

GAUGE

GAUGE CATALOG Vol.008



HOW TO USE PIN GAUGE

Measuring Tool Checking



INDEX

STEEL PIN GAUGES

- AA series 3
- AML series 4
- SA series 5
- AH · AP · AAP · AS series 6
- PM · PG series 7
- AG series (with Handle) 8
- STEEL PIN GAUGE with CENTER HOLE AC series 8
- MASTER PIN GAUGE 8
- STEEL PIN GAUGE for GEAR MEASUREMENT OP series 9

CARBIDE PIN GAUGES

- TAA series 10
- TAG series (with Handle) 10

CERAMIC PIN GAUGES

- CAA series 11
- CAG series (with Handle) 11

THREAD PIN GAUGES

- THREAD PIN GAUGE RA 12
- THREAD PIN GAUGE 13

Custom shape pin gauges available upon request ... 13

PIN GAUGE ACCESSORIES

- ALUMINUM PIN VISE 14
- PIN VISE 14
- PLASTIC CASE 15
- PIN GAUGE CABINET 15
- MAINTENANCE KIT 15
- PLASTIC CASE 15

LIMIT GAUGE

- LIMIT PLUG GAUGE H7 (for manufacturing) STEEL · CARBIDE · CERAMIC 16
- LIMIT PLUG GAUGE H7 (for manufacturing) 17
- LIMIT PLUG GAUGE with thin handle H7 (for manufacturing) 18
- LIMIT PLUG GAUGE with MAINTENANCE LINE 18
- THREAD PLUG GAUGE 19
- THREAD RING GAUGE 20

RING GAUGE

- STEEL RING GAUGE 21
- STEEL RING GAUGE Large size 22
- CARBIDE RING GAUGE 23
- CERAMIC RING GAUGE 23
- STEEL RING LIMIT GAUGE h7 24
- STEEL RING GAUGE with MAINTENANCE LINE 24
- RING GAUGE (with protective cover) 25
- STEEL RING GAUGE OD model 25

Custom shape Ring gauges available upon request ... 26

BLOCK GAUGES

- BLOCK GAUGE SET 27
- BLOCK GAUGES 28
- CERAMIC BLOCK GAUGE SET 29

THICKNESS GAUGES

- FEELER GAUGE 30
- THICKNESS GAUGE 31
- THICKNESS GAUGES Leaf 31
- THICKNESS GAUGE with COLOR SLEEVES 32

TAPER GAUGES

- TAPER GAUGES 33
- RIGHT ANGLE TAPER GAUGE 34
- TAPER GAUGES 34-35-36
- SLIDE TAPER GAUGES 36
- PLASTIC TAPER GAUGES 36
- CIRCULAR TAPER GAUGES 37
- CIRCULAR TAPER GAUGE WITH GREEN COLOR GRIP 38
- CIRCULAR TAPER GAUGE WITH GREEN COLOR CASE 38

WELDING GAUGES

- WELDING GAUGE 39-44
- DIGITAL WELDING GAUGE 44
- ANGLE LIMIT GAUGE 45
- ROOT LIMIT GAUGE 46
- WELDING ELECTRODE GAUGE 46
- ANGLE GAUGE 47
- ANGLE PROTRACTOR 47

Measurement function and List ... 48

OTHER GAUGES

- LIMIT GAUGE for Gasket 49
- GASKET LIMIT GAUGE for width and height measurement 50
- OCTAGONAL GASKET LIMIT GAUGE 50
- PITCH GAUGE 51
- CENTERS GAUGE 51
- ANGLE GAUGE 51
- RADIUS GAUGE 52
- RADIUS GAUGE (Set/ Single part) 52
- DRILL TIP GAUGE 53
- DRILL POINT GAUGE 53
- SLIDING DRILL POINT GAUGE 53
- CHAMFER MEASURING GAUGE 54
- CRACK GAUGE / CLEAR CARD TYPE 54
- PROFILE GAUGE 54

PIN GAUGE

LIMIT GAUGE

RING GAUGE

BLOCK GAUGES

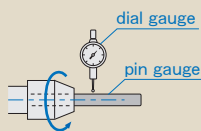
THICKNESS GAUGES

TAPER GAUGES

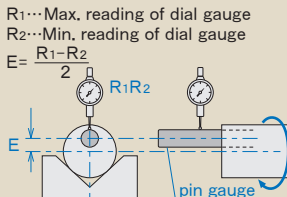
WELDING GAUGES

OTHER GAUGES

Center Runout Measurement



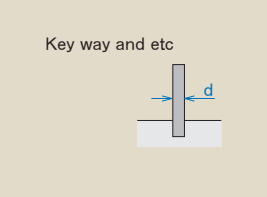
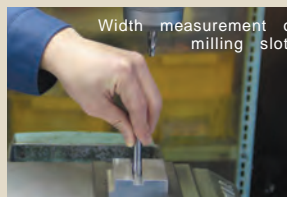
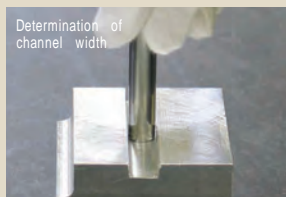
Hole eccentricity Measurement



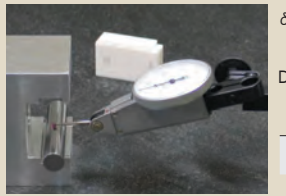
Dovetail Measurement



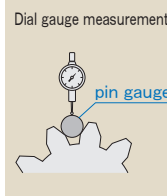
Determination of channel width



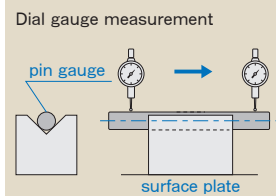
Groove depth measurement



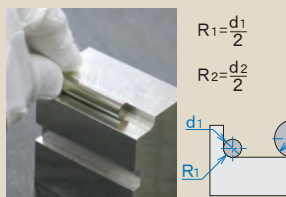
Gear tooth measurement



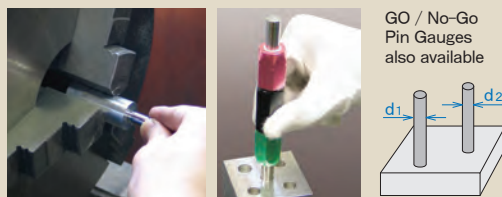
Measuring V groove parallelism



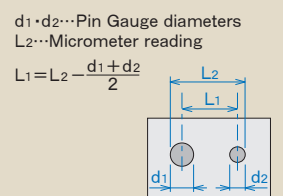
Radius measurement



Hole diameter measurement



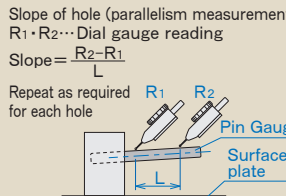
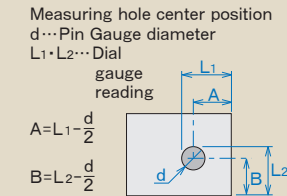
Measurement between holes



Mill tool positioning



Measurement of hole position, parallelism



The industry's first JCSS certified Pin Gauge



JCSS 0232 Calibration service mark registration system based in Japanese law. Niigata Seiki calibration center is registered as operator, category of length measurement, accreditation number 0232 on the basis of ISO/IEC17025.

※ISO/IEC17025 : international standard that defines the general requirements for the competence of testing and calibration laboratories. JCSS accreditation is certified according to this standard.

JCSS Mark and Certificate of Calibration
 Calibration certificate with JCSS mark issued by JCSS calibration service certify that center has demonstrated traceability of metrology to national standards. With calibration certificate and JCSS marks, there is no need to separately verify traceability to national or international standards. Calibration certificate with JCSS mark provides a higher level of proof of traceability of measurement certification, than QMS certification or Self-certification.

Certificate of Calibration

JCSS
0232

総 数 頁のうちの 頁
証明書番号

校正証明書

依頼者名
住 所
品 名 及 び 数 量
器 物 番 号
製 造 者 名
校 正 項 目
校 正 方 法
校正に用いた標準器
校正条件
校正年月日
校正結果は次頁のとおりであることを証明します。

ビンゲージ
新海精機株式会社
外径寸法
線型測器による直接測定
当社「ビンゲージ校正作業標準」による
常用参照標準
校正用ブロックゲージ 製造番号 No. 0010696
ワーキングスタンダード
測長器(スイス MOVIMATIC) 製造番号 No. 120808/108020755
校正差の温度 20°C±0.5°C、湿度 70%以下

年 月 日

平955-0061 新潟県三条市奥野1-2-53
新海精機株式会社
キャリブレ・ションセンター
センター長 小林 正毅

この証明書は、計量法第144条第1項に基づくものであり、検定標準器(国家標準)にトレーサブルな標準器により校正した結果を示すものです。標は、校正した結果の国家標準へのトレーサビリティの証拠です。発行機関の事前の承認なしに、この証明書のカラコピーまたは一部分のみを複製して用いることは禁じられています。

Registration Card

JCSS

登録証

新海精機株式会社 様

計量法第143条第1項の規定に基づき(校正事業者)として登録します。

登録番号 0232

事業所の名称 新海精機株式会社
キャリブレ・ションセンター

所 在 地 新潟県三条市奥野1丁目2番53号

登録に係る区分 長さ (詳細は別紙のヒストリ)

登録の有効期限 平成25年3月31日
平成21年3月4日

国土行政推進 品質向上推進 技術振興 推進

(印)

登録番号0232 長さ 0.1mm以上15mm以下 : U=0.4 μm(包含係数k=2)
15mmを超え30mm以下 : U=0.6 μm(包含係数k=2)

項目	内容	備考
登録標準器	校正用ブロックゲージ	
検定標準器	測長器(スイス MOVIMATIC)	
校正用標準器	ワーキングスタンダード	
測定場所	新潟県三条市奥野1丁目2番53号	

機軸 2

総数〇〇頁のうちの〇〇頁
証明書番号

校正結果

呼び寸法 (mm)	外径寸法(mm)		
	A	B	C

校正の不確かさ
 0.1mm 以上 15mm 以下 : U=0.4 μm(包含係数k=2)
 15mm を超え 30mm 以下 : U=0.6 μm(包含係数k=2)

校正の不確かさは拡張不確かさであり、包含係数k=2で決定され、約95%の信頼の水準をもつと推定される区間を定める。

備 考
 (1) 標準温度: 20°C
 (2) 材質 : 鋼
 (3) 線膨張係数: (11.5±1)×10⁻⁶ /K
 (線膨張係数は実測ではなく、文献による値を採用した。)
 (4) 測定箇所は下図に示す位置とする。
 ① ゲージ部長さ 20mm 以下の場合は
 X方向のA、Cの2箇所とし、各々端面より2mm以下とする。
 ② ゲージ部長さ 30mm を超える場合は
 X方向のA、B、Cの3箇所(刻字面を事前に示す)とする。
 なお、A、Cは端面より5mm以下、Bはほぼ中央とする。

特記事項 なし

以上

検査品 71-0-7

Calibration uncertainty
 An indication of the confidence of the variation in the calibration value. "Calibration uncertainty" is expressed as a numerical value which is obtained from the measurements. In general, 95% confidence level reflects a coverage factor K=2. Smaller value for this number reflects higher technical capability.

STEEL PIN GAUGE SET AA series



Reduced wear **SUB-ZERO Treatment** Individual pin gauges are also available

The most popular type

- Custom made Pin Gauges are available on request
- JCSS calibration available (less than 10,000mm)
- 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, the nominal size is marked on gauge

SPECIFICATIONS

Nominal Size (mm)	Step (mm)	Length (mm)	Tolerance (μm)	Out of Roundness/Cylindricity (μm)	Hardness (HV)
0.05 ... 0.09	0.01 step	5 - 10	± 0.5	0.5	Over 650
0.10 ... 0.19					
0.200 ... 0.999	0.001 step	40	± 0.8	0.5	
1,000 ... 10,000					
10.01 ... 20.00	0.01 step	50	± 1.5	0.8	
20.01 ... 30.00			± 2	1.6	
30.01 ... 41.00			± 3	3.0	

※30.01 ~ 41.00 are custom made

AA series is more accurate compared to conventional pin gauge

Tolerance	conventional	AA series
0.200...10.000mm	$\pm 1\mu\text{m}$	$\pm 0.8\mu\text{m}$
0.200...10.000mm	$0.8\mu\text{m}$	$0.5\mu\text{m}$
10.01 ... 20.00 mm	$1.3\mu\text{m}$	$0.8\mu\text{m}$



AA series 0.010mm step

Model No.	Nominal Size (mm)	Pins per set	Aluminum Pin Vise
AA-00	0.06 · 0.07 · 0.08 ····· 0.290	24	
AA-0A	0.200 · 0.210 · 0.220 ····· 0.500	31	APV-0A
AA-0B	0.500 · 0.510 · 0.520 ····· 1.000	51	APV-0B
AA-1A	1.000 · 1.010 · 1.020 ····· 1.500	51	APV-1A
AA-1B	1.500 · 1.510 · 1.520 ····· 2.000	51	APV-1B
AA-2A	2.000 · 2.010 · 2.020 ····· 2.500	51	APV-2A
AA-2B	2.500 · 2.510 · 2.520 ····· 3.000	51	APV-2B
AA-3A	3.000 · 3.010 · 3.020 ····· 3.500	51	APV-3A
AA-3B	3.500 · 3.510 · 3.520 ····· 4.000	51	APV-3B
AA-4A	4.000 · 4.010 · 4.020 ····· 4.500	51	APV-4A
AA-4B	4.500 · 4.510 · 4.520 ····· 5.000	51	APV-4B
AA-5A	5.000 · 5.010 · 5.020 ····· 5.500	51	APV-5A
AA-5B	5.500 · 5.510 · 5.520 ····· 6.000	51	APV-5B
AA-6A	6.000 · 6.010 · 6.020 ····· 6.500	51	APV-6A
AA-6B	6.500 · 6.510 · 6.520 ····· 7.000	51	APV-6B
AA-7A	7.000 · 7.010 · 7.020 ····· 7.500	51	APV-7A
AA-7B	7.500 · 7.510 · 7.520 ····· 8.000	51	APV-7B
AA-8A	8.000 · 8.010 · 8.020 ····· 8.500	51	APV-8A
AA-8B	8.500 · 8.510 · 8.520 ····· 9.000	51	APV-8B
AA-9A	9.000 · 9.010 · 9.020 ····· 9.500	51	APV-9A
AA-9B	9.500 · 9.510 · 9.520 ····· 10.000	51	APV-9B
AA-10A	10.000 · 10.01 · 10.02 ····· 10.50	51	
AA-10B	10.50 · 10.51 · 10.52 ····· 11.00	51	
AA-11A	11.00 · 11.01 · 11.02 ····· 11.50	51	
AA-11B	11.50 · 11.51 · 11.52 ····· 12.00	51	
AA-12A	12.00 · 12.01 · 12.02 ····· 12.50	51	
AA-12B	12.50 · 12.51 · 12.52 ····· 13.00	51	
AA-13A	13.00 · 13.01 · 13.02 ····· 13.50	51	
AA-13B	13.50 · 13.51 · 13.52 ····· 14.00	51	
AA-14A	14.00 · 14.01 · 14.02 ····· 14.50	51	
AA-14B	14.50 · 14.51 · 14.52 ····· 15.00	51	
AA-15A	15.00 · 15.01 · 15.02 ····· 15.50	51	
AA-15B	15.50 · 15.51 · 15.52 ····· 16.00	51	
AA-16A	16.00 · 16.01 · 16.02 ····· 16.50	51	
AA-16B	16.50 · 16.51 · 16.52 ····· 17.00	51	
AA-17A	17.00 · 17.01 · 17.02 ····· 17.50	51	
AA-17B	17.50 · 17.51 · 17.52 ····· 18.00	51	
AA-18A	18.00 · 18.01 · 18.02 ····· 18.50	51	
AA-18B	18.50 · 18.51 · 18.52 ····· 19.00	51	
AA-19A	19.00 · 19.01 · 19.02 ····· 19.50	51	
AA-19B	19.50 · 19.51 · 19.52 ····· 20.00	51	

AA series 0.005mm step

Model No.	Nominal Size (mm)	Pins per set	Aluminum Pin Vise
AA-0E	0.500 · 0.505 · 0.510 ····· 0.750	51	PV-0B
AA-0F	0.750 · 0.755 · 0.760 ····· 1.000	51	PV-0B
AA-1C	1.000 · 1.005 · 1.010 ····· 1.250	51	PV-1A
AA-1D	1.250 · 1.255 · 1.260 ····· 1.500	51	PV-1A
AA-1E	1.500 · 1.505 · 1.510 ····· 1.750	51	PV-1B
AA-1F	1.750 · 1.755 · 1.760 ····· 2.000	51	PV-1B
AA-2C	2.000 · 2.005 · 2.010 ····· 2.250	51	PV-2A
AA-2D	2.250 · 2.255 · 2.260 ····· 2.500	51	PV-2A
AA-2E	2.500 · 2.505 · 2.510 ····· 2.750	51	PV-2B
AA-2F	2.750 · 2.755 · 2.760 ····· 3.000	51	PV-2B
AA-3C	3.000 · 3.005 · 3.010 ····· 3.250	51	PV-3A
AA-3D	3.250 · 3.255 · 3.260 ····· 3.500	51	PV-3A
AA-3E	3.500 · 3.505 · 3.510 ····· 3.750	51	PV-3B
AA-3F	3.750 · 3.755 · 3.760 ····· 4.000	51	PV-3B
AA-4C	4.000 · 4.005 · 4.010 ····· 4.250	51	PV-4A
AA-4D	4.250 · 4.255 · 4.260 ····· 4.500	51	PV-4A
AA-4E	4.500 · 4.505 · 4.510 ····· 4.750	51	PV-4B
AA-4F	4.750 · 4.755 · 4.760 ····· 5.000	51	PV-4B
AA-5C	5.000 · 5.005 · 5.010 ····· 5.250	51	PV-5A
AA-5D	5.250 · 5.255 · 5.260 ····· 5.500	51	PV-5A
AA-5E	5.500 · 5.505 · 5.510 ····· 5.750	51	PV-5B
AA-5F	5.750 · 5.755 · 5.760 ····· 6.000	51	PV-5B
AA-6C	6.000 · 6.005 · 6.010 ····· 6.250	51	PV-6A
AA-6D	6.250 · 6.255 · 6.260 ····· 6.500	51	PV-6A
AA-6E	6.500 · 6.505 · 6.510 ····· 6.750	51	PV-6B
AA-6F	6.750 · 6.755 · 6.760 ····· 7.000	51	PV-6B
AA-7C	7.000 · 7.005 · 7.010 ····· 7.250	51	
AA-7D	7.250 · 7.255 · 7.260 ····· 7.500	51	
AA-7E	7.500 · 7.505 · 7.510 ····· 7.750	51	
AA-7F	7.750 · 7.755 · 7.760 ····· 8.000	51	
AA-8C	8.000 · 8.005 · 8.010 ····· 8.250	51	
AA-8D	8.250 · 8.255 · 8.260 ····· 8.500	51	
AA-8E	8.500 · 8.505 · 8.510 ····· 8.750	51	
AA-8F	8.750 · 8.755 · 8.760 ····· 9.000	51	
AA-9C	9.000 · 9.005 · 9.010 ····· 9.250	51	
AA-9D	9.250 · 9.255 · 9.260 ····· 9.500	51	
AA-9E	9.500 · 9.505 · 9.510 ····· 9.750	51	
AA-9F	9.750 · 9.755 · 9.760 ····· 10.000	51	

MAINTENANCE LINE PIN GAUGE AML series

Reduced wear SUB-ZERO Treatment *Individual pin gauges are also available*

New Product! Ideal for frequent checking of shallow holes where gauge wear is a concern.

Wear-line on both ends of pin gauge, able to see gauge wear.

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



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

When line disappears, wear is more than about 1µm



0.010mm step

Set No.	Nominal Size(mm)	Pins per Set	Aluminum Pin vise
AML-3A	3,000 · 3,010 · 3,020 ····· 3,500	51	APV-3A
AML-3B	3,500 · 3,510 · 3,520 ····· 4,000	51	APV-3B
AML-4A	4,000 · 4,010 · 4,020 ····· 4,500	51	APV-4A
AML-4B	4,500 · 4,510 · 4,520 ····· 5,000	51	APV-4B
AML-5A	5,000 · 5,010 · 5,020 ····· 5,500	51	APV-5A
AML-5B	5,500 · 5,510 · 5,520 ····· 6,000	51	APV-5B
AML-6A	6,000 · 6,010 · 6,020 ····· 6,500	51	APV-6A
AML-6B	6,500 · 6,510 · 6,520 ····· 7,000	51	APV-6B
AML-7A	7,000 · 7,010 · 7,020 ····· 7,500	51	APV-7A
AML-7B	7,500 · 7,510 · 7,520 ····· 8,000	51	APV-7B
AML-8A	8,000 · 8,010 · 8,020 ····· 8,500	51	APV-8A
AML-8B	8,500 · 8,510 · 8,520 ····· 9,000	51	APV-8B
AML-9A	9,000 · 9,010 · 9,020 ····· 9,500	51	APV-9A
AML-9B	9,500 · 9,510 · 9,520 ····· 10,000	51	APV-9B

SPECIFICATIONS

Size (mm)	Step (mm)	Length (mm)	Tolerance (µm)	Roundness (µm)	Cylindricity (µm)	Hardness (HV)
3,000 ··· 3,990	0.010 step	50	±0.8	0.5	0.5	More than 650
4,000 ··· 4,990						
5,000 ··· 6,000						
6,010 ··· 6,990						
7,000 ··· 7,990						
8,000 ··· 8,990						
9,000 ··· 10,000						

0.001 step pin gauges are also available on request. (Please contact us with request)

STEEL PIN GAUGE SET SA series

Reduced wear SUB-ZERO Treatment Individual pin gauges are also available

High precision quality Pin Gauge



HIGH QUALITY High Precision Product

Time to Replace
8.000
If printing has worn, Gauge could be worn out, please consider replacing.

SPECIFICATIONS

Nominal Size (mm)	Step (mm)	Length (mm)	Tolerance (μm)	Out of Roundness (μm)	Out of Cylindricity (μm)	Hardness (HV)
0.100... 0.199	0.001 step	40	±0.3	0.3	0.3	More than 650
0.200... 0.999						
1.000... 7.000		50	±0.5	0.5	0.5	
7.001... 10.000						

0.001mm step

Model No.	Nominal size (mm)	Pins per set	Model No.	Nominal size (mm)	Pins per set	Model No.	Nominal size (mm)	Pins per set
SA-03	0.297 0.310	14	SA-26	2.597 2.610	14	SA-49	4.897 4.910	14
SA-04	0.397 0.410	14	SA-27	2.697 2.710	14	SA-50	4.997 5.010	14
SA-05	0.497 0.510	14	SA-28	2.797 2.810	14	SA-51	5.097 5.110	14
SA-06	0.597 0.610	14	SA-29	2.897 2.910	14	SA-52	5.197 5.210	14
SA-07	0.697 0.710	14	SA-30	2.997 3.010	14	SA-53	5.297 5.310	14
SA-08	0.797 0.810	14	SA-31	3.097 3.110	14	SA-54	5.397 5.410	14
SA-09	0.897 0.910	14	SA-32	3.197 3.210	14	SA-55	5.497 5.510	14
SA-10	0.997 1.010	14	SA-33	3.297 3.310	14	SA-56	5.597 5.610	14
SA-11	1.097 1.110	14	SA-34	3.397 3.410	14	SA-57	5.697 5.710	14
SA-12	1.197 1.210	14	SA-35	3.497 3.510	14	SA-58	5.797 5.810	14
SA-13	1.297 1.310	14	SA-36	3.597 3.610	14	SA-59	5.897 5.910	14
SA-14	1.397 1.410	14	SA-37	3.697 3.710	14	SA-60	5.997 6.010	14
SA-15	1.497 1.510	14	SA-38	3.797 3.810	14	SA-61	6.097 6.110	14
SA-16	1.597 1.610	14	SA-39	3.897 3.910	14	SA-62	6.197 6.210	14
SA-17	1.697 1.710	14	SA-40	3.997 4.010	14	SA-63	6.297 6.310	14
SA-18	1.797 1.810	14	SA-41	4.097 4.110	14	SA-64	6.397 6.410	14
SA-19	1.897 1.910	14	SA-42	4.197 4.210	14	SA-65	6.497 6.510	14
SA-20	1.997 2.010	14	SA-43	4.297 4.310	14	SA-66	6.597 6.610	14
SA-21	2.097 2.110	14	SA-44	4.397 4.410	14	SA-67	6.697 6.710	14
SA-22	2.197 2.210	14	SA-45	4.497 4.510	14	SA-68	6.797 6.810	14
SA-23	2.297 2.310	14	SA-46	4.597 4.610	14	SA-69	6.897 6.910	14
SA-24	2.397 2.410	14	SA-47	4.697 4.710	14	SA-70	6.997 7.010	14
SA-25	2.497 2.510	14	SA-48	4.797 4.810	14			

Before Using Pin Gauge

- Before using pin gauge, please wipe clean to remove oil or dirt using a clean dry cloth moistened with a solvent cleaning product.
- Please check to insure there is no rust, scratches, or burrs.

During Use of Pin Gauge

- Before using pin gauge confirm that there is no rust or debris in area to be measured and that temperature difference between gauge and measure object is minimized.
- Use through pin vise and gloves to prevent temperature change when handling pin gauge.

Pin Gauge Storage

- After use, thoroughly clean and coat in oil. Inspect for damage and replace in proper case.
- Store in area with low humidity and no large changes in temperature. When not used for a long time, re-coat in oil every six months.

STEEL PIN GAUGE SET AH·AP·AAP·AS series

Reduced wear SUB-ZERO Treatment



For high use applications

Custom made Pin Gauge sets are available on request
 ※Same specifications as AA series.
 ※Pin vise not included



AP series 0.100mm step

Model No.	Nominal size (mm)	Pin per set
AP-1	1.000 · 1.100 · 1.200····· 5.000	41
AP-2	5.000 · 5.100 · 5.200·····10.000	51
AP-3	10.000 · 10.100 · 10.200·····15.000	51
AP-4	15.000 · 15.100 · 15.200·····20.000	51

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····· 10.040 · 10.050	
AS-3	10.950 · 10.960····· 11.000····· 11.040 · 11.050	55
	11.950 · 11.960····· 12.000····· 12.040 · 12.050	
	12.950 · 12.960····· 13.000····· 13.040 · 13.050	
	13.950 · 13.960····· 14.000····· 14.040 · 14.050	
	14.950 · 14.960····· 15.000····· 15.040 · 15.050	
AS-4	15.950 · 15.960····· 16.000····· 16.040 · 16.050	55
	16.950 · 16.960····· 17.000····· 17.040 · 17.050	
	17.950 · 17.960····· 18.000····· 18.040 · 18.050	
	18.950 · 18.960····· 19.000····· 19.040 · 19.050	
	19.950 · 19.960····· 20.000····· 20.040 · 20.050	
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	10.450 · 10.460····· 10.500····· 10.540 · 10.550	55
	11.450 · 11.460····· 11.500····· 11.540 · 11.550	
	12.450 · 12.460····· 12.500····· 12.540 · 12.550	
	13.450 · 13.460····· 13.500····· 13.540 · 13.550	
	14.450 · 14.460····· 14.500····· 14.540 · 14.550	
ASP-4	15.450 · 15.460····· 15.500····· 15.540 · 15.550	55
	16.450 · 16.460····· 16.500····· 16.540 · 16.550	
	17.450 · 17.460····· 17.500····· 17.540 · 17.550	
	18.450 · 18.460····· 18.500····· 18.540 · 18.550	
	19.450 · 19.460····· 19.500····· 19.540 · 19.550	

AH series 0.050mm step

Model No.	Nominal size (mm)	Pin per set
AH-0	0.200 · 0.250 · 0.300··· 1.000	17
AH-1	1.000 · 1.050 · 1.100··· 3.500	51
AH-2	3.500 · 3.550 · 3.600··· 6.000	51
AH-3	6.000 · 6.050 · 6.100··· 8.500	51
AH-4	8.500 · 8.550 · 8.600···11.000	51
AH-5	11.000 · 11.050 · 11.100···13.500	51
AH-6	13.500 · 13.550 · 13.600···16.000	51
AH-7	16.000 · 16.050 · 16.100···18.500	51
AH-8	18.500 · 18.550 · 18.600···20.000	31

AAP series 0.010mm step

Consist of intermediate nominal size Pin Gauges of AA Series.

Model No.	Nominal size (mm)	Pin per set
AAP-0B	0.505 · 0.515 · 0.525··· 1.005	51
AAP-1A	1.005 · 1.015 · 1.025··· 1.505	51
AAP-1B	1.505 · 1.515 · 1.525··· 2.005	51
AAP-2A	2.005 · 2.015 · 2.025··· 2.505	51
AAP-2B	2.505 · 2.515 · 2.525··· 3.005	51
AAP-3A	3.005 · 3.015 · 3.025··· 3.505	51
AAP-3B	3.505 · 3.515 · 3.525··· 4.005	51
AAP-4A	4.005 · 4.015 · 4.025··· 4.505	51
AAP-4B	4.505 · 4.515 · 4.525··· 5.005	51
AAP-5A	5.005 · 5.015 · 5.025··· 5.505	51
AAP-5B	5.505 · 5.515 · 5.525··· 6.005	51
AAP-6A	6.005 · 6.015 · 6.025··· 6.505	51
AAP-6B	6.505 · 6.515 · 6.525··· 7.005	51
AAP-7A	7.005 · 7.015 · 7.025··· 7.505	51
AAP-7B	7.505 · 7.515 · 7.525··· 8.005	51
AAP-8A	8.005 · 8.015 · 8.025··· 8.505	51
AAP-8B	8.505 · 8.515 · 8.525··· 9.005	51
AAP-9A	9.005 · 9.015 · 9.025··· 9.505	51
AAP-9B	9.505 · 9.515 · 9.525···10.005	51

PIN GAUGE
 STEEL PIN GAUGES
 CARBIDE PIN GAUGES
 CERAMIC PIN GAUGES
 THREAD PIN GAUGES
 PIN GAUGE ACCESSORIES
 LIMIT GAUGE
 RING GAUGE
 BLOCK GAUGES
 THICKNESS GAUGES
 TAPER GAUGES
 WELDING GAUGES
 OTHER GAUGES

STEEL PIN GAUGE SET PM·PG series

Reduced wear **SUB-ZERO Treatment** Individual pin gauges are also available

Series to easily determine hole dimension with plus or minus tolerance.

PM series ⊕⊖

Pin Gauges with tolerance of 0 – plus 2μm or 0 – minus 2μm based on nominal size

For over 1.00mm, nominal size and P(for Plus) or M(for Minus) is marked on gagues.

- Please indicate "plus" or "minus" when ordering.
- Individual Pin Gauges are also available.



SPECIFICATIONS

Size (mm)	Step (mm)	Length (mm)	Tolerance (μm)	Out of Roundness/Cylindricity (μm)	Hardness (HV)
0.20... 0.99	0.01 step	40	Plus or Minus 0-2	1.0	Over 650
1.00...10.00		50			

0.01mm step

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

PG series ⊕⊖

Pin Gauges with tolerance of +2 – +5μm (or -2 – -5μm) based on nominal size

- Please indicate "plus" or "minus" when ordering.
- Individual Pin Gauges are also available.
- ※ Pin Vise is not included.
- ※ PG-00 and PG-3 differ in size step.



SPECIFICATIONS

Size (mm)	Step (mm)	Length (mm)	Tolerance (μm)	Out of Roundness/Cylindricity (μm)	Hardness (HV)
0.100... 0.190	0.010 step	20	⊕ 2-5 based on nominal size	1.5	Over 650
0.200... 0.290		40	⊖ 2-5 based on nominal size		
0.300... 0.975	0.025 step	50	※		
1.000...12.975					
13.000...19.000	0.100 step				

※The tolerance of 13,000 – 19,000 Pin Gauges is with Plus (or Minus) 1 – 5μm

Model No.	Nominal size	Step	Pins per set
PG-00	0.100 · 0.110 · 0.120... 0.290	0.010 step	20
PG-0	0.300 · 0.325 · 0.350... 1.525	0.025 step	50
PG-1	1.550 · 1.575 · 1.600... 6.275		190
PG-2A	6.300 · 6.325 · 6.350... 9.775		140
PG-2B	9.800 · 9.825 · 9.850...12.525		110
PG-2C	12.550 · 12.575 · 12.600...12.975	0.100 step	18
PG-3	13.000 · 13.100 · 13.200...19.000		61



STEEL PIN GAUGE SET with HANDLE AG series

Reduced wear SUB-ZERO Treatment Individual pin gauges are also available



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
- Individual pin gauges are also available

0.01mmstep

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

SPECIFICATIONS

Nominal size (mm)	Step (mm)	Length (mm)		Tolerance (μm)	Out of Roundness (μm)	Out of Cylindricity (μm)	Hardness (HV)
		Gauge Length	Overall Length				
0.07... 0.09	0.01 step	3	41	±0.5	0.5	0.5	More than 650
0.10... 0.19				±1.0			
0.20... 0.29							
0.30... 0.49		10	48				
0.50... 0.99		20	58				
1.00... 5.00		30	71				
5.01... 10.00			76				

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

STEEL PIN GAUGE with CENTER HOLE AC series

Reduced wear SUB-ZERO Treatment

Use for measuring gear runout and eccentricity of gear wheels or pulleys can also measure squareness between the hole and side face.

- Vibration measurements
- For above 2.00 mm, the Nominal size is marked on gauge



SPECIFICATIONS

Nominal size (mm)	Step (mm)	Length (mm)	Tolerance (μm)	Out of Roundness (μm)	Out of Cylindricity (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	

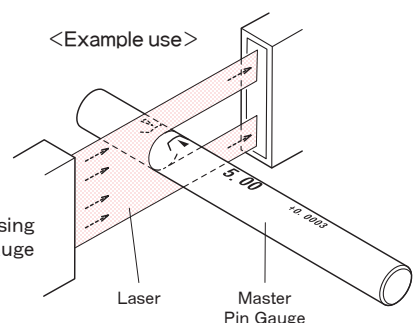
MASTER PIN GAUGE

Reduced wear SUB-ZERO Treatment

Actual value of the specific area is marked on pin gauge

SPECIFICATIONS

Nominal size (mm)	Step (mm)	Length (mm)	Uncertainty (μm)	Out of Roundness (μm)	Hardness (HV)
1.00...4.00	0.01 step	50	0.4	0.5	More than 650
4.01...6.00					



Calibrating a laser thickness gauge using the marked area of the master pin gauge



STEEL PIN GAUGE for GEAR MEASUREMENT OP series

Reduced wear SUB-ZERO Treatment Individual pin gauges are also available



for measuring over pin diameter of gears and involute splines.

Each module is a set of 2 pins each for measuring external gear over-pin-diameter, and internal gear over-pin-diameter.

- For quick and accurate over-pin diameter measurement of internal and external gears. (magnetize the pin for easy handling)
- Custom made pin gauges are available upon request.

SPECIFICATIONS

Dimensional deviation (V and U)	0.90mm–10.00mm : $\pm 1 \mu\text{m}$ 10.01mm–20.00mm : $\pm 1.5 \mu\text{m}$
Out of Roundness/ Cylindricity	0.90mm–10.00mm : $\pm 1 \mu\text{m}$ 10.01mm–20.00mm : $\pm 1.5 \mu\text{m}$
Length	50mm
Hardness	Over HV650

OP-1

Module (mm)	Inner dia. (hole) pin diameter (V) × groove height (V _i) (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 2.40 × 2.00 ※1	–
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 (V _i) (mm)	Outer (axis) pin diameter (U) (mm)
0.75	1.50 × 1.20 –	1.35 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 –	6.75 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

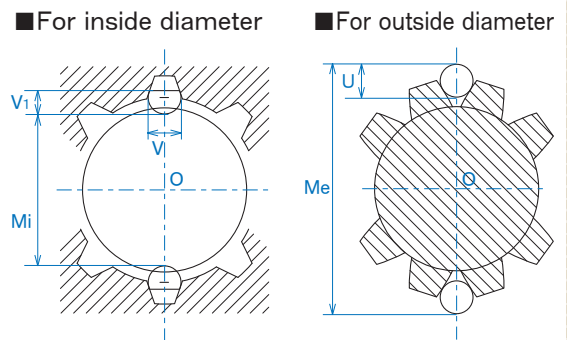
※2 Module 0.75 is used for tooth 6 · 7 · 8 · 9 · 10 · 11

※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 size charts above)

How To Measure



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

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

PIN GAUGE
STEEL PIN GAUGES
CARBIDE PIN GAUGES
CERAMIC PIN GAUGES
THREAD PIN GAUGES
PIN GAUGE ACCESSORIES
LIMIT GAUGE
RING GAUGE
BLOCK GAUGES
THICKNESS GAUGES
TAPER GAUGES
WELDING GAUGES
OTHER GAUGES

CARBIDE PIN GAUGE SET TAA·TAG series

LAPPED FINISH (except for custom made item) *Individual pin gauges are also available*

About 20–30 times more durable than Steel Pin Gauge (For honing work, 100 times)

The coefficient of thermal expansion is small (1/2 of steel, $5 \times 10^{-6} K^{-1}$) 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 broken edges).
 Economical—Periodic calibration is not required.



● LAPPED FINISH **MATERIAL** Steel with carbide insert

TAA series JCSS Calibration available



SPECIFICATIONS

Nominal size (mm)	Step (mm)	Length (mm)	Tolerance (μm)	Out of Roundness (μm)	Cylindricity (μm)
0.50... 0.99	0.01 step	30	± 1	0.8	0.8
1.00... 2.99		38			
3.00... 10.00		50	± 1.5	1.3	1.3
10.01... 14.00					

0.01mm step

Model No.	Nominal size (mm)	Pins per set
TAA-0B	0.50 · 0.51 · 0.52... 1.00	51
TAA-1A	1.00 · 1.01 · 1.02... 1.50	51
TAA-1B	1.50 · 1.51 · 1.52... 2.00	51
TAA-2A	2.00 · 2.01 · 2.02... 2.50	51
TAA-2B	2.50 · 2.51 · 2.52... 3.00	51
TAA-3A	3.00 · 3.01 · 3.02... 3.50	51
TAA-3B	3.50 · 3.51 · 3.52... 4.00	51
TAA-4A	4.00 · 4.01 · 4.02... 4.50	51
TAA-4B	4.50 · 4.51 · 4.52... 5.00	51
TAA-5A	5.00 · 5.01 · 5.02... 5.50	51
TAA-5B	5.50 · 5.51 · 5.52... 6.00	51
TAA-6A	6.00 · 6.01 · 6.02... 6.50	51
TAA-6B	6.50 · 6.51 · 6.52... 7.00	51
TAA-7A	7.00 · 7.01 · 7.02... 7.50	51
TAA-7B	7.50 · 7.51 · 7.52... 8.00	51
TAA-8A	8.00 · 8.01 · 8.02... 8.50	51
TAA-8B	8.50 · 8.51 · 8.52... 9.00	51
TAA-9A	9.00 · 9.01 · 9.02... 9.50	51
TAA-9B	9.50 · 9.51 · 9.52... 10.00	51

TAG series (with Handle)

TAA series Pin Gauge with plastic handle



0.01mm step

Model No.	Nominal size (mm)	Pins per set
TAG-3A	3.00 · 3.01 · 3.02... 3.50	51
TAG-3B	3.50 · 3.51 · 3.52... 4.00	51
TAG-4A	4.00 · 4.01 · 4.02... 4.50	51
TAG-4B	4.50 · 4.51 · 4.52... 5.00	51
TAG-5A	5.00 · 5.01 · 5.02... 5.50	51
TAG-5B	5.50 · 5.51 · 5.52... 6.00	51
TAG-6A	6.00 · 6.01 · 6.02... 6.50	51
TAG-6B	6.50 · 6.51 · 6.52... 7.00	51
TAG-7A	7.00 · 7.01 · 7.02... 7.50	51
TAG-7B	7.50 · 7.51 · 7.52... 8.00	51
TAG-8A	8.00 · 8.01 · 8.02... 8.50	51
TAG-8B	8.50 · 8.51 · 8.52... 9.00	51
TAG-9A	9.00 · 9.01 · 9.02... 9.50	51
TAG-9B	9.50 · 9.51 · 9.52... 10.00	51

SPECIFICATIONS

Nominal size (mm)	Step (mm)	Length (mm)		Tolerance (μm)	Out of Roundness (μm)	Cylindricity (μm)
		Gauge Length	Overall Length			
0.50... 0.99	0.01 step	25	63	± 1	0.8	0.8
1.00... 2.99		28	69			
3.00... 4.99		30	71			
5.00... 10.00		30	76			

Model No.	Nominal size (mm)	Pins per set
TAG-0B	0.50 · 0.51 · 0.52... 1.00	51
TAG-1A	1.00 · 1.01 · 1.02... 1.50	51
TAG-1B	1.50 · 1.51 · 1.52... 2.00	51
TAG-2A	2.00 · 2.01 · 2.02... 2.50	51
TAG-2B	2.50 · 2.51 · 2.52... 3.00	51

CERAMIC PIN GAUGE SET CAA·CAG series

LAPPED FINISH (except for custom made item) *Individual pin gauges are also available*

Light weight and easy to maintain after use.

Features of ceramic

- Strong against abrasion.
- Free from rust and corrosion, and easy maintenance
- Ceramic material is less susceptible to abrasion and age deterioration than steel
- Material has substantially the same coefficient of thermal expansion as steel.
- Non-magnetic

[Comparison between carbide and steel materials]

Item	Material	Ceramics		Cemented Carbide (G2)	Steel (SKH)
		φ0.50-φ2.49	φ2.50-φ10.00		
Specific Gravity		5.5-6.0	3.6-3.9	14.8	7.8
Hardness	HV	1,200	1,800	1,200	730(Harden)
Bending strength	GPa	2.4-7.9	3.1-3.5	22	110-180
Young's Modulus	GPa	180-240	310-370	610	205
Coeff. of thermal expansion	10 ⁻⁶ K ⁻¹	10.5	8	5	11
Heat conductivity	W/m·K	2	20-30	80	76

- For above 1.50mm, Nominal size is laser marked on gauge.
- LAPPED FINISH

MATERIAL Ceramic

CAA series

JCSS Calibration available



SPECIFICATIONS

Nominal size (mm)	Step (mm)	Length (mm)	Tolerance (μm)	Out of Roundness (μm)	Cylindricity (μm)
0.50...2.49	0.01 step	38	±1	0.8	0.8
2.50...2.99					
3.00...3.49					
3.50...9.99					
10.00					

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

0.01mm step

Model No.	Nominal size (mm)	Pins per set
CAA-0B	0.50 · 0.51 · 0.52... 1.00	51
CAA-1A	1.00 · 1.01 · 1.02... 1.50	51
CAA-1B	1.50 · 1.51 · 1.52... 2.00	51
CAA-2A	2.00 · 2.01 · 2.02... 2.50	51
CAA-2B	2.50 · 2.51 · 2.52... 3.00	51
CAA-3A	3.00 · 3.01 · 3.02... 3.50	51
CAA-3B	3.50 · 3.51 · 3.52... 4.00	51
CAA-4A	4.00 · 4.01 · 4.02... 4.50	51
CAA-4B	4.50 · 4.51 · 4.52... 5.00	51
CAA-5A	5.00 · 5.01 · 5.02... 5.50	51
CAA-5B	5.50 · 5.51 · 5.52... 6.00	51
CAA-6A	6.00 · 6.01 · 6.02... 6.50	51
CAA-6B	6.50 · 6.51 · 6.52... 7.00	51
CAA-7A	7.00 · 7.01 · 7.02... 7.50	51
CAA-7B	7.50 · 7.51 · 7.52... 8.00	51
CAA-8A	8.00 · 8.01 · 8.02... 8.50	51
CAA-8B	8.50 · 8.51 · 8.52... 9.00	51
CAA-9A	9.00 · 9.01 · 9.02... 9.50	51
CAA-9B	9.50 · 9.51 · 9.52...10.00	51

CAG series (with Handle)

CAA series Pin Gauge with plastic handle.



0.01mm step

SPECIFICATIONS

Nominal size (mm)	Step (mm)	Length (mm)		Tolerance (μm)	Out of Roundness (μm)	Cylindricity (μm)
		Gauge Length	Overall Length			
0.50... 0.99	0.01 step	28	66	±1	0.8	0.8
1.00... 3.49		28	69			
3.50... 4.99		30	71			
5.00...10.00		30	76			

Model No.	Nominal size (mm)	Pins per set
CAG-0B	0.50 · 0.51 · 0.52... 1.00	51
CAG-1A	1.00 · 1.01 · 1.02... 1.50	51
CAG-1B	1.50 · 1.51 · 1.52... 2.00	51
CAG-2A	2.00 · 2.01 · 2.02... 2.50	51
CAG-2B	2.50 · 2.51 · 2.52... 3.00	51

Model No.	Nominal size (mm)	Pins per set
CAG-3A	3.00 · 3.01 · 3.02... 3.50	51
CAG-3B	3.50 · 3.51 · 3.52... 4.00	51
CAG-4A	4.00 · 4.01 · 4.02... 4.50	51
CAG-4B	4.50 · 4.51 · 4.52... 5.00	51
CAG-5A	5.00 · 5.01 · 5.02... 5.50	51
CAG-5B	5.50 · 5.51 · 5.52... 6.00	51
CAG-6A	6.00 · 6.01 · 6.02... 6.50	51
CAG-6B	6.50 · 6.51 · 6.52... 7.00	51
CAG-7A	7.00 · 7.01 · 7.02... 7.50	51
CAG-7B	7.50 · 7.51 · 7.52... 8.00	51
CAG-8A	8.00 · 8.01 · 8.02... 8.50	51
CAG-8B	8.50 · 8.51 · 8.52... 9.00	51
CAG-9A	9.00 · 9.01 · 9.02... 9.50	51
CAG-9B	9.50 · 9.51 · 9.52...10.00	51

THREAD PIN GAUGE RA

New product!
Suitable when screw holes on workpiece is not chamfered

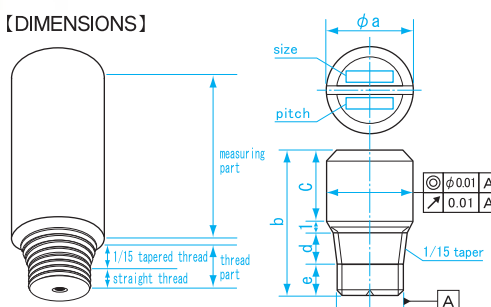


- Threaded portion has 1/15 taper starting at half way point to secure gauge to workpiece.
- Gauge will hold secure to workpiece for holes that are not chamfered to allow measurement of hole angle, etc. which can not be measured with traditional pin gauges.
- Also suitable for deburring Process

SPECIFICATIONS

Accuracy	Runout between measurement part and thread part : Model No. RAOO-1...within 0,01mm
	Runout between measurement part and thread part : Model No. RAOO-2...within 0,015mm
	Runout between measurement part and thread part : Model No. RAOO-3...within 0,02mm
	Accuracy of ϕa : within $\pm 0,005$ mm
MATERIAL	Stainless Steel (SUS303)

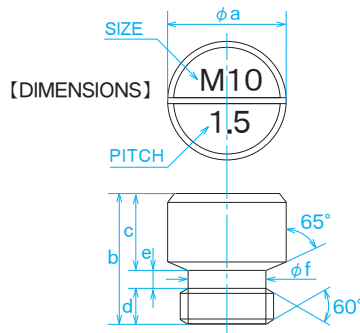
[DIMENSIONS]



Size List

Model No.	Size	a (mm)	b (mm)	c (mm)	d (mm)	e (mm)	
RA125-1	M1 × P0,25	2	8,0	4,5	1,50	1,00	
RA125-2	M1 × P0,25		13,5	10,0			
RA125-3	M1 × P0,25		23,5	20,0			
RA204-1	M2 × P0,4	3	10,0	4,5	2,50	2,00	
RA204-2	M2 × P0,4		25,5	20,0			
RA204-3	M2 × P0,4		35,5	30,0			
RA305-1	M3 × P0,5	4	12,0	5,0	3,50	2,50	
RA305-2	M3 × P0,5		27,0	20,0			
RA305-3	M3 × P0,5		37,0	30,0			
RA407-1	M4 × P0,7	5	14,0	6,0		3,50	3,50
RA407-2	M4 × P0,7		28,0	20,0			
RA407-3	M4 × P0,7		38,0	30,0			
RA508-1	M5 × P0,8	6	16,0	7,0	4,00	4,00	
RA508-2	M5 × P0,8		29,0	20,0			
RA508-3	M5 × P0,8		39,0	30,0			
RA610-1	M6 × P1,0	7	18,0	8,0		4,00	5,00
RA610-2	M6 × P1,0		30,0	20,0			
RA610-3	M6 × P1,0		40,0	30,0			
RA8125-1	M8 × P1,25	9	19,0	8,5	4,50		5,00
RA8125-2	M8 × P1,25		30,5	20,0			
RA8125-3	M8 × P1,25		40,5	30,0			
RA1015-1	M10 × P1,5	11	21,0	8,5	5,50	6,00	
RA1015-2	M10 × P1,5		32,5	20,0			
RA1015-3	M10 × P1,5		42,5	30,0			
RA1215-1	M12 × P1,5	13	23,0	8,5	6,50	7,00	
RA1215-2	M12 × P1,5		34,5	20,0			
RA1215-3	M12 × P1,5		44,5	30,0			
RA12175-1	M12 × P1,75		23,0	8,5			
RA12175-2	M12 × P1,75		34,5	20,0			
RA12175-3	M12 × P1,75		44,5	30,0			
RA1415-1	M14 × P1,5	15	23,5	8,5	6,50	7,50	
RA1415-2	M14 × P1,5		35,0	20,0			
RA1415-3	M14 × P1,5		45,0	30,0			
RA1615-1	M16 × P1,5	17	23,5	8,5	6,50	7,50	
RA1615-2	M16 × P1,5		35,0	20,0			
RA1615-3	M16 × P1,5		45,0	30,0			
RA1815-1	M18 × P1,5	19	24,5	8,5	7,00	8,00	
RA1815-2	M18 × P1,5		36,0	20,0			
RA1815-3	M18 × P1,5		46,0	30,0			

THREAD PIN GAUGE



SPECIFICATIONS

Accuracy	Runout between Measuring Head and Screw: Below 0,01mm Accuracy of Measuring Head (size: a) : Below ±0,005mm Screw : equivalent for JIS for the second grade
Material	Stainless steel (SUS303)

Easy handling with simple tool.
Possible to measure easily, economically,
accurately compared to other Gauges.

With support of threaded portion, accurate measurement is possible

- Stainless steel resists corrosion
- Custom made Pin Gauge is also available.

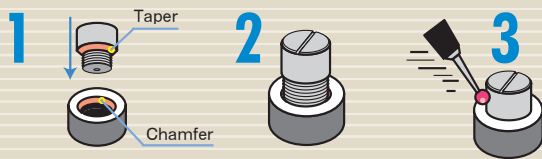
Size List

Model No.	Size	a (mm)	b (mm)	c (mm)	d (mm)	e (mm)	f (mm)	
THP-0204	M2 × P0.4	4	9.5	6	3	0.5	1.4	
THP-0305	M3 × P0.5	5			4.3	0.7	2.2	
THP-0407	M4 × P0.7	6	4		1	3		
THP-0508	M5 × P0.8	7	11	8	5	1	3.9	
THP-06075	M6 × P0.75	8	14				4.5	
THP-0610	M6 × P1.0	10	17	10	5.5		6	
THP-0810	M8 × P1.0							
THP-08125	M8 × P1.25	12	18		6.5			7.5
THP-1010	M10 × P1.0							
THP-10125	M10 × P1.25							
THP-1015	M10 × P1.5	14	19		7.5	1.5		9.5
THP-1210	M12 × P1.0							
THP-12125	M12 × P1.25							
THP-1215	M12 × P1.5	16						11.3
THP-12175	M12 × P1.75							
THP-1415	M14 × P1.5	18	20	8.5			13	
THP-1420	M14 × P2.0							
THP-1615	M16 × P1.5							
THP-1620	M16 × P2.0	20					14.5	
THP-1825	M18 × P2.5							
THP-2025	M20 × P2.5	22					16	

How to use Thread Pin Gauge

- Easily locate threaded hole position with thread pin gauge

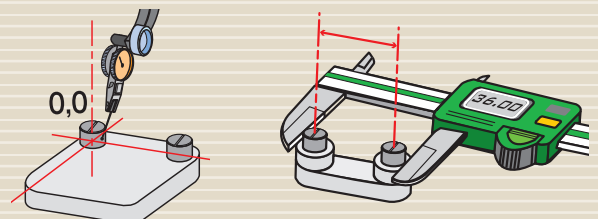
CMM can Easily attain the hole center using thread pin gauge



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



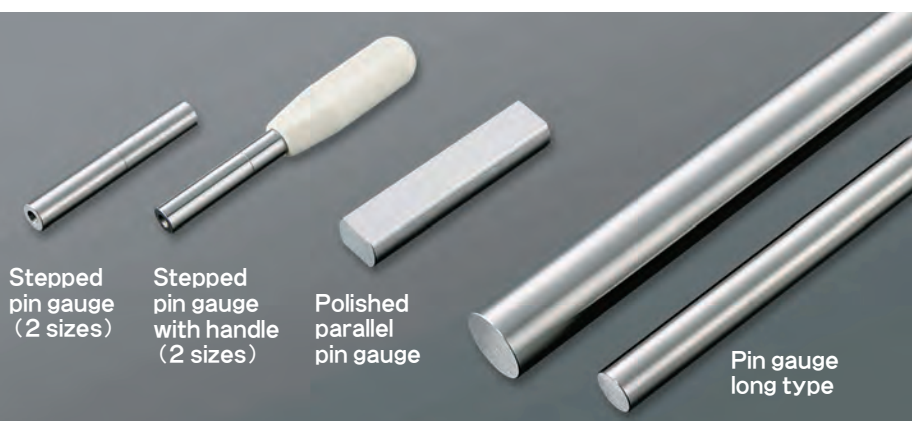
Custom Shapes Available Upon Request Please contact us for more information.

Custom Pin Gauge Examples

Radius end



Chamfered end



Stepped pin gauge (2 sizes)

Stepped pin gauge with handle (2 sizes)

Polished parallel pin gauge

Pin gauge long type

PIN GAUGE ACCESSORIES

ALUMINUM PIN VISE

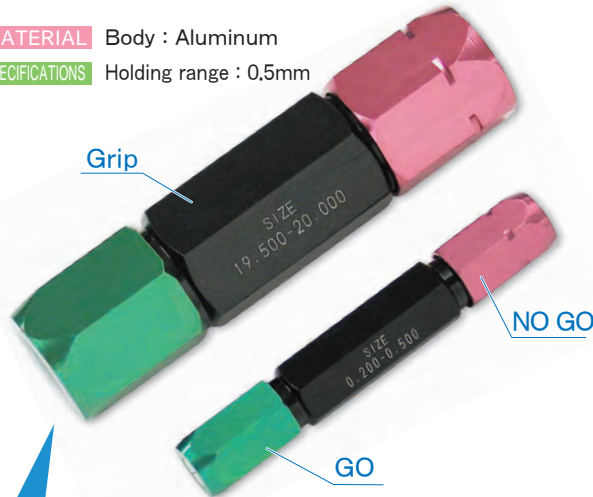
With special made resin collet, Aluminum Pin Vise is strong for deformation, but soft for Pin Gauge

Aluminum Pin Vise can be used as Limit Plug Gauge, holding Pin Gauges in both GO (green) and NO GO (red) side.

Wide holding range of 0.5mm on each side.

- Size is marked on the handle.
- With Plastic Case

MATERIAL Body : Aluminum
SPECIFICATIONS Holding range : 0.5mm



Special Plastic Collet
 ※Patented



Special plastic resin comparable to metal collet with excellent strength, elasticity, and impact resistance, but will not scratch pin gauge.



Pin Vise Compatibility Table

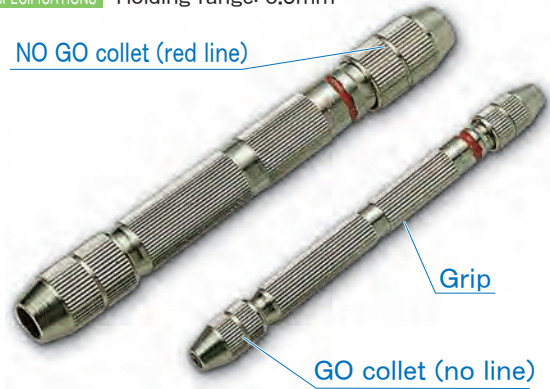
Model No.	Pin Gauge size (mm)	Model No.	Pin Gauge size (mm)
APV-0A	0.200 - 0.500	APV-10A	10.000 - 10.500
APV-0B	0.500 - 1.000	APV-10B	10.500 - 11.000
APV-1A	1.000 - 1.500	APV-11A	11.000 - 11.500
APV-1B	1.500 - 2.000	APV-11B	11.500 - 12.000
APV-2A	2.000 - 2.500	APV-12A	12.000 - 12.500
APV-2B	2.500 - 3.000	APV-12B	12.500 - 13.000
APV-3A	3.000 - 3.500	APV-13A	13.000 - 13.500
APV-3B	3.500 - 4.000	APV-13B	13.500 - 14.000
APV-4A	4.000 - 4.500	APV-14A	14.000 - 14.500
APV-4B	4.500 - 5.000	APV-14B	14.500 - 15.000
APV-5A	5.000 - 5.500	APV-15A	15.000 - 15.500
APV-5B	5.500 - 6.000	APV-15B	15.500 - 16.000
APV-6A	6.000 - 6.500	APV-16A	16.000 - 16.500
APV-6B	6.500 - 7.000	APV-16B	16.500 - 17.000
APV-7A	7.000 - 7.500	APV-17A	17.000 - 17.500
APV-7B	7.500 - 8.000	APV-17B	17.500 - 18.000
APV-8A	8.000 - 8.500	APV-18A	18.000 - 18.500
APV-8B	8.500 - 9.000	APV-18B	18.500 - 19.000
APV-9A	9.000 - 9.500	APV-19A	19.000 - 19.500
APV-9B	9.500 - 10.000	APV-19B	19.500 - 20.000

PIN VISE

For holding Pin Gauges

Pin Vise can be used as Limit Plug Gauge by holding Pin Gauges in both GO (no line) and NO GO (red line) side.

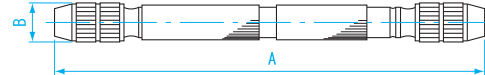
MATERIAL Chrome plated brass
SPECIFICATIONS Holding range: 0.5mm



Size List

No.	A (mm)	B (mm)
①	98	9
②	104	11
③	114	14
④	135	17

[DIMENSIONS]



Pin Vise Compatibility Table

No.	Model No.	Pin Gauge Size (mm)	Part No.		
			Ring	Grip	Collet
①	PV-0A	0.200 - 0.500	B1	B2	B00
①	PV-0B	0.500 - 1.000	B1	B2	B01
①	PV-1A	1.000 - 1.500	B1	B2	B3
①	PV-1B	1.500 - 2.000	B1	B2	B4
①	PV-2A	2.000 - 2.500	B1	B2	B5
①	PV-2B	2.500 - 3.000	B1	B2	B6
②	PV-3A	3.000 - 3.500	B7	B8	B9
②	PV-3B	3.500 - 4.000	B7	B8	B10
②	PV-4A	4.000 - 4.500	B7	B8	B11
②	PV-4B	4.500 - 5.000	B7	B8	B12
③	PV-5A	5.000 - 5.500	B13	B14	B15
③	PV-5B	5.500 - 6.000	B13	B14	B16
③	PV-6A	6.000 - 6.500	B13	B14	B17
③	PV-6B	6.500 - 7.000	B13	B14	B18
④	PV-7A	7.000 - 7.500	B19	B20	B21
④	PV-7B	7.500 - 8.000	B19	B20	B22
④	PV-8A	8.000 - 8.500	B19	B20	B23
④	PV-8B	8.500 - 9.000	B19	B20	B24
④	PV-9A	9.000 - 9.500	B19	B20	B25
④	PV-9B	9.500 - 10.000	B19	B20	B26

PIN GAUGE ACCESSORIES

PLASTIC CASE

Nominal size of each gauge printed at storage location

New, more convenient cases



PCS-1
<ul style="list-style-type: none"> ■ AA series AA-00 - AA-6B ■ TAA series TAA-0B - TAA-6B ■ CAA series CAA-0B - CAA-6B

PCS-2
<ul style="list-style-type: none"> ■ AA series AA-7A - AA-15B ■ TAA series TAA-7A - TAA-9B ■ CAA series CAA-7A - CAA-9B

Removable lid for use as tray



Stands



Stacks



WOODEN CASE



W-1
<ul style="list-style-type: none"> ■ STEEL PIN GAUGE SET PG-00 ⊕ ⊖ PG-0 ⊕ ⊖

W-2
<ul style="list-style-type: none"> ■ STEEL PIN GAUGE SET PG-2C ⊕ ⊖

W-3
<ul style="list-style-type: none"> W-3A ■ STEEL PIN GAUGE SET PG-1 ⊕ ⊖ PG-2A ⊕ ⊖ PG-2B ⊕ ⊖

W-4
<ul style="list-style-type: none"> ■ STEEL PIN GAUGE SET with handle AG-0A - AG-4B ■ CARBIDE PIN GAUGE SET with handle TAG-0A - TAG-4B ■ CERAMIC PIN GAUGE SET with handle CAG-0A - CAG-4B

W-5
<ul style="list-style-type: none"> ■ STEEL PIN GAUGE SET AG-5A - AG-9B ■ CARBIDE PIN GAUGE SET TAG-5A - TAG-9B ■ CERAMIC PIN GAUGE SET CAG-5A - CAG-9B

PIN GAUGE CABINET P-5C

All drawers can be locked at once

Lock

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

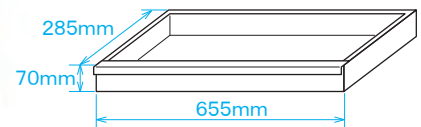
Applicable case: PCS-1, PCS-2



Handle can be mounted either right side or left side

Handle

[Drawer dimensions (removed)]



※ Pin gauges are not included

Model No.	Product Dimensions (mm)	Weight
P-5C	W655×D350×H630	36kg

MAINTENANCE KIT

Daily inspection of pin gauge and maintenance before long term storage
Plastic case for easy to carry



PLASTIC CASE for individual pin gauge



For Steel Pin Gauge

22.00 - 30.00	16.00 - 22.00	7.000 - 15.00	0.060 - 7.000
---------------	---------------	---------------	---------------



For Carbide Pin Gauge	7.00 - 10.00	0.50 - 7.00
-----------------------	--------------	-------------

For Ceramic Pin Gauge	7.00 - 10.00	0.50 - 7.00
-----------------------	--------------	-------------

For Maintenance Line Pin Gauge	7.00 - 10.00	3.00 - 7.00
--------------------------------	--------------	-------------

LIMIT PLUG GAUGE



For inspecting hole diameter

Pair of gauges with maximum and minimum limit size to test the compatibility of holes and widths



STEEL LIMIT PLUG GAUGE H7 (for manufacturing)

Excellent in cost performance, made of steel pin gauges



MATERIAL Body : Aluminum
Gauge : Steel

Model No.	Standard	Tolerance class	Tolerance (μm)
SPG3-H7	φ 3	H7	+10 0
SPG4-H7	φ 4		+12 0
SPG5-H7	φ 5		
SPG6-H7	φ 6		
SPG7-H7	φ 7		
SPG8-H7	φ 8		
SPG9-H7	φ 9		+18 0
SPG10-H7	φ 10		
SPG11-H7	φ 11		
SPG12-H7	φ 12		
SPG13-H7	φ 13		+21 0
SPG14-H7	φ 14		
SPG15-H7	φ 15		+18 0
SPG16-H7	φ 16		
SPG17-H7	φ 17		
SPG18-H7	φ 18		
SPG19-H7	φ 19		
SPG20-H7	φ 20		

CARBIDE LIMIT PLUG GAUGE H7 (for manufacturing)

Excellent in abrasion resistance, made of durable carbide



MATERIAL Body : Aluminum
Gauge : Carbide

Model No.	Standard	Tolerance class	Tolerance (μm)	
TPG3-H7	φ 3	H7	+10 0	
TPG4-H7	φ 4		+12 0	
TPG5-H7	φ 5			
TPG6-H7	φ 6		+15 0	
TPG7-H7	φ 7			
TPG8-H7	φ 8			
TPG9-H7	φ 9			
TPG10-H7	φ 10		+18 0	
TPG11-H7	φ 11			
TPG12-H7	φ 12			
TPG13-H7	φ 13			
TPG14-H7	φ 14			

CERAMIC LIMIT PLUG GAUGE H7 (for manufacturing)

Excellent stability over time, Ceramic requires low maintenance



MATERIAL Body : Aluminum
Gauge : Ceramic

Model No.	Standard	Tolerance class	Tolerance (μm)	
CPG3-H7	φ 3	H7	+10 0	
CPG4-H7	φ 4		+12 0	
CPG5-H7	φ 5			
CPG6-H7	φ 6		+15 0	
CPG7-H7	φ 7			
CPG8-H7	φ 8			
CPG9-H7	φ 9			
CPG10-H7	φ 10			

LIMIT PLUG GAUGE



LIMIT PLUG GAUGE H7 (for manufacturing)



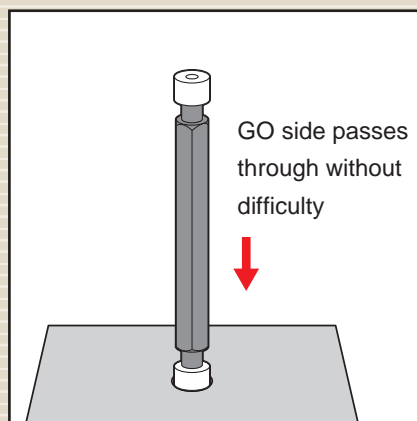
MATERIAL Gauge part : Alloy tool steel
Handle part : Aluminum

SPECIFICATIONS Hardness HV660 - 780

Model No.	Size	Tolerance Class	Dimensional Tolerance (μm)	
LP3-H7	$\phi 3$	H7	+10 0	
LP4-H7	$\phi 4$		+12 0	
LP5-H7	$\phi 5$			
LP6-H7	$\phi 6$			
LP7-H7	$\phi 7$			
LP8-H7	$\phi 8$			
LP9-H7	$\phi 9$			
LP10-H7	$\phi 10$			
LP11-H7	$\phi 11$			
LP12-H7	$\phi 12$			
LP13-H7	$\phi 13$			
LP14-H7	$\phi 14$			
LP15-H7	$\phi 15$			
LP16-H7	$\phi 16$			
LP17-H7	$\phi 17$			
LP18-H7	$\phi 18$			
LP19-H7	$\phi 19$			
LP20-H7	$\phi 20$			
LP21-H7	$\phi 21$			
LP22-H7	$\phi 22$			
LP23-H7	$\phi 23$			
LP24-H7	$\phi 24$			
LP25-H7	$\phi 25$			
LP26-H7	$\phi 26$			
LP27-H7	$\phi 27$			
LP28-H7	$\phi 28$			
LP29-H7	$\phi 29$			
LP30-H7	$\phi 30$			
				+18 0
				+21 0

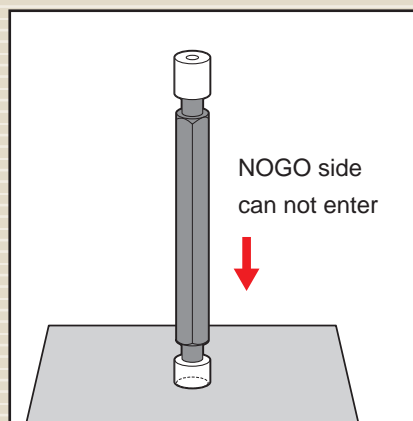
Using Limit Plug Gauge

○ GO side



Go side passes through entire length of hole without difficulty

○ NOGO side



NOGO side is unable to enter hole



LIMIT PLUG GAUGE with thin handle H7 (for manufacturing)

Narrow shaft allows examining diameter deep into a hole



MATERIAL Gauge part : Alloy tool steel
Handle part : Stainless

SHLP10-H7



Model No.	Standard	Weight	JAN (4975846)
SHLP3-H7	φ 3	4g	092129
SHLP4-H7	φ 4	8g	092136
SHLP5-H7	φ 5	10g	092143
SHLP6-H7	φ 6	20g	092150
SHLP7-H7	φ 7	24g	092167
SHLP8-H7	φ 8	27g	092174
SHLP9-H7	φ 9	32g	092181
SHLP10-H7	φ 10	58g	092198
SHLP11-H7	φ 11	63g	092204
SHLP12-H7	φ 12	69g	092211
SHLP13-H7	φ 13	69g	092228
SHLP14-H7	φ 14	82g	092235
SHLP15-H7	φ 15	89g	092242
SHLP16-H7	φ 16	136g	092259
SHLP17-H7	φ 17	146g	092266
SHLP18-H7	φ 18	157g	092273
SHLP19-H7	φ 19	169g	092280
SHLP20-H7	φ 20	181g	092297

Other size above the list also available on request

LIMIT PLUG GAUGE with MAINTENANCE LINE

New product! Maintenance line series plug gauge now available
Maintenance line on Plug Gage allows easy checking for gauge wear - out

Maintenance line on Plug Gage allows easy checking for gauge wear-out
When line disappears, wear is more than 1μm

Custom Size with Fast Delivery!

Please contact us with request



MATERIAL Alloy tool steel

THREAD LIMIT GAUGE



Category	for Inspection
Thread Plug Gauge, Class 2	GPIP
Thread Ring Gauge, Class 2	GRIR

※ Thread Gauge for Machine Work (WPWP, GRWR) are also available.
 ※ ISO type are available on request.

Inspection of Threaded Hole

For each screw size to be measured the corresponding gauge has standard dimensions. The gauge is used to perform GO/NO GO test based on the prescribed minimum and maximum dimensions for each screw grade.

THREAD PLUG GAUGE



MATERIAL Gauge part : Alloy tool steel
 Handle part : Aluminum

Size
M1.4 × P0.3
M1.6 × P0.35
M1.7 × P0.35
M2 × P0.4
M2.3 × P0.4
M2.5 × P0.45
M2.6 × P0.45
M3 × P0.5
M3.5 × P0.6
M4 × P0.5
M4 × P0.7
M5 × P0.8
M6 × P0.75
M6 × P1.0
M7 × P1.0
M8 × P1.0
M8 × P1.25
M10 × P1.0
M10 × P1.25
M10 × P1.5
M12 × P1.0
M12 × P1.25
M12 × P1.5
M12 × P1.75
M14 × P1.5
M14 × P2.0
M16 × P1.5
M16 × P2.0
M18 × P1.5
M18 × P2.5
M20 × P1.5
M20 × P2.5

Using a Thread Plug Limit Gauge

① GO side



First, the GO side should thread into hole without difficulty.

② NOGO side



JIS Standard Next, using NOGO side, no more than two complete turns should be possible.

ISO Standard Next, using NOGO side, no more than two complete turns should be possible.

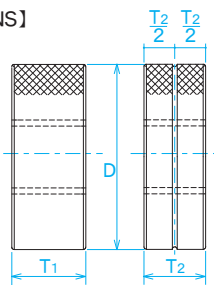
If pass both steps, ① and ②, thread passes examination by thread plug limit gauge.

THREAD RING GAUGE

THREAD RING GAUGE SET



[DIMENSIONS]



MATERIAL Alloy tool steel

Model No.	Size	Outside Dimension / D (mm)	T ₁ (mm)	T ₂ (mm)
GRIR2-0204	M2 × P0.4	25	3	3
GRIR2-02304	M2.3 × P0.4			
GRIR2-025045	M2.5 × P0.45			
GRIR2-026045	M2.6 × P0.45		4	4
GRIR2-0305	M3 × P0.5			
GRIR2-0407	M4 × P0.7			
GRIR2-0508	M5 × P0.8	30	8	6
GRIR2-0610	M6 × P1.0			
GRIR2-0710	M7 × P1.0			
GRIR2-0810	M8 × P1.0			
GRIR2-08125	M8 × P1.25	40	10	8
GRIR2-1010	M10 × P1.0			
GRIR2-10125	M10 × P1.25			
GRIR2-1015	M10 × P1.5			
GRIR2-1210	M12 × P1.0			
GRIR2-12125	M12 × P1.25			
GRIR2-1215	M12 × P1.5	50	15	10
GRIR2-12175	M12 × P1.75			
GRIR2-1415	M14 × P1.5			
GRIR2-1420	M14 × P2.0			
GRIR2-1615	M16 × P1.5			
GRIR2-1620	M16 × P2.0			
GRIR2-1815	M18 × P1.5	22	15	
GRIR2-1825	M18 × P2.5			
GRIR2-2015	M20 × P1.5			
GRIR2-2025	M20 × P2.5			

How to Use thread ring gauge

① GO Gauge



First, Screw the fastener into the GO gauge. It should thread on without difficulty.

② NOGO Gauge



JIS Standard Next, using NOGO gauge, no more than two complete turns should be possible.

ISO Standard Next, using NOGO gauge, no more than two complete turns should be possible.

If pass both steps, ① and ②, thread passes examination by thread ring gauge.

STEEL RING GAUGE

Reduced wear SUB-ZERO Treatment·Hardening process **Fast Delivery**

Use Ring Gauge as master gauge for "0" adjustment of measuring tools such as bore gauge, inside micrometer, dial caliper, etc.

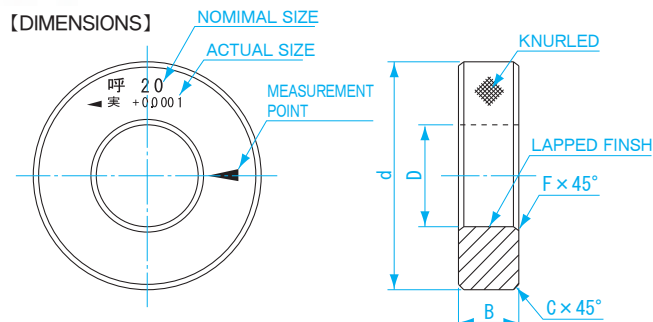


SPECIFICATIONS

Size (mm)	Size (mm)	Out of Roundness (μm)	Out of Cylindricity (μm)	Tolerance (μm)	Hardness (HV)
1 to less than 30	0.1 step	0.5	0.5	± 1.0	653 772
30 to less than 50		0.8	0.8	± 1.5	
50 to less than 60	0.5 step	1.0	1.0	± 2.0	
60 to less than 80					
80 to less than 100					
100 to less than 200	5.0 step	2.0	2.0	± 5.0	

MATERIAL Alloy tool steel

[DIMENSIONS]



Stock available size

Size (mm)	Step (mm)	Step (mm)
1 to less than 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
50 to less than 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
100 to less than 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

Size D (mm)	Outside Diameter d (mm)	Thickness B (mm)	Chamfering for outside diameter C (mm)	Chamfering for inside diameter F (mm)	Remarks	Weight
1 to less than 2.5	22	4	0.4	0.3	Knurled	10g
2.5 to less than 5		5				10g
5 to less than 10	32	8	0.8	0.5		50g
10 to less than 15	38	10				80g
15 to less than 20	45	12	1.2	1.0		100g
20 to less than 25	53	14				200g
25 to less than 32	63	16	1.5	1.0		300g
25 to less than 32	71	18				400g
40 to less than 50	85	20	2.0	1.5		600 - 700g
50 to less than 60	100	24				0.9 - 1.1kg
60 to less than 70	112		24	2.0	1.5	1.1 - 1.3kg
70 to less than 80	125	1.4 - 1.6kg				
80 to less than 90	140	35	2.4	1.5	1.7 - 1.9kg	
90 to less than 100	160				2.3 - 2.6kg	
100 to less than 110	180	30	2.4	1.5	3.7 - 4.1kg	
110 to less than 120	190				4.7 - 5.1kg	
120 to less than 130	200	38	2.4	1.5	5.0 - 5.5kg	
130 to less than 140	210				5.7 - 6.3kg	
140 to less than 160	230	40	2.0	2.0	6.6 - 8.2kg	
160 to less than 180	260				8.6 - 10kg	
180 to less than 200	280				9.4 - 11kg	

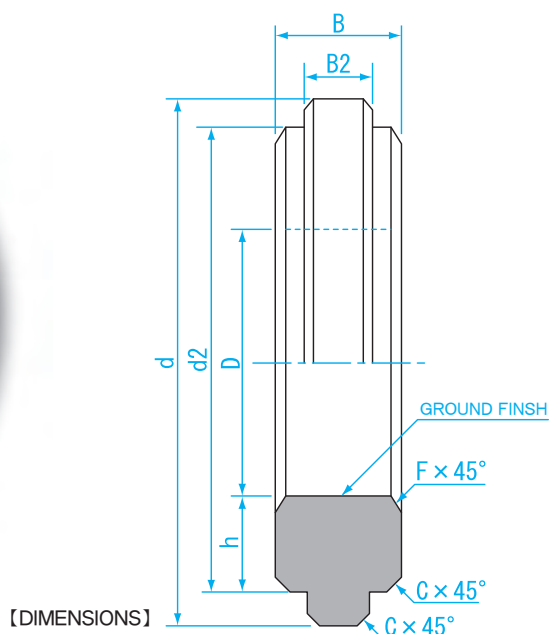
STEEL RING GAUGE SET

Set List

Model No.	Nominal Size	Pin per set
RG-1	1.0 · 1.5 · 2.0 · 2.5 · 3.0 · 4.0 · 5.0 · 6.0 · 7.0 · 8.0 · 9.0 · 10.0	12
RG-2	11.0 · 12.0 · 13.0 · 14.0 · 15.0 · 16.0 · 17.0 · 18.0 · 19.0 · 20.0 · 22.0 · 24.0	12
RG-3	25.0 · 26.0 · 27.0 · 28.0 · 30.0 · 32.0 · 34.0 · 35.0 · 36.0 · 37.0 · 38.0 · 40.0	12
RG-4	42.0 · 44.0 · 45.0 · 46.0 · 47.0 · 48.0 · 50.0	7
RG-5	52.0 · 54.0 · 55.0 · 56.0 · 58.0 · 60.0 · 65.0	7
RG-6	68.0 · 70.0 · 75.0 · 80.0	4
RG-7	85.0 · 90.0 · 95.0 · 10.0	4

STEEL RING GAUGE Large size

Reduced wear SUB-ZERO Treatment·Hardening process



SPECIFICATIONS

Size (mm)	Step (mm)	Out of Roundness (μm)	Out of Cylindricity (μm)	Tolerance (μm)	Hardness (HV)
200 to less 300	10.0 step	5.0	5.0	± 7.0	653 I 772
300 to less 400				± 8.0	
300 to less 400				± 9.0	
500 to less 600				± 10.0	

MATERIAL Alloy tool steel

■ With aluminum case

※ Make-to-order manufacturing

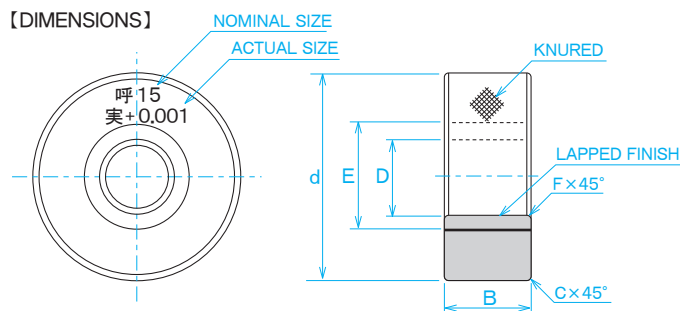
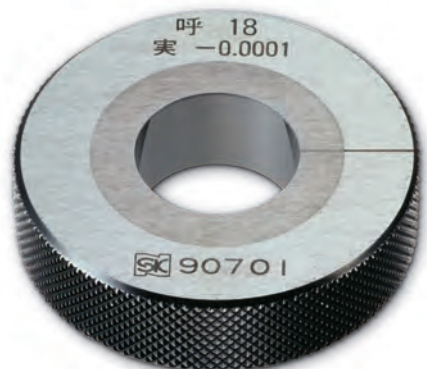
Size List

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					
200 to less than 230	310	250 - 270	45	25	20	2.0	2.5	NOT Knurled	9 - 10
230 to less than 260	340	280 - 300							11 - 14
260 to less than 290	370	310 - 330							11 - 13
290 to less than 320	400	340 - 360							12 - 14
320 to less than 360	440	380 - 410							14 - 16
360 to less than 400	480	420 - 450							15 - 18
400 to less than 450	540	460 - 500	50	25	25	2.5	NOT Knurled	19 - 24	
450 to less than 500	600	510 - 550						23 - 29	
450 to less than 500	600	510 - 550						23 - 29	
500 to less than 520	660	560 - 600						27 - 33	

CARBIDE RING GAUGE

LAPPED FINISH

life span approximately 20 to 30 times grater than steel. Reduced maintenance.



Durable and long life. The coefficient of thermal expansion is small ($1/2$ of steel, $5 \times 10^{-6} K^{-1}$), so better tolerates temperature changes. Less likely to be damaged due to high hardness.

(Economical- Frequent periodic calibration not required)

SPECIFICATIONS

Size (mm)	Step (mm)	Out or Roundness/Cylindricity (μm)	Tolerance (μm)
1 to less than 30	—	0.5	± 1
30 to less than 50	—	0.8	± 1.5

MATERIAL Steel with carbide insert

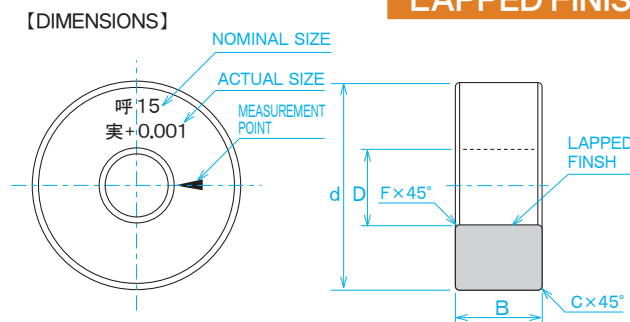
Size List

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

CERAMIC RING GAUGE

LAPPED FINISH

Will not rust or corrode.
Non magnetic ring gauge.



Size List

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

Ceramic material is less susceptible to abrasion and age deterioration than steel. Free from rust and corrosion, and easy maintenance.

Non-magnetic body. Does not deform with damage, resists scratches and forming burrs.

●Size is laser marked.

SPECIFICATIONS

Size (mm)	Step (mm)	Out or Roundness/Cylindricity (μm)	Tolerance (μm)
3 to less than 30	0.5 step	0.5	± 1
30 to less than 50		0.8	± 1.5

Material Data

List	Material	Ceramic	
		Aluminum	Zircon
Gravity	—	3.8	5.6
Hardness	HV	1500	1100
Bending Strength	MPa	3.9	7~8
Young's modulus	GPa	360	205
Coefficient of thermal expansion	$10^{-6} K^{-1}$	8	8
Heat conductivity	W/m·K	29	3.4

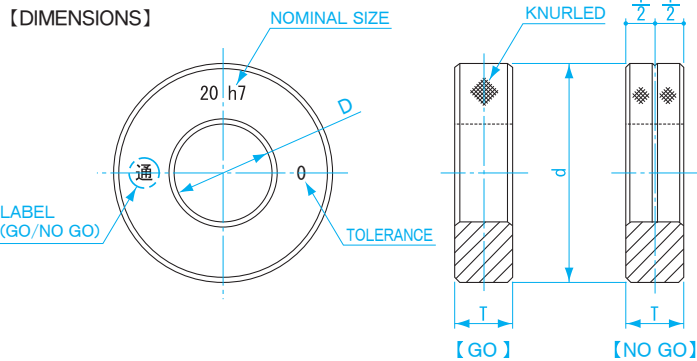
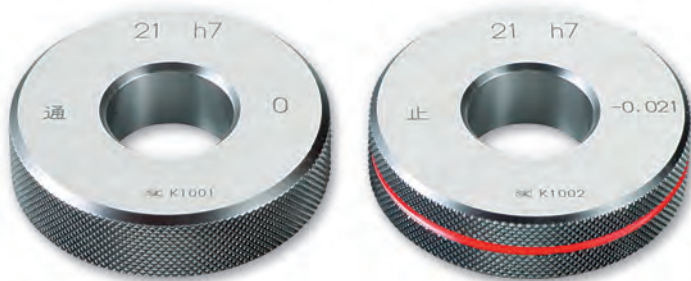
STEEL RING LIMIT GAUGE h7

For shaft diameter inspection

Pair of gauges with maximum and minimum limit size to test the compatibility of hole width

MATERIAL Alloy tool steel

SPECIFICATIONS Hardness: HV653-772



Size List

Model No.	Nominal size D (mm)	Outside Diameter d (mm)	Thickness T (mm)	Tolerance Class	Tolerance (μm)
LR10-h7	$\phi 10$	32	8	h7	0 -15
LR11-h7	$\phi 11$				
LR12-h7	$\phi 12$				
LR13-h7	$\phi 13$				
LR14-h7	$\phi 14$				
LR15-h7	$\phi 15$				
LR16-h7	$\phi 16$	45	12		0 -18
LR17-h7	$\phi 17$				
LR18-h7	$\phi 18$				
LR19-h7	$\phi 19$				
LR20-h7	$\phi 20$	53	14	0 -21	
LR21-h7	$\phi 21$				
LR22-h7	$\phi 22$				
LR23-h7	$\phi 23$				
LR24-h7	$\phi 24$				
LR25-h7	$\phi 25$				
LR26-h7	$\phi 26$	63	16		
LR27-h7	$\phi 27$				
LR28-h7	$\phi 28$				
LR29-h7	$\phi 29$				
LR30-h7	$\phi 30$				



STEEL RING GAUGE with MAINTENANCE LINE

New product! Maintenance line series ring gauge now available

- Maintenance line on steel ring gauge allows easy checking for gauge wear-out.
- When line disappears, wear is more than $1 \mu\text{m}$
- Available for sizes : 15 ~ 50mm (1mm step)

MATERIAL Alloy tool steel

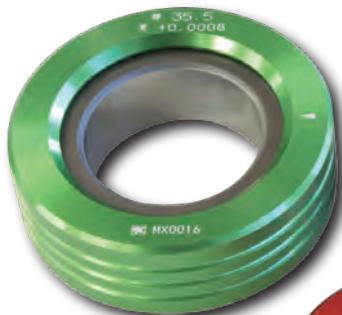


RING GAUGE (with protective cover)

No - Slip and Easy to Handle , will increase productivity

- 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

CARBIDE RING GAUGE (with Protective Cover)



STEEL RING GAUGE (with Protective Cover)



CERAMIC RING GAUGE (with Protective Cover)

MATERIAL ● Protective Cover: Anodized Aluminum
● Gauge: Steel / Carbide / Ceramic

SPECIFICATIONS

Size (mm)	Step (mm)	Roundness · Cylindricity (μm)	Tolerance (μm)
1 to less than 2 (Steel & Carbide only)	1mm step	0.5	±1
2 to less than 30	1mm step	0.5	±1
30 to less than 50	1mm step	0.8	±1.5

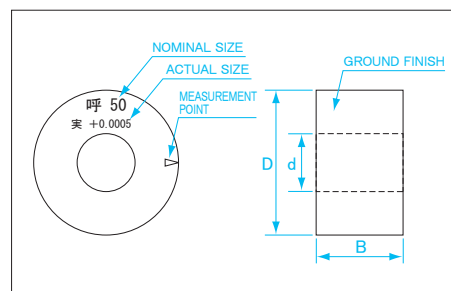
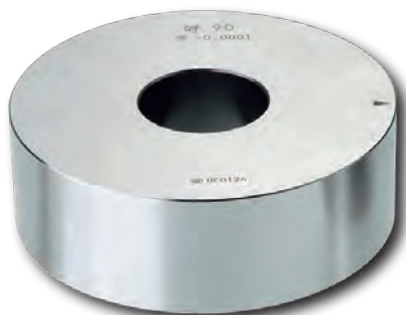
STEEL RING GAUGE OD model

New Product! Available from φ40 - 400mm. Simple calibration or 0 adjustment of outside measuring instrument

For quick calibration of micrometer

MATERIAL Alloy tool steel

SPECIFICATIONS Hardness: HV653-772



SPECIFICATIONS

Size D (mm)	Step (mm)	OD tolerance (μm)	Out of Roundness (μm)	Out of Cylindricity (μm)	Thickness B (mm)	Hole Diameter d (mm)
40 to less than 50	10.0 step	±3	1.5	1.5	30	20
50 to less than 70		±5	2.5	2.5		30
70 to less than 100						40
100 to less than 150						50
150 to less than 200						80
200 to less than 300						160
300 to less than 350				200		
350 to less than 375				250		
375 to less than 400						



Custom shape Ring gauges available upon request

Multiple - step gauge

SPECIAL SHAPE

Quick calibration of Micrometers (0 – 25mm)

OD pitch: 5 · 10 · 15 · 20 · 25mm Integrated type gauge

MATERIAL Alloy tool steel



※ Sample of special shape

Custom Designs for Fast Delivery!

Please contact us with request



Multiple - step gauge / OD model

SPECIAL SHAPE

Use for calibration or 0 adjustment

Size combination is arranged on request

MATERIAL Alloy tool steel



※ Sample of special shape

Custom Designs for Fast Delivery!

Please contact us with request

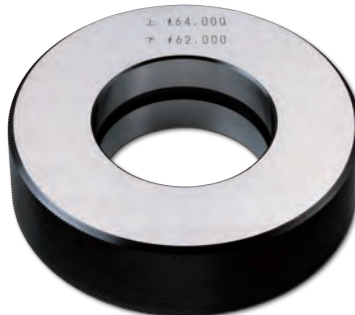
Step gauge / Inner model

SPECIAL SHAPE

0 adjustment for dial bore gauge

Size combination is arranged on request

MATERIAL Alloy tool steel



※ Sample of special shape

Custom Designs for Fast Delivery!

Please contact us with request

Cut out

SPECIAL SHAPE

Hold ring gauge in a jig and prevent movement

MATERIAL Alloy tool steel



※ Sample of special shape

Custom Designs for Fast Delivery!

Please contact us with request

BLOCK GAUGE SET

For general measurement and reference standard in workshop



GBS1-32

MATERIAL High carbon high chromium steel

- Conforms to JIS (Grade 1) Standard

SPECIFICATIONS

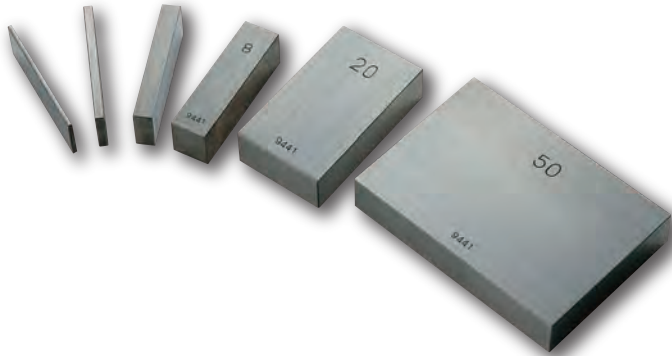
Size (mm)		Grade1	
Over	Below	Tolerance (μm)	Dimensional deviation (μm)
—	10	±0.20	0.16
10	25	±0.30	0.16
25	50	±0.40	0.18
50	75	±0.50	0.18
75	100	±0.60	0.20

Size List

Model No.	Pieces per set	Step (mm)	Nominal Size (mm)	Number of pieces	Weight
GBS1-103	103		1.005	1	3.48kg
		0.01	1.01 · 1.02...1.49	49	
		0.5	0.5 · 1.0...24.5	49	
		25	25 · 50 · 75 · 100	4	
GBS1-76	76		1.005	1	2.1kg
		0.01	1.01 · 1.02...1.49	49	
		0.5	0.5 · 1.0...9.5	19	
		10	10 · 20 · 30 · 40	4	
GBS1-47	47		1.005	1	2.1kg
		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	
GBS1-32	32		1.005	1	1kg
		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 GAUGES

For general measurement and reference
standard in workshop



MATERIAL High carbon high chromium steel

SPECIFICATIONS

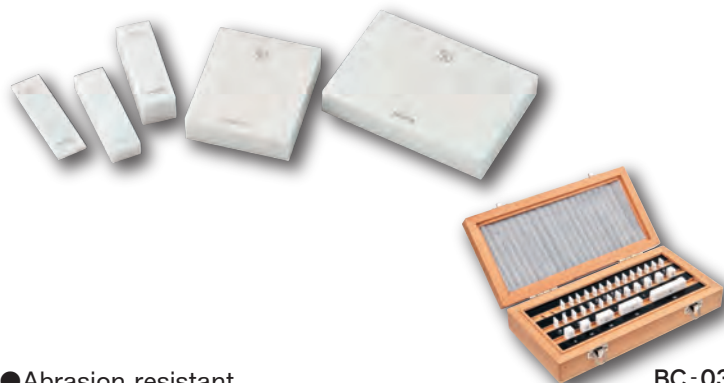
Size (mm)		Grade1	
Over	Below	Tolerance (μm)	Dimensional deviation (μm)
—	10	± 0.20	0.16
10	25	± 0.30	0.16
25	50	± 0.40	0.18
50	75	± 0.50	0.18
75	100	± 0.60	0.20
100	150	± 0.80	0.20
150	200	± 1.00	0.25
200	250	± 1.20	0.25
250	300	± 1.40	0.25
300	400	± 1.80	0.30
400	500	± 2.20	0.35
500	600	± 2.60	0.40

Size List

Model No.	Size	Model No.	Size	Model No.	Size
GB1-05	0.5mm	GB1-132	1.32mm	GB1-1350	13.50mm
GB1-10	1.0mm	GB1-133	1.33mm	GB1-1400	14.00mm
GB1-1-001	1.001mm	GB1-134	1.34mm	GB1-1450	14.50mm
GB1-1-002	1.002mm	GB1-135	1.35mm	GB1-1500	15.00mm
GB1-1-003	1.003mm	GB1-136	1.36mm	GB1-1550	15.50mm
GB1-1-004	1.004mm	GB1-137	1.37mm	GB1-1660	16.00mm
GB1-1-005	1.005mm	GB1-138	1.38mm	GB1-1650	16.50mm
GB1-1-006	1.006mm	GB1-139	1.39mm	GB1-1700	17.00mm
GB1-1-007	1.007mm	GB1-140	1.40mm	GB1-1750	17.50mm
GB1-1-008	1.008mm	GB1-141	1.41mm	GB1-1800	18.00mm
GB1-1-009	1.009mm	GB1-142	1.42mm	GB1-1850	18.50mm
GB1-101	1.01mm	GB1-143	1.43mm	GB1-1900	19.00mm
GB1-102	1.02mm	GB1-144	1.44mm	GB1-1950	19.50mm
GB1-103	1.03mm	GB1-145	1.45mm	GB1-2000	20.00mm
GB1-104	1.04mm	GB1-146	1.46mm	GB1-2050	20.50mm
GB1-105	1.05mm	GB1-147	1.47mm	GB1-2100	21.00mm
GB1-106	1.06mm	GB1-148	1.48mm	GB1-2150	21.50mm
GB1-107	1.07mm	GB1-149	1.49mm	GB1-2200	22.00mm
GB1-108	1.08mm	GB1-150	1.50mm	GB1-2250	22.50mm
GB1-109	1.09mm	GB1-200	2.00mm	GB1-2300	23.00mm
GB1-110	1.10mm	GB1-250	2.50mm	GB1-2350	23.50mm
GB1-111	1.11mm	GB1-300	3.00mm	GB1-2400	24.00mm
GB1-112	1.12mm	GB1-350	3.50mm	GB1-2450	24.50mm
GB1-113	1.13mm	GB1-400	4.00mm	GB1-2500	25.00mm
GB1-114	1.14mm	GB1-450	4.50mm	GB1-3000	30.00mm
GB1-115	1.15mm	GB1-500	5.00mm	GB1-4000	40.00mm
GB1-116	1.16mm	GB1-550	5.50mm	GB1-5000	50.00mm
GB1-117	1.17mm	GB1-600	6.00mm	GB1-6000	60.00mm
GB1-118	1.18mm	GB1-650	6.50mm	GB1-7000	70.00mm
GB1-119	1.19mm	GB1-700	7.00mm	GB1-7500	75.00mm
GB1-120	1.20mm	GB1-750	7.50mm	GB1-8000	80.00mm
GB1-121	1.21mm	GB1-800	8.00mm	GB1-9000	90.00mm
GB1-122	1.22mm	GB1-850	8.50mm	GB1-10000	100.00mm
GB1-123	1.23mm	GB1-900	9.00mm	GB1-12500	125mm
GB1-124	1.24mm	GB1-950	9.50mm	GB1-15000	150mm
GB1-125	1.25mm	GB1-1000	10.00mm	GB1-17500	175mm
GB1-126	1.26mm	GB1-1050	10.50mm	GB1-20000	200mm
GB1-127	1.27mm	GB1-1100	11.00mm	GB1-25000	250mm
GB1-128	1.28mm	GB1-1150	11.50mm	GB1-30000	300mm
GB1-129	1.29mm	GB1-1200	12.00mm	GB1-40000	400mm
GB1-130	1.30mm	GB1-1250	12.50mm	GB1-50000	500mm
GB1-131	1.31mm	GB1-1300	13.00mm	GB1-60000	600mm

CERAMIC BLOCK GAUGE SET

For general measurement and reference standard in workshop



- Abrasion resistant
 - Free from rust and corrosion, and easy maintenance
 - Ceramic material is less susceptible to abrasion and age deterioration than steel
 - Non-magnetic
 - Conforms to JIS (Grade 0) Standard
- MATERIAL** Ceramic (Zircon)

SPECIFICATIONS

Size (mm)		Grade 0	
Over	Below	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

Comparison between steel and ceramic materials

Item	Materials		Ceramic	Steel
Hardness	HV		1300	800
Coefficient of thermal expansion		10 ⁻⁶ /K	9.5	11.5
Specific Gravity			6	7.8
Heat conductivity		W/m·K	2.5	76

SET Item

Model No.	Pieces per set	Step (mm)	Nominal Size (mm)	Number of piece	Weight
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	
		—	50	1	
BC-047	47	—	1.005	1	2.25kg
		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

Model No.	Size (mm)
BC0-10	1
BC0-1-005	1.005
BC0-101	1.01
BC0-102	1.02
BC0-103	1.03
BC0-104	1.04
BC0-105	1.05
BC0-106	1.06
BC0-107	1.07
BC0-108	1.08
BC0-109	1.09
BC0-110	1.1
BC0-120	1.2
BC0-130	1.3
BC0-140	1.4
BC0-150	1.5
BC0-160	1.6
BC0-170	1.7
BC0-180	1.8
BC0-190	1.9
BC0-200	2
BC0-300	3
BC0-400	4
BC0-500	5
BC0-600	6

Model No.	Size (mm)
BC0-700	7
BC0-800	8
BC0-900	9
BC0-1000	10
BC0-1100	11
BC0-1200	12
BC0-1300	13
BC0-1400	14
BC0-1500	15
BC0-1600	16
BC0-1700	17
BC0-1800	18
BC0-1900	19
BC0-2000	20
BC0-2100	21
BC0-2200	22
BC0-2300	23
BC0-2400	24
BC0-2500	25
BC0-3000	30
BC0-5000	50
BC0-6000	60
BC0-7500	75
BC0-10000	100

FEELER GAUGE

Measurement of gap width



Use for assembly or adjustment of automotive engine components or other machines by cutting it to necessary size

- Leaf width: 12.7mm
- 3m and 5m also available

MATERIAL SFG series : Stainless steel
FG series : Carbon tool steel (Hardened)



SFG series (Stainless Steel)

Model No.	Size	Leaf Width (mm)	Accuracy (mm)	Case size (mm)	Weight
SFG-005-1	0.005 × 1m	12.7	±0.004	77×77×22	40g
SFG-01-1	0.01 × 1m				
SFG-02-1	0.02 × 1m				
SFG-03-1	0.03 × 1m				
SFG-04-1	0.04 × 1m		±0.005		
SFG-05-1	0.05 × 1m				
SFG-06-1	0.06 × 1m				
SFG-07-1	0.07 × 1m				
SFG-08-1	0.08 × 1m				
SFG-09-1	0.09 × 1m				
SFG-10-1	0.10 × 1m	±0.006	50g		

FG series (Carbon Tool Steel)

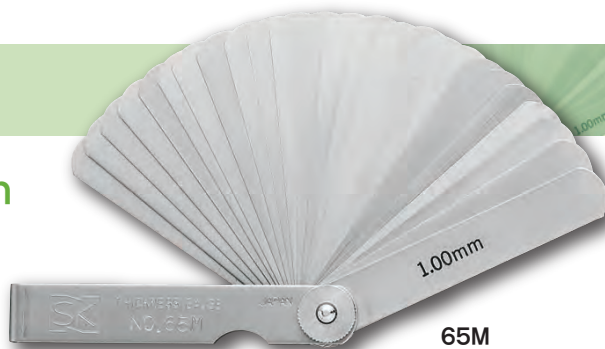
Model No.	Size	Leaf Width (mm)	Accuracy (mm)	Case size (mm)	Weight	
FG-03-1	0.03 × 1m	12.7	±0.005	77×77×22	40g	
FG-04-1	0.04 × 1m					
FG-05-1	0.05 × 1m					
FG-06-1	0.06 × 1m					
FG-07-1	0.07 × 1m					
FG-08-1	0.08 × 1m					
FG-09-1	0.09 × 1m					
FG-10-1	0.10 × 1m					
FG-11-1	0.11 × 1m					±0.01
FG-12-1	0.12 × 1m					
FG-13-1	0.13 × 1m					
FG-14-1	0.14 × 1m					
FG-15-1	0.15 × 1m					
FG-20-1	0.20 × 1m					
FG-25-1	0.25 × 1m					
FG-30-1	0.30 × 1m					
FG-35-1	0.35 × 1m					
FG-40-1	0.40 × 1m		±0.012	115×115×22	60g	
FG-45-1	0.45 × 1m				120g	
FG-50-1	0.50 × 1m		±0.02	-	140g	
FG-60-1	0.60 × 1m	60g				
FG-70-1	0.70 × 1m	80g				
FG-80-1	0.80 × 1m	90g				
FG-90-1	0.90 × 1m	100g				
FG-00-1	1.00 × 1m	110g				

THICKNESS GAUGE

Use for precise spacing inspection by inserting into the gap between two flat surfaces

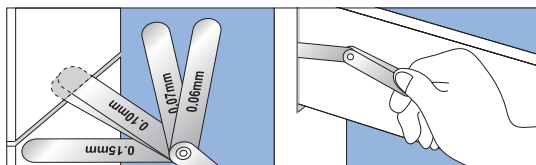
Indispensable instrument for measuring gap between piston and cylinder of automotive engine

● Leaf width 12.7mm



65M

MATERIAL Carbon tool steel



※Leaves can be combined for a wide range of measurements

ACCURACY

Leaf size (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

Size List

Model No.	Leaf Length (mm)	Pieces/ Set	Nominal Size (mm)	Weight
172MA	75	9	0.30 0.04 0.05 0.06 0.07 0.08 0.10 0.15 0.20	30g
172MB	100			30g
172MC	150			50g
172MD	230			70g
172ME	300			90g
100MR	100	10	0.03 0.04 0.05 0.08 0.10 0.15 0.20 0.25 0.30 0.40	40g
150MR	150			60g
100MK	100	10	0.01 0.02 0.03 0.04 0.05 0.06 0.07 0.08 0.09 0.10	30g
150MK	150			40g
60M	75	19	0.03 0.04 0.05 0.06 0.07 0.08 0.09 0.10 0.15 0.20	60g
100MY	100			80g
150MY	150			120g
65M	75	25	0.03 0.04 0.05 0.06 0.07 0.08 0.09 0.10 0.11 0.12	80g
100MZ	100			100g
150MZ	150			150g
72M	75			70g
100MT	100			100g
150MT	150	12	2.00 3.00	140g
100ML	100			80g
150ML	150	19	0.01 0.02 0.03 0.04 0.05 0.06 0.07 0.08 0.09 0.10	120g
80M	75			60g
100MX	100	13	0.03 0.04 0.05 0.06 0.07 0.08 0.10 0.15 0.20 0.30	90g
150MX	150			140g
100MH	100	10	0.10 0.20 0.30 0.40 0.50 0.60 0.70 0.80 0.90 1.00	80g
150MH	150			110g



THICKNESS GAUGES Leaf



S100-05



S150-10

● Leaf width : 12.7mm

MATERIAL Carbon tool steel

Leaf Length: 100mm

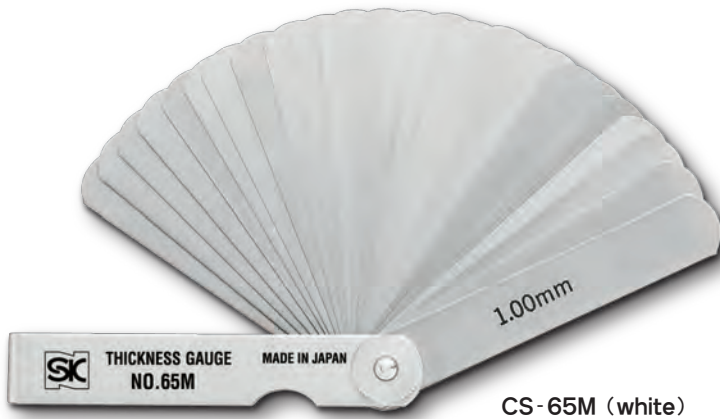
Model No.	Thickness (mm)
S100-001	0.01
S100-002	0.02
S100-003	0.03
S100-004	0.04
S100-005	0.05
S100-006	0.06
S100-007	0.07
S100-008	0.08
S100-009	0.09
S100-01	0.10
S100-02	0.20
S100-03	0.30
S100-04	0.40
S100-05	0.50
S100-06	0.60
S100-07	0.70
S100-08	0.80
S100-09	0.90
S100-10	1.00

Leaf Length: 150mm

Model No.	Thickness (mm)
S150-001	0.01
S150-002	0.02
S150-003	0.03
S150-004	0.04
S150-005	0.05
S150-006	0.06
S150-007	0.07
S150-008	0.08
S150-009	0.09
S150-01	0.10
S150-02	0.20
S150-03	0.30
S150-04	0.40
S150-05	0.50
S150-06	0.60
S150-07	0.70
S150-08	0.80
S150-09	0.90
S150-10	1.00

THICKNESS GAUGE with COLOR SLEEVES

Please choose from white, black and green.



CS-65M (white)



CS-65M (black)



CS-65M (green)

Use for precise spacing inspection by inserting into the gap between two flat surfaces

- Indispensable for measuring the gap between piston and cylinder of automotive engine
- Leaf width 12.7mm

MATERIAL Carbon tool steel

ACCURACY

Leaf size (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

Size List

Model No.	Leaf Length (mm)	Pieces/ Set	Nominal Size (mm)	Weight
CS-172MA	75	9	0.30 0.04 0.05 0.06 0.07 0.08 0.10 0.15 0.20	30g
CS-172MB	100			30g
CS-172MC	150			50g
CS-172MD	230			70g
CS-172ME	300			90g
CS-100MR	100	10	0.03 0.04 0.05 0.08 0.10 0.15 0.20 0.25 0.30 0.40	40g
CS-150MR	150			60g
CS-100MK	100	10	0.01 0.02 0.03 0.04 0.05 0.06 0.07 0.08 0.09 0.10	30g
CS-150MK	150			40g
CS-60M	75	19	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	60g
CS-100MY	100			80g
CS-150MY	150			120g
CS-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
CS-100MZ	100			100g
CS-150MZ	150			150g
CS-72M	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	70g
CS-100MT	100			100g
CS-150MT	150			140g
CS-100ML	100	19	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
CS-150ML	150			120g
CS-80M	75	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	60g
CS-100MX	100			90g
CS-150MX	150			140g
CS-100MH	100	10	0.10 0.20 0.30 0.40 0.50 0.60 0.70 0.80 0.90 1.00	80g
CS-150MH	150			110g

Other color variation are also available,

Please contact us with request

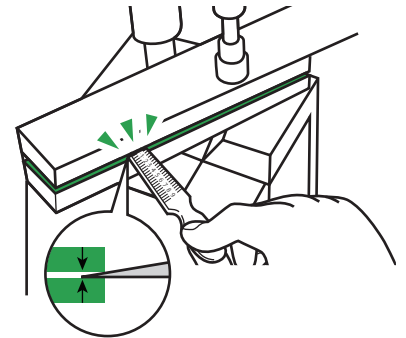


TAPER GAUGES

Use the thickness of taper to measure the gap width



Graduation shows the gap width



- Packed in plastic carrying case
- Accuracy ± 0.04mm
- Satin finish

MATERIAL Machine grade carbon steel (S55C), not hardened

Size List

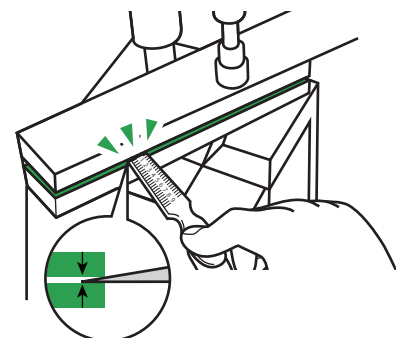
Model No.	Standard	Measuring Range (mm)	Accuracy (mm)	Graduation (mm)	Taper Angle	Full Length(H)×(W) (mm)	Weight
TPG-270A	270A	0.3 – 4	±0.04	0.05	1° 54' 33"	160×11	95g
TPG-270B	270B	0.4 – 6	±0.04	0.05	2° 51' 45"	160×11	95g

TAPER GAUGES

Use the thickness of taper to measure the gap width, also can use as height adjustment jig



Graduation shows the gap width



- Narrow width type
- Satin finish
- Packed in plastic carrying case
- Ball chain attached

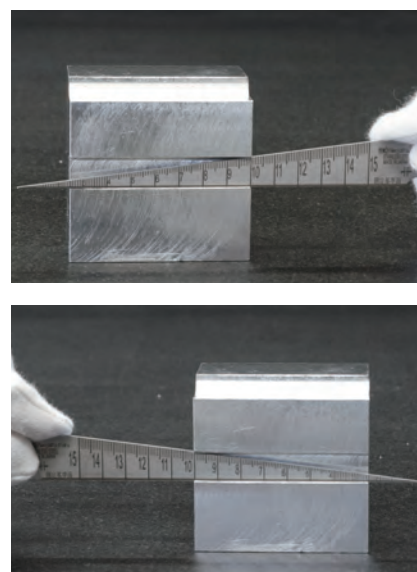
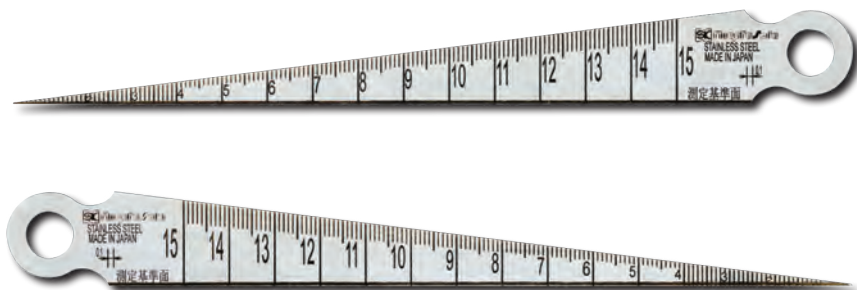
MATERIAL Machine grade carbon steel (S55C), not hardened

Size List

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

RIGHT ANGLE TAPER GAUGE

Taper gauge specialized for inner width measurements
One side of gauge rests secure along with the workpiece for a stable measurement



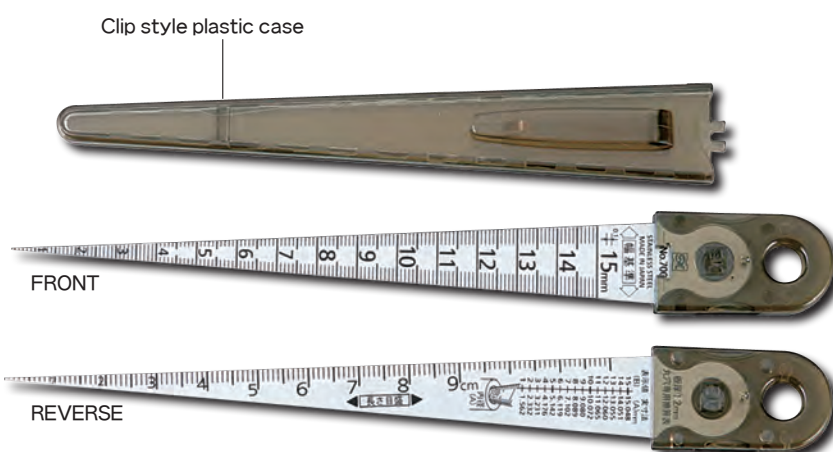
Scale is on the side of gauge to allow reading when top surface is not visible during measurement

MATERIAL Hardened stainless steel (SUS420J2)

Model No.	Measuring Range (mm)	Accuracy (mm)	Graduation (mm)	Taper Angle	Product Dimensions Full Length x Width (mm)	Weight
TPG-700T	1 - 15	±0.05	0.1	7° 9' 10"	148.5	10g

TAPER GAUGES

Use the width of taper to measure the gap width



Perfect for carrying in shirt pocket

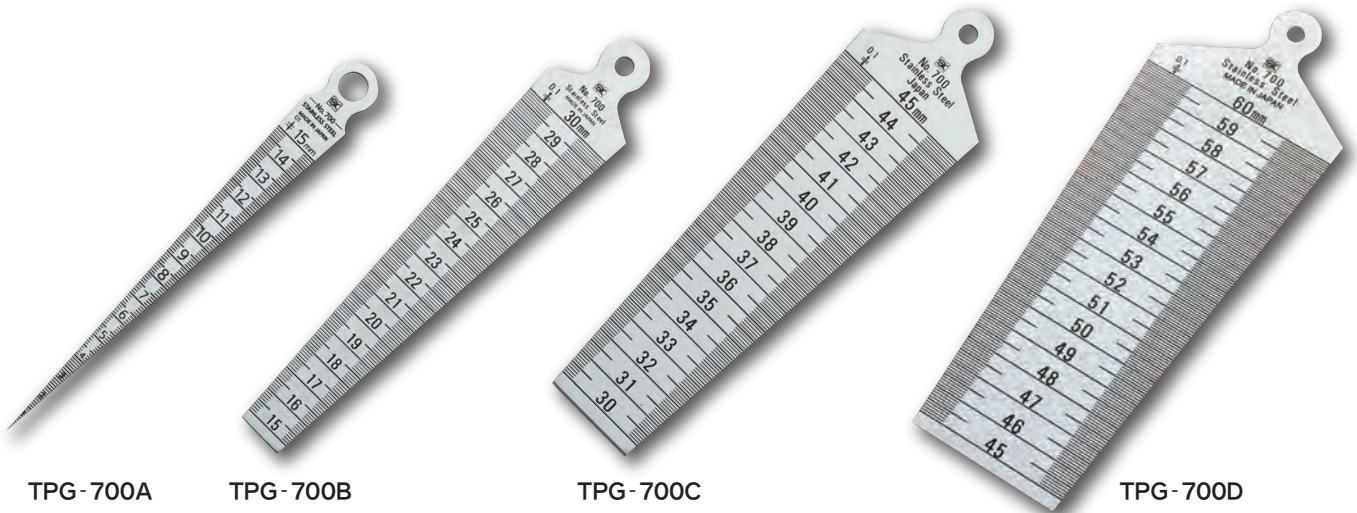
- Hardness : HV480
- Satin finish
- Reverse side - scale graduated, hole diameter conversion table
- Pocket clip style carrying case
- Scale : Front side - Width scale, Reverse side - Length scale

MATERIAL Hardened stainless steel (SUS420J2)

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

TAPER GAUGES

Measure openings, slot width, hole size etc.



TPG-700A

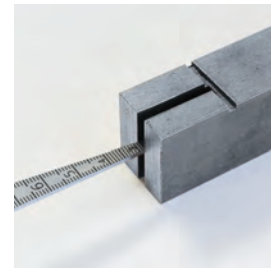
TPG-700B

TPG-700C

TPG-700D

- Hardness : HV480
- Satin finish

MATERIAL Hardened stainless steel (SUS420J2)



Measurement of gap width

Size List

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

TAPER GAUGES

Convenient set, taper gauge 700A with 130mm ruler



Model No.	Standard	Weight
TPG-700S	700S	40g

- Folds safely with pocket clip, easy to carry.

MATERIAL Hardened stainless steel (SUS420J2)

	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"
Ruler	0 - 130	±0.13	0.5	155	-

TAPER GAUGES

Use the width of taper to check the inside diameter of tubing or hole size



Measurement of slot width and hole size etc.

- Use the width of taper to check the inside diameter of tubing or hole size
- Number of leaves: 4 pieces (1 – 8mm, 8 – 15mm, 15 – 22mm, 22 – 29mm)

MATERIAL Hardened stainless steel (SUS420J2)

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

SLIDE TAPER GAUGES

Clip-type slide case for safe and convenient carrying

Clip-style slide case



Perfect for carrying in shirt pocket

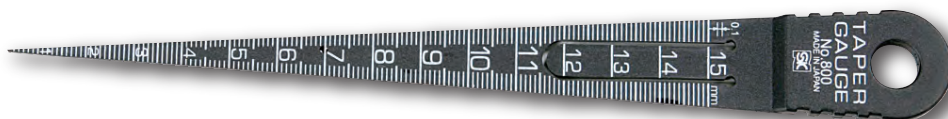
- Hardness : HV480
- Satin finish
- Gauge tip is rounded for safety
- Slide into case for storage

MATERIAL Hardened stainless steel (SUS420J2)

Model No.	Standard	Measuring Range (mm)	Accuracy (mm)	Graduation (mm)	Taper Angle	Weight
TPG-700SL	700SL	1 - 9	±0.05	0.1	7° 9' 10"	20g

PLASTIC TAPER GAUGES

Scratch resistant



can put in a pocket

- Measure openings, slot width, hole size, etc.
- Clip design

MATERIAL Polycarbonate

Model No.	Standard	Measuring Range (mm)	Accuracy (mm)	Graduation (mm)	Weight
TPG-800	800	1 - 15	±0.2	0.1	5g

CIRCULAR TAPER GAUGES

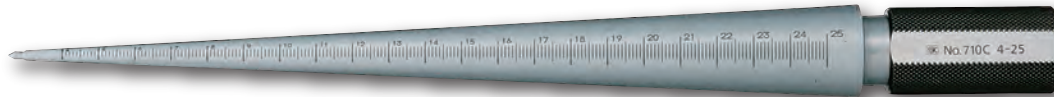
Measure hole size or gap width



TPG-710A



TPG-710B



TPG-710C

- Cylindrical type
- Silver finish

MATERIAL TPG-710A : SK Steel, TPG-710B/710C : Carbon steel for machine structural use
Grip : Free cutting steel

Size List

Model No.	Standard	Measuring Range (mm)	Accuracy (mm)	Graduation (mm)	Taper Angle	Full Length (mm)	Weight
TPG-710A	710A	1 – 6	±0.05	0.1	5° 44'	93	20g
TPG-710B	710B	4 – 15	±0.05	0.1	5° 44'	175	140g
TPG-710C	710C	4 – 25	±0.05	0.1	5° 44'	290	550g

CIRCULAR TAPER GAUGES

Comes with a protective cap for the gauge tip



TPG-715A

- Silver finish

MATERIAL Gauge : SK Steel (Non-Hardened)
Case : Brass

Size List

Model No.	Standard	Measuring Range (mm)	Accuracy (mm)	Graduation (mm)	Taper Angle	Full Length (mm)	Weight
TPG-715A	715A	0.1 – 3	±0.05	0.1	5° 43' 29"	118.5	33g
TPG-715B	715B	1 – 6	±0.05	0.1	5° 43' 29"	168	80g

CIRCULAR TAPER GAUGE WITH GREEN COLOR GRIP

New line - up with Green Aluminum Grip



CGTPG-710A



CGTPG-710B



CGTPG-710C

Measure hole size or gap width

●Sliver finish

MATERIAL Gauge : SK steel (CCTPG-710A), Carbon steel for machine structure use (CCTPG-710B & CCTPG-710C)
Grip : Anodized aluminum

Size List

Model No.	Standard	Measuring Range (mm)	Accuracy (mm)	Graduation (mm)	Taper Angle	Full Length (mm)	Weight
CGTPG-710A	710A	1 - 6	±0.05	0.1	5° 44'	93	20g
CGTPG-710B	710B	4 - 15	±0.05	0.1	5° 44'	175	140g
CGTPG-710C	710C	4 - 25	±0.05	0.1	5° 44'	290	550g

CIRCULAR TAPER GAUGE WITH GREEN COLOR CASE

New line - up. Circular taper gauge with green case.



CCTPG-715A

Use for measuring hole size or gap width

●Comes with a protective cap for the gauge tip

MATERIAL Gauge : SK steel
Case : Anodized aluminum

Size List

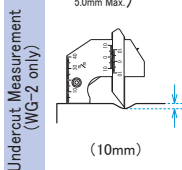
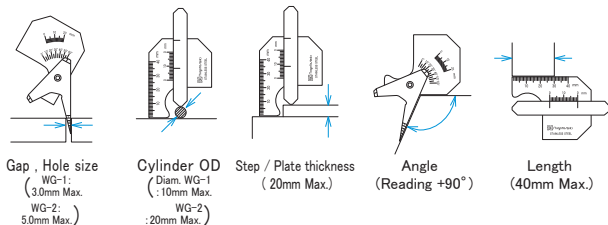
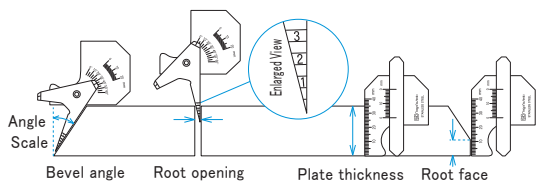
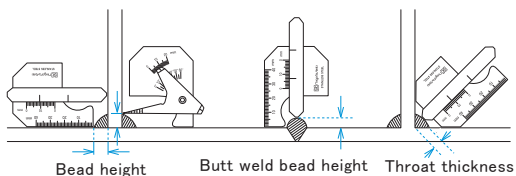
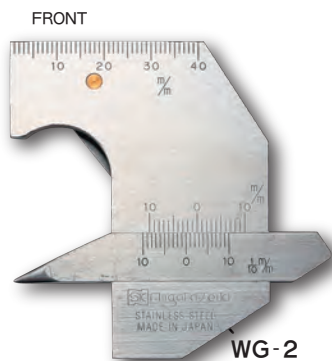
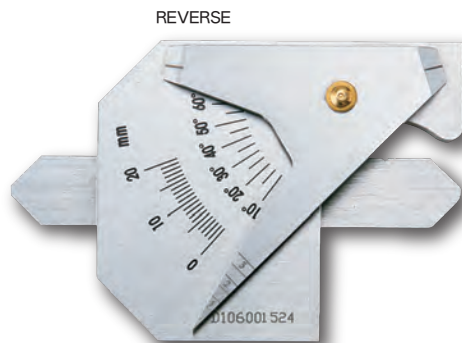
Model No.	Standard	Measuring Range (mm)	Accuracy (mm)	Graduation (mm)	Taper Angle	Full Length (mm)	Weight
CCTPG-715A	715A	0.1 - 3	±0.05	0.1	5° 43' 29"	118.5	33g
CCTPG-715B	715B	1 - 6	±0.05	0.1	5° 43' 29"	168	80g

WELDING GAUGE

Efficient for welding and quality control.
Tough and portable with vinyl case.

For measuring fillet weld, bead weld, etc.

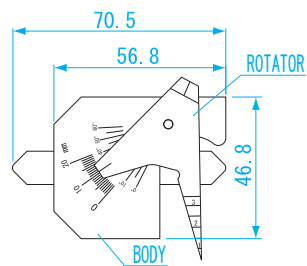
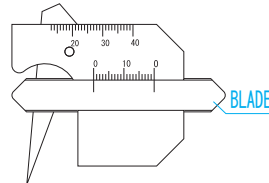
MATERIAL Stainless steel (SUS410)



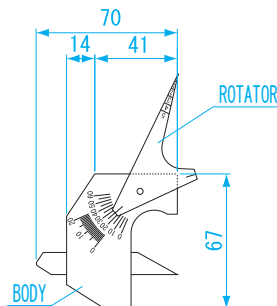
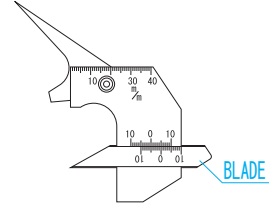
[DIMENSIONS]

Units: mm

WG-1



WG-2

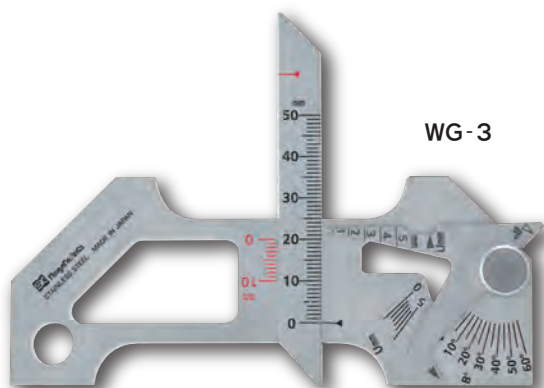


Size List

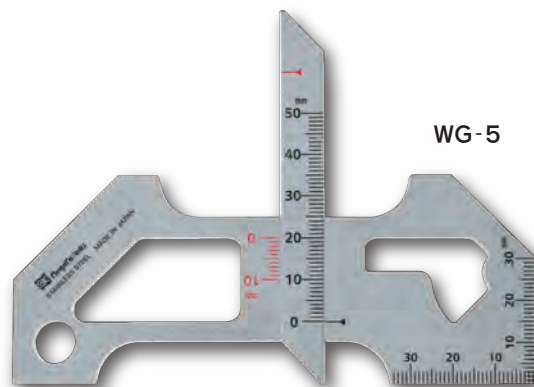
Model No.	Measurement Accuracy for Throat Thickness of Fillet Weld	Bevel Angle Accuracy	Accuracy	Weight
WG-1 (M)	±0.4mm	±0.7°	±0.4mm	79g
WG-2 (L)	±0.2mm	±0.7°	±0.4mm	91g

WELDING GAUGE

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

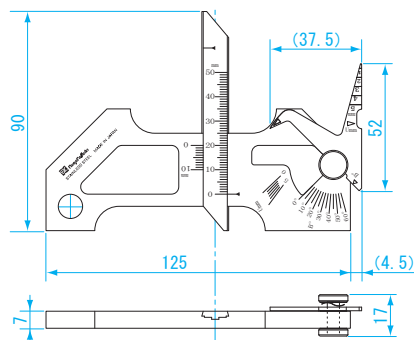


WG-3

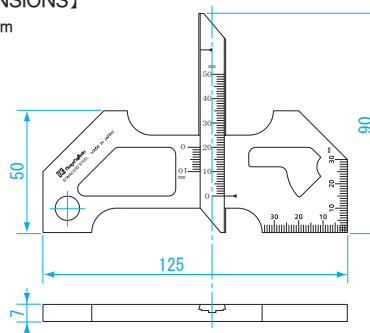


WG-5

[DIMENSIONS] Units: mm



[DIMENSIONS] Units: mm



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

- Silver finish
- 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
- Translucent case for easy confirmation of contents

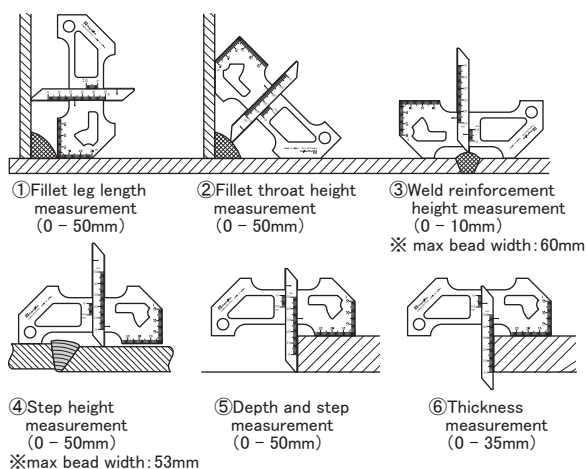
MATERIAL Stainless steel (SUS410)

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

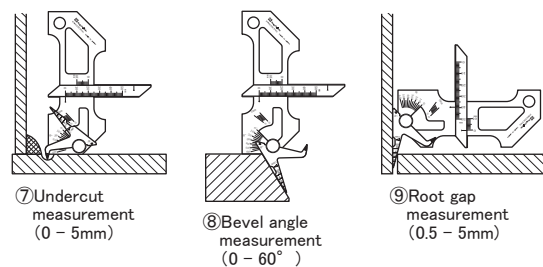
- Silver finish
- Speed up and streamline the quality control of welding
- Measures weld reinforcement height up to 50mm
- Wide base for stability during measurements silver finish is ideal for reduced reflection when photographing measurements
- Translucent case for easy confirmation of contents

MATERIAL Stainless steel (SUS410)

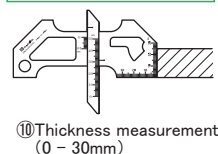
WG-3, WG-5 capabilities



WG-3 only



WG-5 only



Size List

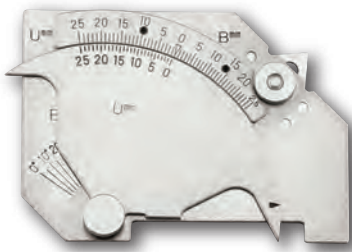
Model No.	Weight
WG-3	198g
WG-5	187g

WELDING GAUGE

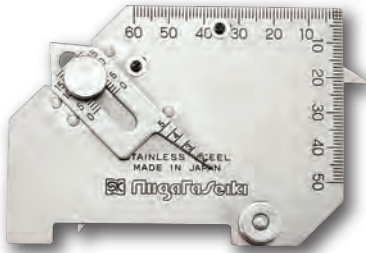
For wide of variety welding measurements

WGU-7M

FRONT

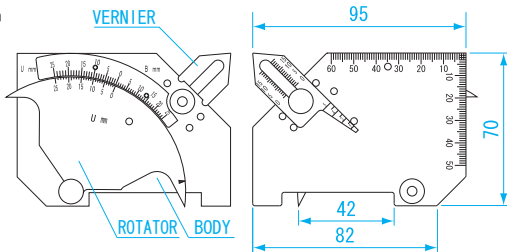


REVERSE



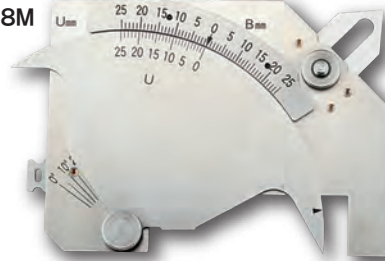
[DIMENSIONS]

Units: mm

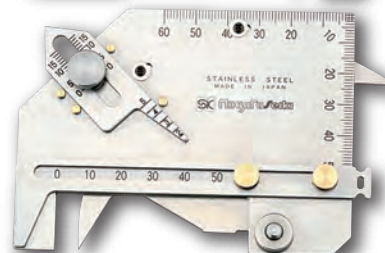


WGU-8M

FRONT

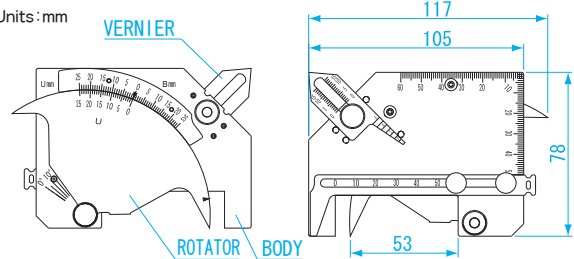


REVERSE



[DIMENSIONS]

Units: mm



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

- Long usage life, rust and corrosion resistant and extremely durable as well as being light weight
- Very convenient to the welding process involving steel frame assembly such as general welding, ship building, bridge construction, etc.
- Easy reading scale

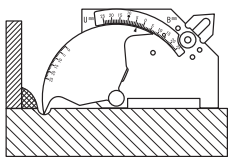
MATERIAL Stainless steel (SUS410)

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

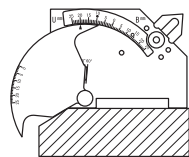
- Additional function for measurement of external diameter of circular workpiece, swelling of pressure welding of reinforcing iron and width of bead weld
- Bead stride width: 53mm
- Bevel angle range: 0-70°
- Easy reading scale

MATERIAL Stainless steel (SUS420J2)

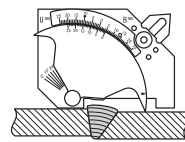
WGU-7M, WGU-8M, WGU-9M common functions



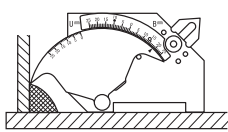
① Undercut depth (0-25mm)



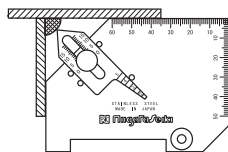
② Bevel angle (WGU-7M: 0-60°) (WGU-8M-WGU-9M: 0-70°)



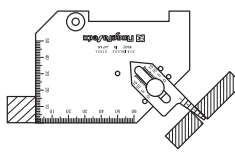
③ Bead striding width (WGU-7M: 42mm) (WGU-8M-WGU-9M: 53mm) Step difference (0-25mm)



④ Height of fillet & bead weld (0-25mm)



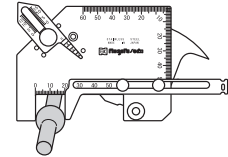
⑤ Throat thickness of fillet weld (0-15mm)



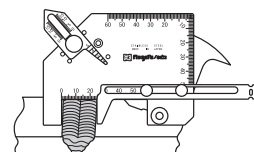
⑥ Root opening (2-5mm)

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 50mm



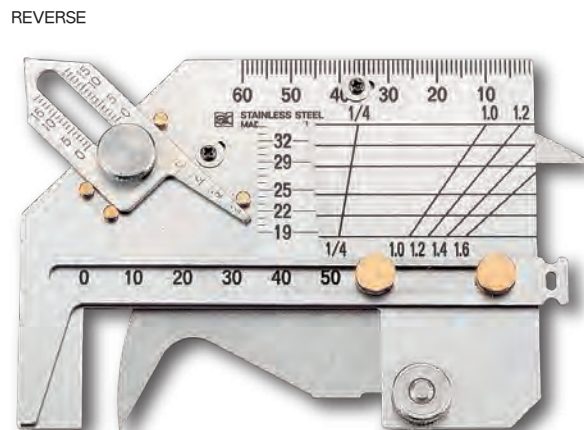
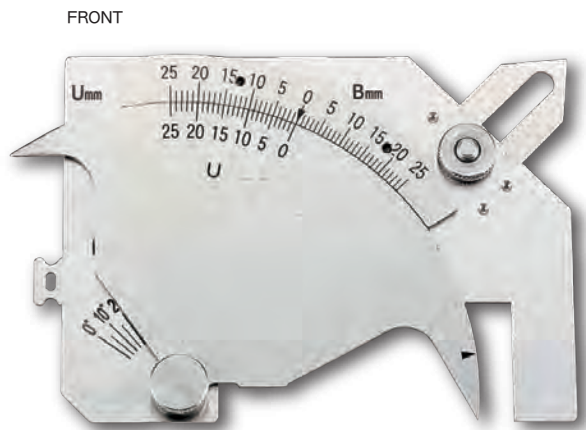
⑨ Width of bead weld (0-53mm)

Size List

Model No.	Weight
WGU-7M	150g
WGU-8M	190g

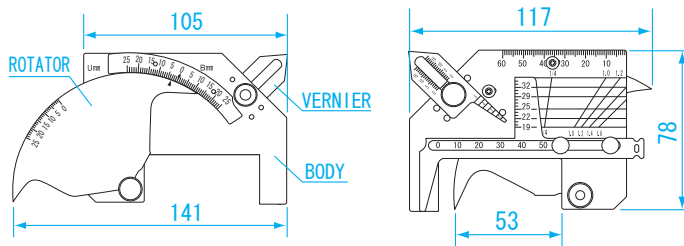
WELDING GAUGE

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
- 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

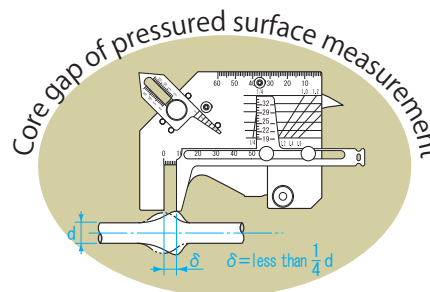
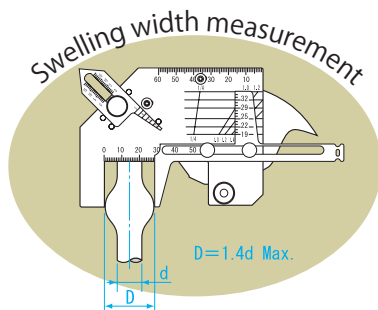
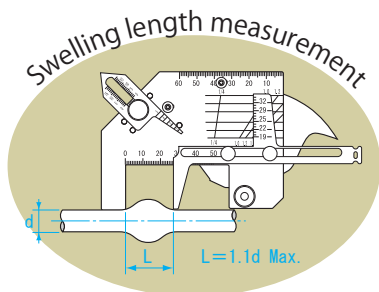
[DIMENSIONS]
Units: mm



MATERIAL Stainless steel (SUS420J2)

Additional functions

Provides quick way to measure the diameter of welded rebar to insure proper dimensions of weld seam. Scale marked for material diameter (ϕ 19, 20, 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.

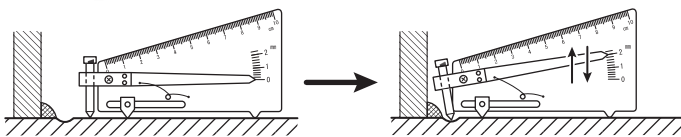
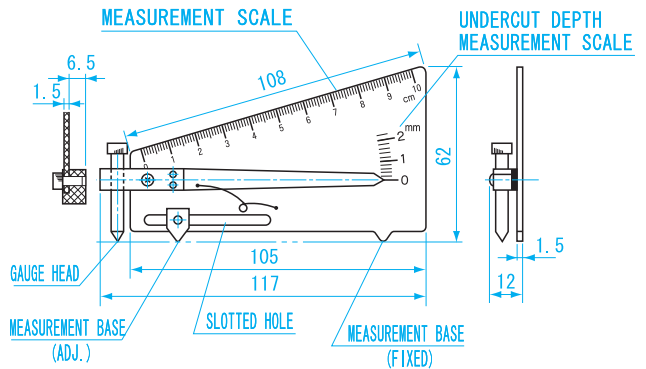
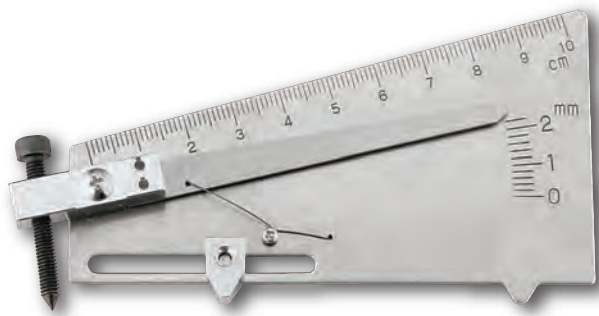


Model No.	Rebar diameter (mm)	Expansion	Weight
WGU-9M	ϕ 19 – 35	1/4, 1.0 – 1.6	190g

WELDING GAUGE

For undercut depth and length measurement
 (Scale range: 0 – 2mm)

[DIMENSIONS] Units: mm



- Easy to measure depth and length of undercut
- Capable of 0 adjustment with screw type of gauge head
- Exclusive use for undercut measurement (minimum reading : 0,2mm)

MATERIAL Stainless steel (SUS410)

Zero Adjustment

- ① Press this gauge to the measuring sample.
- ② Adjust Zero point adjustment screw to indicate 0, insuring that all three points contact surface.

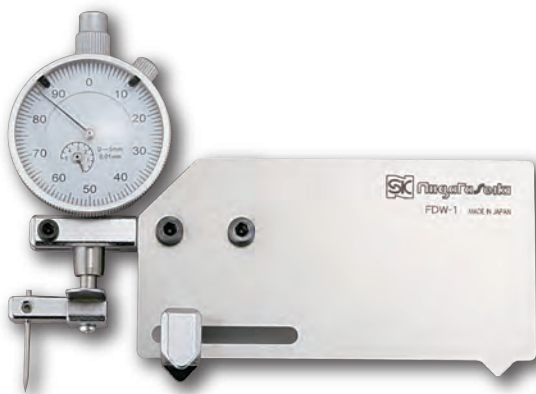
Measurement

After 0 adjustment, put the tool on undercut and the spring will move indicator arm to show depth of undercut on graduation.

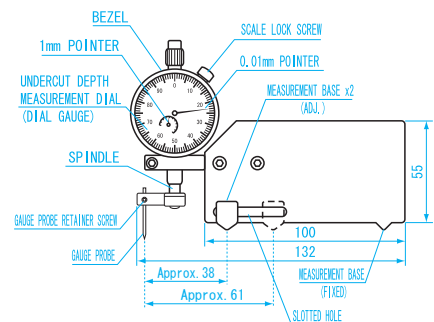
Model No.	Weight
WGU-2S	100g

WELDING GAUGE

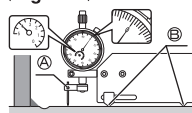
Easy and accurate to measure depth and length of undercut



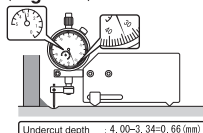
[DIMENSIONS] Units: mm



(Figure 1)



(Figure 2)



- Exclusive use for undercut measurement
- Dial gauge type performs more precise measurement
- Three point support for stable measurement
- Measurement range: 0 – 4.00mm
- Minimum reading : 0.01mm
- Accuracy : ± 0.04 mm
- Width of measurement base : ≈ 23 mm

MATERIAL Stainless steel (SUS420J2)

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.

Model No.	Weight
FDW-1	280g

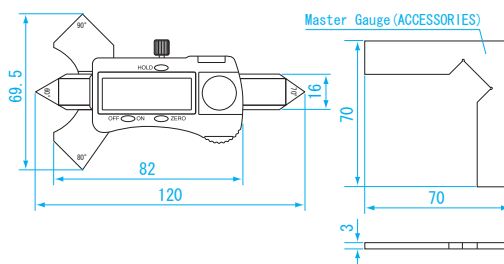
DIGITAL WELDING GAUGE

Provided with zero setting master gauge.

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



[DIMENSIONS]
Units: mm

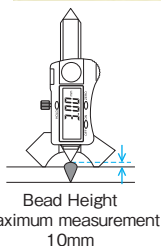


MATERIAL Stainless steel

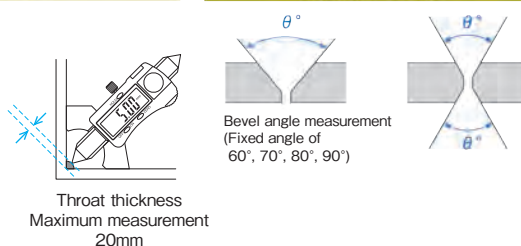
For measuring the size of fillet weld and bead weld

- Easy to read with digital display
- Bevel angle: 60° 70° 80° 90°
- Master gauge included
- Hold function
- Throat thickness : 20mm
- Bead height : 10mm
- Operating temperature : 0 – 40°C
- SR44 or LR44, one included for testing

Weld reinforcement height measurement



Measurement before welding process

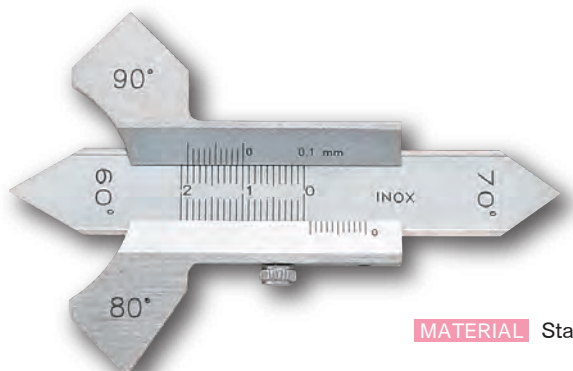


Model No.	Resolution (mm)	Accuracy* (mm)	Weight
DWG-20G	0.01	±0.03	130g

* Quantization Error (±1 digit) not included

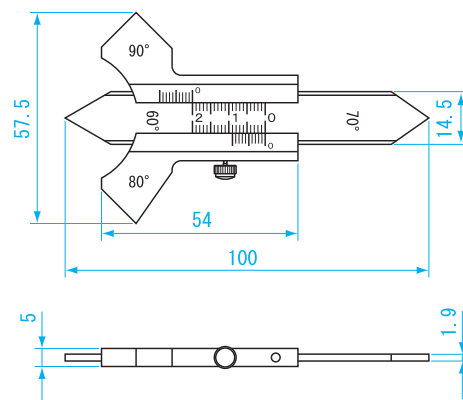
WELDING GAUGE

Use for measuring the size of fillet weld and bead weld



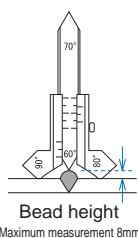
MATERIAL Stainless steel

[DIMENSIONS] Units: mm

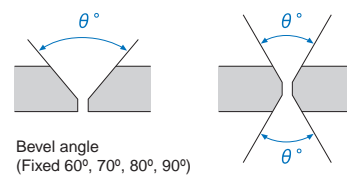
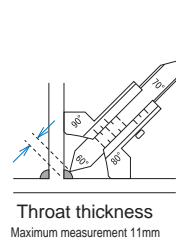


- Bevel angle: 60° 70° 80° 90°
- Fillet weld : 11mm
- Bead weld : 8mm
- Accuracy : ± 0.2mm
- Minimum reading : 0.1mm

Weld Bead Measurement



Measurement Before Welding



Model No.	Weight
AWG-10	80g

ANGLE LIMIT GAUGE

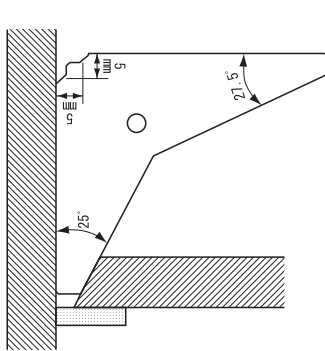
For measuring bevel angle of T-joint (interior angle), bevel angle of facing joint (interior angle), leg length (height), and throat thickness of fillet weld



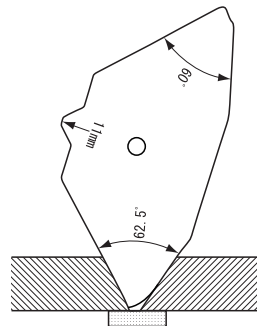
WAL2542

WAL4562

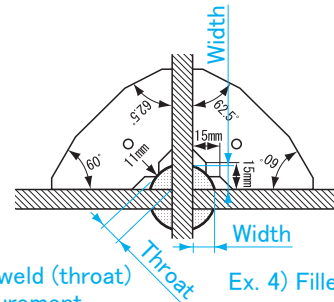
<Example use>



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

- Indication of size limit for easy judgement (angle step by 2.5°, throat thickness step by 1mm)
- Set of 4 pieces
- Provided with plastic case and ball chain

MATERIAL SUS304

SPECIFICATIONS

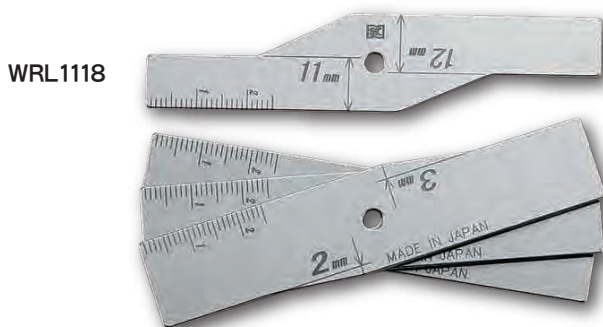
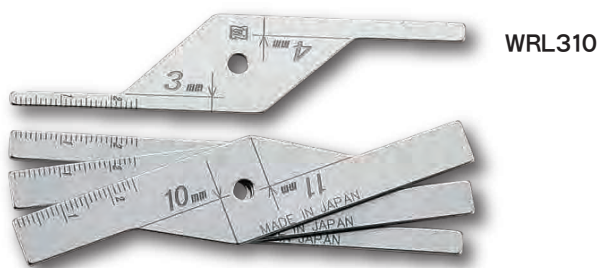
Model No.		WAL2542				WAL4562			
Blank No.		1	2	3	4	1	2	3	4
Outline Dimension (mm)	Overall width	92				92			
	Overall height	46	45	44	43	43	44	45	46
	Plate thickness	1.5				1.5			
Material/ Finish		SUS304 / barrel semi-gloss finish				SUS304 / barrel semi-gloss finish			
Measurement Value Indication	Angle degree (Both side)	25°	30°	35°	40°	45°	50°	55°	60°
	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±0.1mm/ Angle ±1°				Fillet weld·Reinforcement±0.1mm / Angle ±1°			

Size List

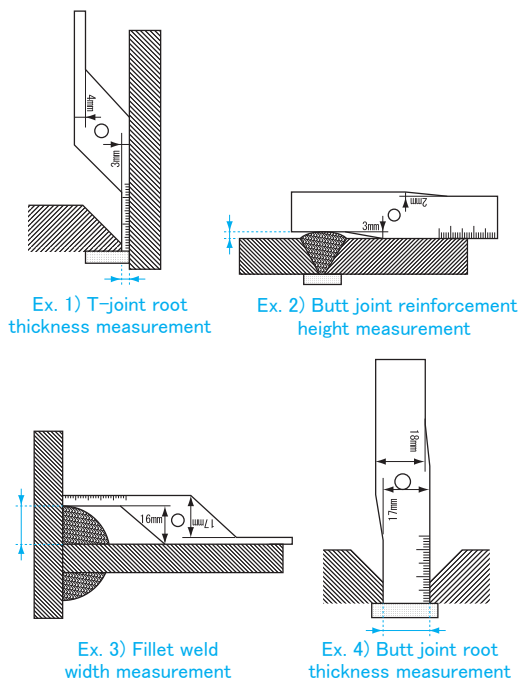
Model No.	Weight
WAL2542	100g
WAL4562	120g

ROOT LIMIT GAUGE

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



<Example use>



- Measure with 1mm interval
- Measurement range chosen so most frequently used dimensions are combined
- The measurement result of root thickness will be indicated on the scale
- Provided with plastic case & ball chain

MATERIAL SUS304

Size List

Model No.	Weight
WRL310	60g
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	20				20			
Accuracy		±0.1mm				±0.1mm			

WELDING ELECTRODE GAUGE

Use for measuring height of welding electrode

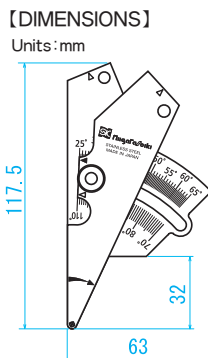


MATERIAL SUS420J2

Custom Size with Fast Delivery!
Please contact us with request

ANGLE GAUGE

New Product! Specialized for angle measurement of grooves with minimum reading 0.5°



- Butt angle measurement and gap angle measurement.
- 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 scale for easy reading.
- T-joint gap angle can be measured avoiding weld buildup.
- Non-reflective satin finish for easy to read scale.
- Solid and convenient carrying. (Provided with plastic carrying case).
- Bevel angle : 25–65° (Minimum graduation: 0.5°).
- Angle of cross weld part : 70–110°.

MATERIAL Stainless steel (SUS410)

<Example use>

1) Butt joint gap angle measurement
(Max. Inside Angle 65° : Plate Thickness : 30mm)

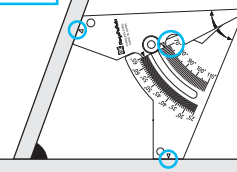
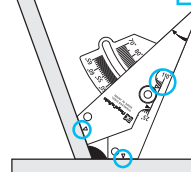
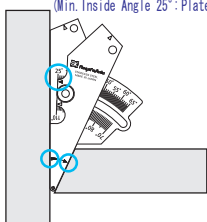
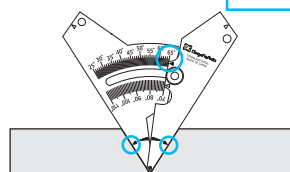
How to Read the value for examples 1) & 2)
Angle between ◀ marks indicated at ▶

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

3) Angle of cross weld part
(Max. Angle 110°)

How to Read the value for examples 3) & 4)
Angle between ◀ marks indicated at ▶

4) Angle of cross weld part
(Min. Angle 70°)



Model No.	Accuracy of angle	Weight
WGA-65	± 0.5°	73.5g

ANGLE PROTRACTOR

New Product! Specialized for angle measurement. 3 measurement points enable multiple angle measurements

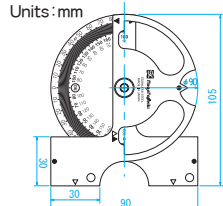


Measuring angles for sheet metal bending, welding flanges and butt joints, openings and bevels, scissors plates, etc.

- 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 easy to read scale
- Solid and convenient carrying (provided with plastic case)
- 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°

MATERIAL Stainless steel (SUS410)

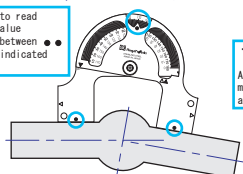
[DIMENSIONS]
Units: mm



<Example use>

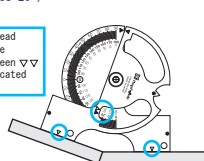
Example 1) Angle measurement of bent butt weld (0–90°: Example indicates 10°)

How to read the value
Angle between ● marks indicated at ●



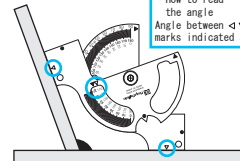
Example 2) Angle measurement of bent Flange and metal plate (0–180°: Example indicates 20°)

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



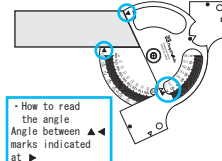
Example 3) Angle of cross weld part (0–180°: Example indicates 110°)

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 ▶



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

Measurement function and List

Process	No.	Categories	Figures	Applicable Model																
				Taper Gauge	WG-1	WG-2	WG-3	WG-5	WGU-7M	WGU-8M	WGU-9M	WGU-2S	FDW-1	WRL310	WRL1118	WAL2542	WAL4562	AWG-10	DWG-20G	WGA-65
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	Lag 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		—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	✓	

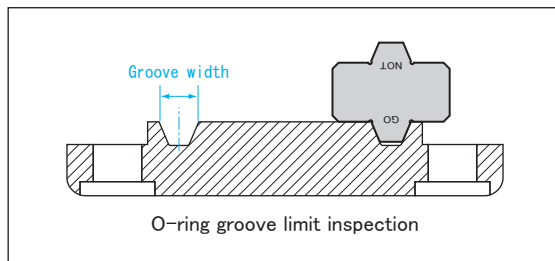
※ Measures dimension of weld, relative amount must be calculated.

SPECIFICATIONS

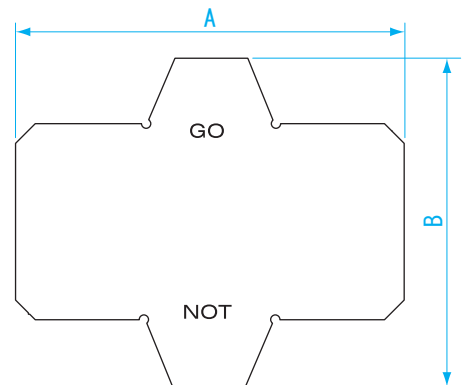
Model No.	Material	Scale	Height of Bead Weld	Height of Fillet Weld	Throat thickness of fillet weld	Undercut depth	Root Opening	Width of Bead Weld	Welding Bar Diameter	Length Accuracy	Beveling(groove) angle	Bending angle and angle of butt weld joint	Stud and beam angle after welding	Angle Accuracy
WG-1	Stainless steel SUS410 Plate thickness: 4.3mm	40mm	10mm	20mm	10mm	—	0.5—3mm	—	10mm	±0.4mm	0—60° Minimum reading value:5°	—	—	±0.7°
WG-2	Stainless steel (SUS410) Plate thickness: 4.9mm			10mm Minimum reading 0.1		10mm	0.5—5mm		20mm	±0.2mm (gap measurement ±0.4mm)				
WG-3	Stainless steel SUS410 Plate thickness 7mm Satin finish	30·35mm	10mm	50mm	50mm	10mm	0.5—5mm	—	10mm	±0.4mm	0—60° Minimum reading value:5°	—	—	±0.7°
WG-5	—					—	—							
WGU-7M	Stainless steel (SUS410) Plate thickness: 1.5mm	50·60mm	25mm	25mm	15mm	25mm	2—5mm	0—53mm	30mm	±0.4mm (Throat thickness measurement ±0.7mm manufacturing accuracy)	0—70° Minimum reading value:5°	—	—	±2°
WGU-8M	Stainless steel (SUS420J2) Plate thickness: 1.5mm								50mm	±0.1mm				
WGU-9M	Stainless steel (SUS420J2) Plate thickness: 1.5mm	60mm	—	—	—	—	—	—	50mm	±0.1mm	—	—	—	—
WGU-2S	Stainless steel (SUS410) Plate thickness: 1.5mm	100mm	—	—	—	2mm	—	—	—	±0.1mm	—	—	—	—
FDW-1	Stainless steel (SUS420J2) Plate thickness: 1.5mm	—	—	—	—	4mm	—	—	—	±0.04mm	—	—	—	—
AWG-10	Stainless steel Thickness: Body: 5mm, Blade: 1.9mm	—	8mm	—	11mm	—	—	—	—	±0.2mm	60·70·80·90° fixed	—	—	—
DWG-20	Stainless steel Thickness: Body: 5.2mm Blade: 2.7mm Display: 13.5mm	—	10mm	—	20mm	—	—	—	—	±0.05mm				
WRL310	Stainless steel (SUS304) Plate thickness: 2mm	20mm	10—17mm (1mm step)	10—17mm fixed (1mm step)	—	—	3—10mm fixed (1mm step)	—	—	±0.1mm	—	—	—	—
WRL1118	Stainless steel (SUS304) Plate thickness: 2mm		2—9mm (1mm step)	2—9mm fixed (1mm step)			11—18mm fixed (1mm step)							
WAL2542	Stainless steel (SUS304) Plate thickness: 1.5mm	—	—	5·7·8·10mm fixed	4—7mm fixed (1mm step)	—	—	—	—	±0.1mm	25·27.5·30·32.5 35·37.5·40·42.5° fixed	—	—	±1°
WAL4562	Stainless steel (SUS304) Plate thickness: 1.5mm			11·13·14·15mm fixed	8—11mm fixed (1mm step)						45·47.5·50·52.5 55·57.5·60·62.5° fixed			
WGA-65	Stainless steel SUS410 Plate thickness 1.5mm Satin finish	—	—	—	—	—	—	—	—	—	25—65° Minimum reading value:0.5°	—	70—110°	±0.5°
AP-130	—	—	—	—	—	—	—	—	—	—	30—130° Minimum reading value:1°	0—90°	0—180°	—

LIMIT GAUGE for Gasket

Limit gauge for measuring width of O-ring groove



[DIMENSIONS]



- GO/NO GO standard conforms to JPI-7S-23
- Groove width accuracy : $\pm 0.20\text{mm}$
- Groove depth accuracy : $\pm 0.41/0\text{mm}$
- Groove bottom corner radius tolerance:
 - Less than 1.5mm ... + 0.8mm
 - More than 1.5mm ... $\pm 0.8\text{mm}$
- Angle accuracy: $\pm 0.5^\circ$

MATERIAL SUS420J2 (Polished finish)

SPECIFICATIONS Units:mm

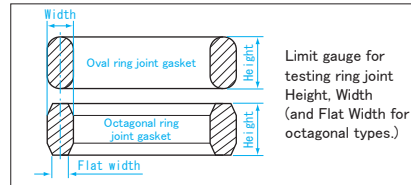
Model No.	A	B
GSW-1	40	35
GSW-2	40	35
GSW-3	60	50
GSW-4	60	50
GSW-5	80	60
GSW-6	80	60
GSW-7	80	70

Size List

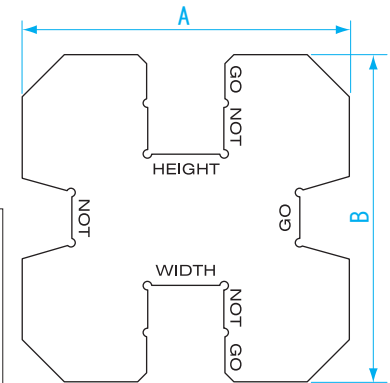
Model No.	Compatible O-Ring No.	Groove Width (mm)	Groove Depth (mm)	Groove Bottom Corner Radius	Weight
GSW-1	21,23,24,26,27,30,31,34,35,37,39,41,44,45,49,53,57,61,65,69,82,84,92,99	7.92	11.91	0.8	11g
GSW-2	28,32,46,73	9.52	13.49	1.5	11g
GSW-3	38,50,54,62,66,77,86,87	11.13	16.66	1.5	22g
GSW-4	42,47,70,74,88,89,93,94,95	12.70	19.84	1.5	22g
GSW-5	51,58,96,97,98	14.27	23.01	1.5	35g
GSW-6	63,78	15.88	26.97	1.5	35g
GSW-7	55,67,71,100	17.48	30.18	1.5	40g

GASKET LIMIT GAUGE for width and height measurement

Limit gauge for GO / NO GO testing of ring joint gaskets



[DIMENSIONS]



SPECIFICATIONS Units: mm

Model No.	A	B
GST-1	80	80
GST-2	80	80
GST-3	80	80
GST-4	120	120
GST-5	120	120
GST-6	140	140
GST-7	140	140

MATERIAL SUS420J2 (Polished finish)

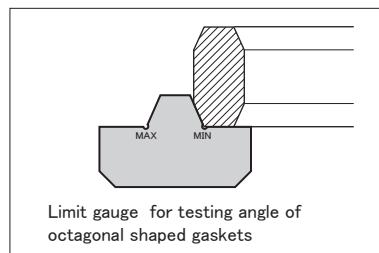
- GO/NO GO standard conforms to JPI-7S-23
- Gasket width accuracy : $\pm 0.20\text{mm}$
- Gasket height accuracy : $\pm 0.5/0\text{mm}$
- Octagonal corner radius accuracy : $\pm 0.5\text{mm}$

Size List

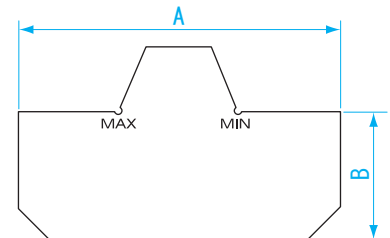
Model No.	Compatible Gasket No.	Gasket Width (mm)	Gasket Height (mm)	Octagonal Corner Radius (mm)	Weight
GST-1	21,23,24,26,27,30,31,34,35,37,39,41,44,45,49,53,57,61,65,69,82,84,92,99	11.13	15.7	1.5	53g
GST-2	28,32,46,73	12.70	17.5	1.5	53g
GST-3	38,50,54,62,66,77,86,87	15.88	20.6	1.5	110g
GST-4	42,47,70,74,88,89,93,94,95	19.05	23.9	1.5	110g
GST-5	51,58,96,97,98	22.22	26.9	1.5	110g
GST-6	63,78	25.40	31.8	2.3	139g
GST-7	55,67,71,100	28.58	35.1	2.3	139g

OCTAGONAL GASKET LIMIT GAUGE

Limit gauge for GO / NO GO testing of angle for octagonal ring joint gaskets



[DIMENSIONS]



- Conform to JPI-7S-23 standards
- Dimensional tolerance of angle: $\pm 0.5^\circ$

MATERIAL SUS420J2 (Polished finish)

Size List

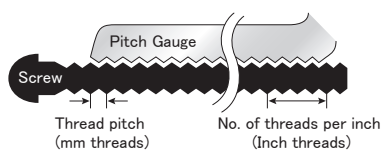
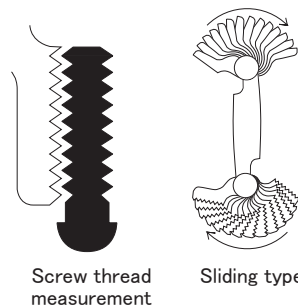
Model No.	Width A (mm)	Height B (mm)	MAX	MIN	Weight
OG-1	50	20	23° 30'	22° 30'	10g
OG-2	60	27	23° 30'	22° 30'	18g

PITCH GAUGE

Use for measuring screw pitch



W26



●Pitch is marked on leaf **MATERIAL** Machine grade carbon steel

Size List

Model No.	Indication unit	Number of leaves	Pitch size											Weight
M28	mm	28	0.25	0.3	0.35	0.4	0.45	0.5	0.55	0.6	0.65	40g		
			0.7	0.75	0.8	0.85	0.9	1	1.1	1.2	1.25		1.3	
			1.4	1.5	1.6	1.7	1.75	1.8	1.9	2	2.5			
W26	inch	26	4	4 1/2	5	6	7	8	9	10	11	12	40g	
			13	14	16	18	19	20	22	24	25	26		
			28	30	32	40	48	60						

CENTER GAUGE

Use for inspection of the angle of lathe center, angle of the tool for screw cutting, etc.



SG-60M

●Can check the angle of tool bits and tool edges

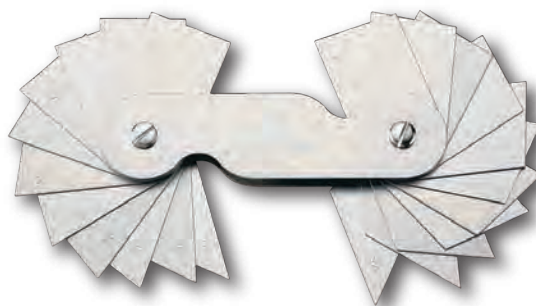
MATERIAL Machine grade carbon steel

Size List

Model No.	Angle	Graduation	Accuracy	Weight
SG-60M	60°	0 – 25mm 0.5mm step, 1mm step	±1°	10g
SG-55I	55°	0 – 1inch 1/14inch step, 1/20inch step	±1°	10g

ANGLE GAUGE

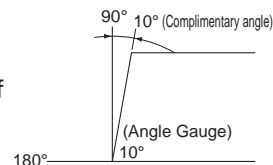
Use for inspection of internal angle



●11 leaves on each side, range of 1° – 45°

●The angle marked on each leaf is complementary angle

MATERIAL Stainless steel



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

RADIUS GAUGE

Use for checking the radius curve of dies, jigs, and wooden molds, etc.



RG-32

● Concave and convex leaves are separated

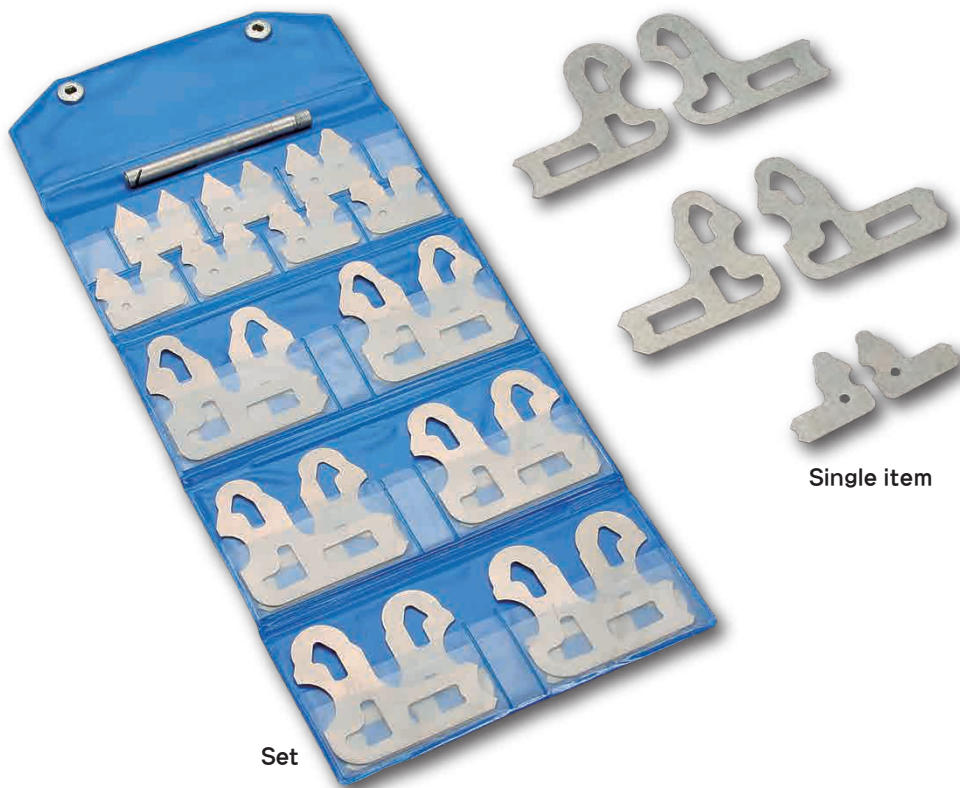
MATERIAL Machine grade carbon steel

Size List

Model No.	Number of Leaves per set	Details of Radius Dimension (mm)	Accuracy (mm)	Weight
RG-34	34	1.0 – 3.0 (0.25 step) 3.5 – 7.0 (0.5 step)	±0.1	65g
RG-32	32	7.5 – 15.0 (0.5 step)	±0.1	115g
RG-30	30	15.5 – 20.0 (0.5 step) 21.0 – 25.0 (1.0 step)	±0.1	110g

RADIUS GAUGE (Set / Single part)

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



Set

Single item

SPECIFICATIONS (Single part)

Model No.	Detail of Radius Dimension (mm)
RGL-05	0.5
RGL-10	1.0
RGL-15	1.5
RGL-20	2.0
RGL-25	2.5
RGL-30	3.0
RGL-35	3.5
RGL-40	4.0
RGL-45	4.5
RGL-50	5.0
RGL-55	5.5
RGL-60	6.0
RGL-65	6.5
RGL-70	7.0
RGL-75	7.5
RGL-80	8.0
RGL-85	8.5
RGL-90	9.0
RGL-95	9.5
RGL-100	10.0
RGL-105	10.5
RGL-110	11.0
RGL-115	11.5
RGL-120	12.0
RGL-125	12.5
RGL-130	13.0

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

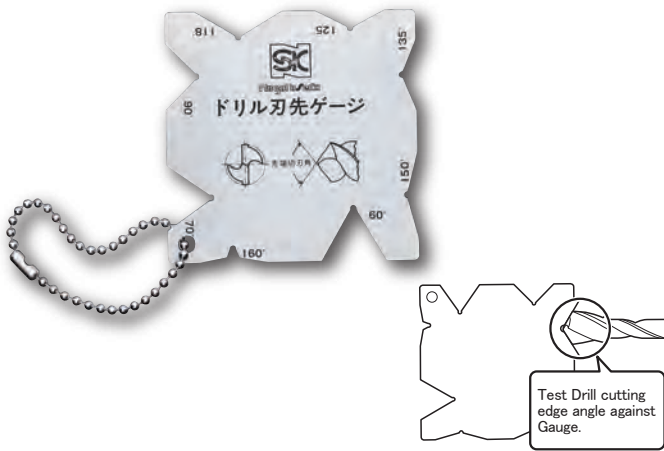
MATERIAL Machine grade carbon steel

SPECIFICATIONS (radius gauge set)

Model No.	Pieces per set	Detail of Radius Dimension (mm)	Accuracy (mm)	Weight
RG-26S	26	0.5 – 13.0 (0.5 step)	±0.1	290g

DRILL TIP GAUGE

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



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

MATERIAL Stainless steel (SUS420J2)

Model No.	Product Dimension W×H×D (mm)	Accuracy	Weight
DPG-A	77×77×1	±1.5°	11g

DRILL POINT GAUGE

Use for measuring the drill edge length range of 3mm–45mm, right and left side



- Provided with ball chain
- Rotating tip angle gauge (Marking at 60° 70° 90° 125° 135° 150°)
- Tip angle : 118°
- Drill edge length : 3 – 45mm

MATERIAL Carbon tool steel

Model No.	Product Dimension (mm)	Accuracy	Weight
DP-118	Base : 22×110×8 Rotor : 7.5×50×2 Main Scale : 68×9	±1.5°	160g

DRILL TIP GAUGE

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



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

MATERIAL Stainless steel (SUS420J2)

Model No.	Product Dimension L×D (mm)	Accuracy	Weight
DPG-118	90×0.5	±1.5°	10g

SLIDING DRILL POINT GAUGE

Maintenance management of drill point angle



- Use for measuring the drill tip edge length range of 3–40mm
- Tip angle : 118°
- Drill edge length : 3–40mm

MATERIAL Stainless steel (SUS420J2) Satin finish

ModelNo.	Accuracy	Weight
S-118	±1.5°	150g

CHAMFER MEASURING GAUGE

Use for measuring the size of all kinds of chamfer



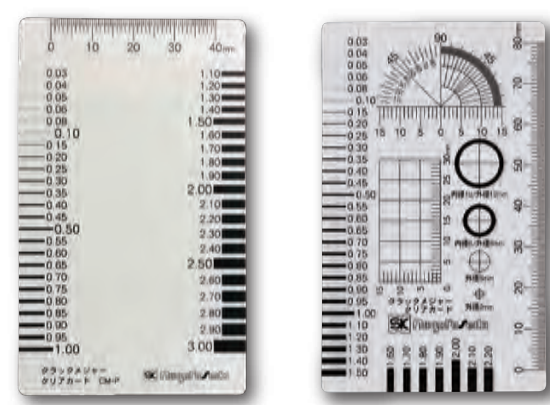
- Measure chamfer circumference of workpiece on lathe
- For milling, measure hole chamfer on workpiece
- Measurement range : 0 – 15C
- Minimum reading : 0.5mm

MATERIAL Stainless steel (SUS420J2)

Model No.	Product Dimension (mm)	Accuracy (mm)	Weight
CMG-10	Overall Length 71.6×2 Side Length16	±0.25	20g

CRACK GAUGE / CLEAR CARD TYPE

Use for measuring cracks



CM-P

CM-C

- CM-P: can measure width and length of cracks
- CM-C: can measure width, angle and length of cracks
- Portable (Business card size)
- Flexible, transparent polyester makes

MATERIAL Polyester

Size List

Model No.	Product Dimension W×H×D (mm)	Weight
CM-P	91×55×0.175	1g
CM-C	91×55×0.175	1g

PROFILE GAUGE

Use for recording the cross-sectional shape of a surface

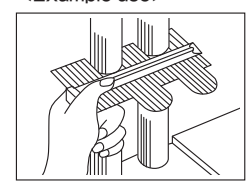


- Pins are thin and can easily record a smooth curve
- Active Length : 150mm

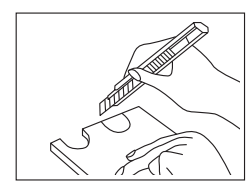
MATERIAL Pin : Stainless steel

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

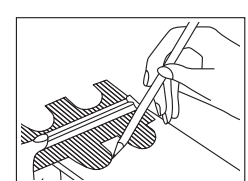
<Example use>



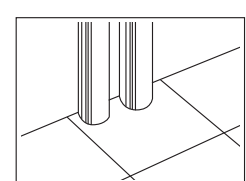
1. Push profile gauge against desired sample



3. Cut workpiece to shape



2. Transfer profile to workpiece



4. A perfect fit made easy

www.sokuteikougu.com

6.960

6.850

6.740

 **ニイガタ**  **seiki**

6-15-22, Tsukanome, Sanjo, Niigata, Japan 955-0055
TEL:+81 256 31 5660 FAX:+81 256 39 7730

URL <http://www.niigataseiki.co.jp>

Dimensions are approximate.
Product specifications and appearance may change without notice.
Actual color may vary from photo.

No.13045000SA