

# LENGTH MEASURING MACHINE GENERAL CATALOG



### **BESTOOL-KANON**

### LENGTH MEASURING MACHINE GENERAL CATALOG

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<sup>←&</sup>quot;ONLY ONE": Products with this red mark are BESTOOL-KANON completely original products.

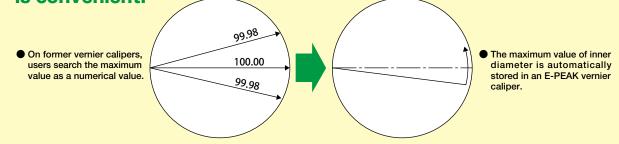


Adequate for narrow space where the display is hard to see

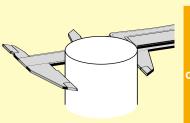
## REGISTERED AS UTILITY MODEL (Japan) (C) Overall length (E) New

Maximum values and minimum values are automatically stored.

For measuring inner diameter, the maximum value (Max) mode is convenient!



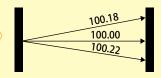
For measuring outer diameter at a dark location, the minimum value (Min) mode is convenient! Reading at hand



The minimum value of outer diameter is automatically stored in an E-PEAK vernier caliper. Lathe turning (Posture for reading caliper is hard.)

Measurement at the back of processing machine (difficult to see the display)

Measurement of width of large groove



E-PEA	K : Speci	fications											(Un	it : mm)	
Model	Measuring length	Resolution	Instrumental error	Overall length	Power supply	Weight	Α	В	С	D	E	F	G	Н	١
E-PEAK15	150		+0.00	241	SR44	170g	234	16	76	40	14	30	7	3.8	
E-PEAK20	200	0.01	±0.02	291	1 piece	190g	284	16	76	40	14	30	7	3.8	l
F-PFAK30	300		+0.03	396	1 picoc	280a	388	16	103	64	14	47	8	4.8	l

### E-PITA / PITA

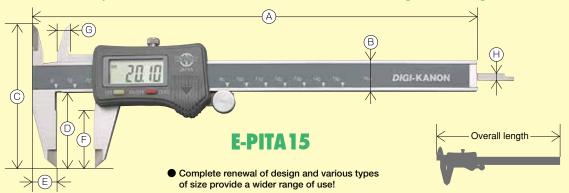
### **Epoch-making flat-head caliper**



### 21st century version of standard caliper!

### Flat-head vernier caliper series

With "Flat head", measurement can be conducted easily from any corners.



#### ■ E-PITA : Specifications

(Unit:mm)

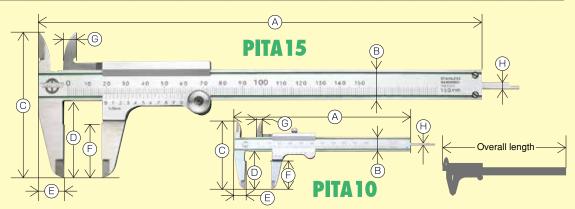
Model	Measuring length	Resolution	Instrumental error	Overall length	Power supply	Weight	Α	В	С	D	Е	F	G	Н
E-PITA10	100			191		160g	184	16	76	40	14	30	7	3.8
E-PITA15	150		±0.02	241		170g	234	16	76	40	14	30	7	3.8
E-PITA20	200	0.01		291	SR44	190g	284	16	76	40	14	30	7	3.8
E-PITA30	300		±0.03	396	1 piece	280g	388	16	103	64	14	47	8	4.8
E-PITA40	400		±0.05	496		400g	488	16	103	64	14	47	8	_

\*E-PITA40 is not equipped with any depth bar.

#### ■ E-PITA: Metric / Inch model Specifications

(Unit:mm)

Model	Measuring length	Resolution	Instrumental error	Overall length	Power supply	Weight	Α	В	С	D	Е	F	G	Н
E-PITA150×6"	150mm×6"	0.01mm	±0.02	241	0044	170g	234	16	76	40	14	30	7	3.8
E-PITA200×8"	200mm×8"	×	±0.02	291	SR44 1 piece	190g	284	16	76	40	14	30	7	3.8
E-PITA300×12"	300mm×12"	0.0005"	±0.03	396	. p.000	280g	388	16	103	64	14	47	8	4.8



• The upper and lower grooves on the main scale side reduce irregular reflection on the scale surface. In addition, the green color imposes a less load to eyesight, resulting less fatigue of eyes.

### ■ PITA: Specifications

(Unit : mm)

Model	Measuring length	Minimum reading	Instrumental error	Overall length	Weight	Α	В	С	D	E	F	G	Н	
PITA10	100			171	100g	166	13.5	65	34.5	11	25	5	2.4	
PITA15	150		±0.05	237	140g	230	16	76	40	14	28	7	3.8	
PITA20	200		Division of 39 mm into 20 equal parts		287	160g	280	16	76	40	14	28	7	3.8
PITA30	300				409	340g	400	20	111	64	19	48	9	3.8
PITA40	400		±0.06	515	420g	506	20	111	64	19	48	9	_	

\*PITA40 is not equipped with any depth bar. \*Minimum reading of PITA10 is division of 19mm into 20 equal parts.

### Easy solution for a narrow space at the tip!

Can be fitted at a location where contact was formerly impossible!

Smooth movement at a location where an instrument was formerly blocked!









### JUDGEMENT

### With "Judgment function", instantaneous sorting of accepted products and rejected products is available.



Measurement of internal dimension



Measurement of external dimension



Measurement of depth

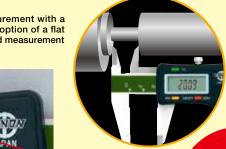


- For sorting accepted parts and rejected parts from a large quantity of parts or the like, the working time can be largely reduced relative to former products.
- By setting the reference value for acceptance of work to be measured in advance, the OK/NG indication can be checked in a moment on the panel. Anyone can make a judgment quickly and easily.
- For complex shapes for which measurement with a former vernier caliper was difficult, adoption of a flat head allows fitted contact of the tip and measurement of edge face without any stress.

In addition to normal measurement, the judgment provides further ...

Measurement on edge face (measurement with flat-head)







The OK indication allows quick and accurate "judgment.'

### ■ ULJ: Specifications

ON/OFF



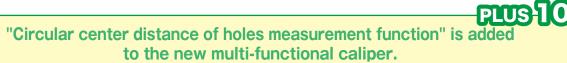
Model	Measuring length	Resolution	Instrumental error	Overall length	Power supply	Weight	Α	В	С	D	Е	F	G	Н
ULJ15	150		±0.03	0044	170g	234	16	76	40	14	30	7	3.8	
ULJ20	200	0.01	±0.03	291	SR44 1 piece	190g	284	16	76	40	14	30	7	3.8
ULJ30	300		±0.04	396	Picco	280g	388	16	103	64	14	47	8	4.8

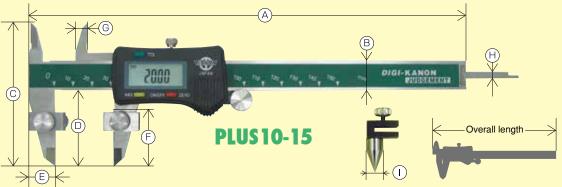
### ■ ULJ: Metric / Inch model Specifications

(Unit : mm)	١

Model	Measuring length	Resolution	Instrumental error	Overall length	Power supply	Weight	Α	В	С	D	Е	F	G	Н	
ULJ150×6"	150mm×6"	0.01mm	±0.03	241	0044	170g	234	16	76	40	14	30	7	3.8	
ULJ200×8"	200mm×8"	0.01mm × 0.0005″	×	±0.03	291	SR44 1 piece	190g	284	16	76	40	14	30	7	3.8
ULJ300×12"	300mm×12"		0.0005"	±0.04	396	. p.000	280a	388	16	103	64	14	47	8	4.8







Inside measurement

Outside measurement

Measurement of depth







Comparative measurement (ABS function)

Point measurement

Measurement of height from a face

Measurement on edge face (measurement with flat-head)





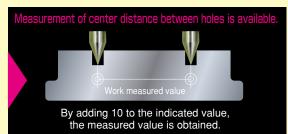




Judgment function



- In addition to normal measurement, a judgment function is provided.
- By mounting a hole pitch probe attachment to the inside of the outside jaw with screws, "circular hole center distance measurement" is available.
   (\*By adding 10 to the indicated value, the measured value is obtained.)





### ■ PLUS10 : Specifications

(Unit : mm)

Model	Measuring length	Resolution	* Instrumental error	Overall length	Power supply	Weight	Α	В	С	D	Е	F	G	Н	- 1	
PLUS10-15	150		±0.00	241	SR44	170g	234	16	76	40	14	30	7	3.8	10	
PLUS10-20	200	0.01	0.01	±0.03	291	1 piece	190g	284	16	76	40	14	30	7	3.8	10
PLUS10-30	300		±0.04	396	. p.ccc	280g	388	16	103	64	14	47	8	4.8	10	

<sup>\*</sup>This is not an instrument error of circular pitch measurement.



### Adequate for large scale measurement

### Digital caliper adequate for large scale measurement

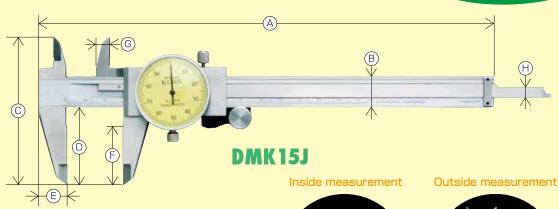


### DMK-J

Black scale on gold base provides easy-to-see display and is adequate for instantaneous reading.

With "Scale dial", instantaneous reading is available. The caliper with dial allows quick reading of measurement.

Dial direct reading method



- The scale dial allows quick reading.
- The black scale on a gold base provides easy-to-see display.
- The shock resistance is improved, allowing use without anxiety.



### ■ DMK-J: Specifications

												,	,
Model	Measuring length	Resolution	Instrumental error	Rotation of pointer	Weight	Α	В	С	D	E	F	G	Н
DMK15J	150		±0.02	1	150g	235	16	77	40	14	30	7	5
DMK20J	200	0.01	±0.03	1	210g	290	17	90	50	17	38	7	5
DMK30J	300		±0.04	1	320g	395	17	105	64	18	50	9	3.8



E-RX/E-RZ Digital caliper for measuring circular center distance of holes with digital direct reading system

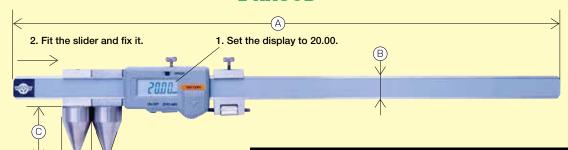


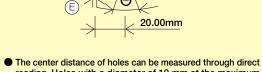
"Digital direct reading system" for hole pitch through easy operation

For center distance measurement "between holes"

**Direct reading system Digital** 

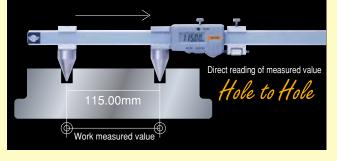
### E-RX30B





reading. Holes with a diameter of 19 mm at the maximum can be measured.

The printer output function is provided.



#### ■ E-RX: Specifications

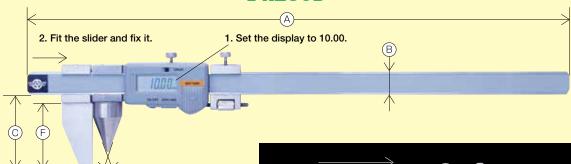
	( -	,
D	E	Θ
		40°

(Unit: mm)

Model	Measuring length	Resolution	Instrumental error	Minimum hole diameter	Maximum hole diameter	Power supply	Weight	Α	В	С	D	Е	Θ	
E-RX20B	20~200	0.01	±0.03	43	<i>ϕ</i> 19	SR44	360g	370	16	35	φ20	φ2	40°	1
E-RX30B	20~300	0.01		Ψ3	ΨΙΘ	1 piece	582g	500	20	35	<i>φ</i> 20	φ2	40°	1
														-

### For measurement of distance "between edge face and hole"

### E-RZ30B



■ The distance between edge face and hole can be measured through direct reading. Holes with a diameter of 19 mm at the maximum can be

measured. The printer output function is provided.

# Work measured value

### ■ E-RZ: Specifications

(Unit:mm)

Model	Measuring length	Resolution	Instrumental error	Minimum hole diameter	Maximum hole diameter	Power supply	Weight	Α	В	С	D	E	F	Θ
E-RZ20B	10~200	0.01	±0.03	12	<i>φ</i> 19	SR44	340g	370	16	50	φ20	φ2	45	40°
E-RZ30B	10~300	0.01		φ3	φιθ	1 piece	560g	500	20	50	<i>φ</i> 20	φ2	42	40°

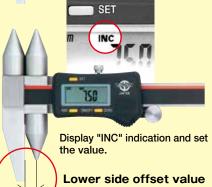
### Centerline caliper for distance between center to center of holes with equal diameter











#### Measurement of distance between center to center of holes



#### Measurement of distance between edge face and hole



 By setting the upper side offset value (15.00 mm) and the lower offset value (7.50 mm), this instrument allows the measured center distance to be indicated as actual size. This saves time for addition or subtraction of indicated value that is required by former instruments, resulting easier use.

7.50mm

- Since one unit of this caliper allows measurement of center distance of holes and distance between edge face and hole through direct reading, the product eliminates the need for preparing two units for two types of measurement, resulting in convenient use.
- Offset value setting in the upper side and the lower side can be easily conducted by pressing the "SET" button.

#### ■ E-RM-J: Specifications

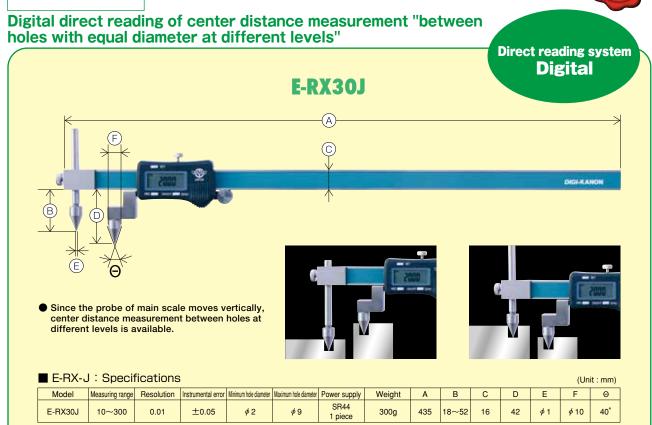
(Unit:mm)

																,	
Model	Measurii	ng range	Donalution	lanta mantal array	Mainon kala diamatan	Maximum hole diameter	Dawer avaalu	Weight	_	0	(	6	_	_			Θ
iviodei	Pitch for upper side	Pitch for lower side	Resolution	instrumental error	MINIMUM NOTE CHARMETER	Maximum noe diameter	Power supply	vveigni	A	ь	C	ט	_		G		Θ
E-RM15J	15~150	7.5~150					0044	300g	260								
E-RM20J	15~200	7.5~200	0.01	±0.05	φ3	φ 14	SR44 1 piece	340g	310	50	16	φ15	φ1.9	38	32	71	40°
E-RM30J	15~300	7.5~300					1 piece	380g	405								

### E-RX-J

### Adequate for center distance measurement for holes at different levels



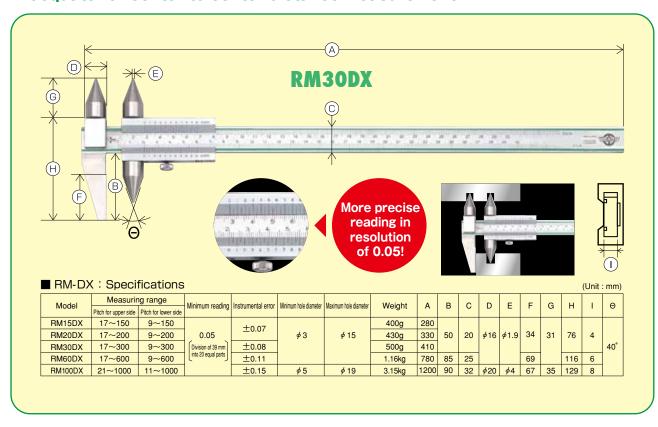


### RM-DX

Centerline caliper for distance between center to center distance of holes with equal diameter



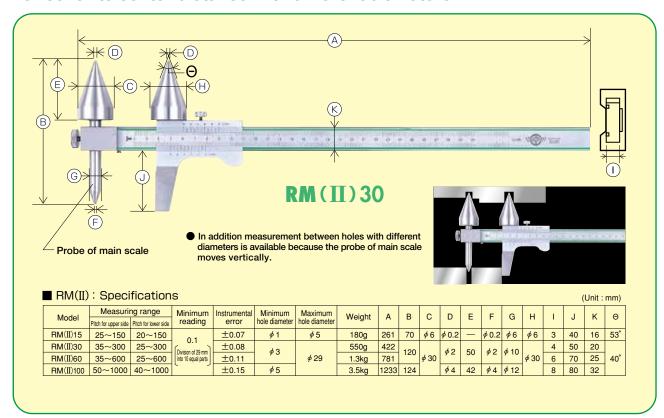
### Adequate for center to center distance measurement!







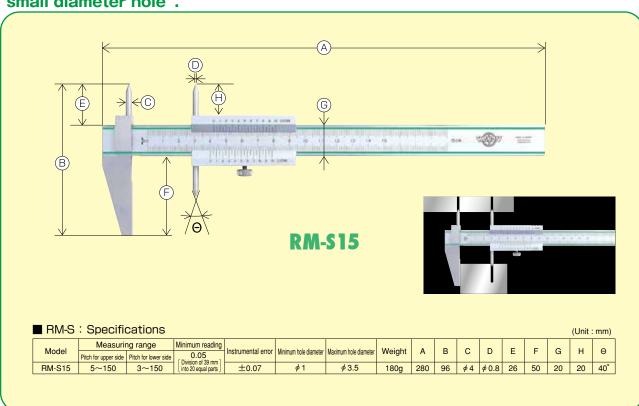
### For cener to center distance with different diameters!



### Adequate for center distance measurement for small diameter holes



Vernier caliper for measuring circular hole center distance adequate for "small diameter hole".

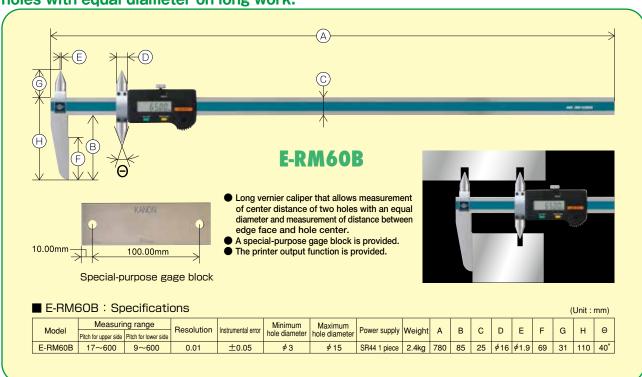


### E-RM60B

### Adequate for center distance measurement for holes with equal diameter on long work



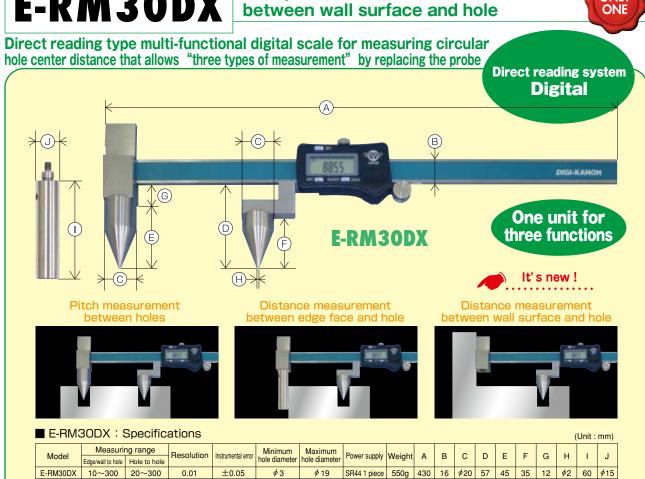
With "measuring length of 600 mm", this large digital caliper is adequate for measuring holes with equal diameter on long work.





Adequate for distance measurement

ONLY ONE

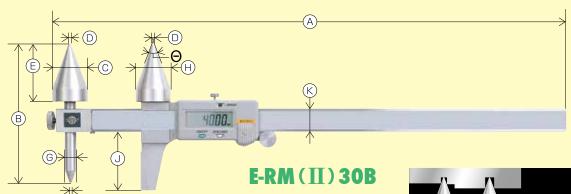


### E-RM(II)/E-RM-S

### Adequate for center distance measurement for holes



Caliper for measuring circular hole center distance adequate for "offset system" with vertical movement of probe and measurement of "small diameter hole and small surface"



 In addition measurement for holes with different diameters is available because the probe of main scale

- moves vertically.

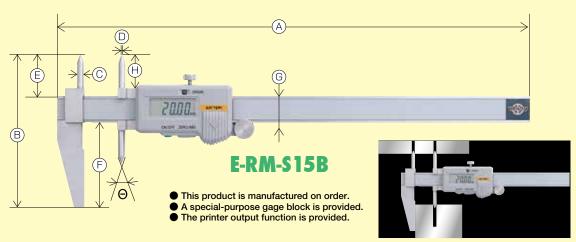
   A special-purpose gage block is provided.
- The printer output function is provided.



### ■ E-RM(II): Specifications

(Unit : mm)

																			,
Model	Measurii	ng range	Donalution	Instrumental error	Minimum	Maximum	Power supply	Woight	۸	В	_	D	_	_	G	п		k	
Model	Pitch for upper side	Pitch for lower side	Resolution	Instrumental error	hole diameter	hole diameter	i owei suppiy	vveigni	^	В	0	D	_	'	u	"	J	IX.	
E-RM(II)15B	25~150	20~150			<i>φ</i> 1	<i>φ</i> 5	SR44	160g	254	70	<i>φ</i> 6	φ0.2	_	φ0.2	<i>φ</i> 6	<i>φ</i> 6	40	16	53°
E-RM(II)30B	35~300	25~300	0.01	±0.05	<i>φ</i> 3	<i>φ</i> 29	1 piece	530g	438	120	<i>φ</i> 30	φ2	50	φ2	<i>∮</i> 10	<i>∲</i> 30	50	20	40°
E-RM(II)60B	35~600	25~600			73	723	, p.000	1.7kg	799	120	730	72	50	72	910	730	70	25	40



### ■ E-RM-S: Specifications

(Unit : mm)

	•																,
Model	Measurii	ng range	Resolution	Instrumental error	Minimum	Maximum	Power supply	Weiaht		Б		7	_	_			
Model	Pitch for upper side	Pitch for lower side	riesolution	ilistiullelital elloi	hole diameter	hole diameter	Fower Supply	vveigni	A		C	ן ט	-		G	п	Ð
E-RM-S15B	5~150	3~150	0.01	±0.05	φ1	φ3.5	SR44 1piece	160a	280	90.7	φ4	<i>∮</i> 0.8	24.7	50	16	20	40°

### Method of setting with special-purpose gage block

Method of measurement on upper and lower sides with E-RM-B series (E-RM60B/E-RM(II)-B/E-RM-S-B) special-purpose gage block

### [In case of E-RM60B]

#### Measurement on lower side

Position the lower measurement section to the dimension A side of the gage block. At this time, ensure that no clearance of measuring surface is present in the edge face side. Press the ON/OFF switch and then press the ZERO/ABS switch.

At this time, dimension A of 10 mm becomes the zero point.

\* When the measured value is indicated, add or subtract it to or from dimension A of 10 mm.

(Example 1) If "8.00" is indicated:

8.00 + 10 mm (dimension A) = 18.00 mm (actual size) (Example 2) If "-0.05" is indicated:

-0.05 + 10 mm (dimension A) = 9.95 mm (actual size)

# 10.00mm 100.00mm B

Special-purpose gage block

#### Measurement on upper side

Position the upper measurement section to the dimension B side of the gage block. At this time, ensure that the probe is securely inserted into the hole. Press the ON/OFF switch and then press the ZERO/ABS switch.

At this time, dimension B of 100 mm becomes the zero point.

\*When the measured value is indicated, add or subtract it to or from dimension B of 100 mm.

(Example 3) If "25.00" is indicated:

25.00 + 100 mm (dimension B) = 125.00 mm (actual size)

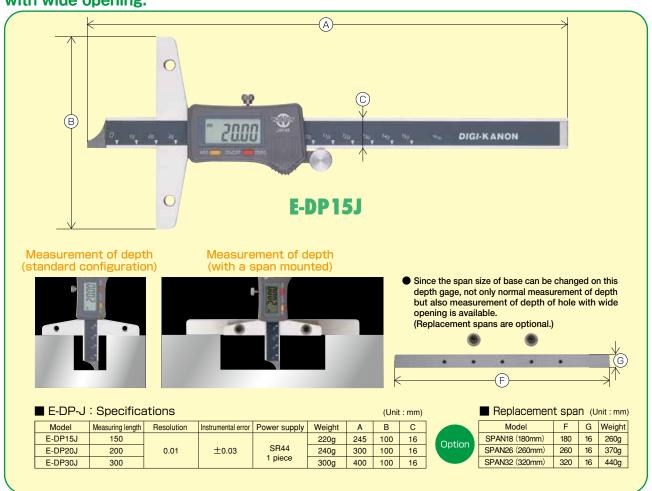
(Example 4) If "-25.00" is indicated:

-25.00 + 100 mm (dimension B) = 75.00 mm (actual size)

### E-DP-J

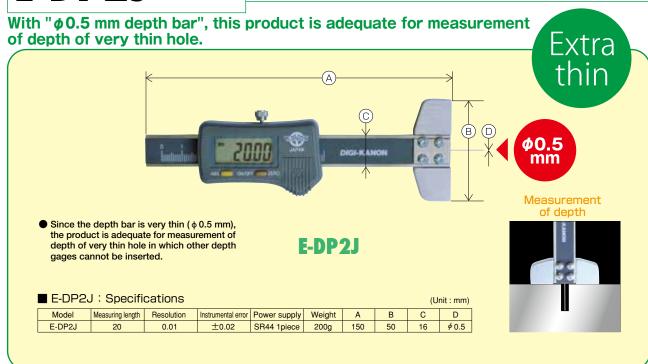
### Adequate for measuring depth of hole with wide opening

With "Span replacement", this depth gage is adequate for measuring depth of hole with wide opening.



### **E-DP2J** Extra thin

Adequate for measurement of depth of very small hole

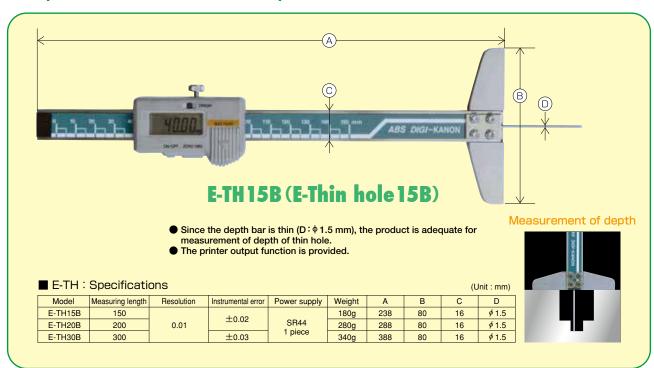


### E-Thin hole

### Thin hole depth gauge with thin depth bar



### Adequate for measurement of depth of thin hole!

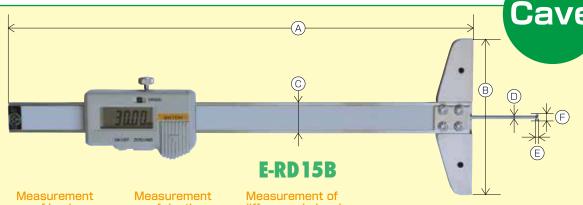




### Research gauge

ONLY ONE

### For hook measurement, depth measurement, and step measurement!

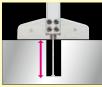


### of hook



The position of inner cave from the edge face can be measured.

### of depth



Also the depth of thin hole can be measured. (\*)

### difference in level



Also the difference in be measured. (\*)

\*For measurement of depth and measurement of difference in level, use an attachment that is provided as accessories. The lower edge face of hook is flat with the edge face of attachment, and zero setting is conducted.

Attachment provided as accessories (overall length: 80 mm)



(Linit: mm)

- Also an attachment with overall length of 180 mm is provided as an option.
- The printer output function is provided.

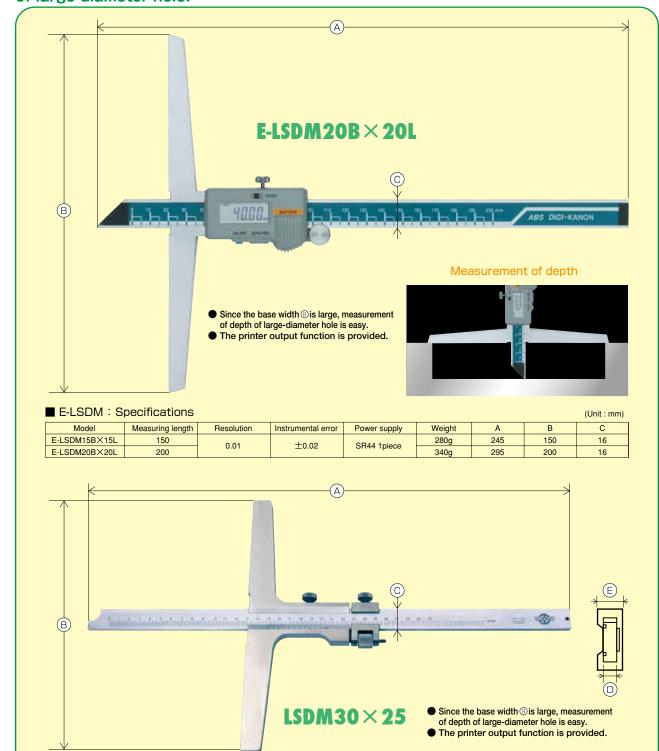
#### ■ E-RD : Specifications

	-,										(011111)
Model	Measuring length	Resolution	Instrumental error	Power supply	Weight	Α	В	С	D	Е	F
E-RD5B1	50				150g	140					
E-RD10B	100				170g	190			<i>\$</i> 2		φ4
E-RD15B		0.01	±0.02	SR44 1piece			80	16		1	
E-RD15B6	150				180g	238			φ 2.5		φ6
E-RD15B8									Ψ 2.5		<i>φ</i> 8

### E-LSDM/LSDM

### Adequate for measurement of depth of large-diameter hole

With "Long base", this long base depth gage is adequate for measurement of depth of large-diameter hole.

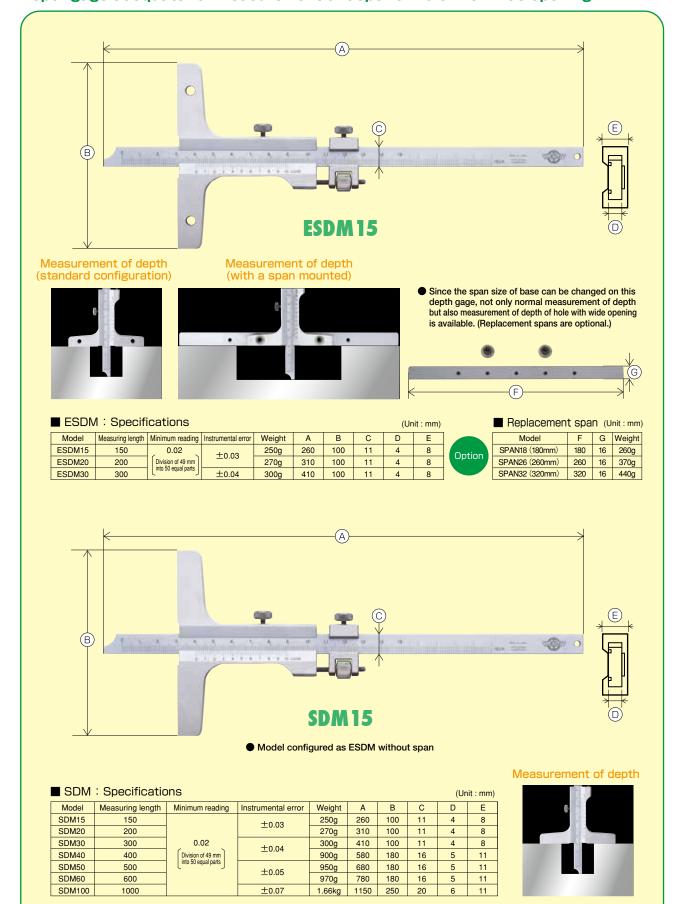


■ LSDM: Speci	fications							(	(Unit : mm)
Model	Measuring length	Minimum reading	Instrumental error	Weight	Α	В	С	D	E
LSDM15×15	150			320g	260	150	11	4	8
LSDM15×20	150			370g	260	200	11	4	8
LSDM15×25	150		±0.03	850g	300	250	20	6	11
LSDM20×15	200	0.02		320g	310	150	11	4	8
LSDM20×20	200	Division of 49 mm		380g	310	200	11	4	8
LSDM20×25	200	into 50 equal parts		900g	350	250	20	6	11
LSDM30×15	300			350g	410	150	11	4	8
LSDM30×20	300		±0.04	410g	410	200	11	4	8
LSDM30×25	300			1.1kg	450	250	20	6	11



### Adequate for measurement of depth of hole with wide opening

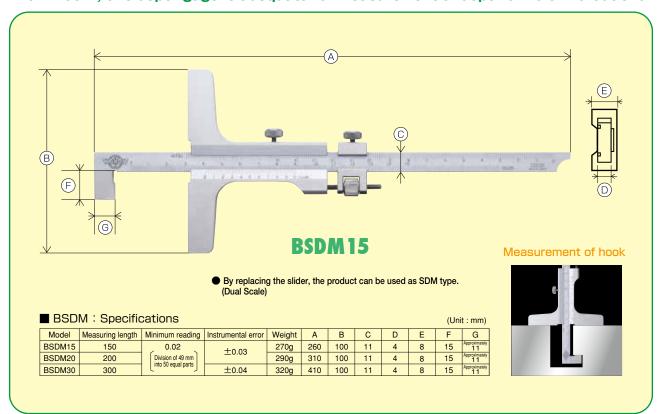
### Depth gage adequate for measurement of depth of hole with wide opening



### **BSDM**

### Adequate for measurement of depth of horizontal cave

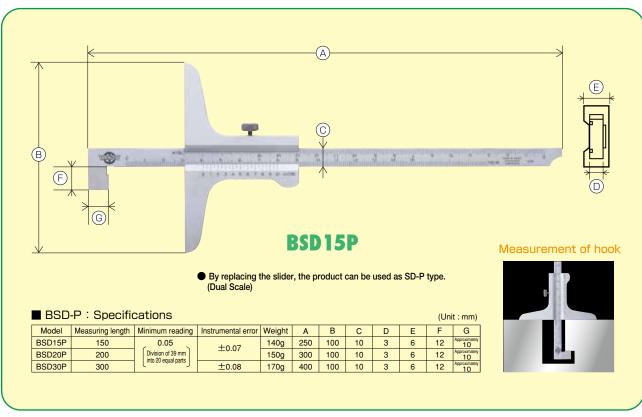
With "Hook", this depth gage is adequate for measurement of depth of hole without end.



### **BSD-P**

### Adequate for measurement of hook in normal hole

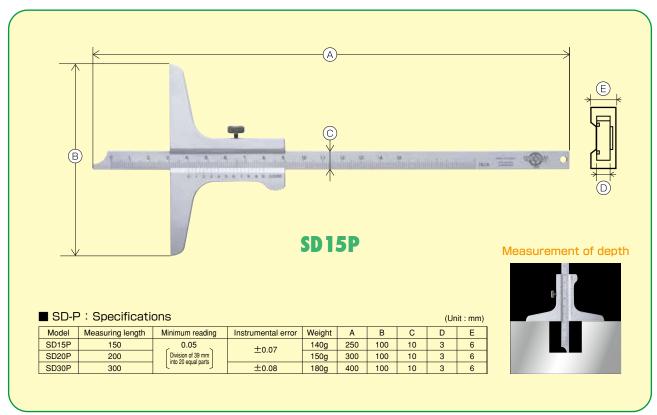
"Standard type", Carl Mahr type depth gage equipped with hook without jogging function





### Adequate for measurement of depth of normal hole

### "Standard type", Carl Mahr type depth gage without jogging function

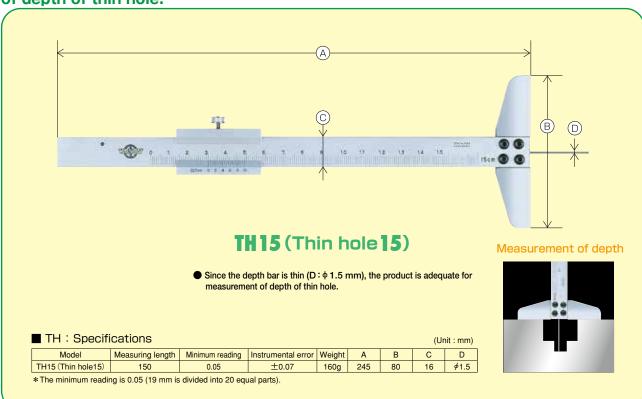




### Adequate for measurement of depth of thin hole

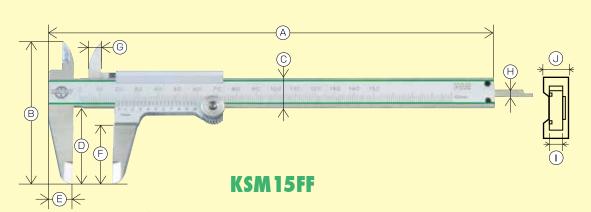


With " $\phi$  1.5 mm depth bar", this thin hole depth gage is adequate for measurement of depth of thin hole.



### Standard vernier caliper for normal measurement

### This standard scale type vernier caliper provides measurement without fatigue of eyes.



 The upper and lower grooves in the main scale side reduce irregular reflection on the scale surface. In addition, the green color imposes a less load to eyesight, resulting in less fatigue of eyes.

#### Inside measurement



#### Outside measurement



Measurement of difference in level



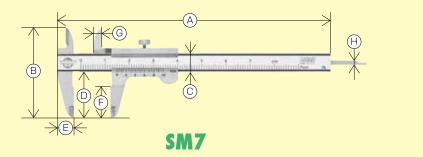
Measurement of depth



#### ■ KSM-FF : Specifications

- KOIVI	-i i · opecino	20013											(Uni	it : mm)	
Model	Measuring length	Minimum reading	Instrumental error	Weight	Α	В	С	D	E	F	G	Н	I	J	
KSM15FF	150	0.05		130g	230	77	16	40	14	28	7	3.8	3	6	
KSM20FF	200	Division of 39 mm into 20 equal parts	±0.05	180g	290	91	17	50	17	37	7.5	3.8	3	6	ı
KSM30FF	300	[ IIII 20 equal parts ]		250g	390	91	17	50	17	37	7.5	3.8	3	6	

### Mini vernier caliper and standard long scale vernier caliper



#### ■ SM: Specifications

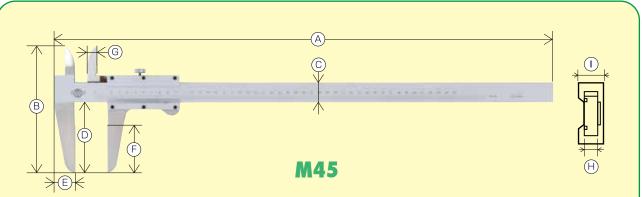
(Unit : mm)

	-,												(0	,
Model	Measuring length	Minimum reading	Instrumental error	Weight	Α	В	С	D	E	F	G	Н	- 1	J
SM7	70	0.05	±0.05	23g	113	38	8	19	7	13	3.5	1.8	2	4.6
SM150	1500		±0.16	6.5kg	1780	268.7	40	160	45	125	20	_	9	16
SM200	2000	0.05	±0.20	12.5kg	2325	330	50	200	50	150	23	_	11	20
SM250	2500	Division of 39 mm	±0.24	14.5kg	2825	330	50	200	50	150	23	_	11	20
SM300	3000	into 20 equal parts	±0.30	17.0kg	3325	330	50	200	50	150	23	_	11	20
SM400	4000		±0.40	25.0kg	4325	330	50	200	50	150	23	_	11	20

<sup>\*</sup>The minimum reading of SM7 is 0.05 (division of 19 mm into 20 equal parts). \*SM150 to SM300 are not equipped with any depth bar.

### Standard vernier caliper for normal measurement

### "Standard type"



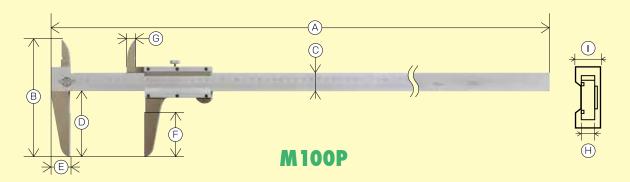
### ■ M: Specifications

(Unit:mm)

Model	Measuring length	Minimum reading	Instrumental error	Weight	Α	В	С	D	Е	F	G	Н	I
M45	450	0.05	±0.10	900g	625	161.5	25	90	25	60	12.5	6	12.5
M50	500	0.05 Division of 39 mm	±0.10	1.13kg	670	161.5	25	90	25	60	12.5	6	12.5
M60	600	into 20 equal parts	±0.11	1.25kg	780	161.5	25	90	25	60	12.5	6	12.5
M100	1000		±0.15	3.50kg	1250	222	32	130	32	85	16	8	15

<sup>\*</sup>Production of M40 was ceased. As an alternative product, we sell PITA40. (See page 3.)

### Although the measuring length is large, this vernier caliper is light and can be held easily with one hand. Also the price is reasonable.



### ■ M-P : Specifications

(Unit : mm)

Model	Measuring length	Minimum reading	Instrumental error	Weight	Α	В	С	D	Е	F	G	Н	I
M60P	600	0.05	±0.11	612g	800	111.6	20	64.2	18.9	48	9.4	4	8
M100P	1000	into 20 equal parts	±0.15	1.9kg	1250	161.5	25	90	25	60	12.5	6	12.5

 $<sup>{\</sup>rm *M60P~M100P~are~not~equipped~with~any~JIS~mark.~The~instrumental~error~is~within~the~JIS~specification.}$ 

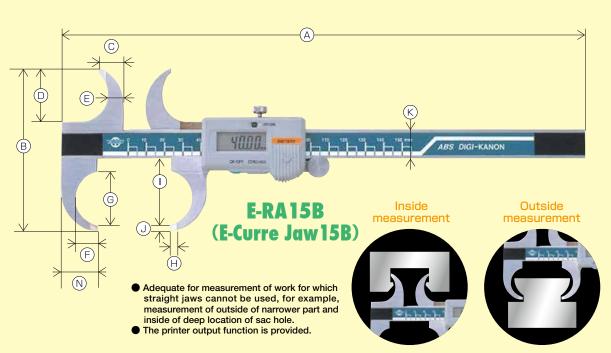
### E-RA E-Curre Jaw RA Curre Jaw

Adequate for measurement at a deep location of sac hole



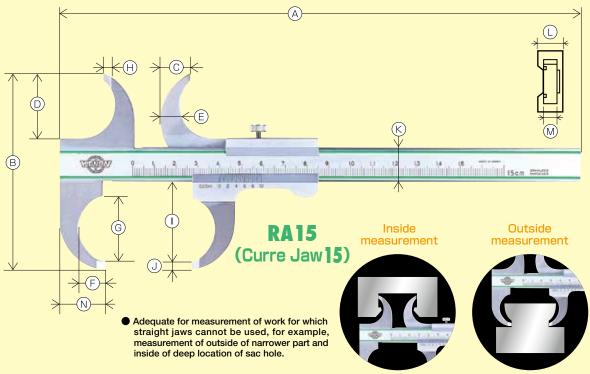
(Unit: mm)

With "Curre jaw", this caliper is adequate for measurement of work for which straight jaws cannot be used.



#### ■ E-RA : Specifications

	om out on to														(Onit .	111111)
Model	Measuring length	Resolution	Instrumental error	Power supply	Weight	Α	В	С	D	Е	F	G	Н	ı	J	K
E-RA15B (E-Curre Jaw15B)	150	0.01	±0.03	SR44 1piece	170g	287	90	14	30	8.5	12	29	5.5	36		16
E-RA20B (E-Curre Jaw20B)	200	0.01	0.03	Original Ipiece	190g	337	30	14	30	0.5	12	29	5.5	30	4	10



### ■ RA : Specifications

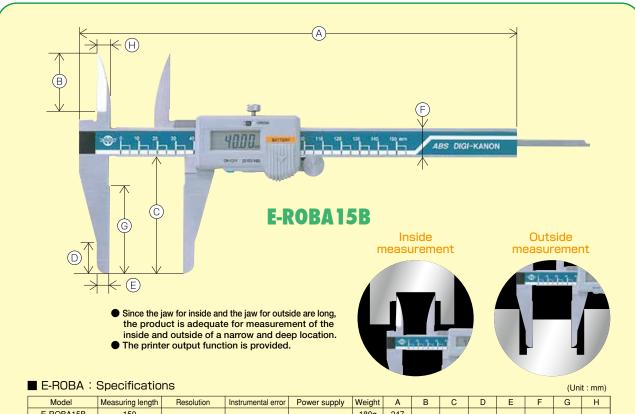
_																	(	,
Model	Measuring length	Minimum reading	Instrumental error	Weight	Α	В	С	D	Е	F	G	Н	- 1	J	K	L	М	N
RA15 (Curre Jaw15)	150	0.05	±0.07	170g	238	90	14	30	8.5	12	29	5.5	36	4	16	0	2	20
RA20 (Curre Jaw20)	200	into 20 equal parts		200g	290	90	14	30	0.5	12	29	5.5	36	4	16	0	3	20

### E-ROBA / ROBA caliper with donkey shape

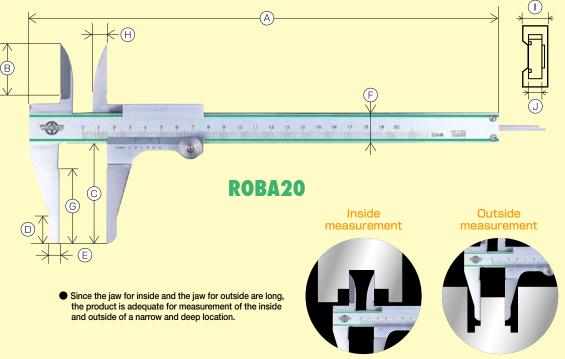


(Linit: mm)

### Adequate for measurement of inside and outside of narrow and deep part!



	0,000001.0											(0111		
Model	Measuring length	Resolution	Instrumental error	Power supply	Weight	Α	В	С	D	E	F	G	Н	
E-ROBA15B	150	0.01	±0.03	SR44 1piece	180g	247	34	64	17	6.5	16	48	٥	
E-ROBA20B	200	0.01	0.03	Sit44 Tpiece	200a	297	34	64	17	6.5	10	40	9	ı



■ ROBA: Specifications

													(0	,	
Model	Measuring length	Minimum reading	Instrumental error	Weight	Α	В	С	D	E	F	G	Н	- 1	J	
ROBA15	150	0.05	±0.07	270g	250										
ROBA20	200	Division of 19 mm into 20 equal parts		310g	300	34	64	17	6.5	20	48	9	8	4	
ROBA30	300	[IIIIU 20 equal parts]	±0.08	370g	410										

### Long jaw caliper



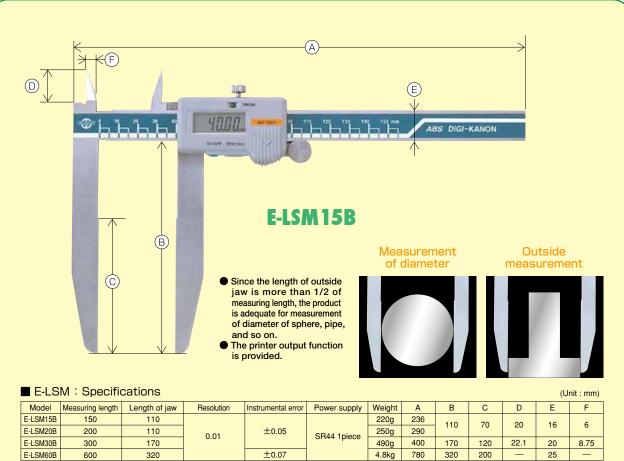
105.5

195.5

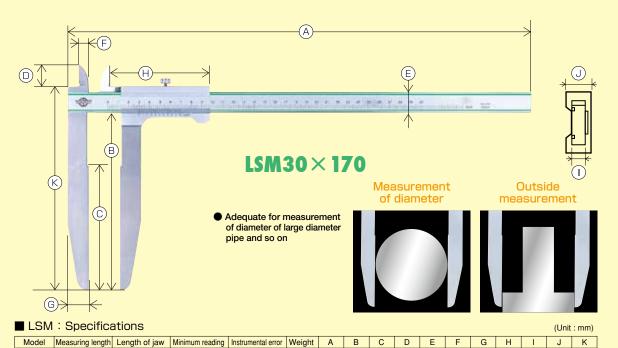
12.5 255

15 352

### Adequate for measurement of diameter of ball, pipe, etc.!



<sup>\*</sup> E-LSM60B is not equipped with the inside jaw.



\* LSM45/60 is not equipped with the inside jaw.

80

110

170

320

0.05

Division of 39 mm into 20 equal parts

150

200

300

450

600

LSM15X80

LSM20×110

LSM30×170

LSM45×230

LSM60×320

160g

220g

440g

1.23kg

3.50kg

±0.07

±0.08

±0.10

±0.11

295 80 50

345 110 70 22 20 10 20 95 4 8 135.5

445 170 120

630 230 150

825 320 200

25

32

25

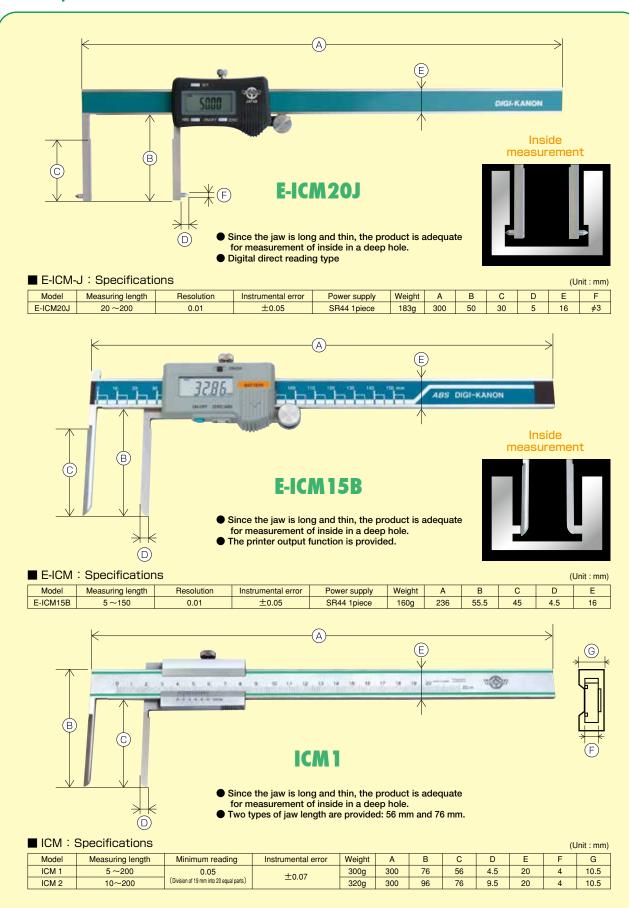
32

6

8

# E-ICM-J/E-ICM/ICM Adequate for measurement of inside in a deep location

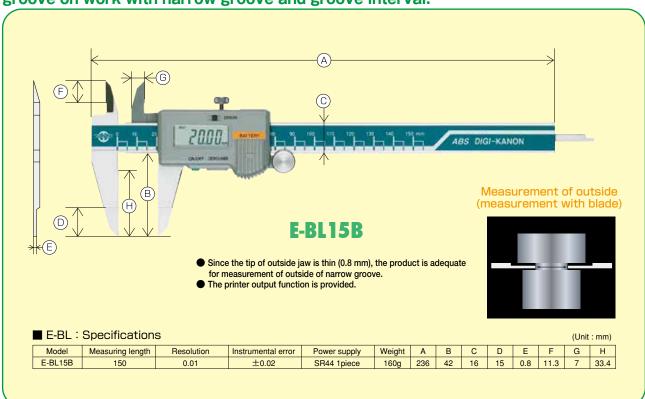
With "Long and thin jaw", this inside caliper is adequate for measurement of inside in a deep location.



### E-BL

### Adequate for measurement of outside of narrow groove

With "Blade jaw", this digital blade caliper is adequate for measurement of outside of groove on work with narrow groove and groove interval.

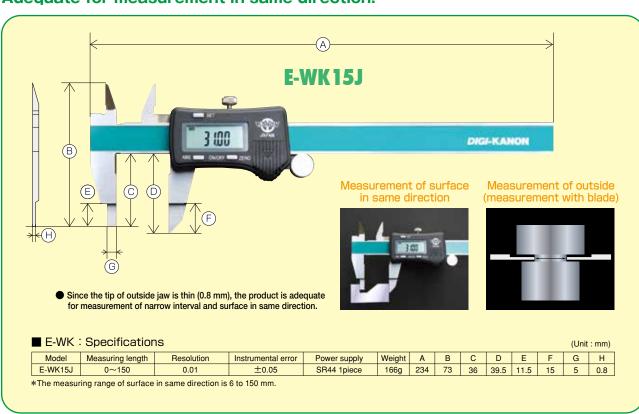


### E-WK

### Direct-reading type digital caliper



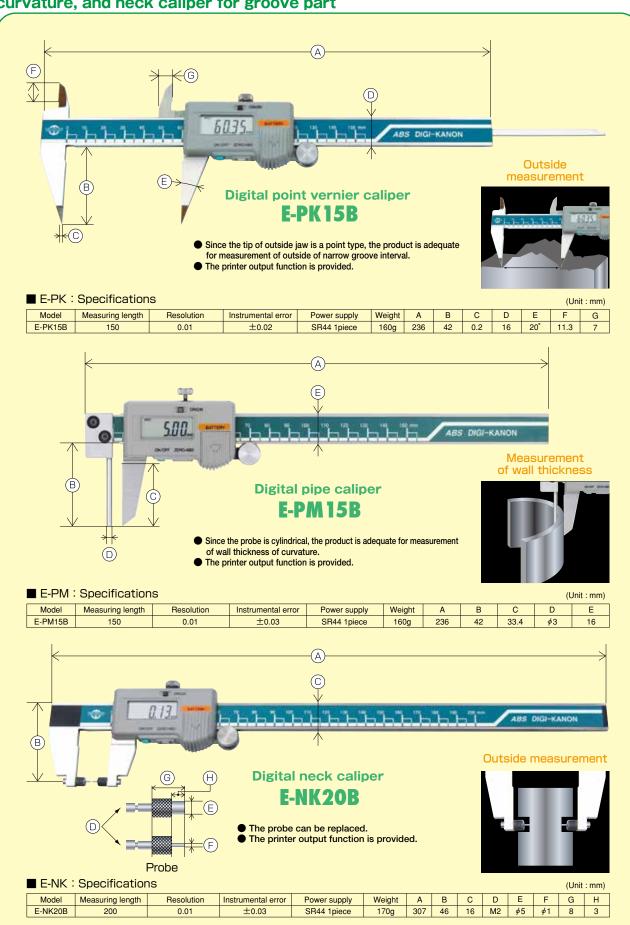
### Adequate for measurement in same direction!



### E-PK/E-PM/E-NK Adequate for m special outside

### Adequate for measurement of special outside

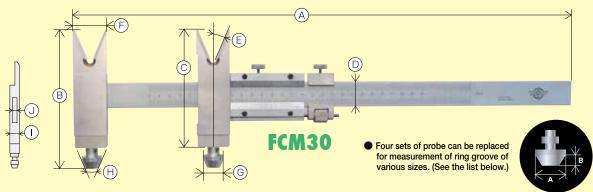
Point vernier caliper for narrow groove interval, pipe caliper for wall thickness of curvature, and neck caliper for groove part



### Adequate for measurement of flange ring groove



### Kanon original flange caliper adequate for measurement of dimensions "within JPI standard"



The dimensions of flange ring groove and gasket can be securely measured.

### Method of measurement



Select a probe (No. 1 to 4) from the list according to the ring No. of groove to be measured.

Method of measurement



Carry out adjustment by jogging so that the V-shape measurement section is completely in contact with the gasket.

### ■ FCM : List of probes

Probe	Dimension	s of groove	Ring No.
Flobe	Width	Depth	*Ring numbers indicated in bold type indicate that the center diameter is 100 mm or more.
No.1	7.14	5.56	R11
8( <b>A</b> )×4( <b>B</b> )	8.74	6.35	R12~20, 22, 25, 29, 33, 36, 40, 43, 48, 52, 56, 59, 64, 68, 72, 76, 80
	11.91	7.92	R21, 23, 24, 26, 27, 30, 31, 34, 35, 37, 39, 41,
N- O	11.91	7.92	44, 45, 49, 53, 57, 61, 65, 69, 82, 84, 92, 99
No.2 14( <b>A</b> )×6( <b>B</b> )	13.49	9.52	R28, 32, 46, 73, 85
14(A) ×0(B)	15.09	11.13	R81
	16.69	11.13	R38, 50, 54, 62, 66, 77, 86, 87
No.3	19.84	12.70	R42, 47, 70, 74, 88, 89, 93, 94, 95
20( <b>A</b> )×7.5( <b>B</b> )	23.01	14.27	R51, 58, 90, 96, 97, 98
	26.97	15.88	R63, 78
No.4	30.18	17.48	R55, 67, 71, <b>100</b>
30( <b>A</b> )×7.5( <b>B</b> )	33.32	17.48	R60, 75, 91, <b>101</b> , <b>102</b> , <b>103</b>
	36.54	20.62	R79, <b>104</b> , <b>105</b>

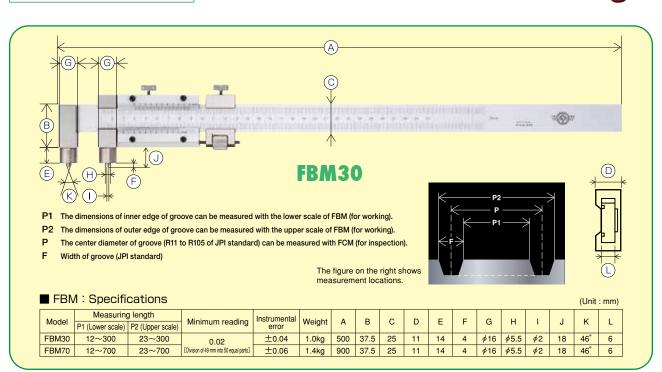
#### ■ FCM : Specifications

FCM:	Specifications											(	Unit:	mm)
Model	Measuring length	Minimum reading	Instrumental error	Weight	Α	В	С	D	Е	F	G	Н	I	J
FCM30	33~300	0.02	±0.04	Approximately 1.2kg	500	135.5	115	25	23°	32	\$\phi 8, \$\phi 14	46°	12	6
FCM70	33~700	(Division of 49 mm into 50 equal parts)	±0.06	Approximately 1.6kg	900	135.5	115	25	23°	32	<i>ϕ</i> 20, <i>ϕ</i> 30	46°	12	6

### FBM For working

### **Developed for measuring dimensions of groove** used for flange during processing

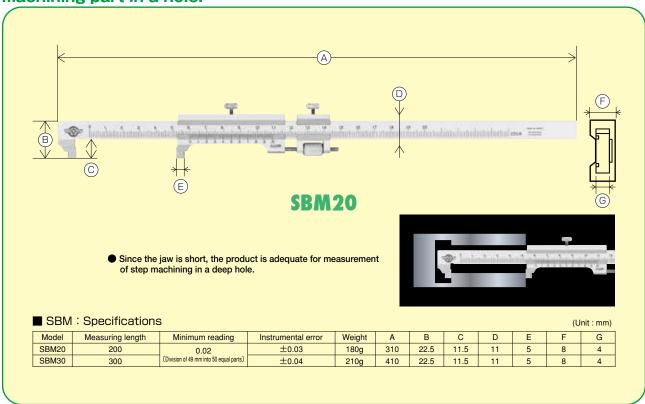






### Adequate for measurement of step machining part in hole

With "Short leg jaw", this product can be easily used for measurement of step machining part in a hole.



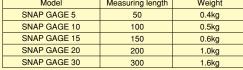
### SNAP GAUGE

For inspection of precision of vernier caliper

With "Various sizes", this snap gauge allows quick inspection of inside and outside of vernier caliper.



#### ■ SNAP GAUGE : Specifications (Unit:mm) Weight Model Measuring length SNAP GAGE 5 50 0.4kg SNAP GAGE 10 100 0.5kg





the gage becomes stable, allowing more accurate inspection of vernier caliper.

By mounting the product to the special-purpose stand,

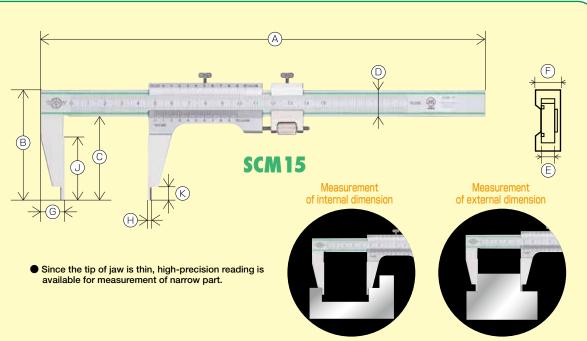
■ SNAP GAUGE STAND (Options)

Model	Weight
SNAP GAGE STAND (common to all sizes)	3.2kg



### High-precision reading for inside and outside measurement

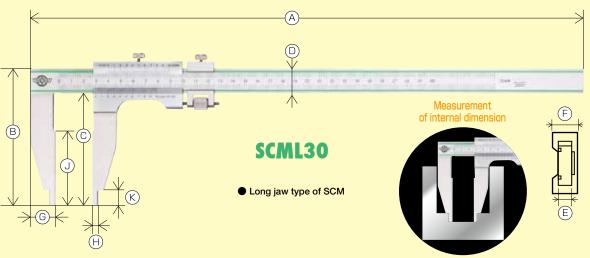
With "Jogging function", high precision is provided. Also various sizes are available with this vernier caliper.



#### ■ SCM · Specifications

- SCIVI	· opecificatio	1113											(Uni	it : mm)
Model	Measuring length for outside dimension	Measuring length for inside dimension	Instrumental error	Weight	А	В	С	D	Е	F	G	Н	J	К
SCM15	0~150	5~150	±0.03	170g	265	66	50	16	3	7	14	2.5	38	8
SCM20	0~200	5~200		220g	320	77	60	17	3	7	15	2.5	46	8
SCM30	0~300	10~300	±0.04	460g	445	95	75	20	4	8	20	5	58	12
SCM40	0~400	10~400		520g	545	95	75	20	4	8	20	5	58	12
SCM45	0~450	14.5~450		900g	625	125	100	25	6	12.5	24.2	7.25	70	18
SCM50	0~500	14.5~500	±0.05	1.26kg	670	125	100	25	6	12.5	24.2	7.25	70	18
SCM60	0~600	14.5~600		1.39kg	780	125	100	25	6	12.5	24.2	7.25	70	18
SCM100	0~1,000	20~1,000	±0.07	3.50kg	1250	172	140	32	8	15	32	10	95	24
SCM150	0~1,500	20~1,500	±0.12	6.50kg	1780	205	165	40	9	16	40	10	125	24
SCM200	0~2,000	25~2,000	±0.16	12.50kg	2325	250	200	50	11	20	50	12.5	150	25
SCM250	0~2,500	25~2,500	±0.22	14.50kg	2825	250	200	50	11	20	50	12.5	150	25
SCM300	0~3,000	25~3,000	±0.26	17.00kg	3325	250	200	50	11	20	50	12.5	150	25
SCM400	0~4,000	25~4,000	±0.40	25.00kg	4325	250	200	50	11	20	50	12.5	150	25

<sup>\*</sup>The minimum reading is 0.02 mm (division of 49 mm into 50 equal parts). For SCM400, however, the value is 0.05 mm.



#### ■ SCML : Specifications

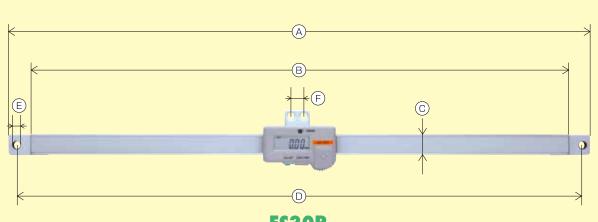
■ SCM	L : Specifications												(Unit	mm)
Model	Measuring length for outside dimension	Measuring length for inside dimension	Instrumental error	Weight	Α	В	С	D	Е	F	G	Н	J	K
SCML30	0~300	10~300	±0.04	500g	445	110	90	20	4	8	20	5	60	12
SCML45	0~450	14.5~450		1.18kg	630	175	150	25	6	12.5	24	7.25	100	18
SCML50	0~500	14.5~500	±0.05	1.35kg	680	175	150	25	6	12.5	24	7.25	100	18
SCML60		14.5~600		1.48kg	780	175	150	25	6	12.5	24	7.25	100	18

<sup>\*</sup>The minimum reading is 0.02 mm (division of 49 mm into 50 equal parts).

ES-B

### Adequate for positioning of machine tool, measurement equipment, and so on

Convenience digital scale on which the indication of "digital direct reading type" scale can be read directly.



- ES30B
- ABS with absolute origin is built in and therefore zero setting is not required each time the power is turned on.
- With a measurement data output function, a statistical process control system or a measurement system can be configured.

#### ■ ES-B : Specifications

(Unit:mm)

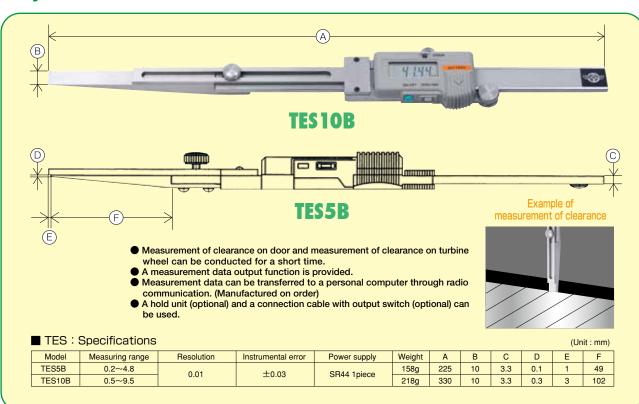
Model	Measuring length	Resolution	Allowable measuring range	Instrumental error	Power supply	Weight	Α	В	С	D	Е	F
ES10B	100	0.01	120			360g	256	220	16	244	<i>\$</i> 6	10 ¢ 5.2
ES20B	200	0.01	220	±0.03	SR44 1 piece	480g	356	320	16	344	<i>\$</i> 6	10 ¢ 5.2
ES30B	300	0.01	320		i piece	590g	456	420	16	444	<i>\$</i> 6	10 ¢ 5.2

### TES

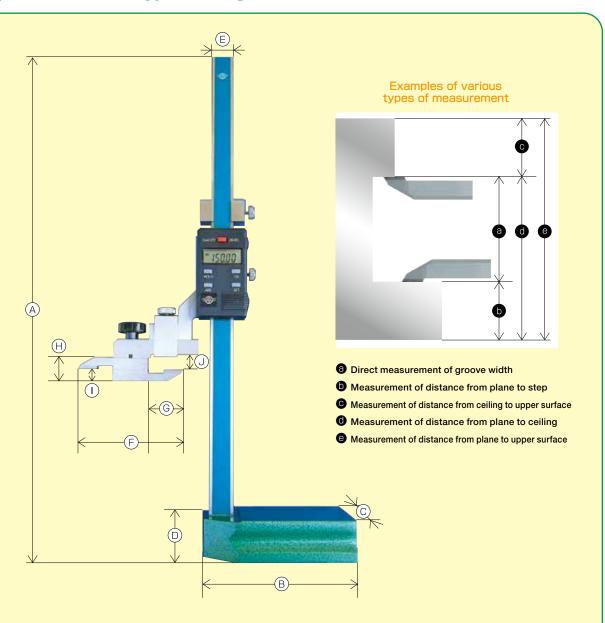
### Digital thickness scale



### Easy measurement of clearance in a narrow location!



### Adequate for various types of height measurement!



### EHK30J

- ABS/INC measurement
   A scriber for SHT-3-30J is provided as a standard component like the rotating scriber.
- Two scriber measuring surfaces of "Kurukuru" are on the same plane. • Since the product is an absolute (ABS) type, zero setting is not required each time the power is turned on.
- Zero setting can be conducted at any positions, and relative measurement is available.

  Digital display provides easy reading.

### Rotating scriber "Kurukuru"



### ■ EHK : Specifications

(Unit:mm)

Model	Measuring range(*)	Resolution	Instrumental error	Power supply	Weight	Α	В	С	D	E	F	G	Н	- 1	J
EHK30J	0~300	0.01	±0.03	SR44 1piece	2.2kg	450.5	120.0	68.0	32.0	19.9	94.0	32.1	20.0	10.0	13.1

 $<sup>\</sup>mbox{*When the rotating scriber "Kurukuru" is used, the measuring range is 10 to 300 mm.}$ 

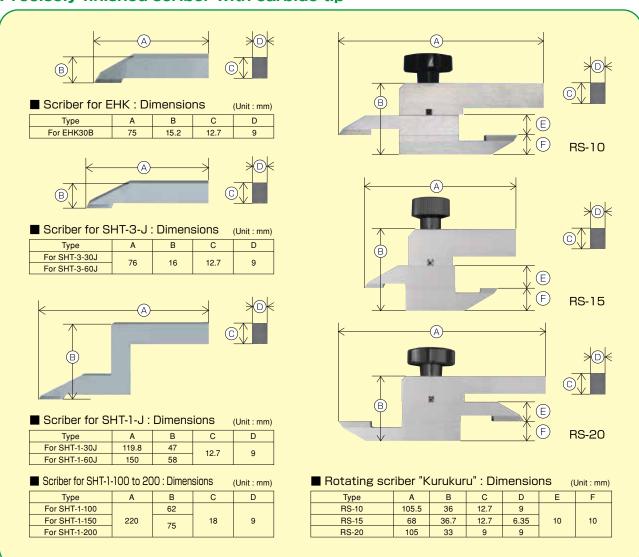
### With various statistical parameters, measurement data is securely controlled.



### **SCRIBER**

### Measuring surface for height gage

### Precisely finished scriber with carbide tip



### SHT-3/SHT-1

Adequate for measurement of height for vertically long objects

With "Vertical movement of main scale", this height gage can be used for instantaneous measurement.



Measurement of height





- A magnifying lens for easy reading of scale is provided.
  A carbide tip is provided on the top end of
- A carbide tip is provided on the top end of scriber, and the measuring surface is precisely finished.

Measurement of height



#### ■ SHT-3 : Specifications

■ SHI-0	o . Specificatio	1115												(Unit :	mm)
Model	Measuring length	Minimum reading	Instrumental error	Weight	Α	В	С	D	Е	F	G	Н	I	J	K
SHT-3-30J	300	0.02	±0.04	2.3kg	480	120	71	32	20	70	26	16	14	8	3.1
SHT-3-60J	600	(Division of 49 mm into 50 equal parts)	±0.05	5.4kg	836	162	110	43	20	90	28	16	19	12	3.1

#### ■ SHT-1 : Specifications

■ 5HI-	i Specificatio	ns												(Unit	: mm)
Model	Measuring length	Minimum reading	Instrumental error	Weight	Α	В	С	D	Е	F	G	Н	_	J	K
SHT-1-30J	300	0.02	±0.04	2.4kg	500	123	71	32	20	84	26	47	14	8	3.1
SHT-1-60J	600	Division of 49 mm	±0.05	5.5kg	851	162	110	43	20	102	28	58	19	12	3.1
SHT-1-150	1,500	into 50 equal parts	±0.12	39.0kg	1,920	272	200	75	35	125	50	75	29.5	20	5
SHT-1-200	2,000		±0.16	43.0kg	2,420	322	250	75	35	125	50	75	29.5	20	5

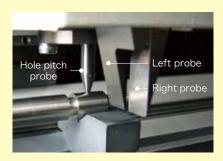
### Measurement of shaft with easy operation

With "3 types of probe placed in line", this oneaxis measuring machine can be used for various types of dimension measurement.

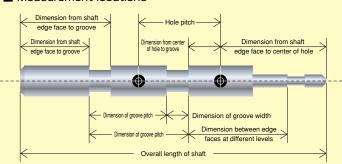


- This product is manufactured on order.
- The product is adequate for dimension measurement
- in grooving section and drilling section of shaft.

  Three types of probe are provided: hole pitch probe, left probe, and right probe.
- V blocks for work rest are provided as accessories. (large, intermediate, and small)
- A printer is provided as a standard component. The output function is provided.
- For printer output, a foot switch specification can be provided. (Optional)



#### Measurement locations



#### ■ X-600/X-1000: Specifications

Model	X-600	X-1000
Measuring length	600mm	1000mm
Resolution	0.01mm	
Precision	$\pm$ 0.03mm $+$ 1digit	
Display	LED display: 7-digit display including a sign	
Power supply voltage	AC100~240V (50/60Hz)	
Power consumption	25VA	
Output	Printer output	
Environmental conditions for operation	Temperature: 0 to 45°C Humidity: 20 to 80%	
Measurable diameter	φ 2∼ φ 40mm	
Measurable groove width	0.5 mm or more	
Function	Zero setting, data output, various types of error display	
Diameter supported by hole pitch probe	φ 1∼ φ 5.8mm	
Outside dimensions (mm)	W 830 $\times$ D 350 $\times$ H 375	W 1400 × D 350 × H 375
Weight	Approximately 90 kg	Approximately 150 kg

### EXLON-Y Adequate for visit board and so on.

Adequate for vision measurement for printed circuit board and so on.

With "Manual operation and noncontact method", this vision measuring machine allows high-precision measurement for small parts and soft objects.



- Only by clicking the measurement location, multipoint measurement can be automatically conducted.
- Basic measurement for point, line, circle, arc, etc. (500 points at the maximum)
- Indirect measurement for distance, angular midpoint, etc.
   Coordinate system setting for axis correction. origin movement, etc.
- Calling and recalculation
- Drawing is conducted at the same time as measurement.
   Recalculation can be conducted only by clicking the measurement location on the graph, instead of number for recalculation of result.
- Graphs can be stored in a DXF file.
   It can be transferred to CAD/CAM, allowing editing.
- As measurement data, in addition to X and Y coordinate values, geometrically calculated values such as roundness and straightness can be outputted at the same time.
- Also the shortest distance and the longest distance can be calculated.
- CNC machines (automatic) are also provided.

### ■ EXLON Y : Specifications

Model	EXLON Y 45	
Measuring range for X axis	400mm	
Measuring range for Y axis	500mm	
Resolution	0.001mm	
Precision on each axis	5+5L/1000 µm	
Operation method	Manual	
Sliding section	LM guide	
Sensor	Optical linear scale	
Environmental conditions: Temperature	18℃~30℃	
Environmental conditions: Humidity	30%~80%	
Detection of image	High-definition image CCD camera	
Lighting system	LED epi-illumination, transillumination (optional)	
Zoom lens-barrel	1x to 4x zoom lens	
Personal computer	OS : Windows 7 Professional	
A	1300mm	
В	720mm	
С	800mm	
Weight	290kg	

Large sizes (up to 2,000 mm) are supported. Contact our company or your dealer.

## EXLON-Z III 453

Adequate for coordinate measurement for complex shape

With "Manual operation" and excellent operability, this coordinate measuring machine allows high-precision measurement for three-dimensional objects.



- A jogging unit with excellent operability is provided for each axis.
- While moving an axis, the machine can be operated easily.

  Since the main body has portal structure, the product is resistant to vibration, resulting in stable precision. Also a stone surface plate is used and therefore the product is resistant to temperature change, resulting in stable precision at ordinary temperature.
- Measurement = Three-dimensional rotation, reverse, enlargement/reduction, movement, and so on of prepared drawing can be conducted easily.
   Output to IGES file allows easy editing on CAD/CAM.
- In addition to measurement of elements (point, line, surface, circle, sphere, cylinder) and indirect measurement in which measured elements are combined for calculation, geometric calculation (straightness, flatness, roundness, sphericity, cylindricity, position, parallelism, perpendicularity) is available.

#### ■ EXLON Z III 453 : Specifications

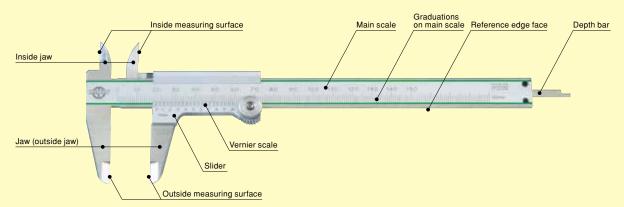
EXLON Z III 453
400mm
500mm
300mm
0.001mm
4+5L/1000 μm
Manual
LM guide
Optical linear scale
18℃~30℃
30%~80%
Electronic probe TP8
OS: Windows 7 Professional
1,830mm
720mm
800mm
415mm
495mm
350kg

Large sizes are also provided. Contact our company or your dealer.

#### Kanon About vernier calipers

#### What is a vernier caliper?

A vernier caliper is a measuring tool for use in the field that is used most widely for dimension measurement at present. A slider and a scale are combined and a vernier scale is mounted to the outside jaw, allowing finer and more accurate reading of graduations of scale.



#### Origin of vernier caliper

It is said that the method of vernier scale was invented by Portuguese mathematician, Petrus Nonius (1492 - 1577). It is French Pierre Vernier that developed structure for accurate reading by mounting this method of scale to one measuring jaw of pass. In Germany, it is called Nonius.

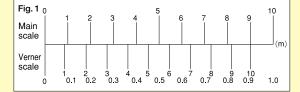
#### Principle of vernier

By subdividing the reference graduations of main scale for accurate reading, a vernier scale is provided. Normally, if the graduations of main scale are in 1 mm steps, the vernier scale is provided by dividing (n-1) mm into n or n/2 equal parts. For example, the following types of vernier scale are the greater part of Kanon calipers. (See Table 1.)

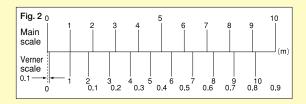
- 1) 1. n = 20 (divided into n equal parts) -> 19 mm is divided into 20 equal parts.
- (ICM, ROBA, RA, etc.)
- 2 2. n = 40 (divided into n/2 equal parts) -> 39 mm is divided into 20 equal parts.
- (PITA, KSM-FF, M45 to M100, SM150 to 300, etc.)
- 3 3. n = 50 (divided into n equal parts) -> 49 mm is divided into 50 equal parts.

(SCM, SCML, FCM, etc.)

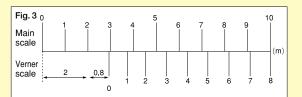
For easy understanding of the principle, take an example of scale in 1 mm steps with vernier scale of 9 mm divided into 10 equal parts (n = 10). For example, as shown in Fig. 1, the 9 graduations (9 mm) on the main scale (in 1 mm steps) divided into 10 equal parts configure a vernier scale. One graduation on the scale is 0.9 mm. Consequently, the difference of one graduation between the main scale and the vernier scale is 1 mm - 0.9 mm = 0.1 mm. This shows a case that graduation 0 on the main scale matches with graduation 0 on the vernier scale, namely the slider is at the leftmost position without any object to be measured. (Fig. 1)



Then, suppose that a string of 0.1 mm in thickness is put in the outside jaw. The vernier scale slides to the right by 0.1 mm, and graduation 1 on the vernier scale that is 0.1 mm shorter than the main scale matches with graduation 1 on the main scale. (Fig. 2) From the reverse point of view, reading this graduation on the vernier scale indicates the quantity of sliding of the vernier scale, namely the dimension of object to be measured (0.1 mm). If the vernier scale slides further and graduation 2 matches, the measured value is 0.2 mm. If graduation 3 matches, the value is 0.3 mm.



In other words, the deviation of graduation 0 on the main scale from graduation 0 on the vernier scale is the measured value. In the case of Fig. 3, the method of reading is expressed as shown below. Deviation of graduation 0 between main scale and vernier scale = Graduation of main scale (2 mm) + (8 X 1/10 mm) = 2.8 mm <- Measured value As shown above, a vernier scale that is graduated in smaller values than the main scale is used to read finer and more accurate dimensions. This is the principle of vernier.



#### Example of actual measurement

In the example on the previous page, 9 mm is divided into 10 equal parts and therefore values can be read in 0.1 mm steps. Here, we show a case of currently popular vernier scale on which 19 mm is divided into 20 equal parts (1).

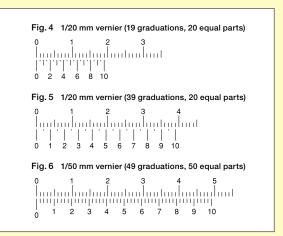
One graduation of this vernier scale is 19mm/20 = 0.95mm. The deviation of one graduation from the main scale is 1mm — 0.95mm = 0.05mm, which is minimum reading. Consequently, values can be read in 5/100 mm, namely, 1/20 mm steps. (Fig. 4) Similarly, in the case of division of 39 mm into 20 equal parts (2), values can be read in 1/20 mm steps (Fig. 5). In the case of division of 49 mm into 50 equal parts (3), values can be read in 0.02 mm, namely 1/50 steps (Fig. 6).

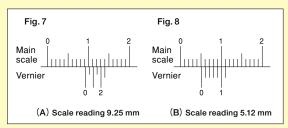
#### (A) How to read 1/20 mm vernier

In the case of Fig. 7, the 5th graduation of vernier matches.  $9mm+(1/20mm\times5)=9mm+0.25mm=9.25mm$  Consequently, the 5th graduation of vernier scale indicates 25 for easy reading.

#### (B) How to read 1/50 mm vernier

In the case of Fig. 8, the 6th graduation of vernier matches.  $5mm+(1/50mm\times6)=5mm+0.12mm=5.12mm$  Consequently, the 6th graduation of vernier scale indicates 11 similarly.





#### Scale type of Kanon vernier calipers Table 1 (JIS B7507 standard)

1 graduation of main scale		1mm									
Method of vernier scale	49 graduations -> 50 equal parts	19 graduations -> 20 equal parts	39 graduations -> 20 equal parts	29 graduations -> 10 equal parts							
Minimum reading	1/50 = 0.02mm	1/20 =	1/10 = 0.1mm								
Applicable Kanon calipers	LSDM, ESDM, SDM, BSDM, FCM, SDM, SCM, SCML	TH, SM7, RA, ROBA, ICM	PITA, RM-DX, RM-S, BSD-P, SD-P, KSM-FF, SM150 ~300, M45~100, LSM	RM (II)							

#### Features of Kanon calipers

Kanon calipers, for which the tradition of Kanon and its excellent technology are fully used from standard products such as KSM-FF and SM to special products, are commonly acknowledged first-class products concerning quality and precision.

#### 1. Material

Since high-quality stainless steel (SUS420J2) that is selected carefully is refined completely, rust is not generated and aged deterioration does not occur.

#### 2. Overall quenching

Not only measuring surfaces but also the main scale are quenched completely, the product has excellent resistance to flaw and wear.

#### 3. Power of two lines of Kanon

Since two grooves are provided on the scale surface, the scale can be easily read and is resistant to flaw. Also galling does not occur easily and smooth sliding can be conducted. (PITA, KSM-FF, etc.)

#### 4. Graduation lines

Graduation lines and numbers are processed with a Kanon original method, and accurate and uniform lines are obtained. Also chromium matte plating is applied to the scale surface, clear and easy reading is available without fatigue of eyes.

#### 5. Excellent precision quality

Each part is processed uniformly with latest special-purpose machines for vernier calipers under a rational mass production system and keeps high precision even after assembly.

## JIS B 7507 | JIS (extract) About vernier calipers



#### 1. Scope

This standard specifies calipers of which the maximum measuring length is 1,000 mm or less among general vernier calipers of which the resolution or the minimum reading is 0.1 mm, 0.05 mm, 0.02 mm or 0.01 mm and which are used for measuring outside dimension and inside dimension (hereafter referred to as caliper).

#### 2. Definition of terms

The definition of principal terms used in this standard conforms to JIS B 7507 and additionally is described below.

#### (1) Caliper

Measuring instrument in which the main scale that is equipped with a jaw with measuring surfaces for outside and inside on one end is configured as a reference component, a slider that is equipped with a jaw including a measuring surface that is parallel with the above measuring surfaces slides, and the distance between measuring surfaces is read on the main scale and the vernier scale or on the dial scale or through electronic digital display.

#### (2) Vernier scale

Scale for reading detailed graduations of main scale graduations of which the graduations are obtained by dividing (n - 1) graduations of main scale into n or n/2 equal parts. Also it is called subscale.

#### (3) Dial scale

Disk type scale in which the slider moving quantity is enlarged mechanically by gears or the like and is read through a rotating pointer.

#### (4) Electronic digital display

Numeric display in which the slider moving quantity is detected based on the main scale and indicated numerically by counting with an electronic circuit.

#### (5) Instrumental error

Value obtained by subtracting real value to be indicated from the read value on the caliper.

#### 3. Notes on use

- (1) Since the caliper is not equipped with any constant pressure device, proper and uniform measurement power must be used for measurement.
  - Note that measurement at the base or the tip of jaw may cause particularly a larger error.
- (2) On electronic digital display, consider sufficiently that the last digit of indicated value is uncertain within the range of 1. Attention must be paid particularly to the operating environment. For example, a magnetic field, electric field, and humidity influence the function of electronic parts.

#### 4-1. Instrumental error of caliper

The tolerance of instrumental error of caliper is shown in Table 1.

Table 1. Tolerance of instrumental error of caliper

(Unit: mm)

Magazzina	loneth	Graduation, resolution	n or minimum reading
Measuring	iengtii	0.1 or 0.05	0.02 or 0.01
	50 or less	±0.05	±0.02
More than 50	100 or less	±0.06	±0.03
More than 100	200 or less	±0.07	±0.00
More than 200	300 or less	±0.08	±0.04
More than 300	400 or less	±0.09	<u>+</u> 0.04
More than 400	500 or less	±0.10	±0.05
More than 500	600 or less	±0.11	±0.03
More than 600	700 or less	±0.12	±0.06
More than 700	800 or less	±0.13	±0.06
More than 800	900 or less	±0.14	±0.07
More than 900	1000 or less	±0.15	±0.07

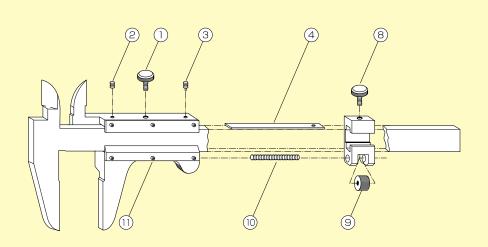
Remarks

- 1. Values in the table are for 20°C.
- 2. These values include measurement errors caused by straightness and parallelism of measuring surface.

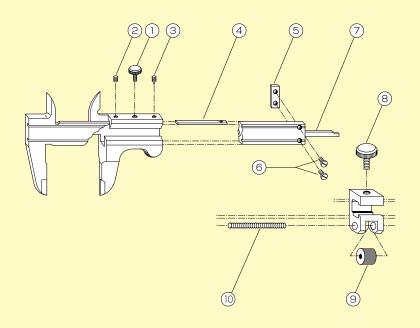
#### 4-2. Deviation of zero point of depth bar

 $For \ calipers \ with \ a \ depth \ bar \ for \ measurement \ of \ depth, \ the \ deviation \ of \ zero \ point \ must \ be \ 0.02 \ mm \ or \ less.$ 

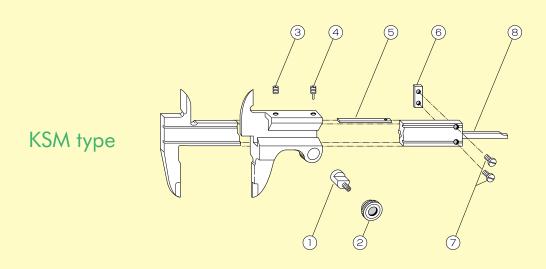
# PARTS LIST



## SM/M type

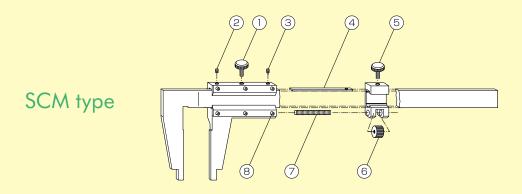


	Name	1	2	3	4	5	6	7	8	9	10	11
Model		Slider clamp	Upper screw	Lower screw	Leaf spring	Bridge plate	Bridge screw	Depth bar	Fine adjust clamp	Fine adjust nut	Fine adjust bar screw	Screw for vernier scale
М	45	0	0	0	0	_	-	_	_	_	_	0
M	50	0	0	0	0	_	-	_	_	_	_	0
M	60	0	0	0	0	-	-	-	-	-	_	0
М	100	0	0	0	0	-	-	_	0	0	0	0
SM	7	0	0	0	0	I	One set screw for depth	0	_	ı	_	-
SM	150	0	0	0	0	ı	_	_	0	0	0	0
SM	200	0	0	0	0	_	-	_	0	0	0	0
SM	250	0	0	0	0	-	_	-	0	0	0	0
SM	300	0	0	0	0	I	_	_	0	0	0	0
RA	15	0	0	0	0	ı	_	_	_	I	_	-
RA	20	0	0	0	0	-	-	-	-	-	_	-
LSM	15× 80	0	0	0	0	-	_	-	-	ı	_	-
LSM	20×110	0	0	0	0	I	_	_	_	ı	_	-
LSM	30×170	0	0	0	0	ı	_	-	_	ı	_	_
LSM	45×230	0	0	0	0	-	-	-	-	-	_	0
LSM	60×320	0	0	0	0	-	_	_	_	-	_	0



	Name	1	2	3	4	5	6	7	8
Model		Lock bolt	Lock nut	Upper screw	Lower screw	Plate spring	Bridge plate	Bridge screw	Depth bar
KSM	15FF	0	0	0	0	0	0	0	0
KSM	20FF	0	0	0	0	0	0	0	0
KSM	30FF	0	0	0	0	0	0	0	0
ROBA	15	0	0	0	0	0	0	0	0
ROBA	20	0	0	0	0	0	0	0	0
ROBA	30	0	0	0	0	0	0	0	0
PITA	10	0	0	0	0	0	0	0	0
PITA	20	0	0	0	0	0	0	0	0
PITA	30	0	0	0	0	0	0	0	0
PITA	40	0	0	0	0	0	-	- *	_

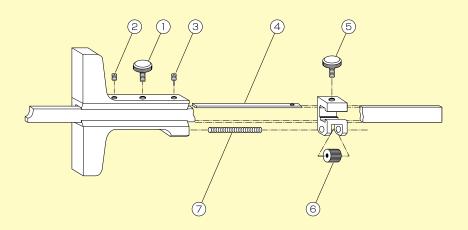
<sup>\*</sup>One stpper screw included



	Name	1	2	3	4	5	6	7	8
Model		Slider clamp	Upper screw	Lower screw	Leaf spring	Fine adjust clamp	Fine adjust nut	Fine adjust bar screw	Screw for vernier scale
SCM	15	0	0	0	0	0	0	0	-
SCM	20	0	0	0	0	0	0	0	_
SCM	30	0	0	0	0	0	0	0	_
SCM	40	0	0	0	0	0	0	0	-
SCM	45	0	0	0	0	0	0	0	0
SCM	50	0	0	0	0	0	0	0	0
SCM	60	0	0	0	0	0	0	0	0
SCM	100	0	0	0	0	0	0	0	0
SCM	150	0	0	0	0	0	0	0	0
SCM	200	0	0	0	0	0	0	0	0
SCM	250	0	0	0	0	0	0	0	0
SCM	300	0	0	0	0	0	0	0	0
SCML	30	0	0	0	0	0	0	0	-
SCML	45	0	0	0	0	0	0	0	0
SCML	50	0	0	0	0	0	0	0	0
SCML	60	0	0	0	0	0	0	0	0

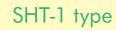
# PARTS LIST

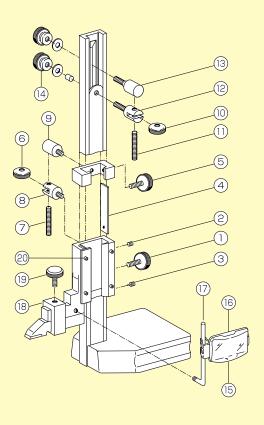
### SDM type

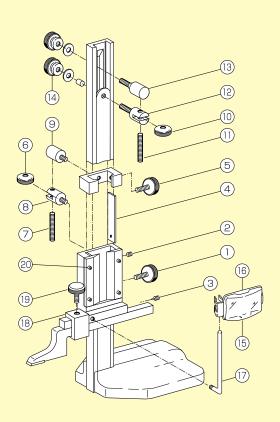


	Name	1	2	3	4	5	6	7
Model		Slider clamp	Upper screw	Lower screw	Leaf spring	Fine adjust clamp	Fine adjust nut	Fine adjust bar screw
SDM	15	0	0	0	0	0	0	0
SDM	20	0	0	0	0	0	0	0
SDM	30	0	0	0	0	0	0	0
SDM	40	0	0	0	0	0	0	0
SDM	50	0	0	0	0	0	0	0
SDM	60	0	0	0	0	0	0	0
SDM	100	0	0	0	0	0	0	0
BSDM	15	0	0	0	0	0	0	0
BSDM	20	0	0	0	0	0	0	0
BSDM	30	0	0	0	0	0	0	0
LSDM	15×15	0	0	0	0	0	0	0
LSDM	15×20	0	0	0	0	0	0	0
LSDM	15×25	0	0	0	0	0	0	0
LSDM	20×15	0	0	0	0	0	0	0
LSDM	20×20	0	0	0	0	0	0	0
LSDM	20×25	0	0	0	0	0	0	0
LSDM	30×15	0	0	0	0	0	0	0
LSDM	30×20	0	0	0	0	0	0	0
LSDM	30×25	0	0	0	0	0	0	0
SD	15P	0	-	0	0	-	-	-
SD	20P	0	-	0	0	-	-	-
SD	30P	0	-	0	0	-	_	-
BSD	15P	0	-	0	0	_	_	-
BSD	20P	0	-	0	0	-	-	-
BSD	30P	0	_	0	0	_	_	_

SHT-3 type





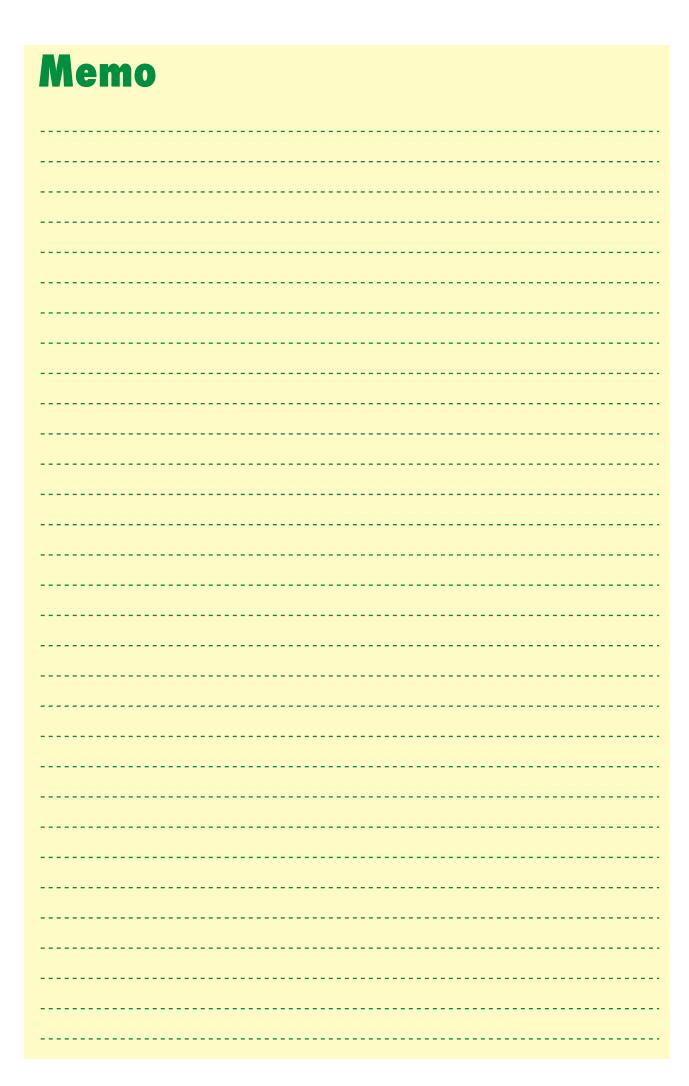


Name	1	2	3	4	5	6	7	8	9	10
Model	Slider clamp	Upper screw	Lower screw	Leaf spring	Lock screw	Fine adjust nut	Fine adjust bar screw	Fine adjust nut holder	Fine adjust blacket nut	Main scale adjust nut
SHT-3-30J	0	0	0	0	0	0	0	0	0	0
SHT-3-60J	0	0	0	0	0	0	0	0	0	0

Name	11	12	13	14	15	16	17	18	19	20
Model	Main scale bar screw	Main scale nut holder	Main scale blacket nut	Main scale fixing nut	Magnifier	Magnifier frame	Magnifier bar	Scriber box	Box clamp	Screw for vernier scale
SHT-3-30J	0	0	0	0	0	0	0	0	0	0
SHT-3-60J	0	0	0	0	0	0	0	0	0	0

Name	1	2	3	4	5	6	7	8	9	10
Model	Slider clamp	Upper screw	Lower screw	Leaf spring	Lock screw	Fine adjust nut	Fine adjust bar screw	Fine adjust nut holder	Fine adjust blacket nut	Main scale adjust nut
SHT-1-30J	0	0	0	0	0	0	0	0	0	0
SHT-1-60J	0	0	0	0	0	0	0	0	0	0
SHT-1-100	0	0	0	0	0	0	0	0	0	0
SHT-1-150	0	0	0	0	0	0	0	0	0	0
SHT-1-200	0	0	0	0	0	0	0	0	0	0

1	Name	11	12	13	14	15	16	17	18	19	20
Model		Main scale bar screw	Main scale nut holder	Main scale blacket nut	Main scale fixing nut	Magnifier	Magnifier frame	Magnifier bar	Scriber box	Box clamp	Screw for vernier scale
SHT-1-	-30J	0	0	0	0	0	0	0	0	0	0
SHT-1-	-60J	0	0	0	0	0	0	0	0	0	0
SHT-1-	-100	0	0	0	0	0	0	0	0	0	0
SHT-1-	-150	0	0	0	0	0	0	0	0	0	0
SHT-1-	-200	0	0	0	0	0	0	0	0	0	0



# "Reliable measured values" of Kanon contribute to "reliable manufacturing."



Torque equipment general catalog

Please feel free to inquire about products and request catalogs.



#### - Origin of KANON Mark -

The KANON mark is a symbol of technology of Nakamura Mfg. Co., Ltd., which was established at the time of foundation. Kanon is a Latin word that means "Standard." We selected this word because we think that our products on which the KANON mark is printed must be "KANON" of all measuring equipment, namely the best model product.

Note that the specifications may be changed without prior notice.

Producted by:

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