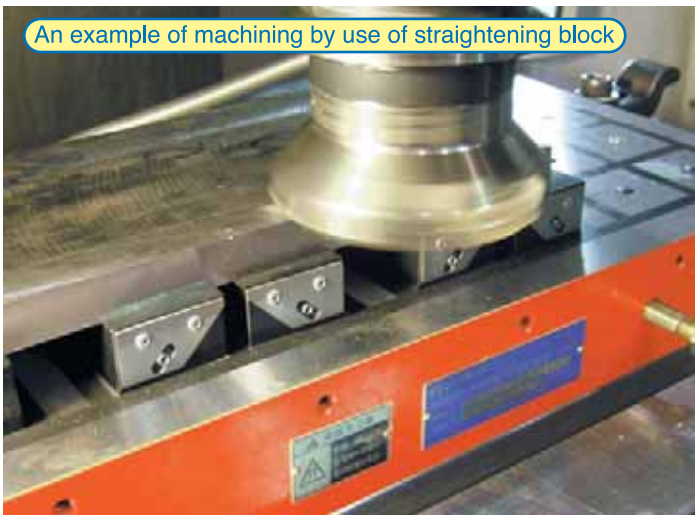
Model EP-Q PERMANENT ELECTROMAGNETIC CHUCK FOR MILLING

A Line-up of Products Selectable According to Machining Methods and Workpieces.

■Electricity is required only when mounting and dismounting workpieces. Workpieces can be held firmly in the event of power failure.

■Usable in wet machining operations.



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

[Features]
- Can be used in wet machining operations.
- Less accuracy change and highly robust construction.
- 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.
- The chuck is very thin, 70 mm in height, and light weight.
- 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 such workpieces of irregular attractive faces that for example have steps and distortion and for machining the bottom and side faces of workpieces.
- The detachable feeder connector is optionally available for pallet change.

〈When ordering〉
- Sizes other than the standard sizes listed in the right-side table are also available.
- The maximum one-piece size is W1300 x L1500 mm. For larger sizes, chucks are to be connected.
- When workpieces are hardened steels or special steels, they may be difficult to dismount due to strong residual magnetism.

■Model designation

Chuck size

CHUCK : EP-Q N 50 - 3060

N……**Normal** (Ribs arranged between poles)
H……**Hard** (Poles arranged densely)

Pole size (□50 or □70)

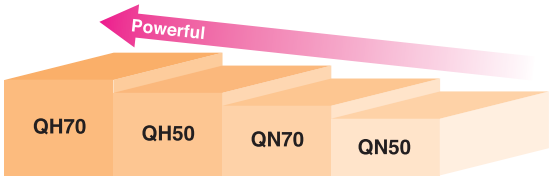
■A guide for selection

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

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 20~25 mm for □50 and 30~35 mm for □70.)

■Relation between chuck models and holding power



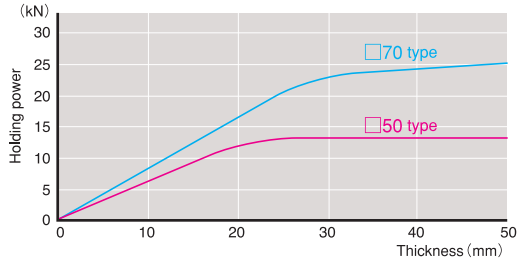
■Holding power

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

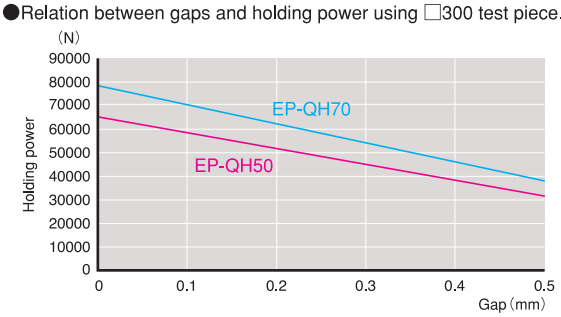
〈An example of calculation〉
Maximum holding power on entire attractive face of EP-QH50-4080
2.94kN×60 (number of poles) =176.4kN {18000kgf}

■EP-Q type holding power characteristic

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



- Relation between gaps and holding power using □300 test piece.

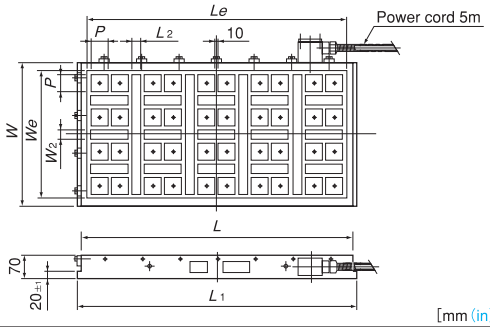


※The holding power of Model EP-QN is 60% to 70% of Model QH.

An example of special fabrication

EP-QN50-80130

Chuck controller required additionally



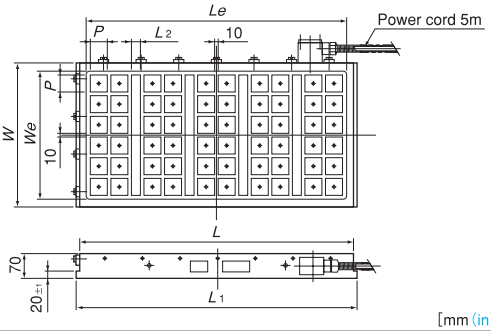
[mm (in)]

Standard Size Model		Chuck Work Face W	Chuck Work Face L	Pole Dimensions We	Pole Dimensions Le	Pole Dimensions No. of Poles	Pole Dimensions P	Pole Dimensions W2	Pole Dimensions L2	Mounting Face L1	Attractive Face Thread Hole N	Attractive Face Thread Hole M	Mass	Applicable Chuck Master
EP-QN50	3060	300 (11.8)	610 (24.0)	252 (9.92)	570 (22.4)	24	50 (1.96)	18 (0.70)	14 (0.55)	630 (24.8)	24 (0.94)	8 (0.31)	90kg/198 lb	EPS-P2100A
	4080	420 (16.5)	800 (31.5)	372 (14.6)	760 (29.9)	40		28 (1.10)	25 (0.98)	820 (32.2)	40 (1.57)		160kg/352 lb	EPS-P2100A-2
	50100	500 (19.6)	960 (37.8)	432 (17.0)	917 (36.1)	60		18 (0.70)		980 (38.5)	60 (2.36)		230kg/507 lb	EPS-P2100A-3
	60100	600 (23.6)		552 (21.7)		72		24 (0.94)			72 (2.83)		280kg/617 lb	
EP-QN70	4080	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 (0.94)	10 (0.39)	150kg/330 lb	EPS-P2100A
	50100	500 (19.6)	1000 (39.3)	452 (17.8)	960 (37.8)	40			25 (0.98)	1020 (40.1)	40 (1.57)		240kg/529 lb	EPS-P2100A-2
	60100	620 (24.4)		572 (22.5)		50					60 (2.36)		300kg/661 lb	EPS-P2100A-3

An example of special fabrication

EP-QH70-4090

Chuck controller required additionally



[mm (in)]

Standard Size Model		Chuck Work Face W	Chuck Work Face L	Pole Dimensions We	Pole Dimensions Le	Pole Dimensions No. of Poles	Pole Dimensions P	Pole Dimensions L2	Mounting Face L1	Attractive Face Thread Hole N	Attractive Face Thread Hole M	Mass	Applicable Chuck Master
EP-QH50	3060	300 (11.8)	610 (24.0)	252 (9.92)	570 (22.4)	32	50 (1.96)	14 (0.55)	630 (24.8)	32 (1.26)	8 (0.31)	90kg/198 lb	EPS-P2100A-2
	4080	420 (16.5)	800 (31.5)	372 (14.6)	760 (29.9)	60		25 (0.98)	820 (32.2)	60 (2.36)		160kg/352 lb	EPS-P2100A-3
	50100	500 (19.6)	960 (37.8)	432 (17.0)	917 (36.1)	84			980 (38.5)			230kg/507 lb	EPS-P2100A-6
	60100	600 (23.6)		552 (21.7)		108				108 (4.25)		280kg/617 lb	
EP-QH70	3060	300 (11.8)	600 (23.6)	252 (9.92)	562 (22.1)	18	70 (2.75)	23 (0.90)	620 (24.4)	18 (0.70)	10 (0.39)	86kg/189 lb	EPS-P2100A
	4080	390 (15.3)	800 (31.5)	332 (13.0)	760 (29.9)	32		24 (0.94)	820 (32.2)	32 (1.26)		150kg/330 lb	EPS-P2100A-2
	50100	470 (18.5)	1000 (39.3)	412 (16.2)	960 (37.8)	50		25 (0.98)	1020 (40.1)	50 (1.96)		220kg/485 lb	EPS-P2100A-3
	60100	620 (24.4)		572 (22.5)		70				70 (2.75)		300kg/661 lb	EPS-P2100A-5

※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.

EP Chuck Master

EPS-P2100A

Model designation

CHUCK MASTER : EPS-P2100A-2, 3, 4, 5, 6

Switching over of output

[mm (in)]

Model	Dimensions (W×H×D)	Operation Box (W×H×D)	Power Source	Output	Output Switchover	Magnetizing Time (approx.)	Demagnetizing Time (approx.)	Breaker Capacity (Ref.)
EPS-P2100A	400 (15.7) ×450 (17.7) ×200 (7.87)	100 (3.93) ×120 (4.72) ×70 (2.75) Cord 5m (196)	200 VAC 50/60Hz 1 φ	90 VDC Average: 100A (Max.: 300A)	No switchover	1s		30A
EPS-P2100A-2	450 (17.7) ×450 (17.7) ×200 (7.87)				2	3s		
EPS-P2100A-3	550 (21.6) ×450 (17.7) ×200 (7.87)				3	4s		40A
EPS-P2100A-4	600 (23.6) ×750 (29.5) ×250 (9.84)				4	7s		
EPS-P2100A-5					5	9s		60A
EPS-P2100A-6					6	11s		

Options

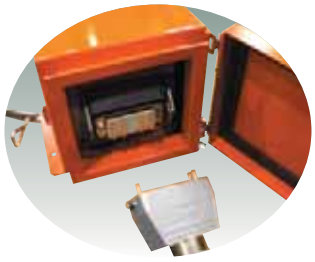
①Straightening blocks for □50 and □70

Model □50	Model □70	Type
KT-Q50	KT-Q70	Fixed
KT-Q50M	KT-Q70M	Movable

KT-Q50M

②Separately installed feeder

Recommended for pallet change spec.



Model of special specification

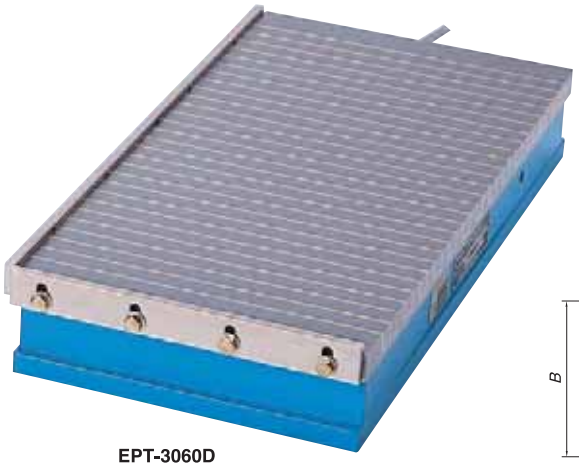
Model with T-slots available

EP-QX50-S

※For more information, please contact us.

PERMANENT ELECTROMAGNETIC CHUCKS

Model EPT STANDARD TYPE



EPT-3060D

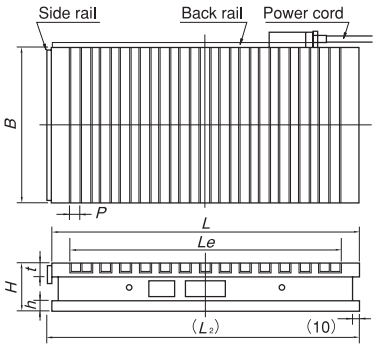
[Application]
Most suitable for highly accurate grinding such as precision grinding and slicing.

[Features]
- Electricity is applied momentarily only to control the magnetomotive force when mounting and dismounting workpieces, minimizing heat generated internally to ensure high precision machining operations.
- Electricity needs not be applied continuously even when holding workpieces, helping reduce running costs.
- The holding power is maintained by the permanent magnet in the event of power failure, improving safety.

Chuck controller required additionally

Power saving

Little heat generated



Note: The dimension L2 has not been machined together with the dimension L and some variation exists.

An example of large size fabrication

[mm (in)]

Model	Nominal Dimensions	Top Plate B1	Top Plate L	Top Plate Le	Top Plate t	Pole Pitch P	Bottom Plate L2	Bottom Plate h	Height H	Voltage	Current	Power Cord	Mass	Electro Chuck Master
EPT- 1530D	150 (5.90) × 300 (11.8)	150 (5.90)	300 (11.8)	240 (9.44)	20.5 (0.80)	14 (2+12) 0.55 (0.07+0.47)	300 (11.8)	20 (0.78)	80 (3.15)	※1 180 VDC	0.9	2m (78.7)	24kg/ 52 lb	EPH-LW205A EPS-W215B
EPT- 1535D	150 (5.90) × 350 (13.7)		350 (13.7)	296 (11.6)			350 (13.7)				1.0		31kg/ 68 lb	
EPT- 1545D	150 (5.90) × 450 (17.7)		450 (17.7)	380 (14.9)			450 (17.7)				1.4		40kg/ 88 lb	
EPT- 2050D	200 (7.87) × 500 (19.6)	200 (7.87)	500 (19.6)	436 (17.1)			500 (19.6)				3.4	3m (118)	66kg/145 lb	
EPT- 2060D	200 (7.87) × 600 (23.6)		600 (23.6)	548 (21.5)			600 (23.6)				3.6		70kg/154 lb	
EPT- 3060D	300 (11.8) × 600 (23.6)	300 (11.8)	600 (23.6)	529 (20.8)	25.0 (0.98)	19.5 (2.5+17) 0.76 (0.09+0.66)		25 (0.98)	100 (3.93)		2.8		140kg/308 lb	
EPT- 4080D	400 (15.7) × 800 (31.5)	400 (15.7)	800 (31.5)	724 (28.5)			800 (31.5)				6.6	5m (196)	211kg/465 lb	
EPT-40100D	400 (15.7) ×1000 (39.3)		1000 (39.3)	919 (36.1)			1000 (39.3)				7.4		275kg/606 lb	
EPT-50100D	500 (19.6) ×1000 (39.3)	500 (19.6)									6.1		330kg/727 lb	EPH-LW210A EPS-W215B

※1···A 90V model is also available. Please contact us. ※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 EPH-LW EP CHUCK MASTER*

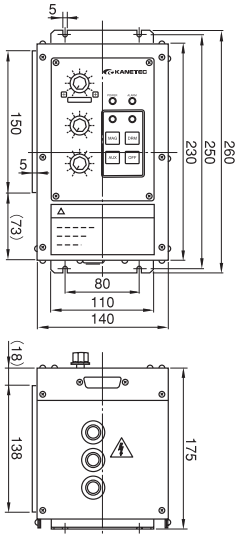
Low magnetic force control function

EPH-LW205A

[Application]
The use of the low magnetic force control function enables straightening operations as with electromagnetic chucks.
The use of the low magnetic force control function facilitates positioning of workpieces. (The low magnetic force control requires electricity to be supplied continuously. When used under low magnetic force control for long hours, accuracy change due to heat generated in the permanent electromagnetic chuck may slightly affect the machining accuracy.)

[Features]
These Chuck Masters enable it to control the low magnetic force (weak holding power), which is difficult with permanent electromagnetic chucks. When a conventional permanent electromagnetic chuck is used, it is necessary to turn it off once and after lowering the magnetizing voltage, turn it on again in order to set a low magnetic force for straightening grinding operations. These Chuck Masters have a control function by which the power can be applied continuously only in the low output region, which makes it possible to finely and continuously adjust the low magnetic force region as with electromagnetic chucks. They offer a capability of straightening grinding with permanent electromagnetic chucks. Workpieces can also be positioned smoothly with the low magnetic force control.

〈EPH-LW205A〉



[mm (in)]

Model	Power Source	Output Voltage	Output Current	Dimensions Width	Dimensions Height	Dimensions Depth	Mass Chack Master	Mass Operation Box
EPH-LW205A	Single-phase 200 VAC 50/60Hz	Permanent electromagnetic: 0—180 VDC (2sec) Low magnetic force: ±0—60 VDC (continuous)	5A	140 (+ 5) 5.51 (+0.19)	230 (9.05)	175 (6.89)	Approx.4.7kg/10.3 lb	Operated from main unit panel.
EPH-LWE205A				140 (+30) 5.51 (+1.18)			Approx.4.5kg/ 9.9 lb	Approx.0.6kg/1.3 lb
EPH-LWE210A			10A	220 (+30) 8.66 (+1.18)	250 (9.84)		Approx.6.0kg/13.2 lb	

※Non-contact Chuck Masters (with low magnetic force control) of permanent electromagnetic chucks (180 VDC version).
※The low magnetic force control is possible when used in combination with the permanent electromagnetic chuck Model EPT-D.
※Three types; rated output of 180 VDC-5A, 180 VDC-5A (with operation box) and 180 VDC-10A (with operation box) are available.

Model EPTW MICROPITCH TYPE

EPTW-1530

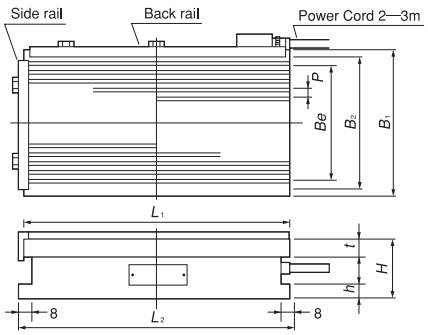
[Application]

Suitable for precision grinding on grinders and for holding thin and thick workpieces having a large area.

[Features]

- Thanks to finer pole pitches on the chuck work face, these chucks hold thin and wide workpieces firmly.
- Electricity is applied momentarily only to control the magnetomotive force when mounting and dismounting workpieces, minimizing heat generated internally to maintain accuracy.
- Electricity needs not be applied continuously even when holding workpieces, helping reduce running costs.
- The holding power is maintained in the event of power failure or cable breakage, thus improving safety.

Chuck controller required additionally

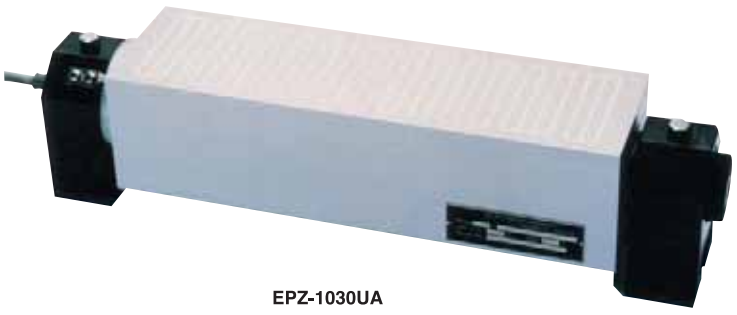


[mm (in)]

Model	Nominal Dimensions	Top Plate				Pole Pitch	Bottom Plate			Height	Voltage	Power Cord	Mass	Electro Chuck Master
		B_1	L_1	t	Be	P	B_2	L_2	h	H				
EPTW-1530	150 (5.90) ×300 (11.8)	150 (5.90)	300 (11.8)	20 (0.78)	125 (4.92)	4 (0.8+3.2) 0.15 (0.03+0.12)	148 (5.82)	300 (11.8)	18 (0.70)	95 (3.74)	90 VDC	2m (78.7)	29kg/ 63 lb	EPS-215B
EPTW-1545	150 (5.90) ×450 (17.7)		450 (17.7)					450 (17.7)					44kg/ 97 lb	
EPTW-2040	200 (7.87) ×400 (15.7)	200 (7.87)	400 (15.7)	25 (0.98)	173 (6.81)		198 (7.79)	400 (15.7)	20 (0.78)	120 (4.72)			65kg/143 lb	
EPTW-2050	200 (7.87) ×500 (19.6)		500 (19.6)					500 (19.6)				3m (118)	82kg/180 lb	
EPTW-2560	250 (9.84) ×600 (23.6)	250 (9.84)	600 (23.6)		217 (8.54)		248 (9.76)	600 (23.6)					123kg/271 lb	
EPTW-3060	300 (11.8) ×600 (23.6)	300 (11.8)			269 (10.5)		298 (11.7)						147kg/324 lb	

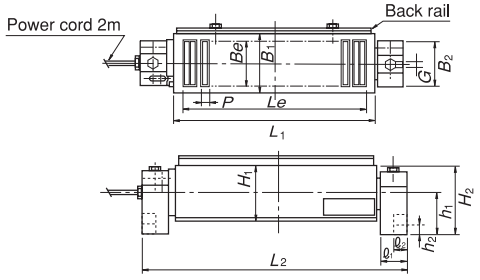
※The chuck controller and clamp parts are not included. The KANETEC chucks work best when a KANETEC chuck controller is used.
※Turning the permanent electromagnetic chucks on and off must be limited to once per several minutes. If on/off operations are repeated frequently, the chucks may be damaged by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

Model EPZ-U ROTARY TYPE



EPZ-1030UA

Chuck controller required additionally



[mm (in)]

Model	Nominal Dimensions	Top Plate					Pole Pitch	Rotary Stand						Length	Height	Voltage	Mass	Electro Chuck Master
		B_1	L_1	Be	Le	H_1	P	B_2	Q_1	Q_2	G	h_1	h_2	L_2	H_2			
EPZ-1025UA	100 (3.93) ×250 (9.84)	100 (3.93)	250 (9.84)	78 (3.07)	211 (8.30)	100 (3.93)	11 (2+9) 0.43 (0.07+0.35)	100 (3.93)	50 (1.96)	29 (1.14)	14 (0.55)	80 (3.15)	15 (0.59)	368 (14.4)	130 (5.11)	90 VDC	22kg/ 48 lb	EPS-215B
EPZ-1030UA	100 (3.93) ×300 (11.8)				255 (10.0)									418 (16.4)			24kg/ 52 lb	
EPZ-1230UA	120 (4.72) ×300 (11.8)	120 (4.72)	300 (11.8)	96 (3.78)	240 (9.44)		14 (2+12) 0.55 (0.07+0.47)					95 (3.74)					30kg/ 66 lb	
EPZ-1530UA	150 (5.90) ×300 (11.8)	150 (5.90)		120 (4.72)										568 (22.3)	145 (5.70)		37kg/ 81 lb	
EPZ-1545UA	150 (5.90) ×450 (17.7)		450 (17.7)		408 (16.0)												52kg/114 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 EP CHUCK MASTER*

Power source for permanent electromagnetic chucks

EPS-215B

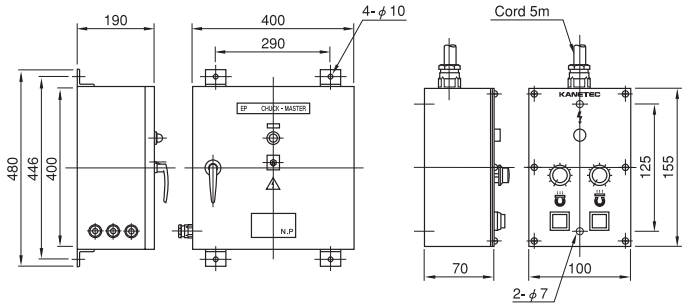
[Application]

Rectifies an input from the AC power source to DC and momentarily outputs exciting current to permanent electromagnetic chucks. The automatic demagnetization circuit is activated to reduce residual magnetism in permanent electromagnetic chucks.

[Features]

- This chuck master is designed for use with electro permanent models : EPT-C, EPTW, EPZ, and EPZ-U.
- Microcomputer control ensures effective automatic demagnetization.
- Adjustable holding power.

〈EPS-230B〉



〈Main unit〉 〈Operation box〉

General models

[mm (in)]

Model	Power Source	Output		Dimensions			Mounting			Mass	Operating box			
		Voltage	Current	Width	Depth	Height	Width	Height	Hole		Width	Depth	Height	Cord
EPS-215B	Single-phase 200 VAC (50/60Hz)	20— 90 VDC	15A	180 (7.08)	130 (5.11)	250 (9.84)	120 (4.72)	275 (10.8)	4-φ 7 (0.27)	4.7kg/10.3 lb	——	——	——	——
EPS-230B			30A	400 (15.7)	190 (7.48)	400 (15.7)	290 (11.4)	446 (17.5)	4-φ10 (0.39)	18.3kg/40.3 lb	100 (3.93)	70 (2.75)	155 (6.10)	5m (196)
EPS-W215B		40—180 VDC	15A	180 (7.08)	130 (5.11)	250 (9.84)	120 (4.72)	275 (10.8)	4-φ 7 (0.27)	4.7kg/10.3 lb	——	——	——	——
EPS-W230B			30A	400 (15.7)	190 (7.48)	400 (15.7)	290 (11.4)	446 (17.5)	4-φ10 (0.39)	18.3kg/40.3 lb	100 (3.93)	70 (2.75)	155 (6.10)	5m (196)

※The applicable models are limited to EPT,EPTW and EPZ-U.
※EPS-230B is used as a power source unit for two or more units of the same model connected in series or specially ordered large chucks.