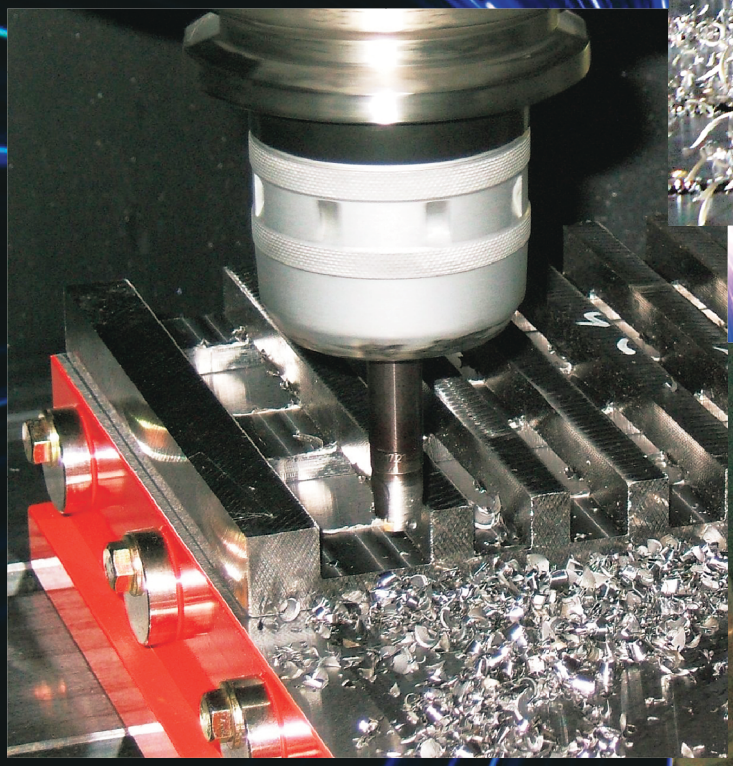
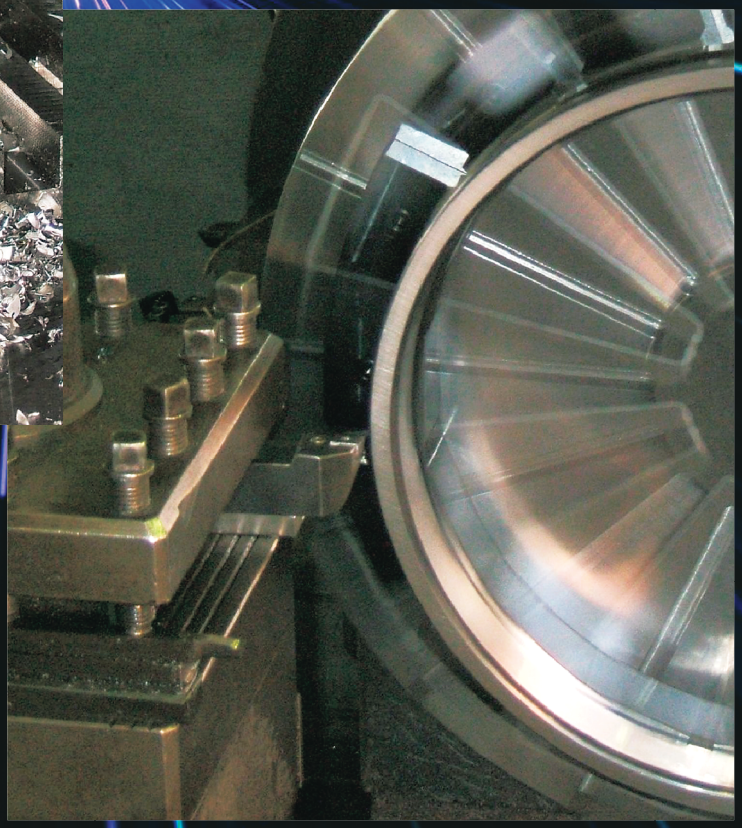
Magnetic chuck for cutting





KANETEC

KANETEC CO.,LTD.

http://www.kanetec.co.jp/en/index.html

1.Magnetic Chucks

Magnetic chucks are a jig to secure workpieces by utilizing the power of magnetic force to attract strong magnetic substances such as iron. While the force to secure workpieces by means of magnetic force is weaker than a mechanical type such as a vise, magnetic chucks offer advantages to anybody to quickly clamp workpieces without troublesome setting up as long as the attractive face of workpieces is comparatively flat. Thanks to this feature, magnetic chucks are widely used in various fields such as grinding, cutting and electric discharging.
We would like to present machines on which magnetic chucks are used and introduce main magnetic chucks “electromagnetic chuck”,“permanent magnetic chuck” and “permanent electromagnetic chuck” used on them.

2.Holding Power

Prior to describing machines and magnetic chucks, the holding power will be explained first. It is well known that the holding power varies according to the area of workpieces to hold, but there are other factors that affect the holding power.

—Factors that affect the holding power—

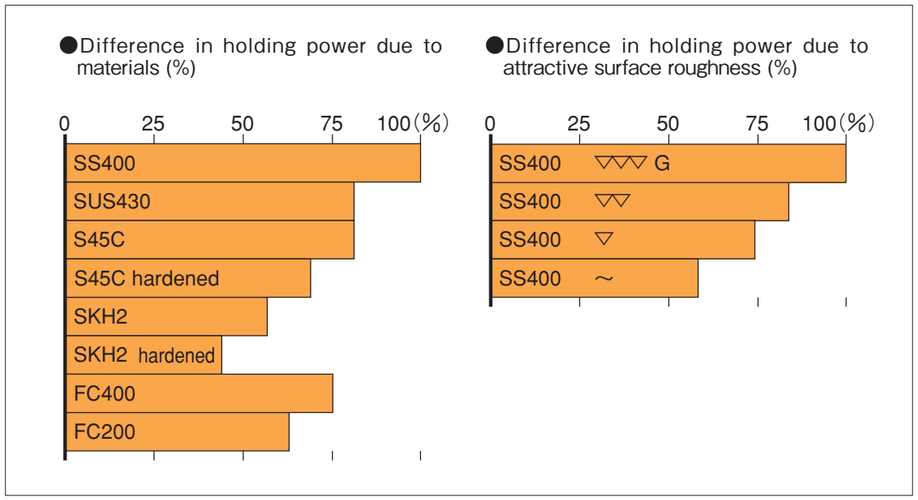
・Material

The elements that are attracted by a magnet include iron, cobalt and nickel (called strong magnetic substances). As the holding power varies according to elements, the holding power on iron also varies according to its kinds (materials). Please see “Relation between material and holding power” below.
Please note that if workpieces are of the same size, the holding power may drop to a half if their materials are different.

・Surface roughness

The holding power varies according to the surface roughness of attractive faces that come into contact with the magnet. Please see “Relation between material and holding power” below.

■ Relation between material and holding power<<Chucks in general>>



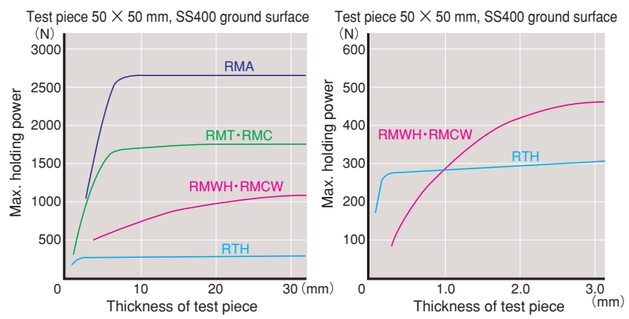
• Thickness of workpieces to hold

While the holding power varies according to sizes of workpieces to hold, a factor that is often overlooked is the thickness of workpieces. Please see the data of holding power according to the thickness of test pieces of the permanent magnetic chuck and the permanent magnetic Lifma (Lifting magnet) below.

— Holding power of permanent magnetic chuck —

■ An example of holding power <<Permanent magnetic chuck>> (1N≒0.1kgf)

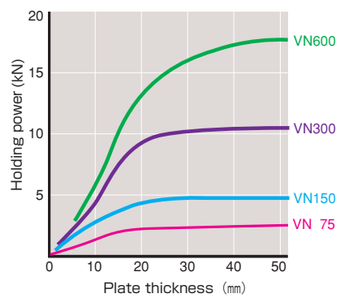
●Relation between thickness of workpiece and holding power



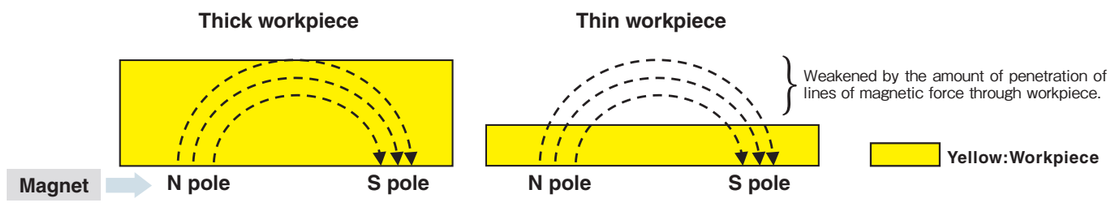
—Holding power of permanent magnetic Lifma (Lifting magnet)—

■ Relation between steel plate thickness and holding power

(Material SS400, surface roughness ▽▽)
※Note that this is not the lifting capacity.



— Lines of magnetic force passing through workpiece thickness (images) —

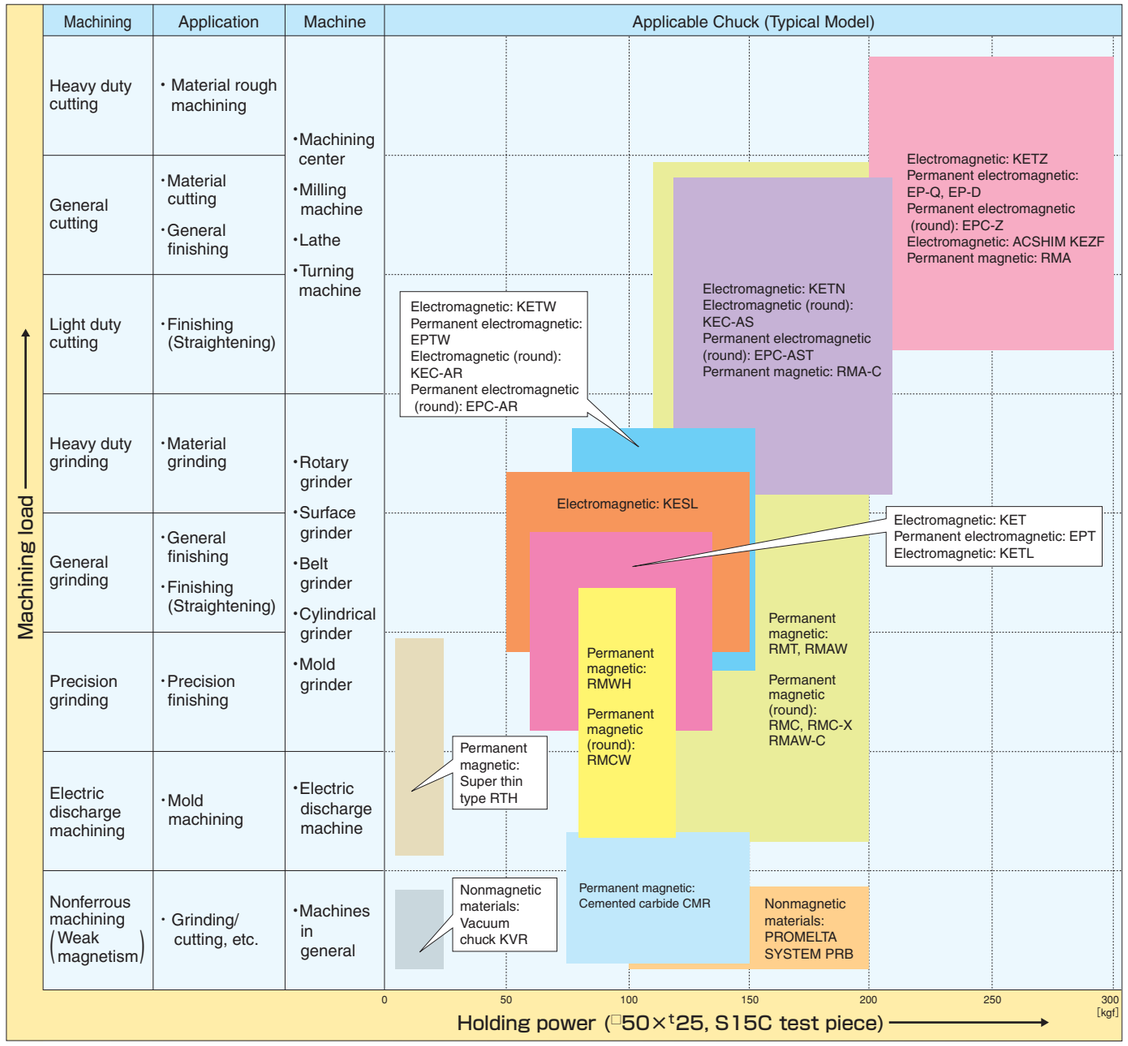


Thus, the holding power becomes very weak when the plate thickness is thin.
※This is true with Kanetec products in general.

3.Machines on Which Magnetic Chucks are Used

3.1 Machines and types of chucks by applications

Types of Chucks by Applications



3.2 Main machines on which magnetic chucks are used

・Surface grinder …

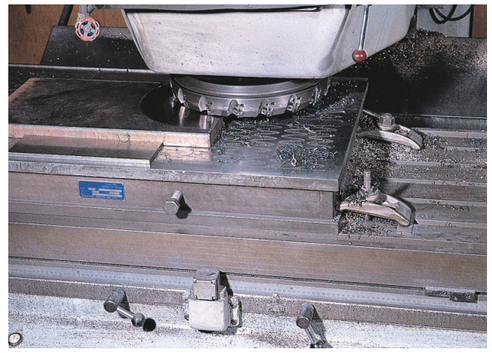
Machine tool on which magnetic chucks are utilized most

<Surface grinder>

・Milling machine …

Magnetic chucks are used to hold thin plates that are easily deformed when secured with vises.

<Milling machine>

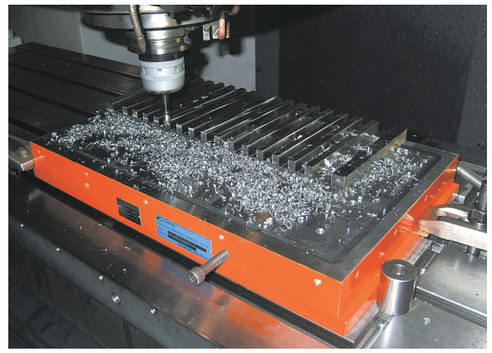


<Milling in progress>

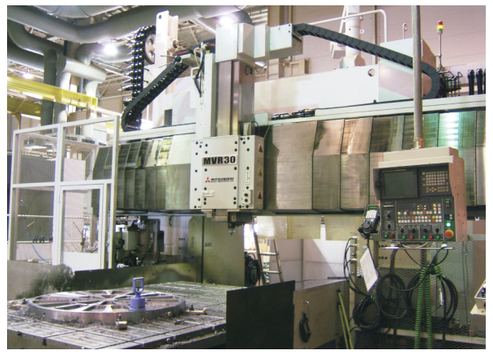
・Machining center …

As with the milling machine, magnetic chucks are used for machining thin workpieces. Since there are cases that magnetic chucks are not usable depending on workpieces and types of machining, manufacturers use either magnetic chucks or vises according to applications.

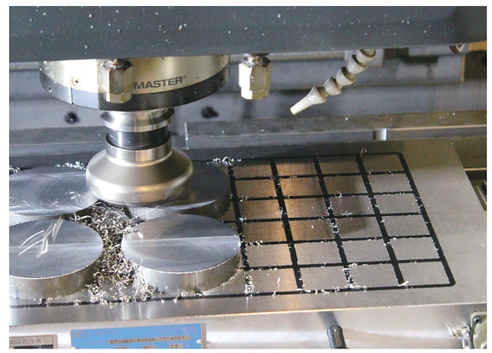
<Machining center photo 1>



<Endmill in operation>



<Machining center photo 2>

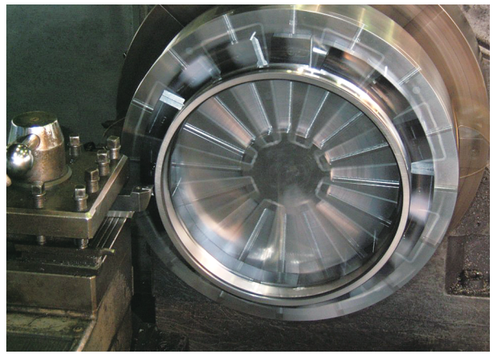


<Milling in progress>

・Lathe …

Magnetic chucks are used to prevent deformation due to clamping when machining thin plates and ring workpieces such as bearings.

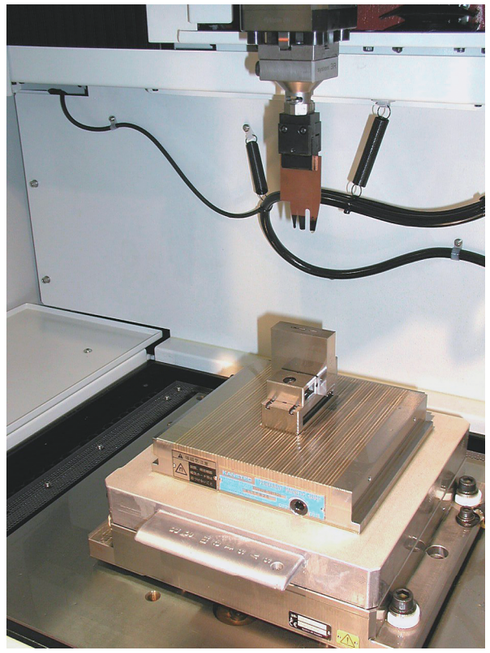
<Lathe>



<Bearing being machined>

・Engraving electric discharge machine …

On electric discharge machines, magnetic chucks are used together with oil-type working fluid.
(If they are used with water-soluble working fluid, they will be rusted.)



4. Features of Various Magnetic Chucks

■ Each magnetic chuck has the following features.

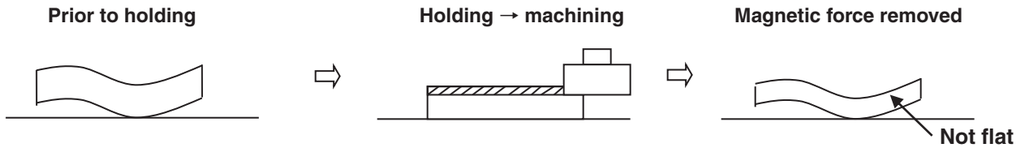
Item \ Magnetic Chuck	Permanent Magnetic Chuck	Electromagnetic Chuck	Permanent Electromagnetic Chuck
Magnetic source	Permanent magnet	Electromagnet	Permanent magnet
Power source	Not required	Required	Required
Rectifier / Chuck Master	Not required	Required	Required
ON/OFF method	Handle turned manually. *Operation by electric signals not possible.	Turned on/off with rectifier / Chuck Master. *Operation by electric signals possible in principle.	Turned on/off with EP Chuck Master. *Operation by electric signals possible in principle.
Magnetic force adjustment (Note 1)	On certain models, adjustable according to handle turn angles.	Adjustable with Chuck Master.	Adjustable with EP Chuck Master. (Note 2)
Temperature rise/accuracy change of magnetic chuck in use (Reference values for both parameters)	None Accuracy change: 0 – 2 μm due to ON/OFF	Yes Temperature rise: 8℃ (5 hours after power on) Accuracy change: 7 – 12 μm	Yes Temperature rise: 0.8℃ (ON-OFF cycle 5 minutes.) Accuracy change: 1 μmm max. (Note 3)
ON-OFF cycle restriction	None However, since the internal magnet moves for ON-OFF, many ON-OFF cycles tend to cause failure.	None	Yes ON or OFF roughly once during a period of shortest 5 min. to 10 minutes. → Frequent cycles may cause coil burning in the worst case.
Holding during power failure or wire breakage	Possible	Not Possible	Possible
Interlock (Note4)	Not Possible	Possible	Possible
Magnetic chuck related products	<Permanent magnetic chuck for cemented carbide> Normal magnetic chucks hardly attract carbide or do not attract carbide at all. This chuck, however, has increased magnetic force to attract carbide. Two models are available: One with ON-OFF function and one with constant ON (OFF not possible). Note, however, that certain carbide types are not attracted at all. It is, therefore, necessary to check if they can be attracted each time the chuck is used.	<Water-cooled electromagnetic chuck> The inside of the electromagnetic chuck is cooled with cooling liquid to minimize temperature rise and accuracy change. This model requires cooling liquid, cooling liquid supply unit, piping, etc. additionally. – Reference data – (Air temperature = cooling liquid temperature) ・Temperature rise: 1℃ max. ・Change due to temperature rise: 1 – 3 μm max.	<Non-contact type Chuck Master> By use of the low magnetic force control function, this model allows adjustment of the magnetic force as with the electromagnetic chuck. Note, however, that when the low magnetic force control is active, the voltage is low, but the chuck remains energized continuously as with the normal electromagnetic chuck. Therefore, when it is used for long hours, accuracy change due to heat generated by the permanent electromagnetic chuck itself tends to occur, affecting machining accuracy.

<Precautions>

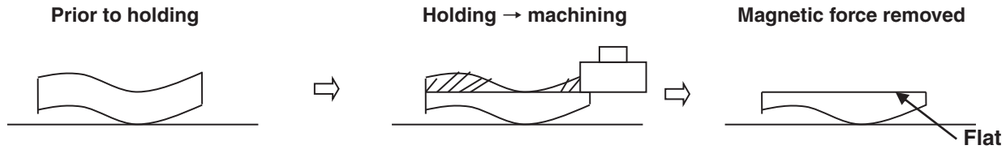
Note 1: Purpose of magnetic force adjustment

When a workpiece is warped, if it is held by the maximum holding power, its warping is absorbed. The purpose of magnetic force adjustment is to hold and machine workpieces with minimum magnetic force to allow the workpiece to remain warped to ensure the flatness of workpieces after machining.

—Workpiece held by max. magnetic force—



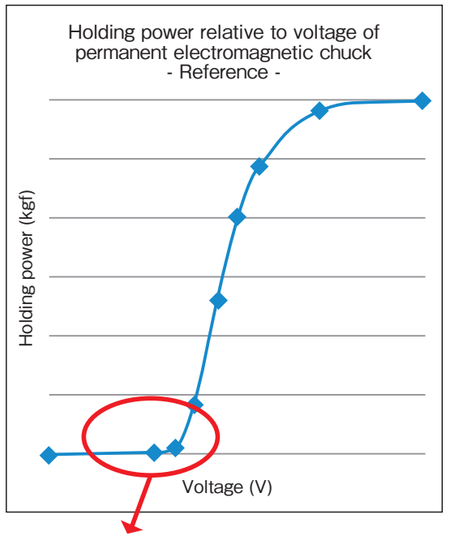
—Workpiece held after magnetic force adjustment—



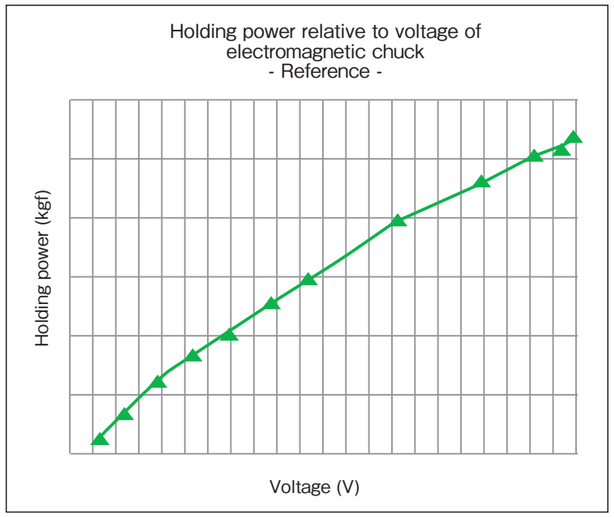
※When machining a workpiece by holding it weakly after magnetic force adjustment, since the workpiece is barely held by a force at which it may be flung off or not during machining, skill and experience are required for adjustment. Please keep in mind that this adjustment cannot be done easily by anyone.

Note 2: Although the permanent electromagnetic chuck allows magnetic force adjustment, the holing power produced is not exactly proportional to the voltage as with the electromagnetic chuck. Except for certain models, if the magnetic force has become too strong, the chuck must be demagnetized once, and then adjusted to a weak force.

Permanent electromagnetic chuck holding power graph (Reference)



Electromagnetic chuck holding power graph (Reference)



The holding power rises abruptly, requiring delicate adjustment.

Note 3: When the ON-OFF cycle is less than 5 minutes, the temperature rise and accuracy change of the permanent electromagnetic chuck may be larger than those of the electromagnetic chuck in some cases. Also, the coil may be burnt depending on the ON-OFF cycle and voltage.

Note 4: If machining is started when the magnetic chuck is not ON (magnetized), the workpiece may be flung away in unexpected directions to cause accidents. This is the signal which is intended to prevent such hazard and enhance the safety of workers and property. The user provides a circuit for interlock of the Chuck Master on the machine that is used to interlock the magnetic chuck and the machine. Thus, the interlock feature cannot be used unless the machine manufacturer provides such circuit.

5. Criteria for Selection of Magnetic Chucks (Bold indicates particularly important criteria)

Criteria \ Magnetic Chuck	Electromagnetic chuck	Permanent Magnetic Chuck	Permanent Electromagnetic Chuck
Criteria for selection (Merits)	·The pitches of magnetic poles or their sizes can be changed. (Some freedomavailable) ·Several magnetic chucks may be used. (ON/OFF of the chucks can be done with one Chuck Master.) ·Emphasis on adjustment of magnetic force. ·Frequent ON-OFF cycle. (ON and OFF several times per minute) ·ON-OFF operation by signals is possible. The magnetic force and demagnetization time can be adjusted by input signals. *Note, however, adjustment of the magnetic force or demagnetization time by input signals is available only in special cases. ·When the Chuck Master is used, since demagnetization is done at the time of OFF, workpieces can relatively easily be removed after OFF. ·Interlock supported.	·Even if magnetic chucks are small, strong holding power is available depending on their models. ·No fear of power failure. ·Mountable on machines easily. (Power source/wiring not required)	·Suitable when heat generation and accuracy change of the magnetic chuck need to be minimized in order to hold workpieces for long hours. ·Suitable for holding workpieces in the case of power failure and wiring breakage. ·The pitches of magnetic poles or their sizes can be changed. (Some freedom available) ·Several magnetic chucks may be used. (ON/OFF of the chucks can be done with one Chuck Master.) ·ON-OFF operation by signals is possible. The magnetic force and demagnetization time can be adjusted by input signals. *Note, however, adjustment of the magnetic force or demagnetization time by input signals is available only in special cases. ·Interlock supported. ·When the Chuck Master is used, since demagnetization is done at the time of OFF, workpieces can relatively easily be removed after OFF. *Certain models such as EP-Q excluded.
Criteria for selection (Demerits)	·Since when ON, power is constantly supplied, the magnetic chuck will generate heat (temperature rise),which causes its accuracy to change. ·If power fails or wiring is broken, the chuck can not continue to hold the workpiece.	·No interlock supported. ·Handle operation means troublesome ON⇔OFF operation. ·Except for certain models, the magnetic force is not adjustable. ·Not suitable for application where ON-OFF cycle is frequent. (The chuck tends to fail.) ·ON-OFF operation by signals such as on automated machines is not possible. ·Since demagnetization is not available as with electromagnetic chucks and certain permanent electromagnetic chucks, the residual magnetism is large after OFF to make it difficult to remove workpieces of hardened steel in some cases. ·Large sizes are not manufacturable. When several units are used, the ONOFF operation needs to be done individually for each of them.	·When the magnetic force needs to be changed from strong to weak, it is necessary to do demagnetization once. ·The voltage and the holing power are not proportional in magnetic force adjustment. ·This chuck is not suitable when the ON-OFF cycle is frequent.

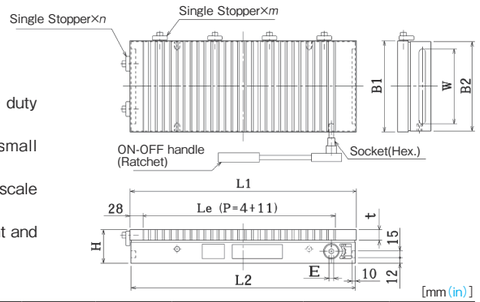
Model RMA SUPER POWERFUL PERMANENT MAGNETIC CHUCK FOR CUTTING

Greatest holding power in Permanent Magnetic Chuck Series!

RMA-1530A

■Example of machining

Workpiece Material	Workpiece Size (mm)	Description of Operation / Machining Conditions
SS	□60×t12mm	f23, f28 spot facing, S1200, F70, depth 2.4-4.8
SKD11 hardened	φ120×100mm	High-speed MC used. Ball end f6-f2, S6000-19000, F1000-2000



[Features]
- Super powerful permanent magnetic chucks developed by special design for heavy duty cutting.
- Relatively fine pole pitches make the magnetism work effectively on certain small workpieces and thin workpieces.
- A drop in magnetic force due to air gaps is little, enabling heavy duty cutting of mill scale steel.
- The holding power is very strong, yet the operation of the select ratchet handle is light and safe. The handle is detachable for space saving.
- Usable in wet conditions.

[mm (in)]

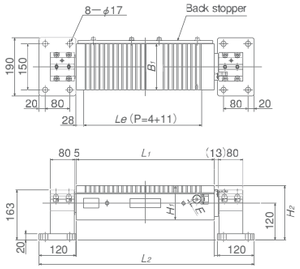
Model	Nominal Size	Work Face				Mounting Face			Height	No. of Stoppers		Handle Hole	Mass
		B_1	L_1	t	Le	B_2	L_2	W	H	n	m	E	
RMA-1530A	150(5.90)×300(11.8)	150(5.90)	300(11.8)	23(0.90)	229(9.01)	146(5.74)	296(11.6)	115(4.52)	69(2.71)	2 pcs	2 pcs	8(0.31)	24kg/ 53 lb
RMA-1545A	150(5.90)×450(17.7)		450(17.7)		379(14.9)		446(17.5)				3 pcs		36kg/ 79 lb
RMA-2050A	200(7.87)×500(19.6)	200(7.87)	500(19.6)		424(16.6)	196(7.71)	496(19.5)	165(6.49)	73(2.87)		4 pcs	10(0.39)	56kg/123 lb
RMA-2060A	200(7.87)×600(23.6)		600(23.6)		529(20.8)		596(23.4)				5 pcs		68kg/150 lb
RMA-2550A	250(9.84)×500(19.6)	250(9.84)	500(19.6)		424(16.6)	246(9.68)	496(19.5)	215(8.46)			4 pcs		71kg/156 lb
RMA-3060A	300(11.8)×600(23.6)	300(11.8)	600(23.6)		544(21.4)	296(11.6)	596(23.4)	265(10.4)		3 pcs	5 pcs		102kg/225 lb
RMA-4060A	400(15.7)×600(23.6)	400(15.7)				396(15.5)		365(14.3)		4 pcs			136kg/299 lb

※The ratchet handle (with socket) is included.

Model RMA-U TILT TYPE POWERFUL PERMANENT MAGNETIC CHUCK

Most suitable for oblique cutting!

RMA-1545U



[Application]
Suitable for heavy duty grinding of inclined surfaces and light duty cutting.

[Features]
- A drop in magnetic force due to air gaps is minimal to make this type suitable for cutting of mill scale steel.
- The tilting angle can be set as desired in a range of 90° forward and 90° backward.

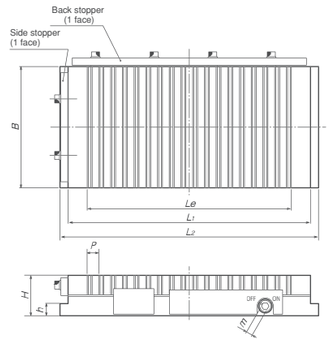
[mm (in)]

Model	Nominal Size	Work Face				Length	Height	Handle Hole	Mass
		B_1	L_1	Le	H_1	L_2	H_2	E	
RMA-1530U	150(5.90)×300(11.8)	150 (5.90)	300(11.8)	229(9.01)	112 (4.40)	552(21.7)	177 (6.96)	Hex. 8 (0.31)	66kg/ 145 lb
RMA-1545U	150(5.90)×450(17.7)		450(17.7)	379(14.9)		702(27.6)			79kg/ 174 lb
RMA-2050U	200(7.87)×500(19.6)	200 (7.87)	500(19.6)	424(16.6)		752(29.6)		Hex.10 (0.39)	108kg/ 238 lb
RMA-2060U	200(7.87)×600(23.6)		600(23.6)	529(20.8)		852(33.5)			125kg/ 275 lb

※The ratchet handle (with socket) is included.
※The scaled ring can be used to set an angle roughly. When it is necessary to set the angle accurately, use a sine bar or other suitable device. Note that when it is tilted forward, the ON-OFF operation will become difficult.

Model RMT POWERFUL RECTANGULAR PERMANENT MAGNETIC CHUCK

RMT-2035



[Application]
Powerful permanent magnetic chucks for a wide range of applications from heavy duty grinding to light duty cutting. Usable in liquid also.

[Features]
- Light weight and thin, yet robust construction. Highly precise chucks minimizing influence of handle operation on accuracy.
- Usable for a wide range of workpieces, from thick to thin.

Stainless steel type is also available.(Max. size W200 × L400 mm)

[mm (in)]

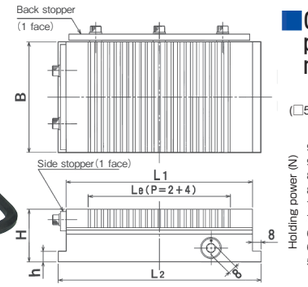
Model	Nominal Size	Work Face			Pole Pitch	Mounting Face			Height	Handle Hole	Mass
		B	L_1	Le	P	B	L_2	h	H	E	
RMT-1018	100(3.93)×175(6.89)	100(3.93)	175(6.89)	137(5.39)	14.5 (1.5+3.2+ 1.5+8.3) (0.57)	100(3.93)	195(7.67)	15 (0.59)	50 (1.96)	Hex. 8 (0.31)	7kg/ 15 lb
RMT-1025	100(3.93)×250(9.84)		250(9.84)	210(8.26)			270(10.6)				9.5kg/ 21 lb
RMT-1030	100(3.93)×300(11.8)		300(11.8)	253(9.96)			320(12.6)				11.5kg/ 25 lb
RMT-1325	125(4.92)×250(9.84)	125(4.92)	250(9.84)	210(8.26)		125(4.92)	270(10.6)				12kg/ 26 lb
RMT-1515	150(5.90)×150(5.90)	150(5.90)	150(5.90)	108(4.25)		150(5.90)	170(6.69)				8.5kg/ 18 lb
RMT-1530	150(5.90)×300(11.8)		300(11.8)	253(9.96)			320(12.6)				17kg/ 37 lb
RMT-1535	150(5.90)×350(13.7)		350(13.7)	296(11.6)			370(14.5)				20kg/ 44 lb
RMT-1545	150(5.90)×450(17.7)		450(17.7)	354(13.9)			470(18.5)				25kg/ 55 lb
RMT-2035	200(7.87)×350(13.7)	200(7.87)	350(13.7)	296(11.6)		200(7.87)	370(14.5)				26kg/ 57 lb
RMT-2040	200(7.87)×400(15.7)		400(15.7)	354(13.9)			420(16.5)				30kg/ 66 lb
RMT-2045	200(7.87)×450(17.7)		450(17.7)	398(15.6)			470(18.5)				33kg/ 73 lb
RMT-2050	200(7.87)×500(19.6)		500(19.6)	441(17.3)			520(20.4)				37kg/ 82 lb
RMT-2060	200(7.87)×600(23.6)		600(23.6)	543(21.3)			620(24.4)				45kg/ 99 lb
RMT-2525	250(9.84)×250(9.84)	250(9.84)	250(9.84)	209(8.22)		250(9.84)	270(10.6)				23kg/ 51 lb
RMT-2530	250(9.84)×300(11.8)		300(11.8)	253(9.96)			320(12.6)				28kg/ 62 lb
RMT-3050	300(11.8)×500(19.6)	300(11.8)	500(19.6)	441(17.3)		300(11.8)	520(20.4)		60 (2.36)		67kg/148 lb
RMT-3060	300(11.8)×600(23.6)		600(23.6)	543(21.3)			620(24.4)				81kg/178 lb

※ As for the handle, a hex wrench key is included with Models up to RMT-1515, and a dedicated handle is included with Models RMT-1530 and above. ※RMT-3050/3060 require 2 places for ON-OFF operation.

Model RMAW FINE PITCH POWERFUL RECTANGULAR PERMANENT MAGNETIC CHUCK

Size is limited to supply

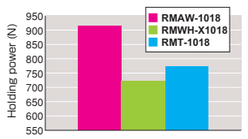
RMAW-1018



■Comparison of holding power on weak magnetic materials

Center - holding power

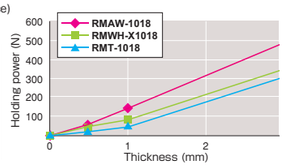
(□50 × t25:SKH2, HRC60 hardened test piece)



■Relation between holding power and thickness

Center - thickness

(□25: S15C test piece)



[Application]
Suitable for grinding small and thin workpieces.

[Features]
- Holds small and thin (thinner than 3 mm) workpieces effectively.
- Holding performance greater than conventional models on hardened parts around molds.
- Gap performance improved over conventional models.

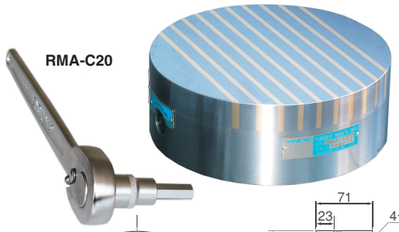
[mm (in)]

Model	Dimensions						Mass
	B	L_1	Le	H	L_2	h	
RMAW-1018	105(4.13)	175(6.88)	134(5.27)	50(1.96)	191(7.51)	10(0.39)	7kg/15.4 lb
RMAW-1325	125(4.92)	250(9.84)	206(8.11)		266(10.4)		12kg/26.4lb
RMAW-1530	150(5.90)	300(11.8)	254(9.99)		316(12.4)		18kg/39.6lb

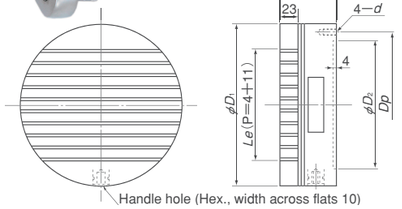
※As for the handle, a hex wrench key is included.

Model RMA-C POWERFUL ROUND PERMANENT MAGNETIC CHUCK

Greatest holding power in Round Type Permanent Magnetic Chuck Series!



RMA-C20

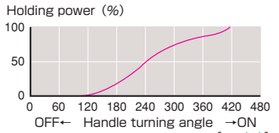


[Application]
Strong holding power for various cutting applications.

[Features]
- The magnetic force adjust feature ensures efficient positioning of workpieces for machining by a lathe.
- An easy-to-operate ratchet handle is employed for ON-OFF operation.
- Holding power 1.5 times greater than that of conventional models.

■Relation between handle turning angle and holding power

(in the center of the attractive face)



[mm (in)]

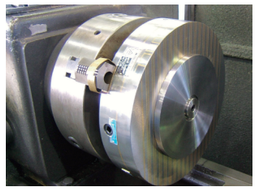
Model	Nominal Size	Work Face		Mounting Face			Mass
		D_1	Le	D_2	Dp	d	
RMA-C16	160(6.29)	160(6.29)	109(4.29)	125(4.92)	140(5.51)	M8(0.31)	11kg/ 24.2 lb
RMA-C20	200(7.87)	200(7.87)	139(5.47)	160(6.29)	180(7.08)		17kg/ 37.4 lb
RMA-C25	250(9.84)	250(9.84)	184(7.24)	200(7.87)	224(8.81)	M10(0.39)	27kg/ 59.5 lb
RMA-C32	315(12.4)	315(12.4)	244(9.60)	250(9.84)	280(11.0)		43kg/ 94.8 lb
RMA-C40	400(15.7)	400(15.7)	319(12.5)	315(12.4)	355(13.9)		69kg/ 152 lb

※The ratchet handle (with socket) is included.

Model RMC POWERFUL ROUND PERMANENT MAGNETIC CHUCK

"B" is magnetic force adjust type.

RMC-32



<An example of machining on lathe>

[Application]
Permanent magnetic chucks using a high-performance magnet for grinding operations on rotary grinders, cylindrical grinders, internal grinders and cutting operations on lathes.

[Features]
- The "B" type can be used in such a way that it first holds a workpiece by a weak magnetic force and after finely adjusting its holding position, it is changed to a strong magnetic force to secure the workpiece firmly.
- Can be used for both grinding and cutting operations.
- Work well on thin workpieces to thick workpieces.
- Highly precise chucks with little accuracy change.

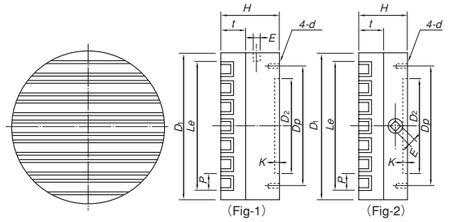
[mm (in)]

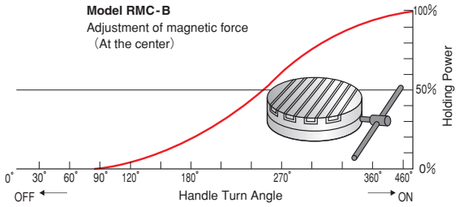
Model	Fig.	Nominal Dimensions	Top Plate D1	Top Plate Le	Pole Pitch P	Bottom Plate D2	Bottom Plate K	Bottom Plate Dp	Bottom Plate d	Face Plate Thickness t	Height H	Handle Hole E	Mass
RMC-13	1	125 (4.92)	125 (4.92)	88 (3.46)	15.2 (1.5+3.2+1.5+9) 0.59 (0.05+0.12+0.05+0.35)	100 (3.93)	4 (0.15)	112 (4.40)	M 6 (0.23)	24 (0.94)	55 (2.16)	Hexagon 8 (0.31)	4.5kg/ 10 lb
RMC-16		160 (6.29)	160 (6.29)	118 (4.64)		125 (4.92)		140 (5.51)	M 8 (0.31)				7.5kg/ 16 lb
RMC-20		200 (7.87)	200 (7.87)	149 (5.86)		160 (6.29)		180 (7.08)					12kg/ 26 lb
RMC-25		250 (9.84)	250 (9.84)	194 (7.63)		200 (7.87)		224 (8.81)					18kg/ 40 lb
RMC-32		315 (12.4)	315 (12.4)	255 (10.0)		250 (9.84)		280 (11.0)	M10 (0.39)				29kg/ 64 lb
RMC-40		400 (15.7)	400 (15.7)	331 (13.0)		315 (12.4)		355 (13.9)					47kg/ 104 lb

※As for handle, hexagonal wrench key is provided for model RMC-13 thru RMC-20, and special handle is supplied for model RMC-25 and above.

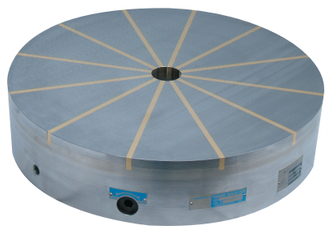
RMC-13B	2	125 (4.92)	125 (4.92)	88 (3.46)	15.2 (1.5+3.2+1.5+9) 0.59 (0.05+0.12+0.05+0.35)	100 (3.93)	4 (0.15)	112 (4.40)	M 6 (0.23)	24 (0.94)	65 (2.55)		6kg/ 13 lb
RMC-16B		160 (6.29)	160 (6.29)	118 (4.64)		125 (4.92)		140 (5.51)	M 8 (0.31)			□ 8 (0.31)	9kg/ 20 lb
RMC-20B		200 (7.87)	200 (7.87)	149 (5.86)		160 (6.29)		180 (7.08)					15kg/ 33 lb
RMC-25B		250 (9.84)	250 (9.84)	194 (7.63)		200 (7.87)		224 (8.81)					23kg/ 51 lb
RMC-32B		315 (12.4)	315 (12.4)	255 (10.0)		250 (9.84)		280 (11.0)	M10 (0.39)			□10 (0.39)	35kg/ 77lb
RMC-40B		400 (15.7)	400 (15.7)	331 (13.0)		315 (12.4)		355 (13.9)					62kg/ 137 lb

※The magnetic force is turned on and off with the T-shape handle (accessory)for the scroll chuck.

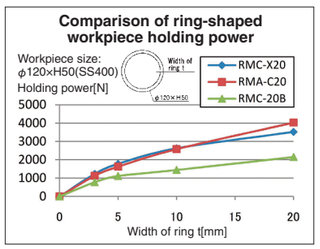




Model RMC-X STAR-POLE ROUND PERMANENT MAGNETIC CHUCK



RMC-X40



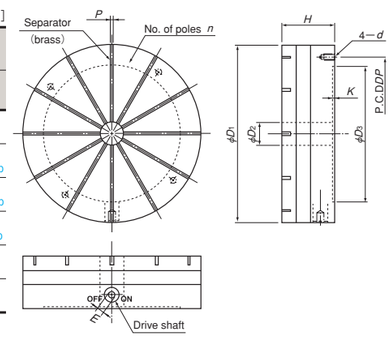
[Application]
Permanent magnetic chucks for securing ring-shaped workpieces on lathes and vertical combined grinding machines.

[Features]
- The star-pole construction generates a strong magnetic force that works well on ring-shaped workpieces such as bearings.
- The permanent magnetic chucks that do not require electricity can be mounted easily without troublesome wiring. They also contribute to energy saving.
- Usable in wet conditions.
- Model RMC-X-B chucks are equipped with a magnetic force adjust function.(The ON-OFF operating angle is about 630 degrees and the magnetic force is adjusted according to the handle turning angles.)

[mm (in)]

Model		Work Face D1	Work Face D2	Work Face P	Work Face No. of poles "n"	Mounting Face D3	Mounting Face K	Mounting Face Dp	Mounting Face d	Height H Standard	Height H Mag.force adjust	Handle Hole E Standard	Handle Hole E Mag.force adjust	Mass Standard	Mass Mag.force adjust
Standard	Mag. force adjust														
RMC-X15	—	150 (5.90)	30 (1.18)	6 (0.23)	10	110 (4.33)	4 (0.15)	130 (5.11)	M8 (0.31)	74 (2.91)	–	8 (0.31)	–	Approx. 9 kg/19.8 lb	–
RMC-X20	RMC-X20B	200 (7.87)				160 (6.29)		180 (7.08)			84 (3.30)		8 (0.31)	Approx. 16kg/35.2 lb	Approx. 18kg/39.6 lb
RMC-X30	RMC-X30B	300 (11.8)	40 (1.57)		12	230 (9.05)		260 (10.2)	M10 (0.39)	89 (3.50)	94 (3.70)	10 (0.39)		Approx. 42kg/92.6 lb	Approx. 43kg/94.7 lb
RMC-X40	RMC-X40B	400 (15.7)				315 (12.4)		355 (13.9)					10 (0.39)	Approx. 83kg/182 lb	Approx. 90kg/198 lb
RMC-X50	—	500 (19.6)	130 (5.11)		24	400 (15.7)		450 (17.7)	M12 (0.47)	117 (4.60)	–		–	Approx. 160kg/352 lb	–
RMC-X60	—	600 (23.6)	180 (7.08)			450 (17.7)		520 (20.4)						Approx. 230kg/507 lb	–

※A ratchet type handle (with socket) is included.



This is an epoch-making chuck that supports a distorted/warped workpiece with sticks to hold it in its natural state.

[Application]
The sticks arranged at certain pitches enable precise setting of workpieces quickly in the machining sector including mold bases in dry milling operations.

- Common specifications of ACSHIM for cutting -

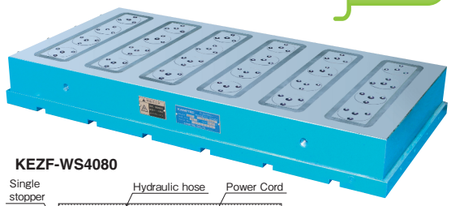
- Sticks on the work face support a distorted (warped) workpiece and hold it in a natural state. Since no measures are necessary to support such workpieces using shims, etc., the work efficiency can be improved.
- A series of operation from supporting a workpiece (raising the sticks) up to holding and securing the workpiece can be done quickly.
- Each stick unit (workpiece support) can be removed easily for easy maintenance.
- The precision flatness machining time can be reduced by 50%.
- The turn-over process in machining is reduced from 3 – 4 steps to 2 steps.
- The use of sticks requires no skills to machine workpieces precisely.
- Workpieces of 3 mm distortion max. can be supported.
- Most suitable for milling plates that are 20 mm or thicker.

Click here for video. Click here for video. Click here for video.

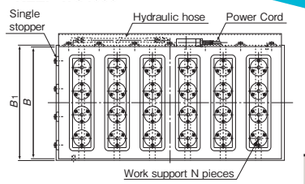
Model KEZF-WS ACSHIM* FOR PRECISION CUTTING

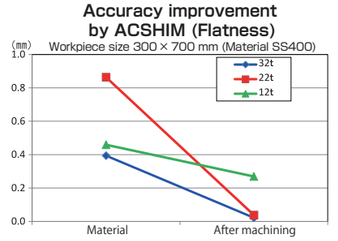
Chuck controller required additionally

Environmentally friendly



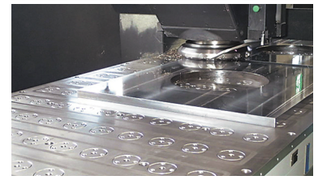
KEZF-WS4080





Note: Not guaranteed values.

A gap in the center of a warped workpiece that cannot be reached by shims is supported by sticks.



[mm (in)]

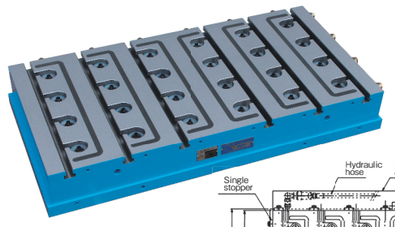
Model	Nominal Size	Work Face B	Work Face L	Mounting Face B1	Mounting Face L1	Mounting Face t	Height H	Number of Sticks	Mass	Dedicated Control Unit
KEZF-WS 3060	300(11.8)× 600(23.6)	300(11.8)	600(23.6)	310(12.2)	620(24.4)	30 (1.18)	105 (4.13)	15	130kg/286 lb	
KEZF-WS 4080	400(15.7)× 800(31.5)	400(15.7)	800(31.5)	410(16.1)	820(32.2)			24	230kg/507 lb	EH-VFW205A
KEZF-WS50100	500(19.6)×1000(39.4)	500(19.6)	1000(39.4)	510(20.0)	1020(40.1)			40	360kg/793 lb	
KEZF-WS60100	600(23.6)×1000(39.4)	600(23.6)		610(24.0)				48	430kg/948 lb	EH-VFW210A

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

Model KEZF-WX

Electromagnetic

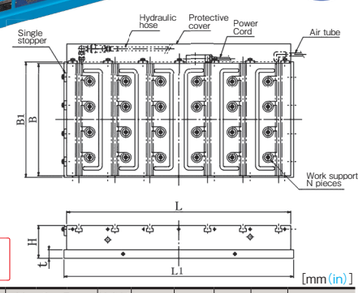
With T-slot



KEZF-WX4080

Environmentally friendly

Chuck controller required additionally



[mm (in)]

Model	Nominal Size	Work Face B	Work Face L	Mounting Face B1	Mounting Face L1	Mounting Face t	Height H	Number of Sticks	Voltage	Current	Mass	Dedicated Control Unit
KEZF-WX 3060	300(11.8) × 600(23.6)	300 (11.8)	600 (23.6)	310 (12.2)	620 (24.4)	30 (1.18)	115 (4.52)	15	90 VDC	2.0A	140kg/ 308 lb	EH-VFW205A
KEZF-WX 4080	400(15.7) × 800(31.4)	400 (15.7)	800 (31.4)	410 (16.1)	820 (32.2)			24		2.3A	250kg/ 551 lb	
KEZF-WX50100	500(19.6) × 1000(39.3)	500 (19.6)	1000 (39.3)	510 (20.0)	1020 (40.1)			40		4.0A	390kg/ 859 lb	
KEZF-WX60100	600(23.6) × 1000(39.3)	600 (23.6)		610 (24.0)				48		6.0A	470kg/ 1036 lb	EH-VFW210A

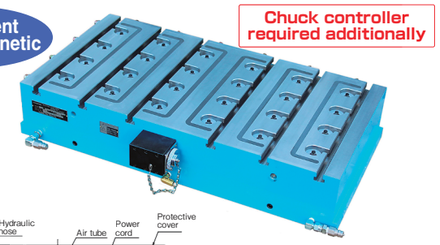
※The control unit and clamp parts are not included. The KANETEC chucks work best when a KANETEC control unit is used.

Model EPZF-WX

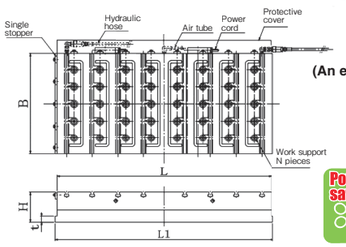
Permanent electromagnetic

With T-slot

Chuck controller required additionally



EPZF-WX4080
(An example of special fabrication)



Environmentally friendly

Power saving

Minimal heat generation

[mm (in)]

Model	Nominal Size	Work Face B	Work Face L	Mounting Face B1	Mounting Face L1	Mounting Face t	Height H	Number of Sticks	Voltage	Mass	Dedicated Control Unit
EPZF-WX50100	500(19.6) × 1000(39.3)	500 (19.6)	1000 (39.3)	500 (19.6)	1020 (40.1)	30 (1.18)	150 (5.90)	40	180 VDC	520kg/ 1146 lb	EPS-WF275A
EPZF-WX60100	600(23.6) × 1000(39.3)	600 (23.6)		600 (23.6)				48		620kg/ 1367 lb	

※The chuck controller and clamp parts are not included. ※The KANETEC chucks work best when a KANETEC chuck controller is used.
※Turning the permanent electromagnetic chucks on and off must be limited to once per several minutes. If on/off operations are repeated frequently, the chucks may be damaged by overheat.

- Specifications of ACSHIM with T-slot - Patended•Design registered

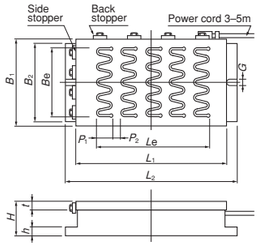
- Compared with Model KEZF-WS, this model offers more freedom of increasing/decreasing the number of sticks.
- A new structure to prevent occurrence of stick operational failure due to chips employed.
- The elimination of the lid of the stick section has enhanced maintainability as there is no need to align the level of the body and the lid when replacing the stick unit.
- The utilization of newly installed T slots enables it to clamp nonferrous or irregular shaped workpieces.
- Electricity is supplied momentarily only when mounting and demounting workpieces, thus minimal heat is generated and highly precise machining can be expected. Also electricity is saved. In addition, this ACSHIM can be used not only for plate machining, but also for various machining operations that require workpieces to be held for a long time.(Model EPZF-WX)

Model KETN POWERFUL WAVEFORM ELECTROMAGNETIC CHUCK

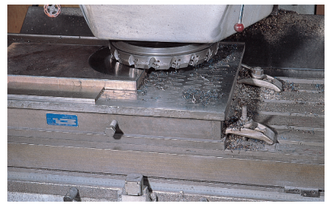
Environmentally friendly

KETN-4080A

Chuck controller required additionally

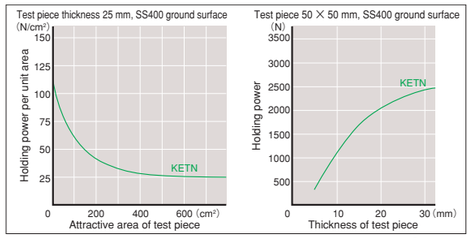


An example of mounting on machine



[Application]
A chuck for cutting by a milling machine, planomiller, etc. The wavy pattern of the separator helps distribute the magnetic force uniformly over the whole attractive surface and increases the overall magnetic force. Thus, this is a general-purpose chuck for a wide range of cutting applications.

[Features]
- Electromagnetic chucks generating strong holding power specially for cutting operations.
- Specially designed to minimize influence of magnetism on cutters.
- For heavy duty cutting, Model KETZ, super powerful electromagnetic chuck, is available, but this model has a wider application range that includes workpieces thinner than 15 mm, for which Model KETZ is not suitable.



[mm (in)]

Model	Nominal Size	Work Face B_1	Work Face L_1	Work Face t	Work Face Be	Work Face Le	Pole Pitch P_1	Pole Pitch P_2	Mounting Face B_2	Mounting Face L_2	Mounting Face h	Height H	Mounting Hole G	Voltage	Current	Mass	Electro Chuck Master
KETN- 1530A	150(5.90)× 300(11.8)	150(5.90)	300(11.8)	20 (0.78)	112(4.40)	248(9.76)	28 (1.10)	16 (0.62)	146(5.74)	344(13.5)	18 (0.70)	100 (3.93)	14	90 VDC	0.49A	27kg/ 59lb	※ES-M103B ES-M305B EH-V305A EH-VE305A
KETN- 1545A	150(5.90)× 450(17.7)		450(17.7)			404(15.9)	26 (1.02)			494(19.4)					0.87A	41kg/ 90lb	
KETN- 2050A	200(7.87)× 500(19.6)	200(7.87)	500(19.6)		152(5.98)	440(17.3)	22 (0.86)		196(7.71)	544(21.4)			Clamping		1.09A	80kg/ 176lb	
KETN- 2060A	200(7.87)× 600(23.6)		600(23.6)			523(20.5)	22.5(0.88)			600(23.6)					1.18A	98kg/ 216lb	
KETN- 2550A	250(9.84)× 500(19.6)	250(9.84)	500(19.6)		208(8.18)	440(17.3)	22 (0.86)		246(9.68)	544(21.4)			14		1.42A	102kg/ 224lb	
KETN- 3060A	300(11.8)× 600(23.6)	300(11.8)	600(23.6)	25 (0.98)	246(9.68)	523(20.5)	22.5(0.88)		294(11.5)	600(23.6)	20 (0.78)	120 (4.72)	Clamping		1.59A	130kg/ 286lb	
KETN- 3080A	300(11.8)× 800(31.5)		800(31.5)			722(28.4)	26 (1.02)			800(31.5)					2.21A	173kg/ 381lb	
KETN-30100A	300(11.8)×1000(39.4)		1000(39.4)			919(36.1)	26.5(1.04)			1000(39.4)					3.35A	240kg/ 529lb	Above models except for the one marked by ※.
KETN- 4080A	400(15.7)× 800(31.5)	400(15.7)	800(31.5)		342(13.4)	722(28.4)	25 (0.98)		390(15.3)	800(31.5)					3.05A	230kg/ 507lb	
KETN-40100A	400(15.7)×1000(39.4)		1000(39.4)			919(36.1)	26.5(1.04)			1000(39.4)					4.17A	288kg/ 634lb	
KETN-50100A	500(19.6)×1000(39.4)	500(19.6)			432(17.0)	920(36.2)	23 (0.90)		490(19.2)						5.86A	400kg/ 881lb	EH-VE210D
KETN-60100A	600(23.6)×1000(39.4)	600(23.6)			522(25.5)	924(36.3)	31 (1.22)		590(23.2)						5.66A	470kg/1036lb	

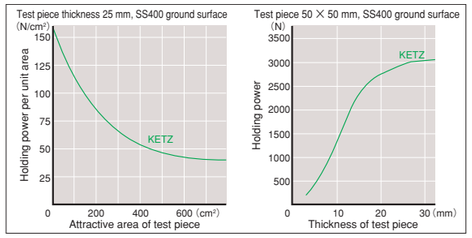
※The power cord is 3 m for KETN-1530A and 1545A and 5 m for other models. ※If the magnetic force needs not be adjusted, use ES-M.
※The chuck controller and clamp parts are not included. The KANETEC chucks work best when a KANETEC chuck controller is used.

Model KETZ SUPER POWERFUL ELECTROMAGNETIC CHUCK

Environmentally friendly

KETZ-2550B

Chuck controller required additionally

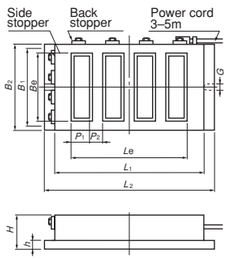


[Application]
Designed for heavy duty cutting by a milling machine and planomiller. Most suitable for powerful chucking of thick workpieces and high-speed cutting where a large cutting force is exerted.

[Features]
- Super powerful electromagnetic chucks specially designed for heavy duty cutting.
- Various measures provided for easy mounting, easy wiring and quick elimination of residual magnetism.
- Very effective holding power for workpieces that are 15 mm or thicker and sized 140×140 mm or larger.

[mm (in)]

Model	Nominal Size	Work Face B_1	Work Face L_1	Work Face Le	Work Face Be	Pole Pitch P_1	Pole Pitch P_2	No.of Poles	Mounting Face B_2	Mounting Face L_2	Mounting Face h	Height H	Mounting Hole G	Voltage	Current	Mass	Electro Chuck Master
KETZ- 1530B	150(5.90)× 300(11.8)	150 (5.90)	300(11.8)	240(9.44)	90 (3.54)	228(8.97)	——	1	156 (6.14)	350(13.7)	18 (0.70)	90 (3.54)	14	90 VDC	0.45A	28kg/ 61lb	※ES-M103B ES-M305B EH-V305A EH-VE305A
KETZ- 1545B	150(5.90)× 450(17.7)		450(17.7)	390(15.3)		378(14.8)	——			500(19.6)					0.66A	42kg/ 92lb	
KETZ- 2050B	200(7.87)× 500(19.6)	200 (7.87)	500(19.6)	422(16.6)	160 (6.29)	62(2.44)	54(2.12)	4	206 (8.10)	520(20.4)	20 (0.78)	100 (3.93)	Clamping (No hole)		0.90A	68kg/ 149lb	
KETZ- 2060B	200(7.87)× 600(23.6)		600(23.6)	520(20.4)		60(2.36)	52(2.04)	5		620(24.4)					0.95A	79kg/ 174lb	
KETZ- 2080B	200(7.87)× 800(31.5)		800(31.5)	718(28.2)		58(2.28)	50(1.96)	7		820(32.2)					1.42A	115kg/ 253lb	
KETZ- 2550B	250(9.84)× 500(19.6)	250 (9.84)	500(19.6)	422(16.6)	200 (7.87)	62(2.44)	54(2.12)	4	256 (10.0)	520(20.4)		110 (4.33)			1.16A	94kg/ 207lb	
KETZ- 2560B	250(9.84)× 600(23.6)		600(23.6)	520(20.4)		60(2.36)	52(2.04)	5		620(24.4)					1.26A	118kg/ 260lb	
KETZ- 3060B	300(11.8)× 600(23.6)	300 (11.8)	600(23.6)	520(20.4)	240 (9.44)	67(2.63)	56(2.20)	7	306 (12.0)	620(24.4)					1.64A	143kg/ 315lb	
KETZ- 3090B	300(11.8)× 900(35.4)		900(35.4)	817(32.1)						920(36.2)					3.04A	203kg/ 447lb	
KETZ- 4080B	400(15.7)× 800(31.5)	400 (15.7)	800(31.5)	718(28.2)	340 (13.3)	58(2.28)	50(1.96)	7	410 (16.1)	820(32.2)					3.23A	240kg/ 529lb	Above models except for the one marked by ※.
KETZ-40100B	400(15.7)×1000(39.4)		1000(39.4)	917(36.1)			55(2.16)	8		1020(40.1)					3.69A	300kg/ 661lb	
KETZ-50100B	500(19.6)×1000(39.4)	500 (19.6)	1000(39.4)		430 (16.9)	65(2.55)			510 (20.0)						3.95A	375kg/ 826lb	
◎KETZ-50150C	500(19.6)×1500(59.0)		750(29.5)×2	1417(55.7)			52(2.04)	6×2		1520(59.8)					2.69A×2	552kg/1217lb	
KETZ-60100B	600(23.6)×1000(39.4)	600 (23.6)	1000(39.4)	917(36.1)	530 (20.8)		55(2.16)	8	610 (24.0)	1020(40.1)					5.30A	414kg/ 912lb	EH-VE210D
◎KETZ-60150C	600(23.6)×1500(59.0)		750(29.5)×2	1412(55.5)			52(2.04)	6×2		1520(59.8)					3.51A×2	650kg/1433lb	



※The power cord is 3 m for KETZ-1530B and 1545B and 5 m for others. ※If the magnetic force needs not be adjusted, use ES-M. ※Sizes not listed above are also available.
※The chuck controller and clamp parts are not included. The KANETEC chucks work best when a KANETEC chuck controller is used. ※The models marked by ◎ are of duplex type. Please provide information such as a center connecting hole position. Also the terminal box TB-2PD is required for connection to the Chuck Master.

Model KEC-AS ROUND ELECTROMAGNETIC CHUCK

■STAR-Pole Type

Environmentally friendly

KEC-32ASE

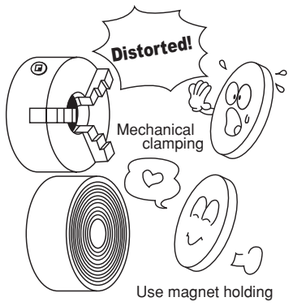
Chuck controller required additionally

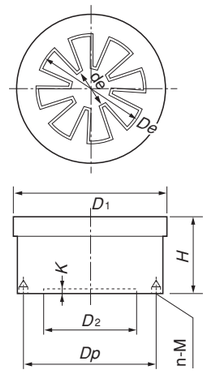
Feeder required additionally (See below)

KEC-50AS-S
(An example of special fabrication)

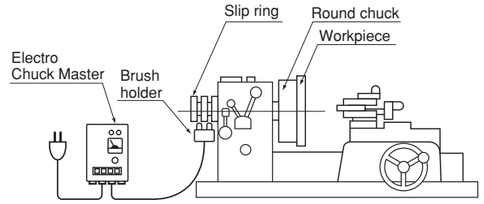
[Application]
Suitable for grinding and cutting operations with the chuck mounted on such machine tools as rotary grinders, lathes, turning machines and rotary milling machines that rotate workpieces to machine. This model comes in two types; ring pole and star pole according to the patterns on the chuck work face. The ring pole type is used for general grinding operations and the star pole type for cutting operations also.

[Features]
- For such operations as cutting thick workpieces, the star pole type is recommended that generates strong holding power.





〈Lathe wiring diagram〉



[mm (in)]

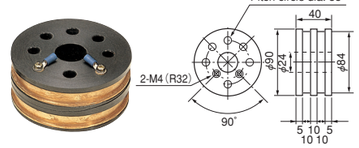
Model	Nominal Size	Work Face D_1	Work Face De	Work Face de	Pole Pitch	No. of Poles	Mounting Face D_2	Mounting Face K	Mounting Face n	Mounting Face M	Mounting Face Dp	Height H	Voltage	Current	Mass	Electro Chuck Master
KEC- 10ASE	100(3.93)	100(3.93)	75(2.95)	29(1.14)	–	8	63(2.48)	4(0.15)	4(0.15)	M 6(0.23)	80(3.15)	85(3.34)	90 VDC	0.04A	4.2kg/ 9 lb	※ES-M103B ES-M305B EH-V305A EH-VE305A
KEC- 16ASE	160(6.29)	160(6.29)	135(5.31)				125(4.92)			M 8(0.31)	140(5.51)			0.08A	12kg/26 lb	
KEC- 20ASE	200(7.87)	200(7.87)	161(6.33)	40(1.57)			160(6.29)				178(7.00)			0.13A	19kg/41 lb	
KEC- 25ASE	250(9.84)	250(9.84)	223(8.77)	49(1.92)			200(7.87)			M10(0.39)	224(8.81)	90(3.54)		0.40A	33kg/72 lb	
KEC- 32ASE	315(12.4)	315(12.4)	271(10.6)			10	250(9.84)				280(11.0)			0.44A	52kg/114 lb	
KEC- 40ASE	400(15.7)	400(15.7)	367(14.4)				315(12.4)				355(13.9)			0.68A	93kg/205 lb	
KEC- 50ASE	500(19.6)	500(19.6)	463(18.2)				400(15.7)			M12(0.47)	450(17.7)			1.00A	145kg/319 lb	
KEC- 63ASE	630(24.8)	630(24.8)	583(22.9)				500(19.6)				560(22.0)			1.28A	190kg/418 lb	
KEC- 80ASE	800(31.5)	800(31.5)	748(29.4)	70(2.75)		12	630(24.8)		8(0.31)		710(27.9)	110(4.33)		1.88A	370kg/815 lb	
KEC-100ASE	1000(39.4)	1000(39.4)	944(37.1)				800(31.5)			M16(0.62)	900(35.4)			3.92A	580kg/1278 lb	Above models except for the one marked by ※.

※If the magnetic force needs not be adjusted, use ES-M.
※The chuck controller and clamp parts are not included. The KANETEC chucks work best when a KANETEC chuck controller is used.

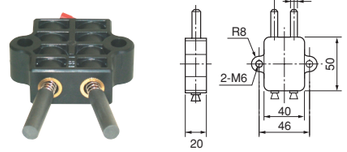
■Feeder (optional)

This feeder is required to use the round type electromagnetic chucks. Since the chuck itself is rotated, the feeder cables cannot be connected directly. For this reason, electricity is fed via a slip contact between the carbon brush on the power source side and the slip ring attached to the chuck.
- The ϕ24 mounting hole of the slip ring (SR-1) can be expanded up to ϕ40.

Slip ring Model SR-1

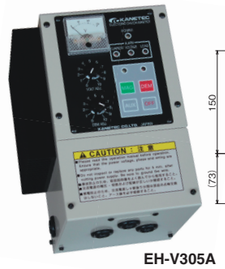


Brush holder Model BH-1A



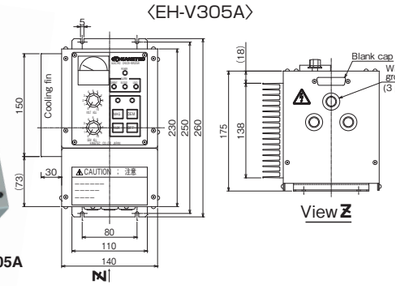
Model EH-V NON-CONTACT TYPE CHUCK MASTER*

Remote operation type



EH-V305A

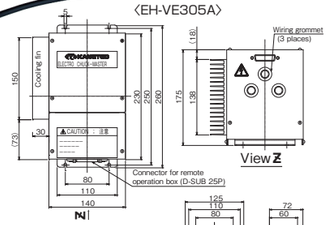
〈EH-V305A〉

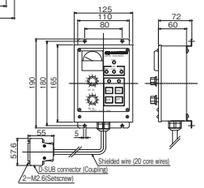


EH-VE305A

<Remote operation box>

〈EH-VE305A〉





〈Dimensions of remote operation box〉

[Application]

Rectifies an input from an AC power source to DC and outputs it to the electromagnetic chuck.

[Features]

- Developed as a non-contact type Chuck Master capable of outputting a constant voltage in a wide range of 100 VAC to 220 VAC and providing high speed consistent demagnetizing effect. Also various protective functions have been incorporated and indicator lamps for individual alarms are provided to identify alarms easily.
- Because a relay (consumable part) is not used, this model can be used continuously and withstand frequent ON/OFF operations.
- The holding power of the electromagnetic chuck can be controlled by adjusting the voltage.
- The rapid automatic demagnetization function is activated to reduce the residual holding power of the electromagnetic chuck.
- Many input/output signals are employed that can be utilized by connecting them to the pin terminal type terminal block in the case.
- Model EH-VE is a derived type of Model EH-V305A (operation unit incorporated) to which a remote operation box is attached for remote operation. For 10A operation, select model EH-VE210D.

[mm (in)]

Model	Power Source	Output	Width	Height	Depth	Mass
EH-V305A	Single phase 100—220 VAC (50／60Hz)	0—90 VDC 5A	170 (6.69)	260 (10.2)	175 (6.89)	4kg/ 8.8 lb
EH-VE305A						4kg/ 8.8 lb (main unit) + 1kg/ 2.2 lb (operation box)
EH-VE210D	Single phase 200 VAC (50／60Hz)	0—90 VDC 10A	282 (11.1)	290 (11.4)		6kg/ 13 lb (main unit) + 1kg/ 2.2 lb (operation box)

※Switch selection (Prior to use, be sure to check the position of the switch.) ※If the magnetic force needs not be adjusted, select Model ES-M.

Model ES-M ELECTRO CHUCK MASTER*

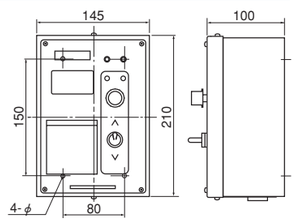
ES-M305B

[Application]

Rectifies an input from an AC power source to DC and outputs it to the electromagnetic chuck. To eliminate the residual holding power of the electromagnetic chuck, the rapid automatic demagnetization function is activated.

[Features]

- An interlock circuit is incorporated.
- Demagnetization is completed quickly by simply pressing the switch. The program has been designed to give a consistent demagnetizing effect within a short time.
- Model ES-M305B can be used on both input voltages of 100 VAC and 200 VAC.
- The noise resistance feature ensures consistent performance in certain noisy environment.
- The DC output voltage is constant.
- The fundamental functions required to control electromagnetic chucks are incorporated neatly.



Precaution for use Model ES-M103B is a low-cost, readily available type and therefore lacks some functions described above.

[mm (in)]

Model	Power Source	Output		Dimensions			Mounting Hole Pitch		Mounting Hole	Mass
		Voltage	Current	Width	Height	Depth	Width	Height		
ES-M103B	Single-phase 100 VAC / 50/60 Hz	90 VDC	3A	145 (5.70)	210 (8.26)	100 (3.93)	80 (3.15)	150 (5.90)	4—φ4.5 (φ0.17)	2.3kg/ 5.1 lb
ES-M305B	Single-phase 100/200 VAC 50／60Hz※1		5A							2.5kg/ 5.5 lb

※1…Switch selection ※If the magnetic force needs to be adjusted, select Model EH.

Selection Guide ■Selecting an Electro Chuck Master

KANETEC's Electro Chuck Master consists of a rectifier and electronically controlled demagnetization circuit. Residual magnetism varies largely depending on workpieces (material, shape, mass, etc.). It is therefore necessary to set the demagnetizing time (few seconds to over ten seconds) suitable for particular workpieces. The most effective demagnetizing patterns for each set time have been programmed in the computer to start automatic demagnetization by button operation. After studying whether the output required for magnetization may be constant or must be variable, select a model suitable for the rating of the electromagnetic chuck.

■Selection based on electric capacity <Model selection>

Name	Model	Power Source	DC Output		Demag. Control	Rectifier	Demagnetizer	Chuck Rating	
			Voltage	Current				Voltage	Max. Current※
Electro Chuck Master	EH-V305A	Single-phase 100 VAC-220 VAC 50/60 Hz	0-90 VDC	5A	Auto	Not required	Not required	90 VDC	4.5A
	EH-VE305A								
	EH-VE210D	Single-phase 200 VAC 50/60 Hz		10A					9.0A
	ES-V220A			20A					18.0A
	ES-V230A			30A					27.0A
	ES-M103B	Single-phase 100 VAC 50/60 Hz	90 VDC	3A					2.7A
	ES-M305B	Single-phase 100/200 VAC 50/60 Hz		5A					4.5A

■Selection based on function <Model selection>

Name	Model	Function		DC Output		Demag. Control		Chuck Rated Current
		Rectifier circuit	Demag. circuit	Variable	Invariable	Auto	Manual	
Electro Chuck Master	ES-M	○	○	—	○	○	—	<DC 4.5A
	EH-V,VE	○	○	○	—	○	—	<DC 9A

Model EP-Q PERMANENT ELECTROMAGNETIC CHUCK FOR CUTTING

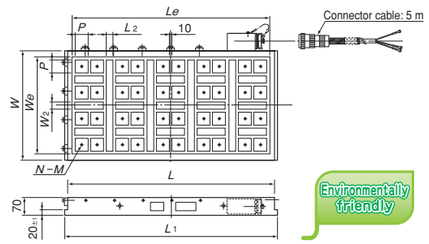
■EP-QN Series

EP-QN7-50100A

Power saving

Minimal heat generation

Chuck controller required additionally



Environmentally friendly

[mm (in)]

Standard Size Model		Work Face		Pole Dimensions						Mounting Face	Tapped Hole on Attractive Face		Mass	Applicable Chuck Master
		W	L	We	Le	No. of poles	P	W2	L2	L1	N	M		
EP-QN5	3060A	300 (11.8)	610 (24.0)	252 (9.92)	570 (22.4)	24	50 (1.96)	18 (0.70)	16 (0.63)	630 (24.8)	24	8 (0.31)	90kg/198 lb	EPS-P2100B
	4080A	420 (16.5)	800 (31.5)	372 (14.6)	760 (29.9)	40		28 (1.10)	25 (0.98)	820 (32.2)	40		160kg/352 lb	
	50100A	500 (19.6)	960 (37.8)	432 (17.0)	917 (36.1)	60		18 (0.70)	26 (1.02)	980 (38.5)	60		230kg/507 lb	
	60100A	600 (23.6)		552 (21.7)		72		24 (0.94)			72		280kg/617 lb	
EP-QN7	4080A	390 (15.3)	800 (31.5)	332 (13.0)	760 (29.9)	24	70 (2.75)	28 (1.10)	24 (0.94)	820 (32.2)	24	10 (0.39)	150kg/330 lb	EPS-P2100B
	50100A	500 (19.6)	1000 (39.4)	452 (17.8)	960 (37.8)	40			25 (0.98)	1020 (40.1)	40		240kg/529 lb	EPS-P2100B-2
	60100A	620 (24.4)		572 (22.5)		50					50		300kg/661 lb	

※Turning the permanent electromagnetic chucks on and off must be limited to once per several minutes. If on/off operations are repeated frequently, the chucks may be damaged by overheat.
※The chuck controller and clamp parts are not included. ※The KANETEC chucks work best when a KANETEC chuck controller is used.

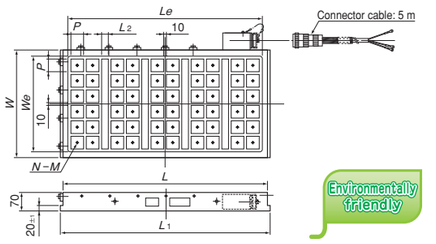
■EP-QS Series

EP-QS5-3060A

Power saving

Minimal heat generation

Chuck controller required additionally

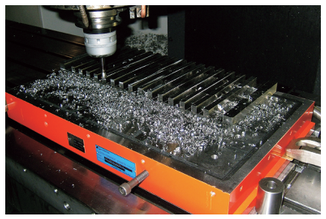


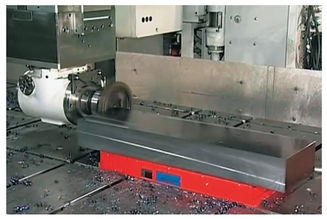
Environmentally friendly

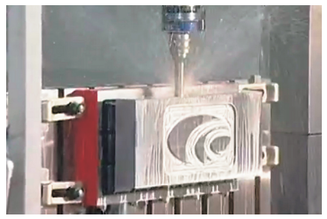
[mm (in)]

Standard Size Model		Work Face		Pole Dimensions					Mounting Face	Tapped Hole on Attractive Face		Mass	Applicable Chuck Master
		W	L	We	Le	No. of poles	P	L2	L1	N	M		
EP-QS5	3060A	300 (11.8)	610 (24.0)	252 (9.92)	570 (22.4)	32	50 (1.96)	16 (0.55)	630 (24.8)	32	8 (0.31)	90kg/198 lb	EPS-P2100B
	4080A	420 (16.5)	800 (31.5)	372 (14.6)	760 (29.9)	60		25 (0.98)	820 (32.2)	60		160kg/352 lb	
	50100A	500 (19.6)	960 (37.8)	432 (17.0)	917 (36.1)	84		26 (1.02)	980 (38.5)	84		230kg/507 lb	EPS-P2100B-2
	60100A	600 (23.6)		552 (21.7)		108				108		280kg/617 lb	
EP-QS7	3060A	300 (11.8)	600 (23.6)	252 (9.92)	562 (22.1)	18	70 (2.75)	25 (0.98)	620 (24.4)	18	10 (0.39)	86kg/189 lb	EPS-P2100B
	4080A	390 (15.3)	800 (31.5)	332 (13.0)	760 (29.9)	32		24 (0.94)	820 (32.2)	32		150kg/330 lb	
	50100A	470 (18.5)	1000 (39.4)	412 (16.2)	960 (37.8)	50		25 (0.98)	1020 (40.1)	50		220kg/485 lb	EPS-P2100B-2
	60100A	620 (24.4)		572 (22.5)		70				70		300kg/661 lb	

※Turning the permanent electromagnetic chucks on and off must be limited to once per several minutes. If on/off operations are repeated frequently, the chucks may be damaged by overheat.
※The chuck controller and clamp parts are not included. ※The KANETEC chucks work best when a KANETEC chuck controller is used.







Click here for video. Click here for video. Click here for video.

[Application]

Suitable for securing workpieces during cutting on milling machines and machining centers.

[Features]

- The power cord is of detachable connector type for easy use. The connector cap is of waterproof type.
- Can be used in wet machining operations.
- The chuck is very thin, 70 mm in height, and light weight.
- Less accuracy change and highly rigid construction.
- Considerable power saving compared with conventional products. (□70: 50% reduction, □50: 70% reduction)
- Magnetization and demagnetization in a very short time.
- Tapped holes on the attractive face can be used to install various blocks to hold workpieces by various methods according to machining operations.
- Straightening blocks are also available that are mounted on the chuck work face to hold workpieces by an induction field. These optional products are very useful for workpieces having irregular attractive faces that for example have steps and distortion and for machining the bottom and side faces of workpieces. (See ■Options on page 32.)

■ Example of machining

Workpiece Material	Workpiece Size (mm)	Cutting Conditions
SCM-440	250×300×70	f125 face mill, V=16, fz=0.1, depth of cut 2 mm, width of cut 100 mm, machining center used.
SKS3 hardened	300×150×20	Endmill for high hardness, flutes 6, f12, n 2600, F1000, ap 10, ae 0.1, setup time reduced to 1/3.

■A guide for selection

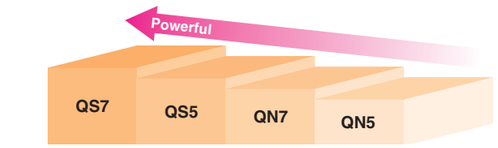
General milling	Good holding conditions such as plate machining.	QN
Planomiller, horizontal M/C, use of straightening blocks, etc.	Poor holding conditions such as heavy duty cutting	QS

Selection of pole size □50 or □70

- The □70 size is superior in the absolute holding power and gap characteristic.
- The □50 size is recommended for relatively small and thin workpieces.(The plate thickness of magnetic saturation is 20 to 25 mm for □50 and 30 to 35 mm for □70.)

■Relation between chuck models and holding power

Comparison of holding power of chucks of same size



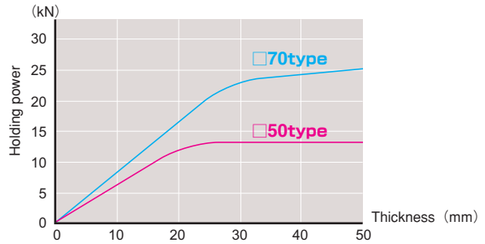
■Holding power

□50 generates the max. holding power of 2.94 kN (300 kgf) or over per pole and □70 generates 5.88 kN (600 kgf) or over per pole.

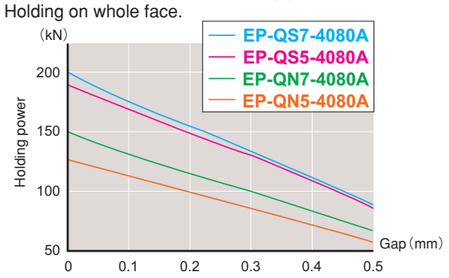
〈An example of calculation〉
Max. holding power on whole attractive face of EP-QS5-4080A
2.94kN×60 (number of poles)=176.4kN {18000kgf}

■EP-Q type holding power characteristic

1. Relation between workpiece thickness and holding power
Test piece held by 4 poles



2. Relation between gap and holding power
Holding on whole face.

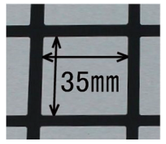


Model EP-QS3 RECTANGULAR PERMANENT ELECTROMAGNETIC CHUCK

Very small magnetic pole type suitable for small and thin workpieces!

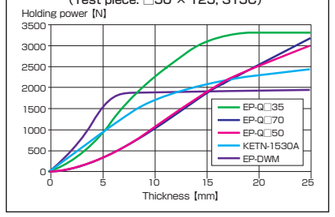
Environmentally friendly / Power saving / Minimal heat generation / Chuck controller required additionally

EP-QS3-3060A



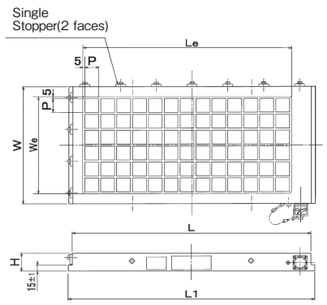
<Newly developed 35-mm square micro poles>

Holding power-thickness characteristic
(Test piece: □50 × T25, S15C)



[Application]
Used for securing workpieces during cutting by milling machines, machining centers, etc.

[Features]
- Compared with conventional permanent electromagnetic chucks for cutting, this type has higher holding power on small and thin workpieces.
- Compared with conventional chucks, the residual holding power has been reduced to a third maximum.
- An original construction is employed to keep the height below 50 mm, thus realizing thin and light weight chucks.
- Electricity is supplied momentarily only when mounting and demounting workpieces, thus minimal heat is generated and highly precise machining can be expected. Also electricity is saved.
- Can be used in wet operations.
- The employment of a quick connector facilitates connection/removal of the cable.



[mm (in)]

Model	Work Face W	Work Face L	Pole Dimensions We	Pole Dimensions Le	Pole Dimensions No.of Poles	Pole Dimensions P	Mounting Face W	Mounting Face L_1	Height H	Mass	Electro Chuck Master
EP-QS3-1732A	165 (6.49)	315 (23.6)	125 (4.92)	245 (9.64)	18	35 (1.37)	165 (6.49)	335 (13.1)	45 (1.77)	16kg/ 35 lb	EPS-P2100B
EP-QS3-2040A	205 (8.07)	400 (15.7)	165 (6.49)	325 (12.7)	32		205 (8.07)	420 (16.5)		26kg/ 57 lb	
EP-QS3-3060A	295 (11.6)	600 (23.6)	245 (9.64)	525 (20.6)	78		295 (11.6)	620 (24.4)		56kg/123 lb	
EP-QS3-4282A	415 (16.3)	820 (32.2)	365 (14.3)	745 (29.3)	162		415 (16.3)	840 (33.0)	50 (1.96)	120kg/264 lb	EPS-P2100B-2

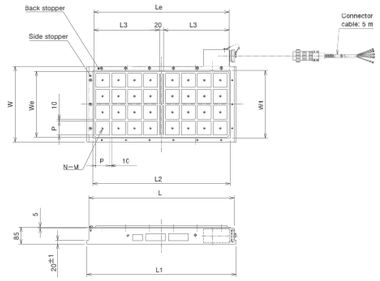
※The chuck controller and clamp parts are not included. ※The KANETEC chucks work best when a KANETEC chuck controller is used.
※Turning the permanent electromagnetic chucks on and off must be limited to once per several minutes. If on/off operations are repeated frequently, the chucks may be damaged by overheat.

Model EP-QD DEMAGNETIZING FUNCTION-EQUIPPED PERMANENT ELECTROMAGNETIC CHUCK FOR CUTTING

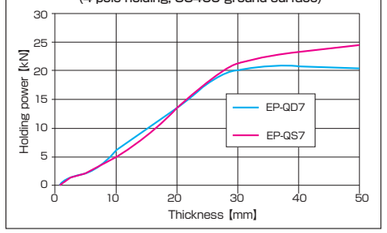
Weakness of checker board pattern type permanent electromagnetic chucks overcome!

Environmentally friendly / Power saving / Minimal heat generation / Chuck controller required additionally

EP-QD7-3469
(Mounting size equivalent to 400 × 800)



Holding power – thickness characteristic
(4-pole holding, SS400 ground surface)



[Application]
Used for securing workpieces during cutting by milling machines, machining centers, etc.

[Features]
- An optimum combination of KANETEC's original magnetic pole construction and a construction dedicated to demagnetization has reduced residual holding power significantly.
- Hardened steel and special steel workpieces having large residual magnetism can be released easily. (Compared with conventional EP-Q)
- The optional straightening block (KT-Q70/Q70M) can be used. By mounting various blocks using tapped holes on the attractive face, various securing methods can be utilized according to machining operations.
- Can be used in wet operations.
- Special types having four poles minimum are available.

[mm (in)]

Model	Mounting Size	Work Face W	Work Face W_1	Work Face L	Work Face L_2	Pole Dimensions We	Pole Dimensions Le	Pole Dimensions No.of Poles	Pole Dimensions P	Pole Dimensions L_3	Mounting Face L_1	Height	Tapped Hole on Attractive Face N	Tapped Hole on Attractive Face M	Mass	Electro Chuck Master
EP-QD7-2669	300 (11.8) × 800 (31.5)	300 (11.8)	260 (10.2)	730 (28.7)	690 (27.1)	250 (9.84)	680 (26.7)	24	70 (2.75)	330 (12.9)	750 (29.5)	85 (3.34)	24	10 (0.39)	125kg/275 lb	EPS-D2100A
EP-QD7-3453	400 (15.7) × 600 (23.6)	380 (14.9)	340 (13.3)	570 (22.4)	530 (20.8)	330 (12.9)	520 (20.4)			250 (9.84)	590 (23.2)					
EP-QD7-3469	400 (15.7) × 800 (31.5)			730 (28.7)	690 (27.1)		680 (26.7)	32		330 (12.9)	750 (29.5)		32		160kg/352 lb	EPS-D2100A-2
EP-QD7-5069	550 (21.6) × 800 (31.5)	540 (21.2)	500 (19.6)			490 (19.2)		48					48		230kg/507 lb	

※The chuck controller and clamp parts are not included. ※The KANETEC chucks work best when a KANETEC chuck controller is used.
※Turning the permanent electromagnetic chucks on and off must be limited to once per several minutes. If on/off operations are repeated frequently, the chucks may be damaged by overheat.

Model EP-D DEMAGNETIZING FUNCTION-EQUIPPED PERMANENT ELECTROMAGNETIC CHUCK FOR CUTTING

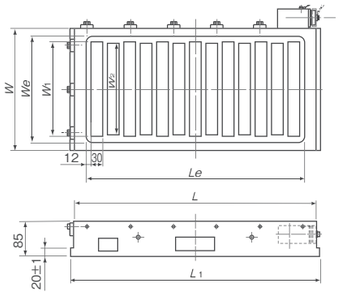
Strong holding power and good release performance realized!

Environmentally friendly / Power saving / Minimal heat generation / Chuck controller required additionally

EP-D3060

[Application]
Used for securing workpieces during cutting by milling machines, machining centers, etc.

[Features]
- A coil dedicated to demagnetization has significantly improved the workpiece release performance when the chuck is turned off.
- The magnetic pole arrangement to concentrate magnetism on the workpiece provides strong holding power.
- Hardened steel and special steel workpieces having large residual magnetism can be released quicker than the conventional chucks.
- Electricity is used only when mounting and demounting workpieces, thus minimal heat is generated and electricity is saved.
- Can be used in wet operations.



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[mm (in)]

Model	Work Face W	Work Face L	Dimensions We	Dimensions Le	Dimensions W_1	Dimensions W_2	Mounting Face L_1	Mass	Electro Chuck Master
EP-D 3060	304 (11.9)	618 (24.3)	264 (10.3)	558 (21.9)	240 (9.44)	232 (9.13)	638 (25.1)	110kg/242 lb	EPS-D2100A
EP-D 4080	404 (15.9)	786 (30.9)	364 (14.3)	726 (28.5)	340 (13.3)	332 (13.0)	806 (31.7)	185kg/407 lb	
EP-D50100	504 (19.8)	1038 (40.8)	464 (18.2)	978 (38.5)	440 (17.3)	432 (17.0)	1058 (41.6)	305kg/672 lb	EPS-D2100A-2
EP-D60100	604 (23.7)		564 (22.2)		540 (21.2)	532 (20.9)		360kg/793 lb	

※The chuck controller and clamp parts are not included. ※The KANETEC chucks work best when a KANETEC chuck controller is used. ※Turning the permanent electromagnetic chucks on and off must be limited to once per several minutes. If on/off operations are repeated frequently, the chucks may be damaged by overheat.

Model EP-DV POWERFUL PERMANENT ELECTROMAGNETIC CHUCK WITH VACUUM FUNCTION

Environmentally friendly | Power saving | Minimal heat generation

Chuck controller and vacuum system required additionally

Hybrid chuck to handle diversified materials!

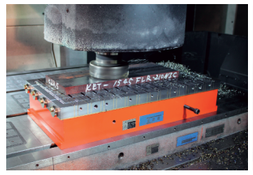
[Application]

Permanent electromagnetic chucks for cutting equipped with a grid-seal type vacuum chuck function added to hold workpieces during cutting and grinding of magnetic and nonmagnetic workpieces.

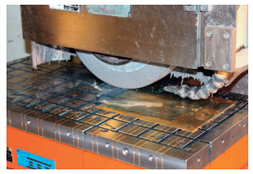
[Features]

- The strong holding power makes these chucks suitable for cutting of magnetic materials.
- Electricity is used only when mounting and demounting workpieces, thus minimal heat is generated and electricity is saved.
- Since these chucks have a construction dedicated to demagnetization, they have good workpiece release performance when they are turned off.
- The vacuum chuck can be set to a desired area by use of seal rubber according to workpieces.
- When machining nonmagnetic workpieces, the permanent electromagnetic feature can be utilized to hold magnetic substances around them to secure them firmly.

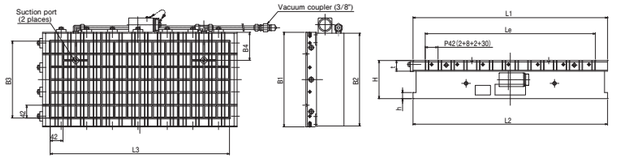
EP-DV3060



An example of milling by utilizing the permanent electromagnetic feature



An example of grinding of brass by utilizing the permanent electromagnetic feature



[mm(in)]

Model	Nominal Size	Work Face					Pole Pitch	Mounting Face			Height	Grid Pitch	Effective Area	Mass	Electro Chuck Master	Applicable Vacuum System
		B_1	L_1	Le	t	B_4	P	B_2	L_2	h	H		$B_3 \times L_3$			
EP-DV 3060	300(11.8) × 600(23.6)	310 (12.2)	638 (25.1)	558 (21.9)	35 (1.37)	92 (3.62)	42(2+8+2+30) (1.65)	304 (11.9)	638 (25.1)	20 (0.78)	125 (4.92)	42(1.65) ×42(1.65)	252(9.9) ×588(23.1)	170kg/ 374lb	EPS-D2100A	VPU-EG VPU-E10 VPU-D20
EP-DV 4080	400(15.7) × 800(31.5)	410 (16.1)	806 (31.7)	726 (28.5)		79 (3.11)		404 (15.9)	806 (31.7)				378(14.8) ×756(29.7)	280kg/ 617lb		
EP-DV50100	500(19.6) ×1000(39.4)	510 (20.0)	1058 (41.6)	978 (38.5)		87 (3.42)		504 (19.8)	1058 (41.6)				462(18.1) ×1008(39.6)	450kg/ 992lb	EPS-D2100A-2	

※The chuck controller, vacuum system and clamp parts are not included. ※The KANETEC chucks work best when a KANETEC chuck controller is used.
※Turning the permanent electromagnetic chucks on and off must be limited to once per several minutes. If on/off operations are repeated frequently, the chucks may be damaged by overheat.

Model EP-DWM POWERFUL PERMANENT ELECTROMAGNETIC CHUCK FOR HEAVY DUTY CUTTING

Environmentally friendly | Power saving | Minimal heat generation

Chuck controller required additionally

Strong magnetic force & good release performance & high water-tightness!

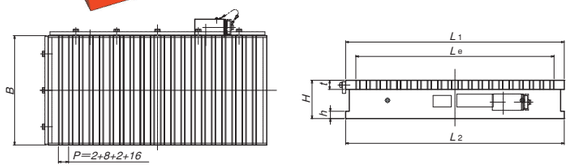
[Application]

Suitable for such precision machining of relatively large load as heavy duty grinding and cutting and for securing workpieces having steps such as linear motion guides.

[Features]

- Capable of holding relatively small workpieces, workpieces having a small attractive area and concave workpieces.
- The addition of a construction dedicated to demagnetization has improved the workpiece release performance when the chuck is turned off.
- Hardened steel and special steel workpieces having large residual magnetism can be released quickly.
- Electricity is supplied momentarily for mounting and demounting workpieces, thus minimal heat is generated and electricity is saved.
- The chucks can be used in wet operations and have improved water-tightness.
- A resin-bonded structural face plate having little environmental burden is employed.

EP-DWM3060



[mm(in)]

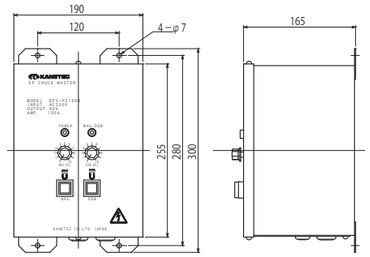
Model	Work Face				Mounting Face		Height	Mass	Electro Chuck Master
	B	L_1	Le	t	L_2	h	H		
EP-DWM2050	200(7.87)	490(19.2)	432(17.0)	25(0.98)	490(19.2)	20(0.78)	105(4.13)	70kg/154 lb	EPS-D2100A
EP-DWM3060	300(11.8)	600(23.6)	544(21.4)		600(23.6)			125kg/275 lb	
EP-DWM4080	400(15.7)	820(32.2)	768(30.2)		820(32.2)			230kg/507 lb	

※The chuck controller and clamp parts are not included. ※The KANETEC chucks work best when a KANETEC chuck controller is used.
※Turning the permanent electromagnetic chucks on and off must be limited to once per several minutes. If on/off operations are repeated frequently, the chucks may be damaged by overheat.

Model EPS-P EP CHUCK MASTER* DEDICATED TO PERMANENT ELECTROMAGNETIC CHUCK EP-Q SERIES

Compact design for limited installation space.

EPS-P2100B-2



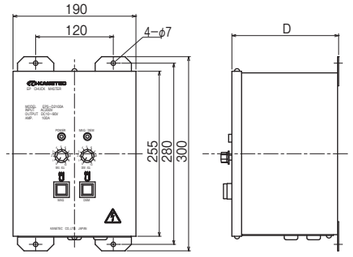
[mm(in)]

Model	EPS-P2100B	EPS-P2100B-2
Dimensions (W×H×D)	190(7.48)×165(6.5)×255(10.0)	
Power source	Single-phase, 200 VAC 50/60 Hz	
Output capacity	10 VDC – 90 VDC pulse 100 A	
Output switchover	No switchover	2
Magnetizing time (approx.)・demagnetizing time (approx.)	1 sec.	3 sec.
Breaker capacity (ref.)	30A	
Mass	7.5kg(16.5)	7.6kg(16.7)

※The power cable must be larger than 3.5 mm² and less than 10 m.

Model EPS-D CHUCK MASTER* DEDICATED TO DEMAGNETIZING FUNCTION-EQUIPPED PERMANENT ELECTROMAGNETIC CHUCK

EPS-D2100A



[Application]

A chuck controller dedicated to permanent electromagnetic chucks equipped with a demagnetizing function.

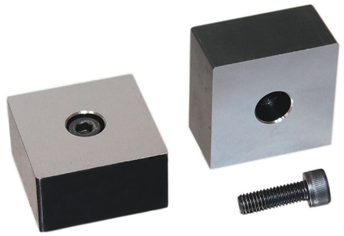
[mm(in)]

Model	EPS-P2100A	EPS-P2100A-2
Dimensions (W×H×D)	190(7.48)×165(6.5)×255(10.0)	190(7.48)×200(7.87)×255(10.0)
Power Source	Single-phase, 200 VAC 50/60 Hz	
Output capacity	10 VDC – 90 VDC pulse 100 A	
Output switchover	No switchover	2
Magnetizing time (approx.)・demagnetizing time (approx.)	1 sec./4 sec.	3 sec./6 sec.
Breaker capacity (ref.)	30A	
Mass	7.5kg(16.5)	8kg(17.6)

※The power cable must be larger than 3.5㎡ and less than 10m.

■Options Straightening block; for □50 and □70 (KT-Q)

KT-Q50M(Movable)



KT-Q50(Stationary)

[mm(in)]

Model		Type
□50(1.96)×H28(1.10)	□70(2.75)×H37(1.45)	
KT-Q50	KT-Q70	Stationary
KT-Q50M	KT-Q70M	Movable

※The H dimension is the standard height.

■Model of special specification

Model with T-slots available

※For more information, please contact us.

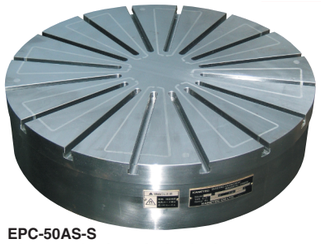
EP-QX50-S

Model EPC-AST ROUND PERMANENT ELECTROMAGNETIC CHUCK

Revolutionary permanent electromagnetic chuck! Magnetic force adjustable!

Chuck controller required additionally

Patented

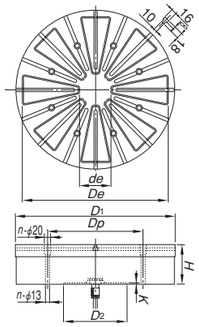


EPC-50AS-S
<An example of special fabrication>

Environmentally friendly

Power saving

Minimal heat generation



[Application]
Suitable for machining of ring-shaped workpieces such as bearings while rotating them on lathes, turning machines, cylindrical grinders and rotary grinders.

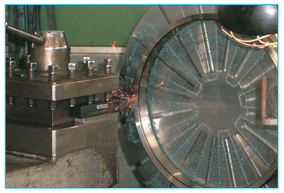
[Features]
- When used in combination with a dedicated controller equipped with a magnetic force adjust function, the magnetic force can be adjusted between strong and weak.
- Since internal heat generation and thermal distortion are minimal, highly precise machining is possible.
- Can be used in wet operations.
- These chucks are provided with T-grooves to make them suitable for various workpieces.

A size φ 1200 and larger is also available.

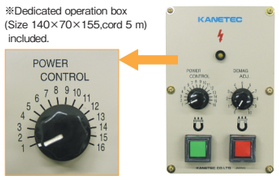
[mm(in)]

Model	Nominal Size	Work Face D1	Work Face De	Work Face de	No. of Poles	Mounting Face D2	Mounting Face K	Mounting Face n	Mounting Face Dp	Height H	Voltage	Current	Mass	Electro Chuck Master
EPC- 50AST	500 (19.6)	500 (19.6)	460 (18.1)	100 (3.93)	8	200 (7.87)	5 (0.19)	8	300 (11.8)	125 (4.92)	180 VDC	27A	Approx. 140kg/ 308 lb	EPS-RW230A
EPC- 70AST	700 (27.5)	700 (27.5)	656 (25.8)	120 (4.72)		400 (15.7)			500 (19.6)	130 (5.11)		32A	Approx. 330kg/ 727 lb	EPS-RW250A
EPC- 90AST	900 (35.4)	900 (35.4)	850 (33.4)	200 (7.87)	12	500 (19.6)		12	700 (27.5)	140 (5.51)		45A	Approx. 600kg/1323 lb	
EPC-120AST	1200 (47.2)	1200 (47.2)	1150 (45.2)	300 (11.8)	18	650 (25.5)	6 (0.23)	18	1000 (39.4)	150 (5.90)		60A	Approx.1100kg/2425 lb	EPS-RW275A

※The chuck controller is not included.
※The slip ring (carbon brush included) is optional. The brush holder support bar for the slip ring should be provided by the user.
※Turning the permanent electromagnetic chucks on and off must be limited to once per several minutes. If on/off operations are repeated frequently, the chucks may be damaged by overheat.



※Dedicated operation box (Size 140×70×155,cord 5 m) included.



[mm(in)]

Model	Power Source	Output Voltage	Output Current	Dimensions Width	Dimensions Height	Dimensions Depth	Mass
EPS-RW230A	Single-phase 200 VAC (50/60Hz)	180 VDC (16 steps)	30A	400(15.7)	480(18.8)	190(7.48)	Approx. 15kg/33.0 lb
EPS-RW250A			50A		725(28.5)	250(9.84)	Approx. 35kg/77.1 lb
EPS-RW275A			75A				

Model EPC-Z POWERFUL ROUND PERMANENT ELECTROMAGNETIC CHUCK

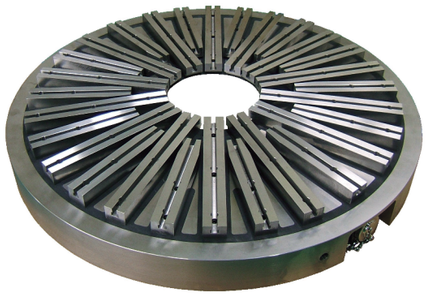
Construction machinery / Ship building / Nuclear power plant / Wind power generation Highly precise machining of ring-shaped workpiece such as bearings!

Environmentally friendly

Power saving

Minimal heat generation

Chuck controller required additionally



EPC-Z90

[Application]
Suitable for machining of ring-shaped workpieces such as bearings while rotating them on lathes and cylindrical grinders.

[Features]
- The employment of a magnetic pole construction suitable for cutting has increased the holding power. Suitable for cutting operations where large load is applied.
- The rectangular magnetic poles provide consistent holding power regardless of workpiece sizes.
- By using included blocks with T-grooves and adapter blocks, various workpieces, small and large, can be held.
- By mounting blocks, workpieces can be machined while being lifted. This feature enables it to machine workpieces from any direction. Also removal of chips and maintenance are easy.

[mm(in)]

Model	Dimensions	No.of Poles	Applicable Workpiece Diameter Min. dia.	Applicable Workpiece Diameter Max. dia.	Mass	Electro Chuck Master
EPC-Z60	φ 640(25.1)×90(3.54)	14	250(9.84)	600(23.6)	170kg/ 374 lb	EPS-PZ2100A-2
EPC-Z90	φ 950(37.4)×90(3.54)	28(14+14)		900(35.4)	410kg/ 904 lb	EPS-PZ2100A-4
EPC-Z120	φ1250(49.2)×90(3.54)			1200(47.2)	725kg/1598 lb	EPS-PZ2100A-6
EPC-Z150	φ1550(61.0)×110(4.33)	44(22+22)	500(19.6)	1500(59.0)	1280kg/2822 lb	EPS-PZ2100A-8
EPC-Z180	φ1850(72.8)×110(4.33)	43	800(31.5)	1800(70.8)	1580kg/3483 lb	EPS-PZ2100A-10
EPC-Z200	φ2050(80.7)×110(4.33)	50	1000(39.4)	2000(78.7)	1800kg/3969 lb	EPS-PZ2100A-10

※The chuck controller is not included.
※The power is supplied through the metal connector (with cable connection confirmation signal) on the side of the chuck.

<Chuck controller>

[mm(in)]

Model	Power Source	Output Voltage	Output Current	Breaker Capacity	Dimensions Width	Dimensions Height	Dimensions Depth	Mass
EPS-PZ2100A-2	200 VAC (50/60Hz) 1φ	90 VDC × 2 times switching	Pulse 100 A (per switching)	30A	450(17.7)	450(17.7)	200(7.87)	15kg/33.0 lb
EPS-PZ2100A-4		90 VDC × 4 times switching		60A	650(25.5)	750(29.5)	250(9.84)	35kg/77.1 lb
EPS-PZ2100A-6		90 VDC × 6 times switching						40kg/88.2 lb
EPS-PZ2100A-8		90 VDC × 8 times switching		75A	600(23.6)	850(33.4)		50kg/110 lb
EPS-PZ2100A-10		90 VDC × 10 times switching			800(31.5)	925(36.4)	300(11.8)	80kg/176 lb

Most suitable for five-face machining with a workpiece overhung and for securing irregular-shaped workpieces!

Model EPB PERMANENT ELECTROMAGNETIC BLOCK

Environmentally friendly

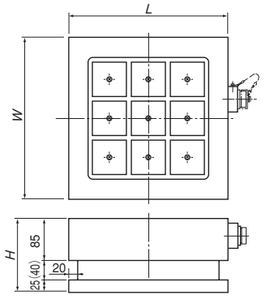
Power saving

Minimal heat generation

EPB-1F2525A

[Application]
Designed for holding workpieces on such machines as machining centers and NC machine tools. Most suitable for machining workpieces by 5-face machining centers, etc.

[Features]
- By securing a workpiece overhanging, the setup time on the 5-face machining center can be shortened.
- These blocks can be used in wet operations and therefore can be used like normal magnetic chucks.
- Since these blocks are of permanent electromagnetic type, the holding power is not affected by power failure or cable breakage. Also since very little heat is generated, thermal influence on workpiece is minimal.
- The metal connector design facilitates disconnection of the power cable. (Pallet change and external setup facilitated.)



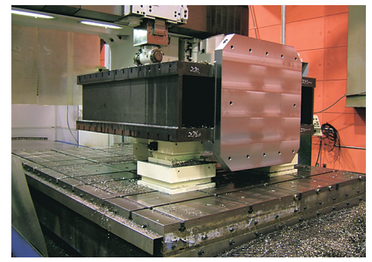
Chuck controller required additionally

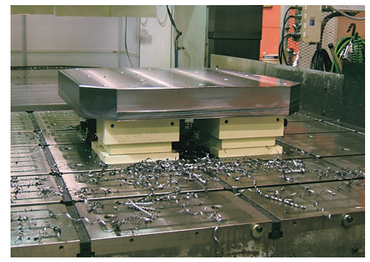
[mm(in)]

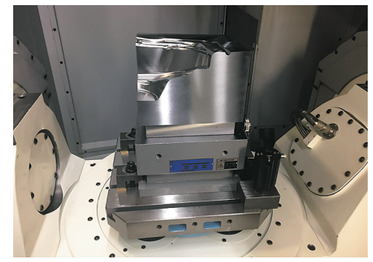
Model	Dimensions W	Dimensions L	Dimensions H	Pole Size	No.of Poles	Holding Power	Mass	Electro Chuck Master
EPB-1F1625A	160 (6.29)	250 (9.84)	150 (5.90)	70 (2.75)	2	11.8kN	40kg/ 88 lb	EPS-P2100B
EPB-1F2525A	250 (9.84)				4	23.5kN	60kg/132 lb	
EPB-1F3333A	330 (12.9)	330 (12.9)			9	53kN	120kg/264 lb	

※The chuck controller is not included.
※Turning the permanent electromagnetic blocks on and off must be limited to once per several minutes. If on/ off operations are repeated frequently, the blocks may be damaged by overheat.
※The holding power is based on a test piece of SS400, 50 mm thick, ground surface held on the whole face.

Click here for video. Click here for video. Click here for video. Click here for video.







Model EPB-2F DOUBLE-FACE HOLDING PERMANENT ELECTROMAGNETIC BLOCK

Environmentally friendly

Power saving

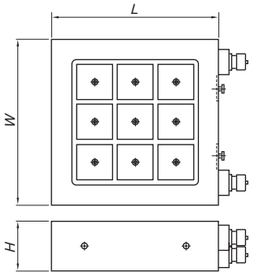
Minimal heat generation

Chuck controller required additionally

EPB-2F2525

[Application]
Suitable for various cutting applications such as by the MC.

[Features]
- As a workpiece is held on both faces, no mechanical clamping is necessary. It can be set on the machine table easily.
- By securing a workpiece overhanging, five faces can be machined in one chucking to improve the machining efficiency and accuracy.
- Since these blocks are of permanent electromagnetic type, the holding power is not affected by power failure or cable breakage. Also since very little heat is generated, thermal influence on workpiece is minimal.
- The power cable is of metal connector type that can be disconnected easily to make it suitable for pallet change and external setup.
- Several blocks can be used at the same time according to workpiece sizes and machining conditions.



[mm(in)]

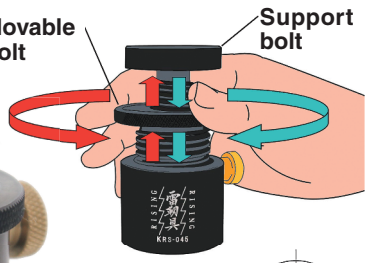
Model	Dimensions W	Dimensions L	Dimensions H	Pole Size	No. of Poles (per Face)	Holding Power	Mass	Electro Chuck Master
EPB-2F2525	250(9.84)	250(9.84)	100(3.93)	70(2.75)	4	23.6kN	40kg/ 88 lb	EPS-P2100B
EPB-2F3333	330(12.9)	330(12.9)			9	53.0kN	70kg/154 lb	

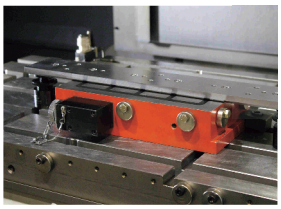
※The chuck controller is not included.
※Turning the permanent electromagnetic blocks on and off must be limited to once per several minutes. If on/ off operations are repeated frequently, the blocks may be damaged by overheat.
※The holding power is based on a test piece of SS400, 50 mm thick, ground surface held on the whole face.

Model KRS HANDY SUPPORT JACK "RISING"

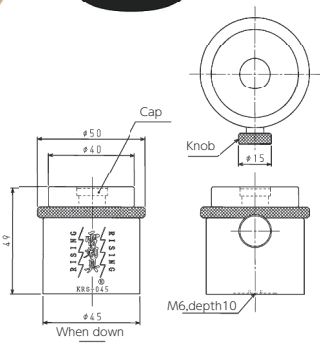
Patented

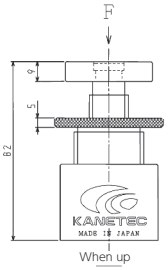
KRS-045





Supporting the overhanding portion of workpiece





[Application]

Suitable for supporting the overhanging portion of workpieces during machining and measurement.

[Features]

- The support bolt moves up and down as the movable bolt is turned. This design enables expansion/contraction or up/down movement quickly by one hand.
- Since the support bolt does not rotate, it does not damage workpieces when it contacts them.
- The movable/support bolts can be locked simultaneously by tightening the knob to enhance the work efficiency.

※ If the knob is likely to be loosened by vibrations, use the included grub screw.

- The use of top and bottom two types of attachments (optional) expands the applications.

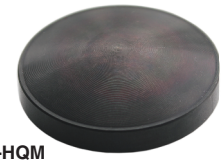
Main unit

[mm (in)]

Model	Main Unit	Height	Allowable Load in F Direction	Mass
KRS-045	ϕ45 (1.77)	49-82 (1.92-3.22)	9.81kN	0.48kg/1.05 lb

※ A grub screw is included.

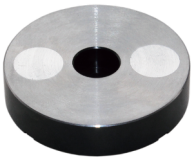
<Top workpiece supporter(Optional)>



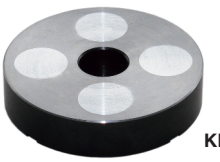
KRS-HQM

KRS-HVM

<Magnets for bottom part mounting(Optional)>



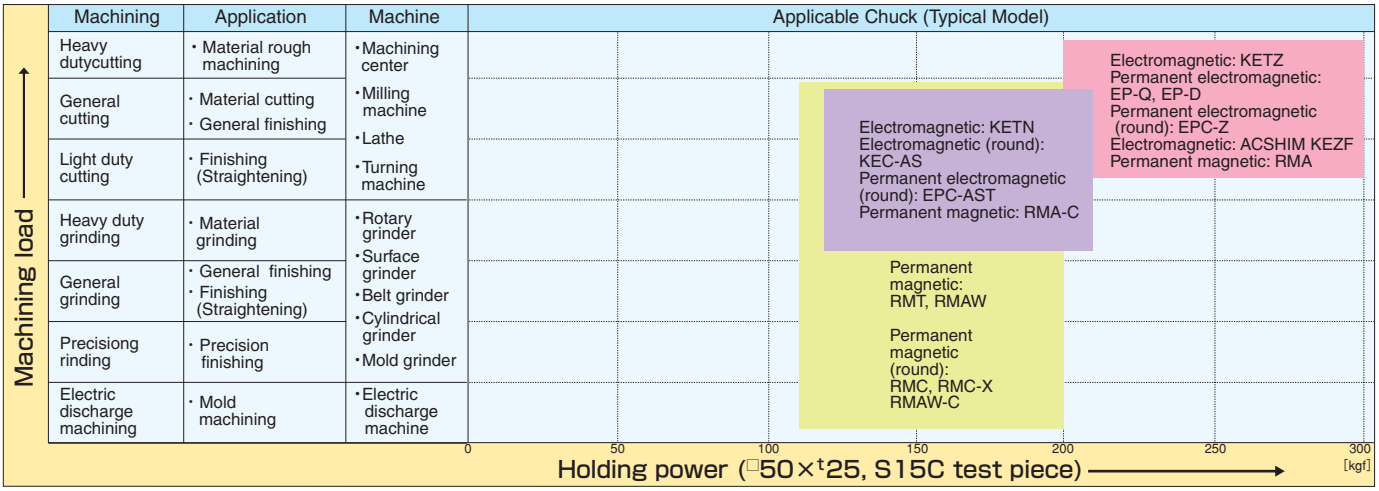
KRS-M2



KRS-M4

Types of Chucks by Applications

Machining	Application	Machine
Heavy dutycutting	・Material rough machining	・Machining center
General cutting	・Material cutting ・General finishing	・Milling machine ・Lathe
Light duty cutting	・Finishing (Straightening)	・Turning machine
Heavy duty grinding	・Material grinding	・Rotary grinder ・Surface grinder ・Belt grinder ・Cylindrical grinder ・Mold grinder
General grinding	・General finishing ・Finishing (Straightening)	
Precisiong rinding	・Precision finishing	
Electric discharge machining	・Mold machining	・Electric discharge machine



Types of Chucks

Type		Model	Application	Applicable Machine
Electromagnetic chuck	With T-groove	KEZX	Heavy duty cutting high-speed cutting	Machining center Milling machine Large planomiller
	Super powerful type	KETZ		
	Straightening	KEZF		
	Powerful waveform type	KETN	Cutting	
	Round type	KEC-AS	Cutting	Grinder, lathe, rotary grinder, turning machine (face lathe)
Permanent magnetic chuck	Powerful type	RMA	Cutting,heavy duty cutting	Milling machine
	For small and thin workpieces	RMAW	Light duty grinding and cutting of thin to thick workpieces	Grinder,Milling machine
	Standard type	RMT	Light duty cutting and grinding of small and thin workpieces	Grinder,electric discharge machine
	Powerful Round type	RMA-C	Cutting	Lathe
	Star-pole Round type	RMC-X	Light duty cutting,grinding	Grinder,Lathe
	Standard Round type	RMC		
Electric discharge machining	Powerful type	EP-Q	Heavy duty cutting,cutting	Milling machine,machining center
	Demagnelizing function type	EP-D		
	Round type	EPC	Turining,grinding	Cylindrical grinder,rotary grinder

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