



# MEASURING INSTRUMENTS

CATALOGUE NO.2012E



**DCL**  
DISEÑO Y METROLOGIA

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# QUALITY | INNOVATION | SERVICE | VALUE



Welcome to INSIZE.

Founded in 1995, INSIZE is a dedicated supplier of measuring instruments. To enable us to serve the world-wide market, we are setting up an INSIZE distribution network on a global basis, so that, wherever you are, INSIZE products with service and support are not far away.

Our key aims are:

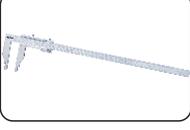
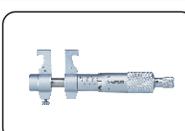
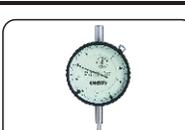
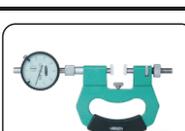
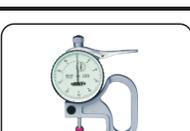
- Quality products made to international standards with full guarantee.
- Innovation by continually striving to improve and develop new products.
- Service and support to ensure you have trouble-free use of INSIZE products.
- Value is always a key element. Our aim is to give you high-performance products at a good price.

Our dedication to Quality, Innovation, Service and Value has created a worldwide demand for the INSIZE products.

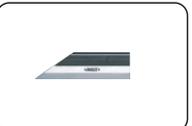
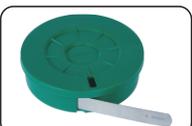
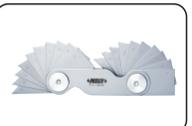
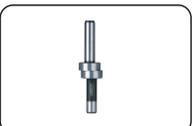
INSIZE is positioning itself for today's economic demands and tomorrow's future!



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## SPC CABLE



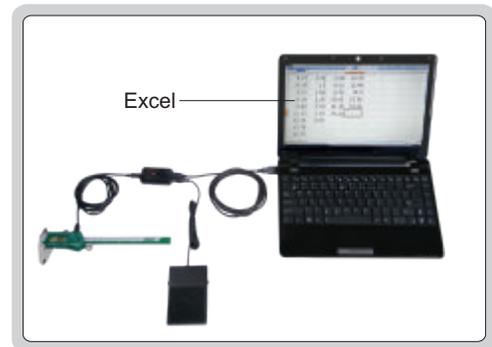
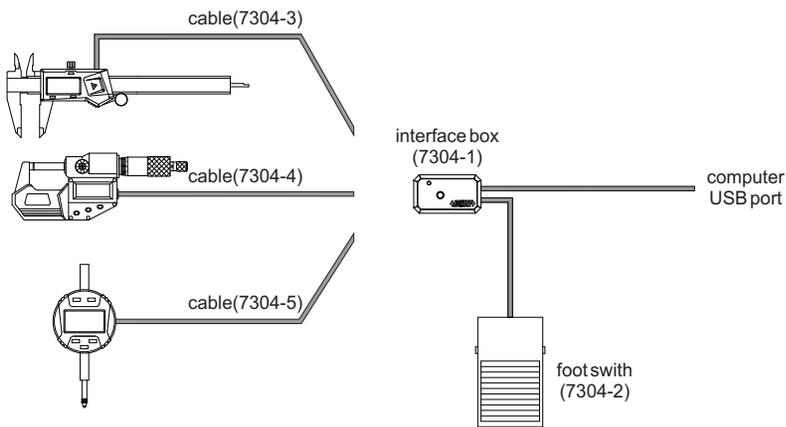
7304-1



7304-2



7304-3



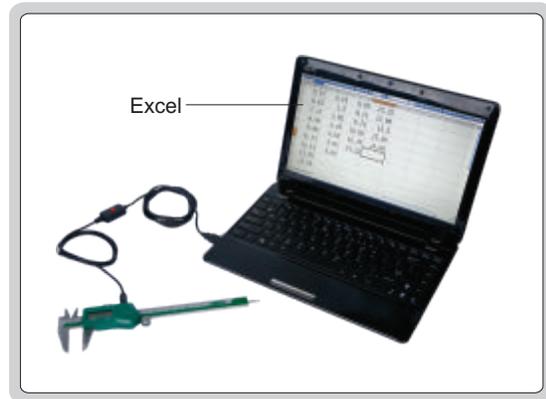
- Without special software, the data can be input as keyboard signal to Excel, Word, CAD, Skype, etc.
- Press the red button on the interface box or the foot switch to input data. Foot switch is optional
- The interface box can accept all cables (code **7304-3**, **7304-4**, **7304-5**), but can accept only one cable at the same time

Code	Description	Applicable products
7304-1	interface box with cable (length 2m)	
7304-2	foot switch with cable (length 1.5m)	
7304-3	cable (length 0.5m)	 <p>digital calipers, digital depth gauges and other gauges with this digital unit</p>
7304-4	cable (length 0.5m)	 <p>digital micrometers with this digital unit (except digital micrometer 3108)</p>
7304-5	cable (length 0.5m)	 <p>digital indicators and other gauges with these digital units</p>

## SPC CABLE



7302-SPC1



- Without special software, the data can be input as keyboard signal to Excel, Word, CAD, Skype, etc.
- Press the red button on the interface box to input data
- Connected to USB port of computer
- Cable length 2.5m

Code	Applicable products	
7302-SPC1		digital calipers, digital depth gauges and other gauges with this digital unit
7302-SPC2		digital micrometers with this digital unit (except digital micrometer 3108)
7302-SPC3		digital indicators and other gauges with these digital units

## SPC CABLE

- Work with software

Code	Applicable products
7301-SPC1	large digital calipers 1106(type B), 1117(type B), 1136(type B), 1135
7301-SPC2	digital height gauges 1151
7301-SPC5	digital height gauges 1150



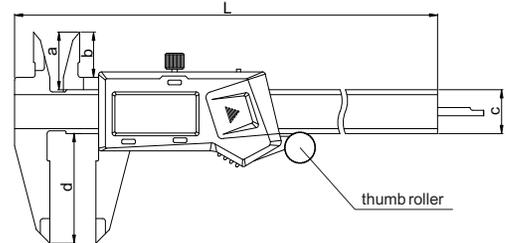
7301-SPC1



## DIGITAL CALIPER

1108-150

- Resolution: 0.01mm/0.0005"
- Buttons: on/off, zero, mm/inch
- Automatic power off, move the digital unit to turn on power
- High moving speed is allowed
- Battery CR2032
- USB data output
- Meet DIN862
- Made of stainless steel
- Optional accessory: SPC cable (page A1-A2)



(mm)

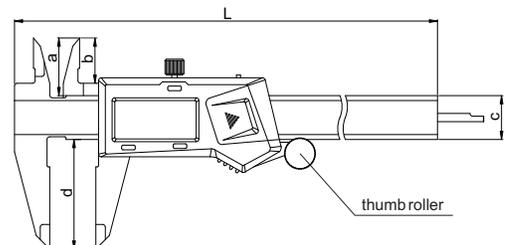
Code	Range	Accuracy	Thumb roller	L	a	b	c	d
1108-150	0-150mm/0-6"	±0.03mm	with	236	21	16	16	40
1108-200	0-200mm/0-8"	±0.03mm	with	286	24	19	16	50
1108-300	0-300mm/0-12"	±0.03mm	with	400	25	20.5	17	60
1108-150W	0-150mm/0-6"	±0.03mm	without	236	21	16	16	40
1108-200W	0-200mm/0-8"	±0.03mm	without	286	24	19	16	50
1108-300W	0-300mm/0-12"	±0.03mm	without	400	25	20.5	17	60



## METRIC DIGITAL CALIPER

1109-150

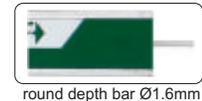
- Resolution: 0.01mm
- Buttons: on/off, zero, ABS
- Absolute and incremental measurement
- Automatic power off, move the digital unit to turn on power
- High moving speed is allowed
- Battery CR2032
- USB data output
- Meet DIN862
- Made of stainless steel
- Optional accessory: SPC cable (page A1-A2)



(mm)

Code	Range	Accuracy	Thumb roller	L	a	b	c	d
1109-150	0-150mm	±0.03mm	with	236	21	16	16	40
1109-200	0-200mm	±0.03mm	with	286	24	19	16	50
1109-300	0-300mm	±0.03mm	with	400	25	20.5	17	60
1109-150W	0-150mm	±0.03mm	without	236	21	16	16	40
1109-200W	0-200mm	±0.03mm	without	286	24	19	16	50
1109-300W	0-300mm	±0.03mm	without	400	25	20.5	17	60

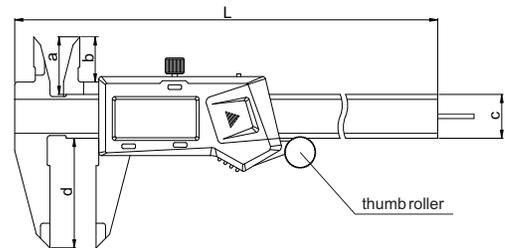
## DIGITAL CALIPER WITH ROUND DEPTH BAR



round depth bar Ø1.6mm

1119-150

- Resolution: 0.01mm/0.0005"
- Buttons: on/off, zero, mm/inch
- Automatic power off, move the digital unit to turn on power
- High moving speed is allowed
- Battery CR2032
- USB data output
- Meet DIN862
- Made of stainless steel
- Optional accessory: SPC cable (page A1-A2)



(mm)

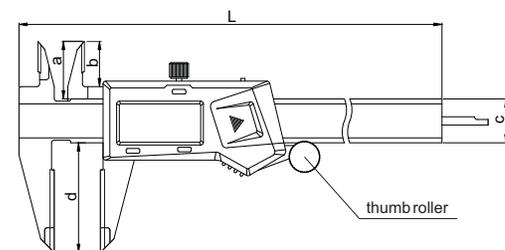
Code	Range	Accuracy	Thumb roller	L	a	b	c	d
1119-150	0-150mm/0-6"	±0.03mm	with	236	21	16	16	40
1119-150W	0-150mm/0-6"	±0.03mm	without	236	21	16	16	40

## DIGITAL CALIPER WITH CARBIDE TIPPED JAWS



1110-150A

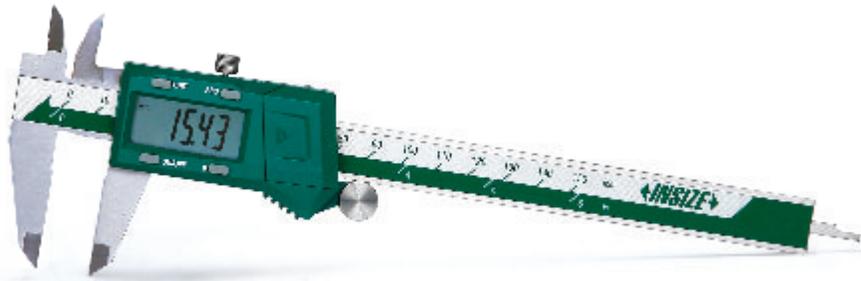
- Carbide tipped jaws for inside and outside measurements
- Resolution: 0.01mm/0.0005"
- Buttons: on/off, zero, mm/inch
- Automatic power off, move the digital unit to turn on power
- High moving speed is allowed
- Battery CR2032
- USB data output
- Meet DIN862
- Made of stainless steel
- Optional accessory: SPC cable (page A1-A2)



(mm)

Code	Range	Accuracy	Thumb roller	L	a	b	c	d
1110-150A	0-150mm/0-6"	±0.03mm	with	236	21	16	16	40
1110-200A	0-200mm/0-8"	±0.03mm	with	286	24	19	16	50
1110-300A	0-300mm/0-12"	±0.03mm	with	400	25	20.5	17	60
1110-150AW	0-150mm/0-6"	±0.03mm	without	236	21	16	16	40
1110-200AW	0-200mm/0-8"	±0.03mm	without	286	24	19	16	50
1110-300AW	0-300mm/0-12"	±0.03mm	without	400	25	20.5	17	60

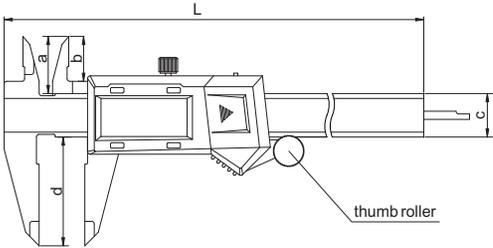
# DIGITAL CALIPER



fraction reading

1102-150

- Resolution: 0.01mm, 0.0005", 1/128"
- Buttons: unit (mm/in/fraction), ABS, on/off, zero
- Absolute and incremental measurement
- Battery CR2032, automatic power off
- Data output
- Meet DIN862
- Made of stainless steel



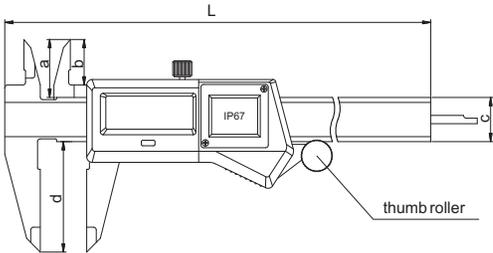
Code	Range	Accuracy	Thumb roller	L	a	b	c	d
1102-150	0-150mm/0-6"	±0.03mm	with	234	21	16.5	16	40
1102-200	0-200mm/0-8"	±0.03mm	with	286	24	19	16	50
1102-300	0-300mm/0-12"	±0.03mm	with	390	26	21.5	16	60
1102-150W	0-150mm/0-6"	±0.03mm	without	234	21	16.5	16	40
1102-200W	0-200mm/0-8"	±0.03mm	without	286	24	19	16	50
1102-300W	0-300mm/0-12"	±0.03mm	without	390	26	21.5	16	60

# WATERPROOF DIGITAL CALIPER



1118-150

- IP67 waterproof
- Resolution: 0.01mm/0.0005"
- Button function: zero, on/off, mm/inch
- Battery CR2032, automatic power off
- Meet DIN862
- Made of stainless steel



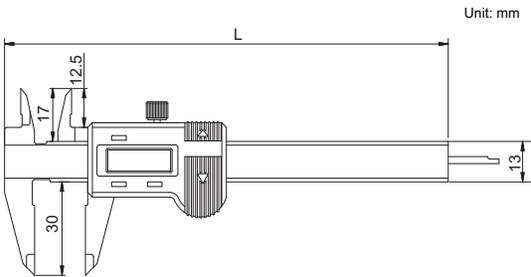
Code	Range	Accuracy	Thumb roller	L	a	b	c	d
1118-150	0-150mm/0-6"	±0.03mm	with	236	21	16	16	40
1118-200	0-200mm/0-8"	±0.03mm	with	286	24	19	16	50
1118-300	0-300mm/0-12"	±0.03mm	with	400	25	20.5	17	60
1118-150W	0-150mm/0-6"	±0.03mm	without	236	21	16	16	40
1118-200W	0-200mm/0-8"	±0.03mm	without	286	24	19	16	50
1118-300W	0-300mm/0-12"	±0.03mm	without	400	25	20.5	17	60

# MINI DIGITAL CALIPER



1111-100

- Resolution: 0.01mm/0.0005"
- Buttons: zero, mm/inch, on/off
- Battery SR44 or LR44
- Meet DIN862
- Made of stainless steel



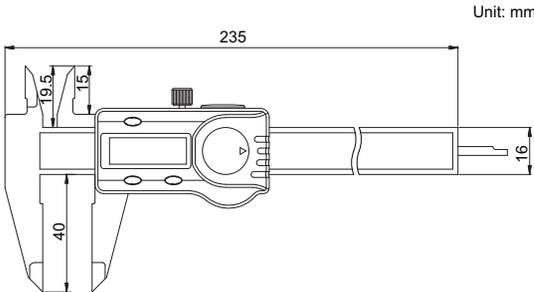
Code	Range	Accuracy	L
1111-75	0-75mm/0-3"	±0.02mm	144mm
1111-100	0-100mm/0-4"	±0.02mm	170mm

# PLASTIC DIGITAL CALIPER



1139-150

- Made of hard plastic
- Resolution: 0.01mm/0.0005"
- Buttons: on/off, zero, mm/inch
- Battery CR2032, automatic power off



Code	Range	Accuracy
1139-150	0-150mm/0-6"	±0.1mm

## DIAL CALIPER



1312-150A

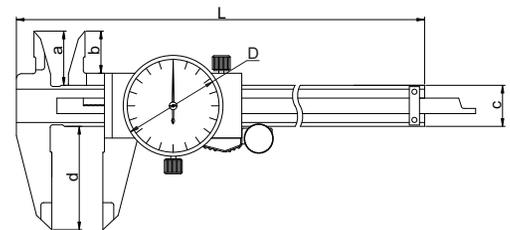
- Shockproof dial indicator
- Made of stainless steel

### Dial indicator graduation 0.02mm (mm)

Code	Range	Accuracy	L	a	b	c	d	D
1312-150A	0-150mm	±0.03mm	233	21	16.5	16	40	Ø39
1312-200A	0-200mm	±0.03mm	288	24	19	16	50	Ø39
1312-300A	0-300mm	±0.04mm	390	30	25	20	64	Ø44

### Dial indicator graduation 0.01mm (mm)

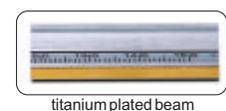
Code	Range	Accuracy	L	a	b	c	d	D
1311-150A	0-150mm	±0.03mm	233	21	16.5	16	40	Ø39
1311-200A	0-200mm	±0.03mm	288	24	19	16	50	Ø39
1311-300A	0-300mm	±0.04mm	390	24	19.5	17	64	Ø39



## DIAL CALIPER WITH TITANIUM PLATED BEAM



1315-150

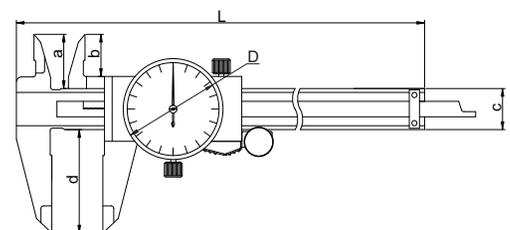


### Dial indicator graduation 0.02mm (mm)

Code	Range	Accuracy	L	a	b	c	d	D
1315-150	0-150mm	±0.03mm	233	21	16.5	16	40	Ø39
1315-200	0-200mm	±0.03mm	288	24	19	16	50	Ø39
1315-300	0-300mm	±0.04mm	390	30	25	20	64	Ø44

### Dial indicator graduation 0.01mm (mm)

Code	Range	Accuracy	L	a	b	c	d	D
1317-150	0-150mm	±0.03mm	233	21	16.5	16	40	Ø39
1317-200	0-200mm	±0.03mm	288	24	19	16	50	Ø39
1317-300	0-300mm	±0.04mm	390	24	19.5	17	64	Ø39



- Titanium plated beam for wear resistant and easy moving
- Shockproof dial indicator
- Made of stainless steel

## VERNIER CALIPER



1205-150S

Graduation 0.02mm (mm)

Code	Range	Accuracy	L	a	b	c	d
1205-1501S	0-150mm	±0.03mm	235	20.5	15.5	16	40
1205-2001S	0-200mm	±0.03mm	290	23.5	19	16	50
1205-3001S	0-300mm	±0.03mm	414	27.5	22	20	64

Graduation 0.02mm/0.001" (mm)

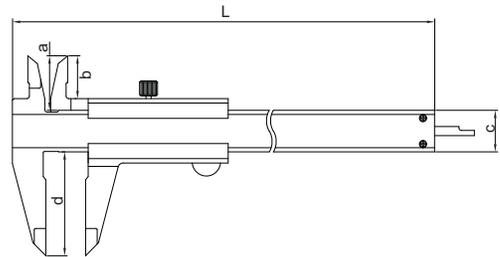
Code	Range	Accuracy	L	a	b	c	d
1205-1502S	0-150mm/0-6"	±0.03mm	235	20.5	15.5	16	40
1205-2002S	0-200mm/0-8"	±0.03mm	290	23.5	19	16	50
1205-3002S	0-300mm/0-12"	±0.03mm	414	27.5	22	20	64

Graduation 0.05mm (mm)

Code	Range	Accuracy	L	a	b	c	d
1205-1503S	0-150mm	±0.05mm	235	20.5	15.5	16	40
1205-2003S	0-200mm	±0.05mm	290	23.5	19	16	50
1205-3003S	0-300mm	±0.05mm	414	27.5	22	20	64

Graduation 0.05mm/1/128" (mm)

Code	Range	Accuracy	L	a	b	c	d
1205-150S	0-150mm/0-6"	±0.05mm	235	20.5	15.5	16	40
1205-200S	0-200mm/0-8"	±0.05mm	290	23.5	19	16	50
1205-300S	0-300mm/0-12"	±0.05mm	414	27.5	22	20	64



- Meet DIN862
- Made of stainless steel
- Satin chrome plated reading surface

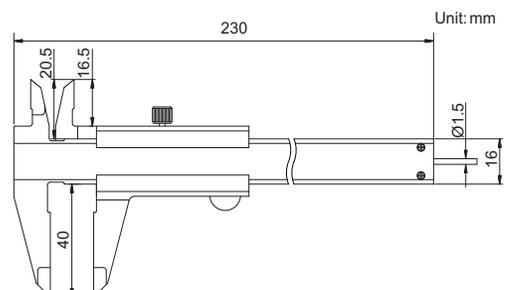
## VERNIER CALIPER WITH ROUND DEPTH BAR



1202-1503

- Meet DIN862
- Graduation 0.05mm
- Round depth bar
- Made of stainless steel
- Satin chrome plated reading surface

Code	Range	Accuracy
1202-1503	0-150mm	±0.05mm



## VERNIER CALIPER WITH TITANIUM PLATED BEAM



titanium plated beam

1219-150

### Graduation 0.02mm

Code	Range	Accuracy
1219-1501	0-150mm	±0.03mm

### Graduation 0.02mm/0.001"

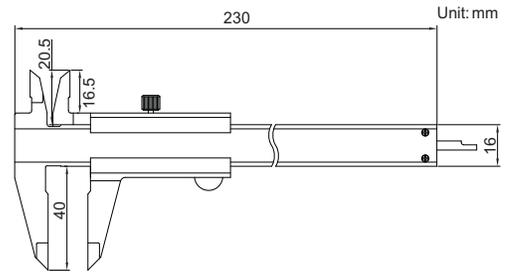
Code	Range	Accuracy
1219-1502	0-150mm/0-6"	±0.03mm

### Graduation 0.05mm

Code	Range	Accuracy
1219-1503	0-150mm	±0.05mm

### Graduation 0.05mm/1/128"

Code	Range	Accuracy
1219-150	0-150mm/0-6"	±0.05mm



Unit: mm

- Meet DIN862
- Titanium plated beam for wear resistant and easy moving
- Made of stainless steel
- Satin chrome plated reading surface

## VERNIER CALIPER



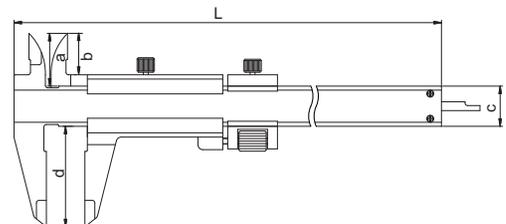
1233-130

### Graduation 0.02mm

Code	Range	Accuracy	L	a	b	c	d	(mm)
1233-1301	0-130mm	±0.03mm	230	20.5	16.5	16	40	
1233-1801	0-180mm	±0.03mm	295	23.5	19	16	50	
1233-2801	0-280mm	±0.03mm	410	26	20	20	60	

### Graduation 0.02mm/0.001"

Code	Range	Accuracy	L	a	b	c	d	(mm)
1233-130	0-130mm/0-5"	±0.03mm	230	20.5	16.5	16	40	
1233-180	0-180mm/0-7"	±0.03mm	295	23.5	19	16	50	
1233-280	0-280mm/0-11"	±0.03mm	410	26	20	20	60	



- Meet DIN862
- With fine adjustment
- Made of stainless steel
- Satin chrome plated reading surface



## VERNIER CALIPER

1223-150

Graduation 0.02mm (mm)

Code	Range	Accuracy	L	a	b	c	d
1223-1501	0-150mm	±0.03mm	230	20.5	16.5	16	40
1223-2001	0-200mm	±0.03mm	295	23.5	19	16	50
1223-3001	0-300mm	±0.03mm	405	26	20	20	60

Graduation 0.02mm/0.001" (mm)

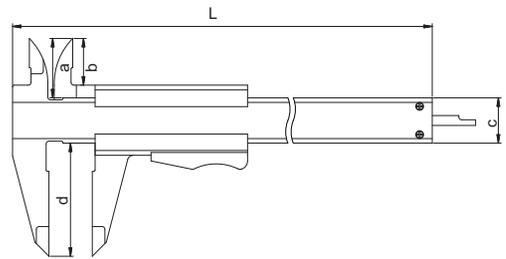
Code	Range	Accuracy	L	a	b	c	d
1223-1502	0-150mm/0-6"	±0.03mm	230	20.5	16.5	16	40
1223-2002	0-200mm/0-8"	±0.03mm	295	23.5	19	16	50
1223-3002	0-300mm/0-12"	±0.03mm	405	26	20	20	60

Graduation 0.05mm (mm)

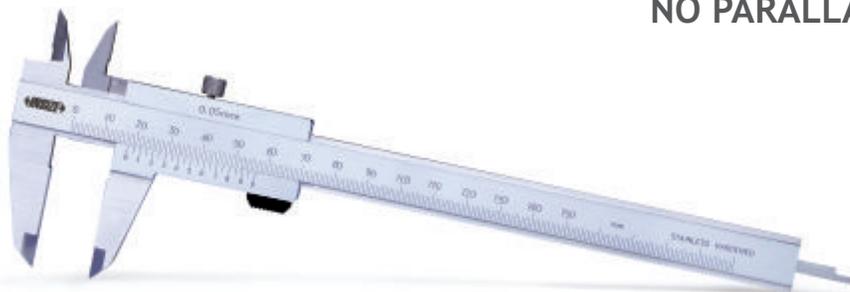
Code	Range	Accuracy	L	a	b	c	d
1223-1503	0-150mm	±0.05mm	230	20.5	16.5	16	40
1223-2003	0-200mm	±0.05mm	295	23.5	19	16	50
1223-3003	0-300mm	±0.05mm	405	26	20	20	60

Graduation 0.05mm/1/128" (mm)

Code	Range	Accuracy	L	a	b	c	d
1223-150	0-150mm/0-6"	±0.05mm	230	20.5	16.5	16	40
1223-200	0-200mm/0-8"	±0.05mm	295	23.5	19	16	50
1223-300	0-300mm/0-12"	±0.05mm	405	26	20	20	60



- Meet DIN862
- With thumb clamp
- Made of stainless steel
- Satin chrome plated reading surface



## NO PARALLAX VERNIER CALIPER

1212-1503

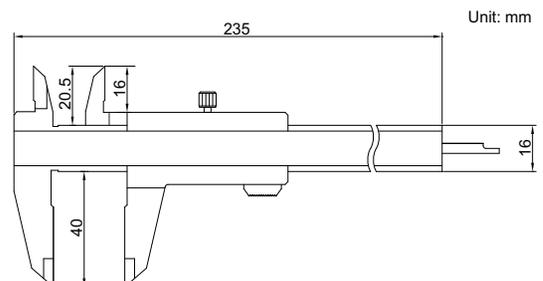
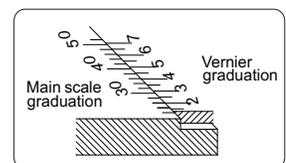
Graduation 0.02mm

Code	Range	Accuracy
1212-1501	0-150mm	±0.03mm

Graduation 0.05mm

Code	Range	Accuracy
1212-1503	0-150mm	±0.05mm

- Meet DIN862
- No parallax
- Made of stainless steel
- Satin chrome plated reading surface



## LEFT HAND VERNIER CALIPER



1239-150

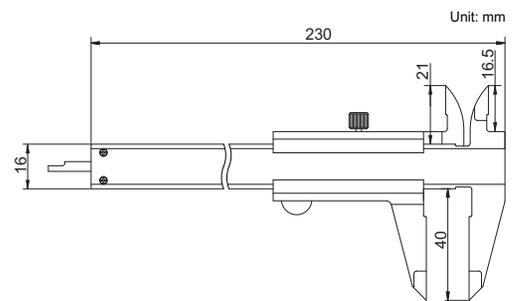
- Meet DIN862
- Designed for left handers
- Made of stainless steel
- Satin chrome plated reading surface

Graduation 0.05mm

Code	Range	Accuracy
1239-1503	0-150mm	±0.05mm

Graduation 0.05mm/1/128"

Code	Range	Accuracy
1239-150	0-150mm/0-6"	±0.05mm



## VERNIER CALIPER WITH CARBIDE TIPPED JAWS



1238-1503

- Meet DIN862
- Carbide tipped jaws for inside and outside measurements
- Made of stainless steel
- Satin chrome plated reading surface

Graduation 0.02mm

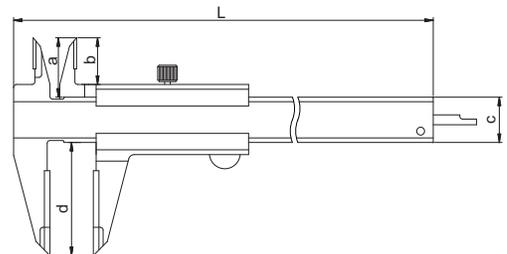
(mm)

Code	Range	Accuracy	L	a	b	c	d
1238-1501	0-150mm	±0.03mm	230	21	16.5	16	40
1238-2001	0-200mm	±0.03mm	295	24	19	16	50
1238-3001	0-300mm	±0.03mm	410	25	20	17	60

Graduation 0.05mm

(mm)

Code	Range	Accuracy	L	a	b	c	d
1238-1503	0-150mm	±0.05mm	230	21	16.5	16	40
1238-2003	0-200mm	±0.05mm	295	24	19	16	50
1238-3003	0-300mm	±0.05mm	410	25	20	17	60



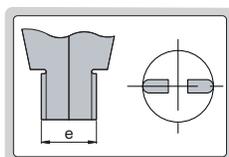
# DIGITAL CALIPER



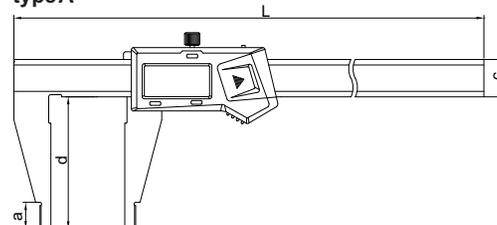
1106-306A



1106-501



type A

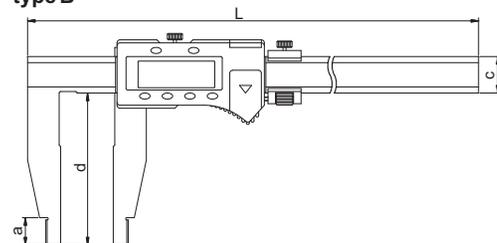


- Resolution: 0.01mm/0.0005"
- Buttons: on/off, zero, mm/inch
- Automatic power off, move the digital unit to turn on power
- High moving speed is allowed
- Battery CR2032
- USB data output
- Made of stainless steel
- Optional accessory: SPC cable (page A1-A2)

(mm)

Code	Range	Type	Accuracy	a	c	d	e	L
1106-256A	0-250mm/0-10"	A	±0.03mm	12	17	60	10	375
1106-306A	0-300mm/0-12"	A	±0.04mm	12	17	60	10	420
1106-301	0-300mm/0-12"	B	±0.05mm	12	24	100	10	420
1106-302	0-300mm/0-12"	B	±0.05mm	12	24	150	10	420
1106-451	0-450mm/0-18"	B	±0.05mm	18	24	100	20	625
1106-501	0-500mm/0-20"	B	±0.05mm	18	24	100	20	675
1106-502	0-500mm/0-20"	B	±0.06mm	18	24	150	20	675
1106-503	0-500mm/0-20"	B	±0.06mm	18	31	200	20	675
1106-505	0-500mm/0-20"	B	±0.08mm	18	42	300	20	675
1106-601	0-600mm/0-24"	B	±0.05mm	18	24	100	20	770
1106-602	0-600mm/0-24"	B	±0.06mm	18	24	150	20	770
1106-603	0-600mm/0-24"	B	±0.06mm	18	31	200	20	770
1106-802	0-800mm/0-32"	B	±0.07mm	24	31	150	20	1025
1106-1002	0-1000mm/0-40"	B	±0.08mm	24	31	150	20	1220
1106-1003	0-1000mm/0-40"	B	±0.08mm	24	31	200	20	1220
1106-1005	0-1000mm/0-40"	B	±0.10mm	24	42	300	20	1220
1106-1502	0-1500mm/0-60"	B	±0.11mm	24	42	150	20	1780
1106-1503	0-1500mm/0-60"	B	±0.12mm	24	42	200	20	1780
1106-2002	0-2000mm/0-80"	B	±0.14mm	24	42	150	20	2290
1106-2003	0-2000mm/0-80"	B	±0.14mm	24	42	200	20	2290

type B



- Resolution: 0.01mm/0.0005"
- Button function: on/off, zero, mm/inch, ABS, data preset
- Absolute and incremental measurement
- Battery CR2032
- Data output
- Made of stainless steel
- Optional accessory: SPC cable (page A1-A2)

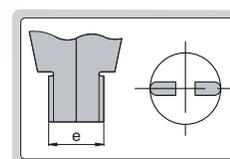
# DIGITAL CALIPER



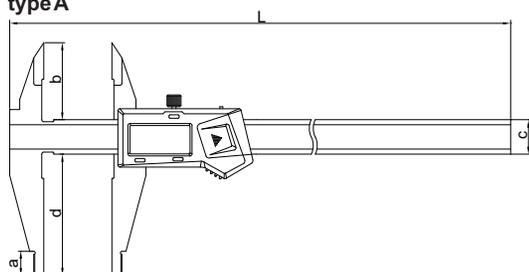
1117-306A



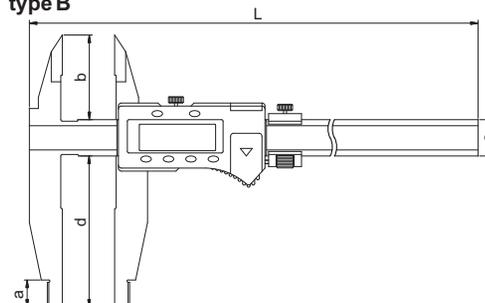
1117-501



type A



type B



- Resolution: 0.01mm/0.0005"
- Buttons: on/off, zero, mm/inch
- Automatic power off, move the digital unit to turn on power
- High moving speed is allowed
- Battery CR2032
- USB data output
- Made of stainless steel
- Optional accessory: SPC cable (page A1-A2)

- Resolution: 0.01mm/0.0005"
- Button function: on/off, zero, mm/inch, ABS, data preset
- Absolute and incremental measurement
- Battery CR2032
- Data output
- Made of stainless steel
- Optional accessory: SPC cable (page A1-A2)

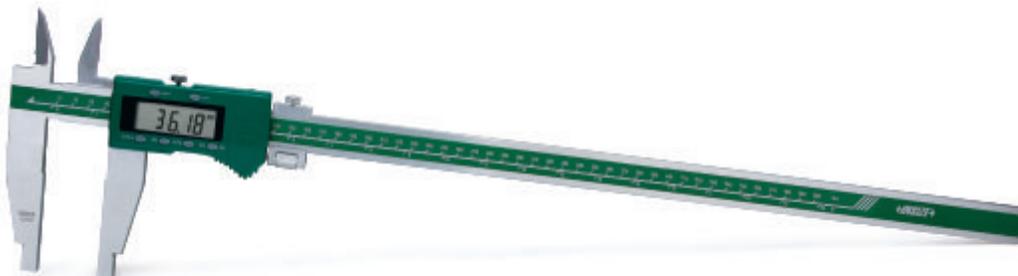
(mm)

Code	Range	Type	Accuracy	a	b	c	d	e	L
1117-256A	0-250mm/0-10"	A	±0.03mm	12	38	17	60	10	375
1117-306A	0-300mm/0-12"	A	±0.04mm	12	38	17	60	10	420
1117-301	0-300mm/0-12"	B	±0.05mm	12	38	24	100	10	420
1117-501	0-500mm/0-20"	B	±0.05mm	18	56	24	100	20	675
1117-502	0-500mm/0-20"	B	±0.06mm	18	56	24	150	20	675
1117-601	0-600mm/0-24"	B	±0.05mm	18	56	24	100	20	770
1117-802	0-800mm/0-32"	B	±0.07mm	24	67	31	150	20	1025
1117-1002	0-1000mm/0-40"	B	±0.08mm	24	67	31	150	20	1220

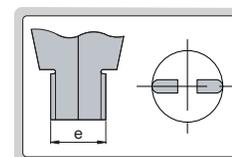
# DIGITAL CALIPER



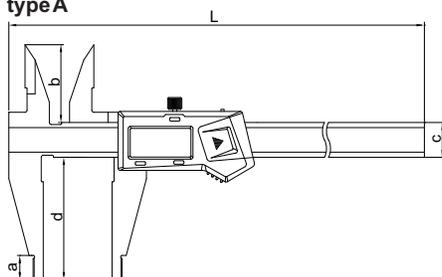
1136-306A



1136-501

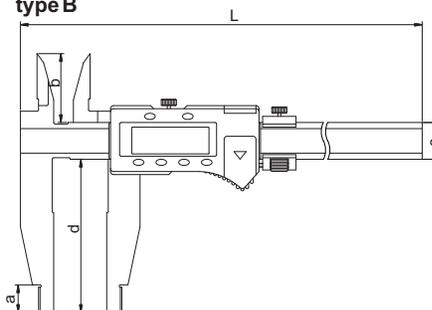


type A



- Resolution: 0.01mm/0.0005"
- Buttons: on/off, zero, mm/inch
- Automatic power off, move the digital unit to turn on power
- High moving speed is allowed
- Battery CR2032
- USB data output
- Made of stainless steel
- Optional accessory: SPC cable (page A1-A2)

type B



- Resolution: 0.01mm/0.0005"
- Button function: on/off, zero, mm/inch, ABS, data preset
- Absolute and incremental measurement
- Battery CR2032
- Data output
- Made of stainless steel
- Optional accessory: SPC cable (page A1-A2)

(mm)

Code	Range	Type	Accuracy	a	b	c	d	e	L
1136-256A	0-250mm/0-10"	A	±0.03mm	12	28	17	60	10	375
1136-306A	0-300mm/0-12"	A	±0.04mm	12	28	17	60	10	420
1136-301	0-300mm/0-12"	B	±0.05mm	12	28	24	100	10	420
1136-451	0-450mm/0-18"	B	±0.05mm	18	45	24	100	20	625
1136-501	0-500mm/0-20"	B	±0.05mm	18	45	24	100	20	675
1136-502	0-500mm/0-20"	B	±0.06mm	18	45	24	150	20	675
1136-503	0-500mm/0-20"	B	±0.06mm	18	45	31	200	20	675
1136-601	0-600mm/0-24"	B	±0.05mm	18	45	24	100	20	770
1136-1002	0-1000mm/0-40"	B	±0.08mm	24	60	31	150	20	1220
1136-1502	0-1500mm/0-60"	B	±0.11mm	24	60	42	150	20	1780
1136-2002	0-2000mm/0-80"	B	±0.14mm	24	60	42	150	20	2290

## DIGITAL CALIPER

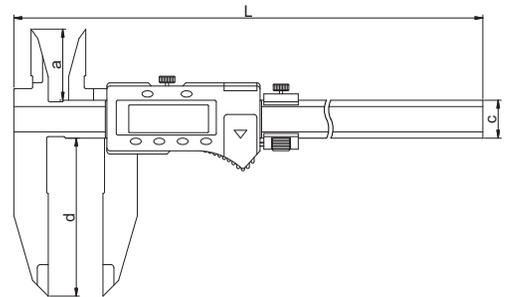


1135-601

- Resolution: 0.01mm/0.0005"
- Button function: on/off, zero, mm/inch, ABS, data preset
- Absolute and incremental measurement
- Battery CR2032
- Data output
- Made of stainless steel
- Optional accessory: SPC cable (page A1-A2)

Code	Range	Accuracy	a	c	d	L
1135-451	0-450mm/0-18"	±0.05mm	45	24	100	625
1135-601	0-600mm/0-24"	±0.05mm	45	24	100	770
1135-1002	0-1000mm/0-40"	±0.08mm	60	31	150	1220

(mm)

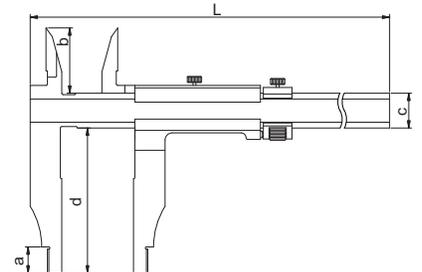
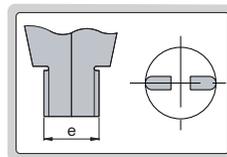


## VERNIER CALIPER



1236-521

- With fine adjustment
- Made of stainless steel
- Satin chrome plated reading surface



### Graduation 0.02mm

Code	Range	Accuracy	d(mm)
1236-391	0-300mm	±0.05mm	90
1236-511	0-500mm	±0.05mm	100
1236-521	0-500mm	±0.06mm	150
1236-611	0-600mm	±0.05mm	100
1236-821	0-800mm	±0.07mm	150
1236-1021	0-1000mm	±0.08mm	150

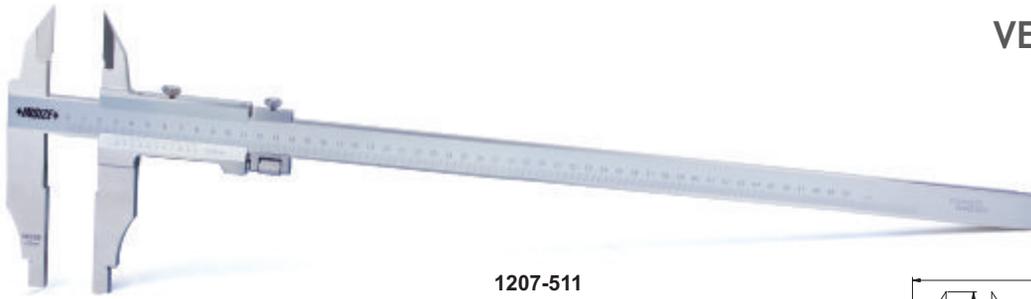
### Graduation 0.05mm

Code	Range	Accuracy	d(mm)
1236-393	0-300mm	±0.07mm	90
1236-513	0-500mm	±0.07mm	100
1236-523	0-500mm	±0.08mm	150
1236-613	0-600mm	±0.08mm	100
1236-823	0-800mm	±0.09mm	150
1236-1023	0-1000mm	±0.12mm	150

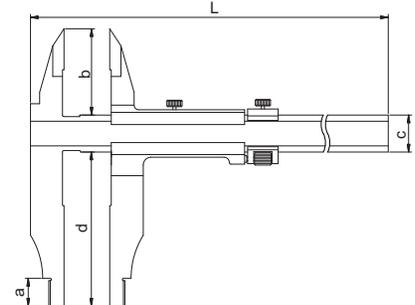
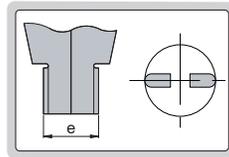
Range	a	b	c	e	L
0-300mm	12	38	20	10	450
0-500mm	18	45	24	20	670
0-600mm	18	45	24	20	770
0-800mm	24	60	31	20	1030
0-1000mm	24	60	31	20	1230

(mm)

## VERNIER CALIPER



1207-511



- With fine adjustment
- Made of stainless steel
- Satin chrome plated reading surface

### Graduation 0.02mm

Code	Range	Accuracy	d(mm)
1207-391	0-300mm	±0.05mm	90
1207-511	0-500mm	±0.05mm	100
1207-521	0-500mm	±0.06mm	150
1207-821	0-800mm	±0.07mm	150
1207-1021	0-1000mm	±0.08mm	150

### Graduation 0.05mm

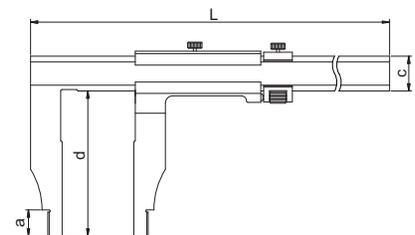
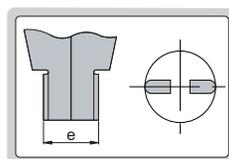
Code	Range	Accuracy	d(mm)
1207-393	0-300mm	±0.07mm	90
1207-513	0-500mm	±0.07mm	100
1207-523	0-500mm	±0.08mm	150
1207-823	0-800mm	±0.09mm	150
1207-1023	0-1000mm	±0.12mm	150

Range	a	b	c	e	L
0-300mm	12	40	20	10	440
0-500mm	18	56	24	20	670
0-800mm	24	67	31	20	930
0-1000mm	24	67	31	20	1230

## VERNIER CALIPER



1208-611



- With fine adjustment
- Made of stainless steel
- Satin chrome plated reading surface

### Graduation 0.02mm (mm)

Code	Range	Accuracy	a	c	d	e	L
1208-211	0-200mm	±0.04mm	18	24	100	20	330
1208-391	0-300mm	±0.05mm	12	20	90	10	410
1208-321	0-300mm	±0.05mm	18	24	150	20	410
1208-511	0-500mm	±0.05mm	18	24	100	20	670
1208-521	0-500mm	±0.06mm	18	24	150	20	670
1208-611	0-600mm	±0.05mm	18	24	100	20	770
1208-621	0-600mm	±0.06mm	18	24	150	20	770
1208-821	0-800mm	±0.07mm	24	31	150	20	1030
1208-1021	0-1000mm	±0.08mm	24	31	150	20	1230
1208-1521	0-1500mm	±0.11mm	24	42	150	20	1820
1208-2021	0-2000mm	±0.14mm	24	42	150	20	2330

### Graduation 0.05mm (mm)

Code	Range	Accuracy	a	c	d	e	L
1208-213	0-200mm	±0.06mm	18	24	100	20	330
1208-393	0-300mm	±0.07mm	12	20	90	10	410
1208-323	0-300mm	±0.07mm	18	24	150	20	410
1208-513	0-500mm	±0.07mm	18	24	100	20	670
1208-523	0-500mm	±0.08mm	18	24	150	20	670
1208-613	0-600mm	±0.08mm	18	24	100	20	770
1208-623	0-600mm	±0.09mm	18	24	150	20	770
1208-823	0-800mm	±0.09mm	24	31	150	20	1030
1208-1023	0-1000mm	±0.12mm	24	31	150	20	1230
1208-1523	0-1500mm	±0.16mm	24	42	150	20	1820
1208-2023	0-2000mm	±0.20mm	24	42	150	20	2330

## VERNIER CALIPER



1210-611

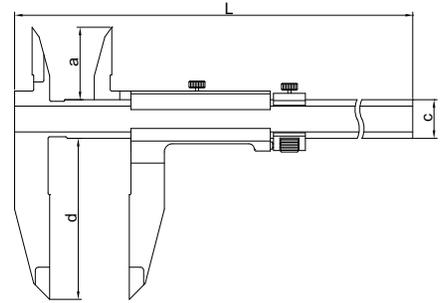
- With fine adjustment
- Made of stainless steel
- Satin chrome plated reading surface

Graduation 0.02mm (mm)

Code	Range	Accuracy	a	c	d	L
1210-611	0-600mm	±0.05mm	45	24	100	770
1210-1021	0-1000mm	±0.08mm	60	31	150	1230

Graduation 0.05mm (mm)

Code	Range	Accuracy	a	c	d	L
1210-613	0-600mm	±0.08mm	45	24	100	770
1210-1023	0-1000mm	±0.12mm	60	31	150	1230

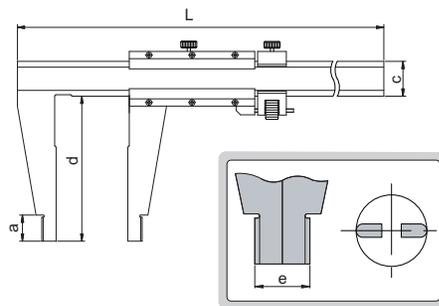


## VERNIER CALIPER



1214-500

- With fine adjustment
- Made of stainless steel
- Satin chrome plated reading surface



(mm)

Range	a	c	e	L
0-300mm	10	20	10	410
0-450mm	18	24	20	620
0-500mm	18	24	20	670
0-600mm	18	24	20	770
0-1000mm	24	32	20	1216
0-1500mm	24	42	20	1830
0-2000mm	24	42	20	2320

Graduation 0.02mm (mm)

Code	Range	Accuracy	d
1214-301	0-300mm	±0.05mm	75
1214-451	0-450mm	±0.05mm	100
1214-501	0-500mm	±0.05mm	100
1214-601	0-600mm	±0.05mm	100
1214-1001	0-1000mm	±0.08mm	140
1214-1501	0-1500mm	±0.12mm	180
1214-2001	0-2000mm	±0.14mm	200

Graduation 0.02mm/0.001" (mm)

Code	Range	Accuracy	d
1214-300	0-300mm/0-12"	±0.05mm	75
1214-450	0-450mm/0-18"	±0.05mm	100
1214-500	0-500mm/0-20"	±0.05mm	100
1214-600	0-600mm/0-24"	±0.05mm	100
1214-1000	0-1000mm/0-40"	±0.08mm	140
1214-1500	0-1500mm/0-60"	±0.12mm	180
1214-2000	0-2000mm/0-80"	±0.14mm	200

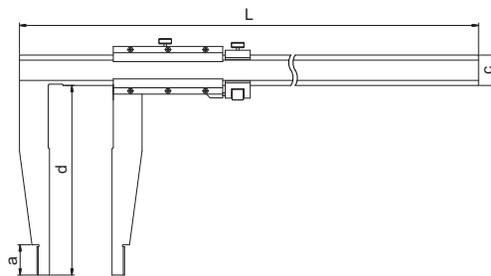
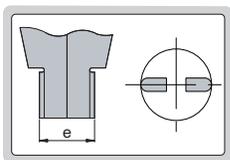
Graduation 0.05mm (mm)

Code	Range	Accuracy	d
1214-303	0-300mm	±0.07mm	75
1214-453	0-450mm	±0.07mm	100
1214-503	0-500mm	±0.07mm	100
1214-603	0-600mm	±0.08mm	100
1214-1003	0-1000mm	±0.12mm	140
1214-1503	0-1500mm	±0.18mm	180
1214-2003	0-2000mm	±0.20mm	200

# LONG JAW VERNIER CALIPER



1215-1032



(mm)			
Range	a	e	L
0-300mm	10	10	410
0-500mm	18	20	670
0-600mm	24	20	770
0-800mm	24	20	1016
0-1000mm	24	20	1216

- With fine adjustment
- Made of stainless steel
- Satin chrome plated reading surface

Graduation 0.02mm (mm)

Code	Range	Accuracy	c	d
1215-391	0-300mm	±0.05mm	17	90
1215-321	0-300mm	±0.05mm	24	150
1215-521	0-500mm	±0.06mm	24	150
1215-531	0-500mm	±0.06mm	24	200
1215-621	0-600mm	±0.06mm	24	150
1215-641	0-600mm	±0.08mm	32	250
1215-821	0-800mm	±0.07mm	32	150
1215-831	0-800mm	±0.07mm	32	200
1215-1031	0-1000mm	±0.08mm	32	200
1215-1051	0-1000mm	±0.11mm	32	300

Graduation 0.02mm/0.001" (mm)

Code	Range	Accuracy	c	d
1215-392	0-300mm/0-12"	±0.05mm	17	90
1215-322	0-300mm/0-12"	±0.05mm	24	150
1215-522	0-500mm/0-20"	±0.06mm	24	150
1215-532	0-500mm/0-20"	±0.06mm	24	200
1215-622	0-600mm/0-24"	±0.06mm	24	150
1215-642	0-600mm/0-24"	±0.08mm	32	250
1215-822	0-800mm/0-32"	±0.07mm	32	150
1215-832	0-800mm/0-32"	±0.07mm	32	200
1215-1032	0-1000mm/0-40"	±0.08mm	32	200
1215-1052	0-1000mm/0-40"	±0.11mm	32	300

Graduation 0.05mm (mm)

Code	Range	Accuracy	c	d
1215-393	0-300mm	±0.07mm	17	90
1215-533	0-500mm	±0.08mm	24	200
1215-833	0-800mm	±0.10mm	32	200
1215-1033	0-1000mm	±0.12mm	32	200

Graduation 0.05mm/1/128" (mm)

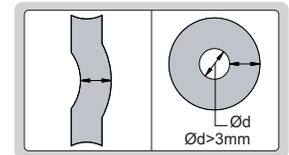
Code	Range	Accuracy	c	d
1215-394	0-300mm/0-12"	±0.07mm	17	90
1215-534	0-500mm/0-20"	±0.08mm	24	200
1215-834	0-800mm/0-32"	±0.10mm	32	200
1215-1034	0-1000mm/0-40"	±0.12mm	32	200

## DIGITAL TUBE THICKNESS CALIPER

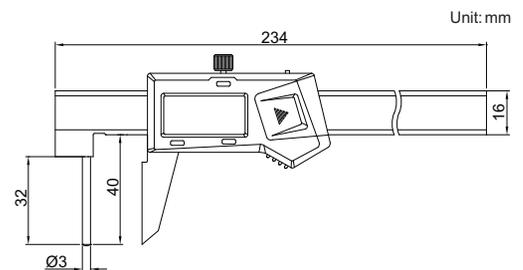


1161-150A

- Measure wall thickness of tubes
- Resolution: 0.01mm/0.0005"
- Buttons: on/off, zero, mm/inch
- Automatic power off, move the digital unit to turn on power
- High moving speed is allowed
- Battery CR2032
- USB data output
- Made of stainless steel
- Optional accessory: SPC cable (page A1-A2)



Code	Range	Accuracy
1161-150A	0-150mm/0-6"	±0.05mm



## TUBE THICKNESS VERNIER CALIPER



1261-1503

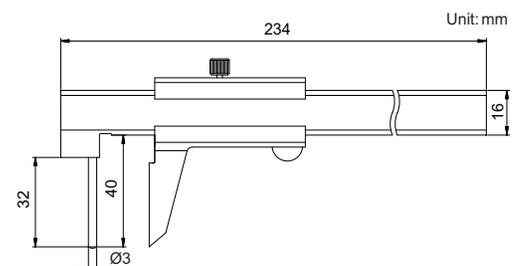
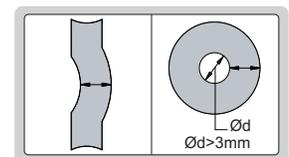
- Measure wall thickness of tubes
- Made of stainless steel
- Stain chrome plated reading surface

### Graduation 0.02mm

Code	Range	Accuracy
1261-1501	0-150mm	±0.05mm

### Graduation 0.05mm

Code	Range	Accuracy
1261-1503	0-150mm	±0.05mm

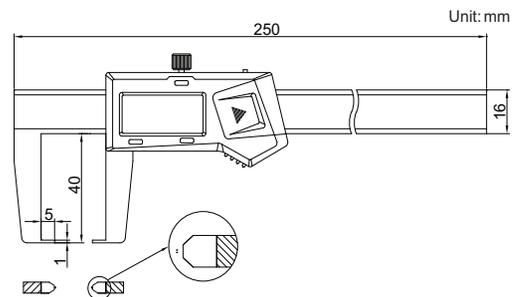
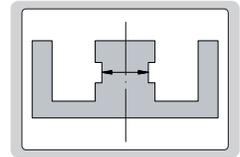


## DIGITAL OUTSIDE NECK CALIPER



1187-150A

- Measure grooves and recesses
- Resolution: 0.01mm/0.0005"
- Buttons: on/off, zero, mm/inch
- Automatic power off, move the digital unit to turn on power
- High moving speed is allowed
- Battery CR2032
- USB data output
- Made of stainless steel
- Optional accessory: SPC cable (page A1-A2)



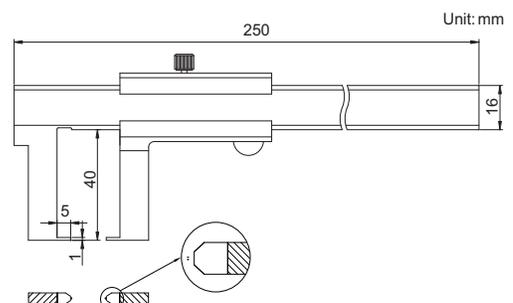
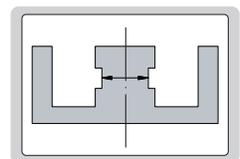
Code	Range	Accuracy
1187-150A	0-150mm/0-6"	±0.04mm

## OUTSIDE NECK VERNIER CALIPER



1287-1503

- Measure grooves and recesses
- Made of stainless steel
- Stain chrome plated reading surface



### Graduation 0.02mm

Code	Range	Accuracy
1287-1501	0-150mm	±0.04mm

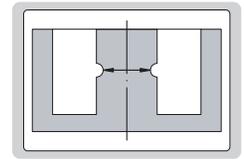
### Graduation 0.05mm

Code	Range	Accuracy
1287-1503	0-150mm	±0.05mm

## DIGITAL OUTSIDE POINT CALIPER

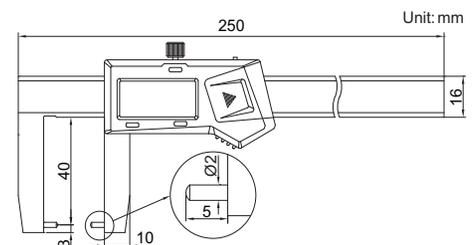


1185-150A



- Measure wall thickness inside bores and recesses
- Resolution: 0.01mm/0.0005"
- Buttons: on/off, zero, mm/inch
- Automatic power off, move the digital unit to turn on power
- High moving speed is allowed
- Battery CR2032
- USB data output
- Made of stainless steel
- Optional accessory: SPC cable (page A1-A2)

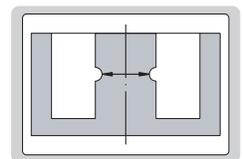
Code	Range	Accuracy
1185-150A	0-150mm/0-6"	±0.04mm



## OUTSIDE POINT VERNIER CALIPER



1285-1503



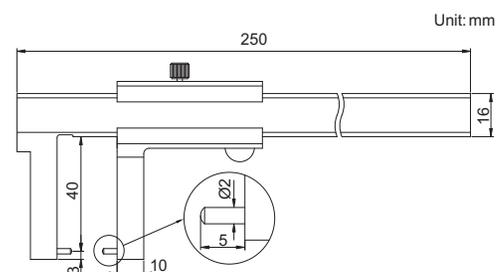
- Measure wall thickness inside bores and recesses
- Made of stainless steel
- Stain chrome plated reading surface

### Graduation 0.02mm

Code	Range	Accuracy
1285-1501	0-150mm	±0.04mm

### Graduation 0.05mm

Code	Range	Accuracy
1285-1503	0-150mm	±0.05mm

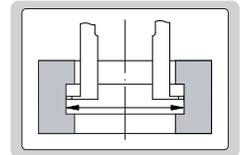


## DIGITAL INSIDE GROOVE CALIPER



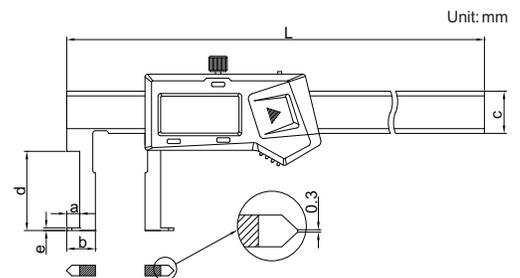
1120-150A

- Measure groove diameter
- Resolution: 0.01mm/0.0005"
- Buttons: on/off, zero, mm/inch
- Automatic power off, move the digital unit to turn on power
- High moving speed is allowed
- Battery CR2032
- USB data output
- Made of stainless steel
- Optional accessory: SPC cable (page A1-A2)



Code	Range	Accuracy	L	a	b	c	d	e
1120-150A	22-150mm	±0.04mm	250	5	11	16	30	1
1120-200A	25-200mm	±0.04mm	310	5	12.5	16	40	1
1120-300A	30-300mm	±0.05mm	410	5	15	17	50	1.5

(mm)

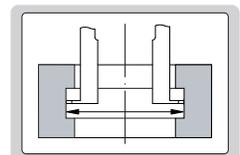


## INSIDE GROOVE VERNIER CALIPER



1262-1503

- Measure groove diameter
- Made of stainless steel
- Stain chrome plated reading surface

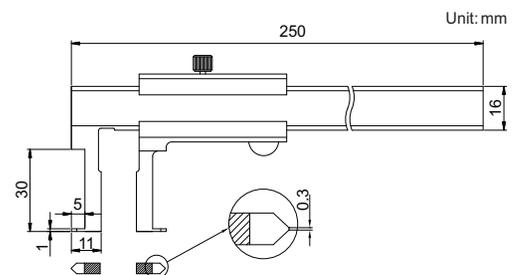


### Graduation 0.02mm

Code	Range	Accuracy
1262-151	22-150mm	±0.04mm

### Graduation 0.05mm

Code	Range	Accuracy
1262-1503	22-150mm	±0.05mm

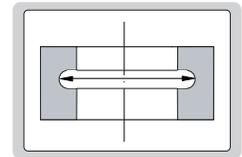


## DIGITAL INSIDE POINT CALIPER



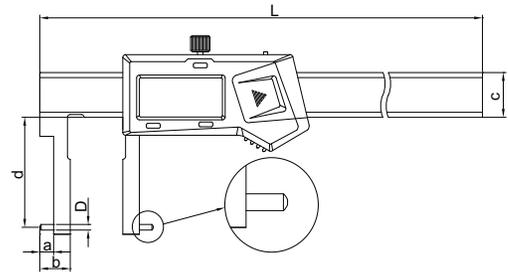
1121-150A

- Measure groove diameter
- Resolution: 0.01mm/0.0005"
- Buttons: on/off, zero, mm/inch
- Automatic power off, move the digital unit to turn on power
- High moving speed is allowed
- Battery CR2032
- USB data output
- Made of stainless steel
- Optional accessory: SPC cable (page A1-A2)



Code	Range	Accuracy	L	a	b	c	d	D
1121-150A	24-150mm	±0.04mm	250	5	12	16	30	Ø2
1121-200A	25-200mm	±0.04mm	310	5	12.5	16	40	Ø2
1121-3001A	50-300mm	±0.06mm	410	8	25	17	80	Ø3

(mm)

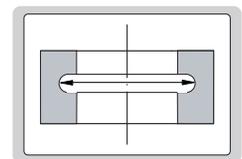


## INSIDE POINT VERNIER CALIPER



1263-153

- Measure groove diameter
- Made of stainless steel
- Stain chrome plated reading surface

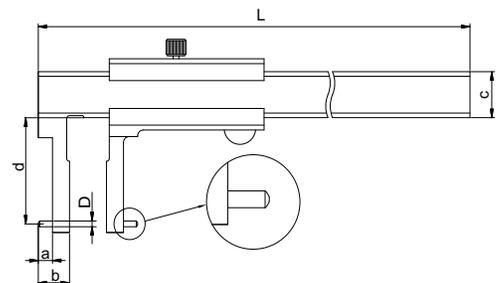


Graduation 0.02mm								
Code	Range	Accuracy	L	a	b	c	d	D
1263-151	24-150mm	±0.04mm	250	5	12	16	30	Ø2
1263-3011	50-300mm	±0.06mm	410	8	25	17	80	Ø3

(mm)

Graduation 0.05mm								
Code	Range	Accuracy	L	a	b	c	d	D
1263-153	24-150mm	±0.05mm	250	5	12	16	30	Ø2
1263-3013	50-300mm	±0.08mm	410	8	25	17	80	Ø3

(mm)

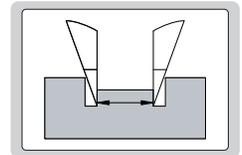


## DIGITAL POINT CALIPER

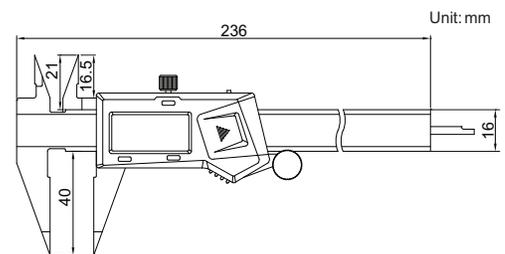


1183-150A

- Pointed jaws fit into small grooves and recesses
- Resolution: 0.01mm/0.0005"
- Buttons: on/off, zero, mm/inch
- Automatic power off, move the digital unit to turn on power
- High moving speed is allowed
- Battery CR2032
- USB data output
- Made of stainless steel
- Optional accessory: SPC cable (page A1-A2)



Code	Range	Accuracy
1183-150A	0-150mm/0-6"	±0.03mm



## POINT VERNIER CALIPER



1283-1503

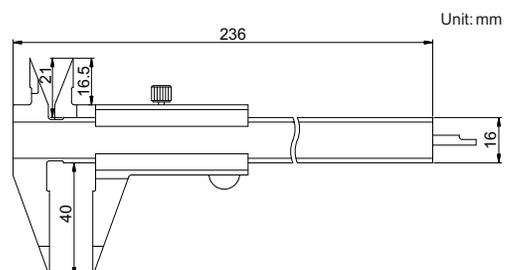
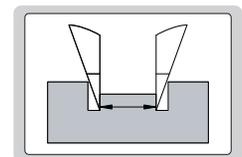
- Pointed jaws fit into small grooves and recesses
- Made of stainless steel
- Stain chrome plated reading surface

### Graduation 0.02mm

Code	Range	Accuracy
1283-1501	0-150mm	±0.03mm

### Graduation 0.05mm

Code	Range	Accuracy
1283-1503	0-150mm	±0.05mm

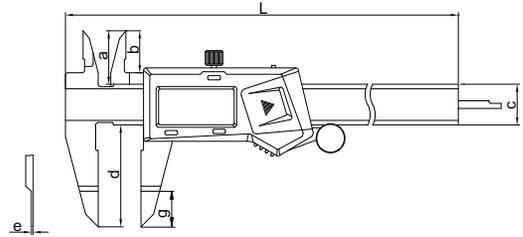


## DIGITAL BLADE CALIPER

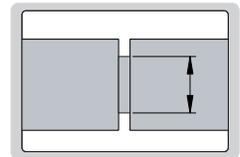


1188-150A

- The blade jaws fit into small grooves
- Resolution: 0.01mm/0.0005"
- Buttons: on/off, zero, mm/inch
- Automatic power off, move the digital unit to turn on power
- High moving speed is allowed
- Battery CR2032
- USB data output
- Made of stainless steel
- Optional accessory: SPC cable (page A1-A2)



Code	Range	Accuracy	L	a	b	c	d	e	g	(mm)
1188-150A	0-150mm/0-6"	±0.03mm	236	21	16	16	40	0.75	17	
1188-200A	0-200mm/0-8"	±0.03mm	286	24	19	16	50	0.75	17	
1188-300A	0-300mm/0-12"	±0.04mm	400	25	20.5	17	60	1.00	17	

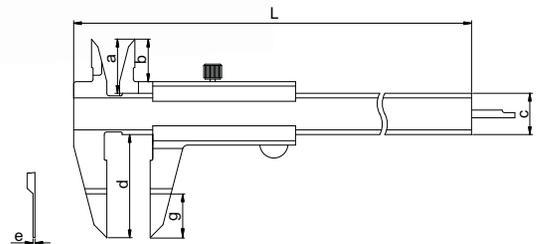


## BLADE VERNIER CALIPER



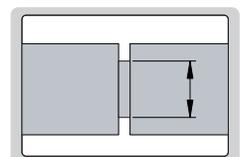
1288-1503

- The blade jaws fit into small grooves
- Made of stainless steel
- Stain chrome plated reading surface



Code	Range	Accuracy	L	a	b	c	d	e	g	(mm)
1288-1501	0-150mm	±0.03mm	236	21	16.5	16	40	0.75	17	
1288-2001	0-200mm	±0.03mm	286	24	19.5	16	50	0.75	17	
1288-3001	0-300mm	±0.04mm	400	25	20.5	17	60	1.00	17	

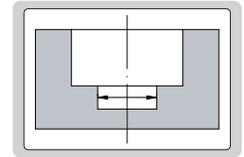
Code	Range	Accuracy	L	a	b	c	d	e	g	(mm)
1288-1503	0-150mm	±0.05mm	236	21	16.5	16	40	0.75	17	
1288-2003	0-200mm	±0.05mm	286	24	19.5	16	50	0.75	17	
1288-3003	0-300mm	±0.08mm	400	25	20.5	17	60	1.00	17	



## DIGITAL INSIDE KNIFE-EDGE CALIPER

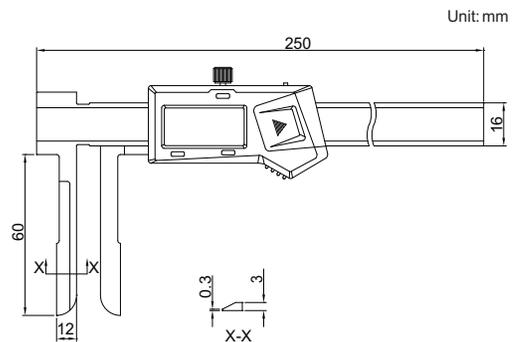


1123-150A



- Measure diameter of deep step holes
- Resolution: 0.01mm/0.0005"
- Buttons: on/off, zero, mm/inch
- Automatic power off, move the digital unit to turn on power
- High moving speed is allowed
- Battery CR2032
- USB data output
- Made of stainless steel
- Optional accessory: SPC cable (page A1-A2)

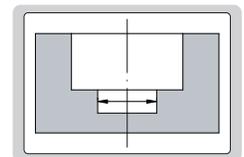
Code	Range	Accuracy
1123-150A	15-150mm/0.6-6"	±0.05mm



## INSIDE KNIFE-EDGE VERNIER CALIPER



1264-153



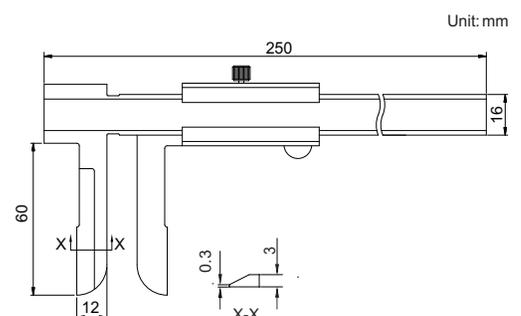
- Measure diameter of deep step holes
- Made of stainless steel
- Stain chrome plated reading surface

### Graduation 0.02mm

Code	Range	Accuracy
1264-151	15-150mm	±0.05mm

### Graduation 0.05mm

Code	Range	Accuracy
1264-153	15-150mm	±0.05mm



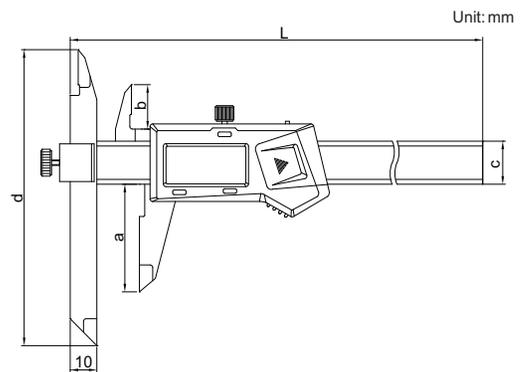
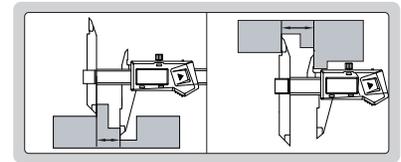




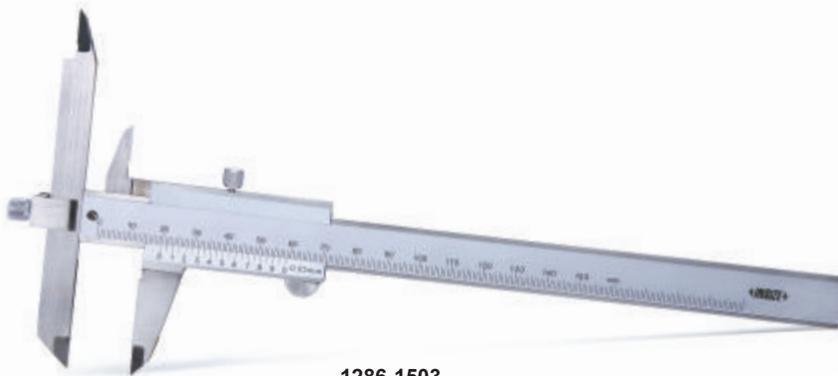
1186-150A

- The left jaw can slide up and down to facilitate measurement of stepped sections
- Resolution: 0.01mm/0.0005"
- Buttons: on/off, zero, mm/inch
- Automatic power off, move the digital unit to turn on power
- High moving speed is allowed
- Battery CR2032
- USB data output
- Made of stainless steel
- Optional accessory: SPC cable (page A1-A2)

## DIGITAL OFFSET CALIPER



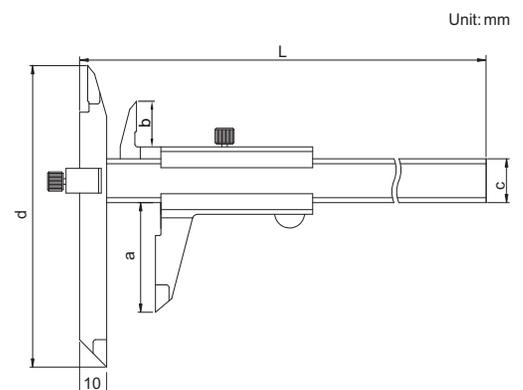
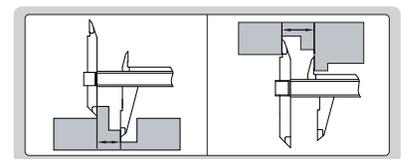
Code	Range	Accuracy	L	a	b	c	d
1186-150A	0-150mm/0-6"	±0.04mm	239	40	16.5	16	110
1186-200A	0-200mm/0-8"	±0.04mm	289	50	19.5	16	120
1186-300A	0-300mm/0-12"	±0.05mm	389	60	20.5	17	130



1286-1503

- The left jaw can slide up and down to facilitate measurement of stepped sections
- Made of stainless steel
- Stain chrome plated reading surface

## OFFSET VERNIER CALIPER



**Graduation 0.02mm (mm)**

Code	Range	Accuracy	L	a	b	c	d
1286-1501	0-150mm	±0.04mm	240	40	16.5	16	110
1286-2001	0-200mm	±0.04mm	290	50	19.5	16	120
1286-3001	0-300mm	±0.05mm	390	60	20.5	17	130

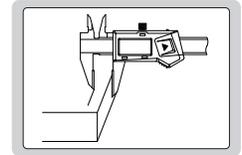
**Graduation 0.05mm (mm)**

Code	Range	Accuracy	L	a	b	c	d
1286-1503	0-150mm	±0.05mm	240	40	16.5	16	110
1286-2003	0-200mm	±0.05mm	290	50	19.5	16	120
1286-3003	0-300mm	±0.08mm	390	60	20.5	17	130

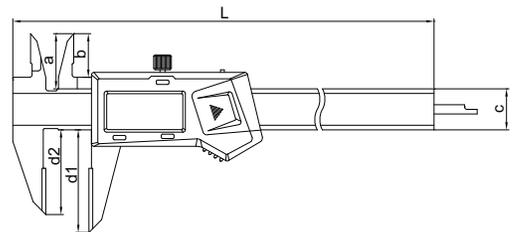
## DIGITAL SCRIBING CALIPER



1166-150A



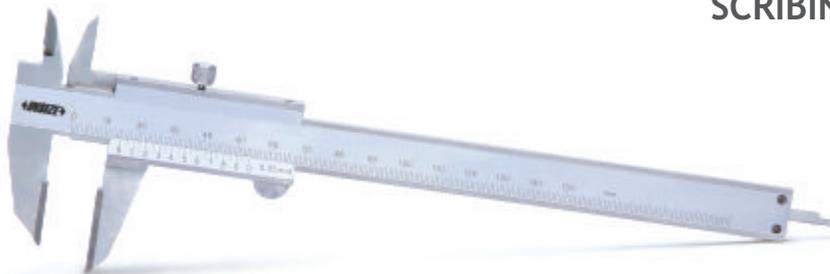
- The carbide-tipped jaws facilitate scribing on workpieces
- Resolution: 0.01mm/0.0005"
- Buttons: on/off, zero, mm/inch
- Automatic power off, move the digital unit to turn on power
- High moving speed is allowed
- Battery CR2032
- USB data output
- Made of stainless steel
- Optional accessory: SPC cable (page A1-A2)



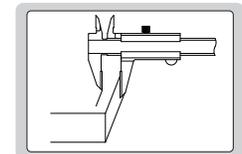
Code	Range	Accuracy	L	a	b	c	d1	d2
1166-150A	0-150mm/0-6"	±0.03mm	236	21	16.5	16	40	33
1166-200A	0-200mm/0-8"	±0.03mm	286	24	19.5	16	50	43
1166-300A	0-300mm/0-12"	±0.04mm	400	25	20.5	17	60	53

(mm)

## SCRIBING VERNIER CALIPER



1266-1503



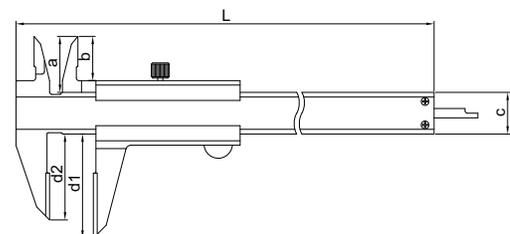
- The carbide-tipped jaws facilitate scribing on workpieces
- Made of stainless steel
- Stain chrome plated reading surface

Graduation 0.02mm								
Code	Range	Accuracy	L	a	b	c	d1	d2
1266-1501	0-150mm	±0.03mm	236	21	16.5	16	40	33
1266-2001	0-200mm	±0.03mm	286	24	19.5	16	50	43
1266-3001	0-300mm	±0.04mm	400	25	20.5	17	60	53

(mm)

Graduation 0.05mm								
Code	Range	Accuracy	L	a	b	c	d1	d2
1266-1503	0-150mm	±0.05mm	236	21	16.5	16	40	33
1266-2003	0-200mm	±0.05mm	286	24	19.5	16	50	43
1266-3003	0-300mm	±0.08mm	400	25	20.5	17	60	53

(mm)

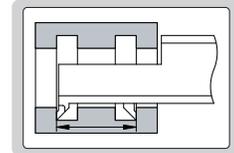


## DIGITAL HOOK CALIPER

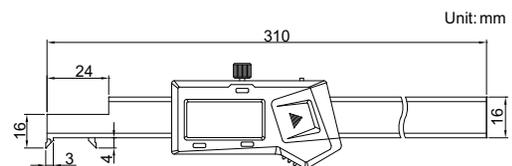


1122-200A

- Measure width of groove inside bores
- Resolution: 0.01mm/0.0005"
- Buttons: on/off, zero, mm/inch
- Automatic power off, move the digital unit to turn on power
- High moving speed is allowed
- Battery CR2032
- USB data output
- Made of stainless steel
- Optional accessory: SPC cable (page A1-A2)



Code	Range	Accuracy
1122-200A	3-200mm/0.12-8"	±0.04mm

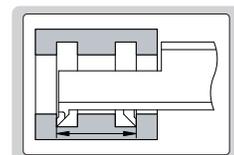


## HOOK VERNIER CALIPER



1265-2003

- Measure width of groove inside bores
- Made of stainless steel
- Stain chrome plated reading surface

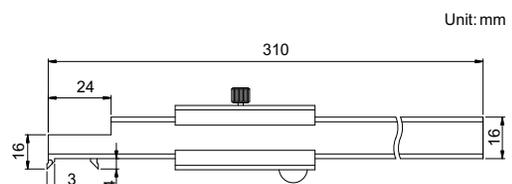


### Graduation 0.02mm

Code	Range	Accuracy
1265-2001	3-200mm	±0.04mm

### Graduation 0.05mm

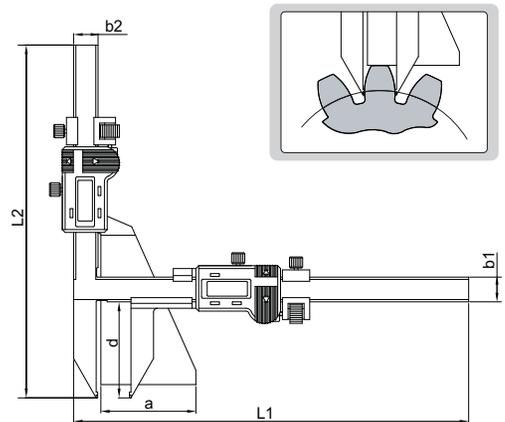
Code	Range	Accuracy
1265-2003	3-200mm	±0.05mm





1181-M30

## DIGITAL GEAR TOOTH CALIPER



Code	Range	Accuracy	L1	L2	a	b1	b2	d
1181-M30	M1-30mm	±0.04mm	156	156.5	21	13	13	30.5
1181-M50	M5-50mm	±0.04mm	210	185.5	50.5	13	13	50.5

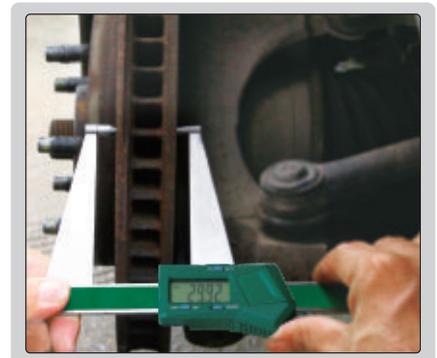
(mm)

- Resolution: 0.01mm/0.0005"
- Carbide tips
- Buttons: zero, on/off, mm/inch
- Battery SR44 or LR44
- Made of stainless steel



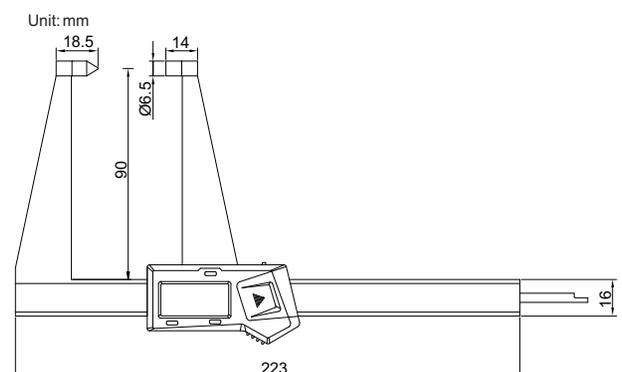
1162-125A

## DIGITAL DISK BRAKE CALIPER



- Measure thickness of disk brakes
- Resolution 0.01mm/0.0005"
- Buttons: on/off, zero, mm/inch
- Automatic power off, move the digital unit to turn on power
- High moving speed is allowed
- Battery CR2032
- USB data output
- Made of stainless steel
- Optional accessory: SPC cable (page A1-A2)

Code	Range	Accuracy
1162-125A	0-125mm/0-5"	±0.05mm



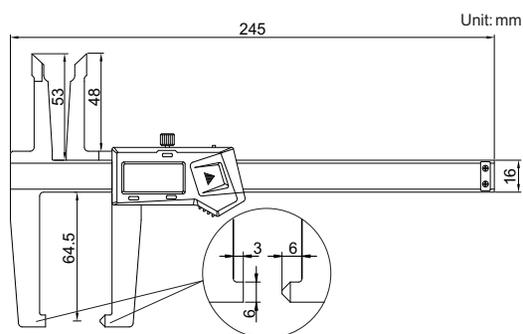
## DIGITAL DISK BRAKE AND PAD CALIPER



1167-150A

- Measure thickness of disk brakes and pad wear
- Resolution: 0.01mm/0.0005"
- Buttons: on/off, zero, mm/inch
- Automatic power off, move the digital unit to turn on power
- High moving speed is allowed
- Battery CR2032
- USB data output
- Made of stainless steel
- Optional accessory: SPC cable (page A1-A2)

Code	Range	Accuracy
1167-150A	0-150mm/0-6"	±0.07mm



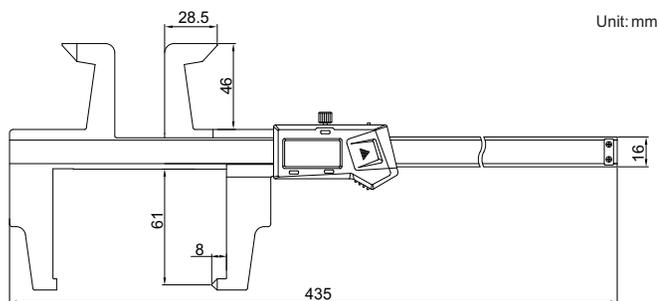
## DIGITAL DRUM BRAKE CALIPER



1168-300A

- Measure internal and external diameter of drum brakes
- Resolution 0.01mm/0.0005"
- Buttons: on/off, zero, mm/inch
- Automatic power off, move the digital unit to turn on power
- High moving speed is allowed
- Battery CR2032
- USB data output
- Made of stainless steel
- Optional accessory: SPC cable (page A1-A2)

Code	Range	Accuracy
1168-300A	0-300mm/0-12"	±0.07mm



# DIGITAL HEIGHT GAUGE



1150-1000

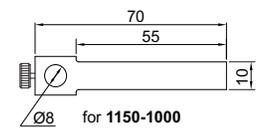
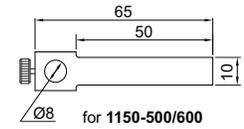
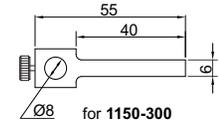


1150-500

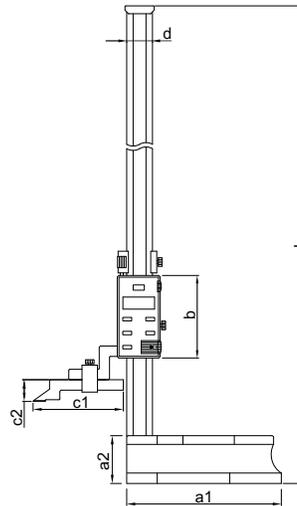
## clamp



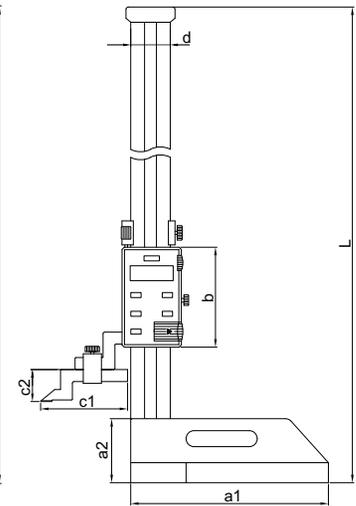
Unit: mm



- Resolution: 0.01mm/0.0005"
- Buttons: on/off, zero, mm/inch, ABS/INC, data hold, TOL, set
- ABS/INC is for absolute and incremental measurement
- TOL is for tolerance measurement
- Carbide tipped scriber
- SR44 or LR44 battery
- Data output
- Supplied with clamp
- Optional accessory: SPC cable (page A1-A2)



type A



type B

(mm)

Code	Range	Type	Accuracy	L	a1	a2	b	c1	c2	d
1150-300	0-300mm/0-12"	A	±0.04mm	470	135	45	80	76	25	23
1150-500	0-500mm/0-20"	A	±0.05mm	720	180	55	95	103	25	30
1150-600	0-600mm/0-24"	A	±0.05mm	820	180	55	95	103	25	30
1150-1000	0-1000mm/0-40"	B	±0.07mm	1275	250	80	125	110	39	50

# DIGITAL HEIGHT GAUGE



1151-1000

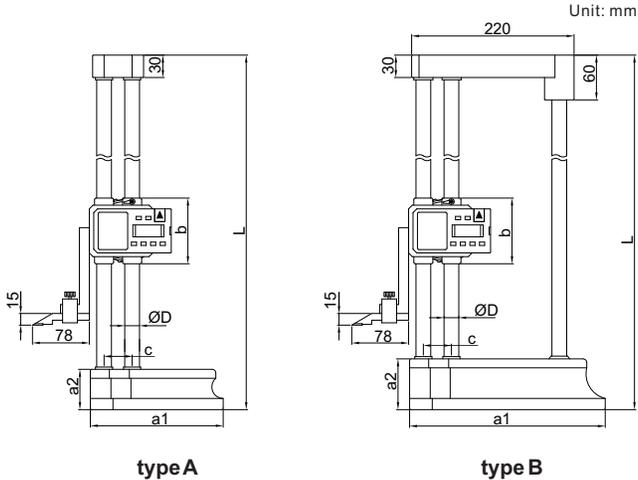


1151-300



driving wheel

- Resolution: 0.01mm/0.001"
- Buttons: on/off, zero, mm/inch, ABS/INC, preset +, preset -, set
- ABS/INC is for absolute and incremental measurement
- Carbide tipped scriber
- SR44 or LR44 battery
- Data output
- With driving wheel
- Optional accessory: SPC cable (page A1-A2)



Unit: mm

type A

type B

Code	Range	Type	Accuracy	L	a1	a2	b	c	ØD
1151-300	0-300mm/0-12"	A	±0.04mm	475	135	43	84	33	15
1151-450	0-450mm/0-18"	A	±0.05mm	660	180	54	88	38	20
1151-600	0-600mm/0-24"	A	±0.05mm	810	180	54	88	38	20
1151-1000	0-1000mm/0-40"	B	±0.07mm	1230	265	68	88	38	20

(mm)

# DIAL HEIGHT GAUGE



1351-1000

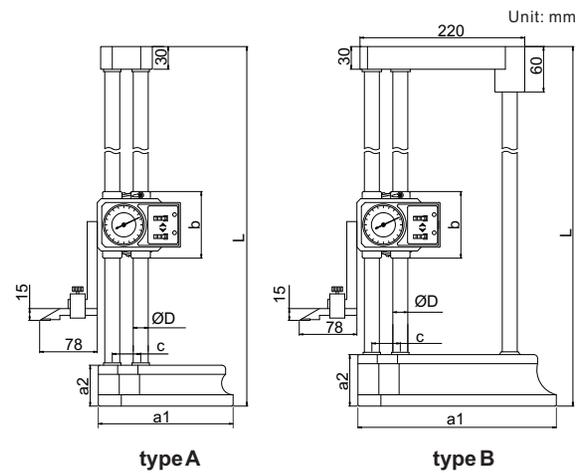


1351-300



driving wheel

- Dial indicator graduation: 0.01mm
- One counter reads in the plus direction and another in the minus direction, so incremental measurement can be made in either direction
- Carbide tipped scriber
- With driving wheel



Unit: mm

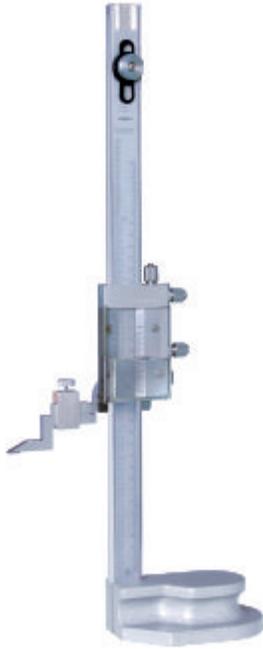
type A

type B

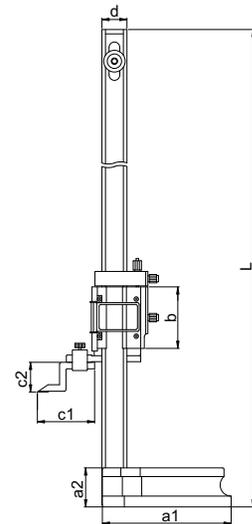
(mm)

Code	Range	Type	Accuracy	L	a1	a2	b	c	ØD
1351-300	0-300mm	A	±0.04mm	475	135	43	84	33	15
1351-450	0-450mm	A	±0.05mm	660	180	54	88	38	20
1351-600	0-600mm	A	±0.05mm	810	180	54	88	38	20
1351-1000	0-1000mm	B	±0.07mm	1230	265	68	88	38	20

## VERNIER HEIGHT GAUGE



1250-300



(mm)

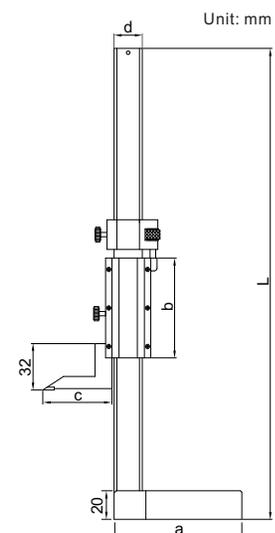
Code	Range	Accuracy	L	a1	a2	b	c1	c2	d
1250-300	0-300mm/0-12"	±0.04mm	545	135	43	75	80	30	28
1250-450	0-450mm/0-18"	±0.05mm	720	180	54	85	80	41	35
1250-600	0-600mm/0-24"	±0.05mm	870	180	54	85	80	41	35
1250-1000	0-1000mm/0-40"	±0.07mm	1310	270	70	85	204	50	40

- Graduation: 0.02mm/0.001"
- Adjustable main scale to set zero
- Carbide tipped scriber
- Satin chrome plated scale
- Supplied with magnifier
- With fine adjustment

## VERNIER HEIGHT GAUGE



1253-200



(mm)

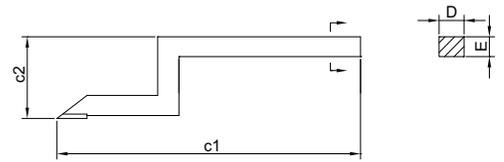
Code	Range	Accuracy	L	a	b	c	d
1253-150	0-150mm/0-6"	±0.03mm	475	75	57	43	16
1253-200	0-200mm/0-8"	±0.03mm	660	90	70	49	20
1253-250	0-250mm/0-10"	±0.03mm	710	90	70	49	20

- Graduation 0.02mm/0.001"
- Carbide tipped scriber
- Satin chrome plated scale

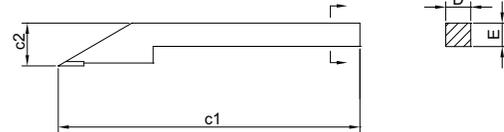
## SCRIBER FOR HEIGHT GAUGES



7150-SC1



type A



type B

- Carbide tipped

Code	For height gauges	Type	c1	c2	D	E
7150-SC1	1150-300	A	76	25	6	8
7150-SC2	1150-500, 1150-600	A	103	25	10	12
7150-SC3	1150-1000	A	110	39	10	15
7150-SC4	1151-300, 1151-450, 1151-600, 1151-1000, 1351-300, 1351-450, 1351-600, 1351-1000	B	78	15	9	9
7150-SC6	1250-300	A	80	30	9	9
7150-SC7	1250-450, 1250-600	A	80	41	9	9
7150-SC8	1250-1000	A	204	50	10	16

(mm)



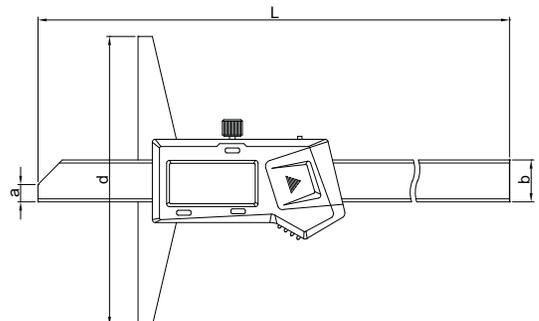
1141-150A

## DIGITAL DEPTH GAUGE

- Resolution: 0.01mm/0.0005"
- Buttons: on/off, zero, mm/inch
- Automatic power off, move the digital unit to turn on power
- High moving speed is allowed
- Battery CR2032
- USB data output
- Made of stainless steel
- Optional accessory: SPC cable (page A1-A2)

Code	Range	Accuracy	L	a	b	d
1141-150A	0-150mm/0-6"	±0.03mm	230	6	14.5	100
1141-200A	0-200mm/0-8"	±0.03mm	280	6	14.5	100
1141-300A	0-300mm/0-12"	±0.04mm	380	6	14.5	150
1141-500A	0-500mm/0-20"	±0.05mm	585	7	15	150

(mm)



## DIGITAL HOOK DEPTH GAUGE

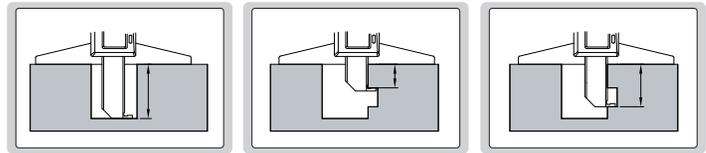
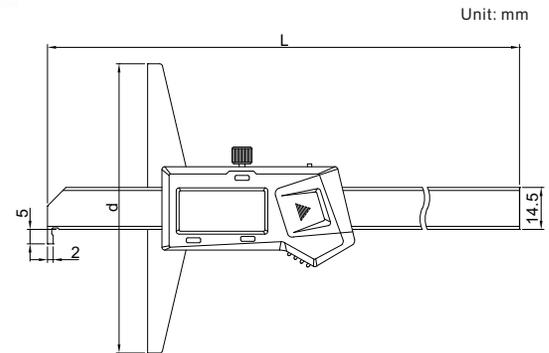


1142-150A

- Resolution: 0.01mm/0.0005"
- Buttons: on/off, zero, mm/inch
- Automatic power off, move the digital unit to turn on power
- High moving speed is allowed
- Battery CR2032
- USB data output
- Made of stainless steel
- Optional accessory: SPC cable (page A1-A2)

(mm)

Code	Range	Accuracy	L	d
1142-150A	0-150mm/0-6"	±0.04mm	230	100
1142-200A	0-200mm/0-8"	±0.04mm	280	100
1142-300A	0-300mm/0-12"	±0.05mm	380	150



## DIGITAL DOUBLE HOOK DEPTH GAUGE

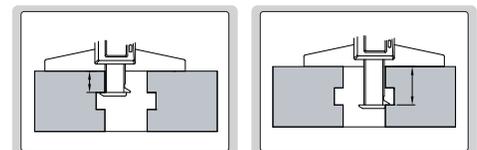
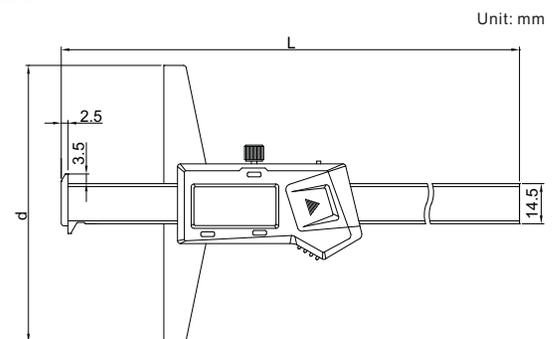


1144-150A

- Resolution: 0.01mm/0.0005"
- Buttons: on/off, zero, mm/inch
- Automatic power off, move the digital unit to turn on power
- High moving speed is allowed
- Battery CR2032
- USB data output
- Made of stainless steel
- Optional accessory: SPC cable (page A1-A2)

(mm)

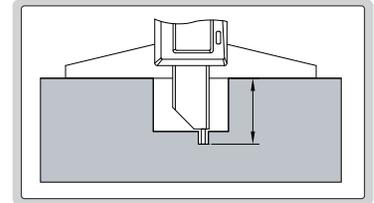
Code	Range	Accuracy	L	d
1144-150A	0-150mm/0-6"	±0.03mm	233	100
1144-200A	0-200mm/0-8"	±0.03mm	283	100
1144-300A	0-300mm/0-12"	±0.04mm	383	150



## DIGITAL POINT DEPTH GAUGE

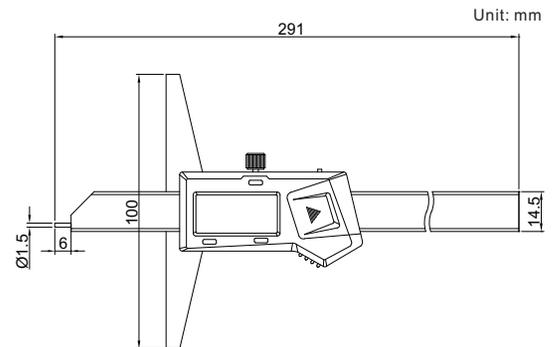


1143-200A

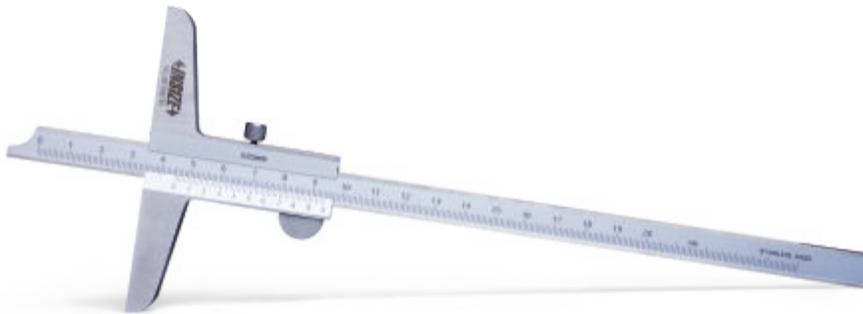


- Resolution: 0.01mm/0.0005"
- Buttons: on/off, zero, mm/inch
- Automatic power off, move the digital unit to turn on power
- High moving speed is allowed
- Battery CR2032
- USB data output
- Made of stainless steel
- Optional accessory: SPC cable (page A1-A2)

Code	Range	Accuracy
1143-200A	0-200mm/0-8"	±0.03mm



## VERNIER DEPTH GAUGE



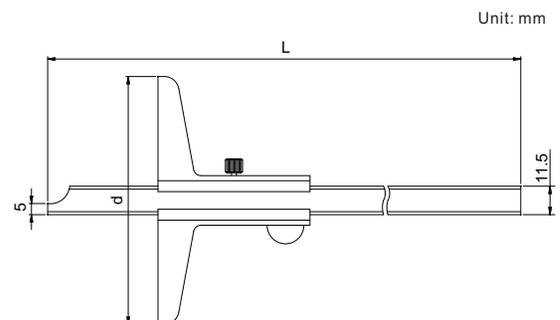
1240-2001

Graduation 0.02mm (mm)

Code	Range	Accuracy	L	d
1240-1501	0-150mm	±0.03mm	245	100
1240-2001	0-200mm	±0.03mm	282	100
1240-3001	0-300mm	±0.04mm	382	100
1240-5001	0-500mm	±0.05mm	585	150

Graduation 0.05mm (mm)

Code	Range	Accuracy	L	d
1240-150	0-150mm	±0.05mm	245	100
1240-200	0-200mm	±0.05mm	282	100
1240-300	0-300mm	±0.08mm	382	100
1240-500	0-500mm	±0.09mm	585	150



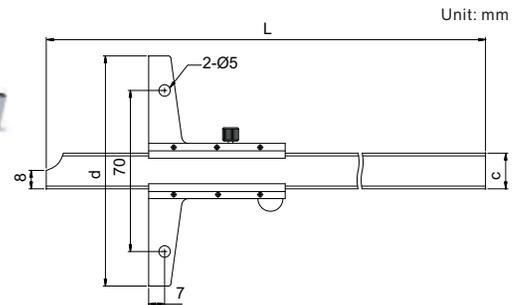
- Made of stainless steel
- Satin chrome plated reading surface

## VERNIER DEPTH GAUGE



1247-1501

- Made of stainless steel
- Satin chrome plating finish on reading surface
- Optional accessory: extension base (code 6141)



### Graduation 0.02mm

Code	Range	Accuracy
1247-1501	0-150mm	±0.03mm
1247-2001	0-200mm	±0.03mm
1247-3001	0-300mm	±0.04mm
1247-6001	0-600mm	±0.05mm
1247-1001	0-1000mm	±0.07mm

### Graduation 0.05mm

Code	Range	Accuracy
1247-150	0-150mm	±0.05mm
1247-200	0-200mm	±0.05mm
1247-300	0-300mm	±0.08mm
1247-600	0-600mm	±0.10mm
1247-1000	0-1000mm	±0.15mm

(mm)

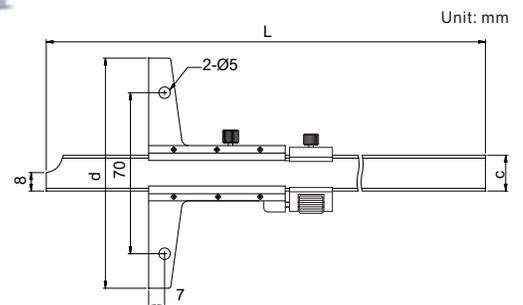
Range	L	c	d
0-150mm	240	16	100
0-200mm	290	16	100
0-300mm	390	16	100
0-600mm	704	18	150
0-1000mm	1124	18	200

## VERNIER DEPTH GAUGE



1249-1501

- With fine adjustment
- Made of stainless steel
- Satin chrome plating finish on reading surface
- Optional accessory: extension base (code 6141)



### Graduation 0.02mm

Code	Range	Accuracy
1249-1501	0-150mm	±0.03mm
1249-2001	0-200mm	±0.03mm
1249-3001	0-300mm	±0.04mm
1249-6001	0-600mm	±0.05mm
1249-1001	0-1000mm	±0.07mm

### Graduation 0.05mm

Code	Range	Accuracy
1249-150	0-150mm	±0.05mm
1249-200	0-200mm	±0.05mm
1249-300	0-300mm	±0.08mm
1249-600	0-600mm	±0.10mm
1249-1000	0-1000mm	±0.15mm

(mm)

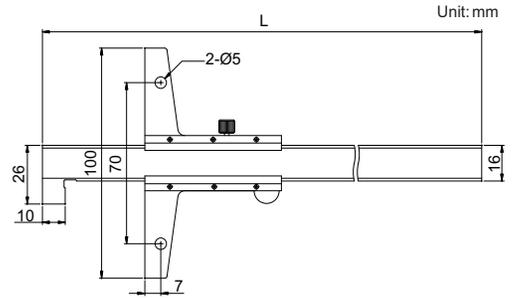
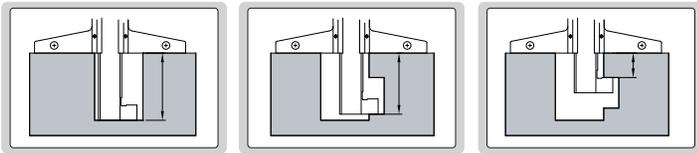
Range	L	c	d
0-150mm	256	16	100
0-200mm	306	16	100
0-300mm	406	16	100
0-600mm	720	18	150
0-1000mm	1140	18	200

# VERNIER HOOK DEPTH GAUGE



1248-1501

- Made of stainless steel
- Satin chrome plating finish on reading surface
- Optional accessory: extension base (code 6141)



### Graduation 0.02mm

Code	Range	Accuracy	L
1248-1501	0-150mm	±0.03mm	266mm
1248-2001	0-200mm	±0.03mm	316mm
1248-3001	0-300mm	±0.04mm	416mm

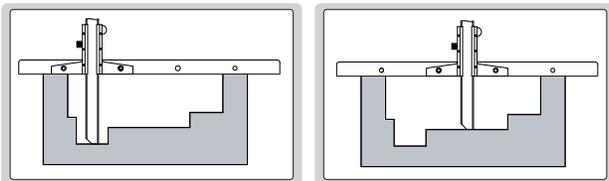
### Graduation 0.05mm

Code	Range	Accuracy	L
1248-150	0-150mm	±0.05mm	266mm
1248-200	0-200mm	±0.05mm	316mm
1248-300	0-300mm	±0.08mm	416mm

# EXTENSION BASE

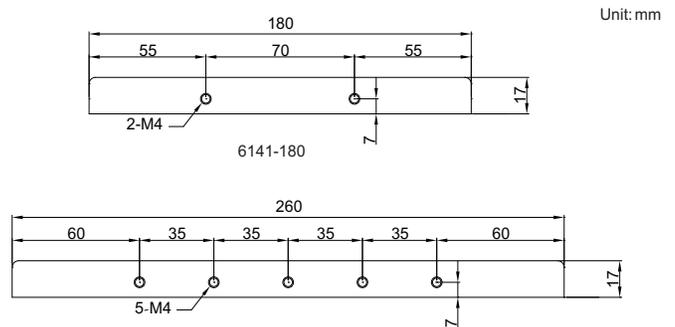


6141-260

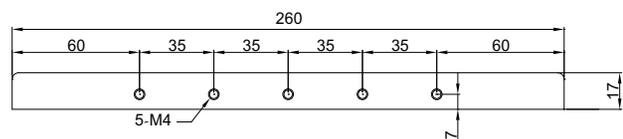


- Supplied with two screws
- Made of stainless steel
- Suitable for depth gauges series 1247, 1248 and 1249

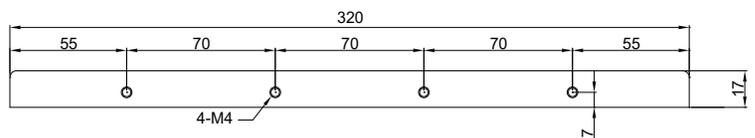
Code	Length
6141-180	180mm
6141-260	260mm
6141-320	320mm



6141-260



6141-320

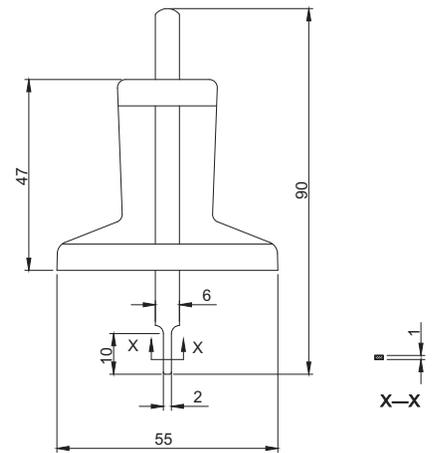


6141-320

## VERNIER DEPTH GAUGE



Unit: mm



- Graduation: 0.1mm
- Made of stainless steel

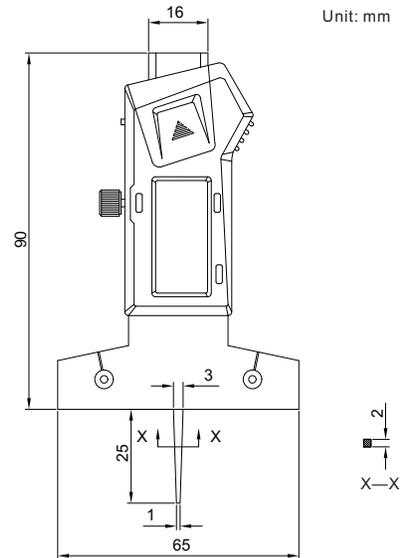
Code	Range	Accuracy
1244-30	0-30mm	±0.10mm

1244-30

## DIGITAL TIRE THREAD DEPTH GAUGE



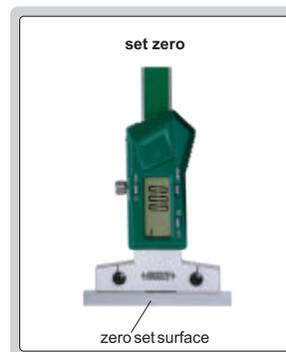
Unit: mm



- Resolution: 0.01mm/0.0005"
- Buttons: on/off, zero, mm/inch
- Supplied with zero set surface
- Automatic power off, move the digital unit to turn on power
- High moving speed is allowed
- Battery CR2032
- USB data output
- Made of stainless steel
- Optional accessory: SPC cable (page A1-A2)

1145-25A

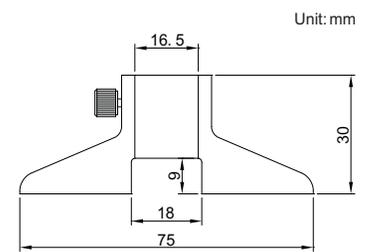
Code	Range	Accuracy
1145-25A	0-25mm/0-1"	±0.03mm



## DEPTH BASE ATTACHMENT



6140



Code

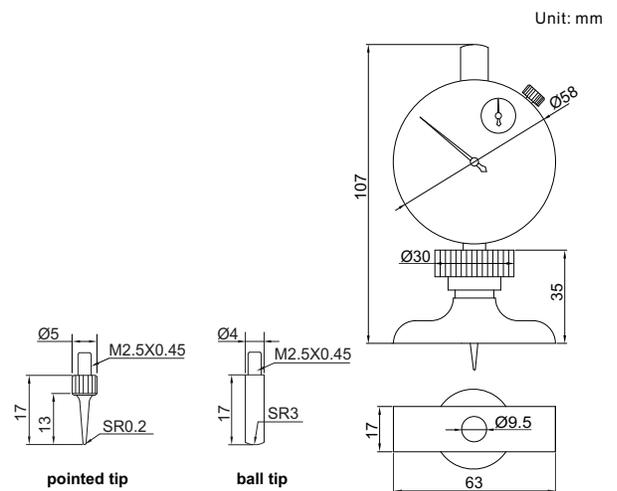
6140

- To increase the stability of depth measurement
- Suitable for 0-150mm and 0-200mm of vernier calipers, digital calipers and dial calipers with beam width 16mm
- Made of stainless steel

## DIAL DEPTH GAUGE



2341-101A



- Stainless steel base
- Supplied with pointed tip and ball tip

Code	Range	Dial indicator stroke	Dial indicator graduation	Accuracy
2341-101A	0-10mm	0-10mm	0.01mm	±0.017mm

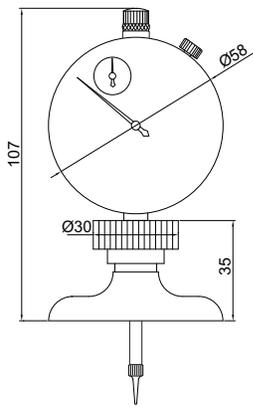
# DIAL DEPTH GAUGE



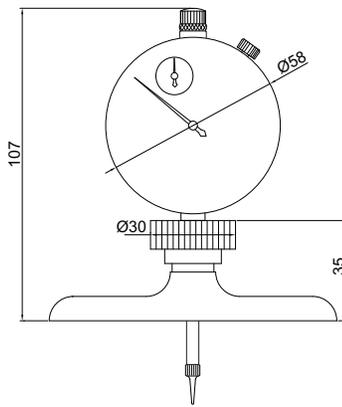
2342-202



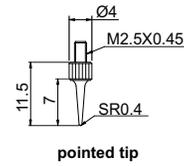
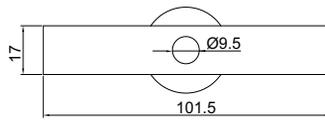
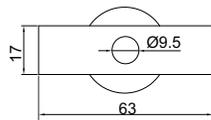
Unit: mm



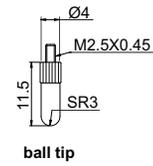
2342-201



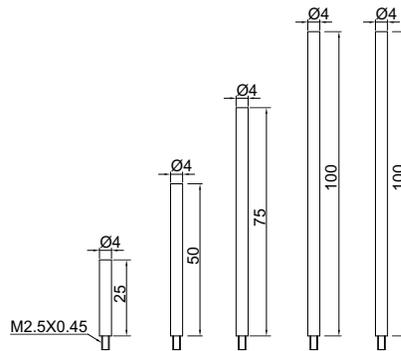
2342-202



pointed tip



ball tip



extension rods

- Stainless steel base
- Extension rods: 25mm(1pc), 50mm(1pc), 75mm(1pc), 100mm(2pcs)
- Supplied with pointed tip and ball tip

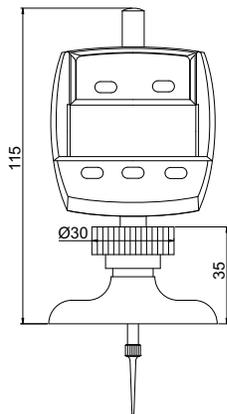
Code	Range	Dial indicator stroke	Dial indicator graduation	Accuracy	Base
2342-201	0-300mm	0-30mm	0.01mm	±0.03mm	63x17mm
2342-202	0-300mm	0-30mm	0.01mm	±0.03mm	101.5x17mm

# DIGITAL DEPTH GAUGE

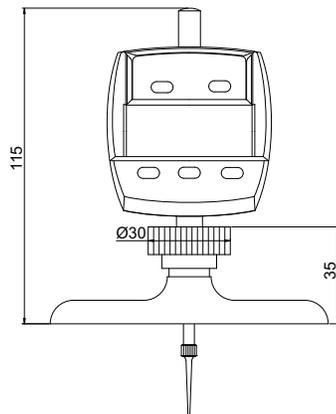


2141-202

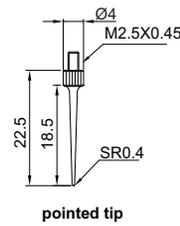
Unit: mm



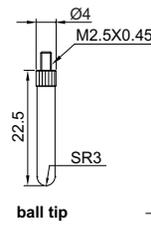
2141-201



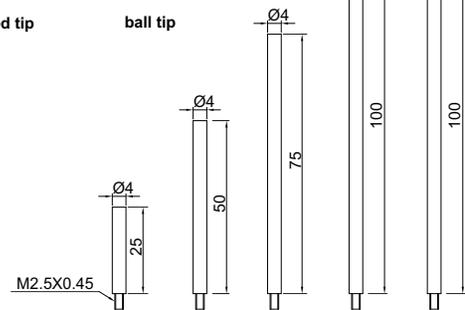
2141-202



pointed tip



ball tip



extension rods

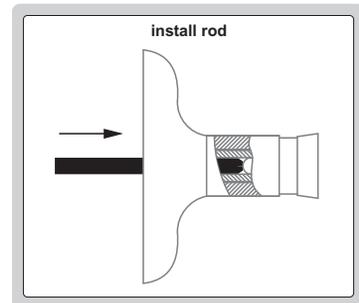
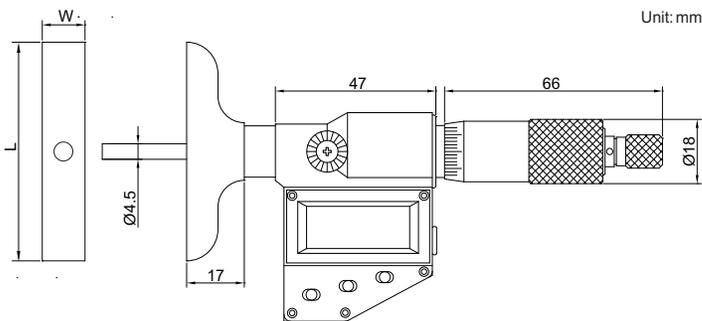
- Mode button : to track the minimum or maximum reading
- '+/-' button: to change measuring direction
- CR2032 battery, automatic power off
- Stainless steel base
- Extension rods: 25mm(1pc), 50mm(1pc), 75mm(1pc), 100mm(2pcs)
- Supplied with pointed tip and ball tip

Code	Range	Digital indicator stroke	Digital indicator resolution	Accuracy	Base
2141-201	0-300mm/0-12"	0-25.4mm/0-1"	0.005mm/0.0005"	±0.03mm	63x17mm
2141-202	0-300mm/0-12"	0-25.4mm/0-1"	0.005mm/0.0005"	±0.03mm	101.5x17mm

# DIGITAL DEPTH MICROMETER



3540-50



- Resolution: 0.001mm/0.00005"
- Micrometer head accuracy: +/-3µm
- Rod accuracy: +/- (2+L/75)µm, L is the measuring range in mm
- Button function: on/off, set, mm/inch, ABS/INC, data output
- IP54 waterproof
- RS232 data output
- SR44 or LR44 battery, automatic power off
- Rods with flat end
- Optional accessory: SPC cable (page A1-A2)

Base: LxW=101.5x17mm

Code	Range	Rods
3540-50	0-50mm/0-2"	2pcs
3540-150	0-150mm/0-6"	6pcs
3540-300	0-300mm/0-12"	12pcs

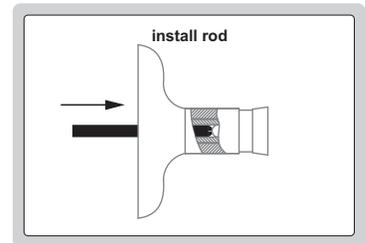
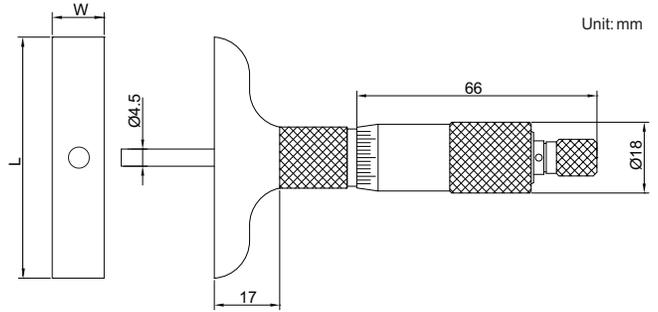
Base: LxW=63x17mm

Code	Range	Rods
3540-B50	0-50mm/0-2"	2pcs
3540-B150	0-150mm/0-6"	6pcs
3540-B300	0-300mm/0-12"	12pcs

## DEPTH MICROMETER



3240-100



Base: LxW=101.5x17mm

Code	Range	Rods
3240-25	0-25mm	1pc
3240-50	0-50mm	2pcs
3240-75	0-75mm	3pcs
3240-100	0-100mm	4pcs
3240-150	0-150mm	6pcs
3240-200	0-200mm	8pcs
3240-300	0-300mm	12pcs

Base: LxW=63x17mm

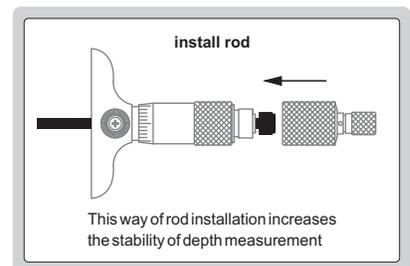
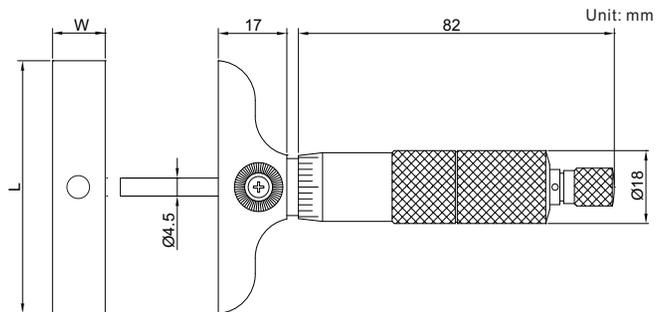
Code	Range	Rods
3240-B25	0-25mm	1pc
3240-B50	0-50mm	2pcs
3240-B75	0-75mm	3pcs
3240-B100	0-100mm	4pcs
3240-B150	0-150mm	6pcs
3240-B200	0-200mm	8pcs
3240-B300	0-300mm	12pcs

- Graduation: 0.01mm
- Micrometer head accuracy:  $\pm 3\mu\text{m}$
- Rod accuracy:  $\pm (2+L/75)\mu\text{m}$ ,  
L is the measuring range in mm
- Rods with flat end
- Ratchet stop

## DEPTH MICROMETER



3241-100



Base: LxW=101.5x17mm

Code	Range	Rods
3241-25	0-25mm	1pc
3241-50	0-50mm	2pcs
3241-75	0-75mm	3pcs
3241-100	0-100mm	4pcs
3241-150	0-150mm	6pcs
3241-200	0-200mm	8pcs
3241-300	0-300mm	12pcs

Base: LxW=63x17mm

Code	Range	Rods
3241-B25	0-25mm	1pc
3241-B50	0-50mm	2pcs
3241-B75	0-75mm	3pcs
3241-B100	0-100mm	4pcs
3241-B150	0-150mm	6pcs
3241-B200	0-200mm	8pcs
3241-B300	0-300mm	12pcs

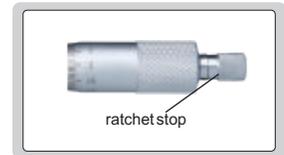
- Graduation: 0.01mm
- Micrometer head accuracy:  $\pm 3\mu\text{m}$
- Rod accuracy:  $\pm (2+L/75)\mu\text{m}$ ,  
L is the measuring range in mm
- Rods with flat end
- Ratchet stop

# DIGITAL OUTSIDE MICROMETER



3101-25A

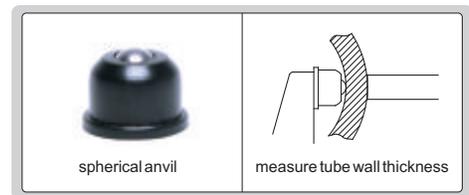
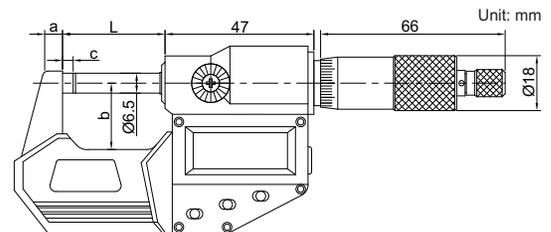
- Resolution 0.001mm/0.00005"
- IP65 waterproof
- Button function: on/off, set, mm/inch, ABS/INC, data output
- RS232 data output
- SR44 or LR44 battery, automatic power off
- Carbide measuring faces
- Supplied with spherical anvil
- Setting standards are included(except 0-25mm/0-1")
- Optional accessory: SPC cable (page A1-A2)



## Ratchet stop type

(mm)

Code	Range	Accuracy	L	a	b	c
3101-25A	0-25mm/0-1"	±2μm	32.5	6	24	3
3101-50A	25-50mm/1-2"	±2μm	57.5	8	32	3
3101-75A	50-75mm/2-3"	±3μm	82.5	8	44.5	3
3101-100A	75-100mm/3-4"	±3μm	107.5	8	57	3
3101-125A	100-125mm/4-5"	±3μm	133	10	70	3
3101-150A	125-150mm/5-6"	±3μm	158.5	10	82	3
3101-175A	150-175mm/6-7"	±4μm	184	12	94.5	5.5
3101-200A	175-200mm/7-8"	±4μm	209.5	12	107	5.5
3101-225A	200-225mm/8-9"	±4μm	234	19.4	129.5	5.5
3101-250A	225-250mm/9-10"	±4μm	259.5	19.4	142.5	5.5
3101-275A	250-275mm/10-11"	±5μm	285	19.4	155	5.5
3101-300A	275-300mm/11-12"	±5μm	310.5	19.4	167.5	5.5



## Ratchet thimble type

(mm)

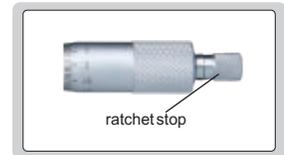
Code	Range	Accuracy	L	a	b	c
3101-25FA	0-25mm/0-1"	±2μm	32.5	6	24	3
3101-50FA	25-50mm/1-2"	±2μm	57.5	8	32	3
3101-75FA	50-75mm/2-3"	±3μm	82.5	8	44.5	3
3101-100FA	75-100mm/3-4"	±3μm	107.5	8	57	3

## METRIC DIGITAL OUTSIDE MICROMETER



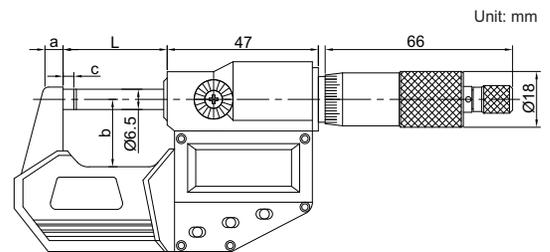
3108-25A

- Resolution 0.001mm
- IP54 waterproof
- Button function: on/off, set, ABS/INC
- Without data output
- SR44 or LR44 battery, automatic power off
- Carbide measuring faces
- Supplied with spherical anvil
- Setting standards are included(except 0-25mm)



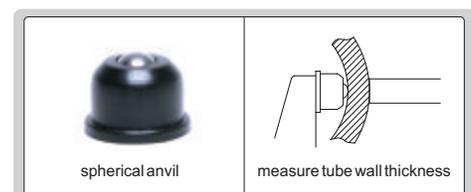
### Ratchet stop type (mm)

Code	Range	Accuracy	L	a	b	c
3108-25A	0-25mm	±2μm	32.5	6	24	3
3108-50A	25-50mm	±2μm	57.5	8	32	3
3108-75A	50-75mm	±3μm	82.5	8	44.5	3
3108-100A	75-100mm	±3μm	107.5	8	57	3
3108-125A	100-125mm	±3μm	133	10	70	3
3108-150A	125-150mm	±3μm	158.5	10	82	3
3108-175A	150-175mm	±4μm	184	12	94.5	5.5
3108-200A	175-200mm	±4μm	209.5	12	107	5.5



### Ratchet thimble type (mm)

Code	Range	Accuracy	L	a	b	c
3108-25FA	0-25mm	±2μm	32.5	6	24	3
3108-50FA	25-50mm	±2μm	57.5	8	32	3
3108-75FA	50-75mm	±3μm	82.5	8	44.5	3
3108-100FA	75-100mm	±3μm	107.5	8	57	3

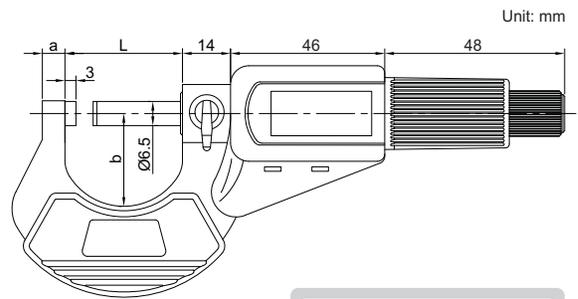


## DIGITAL OUTSIDE MICROMETER



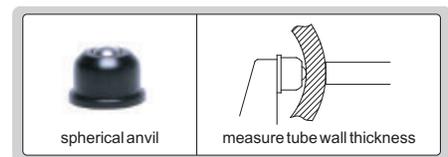
3109-25A

- Resolution 0.001mm/0.00005"
- Button function: on/off, set, mm/inch, ABS/INC
- Without data output
- SR44 or LR44 battery, automatic power off
- Carbide measuring faces
- Ratchet thimble
- Supplied with spherical anvil
- Setting standards are included(except 0-25mm/0-1")



(mm)

Code	Range	Accuracy	L	a	b
3109-25A	0-25mm/0-1"	±2μm	32	6	27.5
3109-50A	25-50mm/1-2"	±2μm	57	8	37
3109-75A	50-75mm/2-3"	±3μm	82	8	50
3109-100A	75-100mm/3-4"	±3μm	107	10	61



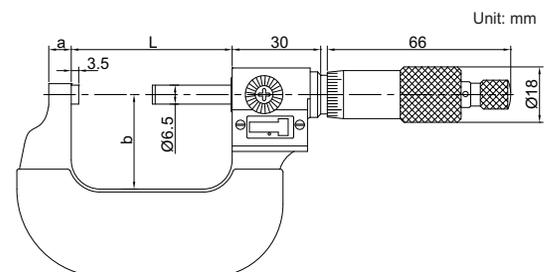
spherical anvil

measure tube wall thickness

## OUTSIDE MICROMETER WITH COUNTER



3400-25

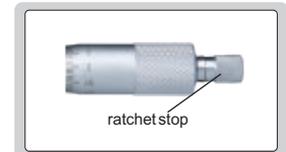


(mm)

Code	Range	Accuracy	L	a	b
3400-25	0-25mm	4μm	32	6	26
3400-50	25-50mm	4μm	57	8	32
3400-75	50-75mm	5μm	82	8	44.5
3400-100	75-100mm	5μm	107	8	57
3400-125	100-125mm	6μm	132.4	8	71.8
3400-150	125-150mm	6μm	157.8	8	84

- Counter resolution 0.01mm
- Thimble graduation 0.01mm
- Carbide measuring faces
- Ratchet stop
- Meet DIN863
- Supplied with setting standards(except 0-25mm)

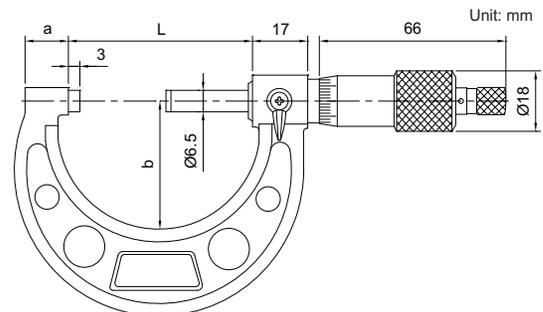
# OUTSIDE MICROMETER



- Graduation: metric 0.01mm  
imperial 0.0001"
- Carbide measuring faces
- Meet DIN863
- Supplied with setting standards(except 0-25mm and 0-1")

## Metric(ratchet stop type) (mm)

Code	Range	Accuracy	L	a	b
3203-25A	0-25mm	4μm	32	9	28
3203-50A	25-50mm	4μm	57	14	38
3203-75A	50-75mm	5μm	82	15	49
3203-100A	75-100mm	5μm	107	15	60
3203-125A	100-125mm	6μm	133	16.5	73
3203-150A	125-150mm	6μm	158	16.5	85
3203-175A	150-175mm	7μm	183	19.4	104
3203-200A	175-200mm	7μm	209	19.4	117
3203-225A	200-225mm	8μm	234	19.4	130
3203-250A	225-250mm	8μm	260	19.4	142
3203-275A	250-275mm	9μm	285	19.4	155
3203-300A	275-300mm	9μm	310	19.4	168



## Metric(ratchet thimble type) (mm)

Code	Range	Accuracy	L	a	b
3203-25FA	0-25mm	4μm	32	9	28
3203-50FA	25-50mm	4μm	57	14	38

## Imperial(ratchet stop type) (mm)

Code	Range	Accuracy	L	a	b
3203-1A	0-1"	0.00015"	32	9	28
3203-2A	1-2"	0.00015"	57	14	38
3203-3A	2-3"	0.0002"	82	15	49
3203-4A	3-4"	0.0002"	107	15	60
3203-5A	4-5"	0.00025"	133	16.5	73
3203-6A	5-6"	0.00025"	158	16.5	85

## Metric micrometer set (ratchet stop type)

Code	Range	Micrometers included
3203-753A	0-75mm	3203-25A, 3203-50A, 3203-75A
3203-1004A	0-100mm	3203-25A, 3203-50A, 3203-75A, 3203-100A
3203-1506A	0-150mm	3203-25A, 3203-50A, 3203-75A, 3203-100A, 3203-125A, 3203-150A
3203-3006A	150-300mm	3203-175A, 3203-200A, 3203-225A, 3203-250A, 3203-275A, 3203-300A
3203-3012A	0-300mm	3203-25A, 3203-50A, 3203-75A, 3203-100A, 3203-125A, 3203-150A, 3203-175A, 3203-200A, 3203-225A, 3203-250A, 3203-275A, 3203-300A

## 1µm GRADUATION OUTSIDE MICROMETER



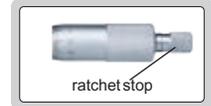
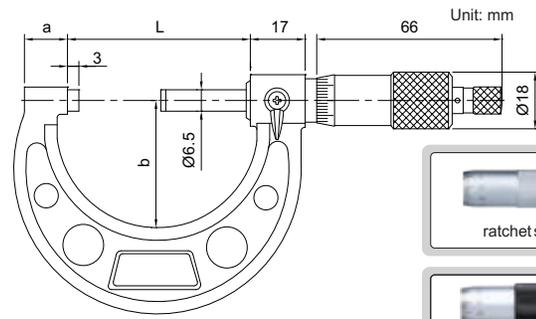
3210-25A

### Ratchet stop type (mm)

Code	Range	Accuracy	L	a	b
3210-25A	0-25mm	4µm	32	9	28
3210-50A	25-50mm	4µm	57	14	38
3210-75A	50-75mm	5µm	82	15	49
3210-100A	75-100mm	5µm	107	15	60
3210-125A	100-125mm	6µm	133	16.5	73
3210-150A	125-150mm	6µm	158	16.5	85
3210-175A	150-175mm	7µm	183	19.4	104
3210-200A	175-200mm	7µm	209	19.4	117

### Ratchet thimble type (mm)

Code	Range	Accuracy	L	a	b
3210-25FA	0-25mm	4µm	32	9	28
3210-50FA	25-50mm	4µm	57	14	38



- Graduation 0.001mm
- Carbide measuring faces
- Meet DIN863
- Supplied with setting standards (except 0-25mm)

### Micrometer set (ratchet stop type)

Code	Range	Micrometers included
3210-753A	0-75mm	3210-25A, 3210-50A, 3210-75A
3210-1004A	0-100mm	3210-25A, 3210-50A, 3210-75A, 3210-100A
3210-1506A	0-150mm	3210-25A, 3210-50A, 3210-75A, 3210-100A, 3210-125A, 3210-150A



3202-25A

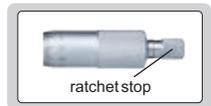
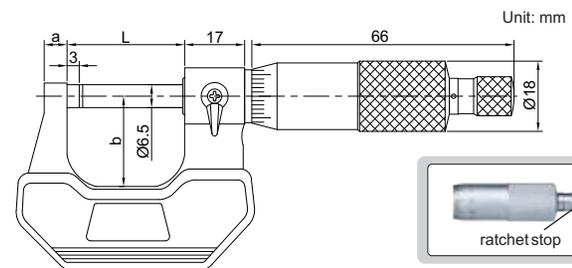
### Ratchet stop type (mm)

Code	Range	Accuracy	L	a	b
3202-25A	0-25mm	4µm	32	6	24
3202-50A	25-50mm	4µm	57	8	32
3202-75A	50-75mm	5µm	82	8	45
3202-100A	75-100mm	5µm	107	8	57
3202-125A	100-125mm	6µm	133	8	70
3202-150A	125-150mm	6µm	158	8	82
3202-175A	150-175mm	7µm	183	8	95
3202-200A	175-200mm	7µm	209	8	107

### Ratchet thimble type (mm)

Code	Range	Accuracy	L	a	b
3202-25FA	0-25mm	4µm	32	6	24
3202-50FA	25-50mm	4µm	57	8	32

## OUTSIDE MICROMETER



- Graduation 0.01mm
- Carbide measuring faces
- Meet DIN863
- Supplied with setting standards (except 0-25mm)

### Micrometer set (ratchet stop type)

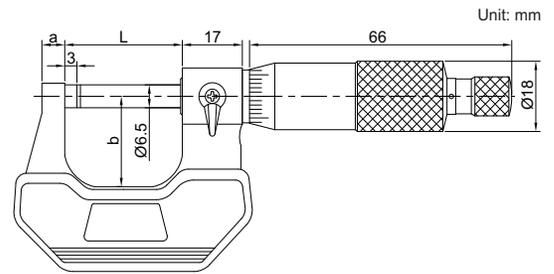
Code	Range	Micrometers included
3202-753A	0-75mm	3202-25A, 3202-50A, 3202-75A
3202-1004A	0-100mm	3202-25A, 3202-50A, 3202-75A, 3202-100A
3202-1506A	0-150mm	3202-25A, 3202-50A, 3202-75A, 3202-100A, 3202-125A, 3202-150A

## 1µm GRADUATION OUTSIDE MICROMETER



3211-25

(mm)					
Code	Range	Accuracy	L	a	b
3211-25	0-25mm	4µm	32	6	24
3211-50	25-50mm	4µm	57	8	32



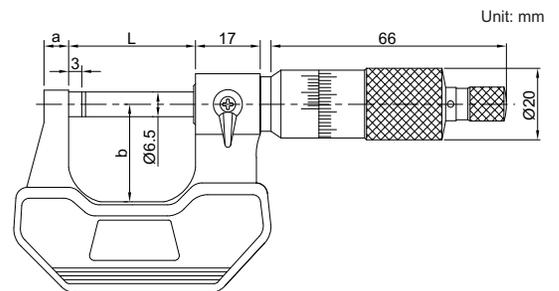
- Graduation 0.001mm
- Carbide measuring faces
- Ratchet stop
- Meet DIN863
- Supplied with setting standards(except 0-25mm)

## NO PARALLAX OUTSIDE MICROMETER



3207-25A

(mm)					
Code	Range	Accuracy	L	a	b
3207-25A	0-25mm	4µm	32	6	24
3207-50A	25-50mm	4µm	57	8	32
3207-75A	50-75mm	5µm	82	8	45
3207-100A	75-100mm	5µm	107	8	57



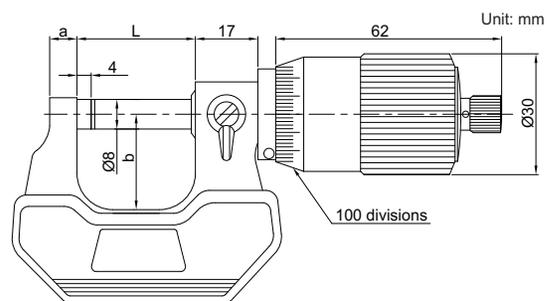
- Graduation 0.001mm
- No parallax
- Ratchet stop
- Carbide measuring faces
- Meet DIN863
- Supplied with setting standards (except 0-25mm)

## QUICK SETTING OUTSIDE MICROMETER



3208-25A

(mm)					
Code	Range	Accuracy	L	a	b
3208-25A	0-25mm	4µm	32	6	24
3208-50A	25-50mm	4µm	57	8	32
3208-75A	50-75mm	5µm	82	8	45
3208-100A	75-100mm	5µm	107	8	57

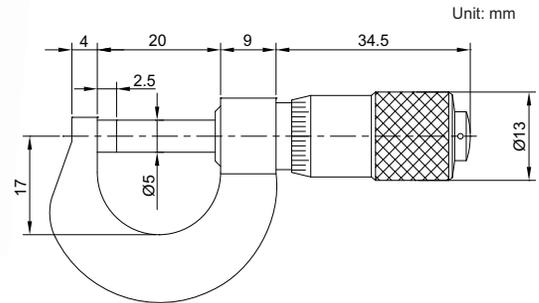


- Graduation 0.01mm
- 1mm feeding of each turn
- Ratchet thimble
- Carbide measuring faces
- Meet DIN863
- Supplied with setting standards (except 0-25mm)

## MINI OUTSIDE MICROMETER



3200-15



Code	Range	Graduation	Accuracy
3200-15	0-15mm	0.01mm	4µm

## OUTSIDE MICROMETER FOR LEFT AND RIGHT HAND

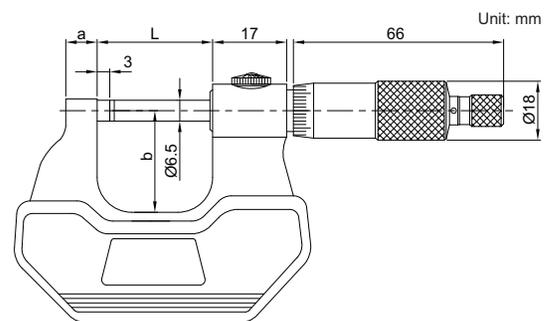


front



back

3236-25A

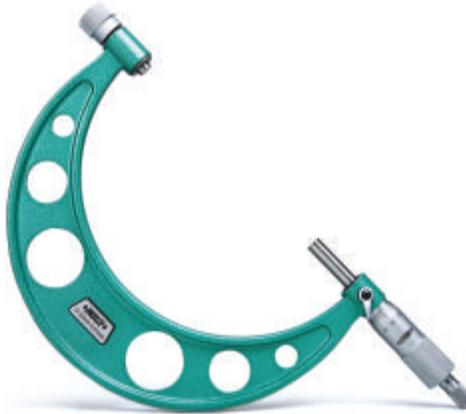


Code	Range	Accuracy	L	a	b
3236-25A	0-25mm	4µm	32	6	24
3236-50A	25-50mm	4µm	57	8	32

(mm)

- Graduation 0.01mm
- Graduations on two sides
- Ratchet stop
- Carbide measuring faces
- Meet DIN863
- Supplied with setting standards (except 0-25mm)

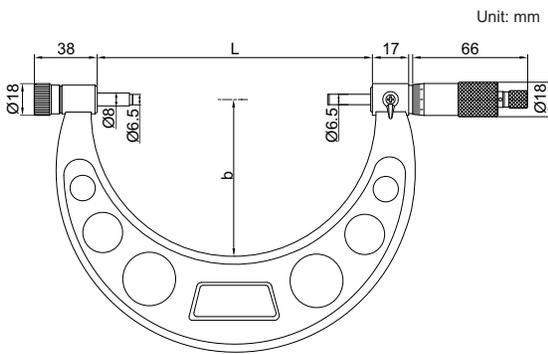
# OUTSIDE MICROMETER WITH INTERCHANGEABLE ANVILS



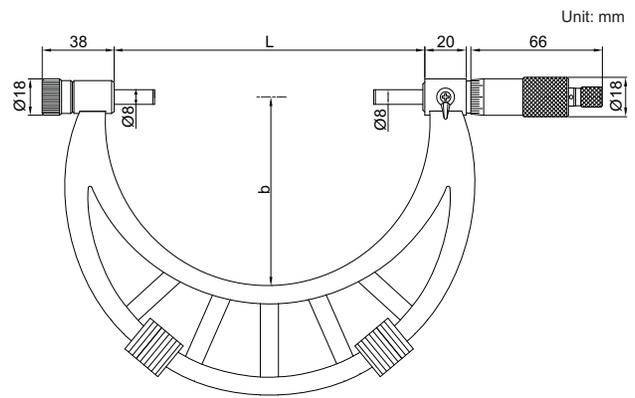
3206-150A



3206-400



type A



type B

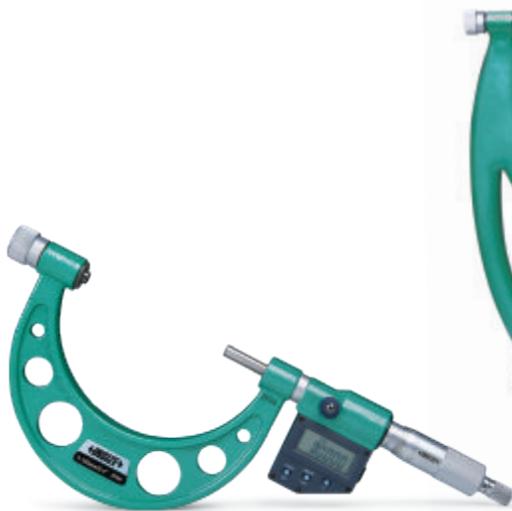
(mm)

Code	Range	Type	Accuracy	L	b
3206-50A	0-50mm	A	4µm	58	35
3206-100A	0-100mm	A	5µm	108	57
3206-150A	0-150mm	A	6µm	158	82
3206-151A	50-150mm	A	6µm	158	82
3206-200A	100-200mm	A	7µm	208	114
3206-300A	150-300mm	A	9µm	308	165
3206-301A	200-300mm	A	9µm	308	165
3206-400	300-400mm	B	11µm	409	224
3206-500	400-500mm	B	13µm	509	275
3206-600	500-600mm	B	14µm	609	321
3206-700	600-700mm	B	16µm	709	371
3206-800	700-800mm	B	18µm	809	426
3206-900	800-900mm	B	20µm	909	476
3206-1000	900-1000mm	B	22µm	1009	576



- Graduation 0.01mm
- Ratchet stop
- Carbide measuring faces
- Supplied with setting standards

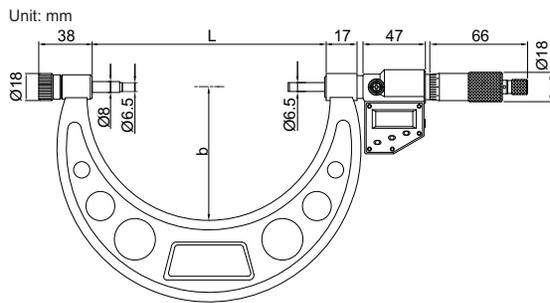
# DIGITAL OUTSIDE MICROMETER WITH INTERCHANGEABLE ANVILS



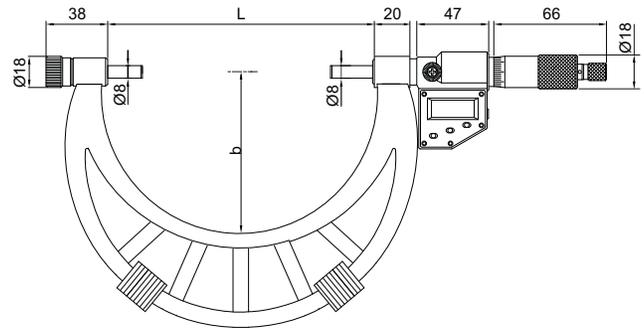
3506-100A



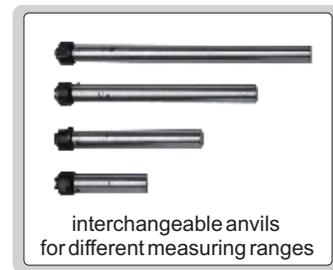
3506-400A



type A



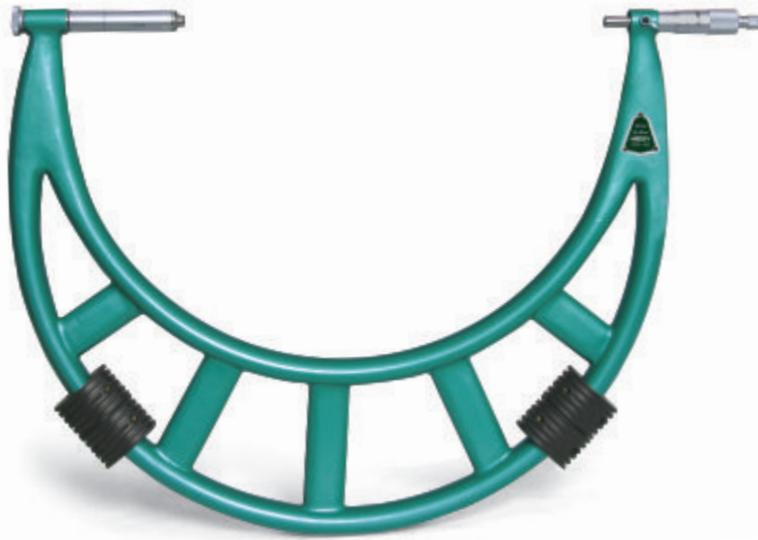
type B



Code	Range	Type	Accuracy	L	b
3506-100A	0-100mm/0-4"	A	±5μm	105	57
3506-150A	0-150mm/0-6"	A	±6μm	155	82
3506-300A	150-300mm/6-12"	A	±8μm	305	165
3506-301A	200-300mm/8-12"	A	±8μm	305	165
3506-400A	300-400mm/12-16"	B	±9μm	405	224
3506-500A	400-500mm/16-20"	B	±11μm	505	275
3506-600A	500-600mm/20-24"	B	±12μm	605	321
3506-700A	600-700mm/24-28"	B	±13μm	705	371
3506-800A	700-800mm/28-32"	B	±15μm	805	426
3506-900A	800-900mm/32-36"	B	±16μm	905	476
3506-1000A	900-1000mm/36-40"	B	±17μm	1005	576

- Resolution 0.001mm/0.00005"
- IP54 waterproof
- Button function: on/off, set, mm/inch, ABS/INC, data output
- RS232 data output
- SR44 or LR44 battery, automatic power off
- Carbide measuring faces
- Supplied with setting standards
- Optional accessory: SPC cable (page A1-A2)

# OUTSIDE MICROMETER WITH EXTENSION ANVIL COLLAR

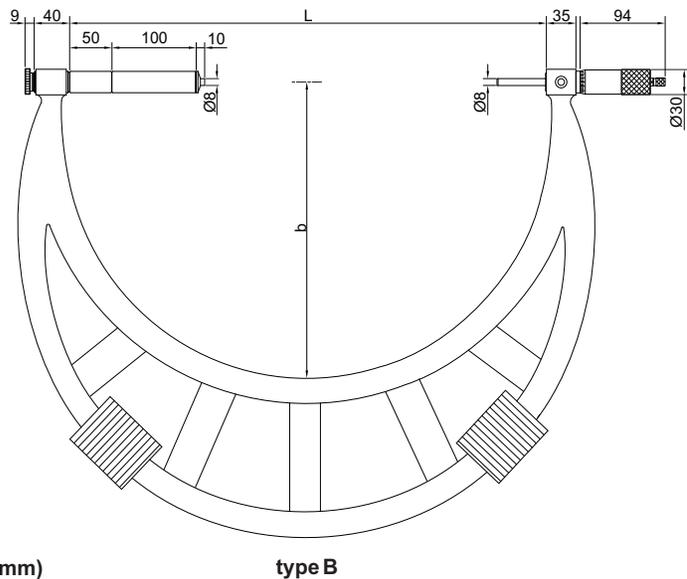
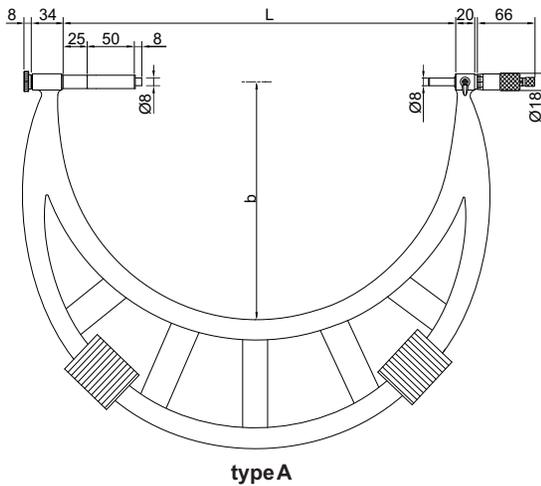


3205-400



adjust collars for different measuring ranges

Unit: mm



(mm)

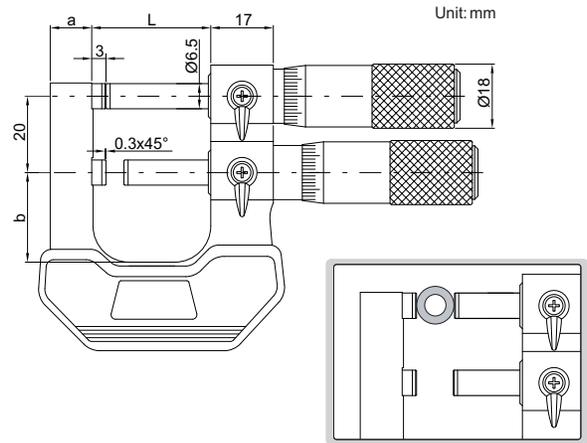
Code	Range	Type	Accuracy	L	b
3205-400	300-400mm	A	11µm	410	250
3205-500	400-500mm	A	13µm	510	295
3205-600	500-600mm	A	14µm	610	345
3205-700	600-700mm	A	16µm	710	395
3205-800	700-800mm	A	18µm	810	445
3205-900	800-900mm	A	20µm	910	495
3205-1000	900-1000mm	A	22µm	1010	545
3205-1200	1000-1200mm	B	22µm	1210	645
3205-1400	1200-1400mm	B	24µm	1410	745
3205-1600	1400-1600mm	B	28µm	1610	845
3205-1800	1600-1800mm	B	31µm	1810	945
3205-2000	1800-2000mm	B	34µm	2010	1045

- Graduation 0.01mm
- Adjust collars for different measuring ranges
- Ratchet stop
- Carbide measuring faces
- Supplied with setting standards

## LIMIT MICROMETER



3235-25A



Unit: mm

Code	Range	Accuracy	L	a	b
3235-25A	0-25mm	4µm	32	12	24
3235-50A	25-50mm	4µm	57	15	32

(mm)

- Used as GO/NO-GO gauge by setting upper and lower limits
- Graduation 0.002mm
- Ratchet stop
- Carbide measuring faces
- Supplied with setting standard(except 0-25mm)

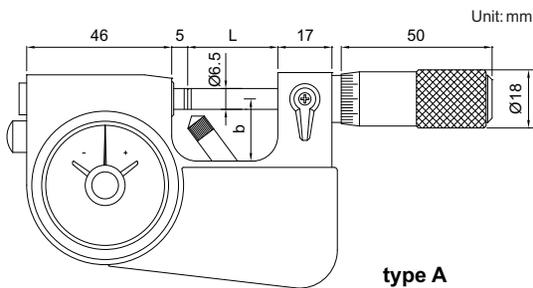
## INDICATING MICROMETER



3332-25

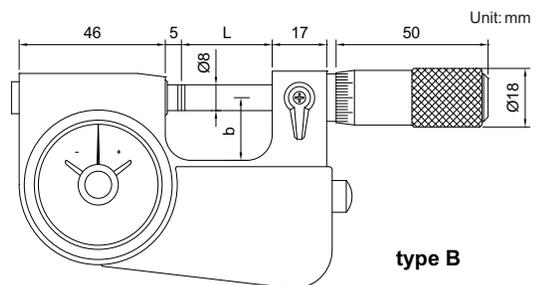


3332-25B



Unit: mm

type A



Unit: mm

type B

Code	Micrometer head range	Micrometer head accuracy	Type	L	b
3332-25	0-25mm	4µm	A	28.5	19
3332-50	25-50mm	4µm	A	53.5	30
3332-75	50-75mm	5µm	A	78.5	45
3332-100	75-100mm	5µm	A	103.5	57
3332-25B	0-25mm	4µm	B	28.5	19

(mm)

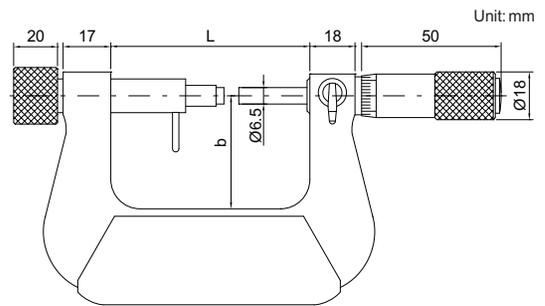
- Micrometer head graduation: 0.002mm
- Dial indicator: range ±0.04mm, graduation 0.001mm, accuracy 0.001mm
- Carbide measuring faces
- Supplied with setting standards(except 0-25mm)

## INDICATING MICROMETER

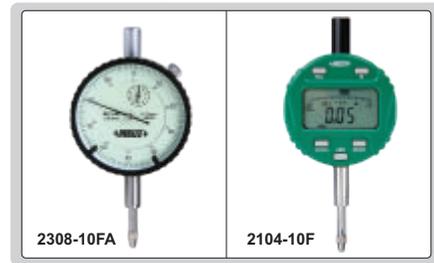


dial indicator  
is not included

3331-25A



optional indicators



Code	Micrometer head range	Micrometer head accuracy	L	b
3331-25A	0-25mm	4µm	67	38
3331-50A	25-50mm	4µm	92.4	50
3331-75A	50-75mm	5µm	117.6	62
3331-100A	75-100mm	5µm	143	70
3331-125A	100-125mm	6µm	168.2	82
3331-150A	125-150mm	6µm	192	94.5
3331-175A	150-175mm	7µm	217	107

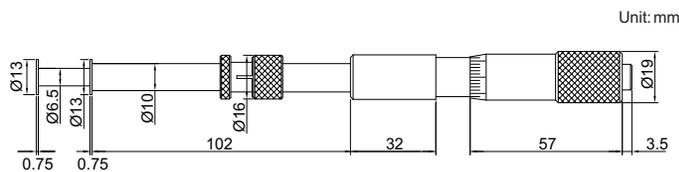
(mm)

- Micrometer head graduation 0.01mm
- Anvil retracting range: 8mm
- Optional indicators:
  - dial indicator, range 0-10mm, graduation 0.01mm (code **2308-10FA**)
  - digital indicator, range 0-12.7mm/0-0.5", resolution 0.01mm/0.0005" (code **2104-10F**)
- Carbide measuring faces
- Supplied with setting standards(except 0-25mm)

## GROOVE MICROMETER



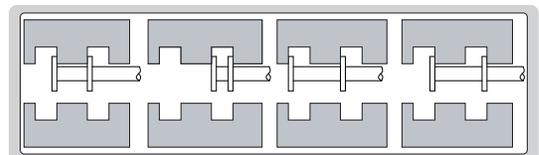
3287-25A



Unit: mm

Code	Range(outside)	Range(inside)	Accuracy
3287-25A	0-25mm	1.6-26.5mm	10µm
3287-50A	25-50mm	26.5-51.5mm	10µm
3287-75A	50-75mm	51.5-76.5mm	10µm
3287-100A	75-100mm	76.5-101.5mm	10µm

- Graduation 0.01mm
- Measure width of grooves inside bores
- Two graduations for inside and outside measurement



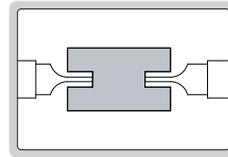
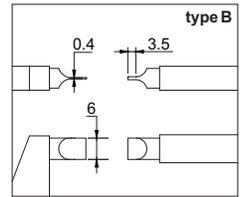
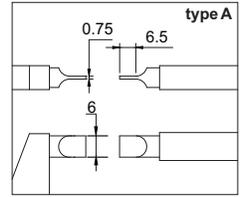
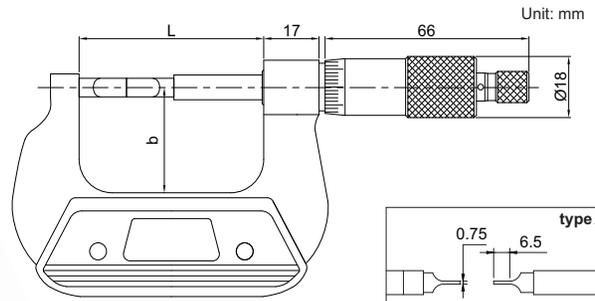
## BLADE MICROMETER



3232-25A

Code	Range	Type	Accuracy	L	b
3232-25A	0-25mm	A	4μm	57	32
3232-50A	25-50mm	A	4μm	82	44.5
3232-75A	50-75mm	A	5μm	107	57
3232-100A	75-100mm	A	5μm	132.6	69.5
3232-125A	100-125mm	A	6μm	158	82
3232-150A	125-150mm	A	6μm	183.4	94.5
3232-175A	150-175mm	A	7μm	208.8	107
3232-25BA	0-25mm	B	4μm	57	32
3232-50BA	25-50mm	B	4μm	82	44.5

(mm)



- Measure the groove diameter of shafts and keyways
- Graduation 0.01mm
- Non-rotating spindle
- Ratchet stop
- Supplied with setting standards(except 0-25mm)

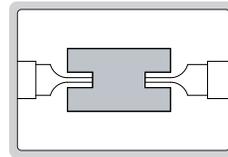
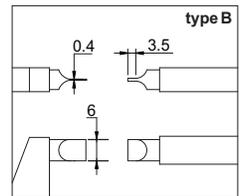
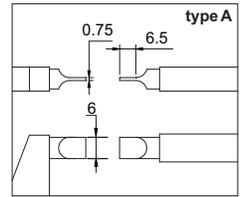
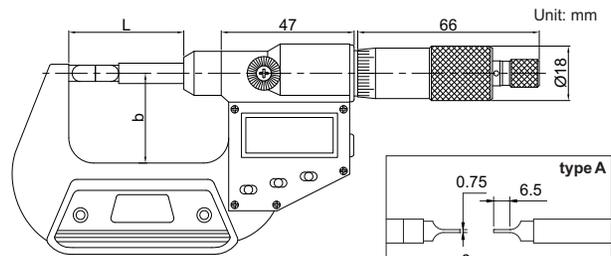
## DIGITAL BLADE MICROMETER



3532-25A

Code	Range	Type	Accuracy	L	b
3532-25A	0-25mm/0-1"	A	±4μm	57	32
3532-50A	25-50mm/1-2"	A	±4μm	82	44.5
3532-75A	50-75mm/2-3"	A	±5μm	107	57
3532-100A	75-100mm/3-4"	A	±5μm	132.6	69.5
3532-25BA	0-25mm/0-1"	B	±4μm	57	32
3532-50BA	25-50mm/1-2"	B	±4μm	82	44.5

(mm)

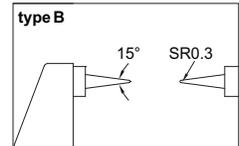
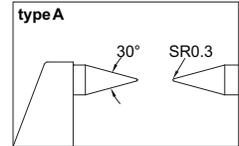
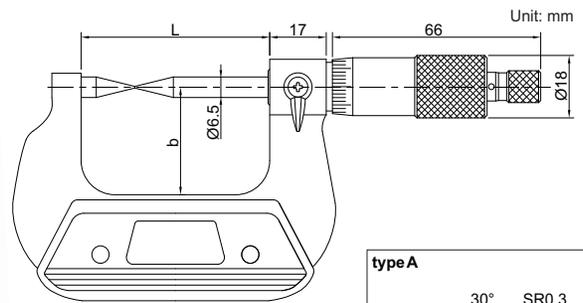


- Measure the groove diameter of shafts and keyways
- Resolution 0.001mm/0.00005"
- Non-rotating spindle
- Button function: on/off, set, mm/inch, ABS/INC, data output
- RS232 data output
- SR44 or LR44 battery, automatic power off
- Ratchet stop
- Supplied with setting standards(except 0-25mm/0-1")
- Optional accessory: SPC cable (page A1-A2)

## POINT MICROMETER



3230-25A



(mm)

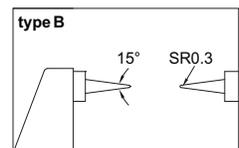
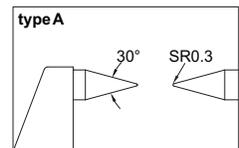
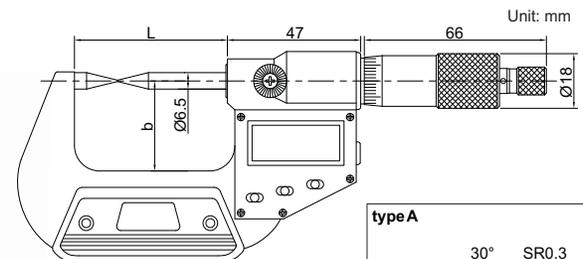
Code	Range	Type	Accuracy	L	b
3230-25A	0-25mm	A	4µm	57	32
3230-50A	25-50mm	A	4µm	82	44.5
3230-75A	50-75mm	A	5µm	107	57
3230-100A	75-100mm	A	5µm	132.6	69.5
3230-25BA	0-25mm	B	4µm	57	32
3230-50BA	25-50mm	B	4µm	82	44.5
3230-75BA	50-75mm	B	5µm	107	57
3230-100BA	75-100mm	B	5µm	132.6	69.5

- Measure the web thickness of drills, small grooves and keyways
- Graduation 0.01mm
- Ratchet stop
- Carbide tips
- Supplied with setting standards(except 0-25mm)

## DIGITAL POINT MICROMETER



3530-25A



(mm)

Code	Range	Type	Accuracy	L	b
3530-25A	0-25mm/0-1"	A	±4µm	57	32
3530-50A	25-50mm/1-2"	A	±4µm	82	44.5
3530-75A	50-75mm/2-3"	A	±5µm	107	57
3530-100A	75-100mm/3-4"	A	±5µm	132.6	69.5
3530-25BA	0-25mm/0-1"	B	±4µm	57	32
3530-50BA	25-50mm/1-2"	B	±4µm	82	44.5
3530-75BA	50-75mm/2-3"	B	±5µm	107	57
3530-100BA	75-100mm/3-4"	B	±5µm	132.6	69.5

- Measure the web thickness of drills, small grooves and keyways
- Resolution 0.001mm/0.00005"
- IP54 waterproof
- Button function: on/off, set, mm/inch, ABS/INC, data output
- RS232 data output
- SR44 or LR44 battery, automatic power off
- Ratchet stop
- Carbide tips
- Supplied with setting standards(except 0-25mm/0-1")
- Optional accessory: SPC cable (page A1-A2)

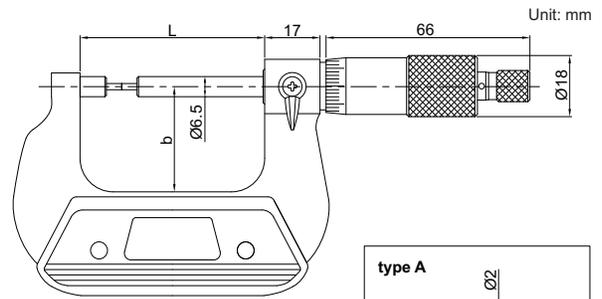
## SPLINE MICROMETER



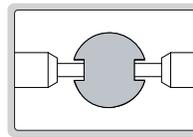
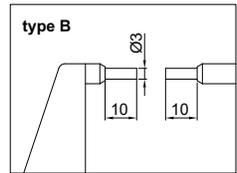
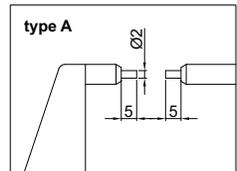
3233-25BA

Code	Range	Type	Accuracy	L	b
3233-25A	0-25mm	A	4 $\mu$ m	57	32
3233-25BA	0-25mm	B	4 $\mu$ m	57	32
3233-50BA	25-50mm	B	4 $\mu$ m	82	44.5
3233-75BA	50-75mm	B	5 $\mu$ m	107	57
3233-100BA	75-100mm	B	5 $\mu$ m	132.6	69.5
3233-125BA	100-125mm	B	6 $\mu$ m	158	82
3233-150BA	125-150mm	B	6 $\mu$ m	183.4	94.5
3233-175BA	150-175mm	B	7 $\mu$ m	208.8	107

(mm)



Unit: mm



- Measure splined shafts, slots and keyways
- Graduation 0.01mm
- Ratchet stop
- Carbide measuring faces
- Supplied with setting standards(except 0-25mm)

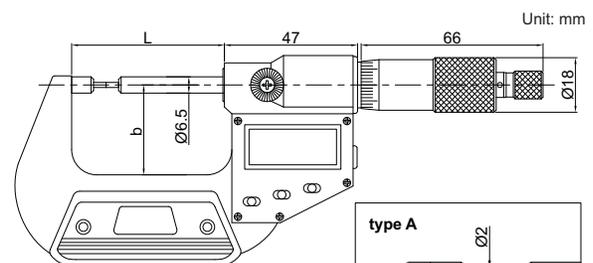
## DIGITAL SPLINE MICROMETER



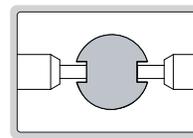
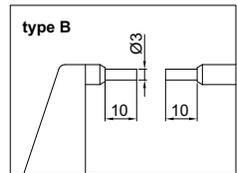
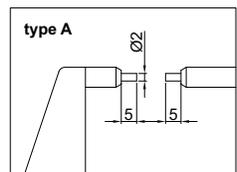
3533-25BA

Code	Range	Type	Accuracy	L	b
3533-25A	0-25mm/0-1"	A	±4 $\mu$ m	57	32
3533-50A	25-50mm/1-2"	A	±4 $\mu$ m	82	44.5
3533-75A	50-75mm/2-3"	A	±5 $\mu$ m	107	57
3533-100A	75-100mm/3-4"	A	±5 $\mu$ m	132.6	69.5
3533-25BA	0-25mm/0-1"	B	±4 $\mu$ m	57	32
3533-50BA	25-50mm/1-2"	B	±4 $\mu$ m	82	44.5
3533-75BA	50-75mm/2-3"	B	±5 $\mu$ m	107	57
3533-100BA	75-100mm/3-4"	B	±5 $\mu$ m	132.6	69.5

(mm)



Unit: mm



- Measure splined shafts, slots and keyways
- Resolution 0.001mm/0.00005"
- IP54 waterproof
- Button function: on/off, set, mm/inch, ABS/INC, data output
- RS232 data output
- SR44 or LR44 battery, automatic power off
- Ratchet stop
- Carbide measuring faces
- Supplied with setting standards(except 0-25mm/0-1")
- Optional accessory: SPC cable (page A1-A2)

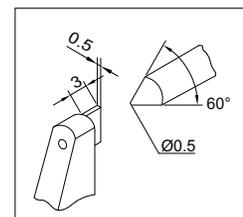
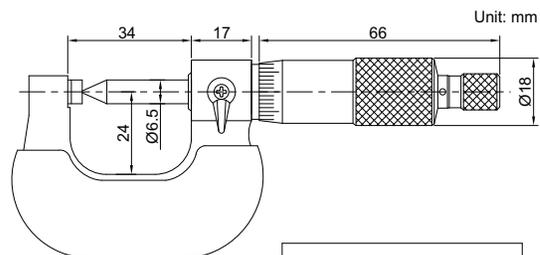
## CRIMP HEIGHT MICROMETER



3266-25BA

- Measure the height of crimp contact
- Graduation 0.01mm
- Ratchet stop

Code	Range	Accuracy
3266-25BA	0-25mm	4μm



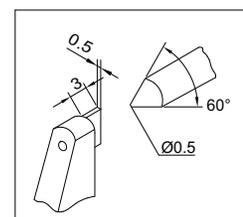
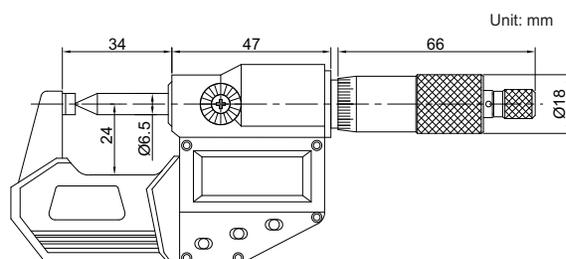
## DIGITAL CRIMP HEIGHT MICROMETER



3566-25BA

- Measure the height of crimp contact
- Resolution 0.001mm/0.00005"
- IP54 waterproof
- Button function: on/off, set, mm/inch, ABS/INC, data output
- RS232 data output
- SR44 or LR44 battery, automatic power off
- Ratchet stop
- Optional accessory: SPC cable (page A1-A2)

Code	Range	Accuracy
3566-25BA	0-25mm/0-1"	±4μm

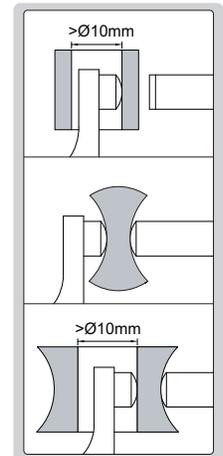
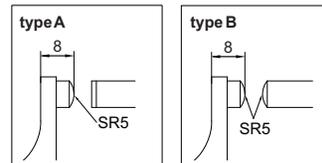
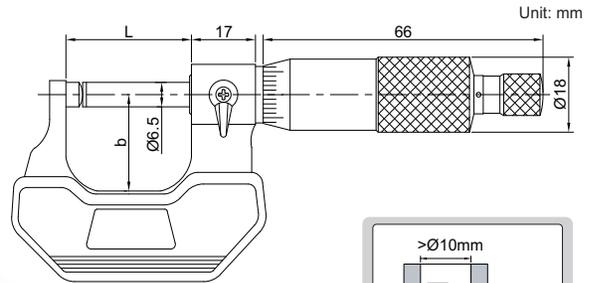


## SPHERICAL ANVIL TUBE MICROMETER



3260-25A

(mm)					
Code	Range	Type	Accuracy	L	b
3260-25A	0-25mm	A	4μm	32	24
3260-50A	25-50mm	A	4μm	57	32
3260-75A	50-75mm	A	5μm	82	44.5
3260-100A	75-100mm	A	5μm	107	57
3260-25SA	0-25mm	B	4μm	32	24
3260-50SA	25-50mm	B	4μm	57	32
3260-75SA	50-75mm	B	5μm	82	44.5
3260-100SA	75-100mm	B	5μm	107	57



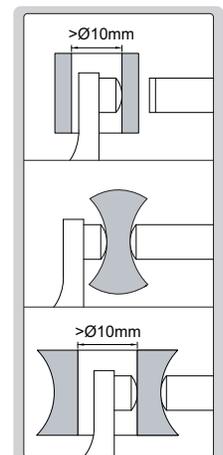
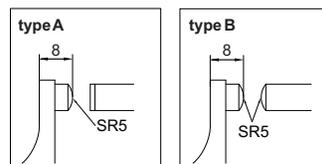
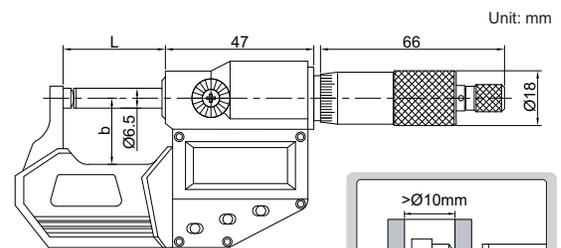
- Measure wall thickness of tubes
- Graduation 0.01mm
- Ratchet stop
- Carbide measuring faces
- Supplied with setting standards(except 0-25mm)

## DIGITAL SPHERICAL ANVIL TUBE MICROMETER



3560-25A

(mm)					
Code	Range	Type	Accuracy	L	b
3560-25A	0-25mm/0-1"	A	±4μm	32	24
3560-50A	25-50mm/1-2"	A	±4μm	57	32
3560-75A	50-75mm/2-3"	A	±5μm	82	44.5
3560-100A	75-100mm/3-4"	A	±5μm	107	57
3560-25SA	0-25mm/0-1"	B	±4μm	32	24
3560-50SA	25-50mm/1-2"	B	±4μm	57	32
3560-75SA	50-75mm/2-3"	B	±5μm	82	44.5
3560-100SA	75-100mm/3-4"	B	±5μm	107	57



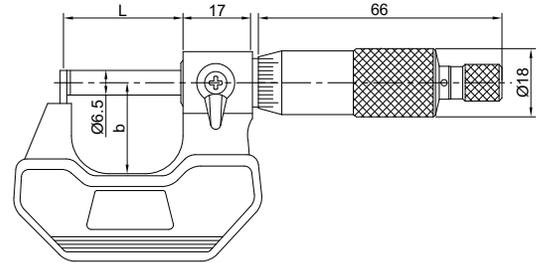
- Measure wall thickness of tubes
- Resolution 0.001mm/0.00005"
- IP54 waterproof
- Button function: on/off, set, mm/inch, ABS/INC, data output
- RS232 data output
- SR44 or LR44 battery, automatic power off
- Ratchet stop
- Carbide measuring faces
- Supplied with setting standards(except 0-25mm/0-1")
- Optional accessory: SPC cable (page A1-A2)

## CYLINDRICAL ANVIL TUBE MICROMETER

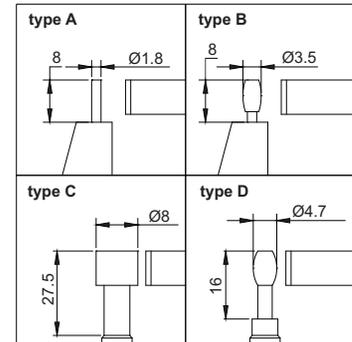
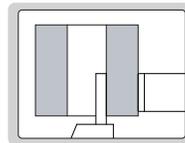
Unit: mm



3261-25A



(mm)					
Code	Range	Type	Accuracy	L	b
3261-25A	0-25mm	A	6µm	31	24
3261-50A	25-50mm	A	6µm	57	32
3261-25BA	0-25mm	B	6µm	31	24
3261-50BA	25-50mm	B	6µm	57	32
3261-25CA	0-25mm	C	6µm	31	24
3261-25DA	0-25mm	D	6µm	31	24



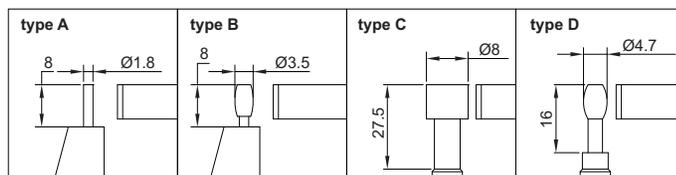
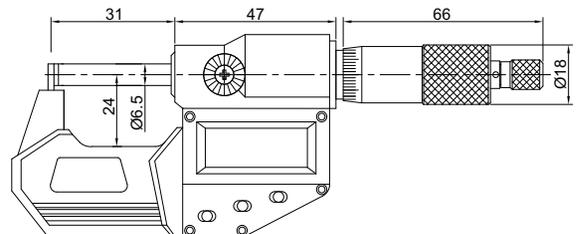
- Measure wall thickness of tubes
- Graduation 0.01mm
- Ratchet stop
- Carbide spindle tip
- Supplied with setting standards(except 0-25mm)

## DIGITAL CYLINDRICAL ANVIL TUBE MICROMETER

Unit: mm



3561-25A



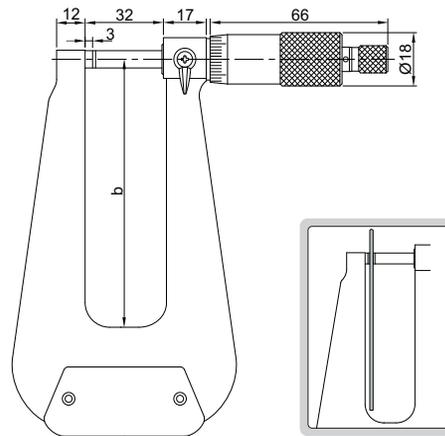
Code	Range	Type	Accuracy
3561-25A	0-25mm/0-1"	A	±6µm
3561-25BA	0-25mm/0-1"	B	±6µm
3561-25CA	0-25mm/0-1"	C	±6µm
3561-25DA	0-25mm/0-1"	D	±6µm

- Measure wall thickness of tubes
- Resolution 0.001mm/0.00005"
- IP54 waterproof
- Button function: on/off, set, mm/inch, ABS/INC, data output
- RS232 data output
- SR44 or LR44 battery, automatic power off
- Ratchet stop
- Carbide spindle tip
- Supplied with setting standards(except 0-25mm/0-1")
- Optional accessory: SPC cable (page A1-A2)

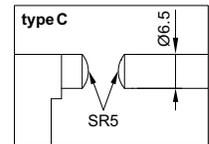
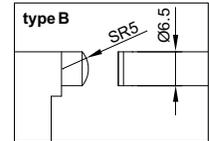
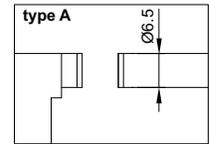
## SHEET METAL MICROMETER



3239-253



Unit: mm



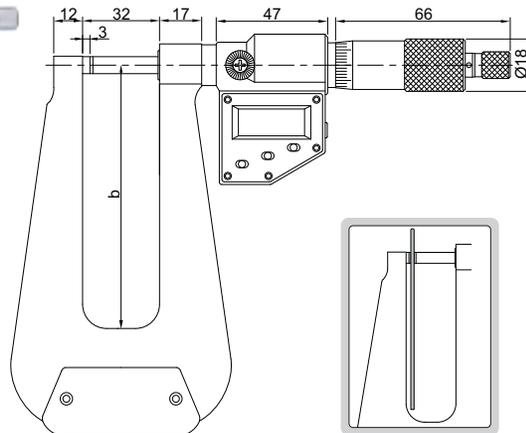
Code	Range	Type	Accuracy	b (mm)
3239-253	0-25mm	A	5µm	155
3239-253F	0-25mm	B	5µm	155
3239-254F	0-25mm	B	6µm	310
3239-253S	0-25mm	C	5µm	155

- Deep frame suitable for sheet metal, paper and plastic
- Graduation 0.01mm
- Ratchet stop
- Carbide measuring faces

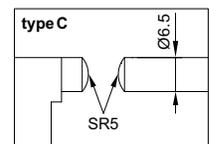
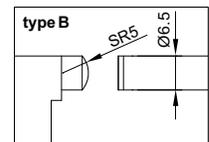
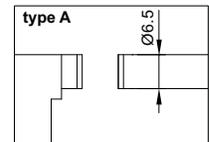
## DIGITAL SHEET METAL MICROMETER



3539-253A



Unit: mm



Code	Range	Type	Accuracy	b (mm)
3539-253A	0-25mm/0-1"	A	±5µm	155
3539-253FA	0-25mm/0-1"	B	±5µm	155
3539-254FA	0-25mm/0-1"	B	±6µm	310
3539-253SA	0-25mm/0-1"	C	±5µm	155

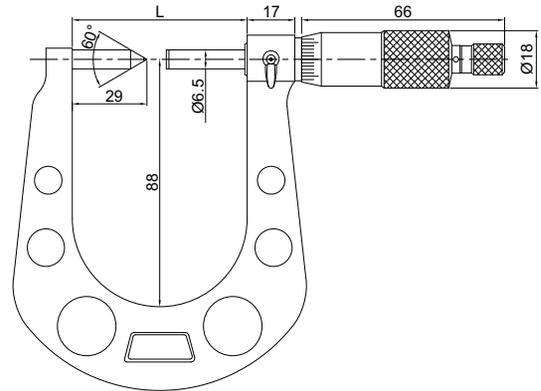
- Deep frame suitable for sheet metal, paper and plastic
- Resolution 0.001mm/0.00005"
- IP54 waterproof
- Button function: on/off, set, mm/inch, ABS/INC, data output
- RS232 data output
- SR44 or LR44 battery, automatic power off
- Ratchet stop
- Carbide measuring faces
- Optional accessory: SPC cable (page A1-A2)

## DISK BRAKE MICROMETER

Unit: mm



3288-33A



Code	Range	Accuracy	L
3288-33A	7.6-33mm	5µm	64.5
3288-50A	25-50mm	5µm	82

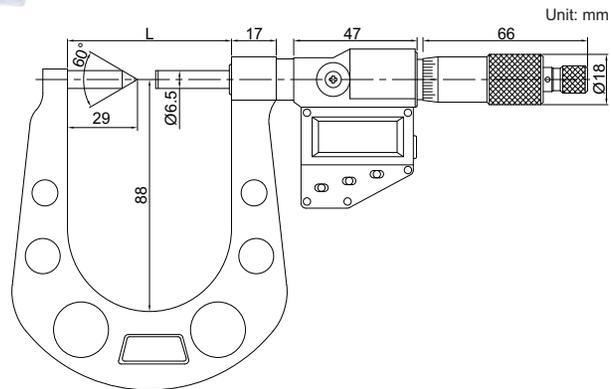
(mm)

- Measure thickness of disk brakes
- Graduation 0.01mm
- Ratchet stop
- Carbide measuring faces
- Supplied with setting standards

## DIGITAL DISK BRAKE MICROMETER



3588-33A



Unit: mm

Code	Range	Accuracy	L
3588-33A	7.6-33mm/0.3-1.3"	±5µm	64.5
3588-50A	25-50mm/1-2"	±5µm	82

(mm)

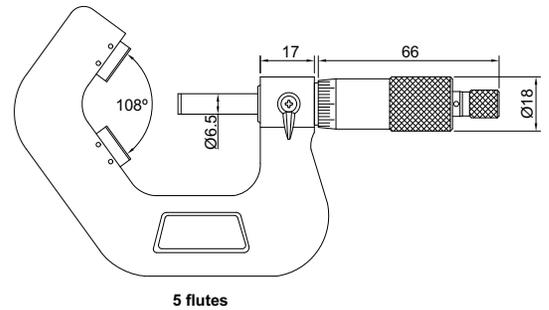
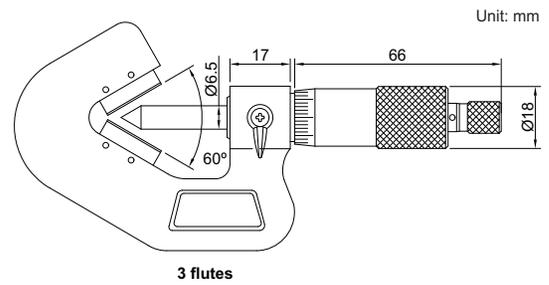
- Measure thickness of disk brakes
- Resolution 0.001mm/0.00005"
- IP54 waterproof
- Button function: on/off, set, mm/inch, ABS/INC, data output
- RS232 data output
- SR44 or LR44 battery, automatic power off
- Ratchet stop
- Carbide measuring faces
- Supplied with setting standards
- Optional accessory: SPC cable (page A1-A2)

## V-ANVIL MICROMETER



3290-153A

Code	Range	Flutes	Accuracy
3290-153A	1-15mm	3	4μm
3290-203A	5-20mm	3	4μm
3290-353A	20-35mm	3	5μm
3290-503A	35-50mm	3	5μm
3290-653A	50-65mm	3	6μm
3290-803A	65-80mm	3	6μm
3290-953A	80-95mm	3	7μm
3290-255A	5-25mm	5	4μm
3290-455A	25-45mm	5	5μm
3290-655A	45-65mm	5	6μm
3290-855A	65-85mm	5	7μm



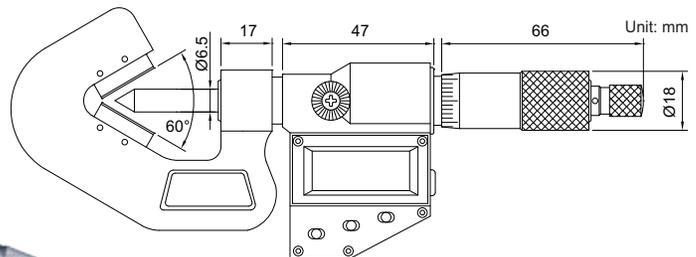
- Measure the outside diameter of cutting tools (such as taps, reamers, end mills) with 3 or 5 flutes
- Graduation 0.01mm
- Ratchet stop
- Carbide measuring faces
- Supplied with setting standards

## DIGITAL V-ANVIL MICROMETER



3590-153A

Code	Range	Flutes	Accuracy
3590-153A	1-15mm/0.04-0.6"	3	±4μm
3590-203A	5-20mm/0.2-0.8"	3	±4μm
3590-353A	20-35mm/0.8-1.4"	3	±5μm
3590-503A	35-50mm/1.4-2.0"	3	±5μm



- Measure the outside diameter of cutting tools (such as taps, reamers, end mills) with 3 flutes
- Resolution 0.001mm/0.00005"
- IP54 waterproof
- Button function: on/off, set, mm/inch, ABS/INC, data output
- RS232 data output
- SR44 or LR44 battery, automatic power off
- Ratchet stop
- Carbide measuring faces
- Supplied with setting standards
- Optional accessory: SPC cable (page A1-A2)

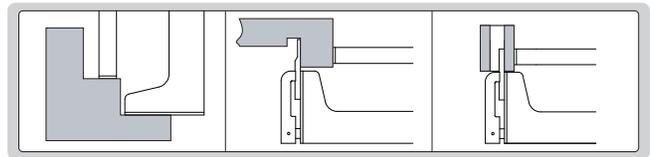
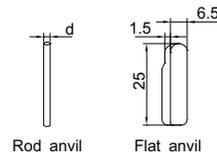
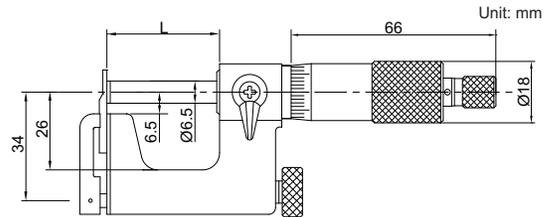
## INTERCHANGEABLE ANVIL MICROMETER



3262-25A

- Measure tube thickness, shoulder edge distance, rivet head height, etc.
- Supplied with flat anvil and rod anvil
- Graduation 0.01mm
- Ratchet stop
- Carbide spindle tip
- Setting standards are included(except 0-25mm)

(mm)				
Code	Range	Accuracy	L	d
3262-25A	0-25mm	4μm	28.5	Ø3
3262-50A	25-50mm	4μm	53.5	Ø5



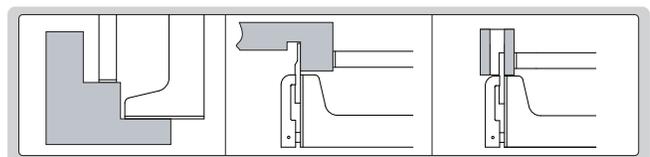
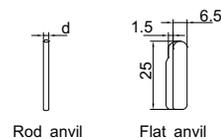
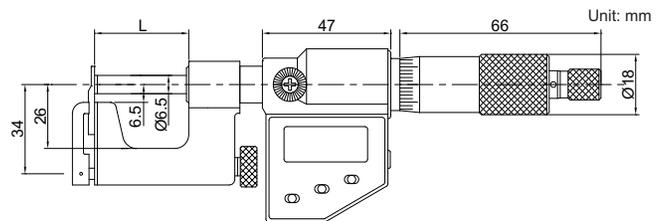
## DIGITAL INTERCHANGEABLE ANVIL MICROMETER



3562-25A

- Measure tube thickness, shoulder edge distance, rivet head height, etc.
- Supplied with flat anvil and rod anvil
- Resolution 0.001mm/0.00005"
- IP54 waterproof
- Button function: on/off, set, mm/inch, ABS/INC, data output
- RS232 data output
- SR44 or LR44 battery, automatic power off
- Ratchet stop
- Carbide spindle tip
- Setting standards are included(except 0-25mm/0-1")
- Optional accessory: SPC cable (page A1-A2)

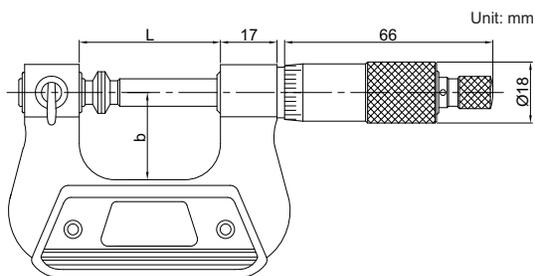
(mm)				
Code	Range	Accuracy	L	d
3562-25A	0-25mm/0-1"	±4μm	28.5	Ø3
3562-50A	25-50mm/1-2"	±4μm	53.5	Ø5



# UNIVERSAL MICROMETER



3280-25A



- Graduation 0.01mm
- Ratchet stop
- Supplied with 7 pairs of anvil/spindle tip
- Setting standards are included (except 0-25mm)
- Optional accessory: 55° anvil/spindle tip (code **3280-SP1** and **3280-SP2**)

Code	Range	Accuracy	L	b
3280-25A	0-25mm	4µm	42	26
3280-50A	25-50mm	4µm	67	38

## standard anvil/spindle tip

Unit: mm

Flat		
Spherical		
Spline		
Disk		
Blade		
Knife-edge		
Point		

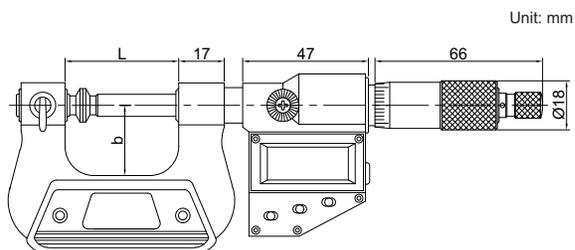
## optional 55° anvil/spindle tip

Code <b>3280-SP1</b> Knife-edge	
Code <b>3280-SP2</b> Point	

## DIGITAL UNIVERSAL MICROMETER



3580-25A



Unit: mm

Code	Range	Accuracy	L	b
3580-25A	0-25mm/0-1"	±4µm	42	26
3580-50A	25-50mm/1-2"	±4µm	67	38

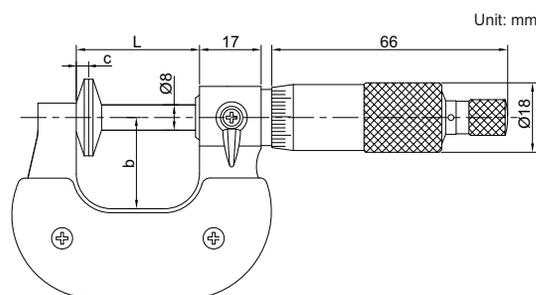
(mm)

- Resolution 0.001mm/0.00005"
- IP54 waterproof
- Button function: on/off, set, mm/inch, ABS/INC, data output
- RS232 data output
- SR44 or LR44 battery, automatic power off
- Ratchet stop
- Supplied with 7 pairs of anvil/spindle tip (same as series 3280, previous page)
- Setting standards are included (except 0-25mm/0-1")
- Optional accessory: 55° anvil/spindle tip code 3280-SP1 and 3280-SP2 (same as series 3280, previous page), SPC cable (page A1-A2)

## DISK MICROMETER



3282-25

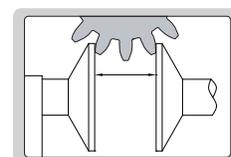
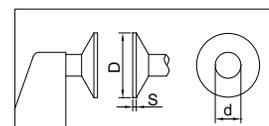


Unit: mm

- Measure root tangent length of gear
- Graduation 0.01mm
- Ratchet stop
- Supplied with setting standards (except 0-25mm)

Code	Range	Accuracy	L	b	c	D	S	d
3282-25	0-25mm	4µm	34	24	3.3	Ø20	0.7	Ø8
3282-50	25-50mm	4µm	59	32	3.3	Ø20	0.7	Ø8
3282-75	50-75mm	5µm	85	45	3.3	Ø20	0.7	Ø8
3282-100	75-100mm	5µm	110	57	3.3	Ø20	0.7	Ø8
3282-125	100-125mm	6µm	138	70	4.3	Ø30	0.9	Ø12
3282-150	125-150mm	6µm	163	82	4.3	Ø30	0.9	Ø12
3282-175	150-175mm	7µm	188	95	4.3	Ø30	0.9	Ø12
3282-200	175-200mm	7µm	214	107	4.3	Ø30	0.9	Ø12

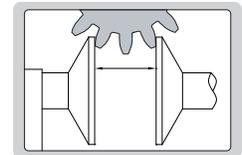
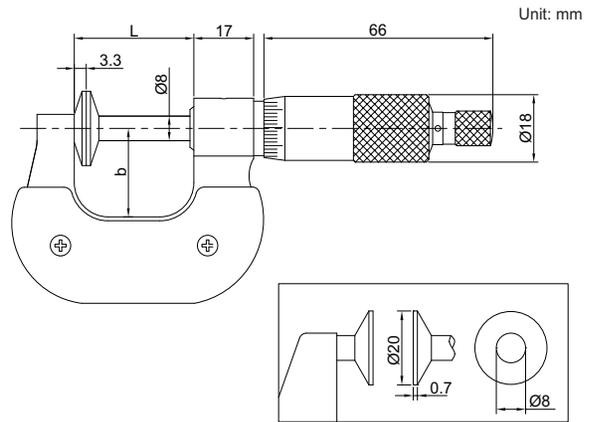
(mm)



## NON ROTATING SPINDLE DISK MICROMETER



3294-25



(mm)				
Code	Range	Accuracy	L	b
3294-25	0-25mm	4µm	34	24
3294-50	25-50mm	4µm	59	32
3294-75	50-75mm	5µm	85	45
3294-100	75-100mm	5µm	110	57

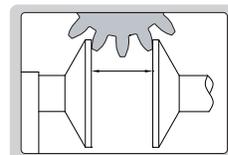
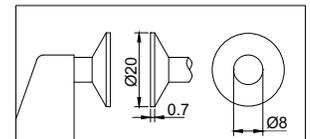
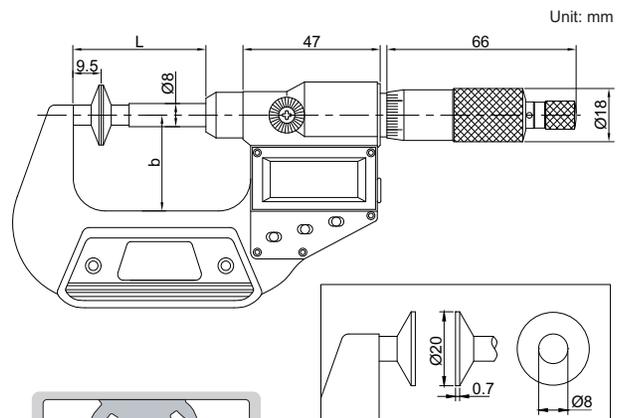
- Measure root tangent length of gear
- Graduation 0.01mm
- Non-rotating spindle
- Ratchet stop
- Supplied with setting standards(except 0-25mm)

## DIGITAL NON ROTATING SPINDLE DISK MICROMETER



3594-25A

- Measure root tangent length of gear
- Resolution 0.001mm/0.00005"
- Non-rotating spindle
- Button function: on/off, set, mm/inch, ABS/INC, data output
- RS232 data output
- SR44 or LR44 battery, automatic power off
- Ratchet stop
- Supplied with setting standards(except 0-25mm/0-1")
- Optional accessory: SPC cable (page A1-A2)



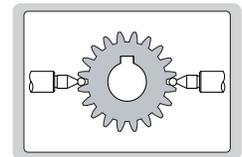
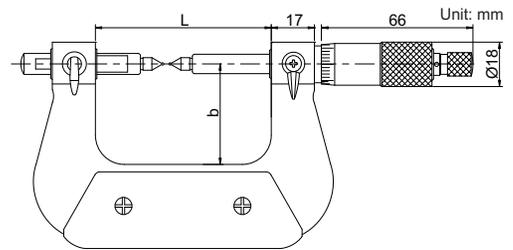
(mm)				
Code	Range	Accuracy	L	b
3594-25A	0-25mm/0-1"	±4µm	43	32
3594-50A	25-50mm/1-2"	±4µm	68	44.5
3594-75A	50-75mm/2-3"	±5µm	93	57
3594-100A	75-100mm/3-4"	±5µm	118.5	70

## GEAR TOOTH MICROMETER

ball tips are not included



3291-25



- Measure over-pin diameter of gears
- Graduation 0.01mm
- Ratchet stop
- Supplied with setting standards(except 0-25mm)
- Optional accessory: ball tips(code 7391, next page)

(mm)

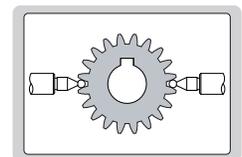
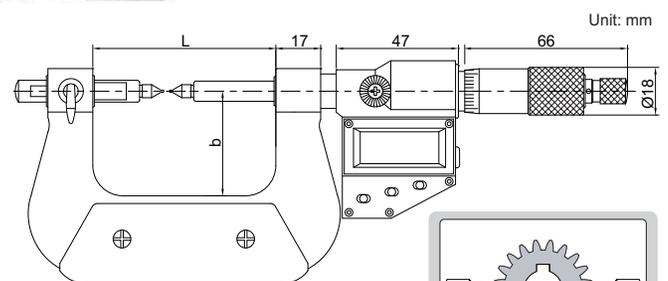
Code	Range	Micrometer head accuracy	Ball tips accuracy	L	b
3291-25	0-25mm	4µm	8µm	67	38
3291-50	25-50mm	4µm	8µm	92.4	50
3291-75	50-75mm	5µm	10µm	117.6	62
3291-100	75-100mm	5µm	10µm	143	70
3291-125	100-125mm	6µm	15µm	168.2	82
3291-150	125-150mm	6µm	15µm	192	94.5
3291-175	150-175mm	7µm	15µm	217	107

## DIGITAL GEAR TOOTH MICROMETER

ball tips are not included



3591-25A



- Measure over-pin diameter of gears
- Resolution 0.001mm/0.00005"
- IP54 waterproof
- Button function: on/off, set, mm/inch, ABS/INC, data output
- RS232 data output
- SR44 or LR44 battery, automatic power off
- Ratchet stop
- Supplied with setting standards(except 0-25mm/0-1")
- Optional accessory: ball tips(code 7391, next page), SPC cable(page A1-A2)

(mm)

Code	Range	Micrometer head accuracy	Ball tips accuracy	L	b
3591-25A	0-25mm/0-1"	±4µm	8µm	67	38
3591-50A	25-50mm/1-2"	±4µm	8µm	92.4	50
3591-75A	50-75mm/2-3"	±5µm	10µm	117.6	62
3591-100A	75-100mm/3-4"	±5µm	10µm	143	70

## BALL TIPS FOR GEAR TOOTH MICROMETER

Code	Ball dia.(D)	Module
7391-T1	SØ1mm	0.6-0.65
7391-T2	SØ1.5mm	0.9-1.0
7391-T3	SØ2.0mm	1.25
7391-T4	SØ2.5mm	1.5
7391-T5	SØ3.0mm	1.75
7391-T6	SØ3.5mm	2
7391-T7	SØ4.0mm	2.25
7391-T8	SØ4.5mm	2.5
7391-T9	SØ5.0mm	2.75
7391-T10	SØ6.0mm	3.5
7391-TS	10 pairs/set, including all above tips	



7391-T5



## MEASURING TIPS FOR SCREW THREAD MICROMETER

Metric and unified thread (60° thread angle)

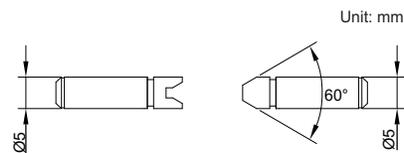
Code	Pitch
7381-T11	0.4-0.5mm/64-48TPI
7381-T12	0.6-0.9mm/44-28TPI
7381-T13	1-1.75mm/24-14TPI
7381-T14	2-3mm/13-9TPI
7381-T15	3.5-5mm/8-5TPI
7381-T16	5.5-7mm/4.5-3.5TPI
7381-TS	6 pairs/set, including all above tips



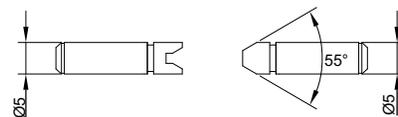
7381-T11

Whitworth thread (55° thread angle)

Code	Pitch
7381-T21	60-48TPI
7381-T22	48-40TPI
7381-T23	40-32TPI
7381-T24	32-24TPI
7381-T25	24-18TPI
7381-T26	18-14TPI
7381-T27	14-10TPI
7381-T28	10-7TPI
7381-T29	7-4.5TPI
7381-T210	4.5-3.5TPI
7381-T2S	10 pairs/set, including all above tips



60° thread angle



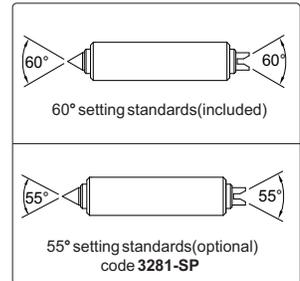
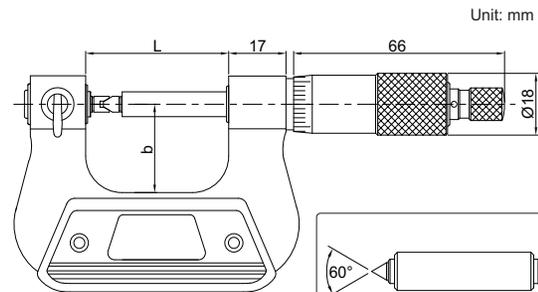
55° thread angle

measuring tips are not included



3281-25A

## SCREW THREAD MICROMETER



(mm)

Code	Range	Micrometer head accuracy	Measuring tips accuracy	L	b
3281-25A	0-25mm	4µm	8µm	42	26
3281-50A	25-50mm	4µm	8µm	67	38
3281-75A	50-75mm	5µm	10µm	92	50
3281-100A	75-100mm	5µm	10µm	117.6	62
3281-125A	100-125mm	6µm	15µm	143	70
3281-150A	125-150mm	6µm	15µm	168.2	82
3281-175A	150-175mm	7µm	15µm	192	94.5
3281-200A	175-200mm	7µm	15µm	217	107

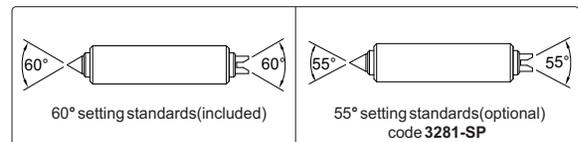
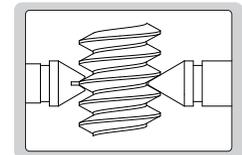
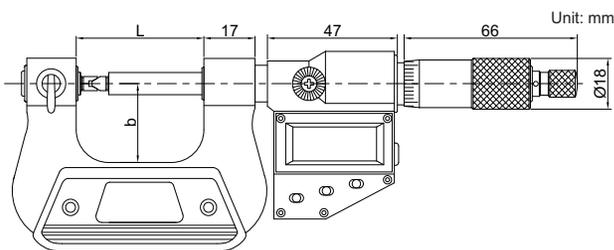
- Measure pitch diameter of screw threads
- Graduation 0.01mm
- Non-rotating spindle
- Ratchet stop
- Supplied with 60° setting standards (except 0-25mm)
- Optional accessory: 55° setting standards (code 3281-SP), measuring tips (code 7381, previous page)

measuring tips are not included



3581-25A

## DIGITAL SCREW THREAD MICROMETER



(mm)

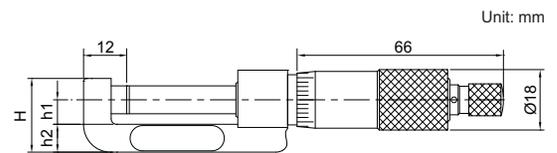
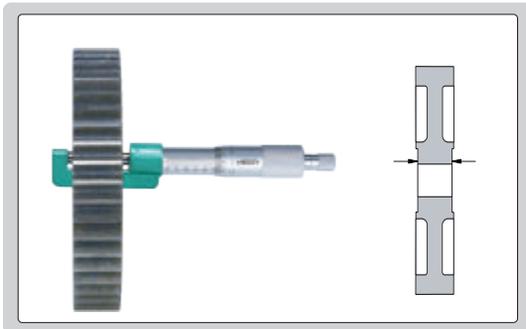
Code	Range	Micrometer head accuracy	Measuring tips accuracy	L	b
3581-25A	0-25mm/0-1"	±4µm	8µm	42	26
3581-50A	25-50mm/1-2"	±4µm	8µm	67	38
3581-75A	50-75mm/2-3"	±5µm	10µm	92	50
3581-100A	75-100mm/3-4"	±5µm	10µm	117.6	62

- Measure pitch diameter of screw threads
- Resolution 0.001mm/0.00005"
- Button function: on/off, set, mm/inch, ABS/INC, data output
- RS232 data output
- SR44 or LR44 battery, automatic power off
- Non-rotating spindle
- Ratchet stop
- Supplied with 60° setting standards (except 0-25mm/0-1")
- Optional accessory: 55° setting standards (code 3281-SP), measuring tips (code 7381, previous page), SPC cable (page A1-A2)

## HUB MICROMETER



3292-25



(mm)

Code	Range	Accuracy	h1	h2	H
3292-25	0-25mm	4µm	6	9	18.7
3292-50	25-50mm	4µm	6.5	11	21.2
3292-75	50-75mm	5µm	6.5	11	21.2
3292-100	75-100mm	5µm	6.5	11	21.2

- Measure hub thickness and shoulder inside a bore
- Graduation 0.01mm
- Ratchet stop
- Carbide measuring faces
- Supplied with setting standards(except 0-25mm)

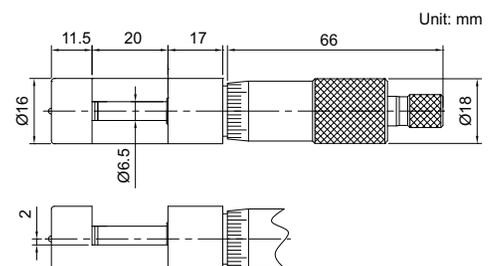
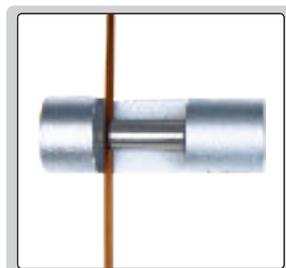
## WIRE MICROMETER



3285-10

- Measure diameter of wires and small balls
- Graduation 0.01mm
- Ratchet stop
- Carbide measuring faces

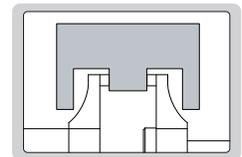
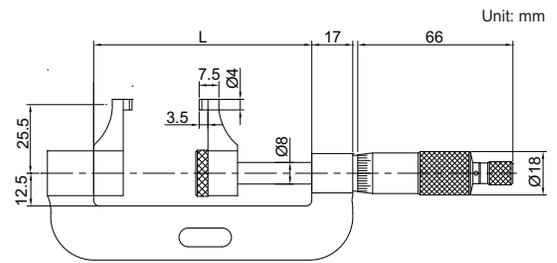
Code	Range	Accuracy
3285-10	0-10mm	4µm



## CALIPER TYPE MICROMETER



3238-25



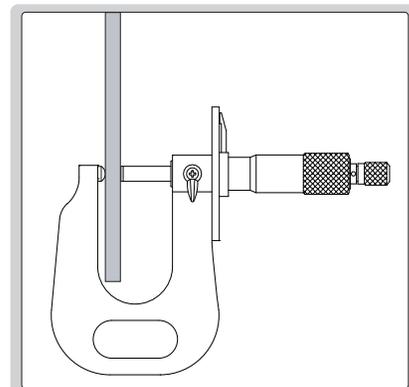
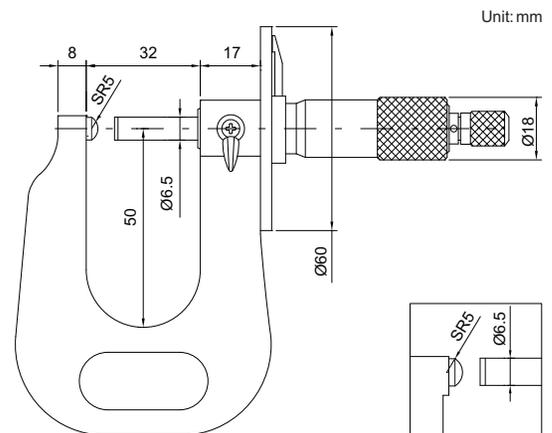
(mm)			
Code	Range	Accuracy	L
3238-25	0-25mm	5 $\mu$ m	56
3238-50	25-50mm	6 $\mu$ m	81

- Graduation 0.01mm
- Non-rotating spindle
- Ratchet stop
- Carbide measuring faces
- Supplied with setting standards(except 0-25mm)

## SHEET METAL MICROMETER



3263-25A



- Measure thickness of sheet metal, paper, plastic and rubber parts
- Graduation 0.01mm
- Ratchet stop
- Carbide measuring faces

Code	Range	Accuracy
3263-25A	0-25mm	4 $\mu$ m

# CAN SEAM MICROMETER



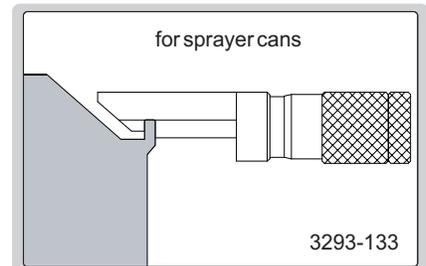
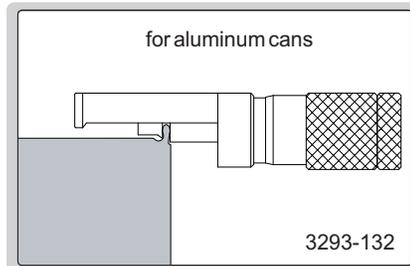
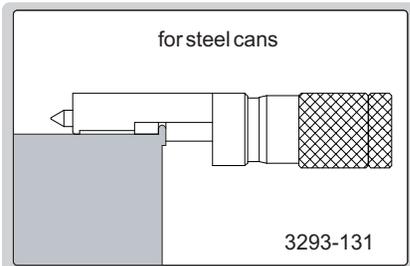
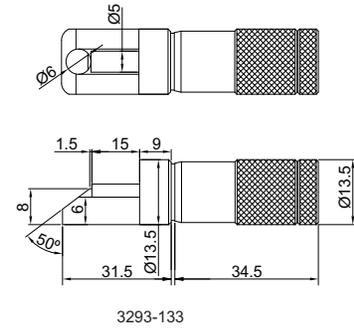
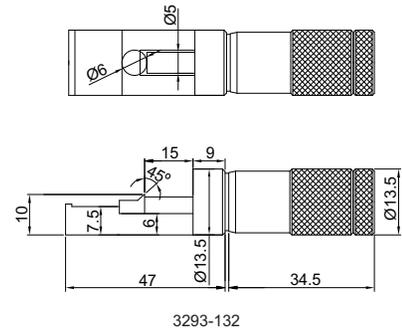
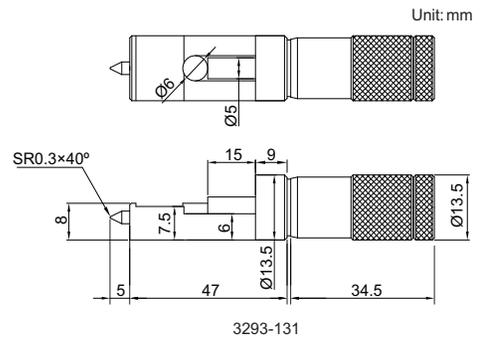
3293-131



3293-132



3293-133



Code	Range	Accuracy
3293-131	0-13mm	4µm
3293-132	0-13mm	4µm
3293-133	0-13mm	4µm

- Measure the width, height and depth of can seams
- Graduation 0.01mm

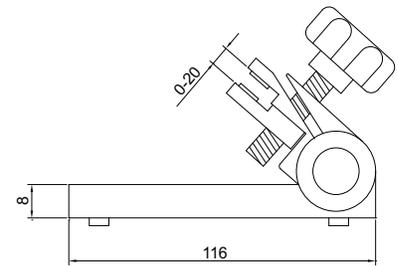
## MICROMETER STAND

Unit: mm

- Suitable for micrometers up to 100mm



6300



Code

6300

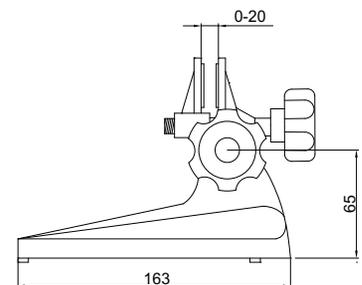
## MICROMETER STAND

Unit: mm

- Suitable for micrometers up to 100mm



6301



Code

6301

## OPTICAL PARALLEL

- Check the flatness and parallelism of measuring faces of micrometer



Code	Parallels included
4184-41	12mm, 12.12mm, 12.25mm, 12.37mm
4184-42	25mm, 25.12mm, 25.25mm, 25.37mm

# MICROMETER SETTING STANDARD

Code	Size	Type	Accuracy	D
6310-25	25mm	A	±1.5μm	Ø7mm
6310-50	50mm	A	±2μm	Ø7mm
6310-75	75mm	A	±2.5μm	Ø7mm
6310-100	100mm	A	±3μm	Ø8mm
6310-125	125mm	A	±3.5μm	Ø8mm
6310-150	150mm	A	±4μm	Ø8mm
6310-175	175mm	A	±4.5μm	Ø8mm
6310-200	200mm	A	±5μm	Ø8mm
6310-225	225mm	A	±5.5μm	Ø8mm
6310-250	250mm	A	±6μm	Ø8mm
6310-275	275mm	A	±6.5μm	Ø8mm
6310-300	300mm	B	±7μm	Ø16mm
6310-325	325mm	B	±7.5μm	Ø16mm
6310-350	350mm	B	±8μm	Ø16mm
6310-375	375mm	B	±8.5μm	Ø16mm
6310-400	400mm	B	±9μm	Ø16mm
6310-425	425mm	B	±9.5μm	Ø16mm
6310-450	450mm	B	±10μm	Ø16mm
6310-475	475mm	B	±10.5μm	Ø16mm
6310-500	500mm	B	±11μm	Ø16mm
6310-525	525mm	B	±11.5μm	Ø16mm
6310-575	575mm	B	±12.5μm	Ø16mm
6310-625	625mm	B	±13.5μm	Ø16mm
6310-675	675mm	B	±14.5μm	Ø16mm
6310-725	725mm	B	±15.5μm	Ø16mm
6310-775	775mm	B	±16.5μm	Ø16mm
6310-825	825mm	B	±17.5μm	Ø16mm
6310-875	875mm	B	±18.5μm	Ø16mm
6310-925	925mm	B	±19.5μm	Ø16mm
6310-975	975mm	B	±20.5μm	Ø16mm
6310-1050	1050mm	B	±22μm	Ø23mm
6310-1150	1150mm	B	±24μm	Ø23mm
6310-1250	1250mm	B	±26μm	Ø23mm
6310-1350	1350mm	B	±28μm	Ø23mm
6310-1450	1450mm	B	±30μm	Ø23mm
6310-1550	1550mm	B	±32μm	Ø23mm
6310-1650	1650mm	B	±34μm	Ø23mm
6310-1750	1750mm	B	±36μm	Ø23mm
6310-1850	1850mm	B	±38μm	Ø23mm
6310-1950	1950mm	B	±40μm	Ø23mm



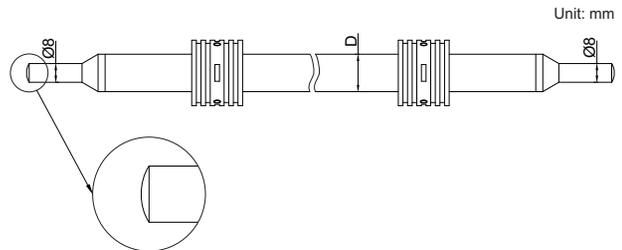
6310-100



type A



6310-300

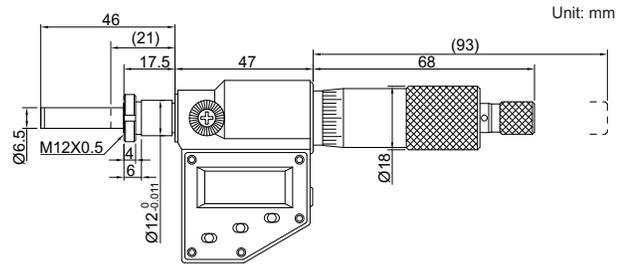


type B

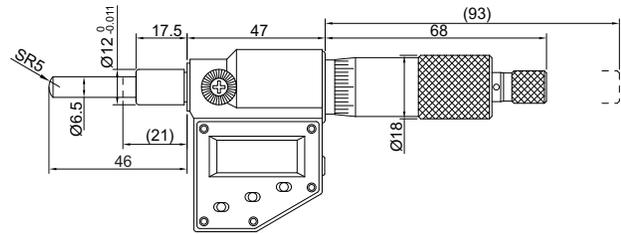
# DIGITAL MICROMETER HEAD



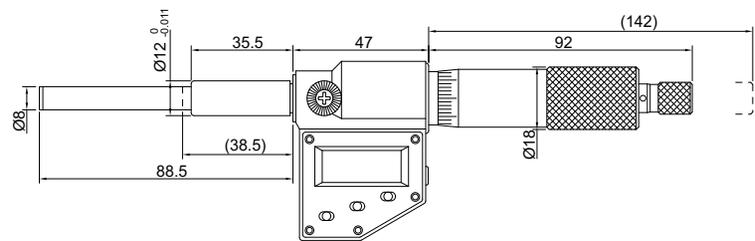
6353-25W



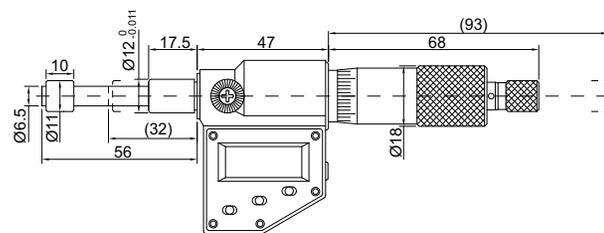
6353-25



6353-25WS



6353-50W



6354-25W

- Resolution 0.001mm/0.00005"
- IP54 waterproof
- Button function: on/off, set, mm/inch, ABS/INC, data output
- RS232 data output
- SR44 or LR44 battery, automatic power off
- Ratchet stop
- Optional accessory: SPC cable (page A1-A2)

## Rotating spindle

Code	Range	Stem	Spindle tip	Accuracy
6353-25	0-25mm/0-1"	with clamp nut	flat (carbide)	±2µm
6353-25W	0-25mm/0-1"	plain	flat (carbide)	±2µm
6353-25S	0-25mm/0-1"	with clamp nut	spherical (SR5)	±2µm
6353-25WS	0-25mm/0-1"	plain	spherical (SR5)	±2µm
6353-50W	0-50mm/0-2"	plain	flat (carbide)	±4µm

## Non-rotating spindle

Code	Range	Stem	Spindle tip	Accuracy
6354-25W	0-25mm/0-1"	plain	flat (carbide)	±2µm

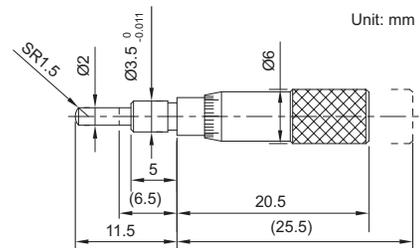
## SMALL MICROMETER HEAD



6372-5WS

- Graduation 0.02mm

Code	Range	Stem	Spindle tip	Accuracy
6372-5WS	0-5mm	plain	spherical (SR1.5)	5µm



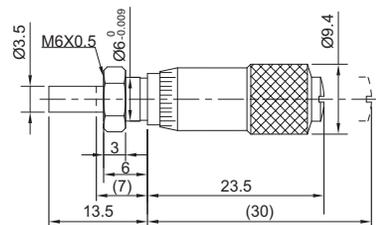
## SMALL MICROMETER HEAD



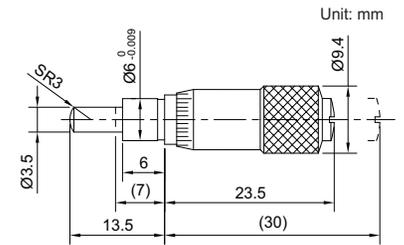
6385-65W

- Graduation 0.01mm

Code	Range	Stem	Spindle tip	Accuracy
6385-65	0-6.5mm	with clamp nut	flat (carbide)	5µm
6385-65W	0-6.5mm	plain	flat (carbide)	5µm
6385-65S	0-6.5mm	with clamp nut	spherical (SR3)	5µm
6385-65WS	0-6.5mm	plain	spherical (SR3)	5µm



6385-65



6385-65WS

## LARGE THIMBLE MICROMETER HEAD



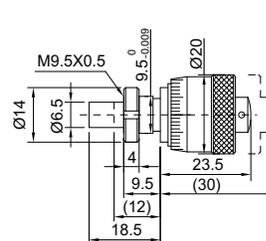
6373-65



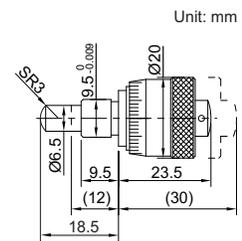
6373-13

- Large thimble diameter for easy reading
- Graduation 0.01mm

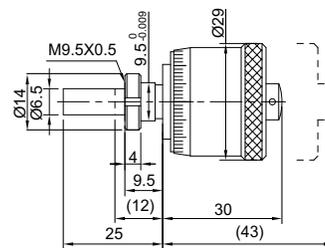
Code	Range	Stem	Spindle tip	Accuracy
6373-65	0-6.5mm	with clamp nut	flat (carbide)	3µm
6373-65W	0-6.5mm	plain	flat (carbide)	3µm
6373-65S	0-6.5mm	with clamp nut	spherical (SR3)	3µm
6373-65WS	0-6.5mm	plain	spherical (SR3)	3µm
6373-13	0-13mm	with clamp nut	flat (carbide)	3µm
6373-13W	0-13mm	plain	flat (carbide)	3µm



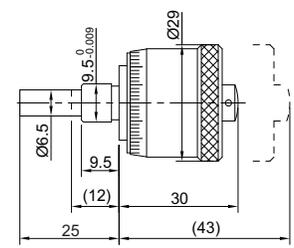
6373-65



6373-65WS



6373-13



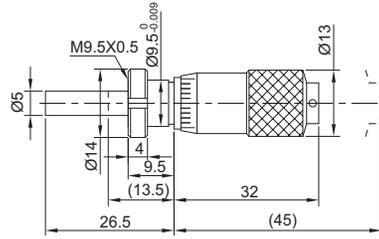
6373-13W

## MICROMETER HEAD

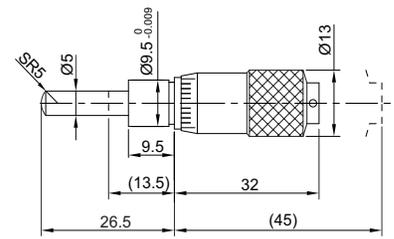
Unit: mm



6386-13W



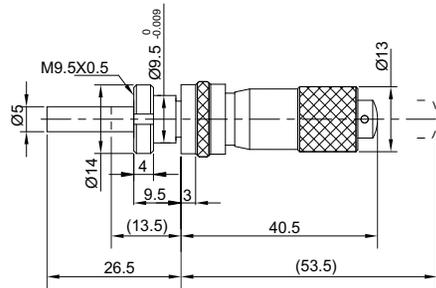
6386-13



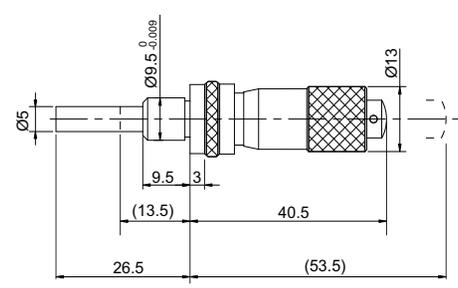
6386-13WS



6386-13P



6386-13P



6386-13WP

- Graduation 0.01mm

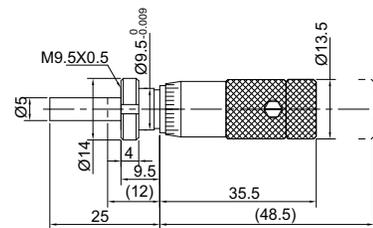
Code	Range	Stem	Spindle tip	Remark	Accuracy
6386-13	0-13mm	with clamp nut	flat (carbide)		3µm
6386-13W	0-13mm	plain	flat (carbide)		3µm
6386-13S	0-13mm	with clamp nut	spherical (SR5)		3µm
6386-13WS	0-13mm	plain	spherical (SR5)		3µm
6386-13P	0-13mm	with clamp nut	flat (carbide)	with spindle lock	3µm
6386-13WP	0-13mm	plain	flat (carbide)	with spindle lock	3µm

## MICROMETER HEAD WITH ZERO ADJUSTABLE THIMBLE

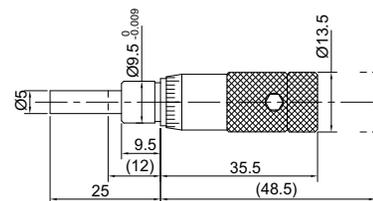
Unit: mm



6384-13W



6384-13



6384-13W

- Graduation 0.01mm
- The thimble can be set to zero at any position

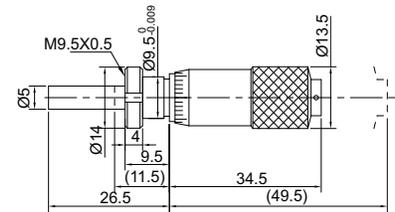
Code	Range	Stem	Spindle tip	Accuracy
6384-13	0-13mm	with clamp nut	flat (carbide)	3µm
6384-13W	0-13mm	plain	flat (carbide)	3µm

## MICROMETER HEAD

Unit: mm



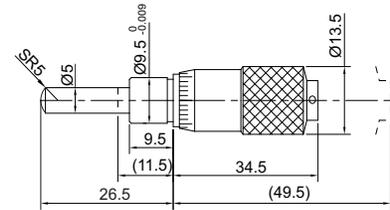
6387-15WS



6387-15

- Graduation 0.01mm

Code	Range	Stem	Spindle tip	Accuracy
6387-15	0-15mm	with clamp nut	flat (carbide)	3μm
6387-15W	0-15mm	plain	flat (carbide)	3μm
6387-15S	0-15mm	with clamp nut	spherical (SR5)	3μm
6387-15WS	0-15mm	plain	spherical (SR5)	3μm



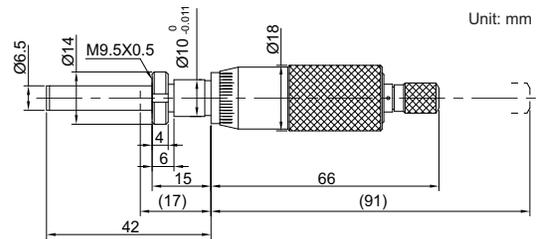
6387-15WS

## MICROMETER HEAD

Unit: mm



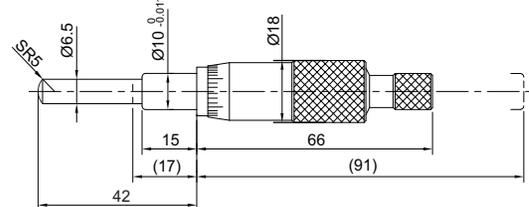
6381-25



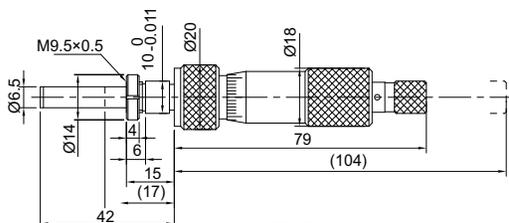
6381-25



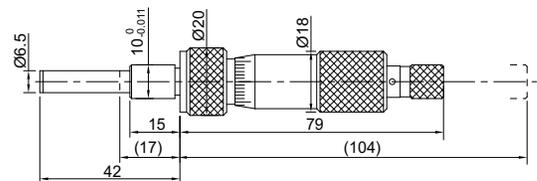
6381-25P



6381-25WS



6381-25P



6381-25WP

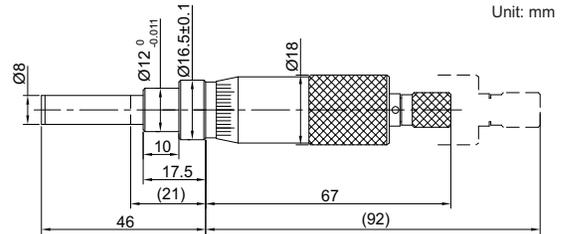
Code	Range	Stem	Spindle tip	Remark	Accuracy
6381-25	0-25mm	with clamp nut	flat (carbide)		3μm
6381-25W	0-25mm	plain	flat (carbide)		3μm
6381-25S	0-25mm	with clamp nut	spherical (SR5)		3μm
6381-25WS	0-25mm	plain	spherical (SR5)		3μm
6381-25P	0-25mm	with clamp nut	flat (carbide)	with spindle lock	3μm
6381-25WP	0-25mm	plain	flat (carbide)	with spindle lock	3μm

- Graduation 0.01mm
- Ratchet stop

## NON ROTATING SPINDLE MICROMETER HEAD



6377-25W



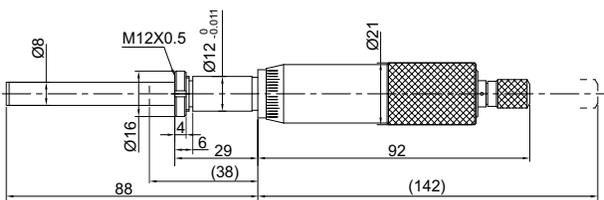
- Graduation 0.01mm
- Ratchet stop
- Non rotating spindle

Code	Range	Stem	Spindle tip	Accuracy
6377-25W	0-25mm	plain	flat (carbide)	3µm

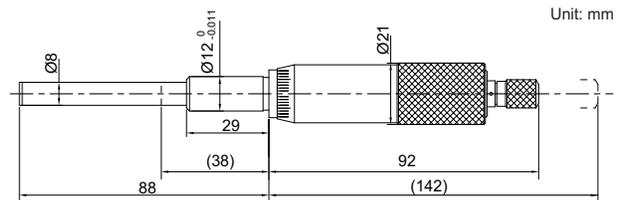
## LARGE MICROMETER HEAD



6388-50W



6388-50



6388-50W

Code	Range	Stem	Spindle tip	Accuracy
6388-50	0-50mm	with clamp nut	flat (carbide)	5µm
6388-50W	0-50mm	plain	flat (carbide)	5µm

- Graduation 0.01mm
- Ratchet stop

# QUICK SPINDLE FEEDING MICROMETER HEAD



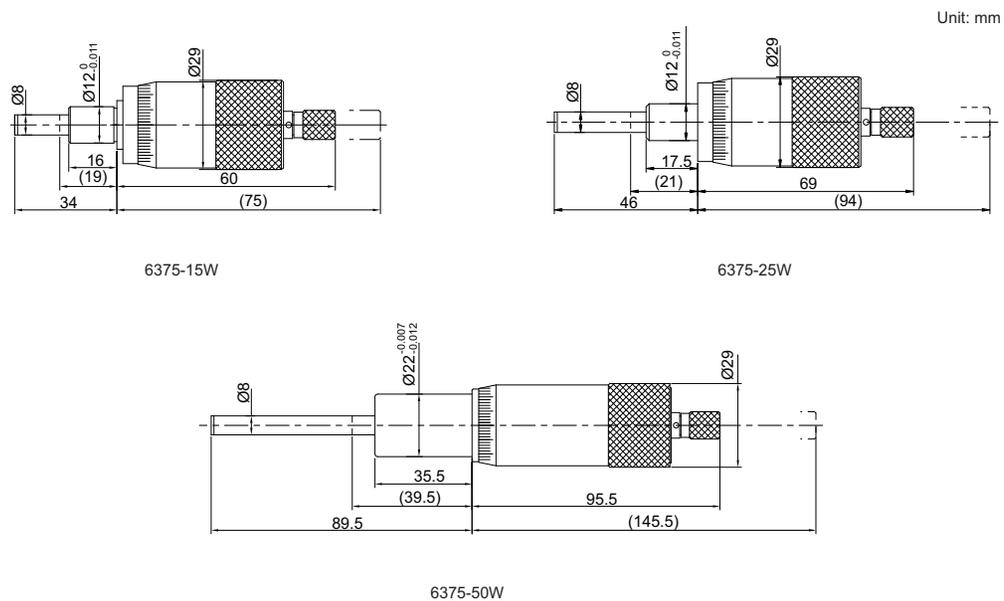
6375-15W



6375-25W



6375-50W



Code	Range	Stem	Spindle tip	Accuracy
6375-15W	0-15mm	plain	flat (carbide)	3µm
6375-25W	0-25mm	plain	flat (carbide)	3µm
6375-50W	0-50mm	plain	flat (carbide)	5µm

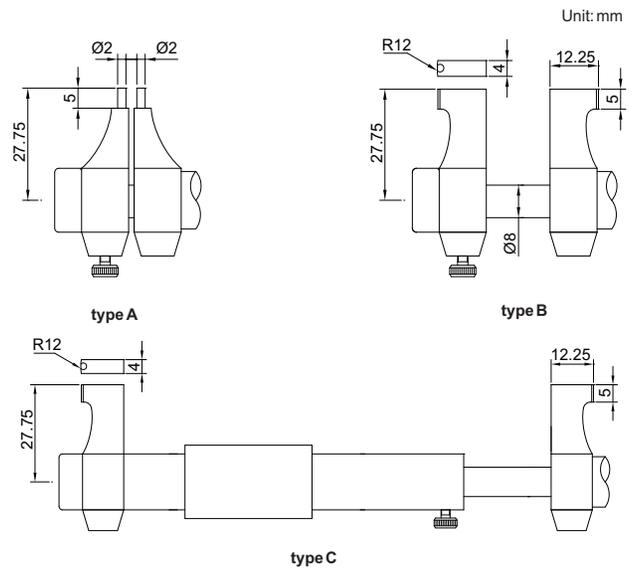
- Graduation 0.01mm
- Quick spindle feed of 1mm/rev.
- Ratchet stop

## INSIDE MICROMETER



3220-50

Code	Range	Type	Setting ring	Accuracy
3220-30	5-30mm	A	5mm	5μm
3220-50	25-50mm	B	25mm	6μm
3220-75	50-75mm	B	—	7μm
3220-100	75-100mm	C	—	8μm
3220-125	100-125mm	C	—	9μm
3220-150	125-150mm	C	—	9μm
3220-175	150-175mm	C	—	10μm
3220-200	175-200mm	C	—	10μm
3220-225	200-225mm	C	—	11μm
3220-250	225-250mm	C	—	11μm
3220-275	250-275mm	C	—	12μm
3220-300	275-300mm	C	—	12μm



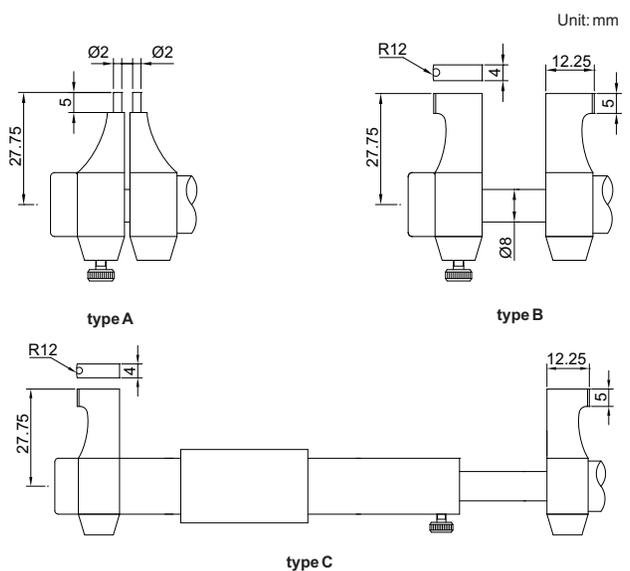
- Graduation 0.01mm
- Ratchet stop
- Carbide measuring faces
- Optional accessory: setting ring (code 6312)

## DIGITAL INSIDE MICROMETER



3520-30

Code	Range	Type	Setting ring	Accuracy
3520-30	5-30mm/0.2-1.2"	A	5mm	±5μm
3520-50	25-50mm/1-2"	B	25mm	±6μm
3520-75	50-75mm/2-3"	B	—	±7μm
3520-100	75-100mm/3-4"	C	—	±8μm



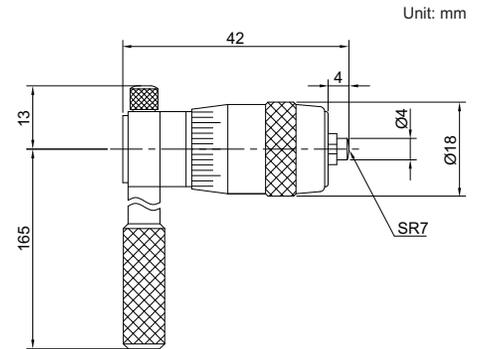
- Resolution 0.001mm/0.00005"
- IP54 waterproof
- Button function: on/off, set, mm/inch, ABS/INC, data output
- RS232 data output
- SR44 or LR44 battery, automatic power off
- Ratchet stop
- Carbide measuring faces
- Optional accessory: SPC cable (page A1-A2), setting ring (code 6312)

## TUBULAR INSIDE MICROMETER



3221-200

Code	Range	Travel of micrometer head	Extension rods
3221-32	25-32mm	7mm	—
3221-50	25-50mm	7mm	2pcs
3221-63	50-63mm	13mm	—
3221-200	50-200mm	13mm	6pcs
3221-300	50-300mm	13mm	10pcs
3221-225	200-225mm	25mm	—
3221-500	200-500mm	25mm	3pcs
3221-1000	200-1000mm	25mm	8pcs



- Graduation 0.01mm
- Accuracy:  $(6+L/50)\mu\text{m}$   
L=maximum measuring length(mm)
- Optional accessory: setting ring(code 6312)

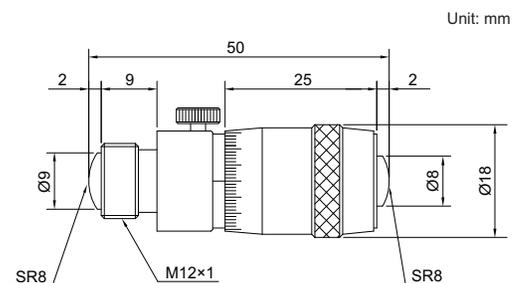
## TUBULAR INSIDE MICROMETER



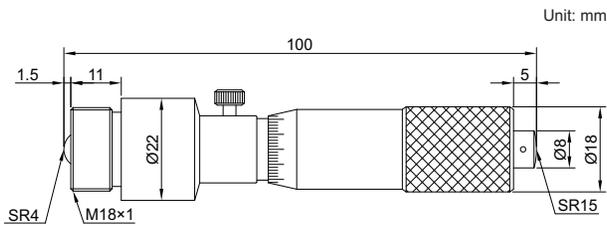
3222-150

- Graduation 0.01mm
- Accuracy:  $(3+n+L/50)\mu\text{m}$   
n=number of rods, L=maximum measuring length(mm)
- Supplied with setting standards
- Carbide measuring faces

Code	Range	Travel of micrometer head	Extension rods
3222-63	50-63mm	13mm	—
3222-150	50-150mm	13mm	13mm, 25mm, 50mm
3222-300	50-300mm	13mm	13mm, 25mm, 50mm(2pcs), 100mm
3222-500	50-500mm	13mm	13mm, 25mm, 50mm(2pcs), 100mm, 200mm
3222-600	50-600mm	13mm	13mm, 25mm, 50mm, 100mm, 150mm, 200mm
3222-1000	50-1000mm	13mm	13mm, 25mm, 50mm(2pcs), 100mm, 200mm(2pcs), 300mm
3222-1500	50-1500mm	13mm	13mm, 25mm, 50mm(2pcs), 100mm, 200mm(3pcs), 300mm(2pcs)



## TUBULAR INSIDE MICROMETER



3225-500

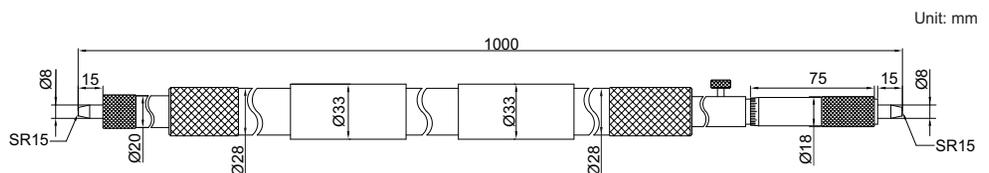
- Graduation 0.01mm
- Accuracy:  $(3+n+L/50)\mu\text{m}$   
n=number of rods, L=maximum measuring length(mm)
- Supplied with setting standards
- Carbide measuring faces

Code	Range	Travel of micrometer head	Extension rods
3225-125	100-125mm	25mm	—
3225-500	100-500mm	25mm	25mm, 50mm, 100mm, 200mm
3225-900	100-900mm	25mm	25mm, 50mm, 100mm, 200mm, 400mm
3225-1300	100-1300mm	25mm	25mm, 50mm, 100mm, 200mm, 400mm(2pcs)
3225-1700	100-1700mm	25mm	25mm, 50mm, 100mm, 200mm, 400mm(3pcs)
3225-2100	100-2100mm	25mm	25mm, 50mm, 100mm, 200mm, 400mm(4pcs)

## TUBULAR INSIDE MICROMETER



3224-2000



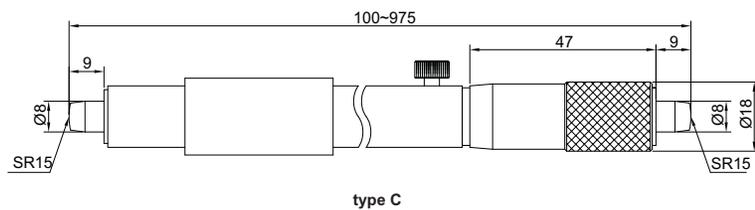
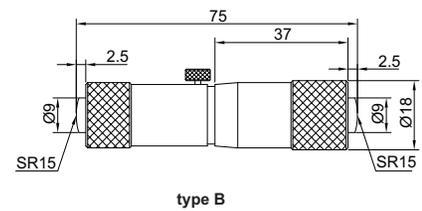
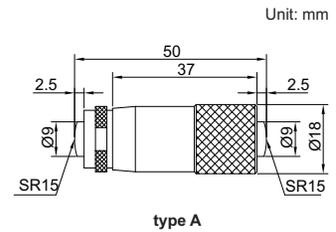
- Graduation 0.01mm
- Accuracy:  $(7+n+L/50)\mu\text{m}$   
n=number of rods, L=maximum measuring length(mm)
- Carbide measuring faces

Code	Range	Travel of micrometer head	Extension rods
3224-2000	1000-2000mm	50mm	50mm, 100mm(2pcs), 200mm, 500mm
3224-3000	1000-3000mm	50mm	50mm, 100mm(2pcs), 200mm, 500mm, 1000mm
3224-4000	1000-4000mm	50mm	50mm, 100mm(2pcs), 200mm, 500mm, 1000mm(2pcs)
3224-5000	1000-5000mm	50mm	50mm, 100mm(2pcs), 200mm, 500mm, 1000mm(3pcs)

# TUBULAR INSIDE MICROMETER



3229-225

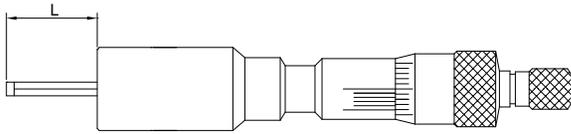


- Graduation 0.01 mm
- Carbide measuring faces

Code	Range	Type	Accuracy
3229-75	50-75mm	A	5μm
3229-100	75-100mm	B	5μm
3229-125	100-125mm	C	6μm
3229-150	125-150mm	C	6μm
3229-175	150-175mm	C	7μm
3229-200	175-200mm	C	7μm
3229-225	200-225mm	C	8μm
3229-250	225-250mm	C	8μm
3229-275	250-275mm	C	9μm
3229-300	275-300mm	C	9μm
3229-325	300-325mm	C	9μm
3229-350	325-350mm	C	9μm
3229-375	350-375mm	C	10μm
3229-400	375-400mm	C	10μm
3229-425	400-425mm	C	10μm
3229-450	425-450mm	C	10μm
3229-475	450-475mm	C	11μm
3229-500	475-500mm	C	11μm
3229-525	500-525mm	C	11μm

Code	Range	Type	Accuracy
3229-550	525-550mm	C	11μm
3229-575	550-575mm	C	11μm
3229-600	575-600mm	C	12μm
3229-625	600-625mm	C	12μm
3229-650	625-650mm	C	12μm
3229-675	650-675mm	C	13μm
3229-700	675-700mm	C	13μm
3229-725	700-725mm	C	13μm
3229-750	725-750mm	C	14μm
3229-775	750-775mm	C	14μm
3229-800	775-800mm	C	14μm
3229-825	800-825mm	C	15μm
3229-850	825-850mm	C	15μm
3229-875	850-875mm	C	15μm
3229-900	875-900mm	C	16μm
3229-925	900-925mm	C	16μm
3229-950	925-950mm	C	16μm
3229-975	950-975mm	C	17μm
3229-1000	975-1000mm	C	17μm

## THREE POINTS INTERNAL MICROMETER



- Graduation 0.001mm
- Carbide measuring faces
- Ratchet stop
- Supplied with setting rings

### Individual

Code	Range	Accuracy	Setting ring	L
3227-2	2-2.5mm	4µm	Ø2.5mm	12.5mm
3227-3	2.5-3mm	4µm	Ø2.5mm	12.5mm
3227-4	3-4mm	4µm	Ø4mm	22.5mm
3227-5	4-5mm	4µm	Ø5mm	22.5mm
3227-6	5-6mm	4µm	Ø6mm	22.5mm

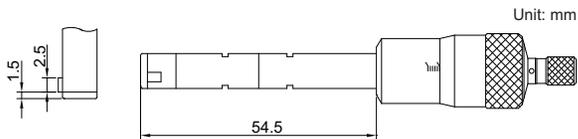


3227-4

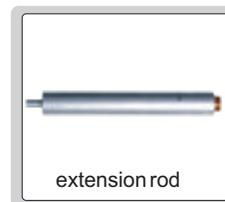
### Set

Code	Range	Micrometers included	Setting ring
3227-232	2-3mm	2-2.5mm, 2.5-3mm	Ø2.5mm
3227-363	3-6mm	3-4mm, 4-5mm, 5-6mm	Ø4mm, Ø5mm, Ø6mm

## THREE POINTS INTERNAL MICROMETER



- Graduation 0.001mm
- Ratchet stop
- Supplied with setting rings and extension rods



3227-8

### Individual

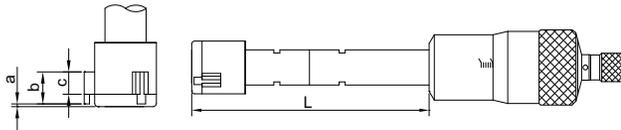
Code	Range	Accuracy	Setting ring	Extension rod
3227-8	6-8mm	4µm	Ø6mm	100mm
3227-10	8-10mm	4µm	Ø8mm	100mm
3227-12	10-12mm	4µm	Ø10mm	100mm

### Set

Code	Range	Micrometers included	Setting ring	Extension rod
3227-123	6-12mm	6-8mm, 8-10mm, 10-12mm	Ø6mm, Ø8mm, Ø10mm	100mm

## THREE POINTS INTERNAL MICROMETER

- Graduation 0.005mm
- Carbide measuring faces
- Ratchet stop
- Supplied with setting rings and extension rods



### Individual

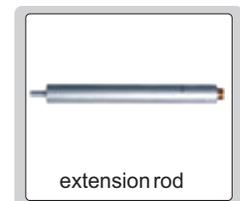
Code	Range	Accuracy	Setting ring	Extension rod	L	a	b	c
3227-16	12-16mm	4µm	Ø16mm	150mm	80	0.5	6	4.5
3227-20	16-20mm	4µm	Ø16mm	150mm	80	0.5	6	4.5
3227-25	20-25mm	4µm	Ø25mm	150mm	90	0.5	8	6
3227-30	25-30mm	4µm	Ø25mm	150mm	90	0.5	8	6
3227-40	30-40mm	4µm	Ø40mm	150mm	97	0.5	14	12
3227-50	40-50mm	5µm	Ø40mm	150mm	97	0.5	14	12
3227-63	50-63mm	5µm	Ø62mm	150mm	114	0.5	17.5	14.5
3227-75	62-75mm	5µm	Ø62mm	150mm	114	0.5	17.5	14.5
3227-88	75-88mm	5µm	Ø87mm	150mm	114	0.5	17.5	14.5
3227-100	87-100mm	5µm	Ø87mm	150mm	114	0.5	17.5	14.5

3227-16



### Set

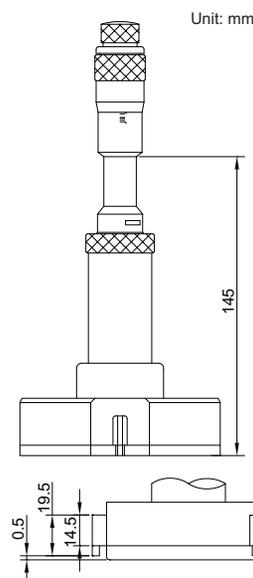
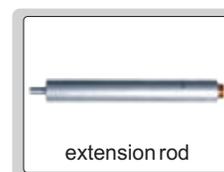
Code	Range	Micrometers included	Setting ring	Extension rod
3227-202	12-20mm	12-16mm, 16-20mm	Ø16mm	150mm
3227-504	20-50mm	20-25mm, 25-30mm, 30-40mm, 40-50mm	Ø25mm, Ø40mm	150mm
3227-1004	50-100mm	50-63mm, 62-75mm, 75-88mm, 87-100mm	Ø62mm, Ø87mm	150mm



## THREE POINTS INTERNAL MICROMETER

- Graduation 0.005mm
- Each micrometer has two sets of interchangeable jaw for different measuring ranges
- Carbide measuring faces
- Ratchet stop
- Supplied with extension rods
- Optional accessory: setting ring (code 6312)

Code	Range	Accuracy	Extension rod
3227-125	100-125mm	5µm	150mm
3227-150	125-150mm	5µm	150mm
3227-175	150-175mm	5µm	150mm
3227-200	175-200mm	5µm	150mm
3227-225	200-225mm	7µm	150mm
3227-250	225-250mm	7µm	150mm
3227-275	250-275mm	7µm	150mm
3227-300	275-300mm	7µm	150mm



3227-125



## DIGITAL THREE POINTS INTERNAL MICROMETER

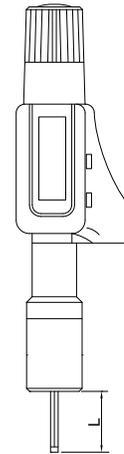
- Resolution 0.001mm/0.00005"
- IP54 waterproof
- Buttons: on/off, set, mm/inch, ABS/INC
- RS232 data output
- SR44 or LR44 battery, automatic power off
- Carbide measuring faces
- Ratchet stop
- Supplied with setting rings
- Optional accessory: SPC cable (page A1-A2)

### Individual

Code	Range	Accuracy	Setting ring	L
3127-2	2-2.5mm	4µm	Ø2.5mm	12.5mm
3127-3	2.5-3mm	4µm	Ø2.5mm	12.5mm
3127-4	3-4mm	4µm	Ø4mm	22.5mm
3127-5	4-5mm	4µm	Ø5mm	22.5mm
3127-6	5-6mm	4µm	Ø6mm	22.5mm

### Set

Code	Range	Micrometers included	Setting ring
3127-232	2-3mm	2-2.5mm, 2.5-3mm	Ø2.5mm
3127-363	3-6mm	3-4mm, 4-5mm, 5-6mm	Ø4mm, Ø5mm, Ø6mm



3127-4



setting ring

## DIGITAL THREE POINTS INTERNAL MICROMETER

- Resolution 0.001mm/0.00005"
- IP54 waterproof
- Buttons: on/off, set, mm/inch, ABS/INC
- RS232 data output
- SR44 or LR44 battery, automatic power off
- Ratchet stop
- Supplied with setting rings and extension rods
- Optional accessory: SPC cable (page A1-A2)

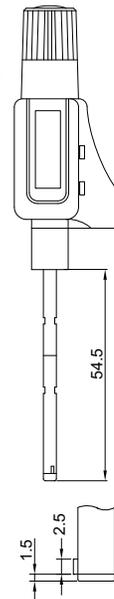
### Individual

Code	Range	Accuracy	Setting ring	Extension rod
3127-8	6-8mm	4µm	Ø6mm	100mm
3127-10	8-10mm	4µm	Ø8mm	100mm
3127-12	10-12mm	4µm	Ø10mm	100mm

### Set

Code	Range	Micrometers included	Setting ring	Extension rod
3127-123	6-12mm	6-8mm, 8-10mm, 10-12mm	Ø6mm, Ø8mm, Ø10mm	100mm

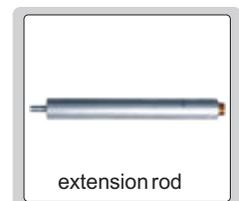
Unit: mm



3127-12



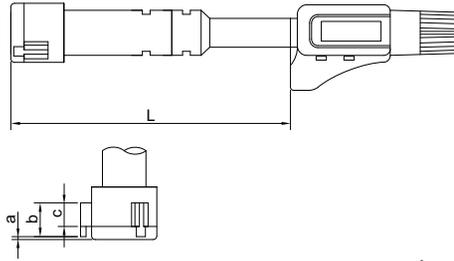
setting ring



extension rod

## DIGITAL THREE POINTS INTERNAL MICROMETER

- Resolution 0.001mm/0.00005"
- IP54 waterproof
- Buttons: on/off, set, mm/inch, ABS/INC
- RS232 data output
- SR44 or LR44 battery, automatic power off
- Carbide measuring faces
- Ratchet stop
- Supplied with setting rings and extension rods
- Optional accessory: SPC cable (page A1-A2)



### Individual

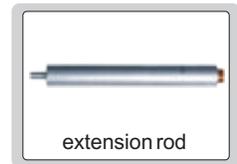
Code	Range	Accuracy	Setting ring	Extension rod	L	a	b	c
3127-16	12-16mm	4µm	Ø16mm	150mm	80	0.5	6	4.5
3127-20	16-20mm	4µm	Ø16mm	150mm	80	0.5	6	4.5
3127-25	20-25mm	4µm	Ø25mm	150mm	90	0.5	8	6
3127-30	25-30mm	4µm	Ø25mm	150mm	90	0.5	8	6
3127-40	30-40mm	4µm	Ø40mm	150mm	97	0.5	14	12
3127-50	40-50mm	5µm	Ø40mm	150mm	97	0.5	14	12
3127-63	50-63mm	5µm	Ø62mm	150mm	114	0.5	17.5	14.5
3127-75	62-75mm	5µm	Ø62mm	150mm	114	0.5	17.5	14.5
3127-88	75-88mm	5µm	Ø87mm	150mm	114	0.5	17.5	14.5
3127-100	87-100mm	5µm	Ø87mm	150mm	114	0.5	17.5	14.5



3127-40



setting ring



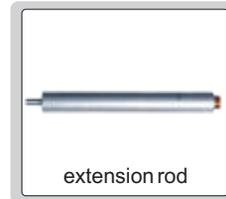
extension rod

### Set

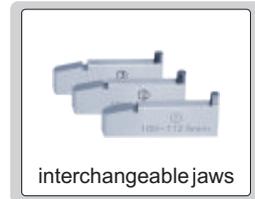
Code	Range	Micrometers included	Setting ring	Extension rod
3127-202	12-20mm	12-16mm, 16-20mm	Ø16mm	150mm
3127-504	20-50mm	20-25mm, 25-30mm, 30-40mm, 40-50mm	Ø25mm, Ø40mm	150mm
3127-1004	50-100mm	50-63mm, 62-75mm, 75-88mm, 87-100mm	Ø62mm, Ø87mm	150mm

## DIGITAL THREE POINTS INTERNAL MICROMETER

- Resolution 0.001mm/0.00005"
- Each micrometer has two sets of interchangeable jaw for different measuring ranges
- IP54 waterproof
- Buttons: on/off, set, mm/inch, ABS/INC
- RS232 data output
- SR44 or LR44 battery, automatic power off
- Carbide measuring faces
- Ratchet stop
- Supplied with extension rods
- Optional accessory: SPC cable (page A1-A2), setting ring (code 6312)

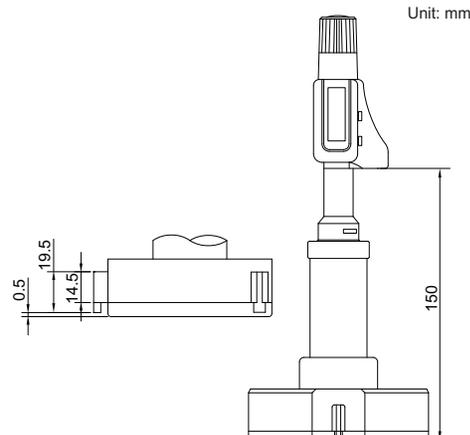


extension rod



interchangeable jaws

Code	Range	Accuracy	Extension rod
3127-125	100-125mm	5µm	150mm
3127-150	125-150mm	5µm	150mm
3127-175	150-175mm	5µm	150mm
3127-200	175-200mm	5µm	150mm
3127-225	200-225mm	7µm	150mm
3127-250	225-250mm	7µm	150mm
3127-275	250-275mm	7µm	150mm
3127-300	275-300mm	7µm	150mm



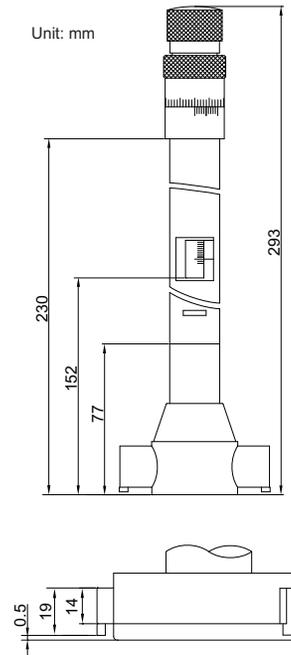
3127-125

## WIDE RANGE THREE POINTS INTERNAL MICROMETER



- Graduation 0.001mm
- Carbide measuring faces
- Ratchet stop
- Setting rings are included(except 200-300mm)

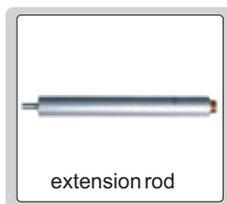
Code	Range	Accuracy	Setting ring
3228-70	50-70mm	5μm	Ø50mm
3228-100	70-100mm	5μm	Ø70mm
3228-150	100-150mm	6μm	Ø100mm
3228-250	150-250mm	8μm	Ø150mm
3228-300	200-300mm	9μm	—



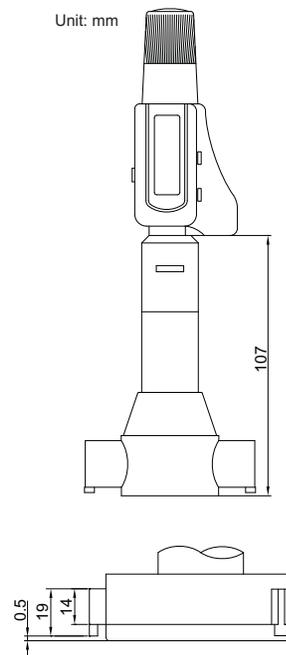
3228-70

## DIGITAL WIDE RANGE THREE POINTS INTERNAL MICROMETER

- Resolution 0.001mm/0.00005"
- IP54 waterproof
- Buttons: on/off, set, mm/inch, ABS/INC
- RS232 data output
- SR44 or LR44 battery, automatic power off
- Carbide measuring faces
- Ratchet stop
- Supplied with extension rods
- Setting rings are included(except 200-300mm)
- Optional accessory: SPC cable (page A1-A2)

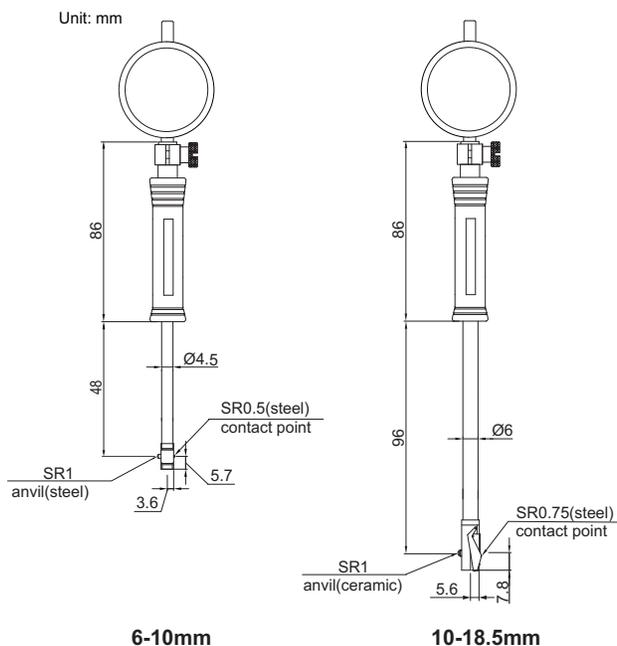
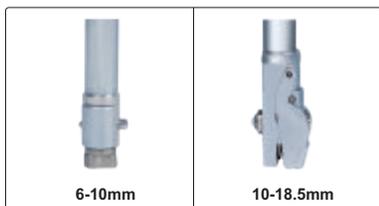


Code	Range	Accuracy	Setting ring	Extension rod
3128-70	50-70mm	5μm	Ø50mm	150mm
3128-100	70-100mm	5μm	Ø70mm	150mm
3128-150	100-150mm	6μm	Ø100mm	150mm
3128-250	150-250mm	8μm	Ø150mm	150mm
3128-300	200-300mm	9μm	—	150mm



3128-70

# BORE GAUGE FOR SMALL HOLES



Read the diameter directly, after inputting the size of setting ring.

MIN

ABS

The minimum value tracking function can find the diameter automatically.

Optional accessory: setting ring (code 6312)

Code	Range	Indicator	Accuracy	Repeatability
2852-10	6-10mm	dial indicator, range 0-3mm, graduation 0.01mm (code 2311-3F)	±0.012mm	0.003mm
2852-18	10-18.5mm		±0.012mm	0.003mm

Code	Range	Indicator	Accuracy	Repeatability
2152-10	6-10mm	digital indicator, range 0-12.7mm/0-0.5", resolution 0.002mm/0.0001" (code 2108-10F)	±0.012mm	0.003mm
2152-18	10-18.5mm		±0.012mm	0.003mm

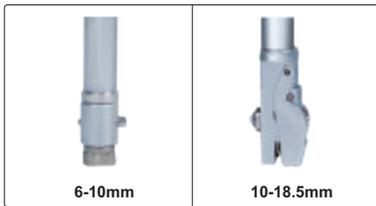
# PRECISION BORE GAUGE FOR SMALL HOLES



2853-10

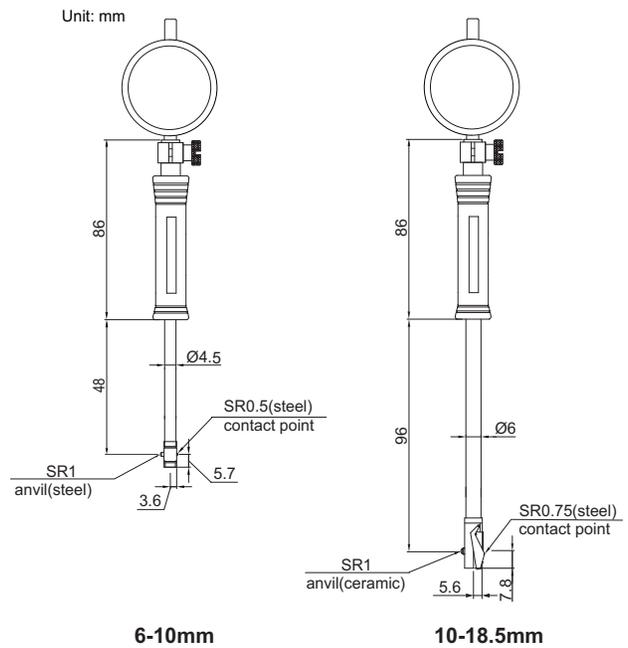


2153-18



6-10mm

10-18.5mm



Read the diameter directly, after inputting the size of setting ring.

MIN

The minimum value tracking function can find the diameter automatically.

Optional accessory: setting ring (code 6312)

Code	Range	Indicator	Accuracy	Repeatability
2853-10	6-10mm	dial indicator, range 0-1mm, graduation 0.001mm (code 2313-1FA)	±0.005mm	0.002mm
2853-18	10-18.5mm		±0.005mm	0.002mm

Code	Range	Indicator	Accuracy	Repeatability
2153-10	6-10mm	digital indicator, range 0-12.7mm/0-0.5", resolution 0.001mm/0.00005" (code 2108-101F)	±0.005mm	0.002mm
2153-18	10-18.5mm		±0.005mm	0.002mm

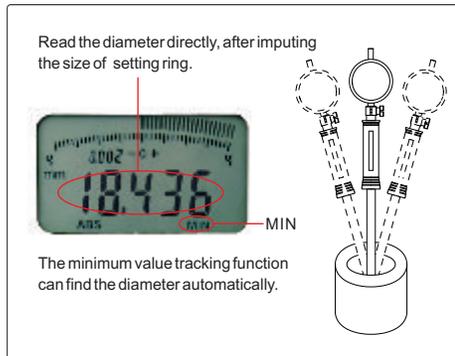
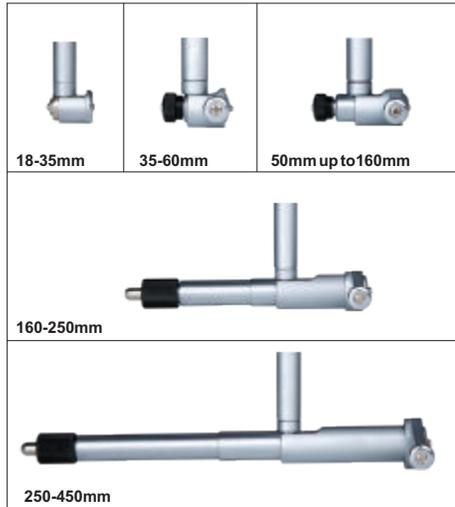
# BORE GAUGE



2322-160A



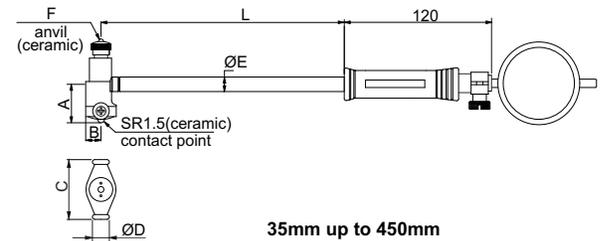
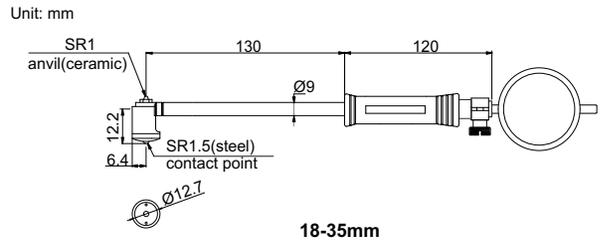
2122-35A



- Optional accessory:  
setting ring (code 6312), extension rod (code 7351)

Code	Range	Indicator	Accuracy	Repeatability
2322-35A	18-35mm	dial indicator, range 0-10mm, graduation 0.01mm (code 2308-10FA)	±0.015mm	0.003mm
2322-60A	35-60mm		±0.018mm	0.003mm
2322-100A	50-100mm		±0.018mm	0.003mm
2322-160A	50-160mm		±0.018mm	0.003mm
2322-161A	100-160mm		±0.018mm	0.003mm
2322-250A	160-250mm		±0.018mm	0.003mm
2322-450A	250-450mm		±0.018mm	0.003mm

Code	Range	Indicator	Accuracy	Repeatability
2122-35A	18-35mm	digital indicator, range 0-12.7mm/0-0.5", resolution 0.002mm/0.0001" (code 2108-10F)	±0.015mm	0.003mm
2122-60A	35-60mm		±0.018mm	0.003mm
2122-100A	50-100mm		±0.018mm	0.003mm
2122-160A	50-160mm		±0.018mm	0.003mm
2122-161A	100-160mm		±0.018mm	0.003mm
2122-250A	160-250mm		±0.018mm	0.003mm
2122-450A	250-450mm		±0.018mm	0.003mm



Range	A	B	C	ØD	ØE	F	L
35-60mm	12.2	6.4	27	13	12.8	SR2	130
50-100mm	18.8	9	27	13	12.8	SR2	130
50-160mm	26	9	35	13	12.8	SR2	130
100-160mm	26	9	35	13	12.8	SR2	130
160-250mm	56.5	13	74.5	15	12.8	SR2	230
250-450mm	86.5	15	101.5	15	14.5	SR2.5	230

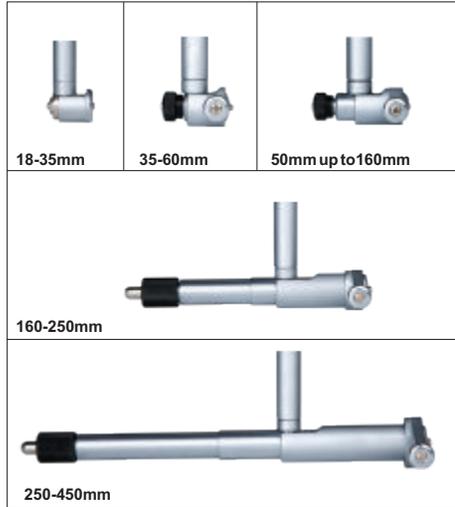
# PRECISION BORE GAUGE



2825-160A



2126-35



18-35mm

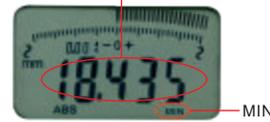
35-60mm

50mm up to 160mm

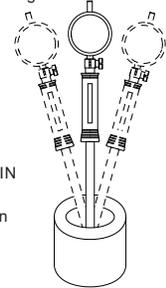
160-250mm

250-450mm

Read the diameter directly, after inputting the size of setting ring.



The minimum value tracking function can find the diameter automatically.

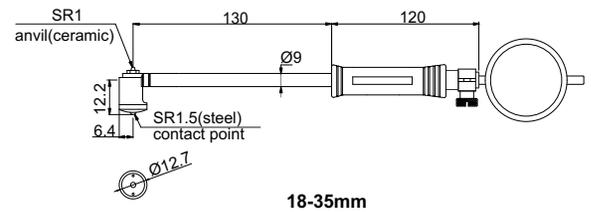


Optional accessory: setting ring (code 6312)

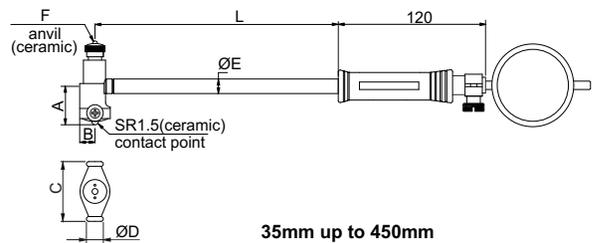
Code	Range	Indicator	Accuracy	Repeatability
2825-35A	18-35mm	dial indicator, range 0-1mm, graduation 0.001mm (code 2313-1FA)	±0.006mm	0.002mm
2825-60A	35-60mm		±0.007mm	0.002mm
2825-100A	50-100mm		±0.007mm	0.002mm
2825-160A	50-160mm		±0.007mm	0.002mm
2825-161A	100-160mm		±0.007mm	0.002mm
2825-250A	160-250mm		±0.007mm	0.002mm
2825-450A	250-450mm		±0.007mm	0.002mm

Code	Range	Indicator	Accuracy	Repeatability
2126-35	18-35mm	digital indicator, range 0-12.7mm/0-0.5", resolution 0.001mm/0.00005" (code 2108-101F)	±0.006mm	0.002mm
2126-60	35-60mm		±0.007mm	0.002mm
2126-100	50-100mm		±0.007mm	0.002mm
2126-160	50-160mm		±0.007mm	0.002mm
2126-161	100-160mm		±0.007mm	0.002mm
2126-250	160-250mm		±0.007mm	0.002mm
2126-450	250-450mm		±0.007mm	0.002mm

Unit: mm



18-35mm



35mm up to 450mm

Range	A	B	C	ØD	ØE	F	L
35-60mm	12.2	6.4	27	13	12.8	SR2	130
50-100mm	18.8	9	27	13	12.8	SR2	130
50-160mm	26	9	35	13	12.8	SR2	130
100-160mm	26	9	35	13	12.8	SR2	130
160-250mm	56.5	13	74.5	15	12.8	SR2	230
250-450mm	86.5	15	101.5	15	14.5	SR2.5	230

## BORE GAUGE SET



2824-S3

- Optional accessory: setting ring (code 6312)

Code	Range	Indicator	Bore gauges included	Accuracy	Repeatability
2824-S3	18-160mm	dial indicator code <b>2308-10FA</b> range 0-10mm, graduation 0.01mm	18-35mm	18-35mm ±0.015mm	0.003mm
2125-S3	18-160mm	digital indicator code <b>2108-10F</b> range 0-12.7mm/0-0.5", resolution 0.002mm/0.0001"	35-60mm	35-60mm ±0.018mm	
			50-160mm	50-160mm ±0.018mm	

## PRECISION BORE GAUGE SET



2129-S3

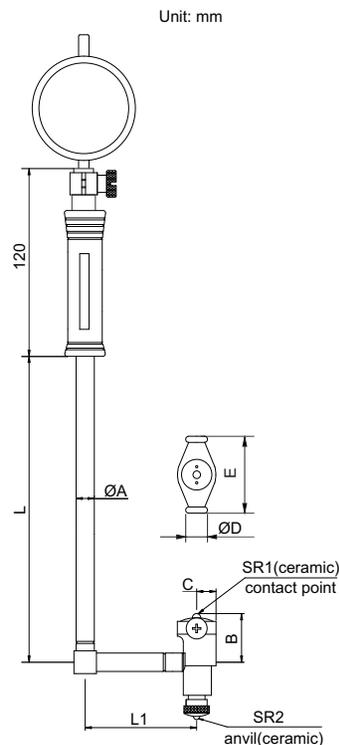
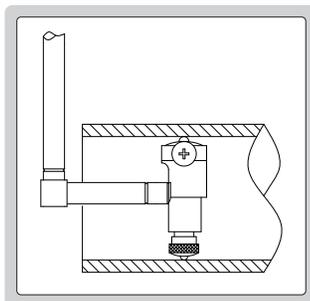
- Optional accessory: setting ring (code 6312)

Code	Range	Indicator	Bore gauges included	Accuracy	Repeatability
2829-S3	18-160mm	dial indicator code <b>2313-1FA</b> range 0-1mm, graduation 0.001mm	18-35mm	18-35mm ±0.006mm	0.002mm
2129-S3	18-160mm	digital indicator, code <b>2108-101F</b> range 0-12.7mm/0-0.5", resolution 0.001mm/0.00005"	35-60mm	35-60mm ±0.007mm	
			50-160mm	50-160mm ±0.007mm	

# BORE GAUGE



2827-160A



■ Optional accessory: setting ring (code 6312)

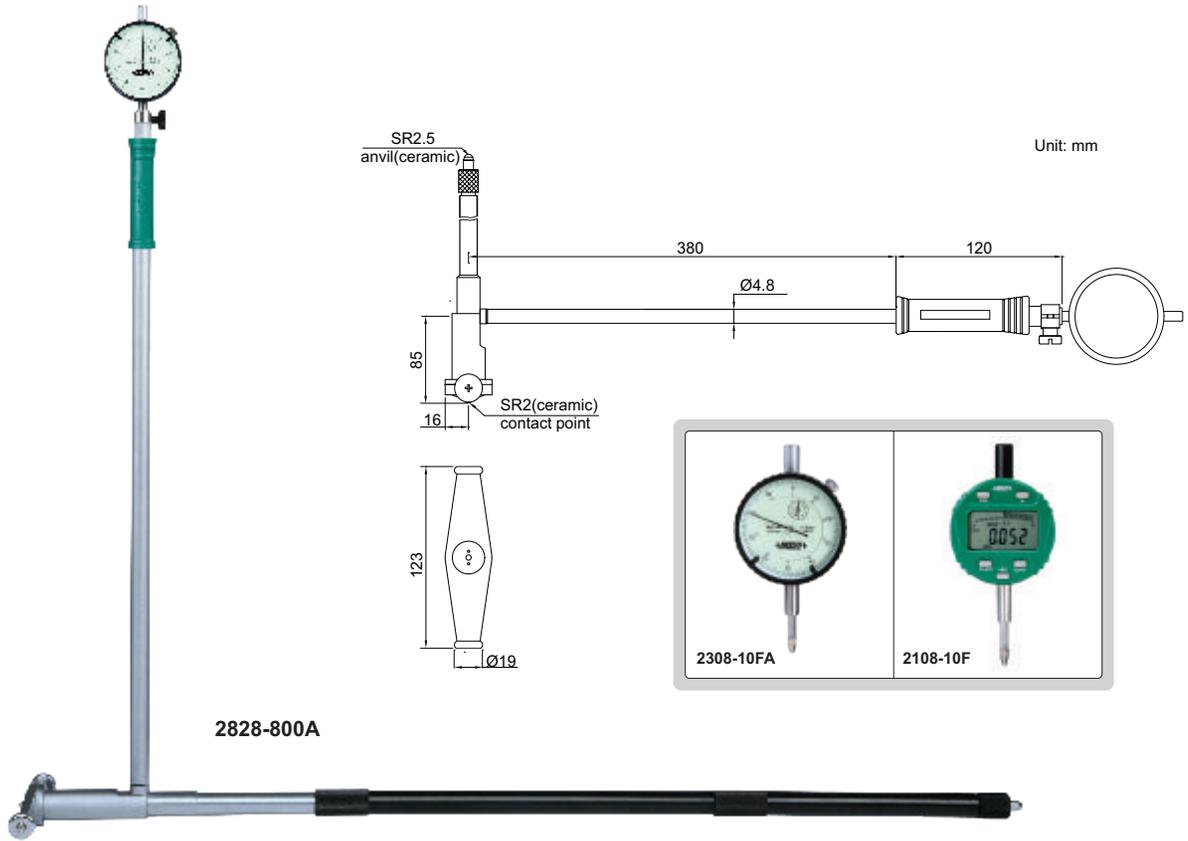
(mm)

Code	Range	Indicator	Accuracy	Repeatability	$\varnothing A$	B	C	$\varnothing D$	E	L	L1
2827-160A	50-160mm	dial indicator code 2308-10FA range 0-10mm, graduation 0.01mm	$\pm 0.018\text{mm}$	0.003mm	12.8	28.5	9.2	13	35	130	76.2
2827-250A	160-250mm		$\pm 0.018\text{mm}$	0.003mm	14.5	62.0	12.7	13	74.5	380	100
2827-450A	250-450mm		$\pm 0.018\text{mm}$	0.003mm	14.5	91.5	15.0	15	101.5	380	100

(mm)

Code	Range	Indicator	Accuracy	Repeatability	$\varnothing A$	B	C	$\varnothing D$	E	L	L1
2127-160	50-160mm	digital indicator code 2108-10F range 0-12.7mm/0-0.5", resolution 0.002mm/0.0001"	$\pm 0.018\text{mm}$	0.003mm	12.8	28.5	9.2	13	35	130	76.2
2127-250	160-250mm		$\pm 0.018\text{mm}$	0.003mm	14.5	62.0	12.7	13	74.5	380	100
2127-450	250-450mm		$\pm 0.018\text{mm}$	0.003mm	14.5	91.5	15.0	15	101.5	380	100

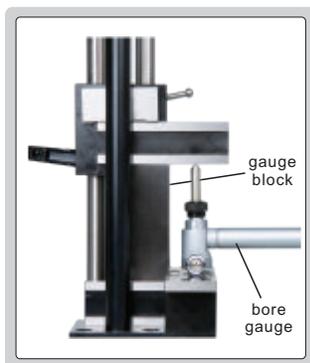
## BORE GAUGE



2828-800A

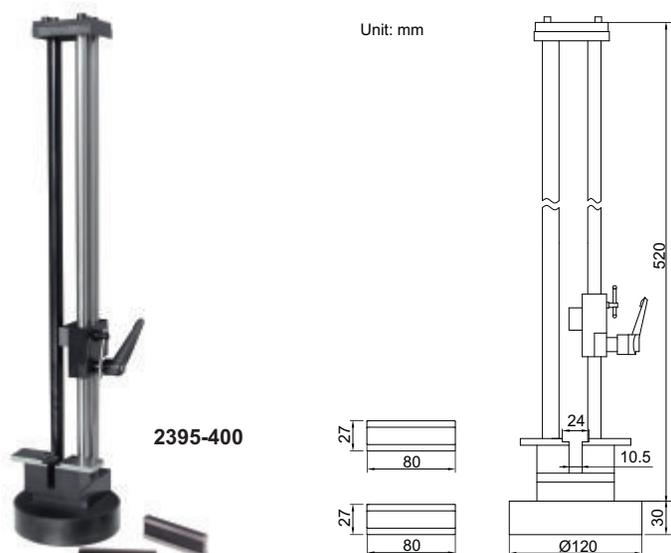
Code	Range	Indicator	Accuracy	Repeatability
2828-800A	400-800mm	dial indicator code <b>2308-10FA</b> range 0-10mm, graduation 0.01mm	±0.025mm	0.003mm
2128-800A	400-800mm	digital indicator code <b>2108-10F</b> range 0-12.7mm/0-0.5", resolution 0.002mm/0.0001"	±0.025mm	0.003mm

## BORE GAUGE CHECKER



- Used together with gauge blocks to set bore gauges

Code	Setting range
2395-400	18-400mm



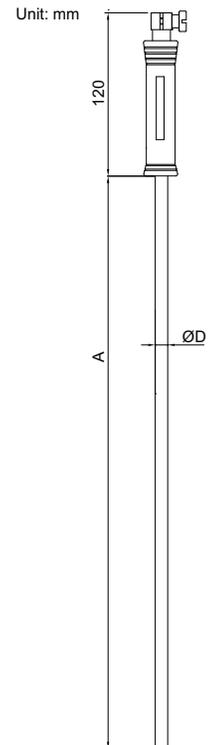
## ANVIL FOR BORE GAUGES



7350-160

Code	Applicable bore gauges	Material of measuring face	Quantity per set	Size of anvil (mm)
7350-10	6-10mm	Steel	9pcs	6, 6.5, 7, 7.5, 8, 8.5, 9, 9.5, 10
7350-18	10-18.5mm	Ceramic	9pcs	10, 11, 12, 13, 14, 15, 16, 17, 18
7350-35	18-35mm	Ceramic	9pcs	18, 20, 22, 24, 26, 28, 30, 32, 34
7350-60	35-60mm	Ceramic	6pcs	35, 40, 45, 50, 55, 60
7350-100	50-100mm	Ceramic	11pcs	50, 55, 60, 65, 70, 75, 80, 85, 90, 95, 100
7350-160	50-160mm	Ceramic	12pcs	50, 55, 60, 65, 70, 75, 80, 85, 90, 95, 100, 105
7350-161	100-160mm	Ceramic	12pcs	50, 55, 60, 65, 70, 75, 80, 85, 90, 95, 100, 105
7350-250	160-250mm	Ceramic	5pcs	160, 170, 180, 190, 200
7350-450	250-450mm	Ceramic	5pcs	250, 260, 270, 280, 290

## EXTENSION ROD



- To assist deep-hole measurement
- Can be used for bore gauges **2322** and **2122**

Code	Applicable bore gauges	(mm)	
		A	ØD
7351-EX11	35-60mm, 50-100mm, 50-160mm, 100-160mm	473	13
7351-EX12		980	13
7351-EX21	160-250mm, 250-450mm	480	14.5
7351-EX22		980	14.5

7351-EX11

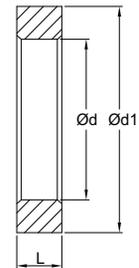
## SETTING RING

- For zero setting of inside micrometers, three points internal micrometers and bore gauges
- Uncertainty in the diameter calibration value:
  - $\pm 1.5\mu\text{m}$  for  $\text{Ø}2\text{-}100\text{mm}$
  - $\pm 2.5\mu\text{m}$  for  $\text{Ø}125\text{-}200\text{mm}$
- Cylindricity:
  - $1\mu\text{m}$  for  $\text{Ø}2\text{-}60\text{mm}$
  - $1.5\mu\text{m}$  for  $\text{Ø}62\text{-}90\text{mm}$
  - $2\mu\text{m}$  for  $\text{Ø}100\text{-}200\text{mm}$
- Meet DIN2250-1
- Hardness HRC  $60\pm 2$



Code	Nominal Size $\text{Ø}d$	$\text{Ø}d1$	L
6312-2	2mm	22	6
6312-3	3mm	22	10
6312-4	4mm	22	10
6312-5	5mm	22	10
6312-6	6mm	32	12
6312-8	8mm	32	12
6312-10	10mm	32	12
6312-12	12mm	38	14
6312-14	14mm	38	14
6312-16	16mm	45	16
6312-20	20mm	45	16
6312-25	25mm	53	18
6312-30	30mm	63	20

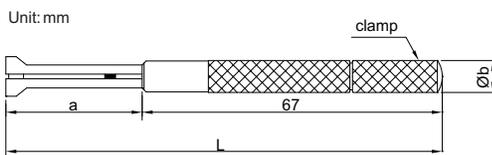
Code	Nominal Size $\text{Ø}d$	$\text{Ø}d1$	L
6312-35	35mm	71	24
6312-40	40mm	71	24
6312-45	45mm	85	32
6312-50	50mm	85	32
6312-60	60mm	100	32
6312-62	62mm	112	32
6312-70	70mm	112	32
6312-75	75mm	125	32
6312-80	80mm	125	32
6312-87	87mm	140	32
6312-90	90mm	140	32
6312-100	100mm	160	32
6312-125	125mm	190	32



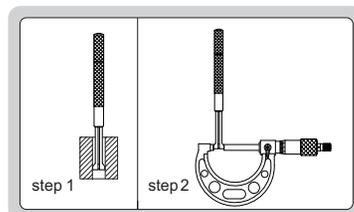
## SMALL HOLE GAUGE SET



4208-1



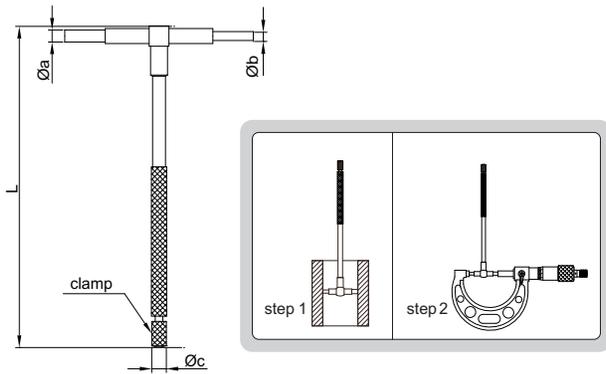
Range	L	a	$\text{Ø}b$
3-5mm	90	22.5	5.5
5-7.5mm	97.6	30	5.5
7.5-10mm	102.8	35	8.5
10-13mm	108	40	8.5



- 4 gauges per set
- For small holes, slots and grooves, etc.
- Satin chrome finish

Code	Total range	Gauges included
4208-1	3-13mm	3-5mm, 5-7.5mm 7.5-10mm, 10-13mm

## TELESCOPING GAUGE SET



(mm)

Range	L	Øa	Øb	Øc
8-12.7mm	115	3.9	2.9	6.2
12.7-19mm	115	5.3	3.8	6.2
19-32mm	115	5.3	3.8	6.2
32-54mm	137	7.6	6.1	7.2
54-90mm	137	7.6	6.1	7.2
90-150mm	137	7.6	6.1	7.2

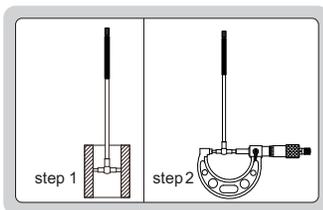


4206-1

Code	Total range	Gauges included
4206-1	8-150mm	8-12.7mm, 12.7-19mm 19-32mm, 32-54mm, 54-90mm, 90-150mm

- 6 gauges per set
- For quick measurement of inside diameter of holes and width of slots
- Satin chrome finish

## LONG HANDLE TELESCOPING GAUGE



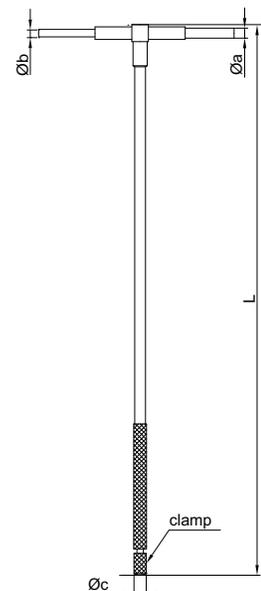
- For quick measurement of inside diameter of deep holes and width of slots
- Satin chrome finish

(mm)

Code	Range	L	Øa	Øb	Øc
4209-1	8-12.7mm	250	3.9	2.9	6.2
4209-2	12.7-19mm	250	5.3	3.8	6.2
4209-3	19-32mm	250	5.3	3.8	6.2
4209-4	32-54mm	300	7.6	6.1	7.2
4209-5	54-90mm	300	7.6	6.1	7.2
4209-6	90-150mm	300	7.6	6.1	7.2
4209-7	120-200mm	300	7.6	6.1	7.2



4209-6



# DIGITAL INDICATOR



2103-10

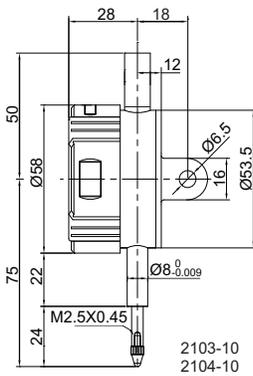


2104-25

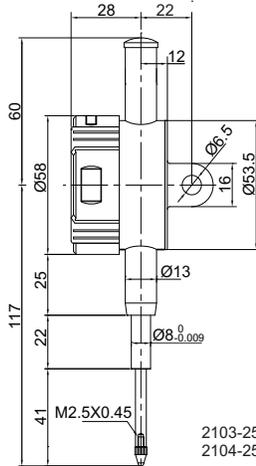


2103-50

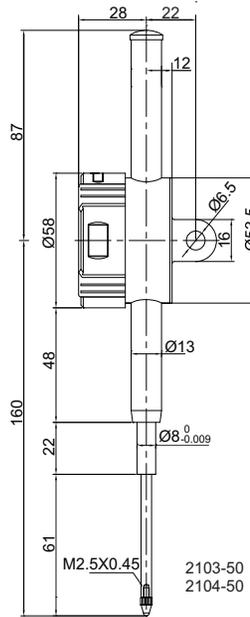
Unit: mm



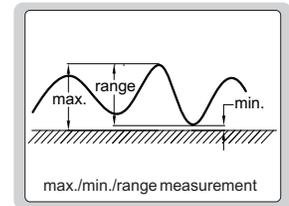
2103-10  
2104-10



2103-25  
2104-25



2103-50  
2104-50



display can be rotated by 320°

## Resolution 0.001mm/0.00005"

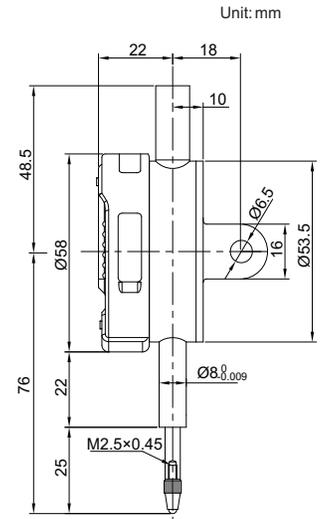
Code	Range	Accuracy( $f_{ges}$ )	Hysteresis( $f_u$ )	Remark
2103-10	12.7mm/0.5"	5 $\mu$ m	2 $\mu$ m	lug back
2103-25	25.4mm/1"	5 $\mu$ m	3 $\mu$ m	lug back
2103-50	50.8mm/2"	6 $\mu$ m	3 $\mu$ m	lug back
2103-10F	12.7mm/0.5"	5 $\mu$ m	2 $\mu$ m	flat back
2103-25F	25.4mm/1"	5 $\mu$ m	3 $\mu$ m	flat back
2103-50F	50.8mm/2"	6 $\mu$ m	3 $\mu$ m	flat back

## Resolution 0.01mm/0.0005"

Code	Range	Accuracy( $f_{ges}$ )	Hysteresis( $f_u$ )	Remark
2104-10	12.7mm/0.5"	20 $\mu$ m	10 $\mu$ m	lug back
2104-25	25.4mm/1"	20 $\mu$ m	10 $\mu$ m	lug back
2104-50	50.8mm/2"	30 $\mu$ m	10 $\mu$ m	lug back
2104-10F	12.7mm/0.5"	20 $\mu$ m	10 $\mu$ m	flat back
2104-25F	25.4mm/1"	20 $\mu$ m	10 $\mu$ m	flat back
2104-50F	50.8mm/2"	30 $\mu$ m	10 $\mu$ m	flat back

- Reading in digit and analog
- Display can be rotated by 320°
- Functions: tolerance GO and NO GO display, data preset, measuring direction change, max./min./range measurement, inch/metric conversion, absolute/incremental measurement
- CR2032 battery, automatic power off
- USB data output
- Optional accessory: SPC cable (page A1-A2), backs (page F15), contact points (page F11-F14)

## DIGITAL INDICATOR

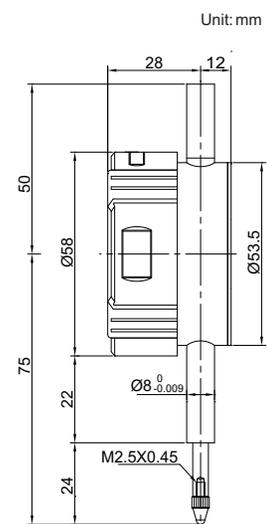


2112-10

- Economic model
- Button function: on/off, inch/mm, zero
- CR2032 battery, automatic power off
- USB data output
- Optional accessory: SPC cable (page A1-A2), backs (page F15), contact points (page F11-F14)

Code	Range	Resolution	Accuracy(f <sub>ges</sub> )	Hysteresis(f <sub>u</sub> )	Remark
2112-10	12.7mm/0.5"	0.01mm/0.0005"	20μm	10μm	lug back
2112-101	12.7mm/0.5"	0.001mm/0.00005"	5μm	2μm	lug back
2112-10F	12.7mm/0.5"	0.01mm/0.0005"	20μm	10μm	flat back
2112-101F	12.7mm/0.5"	0.001mm/0.00005"	5μm	2μm	flat back

## DIGITAL INDICATOR FOR BORE GAUGES



2108-10F

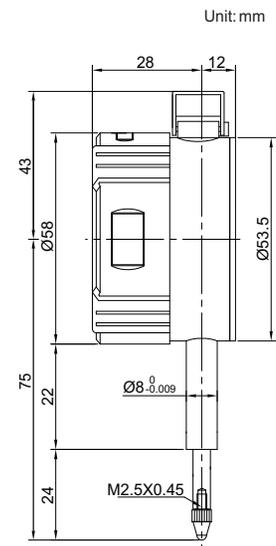
- Specially designed for bore gauges
- The minimum value tracking function can find the diameter automatically
- Read the diameter directly, after inputting the size of setting ring
- Reading in digit and analog
- Display can be rotated by 320°
- Functions: minimum value tracking, calibration, data preset, inch/metric conversion, absolute/incremental measurement
- CR2032 battery, automatic power off
- USB data output
- Optional accessory: SPC cable (page A1-A2), backs (page F15), contact points (page F11-F14)

Code	Range	Resolution	Accuracy(f <sub>ges</sub> )	Hysteresis(f <sub>u</sub> )	Remark
2108-10F	12.7mm/0.5"	0.002mm/0.0001"	20μm	10μm	flatback
2108-101F	12.7mm/0.5"	0.001mm/0.00005"	5μm	2μm	flatback

## DIGITAL INDICATOR WITH LIFTING LEVER



2109-10



Unit: mm

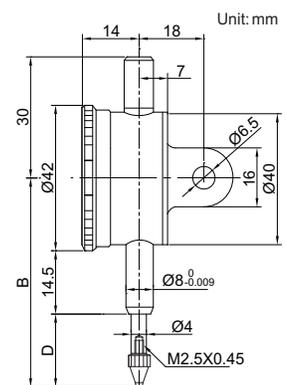
- Reading in digit and analog
- Display can be rotated by 320°
- Functions: tolerance GO and NO GO display, data preset, measuring direction change, max./min./range measurement, inch/metric conversion, absolute/incremental measurement
- CR2032 battery, automatic power off
- USB data output
- Optional accessory: SPC cable (page A1-A2), backs (page F15), contact points (page F11-F14)

Code	Range	Resolution	Accuracy( $f_{ges}$ )	Hysteresis( $f_u$ )	Remark
2109-10	10mm/0.4"	0.01mm/0.0005"	20 $\mu$ m	10 $\mu$ m	flat back
2109-101	10mm/0.4"	0.001mm/0.00005"	5 $\mu$ m	2 $\mu$ m	flat back

## DIAL INDICATOR



2311-5



Unit: mm

- Jeweled bearing
- Supplied with limit hands
- Optional accessory: backs (page F15), contact points (page F11-F14)

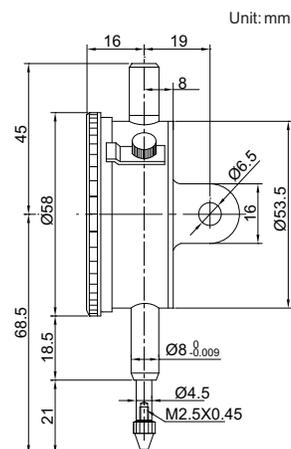
Code	Range	Graduation	Accuracy( $f_{ges}$ )	Hysteresis( $f_u$ )	Range/rev	Dial reading	Remark	B	D
2311-3	3mm	0.01mm	14 $\mu$ m	3 $\mu$ m	0.5mm	0-50	lug back	46mm	10.5mm
2311-5	5mm	0.01mm	16 $\mu$ m	3 $\mu$ m	0.5mm	0-50	lug back	48mm	12.5mm
2311-3F	3mm	0.01mm	14 $\mu$ m	3 $\mu$ m	0.5mm	0-50	flat back	46mm	10.5mm
2311-5F	5mm	0.01mm	16 $\mu$ m	3 $\mu$ m	0.5mm	0-50	flat back	48mm	12.5mm

## DIAL INDICATOR



2308-10A

- Jeweled bearing
- Supplied with limit hands and bezel clamp
- Optional accessory: backs (page F15), contact points (page F11-F14)



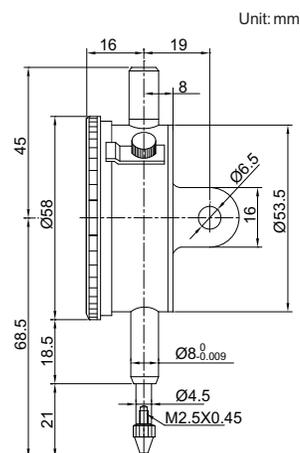
Code	Range	Graduation	Accuracy( $f_{ges}$ )	Hysteresis( $f_u$ )	Range/rev	Dial reading	Remark
2308-3A	3mm	0.01mm	14 $\mu$ m	3 $\mu$ m	1mm	0-100	lug back
2308-5A	5mm	0.01mm	16 $\mu$ m	3 $\mu$ m	1mm	0-100	lug back
2308-10A	10mm	0.01mm	17 $\mu$ m	3 $\mu$ m	1mm	0-100	lug back
2308-3FA	3mm	0.01mm	14 $\mu$ m	3 $\mu$ m	1mm	0-100	flat back
2308-5FA	5mm	0.01mm	16 $\mu$ m	3 $\mu$ m	1mm	0-100	flat back
2308-10FA	10mm	0.01mm	17 $\mu$ m	3 $\mu$ m	1mm	0-100	flat back

## REVERSE READING DIAL INDICATOR



2801-10

- Suitable for depth and step measurements
- Jeweled bearing
- Supplied with limit hands and bezel clamp
- Optional accessory: backs (page F15), contact points (page F11-F14)

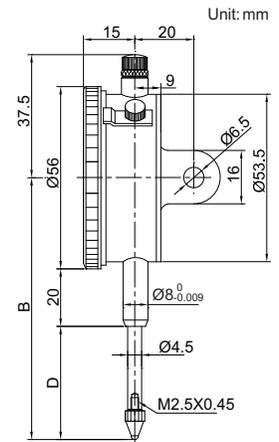


Code	Range	Graduation	Accuracy( $f_{ges}$ )	Hysteresis( $f_u$ )	Range/rev	Dial reading	Remark
2801-10	10mm	0.01mm	20 $\mu$ m	3 $\mu$ m	1mm	100-0	lug back
2801-10F	10mm	0.01mm	20 $\mu$ m	3 $\mu$ m	1mm	100-0	flat back

## DIAL INDICATOR



2310-30A



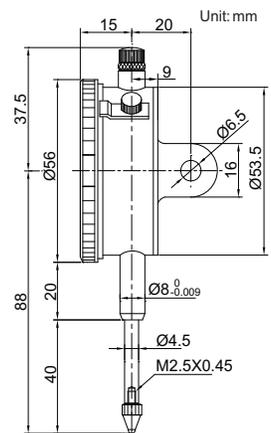
- Supplied with limit hands and bezel clamp
- Optional accessory: backs (page F15), contact points (page F11-F14)

Code	Range	Graduation	Accuracy( $f_{ges}$ )	Hysteresis( $f_u$ )	Range/rev	Dial reading	Remark	B	D
2310-20A	20mm	0.01mm	25 $\mu$ m	5 $\mu$ m	1mm	0-100	lug back	83mm	35mm
2310-30A	30mm	0.01mm	35 $\mu$ m	7 $\mu$ m	1mm	0-100	lug back	88mm	40mm
2310-20FA	20mm	0.01mm	25 $\mu$ m	5 $\mu$ m	1mm	0-100	flat back	83mm	35mm
2310-30FA	30mm	0.01mm	35 $\mu$ m	7 $\mu$ m	1mm	0-100	flat back	88mm	40mm

## REVERSE READING DIAL INDICATOR



2802-30



- Suitable for depth and step measurement
- Supplied with limit hands and bezel clamp
- Optional accessory: backs (page F15), contact points (page F11-F14)

Code	Range	Graduation	Accuracy( $f_{ges}$ )	Hysteresis( $f_u$ )	Range/rev	Dial reading	Remark
2802-30	30mm	0.01mm	35 $\mu$ m	7 $\mu$ m	1mm	100-0	lug back
2802-30F	30mm	0.01mm	35 $\mu$ m	7 $\mu$ m	1mm	100-0	flat back

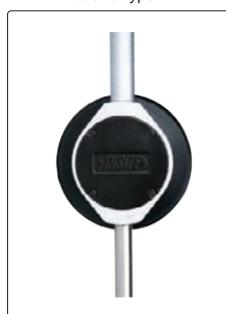
# DIAL INDICATOR



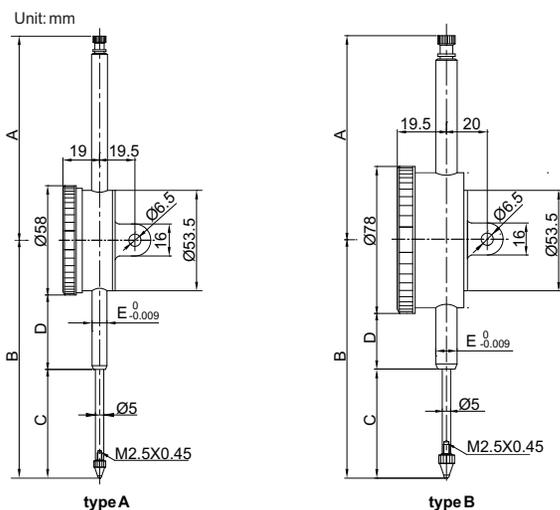
2309-50

- Shockproof
- Jeweled bearing
- Supplied with limit hands
- Optional accessory: backs (page F15), contact points (page F11-F14)

back of type B



stem clamp Ø10mm for 2309-100D



(mm)

Code	Type	A	B	C	D	E
2309-30	A	37.5	89.5	40.9	19.5	Ø8
2309-30F	A	37.5	89.5	40.9	19.5	Ø8
2309-50	A	108.3	126.2	57.7	39.5	Ø8
2309-50D	B	108.3	126.2	57.7	29.5	Ø8
2309-80	A	138.4	168.4	88	51.3	Ø8
2309-80D	B	138.4	168.4	88	41.3	Ø8
2309-100D	B	167.6	207.8	108	60.8	Ø10

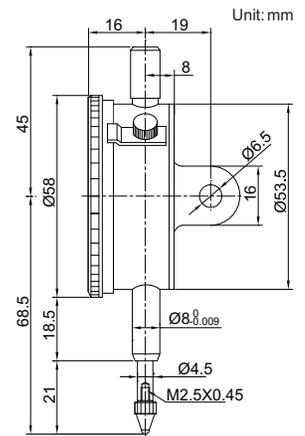
Code	Range	Graduation	Type	Accuracy( $f_{ges}$ )	Hysteresis( $f_u$ )	Range/rev	Dial reading	Remark
2309-30	30mm	0.01mm	A	35 $\mu$ m	7 $\mu$ m	1mm	0-100	lug back
2309-30F	30mm	0.01mm	A	35 $\mu$ m	7 $\mu$ m	1mm	0-100	flat back
2309-50	50mm	0.01mm	A	40 $\mu$ m	8 $\mu$ m	1mm	0-100	flat back with spare lug back
2309-50D	50mm	0.01mm	B	40 $\mu$ m	8 $\mu$ m	1mm	0-100	flat back with spare lug back
2309-80	80mm	0.01mm	A	50 $\mu$ m	9 $\mu$ m	1mm	0-100	flat back with spare lug back
2309-80D	80mm	0.01mm	B	50 $\mu$ m	9 $\mu$ m	1mm	0-100	flat back with spare lug back
2309-100D	100mm	0.01mm	B	50 $\mu$ m	9 $\mu$ m	1mm	0-100	flat back with spare lug back

- Note: 1) 2309-80, 2309-80D and 2309-100D can only be used vertically  
 2) 2309-100D is supplied with stem clamp Ø10mm for magnetic stands (code 6200-60, 6201-60, 6202-80, 6202-100)  
 3) 2309-30 and 2309-30F can not accept optional backs (page F15)

## SHOCKPROOF DIAL INDICATOR



2314-10A



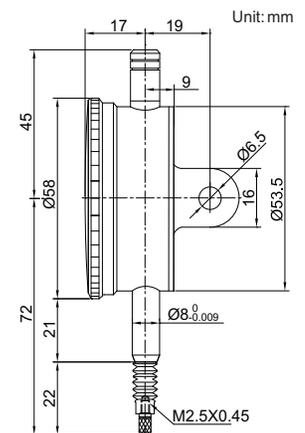
- Shockproof
- Jeweled bearing
- Supplied with limit hands and bezel clamp
- Optional accessory: backs(page F15), contact points(page F11-F14)

Code	Range	Graduation	Accuracy( $f_{ges}$ )	Hysteresis( $f_u$ )	Range/rev	Dialreading	Remark
2314-3A	3mm	0.01mm	14 $\mu$ m	3 $\mu$ m	1mm	0-100	lug back
2314-5A	5mm	0.01mm	16 $\mu$ m	3 $\mu$ m	1mm	0-100	lug back
2314-10A	10mm	0.01mm	20 $\mu$ m	3 $\mu$ m	1mm	0-100	lug back
2314-3FA	3mm	0.01mm	14 $\mu$ m	3 $\mu$ m	1mm	0-100	flat back
2314-5FA	5mm	0.01mm	16 $\mu$ m	3 $\mu$ m	1mm	0-100	flat back
2314-10FA	10mm	0.01mm	20 $\mu$ m	3 $\mu$ m	1mm	0-100	flat back

## WATERPROOF DIAL INDICATOR



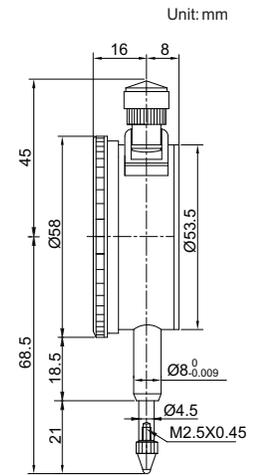
2324-10



- IP54 waterproof
- Jeweled bearing

Code	Range	Graduation	Accuracy( $f_{ges}$ )	Hysteresis( $f_u$ )	Range/rev	Dial reading	Remark
2324-10	10mm	0.01mm	17 $\mu$ m	3 $\mu$ m	1mm	0-100	lug back
2324-10F	10mm	0.01mm	17 $\mu$ m	3 $\mu$ m	1mm	0-100	flat back

## DIAL INDICATOR WITH LIFTING LEVER

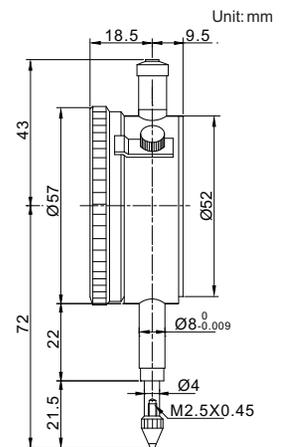


- Jeweled bearing
- Supplied with limit hands
- Optional accessory: backs (page F15), contact points (page F11-F14)

2329-10

Code	Range	Graduation	Accuracy( $f_{ges}$ )	Hysteresis( $f_u$ )	Range/rev	Dial reading	Remark
2329-10	10mm	0.01mm	20 $\mu$ m	3 $\mu$ m	1mm	0-100	flat back

## ONE REVOLUTION DIAL INDICATOR



2306-1F

- Eliminate the possibility of reading errors due to miscounting multiple revolutions
- Shockproof
- Jeweled bearing
- Supplied with limit hands and bezel clamp
- Optional accessory: contact points (page F11-F14)

Code	Range	Graduation	Accuracy( $f_{ges}$ )	Hysteresis( $f_u$ )	Range/rev	Dial reading	Remark
2306-1F	0.8mm	0.01mm	9 $\mu$ m	3 $\mu$ m	1mm	40-0-40	flat back

## DOUBLE FACE DIAL INDICATOR

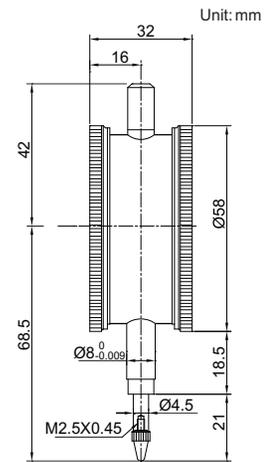


front

back

2328-10

- Read from both sides
- Jeweled bearing
- Supplied with limit hands
- Optional accessory: contact points (page F11-F14)



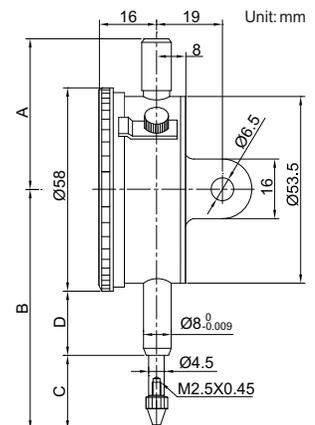
Code	Range	Graduation	Accuracy( $f_{ges}$ )	Hysteresis( $f_u$ )	Range/rev	Dial reading
2328-10	10mm	0.01mm	20 $\mu$ m	3 $\mu$ m	1mm	0-100

## PRECISION DIAL INDICATOR



2313-1A

- Jeweled bearing
- Supplied with limit hands and bezel clamp
- Optional accessory: backs (page F15), contact points (page F11-F14)

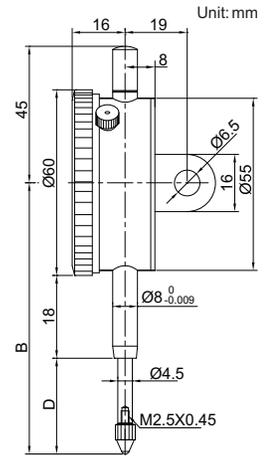


Code	Range	Graduation	Accuracy( $f_{ges}$ )	Hysteresis( $f_u$ )	Range/rev	Dial reading	Remark	A	B	C	D
2313-1A	1mm	0.001mm	5 $\mu$ m	2 $\mu$ m	0.2mm	0-100-0	lug back	45	62.5	19.5	15
2313-2A	2mm	0.001mm	8 $\mu$ m	2.5 $\mu$ m	0.2mm	0-100-0	lug back	45	62.5	19.5	15
2313-3A	3mm	0.001mm	10 $\mu$ m	4 $\mu$ m	0.2mm	0-100-0	lug back	41.5	59.5	21.5	10
2313-5A	5mm	0.001mm	10 $\mu$ m	4 $\mu$ m	0.2mm	0-100-0	lug back	41.5	59.5	21.5	10
2313-1FA	1mm	0.001mm	5 $\mu$ m	2 $\mu$ m	0.2mm	0-100-0	flat back	45	62.5	19.5	15
2313-2FA	2mm	0.001mm	8 $\mu$ m	2.5 $\mu$ m	0.2mm	0-100-0	flat back	45	62.5	19.5	15
2313-3FA	3mm	0.001mm	10 $\mu$ m	4 $\mu$ m	0.2mm	0-100-0	flat back	41.5	59.5	21.5	10
2313-5FA	5mm	0.001mm	10 $\mu$ m	4 $\mu$ m	0.2mm	0-100-0	flat back	41.5	59.5	21.5	10

## DIAL INDICATOR



2318-30



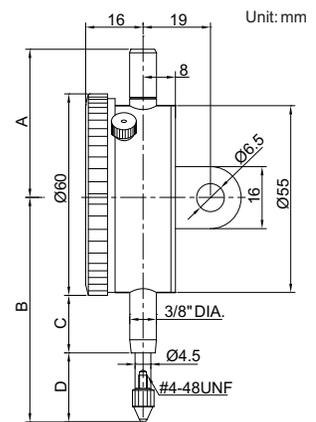
- Supplied with limit hands and bezel clamp
- Optional accessory: backs (page F15), contact points (page F11-F14)

Code	Range	Graduation	Accuracy( $f_{ges}$ )	Hysteresis( $f_u$ )	Range/rev	Dial reading	Remark	(mm)	
								B	D
2318-10	10mm	0.1mm	40 $\mu$ m	20 $\mu$ m	10mm	0-10	lug back	70	20
2318-20	20mm	0.1mm	50 $\mu$ m	20 $\mu$ m	10mm	0-10	lug back	85	35
2318-25	25mm	0.1mm	60 $\mu$ m	20 $\mu$ m	10mm	0-10	lug back	85	35
2318-30	30mm	0.1mm	60 $\mu$ m	20 $\mu$ m	10mm	0-10	lug back	90	40
2318-10F	10mm	0.1mm	40 $\mu$ m	20 $\mu$ m	10mm	0-10	flat back	70	20
2318-20F	20mm	0.1mm	50 $\mu$ m	20 $\mu$ m	10mm	0-10	flat back	85	35
2318-25F	25mm	0.1mm	60 $\mu$ m	20 $\mu$ m	10mm	0-10	flat back	85	35
2318-30F	30mm	0.1mm	60 $\mu$ m	20 $\mu$ m	10mm	0-10	flat back	90	40

## INCH DIAL INDICATOR



2307-1



- Supplied with limit hands and bezel clamp
- Optional accessory: backs (page F15)

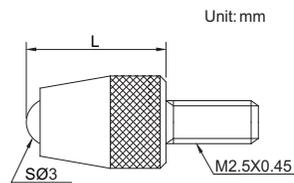
Code	Range	Graduation	Accuracy( $f_{ges}$ )	Hysteresis( $f_u$ )	Range/rev	Dial reading	Remark	(mm)			
								A	B	C	D
2307-025	0.25"	0.001"	0.004"	0.00033"	0.1"	0-100	lug back	46	75	20	25
2307-05	0.5"	0.001"	0.004"	0.00033"	0.1"	0-100	lug back	46	75	20	25
2307-1	1"	0.001"	0.004"	0.00033"	0.1"	0-100	lug back	46	85	20	35
2307-2	2"	0.001"	0.008"	0.00033"	0.1"	0-100	lug back	111	139	50	59

## CONTACT POINT

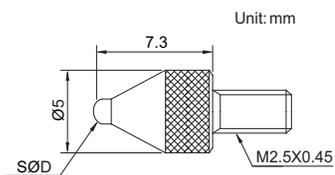


- For dial indicators and digital indicators

## BALL POINT

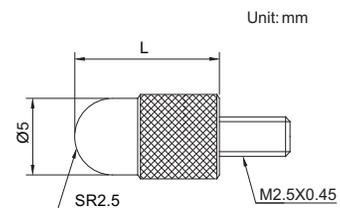


Code	Material	L(mm)
6282-0101	carbide	7.3
6282-0103	ceramic	7.3
6282-0104	carbide	8.3
6282-0106	carbide	12.1
6282-0107	carbide	14
6282-0108	carbide	15
6282-0109	ceramic	15
6282-0110	carbide	17
6282-0111	carbide	19.3
6282-0112	carbide	20
6282-0113	ceramic	20
6282-0114	carbide	22
6282-0115	carbide	25
6282-0116	ceramic	25
6282-0117	carbide	30
6282-0118	ceramic	30



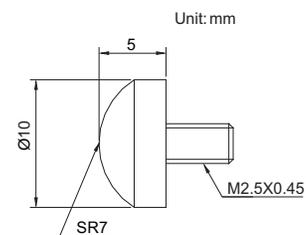
Code	Material	SØD(mm)
6282-0301	steel	1
6282-0302	carbide	1.5
6282-0303	carbide	1.8
6282-0304	carbide	2.5
6282-0305	carbide	4

## SHELL TYPE POINT



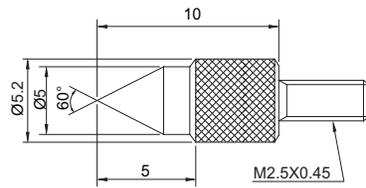
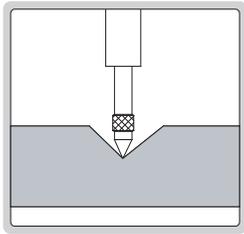
Code	Material	L(mm)
6282-0202	steel	5
6282-0203	steel	10
6282-0205	steel	15
6282-0207	steel	20
6282-0208	steel	25
6282-0210	steel	30

## SPHERICAL POINT

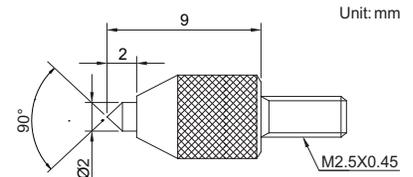


Code	Material
6282-0401	steel

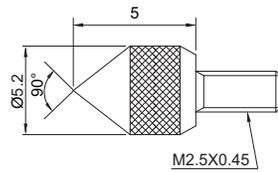
## CONICAL POINT



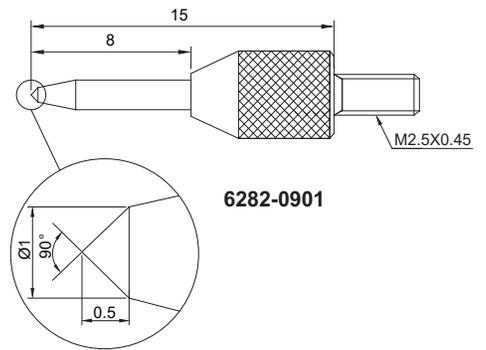
6282-0601



6282-0801



6282-0701

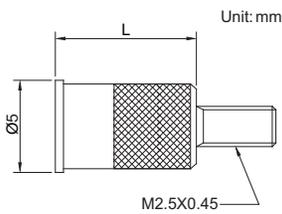


6282-0901

Unit: mm

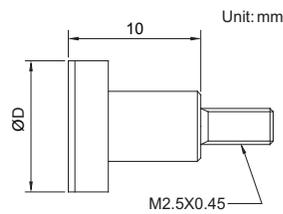
Code	Material
6282-0601	steel
6282-0701	steel
6282-0801	steel
6282-0901	steel

## FLAT POINT



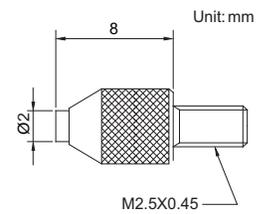
Unit: mm

M2.5X0.45



Unit: mm

M2.5X0.45



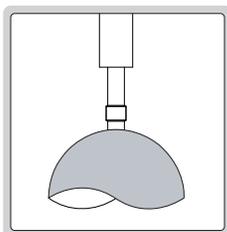
Unit: mm

M2.5X0.45

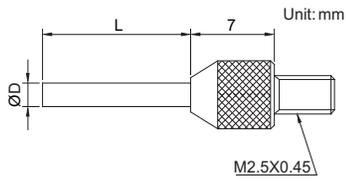
Code	Material	L(mm)
6282-1101	steel	8
6282-1102	steel	10

Code	Material	ØD(mm)
6282-1201	steel	10
6282-1202	steel	15
6282-1203	steel	20
6282-1204	steel	25
6282-1205	steel	30

Code	Material
6282-1301	carbide

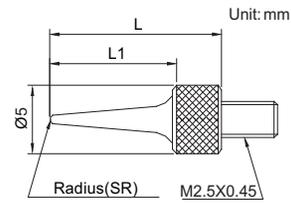
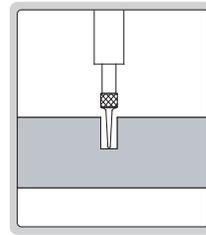


## NEEDLE POINT



(mm)

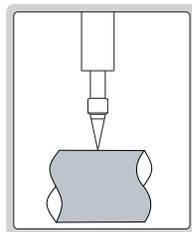
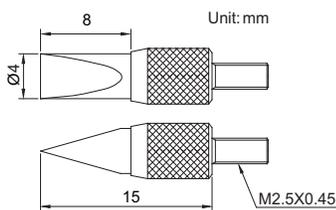
Code	Material	ØD	L
6282-1701	steel	0.45	3
6282-1702	steel	0.45	5
6282-1703	carbide	1	3
6282-1704	carbide	1	5
6282-1705	carbide	1	8
6282-1706	carbide	1	10
6282-1707	carbide	1	20
6282-1708	carbide	1	40
6282-1709	carbide	1.5	5
6282-1710	carbide	1.5	10
6282-1711	carbide	1.5	13
6282-1712	carbide	1.5	20
6282-1713	carbide	1.5	40
6282-1714	carbide	2	8
6282-1715	carbide	2	18
6282-1716	carbide	2	28
6282-1717	carbide	2	40



(mm)

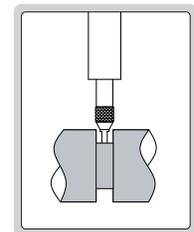
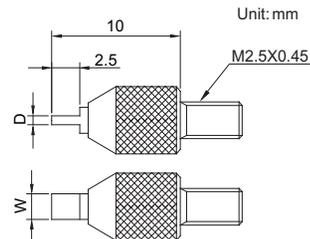
Code	Material	L1	L	SR
6282-1601	steel	11	15	0.4
6282-1602	steel	13	17	0.2
6282-1603	steel	21	25	0.4
6282-1604	steel	31	35	0.4

## KNIFE EDGE POINT



Code	Material
6282-1001	steel

## BLADE POINT

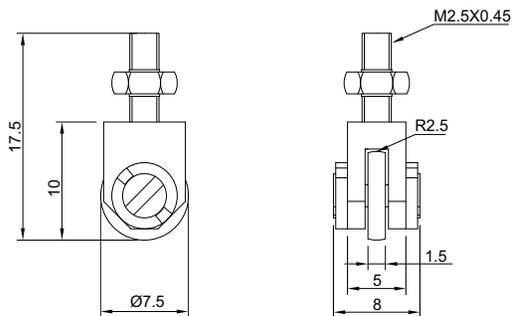


(mm)

Code	Material	D	W
6282-1801	steel	0.4	2
6282-1802	steel	0.6	2
6282-1803	steel	1	4

## ROLLER POINT

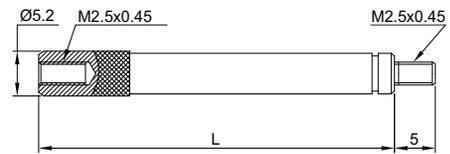
Unit: mm



Code	Material
6282-1901	steel

## EXTENSION ROD

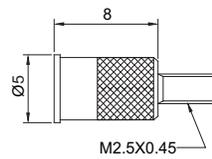
Unit: mm



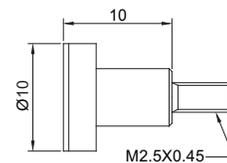
Code	Material	L (mm)	Code	Material	L (mm)
6282-2001	steel	10	6282-2010	steel	55
6282-2002	steel	15	6282-2011	steel	60
6282-2003	steel	20	6282-2012	steel	65
6282-2004	steel	25	6282-2013	steel	70
6282-2005	steel	30	6282-2014	steel	75
6282-2006	steel	35	6282-2015	steel	80
6282-2007	steel	40	6282-2016	steel	90
6282-2008	steel	45	6282-2017	steel	100
6282-2009	steel	50			

## POINT SET

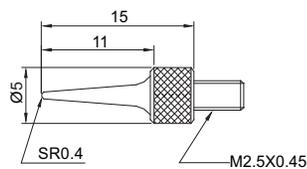
Unit: mm



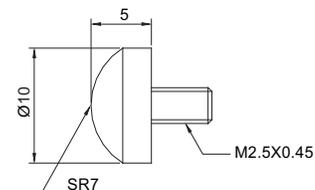
Flat Point



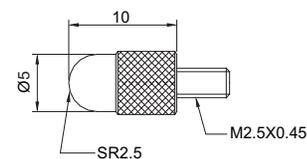
Flat Point



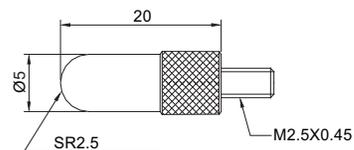
Needle Point



Spherical Point



Shell Type Point



Shell Type Point

Code	Material
6282-S6	steel

# LUG BACK

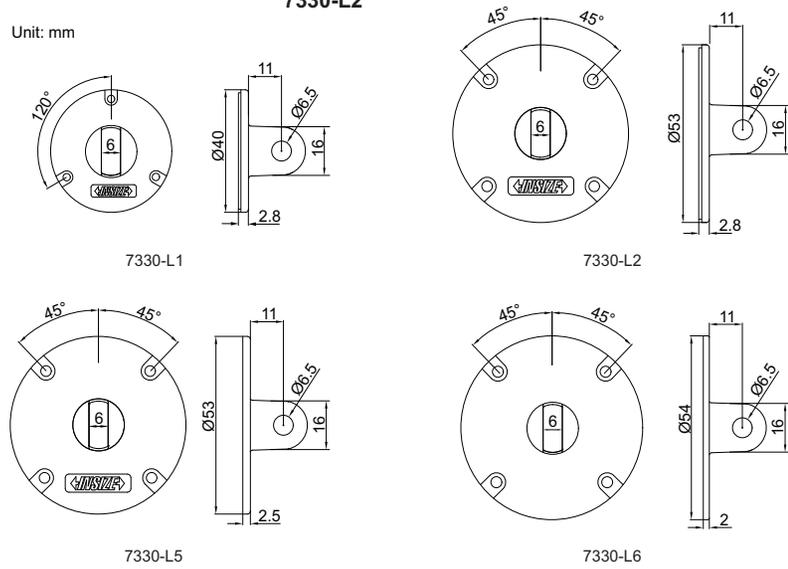
■ Made of aluminum

Code	For digital/dial indicators	Page
7330-L1	2311	F4
7330-L2	2308	F4
	2309 (except 2309-30, 2309-30F)	F6
	2310	F5
	2313-1A, 2313-1FA	F9
	2313-2A, 2313-2FA	F9
	2314	F7
	2329-10	F8
	2801	F4
	2802	F5
7330-L5	2103	F1
	2104	F1
	2108	F2
	2109	F3
	2112	F2
7330-L6	2307	F10
	2318	F10



7330-L2

Unit: mm



# FLAT BACK

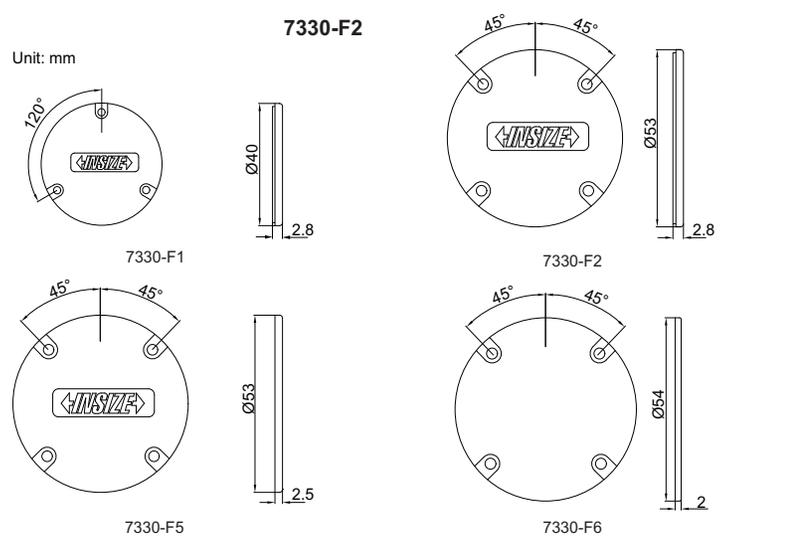
■ Made of aluminum

Code	For digital/dial indicators	Page
7330-F1	2311	F4
7330-F2	2308	F4
	2309 (except 2309-30, 2309-30F)	F6
	2310	F5
	2313-1A, 2313-1FA	F9
	2313-2A, 2313-2FA	F9
	2314	F7
	2329-10	F8
	2801	F4
	2802	F5
7330-F5	2103	F1
	2104	F1
	2108	F2
	2109	F3
7330-F6	2307	F10
	2318	F10



7330-F2

Unit: mm



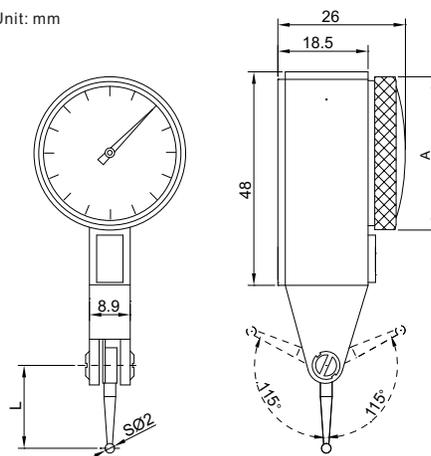
## DIAL TEST INDICATOR



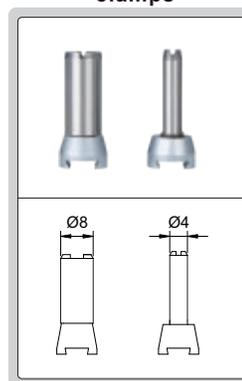
2380-08

- Jeweled bearing
- Carbide contact point
- Two measuring directions
- Anti magnetic body
- Supplied with two clamps: diameter Ø4mm and Ø8mm
- Optional accessory: styli (page F18)

Unit: mm



clamps



Code	Range	Graduation	Accuracy( $f_{ges}$ )	Hysteresis( $f_u$ )	Dial reading	A	L
2380-08	0.8mm	0.01mm	13 $\mu$ m	3 $\mu$ m	0-40-0	Ø30mm	16.5mm
2381-08	0.8mm	0.01mm	13 $\mu$ m	3 $\mu$ m	0-40-0	Ø37.5mm	16.5mm
2380-02	0.2mm	0.002mm	6 $\mu$ m	2 $\mu$ m	0-100-0	Ø30mm	16mm
2381-02	0.2mm	0.002mm	6 $\mu$ m	2 $\mu$ m	0-100-0	Ø37.5mm	16mm

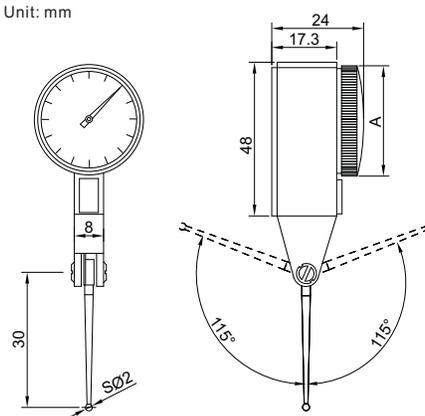
## LONG STYLI DIAL TEST INDICATOR



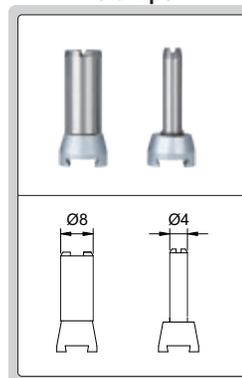
2390-081

- Jeweled bearing
- Ruby contact point
- Two measuring directions
- Anti magnetic body
- Supplied with two clamps: diameter Ø4mm and Ø8mm

Unit: mm



clamps



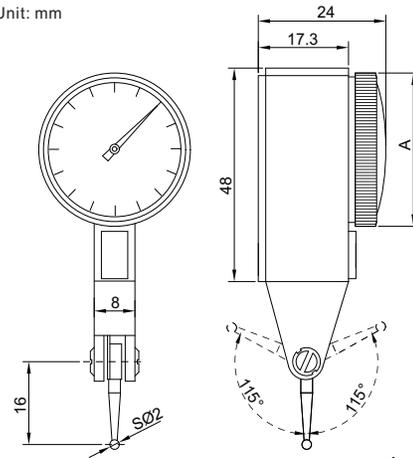
Code	Range	Graduation	Accuracy( $f_{ges}$ )	Hysteresis( $f_u$ )	Dial reading	A
2390-081	0.8mm	0.01mm	13 $\mu$ m	5 $\mu$ m	0-40-0	Ø31mm
2390-082	0.8mm	0.01mm	13 $\mu$ m	5 $\mu$ m	0-40-0	Ø38.4mm

## PRECISION DIAL TEST INDICATOR



2384-012

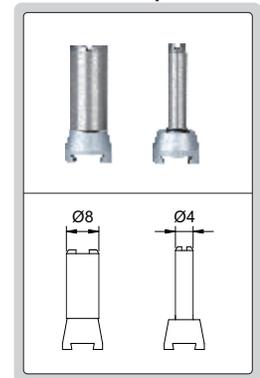
Unit: mm



- Jeweled bearing
- Ruby contact point
- Two measuring directions
- Anti magnetic body
- Supplied with two clamps: diameter Ø4mm and Ø8mm

Code	Range	Graduation	Accuracy( $f_{ges}$ )	Hysteresis( $f_u$ )	Dial reading	A
2384-012	0.12mm	0.001mm	5 $\mu$ m	3 $\mu$ m	0-60-0	Ø31mm
2388-012	0.12mm	0.001mm	5 $\mu$ m	3 $\mu$ m	0-60-0	Ø38.4mm

clamps



## LARGE RANGE DIAL TEST INDICATOR

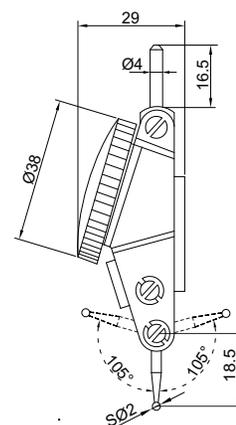


2386-16

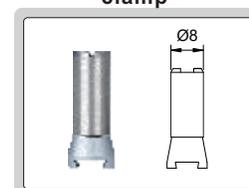
- Jeweled bearing
- Steel contact point
- Two measuring directions
- Anti magnetic body
- Supplied with one clamp: diameter Ø8mm

Code	Range	Graduation	Accuracy( $f_{ges}$ )	Hysteresis( $f_u$ )	Dial reading
2386-16	1.6mm	0.01mm	26 $\mu$ m	6 $\mu$ m	0-40-0

Unit: mm



clamp



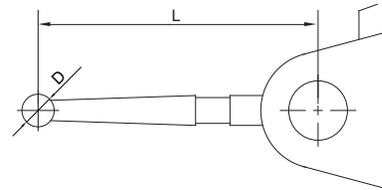
## STYLI FOR DIAL TEST INDICATORS

(mm)

Code	For dial test indicator	Material of contact point	L	D
6284-1	2380-08 2381-08	Steel	16.5	SØ1
6284-3		Carbide	16.5	SØ2
6284-8		Carbide	16.5	SØ3
6284-21	2380-02 2381-02	Steel	16	SØ1
6284-22		Carbide	16	SØ2
6284-23		Carbide	16	SØ3



6284-3



## SPANNER FOR STYLI



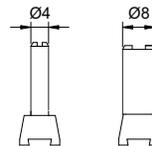
6288

Code

6288

## CLAMP

Unit: mm



6298-1



6298-2

Code

Size

6298-1 Ø4mm

6298-2 Ø8mm

## DIAL TEST INDICATOR HOLDER



6296-1

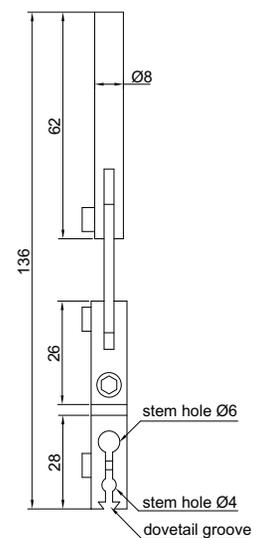
■ Supplied with fixing spanner

Code

6296-1



Unit: mm



## DIAL TEST INDICATOR HOLDER

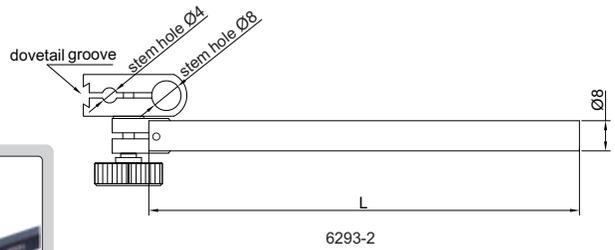
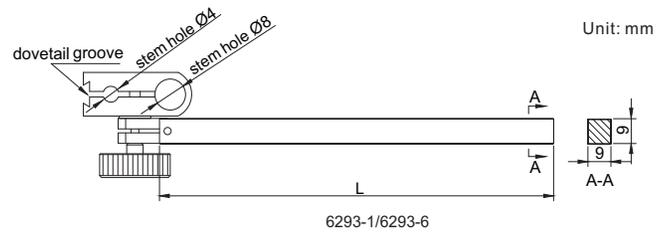


6293-1



6293-2

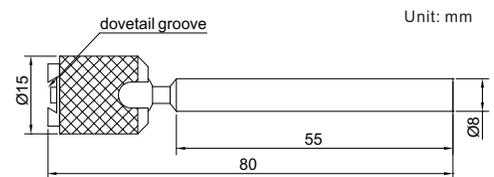
Code	Stem section	Stem length(L)
6293-1	9x9mm	100mm
6293-6	9x9mm	50mm
6293-2	Ø8mm	115mm



## DIAL TEST INDICATOR UNIVERSAL HOLDER



6297-1



Code

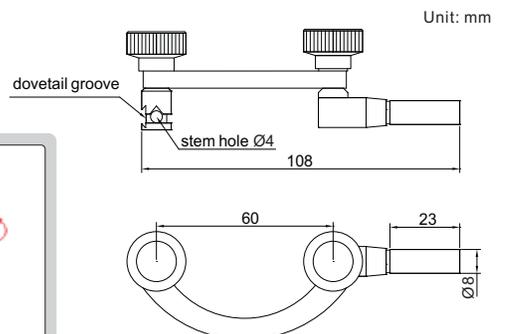
6297-1

- Set the indicators at the desired attitude to the workpiece

## DIAL TEST INDICATOR CENTERING HOLDER



6291-1



Code

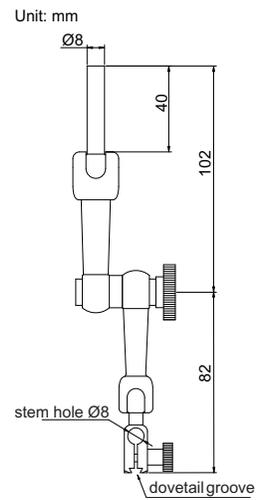
6291-1

- Center cylinders or holes on a machine tool

## DIAL TEST INDICATOR CENTERING HOLDER



6295-1A



**Code**

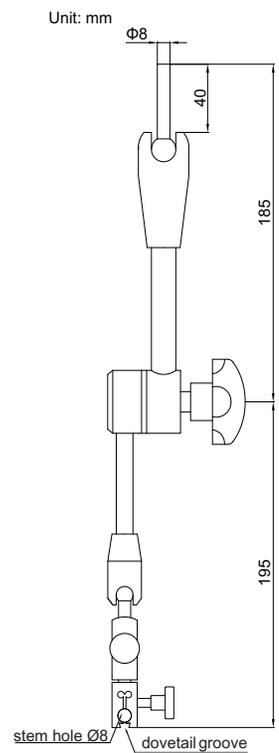
6295-1A

- Center cylinders or holes on a machine tool
- Can be used with dial test indicators

## INDICATOR CENTERING HOLDER



6294-1A



**Code**

6294-1A

- Center cylinders or holes on a machine tool
- Can be used with dial test indicators or dial indicators

# MAGNETIC STAND



6200-60



6201-60

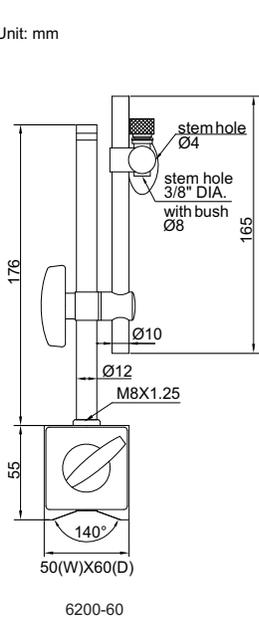


6202-80

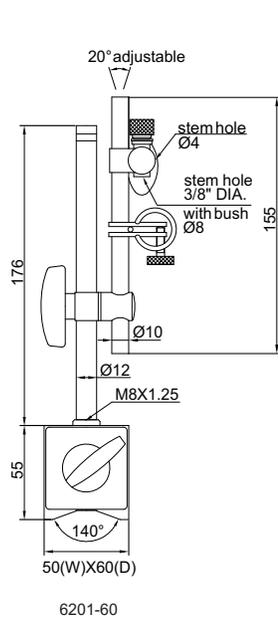


6202-100

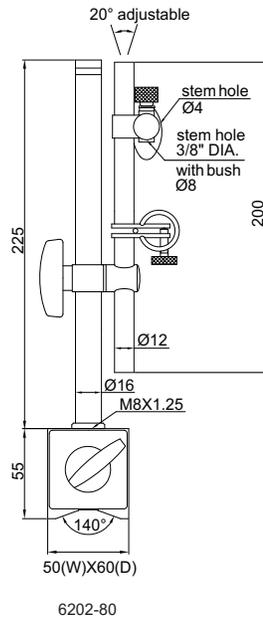
Unit: mm



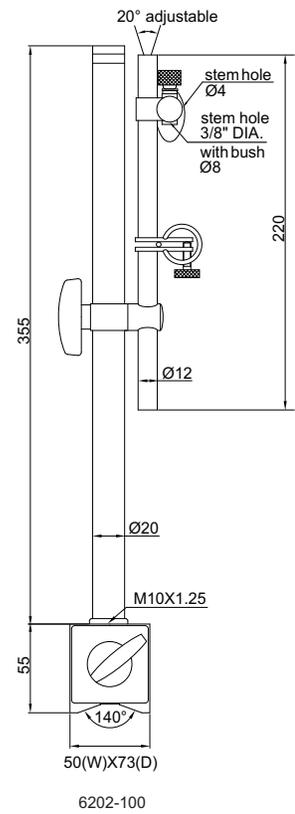
6200-60



6201-60



6202-80



6202-100

- For digital/dial indicators and dial test indicators

Code	Magnetic force	Applicable holding stem	Remark
6200-60	60kgf	Ø8mm, Ø4mm, 3/8" DIA.	without fine adjustment
6201-60	60kgf	Ø8mm, Ø4mm, 3/8" DIA.	with fine adjustment
6202-80	80kgf	Ø8mm, Ø4mm, 3/8" DIA.	with fine adjustment
6202-100	100kgf	Ø8mm, Ø4mm, 3/8" DIA.	with fine adjustment

# UNIVERSAL MAGNETIC STAND



6210-81

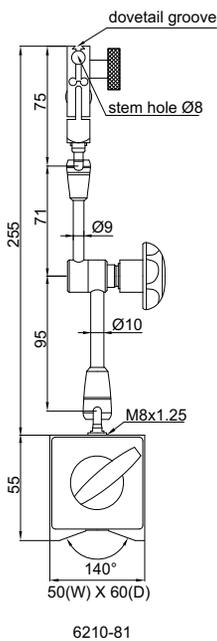


6210-80

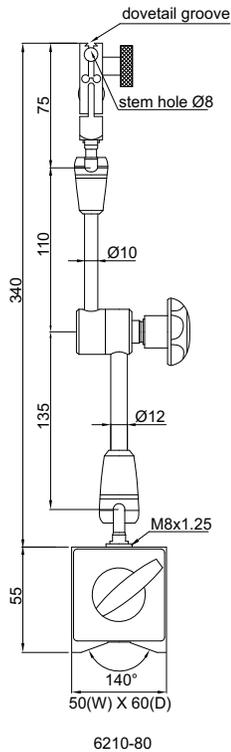


6210-100

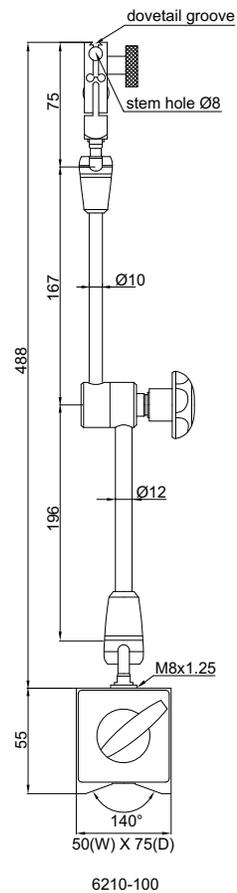
Unit: mm



6210-81



6210-80



6210-100

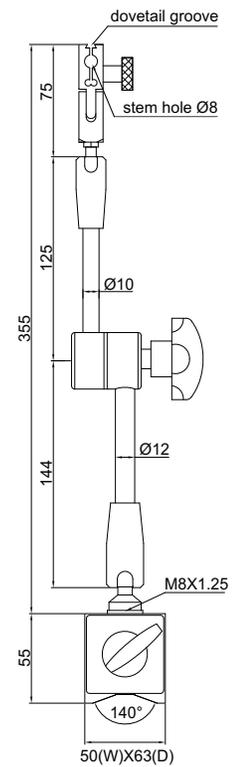
■ For digital/dial indicators and dial test indicators

Code	Magnetic force	Applicable holding stem	Remark
6210-81	80kgf	Ø8mm	with fine adjustment and dovetail groove
6210-80	80kgf	Ø8mm	with fine adjustment and dovetail groove
6210-100	100kgf	Ø8mm	with fine adjustment and dovetail groove

## UNIVERSAL MAGNETIC STAND



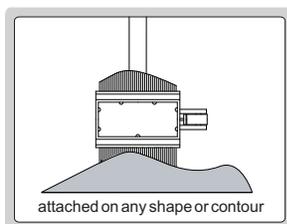
Unit: mm



- For digital/dial indicators and dial test indicators
- Economic model

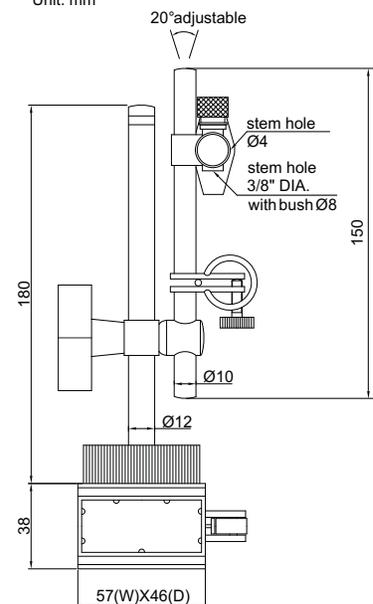
Code	Magnetic force	Applicable holding stem	Remark
6208-80A	80kgf	Ø8mm	with fine adjustment and dovetail groove

## MAGNETIC STAND FOR UNEVEN SURFACE



6215-60

Unit: mm



- For digital/dial indicators and dial test indicators

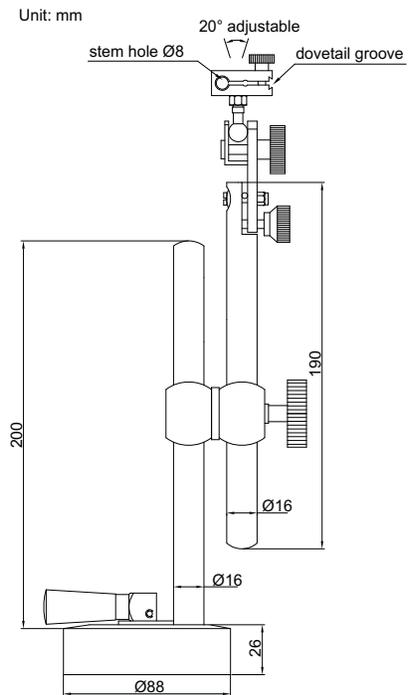
Code	Magnetic force	Applicable holding stem	Remark
6215-60	60kgf	Ø8mm, Ø4mm, 3/8" DIA.	with fine adjustment

## VACUUM STAND



6217-A

- To be used on granite plates
- For digital/dial indicators and dial test indicators



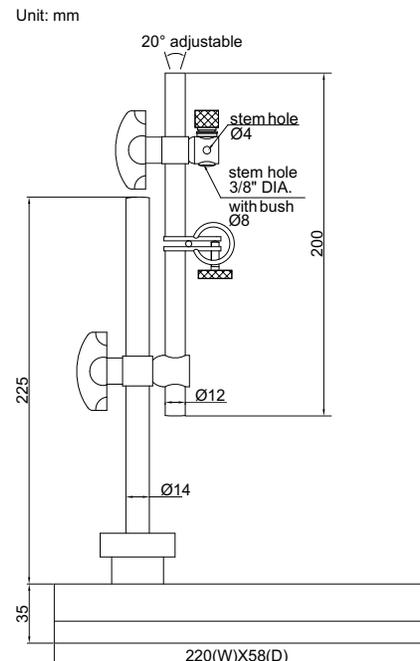
Code	Applicable holding stem	Remark
6217-A	Ø8mm	with fine adjustment and dovetail groove

## UNIVERSAL STAND



6214-A

- For digital/dial indicators and dial test indicators

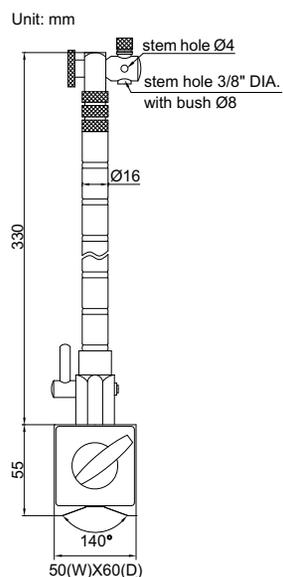


Code	Applicable holding stem	Remark
6214-A	Ø8mm, Ø4mm, 3/8" DIA.	with fine adjustment

## FLEX ARM MAGNETIC STAND<sup>TM</sup>



6207-80A



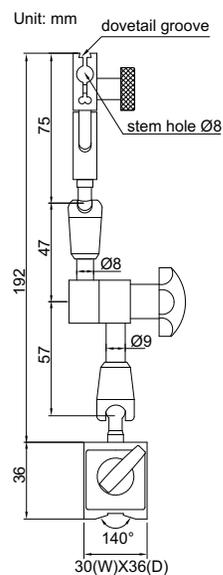
- For dial test indicators

Code	Magnetic force	Applicable holding stem
6207-80A	80kgf	Ø8mm, Ø4mm, 3/8" DIA.

## MINI MAGNETIC STAND



6224-40



- For dial test indicators

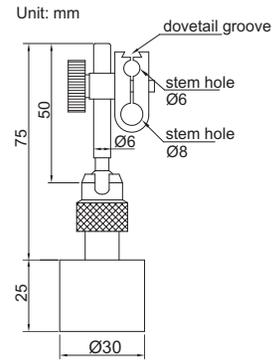
Code	Magnetic force	Applicable holding stem	Remark
6224-40	40kgf	Ø8mm	with fine adjustment and dovetail groove

## MINI MAGNETIC STAND



6211-10

- For dial test indicators



Code	Magnetic force	Applicable holding stem	Remark
6211-10	10kgf	Ø6mm, Ø8mm	with dovetail groove

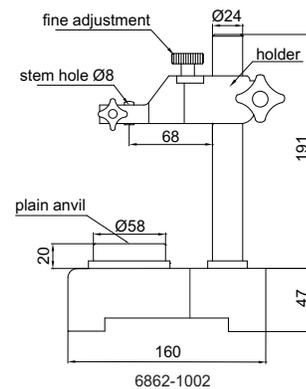
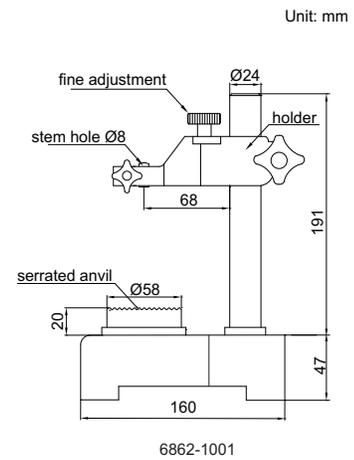
## DIAL GAUGE STAND



6862-1001



6862-1002



- Vertical travel of holder: 100mm
- Fine adjustment range: 2mm

Code	Applicable holding stem	Anvil
6862-1001	Ø8mm	serrated, flatness 1.5µm, hardness HRC60±2
6862-1002	Ø8mm	plain, flatness 1.5µm, hardness HRC60±2

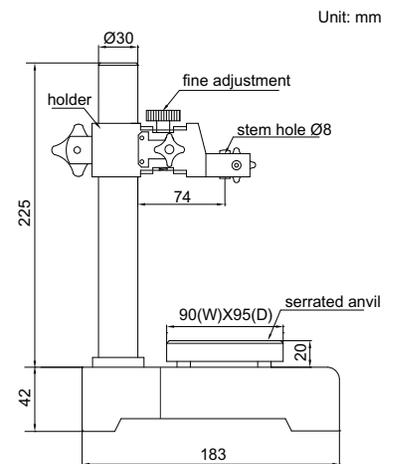
## DIAL GAUGE STAND



6863-150

- Vertical travel of holder: 150mm
- Fine adjustment range: 2mm

Code	Applicable holding stem	Anvil
6863-150	Ø8mm	serrated, flatness 1.5µm, hardness HRC60±2



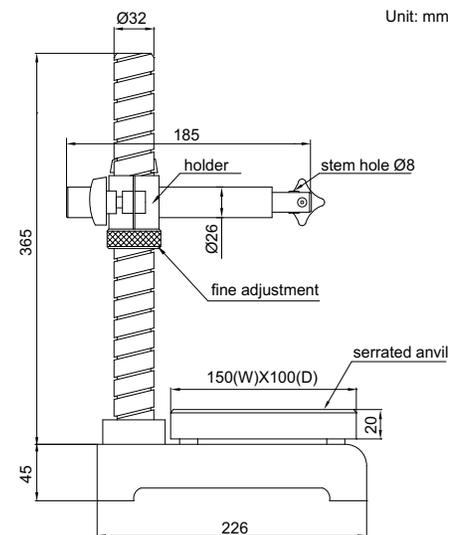
## COMPARATOR STAND



6864-250

- Vertical travel of holder: 250mm
- Fine adjustment range: entire stroke

Code	Applicable holding stem	Anvil
6864-250	Ø8mm	serrated, flatness 1.5µm, hardness HRC60±2



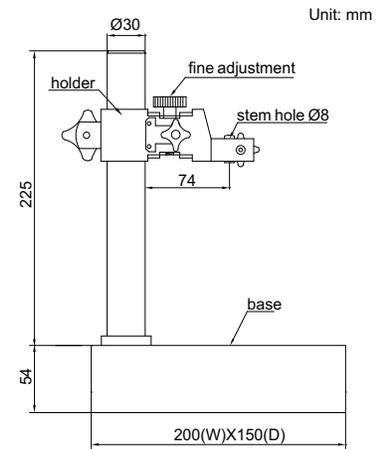
## GRANITE COMPARATOR STAND



6866-150

- Vertical travel of holder: 150mm
- Fine adjustment range: 2mm

Code	Applicable holding stem	Base
6866-150	Ø8mm	flatness 3.2µm



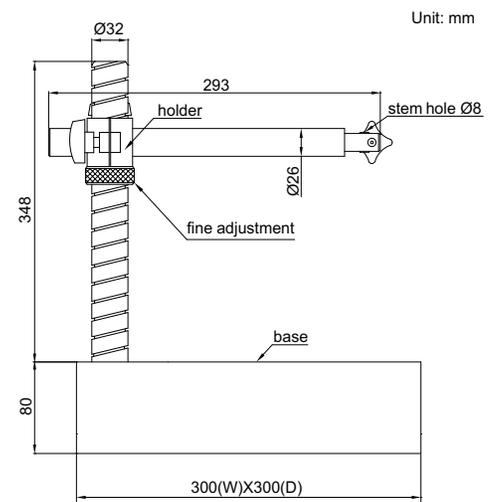
## GRANITE COMPARATOR STAND



6867-250

- Vertical travel of holder: 250mm
- Fine adjustment range: entire stroke

Code	Applicable holding stem	Base
6867-250	Ø8mm	flatness 3.7µm

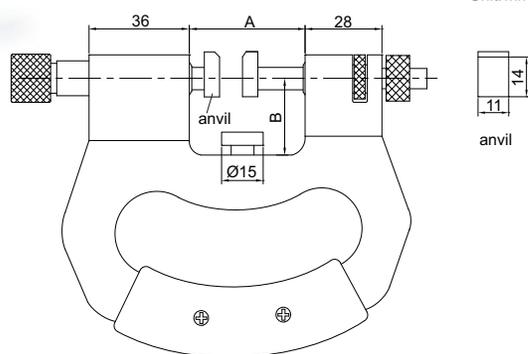


# DIAL SNAP GAUGE



dial indicator is not included

2185-25W



Unit: mm

- For quick Go/No-Go judgment of diameter of cylinders and shafts
- Anvil retracting stroke: 3mm
- Measuring force: 6-9N
- Carbide measuring faces
- Front edges of anvils are chamfered for easy workpiece insertion
- Optional indicators:
  - dial indicator, range 0-10mm, graduation 0.01mm (code 2308-10FA)
  - digital indicator, range 0-12.7mm/0-0.5", resolution 0.001mm/0.00005" (code 2103-10F)
  - digital indicator, range 0-12.7mm/0-0.5", resolution 0.01mm/0.0005" (code 2104-10F)

## optional indicators



2308-10FA

2103-10F

2104-10F

(mm)

Code	Range	A	B
2185-25W	0-25mm	42	20
2185-50W	25-50mm	69	32.5
2185-75W	50-75mm	94	45
2185-100W	75-100mm	119	57.5
2185-125W	100-125mm	144	70
2185-150W	125-150mm	169	82.5
2185-175W	150-175mm	194	95
2185-200W	175-200mm	219	107
2185-225W	200-225mm	244	120
2185-250W	225-250mm	269	132
2185-275W	250-275mm	294	145
2185-300W	275-300mm	319	157

## DIAL SNAP GAUGE



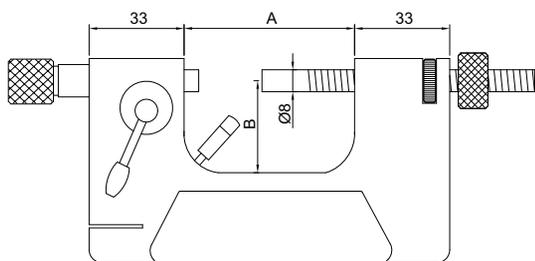
dial indicator  
is not included

2184-50W

optional indicators



Unit: mm



Code	Range	A	B
2184-25W	0-25mm	34	18
2184-50W	0-50mm	62	32
2184-100W	50-100mm	112	62
2184-150W	100-150mm	162	85
2184-200W	150-200mm	212	110

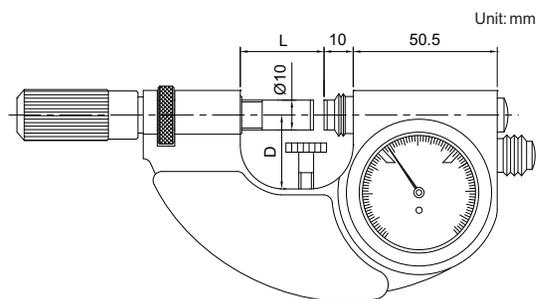
- For quick Go/No-Go judgment of diameter of cylinders and shafts
- Anvil retracting stroke: 3mm
- Measuring force: 6-9N
- Carbide measuring faces
- Optional indicators:
  - dial indicator, range 0-10mm, graduation 0.01mm
  - (code 2308-10FA)
  - digital indicator, range 0-12.7mm/0-0.5", resolution 0.001mm/0.00005"
  - (code 2103-10F)
  - digital indicator, range 0-12.7mm/0-0.5", resolution 0.01mm/0.0005"
  - (code 2104-10F)

## DIAL SNAP GAUGE



3334-25  
(mm)

Code	Range	L	D
3334-25	0-25mm	28.5	25
3334-50	25-50mm	53.5	35
3334-75	50-75mm	78.5	47.5
3334-100	75-100mm	103.5	60

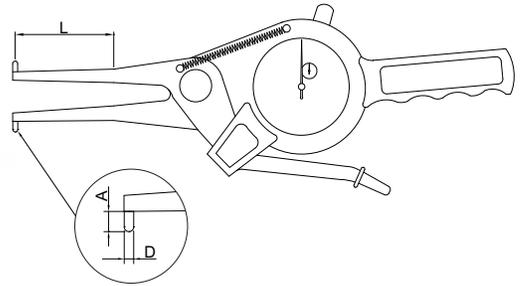


- Go/No-Go judgement for mass production
- Dial indicator: range  $\pm 0.04$ mm, graduation 0.001mm, accuracy 0.001mm
- IP54 waterproof
- Measuring force: 5-10N
- Carbide measuring faces
- Supplied with setting standards(except 0-25mm)

## INTERNAL DIAL CALIPER GAUGE

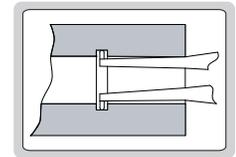


2321-35



(mm)

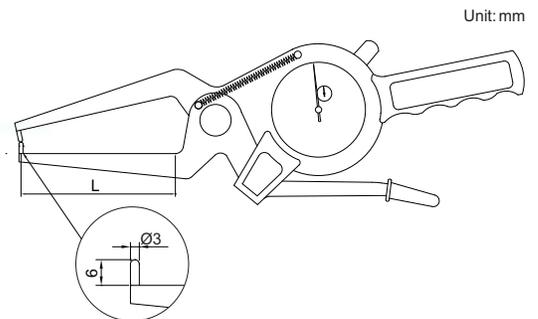
Code	Range	Graduation	Accuracy	L	A	D
2321-35	15-35mm	0.01mm	±0.04mm	50	3	Ø3
2321-AL35	15-35mm	0.01mm	±0.04mm	200	3	Ø3
2321-55	35-55mm	0.01mm	±0.04mm	80	6	Ø3
2321-AL55	35-55mm	0.01mm	±0.04mm	250	8	Ø3
2321-75	55-75mm	0.01mm	±0.04mm	90	8	Ø3
2321-AL75	55-75mm	0.01mm	±0.04mm	250	8	Ø3
2321-95	75-95mm	0.01mm	±0.04mm	100	8	Ø3
2321-115	95-115mm	0.01mm	±0.04mm	150	10	Ø3.2
2321-135	115-135mm	0.01mm	±0.04mm	150	10	Ø3.2



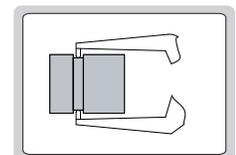
## EXTERNAL DIAL CALIPER GAUGE



2332-20



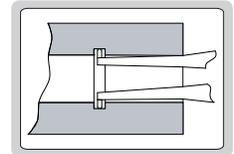
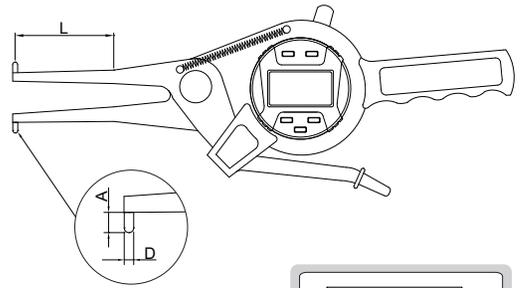
Code	Range	Graduation	Accuracy	L(mm)
2332-20	0-20mm	0.01mm	±0.04mm	60
2332-40	20-40mm	0.01mm	±0.04mm	60
2332-60	40-60mm	0.01mm	±0.04mm	55
2332-80	60-80mm	0.01mm	±0.04mm	55
2332-100	80-100mm	0.01mm	±0.04mm	55



## DIGITAL INTERNAL CALIPER GAUGE



2151-35



(mm)

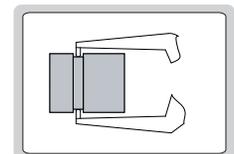
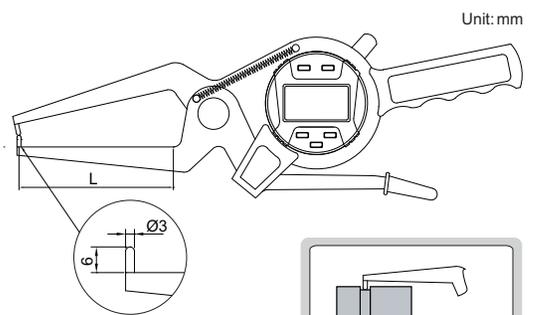
Code	Range	Resolution	Accuracy	L	A	D
2151-35	15-35mm/0.6-1.4"	0.01mm/0.0005"	±0.04mm	50	3	Ø3
2151-AL35	15-35mm/0.6-1.4"	0.01mm/0.0005"	±0.04mm	200	3	Ø3
2151-55	35-55mm/1.4-2.2"	0.01mm/0.0005"	±0.04mm	80	6	Ø3
2151-AL55	35-55mm/1.4-2.2"	0.01mm/0.0005"	±0.04mm	250	8	Ø3
2151-75	55-75mm/2.2-3"	0.01mm/0.0005"	±0.04mm	90	8	Ø3
2151-AL75	55-75mm/2.2-3"	0.01mm/0.0005"	±0.04mm	250	8	Ø3
2151-95	75-95mm/3-3.8"	0.01mm/0.0005"	±0.04mm	100	8	Ø3
2151-115	95-115mm/3.8-4.6"	0.01mm/0.0005"	±0.04mm	150	10	Ø3.2
2151-135	115-135mm/4.6-5.4"	0.01mm/0.0005"	±0.04mm	150	10	Ø3.2

- Reading in digit and analog
- Display can be rotated by 320°
- Functions: tolerance GO and NO GO display, data preset, measuring direction change, max./min./range measurement, inch/metric conversion, absolute/incremental measurement
- CR2032 battery, automatic power off
- USB data output
- Optional accessory: SPC cable (page A1-A2)

## DIGITAL EXTERNAL CALIPER GAUGE



2132-20



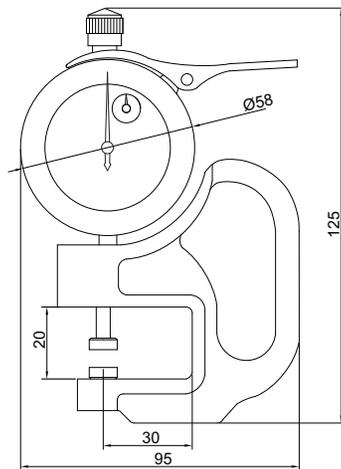
Code	Range	Resolution	Accuracy	L(mm)
2132-20	0-20mm/0-0.8"	0.01mm/0.0005"	±0.04mm	60
2132-40	20-40mm/0.8-1.6"	0.01mm/0.0005"	±0.04mm	60
2132-60	40-60mm/1.6-2.4"	0.01mm/0.0005"	±0.04mm	55
2132-80	60-80mm/2.4-3.2"	0.01mm/0.0005"	±0.04mm	55
2132-100	80-100mm/3.2-4"	0.01mm/0.0005"	±0.04mm	55

- Reading in digit and analog
- Display can be rotated by 320°
- Functions: tolerance GO and NO GO display, data preset, measuring direction change, max./min./range measurement, inch/metric conversion, absolute/incremental measurement
- CR2032 battery, automatic power off
- USB data output
- Optional accessory: SPC cable (page A1-A2)

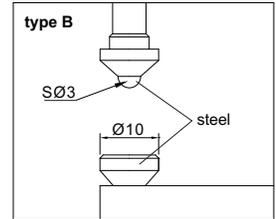
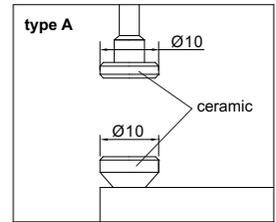
## THICKNESS GAGE



2364-10



Unit: mm

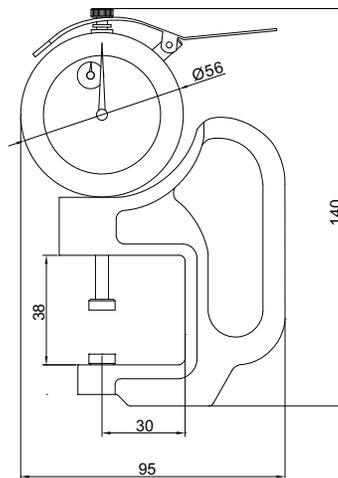


Code	Range	Graduation	Accuracy	Type
2364-10	0-10mm	0.01mm	$\pm 0.02$ mm	A
2364-10B	0-10mm	0.01mm	$\pm 0.02$ mm	B

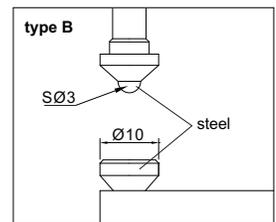
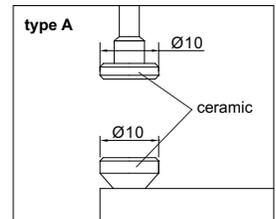
## THICKNESS GAUGE



2366-30



Unit: mm



Code	Range	Graduation	Accuracy	Type
2366-30	0-30mm	0.01mm	$\pm 0.035$ mm	A
2366-30B	0-30mm	0.01mm	$\pm 0.035$ mm	B

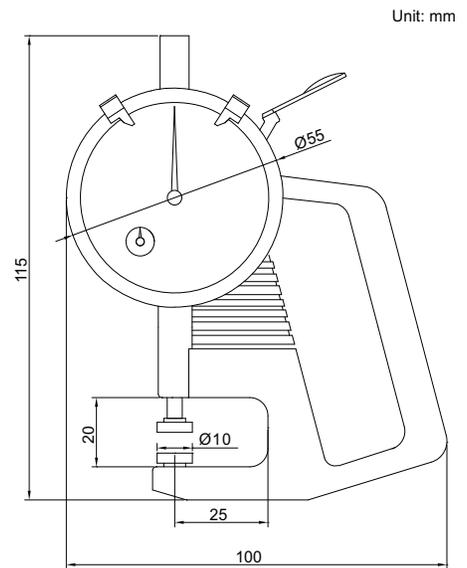
## THICKNESS GAUGE



2861-10

- Ceramic spindle tip and anvil

Code	Range	Graduation	Accuracy
2861-10	0-10mm	0.01mm	±0.02mm



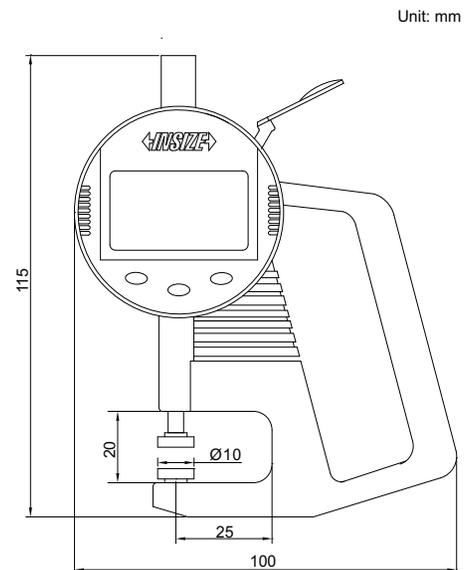
## DIGITAL THICKNESS GAUGE



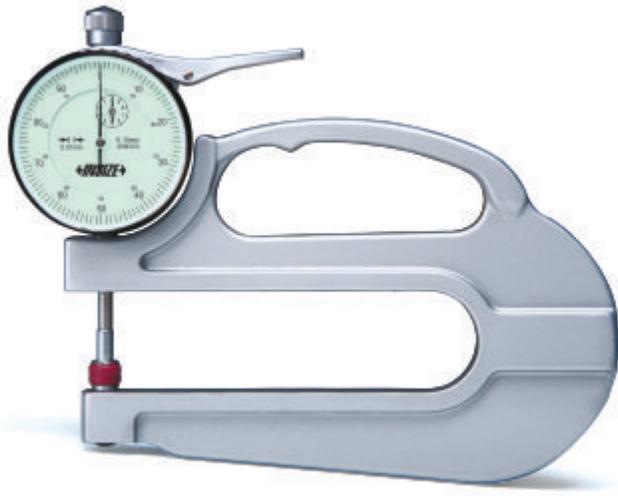
2867-10

- Ceramic spindle tip and anvil
- CR2032 battery

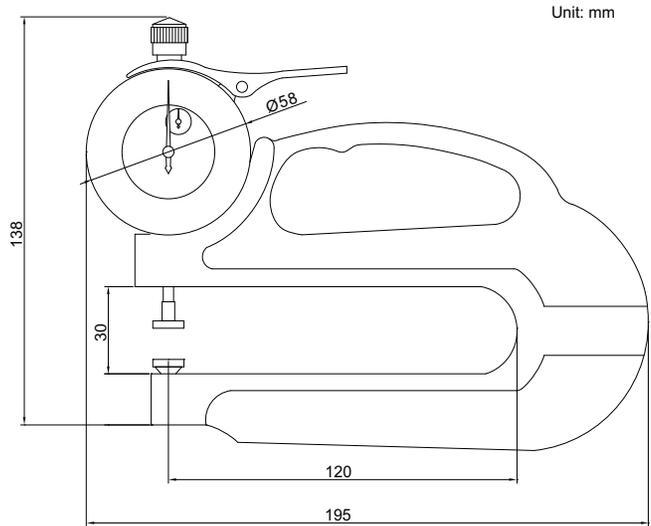
Code	Range	Resolution	Accuracy
2867-10	0-10mm/0.4"	0.01mm/0.0005"	±0.02mm



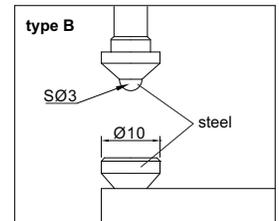
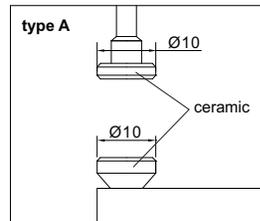
## THICKNESS GAUGE



2365-10



Code	Range	Graduation	Accuracy	Type
2365-10	0-10mm	0.01mm	±0.02mm	A
2365-20	0-20mm	0.01mm	±0.03mm	A
2365-10B	0-10mm	0.01mm	±0.02mm	B
2365-20B	0-20mm	0.01mm	±0.03mm	B



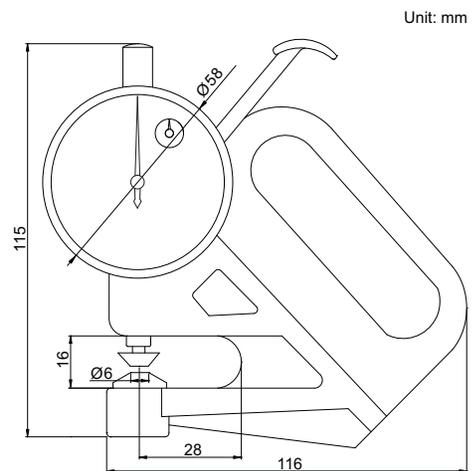
## PRECISION THICKNESS GAUGE



2360-1

- Stainless steel spindle tip and anvil

Code	Range	Graduation	Accuracy
2360-1	0-1mm	0.001mm	±0.005mm

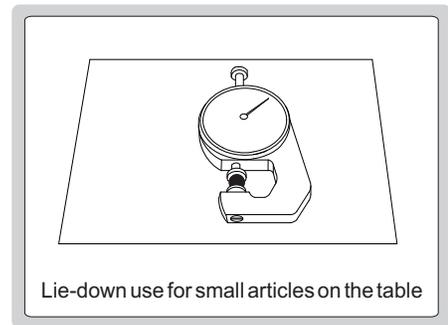
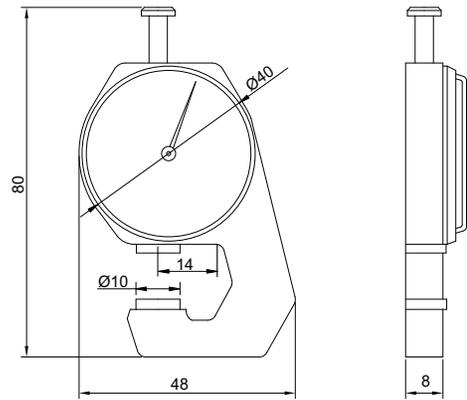


## THICKNESS GAUGE



2361-10

Unit: mm



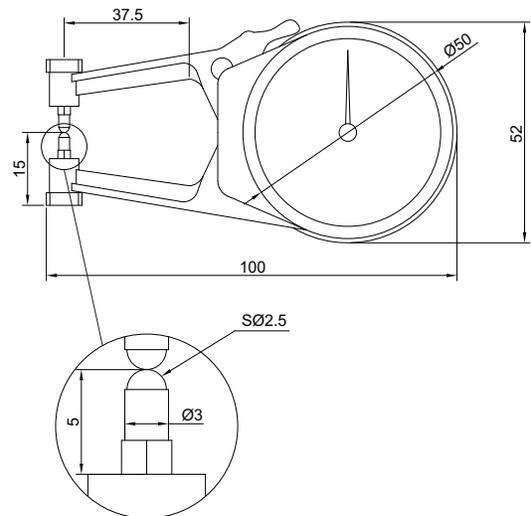
Code	Range	Graduation	Accuracy
2361-10	0-10mm	0.1mm	±0.05mm

## THICKNESS GAUGE



2870-10

Unit: mm



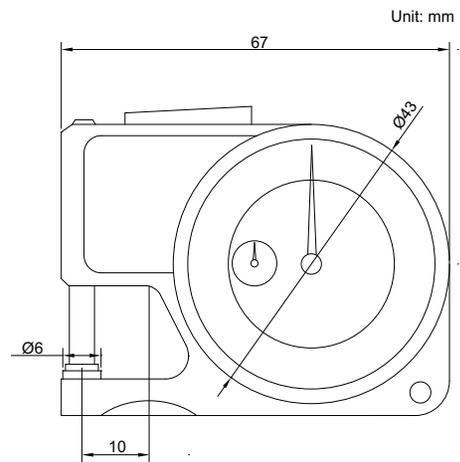
- Made of hard plastic

Code	Range	Graduation	Accuracy
2870-10	0-10mm	0.1mm	±0.1mm

## THICKNESS GAUGE



2363-10



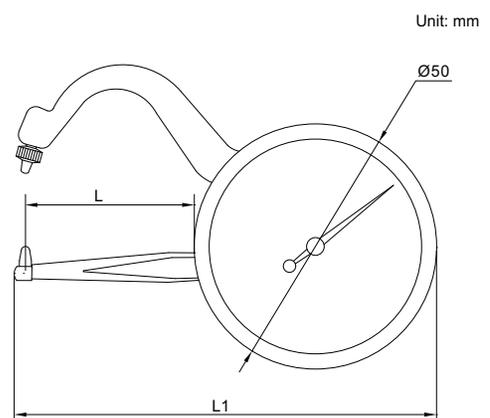
- Stainless steel spindle tip and anvil

Code	Range	Graduation	Accuracy
2363-10	0-10mm	0.01mm	±0.02mm

## THICKNESS GAUGE



2862-101



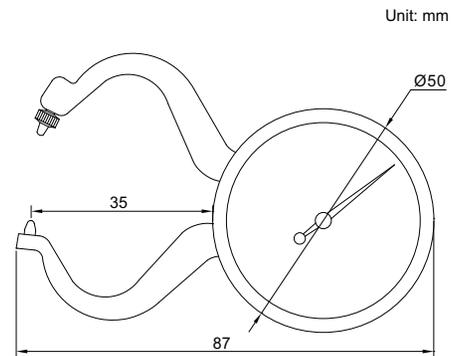
(mm)

Code	Range	Graduation	Accuracy	L	L1
2862-101	0-10mm	0.05mm	±0.1mm	35	85
2862-102	0-10mm	0.05mm	±0.1mm	60	110

## THICKNESS GAUGE



2863-10

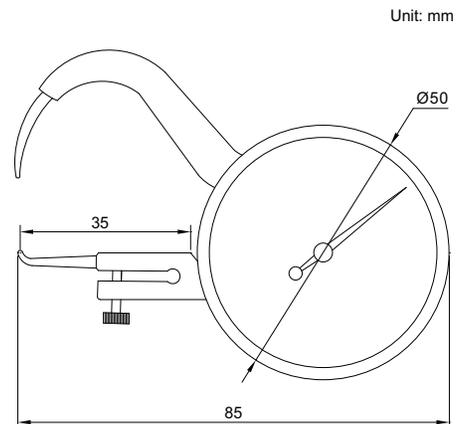


Code	Range	Graduation	Accuracy
2863-10	0-10mm	0.05mm	±0.1mm

## THICKNESS GAUGE WITH POINTED TIPS

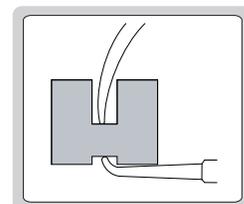


2866-10



- Pointed tips fit into small grooves and recesses

Code	Range	Graduation	Accuracy
2866-10	0-10mm	0.05mm	±0.1mm



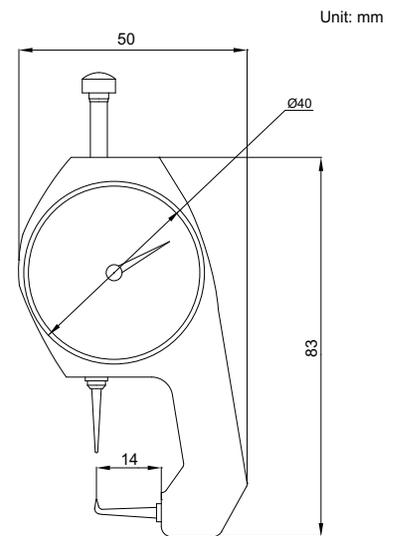
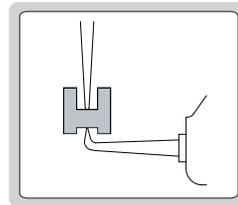
## THICKNESS GAUGE WITH POINTED TIPS



2864-10

- Pointed tips fit into small grooves and recesses

Code	Range	Graduation	Accuracy
2864-10	0-10mm	0.1mm	±0.1mm



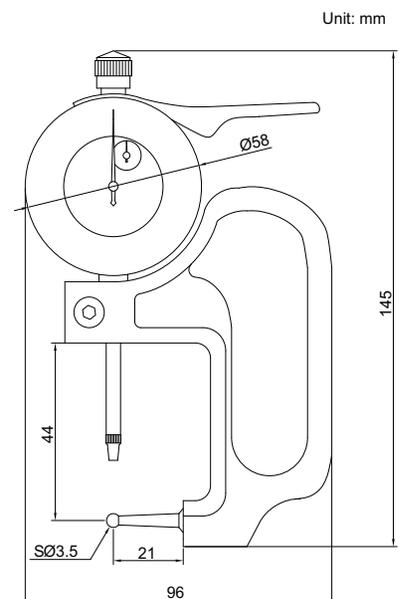
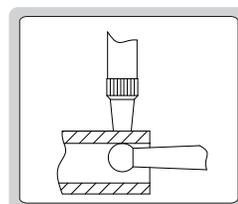
## TUBE THICKNESS GAUGE



2367-10A

- Measure tube wall thickness

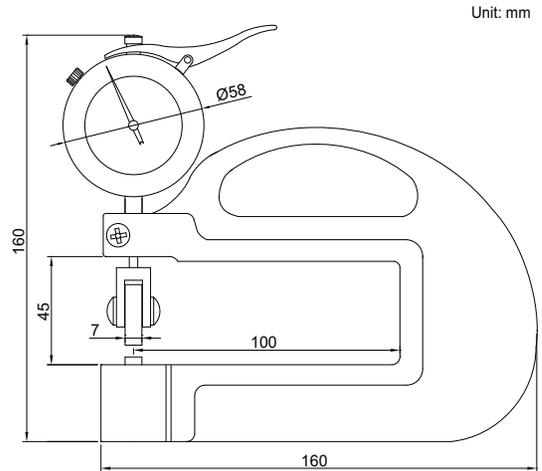
Code	Range	Graduation	Accuracy
2367-10A	0-10mm	0.01mm	±0.02mm



## THICKNESS GAUGE WITH ROLLING WHEEL



2368-10



Unit: mm

- For continuous measurement

Code	Range	Graduation	Accuracy
2368-10	0-10mm	0.01mm	±0.025mm

## SAW SETTING DIAL GAUGE

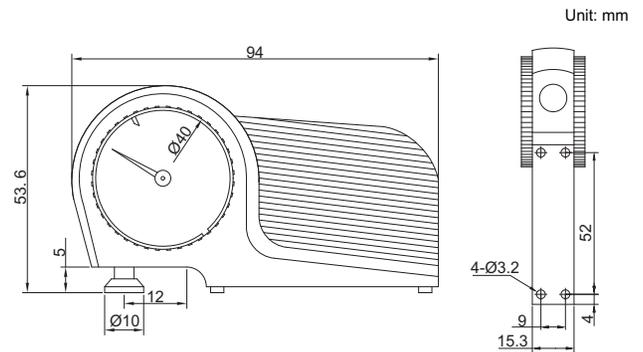


front



back

2869-2

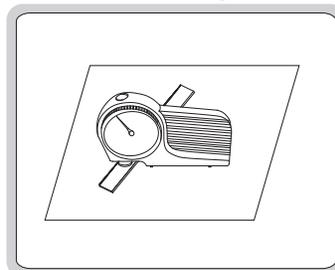


Unit: mm

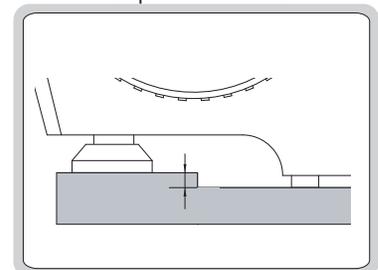
- For saw setting and step measurement
- Dial on both sides
- With limit hand

Code	Range	Graduation	Accuracy
2869-2	0-2mm	0.02mm	±0.02mm

saw setting



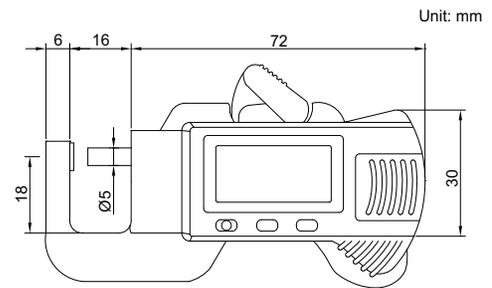
step measurement



## DIGITAL SNAP GAUGE



2166-12

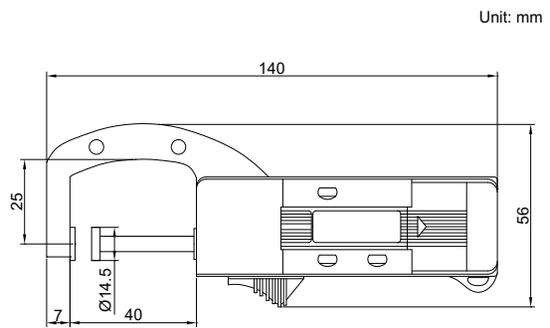


Code	Range	Resolution	Accuracy
2166-12	0-12mm/0-0.5"	0.01mm/0.0005"	±0.03mm

## DIGITAL SNAP GAUGE



2167-25

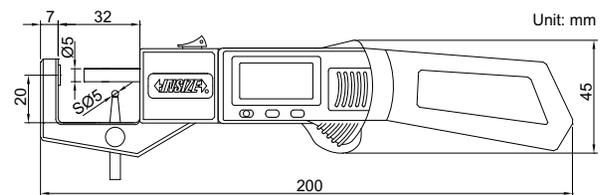
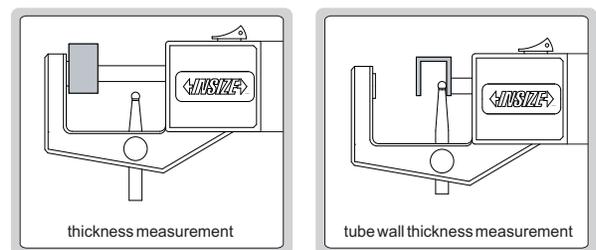


Code	Range	Resolution	Accuracy
2167-25	0-25mm/0-1"	0.01mm/0.0005"	±0.03mm

## DIGITAL SNAP GAUGE



2163-25



- For thickness and tube wall thickness measurement

Code	Thickness range	Tube wall thickness range	Resolution	Accuracy
2163-25	0-25mm/0-1"	0-2mm/0.08"	0.01mm/0.0005"	±0.04mm

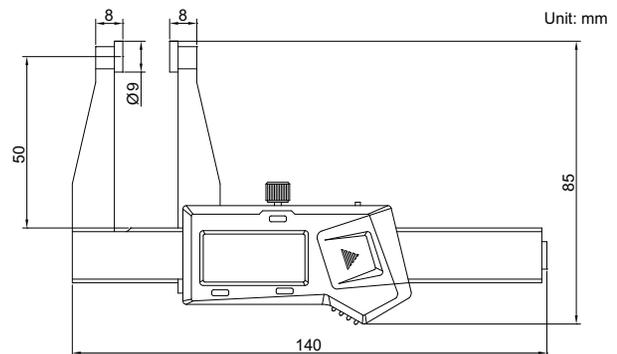
## DIGITAL SNAP GAUGE



1163-50A

- Buttons: on/off, zero, mm/inch
- Automatic power off, move the digital unit to turn on power
- Battery CR2032
- USB data output
- Made of stainless steel
- Optional accessory: SPC cable (page A1-A2)

Code	Range	Resolution	Accuracy
1163-50A	0-50mm/0-2"	0.01mm/0.0005"	±0.03mm



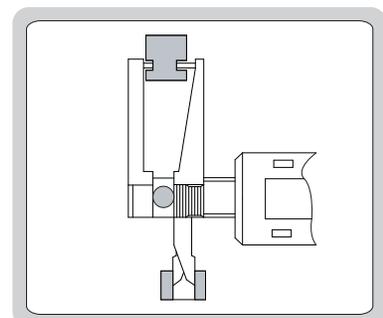
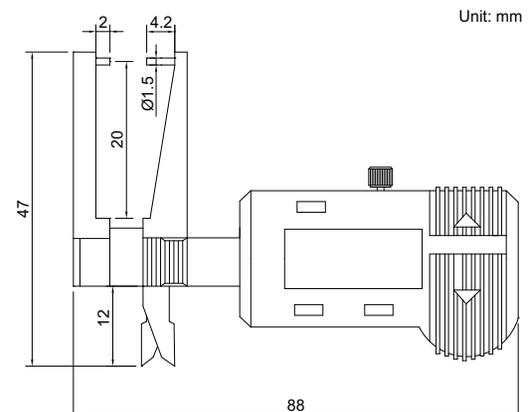
## DIGITAL 3-PURPOSE SNAP GAUGE



2164-25

- Buttons: zero, mm/inch, on/off
- Battery SR44 or LR44
- Made of stainless steel

Code	Range	Resolution	Accuracy
2164-25	0-25mm/0-1"	0.01mm/0.0005"	±0.03mm

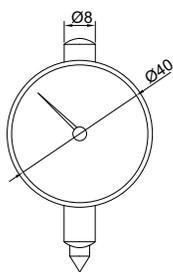


# CRANKSHAFT TESTER

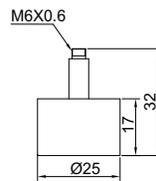
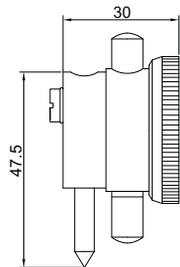


2841-500

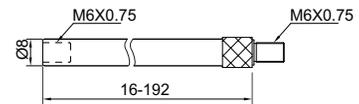
Unit: mm



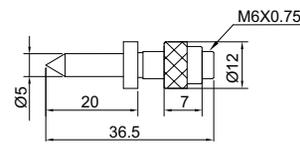
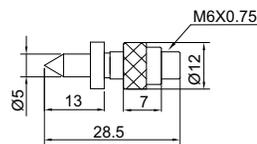
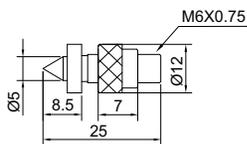
dial indicator



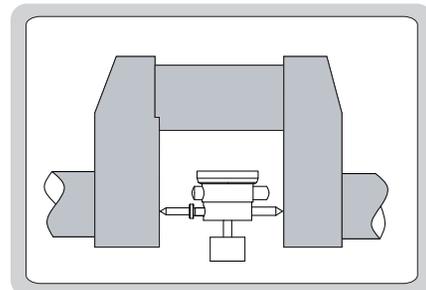
weight block



extension rods



anvils with adjusting screw



- To test crankshaft deflection
- The weight block is mounted on the back of dial indicator to keep the dial indicator facing up

Code	Range	Dial indicator range	Graduation	Extension rods	Accuracy
2841-300	60-300mm	0-3mm	0.01mm	16mm, 32mm, 64mm, 128mm	±0.016mm
2841-500	60-500mm	0-3mm	0.01mm	16mm, 32mm, 64mm, 96mm, 128mm, 192mm	±0.016mm

## DIGITAL RADIUS GAUGE



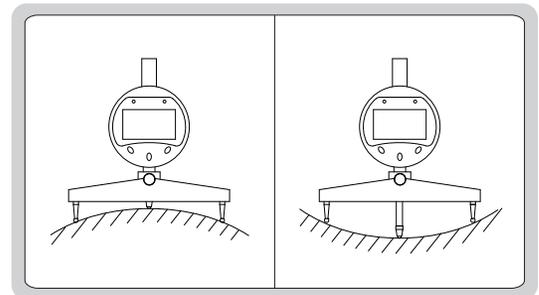
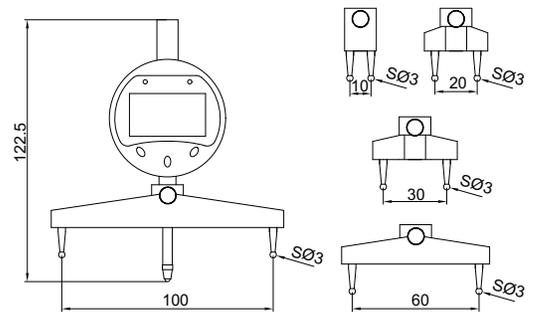
2183

- Measure radius of internal and external arcs
- Supplied with 5 jaws for different sizes of arc
- Battery CR2032

Code	Range of radius (R)	Resolution	Accuracy(mm)
2183	5-700mm/0.2-27.5"	0.01mm/0.001"	±0.01R*

\*R is the radius to be measured

Unit: mm



## SPHERE RADIUS GAUGE

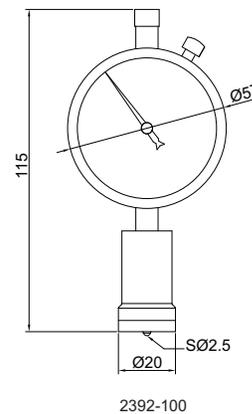


2392-100

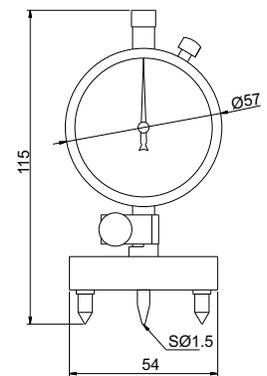


2392-1250

Unit: mm



2392-100

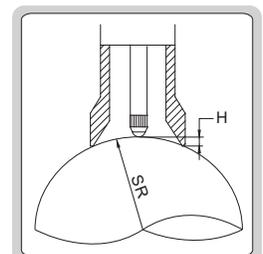


2392-1250

- Measure radius of sphere

Code	Range of radius (SR)	SR(mm)	Graduation	Accuracy(mm)
2392-100	15-100mm	$SR = 50/H + H/2$	0.01mm	$\pm 0.01SR(0.02SR + 1.1)^*$
2392-1250	325-1250mm	$SR = 312.5/H + H/2$	0.01mm	$\pm 0.01SR(0.001SR + 0.7)^*$

\*SR is the radius to be measured





# CERAMIC GAUGE BLOCK SET



4105-87

- Made of ceramic, extremely wear resistance and corrosion resistance, excellent dimension stability
- Meet ISO3650
- Supplied with inspection certificate

Blocks per set	Blocks included in set			Code	
	Size (mm)	Step (mm)	Quantity	Grade 0	Grade 1
112	1.0005		1	4105-112	4105-1112
	1.001-1.009	0.001	9		
	1.01-1.49	0.01	49		
	0.5-24.5	0.5	49		
	25-100	25	4		
103	1.005		1	4105-103	4105-1103
	1.01-1.49	0.01	49		
	0.5-24.5	0.5	49		
	25-100	25	4		
88	1.0005		1	4105-88	4105-188
	1.001-1.009	0.001	9		
	1.01-1.49	0.01	49		
	0.5-9.5	0.5	19		
87	1.001-1.009	0.001	9	4105-87	4105-187
	1.01-1.49	0.01	49		
	0.5-9.5	0.5	19		
76	1.005		1	4105-76	4105-176
	1.01-1.49	0.01	49		
	0.5-9.5	0.5	19		
	10-40	10	4		
	50-100	25	3		
56	0.5		1	4105-56	4105-156
	1.001-1.009	0.001	9		
	1.01-1.09	0.01	9		
	1.1-1.9	0.1	9		
	1-24	1	24		
	25-100	25	4		

Blocks per set	Blocks included in set			Code	
	Size (mm)	Step (mm)	Quantity	Grade 0	Grade 1
47	1.005		1	4105-47A	4105-147A
	1.01-1.09	0.01	9		
	1.1-1.9	0.1	9		
	1-24	1	24		
	25-100	25	4		
47	1.005		1	4105-47	4105-147
	1.01-1.19	0.01	19		
	1.2-1.9	0.1	8		
	1-9	1	9		
	10-100	10	10		
46	1.001-1.009	0.001	9	4105-46	4105-146
	1.01-1.09	0.01	9		
	1.1-1.9	0.1	9		
	1-9	1	9		
	10-100	10	10		
34	1.0005		1	4105-34	4105-134
	1.001-1.009	0.001	9		
	1.01-1.09	0.01	9		
	1.1-1.9	0.1	9		
	1-5	1	5		
32	1.005		1	4105-32	4105-132
	1.01-1.09	0.01	9		
	1.1-1.9	0.1	9		
	1-9	1	9		
	10-30	10	3		
8	125-175	25	3	4105-8	4105-18
	200-250	50	2		
	300-500	100	3		

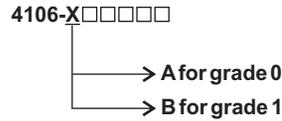
# INDIVIDUAL CERAMIC GAUGE BLOCK



4106-A80

- Made of ceramic, extremely wear resistance and corrosion resistance
- Meet ISO3650
- Supplied with inspection certificate

Code explanation:



Code examples:

Size	Grade	Code
0.5mm	0	4106-AD5
10mm	1	4106-B10

Size	Code
0.5mm	4106- <u>X</u> D5
1mm	4106- <u>X</u> 1
1.0005mm	4106- <u>X</u> 1D0005
1.001mm	4106- <u>X</u> 1D001
1.002mm	4106- <u>X</u> 1D002
1.003mm	4106- <u>X</u> 1D003
1.004mm	4106- <u>X</u> 1D004
1.005mm	4106- <u>X</u> 1D005
1.006mm	4106- <u>X</u> 1D006
1.007mm	4106- <u>X</u> 1D007
1.008mm	4106- <u>X</u> 1D008
1.009mm	4106- <u>X</u> 1D009
1.01mm	4106- <u>X</u> 1D01
1.02mm	4106- <u>X</u> 1D02
1.03mm	4106- <u>X</u> 1D03
1.04mm	4106- <u>X</u> 1D04
1.05mm	4106- <u>X</u> 1D05
1.06mm	4106- <u>X</u> 1D06
1.07mm	4106- <u>X</u> 1D07
1.08mm	4106- <u>X</u> 1D08
1.09mm	4106- <u>X</u> 1D09
1.1mm	4106- <u>X</u> 1D1
1.11mm	4106- <u>X</u> 1D11
1.12mm	4106- <u>X</u> 1D12
1.13mm	4106- <u>X</u> 1D13
1.14mm	4106- <u>X</u> 1D14
1.15mm	4106- <u>X</u> 1D15
1.16mm	4106- <u>X</u> 1D16
1.17mm	4106- <u>X</u> 1D17
1.18mm	4106- <u>X</u> 1D18
1.19mm	4106- <u>X</u> 1D19
1.2mm	4106- <u>X</u> 1D2
1.21mm	4106- <u>X</u> 1D21
1.22mm	4106- <u>X</u> 1D22

Size	Code
1.23mm	4106- <u>X</u> 1D23
1.24mm	4106- <u>X</u> 1D24
1.25mm	4106- <u>X</u> 1D25
1.26mm	4106- <u>X</u> 1D26
1.27mm	4106- <u>X</u> 1D27
1.28mm	4106- <u>X</u> 1D28
1.29mm	4106- <u>X</u> 1D29
1.3mm	4106- <u>X</u> 1D3
1.31mm	4106- <u>X</u> 1D31
1.32mm	4106- <u>X</u> 1D32
1.33mm	4106- <u>X</u> 1D33
1.34mm	4106- <u>X</u> 1D34
1.35mm	4106- <u>X</u> 1D35
1.36mm	4106- <u>X</u> 1D36
1.37mm	4106- <u>X</u> 1D37
1.38mm	4106- <u>X</u> 1D38
1.39mm	4106- <u>X</u> 1D39
1.4mm	4106- <u>X</u> 1D4
1.41mm	4106- <u>X</u> 1D41
1.42mm	4106- <u>X</u> 1D42
1.43mm	4106- <u>X</u> 1D43
1.44mm	4106- <u>X</u> 1D44
1.45mm	4106- <u>X</u> 1D45
1.46mm	4106- <u>X</u> 1D46
1.47mm	4106- <u>X</u> 1D47
1.48mm	4106- <u>X</u> 1D48
1.49mm	4106- <u>X</u> 1D49
1.5mm	4106- <u>X</u> 1D5
1.6mm	4106- <u>X</u> 1D6
1.7mm	4106- <u>X</u> 1D7
1.8mm	4106- <u>X</u> 1D8
1.9mm	4106- <u>X</u> 1D9
2mm	4106- <u>X</u> 2
2.5mm	4106- <u>X</u> 2D5

Size	Code
3mm	4106- <u>X</u> 3
3.5mm	4106- <u>X</u> 3D5
4mm	4106- <u>X</u> 4
4.5mm	4106- <u>X</u> 4D5
5mm	4106- <u>X</u> 5
5.1mm	4106- <u>X</u> 5D1
5.5mm	4106- <u>X</u> 5D5
6mm	4106- <u>X</u> 6
6.5mm	4106- <u>X</u> 6D5
7mm	4106- <u>X</u> 7
7.5mm	4106- <u>X</u> 7D5
7.7mm	4106- <u>X</u> 7D7
8mm	4106- <u>X</u> 8
8.5mm	4106- <u>X</u> 8D5
9mm	4106- <u>X</u> 9
9.5mm	4106- <u>X</u> 9D5
10mm	4106- <u>X</u> 10
10.3mm	4106- <u>X</u> 10D3
10.5mm	4106- <u>X</u> 10D5
11mm	4106- <u>X</u> 11
11.5mm	4106- <u>X</u> 11D5
12mm	4106- <u>X</u> 12
12.5mm	4106- <u>X</u> 12D5
12.9mm	4106- <u>X</u> 12D9
13mm	4106- <u>X</u> 13
13.5mm	4106- <u>X</u> 13D5
14mm	4106- <u>X</u> 14
14.5mm	4106- <u>X</u> 14D5
15mm	4106- <u>X</u> 15
15.5mm	4106- <u>X</u> 15D5
16mm	4106- <u>X</u> 16
16.5mm	4106- <u>X</u> 16D5
17mm	4106- <u>X</u> 17
17.5mm	4106- <u>X</u> 17D5

Size	Code
17.6mm	4106- <u>X</u> 17D6
18mm	4106- <u>X</u> 18
18.5mm	4106- <u>X</u> 18D5
19mm	4106- <u>X</u> 19
19.5mm	4106- <u>X</u> 19D5
20mm	4106- <u>X</u> 20
20.2mm	4106- <u>X</u> 20D2
20.5mm	4106- <u>X</u> 20D5
21mm	4106- <u>X</u> 21
21.5mm	4106- <u>X</u> 21D5
22mm	4106- <u>X</u> 22
22.5mm	4106- <u>X</u> 22D5
22.8mm	4106- <u>X</u> 22D8
23mm	4106- <u>X</u> 23
23.5mm	4106- <u>X</u> 23D5
24mm	4106- <u>X</u> 24
24.5mm	4106- <u>X</u> 24D5
25mm	4106- <u>X</u> 25
30mm	4106- <u>X</u> 30
40mm	4106- <u>X</u> 40
41.3mm	4106- <u>X</u> 41D3
50mm	4106- <u>X</u> 50
60mm	4106- <u>X</u> 60
70mm	4106- <u>X</u> 70
75mm	4106- <u>X</u> 75
80mm	4106- <u>X</u> 80
90mm	4106- <u>X</u> 90
100mm	4106- <u>X</u> 100
125mm	4106- <u>X</u> 125
131.4mm	4106- <u>X</u> 131D4
150mm	4106- <u>X</u> 150

## STEEL GAUGE BLOCK SET



4100-87

- Made of alloy steel
- Meet ISO3650
- Supplied with inspection certificate

Blocks per set	Blocks included in set			Code		
	Size (mm)	Step (mm)	Quantity	Grade 0	Grade 1	Grade 2
122	1.0005		1	4100-122	4100-1122	4100-2122
	1.001-1.009	0.001	9			
	1.01-1.49	0.01	49			
	1.6-1.9	0.1	4			
	0.5-24.5	0.5	49			
	30-100	10	8			
	25-75	50	2			
112	1.0005		1	4100-112	4100-1112	4100-2112
	1.001-1.009	0.001	9			
	1.01-1.49	0.01	49			
	0.5-24.5	0.5	49			
	25-100	25	4			
103	1.005		1	4100-103	4100-1103	4100-2103
	1.01-1.49	0.01	49			
	0.5-24.5	0.5	49			
	25-100	25	4			
88	1.0005		1	4100-88	4100-188	4100-288
	1.001-1.009	0.001	9			
	1.01-1.49	0.01	49			
	0.5-9.5	0.5	19			
	10-100	10	10			
87	1.001-1.009	0.001	9	4100-87	4100-187	4100-287
	1.01-1.49	0.01	49			
	0.5-9.5	0.5	19			
	10-100	10	10			
83	0.5		1	4100-83	4100-183	4100-283
	1		1			
	1.005		1			
	1.01-1.49	0.01	49			
	1.5-1.9	0.1	5			
	2-9.5	0.5	16			
	10-100	10	10			

To be continued

Continued from page H4

Blocks per set	Blocks included in set			Code		
	Size (mm)	Step (mm)	Quantity	Grade 0	Grade 1	Grade 2
76	1.005		1	4100-76	4100-176	4100-276
	1.01-1.49	0.01	49			
	0.5-9.5	0.5	19			
	10-40	10	4			
	50-100	25	3			
56	0.5		1	4100-56	4100-156	4100-256
	1.001-1.009	0.001	9			
	1.01-1.09	0.01	9			
	1.1-1.9	0.1	9			
	1-24	1	24			
	25-100	25	4			
47	1.005		1	4100-47A	4100-147A	4100-247A
	1.01-1.09	0.01	9			
	1.1-1.9	0.1	9			
	1-24	1	24			
	25-100	25	4			
47	1.005		1	4100-47	4100-147	4100-247
	1.01-1.19	0.01	19			
	1.2-1.9	0.1	8			
	1-9	1	9			
	10-100	10	10			
46	1.001-1.009	0.001	9	4100-46	4100-146	4100-246
	1.01-1.09	0.01	9			
	1.1-1.9	0.1	9			
	1-9	1	9			
	10-100	10	10			
34	1.0005		1	4100-34	4100-134	4100-234
	1.001-1.009	0.001	9			
	1.01-1.09	0.01	9			
	1.1-1.9	0.1	9			
	1-5	1	5			
	10		1			
32	1.005		1	4100-32	4100-132	4100-232
	1.01-1.09	0.01	9			
	1.1-1.9	0.1	9			
	1-9	1	9			
	10-30	10	3			
	60		1			
9	1.001-1.009	0.001	9	4100-9	4100-19	4100-29
9	0.991-0.999	0.001	9	4100-9A	4100-19A	4100-29A
8	125-175	25	3	4100-8	4100-18	4100-28
	200-250	50	2			
	300-500	100	3			

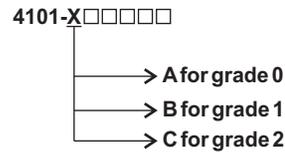
# INDIVIDUAL STEEL GAUGE BLOCK



4101-A70

- Made of alloy steel
- Meet ISO3650
- Supplied with inspection certificate
- Grade 0 is not available from 0.25mm to 0.49mm

### Code explanation:



### Code examples:

Size	Grade	Code
0.5mm	0	4101-AD5
1mm	1	4101-B1
10.5mm	2	4101-C10D5

Size	Code
0.25mm	4101- <u>XD</u> 25
0.26mm	4101- <u>XD</u> 26
0.27mm	4101- <u>XD</u> 27
0.28mm	4101- <u>XD</u> 28
0.29mm	4101- <u>XD</u> 29
0.3mm	4101- <u>XD</u> 3
0.31mm	4101- <u>XD</u> 31
0.32mm	4101- <u>XD</u> 32
0.33mm	4101- <u>XD</u> 33
0.34mm	4101- <u>XD</u> 34
0.35mm	4101- <u>XD</u> 35
0.36mm	4101- <u>XD</u> 36
0.37mm	4101- <u>XD</u> 37
0.38mm	4101- <u>XD</u> 38
0.39mm	4101- <u>XD</u> 39
0.4mm	4101- <u>XD</u> 4
0.41mm	4101- <u>XD</u> 41
0.42mm	4101- <u>XD</u> 42
0.43mm	4101- <u>XD</u> 43
0.44mm	4101- <u>XD</u> 44
0.45mm	4101- <u>XD</u> 45
0.46mm	4101- <u>XD</u> 46
0.47mm	4101- <u>XD</u> 47
0.48mm	4101- <u>XD</u> 48
0.49mm	4101- <u>XD</u> 49
0.5mm	4101- <u>XD</u> 5
0.51mm	4101- <u>XD</u> 51
0.52mm	4101- <u>XD</u> 52
0.53mm	4101- <u>XD</u> 53
0.54mm	4101- <u>XD</u> 54

Size	Code
0.55mm	4101- <u>XD</u> 55
0.56mm	4101- <u>XD</u> 56
0.57mm	4101- <u>XD</u> 57
0.58mm	4101- <u>XD</u> 58
0.59mm	4101- <u>XD</u> 59
0.6mm	4101- <u>XD</u> 6
0.61mm	4101- <u>XD</u> 61
0.62mm	4101- <u>XD</u> 62
0.63mm	4101- <u>XD</u> 63
0.64mm	4101- <u>XD</u> 64
0.65mm	4101- <u>XD</u> 65
0.66mm	4101- <u>XD</u> 66
0.67mm	4101- <u>XD</u> 67
0.68mm	4101- <u>XD</u> 68
0.69mm	4101- <u>XD</u> 69
0.7mm	4101- <u>XD</u> 7
0.71mm	4101- <u>XD</u> 71
0.72mm	4101- <u>XD</u> 72
0.73mm	4101- <u>XD</u> 73
0.74mm	4101- <u>XD</u> 74
0.75mm	4101- <u>XD</u> 75
0.76mm	4101- <u>XD</u> 76
0.77mm	4101- <u>XD</u> 77
0.78mm	4101- <u>XD</u> 78
0.79mm	4101- <u>XD</u> 79
0.8mm	4101- <u>XD</u> 8
0.81mm	4101- <u>XD</u> 81
0.82mm	4101- <u>XD</u> 82
0.83mm	4101- <u>XD</u> 83
0.84mm	4101- <u>XD</u> 84

Size	Code
0.85mm	4101- <u>XD</u> 85
0.86mm	4101- <u>XD</u> 86
0.87mm	4101- <u>XD</u> 87
0.88mm	4101- <u>XD</u> 88
0.89mm	4101- <u>XD</u> 89
0.9mm	4101- <u>XD</u> 9
0.91mm	4101- <u>XD</u> 91
0.92mm	4101- <u>XD</u> 92
0.93mm	4101- <u>XD</u> 93
0.94mm	4101- <u>XD</u> 94
0.95mm	4101- <u>XD</u> 95
0.96mm	4101- <u>XD</u> 96
0.97mm	4101- <u>XD</u> 97
0.98mm	4101- <u>XD</u> 98
0.99mm	4101- <u>XD</u> 99
0.991mm	4101- <u>XD</u> 991
0.992mm	4101- <u>XD</u> 992
0.993mm	4101- <u>XD</u> 993
0.994mm	4101- <u>XD</u> 994
0.995mm	4101- <u>XD</u> 995
0.996mm	4101- <u>XD</u> 996
0.997mm	4101- <u>XD</u> 997
0.998mm	4101- <u>XD</u> 998
0.999mm	4101- <u>XD</u> 999
1mm	4101- <u>X</u> 1
1.0005mm	4101- <u>X1D</u> 0005
1.001mm	4101- <u>X1D</u> 001
1.002mm	4101- <u>X1D</u> 002
1.003mm	4101- <u>X1D</u> 003
1.004mm	4101- <u>X1D</u> 004

Size	Code
1.005mm	4101- <u>X1D</u> 005
1.006mm	4101- <u>X1D</u> 006
1.007mm	4101- <u>X1D</u> 007
1.008mm	4101- <u>X1D</u> 008
1.009mm	4101- <u>X1D</u> 009
1.01mm	4101- <u>X1D</u> 01
1.02mm	4101- <u>X1D</u> 02
1.03mm	4101- <u>X1D</u> 03
1.04mm	4101- <u>X1D</u> 04
1.05mm	4101- <u>X1D</u> 05
1.06mm	4101- <u>X1D</u> 06
1.07mm	4101- <u>X1D</u> 07
1.08mm	4101- <u>X1D</u> 08
1.09mm	4101- <u>X1D</u> 09
1.1mm	4101- <u>X1D</u> 1
1.11mm	4101- <u>X1D</u> 11
1.12mm	4101- <u>X1D</u> 12
1.13mm	4101- <u>X1D</u> 13
1.14mm	4101- <u>X1D</u> 14
1.15mm	4101- <u>X1D</u> 15
1.16mm	4101- <u>X1D</u> 16
1.17mm	4101- <u>X1D</u> 17
1.18mm	4101- <u>X1D</u> 18
1.19mm	4101- <u>X1D</u> 19
1.2mm	4101- <u>X1D</u> 2
1.21mm	4101- <u>X1D</u> 21
1.22mm	4101- <u>X1D</u> 22
1.23mm	4101- <u>X1D</u> 23
1.24mm	4101- <u>X1D</u> 24
1.25mm	4101- <u>X1D</u> 25

To be continued

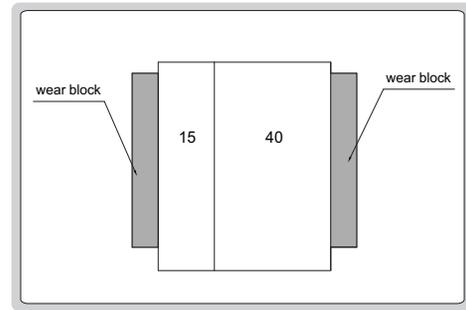
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Size	Code	Size	Code	Size	Code	Size	Code
1.26mm	4101-X1D26	2.05mm	4101-X2D05	2.49mm	4101-X2D49	19.5mm	4101-X19D5
1.27mm	4101-X1D27	2.06mm	4101-X2D06	2.5mm	4101-X2D5	20mm	4101-X20
1.28mm	4101-X1D28	2.07mm	4101-X2D07	2.6mm	4101-X2D6	20.2mm	4101-X20D2
1.29mm	4101-X1D29	2.08mm	4101-X2D08	2.7mm	4101-X2D7	20.5mm	4101-X20D5
1.3mm	4101-X1D3	2.09mm	4101-X2D09	2.8mm	4101-X2D8	21mm	4101-X21
1.31mm	4101-X1D31	2.1mm	4101-X2D1	2.9mm	4101-X2D9	21.5mm	4101-X21D5
1.32mm	4101-X1D32	2.11mm	4101-X2D11	3mm	4101-X3	22mm	4101-X22
1.33mm	4101-X1D33	2.12mm	4101-X2D12	3.5mm	4101-X3D5	22.5mm	4101-X22D5
1.34mm	4101-X1D34	2.13mm	4101-X2D13	4mm	4101-X4	22.8mm	4101-X22D8
1.35mm	4101-X1D35	2.14mm	4101-X2D14	4.5mm	4101-X4D5	23mm	4101-X23
1.36mm	4101-X1D36	2.15mm	4101-X2D15	5mm	4101-X5	23.5mm	4101-X23D5
1.37mm	4101-X1D37	2.16mm	4101-X2D16	5.1mm	4101-X5D1	24mm	4101-X24
1.38mm	4101-X1D38	2.17mm	4101-X2D17	5.5mm	4101-X5D5	24.5mm	4101-X24D5
1.39mm	4101-X1D39	2.18mm	4101-X2D18	6mm	4101-X6	25mm	4101-X25
1.4mm	4101-X1D4	2.19mm	4101-X2D19	6.5mm	4101-X6D5	25.25mm	4101-X25D25
1.41mm	4101-X1D41	2.2mm	4101-X2D2	7mm	4101-X7	30mm	4101-X30
1.42mm	4101-X1D42	2.21mm	4101-X2D21	7.5mm	4101-X7D5	35mm	4101-X35
1.43mm	4101-X1D43	2.22mm	4101-X2D22	7.7mm	4101-X7D7	40mm	4101-X40
1.44mm	4101-X1D44	2.23mm	4101-X2D23	8mm	4101-X8	41.3mm	4101-X41D3
1.45mm	4101-X1D45	2.24mm	4101-X2D24	8.5mm	4101-X8D5	45mm	4101-X45
1.46mm	4101-X1D46	2.25mm	4101-X2D25	9mm	4101-X9	50mm	4101-X50
1.47mm	4101-X1D47	2.26mm	4101-X2D26	9.5mm	4101-X9D5	60mm	4101-X60
1.48mm	4101-X1D48	2.27mm	4101-X2D27	10mm	4101-X10	70mm	4101-X70
1.49mm	4101-X1D49	2.28mm	4101-X2D28	10.3mm	4101-X10D3	75mm	4101-X75
1.5mm	4101-X1D5	2.29mm	4101-X2D29	10.5mm	4101-X10D5	80mm	4101-X80
1.6mm	4101-X1D6	2.3mm	4101-X2D3	11mm	4101-X11	90mm	4101-X90
1.7mm	4101-X1D7	2.31mm	4101-X2D31	11.5mm	4101-X11D5	100mm	4101-X100
1.8mm	4101-X1D8	2.32mm	4101-X2D32	12mm	4101-X12	125mm	4101-X125
1.9mm	4101-X1D9	2.33mm	4101-X2D33	12.5mm	4101-X12D5	131.4mm	4101-X131D4
2mm	4101-X2	2.34mm	4101-X2D34	12.9mm	4101-X12D9	150mm	4101-X150
2.0005mm	4101-X2D0005	2.35mm	4101-X2D35	13mm	4101-X13	175mm	4101-X175
2.001mm	4101-X2D001	2.36mm	4101-X2D36	13.5mm	4101-X13D5	200mm	4101-X200
2.002mm	4101-X2D002	2.37mm	4101-X2D37	14mm	4101-X14	250mm	4101-X250
2.003mm	4101-X2D003	2.38mm	4101-X2D38	14.5mm	4101-X14D5	300mm	4101-X300
2.004mm	4101-X2D004	2.39mm	4101-X2D39	15mm	4101-X15	400mm	4101-X400
2.005mm	4101-X2D005	2.4mm	4101-X2D4	15.5mm	4101-X15D5	500mm	4101-X500
2.006mm	4101-X2D006	2.41mm	4101-X2D41	16mm	4101-X16	600mm	4101-X600
2.007mm	4101-X2D007	2.42mm	4101-X2D42	16.5mm	4101-X16D5	700mm	4101-X700
2.008mm	4101-X2D008	2.43mm	4101-X2D43	17mm	4101-X17	750mm	4101-X750
2.009mm	4101-X2D009	2.44mm	4101-X2D44	17.5mm	4101-X17D5	800mm	4101-X800
2.01mm	4101-X2D01	2.45mm	4101-X2D45	17.6mm	4101-X17D6	900mm	4101-X900
2.02mm	4101-X2D02	2.46mm	4101-X2D46	18mm	4101-X18	1000mm	4101-X1000
2.03mm	4101-X2D03	2.47mm	4101-X2D47	18.5mm	4101-X18D5		
2.04mm	4101-X2D04	2.48mm	4101-X2D48	19mm	4101-X19		

## WEAR BLOCK SET



4111-2



Blocks per set	Size	Material	Code	
			Grade 0	Grade 1
2	1.0mm	ceramic	4111-1	4111-11
2	1.0mm	alloy steel	4111-1A	4111-11A
2	2.0mm	ceramic	4111-2	4111-12
2	2.0mm	alloy steel	4111-2A	4111-12A

- Protect the measuring surfaces of gauge blocks from excessive wear
- Meet ISO3650
- Supplied with inspection certificate

## MICROMETER INSPECTION GAUGE BLOCK SET



4107-10

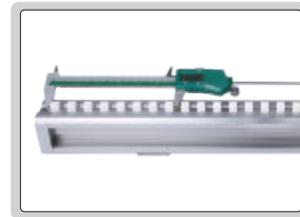
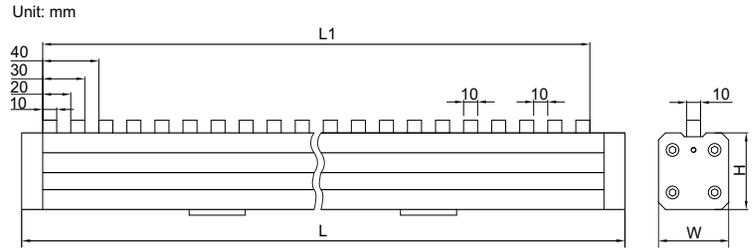
- One piece of optical parallel in each set

Code	Material	Blocks and parallel included in set	Applicable micrometer
4107-10	ceramic	2.5mm, 5.1mm, 7.7mm, 10.3mm, 12.9mm, 15mm, 17.6mm, 20.2mm, 22.8mm, 25mm, optical parallel	0-25mm
4107-101	alloy steel	2.5mm, 5.1mm, 7.7mm, 10.3mm, 12.9mm, 15mm, 17.6mm, 20.2mm, 22.8mm, 25mm, optical parallel	0-25mm

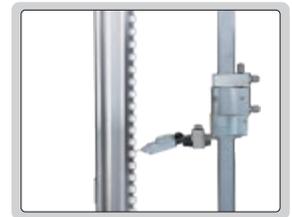
## CHECK MASTER



6882-600A



horizontal orientation



vertical orientation

- To check the accuracy of table movement of machine tools, to calibrate height gauges and CMMs
- Ceramic gauge blocks
- Can be used in either vertical and horizontal orientation
- Supplied with inspection certificate

(mm)

Code	Range	Step	Accuracy	Parallelism of blocks	L	L1	H	W
6882-300A	300mm	10mm	±2.5µm	1.2µm	350	310	49	45
6882-450A	450mm	10mm	±3.5µm	1.5µm	510	470	54	50
6882-600A	600mm	10mm	±3.5µm	1.5µm	650	610	54	50

## ANGLE GAUGE BLOCK SET

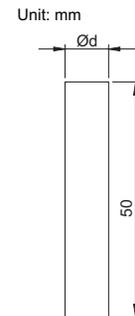
Code	Blocks per set	Angle	Step	Quantity
4109-7A	7	15°10'		1
		30°20'		1
		45°30'		1
		50°		1
		60°40'		1
		75°50'		1
		90°/90°/90°/90°		1
4109-36A	36	10° - 20°	1°	11
		30° - 70°	10°	5
		45°		1
		15°10' - 15°50'	10'	5
		15°1' - 15°9'	1'	9
		10°00'30"		1
		80°/81°/100°/99°		1
		89°10'/89°20'/90°50'/90°40'		1
		89°30'/89°40'/90°30'/90°20'		1
		90°/90°/90°/90°		1



4109-7A

- Standard for angle measurement
- Accuracy ±10"

## PIN GAUGE SET



4166-6D

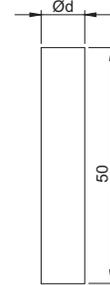
- Made of alloy steel
- Hardness HRC62-65

Code	Diameter Ø d(mm)	Step	Pin gauges per set	Diameter accuracy
4166-0D	0.20, 0.21, 0.22, … 0.50	0.01mm	31	±1µm
4166-1	0.50, 0.51, 0.52, … 1.00	0.01mm	51	±1µm
4166-1D	1.00, 1.01, 1.02, … 1.50	0.01mm	51	±1µm
4166-2	1.50, 1.51, 1.52, … 2.00	0.01mm	51	±1µm
4166-2D	2.00, 2.01, 2.02, … 2.50	0.01mm	51	±1µm
4166-3	2.50, 2.51, 2.52, … 3.00	0.01mm	51	±1µm
4166-3D	3.00, 3.01, 3.02, … 3.50	0.01mm	51	±1µm
4166-4	3.50, 3.51, 3.52, … 4.00	0.01mm	51	±1µm
4166-4D	4.00, 4.01, 4.02, … 4.50	0.01mm	51	±1µm
4166-5	4.50, 4.51, 4.52, … 5.00	0.01mm	51	±1µm
4166-5D	5.00, 5.01, 5.02, … 5.50	0.01mm	51	±1µm
4166-6	5.50, 5.51, 5.52, … 6.00	0.01mm	51	±1µm
4166-6D	6.00, 6.01, 6.02, … 6.50	0.01mm	51	±1µm
4166-7	6.50, 6.51, 6.52, … 7.00	0.01mm	51	±1µm
4166-7D	7.00, 7.01, 7.02, … 7.50	0.01mm	51	±1µm
4166-8	7.50, 7.51, 7.52, … 8.00	0.01mm	51	±1µm
4166-8D	8.00, 8.01, 8.02, … 8.50	0.01mm	51	±1µm
4166-9	8.50, 8.51, 8.52, … 9.00	0.01mm	51	±1µm
4166-9D	9.00, 9.01, 9.02, … 9.50	0.01mm	51	±1µm
4166-10	9.50, 9.51, 9.52, … 10.00	0.01mm	51	±1µm
4166-411	1.0, 1.1, 1.2, … 5.0	0.1mm	41	±1µm
4166-511	5.0, 5.1, 5.2, … 10.0	0.1mm	51	±1µm

## INDIVIDUAL PIN GAUGE



Unit: mm



4110-9D98

- Diameter range:  $\varnothing 0.20 - \varnothing 10.00$ mm
- Diameter accuracy:  $\pm 1\mu\text{m}$
- Made of alloy steel
- Hardness HRC62-65
- Optional accessory: wooden box (code 7340)

Code
4110-xxxx

### Ordering examples:

Diameter	Code
0.21mm	4110-0D21
5.56mm	4110-5D56
8.00mm	4110-8D00

Note: "D" stands for "."

Diameter $\varnothing d$ (mm)
0.20, 0.21, 0.22, 0.23 ..... 1.00
1.01, 1.02, 1.03, 1.04 ..... 2.00
2.01, 2.02, 2.03, 2.04 ..... 3.00
3.01, 3.02, 3.03, 3.04 ..... 4.00
4.01, 4.02, 4.03, 4.04, ..... 5.00
5.01, 5.02, 5.03, 5.04, ..... 6.00
6.01, 6.02, 6.03, 6.04, ..... 7.00
7.01, 7.02, 7.03, 7.04, ..... 8.00
8.01, 8.02, 8.03, 8.04, ..... 9.00
9.01, 9.02, 9.03, 9.04, ..... 10.00

## BOX FOR PIN GAUGES



- Accept maximum 51 individual pin gauges(series 4110)

Code
7340

7340

## PLAIN PLUG GAUGE

- Supplied with Go and No-Go gauges together
- Class H7
- Hardness HRC 60±2

Code	Size	Code	Size
4124-2	2mm	4124-24	24mm
4124-3	3mm	4124-27	27mm
4124-4	4mm	4124-30	30mm
4124-5	5mm	4124-32	32mm
4124-6	6mm	4124-35	35mm
4124-8	8mm	4124-40	40mm
4124-10	10mm	4124-42	42mm
4124-12	12mm	4124-45	45mm
4124-14	14mm	4124-50	50mm
4124-15	15mm	4124-55	55mm
4124-18	18mm	4124-60	60mm
4124-20	20mm		



4124-10

## THREAD PLUG GAUGE



4130-10

- Supplied with Go and No-Go gauges together
- Class 6H
- Standard ISO1502

### Individual

Code	Size(mm)
4130-2	M2x0.4
4130-2D2	M2.2x0.45
4130-2D5	M2.5x0.45
4130-3	M3x0.5
4130-3D5	M3.5x0.6
4130-4	M4x0.7
4130-5	M5x0.8
4130-6	M6x1

Code	Size(mm)
4130-7	M7x1
4130-8	M8x1.25
4130-9	M9x1.25
4130-10	M10x1.5
4130-11	M11x1.5
4130-12	M12x1.75
4130-14	M14x2
4130-16	M16x2

Code	Size(mm)
4130-18	M18x2.5
4130-20	M20x2.5
4130-22	M22x2.5
4130-24	M24x3
4130-27	M27x3
4130-30	M30x3.5
4130-33	M33x3.5
4130-36	M36x4

Code	Size(mm)
4130-39	M39x4
4130-42	M42x4.5
4130-45	M45x4.5
4130-48	M48x5
4130-52	M52x5
4130-56	M56x5.5
4130-60	M60x5.5

### Set

Code	Thread plug gauges included
4130-S7	M3x0.5(4130-3), M4x0.7(4130-4), M5x0.8(4130-5), M6x1(4130-6), M8x1.25(4130-8), M10x1.5(4130-10), M12x1.75(4130-12)

## FINE THREAD PLUG GAUGE



4139-20R

- Supplied with Go and No-Go gauges together
- Class 6H
- Standard ISO1502

Code	Size(mm)	Code	Size(mm)	Code	Size(mm)	Code	Size(mm)	Code	Size(mm)
4139-2B	M2x0.25	4139-11L	M11x0.75	4139-20L	M20x0.75	4139-33L	M33x0.75	4139-45X	M45x4
4139-2D2B	M2.2x0.25	4139-11P	M11x1	4139-20P	M20x1	4139-33P	M33x1	4139-48P	M48x1
4139-2D5D	M2.5x0.35	4139-12G	M12x0.5	4139-20R	M20x1.5	4139-33R	M33x1.5	4139-48R	M48x1.5
4139-3D	M3x0.35	4139-12L	M12x0.75	4139-20T	M20x2	4139-33T	M33x2	4139-48T	M48x2
4139-3D5D	M3.5x0.35	4139-12P	M12x1	4139-22G	M22x0.5	4139-33V	M33x3	4139-48V	M48x3
4139-4G	M4x0.5	4139-12Q	M12x1.25	4139-22L	M22x0.75	4139-36P	M36x1	4139-48X	M48x4
4139-5G	M5x0.5	4139-12R	M12x1.5	4139-22P	M22x1	4139-36R	M36x1.5	4139-52P	M52x1
4139-6G	M6x0.5	4139-14G	M14x0.5	4139-22R	M22x1.5	4139-36T	M36x2	4139-52R	M52x1.5
4139-6L	M6x0.75	4139-14L	M14x0.75	4139-22T	M22x2	4139-36V	M36x3	4139-52T	M52x2
4139-7G	M7x0.5	4139-14P	M14x1	4139-24L	M24x0.75	4139-39P	M39x1	4139-52V	M52x3
4139-7L	M7x0.75	4139-14Q	M14x1.25	4139-24P	M24x1	4139-39R	M39x1.5	4139-52X	M52x4
4139-8G	M8x0.5	4139-14R	M14x1.5	4139-24R	M24x1.5	4139-39T	M39x2	4139-56P	M56x1
4139-8L	M8x0.75	4139-16G	M16x0.5	4139-24T	M24x2	4139-39V	M39x3	4139-56R	M56x1.5
4139-8P	M8x1	4139-16L	M16x0.75	4139-27L	M27x0.75	4139-42P	M42x1	4139-56T	M56x2
4139-9G	M9x0.5	4139-16P	M16x1	4139-27P	M27x1	4139-42R	M42x1.5	4139-56V	M56x3
4139-9L	M9x0.75	4139-16R	M16x1.5	4139-27R	M27x1.5	4139-42T	M42x2	4139-56X	M56x4
4139-9P	M9x1	4139-18G	M18x0.5	4139-27T	M27x2	4139-42V	M42x3	4139-60P	M60x1
4139-10G	M10x0.5	4139-18L	M18x0.75	4139-30L	M30x0.75	4139-42X	M42x4	4139-60R	M60x1.5
4139-10L	M10x0.75	4139-18P	M18x1	4139-30P	M30x1	4139-45P	M45x1	4139-60T	M60x2
4139-10P	M10x1	4139-18R	M18x1.5	4139-30R	M30x1.5	4139-45R	M45x1.5	4139-60V	M60x3
4139-10Q	M10x1.25	4139-18T	M18x2	4139-30T	M30x2	4139-45T	M45x2	4139-60X	M60x4
4139-11G	M11x0.5	4139-20G	M20x0.5	4139-30V	M30x3	4139-45V	M45x3		

# THREAD RING GAUGE



4120-14



4120-14N

- Go and No-Go gauges are supplied separately
- Class 6g
- Standard ISO1502

## Individual

Code Go	Code No Go	Size(mm)
4120-2	4120-2N	M2x0.4
4120-2D2	4120-2D2N	M2.2x0.45
4120-2D5	4120-2D5N	M2.5x0.45
4120-3	4120-3N	M3x0.5
4120-3D5	4120-3D5N	M3.5x0.6
4120-4	4120-4N	M4x0.7
4120-5	4120-5N	M5x0.8
4120-6	4120-6N	M6x1
4120-7	4120-7N	M7x1
4120-8	4120-8N	M8x1.25
4120-9	4120-9N	M9x1.25

Code Go	Code No Go	Size(mm)
4120-10	4120-10N	M10x1.5
4120-11	4120-11N	M11x1.5
4120-12	4120-12N	M12x1.75
4120-14	4120-14N	M14x2
4120-16	4120-16N	M16x2
4120-18	4120-18N	M18x2.5
4120-20	4120-20N	M20x2.5
4120-22	4120-22N	M22x2.5
4120-24	4120-24N	M24x3
4120-27	4120-27N	M27x3
4120-30	4120-30N	M30x3.5

Code Go	Code No Go	Size(mm)
4120-33	4120-33N	M33x3.5
4120-36	4120-36N	M36x4
4120-39	4120-39N	M39x4
4120-42	4120-42N	M42x4.5
4120-45	4120-45N	M45x4.5
4120-48	4120-48N	M48x5
4120-52	4120-52N	M52x5
4120-56	4120-56N	M56x5.5
4120-60	4120-60N	M60x5.5

## Go ring gauge set

Code	Thread ring gauges included
4120-S7	M3x0.5(4120-3), M4x0.7(4120-4), M5x0.8(4120-5), M6x1(4120-6), M8x1.25(4120-8), M10x1.5(4120-10), M12x1.75(4120-12)

## No Go ring gauge set

Code	Thread ring gauges included
4120-S7N	M3x0.5(4120-3N), M4x0.7(4120-4N), M5x0.8(4120-5N), M6x1(4120-6N), M8x1.25(4120-8N), M10x1.5(4120-10N), M12x1.75(4120-12N)

## FINE THREAD RING GAUGE

- Go and No-Go gauges are supplied separately
- Class 6g
- Standard ISO1502



4129-10P



4129-10PN

Code Go	Code No Go	Size(mm)
4129-2B	4129-2BN	M2x0.25
4129-2D2B	4129-2D2BN	M2.2x0.25
4129-2D5D	4129-2D5DN	M2.5x0.35
4129-3D	4129-3DN	M3x0.35
4129-3D5D	4129-3D5DN	M3.5x0.35
4129-4G	4129-4GN	M4x0.5
4129-5G	4129-5GN	M5x0.5
4129-6G	4129-6GN	M6x0.5
4129-6L	4129-6LN	M6x0.75
4129-7G	4129-7GN	M7x0.5
4129-7L	4129-7LN	M7x0.75
4129-8G	4129-8GN	M8x0.5
4129-8L	4129-8LN	M8x0.75
4129-8P	4129-8PN	M8x1
4129-9G	4129-9GN	M9x0.5
4129-9L	4129-9LN	M9x0.75
4129-9P	4129-9PN	M9x1
4129-10G	4129-10GN	M10x0.5
4129-10L	4129-10LN	M10x0.75
4129-10P	4129-10PN	M10x1
4129-10Q	4129-10QN	M10x1.25
4129-11G	4129-11GN	M11x0.5
4129-11L	4129-11LN	M11x0.75
4129-11P	4129-11PN	M11x1
4129-12G	4129-12GN	M12x0.5
4129-12L	4129-12LN	M12x0.75
4129-12P	4129-12PN	M12x1
4129-12Q	4129-12QN	M12x1.25
4129-12R	4129-12RN	M12x1.5
4129-14G	4129-14GN	M14x0.5
4129-14L	4129-14LN	M14x0.75
4129-14P	4129-14PN	M14x1
4129-14Q	4129-14QN	M14x1.25
4129-14R	4129-14RN	M14x1.5
4129-16G	4129-16GN	M16x0.5
4129-16L	4129-16LN	M16x0.75
4129-16P	4129-16PN	M16x1

Code Go	Code No Go	Size(mm)
4129-16R	4129-16RN	M16x1.5
4129-18G	4129-18GN	M18x0.5
4129-18L	4129-18LN	M18x0.75
4129-18P	4129-18PN	M18x1
4129-18R	4129-18RN	M18x1.5
4129-18T	4129-18TN	M18x2
4129-20G	4129-20GN	M20x0.5
4129-20L	4129-20LN	M20x0.75
4129-20P	4129-20PN	M20x1
4129-20R	4129-20RN	M20x1.5
4129-20T	4129-20TN	M20x2
4129-22G	4129-22GN	M22x0.5
4129-22L	4129-22LN	M22x0.75
4129-22P	4129-22PN	M22x1
4129-22R	4129-22RN	M22x1.5
4129-22T	4129-22TN	M22x2
4129-24L	4129-24LN	M24x0.75
4129-24P	4129-24PN	M24x1
4129-24R	4129-24RN	M24x1.5
4129-24T	4129-24TN	M24x2
4129-27L	4129-27LN	M27x0.75
4129-27P	4129-27PN	M27x1
4129-27R	4129-27RN	M27x1.5
4129-27T	4129-27TN	M27x2
4129-30L	4129-30LN	M30x0.75
4129-30P	4129-30PN	M30x1
4129-30R	4129-30RN	M30x1.5
4129-30T	4129-30TN	M30x2
4129-30V	4129-30VN	M30x3
4129-33L	4129-33LN	M33x0.75
4129-33P	4129-33PN	M33x1
4129-33R	4129-33RN	M33x1.5
4129-33T	4129-33TN	M33x2
4129-33V	4129-33VN	M33x3
4129-36P	4129-36PN	M36x1
4129-36R	4129-36RN	M36x1.5
4129-36T	4129-36TN	M36x2

Code Go	Code No Go	Size(mm)
4129-36V	4129-36VN	M36x3
4129-39P	4129-39PN	M39x1
4129-39R	4129-39RN	M39x1.5
4129-39T	4129-39TN	M39x2
4129-39V	4129-39VN	M39x3
4129-42P	4129-42PN	M42x1
4129-42R	4129-42RN	M42x1.5
4129-42T	4129-42TN	M42x2
4129-42V	4129-42VN	M42x3
4129-42X	4129-42XN	M42x4
4129-45P	4129-45PN	M45x1
4129-45R	4129-45RN	M45x1.5
4129-45T	4129-45TN	M45x2
4129-45V	4129-45VN	M45x3
4129-45X	4129-45XN	M45x4
4129-48P	4129-48PN	M48x1
4129-48R	4129-48RN	M48x1.5
4129-48T	4129-48TN	M48x2
4129-48V	4129-48VN	M48x3
4129-48X	4129-48XN	M48x4
4129-52P	4129-52PN	M52x1
4129-52R	4129-52RN	M52x1.5
4129-52T	4129-52TN	M52x2
4129-52V	4129-52VN	M52x3
4129-52X	4129-52XN	M52x4
4129-56P	4129-56PN	M56x1
4129-56R	4129-56RN	M56x1.5
4129-56T	4129-56TN	M56x2
4129-56V	4129-56VN	M56x3
4129-56X	4129-56XN	M56x4
4129-60P	4129-60PN	M60x1
4129-60R	4129-60RN	M60x1.5
4129-60T	4129-60TN	M60x2
4129-60V	4129-60VN	M60x3
4129-60X	4129-60XN	M60x4

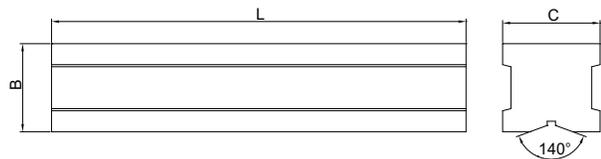
## BLOCK LEVEL



4903-200A

- V-groove on bottom for shafts
- With transverse vial
- Supplied with adjusting wrench

(mm)				
Code	Size(L)	Sensitivity	B	C
4903-150A	150mm	0.02mm/m	40	45
4903-200A	200mm	0.02mm/m	42	47
4903-300A	300mm	0.02mm/m	45	50

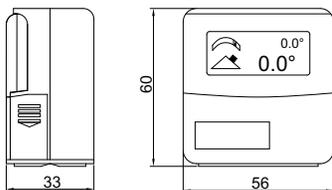


## DIGITAL LEVEL AND PROTRACTOR



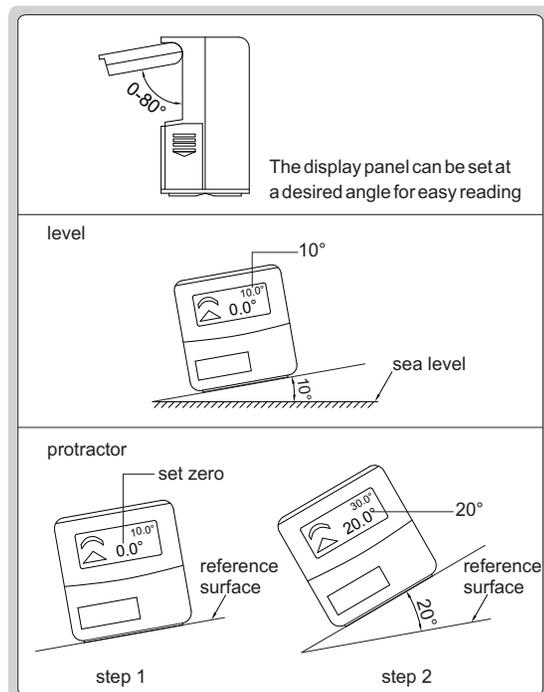
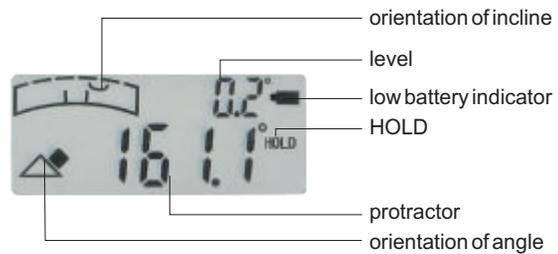
2178-1

Unit: mm



- Used as level and protractor
- The display panel can be set at a desired angle for easy reading
- Magnetic bottom with V-groove for shafts
- The sea level is permanently set inside the chip, calibration is not needed when batteries are replaced
- Buttons: ON/ZERO, HOLD(keep the reading)
- Two AAA batteries
- Automatic power off

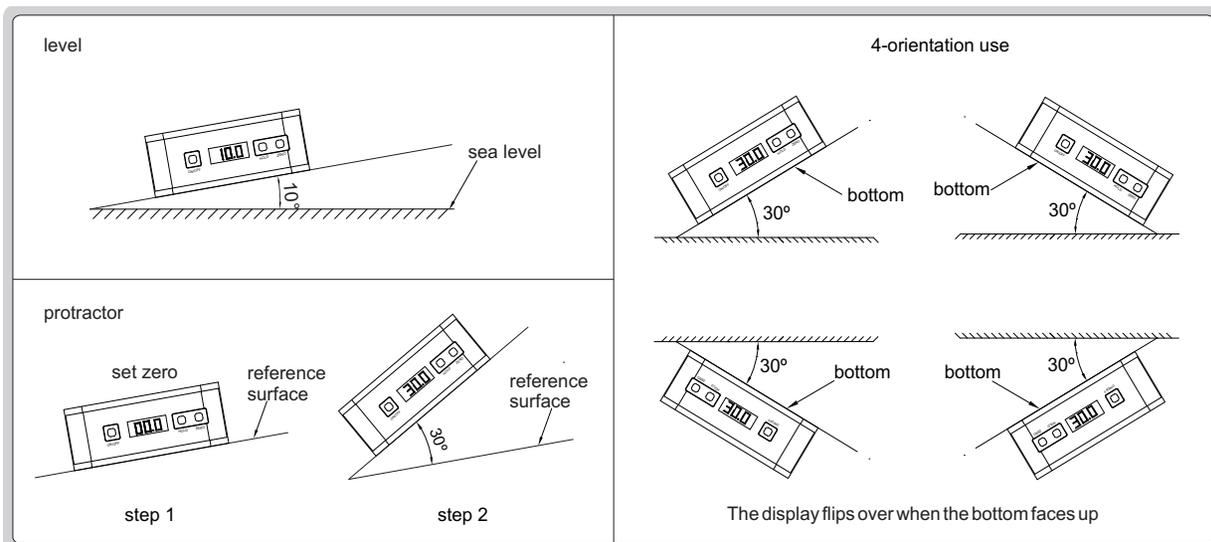
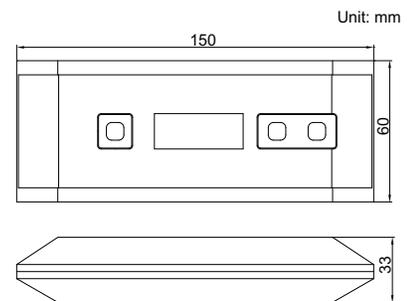
Code	Range	Resolution	Accuracy
2178-1	0 - 180°	0.1° (= 1.745 mm/m)	±0.1°



# DIGITAL LEVEL AND PROTRACTOR



2173-360



- Used as level and protractor
- Aluminum frame
- Magnetic bottom with V-groove for shafts
- Calibration can be made on any plain surfaces
- Buttons: ON/OFF, ZERO, HOLD(keep the reading)
- CR2032 battery
- Automatic power off

Code	Range	Resolution	Accuracy
2173-360	0 - 360° (90°x4)	0.1° (= 1.745 mm/m)	±0.2°

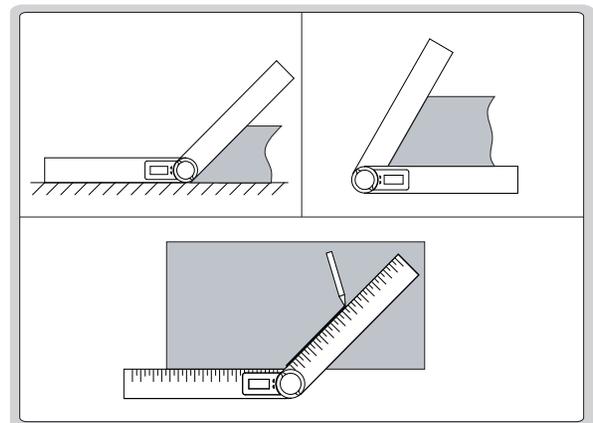
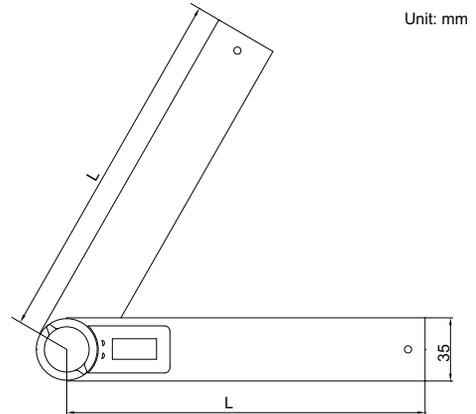
## DIGITAL PROTRACTOR



2176-300

- Buttons: ON/OFF, ZERO
- With clamping screw to lock the blades
- Graduation of blade: 1mm and 1/32"
- CR2032 battery
- Automatic power off

Code	Size(L)	Range	Resolution	Accuracy
2176-200	200mm	0-360°	0.1°	±0.3°
2176-300	300mm	0-360°	0.1°	±0.3°



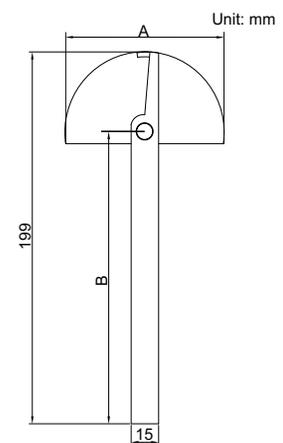
## PROTRACTOR



4780-85

- Made of stainless steel
- Satin chrome plated scale
- With clamping screw

Code	Size(AxB)	Range	Graduation	Accuracy
4780-85	85x150mm	0-180°	1°	±0.3°

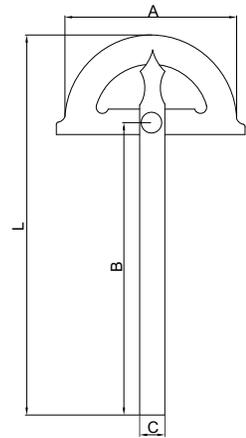


## PROTRACTOR



4799-180

- Made of stainless steel
- Satin chrome plated scale
- With clamping screw



(mm)

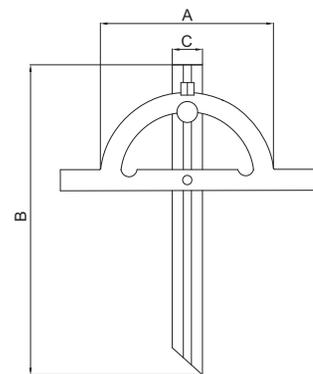
Code	Size(AxB)	Range	Graduation	Accuracy	L	C
4799-180	80x120mm	0 - 180°	1°	±0.3°	168	11
4799-1120	120x150mm	0 - 180°	1°	±0.3°	220	14
4799-1150	150x200mm	0 - 180°	1°	±0.3°	285	16
4799-1200	200x300mm	0 - 180°	1°	±0.3°	413	20
4799-1300	300x500mm	0 - 180°	1°	±0.3°	675	30

## PROTRACTOR



4797-100

- Made of stainless steel
- Satin chrome plated scale
- With clamping screw



(mm)

Code	Size(AxB)	Range	Graduation	Accuracy	C
4797-100	100x150mm	10 - 170°	1°	±0.3°	18
4797-150	150x300mm	10 - 170°	1°	±0.3°	18
4797-200	200x400mm	10 - 170°	1°	±0.3°	20
4797-250	250x500mm	10 - 170°	1°	±0.3°	20
4797-300	300x600mm	10 - 170°	1°	±0.3°	20

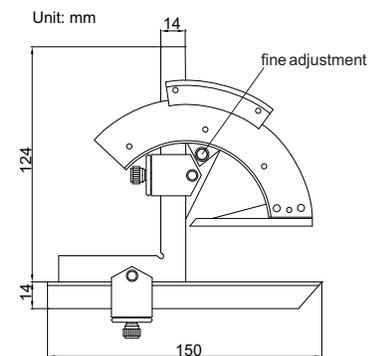
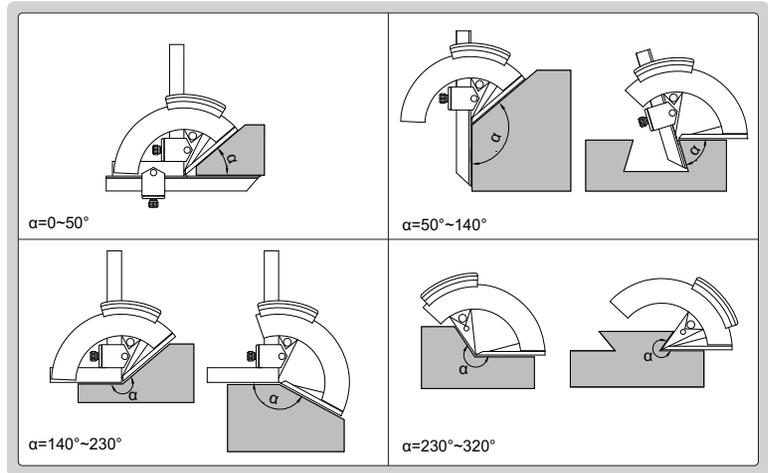
# PROTRACTOR



2374-320

- Made of carbon steel
- Satin chrome plated

Code	Range	Graduation	Accuracy
2374-320	0 - 320°	2'	±2'



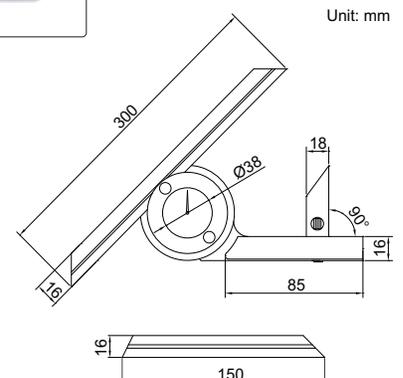
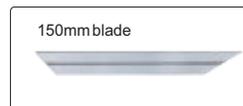
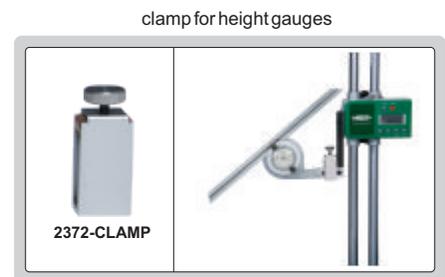
# DIAL PROTRACTOR



2373-360

- Supplied with 150mm blade
- Made of carbon steel
- Optional accessory: clamp (code 2372-CLAMP) suitable for height gauges 1151 and 1351

Code	Range	Graduation	Accuracy
2373-360	0 - 360°	5'	±5'



## UNIVERSAL PROTRACTOR



2372-360

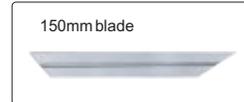
- Parallax-free reading
- Supplied with 150mm blade
- Made of carbon steel
- Optional accessory: clamp (code **2372-CLAMP**) suitable for height gauges **1151** and **1351**

Code	Range	Graduation	Accuracy
2372-360	0-360°	5'	±5'

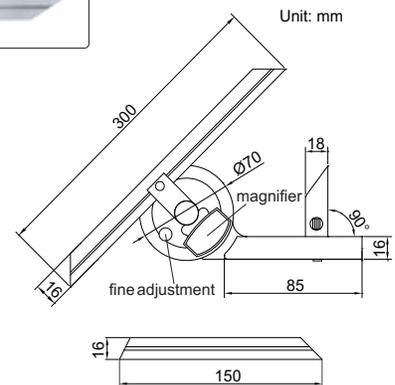
clamp for height gauges



2372-CLAMP



150mm blade



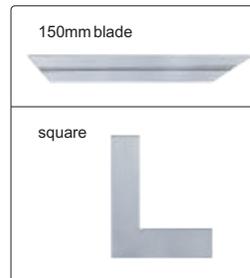
Unit: mm

## DIGITAL PROTRACTOR



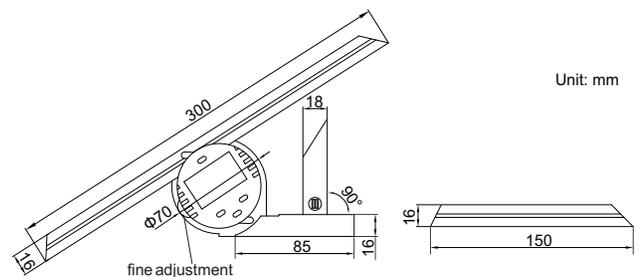
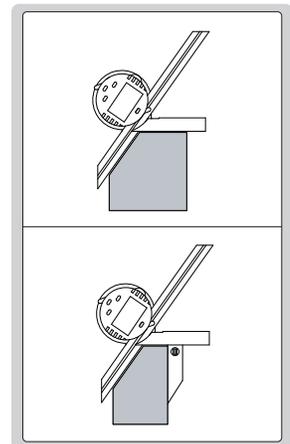
2172-360

- Display in degree (for example 32.658°) and degree/minute/second (for example 32°39'30")
- PRESET button: preset the reading
- MODE button: choose 0-90°, 0-180° or 0-360° display
- ZERO/ON button: zero and power on
- +/- button: change measuring direction
- Battery CR2032, automatic power off
- Supplied with 150mm blade and square to set 90°
- Made of stainless steel



150mm blade

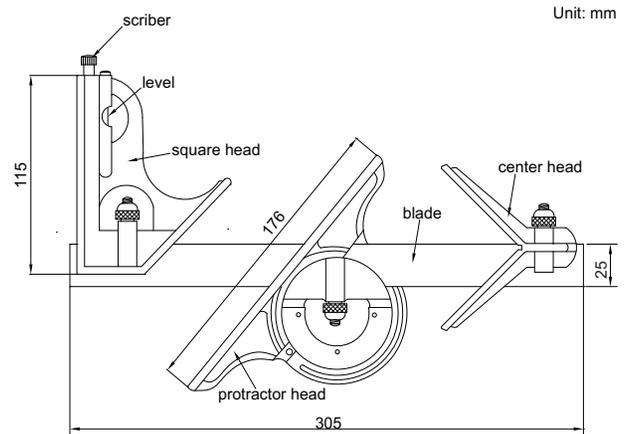
square



Unit: mm

Code	Range	Resolution	Accuracy
2172-360	0 - 360°	30"/0.005°	±5'

# COMBINATION SQUARE SET



2278-180

<p>locate center</p>	<p>protractor</p>	<p>level</p>
<p>set 90°</p>	<p>set 45°</p>	<p>rule and marking</p>

## Code

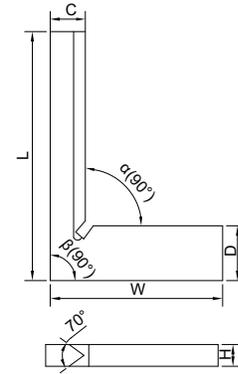
2278-180

- Center head:  
To locate center of round workpieces  
Accuracy:  $\pm 0.15\text{mm}$
- Protractor head:  
To set the blade at desired angle to an edge of a workpiece, and can be used to measure angles  
Range: 0-180°  
Accuracy:  $\pm 7\text{min}$ .
- Square head:  
To set the blade at 90° or 45° to an edge of a workpiece  
Accuracy:  $\pm 8\text{min}$  for 90° square,  $\pm 10\text{min}$  for 45° square
- Blade:  
Range: 300mm/12",  
Graduation: 0.5mm and 1/32" on front face, 1mm and 1/64" on back face
- Optional accessory: rigid rule (code 7113)

## 90 ° TOOL MAKER SQUARE



4794-040



(mm)

Code	Size(LxW)	Squareness		C	D	H
		Inside( $\alpha$ )	Outside( $\beta$ )			
4794-025	25x20mm	2.2 $\mu$ m	2.3 $\mu$ m	4	6.5	3.5
4794-040	40x28mm	2.3 $\mu$ m	2.4 $\mu$ m	5.5	8.5	3.5

- DIN875 grade 00
- Beveled edge for inside measurement
- Made of hardened stainless steel

## 90 ° BEVELED EDGE SQUARE

- Satin chrome plating
- Beveled edges for inside and outside measurement
- Made of hardened stainless steel

DIN875 grade 00

(mm)

Code	Size(LxW)	Squareness		C	D	H
		Inside( $\alpha$ )	Outside( $\beta$ )			
4790-050	50x40mm	2.4 $\mu$ m	2.5 $\mu$ m	13	13	4
4790-075	75x50mm	2.6 $\mu$ m	2.8 $\mu$ m	15	15	4
4790-0100	100x70mm	2.8 $\mu$ m	3.0 $\mu$ m	20	20	5
4790-0150	150x100mm	3.2 $\mu$ m	3.5 $\mu$ m	30	30	6
4790-0200	200x130mm	3.7 $\mu$ m	4.0 $\mu$ m	34	34	7
4790-0250	250x165mm	4.2 $\mu$ m	4.5 $\mu$ m	35	35	7
4790-0300	300x200mm	4.6 $\mu$ m	5.0 $\mu$ m	40	40	8

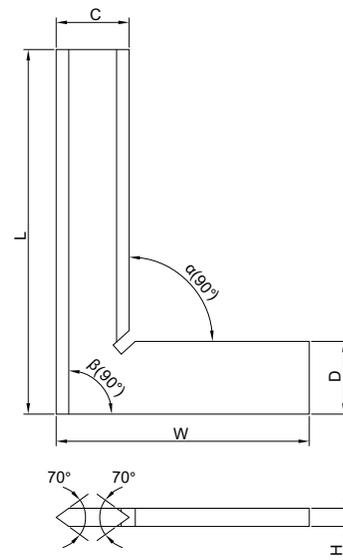
DIN875 grade 0

(mm)

Code	Size(LxW)	Squareness		C	D	H
		Inside( $\alpha$ )	Outside( $\beta$ )			
4790-500	50x40mm	6 $\mu$ m	6 $\mu$ m	13	13	4
4790-750	75x50mm	6 $\mu$ m	7 $\mu$ m	15	15	4
4790-1000	100x70mm	7 $\mu$ m	7 $\mu$ m	20	20	5
4790-1500	150x100mm	7 $\mu$ m	8 $\mu$ m	30	30	6
4790-2000	200x130mm	8 $\mu$ m	9 $\mu$ m	34	34	7
4790-2500	250x165mm	9 $\mu$ m	10 $\mu$ m	35	35	7
4790-3000	300x200mm	10 $\mu$ m	11 $\mu$ m	40	40	8



4790-0100



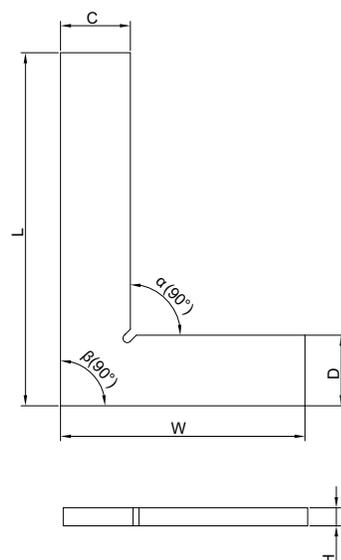
## 90° FLAT EDGE SQUARE



4791-100

(mm)

Code	Size(LxW)	Squareness		C	D	H
		Inside( $\alpha$ )	Outside( $\beta$ )			
4791-50	50x40mm	6 $\mu$ m	6 $\mu$ m	13	13	4
4791-75	75x50mm	6 $\mu$ m	7 $\mu$ m	15	15	4
4791-100	100x70mm	7 $\mu$ m	7 $\mu$ m	20	20	5
4791-150	150x100mm	7 $\mu$ m	8 $\mu$ m	30	30	6
4791-200	200x130mm	8 $\mu$ m	9 $\mu$ m	30	30	7
4791-250	250x165mm	9 $\mu$ m	10 $\mu$ m	35	35	7
4791-300	300x200mm	10 $\mu$ m	11 $\mu$ m	40	40	8



- DIN875 grade 0
- Made of hardened stainless steel

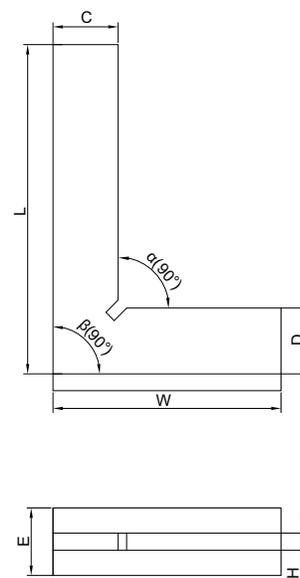
## 90° FLAT EDGE SQUARE WITH WIDE BASE



4793-100

(mm)

Code	Size(LxW)	Squareness		C	D	H	E
		Inside( $\alpha$ )	Outside( $\beta$ )				
4793-50	50x40mm	6 $\mu$ m	6 $\mu$ m	13	13	4	13
4793-75	75x50mm	6 $\mu$ m	7 $\mu$ m	15	15	4	15
4793-100	100x70mm	7 $\mu$ m	7 $\mu$ m	20	20	5	20
4793-150	150x100mm	7 $\mu$ m	8 $\mu$ m	30	30	6	30
4793-200	200x130mm	8 $\mu$ m	9 $\mu$ m	30	30	7	30
4793-250	250x165mm	9 $\mu$ m	10 $\mu$ m	35	35	7	35
4793-300	300x200mm	10 $\mu$ m	11 $\mu$ m	40	40	8	40

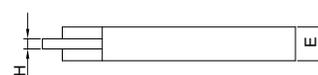
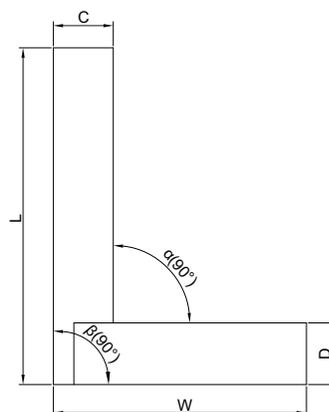


- DIN875 grade 0
- Made of hardened stainless steel

## 90° FLAT EDGE SQUARE WITH WIDE BASE



4792-100



(mm)

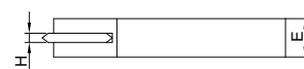
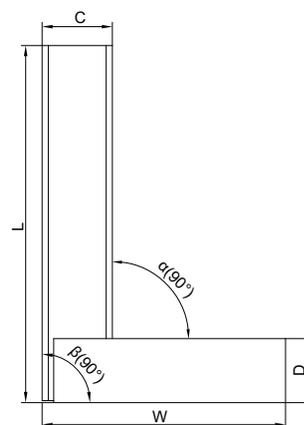
Code	Size(LxW)	Squareness		C	D	H	E
		Inside( $\alpha$ )	Outside( $\beta$ )				
4792-50	50x40mm	6 $\mu$ m	6 $\mu$ m	12	12	3	10
4792-75	75x50mm	6 $\mu$ m	7 $\mu$ m	14	14	3	10
4792-100	100x70mm	7 $\mu$ m	7 $\mu$ m	18	18	3	10
4792-150	150x100mm	8 $\mu$ m	8 $\mu$ m	22	22	4	12
4792-200	200x130mm	9 $\mu$ m	9 $\mu$ m	25	25	4	12

- DIN875 grade 0
- Made of hardened stainless steel

## 90° BEVELED EDGE SQUARE WITH WIDE BASE



4795-100



(mm)

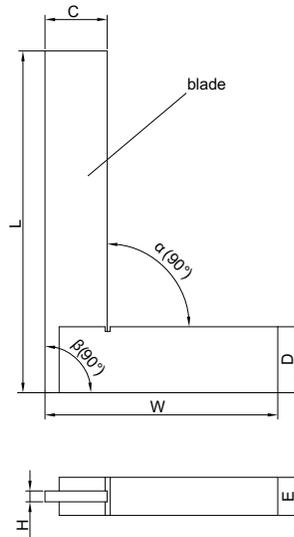
Code	Size(LxW)	Squareness		C	D	H	E
		Inside( $\alpha$ )	Outside( $\beta$ )				
4795-50	50x40mm	6 $\mu$ m	6 $\mu$ m	12	12	3	10
4795-75	75x50mm	6 $\mu$ m	7 $\mu$ m	14	14	3	10
4795-100	100x70mm	7 $\mu$ m	7 $\mu$ m	18	18	3	10
4795-150	150x100mm	8 $\mu$ m	8 $\mu$ m	22	22	4	12
4795-200	200x130mm	9 $\mu$ m	9 $\mu$ m	25	25	4	12

- DIN875 grade 0
- Beveled edges for inside and outside measurement
- Made of hardened stainless steel

# MACHINIST SQUARE WITH WIDE BASE



4707-100



Size(LxW)	C	D	H	E
50x40mm	16	12	3	9
75x50mm	16	16	3	9
100x70mm	19	19	3	12
150x100mm	25	25	3	16
200x130mm	30	32	4	16
250x165mm	30	32	4	19
300x200mm	32	32	4	19
400x250mm	38	38	5	22
500x300mm	45	50	6	25
600x350mm	50	50	6	30
750x400mm	55	55	6	50
900x500mm	65	75	9	50
1000x550mm	65	75	9	50

- Made of carbon steel

## DIN875 grade 1, blade is hardened Individual

Code	Size(LxW)	Squareness	
		Inside( $\alpha$ )	Outside( $\beta$ )
4707-150	50x40mm	12 $\mu$ m	13 $\mu$ m
4707-175	75x50mm	13 $\mu$ m	14 $\mu$ m
4707-1100	100x70mm	14 $\mu$ m	15 $\mu$ m
4707-1150	150x100mm	16 $\mu$ m	18 $\mu$ m
4707-1200	200x130mm	18 $\mu$ m	20 $\mu$ m
4707-1250	250x165mm	21 $\mu$ m	23 $\mu$ m
4707-1300	300x200mm	23 $\mu$ m	25 $\mu$ m
4707-1400	400x250mm	28 $\mu$ m	30 $\mu$ m
4707-1500	500x300mm	33 $\mu$ m	35 $\mu$ m
4707-1600	600x350mm	38 $\mu$ m	40 $\mu$ m
4707-1750	750x400mm	45 $\mu$ m	48 $\mu$ m
4707-1900	900x500mm	51 $\mu$ m	55 $\mu$ m
4707-11000	1000x550mm	56 $\mu$ m	60 $\mu$ m

### Set

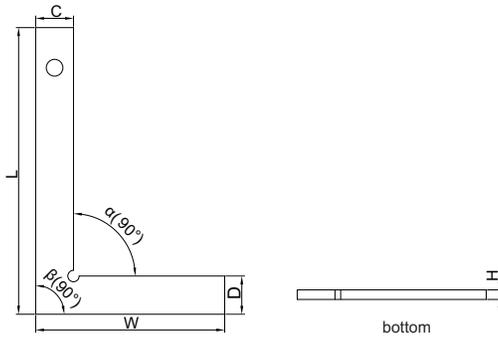
Code	Squares included
4707-1S2	50x40mm (4707-150), 75x50mm (4707-175), 100x70mm (4707-1100), 150x100mm (4707-1150)
4707-1S3	100x70mm (4707-1100), 150x100mm (4707-1150), 200x130mm (4707-1200), 300x200mm (4707-1300)

## DIN875 grade 2, blade is not hardened Individual

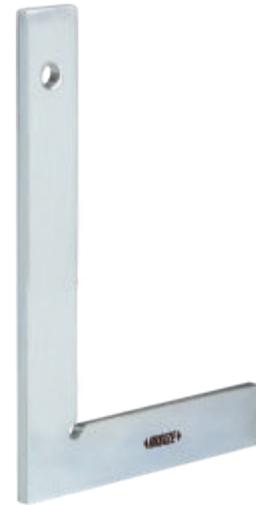
Code	Size(LxW)	Squareness	
		Inside( $\alpha$ )	Outside( $\beta$ )
4707-50	50x40mm	24 $\mu$ m	25 $\mu$ m
4707-75	75x50mm	26 $\mu$ m	28 $\mu$ m
4707-100	100x70mm	28 $\mu$ m	30 $\mu$ m
4707-150	150x100mm	33 $\mu$ m	35 $\mu$ m
4707-200	200x130mm	37 $\mu$ m	40 $\mu$ m
4707-250	250x165mm	42 $\mu$ m	45 $\mu$ m
4707-300	300x200mm	47 $\mu$ m	50 $\mu$ m
4707-400	400x250mm	56 $\mu$ m	60 $\mu$ m
4707-500	500x300mm	65 $\mu$ m	70 $\mu$ m
4707-600	600x350mm	75 $\mu$ m	80 $\mu$ m
4707-750	750x400mm	90 $\mu$ m	95 $\mu$ m
4707-900	900x500mm	103 $\mu$ m	110 $\mu$ m
4707-1000	1000x550mm	113 $\mu$ m	120 $\mu$ m

### Set

Code	Squares included
4707-2S2	50x40mm (4707-50), 75x50mm (4707-75), 100x70mm (4707-100), 150x100mm (4707-150)
4707-2S3	100x70mm (4707-100), 150x100mm (4707-150), 200x130mm (4707-200), 300x200mm (4707-300)



## MACHINIST SQUARE

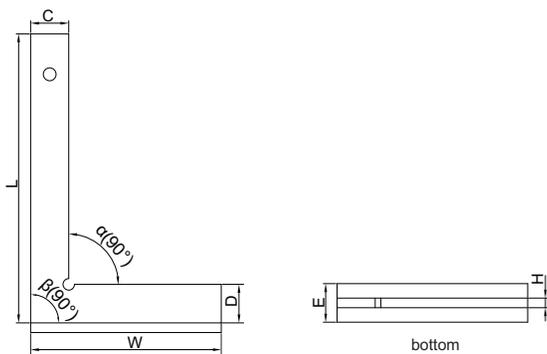


4703-150

- Made of carbon steel
- Galvanized

(mm)

Code	Size(LxW)	Squareness		C	D	H
		Inside( $\alpha$ )	Outside( $\beta$ )			
4703-100	100x70mm	0.15mm	0.15mm	20	20	5
4703-150	150x100mm	0.20mm	0.20mm	20	20	5
4703-200	200x130mm	0.25mm	0.25mm	20	20	5
4703-250	250x160mm	0.30mm	0.30mm	25	25	5
4703-300	300x180mm	0.30mm	0.30mm	25	25	5
4703-400	400x230mm	0.35mm	0.35mm	30	30	6
4703-500	500x280mm	0.35mm	0.35mm	30	30	6
4703-600	600x330mm	0.40mm	0.40mm	30	30	6
4703-750	750x375mm	0.45mm	0.45mm	30	30	6
4703-1000	1000x500mm	0.50mm	0.50mm	30	30	6



## MACHINIST SQUARE WITH WIDE BASE



4704-150

- Made of carbon steel
- Galvanized

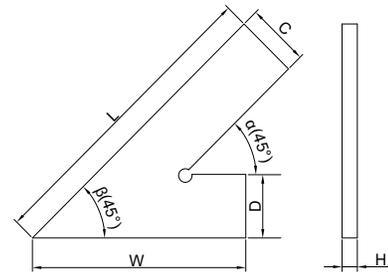
(mm)

Code	Size(LxW)	Squareness		C	D	H	E
		Inside( $\alpha$ )	Outside( $\beta$ )				
4704-100	100x70mm	0.15mm	0.15mm	20	20	5	20
4704-150	150x100mm	0.20mm	0.20mm	20	20	5	20
4704-200	200x130mm	0.25mm	0.25mm	20	20	5	25
4704-250	250x160mm	0.30mm	0.30mm	25	25	5	25
4704-300	300x180mm	0.30mm	0.30mm	25	25	5	30
4704-400	400x230mm	0.35mm	0.35mm	30	30	6	30
4704-500	500x280mm	0.35mm	0.35mm	30	30	6	30
4704-600	600x330mm	0.40mm	0.40mm	30	30	6	30
4704-750	750x375mm	0.45mm	0.45mm	30	30	6	30
4704-1000	1000x500mm	0.50mm	0.50mm	30	30	6	30

## 45° SQUARE



4745-1100



(mm)

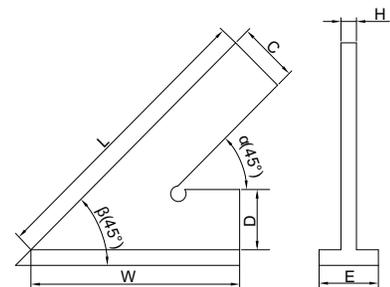
Code	Size(LxW)	Accuracy		C	D	H
		Inside( $\alpha$ )	Outside( $\beta$ )			
4745-1100	100x70mm	27 $\mu$ m	30 $\mu$ m	20	20	5
4745-1120	120x80mm	29 $\mu$ m	32 $\mu$ m	20	20	5
4745-1150	150x100mm	32 $\mu$ m	35 $\mu$ m	20	20	5
4745-1200	200x130mm	36 $\mu$ m	40 $\mu$ m	25	25	5

- Made of hardened stainless steel

## 45° SQUARE WITH WIDE BASE



4747-100

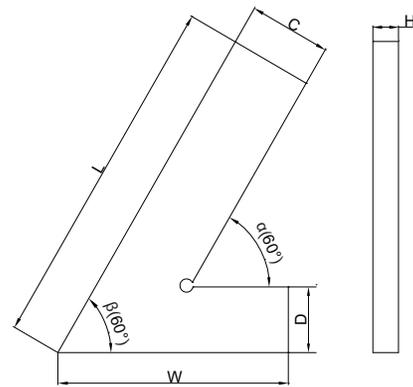


(mm)

Code	Size(LxW)	Accuracy		C	D	H	E
		Inside( $\alpha$ )	Outside( $\beta$ )				
4747-100	100x70mm	27 $\mu$ m	31 $\mu$ m	20	20	5	20
4747-120	120x80mm	29 $\mu$ m	33 $\mu$ m	20	20	5	20
4747-150	150x100mm	32 $\mu$ m	36 $\mu$ m	20	20	5	20
4747-200	200x130mm	36 $\mu$ m	41 $\mu$ m	25	25	5	25

- Made of hardened stainless steel

## 60° SQUARE



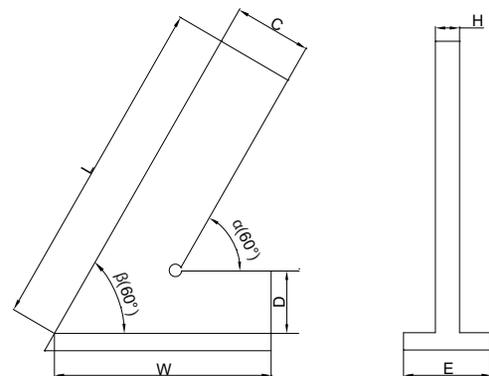
4760-1100

(mm)

Code	Size(LxW)	Accuracy		C	D	H
		Inside( $\alpha$ )	Outside( $\beta$ )			
4760-1100	100x70mm	28 $\mu$ m	30 $\mu$ m	20	20	5
4760-1120	120x80mm	30 $\mu$ m	32 $\mu$ m	20	20	5
4760-1150	150x100mm	32 $\mu$ m	35 $\mu$ m	20	20	5
4760-1200	200x130mm	37 $\mu$ m	40 $\mu$ m	25	25	5

- Made of hardened stainless steel

## 60° SQUARE WITH WIDE BASE



4762-100

(mm)

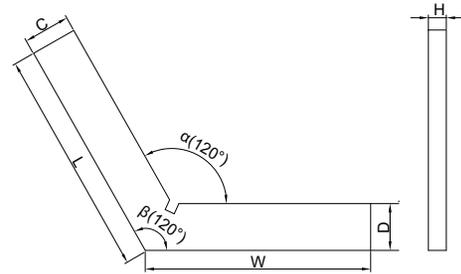
Code	Size(LxW)	Accuracy		C	D	H	E
		Inside( $\alpha$ )	Outside( $\beta$ )				
4762-100	100x70mm	28 $\mu$ m	31 $\mu$ m	20	20	5	20
4762-120	120x80mm	30 $\mu$ m	33 $\mu$ m	20	20	5	20
4762-150	150x100mm	33 $\mu$ m	36 $\mu$ m	20	20	5	20
4762-200	200x130mm	37 $\mu$ m	41 $\mu$ m	25	25	5	25

- Made of hardened stainless steel

## 120° SQUARE



4706-1100



(mm)

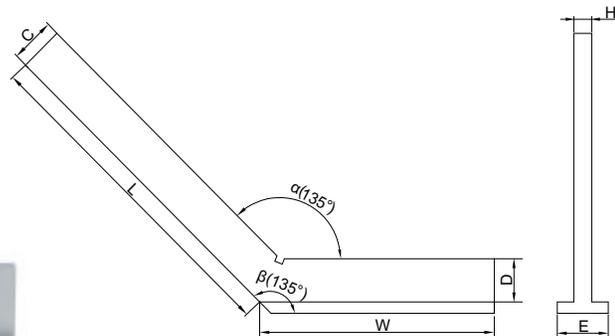
Code	Size(LxW)	Accuracy		C	D	H
		Inside( $\alpha$ )	Outside( $\beta$ )			
4706-150	50x50mm	24 $\mu$ m	25 $\mu$ m	15	15	5
4706-175	75x75mm	26 $\mu$ m	28 $\mu$ m	20	20	5
4706-1100	100x100mm	29 $\mu$ m	30 $\mu$ m	20	20	5
4706-1150	150x150mm	34 $\mu$ m	35 $\mu$ m	25	25	5
4706-1200	200x200mm	38 $\mu$ m	40 $\mu$ m	30	30	7

■ Made of hardened stainless steel

## 135° SQUARE WITH WIDE BASE



4754-3120



(mm)

Code	Size(LxW)	Accuracy		C	D	H	E
		Inside( $\alpha$ )	Outside( $\beta$ )				
4754-3100	100x70mm	29 $\mu$ m	31 $\mu$ m	20	20	5	20
4754-3120	120x80mm	31 $\mu$ m	33 $\mu$ m	20	20	5	20
4754-3150	150x100mm	34 $\mu$ m	36 $\mu$ m	20	20	5	20
4754-3200	200x130mm	39 $\mu$ m	41 $\mu$ m	30	30	7	30
4754-3250	250x165mm	44 $\mu$ m	46 $\mu$ m	30	30	7	30
4754-3300	300x175mm	49 $\mu$ m	51 $\mu$ m	35	35	7	35

■ Made of hardened stainless steel

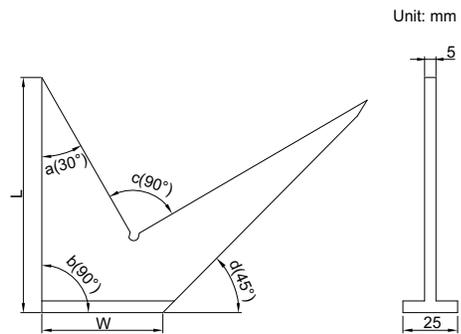
## SPECIAL SQUARE



4709-92

- Made of hardened carbon steel

Code	Size(LxW)	Accuracy			
		a	b	c	d
4709-92	92x47mm	27μm	29μm	29μm	30μm
4709-110	110x59mm	29μm	31μm	31μm	33μm
4709-130	130x70mm	30μm	33μm	33μm	35μm
4709-175	175x94mm	34μm	38μm	38μm	40μm



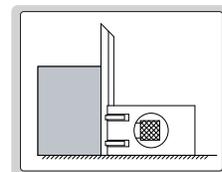
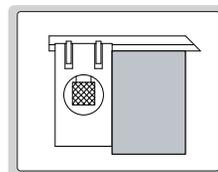
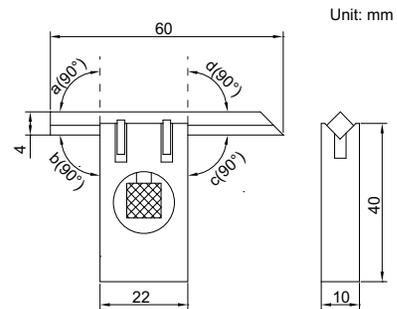
## ADJUSTABLE SQUARE



4701-1

- The straight edge can move and can be locked by the clamping screw
- Made of hardened stainless steel

Code	Squareness(a, b, c, d)
4701-1	7μm



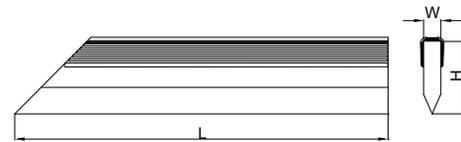
## STRAIGHT EDGE

- DIN874
- Satin chrome plating
- Beveled edge
- Made of hardened stainless steel

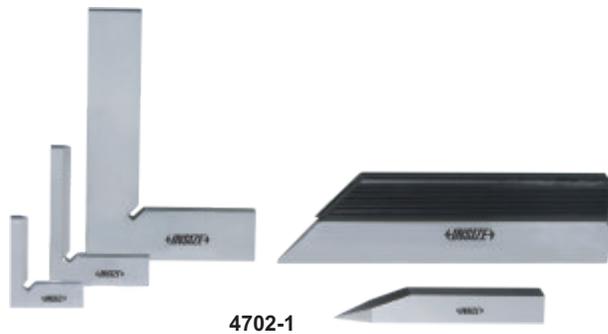
(mm)				
Code	Size (L)	Straightness	W	H
4700-50	50mm	2.2 $\mu$ m	5	20
4700-75	75mm	2.3 $\mu$ m	5	25
4700-100	100mm	2.4 $\mu$ m	5	25
4700-125	125mm	2.5 $\mu$ m	5	25
4700-150	150mm	2.6 $\mu$ m	6	30
4700-200	200mm	2.8 $\mu$ m	6	30
4700-250	250mm	3.0 $\mu$ m	8	40
4700-300	300mm	3.2 $\mu$ m	8	40
4700-400	400mm	3.6 $\mu$ m	10	50
4700-500	500mm	4.0 $\mu$ m	10	50



4700-100

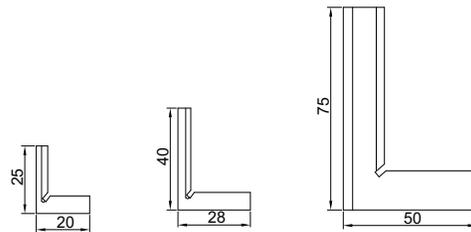


## SQUARE SET

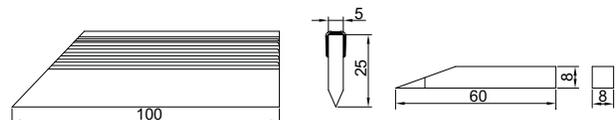


4702-1

Unit: mm



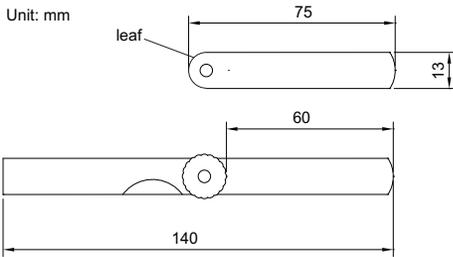
- Includes:
  - 90° tool maker square 25x20mm DIN875 grade 00 (code **4794-025**)
  - 90° tool maker square 40x28mm DIN875 grade 00 (code **4794-040**)
  - 90° beveled edge square 75x50mm DIN875 grade 00 (code **4790-075**)
  - straight edge 100mm DIN874 (code **4700-100**)
  - scriber
- Made of hardened stainless steel



Code

4702-1

## FEELER GAUGE

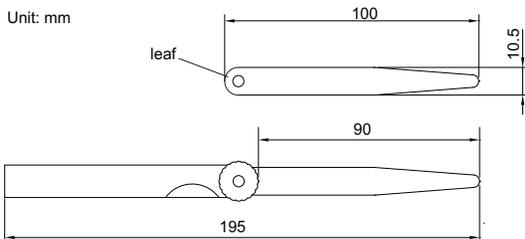


**4601-25**

- Made of hardened alloy steel
- Meet DIN2275
- Accuracy:  $\pm(3+T/80)$   $\mu\text{m}$ , 'T' is the thickness of leaves in  $\mu\text{m}$

Code	Range	Thickness of leaves included (mm)	Quantity of leaves
<b>4601-25</b>	0.04 - 1.00mm	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, 0.55, 0.60, 0.65, 0.70, 0.75, 0.80, 0.85, 0.90, 0.95, 1.00	25

## FEELER GAUGE



**4602-20**

- Made of hardened alloy steel
- Meet DIN2275
- Accuracy:  $\pm(3+T/80)$   $\mu\text{m}$ , 'T' is the thickness of leaves in  $\mu\text{m}$

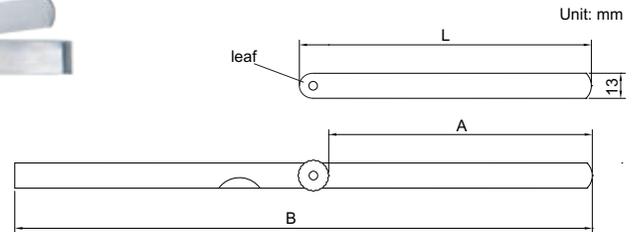
Code	Range	Thickness of leaves included (mm)	Quantity of leaves
<b>4602-13A</b>	0.03 - 0.50mm	0.03, 0.04, 0.05, 0.06, 0.07, 0.08, 0.09, 0.10, 0.15, 0.20, 0.30, 0.40, 0.50	13
<b>4602-13</b>	0.05 - 1.00mm	0.05, 0.10, 0.15, 0.20, 0.25, 0.30, 0.40, 0.50, 0.60, 0.70, 0.80, 0.90, 1.00	13
<b>4602-17</b>	0.02 - 1.00mm	0.02, 0.03, 0.04, 0.05, 0.06, 0.07, 0.08, 0.09, 0.10, 0.15, 0.20, 0.25, 0.30, 0.40, 0.50, 0.75, 1.00	17
<b>4602-20</b>	0.05 - 1.00mm	0.05, 0.10, 0.15, 0.20, 0.25, 0.30, 0.35, 0.40, 0.45, 0.50, 0.55, 0.60, 0.65, 0.70, 0.75, 0.80, 0.85, 0.90, 0.95, 1.00	20
<b>4602-28</b>	0.05 - 1.00mm	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, 0.55, 0.60, 0.65, 0.70, 0.75, 0.80, 0.85, 0.90, 0.95, 1.00	28
<b>4602-32</b>	0.03 - 1.00mm	0.03, 0.04, 0.05, 0.06, 0.07, 0.08, 0.09, 0.10, 0.13, 0.15, 0.18, 0.20, 0.23, 0.25, 0.28, 0.30, 0.33, 0.35, 0.38, 0.40, 0.45, 0.50, 0.55, 0.60, 0.63, 0.65, 0.70, 0.75, 0.80, 0.85, 0.90, 1.00	32

## LONG FEELER GAUGE



4605-20

- Made of hardened alloy steel
- Meet DIN2275
- Accuracy:  $\pm(3+T/80)\mu\text{m}$ , 'T' is the thickness of leaves in  $\mu\text{m}$



(mm)

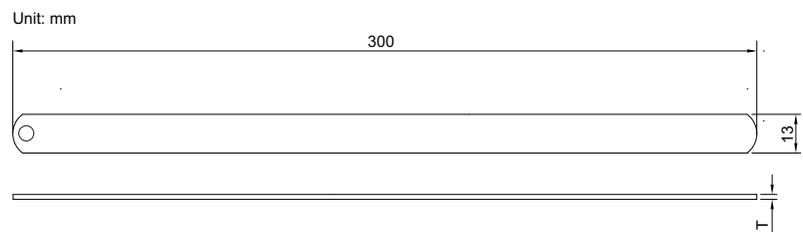
Code	Range	Thickness of leaves included (mm)	Quantity of leaves	L	A	B
4605-13	0.05 - 1.00mm	0.05, 0.10, 0.15, 0.20, 0.25, 0.30, 0.40, 0.50, 0.60, 0.70, 0.80, 0.90, 1.00	13	150	135	295
4605-131	0.05 - 1.00mm		13	200	185	395
4605-132	0.05 - 1.00mm		13	300	285	590
4605-20	0.05 - 1.00mm	0.05, 0.10, 0.15, 0.20, 0.25, 0.30, 0.35, 0.40, 0.45, 0.50, 0.55, 0.60, 0.65, 0.70, 0.75, 0.80, 0.85, 0.90, 0.95, 1.00	20	150	135	295
4605-201	0.05 - 1.00mm		20	200	185	395
4605-202	0.05 - 1.00mm		20	300	285	590

## FEELER GAUGE STOCK

Code	Thickness (T)	Accuracy
4622-02	0.02mm	$\pm 3\mu\text{m}$
4622-03	0.03mm	$\pm 3\mu\text{m}$
4622-04	0.04mm	$\pm 3\mu\text{m}$
4622-05	0.05mm	$\pm 3\mu\text{m}$
4622-06	0.06mm	$\pm 3\mu\text{m}$
4622-07	0.07mm	$\pm 4\mu\text{m}$
4622-08	0.08mm	$\pm 4\mu\text{m}$
4622-09	0.09mm	$\pm 4\mu\text{m}$
4622-10	0.10mm	$\pm 4\mu\text{m}$
4622-12	0.12mm	$\pm 5\mu\text{m}$
4622-15	0.15mm	$\pm 5\mu\text{m}$
4622-18	0.18mm	$\pm 6\mu\text{m}$
4622-20	0.20mm	$\pm 6\mu\text{m}$
4622-25	0.25mm	$\pm 6\mu\text{m}$
4622-30	0.30mm	$\pm 7\mu\text{m}$
4622-35	0.35mm	$\pm 7\mu\text{m}$
4622-40	0.40mm	$\pm 8\mu\text{m}$
4622-45	0.45mm	$\pm 8\mu\text{m}$
4622-50	0.50mm	$\pm 9\mu\text{m}$



4622-10



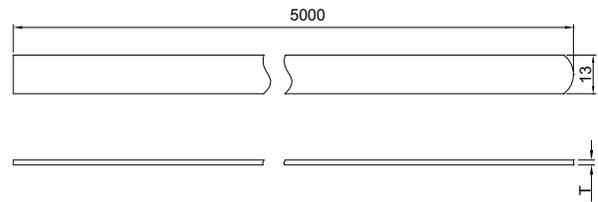
- Used as shims to accurately set spacing
- Made of hardened alloy steel
- Length 300mm
- Width 13mm

## FEELER GAUGE TAPE



4621-30

Unit: mm

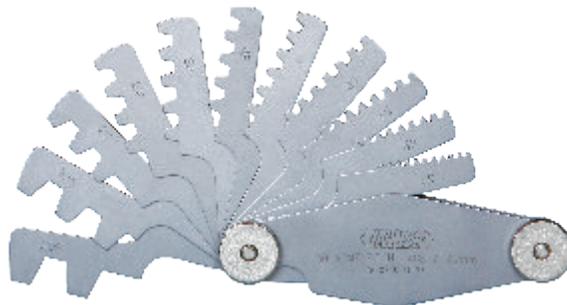


- Used as shims to accurately set spacing
- Made of hardened alloy steel
- Length 5m
- Width 13mm

Code	Thickness (T)	Accuracy (mm)
4621-02	0.02mm	±4µm
4621-03	0.03mm	±4µm
4621-04	0.04mm	±4µm
4621-05	0.05mm	±4µm
4621-06	0.06mm	±4µm
4621-07	0.07mm	±5µm
4621-08	0.08mm	±5µm
4621-09	0.09mm	±5µm
4621-10	0.10mm	±5µm
4621-12	0.12mm	±5µm
4621-15	0.15mm	±6µm
4621-18	0.18mm	±7µm
4621-20	0.20mm	±8µm
4621-25	0.25mm	±9µm
4621-30	0.30mm	±9µm

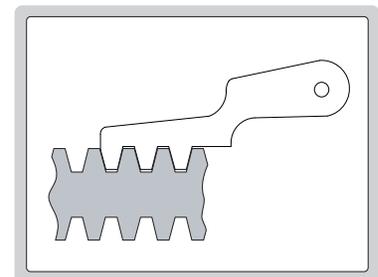
Code	Thickness (T)	Accuracy (mm)
4621-35	0.35mm	±11µm
4621-40	0.40mm	±12µm
4621-45	0.45mm	±12µm
4621-50	0.50mm	±14µm
4621-55	0.55mm	±14µm
4621-60	0.60mm	±14µm
4621-65	0.65mm	±14µm
4621-70	0.70mm	±17µm
4621-75	0.75mm	±17µm
4621-80	0.80mm	±19µm
4621-85	0.85mm	±19µm
4621-90	0.90mm	±22µm
4621-95	0.95mm	±22µm
4621-100	1.00mm	±24µm

## PITCH GAUGE



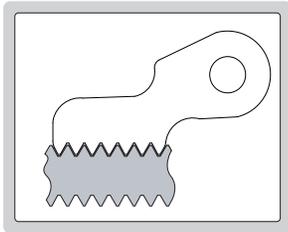
4824-12

- Check the pitch of screw thread
- Accuracy: ±0.07mm



Code	Range	Thread type	Pitch of leaves included	Quantity of leaves
4824-12	2-20mm	ACME 30°	2, 3, 4, 5, 6, 7, 8, 9, 10, 12, 16, 20mm	12
4824-16	1-12TPI	ACME 29°	1, 1-1/3, 1-1/2, 1-3/4, 2, 2-1/2, 3, 3-1/2, 4, 5, 6, 7, 8, 9, 10, 12TPI	16

## PITCH GAUGE



- Check the pitch of screw thread
- Accuracy:  $\pm 0.07\text{mm}$

**4820-122**

### Metric 60° screw

Code	Range	Pitch of leaves included	Quantity of leaves
4820-122	0.4-7.0mm	0.4, 0.5, 0.6, 0.7, 0.75, 0.8, 0.9, 1, 1.25, 1.5, 1.75, 2, 2.5, 3, 3.5, 4, 4.5, 5, 5.5, 6, 6.5, 7mm	22
4820-124	0.25-7.0mm	0.25, 0.3, 0.35, 0.4, 0.5, 0.7, 0.75, 0.8, 0.9, 1, 1.25, 1.5, 1.75, 2, 2.5, 3, 3.5, 4, 4.5, 5, 5.5, 6, 6.5, 7mm	24
4820-1241	0.25-6.0mm	0.25, 0.3, 0.35, 0.4, 0.45, 0.5, 0.6, 0.7, 0.75, 0.8, 0.9, 1, 1.25, 1.5, 1.75, 2, 2.5, 3, 3.5, 4, 4.5, 5, 5.5, 6mm	24

### Unified 60° screw

Code	Range	Pitch of leaves included	Quantity of leaves
4820-230	4-42TPI	4, 4-1/2, 5, 5-1/2, 6, 7, 8, 9, 10, 11, 11-1/2, 12, 13, 14, 15, 16, 18, 20, 22, 24, 26, 27, 28, 30, 32, 34, 36, 38, 40, 42TPI	30

### Whitworth 55° screw

Code	Range	Pitch of leaves included	Quantity of leaves
4820-330	4-42TPI	4, 4-1/2, 5, 5-1/2, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15, 16, 18, 19, 20, 22, 24, 26, 27, 28, 30, 32, 34, 36, 38, 40, 42TPI	30
4820-328	4-62TPI	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, 36, 40, 48, 60, 62TPI	28

### Metric 60° and Whitworth 55° screw

Code	Range	Pitch of leaves included	Quantity of leaves
4820-452	0.25-6.0mm	0.25, 0.3, 0.35, 0.4, 0.45, 0.5, 0.6, 0.7, 0.75, 0.8, 0.9, 1, 1.25, 1.5, 1.75, 2, 2.5, 3, 3.5, 4, 4.5, 5, 5.5, 6mm	52
	4-62TPI	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, 36, 40, 48, 60, 62TPI	
4820-450	0.4-7.0mm	0.4, 0.5, 0.6, 0.7, 0.75, 0.8, 0.9, 1, 1.25, 1.5, 1.75, 2, 2.5, 3, 3.5, 4, 4.5, 5, 5.5, 6, 6.5, 7mm	50
	4-62TPI	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, 36, 40, 48, 60, 62TPI	

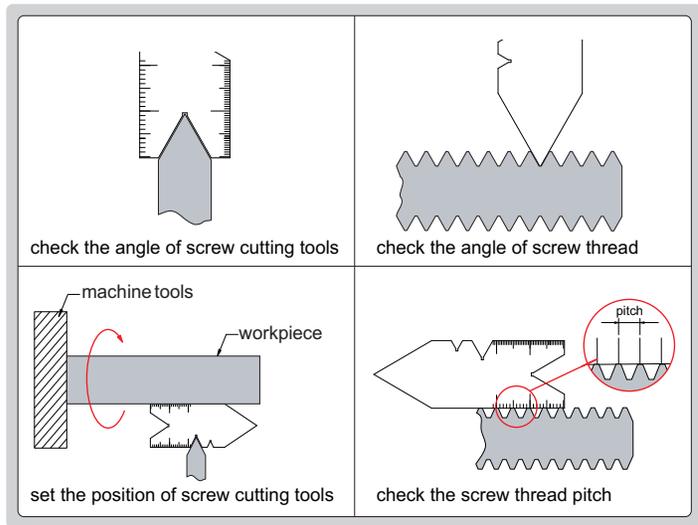
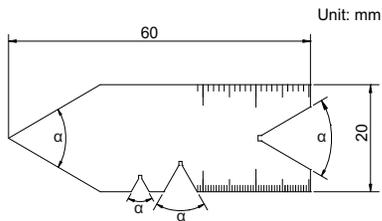
### Metric 60° and Unified 60° screw

Code	Range	Pitch of leaves included	Quantity of leaves
4820-552	0.4-7.0mm	0.4, 0.5, 0.6, 0.7, 0.75, 0.8, 0.9, 1, 1.25, 1.5, 1.75, 2, 2.5, 3, 3.5, 4, 4.5, 5, 5.5, 6, 6.5, 7mm	52
	4-42TPI	4, 4-1/2, 5, 5-1/2, 6, 7, 8, 9, 10, 11, 11-1/2, 12, 13, 14, 15, 16, 18, 20, 22, 24, 26, 27, 28, 30, 32, 34, 36, 38, 40, 42TPI	

## CENTER GAUGE



4810-55



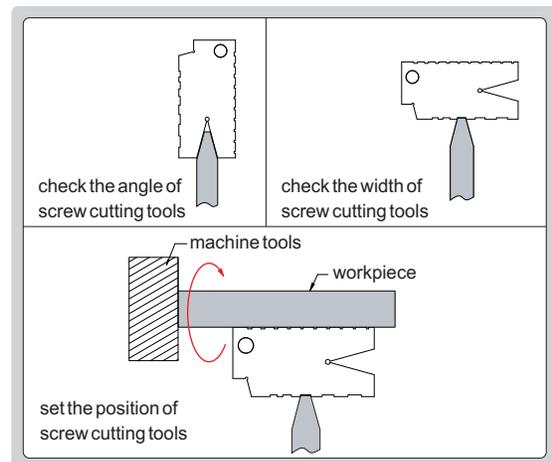
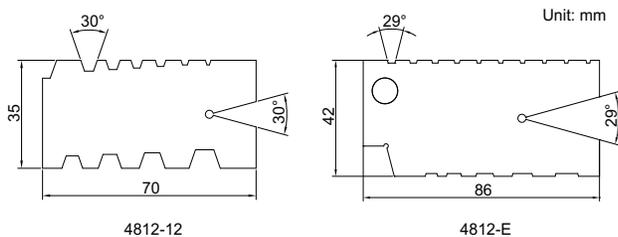
- To check and set screw cutting tools, and check the angle and pitch of screw thread
- Angle accuracy:  $\pm 10\text{min}$ .

Code	Thread type	Angle ( $\alpha$ )	Graduation
4810-601	METRIC 60°	60°	0.5mm and 1mm
4810-602	UNIFIED 60°	60°	14ths and 20ths on front side, 24ths and 32ths on back side
4810-55	WHITWORTH 55°	55°	14ths and 20ths

## THREAD GAUGE



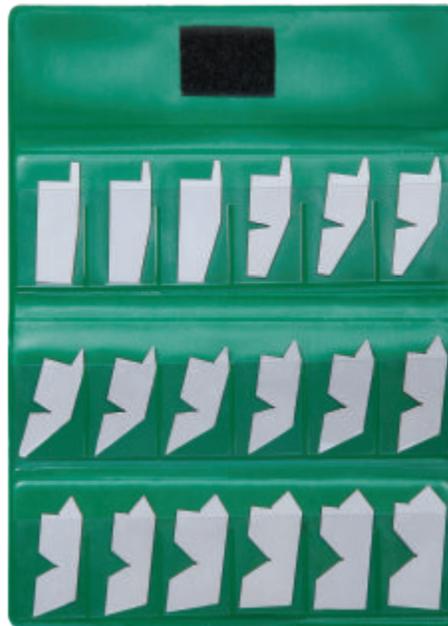
4812-E



- To check and set screw cutting tools
- Angle accuracy:  $\pm 10\text{min}$ .

Code	Range	Thread type	Pitch
4812-12	2- 12mm	ACME 30°	2, 3, 4, 5, 6, 7, 8, 9, 10, 12mm
4812-E	1- 10TPI	ACME 29°	1, 1-1/3, 1-1/2, 1-3/4, 2, 2-1/2, 3, 4, 5, 6, 7, 8, 9, 10TPI

# ANGLE GAUGE SET

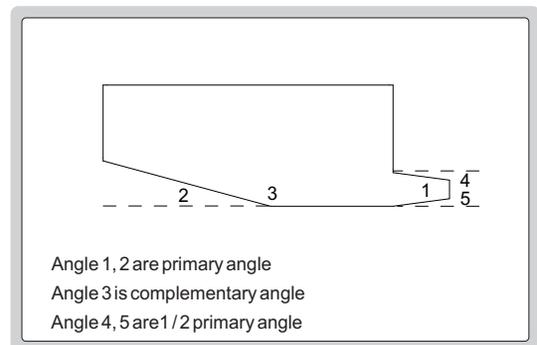


4807

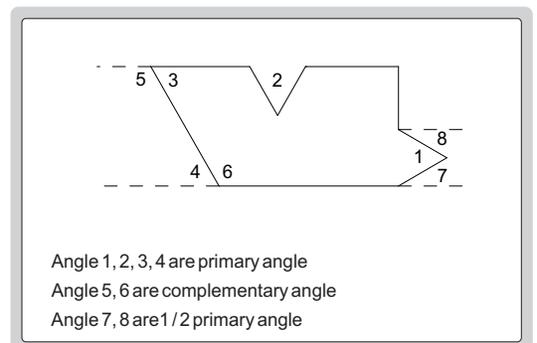
- Each blade checks primary, 1/2 primary and complementary angles

Code	Angle of leaves included	Quantity of leaves	Accuracy
4807	5°, 10°, 15°, 20°, 25°, 30°, 35°, 40°, 45°, 50°, 55°, 60°, 65°, 70°, 75°, 80°, 85°, 90°	18	±10'

Primary angle	1/2 primary angle	Complementary angle	Type
5°	2°30'	175°	A
10°	5°	170°	A
15°	7°30'	165°	A
20°	10°	160°	B
25°	12°30'	155°	B
30°	15°	150°	B
35°	17°30'	145°	B
40°	20°	140°	B
45°	22°30'	135°	B
50°	25°	130°	B
55°	27°30'	125°	B
60°	30°	120°	B
65°	32°30'	115°	B
70°	35°	110°	B
75°	37°30'	105°	B
80°	40°	100°	B
85°	42°30'	95°	B
90°	45°	90°	B



type A

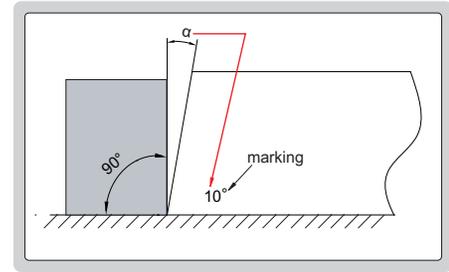


type B

## ANGLE GAUGE



4806-20

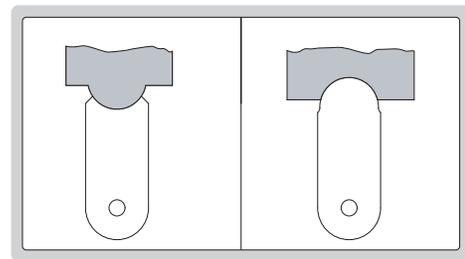


Code	Range	Angle of leaves included	Quantity of leaves	Accuracy
4806-20	1° - 45°	1°, 2°, 3°, 4°, 5°, 6°, 7°, 8°, 9°, 10°, 12°, 14°, 16°, 18°, 20°, 25°, 30°, 35°, 40°, 45°	20	±30'

## RADIUS GAUGE

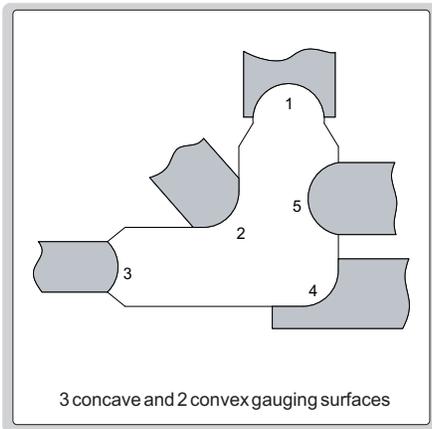


4801-17



Code	Range	Radius of leaves included (mm)	Quantity of leaves (internal + external)	Accuracy
4801-17	1 - 7mm	1, 1.25, 1.5, 1.75, 2, 2.25, 2.5, 2.75, 3, 3.5, 4, 4.5, 5, 5.5, 6, 6.5, 7	17+17	±0.03mm
4801-16	7.5 - 15mm	7.5, 8, 8.5, 9, 9.5, 10, 10.5, 11, 11.5, 12, 12.5, 13, 13.5, 14, 14.5, 15	16+16	±0.035mm
4801-15	15.5 - 25mm	15.5, 16, 16.5, 17, 17.5, 18, 18.5, 19, 19.5, 20, 21, 22, 23, 24, 25	15+15	±0.042mm

## RADIUS GAUGE SET

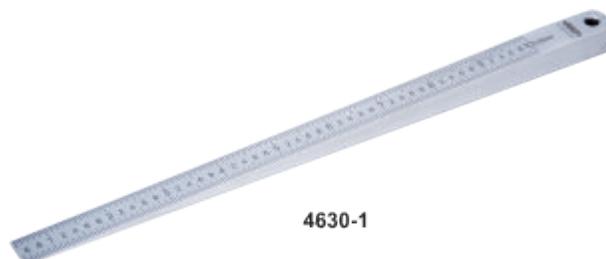
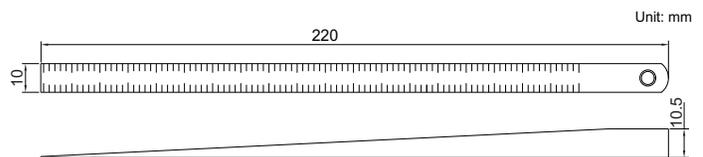
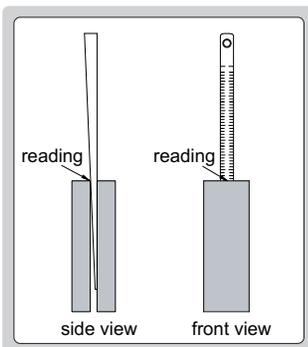


4804-26

- Each piece has 3 concave and 2 convex gauging surfaces
- Supplied with handle

Code	Range	Radius of leaves included (mm)	Quantity of leaves	Accuracy
4804-26	0.5-13mm	0.5, 1, 1.5, 2, 2.5, 3, 3.5, 4, 4.5, 5, 5.5, 6, 6.5, 7, 7.5, 8, 8.5, 9, 9.5, 10, 10.5, 11, 11.5, 12, 12.5, 13	26	±0.05mm

## TAPER GAUGE

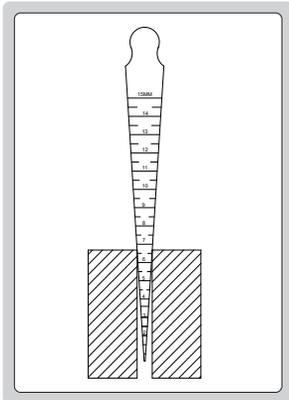


4630-1

Code	Range	Graduation	Accuracy
4630-1	0.5-10mm	0.05mm	±0.07mm

- For quick measurement of gap width
- Stain chrome plated reading surface
- Made of stainless steel

## TAPER GAUGE



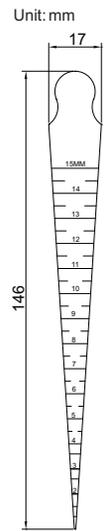
- Measure opening, slot width, hole size, etc.
- Made of stainless steel



front



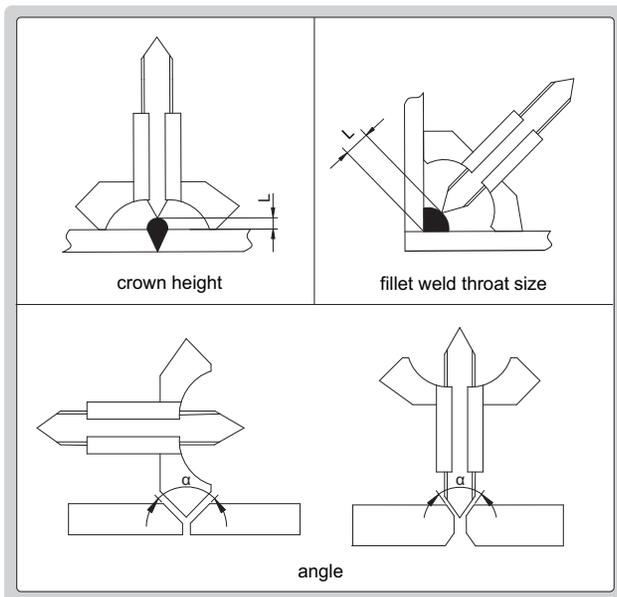
back



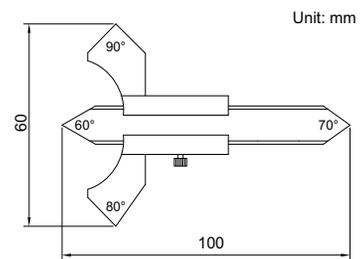
4833-1

Code	Range	Graduation	Accuracy
4833-1	0.8 - 15mm (1/32" - 5/8")	0.1mm (1/64")	±0.1mm

## WELDING GAUGE



4830

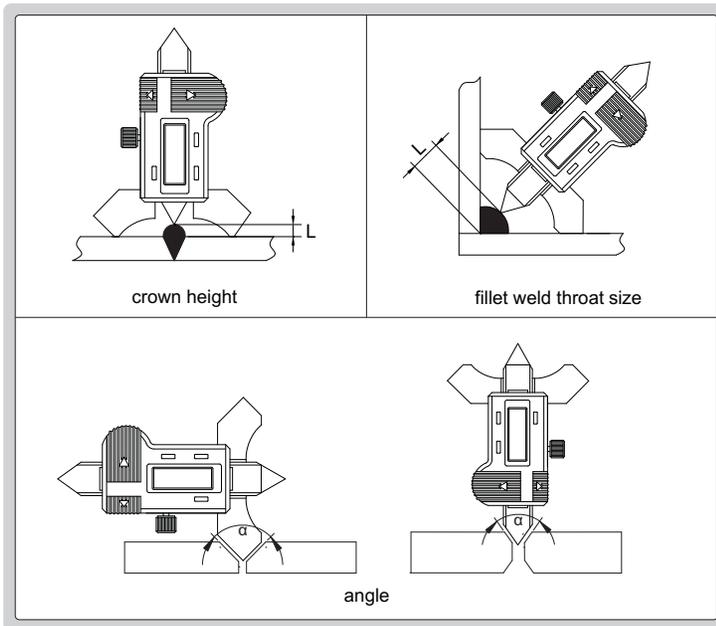


Unit: mm

Code	Measurement	Range	Graduation	Accuracy
4830	crown height	0 - 8mm	0.1mm	±0.1mm
	fillet weld throat size	0 - 20mm	0.1mm	±0.3mm
	angle	60°, 70°, 80°, 90°	—	±1°

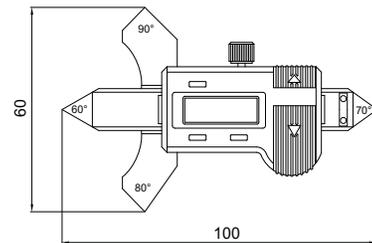
- Made of stainless steel
- Stain chrome plated reading surface

## DIGITAL WELDING GAUGE



4831-20

Unit: mm



Code	Measurement	Range	Resolution	Accuracy
4831-20	crown height	0 - 10mm	0.01mm/0.0005"	±0.03mm
	fillet weld throat size	0 - 20mm	0.01mm/0.0005"	±0.1mm
	angle	60°, 70°, 80°, 90°	—	±1°

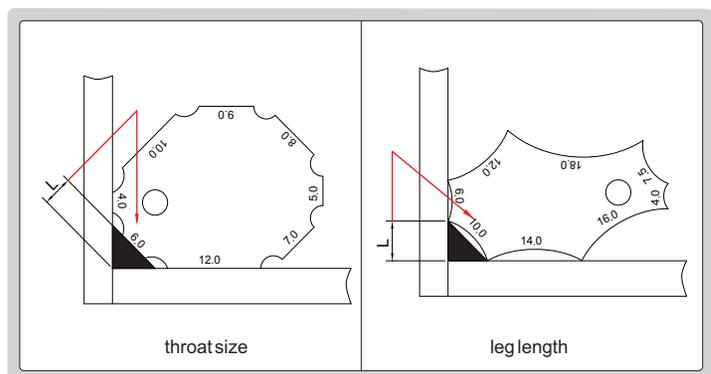
- Buttons: zero, mm/inch, on/off
- Battery SR44 or LR44
- Made of stainless steel

## FILLET WELD GAUGE



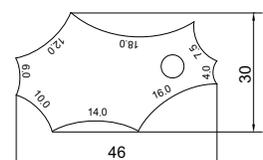
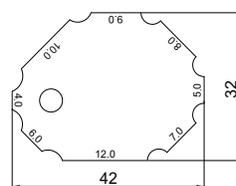
4832-1

- Made of stainless steel
- Sizes marked on both faces



Unit: mm

Code	Throat size (mm)	Leg length (mm)	Accuracy
4832-1	4, 5, 6, 7, 8, 9, 10, 12	4, 6, 7.5, 10, 12, 14, 16, 18	±0.5mm

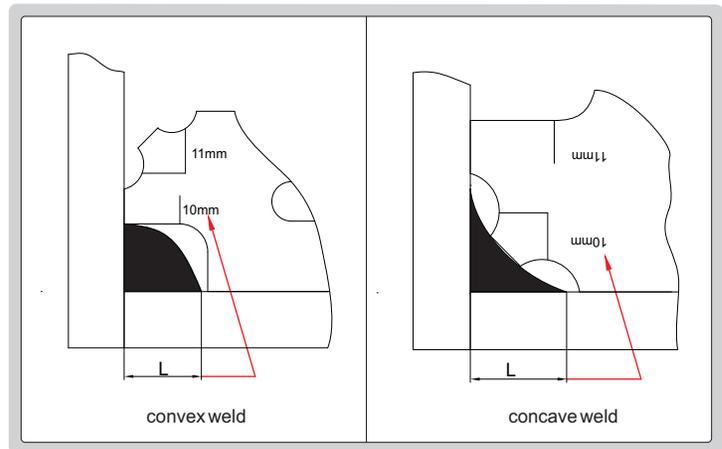


## FILLET WELD GAUGE

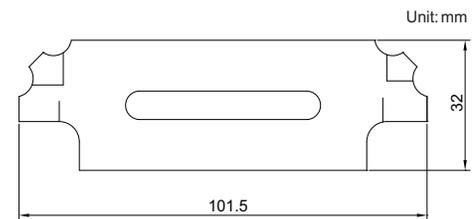


4836-1

- Measure concave and convex weld sizes
- 7 blades are included
- Each blade measures two sizes of concave and convex weld
- Made of stainless steel



Code	Size (mm)	Accuracy
4836-1	3, 4, 5, 6, 8, 9, 10, 11, 12, 14, 16, 19, 22, 25	±0.5mm

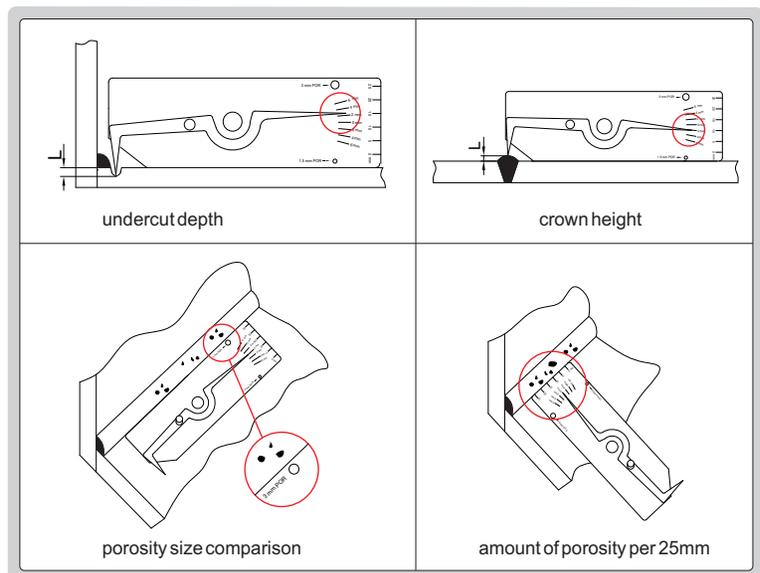


## WELDING GAUGE

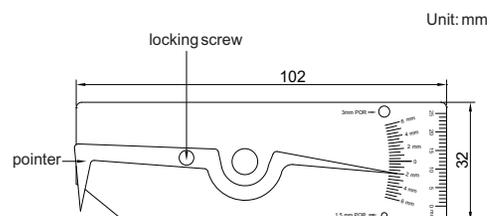


4834-1

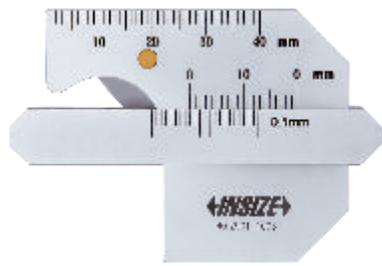
- Pointer can be locked for later reference
- Made of stainless steel



Code	Measurement	Range	Graduation	Accuracy
4834-1	undercut depth	0 - 6mm	0.5mm	±0.5mm
	crown height	0 - 6mm	0.5mm	±0.5mm
	porosity size comparison	1.5mm, 3mm	—	±0.2mm
	amount of porosity per 25mm	25mm	1mm	—



# WELDING GAUGE

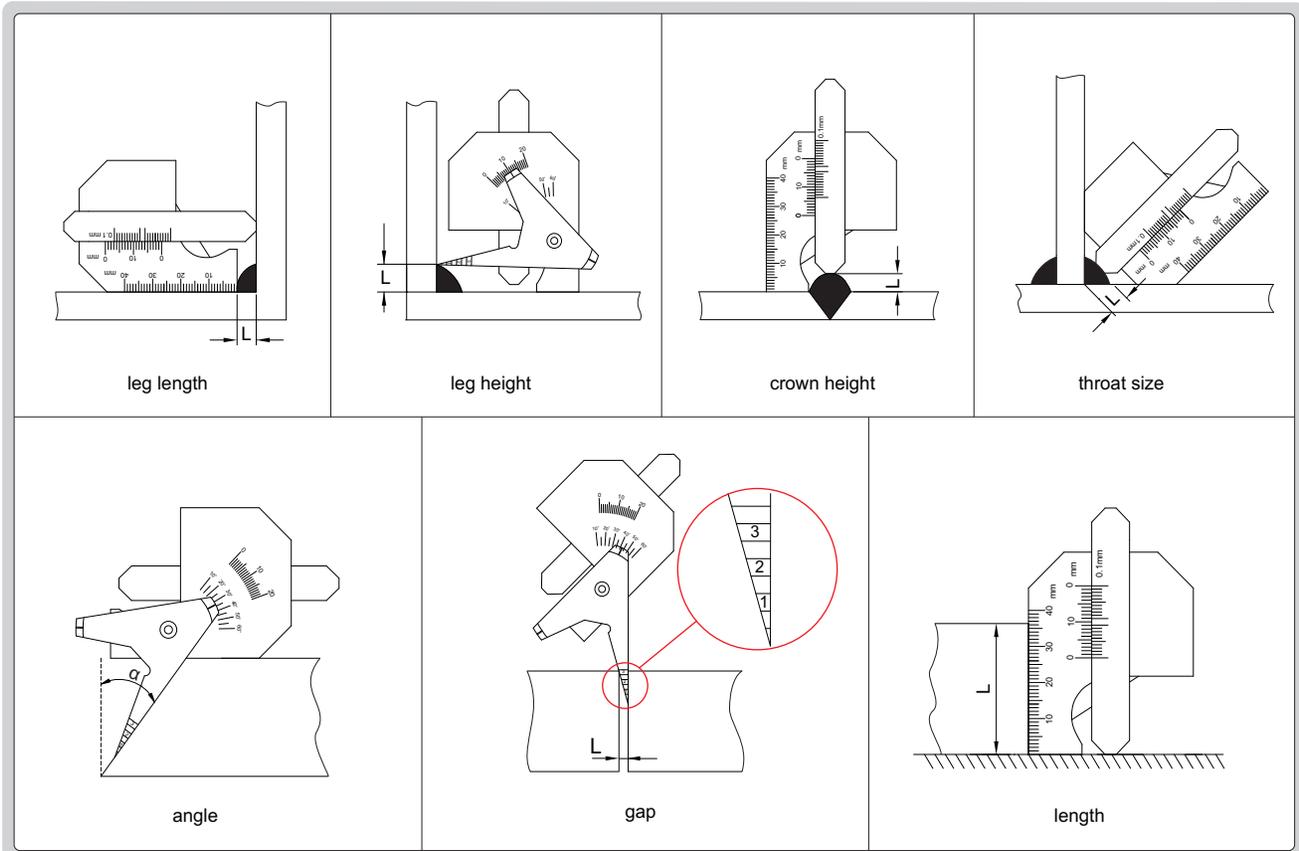


front



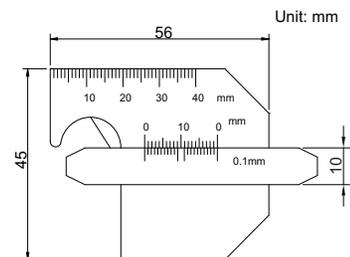
back

6832-1



- Made of stainless steel
- Stain chrome plated surface

Code	Measurement	Range	Graduation	Accuracy
6832-1	leg length	0 - 10mm	0.1mm	±0.1mm
	leg height	0 - 20mm	1mm	±0.5mm
	crown height	0 - 10mm	0.1mm	±0.1mm
	throat size	0 - 10mm	0.1mm	±0.1mm
	angle	0° - 60°	5°	±1°
	gap	1 - 3.5mm	0.5mm	±0.5mm
	length	0 - 40mm	1mm	±0.5mm



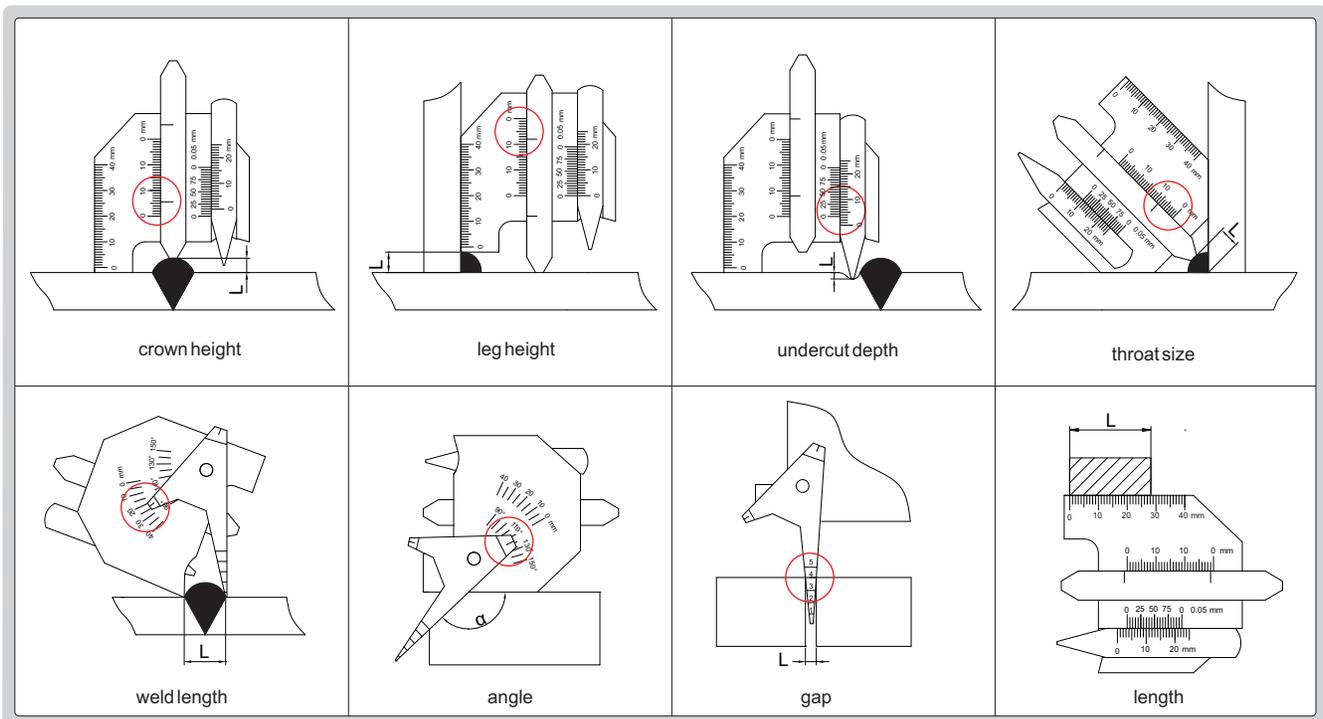
# WELDING GAUGE



front

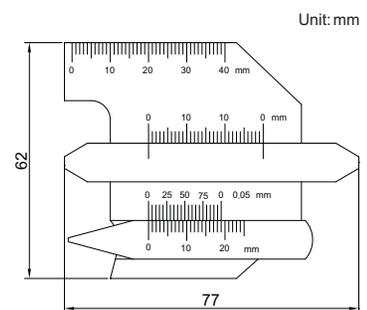
back

4838-1



■ Made of stainless steel

Code	Measurement	Range	Graduation	Accuracy
4838-1	crown height	0 - 10mm	1mm	±0.5mm
	leg height	0 - 14mm	1mm	±0.5mm
	undercut depth	0 - 5mm	0.05mm	±0.05mm
	throat size	0 - 13mm	1mm	±0.5mm
	weld length	0 - 40mm	1mm	±1mm
	angle	90° - 150°	5°	±1°
	gap	0.5 - 5mm	1mm	±0.5mm
	length	0 - 40mm	1mm	±0.5mm

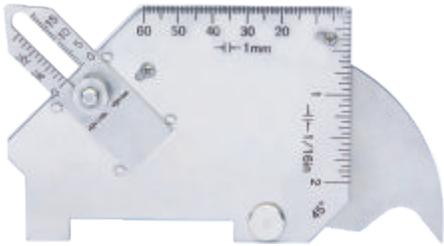


Unit: mm

# WELDING GAUGE

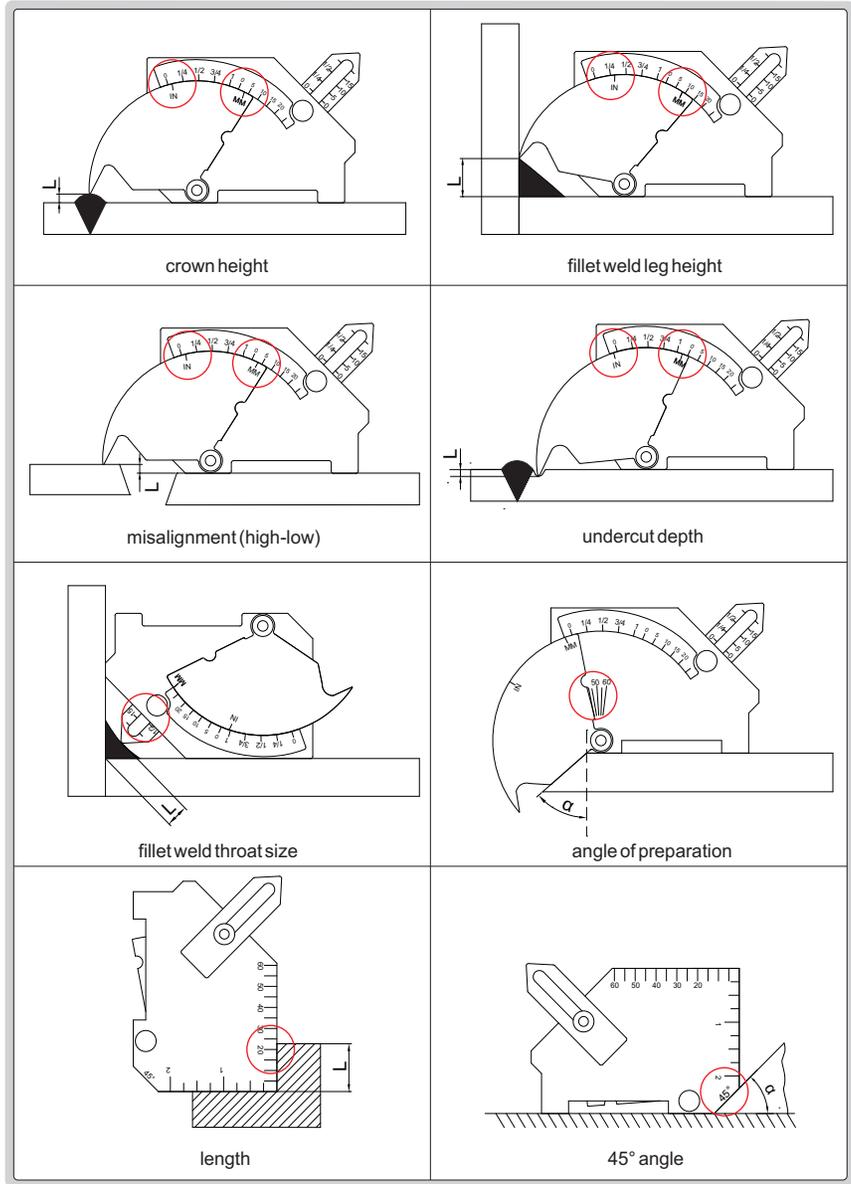


front



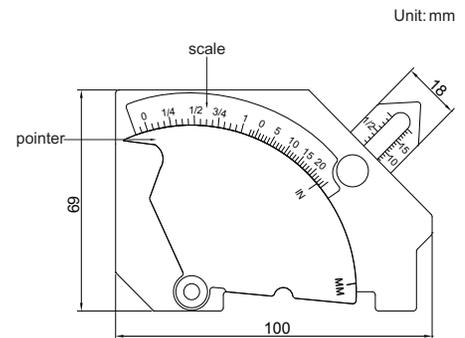
back

4835-1

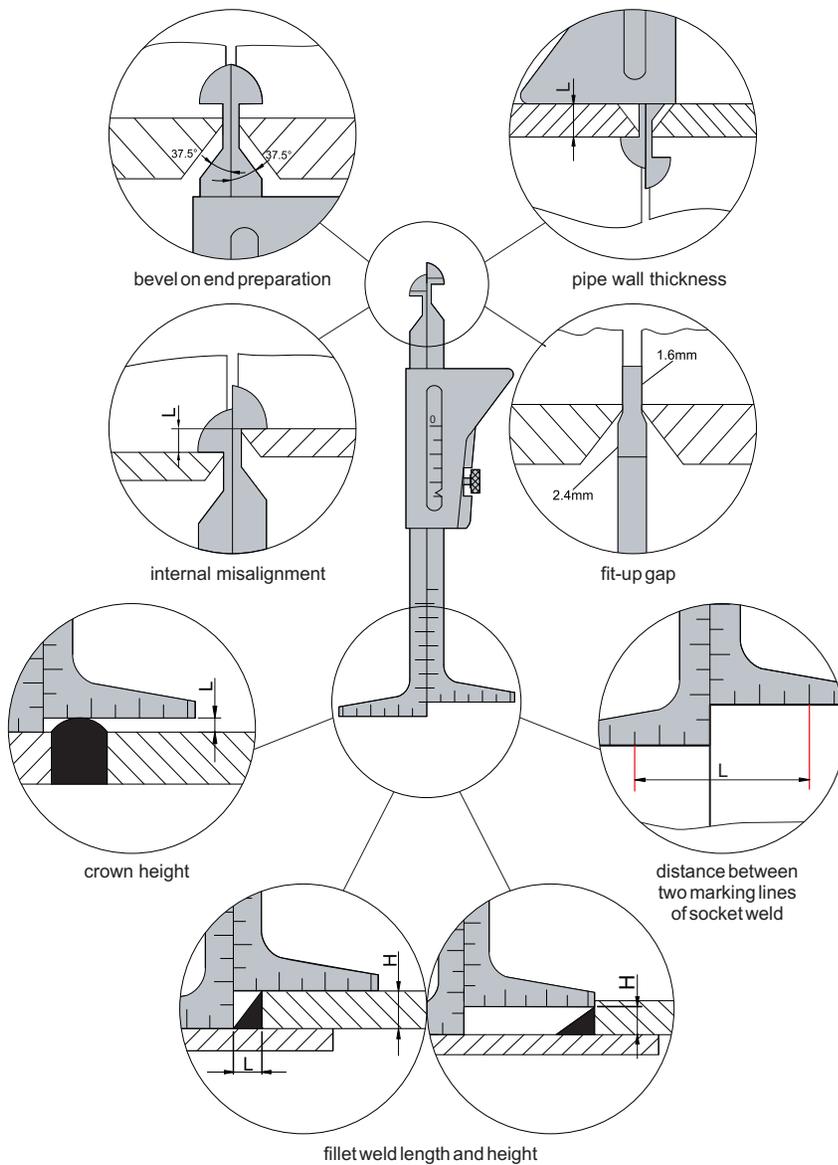


- Adjustable scale to compensate pointer wear
- Made of stainless steel

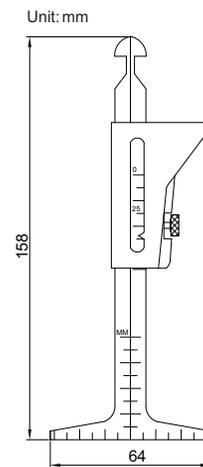
Code	Measurement	Range	Graduation	Accuracy
4835-1	crown height	0 - 25mm (0 - 1")	1mm (1/16")	±0.5mm
	fillet weld leg height	0 - 25mm (0 - 1")	1mm (1/16")	±0.5mm
	misalignment (high-low)	0 - 25mm (0 - 1")	1mm (1/16")	±0.5mm
	undercut depth	0 - 2mm (0 - 1/8")	1mm (1/16")	±0.5mm
	fillet weld throat size	0 - 20mm (0 - 3/4")	1mm (1/16")	±0.5mm
	angle of preparation	0 - 60°	5°	±1°
	length	0 - 60mm (0 - 2")	1mm (1/16")	±0.5mm
	45° angle	—	—	±1°



# PIPE WELDING GAUGE



4839-1



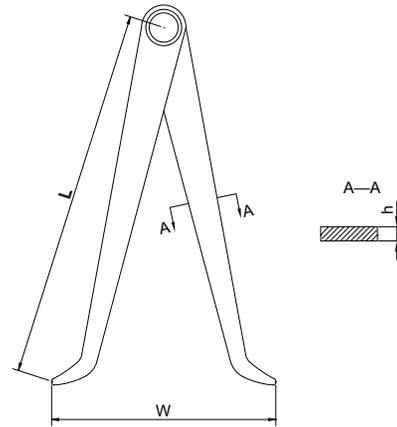
■ Made of stainless steel

Code	Measurement	Range	Graduation	Accuracy
4839-1	bevel on end preparation	37.5°	—	±1°
	pipe wall thickness	0 - 45mm (0 - 1-3/4")	1mm (1/16")	±0.5mm
	internal misalignment	0 - 35mm (0 - 1-3/8")	1mm (1/32")	±0.5mm
	fit-up gap	1.6mm, 2.4mm	—	±0.1mm
	crown height	0 - 35mm (0 - 1-3/8")	1mm (1/32")	±0.5mm
	distance between two marking lines of socket weld	0 - 60mm (0 - 2-3/8")	1mm (1/16")	±0.5mm
	fillet weld length	0 - 30mm (0 - 1-1/4")	1mm (1/16")	±0.5mm
	fillet weld height	0 - 35mm (0 - 1-3/8")	1mm (1/32")	±0.5mm

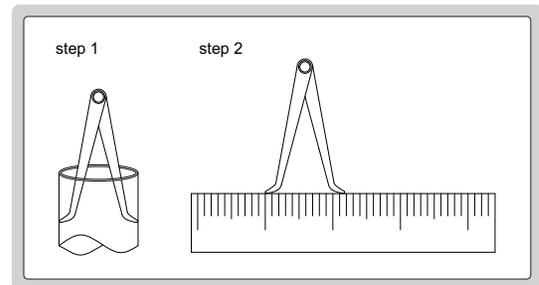
## INSIDE CALIPER



7240-150



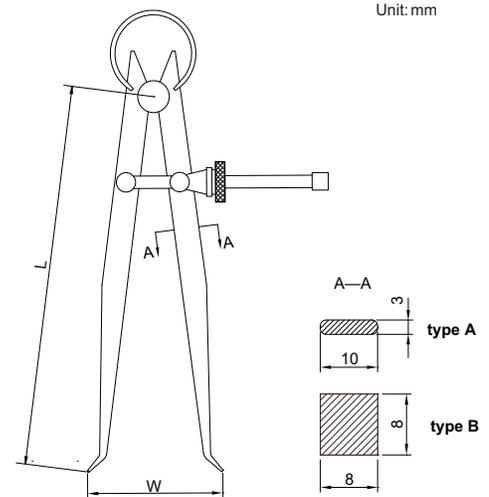
Code	Size(L)	Range(W)	h
7240-150	150mm	15 - 150mm	2mm
7240-200	200mm	15 - 200mm	2mm
7240-250	250mm	15 - 250mm	3mm
7240-300	300mm	15 - 300mm	3mm



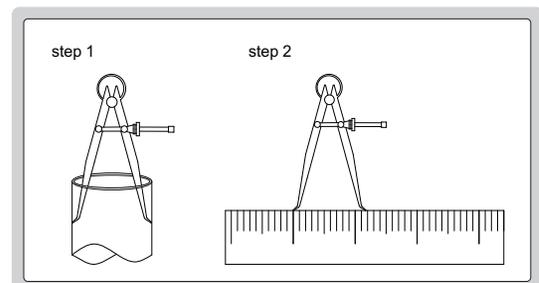
## INSIDE SPRING CALIPER



7249-125



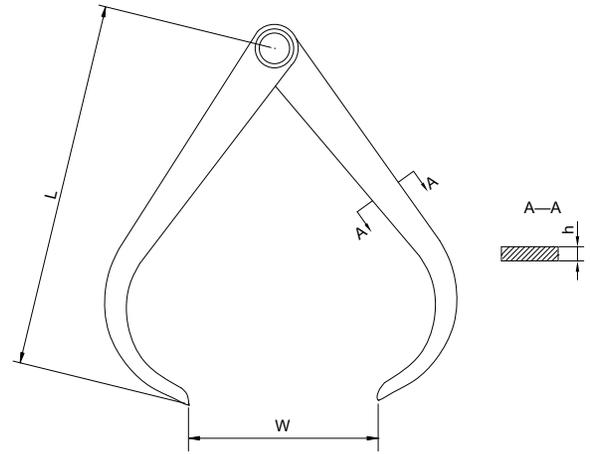
Code	Size(L)	Type	Range(W)
7249-125	125mm	A	15 - 115mm
7249-150	150mm	A	15 - 140mm
7249-200	200mm	A	18 - 190mm
7249-250	250mm	A	20 - 240mm
7249-300	300mm	A	20 - 290mm
7249-400	400mm	B	20 - 390mm
7249-500	500mm	B	25 - 490mm
7249-600	600mm	B	25 - 590mm



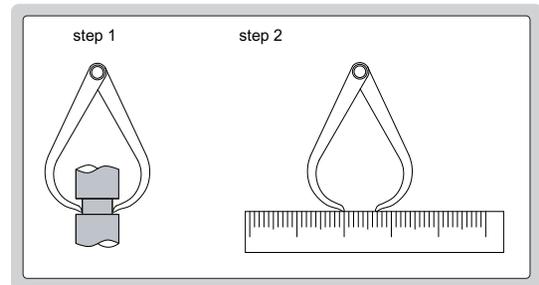
## OUTSIDE CALIPER



7241-150



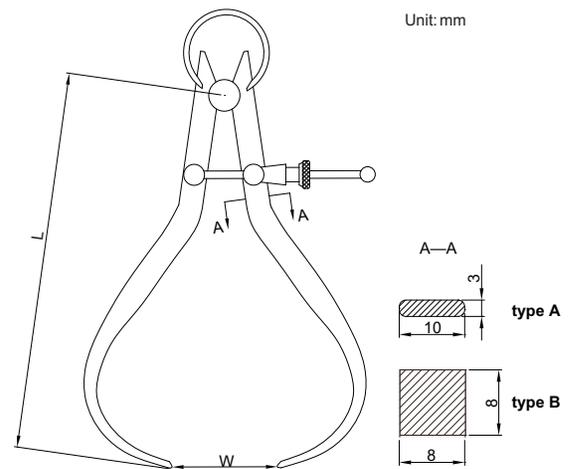
Code	Size(L)	Range(W)	h
7241-150	150mm	0 - 150mm	2mm
7241-200	200mm	0 - 200mm	2mm
7241-250	250mm	0 - 250mm	3mm
7241-300	300mm	0 - 300mm	3mm



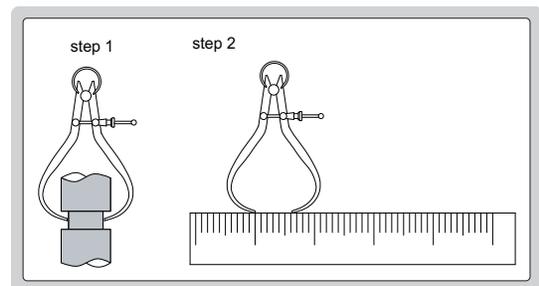
## OUTSIDE SPRING CALIPER



7244-125



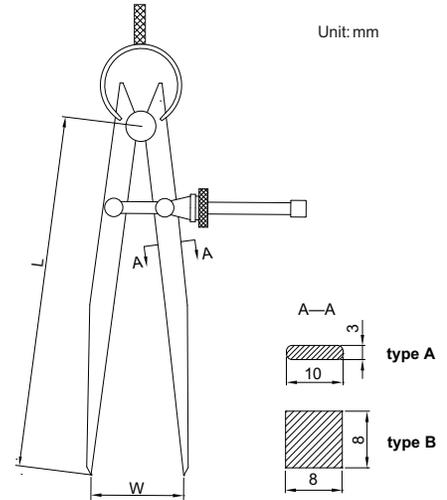
Code	Size(L)	Type	Range(W)
7244-125	125mm	A	0 - 115mm
7244-150	150mm	A	0 - 140mm
7244-200	200mm	A	0 - 190mm
7244-250	250mm	A	0 - 240mm
7244-300	300mm	A	0 - 290mm
7244-400	400mm	B	0 - 390mm
7244-500	500mm	B	0 - 490mm
7244-600	600mm	B	0 - 590mm



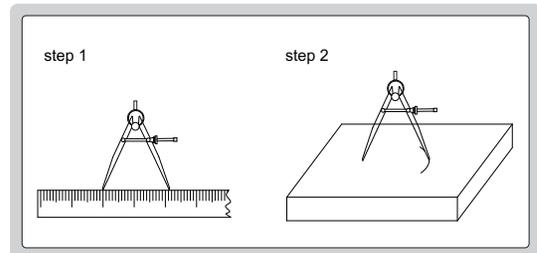
# SPRING DIVIDER



7250-125



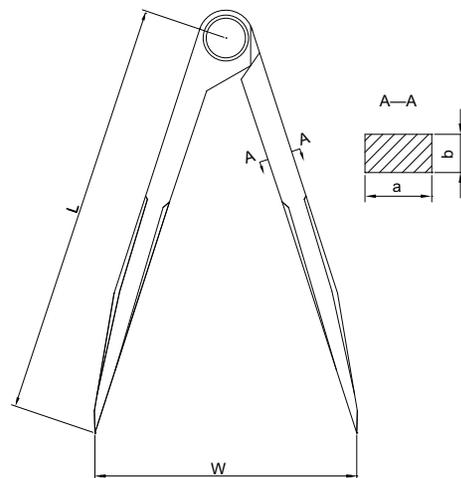
Code	Size(L)	Type	Range(W)
7250-125	125mm	A	0 - 115mm
7250-150	150mm	A	0 - 140mm
7250-200	200mm	A	0 - 190mm
7250-250	250mm	A	0 - 240mm
7250-300	300mm	B	0 - 290mm
7250-400	400mm	B	0 - 390mm
7250-500	500mm	B	0 - 490mm
7250-600	600mm	B	0 - 590mm



# DIVIDER

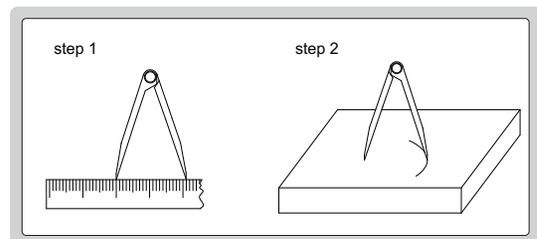


7245-125



(mm)

Code	Size(L)	Range(W)	a	b
7245-125	125mm	0 - 125mm	8.5	7
7245-150	150mm	0 - 150mm	8.5	7
7245-200	200mm	0 - 200mm	10	7
7245-250	250mm	0 - 250mm	11	7
7245-300	300mm	0 - 300mm	12	7



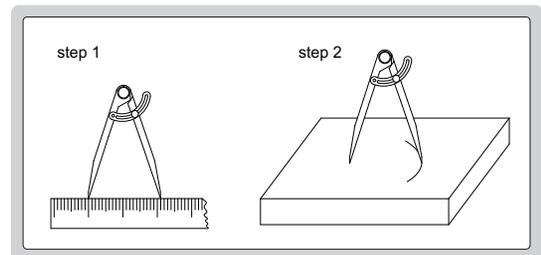
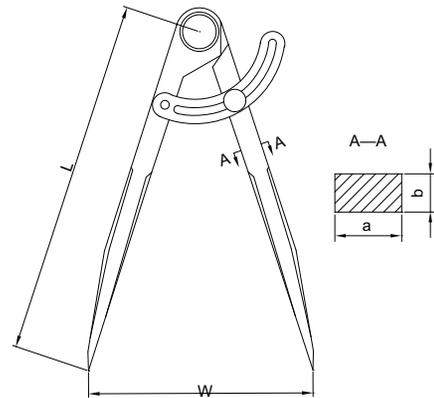
## DIVIDER



7247-125

(mm)

Code	Size(L)	Range(W)	a	b
7247-125	125mm	0 - 115mm	8.5	7
7247-150	150mm	0 - 140mm	8.5	7
7247-200	200mm	0 - 190mm	10	7
7247-250	250mm	0 - 240mm	11	7
7247-300	300mm	0 - 290mm	12	7
7247-400	400mm	0 - 390mm	12	7
7247-500	500mm	0 - 490mm	12	7
7247-600	600mm	0 - 590mm	12	7
7247-800	800mm	0 - 790mm	16	11
7247-1000	1000mm	0 - 990mm	16	11



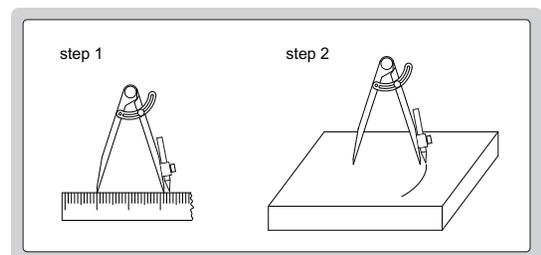
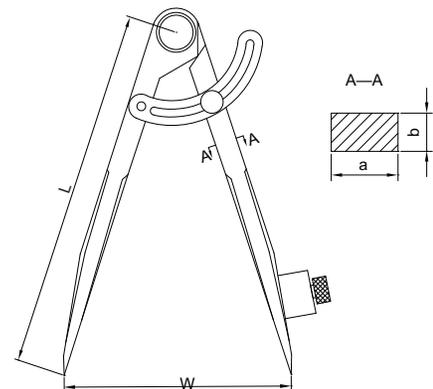
## DIVIDER WITH PENCIL HOLDER



7248-125

(mm)

Code	Size(L)	Range(W)	a	b
7248-125	125mm	0 - 115mm	8.5	7
7248-150	150mm	0 - 140mm	8.5	7
7248-200	200mm	0 - 190mm	10	7
7248-250	250mm	0 - 240mm	11	7
7248-300	300mm	0 - 290mm	12	7

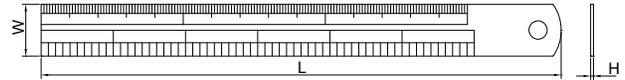


## STEEL RULE



7110-300

- Graduation: 0.5mm, 1mm, 1/64", 1/32", 1/16"
- Semi-flexible rules
- Made of stainless steel
- Non-glare surface



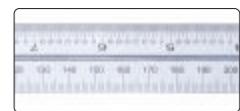
(mm)

Code	Range	Accuracy	L	W	H	Remark
7110-150	150mm/6"	±0.08mm	170	18	1.0	graduation on front and back
7110-200	200mm/8"	±0.08mm	220	18	1.0	graduation on front and back
7110-300	300mm/12"	±0.11mm	330	25	1.0	graduation on front and back
7110-500	500mm/20"	±0.14mm	530	30	1.2	graduation on front and back
7110-600	600mm/24"	±0.15mm	630	30	1.2	graduation on front and back
7110-1000	1000mm/40"	±0.20mm	1040	32	1.5	graduation on front and back
7110-1200	1200mm/48"	±0.24mm	1240	35	1.8	graduation on front
7110-1500	1500mm/60"	±0.35mm	1550	38	1.8	graduation on front
7110-2000	2000mm/80"	±0.45mm	2065	40	2.0	graduation on front

## RIGID RULE

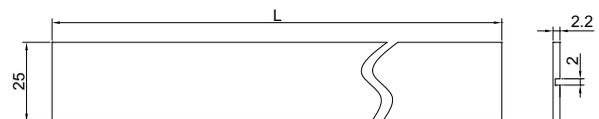


7113-300A



groove on the back

Unit: mm



- Rigid rules
- With groove on the back, suitable for combination square set (code **2278-180**)
- Satin chrome plated

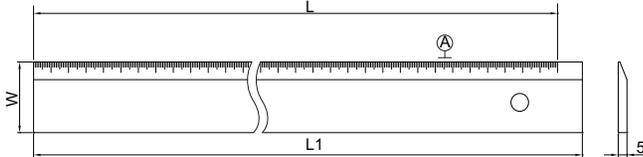
Code	Range	Graduation		Accuracy	L
		front	back		
7113-300A	300mm/12"	0.5mm and 1/32"	1mm and 1/64"	±0.15mm	300mm
7113-450A	450mm/18"	0.5mm and 1/32"	1mm and 1/64"	±0.20mm	450mm
7113-600A	600mm/24"	0.5mm and 1/32"	1mm and 1/64"	±0.25mm	600mm

## STRAIGHT EDGE



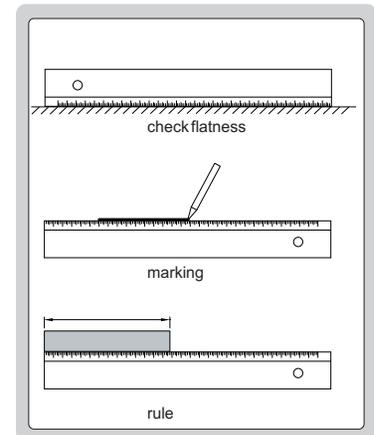
7111-300A

Unit: mm



- Check flatness and straightness, as well as for marking
- Graduation on the beveled edge
- Made of hardened tool steel
- Chrome plated

Code	Range(L)	Straightness of A	L1	W
7111-300A	300mm	0.02mm	320mm	40mm
7111-500A	500mm	0.03mm	520mm	40mm
7111-1000A	1000mm	0.04mm	1020mm	50mm

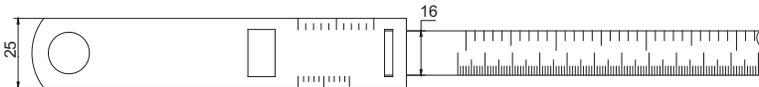


## CIRCUMFERENCE TAPE



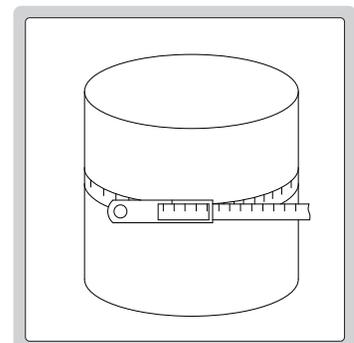
7114-950

Unit: mm



- Measure diameter and circumference of pipes, trees, tires, etc.
- Laser engraved scale
- Made of stainless steel

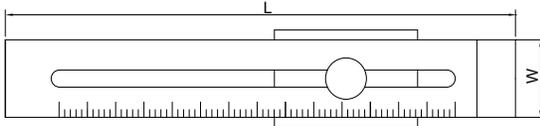
Code	Circumference range	Diameter range	Graduation	Accuracy	
				Circumference	Diameter
7114-950	60 - 950mm	20 - 300mm	0.1mm	±1.5mm	±0.5mm
7114-2200	940 - 2200mm	300 - 700mm	0.1mm	±1.5mm	±0.5mm
7114-3460	2190 - 3460mm	700 - 1100mm	0.1mm	±1.5mm	±0.5mm



## MARKING GAUGE

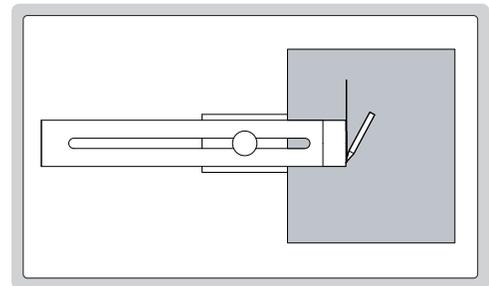


7120-200A

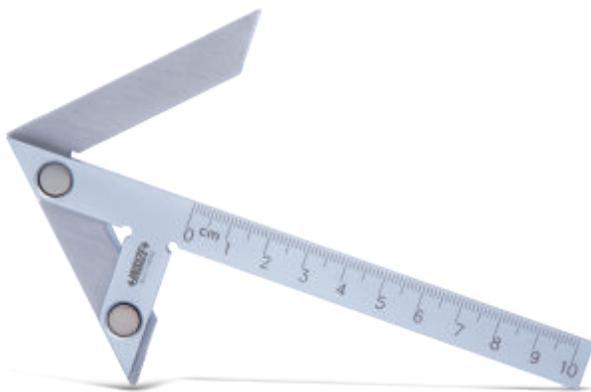


- Made of stainless steel
- Satin chrome finish

(mm)					
Code	Range	Graduation	Accuracy	L	W
7120-200A	0-200mm	0.1mm	±0.1mm	250	40
7120-250A	0-250mm	0.1mm	±0.1mm	300	40
7120-300A	0-300mm	0.1mm	±0.1mm	350	40



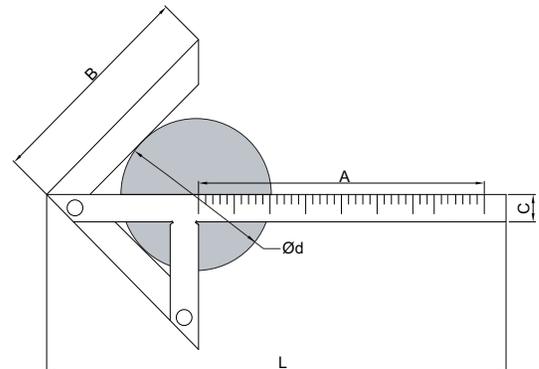
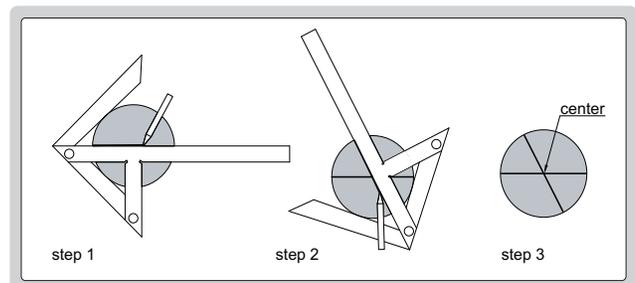
## CENTER MARKING GAUGE



7205-100

- Marking the center of round plates and shafts
- Made of stainless steel
- Satin chrome plated

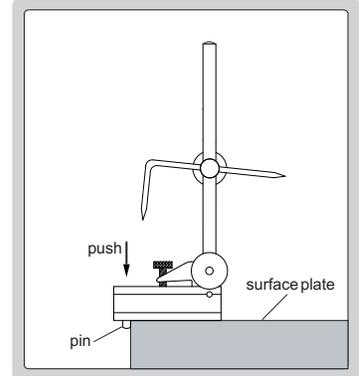
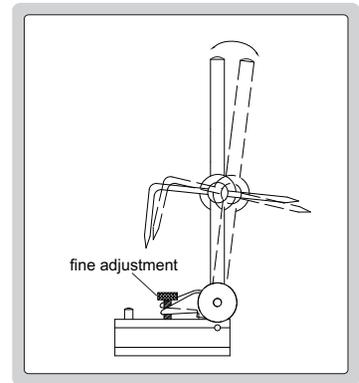
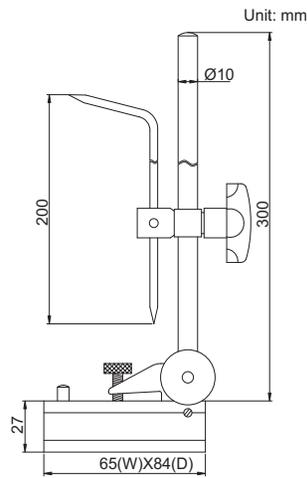
(mm)					
Code	Size(AxB)	Diameter of shafts(Ød)	Accuracy	C	L
7205-100	100X70mm	4-90mm	±0.15mm	12	153
7205-150	150x130mm	4-190mm	±0.15mm	15	245
7205-200	200x150mm	6-220mm	±0.15mm	15	310



# HEIGHT SCRIBER



6990-300A



**Code**  
6990-300A

- Grooved bottom for cylinder
- Two pins to be set against the edge of surface plate

# SCRIBER



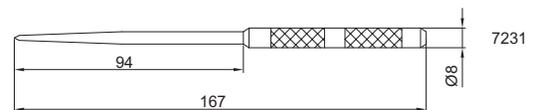
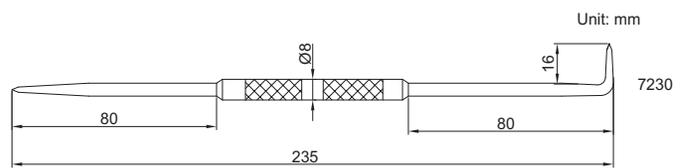
7230



7231



7232



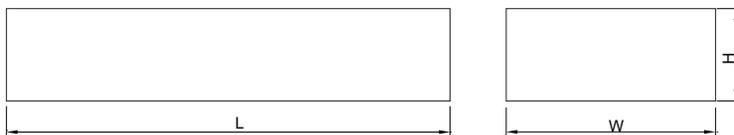
- Nickel plated

Code	Tip
7230	hardened tips
7231	hardened tip
7232	carbide tip

# GRANITE SURFACE PLATE



6900-132



- Made of granite, free from deterioration or dimensional change over time, minimal changes in dimension due to temperature changes
- Meet DIN876, grade 00 is for inspection room or lab, grade 0 is for workshop
- Supplied with calibration certificate
- Optional accessory: stand for granite surface plate (code 6902), jack for granite surface plate (code 6903)

## Grade 00

Code	Size(LxWxH)	Flatness	Weight(Kg)
6900-132	300x200x60mm	2.7µm	11
6900-142	400x250x60mm	2.9µm	18
6900-144	400x400x60mm	3.1µm	29
6900-153	500x315x70mm	3.2µm	33
6900-164	630x400x80mm	3.5µm	60
6900-166	630x630x100mm	3.8µm	119
6900-185	800x500x100mm	3.9µm	120
6900-1106	1000x630x140mm	4.4µm	265
6900-1101	1000x1000x150mm	4.8µm	450
6900-1128	1200x800x160mm	4.9µm	461
6900-1161	1600x1000x180mm	5.8µm	864
6900-1201	2000x1000x220mm	6.5µm	1320
6900-1202	2000x1500x250mm	7.0µm	2250
6900-1251	2500x1500x300mm	7.8µm	3375
6900-1302	3000x2000x400mm	9.2µm	7200

## Grade 0

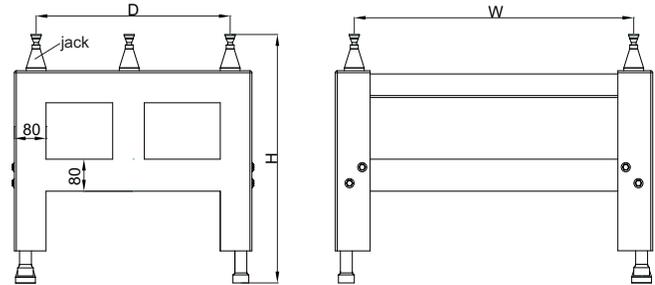
Code	Size(LxWxH)	Flatness	Weight(Kg)
6900-032	300x200x60mm	5.4µm	11
6900-042	400x250x60mm	5.9µm	18
6900-044	400x400x60mm	6.3µm	29
6900-053	500x315x70mm	6.4µm	33
6900-064	630x400x80mm	7.0µm	60
6900-066	630x630x100mm	7.6µm	119
6900-085	800x500x100mm	7.8µm	120
6900-0106	1000x630x140mm	8.7µm	265
6900-0101	1000x1000x150mm	9.7µm	450
6900-0128	1200x800x160mm	9.8µm	461
6900-0161	1600x1000x180mm	11.5µm	864
6900-0201	2000x1000x220mm	12.9µm	1320
6900-0202	2000x1500x250mm	14.0µm	2250
6900-0251	2500x1500x300mm	15.7µm	3375
6900-0302	3000x2000x400mm	18.4µm	7200

## STAND FOR GRANITE SURFACE PLATE



6902-64A

Unit: mm



- For medium size granite surface plates
- Adjusting range of jacks: 0-25mm
- One foot on the bottom is adjustable

(mm)

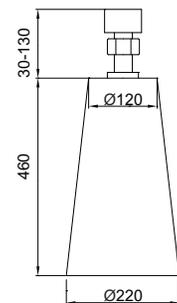
Code	For granite surface plate	W	D	H
6902-64A	630x400x80mm(code 6900-064 and 6900-164)	440	280	755-780
6902-66A	630x630x100mm(code 6900-066 and 6900-166)	440	440	755-780
6902-85A	800x500x100mm(code 6900-085 and 6900-185)	560	350	755-780
6902-106A	1000x630x140mm(code 6900-0106 and 6900-1106)	700	440	735-760
6902-101A	1000x1000x150mm(code 6900-0101 and 6900-1101)	700	700	735-760
6902-128A	1200x800x160mm(code 6900-0128 and 6900-1128)	840	560	735-760
6902-161A	1600x1000x180mm(code 6900-0161 and 6900-1161)	1120	700	735-760

## JACK SET FOR GRANITE SURFACE PLATE



6903

Unit: mm



Code

6903

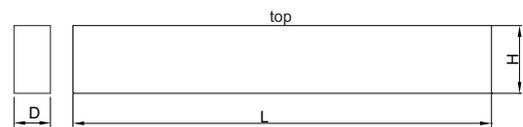
- 5 jacks per set
- Adjustable height
- For large granite surface plates:
  - 2000x1000x220mm(code 6900-0201 and 6900-1201)
  - 2000x1500x250mm(code 6900-0202 and 6900-1202)
  - 2500x1500x300mm(code 6900-0251 and 6900-1251)
  - 3000x2000x400mm(code 6900-0302 and 6900-1302)

## GRANITE STRAIGHT EDGE



4147-500

(mm)				
Code	Range(L)	Flatness of top	D	H
4147-500	500mm	2.8 $\mu$ m	50	80
4147-1000	1000mm	3.3 $\mu$ m	60	120

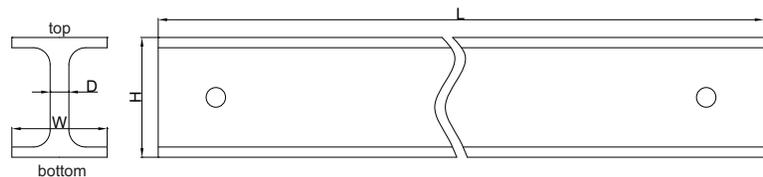


## MAGNALIUM STRAIGHT EDGE



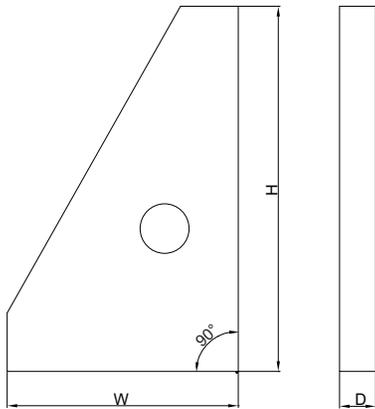
4180-500

- Made of magnalium, light weight, non-deform, no rusty



(mm)						
Code	Range(L)	Flatness of top and bottom	Parallelism between top and bottom	H	W	D
4180-500	500mm	3 $\mu$ m	4 $\mu$ m	60	30	5
4180-1000	1000mm	5 $\mu$ m	8 $\mu$ m	60	30	5
4180-1500	1500mm	15 $\mu$ m	22 $\mu$ m	60	30	5
4180-2000	2000mm	18 $\mu$ m	27 $\mu$ m	100	40	8

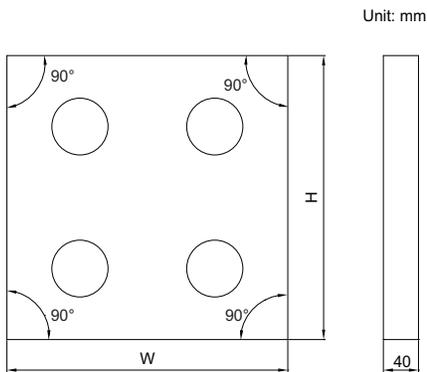
## GRANITE SQUARE



4141-250

Code	Size(HxW)	Squareness	D
4141-250	250x160mm	2.5 $\mu$ m	25mm
4141-400	400x250mm	3.5 $\mu$ m	40mm
4141-630	630x400mm	4.5 $\mu$ m	63mm

## GRANITE SQUARE



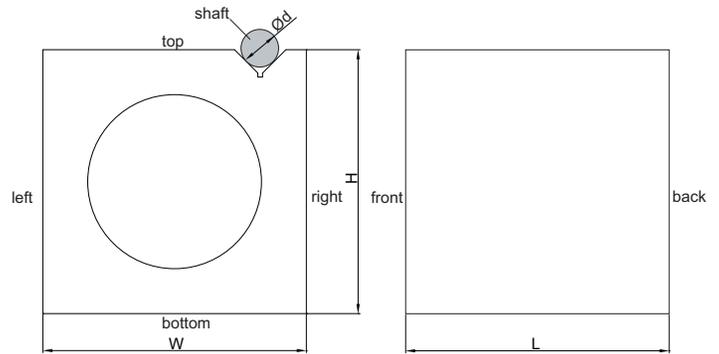
4144-315

Code	Size(HxW)	Squareness
4144-315	315x315mm	2.6 $\mu$ m

## GRANITE SQUARE AND V-BLOCK



4142-160



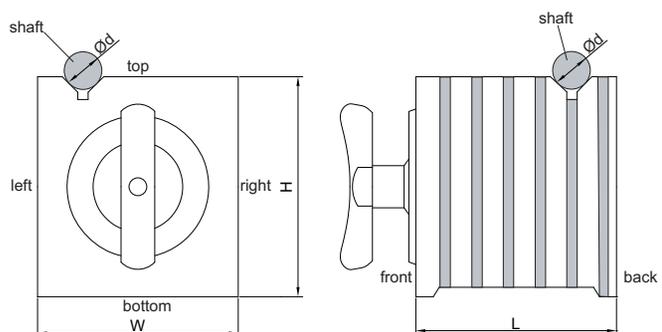
- Thread holes: M8

Code	Size(LxWxH)	Range of shafts ( $\varnothing d$ )	Parallelism and squareness between top, bottom, left, right and back sides	Parallelism of V groove to left, right, top and bottom sides	Squareness of V groove to back side
4142-160	160x160x160mm	6-42mm	8 $\mu$ m	8 $\mu$ m	8 $\mu$ m

## MAGNETIC SQUARE AND V-BLOCK



6510-1A



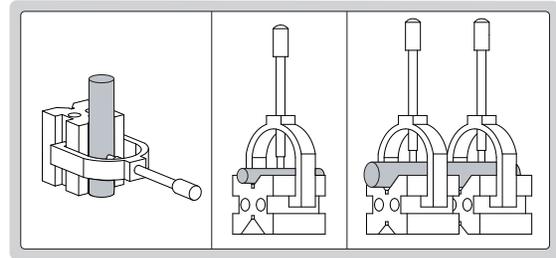
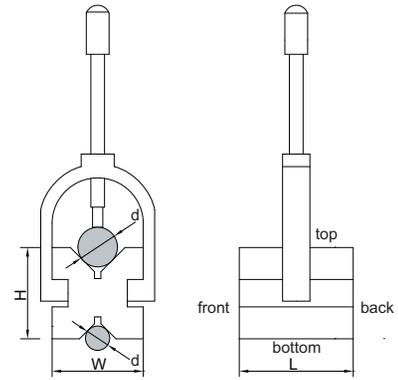
Code	Size(LxWxH)	Magnetic force	Range of shafts ( $\varnothing d$ )	Parallelism and squareness between top, bottom, left, right and back sides	Parallelism and squareness of both V grooves to top, bottom, left, right and back sides
6510-1A	100x100x100mm	30kgf	6-36mm	10 $\mu$ m	10 $\mu$ m
6510-2A	150x150x150mm	30kgf	6-44mm	15 $\mu$ m	15 $\mu$ m

## V-BLOCK SET



6896-11

- Two V-blocks per set
- Hardened to HRC60±2
- V groove on the top for large shafts
- V groove on the bottom for small shafts



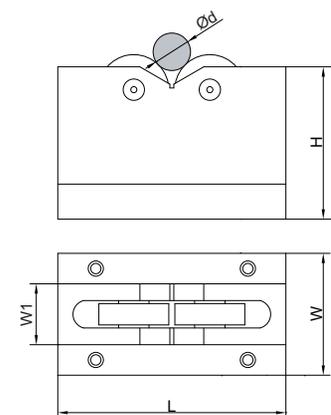
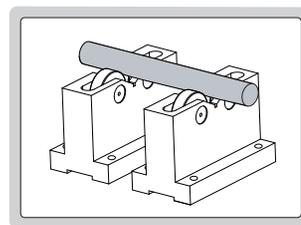
Code	Size(LxWxH)	Range of shafts (Ød)	Parallelism of both V grooves to top and bottom sides	Squareness of both V grooves to front and back sides	Height difference of a matched pair
6896-11	50x40x40mm	5 - 40mm	5µm	5µm	5µm
6896-12	80x63x63mm	7 - 63mm	5µm	5µm	5µm
6896-13	100x80x80mm	7 - 80mm	5µm	5µm	5µm

## ROLLER BEARING V-BLOCK SET



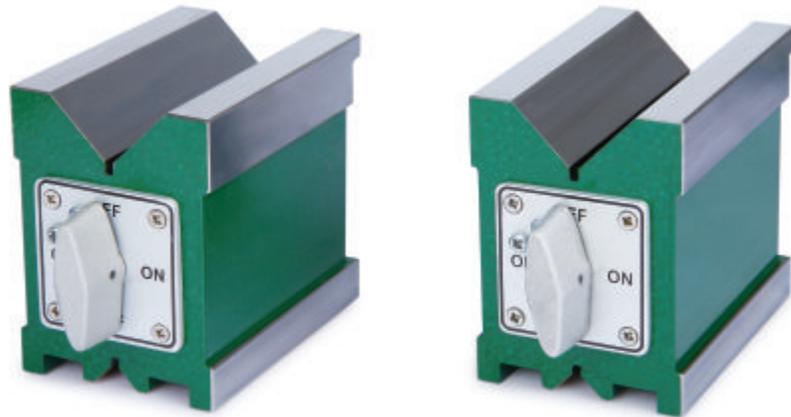
6888-1

- Two V-blocks per set
- Workpieces don't get damaged due to bearings
- Suitable for heavy workpieces

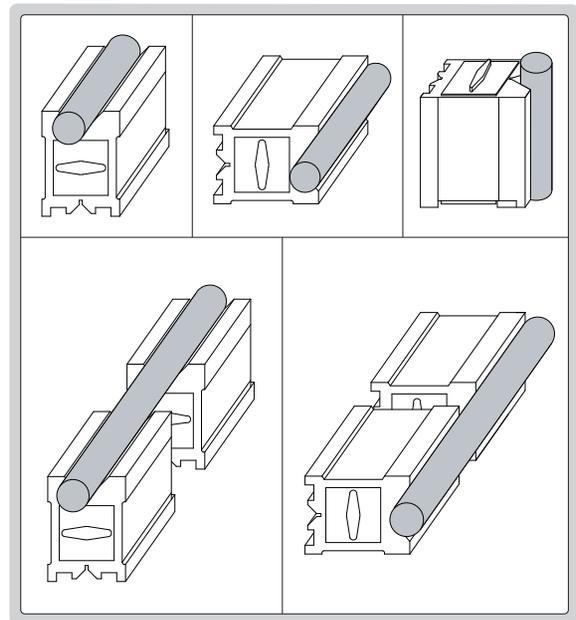
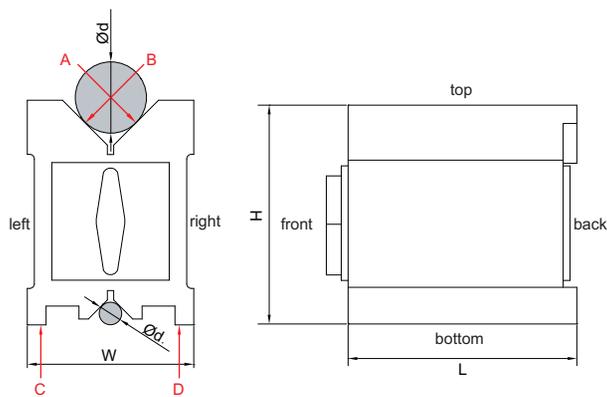


Code	Size (LxWxH)	Range of shafts (Ød)	Parallelism of bearings to bottom (when two V-blocks are closed)	Load capacity	W1
6888-1	150x60x100mm	25 - 70mm	5µm	500kg	22mm
6888-2	150x80x100mm	3 - 55mm	5µm	1000kg	40mm
6888-3	230x100x150mm	70 - 200mm	5µm	1000kg	60mm

# MAGNETIC V-BLOCK SET



6889-1



- Two V-blocks per set
- Surface A, B, C, D are hardened to HRC60±2
- Magnetic force on top, bottom and two V grooves
- V groove on the top for large shafts
- V groove on the bottom for small shafts
- Suitable for cast iron surface plates and granite surface plates

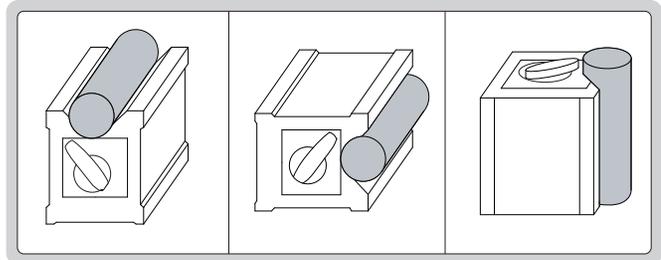
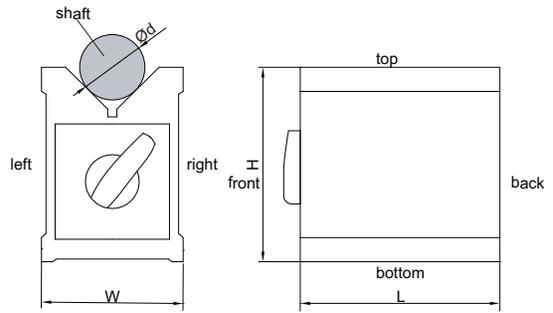
Code	Size(LxWxH)	Range of shafts ( $\varnothing d$ )	Magnetic force	Parallelism of both V grooves to top, bottom, left, right sides	Squareness of both V grooves to back side	Height difference of a matched pair
6889-1	75x56x75mm	5-40mm	75kgf	5 $\mu$ m	5 $\mu$ m	5 $\mu$ m
6889-2	100x70x95mm	5-65mm	100kgf	5 $\mu$ m	5 $\mu$ m	5 $\mu$ m
6889-3	150x75x100mm	5-70mm	125kgf	5 $\mu$ m	5 $\mu$ m	5 $\mu$ m

## MAGNETIC V-BLOCK



6890-702

- Supplied in single piece
- Not hardened
- Not suitable for cast iron surface plates



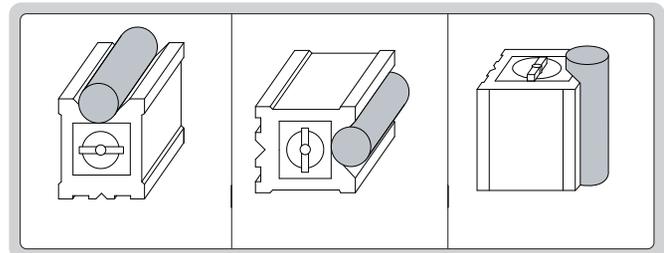
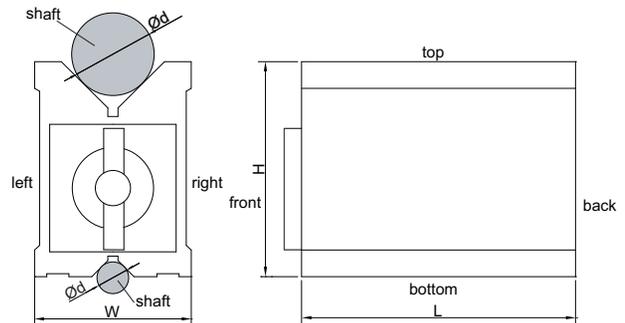
Code	Size(LxWxH)	Range of shafts (Ød)	Magnetic force	Parallelism of V groove to top, bottom, left and right sides	Squareness of V groove to back side
6890-702	70x60x73mm	6 - 44mm	56kgf	10µm	10µm

## MAGNETIC V-BLOCK



6801-1201

- Supplied in single piece
- Not hardened
- V groove on the top for large shafts
- V groove on the bottom for small shafts
- Not suitable for cast iron surface plates



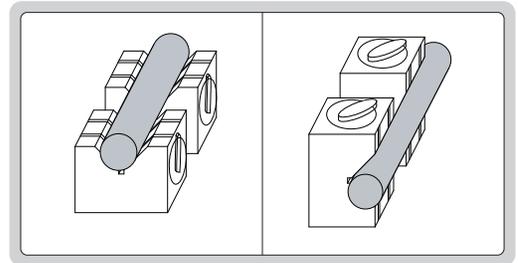
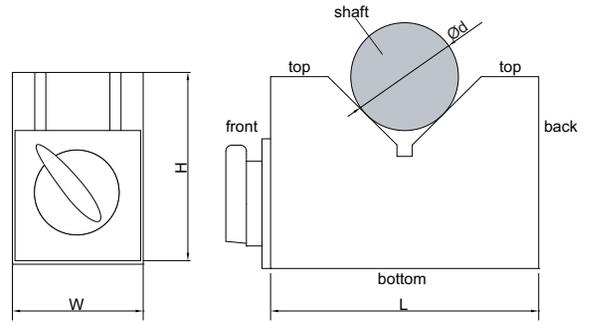
Code	Size(LxWxH)	Range of shafts (Ød)	Magnetic force	Parallelism of both V grooves to top, bottom, left, right side	Squareness of both V grooves to back side
6801-1201	80x70x95mm	6 - 67mm	64kgf	10µm	10µm
6801-1202	100x70x95mm	6 - 67mm	80kgf	10µm	10µm
6801-1203	120x70x95mm	6 - 67mm	96kgf	10µm	10µm

## MAGNETIC V-BLOCK SET



6891-1

- Two V-blocks per set



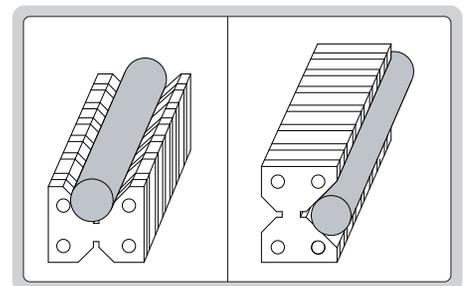
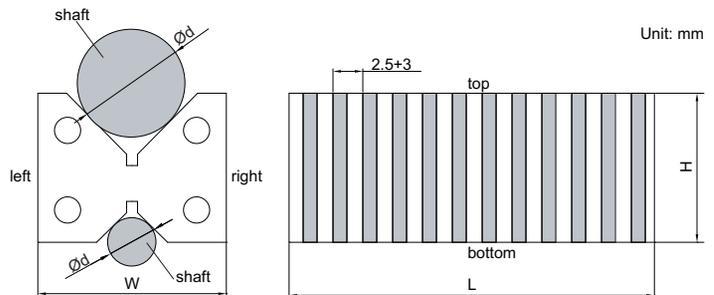
Code	Size(LxWxH)	Range of shafts (Ød)	Magnetic force	Parallelism of V groove to bottom and back sides	Height difference of a matched pair
6891-1	70x40x50mm	6 - 46mm	15kgf	10µm	10µm
6891-3	150x50x100mm	6 - 125mm	23kgf	10µm	10µm

## MAGNETIC INDUCTION V-BLOCK



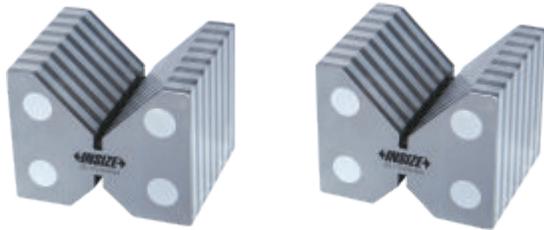
6892-1

- To be used on magnetic chucks
- Supplied in single piece
- V groove on the top for large shafts
- V groove on the bottom for small shafts

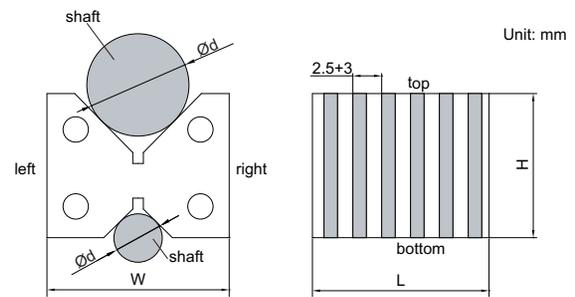


Code	Size(LxWxH)	Range of shafts (Ød)	Pole pitch	Parallelism of both V grooves to top, bottom, left, right sides
6892-1	110x60x48mm	6 - 50mm	2.5+3mm	10µm

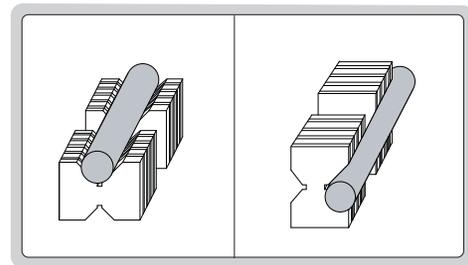
## MAGNETIC INDUCTION V-BLOCK SET



6899-1



- To be used on magnetic chucks
- Two V-blocks per set
- V groove on the top for large shafts
- V groove on the bottom for small shafts

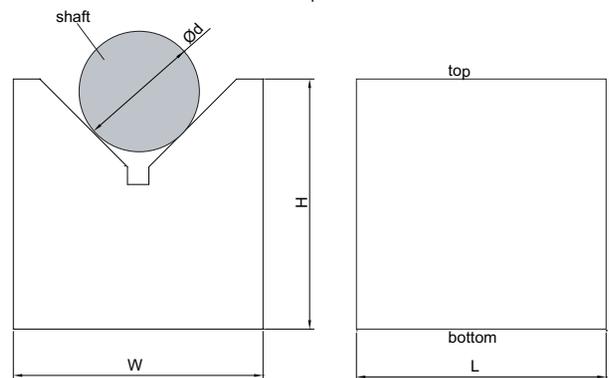


Code	Size(LxWxH)	Range of shafts ( $\varnothing d$ )	Pole pitch	Parallelism of both V grooves to top, bottom, left and right sides	Height difference of a matched pair
6899-1	50x60x48mm	6-50mm	2.5+3mm	10 $\mu$ m	10 $\mu$ m

## GRANITE V-BLOCK SET

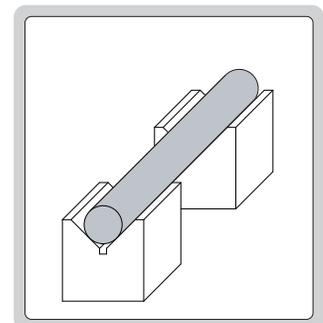


6897-1



- Two V-blocks per set

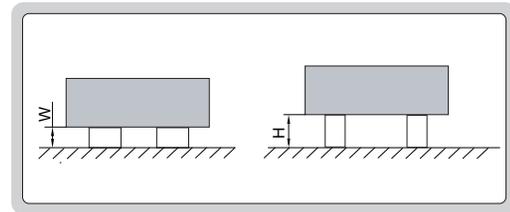
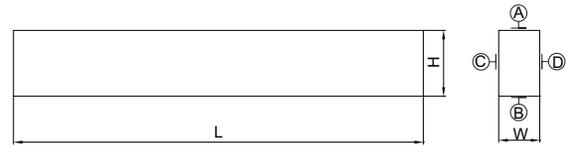
Code	Size(LxWxH)	Range of shafts ( $\varnothing d$ )	Parallelism of V groove to bottom	Height difference of a matched pair
6897-1	70x70x50mm	6-75mm	5 $\mu$ m	5 $\mu$ m
6897-2	100x70x50mm	6-99mm	5 $\mu$ m	5 $\mu$ m



## GRANITE PARALLEL SET



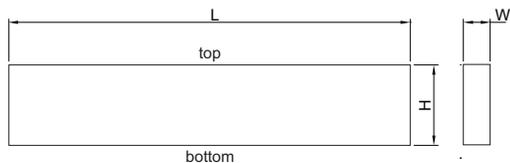
4143-250



Code	Size(LxWxH)	Parallelism between A and B	Parallelism between C and D	Height difference of a matched pair
4143-250	250x25x40mm	5µm	5µm	5µm

- Made of granite, hard and no rusty, no dimensional change over time or temperature change
- Two parallels per set

## PARALLEL SET



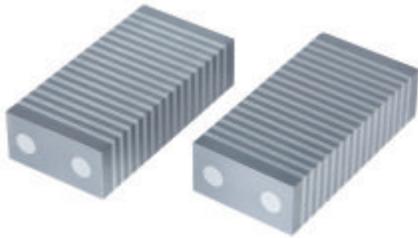
6533-144

- Parallelism between top and bottom: 5µm
- Height difference of a matched pair: 5µm
- Hardened to HRC55-60

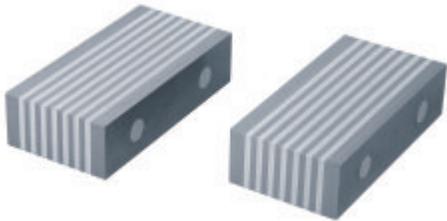
(mm)

Code	Parallels per set	Length(L)	Thickness(W)	Height(H)
6533-20	20 pairs	100	2	5, 10, 15, 20
			3	6, 11, 16, 21
			4	7, 12, 17, 22
			5	8, 13, 18, 23
			6	9, 14, 19, 24
6533-242	24 pairs	125	8	11, 16, 21, 26, 31, 36
			10	13, 18, 23, 28, 33, 38
			12	15, 20, 25, 30, 35, 40
			14	17, 22, 27, 32, 37, 42
6533-143	14 pairs	150	5	14, 16, 18, 20, 22, 24, 26, 28, 30, 32, 35, 40, 45, 50
6533-144	14 pairs	150	10	14, 16, 18, 20, 22, 24, 26, 28, 30, 32, 35, 40, 45, 50
6533-241	24 pairs	150	8	11, 16, 21, 26, 31, 36
			10	13, 18, 23, 28, 33, 38
			12	15, 20, 25, 30, 35, 40
			14	17, 22, 27, 32, 37, 42

# MAGNETIC INDUCTION PARALLEL SET

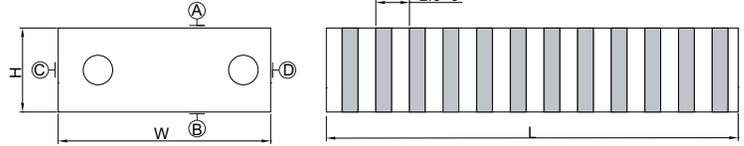


6894-1

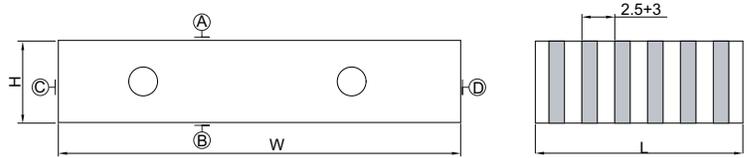


6894-2

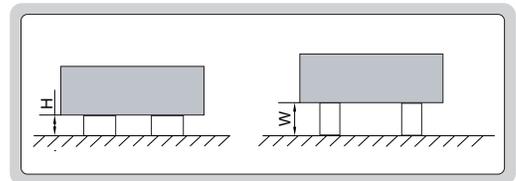
Unit: mm



6894-1



6894-2



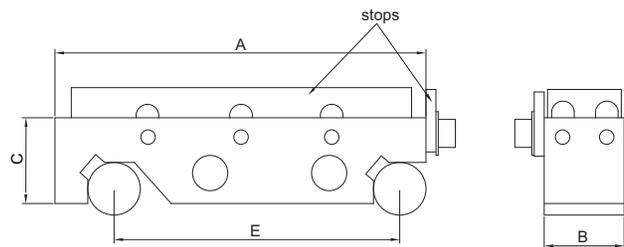
- To be used on magnetic chucks
- Two parallels per set

Code	Size(LxWxH)	Pole pitch	Parallelism between A and B	Parallelism between C and D	Height difference of a matched pair
6894-1	100x50x25mm	2.5+3mm	10μm	10μm	10μm
6894-2	50x100x25mm	2.5+3mm	10μm	10μm	10μm

# SINE BAR

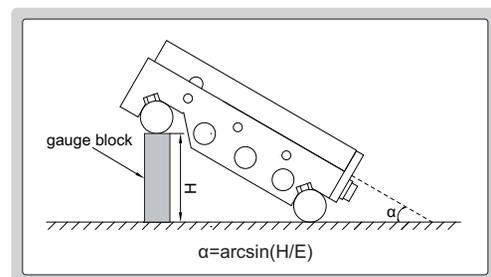


4150-130



- Made of hardened alloy steel

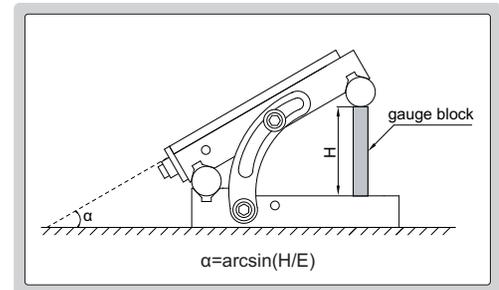
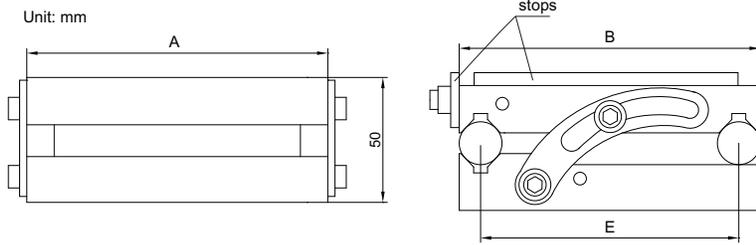
Code	Roller distance (E)	Table size (AxB)	Accuracy of α at 30°	C
4150-130	100mm	130x25mm	±8 seconds	25mm
4150-1301	100mm	130x83mm	±16 seconds	30mm
4150-250	200mm	250x40mm	±8 seconds	40mm
4150-2501	200mm	250x85mm	±16 seconds	40mm



# SINE TABLE



4151-150



- Made of hardened alloy steel

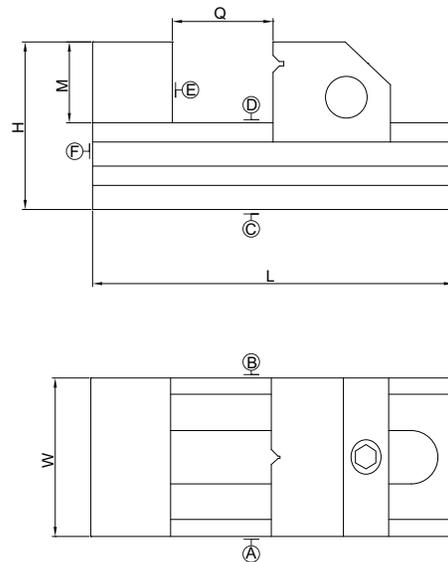
Code	Roller distance (E)	Table size(AxB)	Accuracy of $\alpha$ at 30°
4151-150	100mm	150x150mm	±25 seconds

# PRECISION VISE



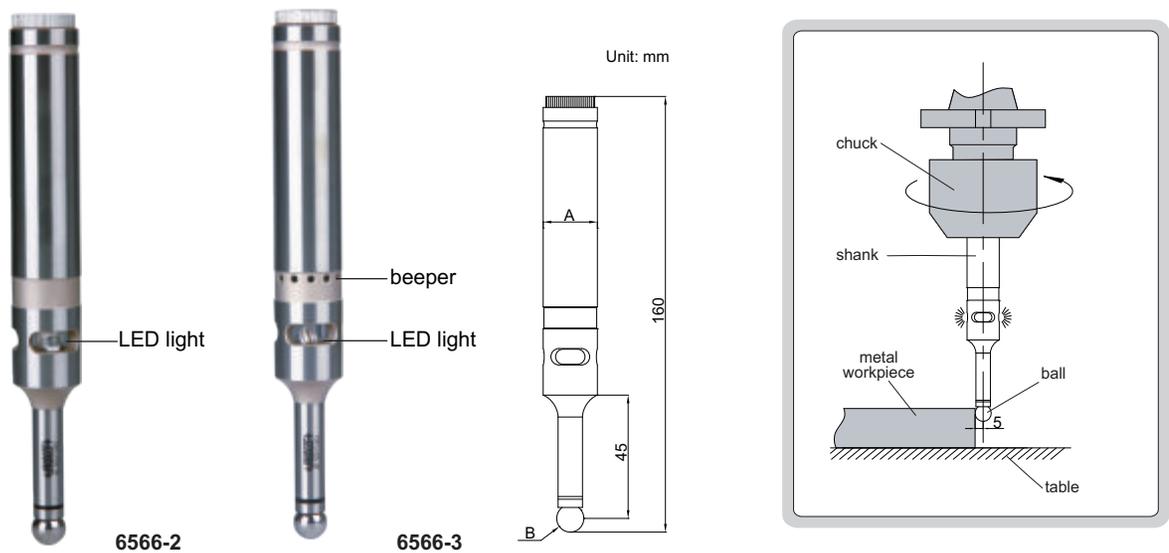
4153-70

- Made of hardened alloy steel
- Parallelism and squareness between A, B, C, D, E and F: 5µm/100mm



Code	Jaw opening(Q)	Jaw width(W)	Overall length(L)	(mm)	
				H	M
4153-70	80mm	70mm	160mm	62	32
4153-90	115mm	90mm	210mm	80	40

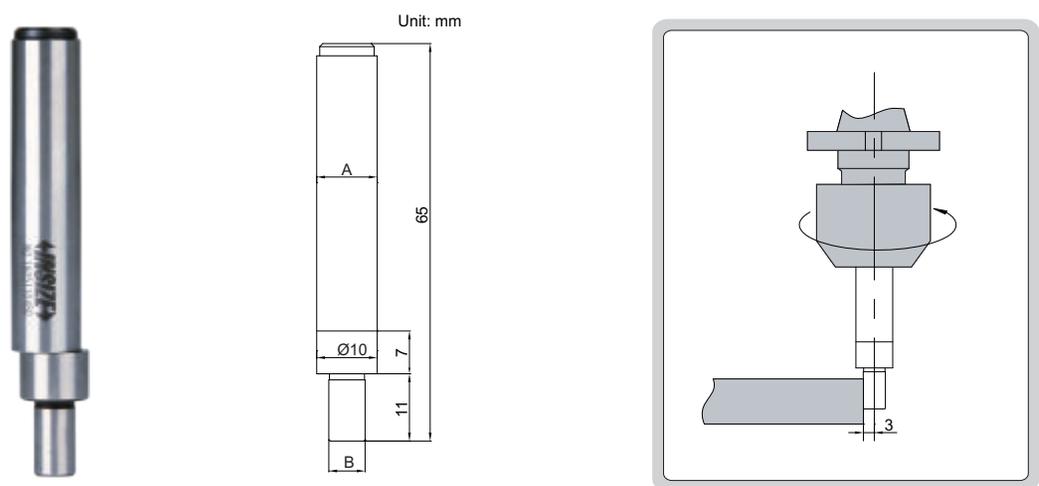
## ELECTRONIC EDGE FINDER



- The shank is electrically conducted to the metal workpiece through the chuck and table, the LED lights up and the beeper sounds(only for **6566-3**), when the ball touches the workpiece
- Not suitable for rotary use
- Hardened shank and contact ball

Code	Shank (A)	Contact ball (B)	Accuracy	Beeper	Battery
<b>6566-2</b>	Ø20mm	SØ10mm	5µm	without	LR1, 1.5Vx2pcs
<b>6566-3</b>	Ø20mm	SØ10mm	5µm	with	23AE, 12Vx1pc

## EDGE FINDER



**6567-1**

- Hardened shank and contact point

Code	Shank (A)	Contact point(B)	Accuracy
<b>6567-1</b>	Ø10mm	Ø6mm	8µm

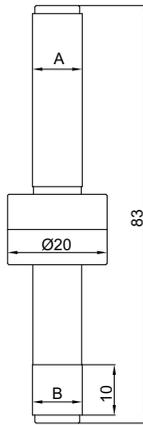
## EDGE FINDER



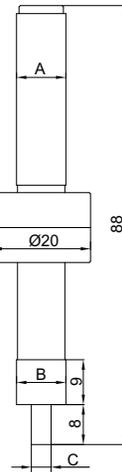
6562-3



6562-4

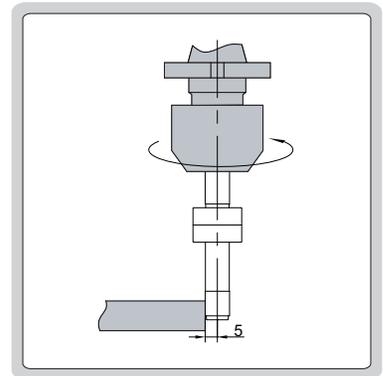


6562-3

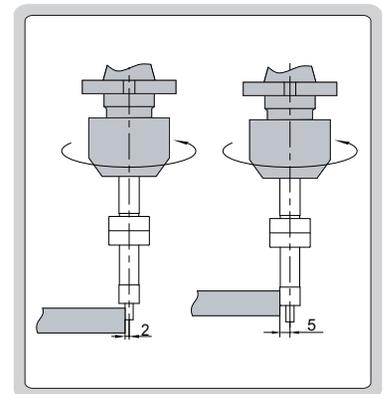


6562-4

Unit: mm



6562-3



6562-4

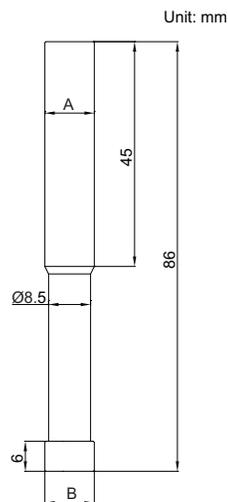
- Hardened shank and contact point

Code	Shank (A)	Contact point(B)	Contact point(C)	Accuracy
6562-3	Ø10mm	Ø10mm	—	5µm
6562-4	Ø10mm	Ø10mm	Ø4mm	5µm

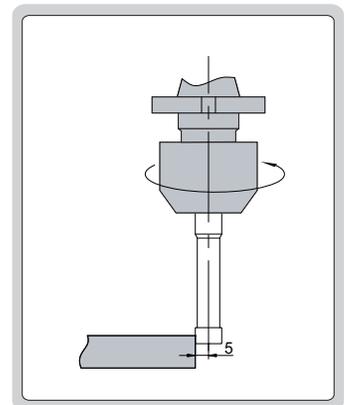
## CERAMIC EDGE FINDER



6568-1



Unit: mm



- Ceramic contact point, non magnetic

Code	Shank (A)	Contact point(B)	Accuracy
6568-1	Ø10mm	Ø10mm	8µm

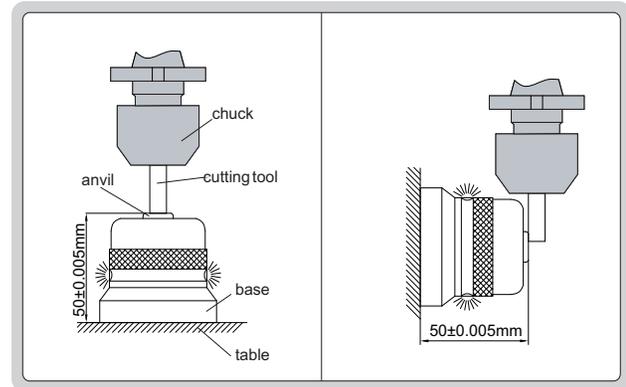
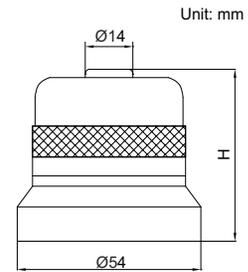
## ELECTRONIC ZERO SETTER



6550-50A

- The base is electrically conducted to the cutting tools through the table and chuck, the LED lights up when the cutting tool touches the anvil
- Magnetic base
- Battery LR44 or SR44

Code	Height (H)	Accuracy
6550-50A	50mm	±5μm



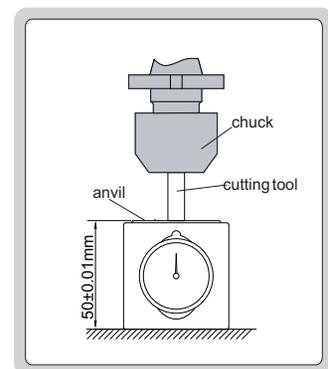
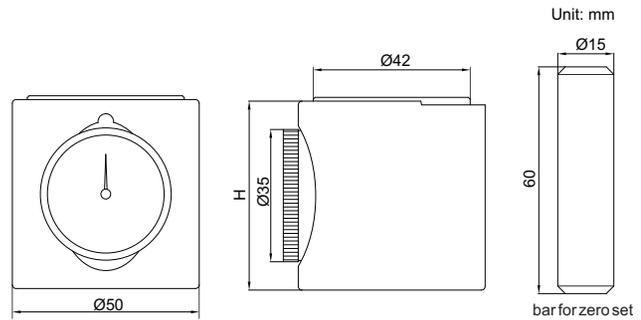
## ZERO SETTER



6552-50

- Supplied with bar for zero set
- Hardened anvil

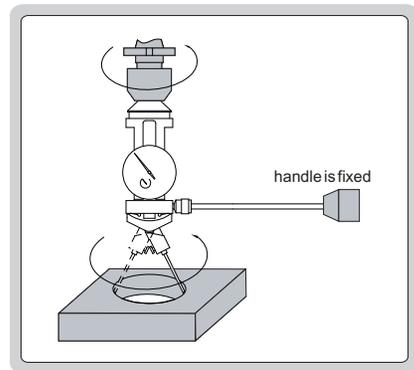
Code	Height(H)	Accuracy
6552-50	50mm	±10μm



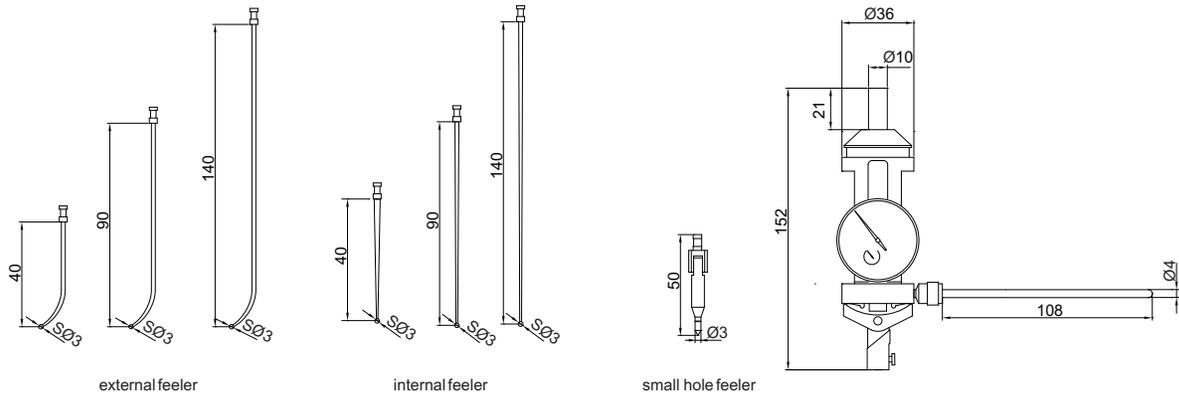
# CENTERING INDICATOR



2385-3



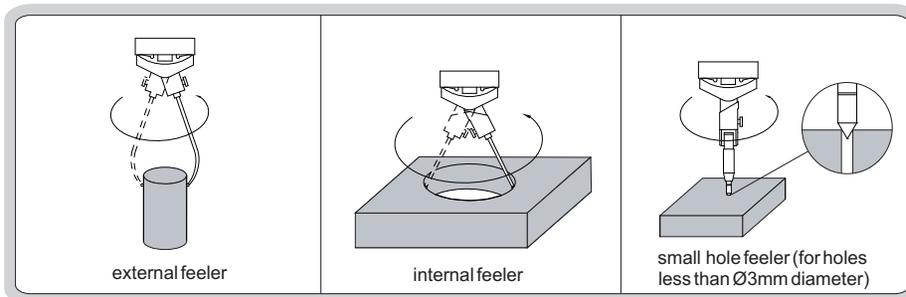
Unit: mm



external feeler

internal feeler

small hole feeler



external feeler

internal feeler

small hole feeler (for holes less than Ø3mm diameter)

Code	Range	Graduation
2385-3	0-3mm	0.01mm

- Provides quick and accurate centering in boring and milling set-up

## 2-PIECE MEASURING TOOL SET



5021

■ Includes:

- 1) Vernier caliper, range 0-150mm/0-6", graduation 0.05mm/1/128"
- 2) Outside micrometer, range 0-25mm, graduation 0.01mm (code 3202-25A)

Code

5021

## 2-PIECE MEASURING TOOL SET



5022

■ Includes:

- 1) Digital caliper, range 0-150mm/0-6", resolution 0.01mm/0.0005" (code 1108-150)
- 2) Digital outside micrometer, range 0-25mm/0-1", resolution 0.001mm/0.00005" (code 3109-25A)

Code

5022

## 2-PIECE MEASURING TOOL SET

■ Includes:

- 1) Dial test indicator, range 0-0.8mm, graduation 0.01mm (code **2380-08**)
- 2) Magnetic stand

Code

5023



5023

## 2-PIECE MEASURING TOOL SET

■ Includes:

- 1) Dial indicator, range 0-10mm, graduation 0.01mm (code **2308-10A**)
- 2) Magnetic stand (code **6201-60**)

Code

5024



5024

## 3-PIECE MEASURING TOOL SET



■ Includes:

- 1) Digital indicator, range 12.7mm/0.5", resolution 0.01mm/0.0005" (code **2112-10**)
- 2) Flex arm
- 3) Locking pliers, adjustable jaw opening from 0 to 25mm

Code

5031



5031

## 4-PIECE MEASURING TOOL SET

■ Includes:

- 1) Vernier caliper, range 0-150mm/0-6", graduation 0.05mm/1/128"
- 2) Outside micrometer, range 0-25mm, graduation 0.01mm (code **3202-25A**)
- 3) 90° beveled edge square, 100x70mm, grade 0 (code **4790-1000**)
- 4) Steel rule, 150mm/6" (code **7110-150**)

Code

5041



5041

## 4-PIECE MEASURING TOOL SET

■ Includes:

- 1) Digital caliper, range 0-150mm/0-6", resolution 0.01mm/0.0005" (code **1108-150**)
- 2) Outside micrometer, range 0-25mm, graduation 0.01mm, (code **3202-25A**)
- 3) 90° beveled edge square, 100x70mm, grade 0 (code **4790-1000**)
- 4) Steel rule, 150mm/6" (code **7110-150**)

Code

5042



5042

## 5-PIECE MEASURING TOOL SET

■ Includes:

- 1) Digital caliper, range 0-150mm/0-6", resolution 0.01mm/0.0005", (code **1108-150**)
- 2) Outside micrometer, range 0-25mm, graduation 0.01mm (code **3203-25A**)
- 3) Dial indicator, range 0-10mm, graduation 0.01mm (code **2308-10A**)
- 4) Magnetic stand (code **6201-60**)
- 5) Micrometer stand (code **6300**)

Code

5051



5051

## 5-PIECE MEASURING TOOL SET

■ Includes:

- 1) Digital caliper, range 0-150mm/0-6", resolution 0.01mm/0.0005" (code **1108-150**)
- 2) Digital outside micrometer, range 0-25mm/0-1", resolution 0.001mm/0.00005" (code **3109-25A**)
- 3) Digital indicator, range 12.7mm/0.5", resolution 0.01mm/0.0005" (code **2112-10**)
- 4) Magnetic stand (code **6201-60**)
- 5) Micrometer stand (code **6300**)

Code

5052



5052

## 6-PIECE MEASURING TOOL SET

■ Includes:

- 1) Digital caliper, range 0-150mm/0-6", resolution 0.01mm/0.0005" (code **1108-150**)
- 2) Outside micrometer, range 0-25mm, graduation 0.01mm (code **3202-25A**)
- 3) Dial indicator, range 0-10mm, graduation 0.01mm (code **2308-10FA**)
- 4) 90° beveled edge square, 100x70mm, grade 0 (code **4790-1000**)
- 5) Scriber (code **7230**)
- 6) Steel rule, 150mm/6" (code **7110-150**)

Code

5061



5061

## 9-PIECE MEASURING TOOL SET

■ Includes:

- 1) Digital caliper, range 0-150mm/0-6", resolution 0.01mm/0.0005"  
(code **1108-150**)
- 2) Outside micrometer, range 0-25mm, graduation 0.01mm (code **3202-25A**)
- 3) Protractor, range 0-180°, graduation 1° (code **4799-180**)
- 4) Pitch gauge, range 0.25-7mm, 24pcs, metric 60° thread (code **4820-124**)
- 5) Radius gauge, range 1-7mm (code **4801-17**)
- 6) Feeler gauge, range 0.05-1.00mm, 20pcs (code **4602-20**)
- 7) 90° beveled edge square, 100x70mm, grade 0 (code **4790-1000**)
- 8) Scriber (code **7230**)
- 9) Steel rule, 150mm/6" (code **7110-150**)

Code

5091



5091

## 13-PIECE MEASURING TOOL SET

■ Includes:

- 1) Digital caliper, range 0-150mm/0-6", resolution 0.01mm/0.0005",  
(code **1108-150**)
- 2) Outside micrometer, range 0-25mm, graduation 0.01mm (code **3202-25A**)
- 3) Dial indicator, range 0-10mm, graduation 0.01mm (code **2308-10A**)
- 4) Magnetic stand (code **6201-60**)
- 5) Protractor, range 0-180°, graduation 1° (code **4799-180**)
- 6) Pitch gauge, range 0.25-7mm, 24pcs, metric 60° thread (code **4820-124**)
- 7) Radius gauge, range 1-7mm (code **4801-17**)
- 8) Feeler gauge, range 0.05-1.00mm, 20pcs (code **4602-20**)
- 9) 90° beveled edge square, 100x70mm, grade 0 (code **4790-1000**)
- 10) Scriber (code **7230**)
- 11) Steel rule, 150mm/6" (code **7110-150**)
- 12) Depth base attachment (code **6140**)
- 13) Zero setting bar

Code

5013



5013

# DIGITAL MICROSCOPE CODE ISM-PM200SA



- Can take pictures and videos
- Supplied with measuring software (code **ISM-PRO**, page N4-N5)

## SPECIFICATION

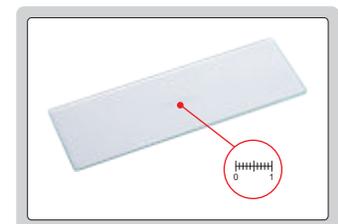
<b>Magnification</b>	10X - 200X
<b>Pixel</b>	1.3M (resolution: 1280x1024)
<b>Illumination</b>	built-in adjustable LED
<b>Power supply</b>	USB 2.0 cable (voltage required: 5±0.1V)

## STANDARD DELIVERY

<b>Digital microscope</b>	1pc
<b>Stand</b>	1pc
<b>White/black plate</b>	1pc
<b>Focus support ring for 80X/150X</b>	1pc
<b>Focus support ring for 60X/200X</b>	1pc
<b>Calibration rule (graduation 0.1mm)</b>	1pc
<b>Calibration rule (graduation 1mm)</b>	1pc
<b>Software disc</b>	1pc



focus support ring



calibration rule

## MAGNIFICATION, FOCUS DISTANCE, VIEW FIELD AND ACCURACY

Magnification	Focus distance	View field	Accuracy
50X	21mm	8.1×6.4mm	30µm
100X	13mm	3.9×3.1mm	15µm
150X	16mm	2.6×2.1mm	10µm
200X	19mm	1.8×1.5mm	8µm

# HIGH MAGNIFICATION DIGITAL MICROSCOPE CODE ISM-PM600SA



- Can take pictures and videos
- Supplied with measuring software (code **ISM-PRO**, page N4-N5)

## SPECIFICATION

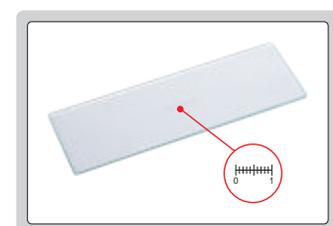
<b>Magnification</b>	450X - 600X
<b>Pixel</b>	1.3M(resolution: 1280x1024)
<b>Illumination</b>	built-in adjustable LED
<b>Power supply</b>	USB 2.0 cable (voltage required: 5±0.1V)

## STANDARD DELIVERY

<b>Digital microscope</b>	1pc
<b>Stand</b>	1pc
<b>White/black plate</b>	1pc
<b>Focus support ring for 600X</b>	1pc
<b>Calibration rule (graduation 0.1mm)</b>	1pc
<b>Software disc</b>	1pc



focus support ring for 600X



calibration rule (graduation 0.1mm)

## MAGNIFICATION, FOCUS DISTANCE, VIEW FIELD AND ACCURACY

Magnification	Focus distance	View field	Accuracy
450X	1.4mm	0.85×0.67mm	6μm
500X	5.5mm	0.76×0.61mm	6μm
550X	8.6mm	0.69×0.55mm	5μm
600X	11.5mm	0.63×0.51mm	5μm

# LONG FOCUS DISTANCE DIGITAL MICROSCOPE CODE ISM-PM160L



- Can take pictures and videos
- Supplied with measuring software (code **ISM-PRO**, page N4-N5)

## SPECIFICATION

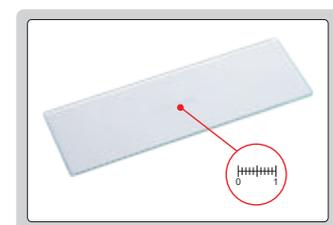
<b>Magnification</b>	35X - 160X
<b>Pixel</b>	1.3M(resolution: 1280x1024)
<b>Illumination</b>	built-in adjustable LED
<b>Power supply</b>	USB 2.0 cable (voltage required: 5±0.1V)

## STANDARD DELIVERY

<b>Digital microscope</b>	1pc
<b>Stand</b>	1pc
<b>White/black plate</b>	1pc
<b>Calibration rule (graduation 1mm)</b>	1pc
<b>Calibration rule (graduation 0.1mm)</b>	1pc
<b>Software disc</b>	1pc



calibration rule (graduation 1mm)

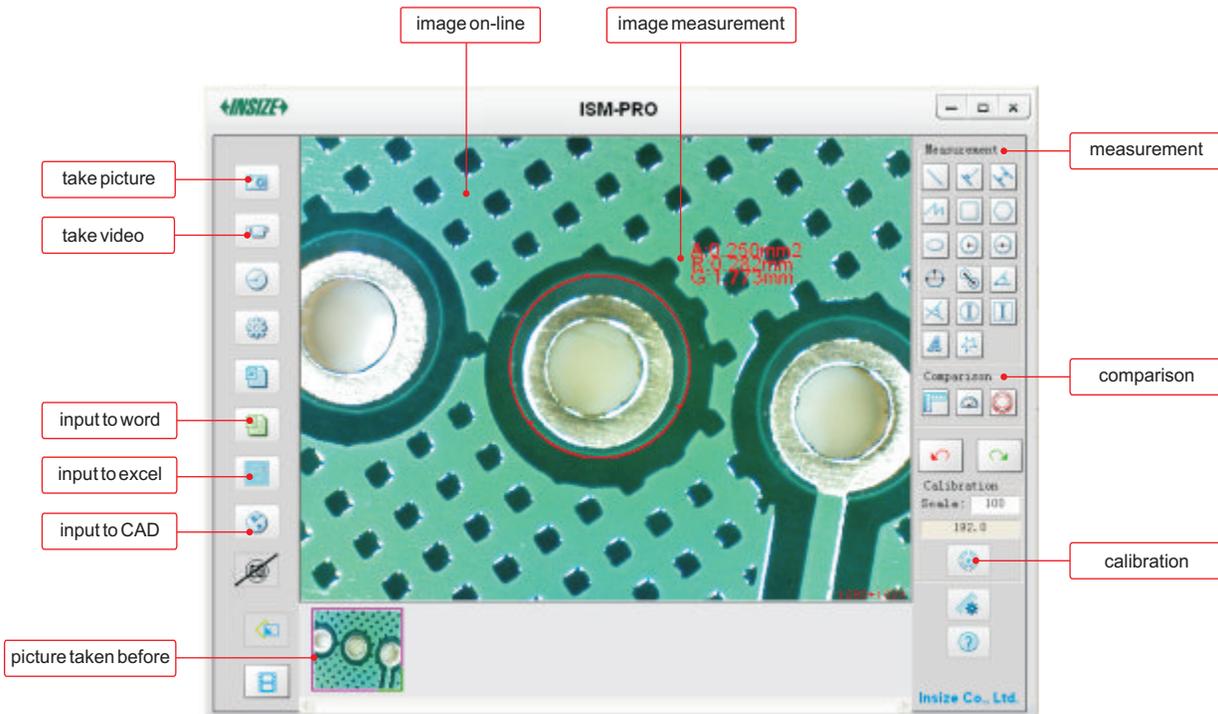


calibration rule (graduation 0.1mm)

## MAGNIFICATION, FOCUS DISTANCE, VIEW FIELD AND ACCURACY

Magnification	Focus distance	View field	Accuracy
50X	62mm	8.1×6.4mm	30μm
100X	45mm	3.9×3.1mm	15μm
160X	50mm	2.4×1.9mm	10μm

# SOFTWARE FOR DIGITAL MICROSCOPE CODE ISM-PRO



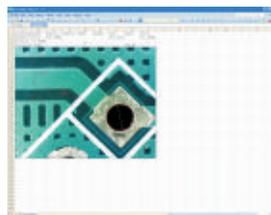
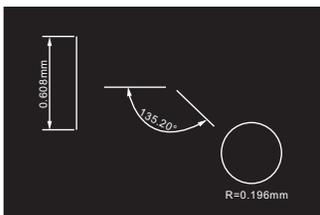
- **Applicable digital microscope:** ISM-PM200SA, ISM-PM600SA, ISM-PM160L
- **Language:** English, Japanese, Korean, German, Turkey, Portuguese, Chinese
- **Operation system:** Windows 7/XP/Vista
- **Measurement:**

Measure the image on-line

-  measure length of line or distance between two points
-  measure distance between point and line
-  measure distance between two parallel lines
-  measure length of continuous line
-  measure area of rectangle
-  measure area of polygon
-  measure area of ellipse
-  measure diameter, girth and area of circle

-  measure radius, girth and area of circle
-  measure radius, girth and area of circle with three points
-  measure distance between two circles
-  measure angle with three points
-  measure angle with two lines
-  add number with circle
-  add number with rectangle
-  add text

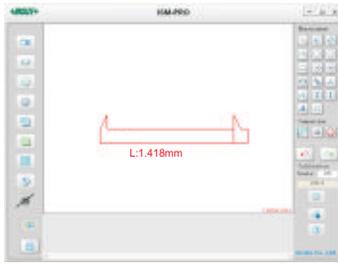
- **Data input to CAD, Word, Excel:**



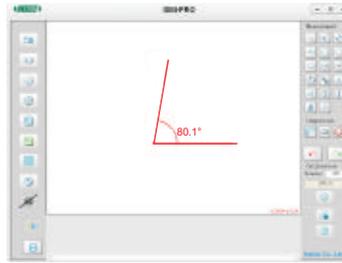
■ **Comparison:**

Create line, angle or circle with desired size, to compare with workpieces.

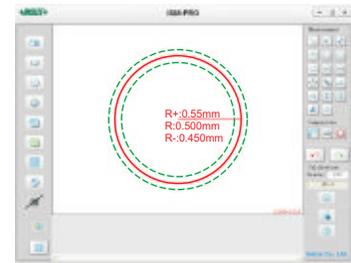
 create line



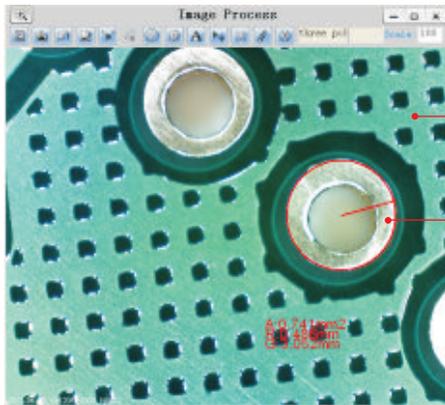
 create angle



 create circle with tolerance



■ **Picture measurement:**



picture taken before

picture measurement

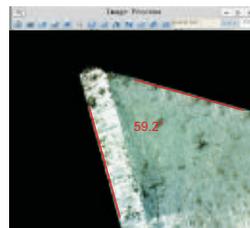
 measuring tools: measure the picture taken before

 edge detection measuring tools

 find two parallel lines automatically, and calculate distance



 find two lines automatically, and calculate angle



 find circle automatically, and calculate radius, girth and area

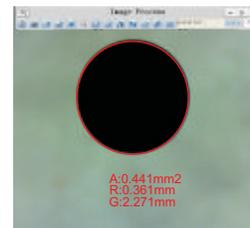
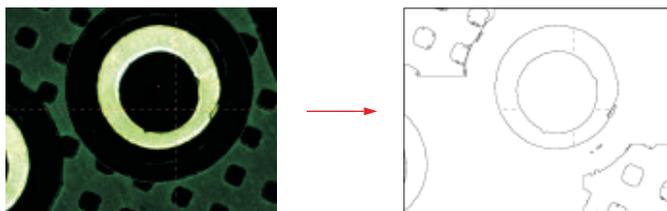


 image process tool: image mirror, image negative, adjust brightness, filter

 edge detection



 calibration: calibration is needed when magnification is changed

# WIRELESS DIGITAL MICROSCOPE CODE ISM-WM200\*



computer is not included

- Can take pictures and videos
- Supplied with measuring software (simple version)

## SPECIFICATION

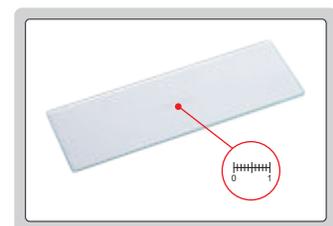
<b>Magnification</b>	10X - 200X
<b>Pixel</b>	0.35M (resolution: 720x480)
<b>Illumination</b>	built-in adjustable LED
<b>Max. transmission distance (between digital microscope and receiver)</b>	5m
<b>Power supply</b>	built-in rechargeable battery



focus support ring

## STANDARD DELIVERY

<b>Digital microscope</b>	1pc
<b>Receiver</b>	1pc
<b>Focus support ring for 80X/150X</b>	1pc
<b>Focus support ring for 60X/200X</b>	1pc
<b>Calibration rule graduation 0.1mm</b>	1pc
<b>Calibration rule graduation 1mm</b>	1pc
<b>Software disc</b>	1pc
<b>AC/DC adapter</b>	1pc



calibration rule

optional accessory

## OPTIONAL ACCESSORY

<b>Stand</b>	<b>ISM-WM200-STAND</b>
--------------	------------------------

## MAGNIFICATION, FOCUS DISTANCE, VIEW FIELD AND ACCURACY

Magnification	Focus distance	View field	Accuracy
60X	19mm	6.9×5.2mm	40μm
80X	16mm	5.0×3.8mm	30μm
150X	16mm	2.6×2.1mm	20μm
200X	19mm	1.8×1.5mm	15μm



stand

\* Add suffix on code No. to devote AC voltage and plug (refer to page V1)

## PORTABLE MEASURING MICROSCOPE CODE ISM-PM100



### SPECIFICATION

<b>Total magnification</b>	100X
<b>Eyepiece</b>	10X with graduation
<b>Objective(achromatic)</b>	10X(numerical aperture: 0.25)
<b>Working distance</b>	7mm
<b>Focus range</b>	30mm
<b>Viewing field</b>	Ø1.8mm
<b>Graduation</b>	0.01mm
<b>Illumination</b>	LED light, illumination filed is adjustable
<b>Diameter of base</b>	Ø63mm
<b>Height</b>	210mm
<b>Weight</b>	650g

### STANDARD DELIVERY

<b>Main unit</b>	1pc
<b>Pen light</b>	1pc
<b>Battery SR44 or LR44</b>	3pcs

# LCD MEASURING MICROSCOPE CODE ISM-DL120\*



- Can take pictures and videos

## SPECIFICATION

<b>Total magnification</b>	18.7X-120X	
<b>Objective</b>	0.7X-4.5X	
<b>Camera pixel</b>	5M	
<b>LCD display resolution</b>	800×600	
<b>Output</b>	video, USB, MMC/SD	
<b>Working distance</b>	93mm	
<b>Working table</b>	<b>diameter</b>	120mm
	<b>rotation range</b>	0-360°
	<b>rotation resolution</b>	0.2°

<b>X-Y stage</b>	<b>travel range</b>	0-25m
	<b>resolution</b>	1μm
	<b>accuracy</b>	5μm
	<b>load capacity</b>	8kg
<b>Illumination</b>		reflected: four quarter LED
		transmitted: 45pcs LED
		brightness is adjustable
<b>Dimension(L×W×H)</b>	480×340×640mm	
<b>Weight</b>	12.5kg	

## STANDARD DELIVERY

<b>Main unit</b>	1pc
<b>Calibration rule(graduation 0.1mm)</b>	1pc
<b>2G SD card</b>	1pc
<b>USB cable and software</b>	1pc
<b>Video output cable</b>	1pc
<b>AC/DC adapter</b>	1pc

<b>Anti-dust cover</b>	1pc
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## OPTIONAL ACCESSORY

<b>0.5X auxiliary objective</b>	ISM-DL120-OB05X
<b>0.75X auxiliary objective</b>	ISM-DL120-OB075X
<b>2X auxiliary objective</b>	ISM-DL120-OB2X

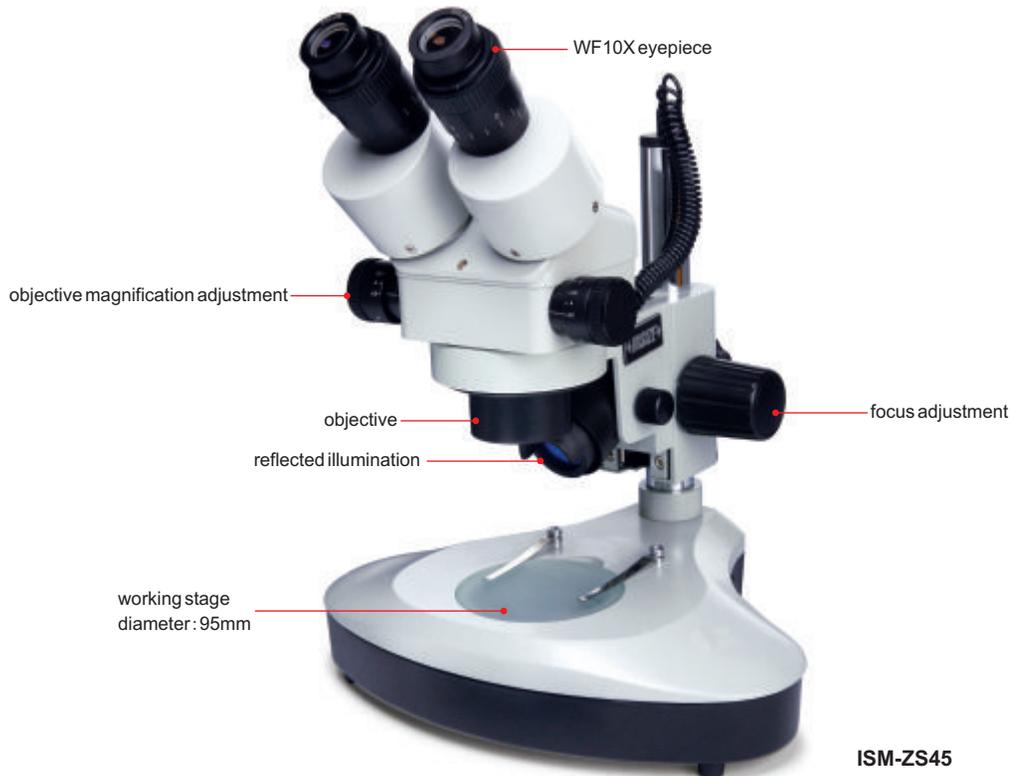
## OBJECTIVE AND VIEW FIELD

Objective	View field
0.7X	8×6mm
1X	6×4.5mm
2X	2.5×1.9mm

Objective	View field
3X	2×1.5mm
4X	1.3×1mm
4.5X	1.2×0.9mm

\* Add suffix on code No. to devote AC voltage and plug (refer to page V1)

## ZOOM STEREO MICROSCOPE



### SPECIFICATION

Code	ISM-ZS45*	ISM-ZS45T*
Optical tube	binocular	trinocular
Eyepiece(wide field)	10X (view field: Ø20mm)	
Objective	0.7X-4.5X (zoom)	
Pupil distance	55-75mm(adjustable)	
Diopter adjustment	±5 diopter(two eyepieces)	
Working distance of objective	55mm	
Max. workpiece height	145mm	
Illumination	selectable reflected and transmitted illumination (brightness is adjustable)	
Dimension(L×W×H)	310×250×420mm	
Weight	6kg	

### STANDARD DELIVERY

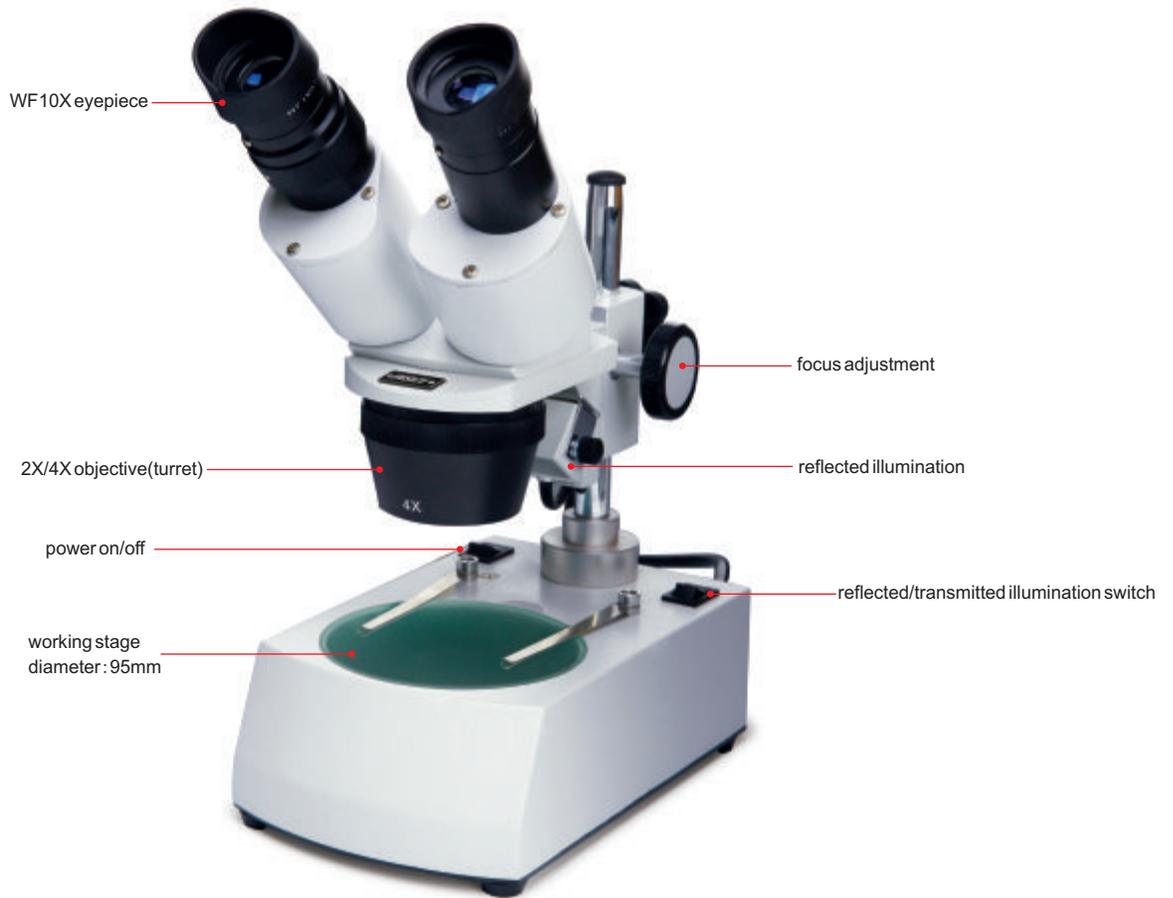
Main unit	1pc
WF10X eyepiece	2pcs
Eyepiece patch	2pcs
Ø95mm frosted glass plate	1pc
Ø42mm frosted glass plate	1pc
Ø80mm steel support ring	1pc
Ø95mm white/black plate	1pc
Spare transmitted lamp (6V, 20W)	1pc
Spare reflected lamp (6V, 15W)	1pc
Anti-dust cover	1pc

### OPTIONAL ACCESSORY

Auxiliary objective	0.5X	ISM-ZS45-OB05X
	0.75X	ISM-ZS45-OB075X
	1.5X	ISM-ZS45-OB1D5X
	2X	ISM-ZS45-OB2X
Eyepiece	WF5X (view field: Ø22mm)	ISM-ZS45-EP5X
	WF15X (view field: Ø16mm)	ISM-ZS45-EP15X
	WF20X (view field: Ø12mm)	ISM-ZS45-EP20X
	WF25X (view field: Ø9mm)	ISM-ZS45-EP25X
Digital camera		ISM-D300B
		ISM-D500

\*Add suffix on code No. to devote AC voltage and plug (refer to page V1)

# STEREO MICROSCOPE CODE ISM-S40\*



## SPECIFICATION

<b>Eyepiece(wide field)</b>	10X(view field: Ø20mm)
<b>Objective</b>	2X, 4X(turret)
<b>Pupil distance</b>	55-75mm(adjustable)
<b>Diopter adjustment</b>	±5 diopter(one eyepiece)
<b>Working distance of objective</b>	57mm
<b>Max. workpiece height</b>	68mm
<b>Illumination</b>	selectable reflected and transmitted illumination
<b>Dimension(L×W×H)</b>	120×200×300mm
<b>Weight</b>	3kg

## STANDARD DELIVERY

<b>Main unit</b>	1pc
<b>WF10X eyepiece</b>	2pcs
<b>Eyepiece patch</b>	2pcs
<b>Ø95mm frosted glass plate</b>	1pc
<b>Ø95mm white/black plate</b>	1pc
<b>Anti-dust cover</b>	1pc

## OPTIONAL ACCESSORY

<b>Eyepiece</b>	<b>WF5X(view field: Ø20mm)</b>	ISM-S40-EP5X
	<b>WF15X(view field: Ø15mm)</b>	ISM-S40-EP15X
	<b>WF20X(view field: Ø10mm)</b>	ISM-S40-EP20X
<b>Digital camera</b>		ISM-D300B
		ISM-D500

\* Add suffix on code No. to devote AC voltage and plug (refer to page V1)

# METALLURGICAL MICROSCOPE

## CODE ISM-M1000\*



- For metallurgical analysis and high magnification observation
- Kohler illumination system provides uniform illumination field
- Objectives 20X, 40X, 100X are spring type

### SPECIFICATION

<b>Eyepiece(wide field)</b>	10X(view field: Ø18mm)			
<b>Objective(plan achromatic)</b>	10X	20X	40X	100X(oil type)
<b>Numerical aperture</b>	0.25	0.40	0.60	1.25
<b>Working distance</b>	8.8mm	8.6mm	3.3mm	0.33mm
<b>Stage</b>	double layer			
	size: 180×150mm			
	travel: 15×15mm			
<b>Pupil distance</b>	53-75mm(adjustable)			
<b>Diopter adjustment</b>	±5 diopter(one eyepiece)			
<b>Illumination</b>	6V/20W halogen lamp			
<b>Dimension(L×W×H)</b>	385×300×440mm			
<b>Weight</b>	11kg			

### STANDARD DELIVERY

<b>Main unit</b>	1pc
<b>Oil for PL100X objective</b>	1bottle
<b>Anti-dust cover</b>	1pc
<b>Filter(blue/green/yellow)</b>	1pc of each

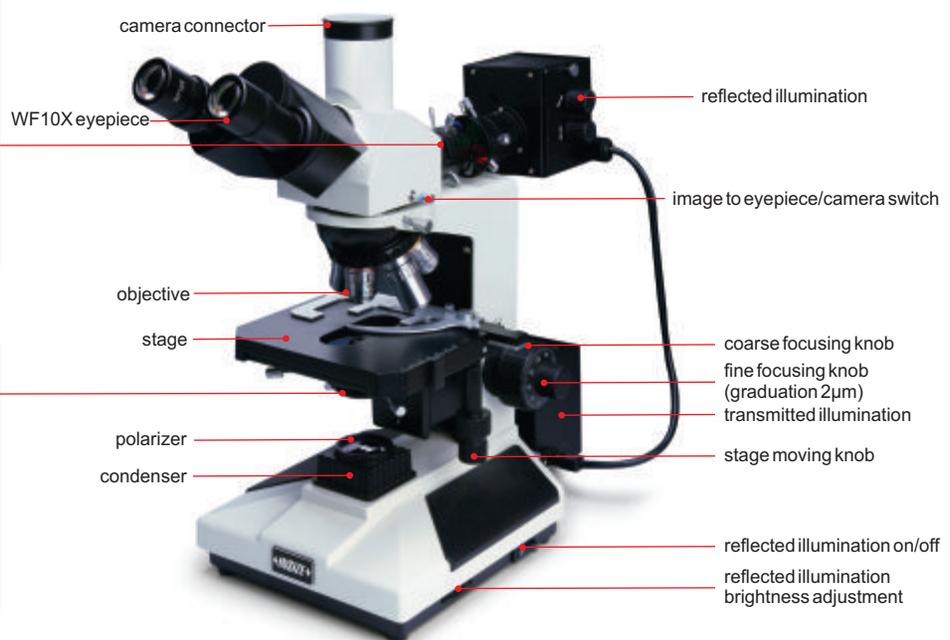
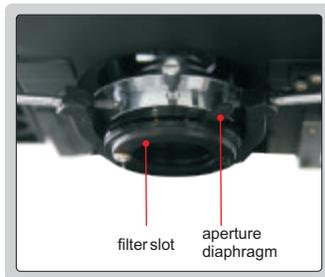
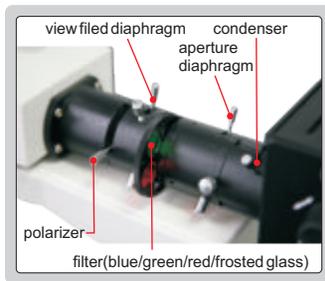
### OPTIONAL ACCESSORY

<b>10X dividing eyepiece(0.1mm/div.)</b>	ISM-MTM-EPD10X	<b>Objective</b>	PL50X	ISM-MTM-OB50X
<b>Camera adapter(1X)</b>	ISM-MTM-ADAPTER		PL60X	ISM-MTM-OB60X
<b>Digital camera</b>	ISM-D300B		PL80X	ISM-MTM-OB80X
	ISM-D500		PL100X(dry type)	ISM-MTM-OB100X

\* Add suffix on code No. to devote AC voltage and plug (refer to page V1)

# METALLURGICAL MICROSCOPE

## CODE ISM-M600\*



- For metallurgical analysis and high magnification observation
- Reflected and transmitted illumination can work at the same time
- Objectives 40X, 60X are spring type

### SPECIFICATION

<b>Eyepiece(wide field)</b>	10X(view field: Ø18mm)				
<b>Objective(plan achromatic)</b>	5X	10X	20X	40X	60X
<b>Numerical aperture</b>	0.12	0.25	0.40	0.60	0.75
<b>Working distance</b>	18.4mm	8.8mm	8.6mm	3.7mm	1.34mm
<b>Stage</b>	double layer with sample clamp				
	size: 160×140mm				
	travel: 75×50mm(graduation: 0.1mm)				
<b>Pupil distance</b>	53-75mm(adjustable)				
<b>Diopter adjustment</b>	±5 diopter(one eyepiece)				
<b>Illumination</b>	reflected and transmitted: 6V/20W halogen lamp, brightness is adjustable				
<b>Dimension(L×W×H)</b>	450×300×350mm				
<b>Weight</b>	11kg				

### STANDARD DELIVERY

<b>Main unit</b>	1pc
<b>Anti-dust cover</b>	1pc
<b>Filter(blue/green/frosted glass)</b>	1pc of each

### OPTIONAL ACCESSORY

<b>10X dividing eyepiece (0.1mm/div.)</b>	ISM-MTM-EPD10X
<b>Digital camera</b>	ISM-D300B
	ISM-D500

<b>Objective</b>	PL80X	ISM-MTM-OB-80X
	PL100X(dry type)	ISM-MTM-OB-100X
<b>Camera adapter(1X)</b>		ISM-MTM-ADAPTER

\* Add suffix on code No. to devote AC voltage and plug (refer to page V1)

## DIGITAL CAMERA



- Insert into eyepiece tube or camera connector of microscopes
- Supplied with software (page P1)

### SPECIFICATION

Code	ISM-D300B	ISM-D500
Sensor	1/2" CMOS	1/2.5" CMOS
Pixel	3M	5M
Resolution	2048×1536	2592×1944 or 1296×972
Frame rate	6fps	2592×1944 3fps 1296×972 12fps
Exposure	manual or auto, exposure time is adjustable	
SNR	43dB	41dB
Power supply	USB	
Weight	400g	

### STANDARD DELIVERY

Main body	1pc
Adapter 0.45X	1pc
Calibration rule(graduation 0.1mm)	1pc
Connector Ø23.2/Ø30mm	1pc
USB cable	1pc
Software disc	1pc

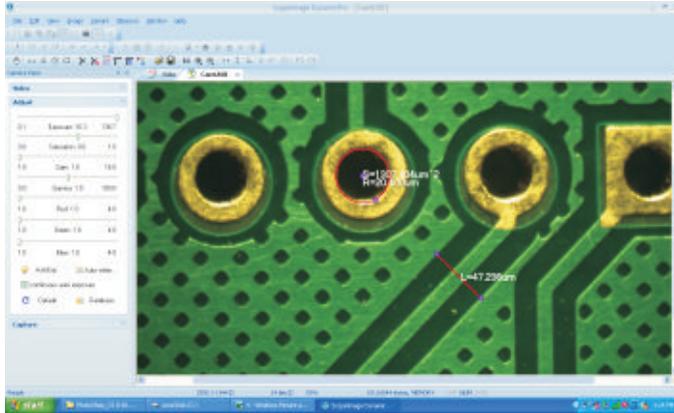
### OPTIONAL ACCESSORY

Adapter 0.28X	ISM-DCA-AD28X
Connector Ø23.2/Ø30.5mm	ISM-DCA-CON

To be continued

Continued from page N13

### SOFTWARE FOR DIGITAL CAMERA



#### Measuring Tools:

-  measure distance between two points
-  measure angle with three points
-  measure circle
-  measure rectangle
-  calibration

- Can take pictures and videos
- Exposure/gain/gamma/saturation/colour adjustment
- Image process feature: zoom in/out, image flip and so on
- Calibration tool to make measurement in high accuracy

### SURFACE ROUGHNESS SPECIMEN CODE 4131



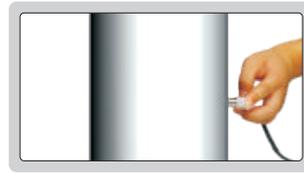
- For checking, identifying and specifying the roughness by symbol

Machining method	Roughness (Ra)	Quantity
Flat lapping	0.1, 0.05 $\mu$ m	2
External grinding	0.2, 0.4, 0.8, 1.6 $\mu$ m	4
Plain grinding	0.05, 0.1, 0.2, 0.4, 0.8, 1.6 $\mu$ m	6
Horizontal milling	0.4, 0.8, 1.6, 3.2, 6.3, 12.5 $\mu$ m	6
Vertical milling	0.4, 0.8, 1.6, 3.2, 6.3, 12.5 $\mu$ m	6
Turning	0.4, 0.8, 1.6, 3.2, 6.3, 12.5 $\mu$ m	6

# ULTRASONIC THICKNESS GAUGE CODE ISU-250C



- Measure the thickness from one side of object, suitable for pipe, tank, etc.
- Applicable material: metal, plastic, glass, nylon, resin, ceramic, rubber, ice
- High accuracy
- Low and high limits with judgement
- Average calculation of maximum 9 readings
- Memory of maximum 5000 readings with location number



couplant(included)



transducer ISU-T06(optional)



transducer ISU-T12(optional)



transducer ISU-T13(optional)

## SPECIFICATION

<b>Resolution</b>	0.01mm(range<100mm)
	0.1mm(range≥100mm)
<b>Velocity</b>	1000-9999m/s
<b>Power supply</b>	2×1.5VAAA batteries
<b>Dimension</b>	64×116×27mm
<b>Weight</b>	220g

## STANDARD DELIVERY

<b>Main unit</b>	1pc
<b>Transducer ISU-T08</b>	1pc
<b>Battery(AAA)</b>	2pcs
<b>Couplant</b>	1bottle
<b>USB cable and software</b>	1pc

## OPTIONAL ACCESSORY

<b>Transducer</b>	ISU-T06
	ISU-T12
	ISU-T13

## SPECIFICATION OF TRANSDUCERS

Code	Frequency	Diameter(Ød)	Measuring range	Minimum size of pipe for measurement (diameter× wall thickness)	Applicable temperature	Application
ISU-T08	5.0MHz	10.8mm	0.8-300mm	20×1.2mm	<60°C	general use
ISU-T06	7.5MHz	8.5mm	0.7-50mm	15×1.2mm	<60°C	for thin material
ISU-T12	2.0MHz	16.3mm	3-350mm	30×4mm	<60°C	for casting steel
ISU-T13	5.0MHz	13mm	3-100mm	25×3mm	<350°C	for high temperature

# ULTRASONIC THICKNESS GAUGE CODE ISU-200B



- Measure the thickness from one side of object, suitable for pipe, tank, etc.
- Applicable material: metal, plastic, glass, nylon, resin, ceramic, rubber, ice



couplant(included)



transducer ISU-P02(optional)



transducer ISU-P07(optional)



transducer ISU-HT5(optional)

## SPECIFICATION

<b>Resolution</b>	0.01mm (range < 100mm)
	0.1mm (range ≥ 100mm)
<b>Velocity</b>	1000-9999m/s
<b>Power supply</b>	2×1.5V AA batteries
<b>Dimension</b>	64×150×32mm
<b>Weight</b>	245g

## STANDARD DELIVERY

<b>Main unit</b>	1pc
<b>Transducer ISU-P05</b>	1pc
<b>Battery(AA)</b>	2pcs
<b>Couplant</b>	1 bottle

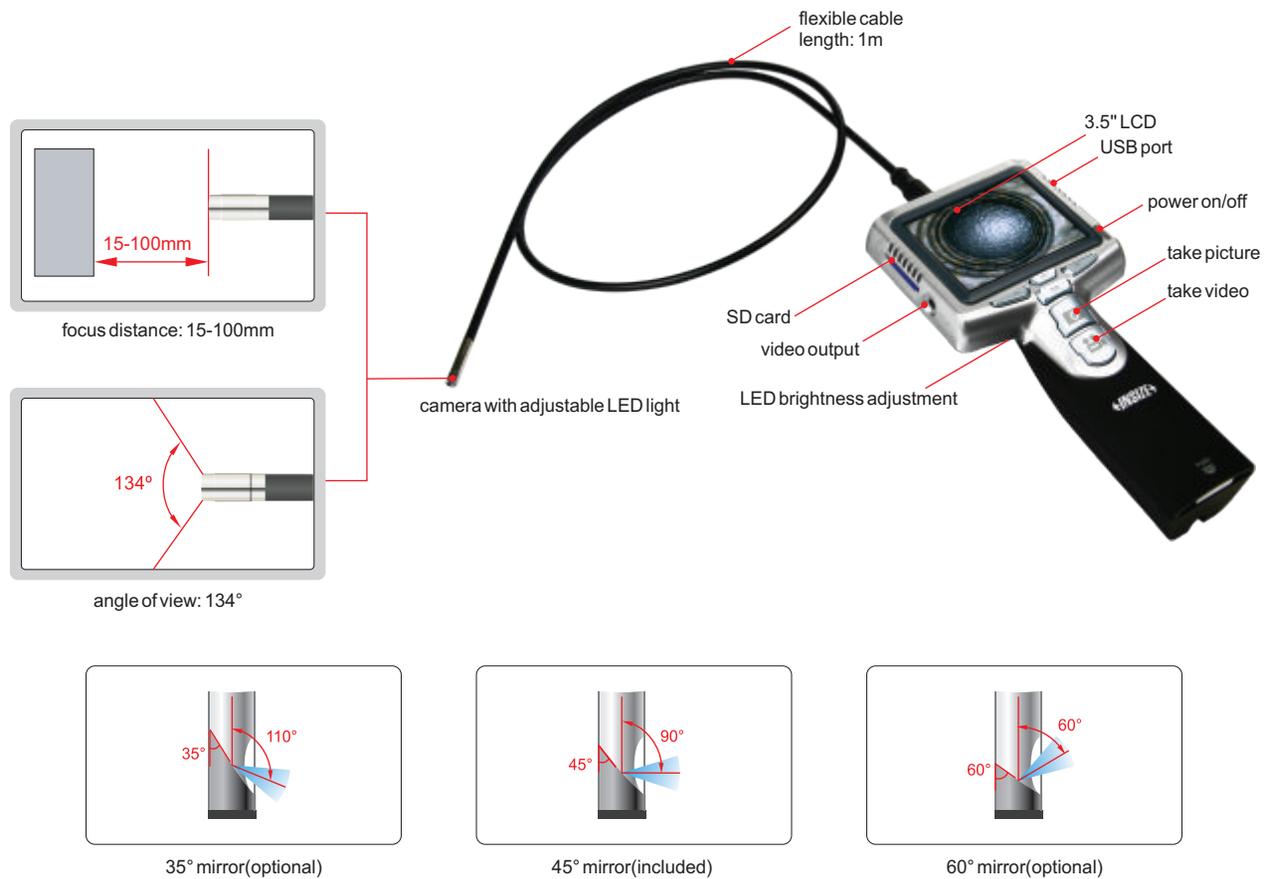
## OPTIONAL ACCESSORY

<b>Transducer</b>	ISU-P02
	ISU-P07
	ISU-HT5
<b>RS232 cable and software</b>	ISU-200B-CABLE

## SPECIFICATION OF TRANSDUCERS

Code	Frequency	Diameter(Ød)	Measuring range	Minimum size of pipe for measurement (diameter × wall thickness)	Applicable temperature	Application
ISU-P05	5.0MHz	12mm	1.2-230mm	20×3mm	<60°C	general use
ISU-P02	2.0MHz	17mm	3-300mm	20×3mm	<60°C	for casting steel
ISU-P07	7.0MHz	8mm	0.75-80mm	15×2mm	<60°C	for thin material
ISU-HT5	5.0MHz	14mm	3-200mm	30×2mm	<300°C	for high temperature

# ENDOSCOPE CODE ISV-E55\*



## SPECIFICATION

<b>Camera</b>	<b>diameter</b>	5.5mm
	<b>pixel</b>	0.3M
	<b>resolution</b>	640x480
	<b>frame rate</b>	30fps
	<b>waterproof</b>	IP57
<b>Video format</b>	PAL or NTSC	
<b>Memory</b>	2G SD card (store 6000 pictures or 15 minutes video)	
<b>Power supply</b>	rechargeable battery (for 3 hours working)	
<b>Weight</b>	450g	

## STANDARD DELIVERY

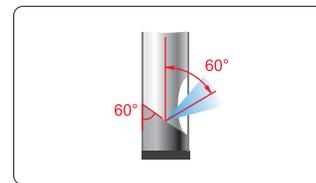
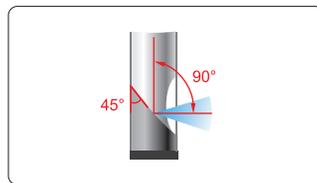
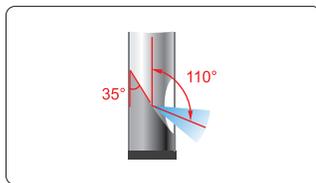
<b>Main unit</b>	1pc	<b>Spare battery</b>	1pc
<b>Cable with camera</b>	1pc	<b>AC/DC adapter</b>	1pc
<b>SD card 2G</b>	1pc	<b>Video output cable</b>	1pc
<b>45° mirror</b>	1pc	<b>USB cable</b>	1pc

## OPTIONAL ACCESSORY

<b>35° mirror</b>	ISV-E55-M35
<b>60° mirror</b>	ISV-E55-M60
<b>Cable</b>	Page Q5

\* Add suffix on code No. to devote AC voltage and plug (refer to page V1)

# ENDOSCOPE CODE ISV-E55B\*



## SPECIFICATION

<b>Camera</b>	<b>diameter</b>	5.5mm
	<b>pixel</b>	0.3M
	<b>resolution</b>	640x480
	<b>frame rate</b>	30fps
	<b>waterproof</b>	IP57
<b>Video format</b>		PAL or NTSC
<b>Power supply</b>		rechargeable battery (for 3 hours working)
<b>Weight</b>		450g

## STANDARD DELIVERY

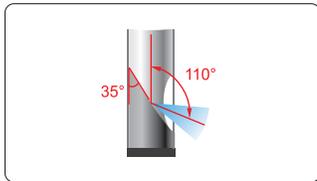
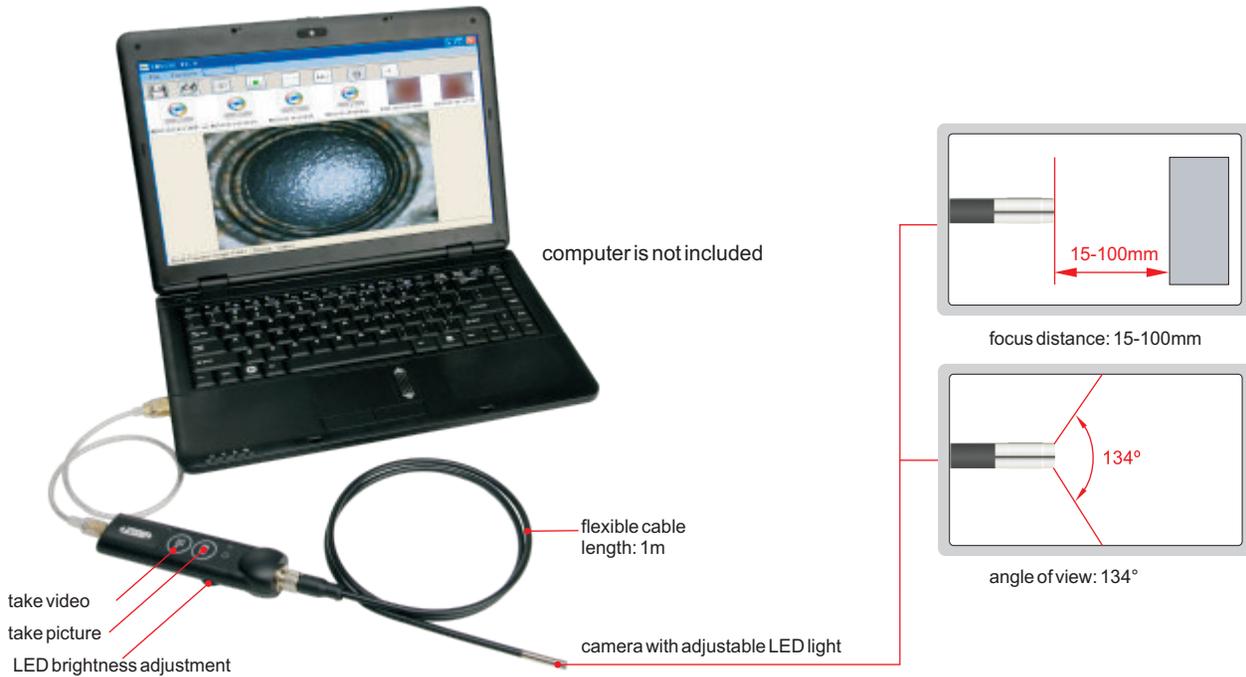
<b>Main unit</b>	1pc
<b>Cable with camera</b>	1pc
<b>AC/DC adapter</b>	1pc
<b>Video output cable</b>	1pc

## OPTIONAL ACCESSORY

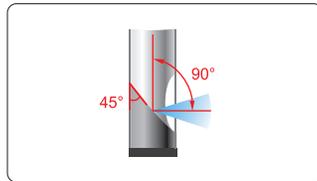
<b>35° mirror</b>	ISV-E55-M35
<b>45° mirror</b>	ISV-E55-M45
<b>60° mirror</b>	ISV-E55-M60
<b>Cable</b>	Page Q5

\* Add suffix on code No. to devote AC voltage and plug (refer to page V1)

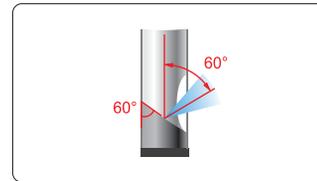
# ENDOSCOPE CODE ISV-E55C



35° mirror(optional)



45° mirror(optional)



60° mirror(optional)

## SPECIFICATION

<b>Camera</b>	<b>diameter</b>	5.5mm
	<b>pixel</b>	0.3M
	<b>resolution</b>	640x480
	<b>frame rate</b>	30fps
	<b>waterproof</b>	IP57
<b>Power supply</b>		USB
<b>Weight</b>		150g

## STANDARD DELIVERY

<b>Main unit</b>	1pc
<b>Cable with camera</b>	1pc
<b>Software CD</b>	1pc
<b>USB cable</b>	1pc

## OPTIONAL ACCESSORY

<b>35° mirror</b>	ISV-E55-M35
<b>45° mirror</b>	ISV-E55-M45
<b>60° mirror</b>	ISV-E55-M60
<b>Cable</b>	Page Q5

## ENDOSCOPE MAIN UNIT CODE ISV-MUE55\*



### SPECIFICATION

<b>Video format</b>	PAL or NTSC
<b>Memory</b>	2G SD card (store 6000 pictures or 15 minutes video)
<b>Power supply</b>	rechargeable battery (for 3 hours working)
<b>Weight</b>	430g

### STANDARD DELIVERY

<b>Main unit</b>	1pc
<b>SD card 2G</b>	1pc
<b>Spare battery</b>	1pc
<b>AC/DC adapter</b>	1pc
<b>Video output cable</b>	1pc
<b>USB cable</b>	1pc

### OPTIONAL ACCESSORY

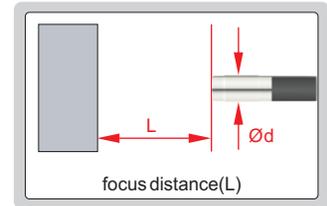
<b>Cable</b>	Page Q5
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\* Add suffix on code No. to devote AC voltage and plug (refer to page V1)

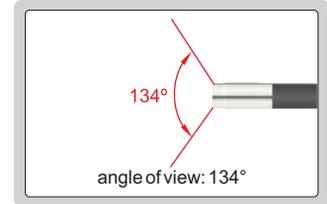
## CABLE FOR ENDOSCOPE



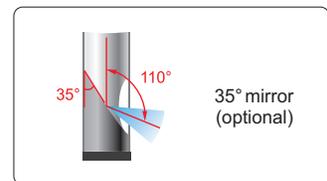
**Type A**  
Flexible cable  
Diameter (Ød)=4.3mm  
IP57 waterproof  
With adjustable LED light



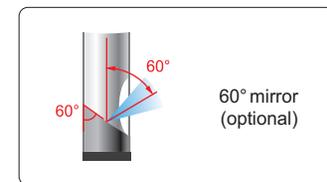
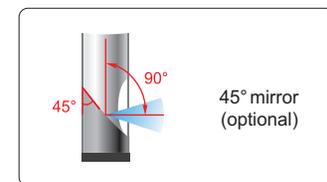
**Type B**  
Flexible cable  
Diameter (Ød)=5.5mm  
IP57 waterproof  
With adjustable LED light



**Type C**  
Semi-rigid cable  
(Cable can be set at any shape)  
Diameter (Ød)=5.5mm  
IP57 waterproof  
With adjustable LED light



**Type D**  
Semi-rigid cable  
(Cable can be set at any shape)  
Diameter (Ød)=12mm  
IP57 waterproof  
With adjustable LED light



■ Applicable endoscopes: ISV-E55, ISV-E55B, ISV-MUE55, ISV-E55C

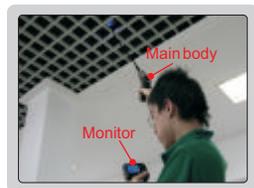
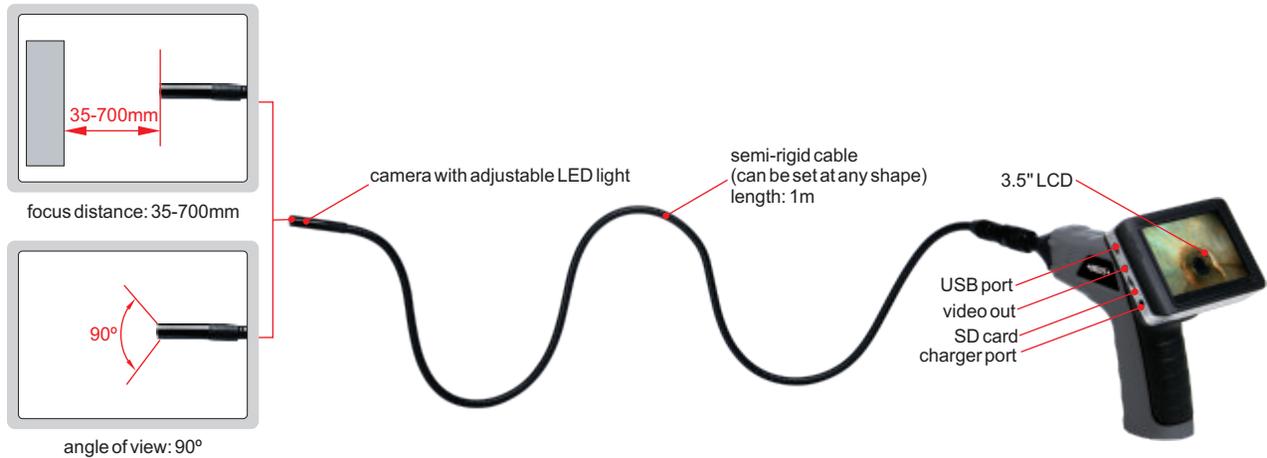
### SPECIFICATION

Code	Type	Diameter (Ød)	Cable length	Focus distance(L)	Camera
ISV-E55-C4301	A	4.3mm	1m	15-30mm	pixel 0.1M resolution 320x240 frame rate 30fps
ISV-E55-C5501	B	5.5mm	1m	15-100mm	pixel 0.3M resolution 640x480 frame rate 30fps
ISV-E55-C5503			3m		
ISV-E55-C5505			5m		
ISV-E55-C5510			10m		
ISV-E55-R5501	C	5.5mm	1m	15-100mm	pixel 0.3M resolution 640x480 frame rate 30fps
ISV-E55-R5503			3m		
ISV-E55-R1201	D	12mm	1m	15-100mm	pixel 0.3M resolution 640x480 frame rate 30fps

### OPTIONAL ACCESSORY

35° mirror for type B and C	ISV-E55-M35
45° mirror for type B and C	ISV-E55-M45
60° mirror for type B and C	ISV-E55-M60

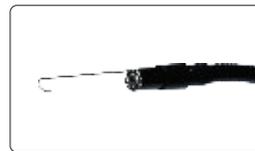
# ENDOSCOPE CODE ISV-1000D\*



the monitor can be separated from main body



mirror



hook



magnetic pick-up

- Can take videos and pictures

## SPECIFICATION

Camera	diameter	9mm
	pixel	0.3M
	resolution	640x480
	frame rate	30fps
	waterproof	IP57
	power supply	4xAA batteries
Monitor	transmission distance	the monitor can be separated from main body, the maximum distance is 10m
	video format	PAL
	memory	2G SD card (store 5000 pictures or 15 minutes video)
	power supply	rechargeable battery (for 4 hours working)
Weight		1.1kg

## STANDARD DELIVERY

Main body	1pc
Monitor	1pc
Cable with camera	1pc
Mirror	1pc
Hook	1pc
Magnetic pick-up	1pc

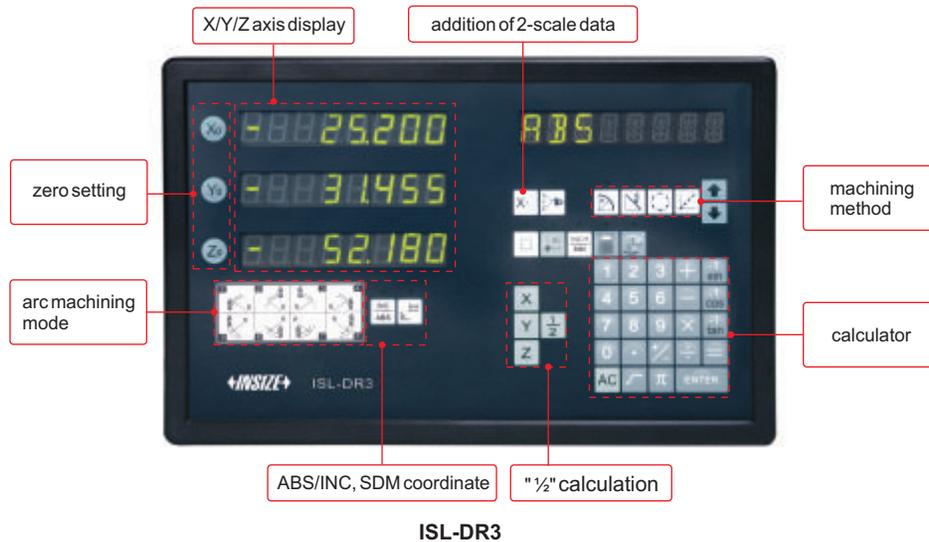
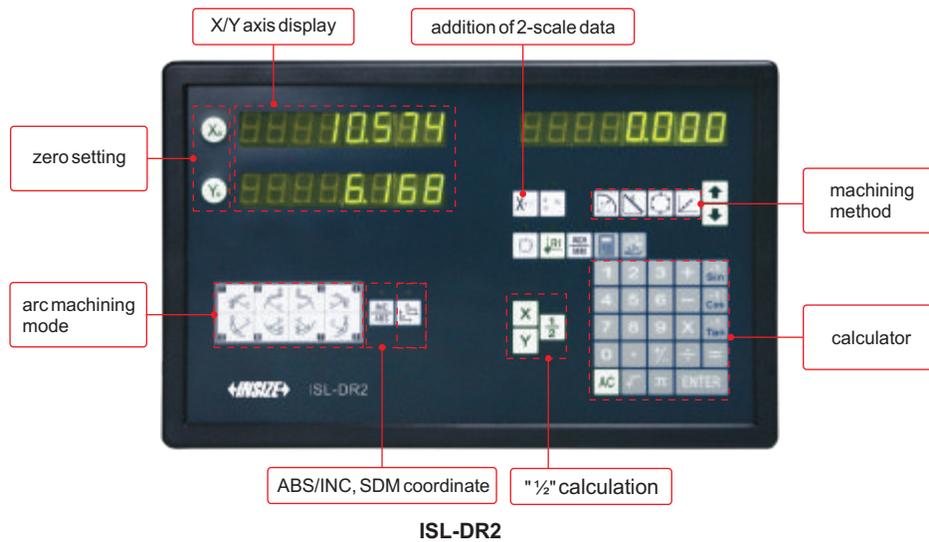
SD card 2G	1pc
AA battery	4pcs
Video output cable	1pc
AC/DC adapter	1pc
USB cable	1pc

## OPTIONAL ACCESSORY

1m semi-rigid extension cable	ISV-1000D-CABLE
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\* Add suffix on code No. to devote AC voltage and plug (refer to page V1)

# COUNTER



## SPECIFICATION

Code	ISL-DR2*	ISL-DR3*
Application	two-axis	three-axis
Scale input ports	2	3
Resolution	0.1μm, 0.2μm, 0.5μm, 1μm, 2μm, 5μm, 10μm	
Functions	addition of 2-scale data, linearity error compensation, smoothing, RS232C interface unit, BCD code out, zero setting, preset, resolution setting, counting direction setting, inch/mm conversion, ABS/INC conversion, expansion/contraction coefficient setting, "1/2" calculation, detecting RI, bolt-hole circle machining, ramp circle machining	
Dimension	295×185×45mm	
Weight	1.45kg	

## STANDARD DELIVERY

Main unit	1pc
Mounting bracket	1pc
Ground cable	1pc

RS232C cable	1pc
Software CD for RS232C	1pc

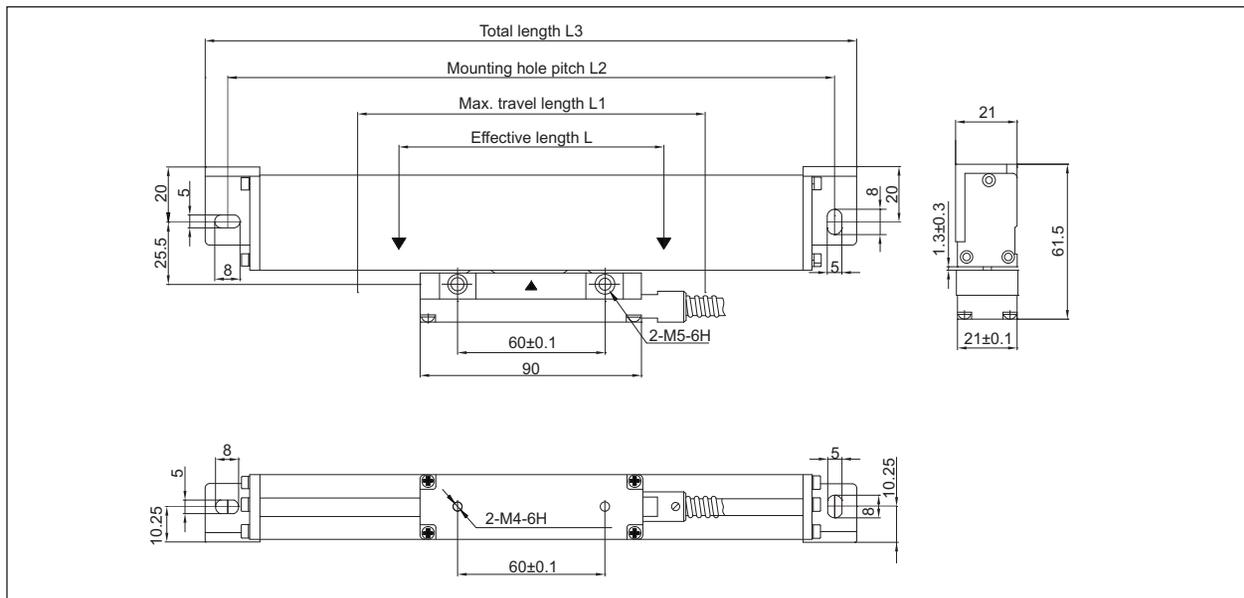
\* Add suffix on code No. to devote AC voltage and plug (refer to page V1)

# LINEAR SCALE

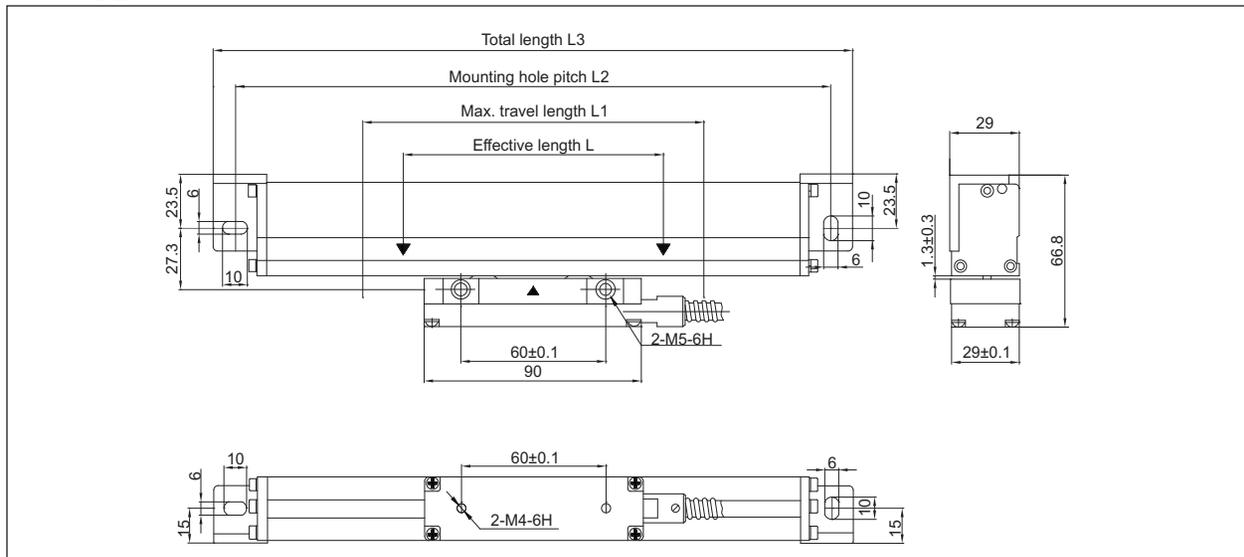


ISL-A1-300

## Series ISL-A1 and ISL-A5



## Series ISL-B5



Effective length(L)	Code		
	Series ISL-A1	Series ISL-A5	Series ISL-B5
50mm	ISL-A1-50	ISL-A5-50	ISL-B5-50
100mm	ISL-A1-100	ISL-A5-100	ISL-B5-100
150mm	ISL-A1-150	ISL-A5-150	ISL-B5-150
200mm	ISL-A1-200	ISL-A5-200	ISL-B5-200
250mm	ISL-A1-250	ISL-A5-250	ISL-B5-250
300mm	ISL-A1-300	ISL-A5-300	ISL-B5-300
350mm	ISL-A1-350	ISL-A5-350	ISL-B5-350
400mm	ISL-A1-400	ISL-A5-400	ISL-B5-400
450mm	ISL-A1-450	ISL-A5-450	ISL-B5-450
500mm	ISL-A1-500	ISL-A5-500	ISL-B5-500
550mm	ISL-A1-550	ISL-A5-550	ISL-B5-550
600mm	ISL-A1-600	ISL-A5-600	ISL-B5-600
650mm	ISL-A1-650	ISL-A5-650	ISL-B5-650
700mm	ISL-A1-700	ISL-A5-700	ISL-B5-700
750mm	ISL-A1-750	ISL-A5-750	ISL-B5-750
800mm	ISL-A1-800	ISL-A5-800	ISL-B5-800
850mm	ISL-A1-850	ISL-A5-850	ISL-B5-850
900mm	ISL-A1-900	ISL-A5-900	ISL-B5-900
950mm	ISL-A1-950	ISL-A5-950	ISL-B5-950
1000mm	ISL-A1-1000	ISL-A5-1000	ISL-B5-1000
1100mm			ISL-B5-1100
1200mm			ISL-B5-1200
1300mm			ISL-B5-1300
1400mm			ISL-B5-1400
1500mm			ISL-B5-1500
1600mm			ISL-B5-1600
1700mm			ISL-B5-1700
1800mm			ISL-B5-1800
1900mm			ISL-B5-1900
2000mm			ISL-B5-2000

#### SPECIFICATION

	Series ISL-A1		Series ISL-A5		Series ISL-B5	
	<b>L1(mm)</b>	L+30(L<950)	L+50(L≥950)	L+30(L<950)	L+50(L≥950)	L+30(L<950)
<b>L2(mm)</b>	L+132(L<950)	L+152(L≥950)	L+132(L<950)	L+152(L≥950)	L+136(L<950)	L+156(L≥950)
<b>L3(mm)</b>	L+149(L<950)	L+169(L≥950)	L+149(L<950)	L+169(L≥950)	L+154(L<950)	L+174(L≥950)
<b>Resolution</b>	1μm		5μm		5μm	
<b>Max. response speed</b>	50m/min		90m/min		60m/min	
<b>Scale grating pitch</b>	20μm					
<b>Scale reference point pitch</b>	50μm					
<b>Accuracy</b>	±(5+5L/1000)μm L is the effective length in mm					
<b>Cable length</b>	3.5m(L: 50-950mm) 5m(L: 1000-1500mm) 10m(L: 1600-2000mm)					

#### STANDARD DELIVERY

<b>Main unit</b>	1pc
<b>'L' shape support</b>	1pc
<b>Anti-dust cover</b>	1pc
<b>Plain base</b>	1pc (for L≥1500mm)

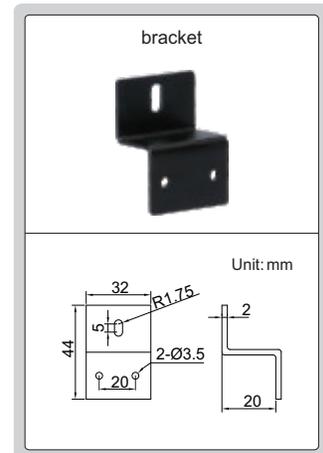
# DIGITAL HORIZONTAL SCALE



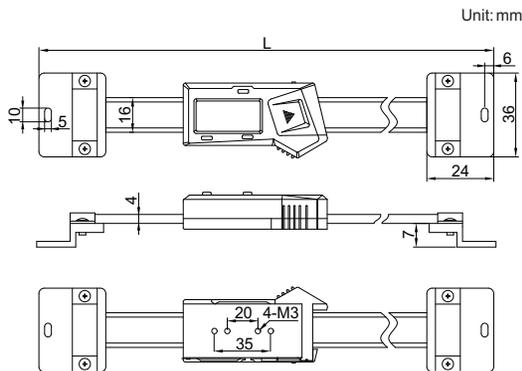
7101-300A



7101-400

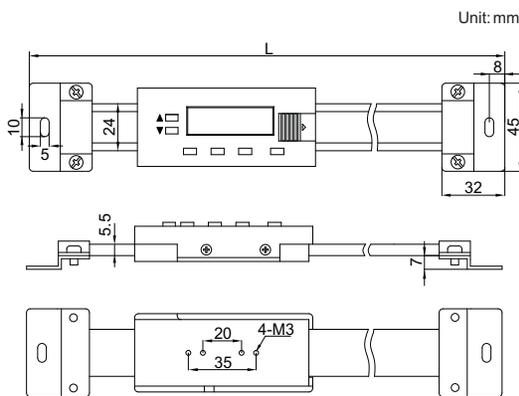


## type A



- Resolution: 0.01mm/0.0005"
- Buttons: on/off, zero, mm/inch
- Automatic power off, move the digital unit to turn on power
- Battery CR2032
- USB data output
- Made of stainless steel
- Supplied with bracket to be mounted on the back
- Optional accessory: SPC cable(page A1-A2)

## type B



- Resolution: 0.01mm/0.0005"
- Button function: on/off, zero, mm/inch, ABS, data preset
- Absolute and incremental measurement
- Battery SR44 or LR44
- Data output
- Made of stainless steel
- Supplied with bracket to be mounted on the back

(mm)

Code	Range	Type	Accuracy	L
7101-100A	100mm	A	±0.02mm	215
7101-150A	150mm	A	±0.03mm	265
7101-200A	200mm	A	±0.03mm	315
7101-300A	300mm	A	±0.04mm	445
7101-400	400mm	B	±0.05mm	590

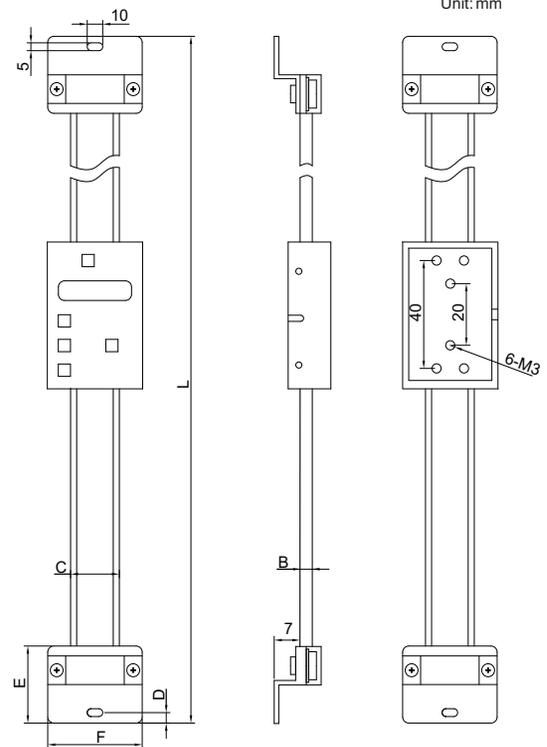
(mm)

Code	Range	Type	Accuracy	L
7101-500	500mm	B	±0.05mm	690
7101-600	600mm	B	±0.08mm	790
7101-800	800mm	B	±0.10mm	990
7101-1000	1000mm	B	±0.10mm	1190

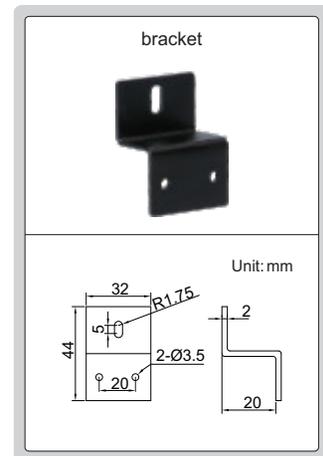
# DIGITAL VERTICAL SCALE



7102-300



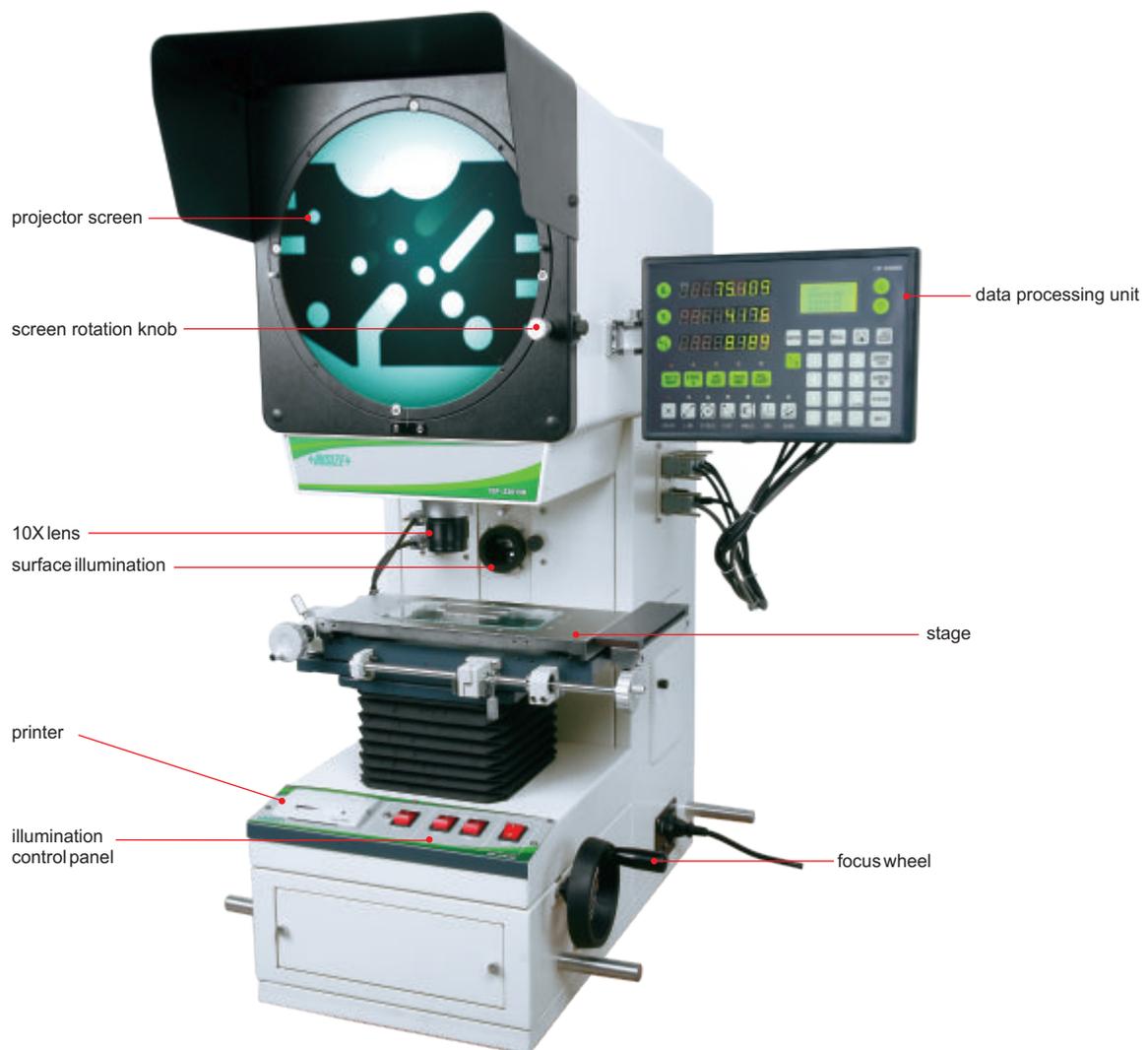
- Resolution: 0.01mm/0.0005"
- Buttons: on/off, zero set, mm/in, data set
- Battery SR44 or LR44
- Data output
- Made of stainless steel
- Supplied with bracket to be mounted on the back



(mm)

Code	Range	Accuracy	B	C	D	E	F	L
7102-100	100mm	±0.02mm	4	20	6	40	24	245
7102-150	150mm	±0.03mm	4	20	6	40	24	296
7102-200	200mm	±0.03mm	4	20	6	40	24	345
7102-300	300mm	±0.04mm	4	20	6	40	24	445
7102-400	400mm	±0.05mm	4	20	6	40	24	545
7102-500	500mm	±0.05mm	5.5	24	8	45	32	685
7102-600	600mm	±0.08mm	5.5	24	8	45	32	785
7102-800	800mm	±0.10mm	5.5	24	8	45	32	985
7102-1000	1000mm	±0.10mm	5.5	24	8	45	32	1185

# PROFILE PROJECTOR CODE ISP-Z3015B\*



\* Add suffix on code No. to devote AC voltage and plug (refer to page V1)

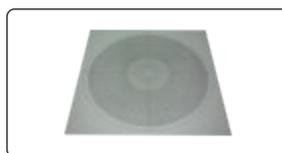
## OPTIONAL ACCESSORY



lens with half-reflection mirror



rotary table  
(glass diameter 100mm, graduation 2°)



overlay chart  
(protractor: graduation 1°  
radius: 1mm increment)



reading scale/standard scale  
(check magnification accuracy)



5X magnifier



holder with clamp



swivel center support



V-block with clamp

## SPECIFICATION

Lens	magnification	10X (standard)	20X (optional)	50X (optional)	100X (optional)
	view field	Ø30mm	Ø15mm	Ø6mm	Ø3mm
	working distance	75mm	69mm	26mm	26mm
Max. workpiece height		85mm	91mm	134mm	134mm
Magnification accuracy		±0.1%			
Image		inverted			
Projector screen		diameter: Ø300mm			
		rotation range: 0°~360°, resolution: 1' or 0.01°, accuracy: 6'			
		reference lines: cross-hairs			
Stage	metal stage size	340×152mm			
	glass stage size	195×95mm			
	X-Y stage travel	range: 150×50mm			
		resolution: 1µm			
	Z(focus) travel range	accuracy: (4+L/25)µm L is the measuring length in mm			
max. load capacity		80mm			
max. load capacity		4kg			
Illumination		contour illumination: 12V/100W halogen lamp, 2-step(high/low) brightness adjustment			
		surface illumination: 24V/150W halogen lamp			
Data processing unit	display	X-Y stage travel, screen rotation			
	output	RS232C			
	function		measure coordinate of point		
			measure coordinate of line		
			measure center coordinate, radius of circle with three points		
			measure distance between two objects		
			measure angle with four points or two lines		
			set origin of coordinate		
			coordinate transform		
	set midpoint of coordinate				
Dimension (L×W×H)		480×780×1150mm			
Weight		135kg			

## STANDARD DELIVERY

Main unit	1pc
10X lens with half-reflection mirror	1pc
Overlay chart clip	4pcs
Level	1pc
Anti-dust cover	1pc

## OPTIONAL ACCESSORY

20X lens with half-reflection mirror	ISP-Z3015B-LENS20X
50X lens with half-reflection mirror	ISP-Z3015B-LENS50X
100X lens with half-reflection mirror	ISP-Z3015B-LENS100X
Rotary table	ISP-Z3015B-TABLE
Overlay chart	ISP-Z3015B-CHART
50mm standard scale	ISP-Z3015B-SCALE50
360mm reading scale	ISP-Z3015B-SCALE360
5X magnifier	ISP-Z3015B-MAGNIFIER
Holder with clamp	ISP-Z3015B-HOLDER
Swivel center support	ISP-Z3015B-SUPPORT
V-block with clamp	ISP-Z3015B-VBLOCK

# MANUAL ROCKWELL HARDNESS TESTER CODE ISH-R150



Ø60mm flat anvil



Ø150mm flat anvil



V-type anvil

## SPECIFICATION

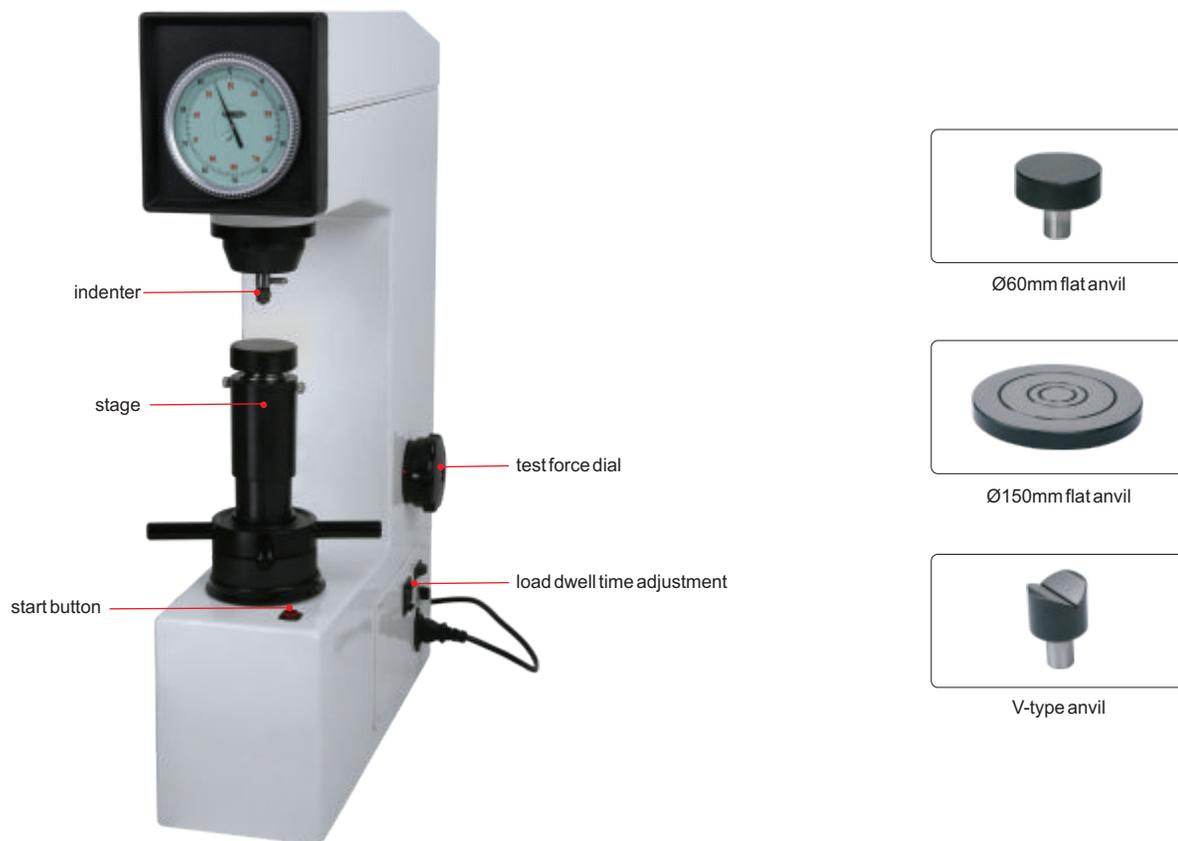
<b>Hardness scale</b>	HRA, HRB, HRC, HRD, HRF, HRG
<b>Preliminary test force</b>	98N
<b>Test force</b>	588N, 980N, 1471N
<b>Display</b>	analogue
<b>Stage elevation</b>	manual
<b>Load control</b>	manual
<b>Min. reading</b>	0.5HR
<b>Max. workpiece height</b>	170mm
<b>Max. workpiece depth</b>	165mm (from the center of indenter)
<b>Dimension</b>	520×160×700mm
<b>Weight</b>	60kg

## STANDARD DELIVERY

<b>Main unit</b>	1pc
<b>Ø60mm flat anvil</b>	1pc
<b>Ø150mm flat anvil</b>	1pc
<b>V-type anvil</b>	1pc
<b>Diamond indenter</b>	1pc

<b>1/16" DIA ball indenter</b>	1pc
<b>Hardness test block HRB85-95</b>	1pc
<b>Hardness test block HRC60-70</b>	1pc
<b>Hardness test block HRC20-30</b>	1pc

# AUTOMATIC ROCKWELL HARDNESS TESTER CODE ISH-MR150\*



## SPECIFICATION

<b>Hardness scale</b>	HRA, HRB, HRC, HRD, HRF, HRG
<b>Preliminary test force</b>	98N
<b>Test force</b>	588N, 980N, 1471N
<b>Display</b>	analogue
<b>Stage elevation</b>	manual
<b>Load control</b>	automatic (load/dwell/unload)
<b>Load dwell time</b>	1-99 second
<b>Min. reading</b>	0.5HR
<b>Max. workpiece height</b>	170mm
<b>Max. workpiece depth</b>	165mm (from the center of indenter)
<b>Dimension</b>	520×160×700mm
<b>Weight</b>	60kg

## STANDARD DELIVERY

<b>Main unit</b>	1pc
<b>Ø60mm flat anvil</b>	1pc
<b>Ø150mm flat anvil</b>	1pc
<b>V-type anvil</b>	1pc
<b>Diamond indenter</b>	1pc

<b>1/16" DIA ball indenter</b>	1pc
<b>Hardness test block HRB85-95</b>	1pc
<b>Hardness test block HRC60-70</b>	1pc
<b>Hardness test block HRC20-30</b>	1pc

\* Add suffix on code No. to devote AC voltage and plug (refer to page V1)



# DIGITAL MICRO-VICKERS HARDNESS TESTER CODE ISH-TDV2000\*



- Measure hardness of thin or small workpieces
- Based on Vickers(HV), can be converted to Rockwell(HRA, HRB and HRC)

## SPECIFICATION

<b>Test force</b>	0.01, 0.025, 0.05, 0.1, 0.2, 0.3, 0.5, 1, 2kgf
<b>Vickers scales</b>	HV0.01, HV0.025, HV0.05, HV0.1, HV0.2, HV0.3, HV0.5, HV1, HV2
<b>Stage elevation</b>	manual
<b>Load control</b>	automatic (load/dwell/unload)
<b>Load dwell time</b>	5-60second (5 second increment)
<b>Objective</b>	10X, 40X
<b>Eyepiece</b>	15X
<b>Total magnification</b>	150X (for observation) 600X (for measurement)
<b>Max. workpiece height</b>	85mm
<b>Max. workpiece depth</b>	85mm (from the center of indenter)
<b>X-Y stage</b>	dimensions: 100×100mm
	travel range: 25×25mm
	graduation: 0.01mm
<b>Data output</b>	RS232C
<b>Dimension</b>	540×500×640mm
<b>Weight</b>	50kg



slice holder



vice



cylinder holder

## STANDARD DELIVERY

<b>Main unit</b>	1pc
<b>10X, 40X objective</b>	1pc of each
<b>Micro Vickers indenter</b>	1pc
<b>Micro Vickers test block (700HV1, 400HV0.2)</b>	1pc of each
<b>Slice holder</b>	1pc
<b>Vice</b>	1pc
<b>Cylinder holder</b>	1pc
<b>Level</b>	1pc

\* Add suffix on code No. to devote AC voltage and plug (refer to page V1)

# BRINELL/ROCKWELL/VICKERS HARDNESS TESTER CODE ISH-BRV\*



Rockwell indenter



Brinell indenter



Vickers indenter



Ø60mm flat anvil for Rockwell



Ø150mm flat anvil for Rockwell



V-type anvil for Rockwell



V-type anvil for Vickers and Brinell

## SPECIFICATION

<b>Rockwell test load</b>	98N preload, 588, 980, 1471N total load
<b>Min. Rockwell reading</b>	0.5HR
<b>Brinell test load</b>	306, 613, 1839N
<b>Vickers test load</b>	294N
<b>Stage elevation</b>	manual
<b>Load control</b>	manual
<b>Magnification of microscope</b>	37.5X/75X (selectable)
<b>Max. workpiece height</b>	180mm
<b>Max. workpiece depth</b>	200mm(from the center of indenter)
<b>Dimension</b>	546×300×767mm
<b>Weight</b>	90kg

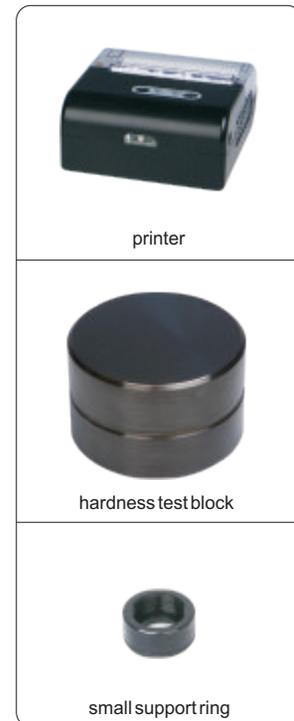
## STANDARD DELIVERY

<b>Main unit</b>	1pc
<b>1/16" DIA ball Rockwell indenter</b>	1pc
<b>Diamond Rockwell indenter</b>	1pc
<b>Ø5mm Brinell indenter</b>	1pc
<b>Ø2.5mm Brinell indenter</b>	1pc
<b>Vickers indenter</b>	1pc
<b>Ø60mm flat anvil for Rockwell</b>	1pc
<b>Ø150mm flat anvil for Rockwell</b>	1pc

<b>V-anvil for Rockwell</b>	1pc
<b>Flat anvil for Vickers and Brinell</b>	1pc
<b>V-anvil for for Vickers and Brinell</b>	1pc
<b>Rockwell test block HRC (high, low)</b>	1pc of each
<b>Rockwell test block HRB</b>	1pc
<b>Brinell test block</b>	1pc
<b>Vickers test block</b>	1pc
<b>Anti-dust cover</b>	1pc

\* Add suffix on code No. to devote AC voltage and plug (refer to page V1)

# PORTABLE HARDNESS TESTER CODE ISH-PHA\*



- Supplied with impact device D
- Based on Leeb(HLD) , converted to Vickers(HV), Brinell(HB), Rockwell(HRC and HRB), Shore(HS) and tensile strength(MPa)
- Connected with printer via bluetooth
- LCD display with backlight
- Automatic power off
- According to ASTM A956

## SPECIFICATION

<b>Min. reading</b>	1HLD, 1HV, 1HB, 0.1HRC, 0.1HRB, 1HS, 1MPa	
<b>Accuracy</b>	±6HLD(when HLD=800)	
<b>Display</b>	Leeb(HLD), converted hardness, material, impact direction, test times, average value, date	
<b>Output</b>	bluetooth	
<b>Applicable workpiece</b>	minimum weight	5kg
		2kg (on solid support)
		0.1kg(coupled on plate)
	minimum thickness: 5mm	
	minimum radius of curved surface: 11 mm	
<b>Power supply</b>	3 × AAA batteries	
<b>Dimension</b>	150 × 80 × 24mm	
<b>Weight</b>	200g	

## STANDARD DELIVERY

<b>Main unit</b>	1pc
<b>Impact device D</b>	1pc
<b>Printer</b>	1pc
<b>Hardness test block</b>	1pc
<b>Small support ring</b>	1pc
<b>Cleaning brush</b>	1pc
<b>AC/DC adapter</b>	1pc

## OPTIONAL ACCESSORY

<b>Support rings</b>	page S10
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## APPLICABLE MATERIAL AND HARDNESS RANGE FOR IMPACT DEVICE D

Material	HLD	HV	HB	HRC	HRB	HS	Tensile strength(MPa)
Steel & cast steel	300-900	81-955	81-654	20-68	38-100	32-100	375-2639
Tool steel	300-840	80-898		20-67			
Stainless steel	300-800	85-802	85-655		46-101		
Cast iron	360-650		93-334				
Cast aluminum alloy	170-570		19-164		23-84		
Brass	200-550		40-173		13-95		
Bronze	300-700		60-290				
Copper	200-690		45-315				

\* Add suffix on code No. to devote AC voltage and plug (refer to page V1)

# PORTABLE HARDNESS TESTER CODE ISH-SPHA\*



- Based on Leeb(HL) , converted to Vickers(HV), Brinell(HB), Rockwell(HRC and HRB), Shore(HS) and tensile strength(MPa)
- Connected with printer via bluetooth
- Up to 800 test results can be saved
- Low and high limits with judgement
- Touch screen operation, large display with backlight
- Language: English, Chinese, Italian, German, French and Russian
- Automatic power off
- According to ASTM A956

## SPECIFICATION

<b>Min. reading</b>	1HL, 1HV, 1HB, 0.1HRC, 0.1HRB, 1HS, 1MPa
<b>Accuracy</b>	±6HL (when HL=800)
<b>Display</b>	Leeb(HL), converted hardness, material, impact direction, test times, average value, deviation, time
<b>Output</b>	bluetooth and USB
<b>Power supply</b>	built-in rechargeable battery
<b>Dimension</b>	135×83×24mm
<b>Weight</b>	350g

## STANDARD DELIVERY

<b>Main unit</b>	1pc
<b>Impact device D</b>	1pc
<b>Printer</b>	1pc
<b>Hardness test block</b>	1pc
<b>Small support ring</b>	1pc
<b>Cleaning brush</b>	1pc
<b>AC/DC adapter</b>	1pc
<b>USB cable and software</b>	1pc
<b>Pen for touch screen</b>	1pc

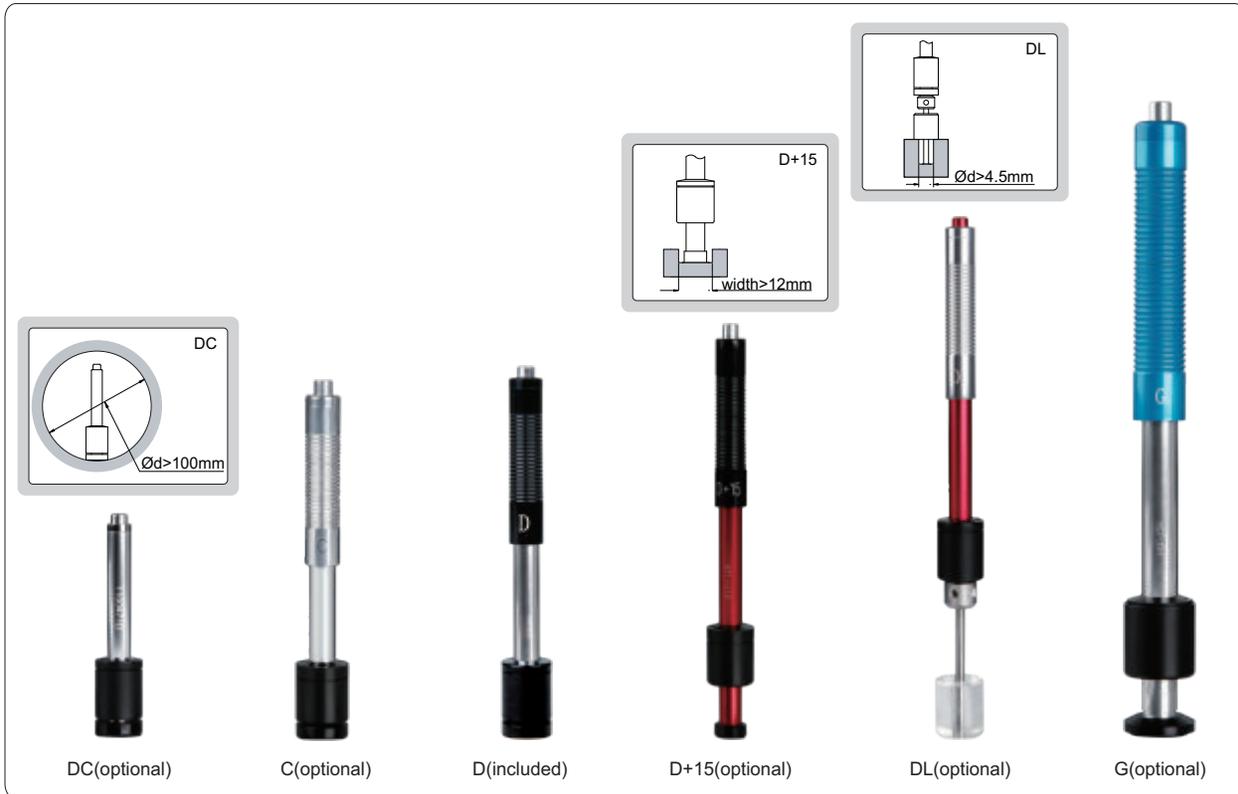
## OPTIONAL ACCESSORY

<b>Impact device DC</b>	ISH-SPHA-DC
<b>Impact device C</b>	ISH-SPHA-C
<b>Impact device D+15</b>	ISH-SPHA-D15
<b>Impact device DL</b>	ISH-SPHA-DL
<b>Impact device G</b>	ISH-SPHA-G
<b>Hardness test block</b>	ISH-BHLG (page S13)
<b>Support rings</b>	page S10

\* Add suffix on code No. to devote AC voltage and plug (refer to page V1)

To be continued

Continued from page S7



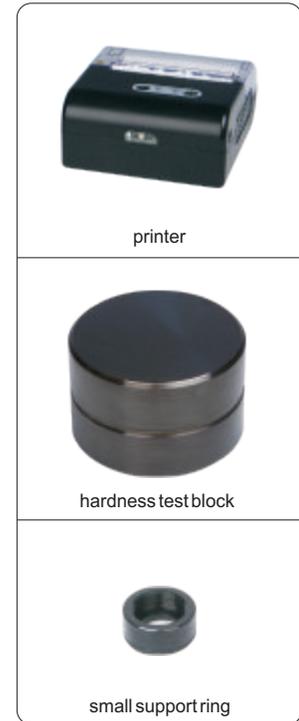
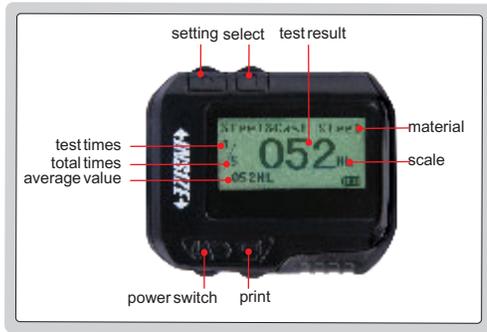
#### APPLICABLE WORKPIECE

Impact device	DC	C	D	D+15	DL	G	
Application	inner wall of cylinder	light, small workpiece	general use	groove or welded corner	narrow channel or small hole	heavy and rough cast workpiece	
Maximum roughness of workpiece(Ra)	1.6 $\mu\text{m}$	0.4 $\mu\text{m}$	1.6 $\mu\text{m}$	1.6 $\mu\text{m}$	1.6 $\mu\text{m}$	7 $\mu\text{m}$	
Minimum weight of workpiece	direct measurement	5kg	1.5kg	5kg	5kg	5kg	15kg
	on solid support	2kg	0.5kg	2kg	2kg	2kg	5kg
	coupled on plate	0.1kg	0.02kg	0.1kg	0.1kg	0.1kg	0.5kg
Minimum thickness of workpiece	5mm	1mm	5mm	5mm	5mm	10mm	

#### APPLICABLE MATERIAL AND HARDNESS RANGE

Material	Scale	DC	C	D	D+15	DL	G
Steel & cast steel	HRC	20-68	20-69.5	20-68	19.3-67.9	20.6-68.2	
	HRB	38-100	38.4-99.5	38-100		37.0-99.9	47.7-99.9
	HB	81-654	80-683	81-654	80-638	81-646	90-646
	HV	81-955	80-996	81-955	180-818	80-950	
	HS	32-100	32-102	32-100	33-99	31-97	
Cast iron	Tensile strength(MPa)			375-2639			
	HB	93-334		93-334			92-326
	HV						
Tool steel	HRC			20-67			
	HV			80-898			
Stainless steel	HRB			46-101			
	HV			85-802			
	HB			85-655			
Cast aluminum alloy	HB			19-164			
	HRB			23-84			
Brass	HB			40-173			
	HRB			13-95			
Bronze	HB			60-290			
Copper	HB			45-315			

# PORTABLE HARDNESS TESTER CODE ISH-SPHD\*



- Impact device D
- Based on Leeb(HLD), converted to Vickers(HV), Brinell(HB), Rockwell(HRC and HRB), Shore(HS) and tensile strength(MPa)
- Automatic direction correction
- Connected with printer via bluetooth
- Up to 500 test results can be saved
- According to ASTM A956

## SPECIFICATION

<b>Min. reading</b>	1HLD, 1HV, 1HB, 0.1HRC, 0.1HRB, 1HS, 1MPa	
<b>Accuracy</b>	±6HLD(when HLD=800)	
<b>Output</b>	USB and bluetooth	
<b>Applicable workpiece</b>	minimum weight	5kg
		2kg (on solid support)
		0.1kg(coupled on plate)
	minimum thickness: 5mm	
minimum radius of curved surface: 11mm		
maximum roughness(Ra): 1.6µm		
<b>Power supply</b>	built-in rechargeable battery	
<b>Dimension</b>	147 × 35 × 22mm	
<b>Weight</b>	65g	

## STANDARD DELIVERY

<b>Main unit</b>	1pc
<b>Printer</b>	1pc
<b>Hardness test block</b>	1pc
<b>Small support ring</b>	1pc
<b>Cleaning brush</b>	1pc
<b>AC/DC adapter</b>	1pc
<b>USB cable and software</b>	1pc

## OPTIONAL ACCESSORY

<b>Support rings</b>	page S10
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## APPLICABLE MATERIAL AND HARDNESS RANGE

Material	HLD	HV	HB	HRC	HRB	HS	Tensile strength(MPa)
Steel & cast steel	300-900	81-955	81-654	20-68	38-100	32-100	375-2639
Tool steel	300-840	80-898		20-67			
Stainless steel	300-800	85-802	85-655		46-101		
Cast iron	360-650		93-334				
Cast aluminum alloy	170-570		19-164		23-84		
Brass	200-550		40-173		13-95		
Bronze	300-700		60-290				
Copper	200-690		45-315				

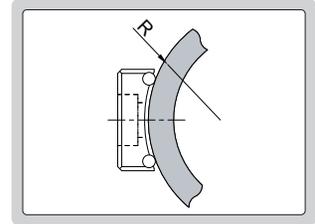
\* Add suffix on code No. to devote AC voltage and plug (refer to page V1)

## SUPPORT RINGS FOR PORTABLE HARDNESS TESTER

type A



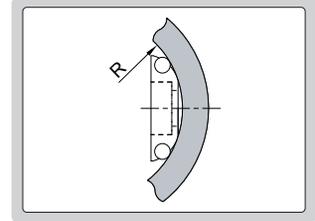
ISH-R1015



type B



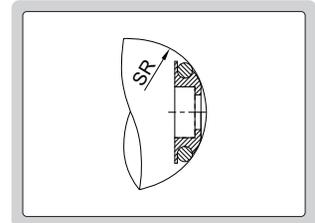
ISH-R1113



type C



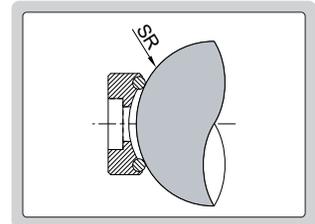
ISH-SR1113



type D



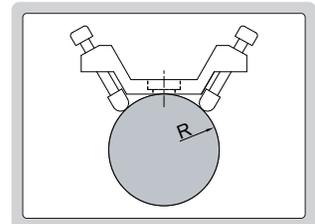
ISH-SR1015



type E



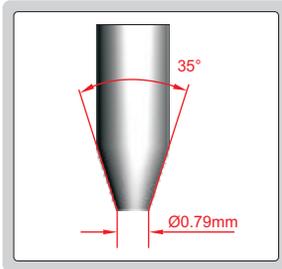
ISH-RUN



### SPECIFICATION

Code	Type	Applicable workpiece	Range (mm)
ISH-R1015	A	cylindrical outside surface	R10 - 15
ISH-R14530			R14.5 - 30
ISH-R2550			R25 - 50
ISH-R1113	B	cylindrical inside surface	R11 - 13
ISH-R12517			R12.5 - 17
ISH-R16530			R16.5 - 30
ISH-SR1113	C	spherical inside surface	SR11 - 13
ISH-SR12517			SR12.5 - 17
ISH-SR16530			SR16.5 - 30
ISH-SR1015	D	spherical outside surface	SR10 - 15
ISH-SR14530			SR14.5 - 30
ISH-RUN	E	cylindrical outside surface	R > 10

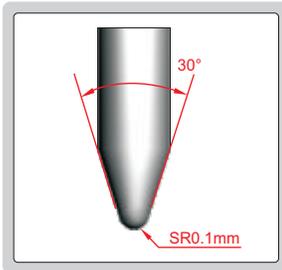
# SHORE DUROMETER



blunt taper indenter



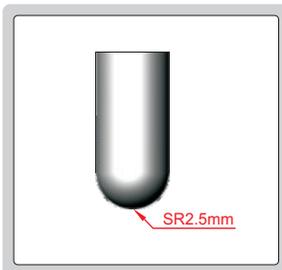
ISH-SA



sharp point indenter



ISH-SD



ball indenter



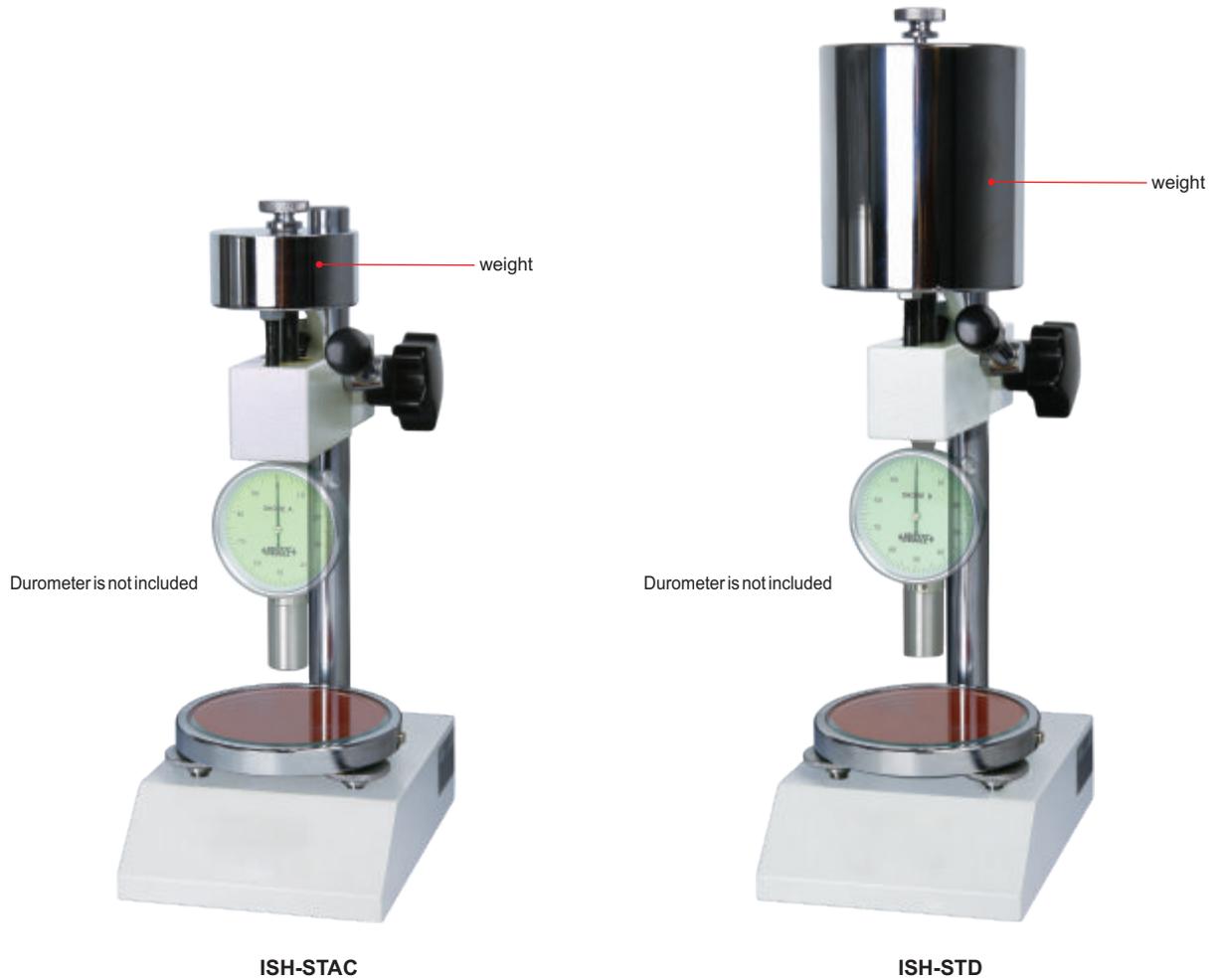
ISH-SC

- According to ISO868, ISO7619, ASTM D 2240
- Optional accessory: hardness test block for ISH-SA (code **ISH-BSA**, page S13), testing stand (page S12)

## SPECIFICATION

Code	ISH-SA	ISH-SD	ISH-SC
Scale	Shore A	Shore D	Shore C
Application	natural rubber, soft elastomer, etc.	hard elastomer, plastic, hard rubber, etc.	foam, sponge, etc.
Measuring range	HA: 10-90	HD: 20-90	HW: 10-90
Resolution	1	1	1
Indenter protrusion	2.5mm	2.5mm	2.5mm
Dimension	115×60×25mm		
Net weight	500g		

## TESTING STAND FOR SHORE DUROMETER



- Can perform repeatable hardness measurement due to fewer possibilities of human error or measurement variations

### SPECIFICATION

Code	ISH-STAC	ISH-STD
Applicable durometer	ISH-SA, ISH-SC	ISH-SD
Stage diameter	Ø100mm	Ø100mm
Maximum workpiece height	75mm	75mm
Mass of weight	1kg	5kg

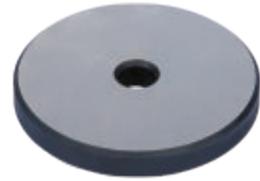
## HARDNESS TEST BLOCK



Rockwell



Vickers



Brinell



Micro-Vickers



Leeb



Shore

### SPECIFICATION

Code	Type	Hardness
ISH-BHRC1	Rockwell C	25-35HRC
ISH-BHRC2		40-50HRC
ISH-BHRC3		55-65HRC
ISH-BHRB	Rockwell B	75-95HRB
ISH-BHRA	Rockwell A	70-85HRA
ISH-BHV5A	Vickers	150-250HV5
ISH-BHV5B		400-500HV5
ISH-BHV5C		650-750HV5
ISH-BHV10A		400-500HV10
ISH-BHV10B		650-750HV10
ISH-BHV30		400-500HV30
ISH-BHB25A	Brinell	75-125HBW 2.5/62.5
ISH-BHB25B		150-250HBW 2.5/187.5
ISH-BHB5A		75-125HBW 5/250
ISH-BHB5B		150-250HBW 5/750
ISH-BHB10A		75-125HBW 10/1000
ISH-BHB10B		150-250HBW 10/3000
ISH-BHV005	Micro-Vickers	200-300HV0.05
ISH-BHV01A		200-300HV0.1
ISH-BHV01B		400-500HV0.1
ISH-BHV02A		400-500HV0.2
ISH-BHV02B		700-800HV0.2
ISH-BHV05		700-800HV0.5
ISH-BHV1		700-800HV1
ISH-BHLD	Leeb	750-830HLD/750-830HLDC/872-916HLDL/757-833HLD+15/812-889HLC
ISH-BHLG		550-630HLG
ISH-BSA	Shore A	7pcs/set: 30-39HA, 40-49HA, 50-59HA, 60-69HA, 70-79HA, 80-89HA, 90-99HA

# FORCE GAUGE



ISF-F100



ISF-F2K

- Push and pull test
- Peak(max.) or tracking work mode



flat push tip



V type push tip



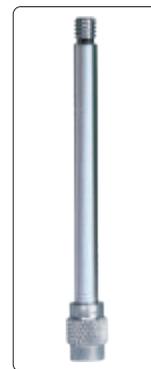
knife-edge push tip



point push tip



pull clamp



extension rod

## SPECIFICATION

Code		ISF-F10	ISF-F20	ISF-F30	ISF-F50	ISF-F100	ISF-F200	ISF-F300	ISF-F500	ISF-F1K	ISF-F2K	ISF-F3K	ISF-F5K
Type		A								B			
Capacity	N	10	20	30	50	100	200	300	500	1000	2000	3000	5000
	kgf	1	2	3	5	10	20	30	50	100	200	300	500
Graduation	N	0.05	0.1	0.2	0.2	0.5	1	2	2	5	10	20	20
Accuracy		±1% full scale								±2% full scale			

## STANDARD DELIVERY

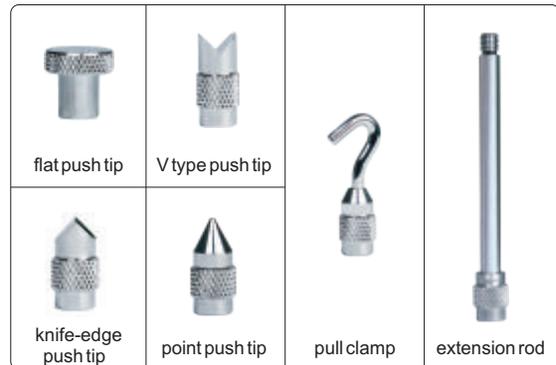
Code	ISF-F10	ISF-F20	ISF-F30	ISF-F50	ISF-F100	ISF-F200	ISF-F300	ISF-F500	ISF-F1K	ISF-F2K	ISF-F3K	ISF-F5K
Main unit	1pc								1pc			
Push tip	4pcs (flat, V type, knife-edge, point)								2pcs (flat, point)			
Pull clamp	1pc								1pc			
Extension rod	1pc								1pc			

# DIGITAL FORCE GAUGE



- Push and pull test
- Peak(max.) or tracking work mode
- Units: kgf, N, lbf
- Low and high limits with judgement
- Maximum 10 memories
- Automatic power off
- Overload alarm
- RS232C output
- Built-in rechargeable battery

accessory for type A



accessory for type B



## SPECIFICATION

Code	ISF-DF10*	ISF-DF20*	ISF-DF50*	ISF-DF100*	ISF-DF200*	ISF-DF500*	ISF-DF1K*	ISF-DF2K*	ISF-DF5K*	ISF-DF10K*	ISF-DF20K*	ISF-DF50K*	ISF-DF100K*
Type	A(internal sensor)						B(external sensor)						
Load capacity	10N	20N	50N	100N	200N	500N	1KN	2KN	5KN	10KN	20KN	50KN	100KN
Resolution(N)	0.005	0.01	0.01	0.05	0.1	0.1	0.5	1	1	5	10	10	50
Measuring range	10% -100% full scale												
Accuracy	±0.5% full scale												

## STANDARD DELIVERY

Code	ISF-DF10	ISF-DF20	ISF-DF50	ISF-DF100	ISF-DF200	ISF-DF500	ISF-DF1K	ISF-DF2K	ISF-DF5K	ISF-DF10K	ISF-DF20K	ISF-DF50K	ISF-DF100K
Main unit	1pc						1pc						
AC/DC adapter	1pc						1pc						
Push/Pull accessory	6pcs (flat push tip, V type push tip, knife-edge push tip, point push tip, pull clamp, extension rod)						4pcs ( flat push tip, adapter, pull clamps)						

## OPTIONAL ACCESSORY

RS232 cable and software	ISF-DF-CABLE
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\*Add suffix on code No. to devote AC voltage and plug (refer to page V1)

## TESTING STAND



ISF-MTD500



ISF-MT500

force gauges are not included



compress test



horizontal orientation test

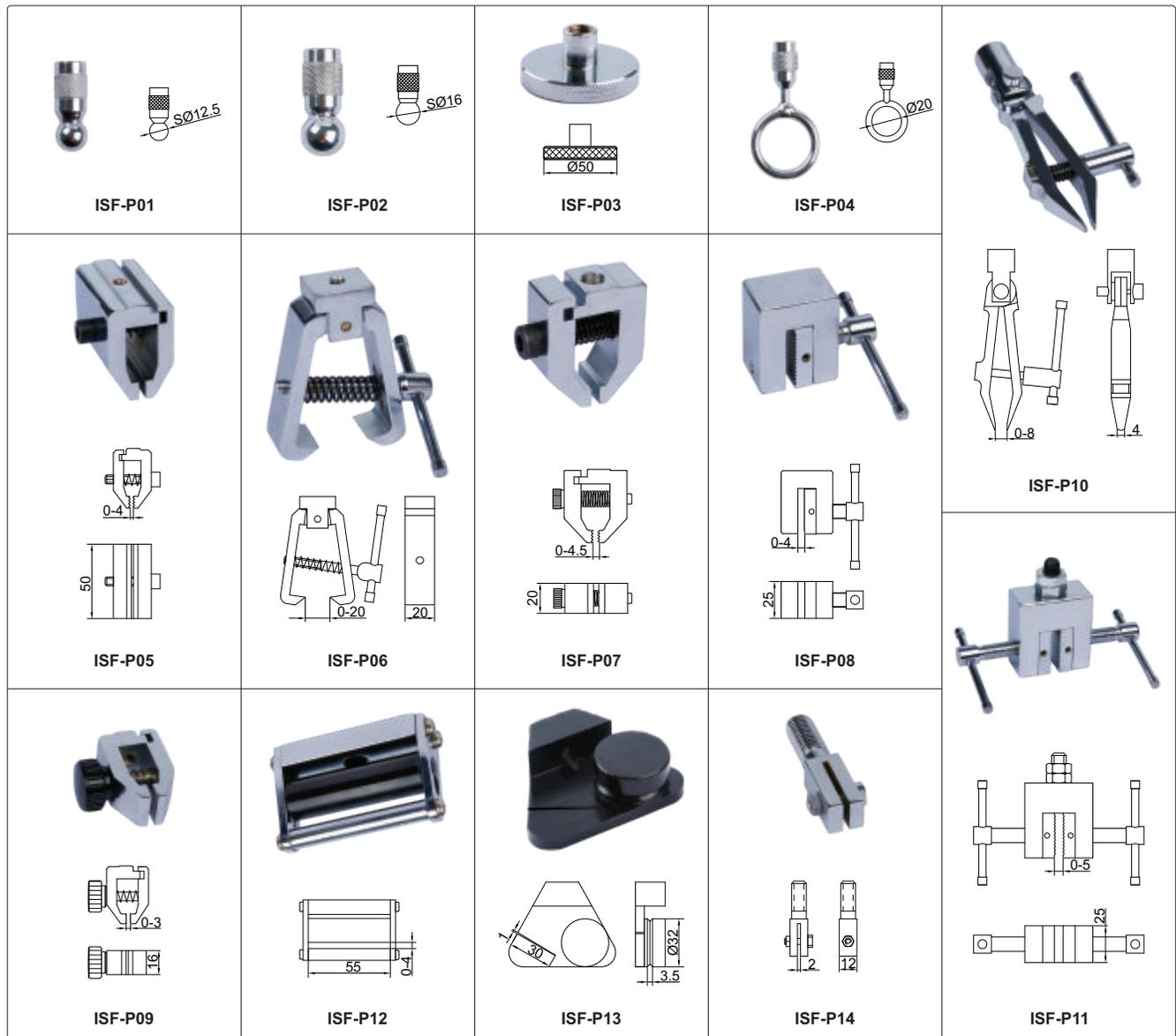
- For tensile and compress test with force gauges
- Both can be used in vertical and horizontal orientation
- ISF-MTD500 is supplied with digital scale(resolution: 0.01mm/0.0005")

### SPECIFICATION

Code	ISF-MTD500	ISF-MT500
Load capacity	500N	
Travel	150mm (3mm vertical movement per revolution of handwheel )	
Dimension	160×240×460mm	
Weight	8.5kg	

# PUSH TIP AND PULL CLAMP FOR FORCE GAUGE

Unit: mm



## SPECIFICATION

### PUSH TIP

Code	Load capacity (N)	Diameter
ISF-P01	5000	12.5mm
ISF-P02	5000	16mm
ISF-P03	3000	50mm

### PULL RING

Code	Load capacity (N)	Diameter
ISF-P04	500	20mm

### SPECIAL PULL CLAMP

Code	Load capacity (N)	Application
ISF-P12	5000	fabric
ISF-P13	5000	wire
ISF-P14	5000	workpiece with hole

### PULL CLAMP

Code	Load capacity (N)	Jaw opening	Jaw width
ISF-P05	3000	0-4mm	50mm
ISF-P06	1000	0-20mm	20mm
ISF-P07	5000	0-4.5mm	20mm
ISF-P08	2000	0-4mm	25mm
ISF-P09	500	0-3mm	16mm
ISF-P10	500	0-8mm	4mm
ISF-P11	5000	0-5mm	25mm

# DIGITAL TORQUE METER

type A



IST-M10

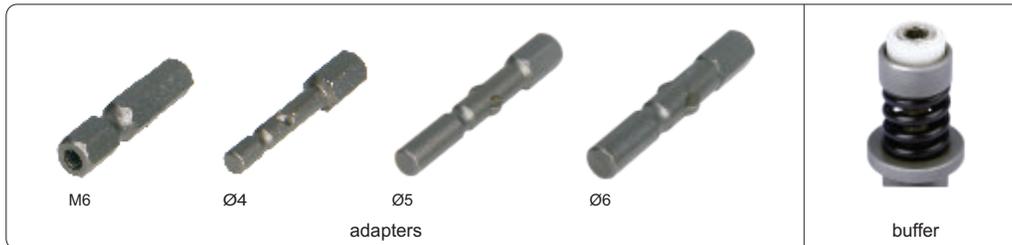
- Clockwise and counter-clockwise measurement
- Peak(max.) or tracking work mode
- Unit: kgf·cm, N·m, lbf·in
- Maximum 10 memories
- Average reading
- Low and high limits with judgement
- RS232C output
- Automatic power off

type B



IST-M50

accessory for type A



## SPECIFICATION

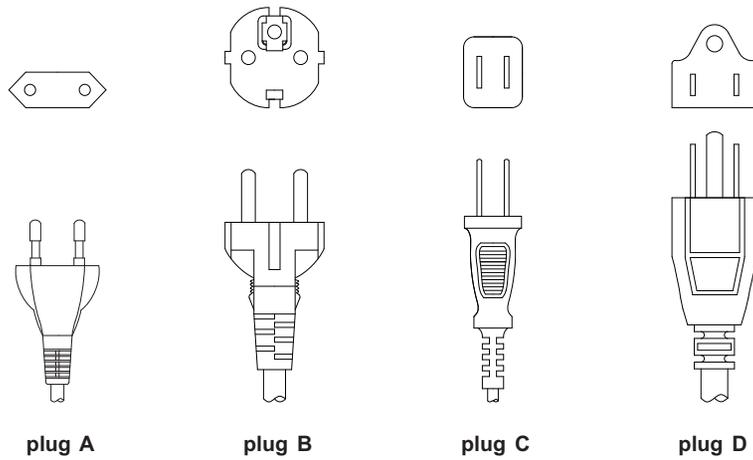
Code	IST-M1*	IST-M2*	IST-M5*	IST-M10*	IST-M20*	IST-M50*	IST-M100*	IST-M200*	IST-M500*
Type	A(internal sensor)					B(external sensor)			
Capacity (N.m)	1	2	5	10	20	50	100	200	500
Resolution (N.m)	0.0005	0.001	0.002	0.005	0.01	0.02	0.05	0.1	0.2
Printer	without					built-in			
Accuracy	±0.5% full scale					±1% full scale			
Max. test speed	5000rpm					5000rpm			
Power	built-in rechargeable battery, for 12 hours working					AC			
Weight	2.4kg					22kg			

## STANDARD DELIVERY

Code	IST-M1	IST-M2	IST-M5	IST-M10	IST-M20	IST-M50	IST-M100	IST-M200	IST-M500
Main unit	1pc					1pc			
Adapter	4pcs(M6, Ø4, Ø5, Ø6)					—			
Buffer	1pc					—			
AC/DC adapter	1pc					—			
RS232 cable and software	1pc					1pc			

\*Add suffix on code No. to devote AC voltage and plug (refer to page V1)

## SUFFIX



- Add suffix on code No. to devote AC voltage and plug, such as ISP-Z3015B-P and ISP-Z3015B-U

Code	Page	Suffix	
		voltage: 220V plug A or B	voltage: 110V plug C or D
ISM-WM200	N6	-P	-U
ISM-DL120	N8	-P	-U
ISM-ZS45	N9	-P	-U
ISM-ZS45T	N9	-P	-U
ISM-S40	N10	-P	-U
ISM-M1000	N11	-P	-U
ISM-M600	N12	-P	-U
ISV-E55	Q1	-P	-U
ISV-E55B	Q2	-P	-U
ISV-MUE55	Q4	-P	-U
ISV-1000D	Q6	-P	-U
ISL-DR2	R1	-P	-U
ISL-DR3	R1	-P	-U
ISP-Z3015B	R6	-P	-U
ISH-MR150	S2	-P	-U
ISH-DR150	S3	-P	-U
ISH-TDV2000	S4	-P	-U
ISH-BRV	S5	-P	-U
ISH-PHA	S6	-P	-U
ISH-SPHA	S7	-P	-U
ISH-SPHD	S9	-P	-U
ISF-DF	T2	-P	-U
IST-M	U1	-P	-U

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1102	Digital Caliper	B3
1106	Digital Caliper	B10
1108	Digital Caliper	B1
1109	Metric Digital Caliper	B1
1110	Digital Caliper With Carbide Tipped Jaws	B2
1111	Mini Digital Caliper	B4
1117	Digital Caliper	B11
1118	Waterproof Digital Caliper	B3
1119	Digital Caliper With Round Depth Bar	B2
1120	Digital Inside Groove Caliper	B20
1121	Digital Inside Point Caliper	B21
1122	Digital Hook Caliper	B28
1123	Digital Inside Knife-edge Caliper	B24
1135	Digital Caliper	B13
1136	Digital Caliper	B12
1139	Plastic Digital Caliper	B4
1141	Digital Depth Gauge	C5
1142	Digital Hook Depth Gauge	C6
1143	Digital Point Depth Gauge	C7
1144	Digital Double Hook Depth Gauge	C6
1145	Digital Tire Thread Depth Gauge	C10
1150	Digital Height Gauge	C1
1151	Digital Height Gauge	C2
1161	Digital Tube Thickness Caliper	B17
1162	Digital Disk Brake Caliper	B29
1163	Digital Snap Gauge	G14
1166	Digital Scribing Caliper	B27
1167	Digital Disk Brake And Pad Caliper	B30
1168	Digital Drum Brake Caliper	B30
1181	Digital Gear Tooth Caliper	B29
1183	Digital Point Caliper	B22
1185	Digital Outside Point Caliper	B19
1186	Digital Offset Caliper	B26
1187	Digital Outside Neck Caliper	B18
1188	Digital Blade Caliper	B23
1192	Digital Offset Centerline Caliper	B25
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1202	Vernier Caliper With Round Depth Bar	B6
1205	Vernier Caliper	B6
1207	Vernier Caliper	B14
1208	Vernier Caliper	B14
1210	Vernier Caliper	B15
1212	No Parallax Vernier Caliper	B8
1214	Vernier Caliper	B15
1215	Long Jaw Vernier Caliper	B16
1219	Vernier Caliper With Titanium Plated Beam	B7
1223	Vernier Caliper	B8
1233	Vernier Caliper	B7
1236	Vernier Caliper	B13
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1240	Vernier Depth Gauge	C7

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1264	Inside Knife-edge Vernier Caliper	B24
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1285	Outside Point Vernier Caliper	B19
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2104	Digital Indicator	F1
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2109	Digital Indicator With Lifting Lever	F3
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2324	Waterproof Dial Indicator	F7
2328	Double Face Dial Indicator	F9
2329	Dial Indicator With Lifting Lever	F8
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