



## MEASURING INSTRUMENTS

High precision instruments to ensure fast and accurate operations



# Content

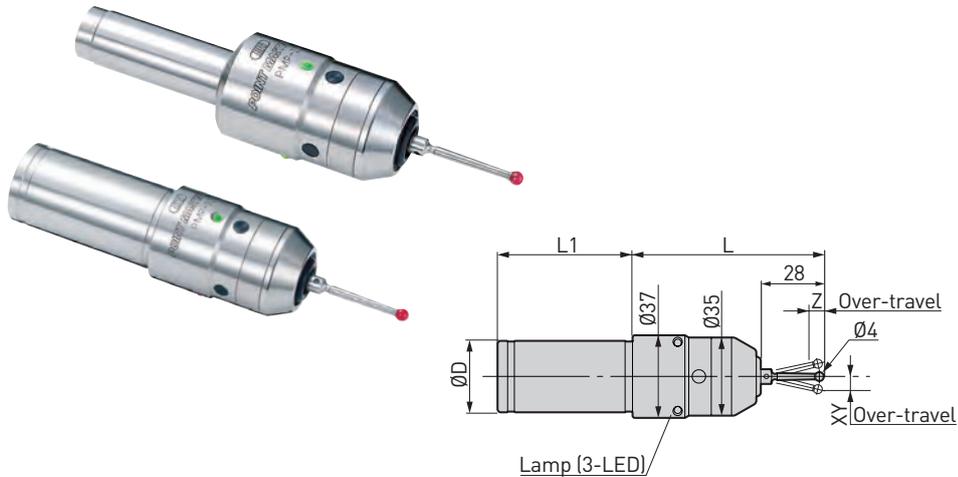
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## Point Master Pro Series

Point Master Pro Series is a precision 3-D touch sensor operating in non-conductive as well as conductive applications, resin, ceramic or coated workpieces, machines with ceramic spindle taper or bearings can all be accommodated.

- LED lamp
- Repeatability  $\pm 1 \mu\text{m}$
- For all materials

### Cylindrical Type



Model	ØD (h7)	L	L1	Over-Travel		Measuring Pressure (N)		Battery (not included)	Battery Life	Standard Stylus (included)	Weight (kg)	Order No.
				XY	Z	XY	Z					
PMP -10	10	75	49	$\pm 12$	5	0.4	1.5	Panasonic Lithium BR435x1	50 hours	ST28-4R	0.4	978.976
-20	20	90	50					LR1x2	50 hours		0.5	961.237

1. PMP-10 has one LED only.
2. Above table indicates the specification when using stylus ST28-4R.
3. There is approx  $5 \mu\text{m}$  lag in X and Y directions and approx.  $2 \mu\text{m}$  lag in Z direction to illuminate LED lamp when stylus touches workpiece surface.
4. Battery is not included.

For Stylus ▶ A180

### BBT Type

JIS B 6339 (BIG-PLUS)

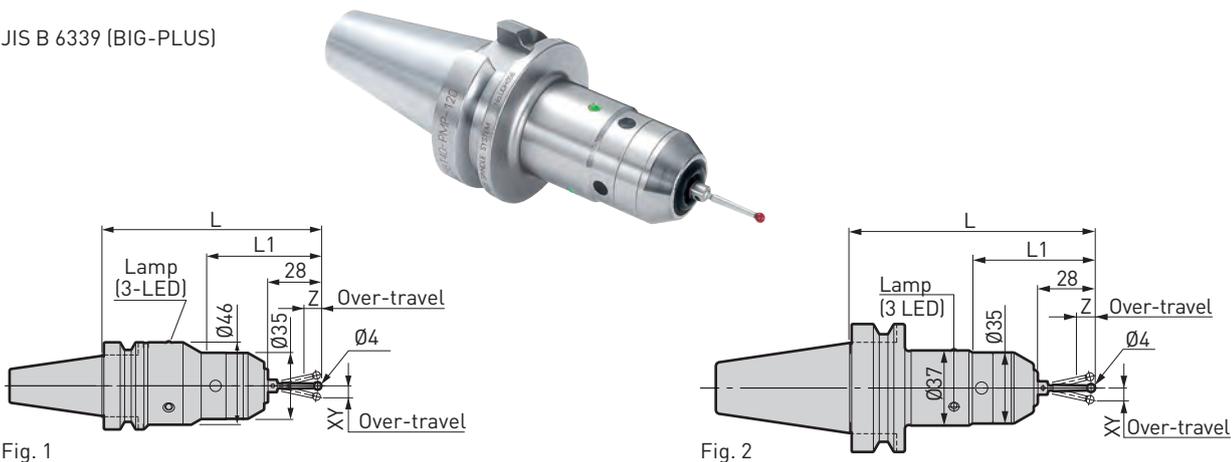


Fig. 1

Fig. 2

BIG-PLUS tools can be used in machining centers with conventional spindles.

Model	Fig.	BBT No.	L	L1	Over-Travel		Measuring Pressure (N)		Battery (not included)	Battery Life	Standard Stylus (included)	Weight (kg)	Order No.
					XY	Z	XY	Z					
BBT30-PMP-115	1	30	115	63	$\pm 12$	5	0.4	1.5	CR2x1	90 hours	ST28-4R	0.8	802.313
BBT40-PMP-120	2	40	120	60					LR1x2	50 hours		1.3	804.649

1. Above table indicates the specification when using stylus ST28-4R.
2. There is approx  $5 \mu\text{m}$  lag in X and Y directions and approx.  $2 \mu\text{m}$  lag in Z direction to illuminate LED lamp when stylus touches workpiece surface.
3. Battery is not included.

For Stylus ▶ A180

## Point Master Pro Series

### HSK Type

ISO 12164(DIN 69893-1) & DIN 69893-5

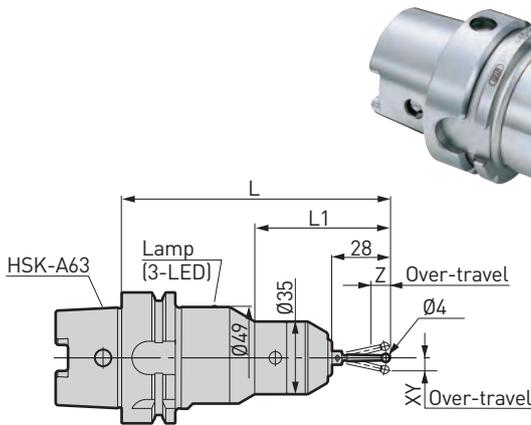


Fig. 1

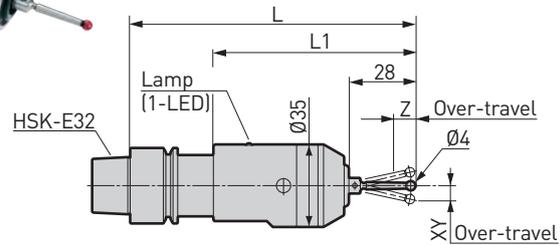


Fig. 2

Model	Fig.	HSK No.	L	L1	Over-Travel		Measuring Pressure (N)		Battery (not included)	Battery Life	Standard Stylus (included)	Weight (kg)	Order No.
					XY	Z	XY	Z					
HSK-A63-PMP-130	1	HSK-A63	130	65	± 12	5	0.4	1.5	CR2x1	90 hours	ST28-4R	1.3	804.656
HSK-E32-PMP-120	2	HSK-E32	120	85	± 12	5	0.4	1.5	SR44x2	24 hours	ST28-4R	0.5	805.561

1. There is approx 5 μm lag in X and Y directions and approx. 2 μm lag in Z direction to illuminate LED lamp when stylus touches workpiece surface.

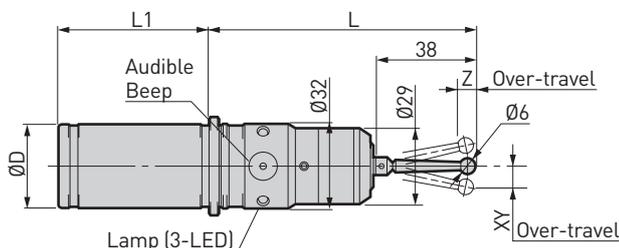
2. Above table indicates the specification when using stylus ST28-4R.  
3. Battery is not included.

For Stylus ▶ A180

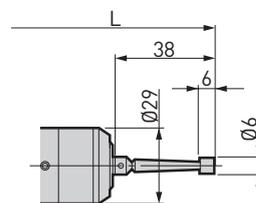
## Point Master PMC Series

Point Master PMC series is ideal touch sensor for electric conductive materials. LED lamp illuminates when the stylus touches the workpiece. Stroke of stylus provides sufficient over-travel for safety.

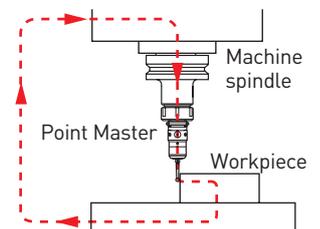
- LED lamp + beep sound
- Repeatability ± 1 μm
- For electric conductive materials



With stylus ST38-6P



With stylus ST38-6x6



Model	ØD h7	L	L1	Over-Travel		Measuring Pressure (N)		Battery (not included)	Battery Life	Standard Stylus (included)	Weight (kg)	Order No.
				XY	Z	XY	Z					
PMC-20	20	110	50	± 12	5	0.6	2.7	LR1x2	90 hours	ST38-6P	0.4	961.238
PMC-20S										ST38-6x6	0.4	804.658

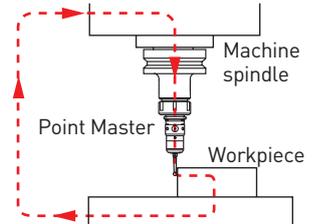
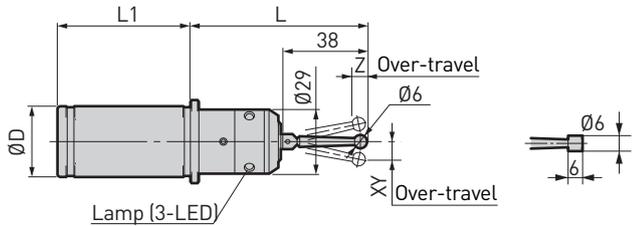
1. Measurement is not possible with non-conductive machine or workpiece.  
2. Point Master PMC utilizes conductivity from the machine, toolholder, Point Master through workpiece.  
3. Battery is not included.

For Stylus ▶ A180

# Point Master PMG Series

LED lamp illuminates when the stylus touches the workpiece.

- LED lamp
- Repeatability  $\pm 1 \mu\text{m}$
- For electric conductive materials



With stylus ST38-6P

With stylus ST38-6x6

Model	ØD h7	L	L1	Over-travel		Measuring Pressure (N)		Battery (not included)	Battery life	Standard Stylus (included)	Weight (kg)	Order No.
				XY	Z	XY	Z					
PMG-20	20	90	50	$\pm 12$	5	0.6	2.7	LR1x2	25 hours	ST38-6P	0.3	961.205
PMG-20S										ST38-6x6		961.206

1. Measurement is not possible with non-conductive machine or workpiece.
2. Point Master PMG utilizes conductivity from the machine, tool holder, point master through workpiece.
3. Battery is not included.

## Alternative Stylus

The stylus (M3 thread) is replaceable. Please replace when different model of stylus required or if damaged.

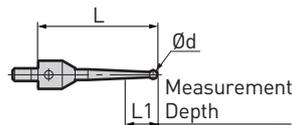


Fig. 1

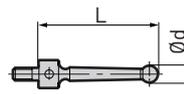


Fig. 2

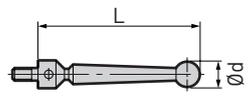


Fig. 3

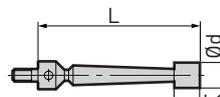
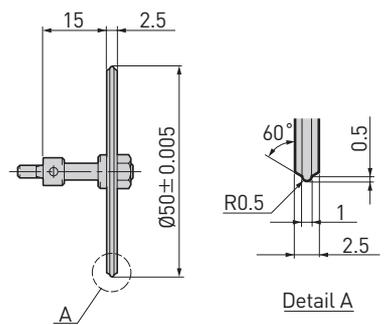


Fig. 4



Model	Fig.	L	L1	Ød	Material	Series	Order No.
ST28 -1P	1	28	2	1	Carbide	PMC·PMP PMG	802.222
-2P			8	2			802.223
-3P			-	3			972.309
-4P				4			972.311
ST38 -6P	3	38	-	6	Steel (SUS)	PMC, PMG	972.304
ST38 -6x6	4		6	6		PMC □ S PMG □ S	972.306
ST28 -4R	2	28	-	4	Ruby	PMP	972.310

1. Stylus model ST38-6x6 is exclusive for PMC-20S and PMG-20S. Runout accuracy may worsen when used on other models.

Model	Order No.
ST15-50K	804.842

1. Ideal for peculiarly shaped workpiece or tapered portion of plastic mold.
2. PMC-series only.



## Base Master Series

Base Master Series is a precision touch sensor to determine workpiece offsets and tool length. Mounted on workpiece surface or machine table, LED lamp illuminates immediately when the cutting edge touches the sensor plate and the position is detected.

### Base Master

The most popular Base Master model with 1µm accuracy. Operates when a conductive circuit is completed.

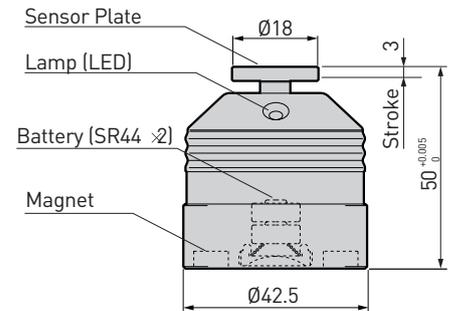
- LED lamp
- For use with conductive cutting tools, workpieces, and machine tools.

Model	Order No.
BM-50	961.201



Height Accuracy	50 <sup>+0.005</sup> <sub>0</sub> mm
Measureable Pressure	3N
Repeatability Accuracy	± 1 µm (2σ)
Min. Measurable Tool Diameter	Ø 1 mm
Battery Life	10 hours (continuous use)
Weight	0.23 kg

1. Battery is not included.



### Base Master Gold

Suitable for various tools and workpieces, including non-conductive materials such as ceramics.

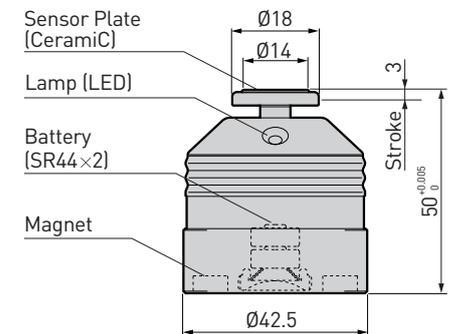
- LED lamp
- For all materials, including non-conductive cutting tools, workpieces, and machine tools

Model	Order No.
BM-50G	961.211



Height Accuracy	50 <sup>+0.005</sup> <sub>0</sub> mm
Measureable Pressure	2N
Repeatability Accuracy	± 1 µm (2σ)
Min. Measurable Tool Diameter	Ø 1 mm
Battery Life	10 hours (continuous use)
Weight	0.24 kg

1. Battery is not included.



### Base Master Micro

Specifically designed for micro cutting tools. Low measuring pressure protects the cutting edge.

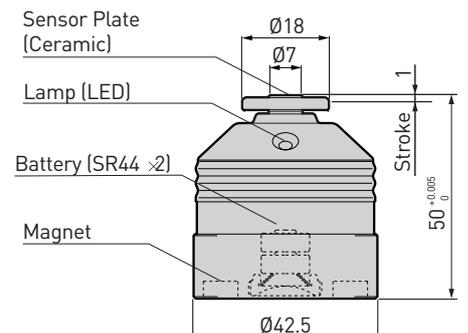
- LED lamp
- For all materials, including non-conductive cutting tools, workpieces, and machine tools

Model	Order No.
BM-50M	961.212



Height Accuracy	50 <sup>+0.005</sup> <sub>0</sub> mm
Measureable Pressure	0.3N
Repeatability Accuracy	± 1 µm (2σ)
Min. Measurable Tool Diameter	Ø 0.05 mm
Battery Life	10 hours (continuous use)
Weight	0.24 kg

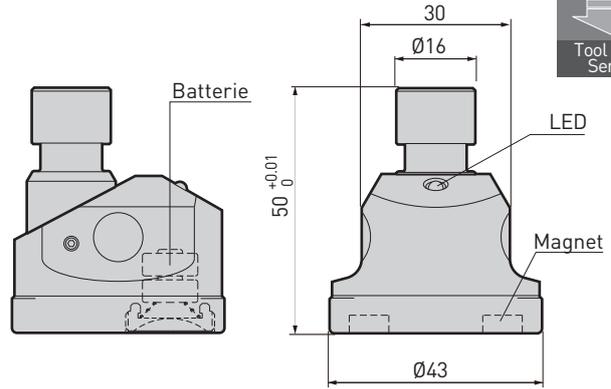
1. Battery is not included.



## Base Master Series

### Base Master Red

- LED lamp
- For all materials, including non-conductive cutting tools, workpieces, and machine tools
- Replaceable sensor plate, BM-MEG, is available as individual part



#### Body Set

Model	Order No.
BM-50R	805.675

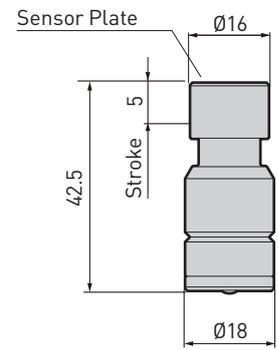
1. BM-MEG is included.

Height Accuracy	50 <sup>+0.01</sup> <sub>0</sub> mm
Repeatability Accuracy	± 1 µm (2σ)
Min. Measureable Tool Diameter	Ø 1 mm
Measureable Pressure	2 N
Sensor Stroke	5 mm
Signal	LED (red)
Battery	SR44 x 2
Weight	0.2 kg

1. Battery is not included.

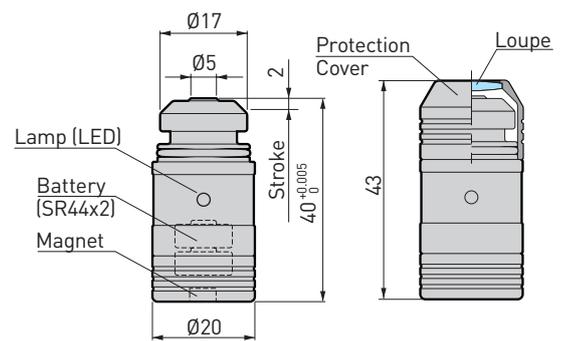
#### Sensor Part

Model	Order No.
BM-MEG	805.674



### Base Master Mini

- LED Lamp
- For all materials, including non-conductive cutting tools, workpieces, and machine tools
- World smallest 20 mm body diameter



Model	Order No.
BMM-20	961.213

1. Protection cover is included.

Height Accuracy	40 <sup>+0.005</sup> <sub>0</sub> mm
Measureable Pressure	1.8 N
Repeatability Accuracy	± 1 µm (2σ)
Min. Measureable Tool Diameter	Ø 0.1 mm
Battery	SR44 x 2
Battery Life	10 hours (continuous use)
Weight	55 g

1. Battery is not included.

## Tool Master

Tool Master is a precision touch sensor with a large dial gauge. LED lamp and sound pre-indicate approach to 100 mm height to ease the detecting operation.



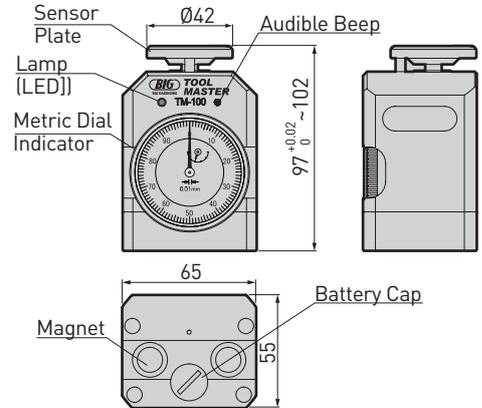
- LED lamp
- Visible dial indicator

Model	Order No.
TM-100	961.347



Height Accuracy	100 $^{+0.02}_0$ mm	
Stroke	5 mm	
Stroke Range	97 - 102 mm	
Measureable Pressure	6N (100 mm)	
Battery	SR4x2	
Weight	1.2 kg	
Dial Gauge	Graduation	0.01 mm
	Indication Tolerance	12 $\mu$ m
	Repeatability	3 $\mu$ m
	Return Tolerance	3 $\mu$ m

1. Dial gauge accuracy in accordance with JISB7503:2011.
2. Battery is not included.



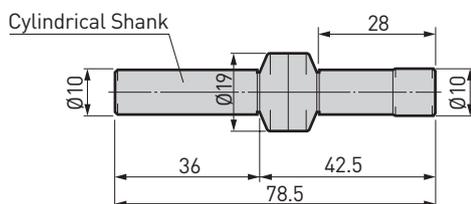
## Accu Center

Accu Center is a simple and precise edge finder offering repeatability within 3  $\mu$ m. Hard chrome plated stylus offers extended life.

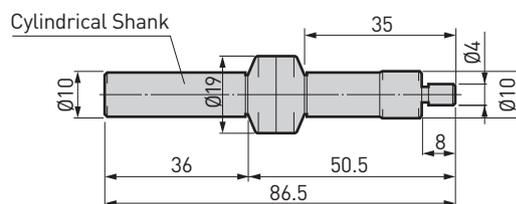
- For all material
- Not for use with horizontal machine tools



Model	Order No.
ACCU-C10	800.483



Model	Order No.
ACCU-C104	800.484



## Base Master Series

Model	Applicable Materials	Height	Repeatability	Min.measureable Tool Diameter	Features
 <p>BM-50</p>	Electric Conductive Materials	50	$\pm 1 \mu\text{m}$ ( $2 \sigma$ )	$\emptyset 1$	Basic type
 <p>BM-50G</p>	All Materials	50	$\pm 1 \mu\text{m}$ ( $2 \sigma$ )	$\emptyset 1$	Most universal type
 <p>BM-50M</p>	All Materials	50	$\pm 1 \mu\text{m}$ ( $2 \sigma$ )	$\emptyset 0.05$	Best for micro tools
 <p>BMM-20</p>	All Materials	40	$\pm 1 \mu\text{m}$ ( $2 \sigma$ )	$\emptyset 0.1$	Compact body design
 <p>BM-50R</p>	All Materials	50	$\pm 1 \mu\text{m}$ ( $2 \sigma$ )	$\emptyset 1$	Replaceable sensor Unit
 <p>TM-100</p>	All Materials	100	$3 \mu\text{m}$	$\emptyset 1$	Visible dial indicator

## Point Master Series

Model	Applicable Materials	Sensor Indicator	Repeatability	Interface	Features
 <p>PMP Series</p>	All materials	LED	$\pm 1 \mu\text{m}$ ( $2 \sigma$ )	BBT HSK Cylindrical	Multi purpose type
 <p>PMC Series</p>	Electric conductive materials	LED + Beep Sound	$\pm 1 \mu\text{m}$ ( $2 \sigma$ )	BBT HSK Cylindrical	Most universal type
 <p>PMG Series</p>	Electric conductive materials	LED	$\pm 1 \mu\text{m}$ ( $2 \sigma$ )	Cylindrical	Basic type
 <p>Accu Centers</p>	All materials	LED	$3 \mu\text{m}$	Cylindrical	Conventional edge finder Only for vertical M/C

## Alignment Tool for ATC arm

For maintenance of machine tool spindle. Measuring equipment of misalignment between the ATC arm and machine tool spindle or magazine pot center.

### How to use

- Load the AL Shank in the machine spindle and mount the AL Flange on the ATC arm.
- Insert the AL Plug into the AL Flange.
- Rotate the AL Plug and read the highest and lowest values of the dial indicator. This direction is the eccentric direction. Half of the gap of the values is the eccentric amount.
- Adjust the position of the ATC arm so that the front end of the AL Plug will be inserted into the AL Flange fully.

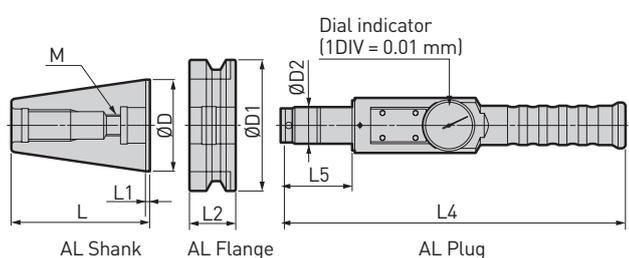
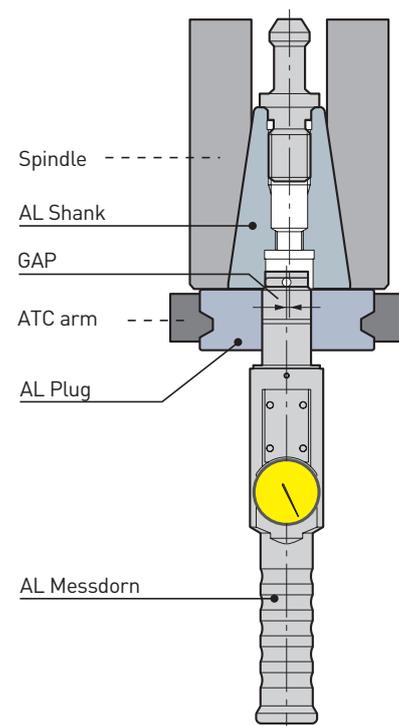


Fig. 1

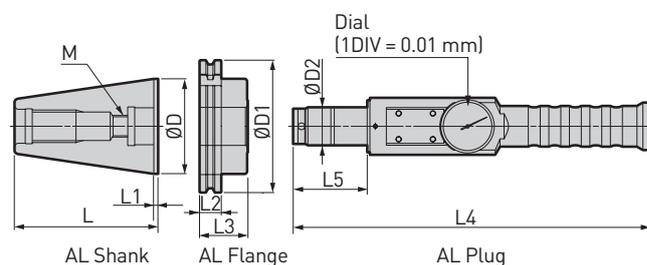


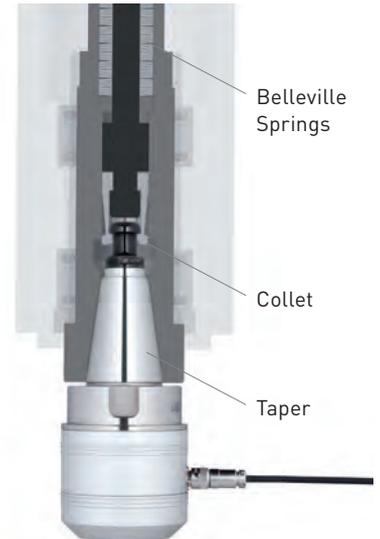
Fig. 2

Model	Fig.	ØD	D1	D2	L	L1	L2	L3	L4	L5	M	Order No.
BT30-ATC18	1	31.75	46.00	18	50.40	2.0	20.0	-	251	44	12	978.238
BT40-ATC20		44.45	63.00	20	67.40	2.0	25.0	-	251	44	12	978.237
BT50-ATC28		69.85	100.00	28	104.80	3.0	35.0	-	261	54	16	978.236
DV40-ATC20	2	44.45	63.55	20	71.60	3.2	15.9	24.3	251	44	12	801.042
DV50-ATC28		69.85	97.50	28	104.95	3.2	15.9	35.3	261	54	16	801.043

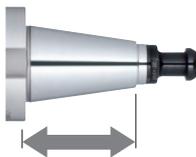
## Dyna Force

Measuring device for pulling force of machine tool spindle.

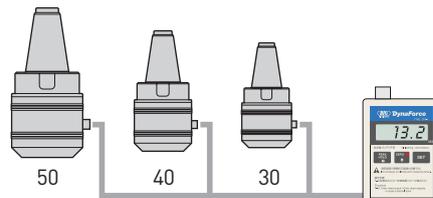
- Periodical measurement avoids reduced rigidity leading to vibrations, loss of machining quality, shortened tool life



**Longer taper shank to enhance reliability**  
Long taper supports itself in long span and stabilizes the value of measurement.



**Only one display for all taper sizes**  
One common display can be used for all taper sizes.



### Specification

Corresponding JIS, DIN, ANSI

#### Measuring device

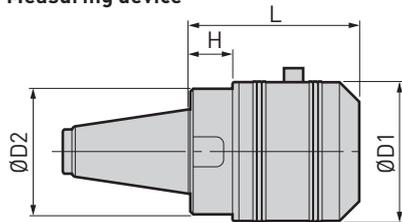


Fig. 1

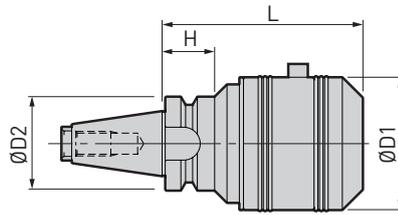


Fig. 2

#### Display



#### Cable



#### Case



Set Model	Contents of Set				Taper Size	Rated Capacity	ØD1	ØD2	L	H	Weight (kg)	Order No.
	Measuring Device	Fig.	Display	Cable								
SNT30-DF10	NT30-DF10	1	DFA-1 (AA batteryx2)	DFC-1 (2 m)	30	10kN (980 kgf)	65	58	80	20	1.5	805.845
SBT30-DF10	BT30-DF10	2					46	98	26	1.6	805.442	
SNT40-DF30	NT40-DF30	1			50	30kN (2 940 kgf)	73	66	90	24	2.5	804.949
SNT50-DF50	NT50-DF50	1					96	90	110	33	6.0	805.423
-DF30 *	-DF30	1			73	70	86	20	3.9	805.846		

1. Each component is also available separately. Please contact BIG KAISER agent if individual component is required.
2. SBT30-DF10 is designed exclusively for machines not capable of automatic tool change.
3. SBT30-DF10 is suitable for BT/BBT30 machines only.
4. Pull stud bolt is to be ordered separately. For DIN, ISO, ANSI & CAT standard machines, exclusive pull stud bolt for dyna force is required.
5. SNT50-DF30 marked with \* is a light-weight model.

### Exclusive pull stud bolts for Dyna Force

An exclusive pull stud bolt is needed for a machine spindle in DIN, ANSI or CAT standard.

Pull stud bolts in MAS and JIS standards can be used. These pull stud bolts are not suitable for the SBT30-DF10.

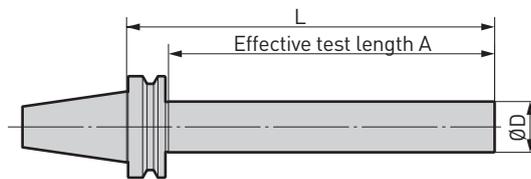


Standard No.	Shank No. 30		Shank No. 40		Shank No. 50	
	Model	Order No.	Model	Order No.	Model	Order No.
DIN69872	DF-PDV30	804.683	DF-PDV40A	804.685	DF-PDV50A	804.686
ISO7388	Type A	-				
	Type B	-				
ANSI B5.50	DF-PAV30	804.680	DF-PAV40	804.681	DF-PAV50	804.682
ASME B5.50	DF-PCV30	804.684	DF-PCV40	804.687	DF-PCV50	804.688

## Dyna Test (BT Shank)

Periodic inspection of machine tools to control production stability.  
Shorter models are ideal for measuring ATC repeatability.

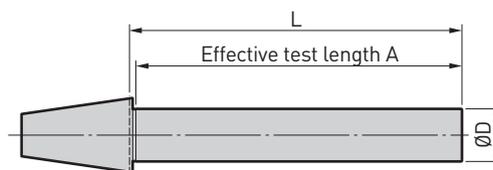
### BIG-PLUS BT type



Model	L	A	ØD	Order No.
BBT30 -32 - L150	150	125	32	800.054
	- L235	235		210
BBT40 -50 - L200	200	170	50	800.065
	- L350	350		320
BBT50 -50 - L200	200	159	50	800.184
	- L360	360		319

1. Taper length is in accordance with JIS BT standard.

### Conventional BT and BIG-PLUS BT type



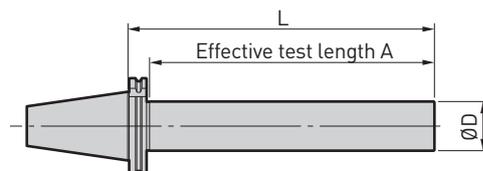
Model	L	A	ØD	Order No.
NT30 -32 - L150	150	144	32	801.759
	- L225	225		219
NT40 -50 - L200	200	184	50	801.760
	- L335	335		319
NT50 -50 - L200	200	194	50	801.762
	- L335	335		319

1. Taper length is in accordance with JIS BT standard.

## Dyna Test (DV Shank)

Periodic inspection of machine tools to control production stability.

### BIG-PLUS DV type



Model	L	A	ØD	Order No.
BDV40 -50 - L340SD	340	310	50	802.834
BDV50 -50 - L340SD	340	318		961.269

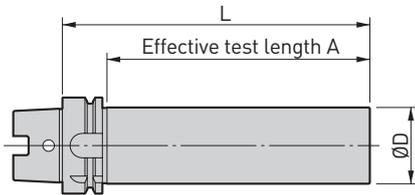
## Dyna Test (HSK Shank)

For inspection and adjustment of machine spindle.



### HSK-A Type

DIN 69893-1 & ISO 12164-1

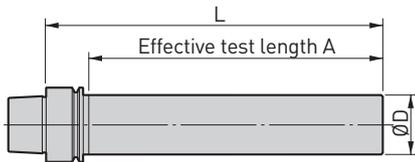


Model	L	A	ØD	Order No.
HSK -A40-32 -L180SD	180	157	32	801.169
-A50-32 -L240SD	240	211		978.198
-A63-50 -L350SD	350	321	50	978.222
-A100-50 -L350SD	350	318		801.073

1. The drive key slots are symmetrical to allow the HSK form A dyna test bar to be indexed 180 degrees.

### HSK-E Type

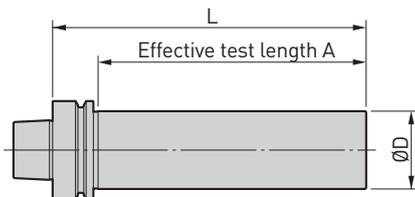
DIN 69893-5



Model	L	A	ØD	Order No.
HSK -E25-20 -L175	175	163	20	978.307
-E32-20 -L180	180	158		802.831
-E40-32 -L180		157	32	978.178
-E50-32 -L240	240	211		979.140

### HSK-F Type

DIN V 69893-6



Model	L	A	ØD	Order No.
HSK -F63-50 -L350	350	321	50	802.832

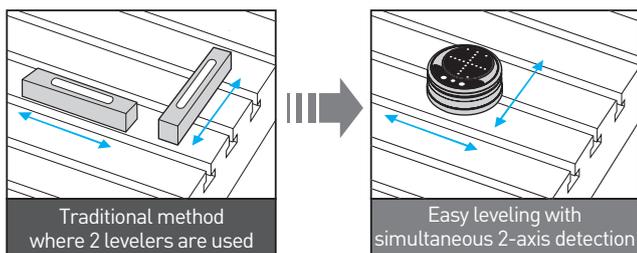
## Level Master

2-axis simultaneous detection leveler. LED displays level conditions for both axis simultaneously. LED and buzzer indication when leveling is completed.

- LED lamp + beep sound
- Simultaneous 2-axis detection saves the extra time & cost of using 2 levelers.



### Simultaneous 2-axis detection



<b>Model</b>	<b>Order No.</b>
LVM01	801.673

<b>Minimum Read Value</b>	0.01 mm Inclination/m
<b>Power Source</b>	Alkaline batteries (AAA x 4 pcs)
<b>Auto Power Off</b>	30 minutes after power is turned on
<b>Operational Temperature</b>	0-40°C (Recommended 20°C ± 5°)
<b>Battery Life</b>	50 hours
<b>Dimensions</b>	Ø 109 mm x 46 mm H
<b>Weight</b>	985 g

1. Batteries are not included.

Note: In the case of high precision leveling, we recommend to check the Level Master in advance on a reference level, such as a level block.

### LED & buzzer indicate leveling completion

#### High Mode

when the required level condition is within 0.01mm/1m

#### Low Mode

when the required level condition is within 0.1mm/1m

LED (blue) & buzzer are simultaneously activated

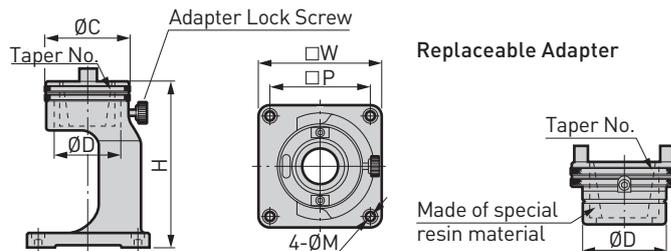
#### Included

- Level Master
- Aluminum case
- Manual
- Warranty
- Inspection certificate

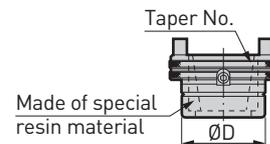


## Tooling Mate

For BBT (BT) and BDV (DV)



Replaceable Adapter

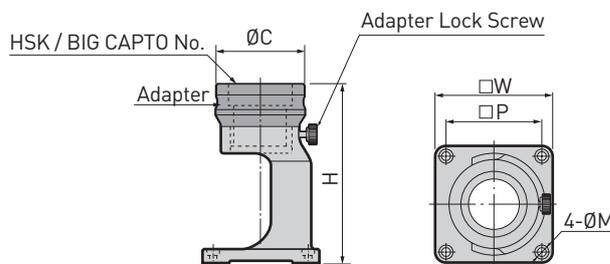


Model	BT / DV No.	ØC	ØD	H	□ W	□ P	ØM	Order No.	Adapter Model	Order No.
TMS40 -20	BT20	76	60	150	110	90	7 (for M6)	805.489	TMA40 -20	805.894
-30	BT30							961.270	-30	802.944
-40	BT40/DV40							961.271	-40	802.945
TMS50 -40	BT40/DV40	105	88	190	160	130	9 (for M8)	961.272	TMA50 -40	802.942
-50	BT50/DV50							961.273	-50	802.943

- 1 pce. of adapter is included.
- Adapter can be ordered individually.

For HSK and BIG CAPTO

Innovative "Two-way clutch needle roller clamping system" assures secure clamping at the tool flange periphery.

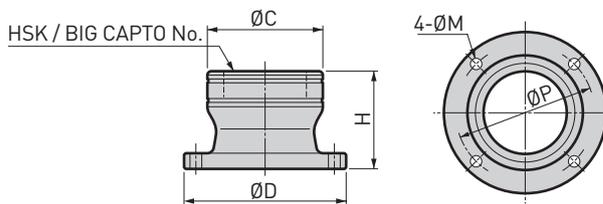


Model	HSK / BIG CAPTO No.	ØC	H	□ W	□ P	ØM	Order No.	Adapter Model	Order No.
TMS40 - 32R	32/C3	76	165	110	90	7 (for M6)	961.339	TMA40 - 32R	802.948
- 40R	40/C4						961.342	- 40R	802.949
- 50R	50/C5						961.346	- 50R	802.950
- 63R	63/C6	87	172	160	130	9 (for M8)	961.338	- 63R	972.331
TMS50 - 80R	80/C8	114	215				802.308	TMA50 - 80R	802.946
-100R	100	124	219	802.307	-100R	802.947			

- 1 pce. of adapter is included.
- Adapter can be ordered individually.

## Kombi Grip

For HSK and BIG CAPTO

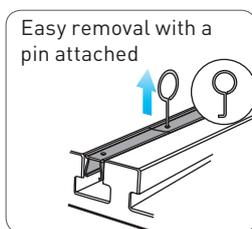


Model	HSK No.	BIG CAPTO No.	ØC	ØD	H	ØP	ØM	Order No.
KG 25R	25	-	48	79	65	62	7 (for M6)	961.291
32R	32	C3	55	85		69		961.292
40R	40	C4	63	93	77	961.293		
50R	50	C5	75	105	70	89	9 (for M8)	961.294
63R	63	C6	88	123.5		75		105.5
80R	80	C8	107	142	90	124		961.296
100R	100	-	127	162	100	144	961.297	

- 4 pcs. of cap bolts to mount on the table are not included.

## T-Slot Clean

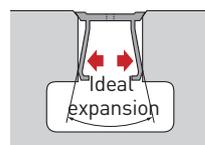
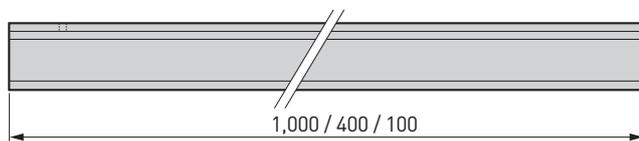
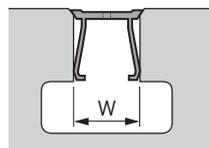
Improve efficiency of table cleaning. Save you from cleaning T-slots packed with swarf. Quick discharge of swarf out of a machine.



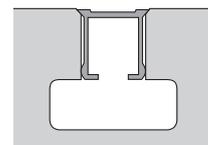
Before



After



BIG KAISER



Other manufacturer

Coolant removes heated swarf and avoids thermal displacement of machine.

### Standard Set

Set Model	W	Contents of Set	Order No.
TS14-S	14	400 mm x 4 pieces	961.252
TS18-S	18	100 mm x 4 pieces	961.253
TS22-S	22	Removal pin x 1 piece	961.254

### 400 mm Set

Set Model	W	Contents of Set	Order No.
TS14-400L-100P	14	400 mm x 100 pieces Removal pin x 10 piece	961.255
TS18-400L-100P	18		961.256
TS22-400L-100P	22		961.257

### 1000 mm Set

#### For large machines

1000 mm (1 m) long version is available.

Set Model	W	Contents of Set	Order No.
TS18-1000L-10P	18	1000 mm x 10 pieces	802.785
TS22-1000L-10P	22	Removal pin x 1 piece	802.787

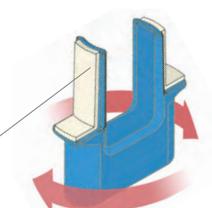
## Spindle Cleaner

#### For BIG CAPTO

Easy cleaning of BIG CAPTO polygon taper.



Cleaning strips



Model	BIG CAPTO No.	Order No.
SC -C3	C3	973.194
-C4	C4	973.195
-C5	C5	973.196
-C6	C6	973.197
-C8	C8	973.198

# Dyna Line

## Precision measuring of tool diameter and runout accuracy

Eliminates machining defects by measuring total runout accuracy at high rotation speeds. Also usable as a maintenance/evaluation tool for runout accuracy of machine spindle.

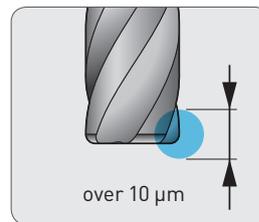
- Non-contact measuring with CMOS linear image sensor
- In-machine measuring
- Portable (usable with 6 C-cell batteries)



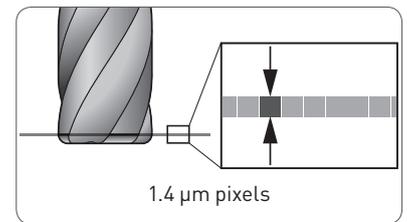
## The innovative linear image measuring method

CMOS sensors are often found in hi-tech equipment such as digital cameras and smart phones. With pixels measuring 1.4 µm, Dyna Line uses the latest CMOS sensors for quick and precise measuring.

### Laser-dot method



### Dyna Line linear sensor



## Measurement at high rotation speeds up to 400 m/min

With a compact size of just an A5 sheet of paper, easy measuring is possible on the machine table. Dyna Line is also usable as a maintenance tool for your machining centre, as well as a measuring tool and axis runout accuracy and tool diameter.

- Diameter measurable at processing rotational speeds
- No potential of damage to delicate tools
- Measurement range: Ø 0.1 - 50 mm
- Indicated resolution: 1 µm
- Can run on 6 C-cell batteries
- Measurable tools with an odd number of teeth



## Three measurement modes depending on type of tool

### Diameter Measuring

Measurable diameter and runout at processing rotation speed.

$$d \leq \varnothing 4$$

Cutting tool with less than Ø 4 mm

Mode

#### Max. 400 m/min

Simultaneous measuring of the tool diameter and runout accuracy of even-numbered teeth at processing rotation speed is possible. Please refer to the right page for tools with an odd number of teeth.

$$d > \varnothing 4$$

Cutting tool with more than Ø 4 mm

Mode

#### Max. 400 m/min

The machine spindle is offset the amount of radius for tools larger than detection range (4.2 mm), and the edge of the tool is measured from the centre of the sensor. Please refer to the right page for tools with an odd number of teeth.

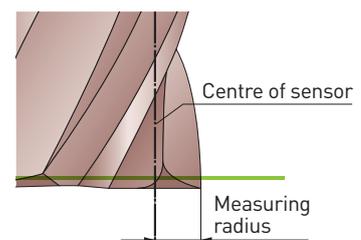
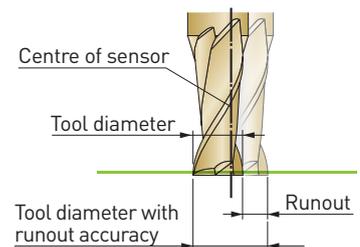
e.g.) Ø 6 endmill

Spindle offset: 3 mm

Displayed measurement result: + 0.002 mm

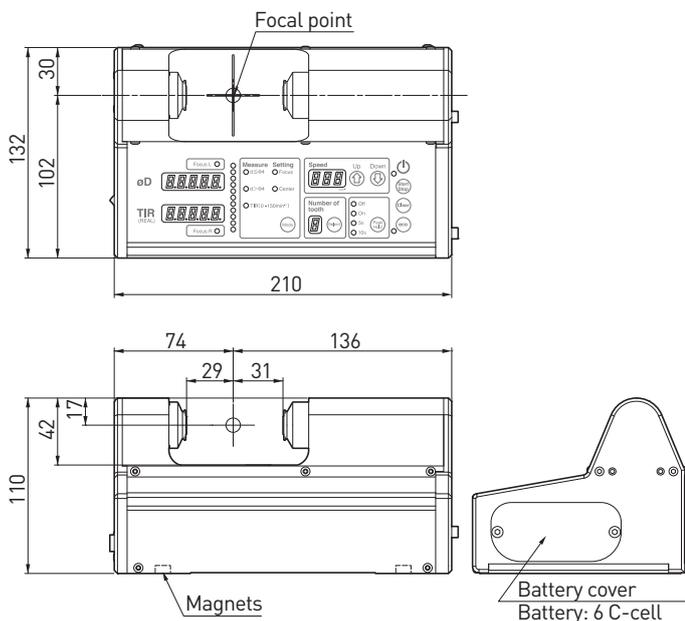
Diameter includes the runout of the rotation:

$$(3 + 0.002) \times 2 = 6.004 \text{ mm}$$



## Main dimensions / Specifications

### Body



### Specifications

Model	DLX4-P	
Detection Method	CMOS linear image sensor	
Light source	LED	
Indicated Resolution	1 μm	
Repeatability	1 μm	
Measurement Range	∅ 0.1 ~ 50 mm (∅ 4.0 or more must be offset)	
Detection Range	4.2 mm	
Ambient temperature	0 ~ + 40°C	
Ambient humidity	30 ~ 75% RH (no condensation)	
Power Source	AC Adapter	AC100 ~ AC240V
	Dry Battery	6 C-cell batteries
Power Consumption	5W	
Battery Life	Normal mode	3 hours
	Eco mode	5 hours
Weight	3.0 kg (without batteries)	
Accessories	Setting tool (model: DCT-300) Protective case Edge cleaner (model: STP-EC)	

### T.I.R. Measuring

Measurable each cutting edge of multiple tools and test bar.

#### T.I.R.

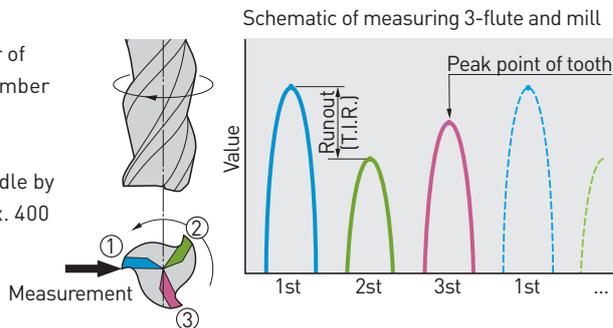
Total indicated runout

#### Mode

#### Max. 150 min<sup>-1</sup>

T.I.R. tools over ∅ 4 mm or with an odd number of teeth can be easily measured by setting the number of teeth and the r.p.m. (up to 9 flutes).

Easily able to measure runout of machine spindle by using test bar as maintenance equipment (max. 400 m/min).



### Measurement mode selection

Tool Diameter	Tool Type	Measurement Items	Mode	Rotation Speed
∅ 0.1 ~ ∅ 4	Even number of teeth, test bar	Diameter, runout	d ≤ ∅ 4	Max. 400 m/min
	Odd number of teeth	Diameter Runout		
∅ 4 ~ ∅ 50	Tool	Diameter	d > ∅ 4	Max. 400 m/min
		Runout	T.I.R.	20 ~ 150 min <sup>-1</sup>
Test bar	Diameter, runout			Max. 400 m/min

1. It may not measure with unequal spacing.

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