



132p



133p



134p



135p~138p



139p



140p



141p



142p



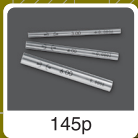
143p



144p



145p



145p



146p



147p



148p



149p



150p



150p



150p



151p



151p



152p

# GAUGES



153p



154p



155p



156p



157p



158p



158p



159p



159p



160p



160p



161p



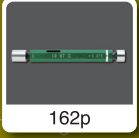
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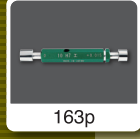
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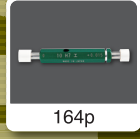
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162p



163p



164p



165p



165p



166p



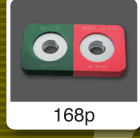
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167p



168p



168p



169p



170p



171p



172p



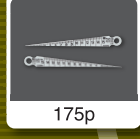
172p



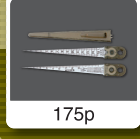
173p



174p



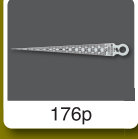
175p



175p



176p



176p



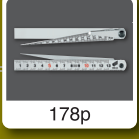
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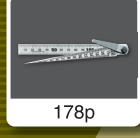
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177p



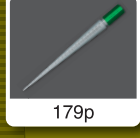
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178p



179p



179p



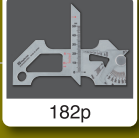
180p



180p



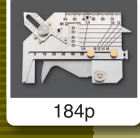
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182p



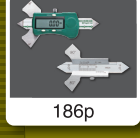
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184p



185p



186p



187p



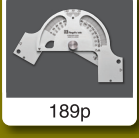
188p



188p



189p



189p



191p



192p



192p



193p



193p



193p



194p



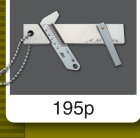
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195p



195p



195p



195p



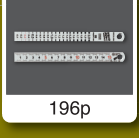
196p



196p



196p



196p

BLOCK GAUGES

PIN GAUGES

PIN GAUGE ACCESSORIES

PIN VISE

RING GAUGES

PLUG GAUGES

LIMIT GAUGES

THICKNESS GAUGES

TAPER GAUGES

WELDING GAUGES

OTHER GAUGES


**GBS0-47**

BLOCK GAUGES

PIN GAUGES

PIN GAUGE ACCESSORIES

PIN VISE

**GAUGES**

RING GAUGES

PLUG GAUGES

LIMIT GAUGES

THICKNESS GAUGES

TAPER GAUGES

WELDING GAUGES

OTHER GAUGES

**USE** • For general measurement and reference standard in workshop

**MATERIAL**  
• High carbon high chromium steel

**FEATURES**  
• Conforms to JIS (Grade 0) Standard

**SPECIFICATION**  
• Section size: less than 10mm: 30 (0~-0.3) × 9 (-0.05~-0.2) mm  
10mm or larger: 35 (0~-0.3) × 9 (-0.05~-0.2) mm  
• Coefficient of thermal expansion:  $11.5 \times 10^{-6} / K$

**SPECIFICATIONS**

Size (mm)		Grade0	
Over	Below	Tolerance ( $\mu m$ )	Dimensional deviation ( $\mu m$ )
—	10	$\pm 0.12$	0.1
10	25	$\pm 0.14$	0.1
25	50	$\pm 0.2$	0.1
50	75	$\pm 0.25$	0.12
75	100	$\pm 0.3$	0.12

Order No.	Model No.	Pieces per set	Step (mm)	Nominal Size (mm)	Number of pieces	Weight
NEW 150293	GBS0-103	103		1.005	1	3.64kg
			0.01	1.01·1.02...1.49	49	
			0.5	0.5·1.0...24.5	49	
			25	25·50·75·100	4	
NEW 150292	GBS0-76	76		1.005	1	2.2kg
			0.01	1.01·1.02...1.49	49	
			0.5	0.5·1.0...9.5	19	
			10	10·20·30·40	4	
NEW 150291	GBS0-47	47		1.005	1	2.4kg
			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	
NEW 150290	GBS0-32	32		1.005	1	0.98kg
			0.01	1.01·1.02...1.09	9	
			0.1	1.1·1.2...1.9	9	
			1.0	1·2·3...9	9	
			10	10·20·30	3	
			60	1		

## High accuracy, class 0 model



- USE**
- As reference standard and for general measurement work.
  - Spacers and prefinished sub-assembly components.

**MATERIALS**

- High carbon high chromium steel

**FEATURES**

- Conforms to JIS grade 0 standard

**SPECIFICATION**

- Section size: less than 10mm: 30(0~-0.3) × 9(-0.05~-0.2) mm  
10mm or larger: 35(0~-0.3) × 9(-0.05~-0.2) mm
- Coefficient of thermal expansion: 11.5 × 10<sup>-6</sup>/K

## 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
125		± 0.40	0.14
150		± 0.40	0.14
175		± 0.50	0.16
200		± 0.50	0.16
250		± 0.60	0.16
300		± 0.70	0.18
400		± 0.90	0.20
500		± 1.10	0.25
600		± 1.30	0.25

Order No.	Model No.	Size
NEW 150294	GB0-05	0.5mm
NEW 150295	GB0-10	1.0mm
NEW 150296	GB0-1-005	1.005mm
NEW 150297	GB0-101	1.01mm
NEW 150298	GB0-102	1.02mm
NEW 150299	GB0-103	1.03mm
NEW 150300	GB0-104	1.04mm
NEW 150301	GB0-105	1.05mm
NEW 150302	GB0-106	1.06mm
NEW 150303	GB0-107	1.07mm
NEW 150304	GB0-108	1.08mm
NEW 150305	GB0-109	1.09mm
NEW 150306	GB0-110	1.10mm
NEW 150307	GB0-111	1.11mm
NEW 150308	GB0-112	1.12mm
NEW 150309	GB0-113	1.13mm
NEW 150310	GB0-114	1.14mm
NEW 150311	GB0-115	1.15mm
NEW 150312	GB0-116	1.16mm
NEW 150313	GB0-117	1.17mm
NEW 150314	GB0-118	1.18mm
NEW 150315	GB0-119	1.19mm
NEW 150316	GB0-120	1.20mm
NEW 150317	GB0-121	1.21mm
NEW 150318	GB0-122	1.22mm
NEW 150319	GB0-123	1.23mm
NEW 150320	GB0-124	1.24mm
NEW 150321	GB0-125	1.25mm
NEW 150322	GB0-126	1.26mm
NEW 150323	GB0-127	1.27mm
NEW 150324	GB0-128	1.28mm
NEW 150325	GB0-129	1.29mm
NEW 150326	GB0-130	1.30mm
NEW 150327	GB0-131	1.31mm
NEW 150328	GB0-132	1.32mm
NEW 150329	GB0-133	1.33mm
NEW 150330	GB0-134	1.34mm
NEW 150331	GB0-135	1.35mm
NEW 150332	GB0-136	1.36mm
NEW 150333	GB0-137	1.37mm
NEW 150334	GB0-138	1.38mm

Order No.	Model No.	Size
NEW 150335	GB0-139	1.39mm
NEW 150336	GB0-140	1.40mm
NEW 150337	GB0-141	1.41mm
NEW 150338	GB0-142	1.42mm
NEW 150339	GB0-143	1.43mm
NEW 150340	GB0-144	1.44mm
NEW 150341	GB0-145	1.45mm
NEW 150342	GB0-146	1.46mm
NEW 150343	GB0-147	1.47mm
NEW 150344	GB0-148	1.48mm
NEW 150345	GB0-149	1.49mm
NEW 150346	GB0-150	1.50mm
NEW 150347	GB0-160	1.60mm
NEW 150348	GB0-170	1.70mm
NEW 150349	GB0-180	1.80mm
NEW 150350	GB0-190	1.90mm
NEW 150351	GB0-200	2.00mm
NEW 150352	GB0-250	2.50mm
NEW 150353	GB0-300	3.00mm
NEW 150354	GB0-350	3.50mm
NEW 150355	GB0-400	4.00mm
NEW 150356	GB0-450	4.50mm
NEW 150357	GB0-500	5.00mm
NEW 150358	GB0-550	5.50mm
NEW 150359	GB0-600	6.00mm
NEW 150360	GB0-650	6.50mm
NEW 150361	GB0-700	7.00mm
NEW 150362	GB0-750	7.50mm
NEW 150363	GB0-800	8.00mm
NEW 150364	GB0-850	8.50mm
NEW 150365	GB0-900	9.00mm
NEW 150366	GB0-950	9.50mm
NEW 150367	GB0-1000	10.00mm
NEW 150368	GB0-1050	10.50mm
NEW 150369	GB0-1100	11.00mm
NEW 150370	GB0-1150	11.50mm
NEW 150371	GB0-1200	12.00mm
NEW 150372	GB0-1250	12.50mm
NEW 150373	GB0-1300	13.00mm
NEW 150374	GB0-1350	13.50mm
NEW 150375	GB0-1400	14.00mm

Order No.	Model No.	Size
NEW 150376	GB0-1450	14.50mm
NEW 150377	GB0-1500	15.00mm
NEW 150378	GB0-1550	15.50mm
NEW 150379	GB0-1600	16.00mm
NEW 150380	GB0-1650	16.50mm
NEW 150381	GB0-1700	17.00mm
NEW 150382	GB0-1750	17.50mm
NEW 150383	GB0-1800	18.00mm
NEW 150384	GB0-1850	18.50mm
NEW 150385	GB0-1900	19.00mm
NEW 150386	GB0-1950	19.50mm
NEW 150387	GB0-2000	20.00mm
NEW 150388	GB0-2050	20.50mm
NEW 150389	GB0-2100	21.00mm
NEW 150390	GB0-2150	21.50mm
NEW 150391	GB0-2200	22.00mm
NEW 150392	GB0-2250	22.50mm
NEW 150393	GB0-2300	23.00mm
NEW 150394	GB0-2350	23.50mm
NEW 150395	GB0-2400	24.00mm
NEW 150396	GB0-2450	24.50mm
NEW 150397	GB0-2500	25.00mm
NEW 150398	GB0-3000	30.00mm
NEW 150399	GB0-4000	40.00mm
NEW 150400	GB0-5000	50.00mm
NEW 150401	GB0-6000	60.00mm
NEW 150402	GB0-7000	70.00mm
NEW 150403	GB0-7500	75.00mm
NEW 150404	GB0-8000	80.00mm
NEW 150405	GB0-9000	90.00mm
NEW 150406	GB0-10000	100.00mm
NEW 150407	GB0-12500	125mm
NEW 150408	GB0-15000	150mm
NEW 150409	GB0-17500	175mm
NEW 150410	GB0-20000	200mm
NEW 150411	GB0-25000	250mm
NEW 150412	GB0-30000	300mm
NEW 150413	GB0-40000	400mm
NEW 150414	GB0-50000	500mm
NEW 150415	GB0-60000	600mm

BLOCK GAUGES

PIN GAUGES

PIN GAUGE ACCESSORIES

PIN VISE

GAUGES

RING GAUGES

PLUG GAUGES

LIMIT GAUGES

THICKNESS GAUGES

TAPER GAUGES

WELDING GAUGES

OTHER GAUGES



GBS1-47

BLOCK GAUGES

PIN GAUGES

PIN GAUGE ACCESSORIES

PIN VISE

GAUGES

RING GAUGES

PLUG GAUGES

LIMIT GAUGES

THICKNESS GAUGES

TAPER GAUGES

WELDING GAUGES

OTHER GAUGES

- USE**
- As reference standard and for general measurement work.
  - Spacers and prefinished sub-assembly components.

- MATERIAL**
- High carbon high chromium steel

- FEATURES**
- Conforms to JIS (Grade 1) Standard

- SPECIFICATIONS**
- Section size: less than 10mm: 30(0~-0.3) × 9(-0.05~-0.2) mm
  - 10mm or larger: 35(0~-0.3) × 9(-0.05~-0.2) mm
  - Coefficient of thermal expansion :  $11.5 \times 10^{-6} / K$

## SPECIFICATIONS

Size (mm)		Grade 1	
Over	Below	Tolerance ( $\mu m$ )	Dimensional deviation ( $\mu m$ )
—	10	$\pm 0.20$	0.16
10	25	$\pm 0.30$	0.16
25	50	$\pm 0.40$	0.18
50	75	$\pm 0.50$	0.18
75	100	$\pm 0.60$	0.20

Order No.	Model No.	Pieces per set	Step (mm)	Nominal Size (mm)	Number of pieces	Weight
150801	GBS1-103	103		1.005	1	3.64kg
			0.01	1.01·1.02··1.49	49	
			0.5	0.5·1.0··24.5	49	
			25	25·50·75·100	4	
150802	GBS1-76	76		1.005	1	2.2kg
			0.01	1.01·1.02··1.49	49	
			0.5	0.5·1.0··9.5	19	
			10	10·20·30·40	4	
150804	GBS1-47	47		1.005	1	2.4kg
			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	
150806	GBS1-32	32		1.005	1	0.98kg
			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		



## 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

- USE**
  - As reference standard and for general measurement work.
  - Spacers and prefinished sub-assembly components.
- MATERIAL**
  - High carbon high chromium steel
- FEATURES**
  - Conforms to JIS (Grade 1) standard
- SPECIFICATION**
  - Section size: less than 10mm: 30(0~-0.3) × 9(-0.05~-0.2) mm  
10mm or larger: 35(0~-0.3) × 9(-0.05~-0.2) mm
  - Coefficient of thermal expansion : 11.5 × 10<sup>-6</sup>/K

Order No.	Model No.	Size
150810	GB1-05	0.5mm
150820	GB1-10	1.0mm
150822	GB1-1-001	1.001mm
150823	GB1-1-002	1.002mm
150824	GB1-1-003	1.003mm
150825	GB1-1-004	1.004mm
150826	GB1-1-005	1.005mm
150827	GB1-1-006	1.006mm
150828	GB1-1-007	1.007mm
150829	GB1-1-008	1.008mm
150830	GB1-1-009	1.009mm
150831	GB1-101	1.01mm
150832	GB1-102	1.02mm
150833	GB1-103	1.03mm
150834	GB1-104	1.04mm
150835	GB1-105	1.05mm
150836	GB1-106	1.06mm
150837	GB1-107	1.07mm
150838	GB1-108	1.08mm
150839	GB1-109	1.09mm
150840	GB1-110	1.10mm
150841	GB1-111	1.11mm
150842	GB1-112	1.12mm
150843	GB1-113	1.13mm
150844	GB1-114	1.14mm
150845	GB1-115	1.15mm
150846	GB1-116	1.16mm
150847	GB1-117	1.17mm
150848	GB1-118	1.18mm
150849	GB1-119	1.19mm
150850	GB1-120	1.20mm
150851	GB1-121	1.21mm
150852	GB1-122	1.22mm
150853	GB1-123	1.23mm
150854	GB1-124	1.24mm
150855	GB1-125	1.25mm
150856	GB1-126	1.26mm
150857	GB1-127	1.27mm
150858	GB1-128	1.28mm
150859	GB1-129	1.29mm
150860	GB1-130	1.30mm
150861	GB1-131	1.31mm

Order No.	Model No.	Size
150862	GB1-132	1.32mm
150863	GB1-133	1.33mm
150864	GB1-134	1.34mm
150865	GB1-135	1.35mm
150866	GB1-136	1.36mm
150867	GB1-137	1.37mm
150868	GB1-138	1.38mm
150869	GB1-139	1.39mm
150870	GB1-140	1.40mm
150871	GB1-141	1.41mm
150872	GB1-142	1.42mm
150873	GB1-143	1.43mm
150874	GB1-144	1.44mm
150875	GB1-145	1.45mm
150876	GB1-146	1.46mm
150877	GB1-147	1.47mm
150878	GB1-148	1.48mm
150879	GB1-149	1.49mm
150880	GB1-150	1.50mm
NEW 153001	GB1-151	1.51mm
NEW 153002	GB1-152	1.52mm
NEW 153003	GB1-153	1.53mm
NEW 153004	GB1-154	1.54mm
NEW 153005	GB1-155	1.55mm
NEW 153006	GB1-156	1.56mm
NEW 153007	GB1-157	1.57mm
NEW 153008	GB1-158	1.58mm
NEW 153009	GB1-159	1.59mm
NEW 153010	GB1-160	1.60mm
NEW 153011	GB1-161	1.61mm
NEW 153012	GB1-162	1.62mm
NEW 153013	GB1-163	1.63mm
NEW 153014	GB1-164	1.64mm
NEW 153015	GB1-165	1.65mm
NEW 153016	GB1-166	1.66mm
NEW 153017	GB1-167	1.67mm
NEW 153018	GB1-168	1.68mm
NEW 153019	GB1-169	1.69mm
NEW 153020	GB1-170	1.70mm
NEW 153021	GB1-171	1.71mm
NEW 153022	GB1-172	1.72mm
NEW 153023	GB1-173	1.73mm

Order No.	Model No.	Size
NEW 153024	GB1-174	1.74mm
NEW 153025	GB1-175	1.75mm
NEW 153026	GB1-176	1.76mm
NEW 153027	GB1-177	1.77mm
NEW 153028	GB1-178	1.78mm
NEW 153029	GB1-179	1.79mm
NEW 153030	GB1-180	1.80mm
NEW 153031	GB1-181	1.81mm
NEW 153032	GB1-182	1.82mm
NEW 153033	GB1-183	1.83mm
NEW 153034	GB1-184	1.84mm
NEW 153035	GB1-185	1.85mm
NEW 153036	GB1-186	1.86mm
NEW 153037	GB1-187	1.87mm
NEW 153038	GB1-188	1.88mm
NEW 153039	GB1-189	1.89mm
NEW 153040	GB1-190	1.90mm
NEW 153041	GB1-191	1.91mm
NEW 153042	GB1-192	1.92mm
NEW 153043	GB1-193	1.93mm
NEW 153044	GB1-194	1.94mm
NEW 153045	GB1-195	1.95mm
NEW 153046	GB1-196	1.96mm
NEW 153047	GB1-197	1.97mm
NEW 153048	GB1-198	1.98mm
NEW 153049	GB1-199	1.99mm
150885	GB1-200	2.00mm
NEW 153050	GB1-201	2.01mm
NEW 153051	GB1-202	2.02mm
NEW 153052	GB1-203	2.03mm
NEW 153053	GB1-204	2.04mm
NEW 153054	GB1-205	2.05mm
NEW 153055	GB1-206	2.06mm
NEW 153056	GB1-207	2.07mm
NEW 153057	GB1-208	2.08mm
NEW 153058	GB1-209	2.09mm
NEW 153059	GB1-210	2.10mm
NEW 153060	GB1-211	2.11mm
NEW 153061	GB1-212	2.12mm
NEW 153062	GB1-213	2.13mm
NEW 153063	GB1-214	2.14mm
NEW 153064	GB1-215	2.15mm

BLOCK GAUGES

PIN GAUGES

PIN GAUGE ACCESSORIES

PIN VISE

GAUGES

RING GAUGES

PLUG GAUGES

LIMIT GAUGES

THICKNESS GAUGES

TAPER GAUGES

WELDING GAUGES

OTHER GAUGES



Refer page 135 for detailed specifications and tolerance

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



Refer page 135 for detailed specifications and tolerance

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



Refer page 135 for detailed specifications and tolerance

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

BLOCK GAUGES

PIN GAUGES

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GAUGES

RING GAUGES

PLUG GAUGES

LIMIT GAUGES

THICKNESS GAUGES

TAPER GAUGES

WELDING GAUGES

OTHER GAUGES

Free from rust and corrosion, and easy maintenance



### SPECIFICATIONS

Size (mm)		Grade 0	
Over	Below	Tolerance ( $\mu\text{m}$ )	Dimensional Deviation ( $\mu\text{m}$ )
—	10	$\pm 0.12$	0.10
10	25	$\pm 0.14$	0.10
25	50	$\pm 0.20$	0.10
50	75	$\pm 0.25$	0.12
75	100	$\pm 0.30$	0.12

### USE

- For general measurement and reference standard in workshop

### MATERIAL

- Ceramic (Zircon)

### FEATURES

- 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

### SPECIFICATIONS

- Section size: less than 10mm...30 (0~−0.3) × 9 (−0.05~−0.2) mm  
10mm to less than 100mm: 35 (0~−0.3) × 9 (−0.05~−0.2) mm
- Coefficient of thermal expansion:  $(9.5 \pm 1) \times 10^{-6} / \text{K}$

### Comparison between steel and ceramic materials

Item	Materials		Ceramic	Steel
	Hardness	HV		
Hardness			1300	800
Coefficient of thermal expansion	$10^{-6} / \text{K}$		9.5	11.5
Specific Gravity			6	7.8
Heat conductivity	$\text{W/m}\cdot\text{K}$		2.5	76

### SET Item

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

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

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

BLOCK GAUGES

PIN GAUGES

PIN GAUGE ACCESSORIES

PIN VISE

GAUGES

RING GAUGES

PLUG GAUGES

LIMIT GAUGES

THICKNESS GAUGES

TAPER GAUGES

WELDING GAUGES

OTHER GAUGES



## STEEL PIN GAUGE SET AA series

JCSS Calibration available



## SUB-ZERO Treatment (Cryogenic hardened)



- FEATURES**
- The most popular type.  
Long life use / Sub zero treatment
  - Individual Pin Gauges are also available
  - Custom made Pin Gauges are available on request
  - 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 ( $\mu\text{m}$ )	Out of Roundness/ Cylindricity ( $\mu\text{m}$ )	Hardness (HV)
0.05 ... 0.09	0.01 Step	5~10	$\pm 0.5$	0.5	More than 650
0.10 ... 0.19		40	$\pm 0.8$		
0.200 ... 0.999	0.001 Step	50	$\pm 1.5$	0.8	
1.000 ... 10.000					
10.01 ... 20.00	0.01 Step	50	$\pm 2$	1.6	
20.01 ... 30.00					
30.01 ... 41.00	—	—	$\pm 3$	3.0	

\* 30.01 ~ 41.00 are custom made

## 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	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	

BLOCK GAUGES

PIN GAUGES

PIN GAUGE ACCESSORIES

PIN VISE

GAUGES

RING GAUGES

PLUG GAUGES

LIMIT GAUGES

THICKNESS GAUGES

TAPER GAUGES

WELDING GAUGES

OTHER GAUGES

High precision quality pin gauge  
SUB-ZERO TREATMENT (Cryogenic hardened)



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... 7.010						
7.011...10.000						

BLOCK GAUGES

PIN GAUGES

PIN GAUGE ACCESSORIES

PIN VISE

FEATURES • High precision quality pin gauge

(0.001mm step)

Model No.	Nominal size (mm)	Pins per set
SA-03	0.297 ..... 0.310	14
SA-04	0.397 ..... 0.410	14
SA-05	0.497 ..... 0.510	14
SA-06	0.597 ..... 0.610	14
SA-07	0.697 ..... 0.710	14
SA-08	0.797 ..... 0.810	14
SA-09	0.897 ..... 0.910	14
SA-10	0.997 ..... 1.010	14
SA-11	1.097 ..... 1.110	14
SA-12	1.197 ..... 1.210	14
SA-13	1.297 ..... 1.310	14
SA-14	1.397 ..... 1.410	14
SA-15	1.497 ..... 1.510	14
SA-16	1.597 ..... 1.610	14
SA-17	1.697 ..... 1.710	14
SA-18	1.797 ..... 1.810	14
SA-19	1.897 ..... 1.910	14
SA-20	1.997 ..... 2.010	14
SA-21	2.097 ..... 2.110	14
SA-22	2.197 ..... 2.210	14
SA-23	2.297 ..... 2.310	14
SA-24	2.397 ..... 2.410	14
SA-25	2.497 ..... 2.510	14
SA-26	2.597 ..... 2.610	14
SA-27	2.697 ..... 2.710	14
SA-28	2.797 ..... 2.810	14
SA-29	2.897 ..... 2.910	14
SA-30	2.997 ..... 3.010	14
SA-31	3.097 ..... 3.110	14
SA-32	3.197 ..... 3.210	14
SA-33	3.297 ..... 3.310	14
SA-34	3.397 ..... 3.410	14
SA-35	3.497 ..... 3.510	14
SA-36	3.597 ..... 3.610	14

Model No.	Nominal size (mm)	Pins per set
SA-37	3.697 ..... 3.710	14
SA-38	3.797 ..... 3.810	14
SA-39	3.897 ..... 3.910	14
SA-40	3.997 ..... 4.010	14
SA-41	4.097 ..... 4.110	14
SA-42	4.197 ..... 4.210	14
SA-43	4.297 ..... 4.310	14
SA-44	4.397 ..... 4.410	14
SA-45	4.497 ..... 4.510	14
SA-46	4.597 ..... 4.610	14
SA-47	4.697 ..... 4.710	14
SA-48	4.797 ..... 4.810	14
SA-49	4.897 ..... 4.910	14
SA-50	4.997 ..... 5.010	14
SA-51	5.097 ..... 5.110	14
SA-52	5.197 ..... 5.210	14
SA-53	5.297 ..... 5.310	14
SA-54	5.397 ..... 5.410	14
SA-55	5.497 ..... 5.510	14
SA-56	5.597 ..... 5.610	14
SA-57	5.697 ..... 5.710	14
SA-58	5.797 ..... 5.810	14
SA-59	5.897 ..... 5.910	14
SA-60	5.997 ..... 6.010	14
SA-61	6.097 ..... 6.110	14
SA-62	6.197 ..... 6.210	14
SA-63	6.297 ..... 6.310	14
SA-64	6.397 ..... 6.410	14
SA-65	6.497 ..... 6.510	14
SA-66	6.597 ..... 6.610	14
SA-67	6.697 ..... 6.710	14
SA-68	6.797 ..... 6.810	14
SA-69	6.897 ..... 6.910	14
SA-70	6.997 ..... 7.010	14

GAUGES

RING GAUGES

PLUG GAUGES

LIMIT GAUGES

THICKNESS GAUGES

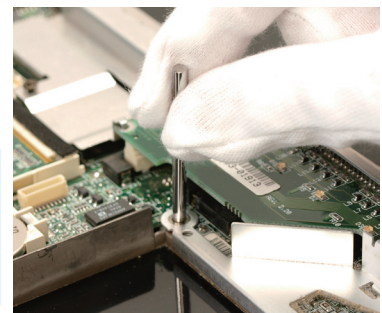
TAPER GAUGES

WELDING GAUGES

OTHER GAUGES



For checking of shallow holes, for those concerned about gauge wear  
**SUB-ZERO TREATMENT (Cryogenic hardened)**



**Wear-line**  
 for checking wear status  
 Tip wear is easy to see  
 When line disappears, wear is more than about 1µm

BLOCK GAUGES

PIN GAUGES

PIN GAUGE ACCESSORIES

PIN VISE

- FEATURES**
- Wear-line on both ends of pin gauge, able to see gauge wear.
  - When line disappears, wear is more than about 1µm
  - Individual pin gauges are also available

Set No.

Set No.	Nominal Size (mm)	Step (mm)	Pins per Set	Aluminum Pin vise
AML-3A	3.000 · 3.010 · 3.020 ····· 3.500	0.010 step	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

GAUGES

RING GAUGES

PLUG GAUGES

LIMIT GAUGES

THICKNESS GAUGES

TAPER GAUGES

WELDING GAUGES

OTHER GAUGES

**SPECIFICATIONS**

Size (mm)	Step (mm)	Length (mm)	Tolerance (µm)	Roundness (µm)	Cylindricity (µm)	Hardness (HV)
3.00 ... 3.99	0.010 step	50	±0.8	0.5	0.5	More than 650
4.00 ... 4.99						
5.00 ... 6.00						
6.01 ... 6.99						
7.00 ... 7.99						
8.00 ... 8.99						
9.00 ... 10.00						

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

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



**FEATURES**

- For high use applications
- Same specifications as AA series
- Custom made Pin Gauge sets are available on request  
※ Pin Vise is 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 • 10.10 • 10.20 ..... 15.00	51
AP-4	15.00 • 15.10 • 15.20 ..... 20.00	51

**AS series**

(0.010mm step)

Consist of Pin Gauge in the range of ± 0.05mm 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	
AS-2	4.950 • 4.960 ..... 5.000 ..... 5.040 • 5.050	55
	5.950 • 5.960 ..... 6.000 ..... 6.040 • 6.050	
	6.950 • 6.960 ..... 7.000 ..... 7.040 • 7.050	
	7.950 • 7.960 ..... 8.000 ..... 8.040 • 8.050	
AS-3	8.950 • 8.960 ..... 9.000 ..... 9.040 • 9.050	55
	9.950 • 9.960 ..... 10.000 ..... 10.04 • 10.05	
	10.95 • 10.96 ..... 11.00 ..... 11.04 • 11.05	
	11.95 • 11.96 ..... 12.00 ..... 12.04 • 12.05	
AS-4	12.95 • 12.96 ..... 13.00 ..... 13.04 • 13.05	55
	13.95 • 13.96 ..... 14.00 ..... 14.04 • 14.05	
	14.95 • 14.96 ..... 15.00 ..... 15.04 • 15.05	
	15.95 • 15.96 ..... 16.00 ..... 16.04 • 16.05	
ASP-1	16.95 • 16.96 ..... 17.00 ..... 17.04 • 17.05	55
	17.95 • 17.96 ..... 18.00 ..... 18.04 • 18.05	
	18.95 • 18.96 ..... 19.00 ..... 19.04 • 19.05	
	19.95 • 19.96 ..... 20.00 ..... 20.04 • 20.05	
ASP-2	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	
ASP-3	4.450 • 4.460 ..... 4.500 ..... 4.540 • 4.550	55
	5.450 • 5.460 ..... 5.500 ..... 5.540 • 5.550	
	6.450 • 6.460 ..... 6.500 ..... 6.540 • 6.550	
	7.450 • 7.460 ..... 7.500 ..... 7.540 • 7.550	
ASP-4	8.450 • 8.460 ..... 8.500 ..... 8.540 • 8.550	55
	9.450 • 9.460 ..... 9.500 ..... 9.540 • 9.550	
	10.45 • 10.46 ..... 10.50 ..... 10.54 • 10.55	
	11.45 • 11.46 ..... 11.50 ..... 11.54 • 11.55	
ASP-5	12.45 • 12.46 ..... 12.50 ..... 12.54 • 12.55	55
	13.45 • 13.46 ..... 13.50 ..... 13.54 • 13.55	
	14.45 • 14.46 ..... 14.50 ..... 14.54 • 14.55	
	15.45 • 15.46 ..... 15.50 ..... 15.54 • 15.55	
ASP-6	16.45 • 16.46 ..... 16.50 ..... 16.54 • 16.55	55
	17.45 • 17.46 ..... 17.50 ..... 17.54 • 17.55	
	18.45 • 18.46 ..... 18.50 ..... 18.54 • 18.55	
	19.45 • 19.46 ..... 19.50 ..... 19.54 • 19.55	

**AH series**

(0.050mm step)

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 ... 11.00	51
AH-5	11.00 • 11.05 • 11.10 ... 13.50	51
AH-6	13.50 • 13.55 • 13.60 ... 16.00	51
AH-7	16.00 • 16.05 • 16.10 ... 18.50	51
AH-8	18.50 • 18.55 • 18.60 ... 20.00	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

BLOCK GAUGES

PIN GAUGES

PIN GAUGE ACCESSORIES

PIN VISE

GAUGES

RING GAUGES

PLUG GAUGES

LIMIT GAUGES

THICKNESS GAUGES

TAPER GAUGES

WELDING GAUGES

OTHER GAUGES

# STEEL PIN GAUGE SET PM • PG series



## SUB-ZERO TREATMENT (Cryogenic hardened)

### PM series ⊕ ⊖

- FEATURES**
- Pin Gauges with tolerance of 0 to plus 2 $\mu$ m or 0 to minus 2 $\mu$ m based on nominal size
  - For over 1.000mm, nominal size and P(for Plus) or M(for Minus) is marked on gauges
  - Please indicate "plus" or "minus" when ordering
  - Individual Pin Gauges are also available



### PG series ⊕ ⊖

- FEATURES**
- Pin Gauges with tolerance of +2 to +5 $\mu$ m (or -2 to -5 $\mu$ m) 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 ( $\mu$ m)	Out of Roundness/ Cylindricity ( $\mu$ m)	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	—
PM-0B	0.50 • 0.51 • 0.52.....1.00	51	PV-0B
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	—

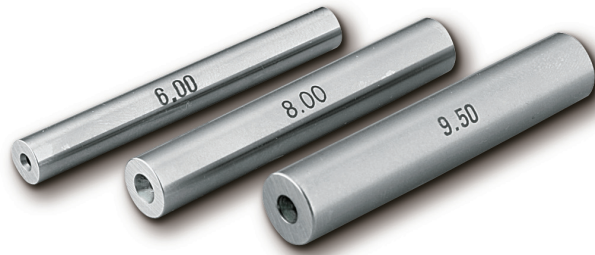
## SPECIFICATIONS

Nominal size (mm)	Step (mm)	Length (mm)	Tolerance ( $\mu$ m)	Out of Roundness/ Cylindricity ( $\mu$ m)	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			
0.300 ... 0.975	0.025 step	50	⊖2~5 based on nominal size		
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) 1~5 $\mu$ m

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		18
PG-3	13.000•13.100•13.200 ...19.000	0.100 step	61

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



**FEATURES**

- Use for measuring gear runout and eccentricity of gear wheels or pulleys can also measure squareness between the hole and side face
- For above 2.00 mm, the Nominal size is marked on gauge

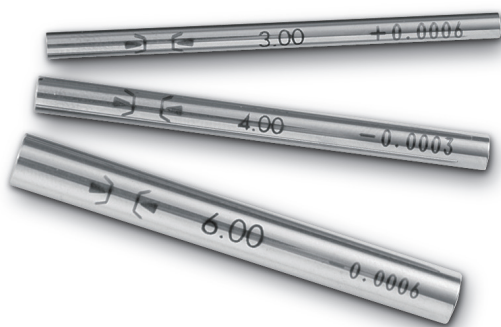
**SPECIFICATIONS**

Nominal size (mm)	Step (mm)	Length (mm)	Tolerance ( $\mu\text{m}$ )	Out of Roundness ( $\mu\text{m}$ )	Out of Cylindricity ( $\mu\text{m}$ )	Runout Tolerance ( $\mu\text{m}$ )	Center hole Angle	Center hole Diameter (mm)	Hardness (HV)
2.00... 2.99	0.01 step	50	$\pm 2.0$	1.0	1.0	Within 2.0	60°	1.3	More than 650
3.00... 3.99								1.8	
4.00... 4.99								2.4	
5.00... 5.99									
6.00... 6.99									
7.00... 7.99								4.0	
8.00... 8.99									
9.00... 10.00									

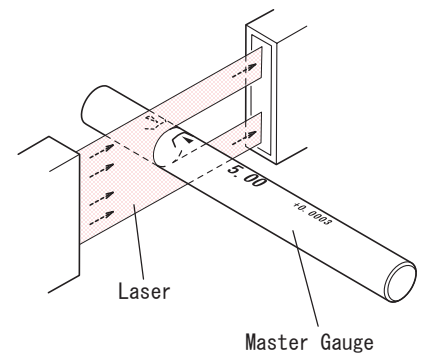
**MASTER GAUGE**

Actual value of the specific area is marked on pin gauge

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



**Example use**



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

- FEATURES**
- Actual value of the specific area is marked on pin gauge

**SPECIFICATIONS**

Nominal size (mm)	Step (mm)	Length (mm)	Uncertainty ( $\mu\text{m}$ )	Out of Roundness ( $\mu\text{m}$ )	Hardness (HV)
1.00... 4.00	0.01	50	0.4	0.5	More than 650
4.01... 6.00					



## SUB-ZERO TREATMENT (Cryogenic hardened)



06

BLOCK GAUGES

PIN GAUGES

PIN GAUGE ACCESSORIES

PIN VISE

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

GAUGES

RING GAUGES

PLUG GAUGES

LIMIT GAUGES

THICKNESS GAUGES

TAPER GAUGES

WELDING GAUGES

OTHER GAUGES

### SPECIFICATIONS

Nominal size (mm)	Step (mm)	Length (mm)		Tolerance ( $\mu\text{m}$ )	Out of Roundness ( $\mu\text{m}$ )	Out of Cylindricity ( $\mu\text{m}$ )	Hardness (HV)
		Gauge Length	Overall Length				
0.07... 0.09	0.01 step	3	41	$\pm 0.5$	0.5	0.5	More than 650
0.10... 0.19							
0.20... 0.29							
0.30... 0.49		10	48	$\pm 1.0$	0.5	0.5	More than 650
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

(0.01mm step)

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

## SUB-ZERO TREATMENT (Cryogenic hardened)

### FEATURES

- For quick and accurate over-pin diameter measurement of internal and external gears. (magnetize the pin for easy handling)
- OP series gauge is for measuring over pin diameter of gears and involute splines. Each module is a set of 2 pins each for measuring external gear over-pin-diameter, and internal gear over-pin-diameter.
- Individual pin gauges are also available
- Custom made pin gauges are available upon request.

To determine proper pin gauge, please note the following.

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



### How To Measure

■ For inside diameter

■ For outside diameter

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

### OP-1

Module (mm)	Inner dia. (hole) pin diameter (V) × groove height (V <sub>i</sub> ) (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	2.25 —
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 <sub>i</sub> ) (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

### SPECIFICATIONS

Dimensional deviation (V and U)	0.90mm~10.00mm : ±1 μm 10.01mm~20.00mm : ±1.5 μm
Out of Roundness/ Cylindricity	0.90mm~10.00mm : ±1 μm 10.01mm~20.00mm : ±1.5 μm
Length	50mm
Hardness	Over HV650

BLOCK GAUGES

PIN GAUGES

PIN GAUGE ACCESSORIES

PIN VISE

GAUGES

RING GAUGES

PLUG GAUGES

LIMIT GAUGES

THICKNESS GAUGES

TAPER GAUGES

WELDING GAUGES

OTHER GAUGES

# CARBIDE PIN GAUGE SET TAA • TAG series

 JCSS Calibration available  
(TAA series)

## FEATURES

- About 20-30 times more durable than Steel Pin Gauge
- The coefficient of thermal expansion is small ( $1/2$  of steel,  $5 \times 10^{-6} \text{K}^{-1}$ ) 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 on broken edges)
- Economical--Periodic calibration is not required

### TAAseries



### TAG series (with Handle)



## SPECIFICATIONS

Nominal size (mm)	Step (mm)	Length (mm)	Tolerance ( $\mu\text{m}$ )	Out of Roundness/Cylindricity ( $\mu\text{m}$ )	Hardness (HV)
0.50... 0.99	0.01 step	30	$\pm 1$	0.8	1200
1.00... 2.99		38			
3.00... 10.00		50	$\pm 1.5$	1.3	
10.01... 14.00					

(0.01mm step)

## SPECIFICATIONS

Nominal size (mm)	Step (mm)	Length (mm)		Tolerance ( $\mu\text{m}$ )	Out of Roundness/Cylindricity ( $\mu\text{m}$ )	Hardness (HV)
		Gauge Length	Overall Length			
0.50... 0.99	0.01 step	25	63	$\pm 1$	0.8	1200
1.00... 2.99		28	69			
3.00... 4.99		30	71			
5.00... 10.00			76			

(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

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
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

## FEATURES

- Strong against abrasion
- Free from rust and corrosion, and easy maintenance
- Ceramic material is less susceptible to abrasion and age deterioration than steel
- Non-magnetic
- For above 1.50mm, Nominal size is laser marked on gauge

## 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
Coefficient of thermal expansion	10 <sup>-6</sup> /K	10.5	8	5	11
Heat conductivity	W/m·K	2	20~30	80	76

## CAA series



## CAG Series (with Handle)



※CAA series Pin Gauge with plastic handle.

## SPECIFICATIONS

Nominal size (mm)	Step (mm)	Length (mm)	Tolerance (μm)	Out of Roundness/ Cylindricity (μm)
0.50...2.49	0.01 step	38	±1	0.8
2.50...2.99				
3.00...3.49				
3.50...9.99				
10.00	—	50		

※ 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

## SPECIFICATIONS

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

※ Length can be changed without any prior notice due to improvement of product.  
(0.01mm step)

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
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

BLOCK GAUGES

PIN GAUGES

PIN GAUGE ACCESSORIES

PIN VISE

GAUGES

RING GAUGES

PLUG GAUGES

LIMIT GAUGES

THICKNESS GAUGES

TAPER GAUGES

WELDING GAUGES

OTHER GAUGES



# PIN GAUGE ACCESSORIES

BLOCK GAUGES

PIN GAUGES

PIN GAUGE ACCESSORIES

PIN VISE

GAUGES

RING GAUGES

PLUG GAUGES

LIMIT GAUGES

THICKNESS GAUGES

TAPER GAUGES

WELDING GAUGES

OTHER GAUGES

## PLASTIC CASE



Removable lid for use as tray



Stands



Stacks



## WOODEN CASE



### W-3 (For PG)

W-3A	■ STEEL PG-1⊕⊖ PG-2A⊕⊖ PG-2B⊕⊖
W-3B	■ STEEL PG-3⊕⊖

### W-4 (AG·Small)

■ STEEL AG-0A ~ AG-4B ■ CARBIDE TAG-0A ~ TAG-4B ■ CERAMIC PIN GAUGE SET with handle CAG-0A ~ CAG-4B
--

### W-5 (AG·Large)

■ STEEL AG-5A ~ AG-9B ■ CARBIDE TAG-5A ~ TAG-9B ■ CERAMIC PIN GAUGE CAG-5A ~ CAG-9B
--

### W-6 (For L)

55slot

### W-9 (For LL)

30slot

PCS-1 (AA·Small)
■ STEEL AA-00 ~ AA-6B AH-0 ~ AH-2 AP-1 AA-0E ~ AA-6F AAP-0B ~ AAP-6A PG-00 ⊕⊖ PG-0 ⊕⊖ PM-0B ⊕⊖ ~ PM-6B ⊕⊖ ■ CARBIDE TAA-0B ~ TAA-6B ■ CAA series CAA-0B ~ CAA-6B

PCS-2 (AA·Large)
■ STEEL AA-7A ~ AA-15B AH-3 ~ AH-6 AP-2 ~ AP-3 AA-7C ~ AA-9F AAP-6B ~ AAP-9B PG-2C ⊕⊖ PM-7A ⊕⊖ ~ PM-9B ⊕⊖ ■ CARBIDE TAA-7A ~ TAA-9B ■ CAA series CAA-7A ~ CAA-9B

PCS-2W (AA·Extra-Large)
■ STEEL AA-16A ~ AA-19B AH-7 ~ AH-8 AP-4

## PLASTIC CASE for individual pin gauge



### For Steel Pin Gauge

LL	L	M	S
22.00 ~ 30.00mm	16.00 ~ 22.00mm	7.000 ~ 15.99mm (16.00mm for AA-15B)	0.06 ~ 6.999mm (7.000mm for AA-6B)



### For Carbide Pin Gauge

M	S
7.00 ~ 14.00mm	0.50 ~ 6.99mm (7.00mm for CAA-6B)

### For Ceramic Pin Gauge

M	S
7.00 ~ 10.00mm	0.50 ~ 6.99mm (7.00mm for CAA-6B)

### For Maintenance Line Pin Gauge

M	S
7.00 ~ 10.00mm	3.000 ~ 6.99mm (7.000mm for AML-6B)

# PIN GAUGE CABINET P-5C



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



**USE** • For storage of pin gauge set

**MATERIALS**

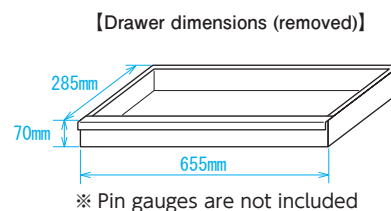
- SPCC (cold rolled steel)

**FEATURES**

- Deep drawer can store SK pin gauge carrying case

**SPECIFICATION**

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



Order No.	Model No.	Product Dimensions (mm)	Weight
217930	P-5C	W655×D350×H630	36kg

BLOCK GAUGES

PIN GAUGES

PIN GAUGE ACCESSORIES

PIN VISE

## MAINTENANCE KIT



**USE** • For pin gauge maintenance

**FEATURES** • Plastic case for easy to carry

GAUGES

RING GAUGES

PLUG GAUGES

LIMIT GAUGES

THICKNESS GAUGES

TAPER GAUGES

WELDING GAUGES

OTHER GAUGES



## ALUMINUM PIN VISE

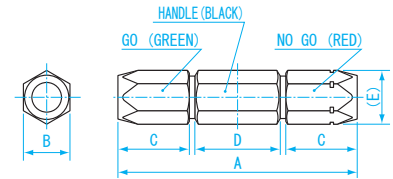
**USE** • For holding pin gauge

**FEATURES**

- Body : Aluminum
- 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.
- Size is marked on the handle.
- With Plastic Case



**DIMENSIONS**

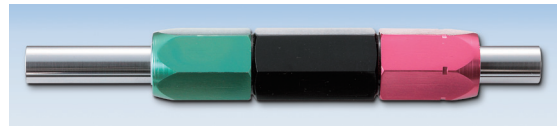


Size	A	B	C	D	E
APV-0A~ 6B	91	14	23	40	16
APV-7A~ 9B	90	17	26	34	19.5
APV-10A~12B	105	21	31	39	24
APV-13A~15B	111	24	31	45	27.5
APV-16A~19B	117	28	32	48	32

**SPECIFICATIONS**

- Holding range : 0.5mm

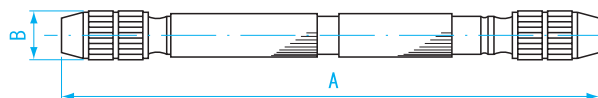
Example use



Order No.	Model No.	Pin Gauge size	Weight
216001	APV-0A	0.200~ 0.500	30g
216002	APV-0B	0.500~ 1.000	30g
216011	APV-1A	1.000~ 1.500	30g
216012	APV-1B	1.500~ 2.000	30g
216021	APV-2A	2.000~ 2.500	30g
216022	APV-2B	2.500~ 3.000	30g
216031	APV-3A	3.000~ 3.500	30g
216032	APV-3B	3.500~ 4.000	30g
216041	APV-4A	4.000~ 4.500	30g
216042	APV-4B	4.500~ 5.000	30g
216051	APV-5A	5.000~ 5.500	30g
216052	APV-5B	5.500~ 6.000	30g
216061	APV-6A	6.000~ 6.500	30g
216062	APV-6B	6.500~ 7.000	30g
216071	APV-7A	7.000~ 7.500	40g
216072	APV-7B	7.500~ 8.000	40g
216081	APV-8A	8.000~ 8.500	40g
216082	APV-8B	8.500~ 9.000	40g
216091	APV-9A	9.000~ 9.500	40g
216092	APV-9B	9.500~10.000	40g
216101	APV-10A	10.000~10.50	65g
216102	APV-10B	10.50 ~11.00	65g
216111	APV-11A	11.00 ~11.50	65g
216112	APV-11B	11.50 ~12.00	65g
216121	APV-12A	12.00 ~12.50	65g
216122	APV-12B	12.50 ~13.00	65g
216131	APV-13A	13.00 ~13.50	80g
216132	APV-13B	13.50 ~14.00	80g
216141	APV-14A	14.00 ~14.50	80g
216142	APV-14B	14.50 ~15.00	80g
216151	APV-15A	15.00 ~15.50	80g
216152	APV-15B	15.50 ~16.00	80g
216161	APV-16A	16.00 ~16.50	110g
216162	APV-16B	16.50 ~17.00	110g
216171	APV-17A	17.00 ~17.50	110g
216172	APV-17B	17.50 ~18.00	110g
216181	APV-18A	18.00 ~18.50	110g
216182	APV-18B	18.50 ~19.00	110g
216191	APV-19A	19.00 ~19.50	110g
216192	APV-19B	19.50 ~20.00	110g



## DIMENSIONS



### USE

- For holding Pin Gauges

### FEATURES

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

### SPECIFICATIONS

- Holding range: 0.5mm

Units : mm

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

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

BLOCK GAUGES

PIN GAUGES

PIN GAUGE ACCESSORIES

PIN VISE

GAUGES

RING GAUGES

PLUG GAUGES

LIMIT GAUGES

THICKNESS GAUGES

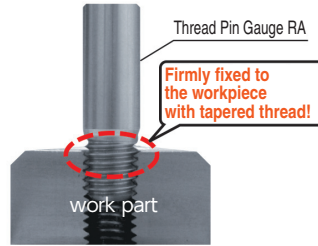
TAPER GAUGES

WELDING GAUGES

OTHER GAUGES

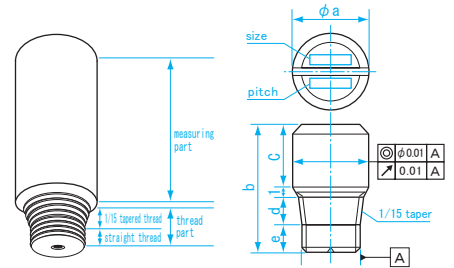
# THREAD PIN GAUGE RA

Suitable when screw holes on workpiece is not chamfered



## DIMENSIONS

Units : mm



- FEATURES**
- 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

Accuracy	Runout between measurement part and thread part : Model No. RA○○-1··within 0.01mm Runout between measurement part and thread part : Model No. RA○○-2··within 0.015mm Runout between measurement part and thread part : Model No. RA○○-3··within 0.02mm Accuracy of $\phi a$ :within $\pm 0.005\text{mm}$
MATERIAL	Stainless Steel (SUS303)

(Size List)

Order No.	Model No.	Size	a (mm)	b (mm)	c (mm)	d (mm)	e (mm)
250011	RA125-1	M1 × P0.25	2	8.0	4.5	1.50	1.00
250012	RA125-2	M1 × P0.25		13.5	10.0		
250013	RA125-3	M1 × P0.25		23.5	20.0		
250014	RA204-1	M2 × P0.4	3	10.0	4.5	2.50	2.00
250015	RA204-2	M2 × P0.4		25.5	20.0		
250016	RA204-3	M2 × P0.4		35.5	30.0		
250017	RA305-1	M3 × P0.5	4	12.0	5.0	3.50	2.50
250018	RA305-2	M3 × P0.5		27.0	20.0		
250019	RA305-3	M3 × P0.5		37.0	30.0		
250020	RA407-1	M4 × P0.7	5	14.0	6.0	3.50	3.50
250021	RA407-2	M4 × P0.7		28.0	20.0		
250022	RA407-3	M4 × P0.7		38.0	30.0		
250023	RA508-1	M5 × P0.8	6	16.0	7.0	4.00	4.00
250024	RA508-2	M5 × P0.8		29.0	20.0		
250025	RA508-3	M5 × P0.8		39.0	30.0		
250026	RA610-1	M6 × P1.0	7	18.0	8.0	4.00	5.00
250027	RA610-2	M6 × P1.0		30.0	20.0		
250028	RA610-3	M6 × P1.0		40.0	30.0		
250029	RA8125-1	M8 × P1.25	9	19.0	8.5	4.50	5.00
250030	RA8125-2	M8 × P1.25		30.5	20.0		
250031	RA8125-3	M8 × P1.25		40.5	30.0		
250032	RA1015-1	M10 × P1.5	11	21.0	8.5	5.50	6.00
250033	RA1015-2	M10 × P1.5		32.5	20.0		
250034	RA1015-3	M10 × P1.5		42.5	30.0		
250035	RA1215-1	M12 × P1.5	13	23.0	8.5	6.50	7.00
250036	RA1215-2	M12 × P1.5		34.5	20.0		
250037	RA1215-3	M12 × P1.5		44.5	30.0		
250038	RA12175-1	M12 × P1.75	15	23.0	8.5	6.50	7.50
250039	RA12175-2	M12 × P1.75		34.5	20.0		
250040	RA12175-3	M12 × P1.75		44.5	30.0		
250041	RA1415-1	M14 × P1.5	17	23.5	8.5	7.00	8.00
250042	RA1415-2	M14 × P1.5		35.0	20.0		
250043	RA1415-3	M14 × P1.5		45.0	30.0		
250044	RA1615-1	M16 × P1.5	19	23.5	8.5	7.00	8.00
250045	RA1615-2	M16 × P1.5		35.0	20.0		
250046	RA1615-3	M16 × P1.5		45.0	30.0		
250047	RA1815-1	M18 × P1.5	19	24.5	8.5	7.00	8.00
250048	RA1815-2	M18 × P1.5		36.0	20.0		
250049	RA1815-3	M18 × P1.5		46.0	30.0		

BLOCK GAUGES

PIN GAUGES

PIN GAUGE ACCESSORIES

PIN VISE

GAUGES

RING GAUGES

PLUG GAUGES

LIMIT GAUGES

THICKNESS GAUGES

TAPER GAUGES

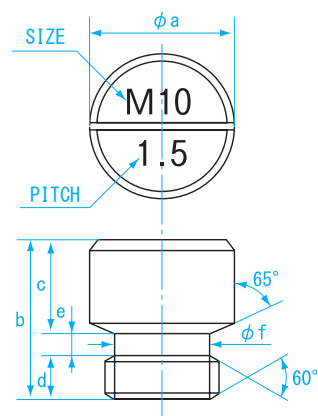
WELDING GAUGES

OTHER GAUGES

# THREAD PIN GAUGE



## DIMENSIONS Units : mm



### FEATURES

- Easy handling with simple tool
- Possible to measure easily, economically, accurately compared to other Gauges
- With support of threaded portion, accurate measurement is possible

<b>Accuracy</b>	Runout between Measuring Head and Screw: Below 0.01mm Accuracy of Measuring Head (size: a): Below $\pm 0.005$ mm Screw: equivalent for JIS for the second grade
<b>Material</b>	Stainless steel (SUS303)

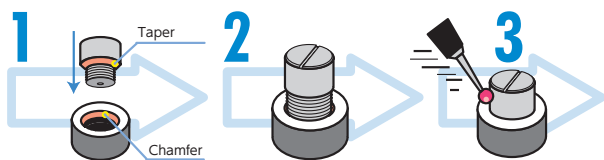
### (Size List)

Order No.	Model No.	Size	a (mm)	b (mm)	c (mm)	d (mm)	e (mm)	f (mm)
360204	THP-0204	M 2 × P0.4	4	9.5	6	3	0.5	1.4
360305	THP-0305	M 3 × P0.5	5					
360407	THP-0407	M 4 × P0.7	6	11		4.3	0.7	3
360508	THP-0508	M 5 × P0.8	7		4	3.9		
360607	THP-06075	M 6 × P0.75	8	14	8	5	1	4.5
360610	THP-0610	M 6 × P1.0	8					
360810	THP-0810	M 8 × P1.0	10	17		10		5.5
360812	THP-08125	M 8 × P1.25	10		7.5		7.5	
361010	THP-1010	M10 × P1.0	12	18	10		6.5	1.5
361012	THP-10125	M10 × P1.25	12			9.5		
361015	THP-1015	M10 × P1.5	14	19		10	7.5	
361210	THP-1210	M12 × P1.0	14		11.3			
361212	THP-12125	M12 × P1.25	16	20	10		8.5	1.5
361215	THP-1215	M12 × P1.5	16			14.5		
361217	THP-12175	M12 × P1.75	18	20		10	8.5	
361415	THP-1415	M14 × P1.5	18		13			
361420	THP-1420	M14 × P2.0	20	20	10		8.5	1.5
361615	THP-1615	M16 × P1.5	20			16		
361620	THP-1620	M16 × P2.0	22	22		10	8.5	
361825	THP-1825	M18 × P2.5	22		16			
362025	THP-2025	M20 × P2.5	22	22	16			

※ Custom made Pin Gauge is also available

### How to use Thread Pin Gauge

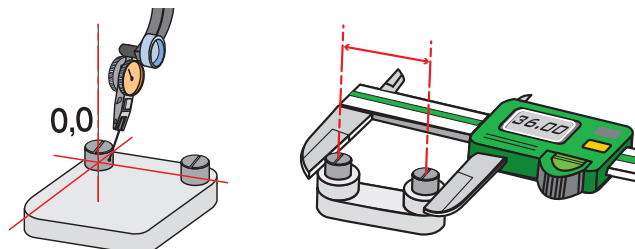
- Easily locate threaded hole position with thread pin gauge  
CMM can Easily attain the hole center using thread pin gauge



1. Prepare a thread pin gauge the same size as the threaded hole
2. Hand screw the thread pin gauge into the threaded hole
3. Measure!

### Example of use

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



BLOCK GAUGES

PIN GAUGES

PIN GAUGE ACCESSORIES

PIN VISE

GAUGES

RING GAUGES

PLUG GAUGES

LIMIT GAUGES

THICKNESS GAUGES

TAPER GAUGES

WELDING GAUGES

OTHER GAUGES



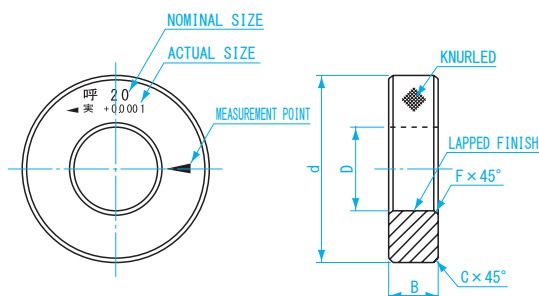
## SUB-ZERO Treatment (Cryogenic hardened) for improved durability

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



### DIMENSIONS

Units : mm



- BLOCK GAUGES
- PIN GAUGES
- PIN GAUGE ACCESSORIES
- PIN VISE

### GAUGES

### RING GAUGES

### PLUG GAUGES

### LIMIT GAUGES

### THICKNESS GAUGES

### TAPER GAUGES

### WELDING GAUGES

### OTHER GAUGES

**MATERIAL** • Alloy tool steel

### SPECIFICATIONS

Size (mm)	Step (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		2.0	2.0	± 5.0	
80 to less than 100	5.0 step	2.0	2.0	± 5.0	
100 to less than 200		2.0	2.0	± 5.0	

(Stock available size)

Size (mm)	Step (mm)	Stock available size (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	0.5step	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

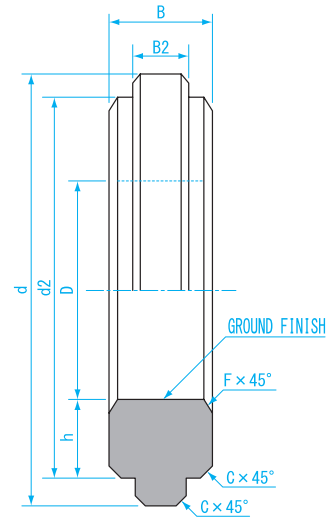
※ Reference value

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
32 to less than 40	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		2.0	1.5	1.1~1.3kg	
70 to less than 80	125	1.4~1.6kg				
80 to less than 90	140	40	2.0	1.7~1.9kg		
90 to less than 100	160			2.3~2.6kg		
100 to less than 110	180	30	2.4	2.0	3.7~4.1kg	
110 to less than 120	190				4.7~5.1kg	
120 to less than 130	200	35	2.4	2.0	5.0~5.5kg	
130 to less than 140	210				5.7~6.3kg	
140 to less than 160	230	40	2.4	2.0	6.6~8.2kg	
160 to less than 180	260				8.6~10kg	
180 to less than 200	280	280	2.4	2.0	9.4~11kg	

**SUB-ZERO TREATMENT (Cryogenic hardened) for improved durability**

## DIMENSIONS

Units : mm



**MATERIALS** • Alloy tool steel

## SPECIFICATIONS

Size (mm)	Step (mm)	Out of Roundness (μm)	Out of Cylindricity (μm)	Tolerance (μm)	Hardness (HV)
200 to less 230	5.0 step	5.0	5.0	± 7.0	653
230 to less 300	10.0 step			± 8.0	
300 to less 400				± 9.0	
400 to less 500				± 10.0	
500 to less 520					

## 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	50	25	25	2.0	2.5	NOT Knurled	15~18
400 to less than 450	540	460~500							19~24
450 to less than 500	600	510~550							23~29
500 to less than 520	660	560~600							27~33

Order No.	Size (mm)
420500	205.0
421000	210.0
421500	215.0
422000	220.0
422500	225.0
423000	230.0
424000	240.0
425000	250.0
426000	260.0
427000	270.0
428000	280.0
429000	290.0

Order No.	Size (mm)
430000	300.0
431000	310.0
432000	320.0
433000	330.0
434000	340.0
435000	350.0
436000	360.0
437000	370.0
438000	380.0
439000	390.0
440000	400.0

BLOCK GAUGES

PIN GAUGES

PIN GAUGE ACCESSORIES

PIN VISE

GAUGES

RING GAUGES

PLUG GAUGES

LIMIT GAUGES

THICKNESS GAUGES

TAPER GAUGES

WELDING GAUGES

OTHER GAUGES



# STEEL RING GAUGE SET



GAUGES

## SUB-ZERO TREATMENT (Cryogenic hardened)



06

### Set List

Set No.	Nominal Size	Pieces 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 · 100.0	4

※ Refer page 156 for detailed specifications and tolerance

BLOCK GAUGES  
PIN GAUGES  
PIN GAUGE ACCESSORIES  
PIN VISE

# STEEL RING GAUGE with MAINTENANCE LINE



GAUGES

## Maintenance line series ring gauge now available

Custom Designs for Fast Delivery!

Please contact us with request

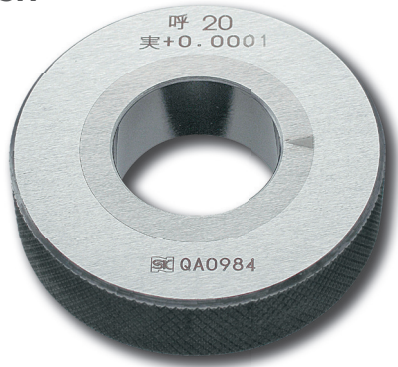


RING GAUGES  
PLUG GAUGES  
LIMIT GAUGES  
THICKNESS GAUGES  
TAPER GAUGES  
WELDING GAUGES  
OTHER GAUGES

- MATERIAL** • Alloy tool steel
- FEATURES**
  - Maintenance line on steel ring gauge allows easy checking for gauge wear-out.
  - When line disappears, wear is more than 1µm
  - Available for sizes : 15 ~ 50mm (1mm step)

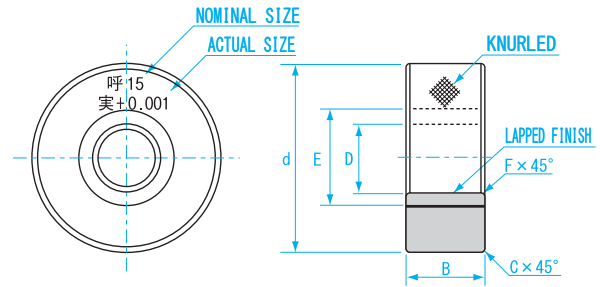
# CARBIDE RING GAUGE

## LAPPED FINISH



## DIMENSIONS

Units : mm



## FEATURES

- Durable and long life
- The coefficient of thermal expansion is small ( $1/2$  of steel,  $5 \times 10^{-6} \text{K}^{-1}$ ), so better tolerates temperature changes
- Less likely to be damaged due to high hardness
- Economical- Frequent periodic calibration not required

## MATERIAL

- Steel with carbide insert

## SPECIFICATIONS

Size (mm)	Step (mm)	Out or Roundness/ Cylindricity ( $\mu\text{m}$ )	Tolerance ( $\mu\text{m}$ )	Hardness (HV)
1 to less than 30	—	0.5	$\pm 1$	1200
30 to less than 50	—	0.8	$\pm 1.5$	

## Size List

※ Reference value

Size D (mm)	Diameter of Carbide part E (mm)	Outside Diameter d (mm)	Thickness B (mm)	Chamfering for outside Diameter C (mm) <sup>※</sup>	Chamfering for inside Diameter F (mm) <sup>※</sup>
1 to less than 2.5	8	22	4	0.4	0.3
2.5 to less than 5	11		5		
5 to less than 10	16	32	8	0.8	0.5
10 to less than 15	21	38	10		
15 to less than 20	28	45	12	1.2	1.0
20 to less than 25	33	53	14		
25 to less than 32	40	63	16	1.5	1.0
32 to less than 40	50	71	18		
40 to less than 50	60	85	20	2.0	

# CERAMIC RING GAUGE

## LAPPED FINISH

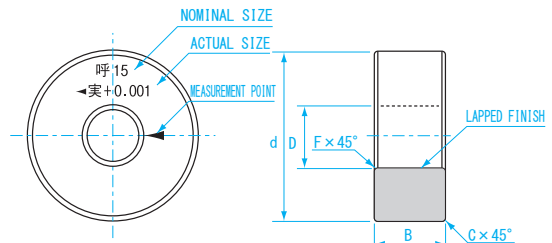


## SPECIFICATIONS

Size (mm)	Step (mm)	Out of Roundness ( $\mu\text{m}$ )	Tolerance ( $\mu\text{m}$ )
1 to less than 30	0.5 step	0.5	$\pm 1$
30 to less than 50		0.8	$\pm 1.5$

## DIMENSIONS

Units : mm



## Size List

※ Reference value

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

## FEATURES

- 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

## MATERIAL

- Ceramics

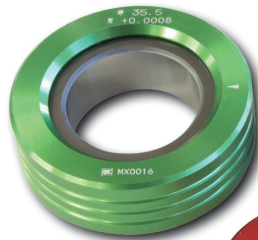
## Material Data

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	$10^{-6} \text{K}^{-1}$	8	8
Heat conductivity	W/m·K	29	3.4

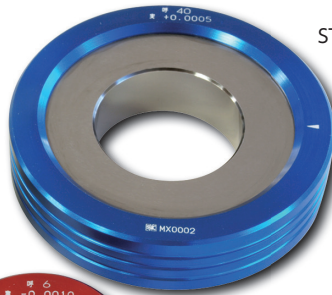
# RING GAUGE (with protective cover)

**No-Slip and Easy to Handle, will increase productivity**

CARBIDE RING GAUGE (with Protective Cover)



STEEL RING GAUGE (with Protective Cover)



CERAMIC RING GAUGE (with Protective Cover)

## FEATURES

- A ring gauge embedded in Aluminum Protective Cover.
- Covered gauge is easier to handle with dirty hands Less susceptible to thermal expansion when holding a gauge by hand.
- Protects from chipping when dropped

## 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

BLOCK GAUGES

# STEEL RING GAUGE OD model

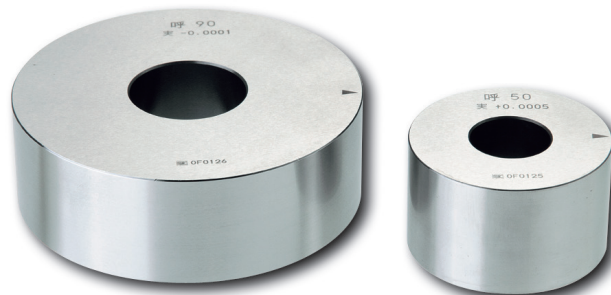


PIN GAUGES

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

PIN GAUGE ACCESSORIES

PIN VISE



GAUGES

RING GAUGES

PLUG GAUGES

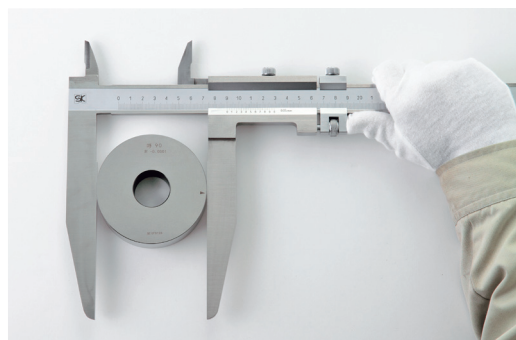
LIMIT GAUGES

THICKNESS GAUGES

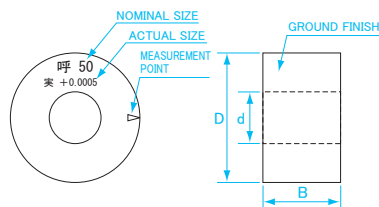
TAPER GAUGES

WELDING GAUGES

OTHER GAUGES



## DIMENSIONS



## SPECIFICATIONS

SizeD (mm)	Step (mm)	OD tolerance (μm)	Out of Roundness (μm)	Out of Cylindricity (μm)	Thickness (mm)	Hole Diameter (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		±10	5	5		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	±10	5	5	250		
375 to less than 400				250		

## USE

- For quick calibration of micrometer

## MATERIAL

- Alloy tool steel

## FEATURES

- Custom sizes are available up to φ 400
- Size range: 40-400mm

## SPECIFICATIONS

- Hardness: HV653-772

## SPECIAL SHAPE- multiple-step gauge

- APPLICATIONS • Quick calibration of Micrometers( 0-25mm)
- MATERIAL • Alloy tool steel
- FEATURES • OD pitch: 5・10・15・20・25mm  
Integrated type gauge



※Sample of special shape

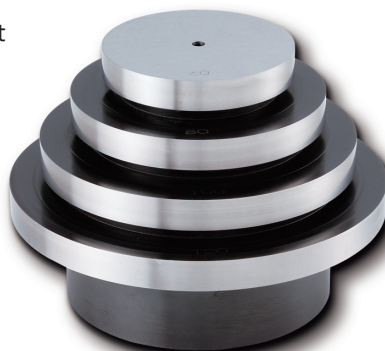
Custom Designs for Fast Delivery!

Please contact us with request



## SPECIAL SHAPE- multiple-step gauge/ OD model

- APPLICATIONS • Use for calibration or 0 adjustment
- MATERIAL • Alloy tool steel
- FEATURES • Size combination is arranged on request



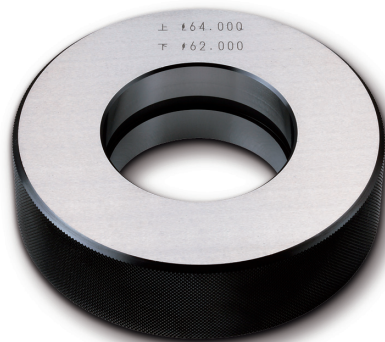
※Sample of custom design

Custom Design for Fast Delivery!

Please contact us with request

## SPECIAL SHAPE- Step gauge/ Inner model

- APPLICATIONS • 0 adjustment for dial bore gauge
- MATERIAL • Alloy tool steel
- FEATURES • Size combination is arranged on request



※Sample of custom design

Custom Designs for Fast Delivery!

Please contact us with request

## SPECIAL SHAPE- Cut out

- APPLICATIONS • Hold ring gauge in a jig and prevent movement
- MATERIAL • Alloy tool steel



※Sample of custom design

Custom Designs for Fast Delivery!

Please contact us with request



## LIMIT PLUG GAUGE H7 (for manufacturing)



LP10-H7



- USE**
  - Limit Plug Gauges are used for measurement tests of holes and shafts
- MATERIAL**
  - Gauge part : Alloy tool steel
  - Handle part : Aluminum
- FEATURES**
  - To determine the fit of a shaft in a hole the gauge has Go/No. Go sides for testing minimum allowable dimensions
- SPECIFICATION**
  - Class H7
  - Hardness HV660 ~ 780

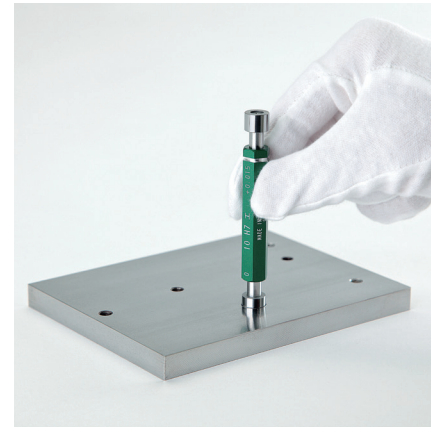
Order No.	Model No.	Size	Weight
397003	LP3-H7	φ 3	10g
397004	LP4-H7	φ 4	10g
397005	LP5-H7	φ 5	10g
397006	LP6-H7	φ 6	10g
397007	LP7-H7	φ 7	20g
397008	LP8-H7	φ 8	20g
397009	LP9-H7	φ 9	20g
397010	LP10-H7	φ10	30g
397011	LP11-H7	φ11	50g
397012	LP12-H7	φ12	50g
397013	LP13-H7	φ13	60g
397014	LP14-H7	φ14	60g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

Other size above the list also available on request

Durable Carbide plug gauge with low thermal expansion and good durability.



TLP10-H7



- USE**
  - Hole diameter inspection
- MATERIALS**
  - Gauge: Carbide
  - Handle: Aluminum
- FEATURES**
  - Go/NoGo gauge for testing the fit of shaft in hole based on maximum and minimum allowable dimensions.
  - Excellent wear resistance for 20-30 times longer service life than steel.
  - The coefficient of thermal expansion ( $5 \times 10^{-6} / K$ ) is  $\frac{1}{2}$  that of steel, so the changes due to temperature are small.
  - Less likely to be scratched or damaged due to high hardness.
  - Economical - Periodic calibration is not required.

Order No.	Model No.	Standard	Weight
396010	TLP10-H7	φ 10	38g
396011	TLP11-H7	φ 11	58g
396012	TLP12-H7	φ 12	64g
396013	TLP13-H7	φ 13	72g
396014	TLP14-H7	φ 14	78g
396015	TLP15-H7	φ 15	110g
396016	TLP16-H7	φ 16	120g
396017	TLP17-H7	φ 17	128g
396018	TLP18-H7	φ 18	142g
396019	TLP19-H7	φ 19	198g
396020	TLP20-H7	φ 20	212g
396021	TLP21-H7	φ 21	222g
396022	TLP22-H7	φ 22	236g
396023	TLP23-H7	φ 23	252g
396024	TLP24-H7	φ 24	268g
396025	TLP25-H7	φ 25	306g
396026	TLP26-H7	φ 26	320g
396027	TLP27-H7	φ 27	334g
396028	TLP28-H7	φ 28	352g
396029	TLP29-H7	φ 29	362g
396030	TLP30-H7	φ 30	382g

BLOCK GAUGES

PIN GAUGES

PIN GAUGE ACCESSORIES

PIN VISE

GAUGES

RING GAUGES

PLUG GAUGES

LIMIT GAUGES

THICKNESS GAUGES

TAPER GAUGES

WELDING GAUGES

OTHER GAUGES



Ceramic plug gauge with long service life for good economic performance.



CLP10-H7



BLOCK GAUGES

PIN GAUGES

PIN GAUGE ACCESSORIES

PIN VISE

## USE

- Hole diameter inspection

## MATERIALS

- Gauge: Ceramic
- Handle: Aluminum

## FEATURES

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

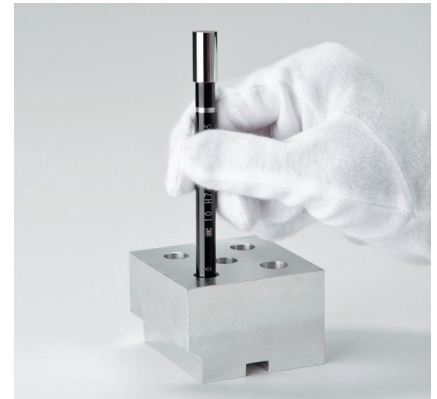
	Order No.	Model No.	Standard
GAUGES	399010	CLP10-H7	φ 10
	399011	CLP11-H7	φ 11
	399012	CLP12-H7	φ 12
RING GAUGES	399013	CLP13-H7	φ 13
	399014	CLP14-H7	φ 14
PLUG GAUGES	399015	CLP15-H7	φ 15
	399016	CLP16-H7	φ 16
LIMIT GAUGES	399017	CLP17-H7	φ 17
	399018	CLP18-H7	φ 18
THICKNESS GAUGES	399019	CLP19-H7	φ 19
	399020	CLP20-H7	φ 20
TAPER GAUGES	399021	CLP21-H7	φ 21
	399022	CLP22-H7	φ 22
WELDING GAUGES	399023	CLP23-H7	φ 23
	399024	CLP24-H7	φ 24
OTHER GAUGES	399025	CLP25-H7	φ 25
	399026	CLP26-H7	φ 26
	399027	CLP27-H7	φ 27
	399028	CLP28-H7	φ 28
	399029	CLP29-H7	φ 29
	399030	CLP30-H7	φ 30

## LIMIT PLUG GAUGE with thin handle H7 (for manufacturing)

Narrow shaft allows examining diameter deep into a hole



SHLP10-H7



- USE**
  - For inspecting hole diameter
- MATERIAL**
  - Gauge part : Alloy tool steel
  - Handle part : Stainless
- FEATURES**
  - The shaft does not interfere and enables inspection of diameter deep into a hole

Order No.	Model No.	Standard	Weight
393503	SHLP3-H7	φ 3	4g
393504	SHLP4-H7	φ 4	8g
393505	SHLP5-H7	φ 5	10g
393506	SHLP6-H7	φ 6	20g
393507	SHLP7-H7	φ 7	24g
393508	SHLP8-H7	φ 8	27g
393509	SHLP9-H7	φ 9	32g
393510	SHLP10-H7	φ10	58g
393511	SHLP11-H7	φ11	63g
393512	SHLP12-H7	φ12	69g
393513	SHLP13-H7	φ13	69g
393514	SHLP14-H7	φ14	82g
393515	SHLP15-H7	φ15	89g
393516	SHLP16-H7	φ16	136g
393517	SHLP17-H7	φ17	146g
393518	SHLP18-H7	φ18	157g
393519	SHLP19-H7	φ19	169g
393520	SHLP20-H7	φ20	181g

Other size above the list also available on request

## LIMIT PLUG GAUGE with MAINTENANCE LINE

New product! Maintenance line series plug gauge now available



Custom Size with Fast Delivery!

Please contact us with request

- USE**
  - For inspecting hole diameter
- MATERIAL**
  - Alloy tool steel
- FEATURES**
  - Maintenance line on Plug Gage allows easy checking for gauge wear-out
  - When line disappears, wear is more than 1μm

BLOCK GAUGES

PIN GAUGES

PIN GAUGE ACCESSORIES

PIN VISE

GAUGES

RING GAUGES

PLUG GAUGES

LIMIT GAUGES

THICKNESS GAUGES

TAPER GAUGES

WELDING GAUGES

OTHER GAUGES

**CARBIDE LIMIT STEP PLUG GAUGE**  






















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



**SPTLP-10**



- USE**
  - Hole diameter inspection
- MATERIALS**
  - Gauge: Carbide
  - Handle: Aluminum
- FEATURES**
  - Go/NoGo gauge for testing the fit of shaft in hole based on maximum and minimum allowable dimensions.
  - Go/NoGo gauge at one side. No need to flip over, work efficiency goes up.

Order No.	Model No.	Standard
 398110	SPTLP-10	φ10
 398111	SPTLP-11	φ11
 398112	SPTLP-12	φ12
 398113	SPTLP-13	φ13
 398114	SPTLP-14	φ14
 398115	SPTLP-15	φ15
 398116	SPTLP-16	φ16
 398117	SPTLP-17	φ17
 398118	SPTLP-18	φ18
 398119	SPTLP-19	φ19
 398120	SPTLP-20	φ20
 398121	SPTLP-21	φ21
 398122	SPTLP-22	φ22
 398123	SPTLP-23	φ23
 398124	SPTLP-24	φ24
 398125	SPTLP-25	φ25
 398126	SPTLP-26	φ26
 398127	SPTLP-27	φ27
 398128	SPTLP-28	φ28
 398129	SPTLP-29	φ29
 398130	SPTLP-30	φ30

**CERAMIC LIMIT STEP PLUG GAUGE**  






















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



**SPCLP-10**



- USE**
  - Hole diameter inspection
- MATERIALS**
  - Gauge: Ceramic
  - Handle: Aluminum
- FEATURES**
  - Go/NoGo gauge for testing the fit of shaft in hole based on maximum and minimum allowable dimensions.
  - Go/NoGo gauge at one side. No need to flip over, work efficiency goes up.

Order No.	Model No.	Standard
 398010	SPCLP-10	φ10
 398011	SPCLP-11	φ11
 398012	SPCLP-12	φ12
 398013	SPCLP-13	φ13
 398014	SPCLP-14	φ14
 398015	SPCLP-15	φ15
 398016	SPCLP-16	φ16
 398017	SPCLP-17	φ17
 398018	SPCLP-18	φ18
 398019	SPCLP-19	φ19
 398020	SPCLP-20	φ20
 398021	SPCLP-21	φ21
 398022	SPCLP-22	φ22
 398023	SPCLP-23	φ23
 398024	SPCLP-24	φ24
 398025	SPCLP-25	φ25
 398026	SPCLP-26	φ26
 398027	SPCLP-27	φ27
 398028	SPCLP-28	φ28
 398029	SPCLP-29	φ29
 398030	SPCLP-30	φ30

## STEEL LIMIT PLUG GAUGE H7 (for manufacturing)

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

**USE** • For inspecting hole diameter

**MATERIAL** • Body : Aluminum • Gauge : Steel


**SPG12-H7**

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

## CARBIDE LIMIT PLUG GAUGE H7 (for manufacturing)

Excellent in abrasion resistance, made of durable carbide

**USE** • For inspecting hole diameter

**MATERIAL** • Body : Aluminum • Gauge : Carbide


**TPG9-H7**

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

## CERAMIC LIMIT PLUG GAUGE H7 (for manufacturing)

Excellent stability over time, Ceramic requires low maintenance

**USE** • For inspecting hole diameter

**MATERIAL** • Body : Aluminum • Gauge : Ceramic


**CPG6-H7**

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

BLOCK GAUGES

PIN GAUGES

PIN GAUGE ACCESSORIES

PIN VISE

**GAUGES**

RING GAUGES

PLUG GAUGES

LIMIT GAUGES

THICKNESS GAUGES

TAPER GAUGES

WELDING GAUGES

OTHER GAUGES

# STEEL RING LIMIT GAUGE h7



# LIMIT STEEL RING GAUGES (with protective cover)

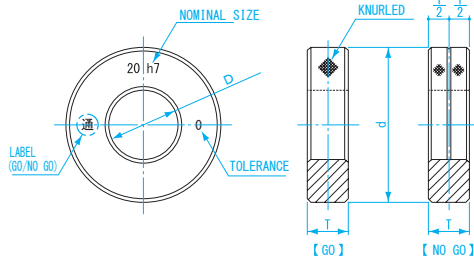


GO/ NOGO gauge paired by a protective cover  
No risk of losing one, easy to use.



## DIMENSIONS

Units : mm



### USE

- For shaft diameter inspection

### MATERIAL

- Alloy tool steel

### FEATURES

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

### SPECIFICATIONS

- Hardness : HV653 ~ 772
- Tolerance class h7

### USE

- For shaft diameter inspection

### MATERIALS

- Gauge: Alloy tool steel
- Protective cover: Aluminum

### FEATURES

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

### SPECIFICATION

- Tolerance class h7

Order No.	Model No.	Nominal size D(mm)	Outside Diameter d(mm)	Thickness T(mm)	Tolerance Class	Tolerance (μm)				
394000	LR10-h7	φ10	32	8	h7	0 -15				
394010	LR11-h7	φ11	38	10		h7	0 -18			
394020	LR12-h7	φ12								
394030	LR13-h7	φ13								
394040	LR14-h7	φ14								
394050	LR15-h7	φ15								
394060	LR16-h7	φ16	45	12				h7	0 -18	
394070	LR17-h7	φ17								
394080	LR18-h7	φ18								
394090	LR19-h7	φ19								
394100	LR20-h7	φ20								
394110	LR21-h7	φ21	53	14	h7	0 -21				
394120	LR22-h7	φ22								
394130	LR23-h7	φ23								
394140	LR24-h7	φ24								
394150	LR25-h7	φ25								
394160	LR26-h7	φ26					63	16	h7	0 -21
394170	LR27-h7	φ27								
394180	LR28-h7	φ28								
394190	LR29-h7	φ29								
394200	LR30-h7	φ30								

Order No.	Model No.	Nominal size (mm)
New 395005	HKLR5-h7	φ5
New 395006	HKLR6-h7	φ6
New 395007	HKLR7-h7	φ7
New 395008	HKLR8-h7	φ8
New 395009	HKLR9-h7	φ9
New 395010	HKLR10-h7	φ10
New 395011	HKLR11-h7	φ11
New 395012	HKLR12-h7	φ12
New 395013	HKLR13-h7	φ13
New 395014	HKLR14-h7	φ14
New 395015	HKLR15-h7	φ15
New 395016	HKLR16-h7	φ16
New 395017	HKLR17-h7	φ17
New 395018	HKLR18-h7	φ18
New 395019	HKLR19-h7	φ19
New 395020	HKLR20-h7	φ20

# THREAD LIMIT GAUGE

Check accuracy of threads easily using GO/NOGO thread gauges

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

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

● For each screw size to be measured the corresponding gauge has standard dimensions. The gauge is used to perform GO/NOGO test based on the prescribed minimum and maximum dimensions for each screw grade.  
 To use test thread using gauge, GO gauge should thread without any difficulties and NOGO gauge should not thread more that two complete revolutions.

- USE** • For screw thread inspection
- FEATURES** • Checks upper and lower limit dimensional precision

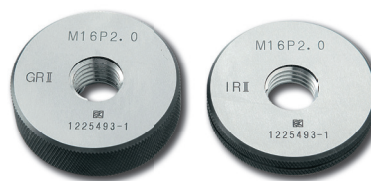
## THREAD PLUG GAUGE



- MATERIAL**
  - Gauge part : Alloy tool steel
  - Handle part : Aluminum

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

## THREAD RING GAUGE



- MATERIAL**
  - Alloy tool steel

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

Other size above the list also available on request

BLOCK GAUGES

PIN GAUGES

PIN GAUGE ACCESSORIES

PIN VISE

GAUGES

RING GAUGES

PLUG GAUGES

LIMIT GAUGES

THICKNESS GAUGES

TAPER GAUGES

WELDING GAUGES

OTHER GAUGES

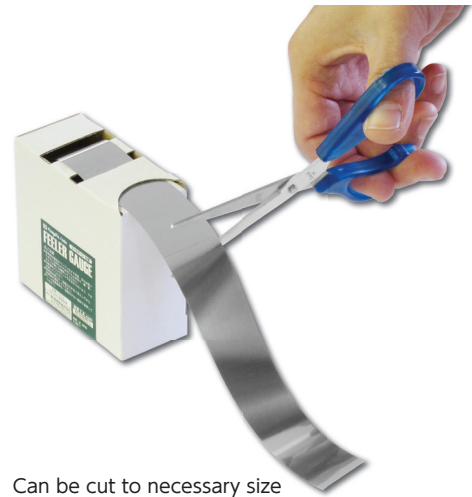


Essential for assembly and adjustment. Wide type of feeler gauge now available.



50mm width

30mm width



Can be cut to necessary size

BLOCK GAUGES

PIN GAUGES

PIN GAUGE ACCESSORIES

PIN VISE

GAUGES

RING GAUGES

PLUG GAUGES

LIMIT GAUGES

THICKNESS GAUGES

TAPER GAUGES

WELDING GAUGES

OTHER GAUGES

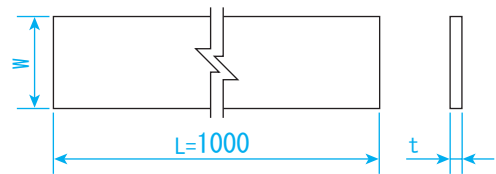
**USE** • For assembly or adjustment of automotive engine components or other machinery by cutting it to necessary size

**MATERIALS** • Stainless steel (SUS304) [RoHS Compliant]  
• Brass (available as custom order)

**FEATURES** • Can be cut to necessary size  
• Convenient cardboard storage box.  
• Made of stainless steel, rust resistant.

### DIMENSIONS

Unit: mm



Order No.	Model No.	Leaf Width (W) (mm)	Thickness (t) (mm)	Thickness Accuracy (t) (mm)
NEW007391	SFG30-005-1	30	0.005	±0.0005
NEW007392	SFG30-01-1		0.01	±0.001
NEW007393	SFG30-02-1		0.02	±0.002
NEW007394	SFG30-03-1		0.03	±0.003
NEW007395	SFG30-04-1		0.04	±0.004
NEW007396	SFG30-05-1		0.05	±0.005
NEW007397	SFG30-06-1		0.06	±0.006
NEW007398	SFG30-08-1		0.08	±0.008
NEW007399	SFG30-10-1		0.1	±0.01
NEW007400	SFG50-005-1		50	0.005
NEW007401	SFG50-01-1	0.01		±0.001
NEW007402	SFG50-02-1	0.02		±0.002
NEW007403	SFG50-03-1	0.03		±0.003
NEW007404	SFG50-04-1	0.04		±0.004
NEW007405	SFG50-05-1	0.05		±0.005
NEW007406	SFG50-06-1	0.06		±0.006
NEW007407	SFG50-08-1	0.08		±0.008
NEW007408	SFG50-10-1	0.1		±0.01



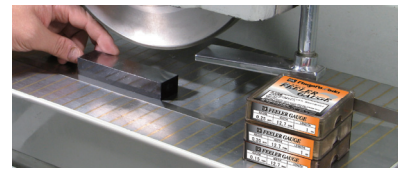
**USE** • Measurement of gap width

**MATERIAL**

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

**FEATURES**

- 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(FG series)



**SFG series (Stainless Steel)**

Order No.	Model No.	Size (mm)	Leaf Width (mm)	Accuracy (mm)	Case size (mm)	Weight
007245	SFG-005-1	0.005×1m	12.7	±0.004	77×77×22	40g
007251	SFG-01-1	0.01 ×1m				
007252	SFG-02-1	0.02 ×1m				
007381	SFG-03-1	0.03 ×1m				
007382	SFG-04-1	0.04 ×1m				
007383	SFG-05-1	0.05 ×1m		±0.005		
007384	SFG-06-1	0.06 ×1m				
007385	SFG-07-1	0.07 ×1m				
007386	SFG-08-1	0.08 ×1m				
007387	SFG-09-1	0.09 ×1m				
007388	SFG-10-1	0.10 ×1m	±0.006	50g		

**FG series (Carbon Tool Steel)**

Order No.	Model No.	Size (mm)	Leaf Width (mm)	Accuracy (mm)	Case size (mm)	Weight	
007253	FG-03-1	0.03 ×1m	12.7	±0.005	77×77×22	40g	
007254	FG-04-1	0.04 ×1m					
007255	FG-05-1	0.05 ×1m					
007256	FG-06-1	0.06 ×1m					
007257	FG-07-1	0.07 ×1m					
007258	FG-08-1	0.08 ×1m		±0.01			
007259	FG-09-1	0.09 ×1m					
007260	FG-10-1	0.10 ×1m					
007261	FG-11-1	0.11 ×1m					
007262	FG-12-1	0.12 ×1m					
007263	FG-13-1	0.13 ×1m		±0.012		115×115×22	50g
007264	FG-14-1	0.14 ×1m					
007265	FG-15-1	0.15 ×1m					
007270	FG-20-1	0.20 ×1m					
007275	FG-25-1	0.25 ×1m					
007280	FG-30-1	0.30 ×1m	±0.02	-	60g		
007282	FG-35-1	0.35 ×1m					
007284	FG-40-1	0.40 ×1m					
007286	FG-45-1	0.45 ×1m					
007287	FG-50-1	0.50 ×1m					
007289	FG-60-1	0.60 ×1m	±0.02	-	60g		
007291	FG-70-1	0.70 ×1m					
007292	FG-80-1	0.80 ×1m					
007293	FG-90-1	0.90 ×1m					
007294	FG-00-1	1.00 ×1m					

BLOCK GAUGES

PIN GAUGES

PIN GAUGE ACCESSORIES

PIN VISE

GAUGES

RING GAUGES

PLUG GAUGES

LIMIT GAUGES

THICKNESS GAUGES

TAPER GAUGES

WELDING GAUGES

OTHER GAUGES

# THICKNESS GAUGE



## USE

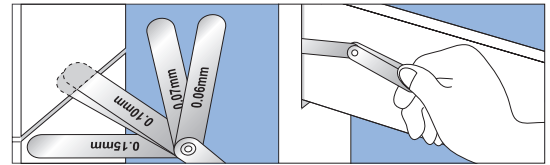
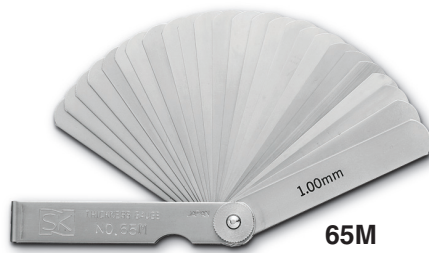
- Measurement of gap width

## MATERIAL

- Carbon tool steel

## FEATURES

- 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



※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

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

06

BLOCK GAUGES

PIN GAUGES

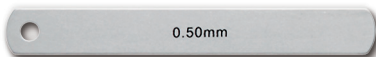
PIN GAUGE ACCESSORIES

PIN VISE

# THICKNESS GAUGES Leaf



S100-05



0.50mm



1.00mm

S150-10

## MATERIAL

- Carbon tool steel

## SPECIFICATIONS

- Leaf width : 12.7mm

### ■ Leaf Length : 100mm

Order No.	Model No.	Thickness (mm)
110801	S100-001	0.01
110802	S100-002	0.02
110803	S100-003	0.03
110804	S100-004	0.04
110805	S100-005	0.05
110806	S100-006	0.06
110807	S100-007	0.07
110808	S100-008	0.08
110809	S100-009	0.09
110810	S100-01	0.10
110811	S100-02	0.20
110812	S100-03	0.30
110813	S100-04	0.40
110814	S100-05	0.50
110815	S100-06	0.60
110816	S100-07	0.70
110817	S100-08	0.80
110818	S100-09	0.90
110819	S100-10	1.00

### ■ Leaf Length : 150mm

Order No.	Model No.	Thickness (mm)
110820	S150-001	0.01
110821	S150-002	0.02
110822	S150-003	0.03
110823	S150-004	0.04
110824	S150-005	0.05
110825	S150-006	0.06
110826	S150-007	0.07
110827	S150-008	0.08
110828	S150-009	0.09
110829	S150-01	0.10
110830	S150-02	0.20
110831	S150-03	0.30
110832	S150-04	0.40
110833	S150-05	0.50
110834	S150-06	0.60
110835	S150-07	0.70
110836	S150-08	0.80
110837	S150-09	0.90
110838	S150-10	1.00

RING GAUGES

PLUG GAUGES

LIMIT GAUGES

THICKNESS GAUGES

TAPER GAUGES

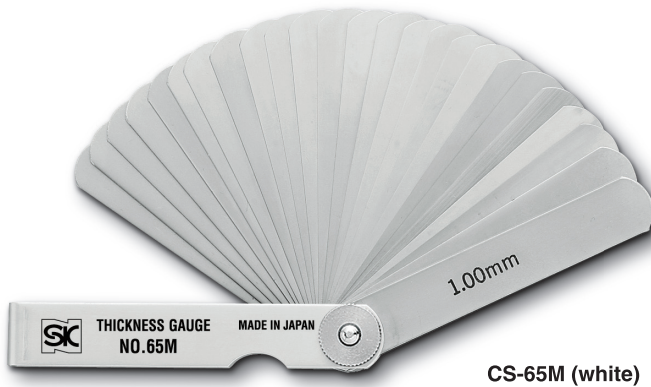
WELDING GAUGES

OTHER GAUGES

# THICKNESS GAUGE with COLOR SLEEVES

Please choose from white, black and green.

• For parts other than 172 series, Threaded pivot so leaves can be removed and replaced.



CS-65M (white)



CS-65M (black)



CS-65M (green)

**USE** • Measurement of gap width

**MATERIAL**

- Carbon tool steel

**FEATURES**

- 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

※ Please specify color (White, Black, Green) when ordering

Model No.	Leaf Length (mm)	Pieces/set	Size (mm)	Weight
CS-172MA	75	9	0.04 0.05 0.06 0.07 0.08 0.10 0.15 0.20 0.30	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

**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

BLOCK GAUGES

PIN GAUGES

PIN GAUGE ACCESSORIES

PIN VISE

GAUGES

RING GAUGES

PLUG GAUGES

LIMIT GAUGES

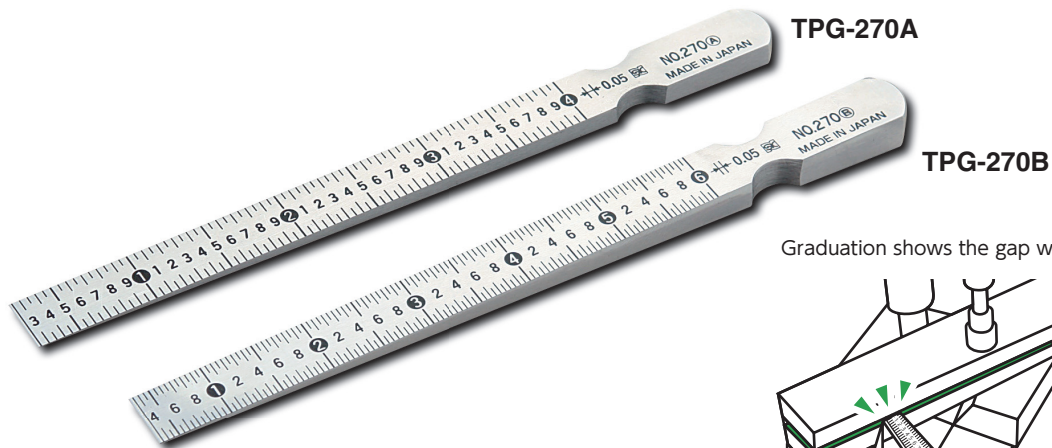
THICKNESS GAUGES

TAPER GAUGES

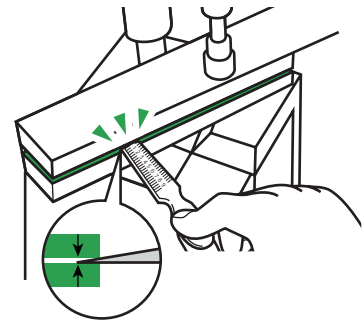
WELDING GAUGES

OTHER GAUGES

## TAPER GAUGES



Graduation shows the gap width



- USE**
  - Measurement of groove and gap etc.
- MATERIAL**
  - Machine grade carbon steel (S55C), not hardened
- FEATURES**
  - Use the thickness of taper to measure the gap width
  - Packed in plastic carrying case
  - Accuracy  $\pm 0.04\text{mm}$
  - Satin finish

Order No.	Model No.	Standard	Measuring Range (mm)	Accuracy (mm)	Graduation (mm)	Taper Angle	Full Length (H) × (W) (mm)	Weight
007000	TPG-270A	270A	0.3~4	$\pm 0.04$	0.05	1°54'33"	160×11	95g
007001	TPG-270B	270B	0.4~6	$\pm 0.04$	0.05	2°51'45"	160×11	95g

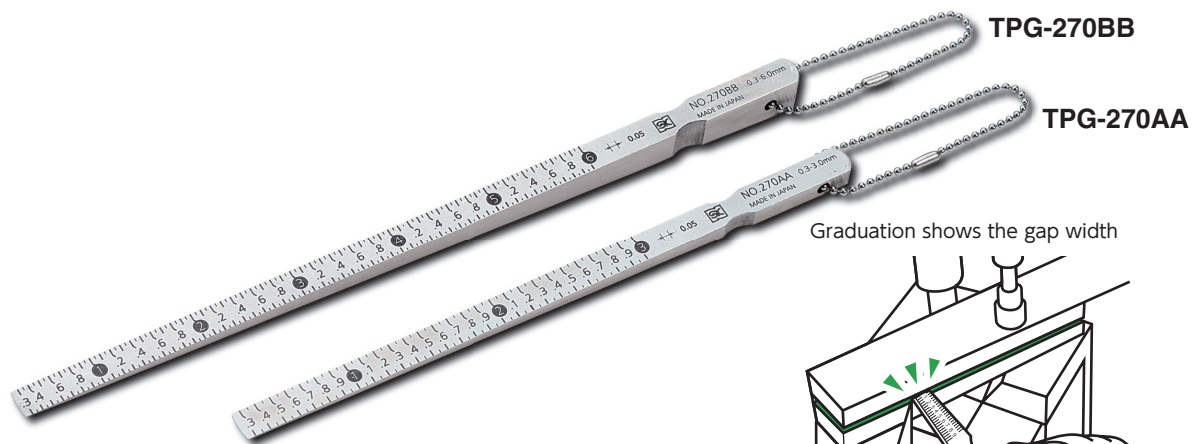
BLOCK GAUGES

PIN GAUGES

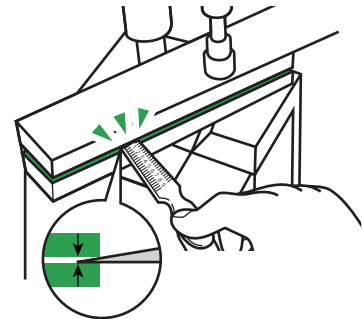
PIN GAUGE ACCESSORIES

PIN VISE

## TAPER GAUGES



Graduation shows the gap width



- USE**
  - Measurement of groove and gap etc.
- MATERIAL**
  - Machine grade carbon steel (S55C), not hardened
- FEATURES**
  - Use the thickness of taper to measure the gap width, also can use as height adjustment jig
  - Narrow width type
  - Satin finish
  - Packed in plastic carrying case
  - Ball chain attached

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

GAUGES

RING GAUGES

PLUG GAUGES

LIMIT GAUGES

THICKNESS GAUGES

TAPER GAUGES

WELDING GAUGES

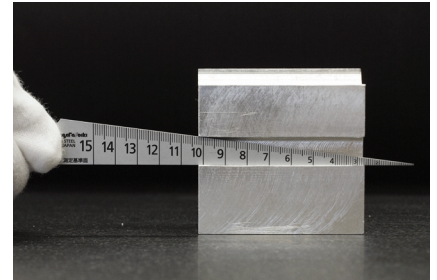
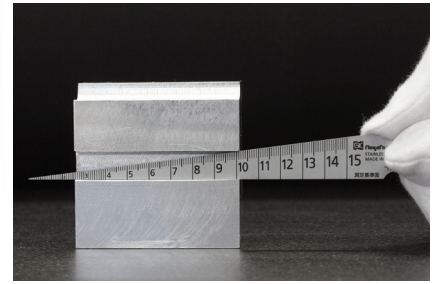
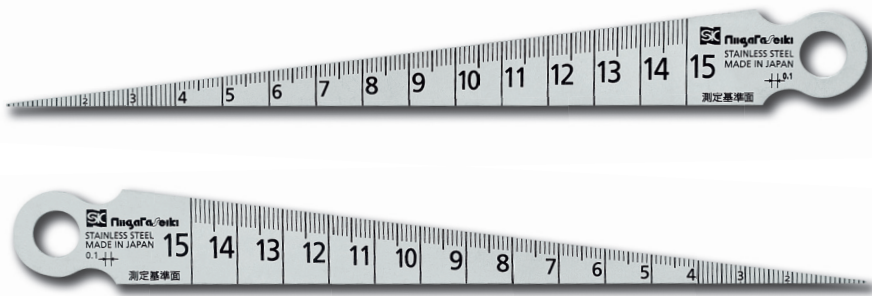
OTHER GAUGES

# RIGHT ANGLE TAPER GAUGE



GAUGES

06



- USE**
  - Measurement of groove and gap etc.
- MATERIAL**
  - Hardened stainless steel (SUS420J2)
- FEATURES**
  - 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

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

BLOCK GAUGES

PIN GAUGES

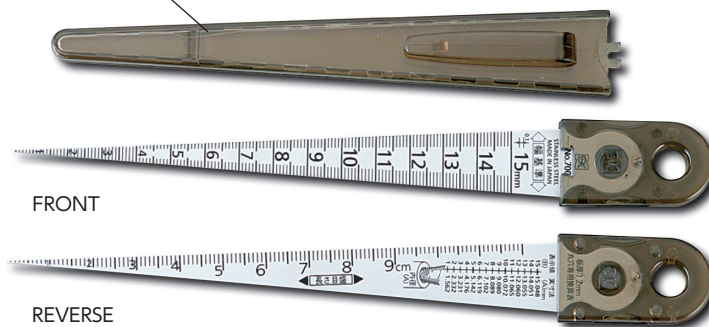
PIN GAUGE ACCESSORIES

PIN VISE

# TAPER GAUGES



Clip style plastic case



Perfect for carrying in shirt pocket

- USE**
  - Use the width of taper to measure the gap width
- MATERIAL**
  - Hardened stainless steel (SUS420J2)
  - Hardness : HV480
- FEATURES**
  - Satin finish
  - Reverse side- scale graduated, hole diameter conversion table
  - Pocket clip style carrying case
  - Scale : Front side- Width scale, Reverse side - Length scale

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

GAUGES

RING GAUGES

PLUG GAUGES

LIMIT GAUGES

THICKNESS GAUGES

TAPER GAUGES

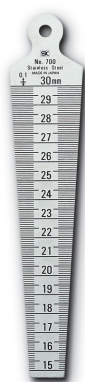
WELDING GAUGES

OTHER GAUGES

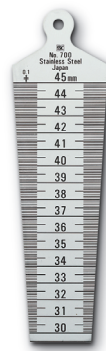
# TAPER GAUGES



TPG-700A



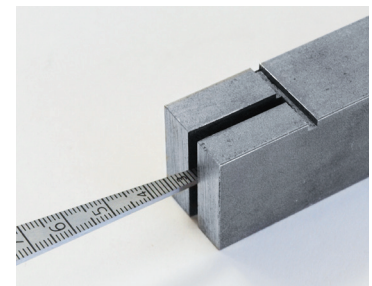
TPG-700B



TPG-700C



TPG-700D



Measurement of gap width

- USE**
  - Measure openings, slot width, hole size etc
- MATERIAL**
  - Hardened stainless steel (SUS420J2)
  - Hardness : HV480
- FEATURES**
  - Satin finish

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

BLOCK GAUGES

PIN GAUGES

PIN GAUGE ACCESSORIES

PIN VISE

GAUGES



# TAPER GAUGES (KAIDAN SCALE)

New stepped millimeter graduation prevents misreading



- USE**
  - Measure openings, slot width, hole size etc
- MATERIALS**
  - Hardened stainless steel
  - Hardness: HV480
- FEATURES**
  - Increasing height of each mark makes it easier for eye to distinguish 1mm steps
  - Sequential number style can be read directly without checking the surrounding numbers, 2mm point markings
  - Satin finish
  - FRONT: width scale
  - BACK: length scale
  - With a conversion table

Order No.	Model No.	Measurement Range (mm)	Accuracy (mm)	Graduation (mm)	Taper Angle	Full Length (mm)	Thickness (mm)	Weight
007211	TPG-700AKD	1 ~ 15	± 0.05	0.1	7° 9' 10"	148.5	1.2	10g

RING GAUGES

PLUG GAUGES

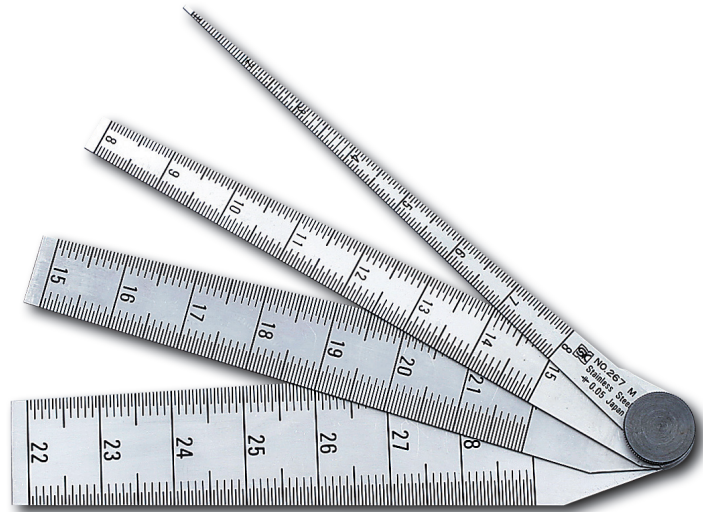
LIMIT GAUGES

THICKNESS GAUGES

TAPER GAUGES

WELDING GAUGES

OTHER GAUGES



- USE**
  - Measurement of slot width and hole size etc.
- MATERIAL**
  - Hardened stainless steel (SUS420J2)
- FEATURES**
  - 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)

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

BLOCK GAUGES

PIN GAUGES

PIN GAUGE ACCESSORIES

PIN VISE

## SLIDE TAPER GAUGES



Clip-style slide case

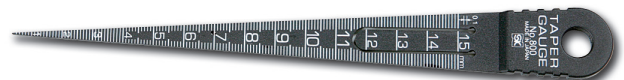


Perfect for carrying in shirt pocket

- USE**
  - Measurement of tubing, bore, slot width, hole size etc.
- MATERIAL**
  - Hardened stainless steel (SUS420J2)
  - Hardness : HV480
- FEATURES**
  - Satin finish
  - Clip-type slide case for safe and convenient carrying
  - Gauge tip is rounded for safety
  - Slide into case for storage

Order No.	Model No.	Standard	Measuring Range (mm)	Accuracy (mm)	Graduation (mm)	Taper Angle	Weight
007201	TPG-700SL	700SL	1~9	±0.05	0.1	7°9'10"	20g

## PLASTIC TAPER GAUGES



can put in a pocket

- USE**
  - Measure openings, slot width, hole size, etc.
- MATERIALS**
  - Polycarbonate
- FEATURES**
  - Scratch resistant
  - Clip design

Order No.	Model No.	Standard	Measuring Range (mm)	Accuracy (mm)	Graduation (mm)	Taper Angle	Weight
007040	TPG-800	800	1~15	±0.2	0.1	158	5g

GAUGES

RING GAUGES

PLUG GAUGES

LIMIT GAUGES

THICKNESS GAUGES

TAPER GAUGES

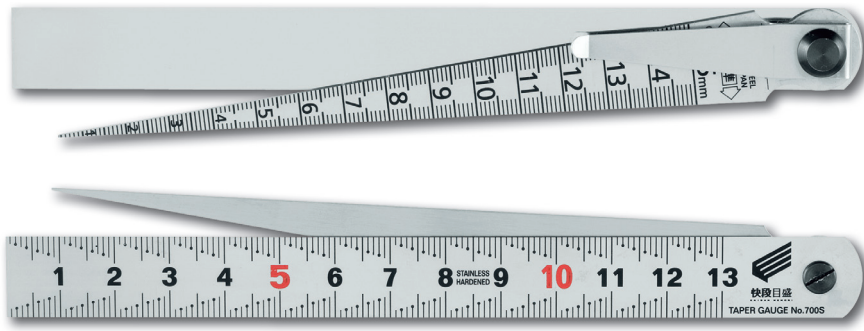
WELDING GAUGES

OTHER GAUGES



## TAPER GAUGES (with KAIDAN SCALE)

Convenient set, taper gauge 700A with 130mm scale



With pocket clip, easy to carry

- USE**
  - Measurement of tubing, slot width, hole size and flange face to face dimension etc.
- MATERIALS**
  - Hardened stainless steel (SUS 420J2)
- FEATURES**
  - Convenient set, taper gauge 700A with 130mm scale. Folds safely with pocket clip, easy to carry
  - 130mm scale with stepped graduation for easy reading
  - Satin finish

Order No.	Model No.	Weight
NEW 007205	700SKD	40g

	Measurement Range (mm)	Accuracy (mm)	Graduation (mm)	Full Length (mm)	Taper Angle
Taper Gauge	1~ 15	±0.05	0.1	148.5	7°9'10"
Scale	0~130	±0.13	0.5	155	—

BLOCK GAUGES

PIN GAUGES

PIN GAUGE ACCESSORIES

PIN VISE

## TAPER GAUGE

Convenient set, taper gauge 700A with 130mm scale



With pocket clip, easy to carry

- USE**
  - Measurement of tubing, slot width, hole size and flange face to face dimension etc.
- MATERIALS**
  - Hardened stainless steel (SUS 420J2)
- FEATURES**
  - Convenient set, taper gauge 700A with 130mm scale. Folds safely with pocket clip, easy to carry
  - Satin finish

Order No.	Model No.	Standard	Weight
007200	TPG-700S	700S	40g

	Measurement Range (mm)	Accuracy (mm)	Graduation (mm)	Full Length (mm)	Taper Angle
Taper Gauge	1~ 15	±0.05	0.1	148.5	7°9'10"
Scale	0~130	±0.13	0.5	155	—

GAUGES

RING GAUGES

PLUG GAUGES

LIMIT GAUGES

THICKNESS GAUGES

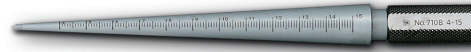
TAPER GAUGES

WELDING GAUGES

OTHER GAUGES



TPG-710A



TPG-710B



TPG-710C

- USE**
  - Measure hole size or gap width
- MATERIAL**
  - TPG-710A : SK Steel, TPG-710B/710C : Carbon steel for machine structural use
  - Grip : Free cutting steel
- FEATURES**
  - Cylindrical type
  - Silver finish

Order No.	Model No.	Standard	Measuring Range (mm)	Accuracy (mm)	Graduation (mm)	Taper Angle	Full Length (mm)	Weight
007100	TPG-710A	710A	1 ~ 6	± 0.05	0.1	5° 44'	93	20g
007101	TPG-710B	710B	4 ~ 15	± 0.05	0.1	5° 44'	175	140g
007102	TPG-710C	710C	4 ~ 25	± 0.05	0.1	5° 44'	290	550g

BLOCK GAUGES

PIN GAUGES

PIN GAUGE ACCESSORIES

PIN VISE

## CIRCULAR TAPER GAUGE WITH GREEN COLOR GRIP

### New line-up with Green Aluminum Grip



CGTPG-710A



CGTPG-710B



CGTPG-710C

- USE**
  - Measure hole size or gap width
- MATERIALS**
  - Gauge : SK steel (CCTPG-710A), Carbon steel for machine structure use (CCTPG-710B & CCTPG-710C)
  - Grip : Anodized aluminum
- FEATURES**
  - Silver finish

Order No.	Model No.	Standard	Measuring Range (mm)	Accuracy (mm)	Graduation (mm)	Taper Angle	Full Length (mm)	Weight
007103	CGTPG-710A	710A	1 ~ 6	± 0.05	0.1	5° 44'	93	20g
007104	CGTPG-710B	710B	4 ~ 15	± 0.05	0.1	5° 44'	175	140g
007105	CGTPG-710C	710C	4 ~ 25	± 0.05	0.1	5° 44'	290	550g

GAUGES

RING GAUGES

PLUG GAUGES

LIMIT GAUGES

THICKNESS GAUGES

TAPER GAUGES

WELDING GAUGES

OTHER GAUGES



## CIRCULAR TAPER GAUGES



TPG-715A

- USE**
  - Use for measuring hole size or gap width
- MATERIAL**
  - Gauge : SK Steel (Non-Hardened)
  - Case : Brass
- FEATURES**
  - Silver finish
  - Comes with a protective cap for the gauge tip

Order No.	Model No.	Standard	Measuring Range (mm)	Accuracy (mm)	Graduation (mm)	Taper Angle	Full Length (mm)	Weight
007150	TPG-715A	715A	0.1 ~ 3	± 0.05	0.1	5° 43' 29"	118.5	33g
007151	TPG-715B	715B	1 ~ 6	± 0.05	0.1	5° 43' 29"	168	80g

BLOCK GAUGES

PIN GAUGES

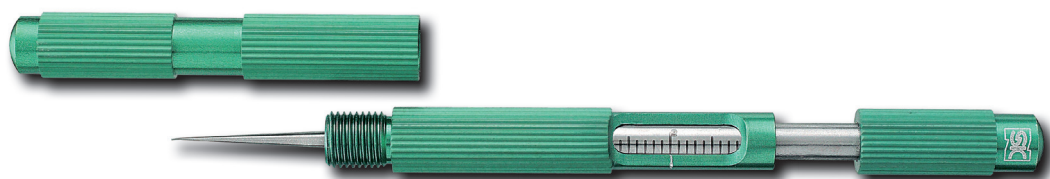
PIN GAUGE ACCESSORIES

PIN VISE

## CIRCULAR TAPER GAUGE WITH GREEN COLOR CASE



New line-up. Circular taper gauge with green case



CCTPG-715A

- USE**
  - Use for measuring hole size or gap width
- MATERIALS**
  - Gauge : SK steel
  - Anodized aluminum
- FEATURES**
  - Comes with a protective cap for the gauge tip

Order No.	Model No.	Standard	Measuring Range (mm)	Accuracy (mm)	Graduation (mm)	Taper Angle	Full Length (mm)	Weight
007152	CCTPG-715A	715A	0.1 ~ 3	± 0.05	0.1	5° 43' 29"	118.5	33g
007153	CCTPG-715B	715B	1 ~ 6	± 0.05	0.1	5° 43' 29"	168	80g

RING GAUGES

PLUG GAUGES

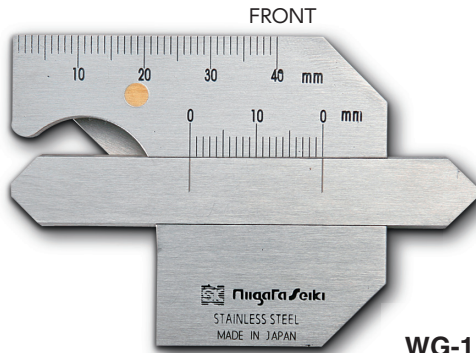
LIMIT GAUGES

THICKNESS GAUGES

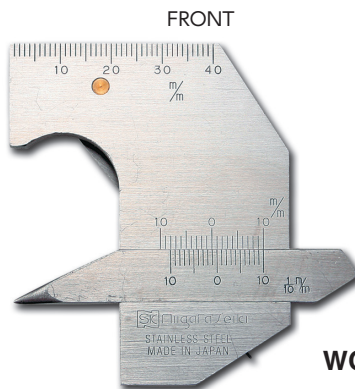
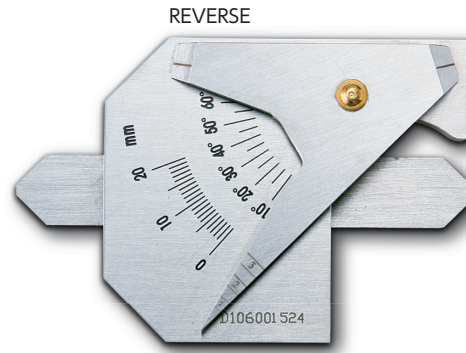
TAPER GAUGES

WELDING GAUGES

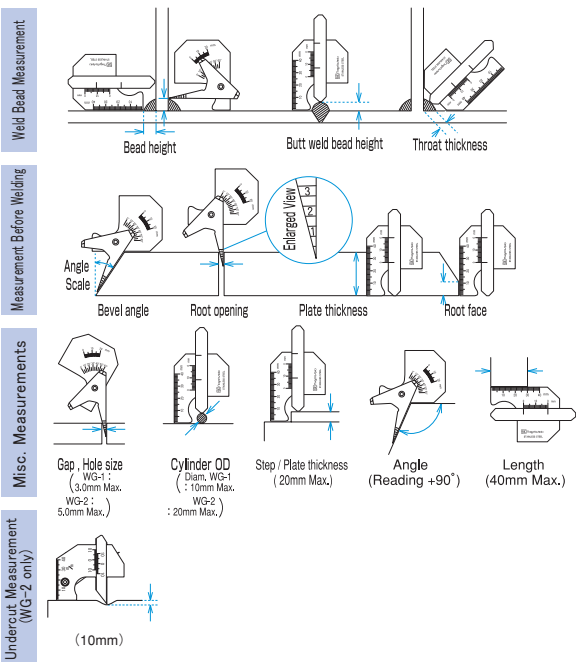
OTHER GAUGES



WG-1

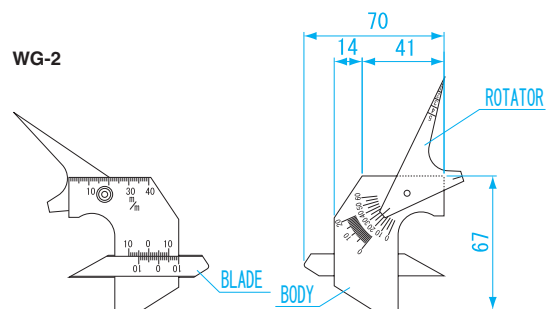
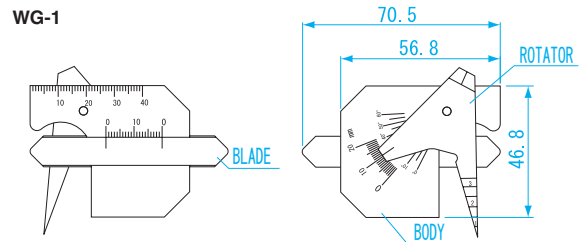


WG-2



## DIMENSIONS

Units : mm



BLOCK GAUGES

PIN GAUGES

PIN GAUGE ACCESSORIES

PIN VISE

GAUGES

RING GAUGES

PLUG GAUGES

LIMIT GAUGES

THICKNESS GAUGES

TAPER GAUGES

WELDING GAUGES

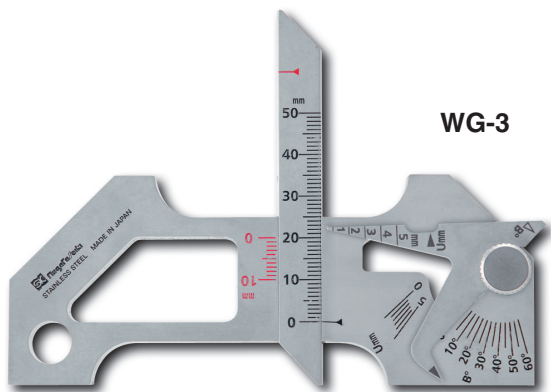
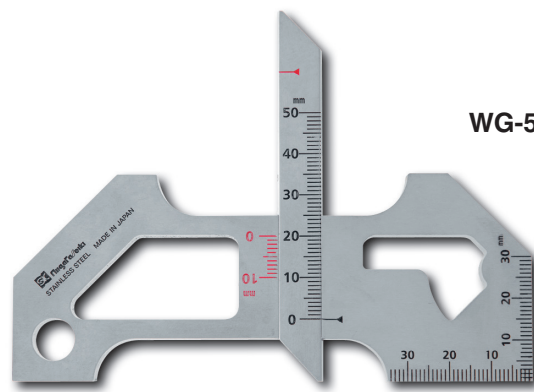
OTHER GAUGES

- USE** • For measuring fillet weld, bead weld, etc.
- MATERIAL** • Stainless steel (SUS410)
- FEATURES** • Efficient for welding and quality control  
• Tough and portable (with vinyl case)

Order No.	Model No.	Measurement Accuracy for Throat Thickness of Fillet Weld	Bevel Angle Accuracy	Accuracy	Weight
007502	WG-1 (M)	± 0.4mm	± 0.7°	± 0.4mm	79g
007503	WG-2 (L)	± 0.2mm	± 0.7°	± 0.4mm	91g

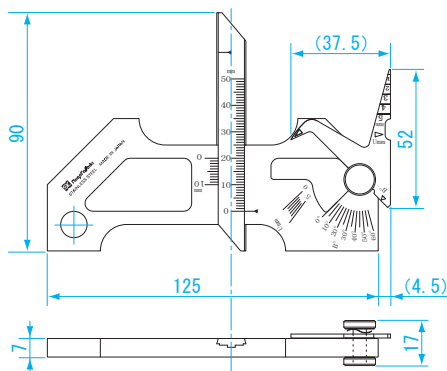
# WELDING GAUGE

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


**WG-3**

**WG-5**

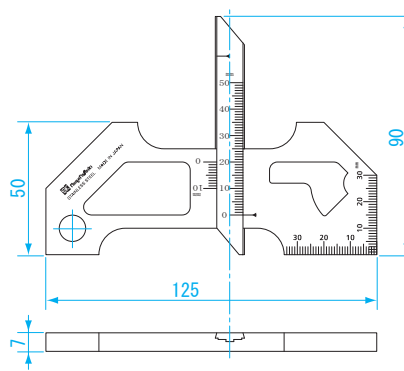
## DIMENSIONS

Units : mm



## DIMENSIONS

Units : mm



BLOCK GAUGES

PIN GAUGES

PIN GAUGE ACCESSORIES

PIN VISE

**USE** • Measurement of size and alignment of bead, gap size, undercut, etc.

### MATERIAL

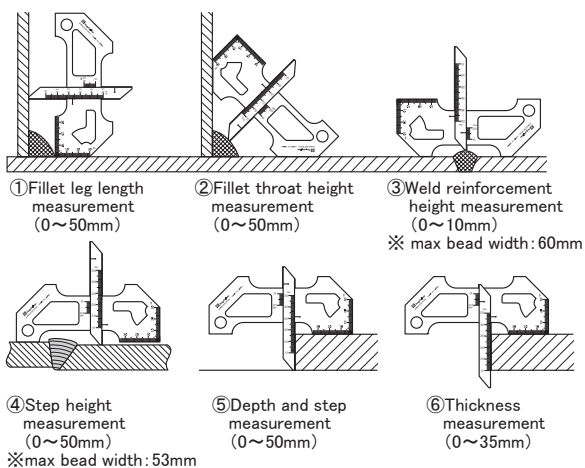
- Stainless Steel (SUS410) Silver finish

### FEATURES

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

### Measurement Functions

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



**USE** • Measurement of size and alignment of bead, gap size, undercut, etc.

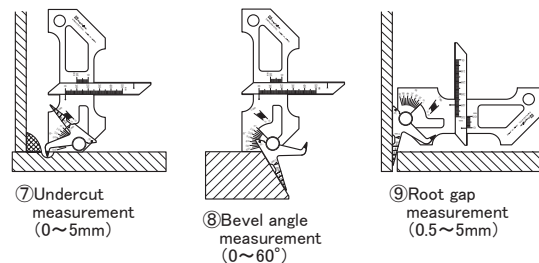
### MATERIAL

- Stainless steel (SUS410) Silver finish

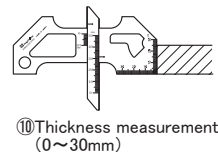
### FEATURES

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

#### WG-3 only



#### WG-5 only



RING GAUGES

PLUG GAUGES

LIMIT GAUGES

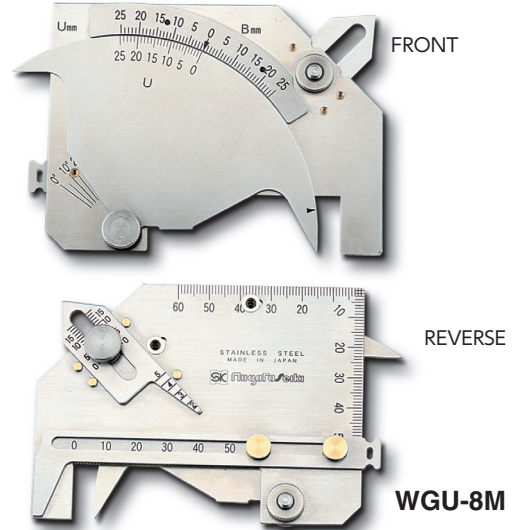
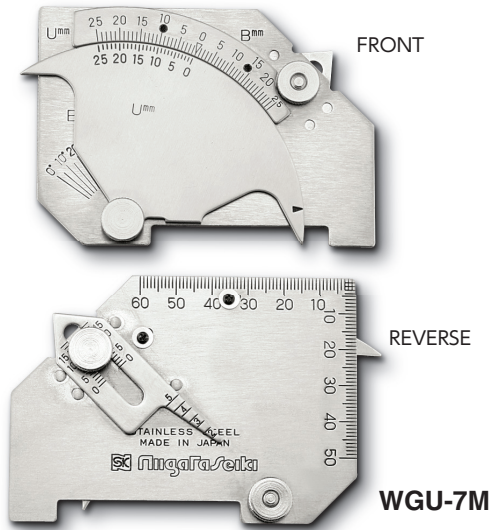
THICKNESS GAUGES

TAPER GAUGES

WELDING GAUGES

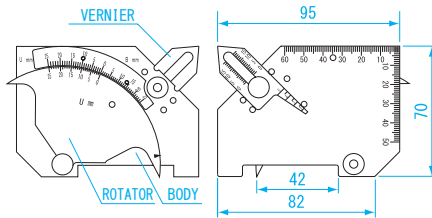
OTHER GAUGES

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



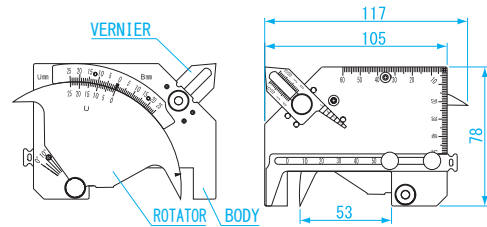
## DIMENSIONS

Units : mm



## DIMENSIONS

Units : mm



## USE

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

## MATERIAL

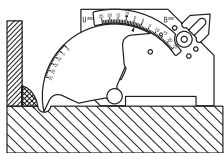
- Stainless steel (SUS410)

## FEATURES

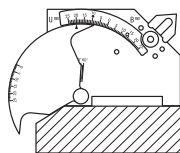
- Long usage life, rust and corrosion resistant and extremely durable as well as being light weight
- Very convenient to the welding process involving steel frame assembly such as general welding, ship building, bridge construction, etc.
- Easy reading scale

## MEASUREMENT FUNCTION

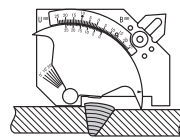
WGU-7M, WGU-8M, WGU-9M common functions



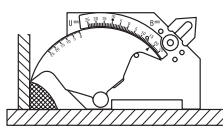
① Undercut depth (0~25mm)



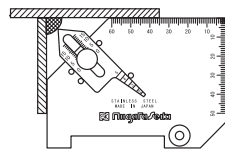
② Bevel angle (WGU-7M: 0~60°) (WGU-8M·WGU-9M: 0~70°)



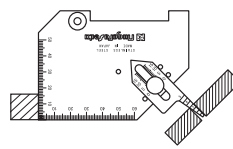
③ Bead striding width (WGU-7M: 42mm) (WGU-8M·WGU-9M: 53mm)  
Step difference (0~25mm)



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

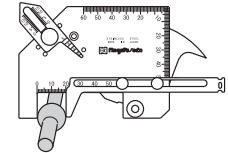


⑤ Throat thickness of fillet weld (0~15mm)

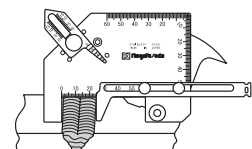


⑥ Root opening (2~5mm)  
⑦ Plate thickness (scale)

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)

Order No.	Model No.	Weight
007513	WGU-7M	150g
007514	WGU-8M	190g

BLOCK GAUGES

PIN GAUGES

PIN GAUGE ACCESSORIES

PIN VISE

GAUGES

RING GAUGES

PLUG GAUGES

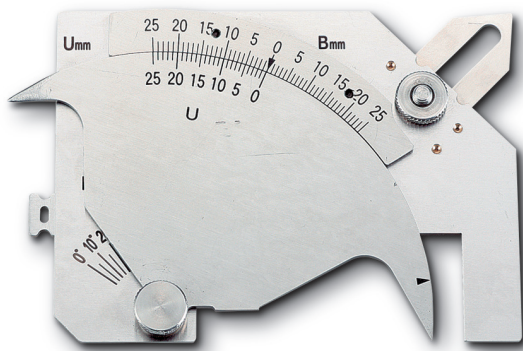
LIMIT GAUGES

THICKNESS GAUGES

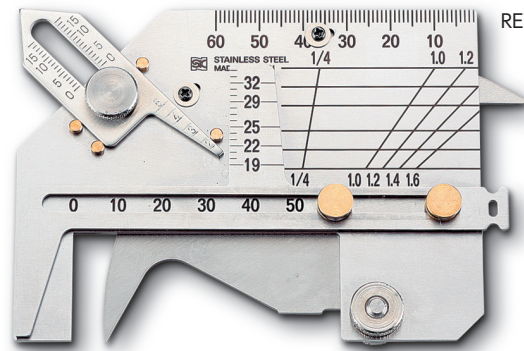
TAPER GAUGES

WELDING GAUGES

OTHER GAUGES



FRONT



REVERSE

**USE**

- For a wide variety of welding measurements

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

**MATERIAL**

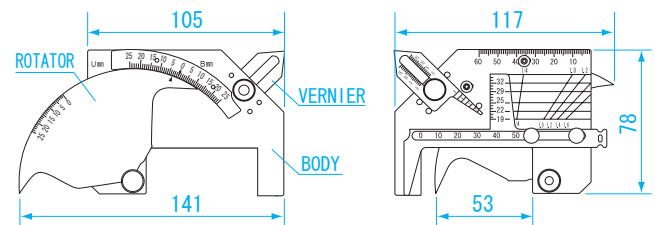
- Stainless steel (SUS420J2)

**FEATURES**

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

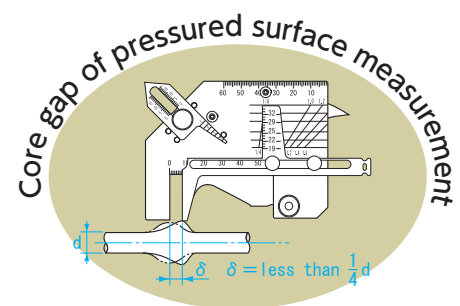
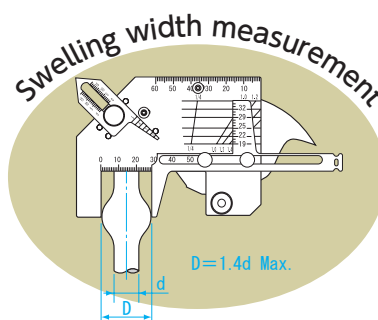
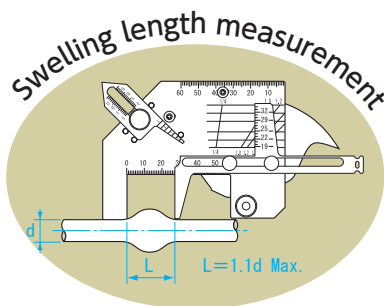
**DIMENSIONS**

Units : mm

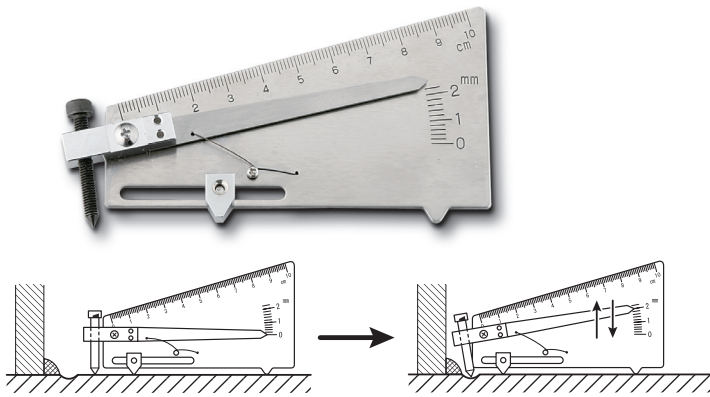
**Additional functions**

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

Scale marked for material diameter ( $\phi$  19, 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.



Order No.	Model No.	Rebar diameter (mm)	Expansion	Weight
007515	WGU-9M	$\phi$ 19 ~ 35	1/4, 1.0 ~ 1.6	190g

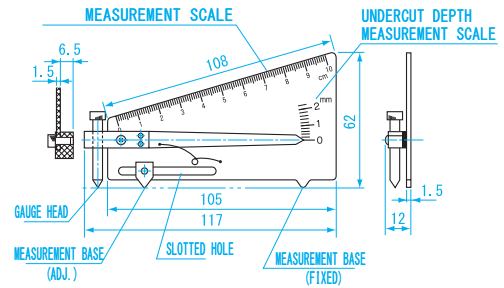


- USE** • For undercut depth and length measurement (Scale range : 0-2mm)
- MATERIAL** • Stainless steel (SUS410)
- FEATURES** • Easy to measure depth and length of undercut  
• Capable of 0 adjustment with screw type of gauge head
- SPECIFICATION**
  - Measurement range  
Depth: 0 ~ 2.0mm (Minimum reading:0.2mm) Length: 0 ~ 10cm (Accuracy: ± 0.1mm)
  - Width of measurement base: ≒ 40mm

Order No.	Model No.	Weight
007521	WGU-25	100g

## DIMENSIONS

Units : mm



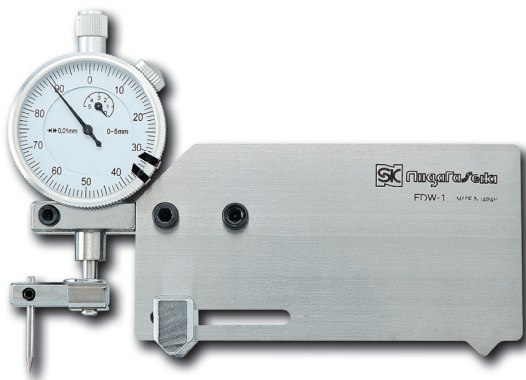
### Zero Adjustment

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

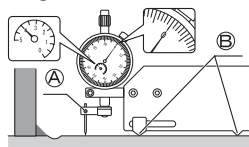
After 0 adjustment, put the tool on undercut and the spring will move indicator arm to show depth of undercut on graduation.

# WELDING GAUGE

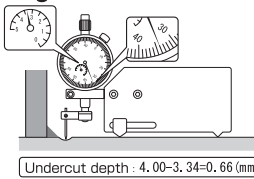


- USE** • Exclusive use for undercut measurement
- FEATURES**
  - Stainless steel (SUS420J2)
  - Easy and accurate to measure depth and length of undercut
  - Dial gauge type performs more precise measurement
  - Three point support for stable measurement
- SPECIFICATIONS**
  - Measurement range : 0 ~ 4.00mm
  - Minimum reading : 0.01mm
  - Accuracy : ± 0.04mm
  - Width of measurement base : ≒ 23mm

(Figure 1)

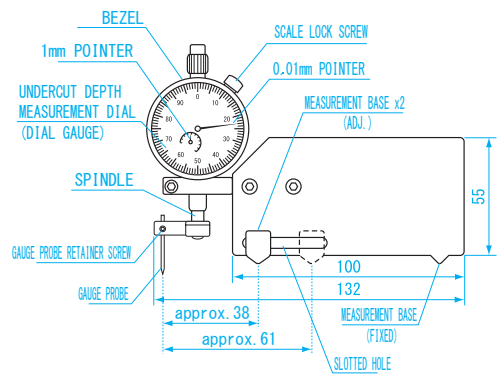


(Figure 2)



## DIMENSIONS

Units : mm



### Zero Adjustment

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

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

### Measurement

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

Order No.	Model No.	Weight
007520	FDW-1	280g

# DIGITAL WELDING GAUGE

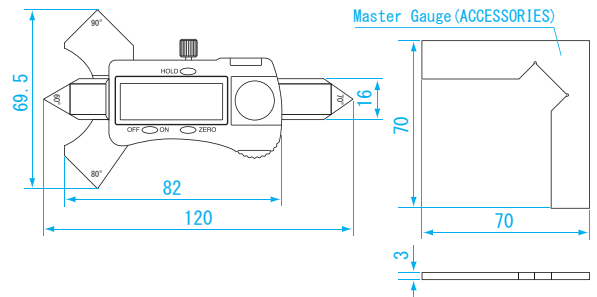


Essential for welding process. Digital welding gauge specialized for measuring fillet weld and bead weld height  
 Provided with zero setting master gauge



## DIMENSIONS

Units : mm



**USE** • For measuring the size of fillet weld and bead weld

**MATERIAL** • Stainless steel

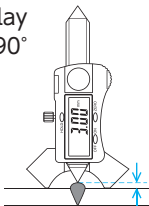
**FEATURES** • Easy to read with digital display  
 • Bevel angle: 60°, 70°, 80°, 90°  
 • Master gauge included  
 • Hold function

### SPECIFICATIONS

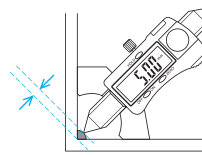
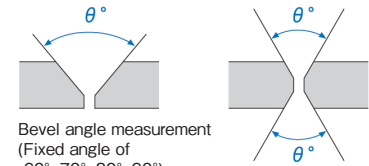
- Throat thickness : 20mm
- Bead height : 10mm
- Operating temperature : 0 ~ 40°C

**POWER** • SR44 or LR44, one included for testing

Weld reinforcement height measurement


 Bead Height  
 Maximum measurement  
 10mm

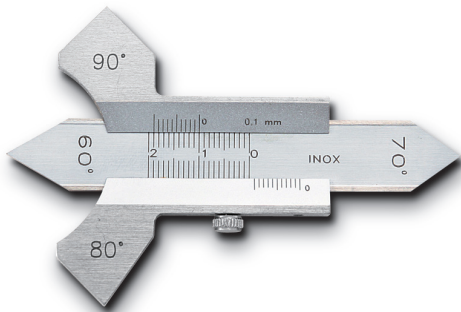
Measurement before welding process


 Throat thickness  
 Maximum measurement  
 20mm

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

Order No.	Model No.	Resolution (mm)	Accuracy※ (mm)	Weight
007526	DWG-20G	0.01	± 0.03	130g

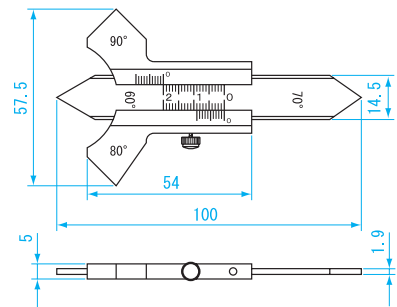
※ Quantization Error ( ± 1 digit ) not included

# WELDING GAUGE



## DIMENSIONS

Units : mm



**USE** • Use for measuring the size of fillet weld and bead weld

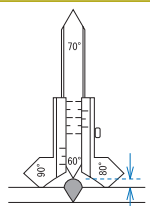
**MATERIAL** • Stainless steel

**FEATURES** • Bevel angle: 60° 70° 80° 90°

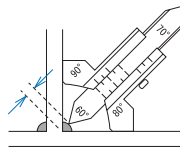
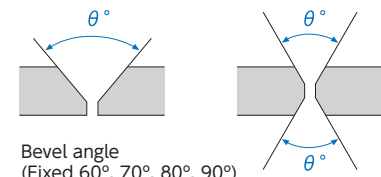
### SPECIFICATIONS

- Fillet weld : 11mm
- Bead weld : 8mm
- Accuracy: ± 0.2mm
- Minimum reading : 0.1mm

Weld Bead Measurement


 Bead height  
 Maximum measurement 8mm

Measurement Before Welding


 Throat thickness  
 Maximum measurement 11mm

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

Order No.	Model No.	Weight
007516	AWG-10	80g

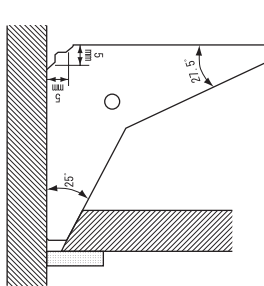


WAL2542

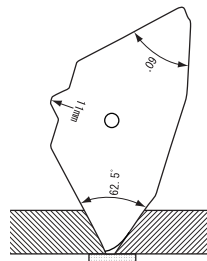


WAL4562

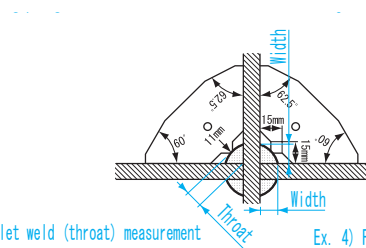
## Example use



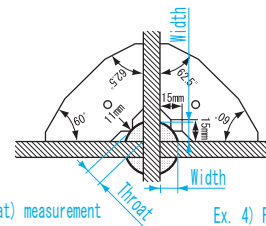
Ex. 1) Joint gap angle (inside) measurement



Ex. 2) Butt joint gap angle measurement



Ex. 3) Fillet weld (throat) measurement



Ex. 4) Fillet weld width measurement

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

## MATERIAL

- SUS304

## FEATURES

- 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

## SPECIFICATIONS

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

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

BLOCK GAUGES

PIN GAUGES

PIN GAUGE ACCESSORIES

PIN VISE

GAUGES

RING GAUGES

PLUG GAUGES

LIMIT GAUGES

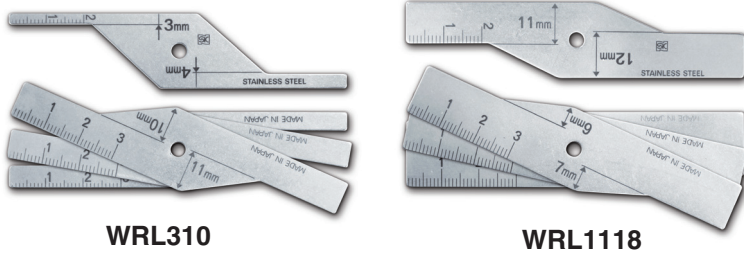
THICKNESS GAUGES

TAPER GAUGES

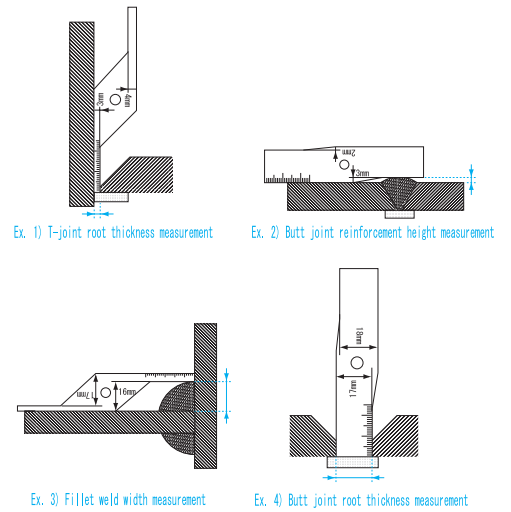
WELDING GAUGES

OTHER GAUGES

# ROOT LIMIT GAUGE


**WRL310**
**WRL1118**

## Example use



- USE**
  - Use for measuring root gap of T-joint or facing joint, leg length (height) of fillet weld and excess weld and height of facing joint
- MATERIAL**
  - SUS304
- FEATURES**
  - Measure with 1mm interval
  - The measurement result of root thickness will be indicated on the scale
  - Measurement range chosen so most frequently used dimensions are combined
  - Provided with plastic case & ball chain

## 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			

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

# WELDING ELECTRODE GAUGE



※Sample of custom design

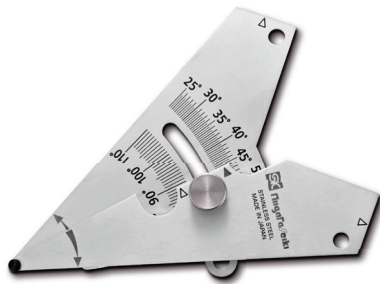
**Custom Designs with Fast Delivery**  
 Please contact us with request

- USE**
  - Use for measuring height of welding electrode
- MATERIAL**
  - SUS420J2

# ANGLE GAUGE

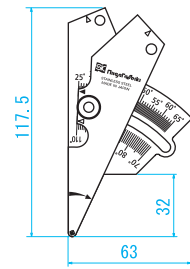


Specialized for angle measurement of grooves with minimum reading 0.5°



## DIMENSIONS

Units : mm



## USE

- Butt angle measurement and gap angle measurement

## MATERIAL

- Stainless(SUS410)

## FEATURES

- Measurement of butt joint gap angle
- Sharpened tip enables measurement for root gap of 0mm, or when sheet thickness is less than 15mm
- Minimum reading 0.5° , large 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)

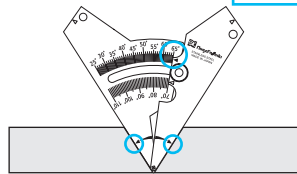
## SPECIFICATIONS

- Bevel angle : 25 ~ 65° ( Minimum graduation: 0.5° )
- Angle of cross weld part : 70-110°

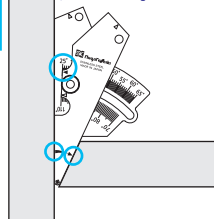
## Example use

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 ▶

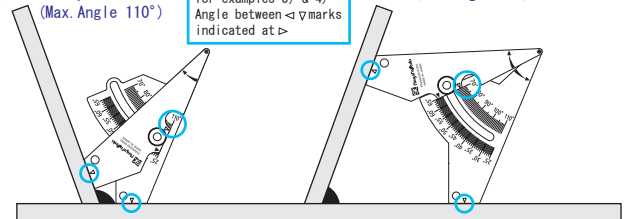


2) T-joint gap angle measurement  
(Min. Inside Angle 25° :Plate Thickness : 30mm)



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°)

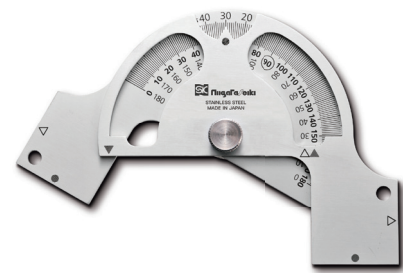
## SPECIFICATIONS

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

# ANGLE PROTRACTOR

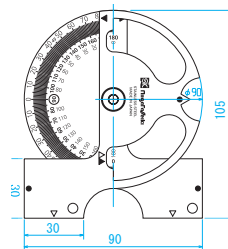


Specialized for angle measurement. 3 measurement points enable multiple angle measurements



## DIMENSIONS

Units : mm



## USE

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

## MATERIAL

- Stainless steel (SUS410)

## FEATURES

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

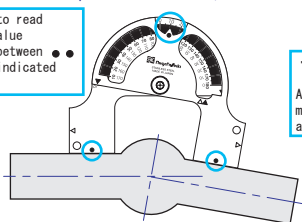
## SPECIFICATIONS

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

## Example use

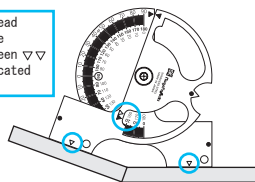
Example 1) Angle measurement of bent butt weld (0~90°:Example indicates 10°)

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



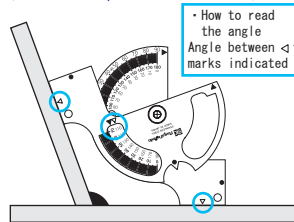
Example 2) Angle measurement of bent Flange and metal plate (0~180°:Example indicates 20°)

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



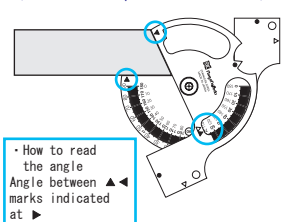
Example 3) Angle of cross weld part (0~180°:Example indicates 110°)

• 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 ▶



## SPECIFICATIONS

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

BLOCK GAUGES

PIN GAUGES

PIN GAUGE ACCESSORIES

PIN VISE

GAUGES

RING GAUGES

PLUG GAUGES

LIMIT GAUGES

THICKNESS GAUGES

TAPER GAUGES

WELDING GAUGES

OTHER GAUGES

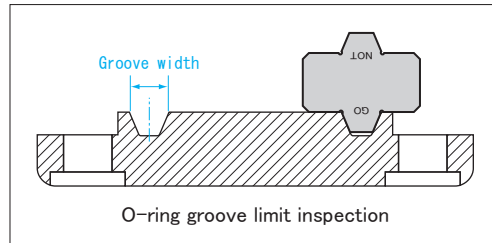
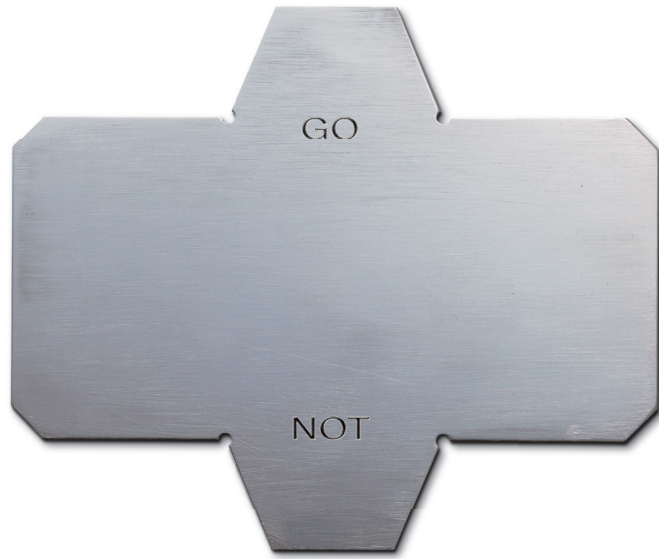
# Measurement function and List

Process	No.	Categories	Figures	Applicable Model														
				テーパーゲージ	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	Leg length (height) of Fillet Weld		—	○	○	○	○	○	○	—	—	○	○	—	—	—	—
	12	Throat Thickness of Fillet Weld		—	○	○	○	○	○	○	—	—	—	○	○	○	—	—
	13	Height of Butt weld Overlay		—	○	○	○	○	○	○	—	—	○	—	○	○	—	—
	14	Height of T-joint weld Overlay		—	○	○	○	○	○	○	—	—	○	—	○	○	—	—
	15	Undercut		—	—	○	○	—	○	○	○	○	—	—	—	—	—	—
	16	Misalignment of Butt Weld		—	—	○	○	○	○	○	○	—	—	—	—	—	—	—
	17	Bending angle and angle of butt weld joint		—	—	—	—	—	—	—	—	—	—	—	—	—	—	○
	18	Angle of Cross weld part		—	—	—	—	—	—	—	—	—	—	—	—	—	○	○
	19	Stud angle after welding		—	—	—	—	—	—	—	—	—	—	—	—	—	○	○
	20	Irregularity of Bead Surface		—	—	—	—	—	—	○	—	—	—	—	—	—	—	—
Pressure welding	21	Swelling diameter		—	—	—	—	—	△※	○	—	—	—	—	—	—	—	—
	22	Swelling length		—	—	—	—	—	△※	○	—	—	—	—	—	—	—	—
	23	Misalignment of Pressured Surface		—	—	—	—	—	△※	○	—	—	—	—	—	—	—	—
	24	Bending angle		—	—	—	—	—	—	—	—	—	—	—	—	—	—	○

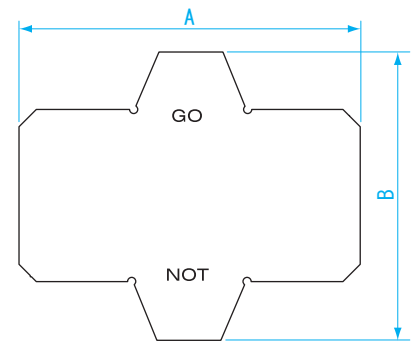
※ Measures dimension of weld, relative amount must be calculated.

## 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	30・35mm	10mm	50mm	50mm	10mm	0.5~5mm	—	10mm	±0.4mm	0~60° Minimum reading value: 5°	—	—	±0.7°
WG-5	Plate thickness 7mm Satin finish			—		—	—		—	—				
WGU-7M	Stainless steel (SUS410) Plate thickness: 1.5mm	50・60mm	25mm	25mm	15mm	25mm	2~5mm	0~53mm	—	±0.4mm (Throat thickness measurement ±0.7mm-manufacturing accuracy)	0~60° Minimum reading value: 5°	—	—	±2°
WGU-8M	Stainless steel (SUS420J2) Plate thickness: 1.5mm								30mm	0~70° Minimum reading value: 5°				
WGU-9M	Stainless steel (SUS420J2) Plate thickness: 1.5mm								50mm					
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)	—	—	—	—	±0.1mm	45・47.5・50・52.5 55・57.5・60・62.5° fixed	—	—	±1°
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°	



## DIMENSIONS



BLOCK GAUGES

PIN GAUGES

PIN GAUGE ACCESSORIES

PIN VISE

GAUGES

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

RING GAUGES

PLUG GAUGES

LIMIT GAUGES

THICKNESS GAUGES

TAPER GAUGES

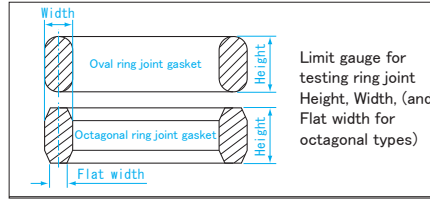
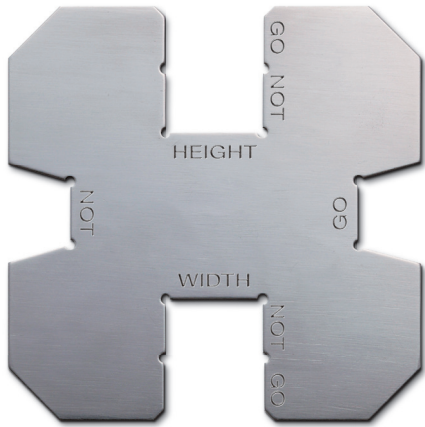
WELDING GAUGES

OTHER GAUGES

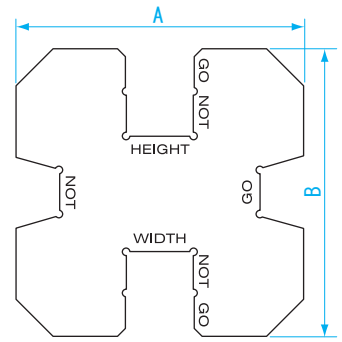
- USE** • Limit gauge for measuring width of O-ring groove
- MATERIAL** • SUS420J2 (Polished finish)
- FEATURES**
  - GO/NO GO standard conforms to JPI-7S-23
  - Groove width accuracy :  $\pm 0.20\text{mm}$
  - Groove depth accuracy :  $\pm 0.41/0\text{mm}$
  - Groove bottom corner radius tolerance:
    - Less than 1.5mm  $\cdots +0.8\text{mm}$
    - More than 1.5mm  $\cdots \pm 0.8\text{mm}$
  - Angle accuracy :  $\pm 0.5^\circ$

Order No.	Model No.	Compatible O-Ring No	Groove Width (mm)	Groove Depth (mm)	Groove Bottom Corner Radius	Weight
007471	GSW-1	21,23,24,26,27,30,31,34,35,37,39,41,44,45,49,53,57,61,65,69,82,84,92,99	11.91	7.92	0.8	11g
007472	GSW-2	28,32,46,73	13.49	9.52	1.5	11g
007473	GSW-3	38,50,54,62,66,77,86,87	16.66	11.13	1.5	22g
007474	GSW-4	42,47,70,74,88,89,93,94,95	19.84	12.70	1.5	22g
007475	GSW-5	51,58,96,97,98	23.01	14.27	1.5	35g
007476	GSW-6	63,78	26.97	15.88	2.3	35g
007477	GSW-7	55,67,71,100	30.18	17.48	2.3	40g

# GASKET LIMIT GAUGE for width and height measurement



## DIMENSIONS



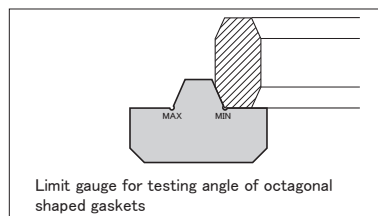
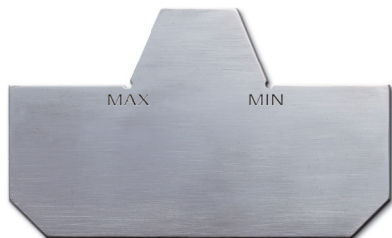
Units : mm

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

- USE**
  - Limit gauge for GO / NO GO testing of ring joint gauges
- MATERIAL**
  - SUS420J2 (Polished finish)
- SPECIFICATIONS**
  - 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 :  $\pm 0.5\text{mm}$

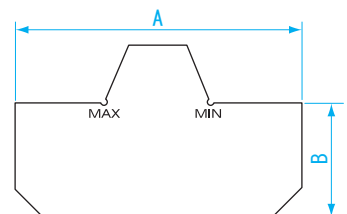
Order No.	Model No.	Compatible Gasket No.	Gasket Width (mm)	Gasket Height (mm)	Octagonal Corner Radius (mm)	Weight
007478	GST-1	21,23,24,26,27,30,31,34,35,37,39,41,44,45,49,53,57,61,65,69,82,84,92,99	11.13	15.7	1.5	53g
007479	GST-2	28,32,46,73	12.70	17.5	1.5	53g
007480	GST-3	38,50,54,62,66,77,86,87	15.88	20.6	1.5	110g
007481	GST-4	42,47,70,74,88,89,93,94,95	19.05	23.9	1.5	110g
007482	GST-5	51,58,96,97,98	22.22	26.9	1.5	110g
007483	GST-6	63,78	25.40	31.8	2.3	139g
007484	GST-7	55,67,71,100	28.58	35.1	2.3	139g

# OCTAGONAL GASKET LIMIT GAUGE



## DIMENSIONS

Units : mm



- USE**
  - Limit gauge for GO/ NO GO testing of angle for octagonal ring joint gauges
- MATERIAL**
  - SUS420J2 (Polished finish)
- SPECIFICATIONS**
  - Conform to JPI-7S-23 standards
  - Dimensional tolerance of angle :  $\pm 0.5^\circ$

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

BLOCK GAUGES

PIN GAUGES

PIN GAUGE ACCESSORIES

PIN VISE

**GAUGES**

RING GAUGES

PLUG GAUGES

LIMIT GAUGES

THICKNESS GAUGES

TAPER GAUGES

WELDING GAUGES

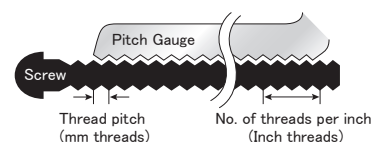
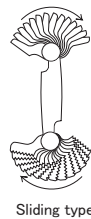
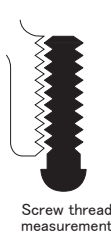
OTHER GAUGES

# PITCH GAUGE



W26

- USE** • Use for measuring screw pitch
- MATERIAL** • Machine grade carbon steel
- FEATURES** • Pitch is marked on leaf



Order No.	Model No.	Indication unit	Number of leaves	Pitch size	Weight
110961	M28	mm	28	0.25 0.3 0.35 0.4 0.45 0.5 0.55 0.6 0.65 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	40g
110962	W26	inch	26	4 4 1/2 5 6 7 8 9 10 11 12 13 14 16 18 19 20 22 24 25 26 28 30 32 40 48 60	40g

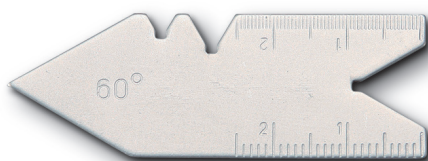
BLOCK GAUGES

PIN GAUGES

PIN GAUGE ACCESSORIES

PIN VISE

# CENTER GAUGE

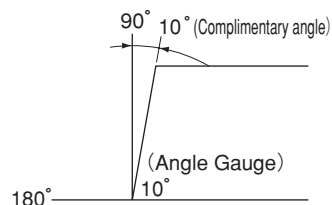
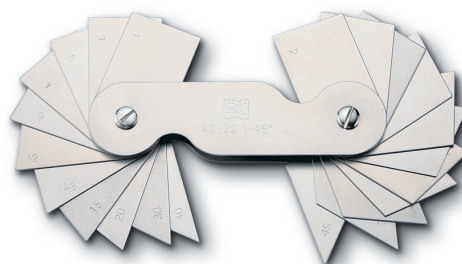


SG-60M

- USE** • Use for inspection of the angle of lathe center, angle of the tool for screw cutting, etc
- MATERIAL** • Machine grade carbon steel
- FEATURES** • Can check the angle of tool bits and tool edges

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

# ANGLE GAUGE



- USE** • Use for inspection of internal angle
- MATERIAL** • Stainless steel
- FEATURES** • 11 leaves on each side, range of 1° ~ 45°  
• The angle marked on each leaf is complementary angle

Order No.	Model No.	Graduation	Accuracy	Weight
110931	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

GAUGES

RING GAUGES

PLUG GAUGES

LIMIT GAUGES

THICKNESS GAUGES

TAPER GAUGES

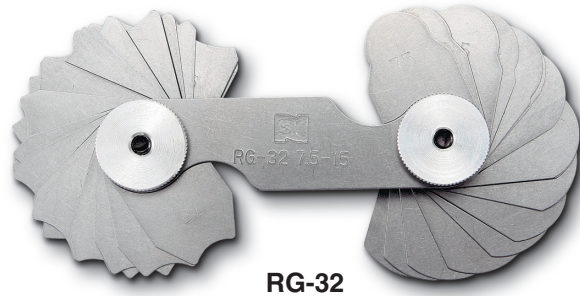
WELDING GAUGES

OTHER GAUGES

## RADIUS GAUGE



- USE** • Use for checking the radius curve of dies, jigs, and wooden molds, etc.
- MATERIAL** • Machine grade carbon steel
- FEATURES** • Concave and convex leaves are separated.


**RG-32**

Order No.	Model No.	Number of Leaves per set	Details of Radius Dimension (mm)	Accuracy (mm)	Weight
110923	RG-34	34	1.0~3.0 (0.25 step) 3.5~7.0 (0.5 step)	±0.1	65g
110922	RG-32	32	7.5~15.0 (0.5 step)	±0.1	115g
110921	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)



BLOCK GAUGES

PIN GAUGES

PIN GAUGE ACCESSORIES

PIN VISE

**GAUGES**

RING GAUGES

PLUG GAUGES

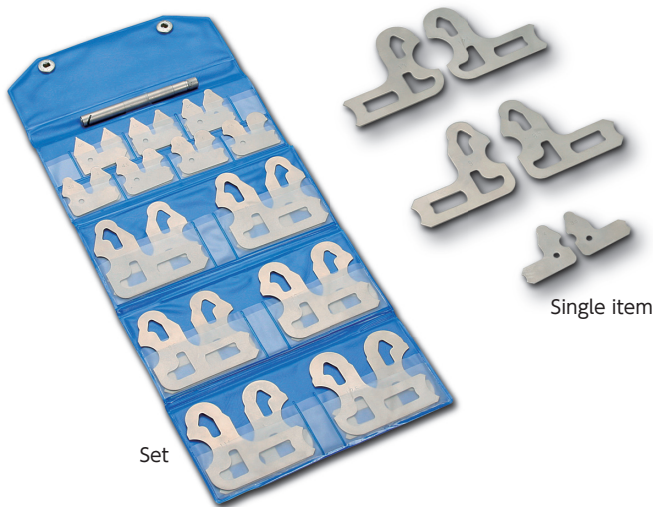
LIMIT GAUGES

THICKNESS GAUGES

TAPER GAUGES

WELDING GAUGES

OTHER GAUGES



### SPECIFICATIONS (Single part)

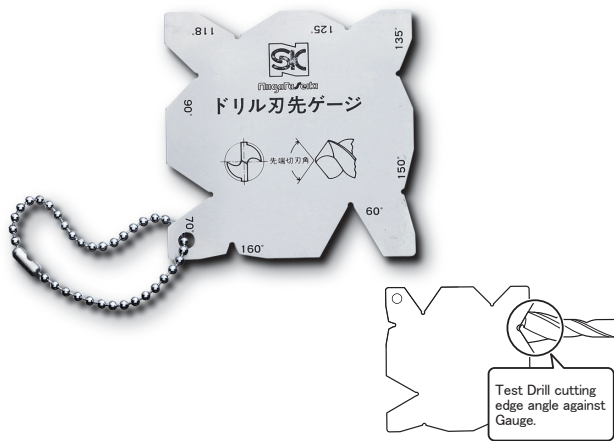
Order No.	Model No.	Detail of Radius Dimension (mm)
110881	RGL-05	0.5
110882	RGL-10	1.0
110883	RGL-15	1.5
110884	RGL-20	2.0
110885	RGL-25	2.5
110886	RGL-30	3.0
110887	RGL-35	3.5
110888	RGL-40	4.0
110889	RGL-45	4.5
110890	RGL-50	5.0
110891	RGL-55	5.5
110892	RGL-60	6.0
110893	RGL-65	6.5
110894	RGL-70	7.0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

- USE** • For checking radius curve of dies, jigs and wooden mold etc.
- MATERIAL** • Machine grade carbon steel
- FEATURES** • Each size is separated, suitable for measuring difficult to access parts

### SPECIFICATIONS (radius gauge set)

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

## DRILL TIP GAUGE



- USE**
  - Use for measuring drill-tip after grinding (60° 70° 90° 118° 125° 135° 150° 160°)
- MATERIAL**
  - Stainless steel (SUS420J2)
- FEATURES**
  - 8 types of edge angle gauges are useful when grinding
  - 2mm scale to measure length of drill tip
  - Provided with ball chain

Order No.	Model No.	Product Dimension W×H×D (mm)	Accuracy	Weight
007531	DPG-A	77×77×1	±1.5°	11g

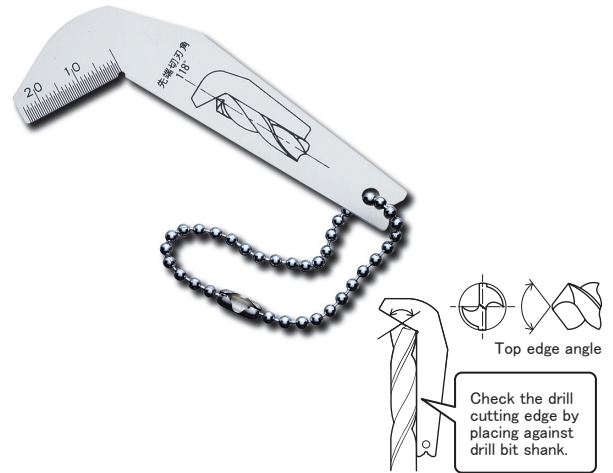
## DRILL POINT GAUGE



- USE**
  - Use for measuring the drill edge length range of 3mm-45mm, right and left side
- MATERIAL**
  - Carbon tool steel
- FEATURES**
  - Provided with ball chain
  - Rotating tip angle gauge (Marking at 60° 70° 90° 125° 135° 150°)
  - Tip angle : 118°
  - Drill edge length : 3 ~ 45mm

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

## DRILL TIP GAUGE



- USE**
  - Use for measuring drill-tip after grinding (118°)
- MATERIAL**
  - Stainless steel (SUS420J2)
- FEATURES**
  - Confirms drill tip edge angle after grinding
  - Provided with ball chain

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

## SLIDING DRILL POINT GAUGE



- USE**
  - Maintenance management of drill point angle
  - Use for measuring the drill tip edge length range of 3-40mm
- MATERIAL**
  - Stainless steel (SUS420J2) Satin finish
- FEATURES**
  - Tip angle : 118°
  - Drill edge length : 3~40mm

Order No.	Model No.	Accuracy	Weight
007536	S-118	±1.5°	150g



## CHAMFER MEASURING GAUGE T RACEABILITY



**USE** • Use for measuring the size of all kinds of chamfer

**MATERIAL**

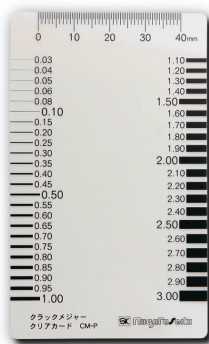
- Stainless steel (SUS420J2)

**FEATURES**

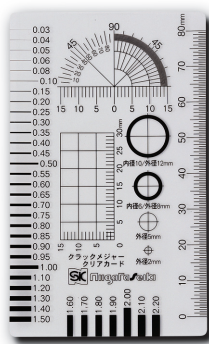
- Measure chamfer circumference of workpiece on lathe
- For milling, measure hole chamfer on workpiece
- Measurement range : 0 ~ 15C
- Minimum reading : 0.5mm

Order No.	Model No.	Product Dimension (mm)	Accuracy (mm)	Weight
006990	CMG-10	Overall Length 71.6×2 Side Length16	±0.25	20g

## CRACK GAUGE/ CLEAR CARD TYPE T RACEABILITY



CM-P



CM-C

**USE**

- Use for measuring cracks

**MATERIAL**

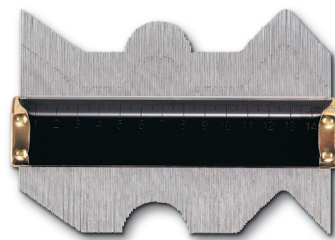
- Polyester

**FEATURES**

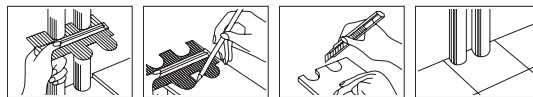
- CM-P: can measure width and length of cracks
- CM-C: can measure width, angle and length of cracks
- Flexible, transparent polyester makes it easy to use
- Portable (Business card size)

Order No.	Model No.	Product Dimension (H) × ( W ) (mm)	Weight
111162	CM-P	91×55	1g
111163	CM-C	91×55	1g

## PROFILE GAUGE T RACEABILITY



**Example of Use**



1. Push profile gauge against desired sample
2. Transfer profile to workpiece
3. Cut workpiece to shape
4. A perfect fit made easy

**USE**

- Use for recording the cross-sectional shape of a surface

**MATERIAL**

- Pin material : Stainless steel

**FEATURES**

- Pins are thin and can easily record a smooth curve

**SPECIFICATIONS** • Active Length: 150mm

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

**CRACK GAUGE with Kaidan Metal Scale** NEW ITEM T RACEABILITY

**0.3mm marked in red! For measuring cracks**

**USE**

- Crack measurement of wall, foundation etc

**MATERIALS**

- Stainless steel (SUS420J2)

**FEATURES**

- 0.3mm marked in red, easy to distinguish defect or cracks.
- Reverse side is 15cm scale with stepped graduation.
- Satin finished

Order No.	Model No.	Measurement Range of Crack Gauge (mm)	Measurement Range of Metal Scale (mm)	Wight
<span style="color: red;">NEW</span> 111262	CM-SKD	0.1~2.0	0~150	10g

BLOCK GAUGES

PIN GAUGES

PIN GAUGE ACCESSORIES

PIN VISE

GAUGES

RING GAUGES

PLUG GAUGES

LIMIT GAUGES

THICKNESS GAUGES

TAPER GAUGES

WELDING GAUGES

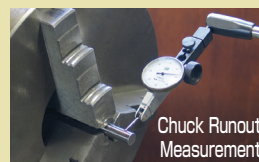
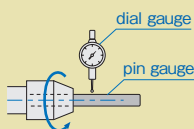
OTHER GAUGES

# HOW TO USE PIN GAUGE

## Measuring Tool Checking



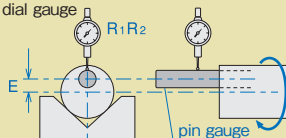
## Center Runout Measurement



## Hole eccentricity Measurement



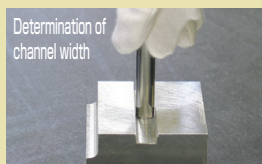
R<sub>1</sub>... Max. reading of dial gauge  
R<sub>2</sub>... Min. reading of dial gauge  
 $E = \frac{R_1 - R_2}{2}$



## Dovetail Measurement



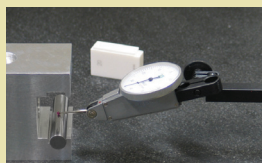
## Determination of channel width



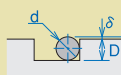
Key way and etc



## Groove depth measurement

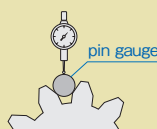


δ... Dial gauge reading  
D = d - δ



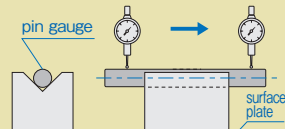
## Gear tooth measurement

Dial gauge measurement

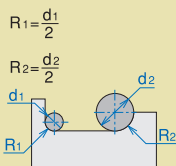
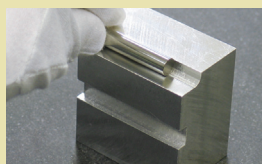


## Measuring V groove parallelism

Dial gauge measurement



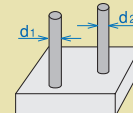
## Radius measurement



## Hole diameter measurement



GO / No-Go Pin Gauges also available

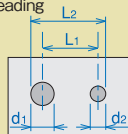


## Measurement between holes



d<sub>1</sub> · d<sub>2</sub>... Pin Gauge diameters  
L<sub>2</sub>... Micrometer reading

$$L_1 = L_2 - \frac{d_1 + d_2}{2}$$



## Mill tool positioning



## Measurement of hole position, parallelism

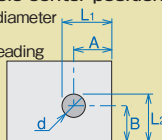


Measuring hole center position

d... Pin Gauge diameter  
L<sub>1</sub> · L<sub>2</sub>... Dial gauge reading

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

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

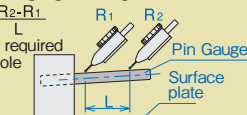


Slope of hole (parallelism measurement)

R<sub>1</sub> · R<sub>2</sub>... Dial gauge reading

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

Repeat as required for each hole



BLOCK GAUGES

PIN GAUGES

PIN GAUGE ACCESSORIES

PIN VISE

GAUGES

RING GAUGES

PLUG GAUGES

LIMIT GAUGES

THICKNESS GAUGES

TAPER GAUGES

WELDING GAUGES

OTHER GAUGES

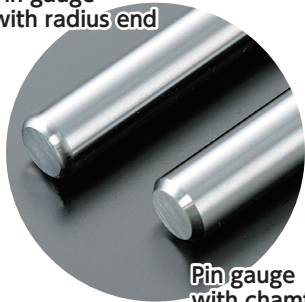


# SPECIAL SHAPES

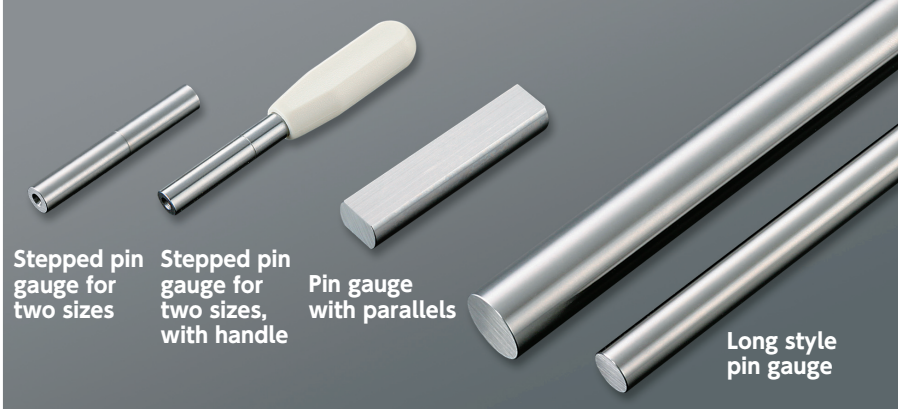
## Custom shape pin gauges available upon request

### Pin gauges for special applications

Pin gauge with radius end



Pin gauge with chamfer



Stepped pin gauge for two sizes

Stepped pin gauge for two sizes, with handle

Pin gauge with parallels

Long style pin gauge

BLOCK GAUGES

PIN GAUGES

PIN GAUGE ACCESSORIES

PIN VISE

GAUGES

RING GAUGES

PLUG GAUGES

LIMIT GAUGES

THICKNESS GAUGES

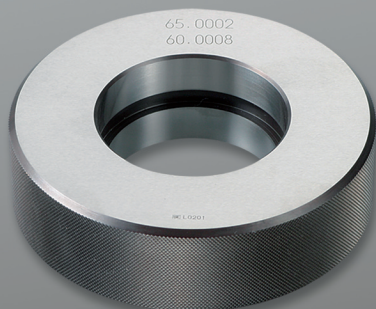
TAPER GAUGES

WELDING GAUGES

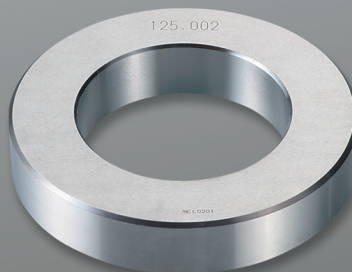
OTHER GAUGES

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

### Ring gauges for special applications

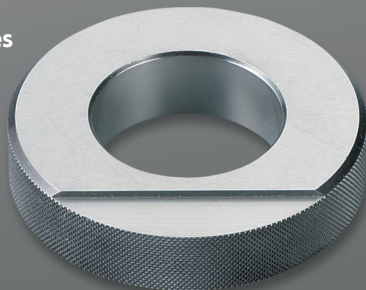


Stepped ring gauge for two sizes

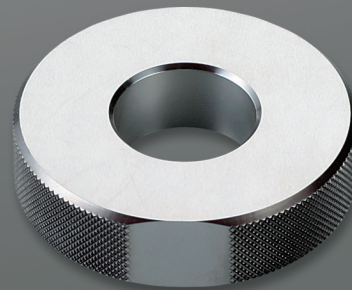


Ring gauge with included OD standard

Custom marking also available



Ring gauge with notch(A)



Ring Gauge with notch (B)

Please contact us with request