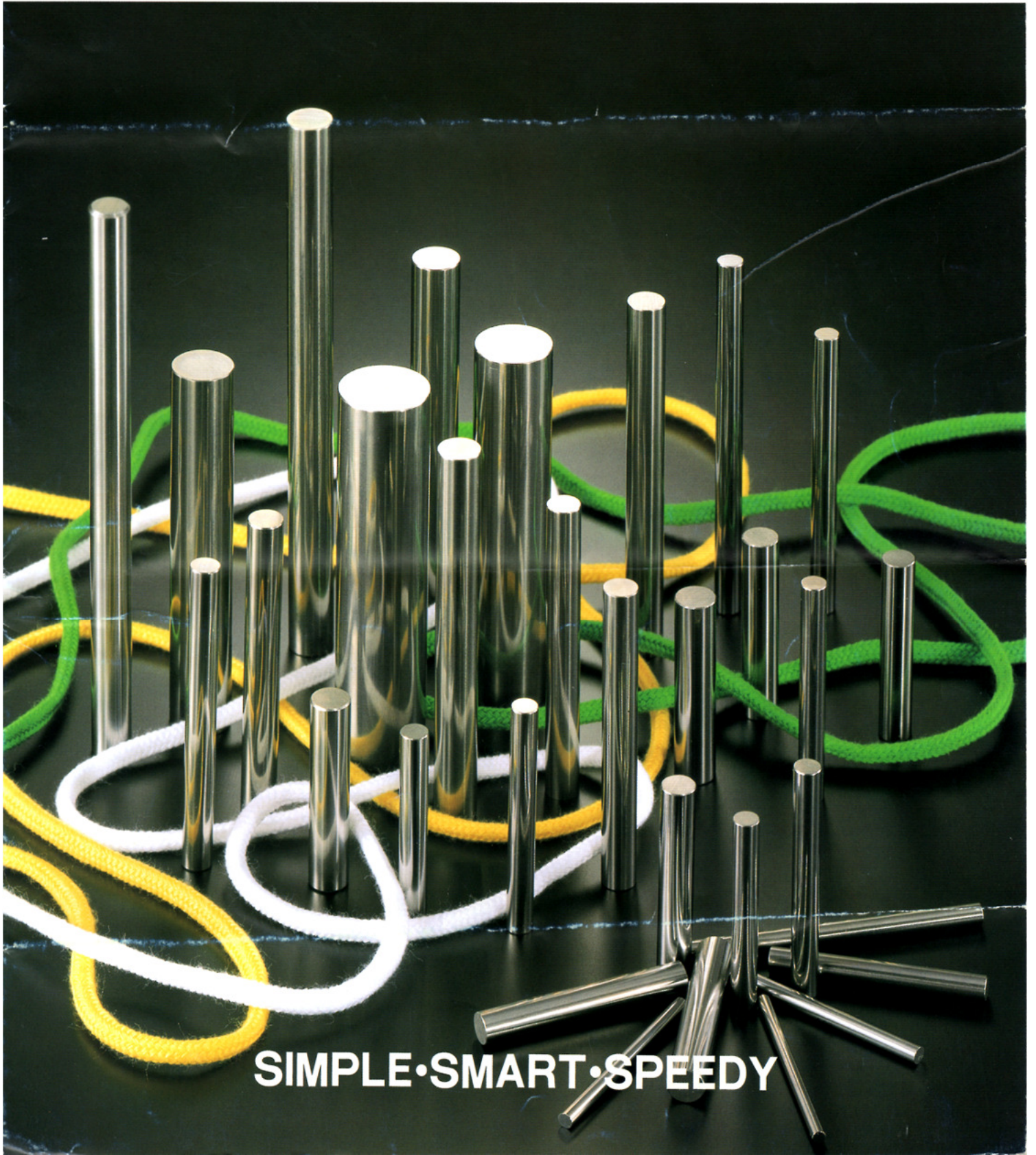




PIN GAUGE



SIMPLE • SMART • SPEEDY

EISEN Co., LTD. — “We supply various sizes of pin gauges at the right time through our streamlined production system”

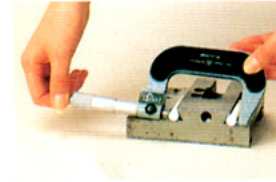
Examples of usage of Pin Gauges



Checking hole diameter



Measuring distance between holes



Measuring dovetail



measuring over pin diameter of gear



Measuring width of groove



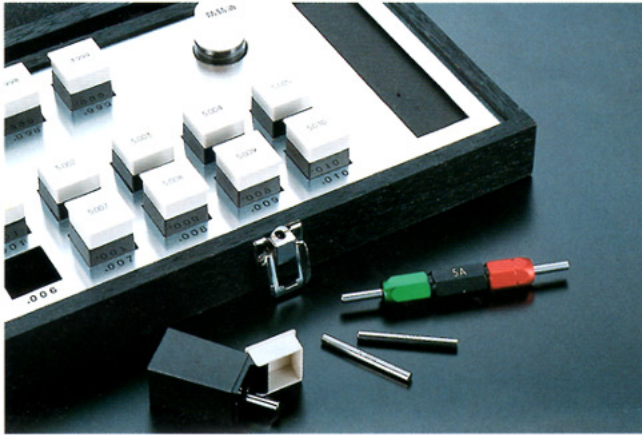
Checking right angle

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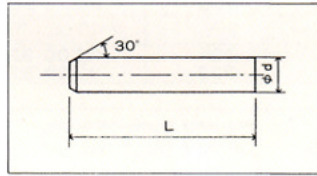
ET SERIES

● Sub-micron Tolerance Pin Gauge Set



● Configuration

For easier insertion/measuring, one end of each gauge is chamfered at 30° angle.



● Specifications

Size (mm)	Length (mm)	Tolerance	Roundness Cylindricity	Hardness HRC
0.297... 2.996	30	±0.3 μm	0.5 μm	more than 58
2.997... 10.010	40			

ET Series gauges have a tolerance of ±0.3 μm and are supplied in increments of 1 μm, capable of checking inside diameters by 0.001 mm steps.

Standard set contain 14 gauges. Specially assorted sets or individual gauges also available on request.

● ET Series

Set No.	Sizes in Increments of 0.001 mm	Quantity
ET- 03	0.297 0.298... 0.309 0.310	14
ET- 04	0.397 0.398... 0.409 0.410	14
ET- 05	0.497 0.498... 0.509 0.510	14
ET- 06	0.597 0.598... 0.609 0.610	14
ET- 07	0.697 0.698... 0.709 0.710	14
ET- 08	0.797 0.798... 0.809 0.810	14
}		}
ET- 95	9.497 9.498... 9.509 9.510	14
ET- 96	9.597 9.598... 9.609 9.610	14
ET- 97	9.697 9.698... 9.709 9.710	14
ET- 98	9.797 9.798... 9.809 9.810	14
ET- 99	9.897 9.898... 9.909 9.910	14
ET-100	9.997 9.998... 10.009 10.010	14

(Specially assorted sets or individual gauges also available on request)

EP SERIES

● Pin Gauge Set in Increments of 0.01 mm



● Specifications

Size (mm)	Length (mm)	Tolerance	Roundness Cylindricity	Hardness HRC
0.05... 1.49	40	±1 μm	0.8 μm	more than 58
1.50... 10.00				
10.01... 20.00	50	±1.5 μm	1.3 μm	

0.20-1.49mm gauges in individual cases with sizes printed on each cap. For gauges over 1.50mm, Nominal sizes are laser cut into each gauge.

● EP Series

Set No.	Sizes in Increments of 0.01 mm	Quantity
EP- 00	0.05 0.06 ... 0.19 0.20	16
EP- 0A	0.20 0.21 ... 0.49 0.50	31
EP- 0B	0.50 0.51 ... 0.99 1.00	51
EP- 1A	1.00 1.01 ... 1.49 1.50	51
EP- 1B	1.50 1.51 ... 1.99 2.00	51

Increments of 0.01mm for a wide variety of uses — special sizes also available.

EP- 2A	2.00 2.01 ... 2.49 2.50	51
EP- 2B	2.50 2.51 ... 2.99 3.00	51
EP- 3A	3.00 3.01 ... 3.49 3.50	51
EP- 3B	3.50 3.51 ... 3.99 4.00	51
EP- 4A	4.00 4.01 ... 4.49 4.50	51
EP- 4B	4.50 4.51 ... 4.99 5.00	51
EP- 5A	5.00 5.01 ... 5.49 5.50	51
EP- 5B	5.50 5.51 ... 5.99 6.00	51
EP- 6A	6.00 6.01 ... 6.49 6.50	51
EP- 6B	6.50 6.51 ... 6.99 7.00	51
EP- 7A	7.00 7.01 ... 7.49 7.50	51
EP- 7B	7.50 7.51 ... 7.99 8.00	51
EP- 8A	8.00 8.01 ... 8.49 8.50	51
EP- 8B	8.50 8.51 ... 8.99 9.00	51
EP- 9A	9.00 9.01 ... 9.49 9.50	51
EP- 9B	9.50 9.51 ... 9.99 10.00	51
EP-10A	10.00 10.01 ... 10.49 10.50	51
EP-10B	10.50 10.51 ... 10.99 11.00	51
EP-11A	11.00 11.01 ... 11.49 11.50	51
EP-11B	11.50 11.51 ... 11.99 12.00	51
EP-12A	12.00 12.01 ... 12.49 12.50	51
EP-12B	12.50 12.51 ... 12.99 13.00	51
EP-13A	13.00 13.01 ... 13.49 13.50	51
EP-13B	13.50 13.51 ... 13.99 14.00	51
EP-14A	14.00 14.01 ... 14.49 14.50	51
EP-14B	14.50 14.51 ... 14.99 15.00	51
EP-15A	15.00 15.01 ... 15.49 15.50	51
EP-15B	15.50 15.51 ... 15.99 16.00	51
EP-16A	16.00 16.01 ... 16.49 16.50	51
EP-16B	16.50 16.51 ... 16.99 17.00	51
EP-17A	17.00 17.01 ... 17.49 17.50	51
EP-17B	17.50 17.51 ... 17.99 18.00	51
EP-18A	18.00 18.01 ... 18.49 18.50	51
EP-18B	18.50 18.51 ... 18.99 19.00	51
EP-19A	19.00 19.01 ... 19.49 19.50	51
EP-19B	19.50 19.51 ... 19.99 20.00	51

(Specially assorted sets or individual gauges also available on request)

FC SERIES ● Large Size Gauges with a Threaded Hole

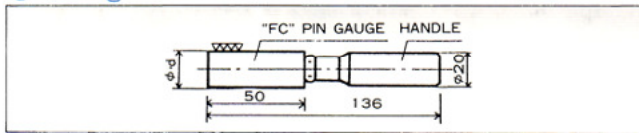


FC Series gauges are larger sized gauges with a threaded hole in one end of each gauge. When aluminum handles are attached, gauges are much easier to use.

● Specifications

Size(mm)	Tolerance	Roundness Cylindricity	Hardness HRC
20.00 ... 30.00	$\pm 2 \mu\text{m}$	1.6 μm	more than 58
30.01 ... 33.00	$\pm 3 \mu\text{m}$	2.4 μm	
Threaded hole : M10×P1.5 12mm depth			

● Configuration



(Individual Gauges and Handles also available)

● FC Series

Set No.	Size in Increments of 0.01mm	Quantity
FC-20A	20.00 20.01 ... 20.49 20.50	51
FC-20B	20.50 20.51 ... 20.99 21.00	51
}	}	}
FC-32A	32.00 32.01 ... 32.49 32.50	51
-32B	32.50 32.51 ... 32.99 33.00	51

NCP SERIES ● Pin Gauge Storage Cabinet Set



Steel storage cabinet for easy and efficient storage of gauges.

● Standard Set

Increments of 0.01mm with range of 1.00 ~ 6.00mm

Bottom drawer for extra storage.

NCP Series cabinets may also be used with other pin gauges sizes. Separate cabinets also available.

● Size of cabinet

W480×D527×H600

Net weight 37.4kg

E91P SERIES ● DIN Standard Pin Gauge Set



E91P Series gauges meet DIN standards

● Specifications

Size(mm)	Length (mm)	Tolerance	Roundness Cylindricity	Hardness HRC
1.00... 1.40	40	$\pm 2 \mu\text{m}$	1.6 μm	more than 58
1.50... 2.90	50			
3.00... 10.00	70			

● E91P Series

Set No.	Sizes	Quantity
E91P	1.00 ... 10.00 increments of 0.1mm	91

ECP SERIES

● Middle Size Set of EP Series

ECP series gauges mid-sized gauges in increments of 0.01mm including EP-OA — EP-12B.

Individual cases and pin vises are included as with EP Series gauges.

● Specifications

Size(mm)	Length (mm)	Tolerance	Roundness /Cylindricity	Hardness HRC
0.105... 1.495	40	± 1 μm	0.8 μm	more than 58
1.505...10.005	50			
10.015...13.005		± 1.5 μm	1.3 μm	
		± 1.5 μm	1.3 μm	

Sizes to 1.495 — sizes are printed on each cap.

For gauges 1.505 and larger, sizes are etched on each cap and laser cut into each gauge.

● ECP Series

Set No.	Sizes in Increments of 0.01mm				Quantity
ECP- OA	0.205	0.215...	0.495	0.505	31
- OB	0.505	0.515...	0.995	1.005	51
ECP- 1A	1.005	1.015...	1.495	1.505	51
- 1B	1.505	1.515...	1.995	2.005	51
ECP- 2A	2.005	2.015...	2.495	2.505	51
- 2B	2.505	2.515...	2.995	3.005	51
{	{				{
ECP-11A	11.005	11.015...	11.495	11.505	51
-11B	11.505	11.515...	11.995	12.005	51
ECP-12A	12.005	12.015...	12.495	12.505	51
-12B	12.505	12.515...	12.995	13.005	51

(Specially assorted sets or individual gauges also available on request)

EH/EL/ER SERIES

● Assorted Gauges from EP/ECP Gauge Sets

● EH Series

Set No.	Sizes in Increments of 0.005mm				Quantity
EH- OA	0.100	0.105...	0.245	0.250	31
- OB	0.250	0.255...	0.495	0.500	51
- OC	0.500	0.505...	0.745	0.750	51
- OD	0.750	0.755...	0.995	1.000	51
EH- 1A	1.000	1.005...	1.245	1.250	51
- 1B	1.250	1.255...	1.495	1.500	51
- 1C	1.500	1.505...	1.745	1.750	51
- 1D	1.750	1.755...	1.995	2.000	51
EH- 2A	2.000	2.005...	2.245	2.250	51
- 2B	2.250	2.255...	2.495	2.500	51
- 2C	2.500	2.505...	2.745	2.750	51
- 2D	2.750	2.755...	2.995	3.000	51
{	{				{
EH-12A	12.000	12.005...	12.245	12.250	51
-12B	12.250	12.255...	12.495	12.500	51
-12C	12.500	12.505...	12.745	12.750	51
-12D	12.750	12.755...	12.995	13.000	51

● Specifications

Size(mm)	Length (mm)	Tolerance	Roundness /Cylindricity	Hardness HRC
0.100 ... 1.495	40	± 1 μm	0.8 μm	more than 58
1.500 ...10.000	50			
10.005 ...20.000		± 1.5 μm	1.3 μm	
20.050 ... 21.000		± 2 μm	1.6 μm	

● EL Series

Set No.	Sizes in Increments of 0.05mm				Quantity
EL-0	0.20	0.25 ...	0.95	1.00	17
-1	1.00	1.05 ...	3.45	3.50	51
-2	3.50	3.55 ...	5.95	6.00	51
-3	6.00	6.05 ...	8.45	8.50	51
-4	8.50	8.55 ...	10.95	11.00	51
-5	11.00	11.05 ...	13.45	13.50	51
-6	13.50	13.55 ...	15.95	16.00	51
-7	16.00	16.05 ...	18.45	18.50	51
-8	18.50	18.55 ...	20.95	21.00	51

● ER Series

Set No.	Sizes in Increments of 0.1mm				Quantity
ER-1	0.20	0.30 ...	4.90	5.00	49
-2	5.00	5.10 ...	9.90	10.00	51
-3	10.00	10.10 ...	14.90	15.00	51
-4	15.00	15.10 ...	19.90	20.00	51

EK SERIES

● Pin Gauge Set in Increments of 0.01mm; Tolerance: +2 μm to 0 or 0 to -2 μm

● Specifications

Size(mm)	Length (mm)	Tolerance	Roundness /Cylindricity	Hardness HRC
0.20... 1.49	40	+2 μm~0 or 0~-2 μm	0.8 μm	more than 58
1.50...10.00	50			
10.01...13.00			1.3 μm	

Sizes to 1.49mm — sizes are printed on each plastic case.

For gauges 1.50mm and larger sizes are laser cut into each gauge. ⊕ sizes are marked KP, ⊖ sizes are marked KM. (Specially assorted sets or individual gauges also available on request)

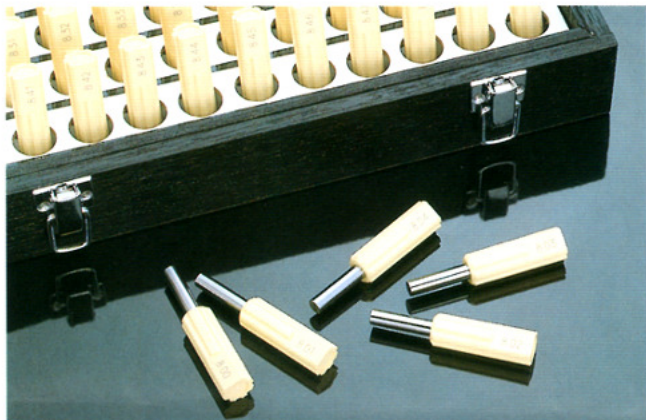
● EK Series

Set No.	Sizes in Increments of 0.01mm				Quantity
EK- OA	0.20	0.21 ...	0.49	0.50	31
- OB	0.50	0.51 ...	0.99	1.00	51
EK- 1A	1.00	1.01 ...	1.49	1.50	51
- 1B	1.50	1.51 ...	1.99	2.00	51
EK- 2A	2.00	2.01 ...	2.49	2.50	51
- 2B	2.50	2.51 ...	2.99	3.00	51
EK- 3A	3.00	3.01 ...	3.49	3.50	51
- 3B	3.50	3.51 ...	3.99	4.00	51
{	{				{
EK-12A	12.00	12.01 ...	12.49	12.50	51
-12B	12.50	12.51 ...	12.99	13.00	51

Please specify ⊕ size or ⊖ size upon ordering.

Sizes over 13.00mm also available on request.

ES SERIES ● Pin Gauge Set With Handle



ES Series gauges are EP Series gauges with molded Plastic handle (non-removable) Sizes are printed on each handle.

Because handles are attached, thermal insulation is greatly increased — thus reducing gauge size fluctuation.

For fast and frequent use, gauges with handle are very convenient.

● Specifications

Size (mm)	Length (mm)		Tolerance	Roundness Cylindricity	Hardness HRC
	Gauge	Handle			
0.20... 1.49	20	40	±1 μm	0.8 μm	more than 58
1.50... 2.99					
3.00... 5.99	30	45			
6.00... 10.00					
10.01... 12.00	40	50	±1.5 μm	1.3 μm	
12.01... 20.00					

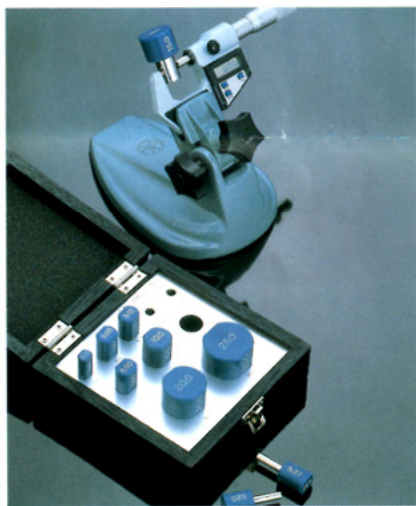
Handle Configurations of more than φ12.00mm gauges are different from the above.

● ES Series

Set No.	Sizes in Increments of 0.01mm				Quantity
ES- 0A	0.20	0.21 ...	0.49	0.50	31
- 0B	0.50	0.51 ...	0.99	1.00	51
ES- 1A	1.00	1.01 ...	1.49	1.50	51
- 1B	1.50	1.51 ...	1.99	2.00	51
ES- 2A	2.00	2.01 ...	2.49	2.50	51
- 2B	2.50	2.51 ...	2.99	3.00	51
ES- 3A	3.00	3.01 ...	3.49	3.50	51
- 3B	3.50	3.51 ...	3.99	4.00	51
ES- 4A	4.00	4.01 ...	4.49	4.50	51
- 4B	4.50	4.51 ...	4.99	5.00	51
ES- 5A	5.00	5.01 ...	5.49	5.50	51
- 5B	5.50	5.51 ...	5.99	6.00	51
}					}
ES-19A	19.00	19.01 ...	19.49	19.50	51
-19B	19.50	19.51 ...	19.99	20.00	51

(Specially assorted sets or individual gauges also available on request)

EMC SERIES ● Pin Gauge Set For Micrometer Accuracy Check (With calibration Results)



Micrometer instrument error spindle screw symmetry and parallelity between spindle and anvil can be measured.

Gauges are supplied with well insulated handles to eliminate heat related distortion,

● Specifications

Size (mm)	Gauge Length (mm)	Tolerance	Roundness Cylindricity	Hardness HRC
2.50... 10.00	20	±0.3 μm	0.5 μm	more than 58
15.00... 25.00		±0.5 μm		

● EMC Series

Set No.	Sizes	Quantity
EMC-1-10	2.50, 5.00, 5.12, 5.25 5.37, 5.50, 10.00, 15.00 20.00, 25.00	10

(Specially assorted sets or individual gauges available on request)

EI SERIES ● Inch Size Pin-Gauge Set

EI Series are inch size pin gauge sets.

● Specifications

Set No.	Length (mm)	Tolerance	Roundness Cylindricity	Hardness HRC
EI-0	40	⊕size (+2~+5 μm) ⊖size (-2~-5 μm) (in relation to standard sizes)	1.3 μm	more than 58
EI-1				
EI-2A	50			
EI-2B				

● EI Series

Set No.	Set Range	Quantity
EI-0 ⊕	0.011 — 0.060" increments of 0.001"	50
EI-0 ⊖		
EI-1 ⊕	0.061 — 0.250" — " —	190
EI-1 ⊖		
EI-2A ⊕	0.251 — 0.390" — " —	140
EI-2A ⊖		
EI-2B ⊕	0.391 — 0.500" — " —	110
EI-2B ⊖		

EC/ECS SERIES

● Fine Ceramic <Zirconia> Pin Gauge Sets



Zirconia-ceramic material is the best material available for making pin gauges. Zirconia-ceramic material does not rust or corrode, is non-magnetic, and resists abrasion. These features assure you long life and easy handling.

EC Series gauges --- without handle

ECS Series gauges --- with handle

● Comparison of Zirconia-ceramic and Carbon Steel

Area of Comparison	Material	Ceramic (Zirconia)	Carbon Steel High-speed-tool-steels (SKS · SKD · SKH)
Hardness (HRA)		89	less than 84
Coefficient of Thermal Expansion ($\times 10^{-6}$)/°C		10.8	11.5

Until now Zirconia-ceramic could not be electronically etched.

However, for sizes over ϕ 1.5mm, sizes are now laser cut into each gauge.

● ECS Series

Size (mm)	Length (mm)		Tolerance	Roundness /Cylindricity
	Gauge	Handle		
0.20... 1.49	20	40	$\pm 1 \mu\text{m}$	$0.8 \mu\text{m}$
1.50... 2.99		45		
3.00... 5.99	30	50		
6.00... 10.00		50		

EC Series gauges (without handles) sizes 0.20~1.49mm are 40mm in length. Sizes over 1.50 are 50mm in length.

● EC Series

Set No.	Sizes in Increments of 0.01mm				Quantity
EC-0A	0.20	0.21	... 0.49	0.50	31
-0B	0.50	0.51	... 0.99	1.00	51
EC-1A	1.00	1.01	... 1.49	1.50	51
-1B	1.50	1.51	... 1.99	2.00	51
EC-2A	2.00	2.01	... 2.49	2.50	51
-2B	2.50	2.51	... 2.99	3.00	51
}					
EC-9A	9.00	9.01	... 9.49	9.50	51
-9B	9.50	9.51	... 9.99	10.00	51

(Specially assorted sets or individual gauges also available on request)

RP SERIES

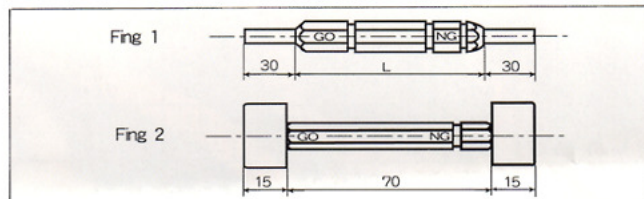
● Zirconia-Ceramic Double Ended Limit Plug Gauge



RP Series gauges are plug type gauges consisting of a handle and changeable gauge caps made zirconia-ceramics.

Specially assorted sets also available.

● Configuration



● Handle Specifications

L	Pin Size (mm)
45	0.2~2.0
60	2.0~4.5
80	4.5~6.0

Gauges meeting JIS standard to IT2 level are available.

If even higher accuracy is required, please ask.

● Sets

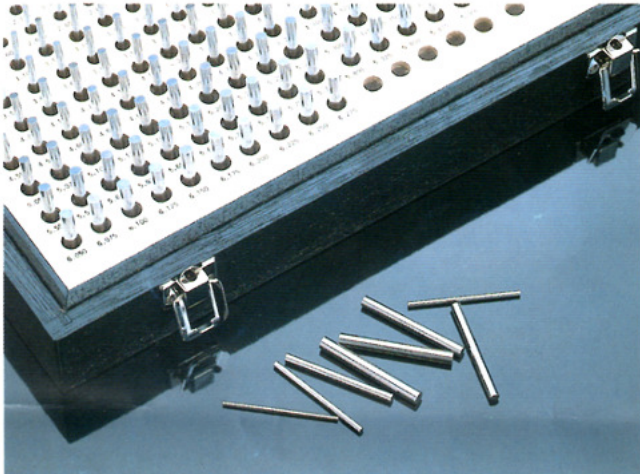
Assorted Size	For H6 Hole	For H7 Hole	For H8 Hole			
6.00						
8.00						
10.00						
12.00						
14.00						
15.00						
16.00						
18.00						
20.00						
22.00						
24.00						
25.00						
Serial Number				RP-6	RP-7	RP-8

● Specifications

Size (mm)	Plug Gauge Tolerance (μm)						Con-figuration
	H6用		H7用		H8用		
	GO	NG	GO	NG	GO	NG	
0.20~ 3.00	+1.6 +0.4	+6.6 +5.4	+2.5 +0.5	+11 +9	+3.0 +1.0	+15.0 +13.0	See Fig.1
3.00~ 6.00	+2.2 +0.8	+8.8 +7.2	+3.2 +0.8	+13.2 +10.8	+4.2 +1.8	+19.2 +16.8	See Fig.2
6.00~ 10.00	+2.2 +0.8	+9.8 +8.2	+3.2 +0.8	+16.2 +13.8	+4.2 +1.8	+23.2 +20.8	
10.00~ 18.00	+3.0 +1.0	+12.0 +10.0	+4.0 +1.0	+19.5 +16.5	+5.5 +2.5	+28.5 +25.5	
18.00~ 25.00	+3.2 +0.8	+14.2 +11.8	+5.0 +1.0	+23 +19	+7.0 +3.0	+35.0 +31.0	

EM SERIES

● Pin Gauge Set in Increments of 0.025mm;
Tolerance: (+) 2 to 5 μ m or (-) 2 to 5 μ m



Eisen Corporation produce more than 150 types of pin gauges. EM Series is our basic assortment set.

At present, we have produced well over 20,000 sets of this type pin gauges for both domestic and overseas market. Our sets are popular, affordable, and contain large assortments. EM-1 sets are especially well-reputed all over the world owing to wide usage and economical price.

● Specifications

Size (mm)	Length (mm)	Tolerance	Roundness Cylindricity	Hardness HRC
0.100... 1.525	40	⊕ size (+2 ~ +5 μ m) ⊖ size (-2 ~ -5 μ m) (in relation to standard sizes)	1.3 μ m	more than 58
1.550... 12.975	50	⊕ size (+1 ~ +5 μ m) ⊖ size (-1 ~ -5 μ m) (in relation to standard sizes)	1.6 μ m	
13.000... 19.000				

Please specify + size or - size upon ordering.

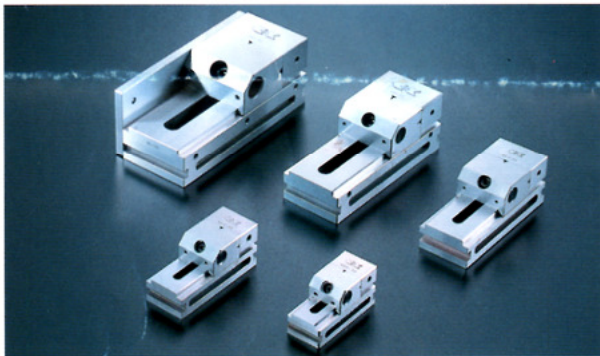
● EM Series

Set No.	Sizes		Quantity
EM-00+ -00-	0.100 0.110 ...	0.280 0.290 increments of 0.01mm	20
EM-0+ -0-	0.300 0.325 ...	1.500 1.525 increments of 0.025mm	50
EM-1+ -1-	1.550 1.575 ...	6.250 6.275 increments of 0.025mm	190
EM-2A+ -2A-	6.300 6.325 ...	9.750 9.775 increments of 0.025mm	140
EM-2B+ -2B-	9.800 9.825 ...	12.500 12.525 increments of 0.025mm	110
EM-2C+ -2C-	12.550 12.575 ...	12.950 12.975 increments of 0.025mm	18
EM-3+ -3-	13.000 13.100 ...	18.900 19.000 increments of 0.1mm	61

(Specially assorted sets or individual gauges also available on request.)

PRECISION TOOLMAKER'S VISE

● MVS-30~65



Eisen's Surface grinding division are producing seven types of high precision toolmaker's vises. Selected alloy tool steel after heat treated and sud-zero treatment are used as material. Squareness and parallelism are accurately ground including vee-grooves in the sliding jaws.

MVS-30 and 35 are mini type vise and can be fixed in a bigger vise to process the smaller workpieces. These mini vise also suit edm machines.

● MVP-60



● MVT-75



● Dimensions & Tolerances (mm)

Model No.	Width of Jaw	Jsw opening	Depth of Jaw	Overall Length	Overall Height	Parallelism & Squareness
MVS-30	30	25	15	70	35	0.002
MVS-35	35	36	17	88	39	0.002
MVS-45	45	50	20	110	45	0.002
MVS-55	55	70	25	140	55	0.003
MVS-65	65	75	30	165	65	0.003
MVP-60	60	77	28	180	61	0.005
MVT-75	76	98	36	178	61	0.005