 360407    | THP-0407  | M4 × P0.7   | 6      | 11     |        | 4.3    | 0.7    | 3.02   |
| 360508    | THP-0508  | M5 × P0.8   | 7      |        |        |        |        | 3.88   |
| 360607    | THP-06075 | M6 × P0.75  | 8      | 14     | 8      | 5      | 1      | 4.95   |
| 360610    | THP-0610  | M6 × P1.0   |        |        |        |        |        | 4.60   |
| 360810    | THP-0810  | M8 × P1.0   | 10     | 17     |        | 5.5    |        | 6.60   |
| 360812    | THP-08125 | M8 × P1.25  |        |        |        |        |        | 6.25   |
| 361010    | THP-1010  | M10 × P1.0  | 12     | 18     |        | 6.5    |        | 8.60   |
| 361012    | THP-10125 | M10 × P1.25 |        |        |        |        |        | 8.25   |
| 361015    | THP-1015  | M10 × P1.5  |        |        |        |        |        | 7.90   |
| 361210    | THP-1210  | M12 × P1.0  | 14     | 19     | 10     | 7.5    | 1.5    | 10.60  |
| 361212    | THP-12125 | M12 × P1.25 |        |        |        |        |        | 10.25  |
| 361215    | THP-1215  | M12 × P1.5  |        |        |        |        |        | 9.90   |
| 361217    | THP-12175 | M12 × P1.75 |        |        |        |        |        | 9.55   |
| 361415    | THP-1415  | M14 × P1.5  | 16     | 20     |        | 8.5    |        | 11.90  |
| 361420    | THP-1420  | M14 × P2.0  |        |        |        |        |        | 11.20  |
| 361615    | THP-1615  | M16 × P1.5  | 18     |        |        | 8      |        | 13.90  |
| 361620    | THP-1620  | M16 × P2.0  |        |        |        |        |        | 13.20  |
| 361825    | THP-1825  | M18 × P2.5  | 20     | 22     |        | 10     |        | 14.50  |
| 362025    | THP-2025  | M20 × P2.5  | 22     |        |        |        |        | 16.50  |

※ Custom made is also available

## How to use Thread Pin Gauge

- Easily locate threaded hole position with thread pin gauge  
CMM can Easily attain the hole center using thread pin gauge



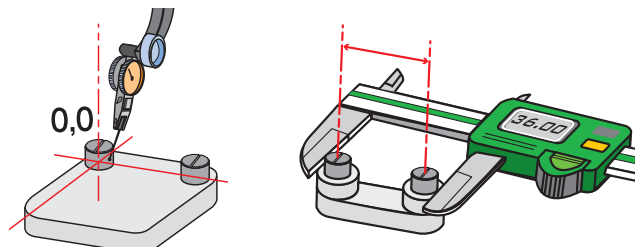
1. Prepare a thread pin gauge the same size as the threaded hole

2. Hand screw the thread pin gauge into the threaded hole

3. Measure!

## Example of use

- Reference position established with two threaded holes
- Pitch measurement between threaded holes



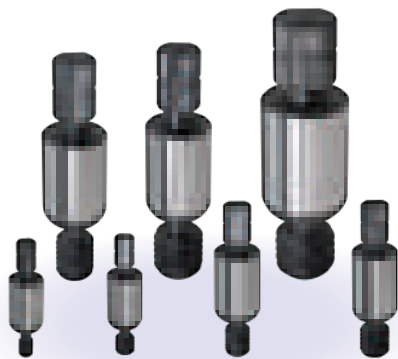
## SCREW POSITION GAUGE

Quick and easy position measuring of screw holes.

The accuracy of measuring is  $\pm 3 \mu\text{m}$ .

High-precision screw position measuring to proceed higher quality production and processing.

- ◇Effective on cost and time reduction.
- ◇"Knurled handle" will not require any tool for detaching.
- ◇Point of origin can set by using screw holes.
- ◇Accurate measurement in fast and cost-cutting method.



### FEATUERS

- The position and pitch of screw holes can be measured with high accuracy
- Fixed with "Knurled handle" to avoid touching the gauge with bare hands
- The bottom of the measured amount of the screw position gauge has an R surface shape, and the screw position gauge is carried to the center of the screw hole
- ※ In order to measure with high accuracy with a screw position gauge, chamfering that is processed at the same time as the screw part is required.

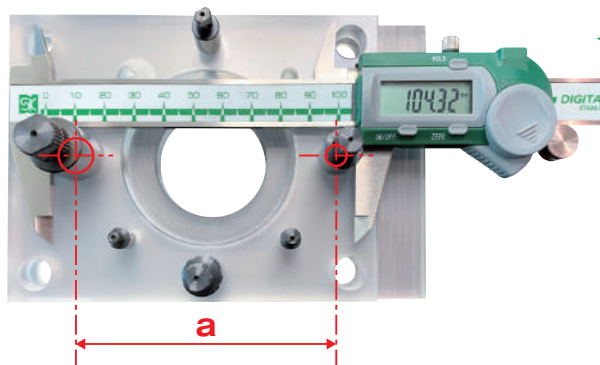
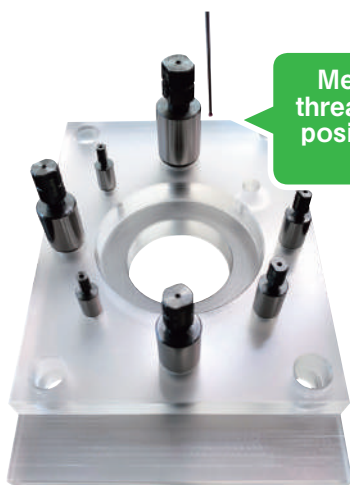
### ACCURACY

- The measuring part (pin gauge) is within  $\pm 0.003 \text{ mm}$  with respect to the outer diameter, and the coaxiality (run out accuracy) between the threaded part and the measuring part is within  $0.01 \text{ mm}$
- The screw grade is equivalent to JIS2 grade (JIS B 0205)

### METERIAL

- Gauge steel SKS. The threaded part is machined (non-heat treated).

## Example of use



### Pitch measurement between threaded holes with caliper

$$\text{Dimension "a"} = \frac{(\text{Dia. of gauge's measuring part} + \text{Dia. of gauge's measuring part})}{2} = \text{Measured value}$$

The caliper in the figure shows 104.32 mm.

※ (The screw position gauge sizes shown in the figure are for M6 and M10.)

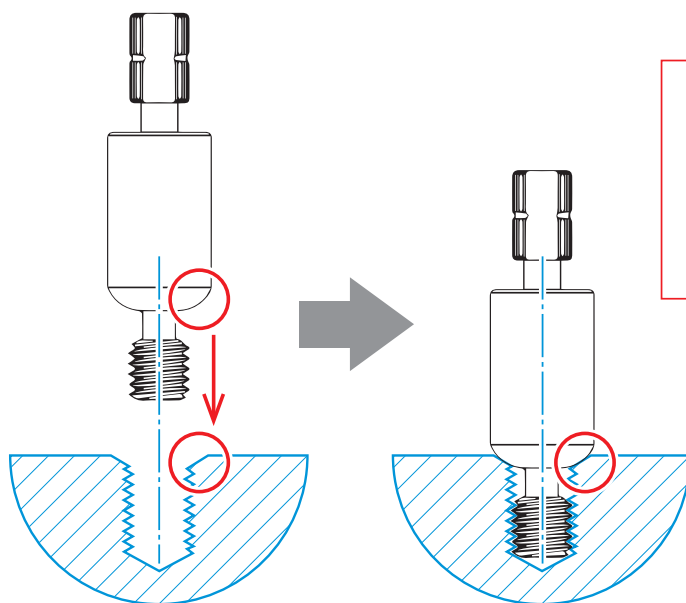
$$\rightarrow 104.32 - \frac{(9 + 13)}{2} = 93.32$$

If the screw position gauges of the same size are used, dimension "a" = measured value - (Dia. of gauge's measurement part).

Example) When both screw position gauge sizes are M10:  
dimension "a" = 104.32 - 13 = 91.32

## SCREW POSITION GAUGE

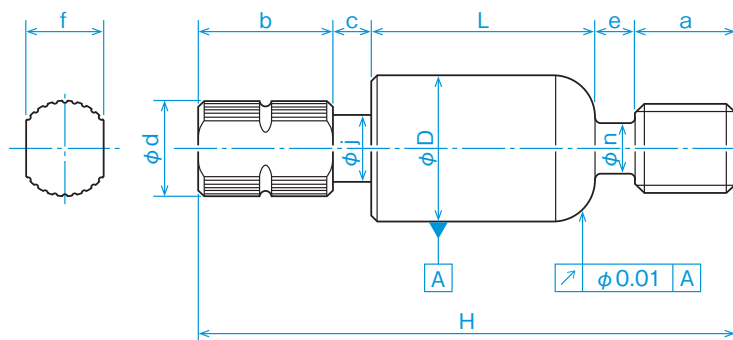
## FEATURES



There is an **R-shaped guide** between measuring part of the gauge and the screw. This guide will lead the gauge to the center of the screw hole by fitting **the chamfer of the screw hole**.

## ● DIMENSIONS

Units: mm



| Order No. | Model No. | Size     | H (mm) | a (mm) | $\phi n$ (mm) | e (mm) | $\phi D$ (mm) | L (mm) | f (mm) | $\phi d$ (mm) | b (mm) | $\phi j$ (mm) | c (mm) |
|-----------|-----------|----------|--------|--------|---------------|--------|---------------|--------|--------|---------------|--------|---------------|--------|
| 320035    | NPG-03050 | M3×0.5   | 26     | 4      | 2.2           | 2      | 7             | 12     | 3.2    | 4             | 6      | 2.5           | 2      |
| 320047    | NPG-04070 | M4×0.7   | 26     | 4      | 2.2           | 2      | 7             | 12     | 3.2    | 4             | 6      | 2.5           | 2      |
| 320058    | NPG-05080 | M5×0.8   | 33     | 6      | 3             | 2      | 9             | 15     | 4      | 5.5           | 8      | 3.5           | 2      |
| 320061    | NPG-06100 | M6×1.0   | 33     | 6      | 3             | 2      | 9             | 15     | 4      | 5.5           | 8      | 3.5           | 2      |
| 320082    | NPG-08125 | M8×1.25  | 48     | 9      | 4.5           | 3.5    | 13            | 20     | 7      | 8.5           | 12     | 6             | 3.5    |
| 320105    | NPG-10150 | M10×1.5  | 48     | 9      | 4.5           | 3.5    | 13            | 20     | 7      | 8.5           | 12     | 6             | 3.5    |
| 320127    | NPG-12175 | M12×1.75 | 55     | 10     | 6             | 3.5    | 17            | 25     | 10     | 12            | 13     | 8             | 3.5    |



## STEEL RING GAUGE

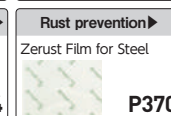


HOW TO MOVE

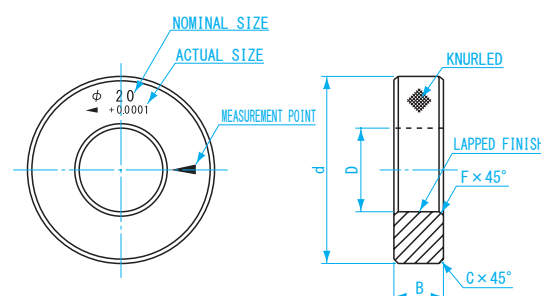
Master ring gauge for internal diameter measurement. A wide range of sizes are in stock while custom size ring gauge is also available upon request.

### SUB-ZERO (Cryogenic hardened) TREATMENT STABILIZATION TREATMENT LAPPED FINISH

Ring gauges are used for zero point adjustment as master gauges for Hall tests, bore gauge, inside micrometers, dial caliper gauge, inner diameter measurement, inside dial comparator gauge, etc



### ● DIMENSIONS



### MATERIAL

- Alloy tool steel (SKS3)

### FEATURES

- Provided with inspection report

### SPECIFICATIONS

| Size (mm)       | Step (mm) | Out of Roundness (μm) | Diameter Inequality (μm) | Tolerance (μm) | Hardness (HV)   |
|-----------------|-----------|-----------------------|--------------------------|----------------|-----------------|
| 1 to 30         | 0.1 step  | 0.5                   | 1.0                      | ± 1.0          | 653<br>}<br>772 |
| Over 30 to 50   |           | 0.8                   | 1.6                      | ± 1.5          |                 |
| Over 50 to 60   | 0.5 step  | 1.0                   | 2.0                      | ± 2.0          |                 |
| Over 60 to 80   |           |                       |                          |                |                 |
| Over 80 to 100  |           |                       |                          |                |                 |
| Over 100 to 200 | 5.0 step  | 2.0                   | 4.0                      | ± 5.0          |                 |

- Surface roughness: Within Ra0.1μm
- Squareness: 0.05 / φ100
- Parallelism: Within 0.015mm

(Standard Size List)

| Size (mm)       | Step (mm) | Step (mm)                                                                               |
|-----------------|-----------|-----------------------------------------------------------------------------------------|
| 1 to 50         | 0.1 step  | 1.0•1.1•1.2•1.3•1.4•1.5•1.6•1.7•1.8•1.9•2.0•2.1•2.2•2.3•2.4•2.5•2.6•2.7.....50.0        |
| Over 50 to 100  | 0.5 step  | 50.5•51.0•51.5•52.0•52.5•53.0•53.5•54.0•54.5•55.0•55.5•56.0•56.5•57.0•57.5.....100.0    |
| Over 100 to 200 | 5.0 step  | 105.0•110.0•115.0•120.0•125.0•130.0•135.0•140.0•145.0•150.0•155.0•160.0•165.0.....200.0 |

### Size List

※ Reference value

| Size<br>D (mm)  | Outside<br>Diameter<br>d (mm) | Thickness<br>B (mm) | Chamfering for<br>outside diameter<br>C (mm) <sup>※</sup> | Chamfering for<br>inside diameter<br>F (mm) <sup>※</sup> | Remarks | Weight    |
|-----------------|-------------------------------|---------------------|-----------------------------------------------------------|----------------------------------------------------------|---------|-----------|
| 1 to 2.5        | 22                            | 4                   | 0.4                                                       | 0.3                                                      | Knurled | 10g       |
| Over 2.5 to 5   |                               | 5                   |                                                           |                                                          |         | 10g       |
| Over 5 to 10    | 32                            | 8                   | 0.8                                                       | 0.5                                                      |         | 50g       |
| Over 10 to 15   | 38                            | 10                  | 80g                                                       |                                                          |         |           |
| Over 15 to 20   | 45                            | 12                  | 1.2                                                       | 1.0                                                      |         | 100g      |
| Over 20 to 25   | 53                            | 14                  |                                                           |                                                          |         | 200g      |
| Over 25 to 32   | 63                            | 16                  | 300g                                                      |                                                          |         |           |
| Over 32 to 40   | 71                            | 18                  | 400g                                                      |                                                          |         |           |
| Over 40 to 50   | 85                            | 20                  | 2.0                                                       |                                                          |         | 1.5       |
| Over 50 to 60   | 100                           | 24                  |                                                           | 0.9~1.1kg                                                |         |           |
| Over 60 to 70   | 112                           |                     |                                                           | 1.1~1.3kg                                                |         |           |
| Over 70 to 80   | 125                           |                     |                                                           | 1.4~1.6kg                                                |         |           |
| Over 80 to 90   | 140                           |                     |                                                           | 1.7~1.9kg                                                |         |           |
| Over 90 to 100  | 160                           |                     |                                                           | 2.3~2.6kg                                                |         |           |
| Over 100 to 110 | 180                           | 30                  |                                                           | 3.7~4.1kg                                                |         |           |
| Over 110 to 120 | 190                           | 35                  |                                                           | 4.7~5.1kg                                                |         |           |
| Over 120 to 130 | 200                           |                     | 5.0~5.5kg                                                 |                                                          |         |           |
| Over 130 to 140 | 210                           | 38                  | 2.4                                                       | 2.0                                                      |         | 5.7~6.3kg |
| Over 140 to 160 | 230                           | 40                  |                                                           |                                                          |         | 6.6~8.2kg |
| Over 160 to 180 | 260                           |                     |                                                           |                                                          |         | 8.6~10kg  |
| Over 180 to 200 | 280                           |                     | 9.4~11kg                                                  |                                                          |         |           |

Sizes available: 1.0 ~ 520.0mm (Please contact us with request)

## STEEL RING GAUGE LARGE SIZE



MTO product



HOW TO MOVE

A must-see for heavy equipment related companies!

Up to 520mm manufacturable. Custom size ring gauge is also available upon request.

SUB-ZERO (Cryogenic hardened) TREATMENT  
STABILIZATION TREATMENT

■ Provided with aluminum case



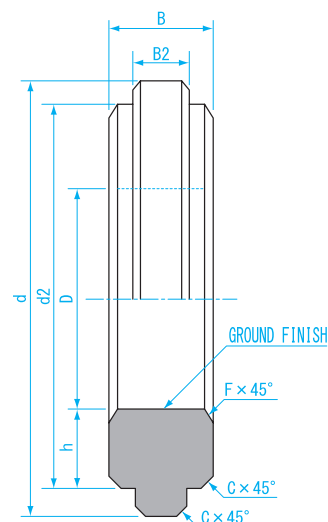
## MATERIAL

- Alloy tool steel (SKS3)

## FEATURES

- Provided with inspection report

## ● DIMENSIONS



## SPECIFICATIONS

| Size<br>(mm)    | Step<br>(mm) | Out of Roundness<br>( μ m) | Diameter Inequality<br>( μ m) | Tolerance<br>( μ m) | Hardness<br>(HV) |
|-----------------|--------------|----------------------------|-------------------------------|---------------------|------------------|
| Over 200 to 230 | 5.0 step     | 5.0                        | 10.0                          | ± 7.0               | 653<br>772       |
| Over 230 to 300 | 10.0 step    |                            |                               | ± 8.0               |                  |
| Over 300 to 400 |              |                            |                               | ± 9.0               |                  |
| Over 400 to 500 |              |                            |                               | ± 10.0              |                  |
| Over 500 to 520 |              |                            |                               |                     |                  |

- Surface roughness: Within Ra0.2μm
- Squareness: 0.1/φ450
- Parallelism: Within 0.025mm

## Size List

※ Reference value

| Size D (mm)     | Outside Diameter (mm) |         | Thickness (mm) |    | h (mm) | Chamfering for outside diameter C (mm) * | Chamfering for inside diameter F (mm) * | Remarks     | Weight (kg) |
|-----------------|-----------------------|---------|----------------|----|--------|------------------------------------------|-----------------------------------------|-------------|-------------|
|                 | d                     | d2      | B              | B2 |        |                                          |                                         |             |             |
| Over 200 to 230 | 310                   | 250~270 | 45             | 25 | 20     | 2.0                                      | 2.5                                     | NOT Knurled | 9~10        |
| Over 230 to 260 | 340                   | 280~300 |                |    |        |                                          |                                         |             | 11~14       |
| Over 260 to 290 | 370                   | 310~330 |                |    |        |                                          |                                         |             | 11~13       |
| Over 290 to 320 | 400                   | 340~360 |                |    |        |                                          |                                         |             | 12~14       |
| Over 320 to 360 | 440                   | 380~410 |                |    |        |                                          |                                         |             | 14~16       |
| Over 360 to 400 | 480                   | 420~450 | 50             | 25 | 25     | 2.0                                      | 2.5                                     | NOT Knurled | 15~18       |
| Over 400 to 450 | 540                   | 460~500 |                |    |        |                                          |                                         |             | 19~24       |
| Over 450 to 500 | 600                   | 510~550 |                |    |        |                                          |                                         |             | 23~29       |
| Over 500 to 520 | 660                   | 560~600 |                |    |        |                                          |                                         |             | 27~33       |

| Order No. | Model No. | Size (mm) |
|-----------|-----------|-----------|
| 420500    | RG-205    | 205.0     |
| 421000    | RG-210    | 210.0     |
| 421500    | RG-215    | 215.0     |
| 422000    | RG-220    | 220.0     |
| 422500    | RG-225    | 225.0     |
| 423000    | RG-230    | 230.0     |
| 424000    | RG-240    | 240.0     |
| 425000    | RG-250    | 250.0     |
| 426000    | RG-260    | 260.0     |
| 427000    | RG-270    | 270.0     |
| 428000    | RG-280    | 280.0     |
| 429000    | RG-290    | 290.0     |
| 430000    | RG-300    | 300.0     |
| 431000    | RG-310    | 310.0     |
| 432000    | RG-320    | 320.0     |
| 433000    | RG-330    | 330.0     |
| 434000    | RG-340    | 340.0     |
| 435000    | RG-350    | 350.0     |

| Order No. | Model No. | Size (mm) |
|-----------|-----------|-----------|
| 436000    | RG-360    | 360.0     |
| 437000    | RG-370    | 370.0     |
| 438000    | RG-380    | 380.0     |
| 439000    | RG-390    | 390.0     |
| 440000    | RG-400    | 400.0     |
| 441000    | RG-410    | 410.0     |
| 442000    | RG-420    | 420.0     |
| 443000    | RG-430    | 430.0     |
| 444000    | RG-440    | 440.0     |
| 445000    | RG-450    | 450.0     |
| 446000    | RG-460    | 460.0     |
| 447000    | RG-470    | 470.0     |
| 448000    | RG-480    | 480.0     |
| 449000    | RG-490    | 490.0     |
| 450000    | RG-500    | 500.0     |
| 451000    | RG-510    | 510.0     |
| 452000    | RG-520    | 520.0     |

## CARBIDE RING GAUGE

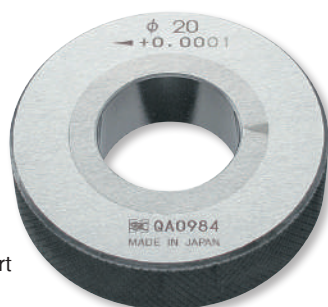


HOW TO MOVE

Made of highly-durable material.

Inner ring made of carbide, highly-durable material.

## LAPPED FINISH



## MATERIAL

- Steel with carbide insert

## FEATURES

- Durable and long life
- The coefficient of thermal expansion is small so better tolerates temperature changes
- Less likely to be damaged due to high hardness
- Economical - longer span of periodic calibration compared to steel gauge
- Provided with inspection report

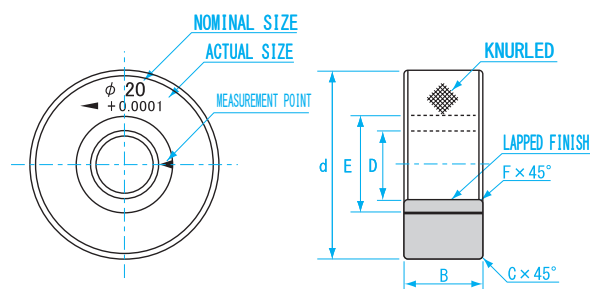
## SPECIFICATIONS

| Size (mm)     | Step (mm) | Out of Roundness (μm) | Diameter Inequality (μm) | Tolerance (μm) | Hardness (HV) |
|---------------|-----------|-----------------------|--------------------------|----------------|---------------|
| 1 to 30       | —         | 0.5                   | 1.0                      | ±1             | 1,200         |
| Over 30 to 50 | —         | 0.8                   | 1.6                      | ±1.5           |               |

- Surface roughness: Within Ra0.1μm
- Squareness: 0.05/φ100
- Parallelism: Within 0.015mm

Sizes available: 1.0 ~ 50.0mm (Please contact us with request)

## ● DIMENSIONS



## Size List

※ Reference value

| Size<br>D (mm) | Diameter of<br>Carbide part<br>E (mm) | Outside<br>Diameter<br>d (mm) | Thickness<br>B (mm) | Chamfering for<br>outside Diameter<br>C (mm) | Chamfering for<br>inside Diameter<br>F (mm) |
|----------------|---------------------------------------|-------------------------------|---------------------|----------------------------------------------|---------------------------------------------|
| 1 to 2.5       | 8                                     | 22                            | 4                   | 0.4                                          | 0.3                                         |
| Over 2.5 to 5  | 11                                    |                               | 5                   |                                              |                                             |
| Over 5 to 10   | 16                                    | 32                            | 8                   | 0.8                                          | 0.5                                         |
| Over 10 to 15  | 21                                    | 38                            | 10                  | 1.2                                          |                                             |
| Over 15 to 20  | 28                                    | 45                            | 12                  |                                              | 1.5                                         |
| Over 20 to 25  | 33                                    | 53                            | 14                  |                                              |                                             |
| Over 25 to 32  | 40                                    | 63                            | 16                  |                                              |                                             |
| Over 32 to 40  | 50                                    | 71                            | 18                  |                                              |                                             |
| Over 40 to 50  | 60                                    | 85                            | 20                  | 2.0                                          |                                             |

## CERAMIC RING GAUGE



HOW TO MOVE

Made of highly-durable material. Less affected by thermal expansion as well as free from rust.

Excellent workability and economy.

## LAPPED FINISH



## MATERIAL

- Ceramics (Zirconia)

## FEATURES

- Ceramic material is less susceptible to abrasion and aged deterioration than steel
- Free from rust and corrosion, and easy maintenance
- Non-magnetic body
- Does not deform with damage, resists scratches and forming burrs
- Lightweight and easy handling
- Size is laser marked
- Provided with inspection report

## Material Data

| List                             | Material            | Ceramics (Zirconia) |
|----------------------------------|---------------------|---------------------|
| Specific Gravity                 | —                   | 6                   |
| Hardness                         | HV                  | 1,250               |
| Bending strength                 | MPa                 | 1,000               |
| Young's Modulus                  | GPa                 | 200                 |
| Coefficient of thermal expansion | 10 <sup>-6</sup> /K | 9.5                 |
| Heat conductivity                | W/m·K               | 3                   |

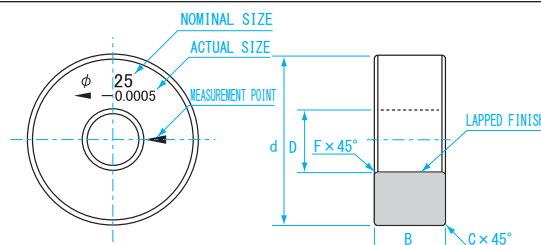
Sizes available: 3.0 ~ 50.0mm (Please contact us with request)

## SPECIFICATIONS

| Size (mm)     | Step (mm) | Out of Roundness (μm) | Diameter Inequality (μm) | Tolerance (μm) |
|---------------|-----------|-----------------------|--------------------------|----------------|
| 3 to 30       | 0.5 step  | 0.5                   | 1.0                      | ±1             |
| Over 30 to 50 |           | 0.8                   | 1.6                      | ±1.5           |

- Surface roughness: Within Ra0.1μm
- Squareness: 0.05/φ100
- Parallelism: Within 0.015mm

## ● DIMENSIONS



## Size List

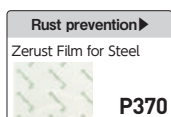
※ Reference value

| Size<br>D (mm) | Outside Diameter<br>d (mm) | Thickness<br>B (mm) | Chamfering for<br>outside diameter<br>C (mm) | Chamfering for<br>inside diameter<br>F (mm) |
|----------------|----------------------------|---------------------|----------------------------------------------|---------------------------------------------|
| 3 to 10        | 32                         | 8                   | 0.8                                          | 0.5                                         |
| Over 10 to 15  | 38                         | 10                  | 1.2                                          |                                             |
| Over 15 to 20  | 45                         | 12                  |                                              |                                             |
| Over 20 to 25  | 53                         | 14                  |                                              |                                             |
| Over 25 to 32  | 63                         | 16                  | 1.5                                          | 1.0                                         |
| Over 32 to 40  | 71                         | 18                  | 2.0                                          |                                             |
| Over 40 to 50  | 85                         | 20                  |                                              |                                             |

STEEL RING GAUGE  
WITH MAINTENANCE LINE

MTO product

Maintenance line series  
ring gauge now available.  
Easy checking for gauge wear-out.

Custom Sizes  
AvailablePlease contact us  
for inquiry

## MATERIAL

- Alloy tool steel (SKS3)

## FEATURES

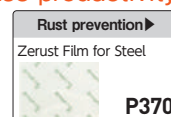
- Maintenance line on steel ring gauge allows easy checking for gauge wear-out
- When line disappears, wear is more than 1μm
- Available for sizes: 15~50mm (1mm step)
- Provided with inspection report

RING GAUGE  
WITH PROTECTIVE COVER

MTO product

No-slip and easy to handle, will increase productivity  
**LAPPED FINISH**

CERAMIC RING GAUGE  
(with protective cover)



CARBIDE RING GAUGE  
(with protective cover)

STEEL RING GAUGE  
(with protective cover)

## MATERIAL

- Protective cover: Anodized aluminum
- Gauge: Steel / Carbide / Ceramic

## FEATURES

- A ring gauge embedded in aluminum protective cover
- Covered gauge is easier to handle with dirty hands
- Less susceptible to thermal expansion when holding a gauge by hand
- Protects from chipping when dropped
- Provided with inspection report

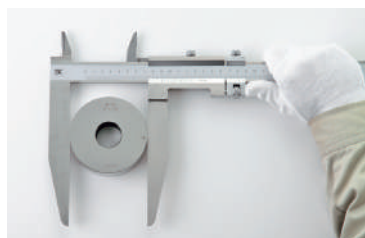
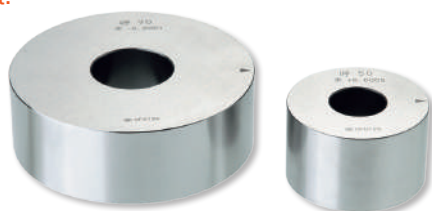
## SPECIFICATIONS

| Size (mm)                     | Step (mm) | Out of Roundness (μm) | Diameter Inequality (μm) | Tolerance (μm) |
|-------------------------------|-----------|-----------------------|--------------------------|----------------|
| 1 to 2 (Steel & Carbide only) | 1 step    | 0.5                   | 1.0                      | ±1             |
| Over 2 to 30                  | 1 step    | 0.5                   | 1.0                      | ±1             |
| Over 30 to 50                 | 1 step    | 0.8                   | 1.6                      | ±1.5           |

- Surface roughness: Within Ra0.1μm

## STEEL RING GAUGE OD MODEL

Available from φ 40-400mm.  
Simple calibration or 0 adjustment of outside measuring instrument.



## USE

- For quick calibration of micrometer

## MATERIAL

- Alloy tool steel (SKS3)

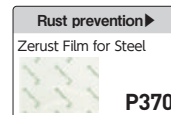
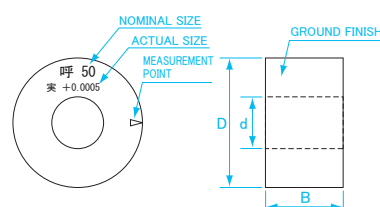
## FEATURES

- Custom sizes are available φ40~400mm
- Provided with inspection report

## SPECIFICATIONS

- Hardness: HV653~772

## ● DIMENSIONS



## SPECIFICATIONS

| SizeD (mm)      | OD tolerance (μm) | Out of Roundness (μm) | Diameter Inequality (μm) | Thickness B (mm) | Hole Diameter (mm) |
|-----------------|-------------------|-----------------------|--------------------------|------------------|--------------------|
| 40 to 50        | ±3                | 1.5                   | 3                        | 30               | 20                 |
| Over 50 to 70   | ±5                | 2.5                   | 5                        |                  | 30                 |
| Over 70 to 100  |                   |                       |                          |                  | 40                 |
| Over 100 to 150 | ±10               | 5                     | 10                       |                  | 50                 |
| Over 150 to 200 |                   |                       |                          |                  | 80                 |
| Over 200 to 300 |                   |                       |                          |                  | 160                |
| Over 300 to 350 |                   |                       |                          |                  | 200                |
| Over 350 to 375 |                   |                       |                          |                  | 250                |
| Over 375 to 400 |                   |                       |                          |                  |                    |

| Order No. | Model No. | SizeD (mm) | OD tolerance (μm) | Out of Roundness (μm) | Diameter Inequality (μm) | Thickness B (mm) |
|-----------|-----------|------------|-------------------|-----------------------|--------------------------|------------------|
| 470004    | SRO-40    | 40         | ±3                | 1.5                   | 3                        | 30               |
| 470005    | SRO-50    | 50         |                   |                       |                          |                  |
| 470006    | SRO-60    | 60         | ±5                | 2.5                   | 5                        |                  |
| 470007    | SRO-70    | 70         |                   |                       |                          |                  |
| 470008    | SRO-80    | 80         |                   |                       |                          |                  |
| 470009    | SRO-90    | 90         |                   |                       |                          |                  |
| 470010    | SRO-100   | 100        |                   |                       |                          |                  |

Sizes available: φ 40 ~ 400mm (Please contact us with request)



## SPECIAL SHAPE - MULTIPLE-STEP GAUGE

MTO product

## USE

- For quick calibration of micrometers (0~25mm)

## MATERIAL

- Alloy tool steel (SKS3)

## FEATURES

- OD pitch: 5・10・15・20・25mm integrated type gauge



※Sample image

Custom Designs  
AvailablePlease contact us  
for inquiry

## SPECIAL SHAPE - MULTIPLE-STEP GAUGE / OD MODEL

MTO product

## USE

- For calibration or 0 adjustment

## MATERIAL

- Alloy tool steel (SKS3)

## FEATURES

- Size combination is arranged on request



※Sample image

Custom Designs  
AvailablePlease contact us  
for inquiry

## SPECIAL SHAPE - STEP GAUGE / ID MODEL

MTO product

## USE

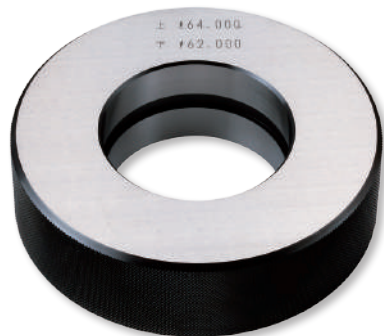
- For 0 adjustment of dial bore gauge

## MATERIAL

- Alloy tool steel (SKS3)

## FEATURES

- Size combination is arranged on request



※Sample image

Custom Sizes  
AvailablePlease contact us  
for inquiry

## SPECIAL SHAPE - CUT OUT

MTO product

## USE

- The special shape allows to hold the ring gauge with a fixture to prevent the gauge from moving

## MATERIAL

- Alloy tool steel (SKS3)



※Sample image

Custom Designs  
AvailablePlease contact us  
for inquiry

# STEEL LIMIT PLUG GAUGE



HOW TO MOVE

For GO/NOGO inspection of hole diameter

## Gauge SUB-ZERO (Cryogenic hardened) TREATMENT

### USE

- For hole diameter inspection

### MATERIAL

- Gauge: Alloy tool steel
- Handle: Aluminum

### FEATURES

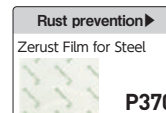
- GO/NOGO gauge for testing fit of shaft in a hole based on maximum and minimum allowable dimensions
- Provided with inspection report

### SPECIFICATIONS

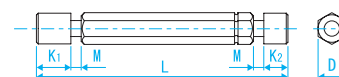
- Class H7 for manufacturing
- Hardness HV660~780
- Surface roughness: Within Ra0.2μm



LP10-H7



### ● DIMENSIONS



| Order No. | Model No. | Size | L (mm) | K <sub>1</sub> (mm) | K <sub>2</sub> (mm) | M (mm) | D (mm) | Weight |
|-----------|-----------|------|--------|---------------------|---------------------|--------|--------|--------|
| 397003    | LP3-H7    | φ 3  | 58.5   | 7                   | 3.5                 | 4      | 6      | 10g    |
| 397004    | LP4-H7    | φ 4  | 77     | 10                  | 5                   | 6      | 8      | 10g    |
| 397005    | LP5-H7    | φ 5  |        |                     |                     |        |        | 10g    |
| 397006    | LP6-H7    | φ 6  |        |                     |                     |        |        | 10g    |
| 397007    | LP7-H7    | φ 7  | 101    | 12                  | 7                   | 9      | 9      | 20g    |
| 397008    | LP8-H7    | φ 8  |        |                     |                     |        |        | 20g    |
| 397009    | LP9-H7    | φ 9  |        |                     |                     |        |        | 20g    |
| 397010    | LP10-H7   | φ10  | 107    | 13                  | 6                   | 12     | 12     | 30g    |
| 397011    | LP11-H7   | φ11  |        |                     |                     |        |        | 50g    |
| 397012    | LP12-H7   | φ12  |        |                     |                     |        |        | 50g    |
| 397013    | LP13-H7   | φ13  | 119    | 17                  | 10                  | 17     | 17     | 60g    |
| 397014    | LP14-H7   | φ14  |        |                     |                     |        |        | 60g    |
| 397015    | LP15-H7   | φ15  |        |                     |                     |        |        | 100g   |
| 397016    | LP16-H7   | φ16  | 141    | 22                  | 13                  | 8      | 21     | 100g   |
| 397017    | LP17-H7   | φ17  |        |                     |                     |        |        | 120g   |
| 397018    | LP18-H7   | φ18  |        |                     |                     |        |        | 130g   |
| 397019    | LP19-H7   | φ19  | 157    | 25                  | 9.5                 | 26     | 26     | 180g   |
| 397020    | LP20-H7   | φ20  |        |                     |                     |        |        | 190g   |
| 397021    | LP21-H7   | φ21  |        |                     |                     |        |        | 200g   |
| 397022    | LP22-H7   | φ22  | 141    | 22                  | 13                  | 8      | 21     | 200g   |
| 397023    | LP23-H7   | φ23  |        |                     |                     |        |        | 210g   |
| 397024    | LP24-H7   | φ24  |        |                     |                     |        |        | 210g   |
| 397025    | LP25-H7   | φ25  | 157    | 25                  | 9.5                 | 26     | 26     | 250g   |
| 397026    | LP26-H7   | φ26  |        |                     |                     |        |        | 260g   |
| 397027    | LP27-H7   | φ27  |        |                     |                     |        |        | 280g   |
| 397028    | LP28-H7   | φ28  | 141    | 22                  | 13                  | 8      | 21     | 290g   |
| 397029    | LP29-H7   | φ29  |        |                     |                     |        |        | 290g   |
| 397030    | LP30-H7   | φ30  |        |                     |                     |        |        | 300g   |
| 397031    | LP31-H7   | φ31  | 157    | 25                  | 9.5                 | 26     | 26     | 470g   |
| 397032    | LP32-H7   | φ32  |        |                     |                     |        |        | 480g   |
| 397033    | LP33-H7   | φ33  |        |                     |                     |        |        | 500g   |
| 397034    | LP34-H7   | φ34  | 157    | 25                  | 9.5                 | 26     | 26     | 520g   |
| 397035    | LP35-H7   | φ35  |        |                     |                     |        |        | 540g   |
| 397036    | LP36-H7   | φ36  |        |                     |                     |        |        | 550g   |
| 397037    | LP37-H7   | φ37  | 157    | 25                  | 9.5                 | 26     | 26     | 570g   |
| 397038    | LP38-H7   | φ38  |        |                     |                     |        |        | 590g   |
| 397039    | LP39-H7   | φ39  |        |                     |                     |        |        | 600g   |
| 397040    | LP40-H7   | φ40  |        |                     |                     |        |        | 620g   |

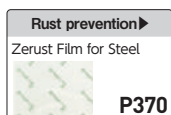
Custom size limit gauges are also available on request

## CARBIDE LIMIT PLUG GAUGE



HOW TO MOVE

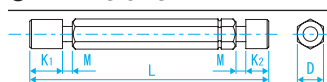
Durable Carbide plug gauge  
with low thermal expansion  
and good durability



TLP10-H7



## ● DIMENSIONS



## USE

- For hole diameter inspection

## MATERIAL

- Gauge: Carbide ● Handle: Aluminum

## FEATURES

- GO/NOGO gauge for testing fit of shaft in a hole based on maximum and minimum allowable dimensions
- Excellent wear resistance for 20~30 times longer service life than steel
- The coefficient of thermal expansion ( $5 \times 10^{-6} / \text{K}$ ) is  $\frac{1}{2}$  that of steel, so the changes due to temperature are small
- Less likely to be scratched or damaged due to high hardness
- Economical - longer span of periodic calibration compared to steel gauge
- Provided with inspection report

## SPECIFICATIONS

- Class H7 for manufacturing
- Surface roughness: Within Ra0.2 $\mu\text{m}$

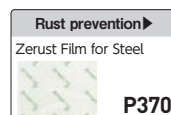
| Order No. | Model No. | Standard  | L (mm) | K <sub>1</sub> (mm) | K <sub>2</sub> (mm) | M (mm) | D (mm) | Weight |
|-----------|-----------|-----------|--------|---------------------|---------------------|--------|--------|--------|
| 396010    | TLP10-H7  | $\phi 10$ | 87     | 10                  | 7                   | 7      | 10     | 38g    |
| 396011    | TLP11-H7  | $\phi 11$ | 99     | 12                  | 8                   | 8      | 12     | 58g    |
| 396012    | TLP12-H7  | $\phi 12$ |        |                     |                     |        |        | 64g    |
| 396013    | TLP13-H7  | $\phi 13$ |        |                     |                     |        |        | 72g    |
| 396014    | TLP14-H7  | $\phi 14$ | 116    | 10                  | 10                  | 14     | 14     | 78g    |
| 396015    | TLP15-H7  | $\phi 15$ |        |                     |                     |        |        | 110g   |
| 396016    | TLP16-H7  | $\phi 16$ |        |                     |                     |        |        | 120g   |
| 396017    | TLP17-H7  | $\phi 17$ | 132    | 16                  | 12                  | 12     | 17     | 128g   |
| 396018    | TLP18-H7  | $\phi 18$ |        |                     |                     |        |        | 142g   |
| 396019    | TLP19-H7  | $\phi 19$ |        |                     |                     |        |        | 198g   |
| 396020    | TLP20-H7  | $\phi 20$ | 136    | 18                  | 14                  | 12     | 17     | 212g   |
| 396021    | TLP21-H7  | $\phi 21$ |        |                     |                     |        |        | 222g   |
| 396022    | TLP22-H7  | $\phi 22$ |        |                     |                     |        |        | 236g   |
| 396023    | TLP23-H7  | $\phi 23$ | 136    | 18                  | 14                  | 12     | 17     | 252g   |
| 396024    | TLP24-H7  | $\phi 24$ |        |                     |                     |        |        | 268g   |
| 396025    | TLP25-H7  | $\phi 25$ |        |                     |                     |        |        | 306g   |
| 396026    | TLP26-H7  | $\phi 26$ | 136    | 18                  | 14                  | 12     | 17     | 320g   |
| 396027    | TLP27-H7  | $\phi 27$ |        |                     |                     |        |        | 334g   |
| 396028    | TLP28-H7  | $\phi 28$ |        |                     |                     |        |        | 352g   |
| 396029    | TLP29-H7  | $\phi 29$ | 136    | 18                  | 14                  | 12     | 17     | 362g   |
| 396030    | TLP30-H7  | $\phi 30$ |        |                     |                     |        |        | 382g   |

## CERAMIC LIMIT PLUG GAUGE



HOW TO MOVE

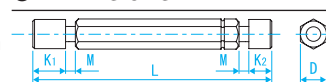
Ceramic plug gauge  
with long service life  
for good economic performance



CLP10-H7



## ● DIMENSIONS



## USE

- For hole diameter inspection

## MATERIAL

- Gauge: Ceramic ● Handle: Aluminum

## FEATURES

- GO/NOGO gauge for testing fit of shaft in a hole based on maximum and minimum allowable dimensions
- Ceramic material is less susceptible to abrasion and aged deterioration than steel
- Free from rust and corrosion, and easy maintenance
- Material has coefficient of thermal expansion similar to steel
- Non-magnetic
- Does not deform with damage, resist scratches and forming burrs
- Provided with inspection report

## SPECIFICATIONS

- Class H7 for manufacturing
- Surface roughness: Within Ra0.2 $\mu\text{m}$

| Order No. | Model No. | Standard  | L (mm) | K <sub>1</sub> (mm) | K <sub>2</sub> (mm) | M (mm) | D (mm) |
|-----------|-----------|-----------|--------|---------------------|---------------------|--------|--------|
| 399010    | CLP10-H7  | $\phi 10$ | 87     | 10                  | 7                   | 7      | 10     |
| 399011    | CLP11-H7  | $\phi 11$ | 99     | 12                  | 8                   | 8      | 12     |
| 399012    | CLP12-H7  | $\phi 12$ |        |                     |                     |        |        |
| 399013    | CLP13-H7  | $\phi 13$ |        |                     |                     |        |        |
| 399014    | CLP14-H7  | $\phi 14$ | 116    | 10                  | 10                  | 14     | 14     |
| 399015    | CLP15-H7  | $\phi 15$ |        |                     |                     |        |        |
| 399016    | CLP16-H7  | $\phi 16$ |        |                     |                     |        |        |
| 399017    | CLP17-H7  | $\phi 17$ | 132    | 16                  | 12                  | 12     | 17     |
| 399018    | CLP18-H7  | $\phi 18$ |        |                     |                     |        |        |
| 399019    | CLP19-H7  | $\phi 19$ |        |                     |                     |        |        |
| 399020    | CLP20-H7  | $\phi 20$ | 136    | 18                  | 14                  | 12     | 17     |
| 399021    | CLP21-H7  | $\phi 21$ |        |                     |                     |        |        |
| 399022    | CLP22-H7  | $\phi 22$ |        |                     |                     |        |        |
| 399023    | CLP23-H7  | $\phi 23$ | 136    | 18                  | 14                  | 12     | 17     |
| 399024    | CLP24-H7  | $\phi 24$ |        |                     |                     |        |        |
| 399025    | CLP25-H7  | $\phi 25$ |        |                     |                     |        |        |
| 399026    | CLP26-H7  | $\phi 26$ | 136    | 18                  | 14                  | 12     | 17     |
| 399027    | CLP27-H7  | $\phi 27$ |        |                     |                     |        |        |
| 399028    | CLP28-H7  | $\phi 28$ |        |                     |                     |        |        |
| 399029    | CLP29-H7  | $\phi 29$ | 136    | 18                  | 14                  | 12     | 17     |
| 399030    | CLP30-H7  | $\phi 30$ |        |                     |                     |        |        |

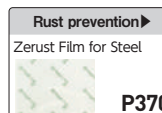
## LIMIT PLUG GAUGE WITH THIN HANDLE



HOW TO MOVE

Narrow shaft allows examining diameter of deep holes

Gauge SUB-ZERO (Cryogenic hardened) TREATMENT



### USE

- For hole diameter inspection

SHLP10-H7

### MATERIAL

- Gauge: Alloy tool steel
- Handle: Stainless

### FEATURES

- Handle diameter is smaller than gauge diameter so that the gauge reaches to deeper hole where normal limit plug gauge cannot
- Provided with inspection report

### SPECIFICATIONS

- Class H7 for manufacturing
- Surface roughness: Within Ra0.2μm

### ● DIMENSIONS



| Order No. | Model No. | Standard | L<br>(mm) | K <sub>1</sub><br>(mm) | K <sub>2</sub><br>(mm) | Handle Diameter<br>(mm) | Weight |
|-----------|-----------|----------|-----------|------------------------|------------------------|-------------------------|--------|
| 393503    | SHLP3-H7  | φ 3      | 110       | 20                     | 20                     | φ 2                     | 4g     |
| 393504    | SHLP4-H7  | φ 4      |           |                        |                        | φ 3                     | 8g     |
| 393505    | SHLP5-H7  | φ 5      |           |                        |                        |                         | 10g    |
| 393506    | SHLP6-H7  | φ 6      |           |                        |                        |                         | 20g    |
| 393507    | SHLP7-H7  | φ 7      |           |                        |                        | φ 5                     | 24g    |
| 393508    | SHLP8-H7  | φ 8      | 120       | 20                     | 20                     |                         | 27g    |
| 393509    | SHLP9-H7  | φ 9      |           |                        |                        |                         | 32g    |
| 393510    | SHLP10-H7 | φ 10     |           |                        |                        |                         | 58g    |
| 393511    | SHLP11-H7 | φ 11     |           |                        |                        |                         | 63g    |
| 393512    | SHLP12-H7 | φ 12     |           |                        |                        | φ 8                     | 69g    |
| 393513    | SHLP13-H7 | φ 13     | 140       | 25                     | 25                     |                         | 69g    |
| 393514    | SHLP14-H7 | φ 14     |           |                        |                        |                         | 82g    |
| 393515    | SHLP15-H7 | φ 15     |           |                        |                        |                         | 89g    |
| 393516    | SHLP16-H7 | φ 16     |           |                        |                        |                         | 136g   |
| 393517    | SHLP17-H7 | φ 17     |           |                        |                        | φ 10                    | 146g   |
| 393518    | SHLP18-H7 | φ 18     | 140       | 25                     | 25                     |                         | 157g   |
| 393519    | SHLP19-H7 | φ 19     |           |                        |                        |                         | 169g   |
| 393520    | SHLP20-H7 | φ 20     |           |                        |                        |                         | 181g   |

Custom size limit gauges are also available on request

BLOCK GAUGE

PIN GAUGE

PIN VISE

PIN GAUGE ACCESSORIES

RING GAUGE

PLUG GAUGE

LIMIT GAUGE

THICKNESS GAUGE

TAPER GAUGE

WELDING GAUGE

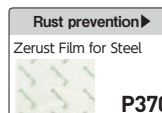
OTHER GAUGES

## LIMIT PLUG GAUGE WITH MAINTENANCE LINE



Maintenance line series plug gauge now available

Gauge SUB-ZERO (Cryogenic hardened) TREATMENT



Custom Sizes Available

Please contact us for inquiry

### USE

- For hole diameter inspection

### MATERIAL

- Alloy tool steel

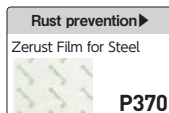
### FEATURES

- Maintenance line on Plug Gauge allows easy checking for gauge wear-out
- When line disappears, wear is more than 1μm
- Provided with inspection report



CARBIDE LIMIT STEP PLUG GAUGE 

GO/NOGO gauge at one side.  
No need to flip over, work efficiency goes up.



SPTLP-10



## USE

- For hole diameter inspection

## MATERIAL

- Gauge: Carbide
- Handle: Aluminum

## FEATURES

- GO/NOGO gauge for testing fit of shaft in a hole based on maximum and minimum allowable dimensions
- No need to flip over, work efficiency goes up
- Provided with inspection report

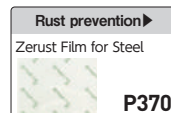
## SPECIFICATIONS

- Class H7 for manufacturing
- Surface roughness: Within Ra0.2μm

## ● DIMENSIONS

CERAMIC LIMIT STEP PLUG GAUGE 

GO/NOGO gauge at one side.  
No need to flip over, work efficiency goes up.



SPCLP-10



## USE

- For hole diameter inspection

## MATERIAL

- Gauge: Ceramic
- Handle: Aluminum

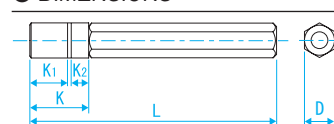
## FEATURES

- GO/NOGO gauge for testing fit of shaft in a hole based on maximum and minimum allowable dimensions
- No need to flip over, work efficiency goes up
- Provided with inspection report

## SPECIFICATIONS

- Class H7 for manufacturing
- Surface roughness: Within Ra0.2μm

## ● DIMENSIONS



| Order No. | Model No. | Standard | L (mm) | K <sub>1</sub> (mm) | K <sub>2</sub> (mm) | K (mm) | D (mm) |
|-----------|-----------|----------|--------|---------------------|---------------------|--------|--------|
| 398110    | SPTLP-10  | φ10      | 72     | 10                  | 5                   | 16     | 10     |
| 398111    | SPTLP-11  | φ11      | 82     | 12                  | 6                   | 19     | 12     |
| 398112    | SPTLP-12  | φ12      |        |                     |                     |        |        |
| 398113    | SPTLP-13  | φ13      |        |                     |                     |        |        |
| 398114    | SPTLP-14  | φ14      | 95     | 16                  | 8                   | 25     | 14     |
| 398115    | SPTLP-15  | φ15      |        |                     |                     |        |        |
| 398116    | SPTLP-16  | φ16      |        |                     |                     |        |        |
| 398117    | SPTLP-17  | φ17      | 107    | 16                  | 10                  | 27     | 17     |
| 398118    | SPTLP-18  | φ18      |        |                     |                     |        |        |
| 398119    | SPTLP-19  | φ19      |        |                     |                     |        |        |
| 398120    | SPTLP-20  | φ20      | 110    | 18                  | 10                  | 29     | 17     |
| 398121    | SPTLP-21  | φ21      |        |                     |                     |        |        |
| 398122    | SPTLP-22  | φ22      |        |                     |                     |        |        |
| 398123    | SPTLP-23  | φ23      | 110    | 18                  | 10                  | 29     | 17     |
| 398124    | SPTLP-24  | φ24      |        |                     |                     |        |        |
| 398125    | SPTLP-25  | φ25      |        |                     |                     |        |        |
| 398126    | SPTLP-26  | φ26      | 110    | 18                  | 10                  | 29     | 17     |
| 398127    | SPTLP-27  | φ27      |        |                     |                     |        |        |
| 398128    | SPTLP-28  | φ28      |        |                     |                     |        |        |
| 398129    | SPTLP-29  | φ29      | 110    | 18                  | 10                  | 29     | 17     |
| 398130    | SPTLP-30  | φ30      |        |                     |                     |        |        |

| Order No. | Model No. | Standard | L (mm) | K <sub>1</sub> (mm) | K <sub>2</sub> (mm) | K (mm) | D (mm) |
|-----------|-----------|----------|--------|---------------------|---------------------|--------|--------|
| 398010    | SPCLP-10  | φ10      | 72     | 10                  | 5                   | 16     | 10     |
| 398011    | SPCLP-11  | φ11      | 82     | 12                  | 6                   | 19     | 12     |
| 398012    | SPCLP-12  | φ12      |        |                     |                     |        |        |
| 398013    | SPCLP-13  | φ13      |        |                     |                     |        |        |
| 398014    | SPCLP-14  | φ14      | 95     | 16                  | 8                   | 25     | 14     |
| 398015    | SPCLP-15  | φ15      |        |                     |                     |        |        |
| 398016    | SPCLP-16  | φ16      |        |                     |                     |        |        |
| 398017    | SPCLP-17  | φ17      | 107    | 16                  | 10                  | 27     | 17     |
| 398018    | SPCLP-18  | φ18      |        |                     |                     |        |        |
| 398019    | SPCLP-19  | φ19      |        |                     |                     |        |        |
| 398020    | SPCLP-20  | φ20      | 110    | 18                  | 10                  | 29     | 17     |
| 398021    | SPCLP-21  | φ21      |        |                     |                     |        |        |
| 398022    | SPCLP-22  | φ22      |        |                     |                     |        |        |
| 398023    | SPCLP-23  | φ23      | 110    | 18                  | 10                  | 29     | 17     |
| 398024    | SPCLP-24  | φ24      |        |                     |                     |        |        |
| 398025    | SPCLP-25  | φ25      |        |                     |                     |        |        |
| 398026    | SPCLP-26  | φ26      | 110    | 18                  | 10                  | 29     | 17     |
| 398027    | SPCLP-27  | φ27      |        |                     |                     |        |        |
| 398028    | SPCLP-28  | φ28      |        |                     |                     |        |        |
| 398029    | SPCLP-29  | φ29      | 110    | 18                  | 10                  | 29     | 17     |
| 398030    | SPCLP-30  | φ30      |        |                     |                     |        |        |

## STEEL LIMIT PLUG GAUGE (APV TYPE) T

Reasonable choice - a pair of pin gauges installed in an aluminum holder. Pin gauges are exchangeable in case of worn-out.



SPG12-H7



- USE ●GO/ NOGO plug gauge for hole diameter inspection
- MATERIAL ●Body: Aluminum
- SPECIFICATIONS ●Gauge: Steel (SUB-ZERO/ Cryogenic hardened Treatment)
- Class H7 for manufacturing

| Order No. | Model No. | Standard | Tolerance Class | Tolerance (μm) |
|-----------|-----------|----------|-----------------|----------------|
| 393030    | SPG3-H7   | φ 3      | H7              | +10<br>0       |
| 393040    | SPG4-H7   | φ 4      |                 | +12<br>0       |
| 393050    | SPG5-H7   | φ 5      |                 |                |
| 393060    | SPG6-H7   | φ 6      |                 |                |
| 393070    | SPG7-H7   | φ 7      |                 | +15<br>0       |
| 393080    | SPG8-H7   | φ 8      |                 |                |
| 393090    | SPG9-H7   | φ 9      |                 |                |
| 393100    | SPG10-H7  | φ10      |                 |                |
| 393110    | SPG11-H7  | φ11      |                 | +18<br>0       |
| 393120    | SPG12-H7  | φ12      |                 |                |
| 393130    | SPG13-H7  | φ13      |                 |                |
| 393140    | SPG14-H7  | φ14      |                 | +21<br>0       |
| 393150    | SPG15-H7  | φ15      |                 |                |
| 393160    | SPG16-H7  | φ16      |                 |                |
| 393170    | SPG17-H7  | φ17      |                 |                |
| 393180    | SPG18-H7  | φ18      |                 |                |
| 393190    | SPG19-H7  | φ19      |                 |                |
| 393200    | SPG20-H7  | φ20      |                 |                |

※5mm from each edge is not precision guaranteed

## STEEL LIMIT PLUG GAUGE GO NEW! T

Replacement gauge for the Go side of the Steel Limit Plug Gauge H7 (for manufacturing).  
Only GO side where worn-out occurs can be replaced.



- USE ●For replacing the Go side of the Steel Limit Plug Gauge H7 (for manufacturing)
- MATERIAL ●Steel (SUB-ZERO/ Cryogenic hardened Treatment)
- SPECIFICATIONS ●Class H7 for manufacturing

| Order No.   | Model No.   | Standard | Common body Model No. |
|-------------|-------------|----------|-----------------------|
| NEW! 390043 | SPG3-H7-GO  | φ 3      | SPG3-H7               |
| NEW! 390044 | SPG4-H7-GO  | φ 4      | SPG4-H7               |
| NEW! 390045 | SPG5-H7-GO  | φ 5      | SPG5-H7               |
| NEW! 390046 | SPG6-H7-GO  | φ 6      | SPG6-H7               |
| NEW! 390047 | SPG7-H7-GO  | φ 7      | SPG7-H7               |
| NEW! 390048 | SPG8-H7-GO  | φ 8      | SPG8-H7               |
| NEW! 390049 | SPG9-H7-GO  | φ 9      | SPG9-H7               |
| NEW! 390050 | SPG10-H7-GO | φ 10     | SPG10-H7              |
| NEW! 390051 | SPG11-H7-GO | φ 11     | SPG11-H7              |
| NEW! 390052 | SPG12-H7-GO | φ 12     | SPG12-H7              |
| NEW! 390053 | SPG13-H7-GO | φ 13     | SPG13-H7              |
| NEW! 390054 | SPG14-H7-GO | φ 14     | SPG14-H7              |
| NEW! 390055 | SPG15-H7-GO | φ 15     | SPG15-H7              |
| NEW! 390056 | SPG16-H7-GO | φ 16     | SPG16-H7              |
| NEW! 390057 | SPG17-H7-GO | φ 17     | SPG17-H7              |
| NEW! 390058 | SPG18-H7-GO | φ 18     | SPG18-H7              |
| NEW! 390059 | SPG19-H7-GO | φ 19     | SPG19-H7              |
| NEW! 390060 | SPG20-H7-GO | φ 20     | SPG20-H7              |

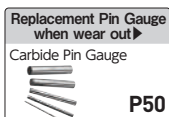
※5mm from each edge is not precision guaranteed

## CARBIDE LIMIT PLUG GAUGE (APV TYPE) T

Excellent in abrasion resistance, made of durable carbide



TPG9-H7



- USE ●GO/ NOGO plug gauge for hole diameter inspection
- MATERIAL ●Body: Aluminum ●Gauge: Carbide
- SPECIFICATIONS ●Class H7 for manufacturing

| Order No. | Model No. | Standard | Tolerance Class | Tolerance (μm) |
|-----------|-----------|----------|-----------------|----------------|
| 393230    | TPG3-H7   | φ 3      | H7              | +10<br>0       |
| 393240    | TPG4-H7   | φ 4      |                 | +12<br>0       |
| 393250    | TPG5-H7   | φ 5      |                 |                |
| 393260    | TPG6-H7   | φ 6      |                 |                |
| 393270    | TPG7-H7   | φ 7      |                 | +15<br>0       |
| 393280    | TPG8-H7   | φ 8      |                 |                |
| 393290    | TPG9-H7   | φ 9      |                 |                |
| 393300    | TPG10-H7  | φ10      |                 | +18<br>0       |
| 393310    | TPG11-H7  | φ11      |                 |                |
| 393320    | TPG12-H7  | φ12      |                 |                |
| 393330    | TPG13-H7  | φ13      |                 | +21<br>0       |
| 393340    | TPG14-H7  | φ14      |                 |                |
| 393350    | TPG15-H7  | φ15      |                 |                |
| 393360    | TPG16-H7  | φ16      |                 |                |
| 393370    | TPG17-H7  | φ17      |                 |                |
| 393380    | TPG18-H7  | φ18      |                 |                |
| 393390    | TPG19-H7  | φ19      |                 |                |
| 393400    | TPG20-H7  | φ20      |                 |                |

※5mm from each edge is not precision guaranteed

## CERAMIC LIMIT PLUG GAUGE (APV TYPE) T

Excellent stability to aged deterioration, requires low maintenance



CPG6-H7



- USE ●GO/ NOGO plug gauge for hole diameter inspection
- MATERIAL ●Body: Aluminum ●Gauge: Ceramic (Zirconia)
- SPECIFICATIONS ●Class H7 for manufacturing

| Order No. | Model No. | Standard | Tolerance Class | Tolerance (μm) |
|-----------|-----------|----------|-----------------|----------------|
| 393430    | CPG3-H7   | φ 3      | H7              | +10<br>0       |
| 393440    | CPG4-H7   | φ 4      |                 | +12<br>0       |
| 393450    | CPG5-H7   | φ 5      |                 |                |
| 393460    | CPG6-H7   | φ 6      |                 |                |
| 393470    | CPG7-H7   | φ 7      |                 | +15<br>0       |
| 393480    | CPG8-H7   | φ 8      |                 |                |
| 393490    | CPG9-H7   | φ 9      |                 |                |
| 393500    | CPG10-H7  | φ10      |                 |                |

※5mm from each edge is not precision guaranteed



BLOCK GAUGE

PIN GAUGE

PIN VISE

PIN GAUGE ACCESSORIES

RING GAUGE

PLUG GAUGE

LIMIT GAUGE

THICKNESS GAUGE

TAPER GAUGE

WELDING GAUGE

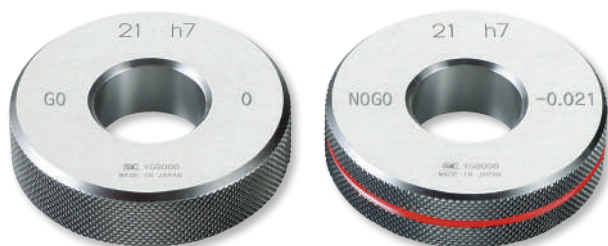
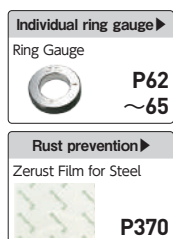
OTHER GAUGES

## STEEL LIMIT RING GAUGE



Convenient set for inspection by passing directly through splined shafts, etc.

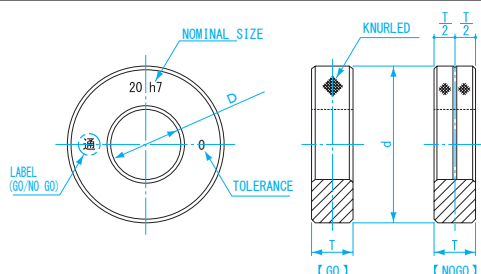
Custom size limit ring gauges are also available upon request



LR21-h7

## ● DIMENSIONS

Units: mm



## USE

- GO/ NOGO ring gauge for shaft diameter inspection

## MATERIAL

- Alloy tool steel

## FEATURES

- A pair of gauges with maximum and minimum limit size to test the compatibility of hole width
- Provided with inspection report

## SPECIFICATIONS

- Class h7 for manufacturing
- Hardness: HV653~772

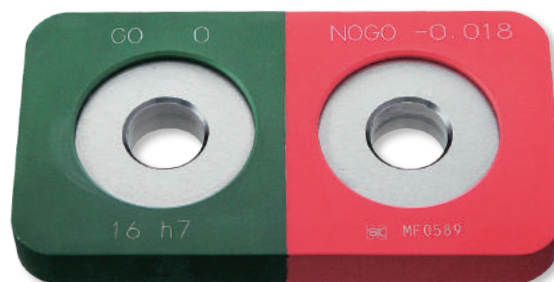
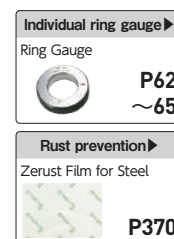
| Order No. | Model No. | Nominal size<br>D (mm) | Outside Diameter<br>d (mm) | Thickness<br>T (mm) | Tolerance<br>( $\mu\text{m}$ ) |
|-----------|-----------|------------------------|----------------------------|---------------------|--------------------------------|
| 394000    | LR10-h7   | $\phi 10$              | 32                         | 8                   | 0<br>-15                       |
| 394010    | LR11-h7   | $\phi 11$              | 38                         | 10                  | 0<br>-18                       |
| 394020    | LR12-h7   | $\phi 12$              |                            |                     |                                |
| 394030    | LR13-h7   | $\phi 13$              |                            |                     |                                |
| 394040    | LR14-h7   | $\phi 14$              |                            |                     |                                |
| 394050    | LR15-h7   | $\phi 15$              |                            |                     |                                |
| 394060    | LR16-h7   | $\phi 16$              | 45                         | 12                  | 0<br>-18                       |
| 394070    | LR17-h7   | $\phi 17$              |                            |                     |                                |
| 394080    | LR18-h7   | $\phi 18$              |                            |                     |                                |
| 394090    | LR19-h7   | $\phi 19$              |                            |                     |                                |
| 394100    | LR20-h7   | $\phi 20$              |                            |                     |                                |
| 394110    | LR21-h7   | $\phi 21$              | 53                         | 14                  | 0<br>-21                       |
| 394120    | LR22-h7   | $\phi 22$              |                            |                     |                                |
| 394130    | LR23-h7   | $\phi 23$              |                            |                     |                                |
| 394140    | LR24-h7   | $\phi 24$              |                            |                     |                                |
| 394150    | LR25-h7   | $\phi 25$              |                            |                     |                                |
| 394160    | LR26-h7   | $\phi 26$              | 63                         | 16                  | 0<br>-21                       |
| 394170    | LR27-h7   | $\phi 27$              |                            |                     |                                |
| 394180    | LR28-h7   | $\phi 28$              |                            |                     |                                |
| 394190    | LR29-h7   | $\phi 29$              |                            |                     |                                |
| 394200    | LR30-h7   | $\phi 30$              |                            |                     |                                |

## STEEL LIMIT RING GAUGE WITH PROTECTIVE COVER



GO/ NOGO gauge paired by a protective cover.

No risk of losing one, easy to use.



HKLR16-h7

## USE

- GO/ NOGO ring gauge for shaft diameter inspection

## MATERIAL

- Gauge: Alloy tool steel
- Protective cover: Aluminum

## FEATURES

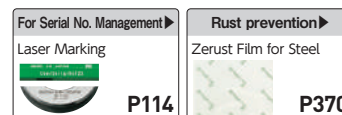
- GO/ NOGO gauge embedded in aluminum protective cover
- Covered gauge is easier to handle with dirty hands
- Less susceptible to thermal expansion when holding a gauge by hand
- Provided with inspection report

## SPECIFICATIONS

- Class h7 for manufacturing
- Hardness: HV653~772 (Gauge)

| Order No. | Model No. | Nominal size<br>(mm) |
|-----------|-----------|----------------------|
| 395005    | HKLR5-h7  | $\phi 5$             |
| 395006    | HKLR6-h7  | $\phi 6$             |
| 395007    | HKLR7-h7  | $\phi 7$             |
| 395008    | HKLR8-h7  | $\phi 8$             |
| 395009    | HKLR9-h7  | $\phi 9$             |
| 395010    | HKLR10-h7 | $\phi 10$            |
| 395011    | HKLR11-h7 | $\phi 11$            |
| 395012    | HKLR12-h7 | $\phi 12$            |
| 395013    | HKLR13-h7 | $\phi 13$            |
| 395014    | HKLR14-h7 | $\phi 14$            |
| 395015    | HKLR15-h7 | $\phi 15$            |
| 395016    | HKLR16-h7 | $\phi 16$            |
| 395017    | HKLR17-h7 | $\phi 17$            |
| 395018    | HKLR18-h7 | $\phi 18$            |
| 395019    | HKLR19-h7 | $\phi 19$            |
| 395020    | HKLR20-h7 | $\phi 20$            |

# THREAD LIMIT GAUGE (OLD JIS / GPII II • GRIR II)



Essentials for checking screw accuracy.  
GO/NOGO gauge for checking accuracy of thread.  
This is a OLD JIS standard gauge of Class 2 for inspection.

| Category                   | for Inspection |
|----------------------------|----------------|
| Thread Plug Gauge, Class 2 | GPII II        |
| Thread Ring Gauge, Class 2 | GRIR II        |

● Thread limit gauge is used to perform GO/NOGO inspection based on the minimum and maximum dimensions prescribed for each screw grade.  
For acceptance of a threaded part, GO gauge should thread without any difficulties and NOGO gauge should not thread more than two complete revolutions.

※ The thread category does not represent its quality but represent the position of the acceptance range.  
Please select a screw gauge suitable for the product grade.

## USE

- For internal/ external screw thread inspection

## FEATURES

- Enables to inspect whether threaded parts are within upper / lower limits of the screw's prescribed dimensional precision
- Provided with inspection report

## THREAD LIMIT PLUG GAUGE (OLD JIS FOR INSPECTION CLASS 2 / GPII II)



HOW TO MOVE



GPII-1215

## MATERIAL

- Gauge: Alloy tool steel
- Handle: Aluminum

## ● DIMENSIONS



※ Reference purposes only

| Order No. | Model No.    | Nominal size | K <sub>1</sub><br>(mm) | K <sub>2</sub><br>(mm) | M※<br>(mm) | L※<br>(mm) |
|-----------|--------------|--------------|------------------------|------------------------|------------|------------|
| 370204    | GPII2-0204   | M2 × P0.4    |                        |                        |            |            |
| 370207    | GPII2-026045 | M2.6 × P0.45 | 4.5                    | 4.5                    | 5.5        | 60         |
| 370305    | GPII2-0305   | M3 × P0.5    |                        |                        |            |            |
| 370306    | GPII2-03506  | M3.5 × P0.6  | 6                      |                        |            | 72         |
| 370407    | GPII2-0407   | M4 × P0.7    |                        |                        |            |            |
| 370508    | GPII2-0508   | M5 × P0.8    |                        | 6                      | 6          |            |
| 370607    | GPII2-06075  | M6 × P0.75   | 8                      |                        |            | 74         |
| 370610    | GPII2-0610   | M6 × P1.0    |                        |                        |            |            |
| 370710    | GPII2-0710   | M7 × P1.0    | 10                     |                        |            | 86         |
| 370810    | GPII2-0810   | M8 × P1.0    |                        |                        |            |            |
| 370812    | GPII2-08125  | M8 × P1.25   |                        |                        | 7          |            |
| 371010    | GPII2-1010   | M10 × P1.0   | 12                     |                        |            | 92         |
| 371012    | GPII2-10125  | M10 × P1.25  |                        |                        |            |            |
| 371015    | GPII2-1015   | M10 × P1.5   |                        |                        |            |            |
| 371210    | GPII2-1210   | M12 × P1.0   |                        | 10                     |            |            |
| 371212    | GPII2-12125  | M12 × P1.25  | 16                     |                        | 8          | 105        |
| 371215    | GPII2-1215   | M12 × P1.5   |                        |                        |            |            |
| 371217    | GPII2-12175  | M12 × P1.75  |                        |                        |            |            |
| 371420    | GPII2-1420   | M14 × P2.0   | 15                     |                        |            | 117        |
| 371620    | GPII2-1620   | M16 × P2.0   |                        |                        | 6          |            |
| 371825    | GPII2-1825   | M18 × P2.5   | 22                     | 15                     |            | 129        |
| 372025    | GPII2-2025   | M20 × P2.5   |                        |                        |            |            |

## THREAD LIMIT RING GAUGE (OLD JIS FOR INSPECTION CLASS 2 / GRIR II)



HOW TO MOVE

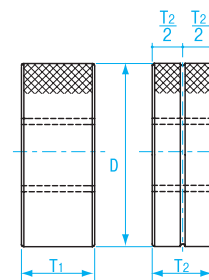


GRIR2-1620

## MATERIAL

- Alloy tool steel

## ● DIMENSIONS



| Order No. | Model No.    | Nominal size | Outside Diameter<br>D (mm) | T <sub>1</sub><br>(mm) | T <sub>2</sub><br>(mm) |
|-----------|--------------|--------------|----------------------------|------------------------|------------------------|
| 380204    | GRIR2-0204   | M2 × P0.4    |                            |                        |                        |
| 380207    | GRIR2-026045 | M2.6 × P0.45 |                            | 3                      | 3                      |
| 380305    | GRIR2-0305   | M3 × P0.5    | 25                         | 4                      |                        |
| 380407    | GRIR2-0407   | M4 × P0.7    |                            | 6                      | 4                      |
| 380508    | GRIR2-0508   | M5 × P0.8    |                            |                        |                        |
| 380610    | GRIR2-0610   | M6 × P1.0    |                            |                        |                        |
| 380710    | GRIR2-0710   | M7 × P1.0    | 30                         | 8                      | 6                      |
| 380810    | GRIR2-0810   | M8 × P1.0    |                            |                        |                        |
| 380812    | GRIR2-08125  | M8 × P1.25   |                            |                        |                        |
| 381010    | GRIR2-1010   | M10 × P1.0   |                            |                        |                        |
| 381012    | GRIR2-10125  | M10 × P1.25  |                            |                        |                        |
| 381015    | GRIR2-1015   | M10 × P1.5   | 40                         | 10                     | 8                      |
| 381210    | GRIR2-1210   | M12 × P1.0   |                            |                        |                        |
| 381212    | GRIR2-12125  | M12 × P1.25  |                            |                        |                        |
| 381215    | GRIR2-1215   | M12 × P1.5   |                            |                        |                        |
| 381217    | GRIR2-12175  | M12 × P1.75  |                            |                        |                        |
| 381420    | GRIR2-1420   | M14 × P2.0   | 50                         | 15                     | 10                     |
| 381620    | GRIR2-1620   | M16 × P2.0   |                            |                        |                        |
| 381825    | GRIR2-1825   | M18 × P2.5   |                            | 22                     | 15                     |
| 382025    | GRIR2-2025   | M20 × P2.5   |                            |                        |                        |

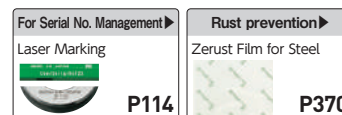
Custom size limit gauges are also available on request



# THREAD LIMIT GAUGE (OLD JIS / GPWP II • GRWR II)



Essentials for checking screw accuracy.  
GO/NOGO gauge for checking accuracy of thread.  
This is a OLD JIS standard gauge of Class 2 for manufacturing.



| Category                   | for Manufacturing |
|----------------------------|-------------------|
| Thread Plug Gauge, Class 2 | GPWP II           |
| Thread Ring Gauge, Class 2 | GRWR II           |

● Thread limit Gauge is used to perform GO / NOGO inspection based on the minimum and maximum dimensions prescribed for each screw grade.  
For acceptance of a threaded part, GO gauge should thread without any difficulties and NOGO should not thread more than two complete revolutions.

※ The thread category does not represent its quality but represent the position of the acceptance range.  
Please select a screw gauge suitable for the product grade.

## USE

- For Internal/ external screw thread inspection

## FEATURES

- Enables to inspect whether threaded parts are within upper/lower limits of the screw's prescribed dimensional precision.
- Provided with inspection report

## THREAD LIMIT PLUG GAUGE (OLD JIS FOR MACHINE WORK CLASS 2 / GPWP II)



HOW TO MOVE

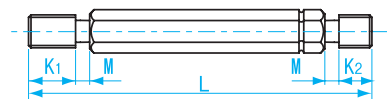


GPWP2-12175

## MATERIAL

- Gauge: Alloy tool steel
- Handle: Aluminum

## ● DIMENSIONS



## THREAD LIMIT RING GAUGE (OLD JIS FOR MACHINE WORK CLASS 2 / GRWR II)



HOW TO MOVE

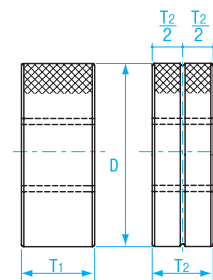


GRWR2-1620

## MATERIAL

- Alloy tool steel

## ● DIMENSIONS



※ Reference purposes only

| Order No. | Model No.    | Nominal Size | K <sub>1</sub><br>(mm) | K <sub>2</sub><br>(mm) | M※<br>(mm) | L※<br>(mm) |
|-----------|--------------|--------------|------------------------|------------------------|------------|------------|
| 470204    | GPWP2-0204   | M2 × P0.4    |                        |                        |            |            |
| 470207    | GPWP2-026045 | M2.6 × P0.45 | 4.5                    | 4.5                    | 5.5        | 60         |
| 470305    | GPWP2-0305   | M3 × P0.5    |                        |                        |            |            |
| 470306    | GPWP2-03506  | M3.5 × P0.6  | 6                      |                        |            | 72         |
| 470407    | GPWP2-0407   | M4 × P0.7    |                        |                        |            |            |
| 470508    | GPWP2-0508   | M5 × P0.8    |                        | 6                      | 6          |            |
| 470607    | GPWP2-06075  | M6 × P0.75   | 8                      |                        |            | 74         |
| 470610    | GPWP2-0610   | M6 × P1.0    |                        |                        |            |            |
| 470710    | GPWP2-0710   | M7 × P1.0    | 10                     |                        |            | 86         |
| 470810    | GPWP2-0810   | M8 × P1.0    |                        |                        |            |            |
| 470812    | GPWP2-08125  | M8 × P1.25   |                        |                        | 7          |            |
| 471010    | GPWP2-1010   | M10 × P1.0   | 12                     |                        |            | 92         |
| 471012    | GPWP2-10125  | M10 × P1.25  |                        |                        |            |            |
| 471015    | GPWP2-1015   | M10 × P1.5   |                        |                        |            |            |
| 471210    | GPWP2-1210   | M12 × P1.0   |                        | 10                     |            |            |
| 471212    | GPWP2-12125  | M12 × P1.25  | 16                     |                        | 8          | 105        |
| 471215    | GPWP2-1215   | M12 × P1.5   |                        |                        |            |            |
| 471217    | GPWP2-12175  | M12 × P1.75  |                        |                        |            |            |
| 471420    | GPWP2-1420   | M14 × P2.0   | 15                     |                        |            | 117        |
| 471620    | GPWP2-1620   | M16 × P2.0   |                        |                        | 6          |            |
| 471825    | GPWP2-1825   | M18 × P2.5   |                        |                        |            |            |
| 472025    | GPWP2-2025   | M20 × P2.5   | 22                     | 15                     |            | 129        |

| Order No. | Model No.    | Nominal Size | Outside Diameter D<br>(mm) | T <sub>1</sub><br>(mm) | T <sub>2</sub><br>(mm) |
|-----------|--------------|--------------|----------------------------|------------------------|------------------------|
| 300204    | GRWR2-0204   | M2 × P0.4    |                            |                        |                        |
| 300207    | GRWR2-026045 | M2.6 × P0.45 |                            | 3                      | 3                      |
| 300305    | GRWR2-0305   | M3 × P0.5    | 25                         | 4                      |                        |
| 300407    | GRWR2-0407   | M4 × P0.7    |                            | 6                      | 4                      |
| 300508    | GRWR2-0508   | M5 × P0.8    |                            |                        |                        |
| 300610    | GRWR2-0610   | M6 × P1.0    |                            |                        |                        |
| 300710    | GRWR2-0710   | M7 × P1.0    | 30                         |                        |                        |
| 300810    | GRWR2-0810   | M8 × P1.0    |                            | 8                      | 6                      |
| 300812    | GRWR2-08125  | M8 × P1.25   |                            |                        |                        |
| 301010    | GRWR2-1010   | M10 × P1.0   |                            |                        |                        |
| 301012    | GRWR2-10125  | M10 × P1.25  |                            |                        |                        |
| 301015    | GRWR2-1015   | M10 × P1.5   |                            |                        |                        |
| 301210    | GRWR2-1210   | M12 × P1.0   | 40                         | 10                     | 8                      |
| 301212    | GRWR2-12125  | M12 × P1.25  |                            |                        |                        |
| 301215    | GRWR2-1215   | M12 × P1.5   |                            |                        |                        |
| 301217    | GRWR2-12175  | M12 × P1.75  |                            |                        |                        |
| 301420    | GRWR2-1420   | M14 × P2.0   |                            | 15                     | 10                     |
| 301620    | GRWR2-1620   | M16 × P2.0   | 50                         |                        |                        |
| 301825    | GRWR2-1825   | M18 × P2.5   |                            | 22                     | 15                     |
| 302025    | GRWR2-2025   | M20 × P2.5   |                            |                        |                        |

Custom size limit gauges are also available on request

## THREAD LIMIT PLUG GAUGE (ISO TYPE JIS / GPNP)



HOW TO MOVE

Essentials for checking screw accuracy.

GO/NOGO gauge for checking accuracy of thread.

While the original JIS gauge has two classifications of NOGO gauge  
(; for Inspection and for Manufacturing),  
there is no classification in ISO type JIS gauge 0.



| Cateryory            | Standard • Class |
|----------------------|------------------|
| Thread Plug, Class 2 | GPNP-6H          |

- Thread limit Gauge is used to perform GO/NOGO inspection based on the minimum and maximum dimensions prescribed for each screw grade.  
For acceptance of a threaded part, GO gauge should thread without any difficulties and NOGO should not thread more than two complete revolutions.

※ The thread category does not represent its quality but represent the position of the acceptance range.  
Please select a screw gauge suitable for the product grade.

### USE

- For Internal / external screw thread inspection

### FEATURES

- Enables to inspect whether threaded parts are within upper/lower limits of the screw's prescribed dimensional precision.
- Provided with inspection report

## THREAD LIMIT PLUG GAUGE (ISO TYPE JIS / GPNP)



GPNP-12175I

### ● DIMENSIONS



### Material

- Gauge: Alloy tool steel
- Handle: Aluminum

※ Reference purposes only

| Order No. | Model No.   | Nominal Size | K <sub>1</sub><br>(mm) | K <sub>2</sub><br>(mm) | M ※<br>(mm) | L ※<br>(mm) |
|-----------|-------------|--------------|------------------------|------------------------|-------------|-------------|
| 326024    | GPNP-0204I  | M 2 × P0.4   | 4.5                    | 4.5                    | 5.5         | 60          |
| 326035    | GPNP-0305I  | M 3 × P0.5   | 6                      | 6                      | 6           | 72          |
| 326036    | GPNP-03506I | M 3.5 × P0.6 | 8                      | 6                      | 6           | 74          |
| 326047    | GPNP-0407I  | M 4 × P0.7   | 10                     | 6                      | 6           | 86          |
| 326058    | GPNP-0508I  | M 5 × P0.8   | 12                     | 6                      | 6           | 92          |
| 326060    | GPNP-06075I | M 6 × P0.75  | 16                     | 6                      | 6           | 105         |
| 326061    | GPNP-0610I  | M 6 × P1.0   | 16                     | 6                      | 6           | 105         |
| 326071    | GPNP-0710I  | M 7 × P1.0   | 16                     | 6                      | 6           | 105         |
| 326080    | GPNP-0810I  | M 8 × P1.0   | 16                     | 6                      | 6           | 105         |
| 326081    | GPNP-08125I | M 8 × P1.25  | 16                     | 6                      | 6           | 105         |
| 326099    | GPNP-1010I  | M10 × P1.0   | 16                     | 6                      | 6           | 105         |
| 326100    | GPNP-10125I | M10 × P1.25  | 16                     | 6                      | 6           | 105         |
| 326101    | GPNP-1015I  | M10 × P1.5   | 16                     | 6                      | 6           | 105         |
| 326118    | GPNP-1210I  | M12 × P1.0   | 16                     | 6                      | 6           | 105         |
| 326119    | GPNP-12125I | M12 × P1.25  | 16                     | 6                      | 6           | 105         |
| 326120    | GPNP-1215I  | M12 × P1.5   | 16                     | 6                      | 6           | 105         |
| 326121    | GPNP-12175I | M12 × P1.75  | 16                     | 6                      | 6           | 105         |

## THREAD PLUG GAUGE **NEW!**

A specially designed thread gauge with an insertion guide at the tip for pre-hole GO inspection! Equipped with a hexagonal bit, it can be used by attaching it to electric drill drivers.



GP2H-08125

### USE

- For thread hole GO inspection and pre-thread hole GO inspection

### MATERIAL

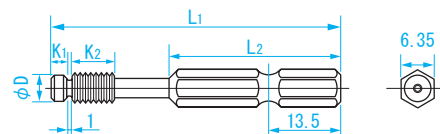
- Gauge: Alloy tool steel

### FEATURES

- A thread plug gauge designed exclusively for GO inspection
  - Specially designed with an insertion guide gauge at the tip, enabling simultaneous confirmation of pre-hole and threaded hole GO inspection, improving inspection efficiency
  - The shank section features a 6.35mm hexagonal bit, allowing attachment to electric drill drivers. Significantly reduces measurement time compared to manual inspection.
- ※ For safety, use electric drill drivers with low torque.  
(Recommended torque value: 1 N·m or less)

### ● DIMENSIONS

Units : mm



\*Reference values

| Order No.          | Model No.  | Nominal Dimension | D (mm) | K <sub>1</sub> (mm) | K <sub>2</sub> (mm) | L <sub>1</sub> ※ (mm) | L <sub>2</sub> ※ (mm) |
|--------------------|------------|-------------------|--------|---------------------|---------------------|-----------------------|-----------------------|
| <b>NEW!</b> 390101 | GP2H-0305  | M3 × P0.5         | 2.459  | 1.5                 | 4.5                 | 47                    | 32.95                 |
| <b>NEW!</b> 390102 | GP2H-0407  | M4 × P0.7         | 3.242  | 2                   | 6                   | 49.5                  | 32.65                 |
| <b>NEW!</b> 390103 | GP2H-0508  | M5 × P0.8         | 4.134  | 3                   | 8                   | 54.5                  | 32.25                 |
| <b>NEW!</b> 390104 | GP2H-0610  | M6 × P1.0         | 4.917  | 5                   | 12                  | 63.5                  | 31.5                  |
| <b>NEW!</b> 390105 | GP2H-08125 | M8 × P1.25        | 6.647  | 7                   | 16                  | 75.5                  | 31                    |
| <b>NEW!</b> 390106 | GP2H-1015  | M10 × P1.5        | 8.376  |                     |                     |                       |                       |
| <b>NEW!</b> 390107 | GP2H-12175 | M12 × P1.75       | 10.106 |                     |                     |                       |                       |

## TAP GAUGE FOR NOGO

Thread gauge and pilot hole size pin gauge in one product.  
Checking pilot hole diameter with its upper limit.



GP2N-0610

Pass Condition



### USE

- Checking NG for large tap hole

### MATERIAL

- Gauge: Steel ● Handle: Aluminum

### FEATURES

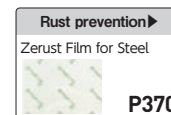
- One side thread plug gauge, one side pin gauge for pilot hole confirmation

| Order No. | Model No.  | Nominal Size |
|-----------|------------|--------------|
| 390211    | GP2N-0305  | M3 × P0.5    |
| 390212    | GP2N-0407  | M4 × P0.7    |
| 390213    | GP2N-0508  | M5 × P0.8    |
| 390214    | GP2N-0610  | M6 × P1.0    |
| 390215    | GP2N-08125 | M8 × P1.25   |

Replacement thread / pin gauge available

## TAP GAUGE FOR GO

Thread gauge and pilot hole size pin gauge in one product.  
Checking pilot hole diameter with its lower limit.



GP2G-0610

Pass Condition



### USE

- Checking NG for small tape hole

### MATERIAL

- Gauge: Steel ● Handle: Aluminum

### FEATURES

- One side thread plug gauge, one side pin gauge for pilot hole confirmation

| Order No. | Model No.  | Nominal Size |
|-----------|------------|--------------|
| 390221    | GP2G-0305  | M3 × P0.5    |
| 390222    | GP2G-0407  | M4 × P0.7    |
| 390223    | GP2G-0508  | M5 × P0.8    |
| 390224    | GP2G-0610  | M6 × P1.0    |
| 390225    | GP2G-08125 | M8 × P1.25   |

Replacement thread / pin gauge available

## TAP HOLE CHECKING GAUGE SET **NEW!**

Easily and accurately confirm thread pre-hole diameters with pin gauges!

A set of 8 pins with percentage of thread engagement ranging from 100% to 65%.



THC-0204



### USE

- For confirming thread pre-hole diameters as specified in JIS B 1004.

### MATERIAL

- Steel (Sub-zero treated for  $\phi 2.700\text{mm}$  and above)

### FEATURES

- Ensures that the thread pre-holes in processed workpieces comply with specifications.
- Dimensions are based on percentage of thread engagement calculations as per JIS B 1004.
- Includes a total of 8 pins with percentage of thread engagement from 100% to 65%.
- High-precision pin gauges enable accurate confirmation.

### SPECIFICATIONS

- Pin Gauge: Steel Pin Gauge AA

\*For accuracy and detailed specifications, please refer to the Steel Pin Gauge AA Series.

| Order No.          | Model No. | Compatible Thread Diameter | Gauge Size (mm) [percentage of thread engagement] |      |      |      |      |      |      |      |
|--------------------|-----------|----------------------------|---------------------------------------------------|------|------|------|------|------|------|------|
|                    |           |                            | 100%                                              | 95%  | 90%  | 85%  | 80%  | 75%  | 70%  | 65%  |
| <b>NEW!</b> 390231 | THC-0204  | M2×P0.4                    | 1.57                                              | 1.59 | 1.61 | 1.63 | 1.65 | 1.67 | 1.70 | 1.72 |
| <b>NEW!</b> 390232 | THC-0305  | M3×P0.5                    | 2.46                                              | 2.49 | 2.51 | 2.54 | 2.57 | 2.59 | 2.62 | 2.65 |
| <b>NEW!</b> 390233 | THC-0407  | M4×P0.7                    | 3.24                                              | 3.28 | 3.32 | 3.36 | 3.39 | 3.43 | 3.47 | 3.51 |
| <b>NEW!</b> 390234 | THC-0508  | M5×P0.8                    | 4.13                                              | 4.18 | 4.22 | 4.26 | 4.31 | 4.35 | 4.39 | 4.44 |
| <b>NEW!</b> 390235 | THC-0610  | M6×P1.0                    | 4.92                                              | 4.97 | 5.03 | 5.08 | 5.13 | 5.19 | 5.24 | 5.30 |
| <b>NEW!</b> 390236 | THC-08125 | M8×P1.25                   | 6.65                                              | 6.71 | 6.78 | 6.85 | 6.92 | 6.98 | 7.05 | 7.12 |
| <b>NEW!</b> 390237 | THC-1015  | M10×P1.5                   | 8.38                                              | 8.46 | 8.54 | 8.62 | 8.70 | 8.78 | 8.86 | 8.94 |

## BALL GAP GAUGE

Small hole gauge to check right position or gap when assembling parts

### USE

- For gap measurement
- Suitable for measuring shallow groove and curved inner pipes

### MATERIAL

- Gauge head: Carbide
- Stem/Grip: Stainless steel

### FEATURES

- Stainless steel spring. Flexible shaft and able to bend
- Easy to check right position or gap when assembling parts

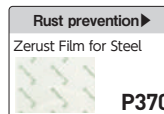
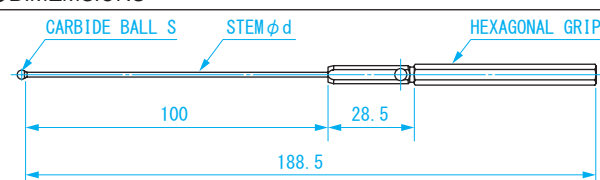
### SPECIFICATIONS

- Gauge Accuracy: Sphericity 0.005mm  
Tolerance  $\pm 0.005\text{mm}$



### DIMENSIONS

Units: mm



| Order No. | Model No. | Ball size S (mm) | Stem diameter d (mm) |
|-----------|-----------|------------------|----------------------|
| 112000    | BTS-020   | $\phi 2.0$       | 1.0                  |
| 112001    | BTS-021   | $\phi 2.1$       |                      |
| 112002    | BTS-022   | $\phi 2.2$       |                      |
| 112003    | BTS-023   | $\phi 2.3$       |                      |
| 112004    | BTS-024   | $\phi 2.4$       |                      |
| 112005    | BTS-025   | $\phi 2.5$       |                      |
| 112006    | BTS-026   | $\phi 2.6$       |                      |
| 112007    | BTS-027   | $\phi 2.7$       |                      |
| 112008    | BTS-028   | $\phi 2.8$       |                      |
| 112009    | BTS-029   | $\phi 2.9$       |                      |
| 112010    | BTS-030   | $\phi 3.0$       | 1.6                  |
| 112011    | BTS-031   | $\phi 3.1$       |                      |
| 112012    | BTS-032   | $\phi 3.2$       |                      |
| 112013    | BTS-033   | $\phi 3.3$       |                      |
| 112014    | BTS-034   | $\phi 3.4$       |                      |
| 112015    | BTS-035   | $\phi 3.5$       |                      |
| 112016    | BTS-036   | $\phi 3.6$       |                      |
| 112017    | BTS-037   | $\phi 3.7$       |                      |
| 112018    | BTS-038   | $\phi 3.8$       |                      |
| 112019    | BTS-039   | $\phi 3.9$       |                      |
| 112020    | BTS-040   | $\phi 4.0$       | 2.3                  |
| 112021    | BTS-041   | $\phi 4.1$       |                      |
| 112022    | BTS-042   | $\phi 4.2$       |                      |
| 112023    | BTS-043   | $\phi 4.3$       |                      |
| 112024    | BTS-044   | $\phi 4.4$       |                      |
| 112025    | BTS-045   | $\phi 4.5$       |                      |

| Order No. | Model No. | Ball size S (mm) | Stem diameter d (mm) |
|-----------|-----------|------------------|----------------------|
| 112026    | BTS-046   | $\phi 4.6$       | 2.3                  |
| 112027    | BTS-047   | $\phi 4.7$       |                      |
| 112028    | BTS-048   | $\phi 4.8$       |                      |
| 112029    | BTS-049   | $\phi 4.9$       |                      |
| 112030    | BTS-050   | $\phi 5.0$       |                      |
| 112031    | BTS-051   | $\phi 5.1$       |                      |
| 112032    | BTS-052   | $\phi 5.2$       |                      |
| 112033    | BTS-053   | $\phi 5.3$       |                      |
| 112034    | BTS-054   | $\phi 5.4$       |                      |
| 112035    | BTS-055   | $\phi 5.5$       |                      |
| 112036    | BTS-056   | $\phi 5.6$       |                      |
| 112037    | BTS-057   | $\phi 5.7$       |                      |
| 112038    | BTS-058   | $\phi 5.8$       |                      |
| 112039    | BTS-059   | $\phi 5.9$       |                      |
| 112040    | BTS-060   | $\phi 6.0$       |                      |
| 112041    | BTS-061   | $\phi 6.1$       |                      |
| 112042    | BTS-062   | $\phi 6.2$       |                      |
| 112043    | BTS-063   | $\phi 6.3$       |                      |
| 112044    | BTS-064   | $\phi 6.4$       |                      |
| 112045    | BTS-065   | $\phi 6.5$       |                      |
| 112046    | BTS-066   | $\phi 6.6$       |                      |
| 112047    | BTS-067   | $\phi 6.7$       |                      |
| 112048    | BTS-068   | $\phi 6.8$       |                      |
| 112049    | BTS-069   | $\phi 6.9$       |                      |
| 112050    | BTS-070   | $\phi 7.0$       |                      |



## BALL GAP GAUGE

Small hole gauge to check right position or gap when assembling parts

### USE

- For gap measurement
- Suitable for measuring shallow groove and curbed inner pipes

### MATERIAL

- Gauge head: Carbide
- Stem: Stainless steel
- Grip: ABS

### FEATURES

- Stainless steel spring. Flexible shaft and able to bend
- Easy to check right position or gap when assembling parts

### SPECIFICATIONS

- Gauge Accuracy: Sphericity 0.005mm Tolerance  $\pm 0.005$ mm

| Order No. | Model No. | Ball size S (mm) | Stem diameter d (mm) |
|-----------|-----------|------------------|----------------------|
| 112051    | BTP-020   | $\phi 2.0$       | 1.0                  |
| 112052    | BTP-021   | $\phi 2.1$       |                      |
| 112053    | BTP-022   | $\phi 2.2$       |                      |
| 112054    | BTP-023   | $\phi 2.3$       |                      |
| 112055    | BTP-024   | $\phi 2.4$       |                      |
| 112056    | BTP-025   | $\phi 2.5$       |                      |
| 112057    | BTP-026   | $\phi 2.6$       |                      |
| 112058    | BTP-027   | $\phi 2.7$       |                      |
| 112059    | BTP-028   | $\phi 2.8$       |                      |
| 112060    | BTP-029   | $\phi 2.9$       |                      |
| 112061    | BTP-030   | $\phi 3.0$       |                      |
| 112062    | BTP-031   | $\phi 3.1$       | 1.6                  |
| 112063    | BTP-032   | $\phi 3.2$       |                      |
| 112064    | BTP-033   | $\phi 3.3$       |                      |
| 112065    | BTP-034   | $\phi 3.4$       |                      |
| 112066    | BTP-035   | $\phi 3.5$       |                      |
| 112067    | BTP-036   | $\phi 3.6$       |                      |
| 112068    | BTP-037   | $\phi 3.7$       |                      |
| 112069    | BTP-038   | $\phi 3.8$       |                      |
| 112070    | BTP-039   | $\phi 3.9$       |                      |
| 112071    | BTP-040   | $\phi 4.0$       |                      |
| 112072    | BTP-041   | $\phi 4.1$       |                      |
| 112073    | BTP-042   | $\phi 4.2$       | 2.3                  |
| 112074    | BTP-043   | $\phi 4.3$       |                      |
| 112075    | BTP-044   | $\phi 4.4$       |                      |
| 112076    | BTP-045   | $\phi 4.5$       |                      |

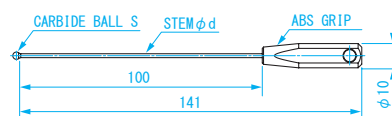
| Order No. | Model No. | Ball size S (mm) | Stem diameter d (mm) |
|-----------|-----------|------------------|----------------------|
| 112077    | BTP-046   | $\phi 4.6$       |                      |
| 112078    | BTP-047   | $\phi 4.7$       |                      |
| 112079    | BTP-048   | $\phi 4.8$       |                      |
| 112080    | BTP-049   | $\phi 4.9$       |                      |
| 112081    | BTP-050   | $\phi 5.0$       |                      |
| 112082    | BTP-051   | $\phi 5.1$       |                      |
| 112083    | BTP-052   | $\phi 5.2$       |                      |
| 112084    | BTP-053   | $\phi 5.3$       |                      |
| 112085    | BTP-054   | $\phi 5.4$       |                      |
| 112086    | BTP-055   | $\phi 5.5$       |                      |
| 112087    | BTP-056   | $\phi 5.6$       |                      |
| 112088    | BTP-057   | $\phi 5.7$       |                      |
| 112089    | BTP-058   | $\phi 5.8$       | 2.3                  |
| 112090    | BTP-059   | $\phi 5.9$       |                      |
| 112091    | BTP-060   | $\phi 6.0$       |                      |
| 112092    | BTP-061   | $\phi 6.1$       |                      |
| 112093    | BTP-062   | $\phi 6.2$       |                      |
| 112094    | BTP-063   | $\phi 6.3$       |                      |
| 112095    | BTP-064   | $\phi 6.4$       |                      |
| 112096    | BTP-065   | $\phi 6.5$       |                      |
| 112097    | BTP-066   | $\phi 6.6$       |                      |
| 112098    | BTP-067   | $\phi 6.7$       |                      |
| 112099    | BTP-068   | $\phi 6.8$       |                      |
| 112100    | BTP-069   | $\phi 6.9$       |                      |
| 112101    | BTP-070   | $\phi 7.0$       |                      |



BTP-050

### DIMENSIONS

Units: mm



## BALL GAP GAUGE SHAPE MEMORY **NEW!**

Small hole gauge to check right position or gap when assembling parts

### USE

- For gap measurement
- Suitable for measuring shallow groove and curbed inner pipes

### MATERIAL

- Gauge head: Carbide
- Stem: Shape memory alloy
- Grip: ABS

### FEATURES

- The stem is made of a shape memory alloy, allowing it to return to its original shape after bending and measuring
- Easy to check right position for gap when assembling parts

### SPECIFICATIONS

- Gauge Accuracy: Sphericity 0.005mm Tolerance  $\pm 0.005$ mm

| Order No.          | Model No. | Ball size S (mm) | Stem diameter d (mm) |
|--------------------|-----------|------------------|----------------------|
| <b>NEW!</b> 112102 | BNTP-020  | $\phi 2.0$       |                      |
| <b>NEW!</b> 112103 | BNTP-021  | $\phi 2.1$       |                      |
| <b>NEW!</b> 112104 | BNTP-022  | $\phi 2.2$       |                      |
| <b>NEW!</b> 112105 | BNTP-023  | $\phi 2.3$       |                      |
| <b>NEW!</b> 112106 | BNTP-024  | $\phi 2.4$       |                      |
| <b>NEW!</b> 112107 | BNTP-025  | $\phi 2.5$       |                      |
| <b>NEW!</b> 112108 | BNTP-026  | $\phi 2.6$       |                      |
| <b>NEW!</b> 112109 | BNTP-027  | $\phi 2.7$       |                      |
| <b>NEW!</b> 112110 | BNTP-028  | $\phi 2.8$       |                      |
| <b>NEW!</b> 112111 | BNTP-029  | $\phi 2.9$       |                      |
| <b>NEW!</b> 112112 | BNTP-030  | $\phi 3.0$       |                      |
| <b>NEW!</b> 112113 | BNTP-031  | $\phi 3.1$       | 1.6                  |
| <b>NEW!</b> 112114 | BNTP-032  | $\phi 3.2$       |                      |
| <b>NEW!</b> 112115 | BNTP-033  | $\phi 3.3$       |                      |
| <b>NEW!</b> 112116 | BNTP-034  | $\phi 3.4$       |                      |
| <b>NEW!</b> 112117 | BNTP-035  | $\phi 3.5$       |                      |
| <b>NEW!</b> 112118 | BNTP-036  | $\phi 3.6$       |                      |
| <b>NEW!</b> 112119 | BNTP-037  | $\phi 3.7$       |                      |
| <b>NEW!</b> 112120 | BNTP-038  | $\phi 3.8$       |                      |
| <b>NEW!</b> 112121 | BNTP-039  | $\phi 3.9$       |                      |
| <b>NEW!</b> 112122 | BNTP-040  | $\phi 4.0$       |                      |
| <b>NEW!</b> 112123 | BNTP-041  | $\phi 4.1$       |                      |
| <b>NEW!</b> 112124 | BNTP-042  | $\phi 4.2$       | 2.3                  |
| <b>NEW!</b> 112125 | BNTP-043  | $\phi 4.3$       |                      |
| <b>NEW!</b> 112126 | BNTP-044  | $\phi 4.4$       |                      |
| <b>NEW!</b> 112127 | BNTP-045  | $\phi 4.5$       |                      |

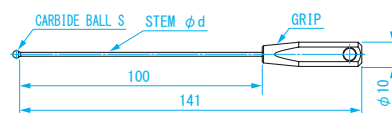
| Order No.          | Model No. | Ball size S (mm) | Stem diameter d (mm) |
|--------------------|-----------|------------------|----------------------|
| <b>NEW!</b> 112128 | BNTP-046  | $\phi 4.6$       |                      |
| <b>NEW!</b> 112129 | BNTP-047  | $\phi 4.7$       |                      |
| <b>NEW!</b> 112130 | BNTP-048  | $\phi 4.8$       |                      |
| <b>NEW!</b> 112131 | BNTP-049  | $\phi 4.9$       |                      |
| <b>NEW!</b> 112132 | BNTP-050  | $\phi 5.0$       |                      |
| <b>NEW!</b> 112133 | BNTP-051  | $\phi 5.1$       |                      |
| <b>NEW!</b> 112134 | BNTP-052  | $\phi 5.2$       |                      |
| <b>NEW!</b> 112135 | BNTP-053  | $\phi 5.3$       |                      |
| <b>NEW!</b> 112136 | BNTP-054  | $\phi 5.4$       |                      |
| <b>NEW!</b> 112137 | BNTP-055  | $\phi 5.5$       |                      |
| <b>NEW!</b> 112138 | BNTP-056  | $\phi 5.6$       |                      |
| <b>NEW!</b> 112139 | BNTP-057  | $\phi 5.7$       |                      |
| <b>NEW!</b> 112140 | BNTP-058  | $\phi 5.8$       | 2.3                  |
| <b>NEW!</b> 112141 | BNTP-059  | $\phi 5.9$       |                      |
| <b>NEW!</b> 112142 | BNTP-060  | $\phi 6.0$       |                      |
| <b>NEW!</b> 112143 | BNTP-061  | $\phi 6.1$       |                      |
| <b>NEW!</b> 112144 | BNTP-062  | $\phi 6.2$       |                      |
| <b>NEW!</b> 112145 | BNTP-063  | $\phi 6.3$       |                      |
| <b>NEW!</b> 112146 | BNTP-064  | $\phi 6.4$       |                      |
| <b>NEW!</b> 112147 | BNTP-065  | $\phi 6.5$       |                      |
| <b>NEW!</b> 112148 | BNTP-066  | $\phi 6.6$       |                      |
| <b>NEW!</b> 112149 | BNTP-067  | $\phi 6.7$       |                      |
| <b>NEW!</b> 112150 | BNTP-068  | $\phi 6.8$       |                      |
| <b>NEW!</b> 112151 | BNTP-069  | $\phi 6.9$       |                      |
| <b>NEW!</b> 112152 | BNTP-070  | $\phi 7.0$       |                      |



BNTP-050

### DIMENSIONS

Units : mm



Check  
Shape memory  
in the video!

## FEELER GAUGE (WIDE TYPE)

Essential for assembly and adjustment.  
A wide type of feeler gauge is now available.

**T**  
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を除く

12.7mm wide (normal) type ▶  
Feeler Gauge  
 **P79**  
~80

Multiple sizes in one product ▶  
Thickness Gauge  
 **P81**  
~84

Rust prevention ▶  
Zerust Film for Steel  
 **P370**

50mm width

30mm width

### USE

- For measurement of gap width
- For assemble or adjustment of automotive engine components or other machinery

### MATERIAL

- Stainless steel (SUS304) 【RoHS Compliant】

### FEATURES

- Can be cut to necessary size
- Convenient cardboard storage box
- Made of stainless steel, rust resistant

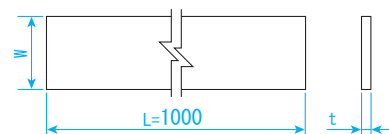
### SPECIFICATIONS

- Leaf Length: 1m
- Case Size: 80×88×40mm (30mm width)  
90×90×60mm (50mm width)

Can be cut to necessary size

### ● DIMENSIONS

Units: mm



#### ■ Leaf Width (W) : 30mm

| Order No. | Model No.   | Thickness (t) (mm) | Thickness Accuracy (t) (mm) |
|-----------|-------------|--------------------|-----------------------------|
| 007391    | SFG30-005-1 | 0.005              | ±0.0005                     |
| 007392    | SFG30-01-1  | 0.01               | ±0.001                      |
| 007393    | SFG30-02-1  | 0.02               | ±0.002                      |
| 007394    | SFG30-03-1  | 0.03               | ±0.003                      |
| 007395    | SFG30-04-1  | 0.04               | ±0.004                      |
| 007396    | SFG30-05-1  | 0.05               | ±0.005                      |
| 007397    | SFG30-06-1  | 0.06               | ±0.006                      |
| 007398    | SFG30-08-1  | 0.08               | ±0.008                      |
| 007399    | SFG30-10-1  | 0.1                | ±0.01                       |

#### ■ Leaf Width (W) : 50mm

| Order No. | Model No.   | Thickness (t) (mm) | Thickness Accuracy (t) (mm) |
|-----------|-------------|--------------------|-----------------------------|
| 007400    | SFG50-005-1 | 0.005              | ±0.0005                     |
| 007401    | SFG50-01-1  | 0.01               | ±0.001                      |
| 007402    | SFG50-02-1  | 0.02               | ±0.002                      |
| 007403    | SFG50-03-1  | 0.03               | ±0.003                      |
| 007404    | SFG50-04-1  | 0.04               | ±0.004                      |
| 007405    | SFG50-05-1  | 0.05               | ±0.005                      |
| 007406    | SFG50-06-1  | 0.06               | ±0.006                      |
| 007407    | SFG50-08-1  | 0.08               | ±0.008                      |
| 007408    | SFG50-10-1  | 0.1                | ±0.01                       |

BLOCK GAUGE

PIN GAUGE

PIN VISE

PIN GAUGE ACCESSORIES

RING GAUGE

PLUG GAUGE

LIMIT GAUGE

THICKNESS GAUGE

TAPER GAUGE

WELDING GAUGE

OTHER GAUGES

## FEELER GAUGE (SFG SERIES)

Essential for assembly and fitting work. Made of rust-resistant stainless steel.  
Can be used by cutting only the necessary size.

**T**  
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を除く

### USE

- For measurement of gap width

### MATERIAL

- Leaf thickness: 0.01mm Stainless steel SUS301H  
0.005~0.02~0.30mm Stainless steel SUS304H

### FEATURES

- For assemble or adjustment of automotive engine components or other machinery. Can be cut to necessary size.

### SPECIFICATIONS

- Leaf width: 12.7mm
- Leaf hardness: HV300 and above
- Case Size: 77×77×22mm  
115×115×22mm (Order No: 007434~007439)



Wide width type ▶  
Feeler Gauge (Wide type)  
 **P79**

Multiple sizes in one product ▶  
Thickness Gauge  
 **P81**  
~84

Rust prevention ▶  
Zerust Film for Steel  
 **P370**

| Order No. | Model No. | Size     | Leaf Thickness (mm) | Leaf Length (mm) | Accuracy (mm) | Weight (incl. case) |
|-----------|-----------|----------|---------------------|------------------|---------------|---------------------|
| 007245    | SFG-005-1 | 0.005×1m | 0.005               | 1                | ±0.004        | 34g                 |
| 007251    | SFG-01-1  | 0.01×1m  | 0.01                |                  |               | 34g                 |
| 007252    | SFG-02-1  | 0.02×1m  | 0.02                |                  |               | 35g                 |
| 007381    | SFG-03-1  | 0.03×1m  | 0.03                |                  |               | 36g                 |
| 007382    | SFG-04-1  | 0.04×1m  | 0.04                |                  |               | 37g                 |
| 007383    | SFG-05-1  | 0.05×1m  | 0.05                |                  | ±0.005        | 38g                 |
| 007384    | SFG-06-1  | 0.06×1m  | 0.06                |                  |               | 39g                 |
| 007385    | SFG-07-1  | 0.07×1m  | 0.07                |                  |               | 40g                 |
| 007386    | SFG-08-1  | 0.08×1m  | 0.08                |                  |               | 41g                 |
| 007387    | SFG-09-1  | 0.09×1m  | 0.09                |                  |               | 42g                 |
| 007388    | SFG-10-1  | 0.10×1m  | 0.10                | 3                | ±0.006        | 43g                 |
| 007431    | SFG-15-1  | 0.15×1m  | 0.15                |                  |               | 50g                 |
| 007432    | SFG-20-1  | 0.20×1m  | 0.20                |                  |               | 55g                 |
| 007433    | SFG-30-1  | 0.30×1m  | 0.30                |                  |               | 65g                 |
| 007421    | SFG-01-3  | 0.01×3m  | 0.01                |                  | ±0.004        | 36g                 |
| 007422    | SFG-02-3  | 0.02×3m  | 0.02                |                  |               | 39g                 |
| 007423    | SFG-03-3  | 0.03×3m  | 0.03                |                  |               | 42g                 |
| 007424    | SFG-04-3  | 0.04×3m  | 0.04                |                  | ±0.005        | 45g                 |
| 007425    | SFG-05-3  | 0.05×3m  | 0.05                |                  |               | 48g                 |

| Order No. | Model No. | Size    | Leaf Thickness (mm) | Leaf Length (mm) | Accuracy (mm) | Weight (incl. case) |
|-----------|-----------|---------|---------------------|------------------|---------------|---------------------|
| 007426    | SFG-06-3  | 0.06×3m | 0.06                | 3                | ±0.005        | 51g                 |
| 007427    | SFG-07-3  | 0.07×3m | 0.07                |                  |               | 54g                 |
| 007428    | SFG-08-3  | 0.08×3m | 0.08                |                  |               | 57g                 |
| 007429    | SFG-09-3  | 0.09×3m | 0.09                |                  |               | 60g                 |
| 007430    | SFG-10-3  | 0.10×3m | 0.10                |                  | ±0.006        | 63g                 |
| 007434    | SFG-15-3  | 0.15×3m | 0.15                |                  |               | 130g                |
| 007435    | SFG-20-3  | 0.20×3m | 0.20                |                  |               | 145g                |
| 007436    | SFG-30-3  | 0.30×3m | 0.30                |                  |               | 175g                |
| 007411    | SFG-01-5  | 0.01×5m | 0.01                | 5                | ±0.004        | 38g                 |
| 007412    | SFG-02-5  | 0.02×5m | 0.02                |                  |               | 43g                 |
| 007413    | SFG-03-5  | 0.03×5m | 0.03                |                  |               | 48g                 |
| 007414    | SFG-04-5  | 0.04×5m | 0.04                |                  |               | 53g                 |
| 007415    | SFG-05-5  | 0.05×5m | 0.05                |                  | ±0.005        | 58g                 |
| 007416    | SFG-06-5  | 0.06×5m | 0.06                |                  |               | 63g                 |
| 007417    | SFG-07-5  | 0.07×5m | 0.07                |                  |               | 68g                 |
| 007418    | SFG-08-5  | 0.08×5m | 0.08                |                  |               | 73g                 |
| 007419    | SFG-09-5  | 0.09×5m | 0.09                |                  |               | 78g                 |
| 007420    | SFG-10-5  | 0.10×5m | 0.10                |                  | ±0.006        | 83g                 |
| 007437    | SFG-15-5  | 0.15×5m | 0.15                |                  |               | 160g                |
| 007438    | SFG-20-5  | 0.20×5m | 0.20                |                  |               | 185g                |
| 007439    | SFG-30-5  | 0.30×5m | 0.30                |                  |               | 235g                |

## FEELER GAUGE (FG SERIES)



Essential for assembly and fitting work.  
Can be used by cutting only the necessary size.

### USE

- For measurement of gap width

### MATERIAL

- Carbon tool steel (Hardened) (equivalent to SK7)

### FEATURES

- For assembly or adjustment of automotive engine components or other machinery. Can be cut to necessary size.

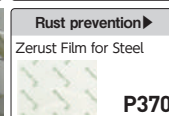
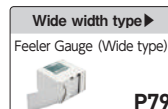
### SPECIFICATIONS

- Leaf width: 12.7mm ● Leaf hardness: HV320 and above

※ White powder remains on the surface of the product is antirust agent



Case package



Plastic bag package

| Order No. | Model No. | Size (mm) | Leaf Width (mm) | Leaf Length (m) | Accuracy (mm)              | Case size (mm)           | Weight (Including case)    |        |                          |     |
|-----------|-----------|-----------|-----------------|-----------------|----------------------------|--------------------------|----------------------------|--------|--------------------------|-----|
| 007253    | FG-03-1   | 0.03x1m   | 0.03            | 1               | ±0.005                     | Case package<br>77×77×22 | 36g                        |        |                          |     |
| 007254    | FG-04-1   | 0.04x1m   | 0.04            |                 |                            |                          | 37g                        |        |                          |     |
| 007255    | FG-05-1   | 0.05x1m   | 0.05            |                 |                            |                          | 38g                        |        |                          |     |
| 007256    | FG-06-1   | 0.06x1m   | 0.06            |                 |                            |                          | 39g                        |        |                          |     |
| 007257    | FG-07-1   | 0.07x1m   | 0.07            |                 |                            |                          | 40g                        |        |                          |     |
| 007258    | FG-08-1   | 0.08x1m   | 0.08            |                 |                            |                          | 41g                        |        |                          |     |
| 007259    | FG-09-1   | 0.09x1m   | 0.09            |                 |                            |                          | 42g                        |        |                          |     |
| 007260    | FG-10-1   | 0.10x1m   | 0.10            |                 |                            |                          | 43g                        |        |                          |     |
| 007261    | FG-11-1   | 0.11x1m   | 0.11            |                 |                            |                          | 44g                        |        |                          |     |
| 007262    | FG-12-1   | 0.12x1m   | 0.12            |                 |                            |                          | 45g                        |        |                          |     |
| 007263    | FG-13-1   | 0.13x1m   | 0.13            |                 | ±0.01                      |                          | 46g                        |        |                          |     |
| 007264    | FG-14-1   | 0.14x1m   | 0.14            |                 |                            |                          | 47g                        |        |                          |     |
| 007265    | FG-15-1   | 0.15x1m   | 0.15            |                 |                            |                          | 48g                        |        |                          |     |
| 007266    | FG-16-1   | 0.16x1m   | 0.16            |                 |                            |                          | 49g                        |        |                          |     |
| 007267    | FG-17-1   | 0.17x1m   | 0.17            |                 |                            |                          | 50g                        |        |                          |     |
| 007268    | FG-18-1   | 0.18x1m   | 0.18            |                 |                            |                          | 51g                        |        |                          |     |
| 007269    | FG-19-1   | 0.19x1m   | 0.19            |                 |                            |                          | 52g                        |        |                          |     |
| 007270    | FG-20-1   | 0.20x1m   | 0.20            |                 |                            |                          | 53g                        |        |                          |     |
| 007275    | FG-25-1   | 0.25x1m   | 0.25            |                 |                            |                          | 58g                        |        |                          |     |
| 007280    | FG-30-1   | 0.30x1m   | 0.30            |                 |                            |                          | 63g                        |        |                          |     |
| 007282    | FG-35-1   | 0.35x1m   | 0.35            |                 | ±0.012                     |                          | Case package<br>115×115×22 | 121g   |                          |     |
| 007284    | FG-40-1   | 0.40x1m   | 0.40            |                 |                            |                          |                            | 126g   |                          |     |
| 007286    | FG-45-1   | 0.45x1m   | 0.45            |                 |                            |                          |                            | 133g   |                          |     |
| 007287    | FG-50-1   | 0.50x1m   | 0.50            |                 | ±0.02                      |                          | Plastic bag<br>package     | 138g   |                          |     |
| 007289    | FG-60-1   | 0.60x1m   | 0.60            |                 |                            |                          |                            | 64g    |                          |     |
| 007291    | FG-70-1   | 0.70x1m   | 0.70            |                 |                            |                          |                            | 72g    |                          |     |
| 007292    | FG-80-1   | 0.80x1m   | 0.80            |                 |                            |                          |                            | 84g    |                          |     |
| 007293    | FG-90-1   | 0.90x1m   | 0.90            |                 | 3                          |                          | Case package<br>77×77×22   | 92g    |                          |     |
| 007294    | FG-00-1   | 1.00x1m   | 1.00            |                 |                            |                          |                            | 101g   |                          |     |
| 007303    | FG-03-3   | 0.03x3m   | 0.03            |                 |                            |                          |                            | ±0.005 | Case package<br>77×77×22 | 42g |
| 007304    | FG-04-3   | 0.04x3m   | 0.04            |                 |                            |                          |                            |        |                          | 45g |
| 007305    | FG-05-3   | 0.05x3m   | 0.05            |                 |                            |                          |                            |        |                          | 48g |
| 007306    | FG-06-3   | 0.06x3m   | 0.06            |                 |                            |                          |                            |        |                          | 51g |
| 007307    | FG-07-3   | 0.07x3m   | 0.07            |                 |                            |                          |                            |        |                          | 54g |
| 007308    | FG-08-3   | 0.08x3m   | 0.08            | 57g             |                            |                          |                            |        |                          |     |
| 007309    | FG-09-3   | 0.09x3m   | 0.09            | 60g             |                            |                          |                            |        |                          |     |
| 007310    | FG-10-3   | 0.10x3m   | 0.10            | 63g             |                            |                          |                            |        |                          |     |
| 007311    | FG-11-3   | 0.11x3m   | 0.11            | ±0.01           | Case package<br>115×115×22 | 66g                      |                            |        |                          |     |
| 007312    | FG-12-3   | 0.12x3m   | 0.12            |                 |                            | 69g                      |                            |        |                          |     |
| 007313    | FG-13-3   | 0.13x3m   | 0.13            |                 |                            | 72g                      |                            |        |                          |     |
| 007314    | FG-14-3   | 0.14x3m   | 0.14            |                 |                            | 75g                      |                            |        |                          |     |
| 007315    | FG-15-3   | 0.15x3m   | 0.15            |                 |                            | 130g                     |                            |        |                          |     |
| 007317    | FG-20-3   | 0.20x3m   | 0.20            |                 |                            | 145g                     |                            |        |                          |     |
| 007318    | FG-25-3   | 0.25x3m   | 0.25            |                 |                            | 160g                     |                            |        |                          |     |
| 007319    | FG-30-3   | 0.30x3m   | 0.30            |                 |                            | ±0.012                   | Plastic bag<br>package     | 176g   |                          |     |
| 007321    | FG-35-3   | 0.35x3m   | 0.35            | 107g            |                            |                          |                            |        |                          |     |
| 007323    | FG-40-3   | 0.40x3m   | 0.40            | 140g            |                            |                          |                            |        |                          |     |
| 007325    | FG-45-3   | 0.45x3m   | 0.45            | 156g            |                            |                          |                            |        |                          |     |
| 007326    | FG-50-3   | 0.50x3m   | 0.50            | 170g            |                            |                          |                            |        |                          |     |
| 007328    | FG-60-3   | 0.60x3m   | 0.60            | 208g            |                            |                          |                            |        |                          |     |
| 007330    | FG-70-3   | 0.70x3m   | 0.70            | ±0.02           |                            | 234g                     |                            |        |                          |     |
| 007331    | FG-80-3   | 0.80x3m   | 0.80            |                 |                            | 270g                     |                            |        |                          |     |
| 007332    | FG-90-3   | 0.90x3m   | 0.90            |                 |                            | 293g                     |                            |        |                          |     |
| 007333    | FG-00-3   | 1.00x3m   | 1.00            |                 |                            | 320g                     |                            |        |                          |     |
| 007343    | FG-03-5   | 0.03x5m   | 0.03            | 5               | Case package<br>77×77×22   | 48g                      |                            |        |                          |     |
| 007344    | FG-04-5   | 0.04x5m   | 0.04            |                 |                            | ±0.005                   | 53g                        |        |                          |     |
| 007345    | FG-05-5   | 0.05x5m   | 0.05            |                 |                            |                          | 58g                        |        |                          |     |
| 007346    | FG-06-5   | 0.06x5m   | 0.06            |                 |                            |                          | 63g                        |        |                          |     |
| 007347    | FG-07-5   | 0.07x5m   | 0.07            |                 |                            |                          | 68g                        |        |                          |     |
| 007348    | FG-08-5   | 0.08x5m   | 0.08            |                 |                            |                          | 73g                        |        |                          |     |
| 007349    | FG-09-5   | 0.09x5m   | 0.09            |                 |                            |                          | 78g                        |        |                          |     |
| 007350    | FG-10-5   | 0.10x5m   | 0.10            |                 |                            |                          | 83g                        |        |                          |     |
| 007351    | FG-11-5   | 0.11x5m   | 0.11            |                 |                            |                          | 88g                        |        |                          |     |
| 007352    | FG-12-5   | 0.12x5m   | 0.12            |                 |                            | ±0.01                    | Case package<br>115×115×22 | 93g    |                          |     |
| 007353    | FG-13-5   | 0.13x5m   | 0.13            | 98g             |                            |                          |                            |        |                          |     |
| 007354    | FG-14-5   | 0.14x5m   | 0.14            | 103g            |                            |                          |                            |        |                          |     |
| 007355    | FG-15-5   | 0.15x5m   | 0.15            | 161g            |                            |                          |                            |        |                          |     |
| 007357    | FG-20-5   | 0.20x5m   | 0.20            | 185g            |                            |                          |                            |        |                          |     |
| 007358    | FG-25-5   | 0.25x5m   | 0.25            | 157g            |                            |                          |                            |        |                          |     |
| 007359    | FG-30-5   | 0.30x5m   | 0.30            | 184g            |                            |                          |                            |        |                          |     |
| 007361    | FG-35-5   | 0.35x5m   | 0.35            | ±0.012          | Plastic bag<br>package     | 211g                     |                            |        |                          |     |
| 007363    | FG-40-5   | 0.40x5m   | 0.40            |                 |                            | 232g                     |                            |        |                          |     |
| 007365    | FG-45-5   | 0.45x5m   | 0.45            |                 |                            | 259g                     |                            |        |                          |     |
| 007366    | FG-50-5   | 0.50x5m   | 0.50            | ±0.02           |                            | 282g                     |                            |        |                          |     |
| 007368    | FG-60-5   | 0.60x5m   | 0.60            |                 |                            | 345g                     |                            |        |                          |     |
| 007370    | FG-70-5   | 0.70x5m   | 0.70            |                 |                            | 389g                     |                            |        |                          |     |
| 007371    | FG-80-5   | 0.80x5m   | 0.80            |                 |                            | 449g                     |                            |        |                          |     |
| 007372    | FG-90-5   | 0.90x5m   | 0.90            |                 |                            | 487g                     |                            |        |                          |     |
| 007373    | FG-00-5   | 1.00x5m   | 1.00            |                 |                            | 532g                     |                            |        |                          |     |

## THICKNESS GAUGE



Suitable for measuring slight gaps where it is difficult to do with other measuring instruments

\*Each of leaf can be detached by unscrewing the clasp (except 172 series)



65M

|                                                                         |                                                                 |
|-------------------------------------------------------------------------|-----------------------------------------------------------------|
| <b>For cutting necessary size▶</b><br>Feeler Gauge<br><b>P79</b><br>~80 | <b>Replaceable leaf▶</b><br>Thickness Gauge Leaf<br><b>P83</b>  |
| <b>Rust-resistant type▶</b><br>Stainless Thickness Gauge<br><b>P84</b>  | <b>Rust prevention▶</b><br>Zerust Film for Steel<br><b>P370</b> |

### USE

- For measurement of gap width

### MATERIAL

- Carbon tool steel (Hardened)

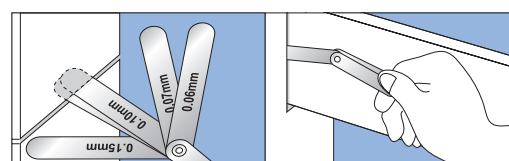
### FEATURES

- Enables precise inspection by inserting the gauge into the gap between two flat surfaces
- Suitable for measuring gap between piston and cylinder of automotive engine

### SPECIFICATIONS

- Leaf width: 12.7mm

※ White powder remains on the surface of the product is antirust agent



※ Leaves can be combined for a wide range of measurements

### ACCURACY

| Leaf thickness (mm) | Tolerance (mm) |
|---------------------|----------------|
| 0.01~0.06           | ±0.005         |
| 0.07~0.10           | ±0.01          |
| 0.11~0.35           | ±0.015         |
| 0.40~0.60           | ±0.02          |
| 0.70~3.00           | ±0.035         |

| Order No. | Model No. | Leaf Length (mm) | Pieces/ Set | Nominal Size (mm)                                                                                                            | Weight |
|-----------|-----------|------------------|-------------|------------------------------------------------------------------------------------------------------------------------------|--------|
| 111032    | 172MA     | 75               | 9           | 0.04 0.05 0.06 0.07 0.08 0.10 0.15 0.20 0.30                                                                                 | 30g    |
| 111033    | 172MB     | 100              |             |                                                                                                                              | 30g    |
| 111034    | 172MC     | 150              |             |                                                                                                                              | 50g    |
| 110970    | 172MD     | 230              |             |                                                                                                                              | 70g    |
| 110971    | 172ME     | 300              | 10          | 0.03 0.04 0.05 0.08 0.10 0.15 0.20 0.25 0.30 0.40                                                                            | 90g    |
| 110972    | 100MR     | 100              |             |                                                                                                                              | 40g    |
| 110973    | 150MR     | 150              | 10          | 0.01 0.02 0.03 0.04 0.05 0.06 0.07 0.08 0.09 0.10                                                                            | 60g    |
| 110974    | 100MK     | 100              |             |                                                                                                                              | 30g    |
| 110975    | 150MK     | 150              | 19          | 0.01 0.02 0.03 0.04 0.05 0.06 0.07 0.08 0.09 0.10 0.15 0.20 0.25 0.30 0.35 0.40 0.45 0.50 0.70 0.80 1.00                     | 40g    |
| 111038    | 60M       | 75               |             | 0.03 0.04 0.05 0.06 0.07 0.08 0.09 0.10 0.15 0.20                                                                            | 60g    |
| 111039    | 100MY     | 100              |             |                                                                                                                              | 80g    |
| 111040    | 150MY     | 150              |             |                                                                                                                              | 120g   |
| 111035    | 65M       | 75               | 25          | 0.03 0.04 0.05 0.06 0.07 0.08 0.09 0.10 0.11 0.12 0.13 0.14 0.15 0.20 0.25 0.30 0.35 0.40 0.45 0.50 0.60 0.70 0.80 0.90 1.00 | 80g    |
| 111036    | 100MZ     | 100              |             |                                                                                                                              | 100g   |
| 111037    | 150MZ     | 150              |             |                                                                                                                              | 150g   |
| 111031    | 72M       | 75               | 12          | 0.04 0.05 0.06 0.07 0.08 0.10 0.15 0.20 0.30 1.00                                                                            | 70g    |
| 111044    | 100MT     | 100              |             | 2.00 3.00                                                                                                                    | 100g   |
| 111045    | 150MT     | 150              | 19          |                                                                                                                              | 140g   |
| 110976    | 100ML     | 100              |             | 0.01 0.02 0.03 0.04 0.05 0.06 0.07 0.08 0.09 0.10 0.20 0.30 0.40 0.50 0.60 0.70 0.80 0.90 1.00                               | 80g    |
| 110977    | 150ML     | 150              |             |                                                                                                                              | 120g   |
| 110978    | 80M       | 75               | 13          |                                                                                                                              | 60g    |
| 111046    | 100MX     | 100              |             | 0.03 0.04 0.05 0.06 0.07 0.08 0.10 0.15 0.20 0.30 1.00 2.00 3.00                                                             | 90g    |
| 111047    | 150MX     | 150              |             |                                                                                                                              | 140g   |
| 111048    | 100MH     | 100              | 10          |                                                                                                                              | 80g    |
| 111049    | 150MH     | 150              |             | 0.10 0.20 0.30 0.40 0.50 0.60 0.70 0.80 0.90 1.00                                                                            | 110g   |

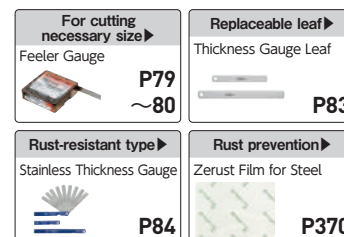
## THICKNESS GAUGE WITH COLOR SLEEVE



HOW TO MOVE

Same accuracy as regular THICKNESS GAUGE  
with three different color options - white, black and green

\*Each of leaf can be detached by unscrewing the clasp (except 172 series)



## USE

- For measurement of gap width

## MATERIAL

- Carbon tool steel (Hardened)

## FEATURES

- Enables precise inspection by inserting the gauge into the gap between two flat surfaces
- Suitable for measuring gap between piston and cylinder of automotive engine

## SPECIFICATIONS

- Leaf width: 12.7mm

※White powder remains on the surface of the product is anti-rust agent

## ACCURACY

| Leaf Thickness (mm) | Tolerance (mm) |
|---------------------|----------------|
| 0.01~0.06           | ±0.005         |
| 0.07~0.10           | ±0.01          |
| 0.11~0.35           | ±0.015         |
| 0.40~0.60           | ±0.02          |
| 0.70~3.00           | ±0.035         |

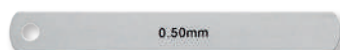
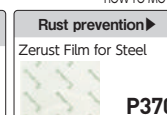
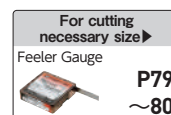
| Order No. | Model No.    | Leaf Length (mm) | Pieces/ Set | Size (mm)                                                                                                                         | Weight |
|-----------|--------------|------------------|-------------|-----------------------------------------------------------------------------------------------------------------------------------|--------|
| 110601    | CS-172MA (W) | 75               | 9           | 0.04 0.05 0.06 0.07 0.08 0.10 0.15 0.20 0.30                                                                                      | 30g    |
| 110602    | CS-172MA (B) |                  |             |                                                                                                                                   | 30g    |
| 110603    | CS-172MA (G) |                  |             |                                                                                                                                   |        |
| 110604    | CS-172MB (W) | 100              | 10          | 0.03 0.04 0.05 0.08 0.10 0.15 0.20 0.25 0.30 0.40                                                                                 | 40g    |
| 110605    | CS-172MB (B) |                  |             |                                                                                                                                   | 60g    |
| 110606    | CS-172MB (G) |                  |             |                                                                                                                                   |        |
| 110607    | CS-172MC (W) | 150              | 10          | 0.01 0.02 0.03 0.04 0.05 0.06 0.07 0.08 0.09 0.10                                                                                 | 30g    |
| 110608    | CS-172MC (B) |                  |             |                                                                                                                                   | 40g    |
| 110609    | CS-172MC (G) |                  |             |                                                                                                                                   |        |
| 110610    | CS-100MR (W) | 100              | 10          | 0.03 0.04 0.05 0.08 0.10 0.15 0.20 0.25 0.30 0.40                                                                                 | 40g    |
| 110611    | CS-100MR (B) |                  |             |                                                                                                                                   | 60g    |
| 110612    | CS-100MR (G) |                  |             |                                                                                                                                   |        |
| 110613    | CS-150MR (W) | 150              | 10          | 0.01 0.02 0.03 0.04 0.05 0.06 0.07 0.08 0.09 0.10                                                                                 | 30g    |
| 110614    | CS-150MR (B) |                  |             |                                                                                                                                   | 40g    |
| 110615    | CS-150MR (G) |                  |             |                                                                                                                                   |        |
| 110616    | CS-100MK (W) | 100              | 10          | 0.03 0.04 0.05 0.06 0.07 0.08 0.09 0.10 0.15 0.20 0.25 0.30 0.35 0.40 0.45 0.50 0.70 0.80 1.00                                    | 80g    |
| 110617    | CS-100MK (B) |                  |             |                                                                                                                                   | 120g   |
| 110618    | CS-100MK (G) |                  |             |                                                                                                                                   |        |
| 110619    | CS-150MK (W) | 150              | 10          | 0.03 0.04 0.05 0.06 0.07 0.08 0.09 0.10 0.11 0.12 0.13 0.14 0.15 0.20 0.25 0.30 0.35 0.40 0.45 0.50 0.60 0.70 0.80 0.90 1.00      | 100g   |
| 110620    | CS-150MK (B) |                  |             |                                                                                                                                   | 150g   |
| 110621    | CS-150MK (G) |                  |             |                                                                                                                                   |        |
| 110622    | CS-60M (W)   | 75               | 12          | 0.04 0.05 0.06 0.07 0.08 0.10 0.15 0.20 0.30 1.00 2.00 3.00                                                                       | 100g   |
| 110623    | CS-60M (B)   |                  |             |                                                                                                                                   | 140g   |
| 110624    | CS-60M (G)   |                  |             |                                                                                                                                   |        |
| 110625    | CS-100MY (W) | 100              | 19          | 0.01 0.02 0.03 0.04 0.05 0.06 0.07 0.08 0.09 0.10 0.12 0.13 0.14 0.15 0.20 0.25 0.30 0.40 0.50 0.60 0.70 0.80 0.90 1.00           | 80g    |
| 110626    | CS-100MY (B) |                  |             |                                                                                                                                   | 120g   |
| 110627    | CS-100MY (G) |                  |             |                                                                                                                                   |        |
| 110628    | CS-150MY (W) | 150              | 19          | 0.03 0.04 0.05 0.06 0.07 0.08 0.10 0.15 0.20 0.30 1.00 2.00 3.00                                                                  | 90g    |
| 110629    | CS-150MY (B) |                  |             |                                                                                                                                   | 140g   |
| 110630    | CS-150MY (G) |                  |             |                                                                                                                                   |        |
| 110631    | CS-65M (W)   | 75               | 12          | 0.04 0.05 0.06 0.07 0.08 0.10 0.15 0.20 0.30 1.00 2.00 3.00                                                                       | 100g   |
| 110632    | CS-65M (B)   |                  |             |                                                                                                                                   | 140g   |
| 110633    | CS-65M (G)   |                  |             |                                                                                                                                   |        |
| 110634    | CS-100MZ (W) | 100              | 19          | 0.01 0.02 0.03 0.04 0.05 0.06 0.07 0.08 0.09 0.10 0.12 0.13 0.14 0.15 0.20 0.25 0.30 0.35 0.40 0.45 0.50 0.60 0.70 0.80 0.90 1.00 | 80g    |
| 110635    | CS-100MZ (B) |                  |             |                                                                                                                                   | 100g   |
| 110636    | CS-100MZ (G) |                  |             |                                                                                                                                   |        |
| 110637    | CS-150MZ (W) | 150              | 19          | 0.03 0.04 0.05 0.06 0.07 0.08 0.10 0.15 0.20 0.30 1.00 2.00 3.00                                                                  | 90g    |
| 110638    | CS-150MZ (B) |                  |             |                                                                                                                                   | 140g   |
| 110639    | CS-150MZ (G) |                  |             |                                                                                                                                   |        |
| 110640    | CS-72M (W)   | 75               | 12          | 0.04 0.05 0.06 0.07 0.08 0.10 0.15 0.20 0.30 1.00 2.00 3.00                                                                       | 100g   |
| 110641    | CS-72M (B)   |                  |             |                                                                                                                                   | 140g   |
| 110642    | CS-72M (G)   |                  |             |                                                                                                                                   |        |
| 110643    | CS-100MT (W) | 100              | 12          | 0.01 0.02 0.03 0.04 0.05 0.06 0.07 0.08 0.09 0.10 0.12 0.13 0.14 0.15 0.20 0.25 0.30 0.35 0.40 0.45 0.50 0.60 0.70 0.80 0.90 1.00 | 80g    |
| 110644    | CS-100MT (B) |                  |             |                                                                                                                                   | 120g   |
| 110645    | CS-100MT (G) |                  |             |                                                                                                                                   |        |
| 110646    | CS-150MT (W) | 150              | 12          | 0.03 0.04 0.05 0.06 0.07 0.08 0.10 0.15 0.20 0.30 1.00 2.00 3.00                                                                  | 90g    |
| 110647    | CS-150MT (B) |                  |             |                                                                                                                                   | 140g   |
| 110648    | CS-150MT (G) |                  |             |                                                                                                                                   |        |
| 110649    | CS-100ML (W) | 100              | 19          | 0.01 0.02 0.03 0.04 0.05 0.06 0.07 0.08 0.09 0.10 0.12 0.13 0.14 0.15 0.20 0.25 0.30 0.35 0.40 0.45 0.50 0.60 0.70 0.80 0.90 1.00 | 80g    |
| 110650    | CS-100ML (B) |                  |             |                                                                                                                                   | 120g   |
| 110651    | CS-100ML (G) |                  |             |                                                                                                                                   |        |
| 110652    | CS-150ML (W) | 150              | 19          | 0.03 0.04 0.05 0.06 0.07 0.08 0.10 0.15 0.20 0.30 1.00 2.00 3.00                                                                  | 90g    |
| 110653    | CS-150ML (B) |                  |             |                                                                                                                                   | 140g   |
| 110654    | CS-150ML (G) |                  |             |                                                                                                                                   |        |
| 110655    | CS-80M (W)   | 75               | 13          | 0.01 0.02 0.03 0.04 0.05 0.06 0.07 0.08 0.09 0.10 0.12 0.13 0.14 0.15 0.20 0.25 0.30 0.35 0.40 0.45 0.50 0.60 0.70 0.80 0.90 1.00 | 80g    |
| 110656    | CS-80M (B)   |                  |             |                                                                                                                                   | 120g   |
| 110657    | CS-80M (G)   |                  |             |                                                                                                                                   |        |
| 110658    | CS-100MX (W) | 100              | 13          | 0.03 0.04 0.05 0.06 0.07 0.08 0.10 0.15 0.20 0.30 1.00 2.00 3.00                                                                  | 90g    |
| 110659    | CS-100MX (B) |                  |             |                                                                                                                                   | 140g   |
| 110660    | CS-100MX (G) |                  |             |                                                                                                                                   |        |
| 110661    | CS-150MX (W) | 150              | 13          | 0.01 0.02 0.03 0.04 0.05 0.06 0.07 0.08 0.09 0.10 0.12 0.13 0.14 0.15 0.20 0.25 0.30 0.35 0.40 0.45 0.50 0.60 0.70 0.80 0.90 1.00 | 80g    |
| 110662    | CS-150MX (B) |                  |             |                                                                                                                                   | 120g   |
| 110663    | CS-150MX (G) |                  |             |                                                                                                                                   |        |
| 110664    | CS-100MH (W) | 100              | 10          | 0.10 0.20 0.30 0.40 0.50 0.60 0.70 0.80 0.90 1.00                                                                                 | 80g    |
| 110665    | CS-100MH (B) |                  |             |                                                                                                                                   | 110g   |
| 110666    | CS-100MH (G) |                  |             |                                                                                                                                   |        |
| 110667    | CS-150MH (W) | 150              | 10          | 0.10 0.20 0.30 0.40 0.50 0.60 0.70 0.80 0.90 1.00                                                                                 | 80g    |
| 110668    | CS-150MH (B) |                  |             |                                                                                                                                   | 110g   |
| 110669    | CS-150MH (G) |                  |             |                                                                                                                                   |        |
| 110670    | CS-100MH (W) | 100              | 10          | 0.10 0.20 0.30 0.40 0.50 0.60 0.70 0.80 0.90 1.00                                                                                 | 80g    |
| 110671    | CS-100MH (B) |                  |             |                                                                                                                                   | 110g   |
| 110672    | CS-100MH (G) |                  |             |                                                                                                                                   |        |
| 110673    | CS-150MH (W) | 150              | 10          | 0.10 0.20 0.30 0.40 0.50 0.60 0.70 0.80 0.90 1.00                                                                                 | 80g    |
| 110674    | CS-150MH (B) |                  |             |                                                                                                                                   | 110g   |
| 110675    | CS-150MH (G) |                  |             |                                                                                                                                   |        |



## THICKNESS GAUGE LEAF



HOW TO MOVE



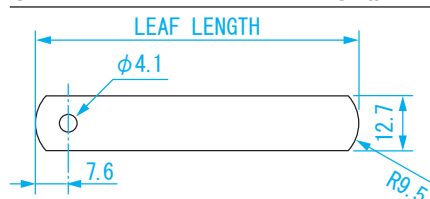
S100-05



S150-10

## ● DIMENSIONS

Units : mm



## ACCURACY

| Leaf Thickness (mm) | Tolerance (mm) |
|---------------------|----------------|
| 0.01~0.06           | ±0.005         |
| 0.07~0.10           | ±0.01          |
| 0.11~0.35           | ±0.015         |
| 0.40~0.60           | ±0.02          |
| 0.70~3.00           | ±0.035         |

## MATERIAL

- Carbon tool steel (Hardened)

## SPECIFICATIONS

- Leaf width: 12.7mm

※ White powder remains on the surface of the product is anti-rust agent

## ■ Leaf Length: 75mm

| Order No. | Model No. | Thickness (mm) |
|-----------|-----------|----------------|
| 110733    | S075-003  | 0.03           |
| 110734    | S075-004  | 0.04           |
| 110735    | S075-005  | 0.05           |
| 110736    | S075-006  | 0.06           |
| 110737    | S075-007  | 0.07           |
| 110738    | S075-008  | 0.08           |
| 110739    | S075-009  | 0.09           |
| 110740    | S075-01   | 0.10           |
| 110741    | S075-011  | 0.11           |
| 110742    | S075-012  | 0.12           |
| 110743    | S075-013  | 0.13           |
| 110744    | S075-014  | 0.14           |
| 110745    | S075-015  | 0.15           |
| 110746    | S075-02   | 0.20           |
| 110747    | S075-025  | 0.25           |
| 110748    | S075-03   | 0.30           |
| 110749    | S075-035  | 0.35           |
| 110750    | S075-04   | 0.40           |
| 110751    | S075-045  | 0.45           |
| 110752    | S075-05   | 0.50           |
| 110753    | S075-06   | 0.60           |
| 110754    | S075-07   | 0.70           |
| 110755    | S075-08   | 0.80           |
| 110756    | S075-09   | 0.90           |
| 110757    | S075-10   | 1.00           |

## ■ Leaf Length: 100mm

| Order No. | Model No. | Thickness (mm) |
|-----------|-----------|----------------|
| 110801    | S100-001  | 0.01           |
| 110802    | S100-002  | 0.02           |
| 110803    | S100-003  | 0.03           |
| 110804    | S100-004  | 0.04           |
| 110805    | S100-005  | 0.05           |
| 110806    | S100-006  | 0.06           |
| 110807    | S100-007  | 0.07           |
| 110808    | S100-008  | 0.08           |
| 110809    | S100-009  | 0.09           |
| 110810    | S100-01   | 0.10           |
| 110841    | S100-011  | 0.11           |
| 110842    | S100-012  | 0.12           |
| 110843    | S100-013  | 0.13           |
| 110844    | S100-014  | 0.14           |
| 110845    | S100-015  | 0.15           |
| 110811    | S100-02   | 0.20           |
| 110846    | S100-025  | 0.25           |
| 110812    | S100-03   | 0.30           |
| 110847    | S100-035  | 0.35           |
| 110813    | S100-04   | 0.40           |
| 110848    | S100-045  | 0.45           |
| 110814    | S100-05   | 0.50           |
| 110815    | S100-06   | 0.60           |
| 110816    | S100-07   | 0.70           |
| 110817    | S100-08   | 0.80           |
| 110818    | S100-09   | 0.90           |
| 110819    | S100-10   | 1.00           |
| 110849    | S100-20   | 2.00           |
| 110850    | S100-30   | 3.00           |

## ■ Leaf Length: 150mm

| Order No. | Model No. | Thickness (mm) |
|-----------|-----------|----------------|
| 110820    | S150-001  | 0.01           |
| 110821    | S150-002  | 0.02           |
| 110822    | S150-003  | 0.03           |
| 110823    | S150-004  | 0.04           |
| 110824    | S150-005  | 0.05           |
| 110825    | S150-006  | 0.06           |
| 110826    | S150-007  | 0.07           |
| 110827    | S150-008  | 0.08           |
| 110828    | S150-009  | 0.09           |
| 110829    | S150-01   | 0.10           |
| 110851    | S150-011  | 0.11           |
| 110852    | S150-012  | 0.12           |
| 110853    | S150-013  | 0.13           |
| 110854    | S150-014  | 0.14           |
| 110855    | S150-015  | 0.15           |
| 110830    | S150-02   | 0.20           |
| 110856    | S150-025  | 0.25           |
| 110831    | S150-03   | 0.30           |
| 110857    | S150-035  | 0.35           |
| 110832    | S150-04   | 0.40           |
| 110858    | S150-045  | 0.45           |
| 110833    | S150-05   | 0.50           |
| 110834    | S150-06   | 0.60           |
| 110835    | S150-07   | 0.70           |
| 110836    | S150-08   | 0.80           |
| 110837    | S150-09   | 0.90           |
| 110838    | S150-10   | 1.00           |
| 110859    | S150-20   | 2.00           |
| 110860    | S150-30   | 3.00           |



## THICKNESS GAUGES WITH GRADUATION



HOW TO MOVE

Easy to see amount of insertion.

Thickness gauge leaf with graduation.

## USE

- For measurement of gap width

## MATERIAL

- Carbon tool steel (Hardened)

## FEATURES

- Enables to see insertion amount by adding graduation to the existing thickness gauges
- Stepped length of linear graduations by 1mm for easy-to-read

## SPECIFICATIONS

- Leaf width: 12.7mm

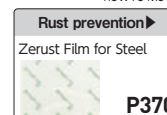
※ White powder remains on the surface of the product is anti-rust agent



S100-05M



S150-05M



| Order No. | Model No. | Thickness (mm) | Leaf Length (mm) | Max. Measurable Length (mm) | Thickness Tolerance (mm) | Graduation Accuracy (mm) |
|-----------|-----------|----------------|------------------|-----------------------------|--------------------------|--------------------------|
| 110692    | S100-01M  | 0.1            | 100              | 37                          | ±0.01                    | ±0.2                     |
| 110700    | S100-05M  | 0.5            |                  |                             | ±0.02                    |                          |
| 110702    | S150-01M  | 0.1            | 150              | 57                          | ±0.01                    |                          |
| 110710    | S150-05M  | 0.5            |                  |                             | ±0.02                    |                          |

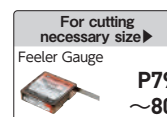
## STAINLESS THICKNESS GAUGE

Rust-resistant stainless steel type now available

\*Each of leaf can be detached by unscrewing the clasp



HOW TO MOVE



### USE

- For measurement of gap width

### MATERIAL

- Stainless steel (SUS304H)

### FEATURES

- Rust-resistant stainless steel leaf
- Accurate inspection can be done by inserting into a fine gap between two planes where difficult to measure
- It is an indispensable measuring tools for automotive distance measurement of piston and cylinder of engine
- Leaf width: 12.7mm

### ACCURACY

| Leaf thickness (mm) | Tolerance (mm) |
|---------------------|----------------|
| 0.04~0.10           | ±0.005         |
| 0.15~0.30           | ±0.015         |

| Order No. | Model No. | Leaf Length (mm) | Pieces /set | Size (mm)                                    | Weight |
|-----------|-----------|------------------|-------------|----------------------------------------------|--------|
| 110681    | S172MA    | 75               | 9           | 0.04 0.05 0.06 0.07 0.08 0.10 0.15 0.20 0.30 | 23g    |
| 110682    | S172MB    | 100              |             |                                              | 28g    |
| 110683    | S172MC    | 150              |             |                                              | 41g    |

## STAINLESS THICKNESS GAUGE LEAF



HOW TO MOVE



SS-100-030



SS-150-030

### MATERIAL

- Stainless steel (SUS304H)
- Leaf width: 12.7mm

### ACCURACY

| Leaf size (mm) | Tolerance (mm) |
|----------------|----------------|
| 0.04~0.10      | ±0.005         |
| 0.15~0.30      | ±0.015         |

### ■ Leaf Length: 100mm

| Order No. | Model No.  | Thickness (mm) |
|-----------|------------|----------------|
| 110764    | SS-100-004 | 0.04           |
| 110765    | SS-100-005 | 0.05           |
| 110766    | SS-100-006 | 0.06           |
| 110767    | SS-100-007 | 0.07           |
| 110768    | SS-100-008 | 0.08           |
| 110770    | SS-100-010 | 0.10           |
| 110771    | SS-100-015 | 0.15           |
| 110772    | SS-100-020 | 0.20           |
| 110773    | SS-100-030 | 0.30           |

### ■ Leaf Length: 150mm

| Order No. | Model No.  | Thickness (mm) |
|-----------|------------|----------------|
| 110777    | SS-150-004 | 0.04           |
| 110778    | SS-150-005 | 0.05           |
| 110779    | SS-150-006 | 0.06           |
| 110780    | SS-150-007 | 0.07           |
| 110781    | SS-150-008 | 0.08           |
| 110783    | SS-150-010 | 0.10           |
| 110784    | SS-150-015 | 0.15           |
| 110785    | SS-150-020 | 0.20           |
| 110786    | SS-150-030 | 0.30           |

## TAPER GAUGE

Quick size measurement of groove and gap



HOW TO MOVE



### USE

- For measurement of groove and gap etc.

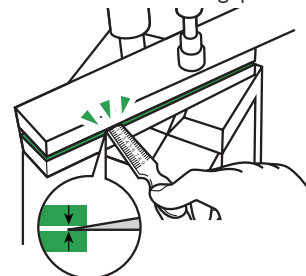
### MATERIAL

- Carbon steel for machine structural use (Non-hardened)

### FEATURES

- Each number marked on the gauge shows gauge thickness of its point which enables to measure width of inner gap
- Satin finish
- Packed in plastic carrying case

Graduation shows the gap width



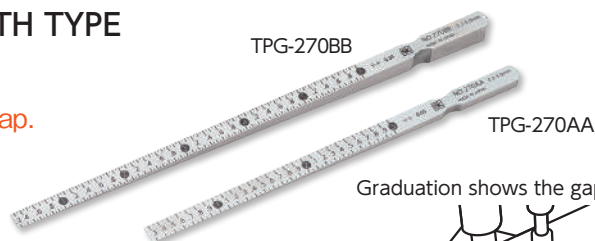
| Order No. | Model No. | Standard | Measuring Range (mm) | Accuracy (mm) | Graduation (mm) | Taper Angle | Full Length H×W (mm) | Weight |
|-----------|-----------|----------|----------------------|---------------|-----------------|-------------|----------------------|--------|
| 007000    | TPG-270A  | 270A     | 0.3~4                | ±0.04         | 0.05            | 1°54'33"    | 158×12               | 95g    |
| 007001    | TPG-270B  | 270B     | 0.4~6                | ±0.04         | 0.05            | 2°51'45"    | 158×12               | 95g    |

## TAPER GAUGE NARROW WIDTH TYPE

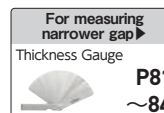
Narrow width type.

Quick size measurement of groove and gap.

For use as a height adjustment jig.



HOW TO MOVE



### USE

- For measurement of groove and gap etc.

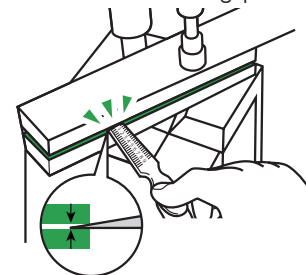
### MATERIAL

- Carbon steel for machine structural use (Non-hardened)

### FEATURES

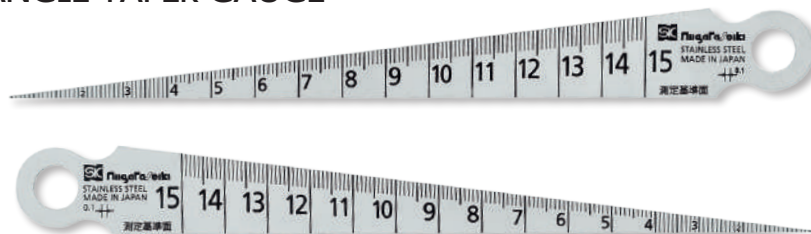
- Each number marked on the gauge shows gauge thickness of its point which enables to measure width of inner gap
- Satin finish
- Packed in plastic carrying case

Graduation shows the gap width



| Order No. | Model No. | Standard | Measuring Range (mm) | Accuracy (mm) | Graduation (mm) | Taper Angle | Full Length H×W (mm) | Weight |
|-----------|-----------|----------|----------------------|---------------|-----------------|-------------|----------------------|--------|
| 007002    | TPG-270AA | 270AA    | 0.3~3                | ±0.04         | 0.05            | 1°54'33"    | 127.5×6              | 18g    |
| 007003    | TPG-270BB | 270BB    | 0.3~6                | ±0.04         | 0.05            | 2°51'45"    | 160 ×6               | 38g    |

## RIGHT ANGLE TAPER GAUGE



HOW TO MOVE

### USE

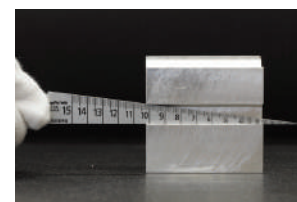
- For measurement of groove and gap etc.

### MATERIAL

- Hardened stainless steel ● Hardness: HV480

### FEATURES

- Taper gauge specialized in inner width measurements.  
One side of gauge rests secure along with the workpiece for a stable measurement.
- The scale is designed to be read easily from the side when the gap to be measured is not visible from above



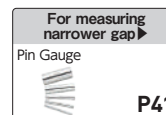
| Order No. | Model No. | Measuring Range (mm) | Accuracy (mm) | Graduation (mm) | Taper Angle | Full Length (mm) | Thickness (mm) | Weight |
|-----------|-----------|----------------------|---------------|-----------------|-------------|------------------|----------------|--------|
| 007004    | TPG-700T  | 1~15                 | ±0.05         | 0.1             | 7° 9' 10"   | 148.5            | 1.2            | 10g    |

## TAPER GAUGE

Quick size measurement of groove and gap



HOW TO MOVE



TPG-700A



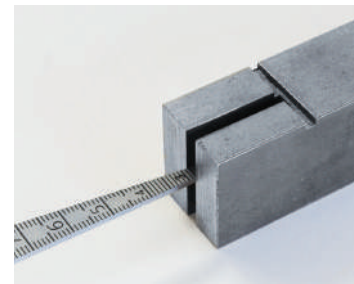
TPG-700B



TPG-700C



TPG-700D



Measurement of gap width

### USE

- For measurement of groove, gap, hole diameter etc.

### MATERIAL

- Hardened stainless steel
- Hardness: HV480

### FEATURES

- Satin finish

| Order No. | Model No. | Standard   | Measuring Range (mm) | Accuracy (mm) | Graduation (mm) | Taper Angle | Overall Length (mm) | Thickness (mm) | Weight |
|-----------|-----------|------------|----------------------|---------------|-----------------|-------------|---------------------|----------------|--------|
| 007010    | TPG-700A  | #700 1-15  | 1 ~ 15               | ± 0.05        | 0.1             | 7° 9' 10"   | 148.5               | 1.2            | 10g    |
| 007011    | TPG-700B  | #700 15-30 | 15 ~ 30              | ± 0.05        | 0.1             | 7° 9' 10"   | 153                 | 1.2            | 40g    |
| 007012    | TPG-700C  | #700 30-45 | 30 ~ 45              | ± 0.05        | 0.1             | 7° 9' 10"   | 159                 | 1.2            | 60g    |
| 007013    | TPG-700D  | #700 45-60 | 45 ~ 60              | ± 0.05        | 0.1             | 7° 9' 10"   | 161.5               | 1.2            | 80g    |

## SHORT TAPER GAUGE SET/ SINGLE PART

No need to cut-off the existing taper gauge.  
Suitable for measuring shallow gap



HOW TO MOVE



TPG-511



TPG-0515S

### USE

- For measurement of groove, gap, hole diameter etc.

### MATERIAL

- Stainless steel
- Hardness: HV300

### FEATURES

- Suitable for measuring shallow gap
- With ball chain
- TPG-0515S is a set of 0.5~7.0mm, 5.0~11.0mm and 9.0~15.0mm

| Order No. | Model No. | Measuring Range (mm) | Accuracy (mm) | Graduation (mm) | Taper Angle | Overall Length (mm) | Thickness (mm) | Weight |
|-----------|-----------|----------------------|---------------|-----------------|-------------|---------------------|----------------|--------|
| 111422    | TPG-057   | 0.5 ~ 7.0            | ± 0.2         | 0.1             | 7° 9' 10"   | 72.8                | 1.2            | 6g     |
| 111423    | TPG-511   | 5.0 ~ 11.0           |               |                 |             | 68.8                |                | 9g     |
| 111424    | TPG-915   | 9.0 ~ 15.0           |               |                 |             | 68.8                |                | 11g    |
| 111425    | TPG-0515S | 0.5 ~ 15.0           |               |                 |             | 72.8                |                | 20g    |



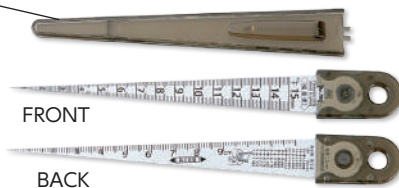
## TAPER GAUGE

With a PC clip case for easy carrying



HOW TO MOVE

Clip style plastic case



FRONT

BACK

### USE

- For measurement of groove, gap, hole diameter etc.

### MATERIAL

- Hardened stainless steel
- Hardness: HV480

### FEATURES

- Satin finish
- Back side- scale graduated and hole diameter conversion table
- Pocket clip style carrying case
- Front - Width scale, Back - Length scale



Perfect for carrying in shirt pocket

Wide Measuring Range  
1-29mm ▶  
Taper Gauge TPG-267M  
**P87**

Slide case for  
convenient carrying ▶  
Slide Taper Gauge  
**P87**

Made of polycarbonate ▶  
Plastic Taper Gauge K Aidan  
**P89**

130mm scale set ▶  
Taper Gauge with Scale  
**P90**

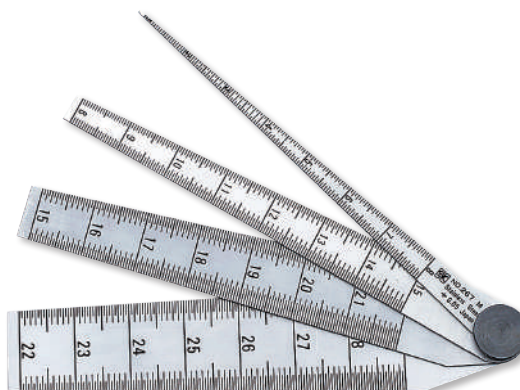
| Order No. | Model No. | Standard                    | Measuring Range (mm) | Accuracy (mm) | Graduation (mm) | Taper Angle | Full Length (mm) | Thickness (mm) | Weight |
|-----------|-----------|-----------------------------|----------------------|---------------|-----------------|-------------|------------------|----------------|--------|
| 007008    | TPG-700AC | #700 1-15 with Plastic case | 1 ~ 15               | ± 0.05        | 0.1             | 7° 9' 10"   | 148.5            | 1.2            | 10g    |

## TAPER GAUGE

Four different sizes of gauges in one set, enables to measure 1 ~ 29mm gap



HOW TO MOVE



### USE

- For measurement of groove, gap, hole diameter etc.

### MATERIAL

- Hardened stainless steel
- Hardness: HV480

### FEATURES

- Satin finish
- Number of leaves: 4 pieces (1~8mm, 8~15mm, 15~22mm, 22~29mm)

| Order No. | Model No. | Standard | Measuring Range (mm) | Accuracy (mm) | Graduation (mm) | Full Length (mm) | Thickness (mm) | Weight |
|-----------|-----------|----------|----------------------|---------------|-----------------|------------------|----------------|--------|
| 007030    | TPG-267M  | 267M     | 1~29                 | ±0.05         | 0.05            | 144              | 1.2            | 80g    |

## SLIDE TAPER GAUGE

Clip-type slide case for safe and convenient carrying



HOW TO MOVE



### USE

- For measurement of groove, gap, hole diameter etc.

### MATERIAL

- Hardened stainless steel
- Hardness: HV480

### FEATURES

- Satin finish
- Clip-type slide case for safe and convenient carrying
- Gauge tip is rounded for safety
- Slide into case for storage

Clip-style  
slide case



Perfect for carrying in shirt pocket

| Order No. | Model No. | Standard | Measuring Range (mm) | Accuracy (mm) | Graduation (mm) | Taper Angle | Thickness (mm) | Weight |
|-----------|-----------|----------|----------------------|---------------|-----------------|-------------|----------------|--------|
| 007201    | TPG-700SL | 700SL    | 1~9                  | ±0.1          | 0.1             | 7° 9' 10"   | 0.5            | 20g    |



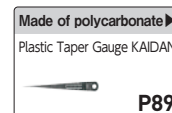


## TAPER GAUGE KAIDAN



HOW TO MOVE

New stepped millimeter graduation prevents misreading



### USE

- For measurement of groove, gap, hole diameter etc.

### MATERIAL

- Hardened stainless steel
- Hardness: HV480

### FEATURES

- Increasing height of each mark makes it easier for eye to distinguish 0.1mm steps
- Sequential number style can be read directly without checking the surrounding numbers, 0.2mm point markings
- Satin finish
- Front: width scale
- Back: length scale with a conversion table

| Order No. | Model No.  | Standard | Measuring Range (mm) | Accuracy (mm) | Graduation (mm) | Taper Angle | Full Length (mm) | Thickness (mm) | Weight |
|-----------|------------|----------|----------------------|---------------|-----------------|-------------|------------------|----------------|--------|
| 007211    | TPG-700AKD | #700     | 1 ~ 15               | ± 0.05        | 0.1             | 7° 9' 10"   | 148.5            | 1.0            | 10g    |

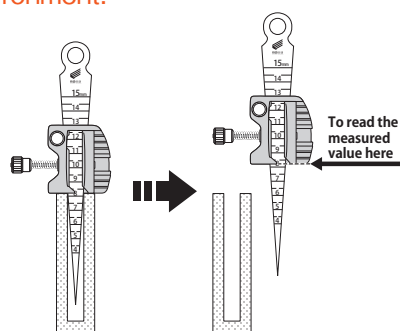
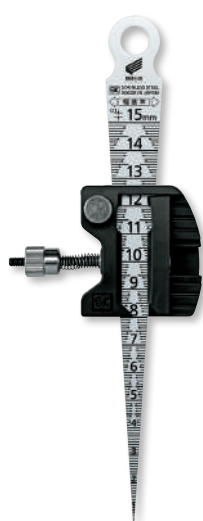


## TAPER GAUGE STOPPER/ TAPER GAUGE KAIDAN WITH STOPPER

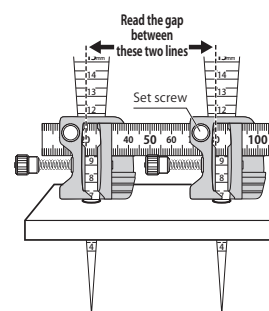


HOW TO MOVE

Capable of retaining the measuring position of Taper gauge.  
Useful when reading scale in a hard-to-see environment.



For measurement in a hard-to-see environment or prevention of misreading.



Simple center-to-center measurement is possible by combination use of taper gauge, stopper (2pcs each) and a ruler.  
※For same flat surface and same hole diameter

TPG-700AKDS

TGS-15

### USE

- When measuring hole diameter or groove width with a taper gauge, the measured value is retained even in a measurement environment where it is difficult to check the measured value
- For prevention of parallax by reading scale of taper gauge and end face position of taper gauge stopper

### MATERIAL

- ABS

### FEATURES

- Retaining force of the taper gauge can be changed with the adjusting screw
- Simple center-to-center measurement is possible by combination use of taper gauge, stopper (2pcs each) and a 15cm ruler

### SPECIFICATIONS

- Applicable taper gauge: Measuring range 1~15mm, Thickness 1.0・1.2mm (Standard #700 type)
- Applicable ruler: Length 150mm, Width 15mm, Thickness 0.5mm (JIS straight metal ruler 150mm)
- Taper gauge useable range: 1~14mm
- When measuring center-to-center ... Applicable hole diameter:  $\phi 2 \sim 14 \text{ mm}$   
... Center-to-center measuring range: 60~140mm  
... Measurement accuracy: Approx. 0.5mm

| Order No. | Model No.   | Configuration                                 | Weight |
|-----------|-------------|-----------------------------------------------|--------|
| 007214    | TGS-15      | STOPPER                                       | 16g    |
| 007215    | TPG-700AKDS | STOPPER + TAPER GAUGE KAIDAN TPG-700AKD (SET) | 26g    |



## PLASTIC TAPER GAUGE KAIDAN



HOW TO MOVE

GAUGE

Polycarbonate material allows scratch-free contact to measuring objects



TPG-800KD



TPG-800WKD

### USE

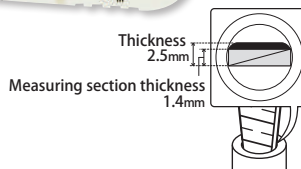
- For measurement of groove, gap, hole diameter etc.

### MATERIAL

- Polycarbonate

### FEATURES

- Made by polycarbonate that does not easily scratch work
- Clip design



Stepped millimeter graduation prevents misreading



can put in a pocket

| Order No. | Model No.  | Body Color | Measuring Range (mm) | Accuracy (mm) | Graduation (mm) | Full Length (mm) | Measuring Section Thickness (mm) | Weight |
|-----------|------------|------------|----------------------|---------------|-----------------|------------------|----------------------------------|--------|
| 007212    | TPG-800KD  | Black      | 1~15                 | ±0.2          | 0.1             | 158              | 1.4                              | 5g     |
| 007216    | TPG-800WKD | White      |                      |               |                 |                  |                                  |        |



## PLASTIC TAPER GAUGE KAIDAN GLOW TYPE



HOW TO MOVE

High visibility in the dark



### USE

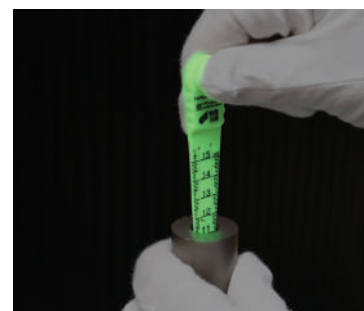
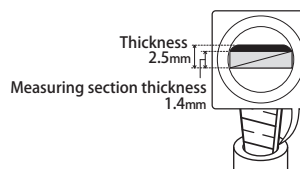
- For measurement of groove, gap, hole diameter etc.

### MATERIAL

- Polycarbonate

### FEATURES

- Stores light in bright places and glows in dark places
- Made by polycarbonate that does not easily scratch work
- Clip design



| Order No. | Model No.  | Measuring Range (mm) | Accuracy (mm) | Graduation (mm) | Full Length (mm) | Measuring Section Thickness (mm) | Weight |
|-----------|------------|----------------------|---------------|-----------------|------------------|----------------------------------|--------|
| 007213    | TPG-800GKD | 1~15                 | ±0.2          | 0.1             | 158              | 1.4                              | 5g     |

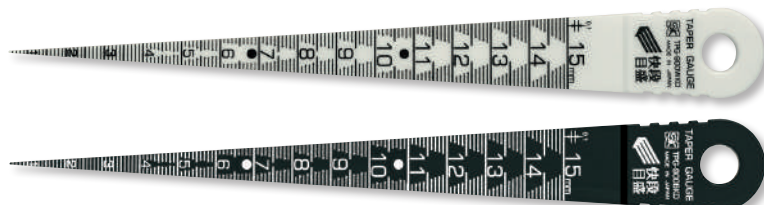


## PLASTIC TAPER GAUGE KAIDAN



HOW TO MOVE

By separating the gauges point to point, the length can be adjusted to measure shallow holes and gaps



### USE

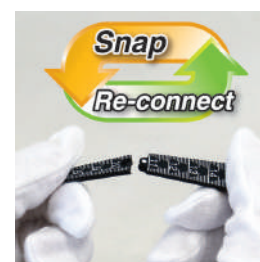
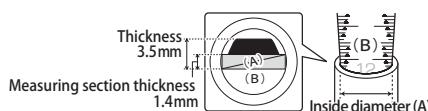
- For measurement of groove, gap, hole diameter etc.

### MATERIAL

- Polycarbonate

### FEATURES

- Gauges can be separated and connected to each other
- Made by polycarbonate that does not easily scratch work



Can be separated/connected freely for shallow hole measurement

| Order No. | Model No.  | Body Color | Measuring Range (mm) | Accuracy (mm) | Graduation (mm) | Full Length (mm) | Measuring Section Thickness (mm) | Weight |
|-----------|------------|------------|----------------------|---------------|-----------------|------------------|----------------------------------|--------|
| 007218    | TPG-900WKD | White      | 1~15                 | ±0.2          | 0.1             | 158              | 1.4                              | 5g     |
| 007219    | TPG-900BKD | Black      |                      |               |                 |                  |                                  |        |



## PLASTIC TAPER GAUGE WITH KAIKAN RULER



HOW TO MOVE

Convenient set, taper gauge with ruler. Polycarbonate material allows scratch-free contact to measuring objects.

### USE

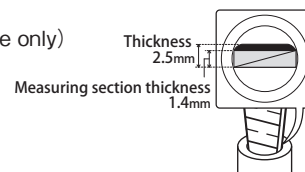
- For measurement of groove, gap, hole diameter etc.

### MATERIAL

- Taper gauge: Polycarbonate ● Scale: Acrylic

### FEATURES

- Convenient set, taper gauge TPG-800WKD with 130mm ruler ● With a clip-shaped slit (Taper gauge only)
- Can be used as individual products by detaching the connecting part.



| Order No. | Model No. | Weight |
|-----------|-----------|--------|
| 007217    | 800SWKD   | 12g    |

|             | Measuring Range (mm) | Accuracy (mm) | Graduation (mm) | Full Length (mm) | Measuring Section Thickness (mm) |
|-------------|----------------------|---------------|-----------------|------------------|----------------------------------|
| Taper Gauge | 1~ 15                | ±0.2          | 0.1             | 158              | 1.4                              |
| Scale       | 0~130                | ±0.2          | 1               | 160              | —                                |



## TAPER GAUGE WITH KAIKAN SCALE



HOW TO MOVE

Convenient set, taper gauge with ruler.

New stepped millimeter graduation prevents misreading.

### USE

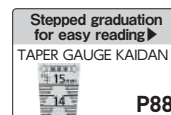
- For measurement of groove, gap, hole diameter and length

### MATERIAL

- Hardened stainless steel

### FEATURES

- Convenient set, taper gauge 700A with 130mm scale. Folds safely with pocket clip, easy to carry
- 130mm scale with 1mm KaiKan graduation on the back for convenient use
- Satin finish



With pocket clip, easy to carry

| Order No. | Model No. | Weight |
|-----------|-----------|--------|
| 007205    | 700SKD    | 25g    |

|             | Measuring Range (mm) | Accuracy (mm) | Graduation (mm) | Full Length (mm) | Taper Angle |
|-------------|----------------------|---------------|-----------------|------------------|-------------|
| Taper Gauge | 1~ 15                | ±0.05         | 0.1             | 148.5            | 7° 9' 10"   |
| Scale       | 0~130                | ±0.20         | 1               | 155              | —           |

## TAPER GAUGE



HOW TO MOVE

Convenient set, taper gauge with ruler.

With a clip for storing in a pocket.

### USE

- For measurement of groove, gap, hole diameter and length

### MATERIAL

- Hardened stainless steel

### FEATURES

- Convenient set, taper gauge 700A with 130mm scale. Folds safely with pocket clip, easy to carry
- Satin finish



With pocket clip, easy to carry

| Order No. | Model No. | Standard | Weight |
|-----------|-----------|----------|--------|
| 007200    | TPG-700S  | 700S     | 25g    |

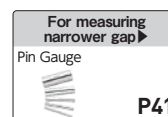
|             | Measuring Range (mm) | Accuracy (mm) | Graduation (mm) | Full Length (mm) | Taper Angle |
|-------------|----------------------|---------------|-----------------|------------------|-------------|
| Taper Gauge | 1~ 15                | ±0.05         | 0.1             | 148.5            | 7° 9' 10"   |
| Scale       | 0~130                | ±0.20         | 0.5             | 155              | —           |

## CIRCULAR TAPER GAUGE WITH GREEN COLOR GRIP

Green colored grip type is now available for the popular circular taper gauge



HOW TO MOVE



CGTPG-710A



CGTPG-710B



CGTPG-710C

### USE

- For measurement of groove, gap, hole and tube diameter etc.

### MATERIAL

- Gauge: Carbon tool steel (CGTPG-710A), Carbon steel for machine structural use (CGTPG-710B & 710C)
- Grip: Anodized aluminum

### FEATURES

- Silver finish
- With a vinyl case for convenient storage

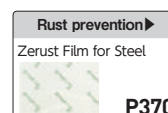
| Order No. | Model No.  | Standard | Measuring Range (mm) | Accuracy (mm) | Graduation (mm) | Taper Angle | Full Length (mm) | Weight |
|-----------|------------|----------|----------------------|---------------|-----------------|-------------|------------------|--------|
| 007103    | CGTPG-710A | 710A     | 1 ~ 6                | ± 0.05        | 0.1             | 5° 44'      | 93               | 11g    |
| 007104    | CGTPG-710B | 710B     | 4 ~ 15               | ± 0.05        | 0.1             | 5° 44'      | 175              | 115g   |
| 007105    | CGTPG-710C | 710C     | 4 ~ 25               | ± 0.05        | 0.1             | 5° 44'      | 290              | 470g   |

## CIRCULAR TAPER GAUGE WITH GREEN COLOR CASE

Green colored grip type is now available for the popular circular taper gauge



HOW TO MOVE



CCTPG-715A

### USE

- For measurement of groove, gap, hole and tube diameter etc.

### MATERIAL

- Gauge: Carbon tool steel
- Case: Anodized aluminum

### FEATURES

- Comes with a cap for gauge tip protection
- With a vinyl case for convenient storage

| Order No. | Model No.  | Standard | Measuring Range (mm) | Accuracy (mm) | Graduation (mm) | Taper Angle | Full Length (mm) | Weight |
|-----------|------------|----------|----------------------|---------------|-----------------|-------------|------------------|--------|
| 007152    | CCTPG-715A | 715A     | 0.1 ~ 3              | ± 0.05        | 0.1             | 5° 43' 29"  | 118.5            | 18g    |
| 007153    | CCTPG-715B | 715B     | 1 ~ 6                | ± 0.05        | 0.1             | 5° 43' 29"  | 168              | 46g    |

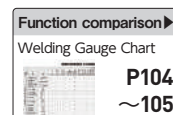


WELDING GAUGES **NEW!**

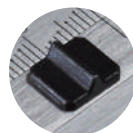
(007524)



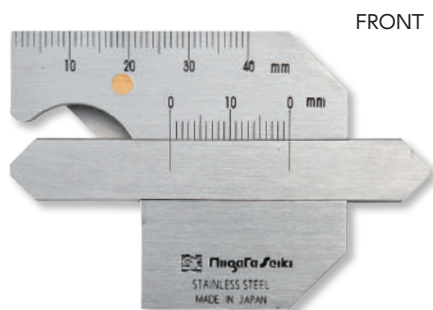
Essential for welding process! It is Bead height gauge.  
A wide variety of welding measurements in one gauge



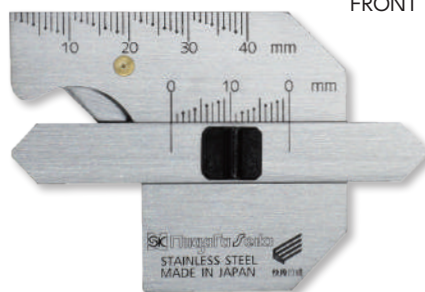
Equipped with a finger hook for comfortable operation even while wearing gloves: WG-1FKD



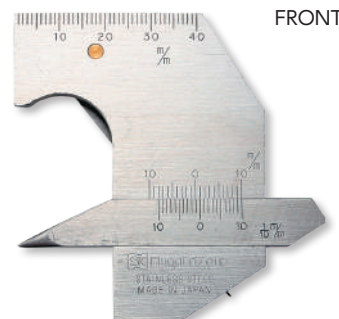
Support for undercut measurement: WG-2 (L)



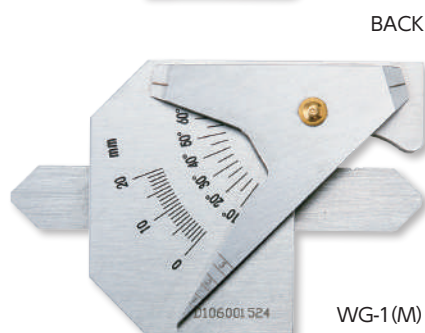
FRONT



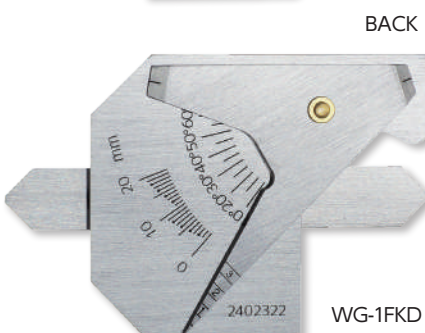
FRONT



FRONT



BACK



BACK



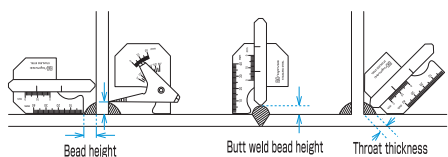
BACK

WG-1 (M)

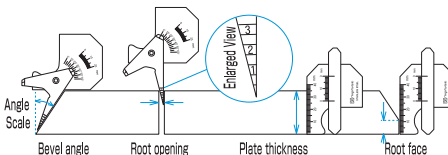
WG-1FKD

WG-2 (L)

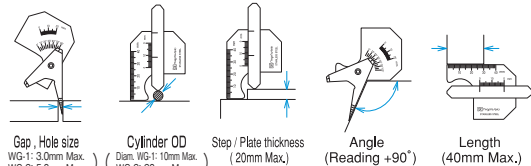
Weld reinforcement  
height measurement



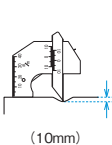
Measurement before  
welding process



Applied Measurement



Undercut Measurement  
(Only WG-2)



## USE

- For measuring fillet weld, bead weld, etc.

## MATERIAL

- Stainless steel

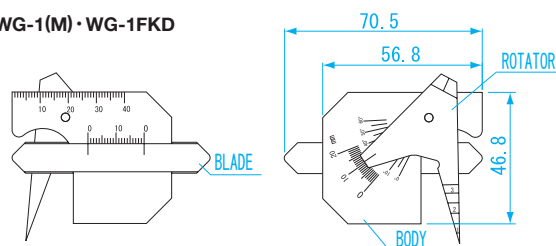
## FEATURES

- Efficient for welding and quality control
- Tough and portable (with a vinyl case)

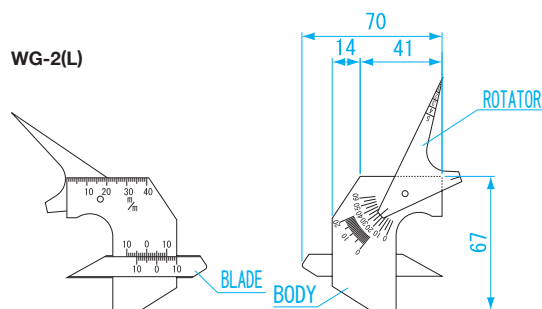
## ● DIMENSIONS

Units: mm

## WG-1 (M) · WG-1FKD



## WG-2 (L)

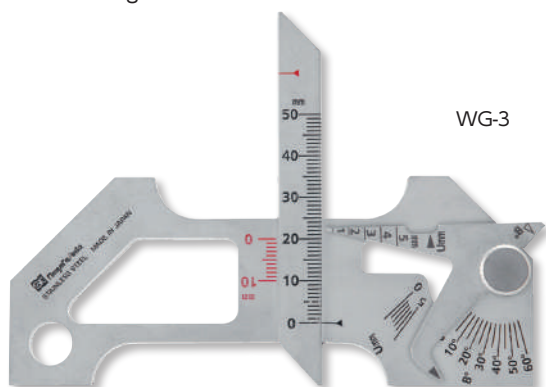
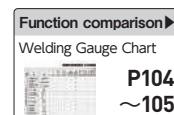


| Order No.          | Model No. | Measurement Accuracy for Throat Thickness of Fillet Weld | Bevel Angle Accuracy | Accuracy | Weight |
|--------------------|-----------|----------------------------------------------------------|----------------------|----------|--------|
| 007502             | WG-1 (M)  | ± 0.4mm                                                  |                      |          | 79g    |
| <b>NEW!</b> 007524 | WG-1FKD   | ± 0.4mm                                                  | ± 0.7°               | ± 0.4mm  | 80g    |
| 007503             | WG-2 (L)  | ± 0.2mm                                                  |                      |          | 91g    |

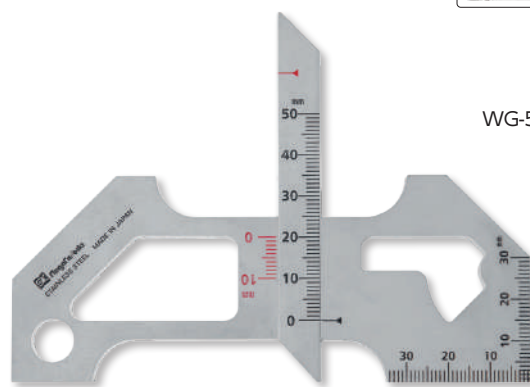
## WELDING GAUGE

Gauges with new features added to existing welding gauge line-up.  
Measure weld reinforcement height up to 50mm.

(※In bead height and throat thickness)



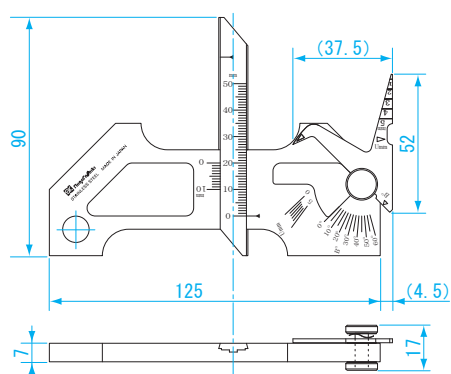
WG-3



WG-5

### ● DIMENSIONS

Units: mm



### USE

- Measurement of size and alignment of bead, gap size, undercut, etc.

### MATERIAL

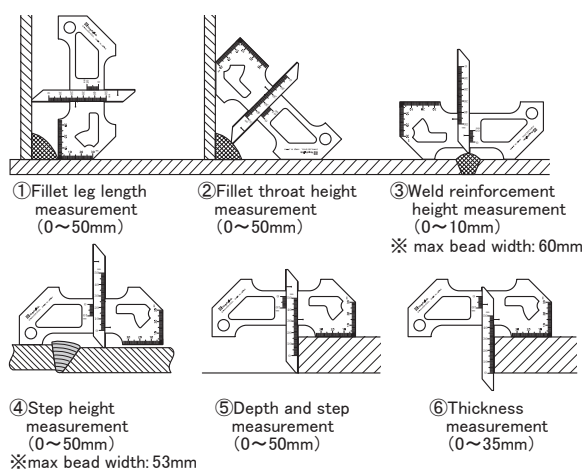
- Stainless Steel

### FEATURES

- Speed up and streamline the quality control of welding
- Measures weld reinforcement height up to 50mm
- Wide base for stability during measurements
- Pivoting gauge provides a variety of measurement functions
- Silver finish is ideal for reduced reflection when photographing measurements
- Translucent case for easy confirmation of contents

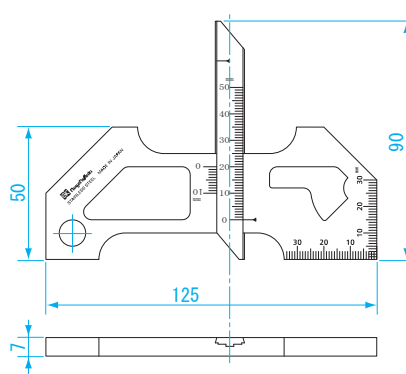
### ■ Measurement Functions

#### WG-3, WG-5 capabilities



### ● DIMENSIONS

Units: mm



### USE

- Measurement of size and alignment of bead

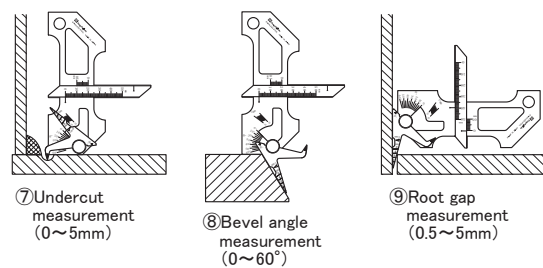
### MATERIAL

- Stainless steel

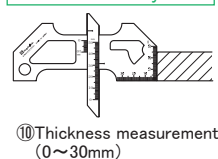
### FEATURES

- Speed up and streamline the quality control of welding
- Measures weld reinforcement height up to 50mm
- Wide base for stability during measurements
- Silver finish is ideal for reduced reflection when photographing measurements
- Translucent case for easy confirmation of contents

#### WG-3 only



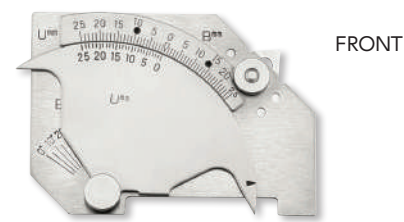
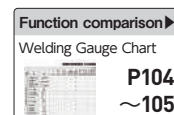
#### WG-5 only



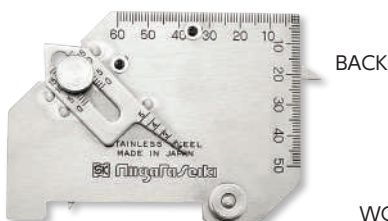
| Order No. | Model No. | Weight |
|-----------|-----------|--------|
| 007506    | WG-3      | 198g   |
| 007507    | WG-5      | 187g   |

## WELDING GAUGE

Essential for welding process. A wide variety of welding measurements in one gauge.

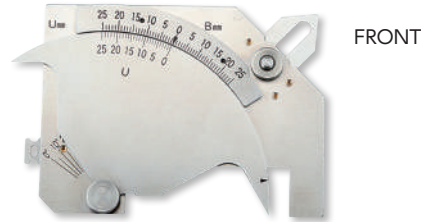


FRONT

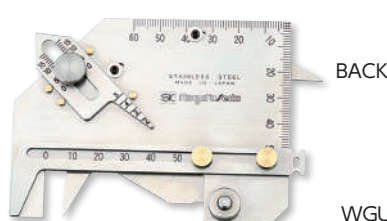


BACK

WGU-7M



FRONT

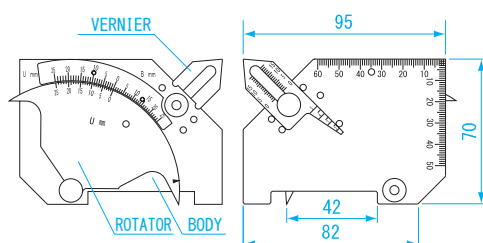


BACK

WGU-8M

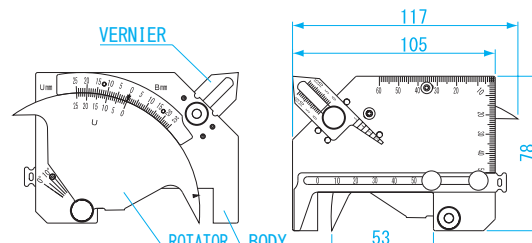
## ● DIMENSIONS

Units: mm



## ● DIMENSIONS

Units: mm



## USE

- For wide of variety welding measurements

Undercut depth / Groove angle / Inconsistent level  
Height of fillet weld & bead weld / Throat thickness of fillet  
Root opening / Plate thickness

## MATERIAL

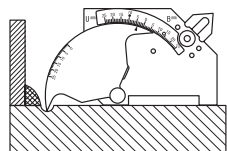
- Stainless steel

## FEATURES

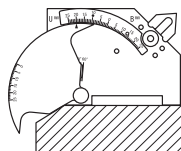
- For a wide variety of welding measurements
- Very convenient to the welding process involving steel frame assembly such as general welding, ship building, bridge construction, etc.
- Easy reading scale
- With a vinyl case for easy carrying

## ■ MEASUREMENT FUNCTION

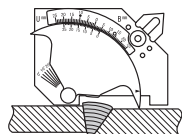
WGU-7M, WGU-8M, WGU-9M common functions



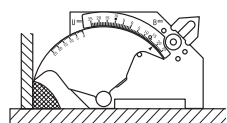
① Undercut depth (0~25mm)



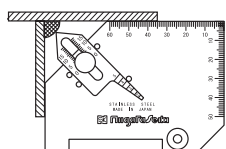
② Bevel angle (WGU-7M: 0~60°) (WGU-8M-WGU-9M: 0~70°)



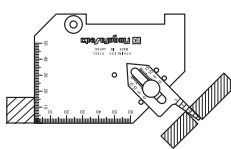
③ Bead striding width (WGU-7M: 42mm) (WGU-8M-WGU-9M: 53mm) Step difference (0~25mm)



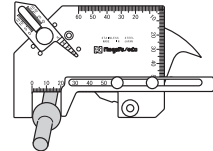
④ Height of fillet &amp; bead weld (0~25mm)



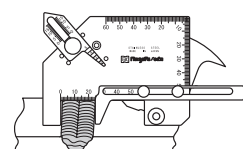
⑤ Throat thickness of fillet weld (0~15mm)

⑥ Root opening (2~5mm)  
⑦ Plate thickness (scale)

WGU-8M, WGU-9M common functions



⑧ External diameter of circular workpiece (WGU-8M: up to 30mm) (WGU-9M: up to 40mm)



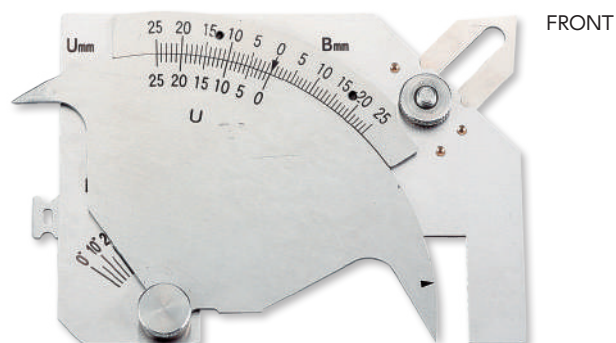
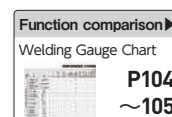
⑨ Width of bead weld (0~50mm)

| Order No. | Model No. | Weight |
|-----------|-----------|--------|
| 007513    | WGU-7M    | 118g   |
| 007514    | WGU-8M    | 155g   |

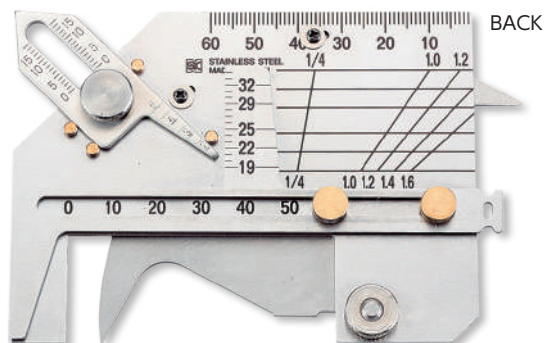
# WELDING GAUGE



Essential for welding process. A wide variety of welding measurements in one gauge.



FRONT



BACK

## USE

- For a wide variety of welding measurements

Undercut depth / Groove angle / Inconsistent level  
Height of fillet weld & bead weld / Throat thickness of fillet  
Root opening / Plate thickness / External diameter of circular  
workpiece / Width of bead weld

## MATERIAL

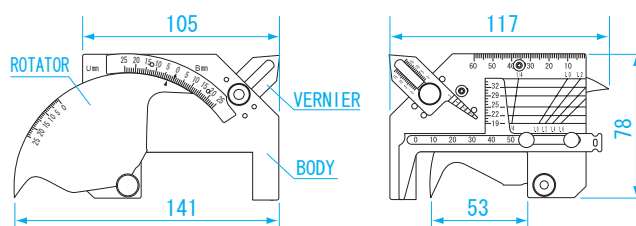
- Stainless steel

## FEATURES

- Additional functions for measurement of
  - external diameter of circular workpiece
  - swelling of pressure welded reinforcing iron
  - width of bead weld
- Bead stride width: 53mm
- Bevel angle range: 0-70°
- Higher accuracy undercut measurement function
- With a vinyl case for easy carrying

## ● DIMENSIONS

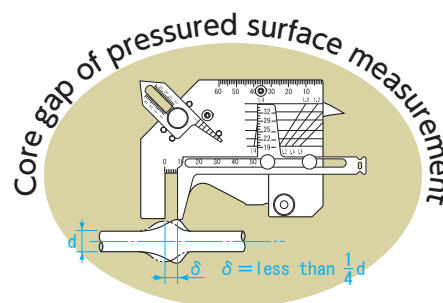
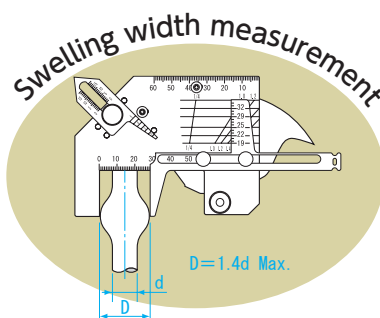
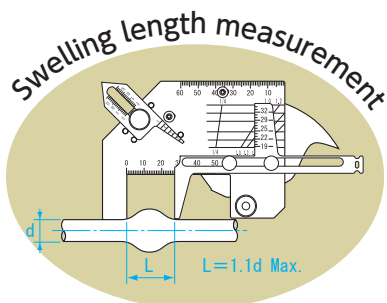
Units: mm



## Additional functions

Provides quick way to measure the diameter of welded rebar to insure proper dimensions of weld seam.

Scale marked for material diameter ( $\phi$  19, 22, 25, 29, 32) corresponding to various rebar diameters, and amount of expansion (1/4, 1.0~1.6). You can quickly find the ratio by reading the intersection of the two scale lines.



※ Please also refer to "MEASUREMENT FUNCTIONS" on Page 94 to see other functions

| Order No. | Model No. | Rebar diameter (mm) | Expansion      | Weight |
|-----------|-----------|---------------------|----------------|--------|
| 007515    | WGU-9M    | $\phi$ 19 ~ 35      | 1/4, 1.0 ~ 1.6 | 155g   |

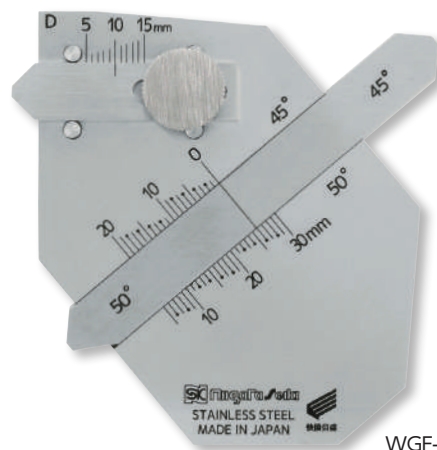




60°・50° beveled deformed fillet weld supports throat thickness measurement.  
New Welding gauges standard developed from the voices in measurement sites.



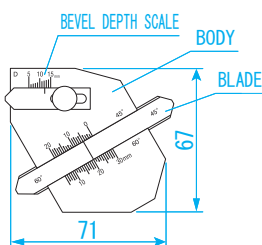
WGF-60



WGF-50

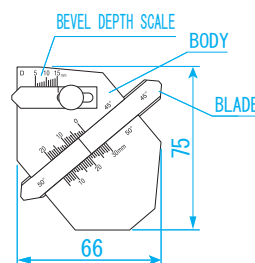
## ● DIMENSIONS

Units: mm



## ● DIMENSIONS

Units: mm



BLOCK GAUGE

PIN GAUGE

PIN VISE

PIN GAUGE ACCESSORIES

RING GAUGE

PLUG GAUGE

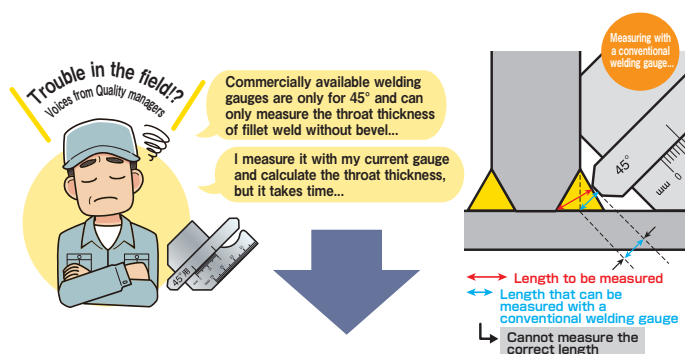
LIMIT GAUGE

THICKNESS GAUGE

TAPER GAUGE

WELDING GAUGE

OTHER GAUGES



In response to customer requests, we have developed welding gauges for **deformed fillet welding** with **60° and 50° bevels**.

## USE

- Throat thickness of fillet weld
- Throat Thickness Measurement for Bevelled Irregular Fillet Welds

## MATERIAL

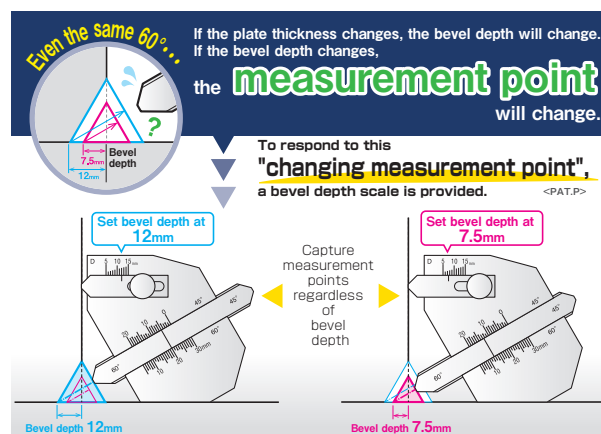
- Stainless steel

## FEATURES

- A new standard model welding gauge designed based on feedback from measurement sites, compatible with irregular fillet welds with groove.
- Supports throat thickness measurement for fillet welds with grooves, eliminating the need to calculate throat thickness after measuring with standard welding gauges.
- By rotating the body 180°, it is also possible to measure the throat thickness of standard fillet welds without grooves.
- If the plate thickness changes, the bevel depth will change. A bevel depth scale is provided to accommodate changing measurement points that cannot be measured by angle alone.
- Portable (with vinyl case)

## SPECIFICATIONS

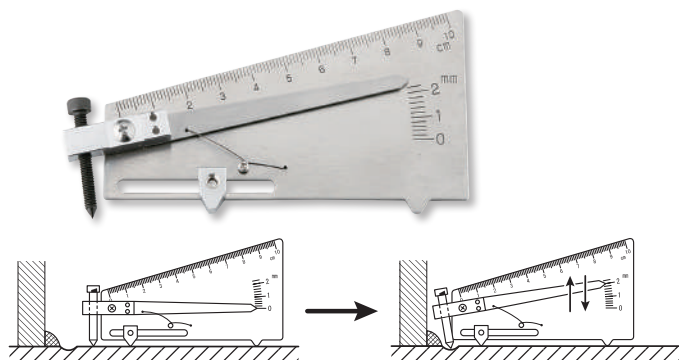
- Throat Thickness Measuring Range: Bevel Groove ... 5~30mm  
Fillet ... 0~20mm
- Groove Depth Range: 5~14.5mm ● Minimum reading: 1mm ● Accuracy of length:  $\pm 0.4$ mm



| Order No.          | Model No. | Applicable angle               | Weight |
|--------------------|-----------|--------------------------------|--------|
| <b>NEW!</b> 007522 | WGF-60    | Bevel angle 60°・No bevel (45°) | 130g   |
| <b>NEW!</b> 007523 | WGF-50    | Bevel angle 50°・No bevel (45°) | 140g   |

## WELDING GAUGE

Essential for welding process. Specialized for undercut depth measurement.



### USE

- Exclusive use for undercut measurement

### MATERIAL

- Stainless steel

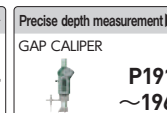
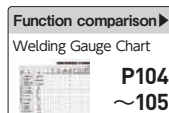
### FEATURES

- Easy to measure depth and length of undercut
- Capable of 0 adjustment with screw type of gauge head
- With a vinyl case for easy carrying

### SPECIFICATIONS

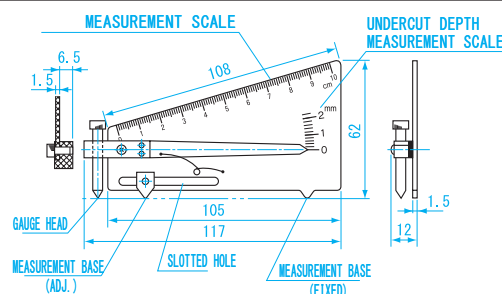
- Measuring Range  
Depth: 0 ~ 2.0mm (Minimum reading: 0.2mm, Accuracy:  $\pm 0.1$ mm)  
Length: 0 ~ 10cm
- Width of measurement base: Approx 40mm

| Order No. | Model No. | Weight |
|-----------|-----------|--------|
| 007521    | WGU-2S    | 100g   |



### ● DIMENSIONS

Units: mm



### Zero Adjustment

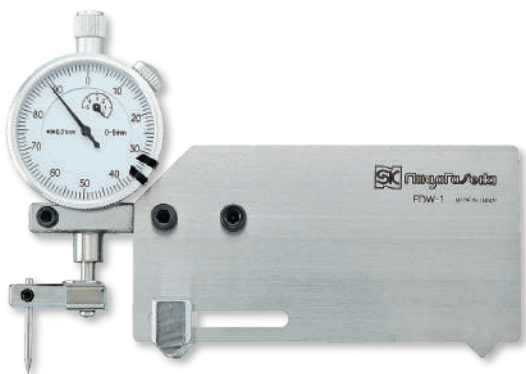
1. Set the position of the Adjustable Contact Point for measurement on flat area of base material.
2. Hold the gauge to a flat surface, insuring that the two Contact Points and the Gauge Head are in contact with the surface. Loosen the Gauge Head Set-Screw using a standard screwdriver.
3. Rotate the Gauge Head to adjust the Undercut Depth reading to "0". Once set to "0", tighten the Gauge Head Set-Screw to secure the Gauge Head.

### Measurement

4. After setting the 0-Point, position the Gauge Head to the center of the undercut.
5. Pointer will show the undercut depth.

## WELDING GAUGE

Essential for welding process. Dial gauge type.  
Specialized for undercut measurement.



### USE

- Exclusive use for undercut measurement

### MATERIAL

- Stainless steel

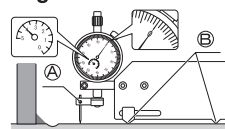
### FEATURES

- Easy and accurate to measure depth and length of undercut
- Dial gauge type performs more precise measurement
- Three point support for stable measurement

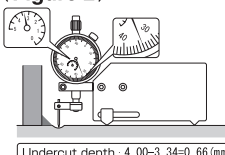
### SPECIFICATIONS

- Measuring Range: 0~4.00mm
- Minimum reading: 0.01mm
- Accuracy:  $\pm 0.04$ mm
- Width of measurement base: Approx 23mm

(Figure 1)



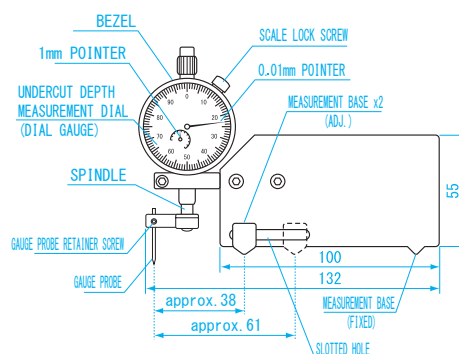
(Figure 2)



Undercut depth : 4.00-3.34=0.66 (mm)

### ● DIMENSIONS

Units: mm



### Zero Adjustment

Recommended to be performed on a flat surface such as a surface plate

- ① Loosen GAUGE PROBE RETAINER SCREW using hex key
- ② Place Welding Gauge on surface insuring all three points of MEASUREMENT BASE are making contact (2x ADJ, 1x FIXED) and push on SPINDLE shaft. When 1mm POINTER indicates 4.00mm, tighten GAUGE PROBE RETAINER SCREW. (Insure that probe tip is in contact with the surface plate)

### Measurement

- ① Place the gauge on a flat surface and rotate BEZEL to indicate 0.01mm. (Figure 1)
- ② Place PROBE tip on weld undercut point to be measured. (Figure 2)
- ③ Undercut value is obtained by subtracting Dial Gauge reading from 4.00mm

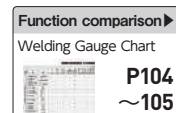
| Order No. | Model No. | Weight |
|-----------|-----------|--------|
| 007520    | FDW-1     | 192g   |



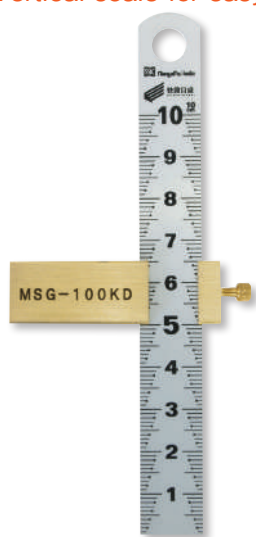
## MULTI STEP GAUGE KAIDAN



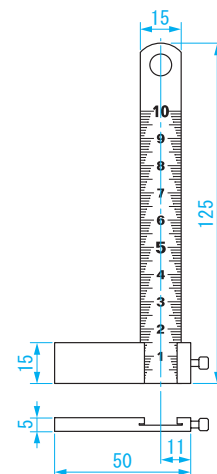
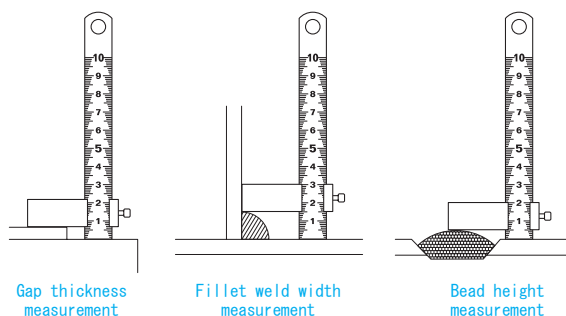
For measurement of steps of machinery, jigs and structures.  
Vertical scale for easy reading.



● DIMENSIONS Units: mm



### ● Example of use



### USE

- For measurement of steps of machinery, jigs and structures

### MATERIAL

- Scale: Stainless steel ● Dips: Brass

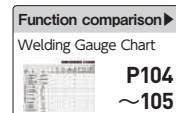
### FEATURES

- Vertical scale for easy reading
- Stepped length of linear graduations by 1mm for easy-to-read

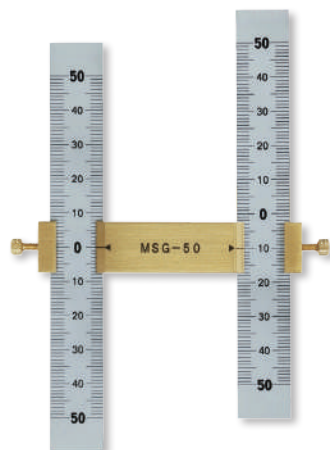
| Order No. | Model No. | Measurement Range (mm) | Accuracy (mm) | Graduation (mm) | Weight |
|-----------|-----------|------------------------|---------------|-----------------|--------|
| 111401    | MSG-100KD | 0~100                  | ±0.15         | 1               | 32g    |

## MULTI STEP GAUGE

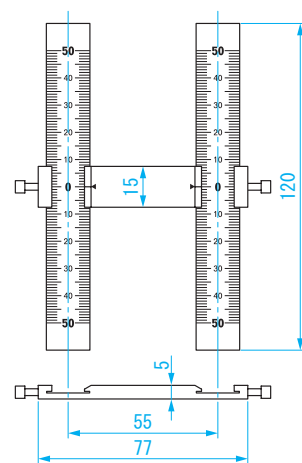
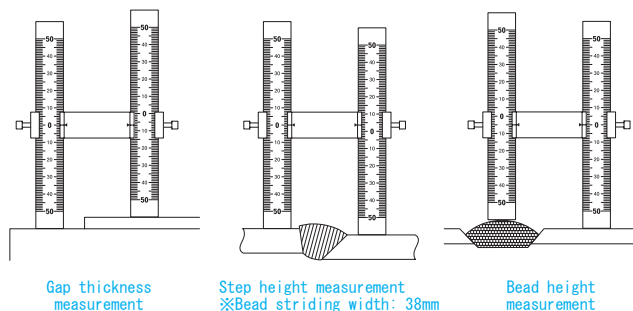
For measurement of steps of machinery, jigs and structures.  
Vertical scale for easy reading.



● DIMENSIONS Units: mm



### ● Example of use



### USE

- For measurement of steps of machinery, jigs and structures

### MATERIAL

- Scale: Stainless steel ● Dips: Brass

### FEATURES

- Vertical scale for easy reading

| Order No. | Model No. | Measurement Range (mm) | Accuracy (mm) | Graduation (mm) | Weight |
|-----------|-----------|------------------------|---------------|-----------------|--------|
| 111402    | MSG-50    | -50~+50                | ±0.15         | 1               | 51g    |

## DIGITAL WELDING GAUGE



Bluetooth BOX (separately sold) can be attached.

Essential for welding process.

Digital welding gauge specialized for measuring fillet weld and bead weld height.

Provided with zero setting master gauge



### USE

- For measuring the size of fillet weld and bead weld

### MATERIAL

- Stainless steel

### FEATURES

- Bluetooth BOX (separately sold) can be attached
- Easy to read with digital display
- Master gauge included
- Hold function
- Auto power off function (after approx. 20 min)
- With a plastic case

### SPECIFICATIONS

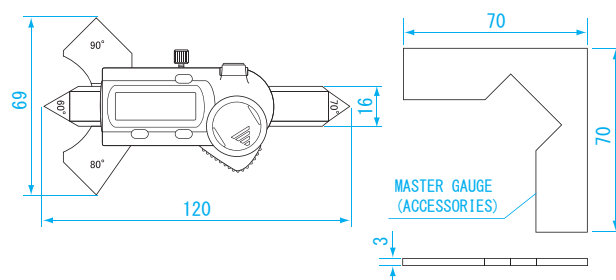
- Throat thickness: 20mm
- Bead height: 10mm
- Bevel angle: 60°, 70°, 80°, 90° (Accuracy:  $\pm 2^\circ$ )

### POWER

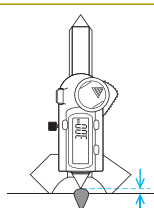
- One CR2032 (lithium) battery included for testing

### ● DIMENSIONS

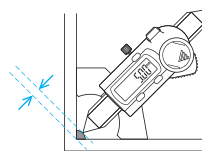
Units: mm



### Weld reinforcement height measurement

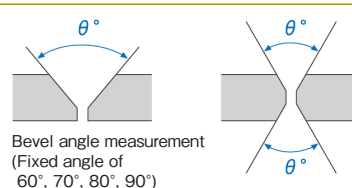


Bead height  
Maximum measurement  
10mm



Throat thickness  
Maximum measurement  
20mm

### Measurement before welding process



Bevel angle measurement  
(Fixed angle of  
60°, 70°, 80°, 90°)

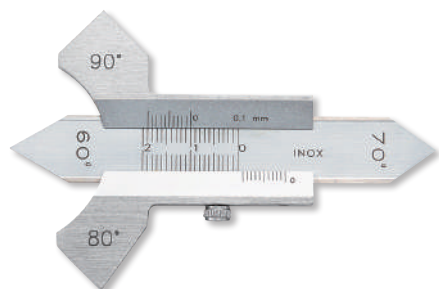
※ Quantization Error ( $\pm 1$  digit) not included

| Order No. | Model No. | Resolution (mm) | Accuracy※ (mm) | Weight |
|-----------|-----------|-----------------|----------------|--------|
| 007527    | GDCS-20WG | 0.01            | $\pm 0.03$     | 130g   |

## WELDING GAUGE

Essential for welding process.

Analog type welding gauge specialized for measuring fillet weld and bead weld height.



### USE

- For measuring the size of fillet weld and bead weld

### MATERIAL

- Stainless steel

### FEATURES

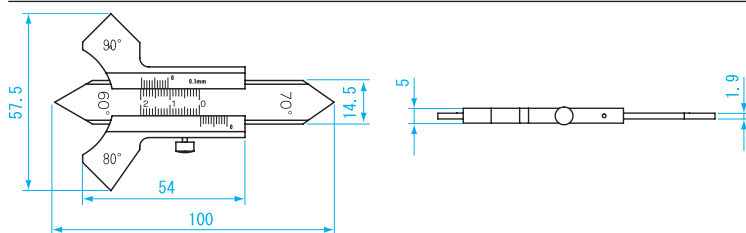
- Made of stainless steel, corrosion resistant
- Bevel angle: 60°, 70°, 80°, 90°
- With a vinyl case for easy carrying

### SPECIFICATIONS

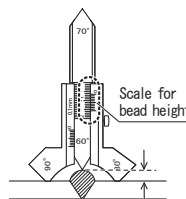
- Fillet weld: 11mm
- Bead weld: 8mm
- Accuracy:  $\pm 0.2$ mm
- Minimum reading: 0.1mm

### ● DIMENSIONS

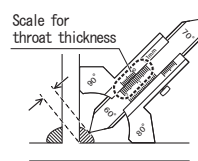
Units: mm



### Weld Bead Measurement

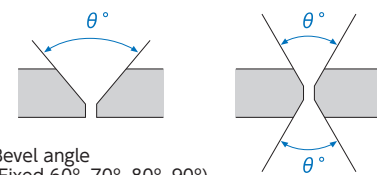


Bead height  
Maximum measurement 8mm



Throat thickness  
Maximum measurement 11mm

### Measurement Before Welding



Bevel angle  
(Fixed 60°, 70°, 80°, 90°)

| Order No. | Model No. | Weight |
|-----------|-----------|--------|
| 007516    | AWG-10    | 60g    |



## ANGLE LIMIT GAUGE

Essential for welding process.

This is a limit gauge for measuring joint gap angle and butt joint gap angle.

**Function comparison▶**  
Welding Gauge Chart  
P104  
~105

**Groove angle measurement▶**  
Angle Gauge  
P103

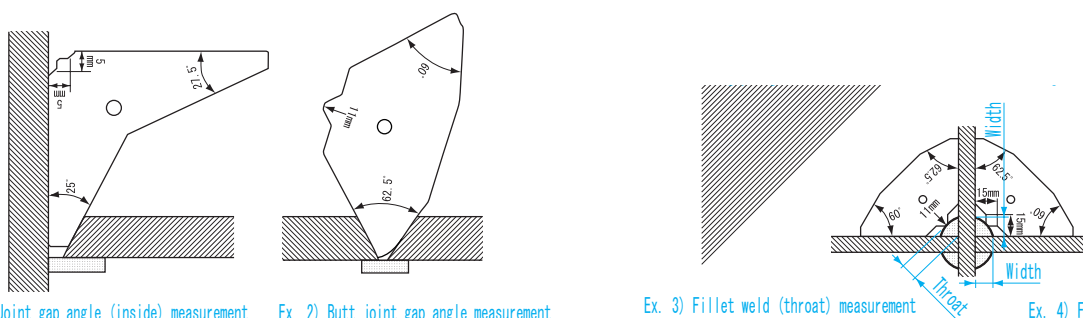
**Inner angle measurement▶**  
Inside Protractor  
P160



WAL2542

WAL4562

### ● Example of use



Ex. 1) Joint gap angle (inside) measurement

Ex. 2) Butt joint gap angle measurement

Ex. 3) Fillet weld (throat) measurement

Ex. 4) Fillet weld width measurement

### USE

- For measuring bevel angle of T-joint (interior angle), bevel angle of facing joint (interior angle), leg length (height), and throat thickness of fillet weld

### MATERIAL

- Stainless steel

### FEATURES

- Indication of size limit for easy judgement (angle step by 2.5°, throat thickness step by 1mm)
- The leg length is the allowable limit dimension at the measured throat thickness dimension
- The most frequently used dimensions are selected as the gauge sizes
- Provided with plastic case and ball chain

### SPECIFICATIONS

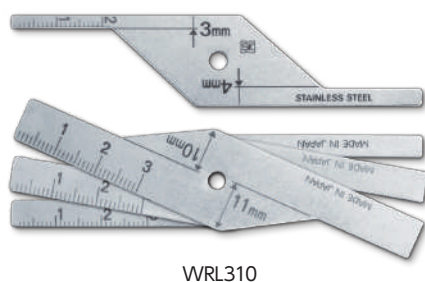
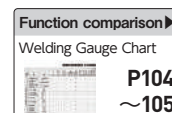
| Model No.                    |                          | WAL2542                                                            |       |       |       | WAL4562                                                            |       |       |       |
|------------------------------|--------------------------|--------------------------------------------------------------------|-------|-------|-------|--------------------------------------------------------------------|-------|-------|-------|
| Blank No.                    |                          | 1                                                                  | 2     | 3     | 4     | 1                                                                  | 2     | 3     | 4     |
| Outline Dimension (mm)       | Overall width            | 92                                                                 |       |       |       | 92                                                                 |       |       |       |
|                              | Overall height           | 46                                                                 | 45    | 44    | 43    | 43                                                                 | 44    | 45    | 46    |
|                              | Plate thickness          | 1.5                                                                |       |       |       | 1.5                                                                |       |       |       |
| Material/ Finish             |                          | SUS304 /barrel semi-gloss finish                                   |       |       |       | SUS304/ barrel semi-gloss finish                                   |       |       |       |
| Measurement Value Indication | Angle degree (Both side) | 25°                                                                | 30°   | 35°   | 40°   | 45°                                                                | 50°   | 55°   | 60°   |
|                              |                          | 27.5°                                                              | 32.5° | 37.5° | 42.5° | 47.5°                                                              | 52.5° | 57.5° | 62.5° |
|                              | Throat thickness (Front) | 4                                                                  | 5     | 6     | 7     | 8                                                                  | 9     | 10    | 11    |
|                              | Leg Length (Back)        | 5                                                                  | 7     | 8     | 10    | 11                                                                 | 13    | 14    | 15    |
| Accuracy                     |                          | Fillet weld·Reinforcement $\pm 0.1\text{mm}$ / Angle $\pm 1^\circ$ |       |       |       | Fillet weld·Reinforcement $\pm 0.1\text{mm}$ / Angle $\pm 1^\circ$ |       |       |       |

| Order No. | Model No. | Weight |
|-----------|-----------|--------|
| 007550    | WAL2542   | 100g   |
| 007551    | WAL4562   | 120g   |

## ROOT LIMIT GAUGE

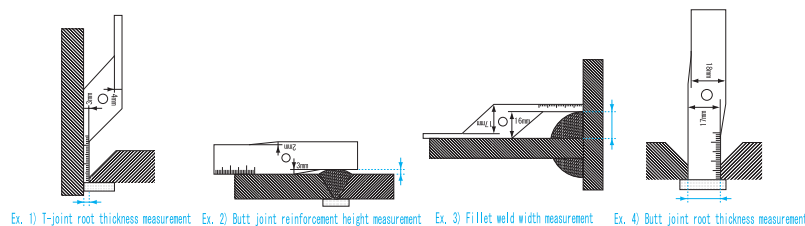
Essential for welding process.

Limit gauge for measuring root gap of T-joint, facing joint and so on



WRL310

### ● Example of use



### USE

- Use for measuring root gap of T-joint or facing joint, leg length (height) of fillet weld and excess weld and height of facing joint

### MATERIAL

- Stainless steel

### FEATURES

- Measure with 1mm interval
- The measurement result of root thickness will be indicated on the scale
- The most frequently used dimensions are selected as the gauge sizes
- Provided with plastic case and ball chain

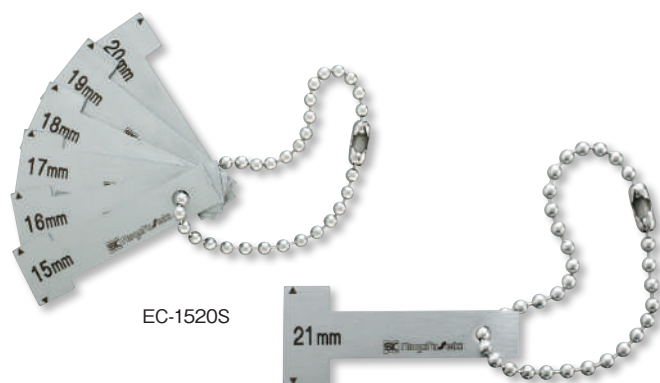
| Order No. | Model No. | Weight |
|-----------|-----------|--------|
| 007560    | WRL310    | 60g    |
| 007561    | WRL1118   | 90g    |

### SPECIFICATIONS

| Model No.                    |                          | WRL310                           |       |       |       | WRL1118                          |       |       |       |
|------------------------------|--------------------------|----------------------------------|-------|-------|-------|----------------------------------|-------|-------|-------|
| Blank No.                    |                          | 1                                | 2     | 3     | 4     | 1                                | 2     | 3     | 4     |
| Outline dimension (mm)       | Overall width            | 90                               |       |       |       | 90                               |       |       |       |
|                              | Overall height           | 20                               |       |       |       | 20                               |       |       |       |
|                              | Plate thickness          | 2                                |       |       |       | 2                                |       |       |       |
| Material/ Finish             |                          | SUS304/ barrel semi-gloss finish |       |       |       | SUS304/ barrel semi-gloss finish |       |       |       |
| Measurement Value Indication | Root gap (Front)         | 3·4                              | 5·6   | 7·8   | 9·10  | 11·12                            | 13·14 | 15·16 | 17·18 |
|                              | Leg length-height (Back) | 16·17                            | 14·15 | 12·13 | 10·11 | 8·9                              | 6·7   | 4·5   | 2·3   |
|                              | Root side (Front)        | 20                               |       |       |       | 20                               |       |       |       |
|                              | Plate thickness          | 30                               |       |       |       | 30                               |       |       |       |
| Accuracy                     |                          | ±0.1mm                           |       |       |       | ±0.1mm                           |       |       |       |

## WELDING ELECTRODE GAUGE SET / SINGLE PART

Quick measurement for height of welding electrode



EC-1520S

EC-21

### USE

- Use for measuring height of welding electrode

### MATERIAL

- Stainless steel

### SPECIFICATIONS

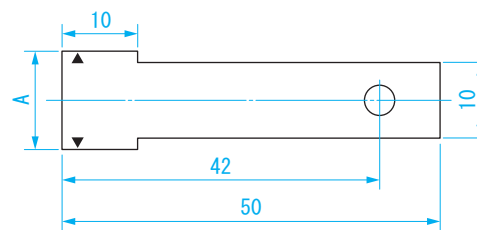
- Accuracy: ±0.2mm
- Thickness: 1mm
- With ball chain

### ■ Set

| Order No. | Model No. | Size A (mm)                 | Weight |
|-----------|-----------|-----------------------------|--------|
| 111419    | EC-1015S  | 10 · 11 · 12 · 13 · 14 · 15 | 26g    |
| 111420    | EC-1520S  | 15 · 16 · 17 · 18 · 19 · 20 | 28g    |
| 111421    | EC-2025S  | 20 · 21 · 22 · 23 · 24 · 25 | 31g    |

### ● DIMENSIONS

Units: mm



### ■ Single Part

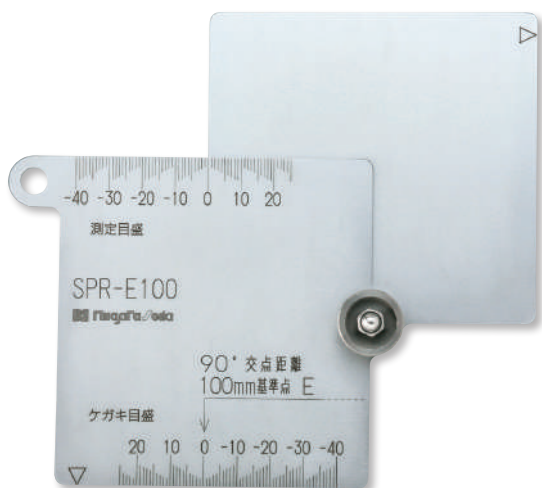
| Order No. | Model No. | Size A (mm) | Weight |
|-----------|-----------|-------------|--------|
| 111403    | EC-10     | 10          | 6.7g   |
| 111404    | EC-11     | 11          | 6.8g   |
| 111405    | EC-12     | 12          | 6.8g   |
| 111406    | EC-13     | 13          | 6.9g   |
| 111407    | EC-14     | 14          | 7.0g   |
| 111408    | EC-15     | 15          | 7.1g   |
| 111409    | EC-16     | 16          | 7.2g   |
| 111410    | EC-17     | 17          | 7.2g   |
| 111411    | EC-18     | 18          | 7.3g   |
| 111412    | EC-19     | 19          | 7.4g   |
| 111413    | EC-20     | 20          | 7.5g   |
| 111414    | EC-21     | 21          | 7.5g   |
| 111415    | EC-22     | 22          | 7.6g   |
| 111416    | EC-23     | 23          | 7.7g   |
| 111417    | EC-24     | 24          | 7.8g   |
| 111418    | EC-25     | 25          | 7.8g   |



## STEALTH POINT READER

The length measurement from welded corners.

Can determine the position of the reference point (100 mm) from the corner hidden in fillet.



### USE

- For measuring the length from the welded corner

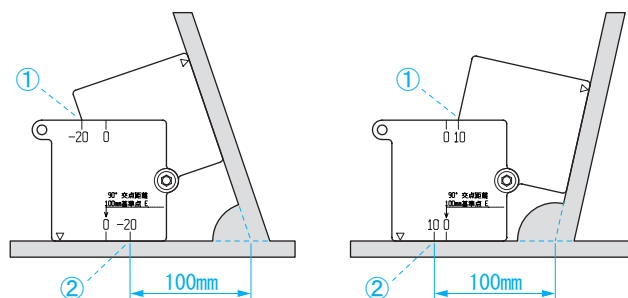
### FEATURES

- Can determine the position of the reference point (100 mm) from the corner hidden in fillet
- With a vinyl case for convenient storage

### MATERIAL

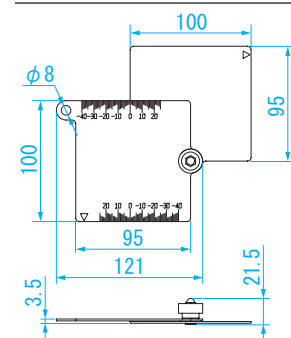
- Stainless steel

### ● Example of use



- ① Read the value from the measuring scale where the two plates intersect
- ② Confirm the same point as ① and the value read from step ① indicates the point 100mm from the corner

### ● DIMENSIONS Units: mm



| Order No. | Model No. | Usage Range (intersection angle) | Accuracy (mm) | Weight |
|-----------|-----------|----------------------------------|---------------|--------|
| 007571    | SPR-E100  | 60° ~ 120°                       | ± 0.5         | 240g   |



## STEALTH POINT READER

For measuring the length from the welded corner.

Dedicated application software for free and it can be easily measured the distance from the reference point to the welding point.

※Download the app by the method described in the instruction manual that comes with the product.



### USE

- For measuring the length from the welded corner

### MATERIAL

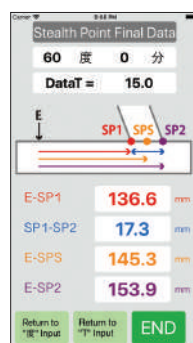
- Stainless steel

### FEATURES

- Dedicated application software for free and it can be easily measured the distance from the reference point to the welding point
- With a vinyl case for convenient storage

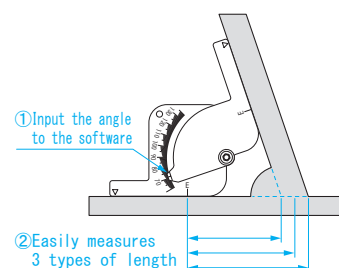
### Supported OS

- iPhone: iOS 10.0 or later / Android: Android 4.4 or later



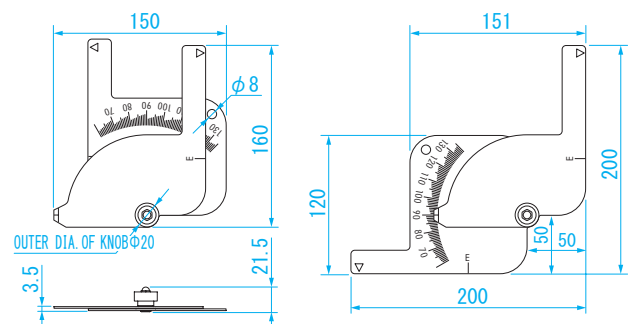
< Image of application >

### ● Example of use



### ● DIMENSIONS

Units: mm



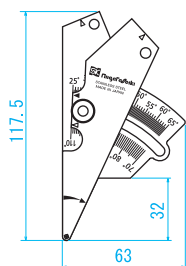
| Order No. | Model No. | Usage Range (intersection angle) | Angle Measurement Accuracy | Accuracy (welding point distance from reference point) (mm) | Weight |
|-----------|-----------|----------------------------------|----------------------------|-------------------------------------------------------------|--------|
| 007572    | SPR-S     | 60° ~ 135°                       | ± 0.5°                     | ± 0.7 (85° or more)<br>± 1.1 (less than 85°)                | 270g   |

## ANGLE GAUGE

Specialized for angle measurement of grooves with minimum reading 0.5°



### ● DIMENSIONS Units: mm



### USE

- Butt angle measurement and gap angle measurement

### MATERIAL

- Stainless steel

### FEATURES

- Measurement of butt joint gap angle
- Sharpened tip enables measurement for root gap of 0mm, or when sheet thickness is less than 15mm
- Minimum reading 0.5°, large graduation for easy reading
- T-joint gap angle can be measured avoiding weld buildup
- Non-reflective satin finish for better legibility

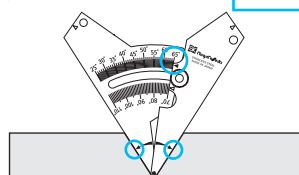
### SPECIFICATIONS

- Solid and convenient carrying (provided with plastic carrying case)
- Bevel angle: 25~65° (minimum graduation: 0.5°)
- Angle of cross weld part: 70~110°

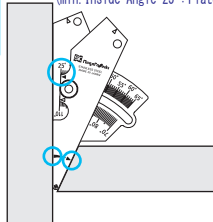
### ● Example of use

Example 1) Butt joint gap angle measurement  
(max. inside angle 65° : plate thickness : 30mm)

• How to read the value  
Examples 1) & 2)  
Angle between ◀ marks indicated at ▶

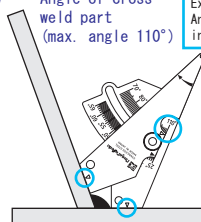


Example 2) T-joint gap angle measurement  
(min. Inside Angle 25° : Plate Thickness : 30mm)

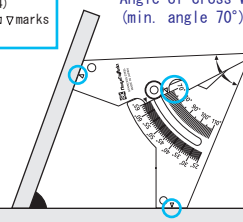


Example 3) Angle of cross weld part  
(max. angle 110°)

How to read the value  
Examples 3) & 4)  
Angle between ◀ marks indicated at ▶



Example 4) Angle of cross weld part  
(min. angle 70°)



### SPECIFICATIONS

| Order No. | Model No. | Accuracy | Weight |
|-----------|-----------|----------|--------|
| 007518    | WGA-65    | ± 0.5°   | 73.5g  |

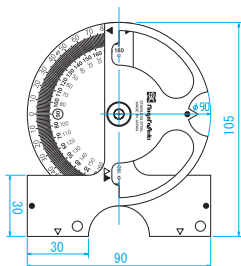
## ANGLE PROTRACTOR

Specialized for angle measurement.

Three measurement points enable multiple angle measurements.



### ● DIMENSIONS Units: mm



### USE

- Measuring angles for sheet metal bending, welding flanges and butt joints, openings and bevels, scissors plates, etc.

### MATERIAL

- Stainless steel

### FEATURES

- Enables a wide range of angle measurements before and after welding process
- Direct measurement can be done without interference from swelling or weld bead
- Can measure sheet metal bends and outside angle measurements
- Non-reflective satin finish for better legibility
- Solid and convenient carrying (provided with plastic case)

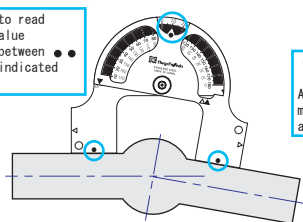
### SPECIFICATIONS

- Bevel angle: Scissors angle 30~130° (minimum graduation: 1°)
- Bending angle and angle of butt weld joint: 0~90°
- Stud and beam angle after welding: 0~180°

### ● Example of use

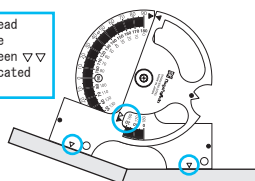
Example 1) Angle measurement of bent butt weld (0~90° : example indicates 10°)

• How to read the value  
Angle between ◀ marks indicated at ▶



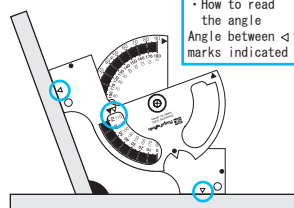
Example 2) Angle measurement of bent Flange and metal plate (0~180° : example indicates 160° (20°))

• How to read the value  
Angle between ▼ marks indicated at ▶



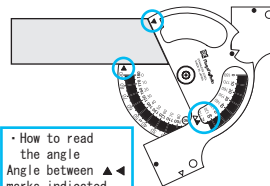
Example 3) Angle of cross weld part (0~180° : example indicates 110°)

• How to read the angle  
Angle between ◀ marks indicated at ▶



Example 4) Plate bevel angle (30~130° : example indicates 65°)

• How to read the angle  
Angle between ▲ marks indicated at ▶



### SPECIFICATIONS

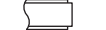
| Order No. | Model No. | Accuracy of angle | Weight |
|-----------|-----------|-------------------|--------|
| 007519    | AP-130    | ± 0.5°            | 100g   |



# Measurement function and List

※ Measures dimension of weld, relative amount must be calculated

| Process                                 | No.                                        | Applicable Model                           |         | WG-1 (M)<br>WG-1FKD                       | WG-2 (L)                                | WG-3                                                | WG-5    | WGU-7M                                    | WGU-8M                                | WGU-9M | WGF-60                                    | WGF-50    | WGU-2S                                    |
|-----------------------------------------|--------------------------------------------|--------------------------------------------|---------|-------------------------------------------|-----------------------------------------|-----------------------------------------------------|---------|-------------------------------------------|---------------------------------------|--------|-------------------------------------------|-----------|-------------------------------------------|
|                                         |                                            | Categories                                 | Figures |                                           |                                         |                                                     |         |                                           |                                       |        |                                           |           |                                           |
| Machining and Assembly (Before welding) | 1                                          | T joint Gap                                |         | ○                                         | ○                                       | ○                                                   | —       | ○                                         | ○                                     | ○      | —                                         | —         | —                                         |
|                                         | 2                                          | Lap joint Gap                              |         | ○                                         | ○                                       | ○                                                   | —       | ○                                         | ○                                     | ○      | —                                         | —         | —                                         |
|                                         | 3                                          | Misalignment of Butt weld                  |         | ○                                         | ○                                       | ○                                                   | —       | ○                                         | ○                                     | ○      | —                                         | —         | —                                         |
|                                         | 4                                          | Root Openings                              |         | ○                                         | ○                                       | ○                                                   | —       | ○                                         | ○                                     | ○      | —                                         | —         | —                                         |
|                                         | 5                                          | Root gap of T-joint                        |         | —                                         | —                                       | —                                                   | —       | —                                         | —                                     | —      | —                                         | —         | —                                         |
|                                         | 6                                          | Root Face                                  |         | ○                                         | ○                                       | ○                                                   | ○       | ○                                         | ○                                     | ○      | —                                         | —         | ○                                         |
|                                         | 7                                          | Bevel Angle                                |         | ○                                         | ○                                       | ○                                                   | —       | ○                                         | ○                                     | ○      | —                                         | —         | —                                         |
|                                         | 8                                          | Groove angle                               |         | —                                         | —                                       | —                                                   | —       | —                                         | —                                     | —      | —                                         | —         | —                                         |
|                                         | 9                                          | T-joint gap angle                          |         | —                                         | —                                       | —                                                   | —       | —                                         | —                                     | —      | —                                         | —         | —                                         |
|                                         | 10                                         | Edg Misalignment                           |         | ○                                         | ○                                       | ○                                                   | ○       | ○                                         | ○                                     | ○      | —                                         | —         | —                                         |
| After Welding                           | 11                                         | Leg length (height) of Fillet Weld         |         | ○                                         | ○                                       | ○                                                   | ○       | ○                                         | ○                                     | ○      | —                                         | —         | —                                         |
|                                         | 12                                         | Throat Thickness of Fillet Weld            |         | ○                                         | ○                                       | ○                                                   | ○       | ○                                         | ○                                     | ○      | (60°・45°)                                 | (50°・45°) | —                                         |
|                                         | 13                                         | Height of Butt weld Overlay                |         | ○                                         | ○                                       | ○                                                   | ○       | ○                                         | ○                                     | ○      | —                                         | —         | —                                         |
|                                         | 14                                         | Height of T- joint weld Overlay            |         | ○                                         | ○                                       | ○                                                   | ○       | ○                                         | ○                                     | ○      | —                                         | —         | —                                         |
|                                         | 15                                         | Undercut                                   |         | —                                         | ○                                       | ○                                                   | —       | ○                                         | ○                                     | ○      | —                                         | —         | ○                                         |
|                                         | 16                                         | Misalignment of Butt Weld                  |         | —                                         | ○                                       | ○                                                   | ○       | ○                                         | ○                                     | ○      | —                                         | —         | —                                         |
|                                         | 17                                         | Bending angle and angle of butt weld joint |         | —                                         | —                                       | —                                                   | —       | —                                         | —                                     | —      | —                                         | —         | —                                         |
|                                         | 18                                         | Angle of Cross weld part                   |         | —                                         | —                                       | —                                                   | —       | —                                         | —                                     | —      | —                                         | —         | —                                         |
|                                         | 19                                         | Stud angle after welding                   |         | —                                         | —                                       | —                                                   | —       | —                                         | —                                     | —      | —                                         | —         | —                                         |
|                                         | 20                                         | Irregularity of Bead Surface               |         | —                                         | —                                       | —                                                   | —       | —                                         | ○                                     | ○      | —                                         | —         | —                                         |
| Pressure welding                        | 21                                         | Swelling diameter                          |         | —                                         | —                                       | —                                                   | —       | —                                         |                                       | ○      | —                                         | —         | —                                         |
|                                         | 22                                         | Swelling length                            |         | —                                         | —                                       | —                                                   | —       | —                                         |                                       | ○      | —                                         | —         | —                                         |
|                                         | 23                                         | Misalignment of Pressured Surface          |         | —                                         | —                                       | —                                                   | —       | —                                         |                                       | ○      | —                                         | —         | —                                         |
|                                         | 24                                         | Bending angle                              |         | —                                         | —                                       | —                                                   | —       | —                                         | —                                     | —      | —                                         | —         | —                                         |
| SPECIFICATIONS                          | Material                                   |                                            |         | Stainless steel<br>Plate thickness: 4.3mm |                                         | Stainless steel<br>Plate thickness 7mm Satin finish |         | Stainless steel<br>Plate thickness: 1.5mm |                                       |        | Stainless steel<br>Plate thickness: 4.3mm |           | Stainless steel<br>Plate thickness: 1.5mm |
|                                         | Scale                                      |                                            |         | 40mm                                      |                                         | —                                                   | 30・35mm | 50・60mm                                   |                                       | 60mm   | —                                         |           | 100mm                                     |
|                                         | Height of Bead Weld                        |                                            |         | 10mm                                      |                                         | 10mm                                                |         | 25mm                                      |                                       |        | —                                         |           | —                                         |
|                                         | Height of Fillet Weld                      |                                            |         | Blade : 20mm<br>Rotator : 20mm            |                                         | Blade : 10mm<br>Rotator : 20mm                      |         | 25mm                                      |                                       |        | —                                         |           | —                                         |
|                                         | Throat thickness of fillet weld            |                                            |         | 10mm                                      |                                         | 50mm                                                |         | 15mm                                      |                                       |        | With bevel…5 ~ 30mm<br>No bevel…0 ~ 20mm  |           | —                                         |
|                                         | Undercut depth                             |                                            |         | —                                         | 10mm<br>Minimum read 0.1                | 10mm                                                | —       | 25mm                                      |                                       |        | —                                         |           | 2mm<br>(Accuracy ± 0.1mm)                 |
|                                         | Root Opening                               |                                            |         | 0.5 ~ 3mm                                 | 1 ~ 5mm                                 | 0.5 ~ 5mm                                           | —       | 2 ~ 5mm                                   |                                       |        | —                                         |           | —                                         |
|                                         | Welding Bar Diameter                       |                                            |         | 10mm                                      |                                         | 10mm                                                |         | —                                         | 30mm                                  | 40mm   | —                                         |           | —                                         |
|                                         | Width of Bead Weld                         |                                            |         | —                                         |                                         | —                                                   |         | —                                         | 0 ~ 50mm                              |        |                                           | —         |                                           |
|                                         | Length Accuracy                            |                                            |         | ± 0.4mm                                   | ± 0.2mm<br>(Gap measurement<br>± 0.4mm) | ± 0.4mm                                             |         | ± 0.6mm                                   |                                       |        | ± 0.4mm                                   |           | ± 0.6mm                                   |
|                                         | Beveling (groove) angle                    |                                            |         | 0 ~ 60° Minimum<br>reading value : 5°     |                                         | 0 ~ 60° Minimum<br>reading value : 5°               | —       | 0 ~ 60° Minimum<br>reading value : 5°     | 0 ~ 70° Minimum<br>reading value : 5° |        | —                                         |           | —                                         |
|                                         | Bending angle and angle of butt weld joint |                                            |         | —                                         |                                         | —                                                   |         | —                                         |                                       |        | —                                         |           | —                                         |
|                                         | Stud and beam angle after welding          |                                            |         | —                                         |                                         | —                                                   |         | —                                         |                                       |        | —                                         |           | —                                         |
|                                         | Angle Accuracy                             |                                            |         | ± 0.7°                                    |                                         | ± 0.7°                                              | —       | ± 2°                                      |                                       |        | —                                         |           | —                                         |

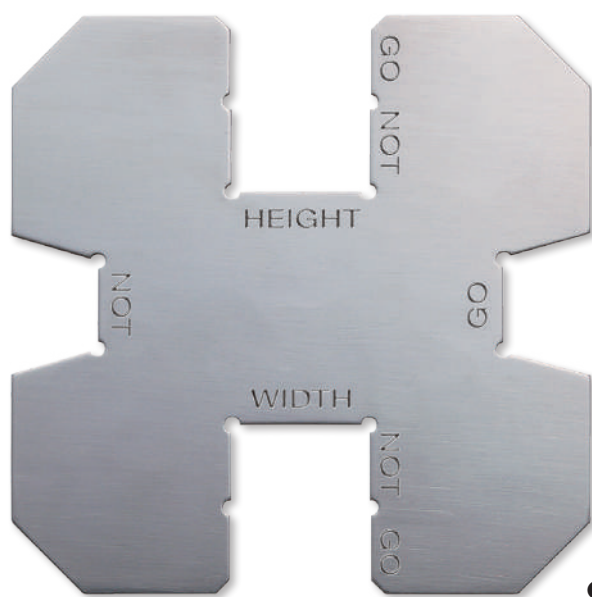
| Process                                 | No.                                        | Applicable Model                           |                                                                                     | FDW-1                                                                             | WRL310<br>WRL1118                                                                 | WAL2542<br>WAL4562                                                                                             | AWG-10                                                                            | GDCS-20WG                                                                         | WGA-65                                                                             | AP-130                                                                              | MSG-100KD                                                                           | MSG-50                                                                              | TAPER GAUGE                                                                         |
|-----------------------------------------|--------------------------------------------|--------------------------------------------|-------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|
|                                         |                                            | Categories                                 | Figures                                                                             |  |  |                               |  |  |  |  |  |  |  |
| Machining and Assembly (Before welding) | 1                                          | T joint Gap                                |    | —                                                                                 | ○                                                                                 | —                                                                                                              | —                                                                                 | —                                                                                 | —                                                                                  | —                                                                                   | —                                                                                   | —                                                                                   | ○                                                                                   |
|                                         | 2                                          | Lap joint Gap                              |    | —                                                                                 | ○                                                                                 | —                                                                                                              | —                                                                                 | —                                                                                 | —                                                                                  | —                                                                                   | —                                                                                   | —                                                                                   | ○                                                                                   |
|                                         | 3                                          | Misalignment of Butt weld                  |    | —                                                                                 | ○                                                                                 | —                                                                                                              | —                                                                                 | —                                                                                 | —                                                                                  | —                                                                                   | —                                                                                   | —                                                                                   | ○                                                                                   |
|                                         | 4                                          | Root Openings                              |    | —                                                                                 | ○                                                                                 | —                                                                                                              | —                                                                                 | —                                                                                 | —                                                                                  | —                                                                                   | —                                                                                   | —                                                                                   | ○                                                                                   |
|                                         | 5                                          | Root gap of T-joint                        |    | —                                                                                 | ○                                                                                 | —                                                                                                              | —                                                                                 | —                                                                                 | —                                                                                  | —                                                                                   | —                                                                                   | —                                                                                   | —                                                                                   |
|                                         | 6                                          | Root Face                                  |    | —                                                                                 | ○                                                                                 | —                                                                                                              | —                                                                                 | —                                                                                 | —                                                                                  | —                                                                                   | —                                                                                   | —                                                                                   | —                                                                                   |
|                                         | 7                                          | Bevel Angle                                |    | —                                                                                 | —                                                                                 | —                                                                                                              | —                                                                                 | —                                                                                 | —                                                                                  | ○                                                                                   | —                                                                                   | —                                                                                   | —                                                                                   |
|                                         | 8                                          | Groove angle                               |    | —                                                                                 | —                                                                                 | ○                                                                                                              | ○                                                                                 | ○                                                                                 | ○                                                                                  | —                                                                                   | —                                                                                   | —                                                                                   | —                                                                                   |
|                                         | 9                                          | T-joint gap angle                          |    | —                                                                                 | —                                                                                 | ○                                                                                                              | —                                                                                 | —                                                                                 | ○                                                                                  | —                                                                                   | —                                                                                   | —                                                                                   | —                                                                                   |
|                                         | 10                                         | Edg Misalignment                           |    | —                                                                                 | —                                                                                 | —                                                                                                              | —                                                                                 | —                                                                                 | —                                                                                  | —                                                                                   | —                                                                                   | —                                                                                   | —                                                                                   |
| After Welding                           | 11                                         | Leg length (height) of Fillet Weld         |    | —                                                                                 | ○                                                                                 | ○                                                                                                              | —                                                                                 | —                                                                                 | —                                                                                  | —                                                                                   | ○                                                                                   | —                                                                                   | —                                                                                   |
|                                         | 12                                         | Throat Thickness of Fillet Weld            |    | —                                                                                 | —                                                                                 | ○                                                                                                              | ○                                                                                 | ○                                                                                 | —                                                                                  | —                                                                                   | —                                                                                   | —                                                                                   | —                                                                                   |
|                                         | 13                                         | Height of Butt weld Overlay                |    | —                                                                                 | ○                                                                                 | —                                                                                                              | ○                                                                                 | ○                                                                                 | —                                                                                  | —                                                                                   | ○                                                                                   | ○                                                                                   | —                                                                                   |
|                                         | 14                                         | Height of T-joint weld Overlay             |    | —                                                                                 | ○                                                                                 | —                                                                                                              | ○                                                                                 | ○                                                                                 | —                                                                                  | —                                                                                   | ○                                                                                   | —                                                                                   | —                                                                                   |
|                                         | 15                                         | Undercut                                   |    | ○                                                                                 | —                                                                                 | —                                                                                                              | —                                                                                 | —                                                                                 | —                                                                                  | —                                                                                   | —                                                                                   | —                                                                                   | —                                                                                   |
|                                         | 16                                         | Misalignment of Butt Weld                  |    | —                                                                                 | —                                                                                 | —                                                                                                              | —                                                                                 | —                                                                                 | —                                                                                  | —                                                                                   | —                                                                                   | ○                                                                                   | —                                                                                   |
|                                         | 17                                         | Bending angle and angle of butt weld joint |   | —                                                                                 | —                                                                                 | —                                                                                                              | —                                                                                 | —                                                                                 | —                                                                                  | ○                                                                                   | —                                                                                   | —                                                                                   | —                                                                                   |
|                                         | 18                                         | Angle of Cross weld part                   |  | —                                                                                 | —                                                                                 | —                                                                                                              | —                                                                                 | —                                                                                 | ○                                                                                  | ○                                                                                   | —                                                                                   | —                                                                                   | —                                                                                   |
|                                         | 19                                         | Stud angle after welding                   |  | —                                                                                 | —                                                                                 | —                                                                                                              | —                                                                                 | —                                                                                 | ○                                                                                  | ○                                                                                   | —                                                                                   | —                                                                                   | —                                                                                   |
|                                         | 20                                         | Irregularity of Bead Surface               |  | —                                                                                 | —                                                                                 | —                                                                                                              | —                                                                                 | —                                                                                 | —                                                                                  | —                                                                                   | —                                                                                   | —                                                                                   | —                                                                                   |
| Pressure welding                        | 21                                         | Swelling diameter                          |  | —                                                                                 | —                                                                                 | —                                                                                                              | —                                                                                 | —                                                                                 | —                                                                                  | —                                                                                   | —                                                                                   | —                                                                                   | —                                                                                   |
|                                         | 22                                         | Swelling length                            |  | —                                                                                 | —                                                                                 | —                                                                                                              | —                                                                                 | —                                                                                 | —                                                                                  | —                                                                                   | —                                                                                   | —                                                                                   | —                                                                                   |
|                                         | 23                                         | Misalignment of Pressured Surface          |  | —                                                                                 | —                                                                                 | —                                                                                                              | —                                                                                 | —                                                                                 | —                                                                                  | —                                                                                   | —                                                                                   | —                                                                                   | —                                                                                   |
|                                         | 24                                         | Bending angle                              |  | —                                                                                 | —                                                                                 | —                                                                                                              | —                                                                                 | —                                                                                 | —                                                                                  | ○                                                                                   | —                                                                                   | —                                                                                   | —                                                                                   |
| SPECIFICATIONS                          | Material                                   |                                            |                                                                                     | Stainless steel<br>Plate thickness : 1.5mm                                        | Stainless steel<br>Plate thickness : 2mm                                          | Stainless steel<br>Plate thickness : 1.5mm                                                                     | Stainless steel<br>Thickness :<br>Body : 5mm, Blade: 1.9mm                        | Stainless steel<br>Thickness : Body: 5.7mm<br>Blade : 3.2mm                       | Stainless steel<br>Plate thickness : 1.5mm<br>Satin finish                         |                                                                                     | Stainless steel<br>Brass                                                            | Stainless steel<br>Brass                                                            | —                                                                                   |
|                                         | Scale                                      |                                            |                                                                                     | —                                                                                 | 20mm                                                                              | —                                                                                                              | —                                                                                 |                                                                                   | —                                                                                  |                                                                                     | 10cm                                                                                | 50-0-50mm                                                                           | —                                                                                   |
|                                         | Height of Bead Weld                        |                                            |                                                                                     | —                                                                                 | 10 ~ 17mm fixed (1mm step)<br>2 ~ 9mm fixed (1mm step)                            | —                                                                                                              | 8mm                                                                               | 10mm                                                                              | —                                                                                  |                                                                                     | 10cm<br>(Width: Approx. 3cm)                                                        | 100mm<br>(Width: Approx. 38mm)                                                      | —                                                                                   |
|                                         | Height of Fillet Weld                      |                                            |                                                                                     | —                                                                                 | 10 ~ 17mm fixed (1mm step)<br>2 ~ 9mm fixed (1mm step)                            | 5 · 7 · 8 · 10mm fixed<br>11 · 13 · 14 · 15mm fixed                                                            | —                                                                                 |                                                                                   | —                                                                                  |                                                                                     | 10cm<br>(Width: Approx. 3cm)                                                        | —                                                                                   | —                                                                                   |
|                                         | Throat thickness of fillet weld            |                                            |                                                                                     | —                                                                                 | —                                                                                 | 4 ~ 7mm fixed (1mm step)<br>8 ~ 11mm fixed (1mm step)                                                          | 11mm                                                                              | 20mm                                                                              | —                                                                                  |                                                                                     | —                                                                                   | —                                                                                   | —                                                                                   |
|                                         | Undercut depth                             |                                            |                                                                                     | 4mm<br>(Accuracy ± 0.04mm)                                                        | —                                                                                 | —                                                                                                              | —                                                                                 |                                                                                   | —                                                                                  |                                                                                     | —                                                                                   | —                                                                                   | —                                                                                   |
|                                         | Root Opening                               |                                            |                                                                                     | —                                                                                 | 3 ~ 10mm fixed (1mm step)<br>11 ~ 18mm fixed (1mm step)                           | —                                                                                                              | —                                                                                 |                                                                                   | —                                                                                  |                                                                                     | —                                                                                   | —                                                                                   | —                                                                                   |
|                                         | Welding Bar Diameter                       |                                            |                                                                                     | —                                                                                 | —                                                                                 | —                                                                                                              | —                                                                                 |                                                                                   | —                                                                                  |                                                                                     | —                                                                                   | —                                                                                   | —                                                                                   |
|                                         | Width of Bead Weld                         |                                            |                                                                                     | —                                                                                 | —                                                                                 | —                                                                                                              | —                                                                                 |                                                                                   | —                                                                                  |                                                                                     | —                                                                                   | —                                                                                   | —                                                                                   |
|                                         | Length Accuracy                            |                                            |                                                                                     | —                                                                                 | ± 0.1mm                                                                           | ± 0.1mm                                                                                                        | ± 0.2mm                                                                           | ± 0.03mm                                                                          | —                                                                                  |                                                                                     | —                                                                                   | —                                                                                   | —                                                                                   |
|                                         | Beveling (groove) angle                    |                                            |                                                                                     | —                                                                                 | —                                                                                 | 25 · 27.5 · 30 · 32.5<br>35 · 37.5 · 40 · 42.5° fixed<br>45 · 47.5 · 50 · 52.5<br>55 · 57.5 · 60 · 62.5° fixed | 60 · 70 · 80 · 90° fixed                                                          |                                                                                   | 25 ~ 65° Minimum<br>reading value : 0.5°                                           | Bevel angle<br>30 ~ 130° Minimum<br>reading value : 1°                              | —                                                                                   | —                                                                                   | —                                                                                   |
|                                         | Bending angle and angle of butt weld joint |                                            |                                                                                     | —                                                                                 | —                                                                                 | —                                                                                                              | —                                                                                 |                                                                                   | —                                                                                  | 0 ~ 90°                                                                             | —                                                                                   | —                                                                                   | —                                                                                   |
|                                         | Stud and beam angle after welding          |                                            |                                                                                     | —                                                                                 | —                                                                                 | —                                                                                                              | —                                                                                 |                                                                                   | 70 ~ 110°                                                                          | 0 ~ 180°                                                                            | —                                                                                   | —                                                                                   | —                                                                                   |
|                                         | Angle Accuracy                             |                                            |                                                                                     | —                                                                                 | —                                                                                 | ± 1°                                                                                                           | —                                                                                 |                                                                                   | ± 0.5°                                                                             |                                                                                     | —                                                                                   | —                                                                                   | —                                                                                   |

BLOCK  
GAUGEPIN  
GAUGEPIN  
VISEPIN  
GAUGE  
ACCESSORIESRING  
GAUGEPLUG  
GAUGELIMIT  
GAUGETHICKNESS  
GAUGETAPER  
GAUGEWELDING  
GAUGEOTHER  
GAUGES

## GASKET LIMIT GAUGE

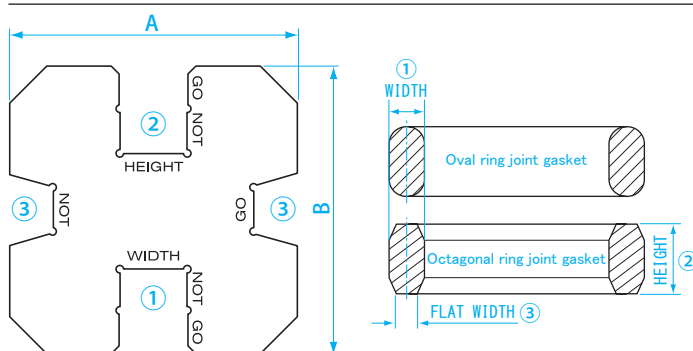
T MTO product

Limit gauge for GO/NOGO testing of ring joint gaskets.  
Various ring numbers are supported.



GST-1

## ● DIMENSIONS



Units: mm

| Model No. | Outer size |     | Applicable Gasket Specification |       |          |       |              |       |
|-----------|------------|-----|---------------------------------|-------|----------|-------|--------------|-------|
|           |            |     | ① Width                         |       | ② Height |       | ③ Flat width |       |
|           | A          | B   | GO                              | NOT   | GO       | NOT   | GO           | NOT   |
| GST-1     | 80         | 80  | 11.33                           | 10.93 | 16.20    | 15.20 | 7.95         | 7.55  |
| GST-2     | 80         | 80  | 12.90                           | 12.50 | 18.00    | 17.00 | 8.86         | 8.46  |
| GST-3     | 80         | 80  | 16.08                           | 15.68 | 21.10    | 20.10 | 10.69        | 10.29 |
| GST-4     | 120        | 120 | 19.25                           | 18.85 | 24.40    | 23.40 | 12.52        | 12.12 |
| GST-5     | 120        | 120 | 22.42                           | 22.02 | 27.40    | 26.40 | 15.01        | 14.61 |
| GST-6     | 140        | 140 | 25.60                           | 25.20 | 32.30    | 31.30 | 17.50        | 17.10 |
| GST-7     | 140        | 140 | 28.78                           | 28.38 | 35.60    | 34.60 | 20.01        | 19.61 |

## USE

- Limit gauge for GO/NOGO testing of ring joint gaskets (Oval ring joint gasket can be tested its width only. Octagonal ring joint gasket can be tested its width, height and flat width.)

## MATERIAL

- Stainless steel (Thickness: 1.5mm)

## SPECIFICATIONS

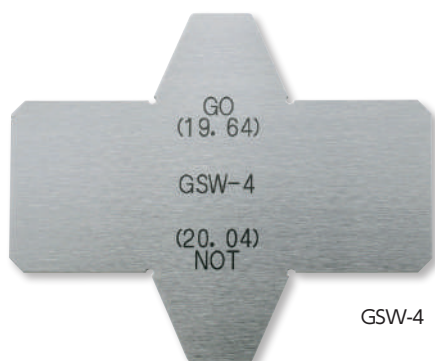
- GO/NOGO standard conforms to JPI-7S-23
- Gasket width accuracy:  $\pm 0.20\text{mm}$
- Gasket height accuracy:  $\pm 0.5\text{mm}$

| Order No. | Model No. | Applicable Gasket Specification                                         |                   |                    |                           | Weight |
|-----------|-----------|-------------------------------------------------------------------------|-------------------|--------------------|---------------------------|--------|
|           |           | Compatible Gasket No.                                                   | Common size       | Octagonal gasket   |                           |        |
|           |           |                                                                         | Gasket Width (mm) | Gasket Height (mm) | Octagonal Flat Width (mm) |        |
| 007478    | GST-1     | 21,23,24,26,27,30,31,34,35,37,39,41,44,45,49,53,57,61,65,69,82,84,92,99 | 11.13             | 15.7               | 7.75                      | 60g    |
| 007479    | GST-2     | 28,32,46,73                                                             | 12.70             | 17.5               | 8.66                      | 60g    |
| 007480    | GST-3     | 38,50,54,62,66,77,86,87                                                 | 15.88             | 20.6               | 10.49                     | 55g    |
| 007481    | GST-4     | 42,47,70,74,88,89,93,94,95                                              | 19.05             | 23.9               | 12.32                     | 140g   |
| 007482    | GST-5     | 51,58,96,97,98                                                          | 22.22             | 26.9               | 14.81                     | 133g   |
| 007483    | GST-6     | 63,78                                                                   | 25.40             | 31.8               | 17.30                     | 170g   |
| 007484    | GST-7     | 55,67,71,100                                                            | 28.58             | 35.1               | 19.81                     | 167g   |

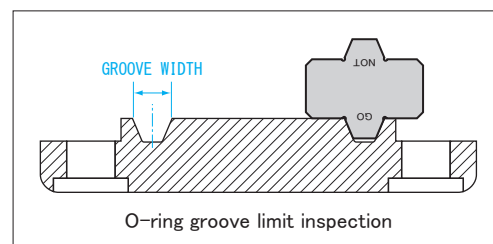
## GASKET LIMIT GAUGE

 MTO product

Limit gauge for GO/NOGO testing of O-ring groove width.  
Various ring numbers are supported.

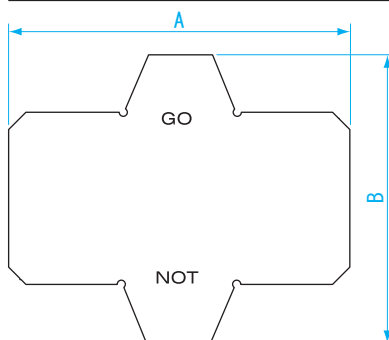


GSW-4



O-ring groove limit inspection

## ● DIMENSIONS



Units: mm

| Model No. | A  | B  |
|-----------|----|----|
| GSW-1     | 40 | 35 |
| GSW-2     | 40 | 35 |
| GSW-3     | 60 | 50 |
| GSW-4     | 60 | 50 |
| GSW-5     | 80 | 60 |
| GSW-6     | 80 | 60 |
| GSW-7     | 80 | 70 |

## USE

- Limit gauge for measuring width of O-ring groove

## MATERIAL

- Stainless steel (Thickness: 1.5mm)

## SPECIFICATIONS

- GO/NOGO standard conforms to JPI-7S-23
- Groove width accuracy:  $\pm 0.20\text{mm}$
- Angle accuracy:  $\pm 0.5^\circ$

| Order No. | Model No. | Applicable O-ring groove Specification                                  |                   |         |          | Weight |
|-----------|-----------|-------------------------------------------------------------------------|-------------------|---------|----------|--------|
|           |           | Compatible O-Ring No.                                                   | Groove Width (mm) | GO (mm) | NOT (mm) |        |
| 007471    | GSW-1     | 21,23,24,26,27,30,31,34,35,37,39,41,44,45,49,53,57,61,65,69,82,84,92,99 | 11.91             | 11.71   | 12.11    | 11g    |
| 007472    | GSW-2     | 28,32,46,73                                                             | 13.49             | 13.29   | 13.69    | 11g    |
| 007473    | GSW-3     | 38,50,54,62,66,77,86,87                                                 | 16.66             | 16.46   | 16.86    | 22g    |
| 007474    | GSW-4     | 42,47,70,74,88,89,93,94,95                                              | 19.84             | 19.64   | 20.04    | 22g    |
| 007475    | GSW-5     | 51,58,96,97,98                                                          | 23.01             | 22.81   | 23.21    | 35g    |
| 007476    | GSW-6     | 63,78                                                                   | 26.97             | 26.77   | 27.17    | 35g    |
| 007477    | GSW-7     | 55,67,71,100                                                            | 30.18             | 29.98   | 30.38    | 40g    |



BLOCK GAUGE

PIN GAUGE

PIN VISE



PIN GAUGE ACCESSORIES

RING GAUGE

PLUG GAUGE

LIMIT GAUGE

THICKNESS GAUGE

TAPER GAUGE

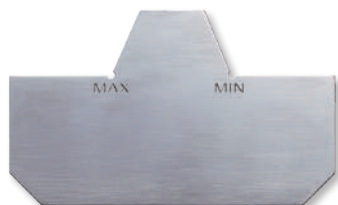
WELDING GAUGE

OTHER GAUGES

## GASKET LIMIT GAUGE

 MTO product

Limit gauge for GO/NOGO testing of angle for octagonal ring joint gaskets



OG-2

## USE

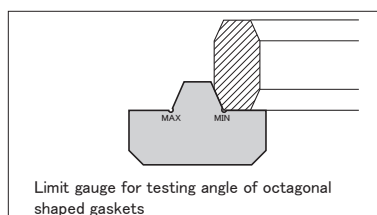
- Limit gauge for GO/NOGO testing of angle for octagonal ring joint gaskets

## MATERIAL

- Stainless steel

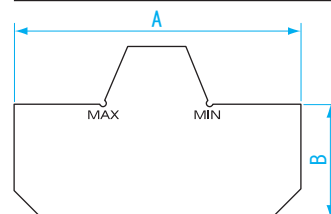
## SPECIFICATIONS

- Angle standard conforms to JPI-7S-23
- Thickness: 1.5mm
- Dimensional tolerance of angle:  $\pm 0.5^\circ$



Limit gauge for testing angle of octagonal shaped gaskets

## ● DIMENSIONS



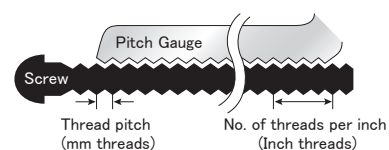
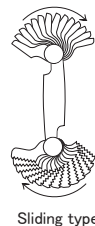
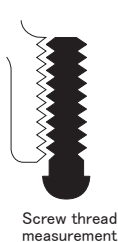
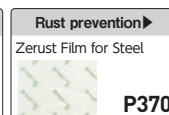
| Order No. | Model No. | Width A (mm) | Height B (mm) | MAX     | MIN     | Weight |
|-----------|-----------|--------------|---------------|---------|---------|--------|
| 007485    | OG-1      | 50           | 20            | 23° 30' | 22° 30' | 10g    |
| 007486    | OG-2      | 60           | 27            | 23° 30' | 22° 30' | 18g    |



## PITCH GAUGE

0

Screw pitch can be easily checked by simply following the external thread pitch



## USE

- Use for measuring screw pitch

## MATERIAL

- Carbon steel for machine structural use

## FEATURES

- Pitch is marked on leaf

BLOCK GAUGE

PIN GAUGE

PIN VISE

PIN GAUGE ACCESSORIES

RING GAUGE

PLUG GAUGE

LIMIT GAUGE

THICKNESS GAUGE

TAPER GAUGE

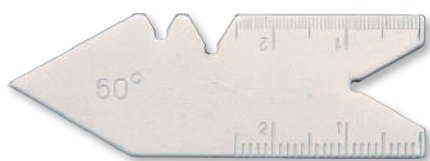
WELDING GAUGE

OTHER GAUGES

## CENTER GAUGE

TO

Gauge for inspecting angles of tool bits and tool edges



SG-60M

## USE

- Fish tail thread gauge for inspection of the angle of lathe center, angle of the tool for screw cutting, etc.

## MATERIAL

- Carbon steel for machine structural use

## FEATURES

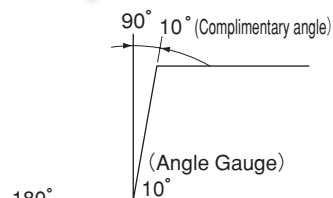
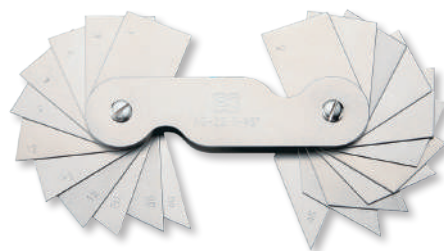
- Can check angles of tool bits and tool edges
- With a vinyl case for easy carrying

| Order No. | Model No. | Angle | Graduation                                | Accuracy | Weight |
|-----------|-----------|-------|-------------------------------------------|----------|--------|
| 007541    | SG-60M    | 60°   | 0~25mm<br>0.5mm step, 1mm step            | ±1°      | 10g    |
| 007542    | SG-55I    | 55°   | 0~1inch<br>1/14 inch step, 1/20 inch step | ±1°      | 10g    |

## ANGLE GAUGE

0

Essential for welding process.  
Gauge for internal angle inspection.



## USE

- Use for inspection of internal angle

## MATERIAL

- Stainless steel

## FEATURES

- 11 leaves on each side, range of 1°~45°
- The angle marked on each leaf is complementary angle
- With a vinyl case for easy carrying

| Order No. | Model No. | Graduation                                                        | Accuracy | Weight |
|-----------|-----------|-------------------------------------------------------------------|----------|--------|
| 110931    | AG-22     | 1 2 3 4 5 6 7 8 9<br>10 12 14 14.5 15 16<br>18 20 25 30 35 40 45° | ±20'     | 200g   |

## RADIUS GAUGE

For dies, canning and welding process. Easy to check the radius curve of workpiece.

### USE

- For checking the radius curve of workpieces, dies, jigs, and wooden molds, etc.

### MATERIAL

- Cold rolled steel

### FEATURES

- Concave and convex shape leaves are stored in both side.
- Suitable for radius curve measuring of circular groove



RG-34F

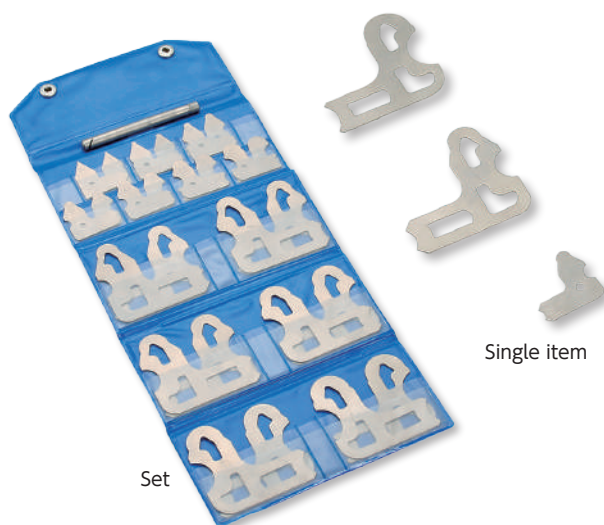
| Order No. | Model No. | Number of Leaves per Set | Details of Radius Dimension (mm)             | Accuracy (mm)                      | Weight |
|-----------|-----------|--------------------------|----------------------------------------------|------------------------------------|--------|
| 110924    | RG-34F    | 34                       | 1.0~ 3.0 (0.25 step)<br>3.5~ 7.0 (0.5 step)  | 1.0~3.0:±0.03<br>3.5~7.0:±0.04     | 80g    |
| 110925    | RG-32F    | 32                       | 7.5~15.0 (0.5 step)                          | ±0.04                              | 160g   |
| 110926    | RG-30F    | 30                       | 15.5~20.0 (0.5 step)<br>21.0~25.0 (1.0 step) | 15.5~23.0:±0.04<br>24.0,25.0:±0.05 | 250g   |

## RADIUS GAUGE (Set / Single part)



(RG-26S)

For dies, canning and welding process. Easy to check the radius curve of workpiece.



Set

Single item

### SPECIFICATIONS (Single part)

| Order No. | Model No. | Detail of Radius Dimension (mm) |
|-----------|-----------|---------------------------------|
| 110881    | RGL-05    | 0.5                             |
| 110882    | RGL-10    | 1.0                             |
| 110883    | RGL-15    | 1.5                             |
| 110884    | RGL-20    | 2.0                             |
| 110885    | RGL-25    | 2.5                             |
| 110886    | RGL-30    | 3.0                             |
| 110887    | RGL-35    | 3.5                             |
| 110888    | RGL-40    | 4.0                             |
| 110889    | RGL-45    | 4.5                             |
| 110890    | RGL-50    | 5.0                             |
| 110891    | RGL-55    | 5.5                             |
| 110892    | RGL-60    | 6.0                             |
| 110893    | RGL-65    | 6.5                             |
| 110894    | RGL-70    | 7.0                             |
| 110895    | RGL-75    | 7.5                             |
| 110896    | RGL-80    | 8.0                             |
| 110897    | RGL-85    | 8.5                             |
| 110898    | RGL-90    | 9.0                             |
| 110899    | RGL-95    | 9.5                             |
| 110900    | RGL-100   | 10.0                            |
| 110901    | RGL-105   | 10.5                            |
| 110902    | RGL-110   | 11.0                            |
| 110903    | RGL-115   | 11.5                            |
| 110904    | RGL-120   | 12.0                            |
| 110905    | RGL-125   | 12.5                            |
| 110906    | RGL-130   | 13.0                            |

### USE

- For checking radius curve of dies, jigs and wooden mold etc.

### MATERIAL

- Stainless steel

### FEATURES

- Each size is separated, suitable for measuring difficult to access parts

### SPECIFICATIONS (Radius gauge set)

| Order No.     | Model No. | Pieces per Set | Detail of Radius Dimension (mm) |
|---------------|-----------|----------------|---------------------------------|
| 110875        | RG-26S    | 26             | 0.5~13.0(0.5step)               |
| Accuracy (mm) |           | Weight         |                                 |
| ±0.1          |           | 290g           |                                 |

BLOCK GAUGE

PIN GAUGE

PIN VISE

PIN GAUGE ACCESSORIES

RING GAUGE

PLUG GAUGE

LIMIT GAUGE

THICKNESS GAUGE

TAPER GAUGE

WELDING GAUGE

OTHER GAUGES

## DRILL TIP GAUGE

Suitable for checking angle of drill-tip after grinding

### USE

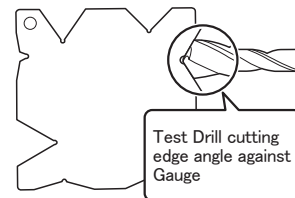
- Use for checking angle of drill-tip after grinding (60° 70° 90° 118° 125° 135° 150° 160°)

### MATERIAL

- Stainless steel

### FEATURES

- 8 types of edge angle gauges are useful when grinding
- 2mm scale to measure length of drill tip
- Provided with ball chain



| Order No. | Model No. | Product Dimension<br>W×H×D(mm) | Accuracy | Weight |
|-----------|-----------|--------------------------------|----------|--------|
| 007531    | DPG-A     | 77×77×1                        | ±1.5°    | 44g    |

## DRILL TIP GAUGE

Suitable for measuring drill-tip after grinding

### USE

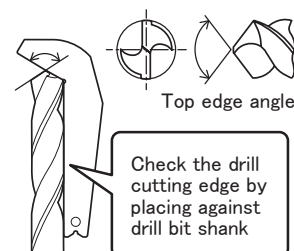
- Use for measuring drill-tip after grinding (118°)

### MATERIAL

- Stainless steel

### FEATURES

- Confirms drill tip edge angle after grinding
- Provided with ball chain



| Order No. | Model No. | Product Dimension<br>L×D(mm) | Accuracy | Weight |
|-----------|-----------|------------------------------|----------|--------|
| 007532    | DPG-118   | 90×0.5                       | ±1.5°    | 10g    |

## DRILL POINT GAUGE

Suitable for checking angle of drill-tip after grinding

### USE

- Maintenance management of drilling work
- For measuring drill-tip angle, eccentricity of chisel edge and lip height

### MATERIAL

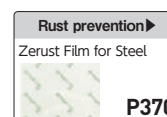
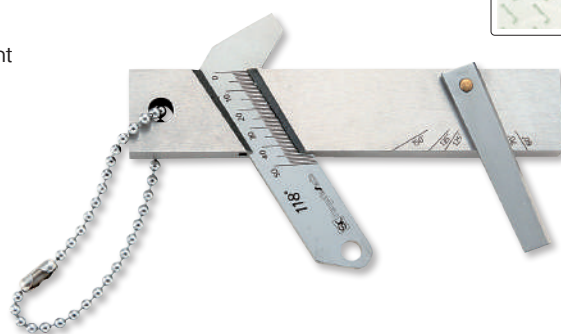
- Main scale-rotor: Stainless steel
- Base: Carbon tool steel

### FEATURES

- Clearly marked scale for quick reading
- Rotating tip angle gauge (Marking at 60° 70° 90° 125° 135° 150°)
- Provided with ball chain

### SPECIFICATIONS

- Tip angle: 118°
- Drill edge length: 3~45mm



| Order No. | Model No. | Product Dimension<br>(mm)                               | Accuracy | Weight |
|-----------|-----------|---------------------------------------------------------|----------|--------|
| 007535    | DP-118    | Base: 22×110×8<br>Rotator: 7.5×50×2<br>Main Scale: 68×9 | ±1.5°    | 160g   |



## SLIDING DRILL POINT GAUGE

Suitable for checking angle of drill-tip after grinding

### USE

- Maintenance management of drill point angle

### MATERIAL

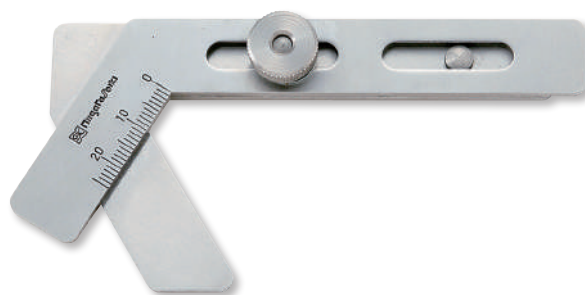
- Stainless steel

### FEATURES

- Use for measuring the drill tip edge length range of 3~40mm

### SPECIFICATIONS

- Tip angle: 118°
- Drill edge length: 3~40mm



| Order No. | Model No. | Accuracy | Weight |
|-----------|-----------|----------|--------|
| 007536    | S-118     | ±1.5°    | 120g   |

## DIGITAL VERNIER CALIPER FOR CHAMFER MEASURING

**NEW!**



Compatible with the optional Bluetooth BOX!

Accurately measures difficult-to-measure chamfer dimensions digitally.

### USE

- For measuring chamfer dimensions.

### MATERIAL

- Stainless steel

### FEATURES

- Suitable for measuring chamfer dimensions at 45° or 30°.
- Using a 30° caliper to measure the 30° side allows for conversion to the 60° side
- The ruler contact thickness is 0.3mm, making it extremely thin and enabling measurements of chamfers inside cylindrical surfaces (cylindrical inner diameter  $\phi 9$ mm or larger)
- A master for calibration (MCM-4) is available to assist with reference adjustment when the main body wears out (sold separately)
- Bluetooth BOX (separately sold) can be attached.
- Display hold function ● Auto power off function (after approx. 20 min)

### POWER SUPPLY

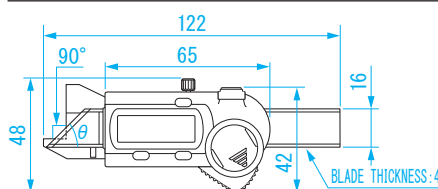
- One CR2032 (lithium) battery included for testing



GDCP-45C8

### ● DIMENSIONS

Units: mm



Separate Master MCM-4



\*Excludes quantization error ( $\pm 1$  count).

| Order No.          | Model No. | Ruler Tip Angle $\theta$ | Measuring Range Chamfer Dimensions (mm) | Minimum Reading Value (mm) | Maximum Permissible Error (mm)* | Weight |
|--------------------|-----------|--------------------------|-----------------------------------------|----------------------------|---------------------------------|--------|
| <b>NEW!</b> 151313 | GDCP-45C8 | 45°                      | 0-8                                     | 0.01                       | ±0.05                           | 110g   |
| <b>NEW!</b> 151314 | GDCP-30C8 | 30°                      |                                         |                            |                                 | 110g   |

### ● Master for Digital Chamfer Measuring Caliper

| Order No.          | Model No. | Base Dimension (mm) | Compatible Model No. | MATERIAL        | Size (mm)  | Weight |
|--------------------|-----------|---------------------|----------------------|-----------------|------------|--------|
| <b>NEW!</b> 151317 | MCM-4     | 4.00                | GDCP-45C8, GDCP-30C8 | Stainless steel | W25×L25×D5 | 25g    |

## CHAMFER MEASURING GAUGE

Easy size measurement and inspection of machined surfaces

### USE

- Use for measuring the size of all kinds of chamfer

### MATERIAL

- Stainless steel

### FEATURES

- Measure chamfer circumference of workpiece on lathe
- For milling, measure hole chamfer on workpiece
- Provided with ball chain

### SPECIFICATIONS

- Measuring range: 0~15C ● Minimum reading: 0.5mm



| Order No. | Model No. | Product Dimension (mm)                              | Accuracy (mm) | Weight |
|-----------|-----------|-----------------------------------------------------|---------------|--------|
| 006990    | CMG-10    | Overall Length 71.3 × Thickness 2<br>Side Length 14 | ±0.25         | 20g    |

## PROFILE GAUGE

Complex shapes can be contoured



### USE

- Contour gauge for recording the cross-sectional shape of a surface

### MATERIAL

- Pin material: Stainless steel

### FEATURES

- Pins are thin and can easily record a smooth curve

### SPECIFICATIONS

- Active Length: 150mm

### Example of Use



1. Push profile gauge against desired sample

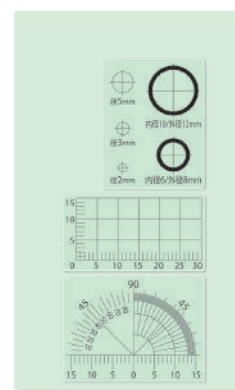
2. Transfer profile to workpiece

3. Cut workpiece to shape

4. A perfect fit made easy

| Order No. | Model No. | Product Dimension (mm) | Weight |
|-----------|-----------|------------------------|--------|
| 011440    | CG-100S   | 155×84                 | 210g   |

## CRACK GAUGE KAIKAN CLEAR CARD



Sticker included

### USE

- Crack measurement of wall, foundation etc.

### MATERIAL

- Polyester

### FEATURES

- Measuring width and length of crack
- Supplied with sticker for angle and diameter measurement
- Flexible, transparent polyester material makes it easy to use
- Portable (business card size)

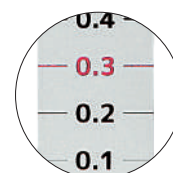
| Order No. | Model No. | Product Dimension (mm) | Weight |
|-----------|-----------|------------------------|--------|
| 111263    | CM-CKD    | 91×55                  | 1g     |

## CRACK GAUGE WITH KAIKAN SCALE TYPE

0.3mm marked in red.  
For measuring cracks.



FRONT



### USE

- Crack measurement of wall, foundation etc.

### MATERIAL

- Stainless steel

### FEATURES

- 0.3mm marked in red, easy to distinguish defect or cracks
- Stepped length of linear graduations by 1mm for easy-to-read on back
- Satin finished



BACK

| Order No. | Model No. | Measurement Range of Crack Gauge (mm) | Measurement Range of Metal Scale (mm) | Weight |
|-----------|-----------|---------------------------------------|---------------------------------------|--------|
| 111262    | CM-SKD    | 0.1~2.0                               | 0~150                                 | 10g    |

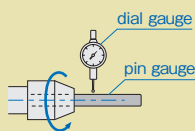


# HOW TO USE PIN GAUGE

## Measuring Tool Checking



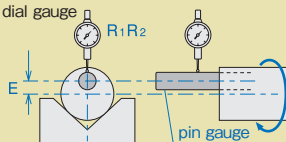
## Center Runout Measurement



## Hole eccentricity Measurement



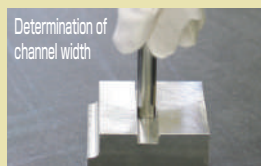
$R_1$ ... Max. reading of dial gauge  
 $R_2$ ... Min. reading of dial gauge  
 $E = \frac{R_1 - R_2}{2}$



## Dovetail Measurement



## Determination of channel width



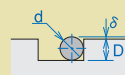
Key way and etc



## Groove depth measurement

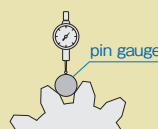


$\delta$ ... Dial gauge reading  
 $D = d - \delta$



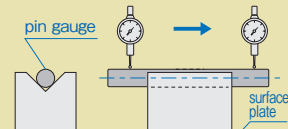
## Gear tooth measurement

Dial gauge measurement

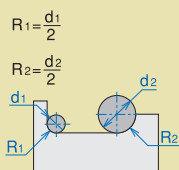
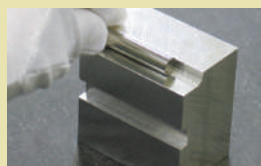


## Measuring V groove parallelism

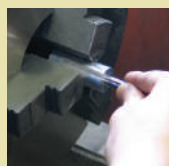
Dial gauge measurement



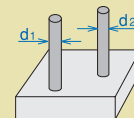
## Radius measurement



## Hole diameter measurement



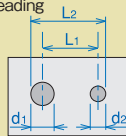
GO / No-Go Pin Gauges also available



## Measurement between holes



$d_1 \cdot d_2$ ... Pin Gauge diameters  
 $L_2$ ... Micrometer reading  
 $L_1 = L_2 - \frac{d_1 + d_2}{2}$



## Mill tool positioning



## Measurement of hole position, parallelism

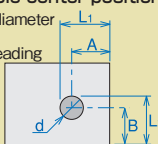


Measuring hole center position

$d$ ... Pin Gauge diameter  
 $L_1 \cdot L_2$ ... Dial gauge reading

$$A = L_1 - \frac{d}{2}$$

$$B = L_2 - \frac{d}{2}$$

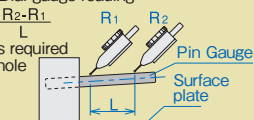


Slope of hole (parallelism measurement)

$R_1 \cdot R_2$ ... Dial gauge reading

$$\text{Slope} = \frac{R_2 - R_1}{L}$$

Repeat as required for each hole

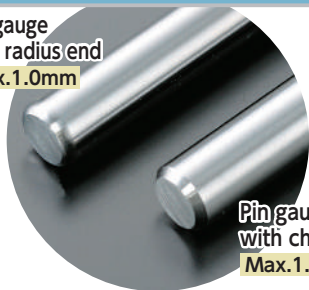


# SPECIAL SHAPES

## Custom shape pin gauges available upon request

### Pin gauges for special applications

Pin gauge  
with radius/end  
Max.1.0mm

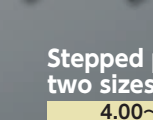


Pin gauge  
with chamfer  
Max.1.0mm

Stepped pin gauge for two sizes  
4.00~41.00mm



Stepped pin gauge for  
two sizes, with handle  
4.00~30.00mm



Pin gauge with parallels  
2.00~20.00mm



Long style  
pin gauge  
1.60~19.99mm



## Custom Ring gauges, Stepped gauges, special shapes available upon request.

### Ring gauges for special applications

Custom  
marking  
also  
available

Stepped ring gauge for two sizes  
12~200mm



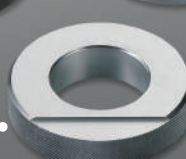
Ring gauge with included OD standard  
15~200mm



Ring gauge  
with notch (B)  
5~50mm



Ring gauge  
with notch (A)  
5~50mm



Please feel free to contact us for any inquiry

※Some items cannot be manufactured depending on conditions. Please contact us for details.

## LASER MARKING

### Custom marking for gauge control and identification

#### Laser Marking for Ring Gauge



Number of characters: Up to 23 characters with  
(example)  
a ring gauge size of  $\phi 30.0\text{mm}$   
Please inquire the maximum number  
of characters of other size

#### Laser Marking for Plug Gauge Handle



Number of characters: Up to 15 characters

| Order No. | Model No. | Delivery time                          |
|-----------|-----------|----------------------------------------|
| 499991    | RGLM      | 15 business days after receiving order |

| Order No. | Model No. | Delivery time                          |
|-----------|-----------|----------------------------------------|
| 499992    | GPLM      | 15 business days after receiving order |

# VARIOUS GAUGES

In addition to the existing gauge products, more gauges are added to the line-up

## SNAP GAUGE



STEEL TYPE

CARBIDE TYPE

Snap gauge is used to test diameter and thickness/ width of cylindrical parts such as shaft. The entrance of snap gauge is GO gauge. Lower the gauge vertically onto the test item. The width of the gauge gets smaller as passing the GO gauge. This area is NOGO gauge. When the gauges stops at this NOGO gauge position, the test item is accepted. In testing with snap gauge, the gauge is lowered by its own weight.

There are two types of snap gauges.

•STEEL TYPE - Only the measurement area is quenched

•CARBIDE TYPE - Carbide material is attached to the measurement area

Please choose a suitable type according to the frequency of use or other factors.

## CUSTOM SHAPE LIMIT PLUG GAUGE



Production of limit plug gauge with custom size or custom shape is also possible.

Please feel free to contact us for any inquiry



BLOCK  
GAUGE

PIN  
GAUGE

PIN  
VISE

PIN  
GAUGE  
ACCESSORIES

RING  
GAUGE

PLUG  
GAUGE

LIMIT  
GAUGE

THICKNESS  
GAUGE

TAPER  
GAUGE

WELDING  
GAUGE

OTHER  
GAUGES

# VARIOUS GAUGES

## TAPER PLUG/ RING GAUGE



Taper gauge is used to check taper ratio of tapered hole or shaft. Generally comprised of a taper plug gauge and a taper ring gauge, the connected pair forms a standard gauge. However, this gauge can also be manufactured with a notch in order to identify this product's standard stopping position on the end face.

### ●How to use taper gauges

For inspecting tapered products by taper gauge. Generally the inspection of the tapered hole is done at the base of the standard line of the large end of the taper plug gauge or at the end face of the taper plug gauge.

The inspection of the taper shaft is generally done at the small end of the end face.

Pass or fail is determined by the amount of deviation from the hole of the product or end face of the shaft.

In addition, the taper is inspected by contact.

To conduct the inspection by contact, apply a light coat of Prussian blue or light cinnabar evenly on the surface of the plug, and insert it in the tapered hole, then turn the plug a little and remove.

As good contact of taper the applied blue or light cinnabar is removed from the gauge.

Furthermore to perform satisfactory inspection of contact, the following precautions should be noted.

- ①Clean the gauge and product well, removing any accumulated dust.
- ②Apply Prussian blue or light cinnabar evenly over the gauge. It is necessary to apply it thoroughly before it changes into a lighter color.
- ③Be careful to avoid scraping the gauge and product against each other or putting the gauge in only halfway.
- ④Under normal conditions, hold or anchor the plug in an upright position, then tug the ring about 1/8 while pressing down lightly with even force, then replace it.
- ⑤Separate the gauge and product gently. Be careful not to scrape this time as well.

Contact can also be used for between gauge inspections.

## SPLINE GAUGE



Spline gauge is used for pass/ fail judgment of the size, shape or posture of spline shaped work such as automobiles and aircraft parts.

Using "GO" and "NOGO" of special spline shape threading gauge, pass or fail is easily distinguished.

This gauge can be used for a variety of purposes, including in-process or intermediate inspection at manufacturing site or final inspection at QC department.

**Please feel free to contact us for any inquiry**