


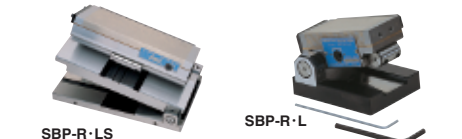
SINE BAR CHUCKS

Types of Sine Bar Chucks

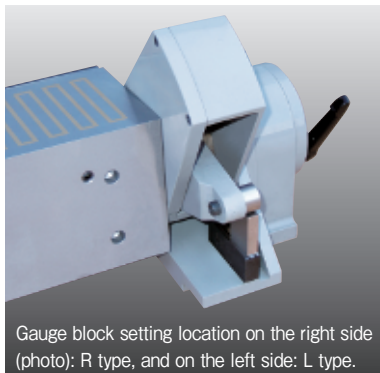
The sine bar chucks are used to set accurate angles of workpieces for highly precise grinding or as an inspection fixture. This is a type of chuck that utilizes angle setting by a sine bar and the chuck work face can be set to a desired angle efficiently.

Feature

The sine bar chucks come in various types such as electromagnetic, water-cooled, permanent electromagnetic, permanent magnetic and in various sizes.

Type	Model	Features	Remarks
Rotary electromagnetic	SBE-U	Dust cover provided on gauge block	
Rotary water-cooled electromagnetic	SBC-U	High precision water-cooled type	
Rotary permanent electromagnetic	SBEP-U	Momentary power application for minimized heat generation	
Rotary permanent magnetic	SBP-U	Dust cover provided on gauge block	
Sine bar chuck compound type	SBP-R·LS	Thin compound type	
Sine bar chuck single type	SBP-R·S	Thin single type	
	SBP-R·L	Tilting in longitudinal direction	

※The rotary tilting sine bar chuck comes with a gauge block (for 0° setting) of 25.882 mm of JIS Class B.



Gauge block setting location on the right side (photo): R type, and on the left side: L type.



The lock lever is installed on both sides.

Model SBE-U TILT TYPE ELECTROMAGNETIC SINE BAR CHUCK

Environmentally friendly



SBE-1131UFR-C

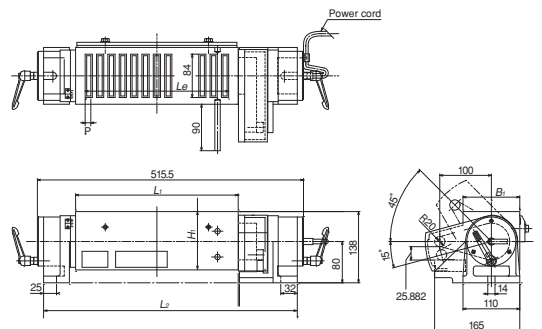
Chuck controller required additionally

[Application]

Suitable for high precision angle grinding of molds and jigs.

[Features]

- The gauge block can be set on either the right side (R) or left side (L) to meet the rotating direction of the grinding wheel of the grinder.
- The chuck can be smoothly tilted and easily operated.
- An angle can be set finely by one try with the clamp system.
- The position can be changed and secured by pulling the lever in the axial direction.
- When the dustproof cover of the gauge block is opened beyond about 60 degrees, it is locked to facilitate setup and cleaning.



[mm (in.)]

Model	Nominal Size	Work Face				Pole Pitch P	Mounting Length L ₂	Height		Tilt Angle	Angle Accuracy	Voltage	Current	Mass	Electro Chuck Master	Remarks
		B ₁	L ₁	L _e	H ₁			Angle 0°, Min.	Cover fully open, Max.							
SBE-1131UFR-C	110(4.33) × 315(12.4)	110(4.33)	315(12.4)	278(10.9)	113(4.44)	11(3+8) 0.43 (0.11+0.31)	492(19.3)	138(5.43)	210(8.26)	-15° - +45°	0.007/100 max.	90 VDC	0.3A	36kg/79 lb	ES-M103B ES-M305B EH-V305A	※For types with a combination of a rectifier and demagnetizer, see pages of "Chuck Controllers."
SBE-1131UFL-C																

※The type having the gauge block setting area on the right side is indicated by "R" and that on the left side indicated by "L".

※The chuck controller and clamp parts are not included. The KANETEC chucks work best when a KANETEC chuck controller is used.

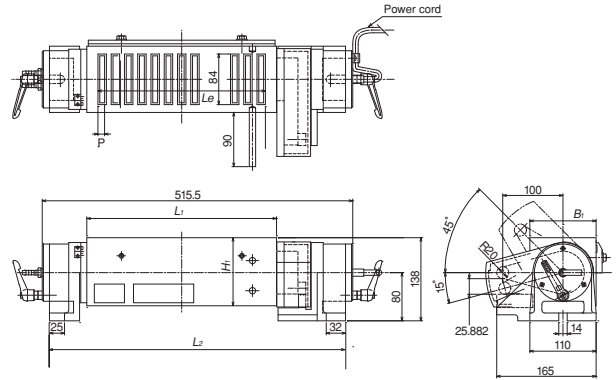
※A gauge block (25.882 mm) for 0° is included. For the mechanism of angle setting, see the bottom part on page 51. The conversion table included with the product facilitates angle setting.

Model **SBC-U** TILT TYPE WATER-COOLED ELECTROMAGNETIC SINE BAR CHUCK



SBC-1131UFL-C

Chuck controller required additionally



[Application]

Constructed to enable real-time internal cooling of heat generated when power is applied to the electromagnet, making these chucks suitable for higher precision grinding operation.

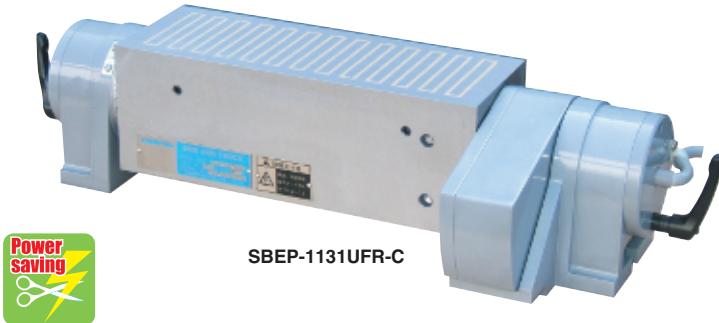
[Features]

- Change in accuracy is minimized by supplying coolant at a flow rate of 2 to 4 L/min to minimize coil heating.
- The mechanical functions and features are almost the same as those of Model SBE chucks.

Model	Nominal Size	Work Face				Pole Pitch	Mounting Length	Height		Tilt Angle	Angle Accuracy	Voltage	Current	Mass	Electro Chuck Master	Remarks
		B ₁	L ₁	L _e	H ₁	P	L ₂	Angle 0°, Min.	Cover fully open, Max.							
SBC-1131UFR-C	110(4.33) × 315(12.4)	110(4.33)	315(12.4)	278(10.9)	113(4.44)	11(3+8) 0.43 (0.11+0.31)	492(19.3)	138(5.43)	210(8.26)	-15° - +45°	0.007/100 max.	90 VDC	0.3A	36kg/79 lb	ES-M103B ES-M305B EH-V305A	※For models with a combination of a rectifier and demagnetizer, see pages of "Chuck Controllers." P17-P20
SBC-1131UFL-C																

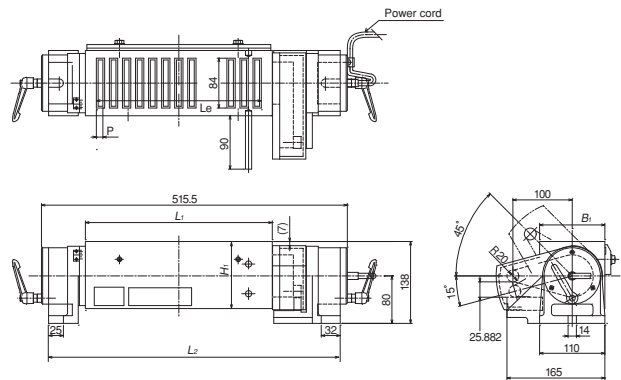
※The type having the gauge block setting area on the right side is indicated by "R" and that on the left side indicated by "L". ※A cooler unit is required additionally.
 ※The chuck controller and clamp parts are not included. The KANETEC chucks work best when a KANETEC chuck controller is used.
 ※A gauge block (25.882 mm) for 0° is included. For the mechanism of angle setting, see the bottom part on page 51. The conversion table included with the product facilitates angle setting.

Model **SBEP-U** TILT TYPE PERMANENT ELECTROMAGNETIC SINE BAR CHUCK



SBEP-1131UFR-C

Chuck controller required additionally



[Application]

These chucks are recommended for angle grinding of molds and jigs. Since magnetization is carried out by momentary power application, almost no heat is generated to make this model suitable for high precision grinding.

[Features]

- Electricity is applied momentarily. No electricity is required to maintain the holding power during grinding, thus saving energy.
- The holding power is maintained in the event of power failure during grinding, thus enhancing safety.
- The mechanical functions and features are almost the same as those of Model SBE.

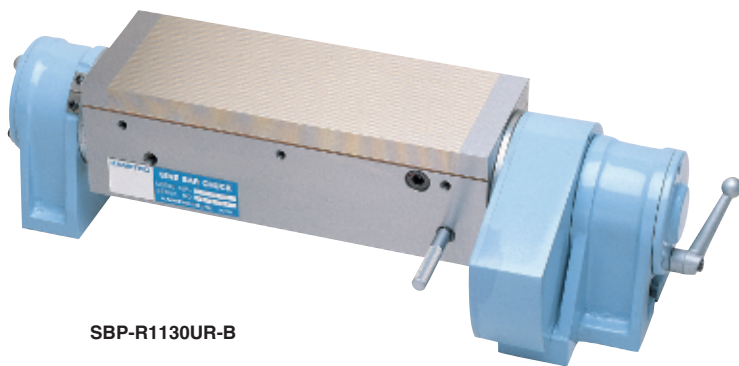
Model	Nominal Size	Work Face				Pole Pitch	Mounting Length	Height		Tilt Angle	Angle Accuracy	Voltage	Current	Mass	Electro Chuck Master
		B ₁	L ₁	L _e	H ₁	P	L ₂	Angle 0°, Min.	Cover fully open, Max.						
SBEP-1131UFR-C	110(4.33) × 315(12.4)	110(4.33)	315(12.4)	278(10.9)	113(4.44)	11(3+8) 0.43(0.11+0.31)	492(19.3)	138(5.43)	210(8.26)	-15° - +45°	0.007/100 max.	90 VDC	2.1A	36kg/79 lb	EPS-215B
SBEP-1131UFL-C															

※The type having the gauge block setting area on the right side is indicated by "R" and that on the left side indicated by "L".
 ※The chuck controller and clamp parts are not included. The KANETEC chucks work best when a KANETEC chuck controller is used.
 ※A gauge block (25.882 mm) for 0° is included. For the mechanism of angle setting, see the bottom part on page 51. The conversion table included with the product facilitates angle setting.

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 BLOCKS FOR MC
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 PROMELTA* SYSTEM
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 BLOCKS, HOLDERS, MINI CHUCKS
 HOLDING TOOLS
 MEASURING TOOL HOLDERS
 MAGNETIC HOLDERS
 MAGNETIC TOOLS

SINE BAR CHUCKS

Model SBP-R-UR TILT TYPE PERMANENT MAGNETIC SINE BAR CHUCK



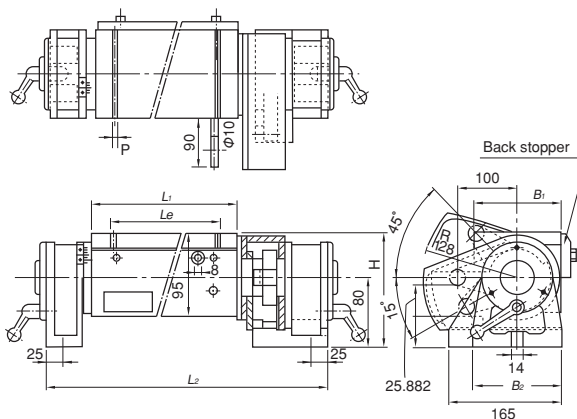
SBP-R1130UR-B

[Application]

Suitable for grinding molds and jigs including relatively small and thin ones that require high precision.

[Features]

- No electricity is needed, thus no heat is generated.
- The mechanical functions and features are almost the same as those of Model SBE.



[mm(in)]

Model	Nominal Size	Work Face			Pole Pitch	Mounting Face		Height	Height at Max. Tilt	Tilt Angle	Angle Accuracy	Mass
		B ₁	L ₁	L _e	H ₁	B ₂	L ₂	H				
SBP-R1130UR-B	105(4.13) × 300(11.8)	105(4.13)	300(11.8)	256(10.0)	3(1+2) 0.11(0.03+0.07)	110(4.33)	477(18.7)	135(5.31)	210(8.26)	-15° -+45°	0.007/100 max.	35kg/77 lb

*A gauge block (25.882 mm) for 0° is included. For the mechanism of angle setting, see the bottom part on page 51. The conversion table included with the product facilitates angle setting.

Model SBP-R-LS COMPOUND TYPE PERMANENT MAGNETIC SINE BAR CHUCK

W type



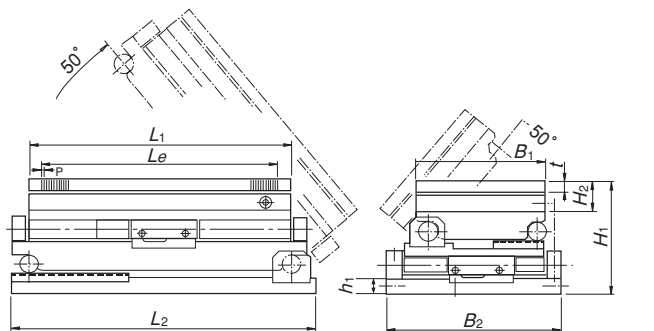
SBP-R1530LS-A

[Application]

Permanent magnetic chucks to enable highly accurate composite inclination on the X axis and Y axis.

[Features]

- When one side is closed, the chuck acts as a single vertical or horizontal type.
- The whole sine bar part is made of special steel, which has been precisely ground after hardening.
- The major parts have been lapped to ensure highly precise grinding and measurement over a long period of time.
- Since a thin permanent magnetic chuck is used, this model is easy to handle and provides a wider machining space.
- These chucks employ a permanent magnet and therefore no heat is generated, which enables highly precise grinding.



[mm(in)]

Gauge block not included.

Model	Nominal Size	Work Face				Pole Pitch	Mounting Face			Height		Height at Max. Tilt	Tilt Angle	Angle Accuracy	Roller Center Distance	Mass
		B ₁	L ₁	t	L _e	P	B ₂	L ₂	H ₁	H ₁	H ₂					
SBP-R1018LS-A	105(4.13) × 175(6.89)	105(4.13)	175(6.89)		143(5.63)		166(6.53)	200(7.87)		129(5.07)		(248) (9.76)	0° -50° Accuracy guaranteed range 0° -45°	0.007/100 max.	Upper 75(2.95) Lower 150(5.90)	18kg/ 39 lb
SBP-R1325LS-A	130(5.11) × 250(9.84)	130(5.11)	250(9.84)	18(0.70)	209(8.22)	3(1+2) 0.11(0.03+0.07)	186(7.32)	300(11.8)	22(0.86)		40(1.57)	(323) (12.7)			Upper 100(3.93) Lower 250(9.84)	35kg/ 77 lb
SBP-R1515LS-A	150(5.90) × 150(5.90)	150(5.90)	150(5.90)		119(4.68)		200(7.87)	210(8.26)		130(5.11)		(264) (10.3)			Upper 125(4.92) Lower 150(5.90)	25kg/ 55 lb
SBP-R1530LS-A	150(5.90) × 300(11.8)	150(5.90)	300(11.8)		257(10.1)		206(8.10)	345(13.5)	345(13.5)			(372) (14.6)			Upper 125(4.92) Lower 300(11.8)	45kg/ 99 lb

*A hex wrench key is included. For the mechanism of angle setting, see the bottom part on page 51. The conversion table included with the product facilitates angle setting.

ELECTROMAGNETIC CHUCK CONTROLLERS PERMANENT MAGNETIC CHUCKS ELECTROMAGNETIC CHUCKS PERMANENT MAGNETIC CHUCKS FOR MC BLOCKS VACUUM CHUCKS PROMETA* SINE BAR CHUCKS BLOCKS, HOLDERS, MINI CHUCKS HOLDING TOOLS MEASURING TOOL HOLDERS MAGNETIC HOLDERS MAGNETIC TOOLS

Model **SBP-R·S** SINGLE TYPE PERMANENT MAGNETIC SINE BAR CHUCK

S type



SBP-R1018S-B

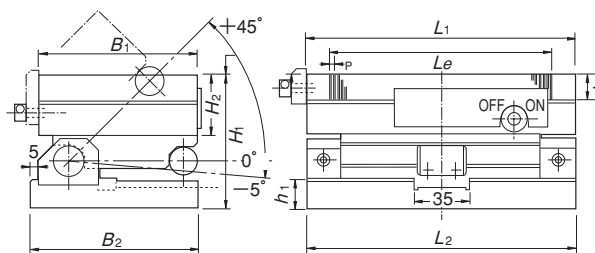
Gauge block not included.

[Application]

A laterally long type with the long side as the tilting axis for highly precise grinding and measurement.

[Features]

- A flat type as thin as 89 mm to 100 mm for a wide range of applications. With a thin permanent magnetic chuck mounted, this single type has been precisely finished to 0.007 mm or better.
- The whole sine bar part is made of special steel, which has been precisely ground after hardening.
- The major parts have been lapped to ensure highly precise grinding and measurement over a long period of time.
- Since a thin permanent magnetic chuck is used, this model is easy to handle and provides a wider machining space.
- These chucks employ a permanent magnet and therefore no heat is generated, which enables highly precise grinding.



[mm (in)]

Model	Nominal Size	Work Face				Pole Pitch <i>P</i>	Mounting Face			Height		Height at Max. Tilt	Tilt Angle	Angle Accuracy	Roller Center Distance	Mass	
		<i>B</i> ₁	<i>L</i> ₁	<i>t</i>	<i>L</i> _e		<i>B</i> ₂	<i>L</i> ₂	<i>h</i> ₁	<i>H</i> ₁	<i>H</i> ₂						
SBP-R1018S-B	105 (41.3) × 175 (6.89)	105 (4.13)	175 (6.89)		142 (5.59)	3 (1+2) 0.11 (0.03+0.07)	110 (4.33)	175 (6.89)	20 (0.78)	89 (3.50)		(117) (4.60)	-5° -45°	0.007 / 100 max.	75 (2.95)	9kg / 20 lb	
SBP-R1530S-B	150 (5.90) × 300 (11.8)	150 (5.90)	300 (11.8)	18 (0.70)	256 (10.0)		160 (6.29)	300 (11.8)	27 (1.06)	96 (3.78)	40 (1.57)				(172) (6.77)	125 (4.92)	27kg / 60 lb
SBP-R1545S-B	150 (5.90) × 450 (17.7)		450 (17.7)		394 (15.5)			450 (17.7)	31 (1.22)	100 (3.93)							125 (4.92)

※A hex wrench key is included. For the mechanism of angle setting, see the bottom part on page 51. The conversion table included with the product facilitates angle setting.

Model **SBP-R·L** SINGLE TYPE PERMANENT MAGNETIC SINE BAR CHUCK

L type



SBP-R1018L-B

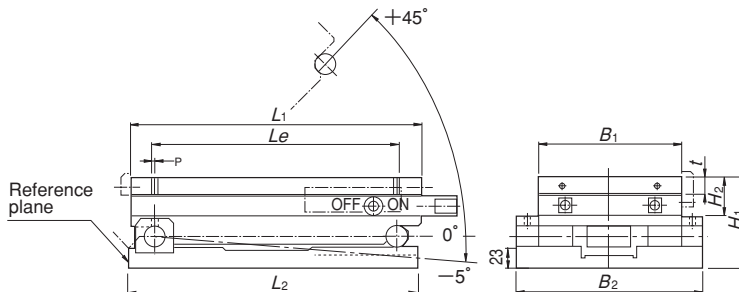
Gauge block not included.

[Application]

A longitudinally long type with the short side as the tilting axis for highly precise grinding and measurement. Suitable for highly precise angle grinding on mold grinders, etc.

[Features]

- A grip is provided to facilitate angle setting in the longitudinal direction.



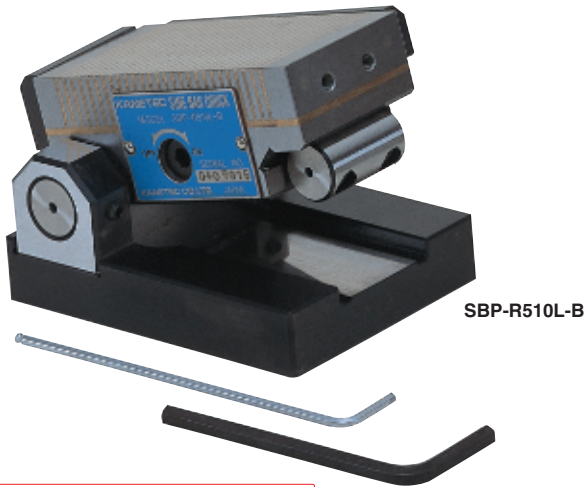
[mm (in)]

Model	Nominal Size	Work Face				Pole Pitch <i>P</i>	Mounting Face			Height		Height at Max. Tilt	Tilt Angle	Angle Accuracy	Roller Center Distance	Mass
		<i>B</i> ₁	<i>L</i> ₁	<i>t</i>	<i>L</i> _e		<i>B</i> ₂	<i>L</i> ₂	<i>h</i> ₁	<i>H</i> ₁	<i>H</i> ₂					
SBP-R1018L-B	105 (4.13) × 175 (6.89)	105 (4.13)	175 (6.89)	18 (0.70)	142 (5.59)	3 (1+2) 0.11 (0.03+0.07)	151 (5.94)	175 (6.89)	89 (3.50)	40 (1.57)		(175.5) (6.90)	-5° -45°	0.007 / 100 max.	125 (4.92)	11kg / 24 lb
SBP-R1530L-B	150 (5.90) × 300 (11.8)	150 (5.90)	300 (11.8)		256 (10.0)		196 (7.71)	300 (11.8)	103 (4.05)						(272) (10.7)	250 (9.84)

※The tilting base setscrews are 6 mm wide across flats. A hex wrench key is included. For the mechanism of angle setting, see the bottom part on page 51. The conversion table included with the product facilitates angle setting.

ELECTROMAGNETIC CHUCKS
CHUCK CONTROLLERS
PERMANENT MAGNETIC CHUCKS
PERMANENT ELECTROMAGNETIC CHUCKS
BLOCKS FOR MC
VACUUM CHUCKS
PROMELTA* SYSTEM
SINE BAR CHUCKS
BLOCKS, HOLDERS, MINI CHUCKS
HOLDING TOOLS
MEASURING TOOL HOLDERS
MAGNETIC HOLDERS
MAGNETIC TOOLS

Model SBP-R•L MINI PERMANENT MAGNETIC SINE BAR CHUCK

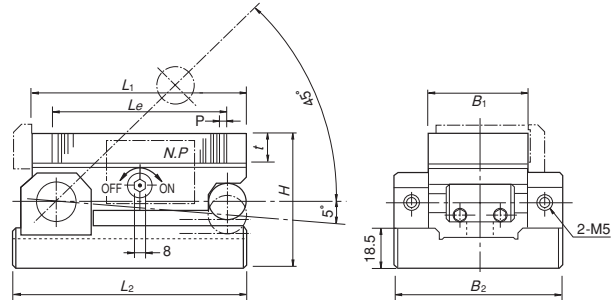


[Application]

Designed for easy use in mold grinding and angle grinding of small workpieces.

[Features]

- Compact and simple construction for easy handling.
- The shaft can be secured to use this chuck for grinding operations also.
- The magnetic pole micro pitches on the chuck work face enable grinding of a wide range of workpieces from small workpieces to thick workpieces.

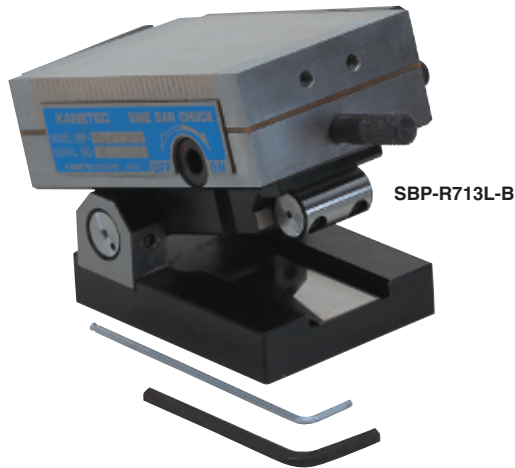


Gauge block not included.

Model	Nominal Size	Work Face				Pole Pitch <i>P</i>	Mounting Face		Height <i>H</i>	Height at Max. Tilt	Tilt Angle	Angle Accuracy	Roller Center Distance	Mass
		<i>B</i> ₁	<i>L</i> ₁	<i>t</i>	<i>L</i> _e		<i>B</i> ₂	<i>L</i> ₂						
SBP-R510L-B	45 (1.77) × 95 (3.74)	45 (1.77)	95 (3.74)	18 (0.70)	79 (3.11)	3 (1+2) 0.11 (0.03+0.07)	75 (2.95)	103 (4.05)	62 (2.44)	(114) (4.48)	-5°-45°	0.007/100 max.	75 (2.95)	3kg/6.6 lb

*A hex wrench key is included. For the mechanism of angle setting, see the bottom part on this page. The conversion table included with the product facilitates angle setting.

Model SBP-R SMALL PERMANENT MAGNETIC SINE BAR CHUCK



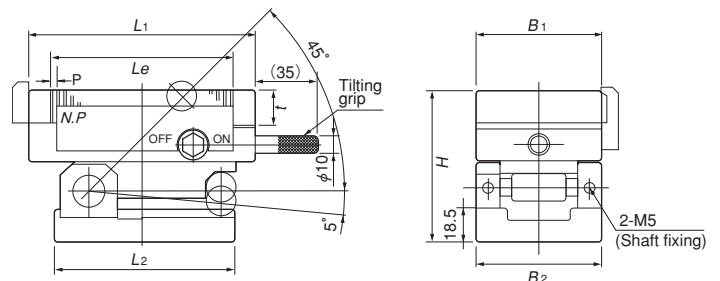
Two types are available; longitudinal type (Model SBP-R713S) and lateral type (Model SBP-R713L) relative to the tilting angle. The accuracy and durability are equivalent to those of the thin permanent magnetic sine bar chuck.

[Application]

Easy to use for highly precise angle grinding on mold grinders, etc..

[Features]

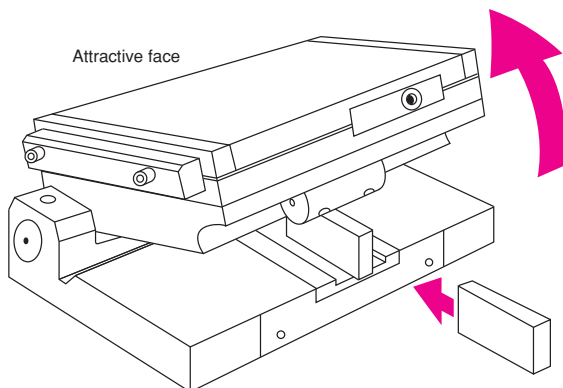
- The magnetic pole micro pitches on the chuck work face enable grinding of a wide range of workpieces from small workpieces to thick workpieces.



Gauge block not included.

Model	Nominal Size	Work Face				Pole Pitch <i>P</i>	Mounting Face		Height <i>H</i>	Height at Max. Tilt	Tilt Angle	Angle Accuracy	Roller Center Distance	Mass
		<i>B</i> ₁	<i>L</i> ₁	<i>t</i>	<i>L</i> _e		<i>B</i> ₂	<i>L</i> ₂						
SBP-R713L-B	75 (2.95) × 130 (5.11)	75 (2.95)	130 (5.11)	18 (0.70)	103 (4.05)	3 (1+2) 0.11 (0.03+0.07)	75 (2.95)	103 (4.05)	86 (3.38)	(124) (4.88) (114) (4.48)	-5°-45°	0.007/100 max.	75 (2.95)	7kg/15.5 lb
SBP-R713S-B	130 (5.11) × 75 (2.95)	130 (5.11)	75 (2.95)	18 (0.70)	103 (4.05)	3 (1+2) 0.11 (0.03+0.07)	75 (2.95)	103 (4.05)	86 (3.38)	(124) (4.88) (114) (4.48)	-5°-45°	0.007/100 max.	75 (2.95)	7kg/15.5 lb

*Gauge blocks are not included. A hexagonal wrench key is included. For the mechanism of angle setting, see the bottom part of page. The conversion table included with the product facilitates angle setting.



■ Mechanism of Angle Setting by Sine Bar Chuck

A gauge block is used for setting the angle.

An angle is obtained by the trigonometric function using the gauge block dimension as the vertical side (*a*) and the roller center distance (from the center of open/close shaft to the center of reference bar on the open/close side) as the hypotenuse (*c*), as shown.

$$\sin \theta = \frac{a}{c}$$

Select an approximate value from the function table for θ .

When using a certain angle repeatedly, a method is available which uses a special master gauge made to the dimension "a," which determines an angle, obtained from the function table in advance.

