

Lifting magnets for safe and efficient transportation of heavy and large workpieces. Kanetec offers a variety of lifting magnets to meet your diversified requirements.



An example of lifting by use of LPR-VA type

Type And Features

	Permanent Magnetic Lifma	Electromagnetic Lifma	Permanent Electromagnetic Lifma	Battery Ace
Type				
Features	- You don't need power source for the magnet. You can eliminate the worry of potential trouble and danger due to power interruption. - As a result, you can use it anywhere without wiring and without need for a rectifier. - Powerful magnetic force in spite of small size.	- You can easily adjust the intensity of magnetic force (for controlling the number of lifting steel plates). - Lifting magnets of larger type and coupling type are available. - The magnet is operated by remote control and is useful for process automation.	- Electricity is applied only when holding and releasing workpieces. Since workpieces are held by a permanent magnet, they can be transported safely in the event of power failure. - Power consumption is very low. - Remote control and serial connection enables automation.	- You don't need the power source and can use it anywhere. - Accordingly, potential trouble is eliminated if power interruption or wire disconnection occurs. - Built-in battery ensures high operability and is controllable remotely.
Model	LPR-VA, P, PL	LMU, LMU-SR, LM-EC, LM-EP	LEP	LME

Lifting magnets for safe and efficient transportation of heavy and large workpieces. Kanetec offers a variety of lifting magnets to meet your diversified requirements.

INSTRUCTIONS FOR USE

Holding power

Holding power changes depending on the thickness of material, clearance between the material and magnet and the quality of the material. Please see the graph.

Maximum holding power

The upper limit of holding power acting on a workpiece of mild steel SS400 which is thick enough and free from dust and projections on its attractive face and attracted by the whole area is expressed as the maximum holding power.

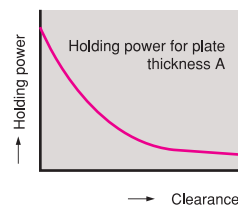
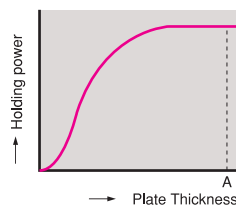
Lifting capacity

The mass of the material that can be lifted by the maximum holding power under the optimum condition is quoted as the maximum lifting capacity. The lifting capacity of the magnet is quoted by 1/2 of the maximum holding power for the electromagnetic Lifma (LMU, LMU-SR, LM-EP) and Battery Ace; 1/3 of it for the permanent magnetic Lifma, LPE; and 1/4 of it for Model PL and permanent electromagnetic Lifma as reference for capacity. However, it is impossible to lift the material having a weight indicated by the lifting capacity if it is thinner (the holding power drops if the plate is thinner).

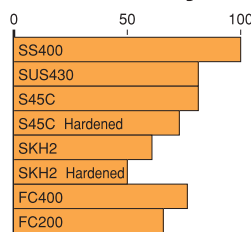
Determining sizes of objects to lift

Please determine a size of steel plates, etc. to lift in consideration of such factors as the plate thickness, gap created by deflection and dust, attracting area, material and balance of objects to lift and the safety factor.

Change in Holding Power by Plate Thickness and Clearance



Difference in Holding Power by Material Quality



Difference in Holding Power by Attractive Face Roughness



Model LPR-V PERMANENT MAGNETIC LIFMA*

The body is protected from impact on both the front and back with guards that also serve as grips. Easy movement and positioning. Easy to handle and almighty models to meet a wide range of applications.

All models for steel plates and round steels!!



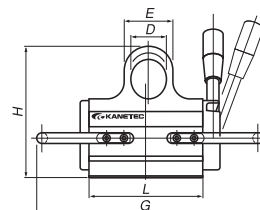
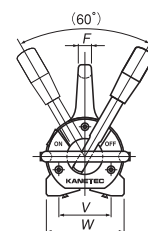
Awarded "Distinguished Invention" in 31st Invention Award in JAPAN 2006.

[Application]

Permanent magnetic type lifting magnets used as a lifting section of cranes and hoists for transportation of steels in warehouses or machining shops or for mounting and dismounting workpieces to and from machine tools. These are suitable for transporting semi-finished products having a flat surface such as machine parts, press dies and plastic molds and for transporting mill scale steel plates and flat steels.

[Features]

- All models are capable of lifting steel plates and round steels.
- Since a permanent magnet is used, no electricity is required and a risk associated with power failure and wiring breakage is eliminated.
- Very strong holding power, yet small and light weight.
- The mounting and dismounting (ON/OFF) mechanism can be operated easily.
- Such a safety feature is incorporated that disables ON/OFF if a workpiece thicker than the standard (see Kanetec Lifting Standard) is not attracted to the attractive face.
- The lever is designed so as not to return rapidly at OFF in consideration of safety and durability.



! Precautions for use

The permanent magnetic Lifma LPR Series are not of waterproof construction. Ensure no water will enter or stick to them. Rust and scratches on the attractive face affect the holding power adversely. Repair it periodically.

Model	Lifting Capacity		Dimensions								Mass
	Round Steel	Steel Plate	W	V	L	H	G	D	E	F	
LPR-V150A	100kg/ 220 lb	150kg/ 330 lb	90 (3.54)	60 (2.36)	130 (5.11)	150 (5.90)	260 (10.2)	40 (1.57)	61 (2.40)	15 (0.59)	7.5kg/16.5 lb
LPR-V300A	200kg/ 440 lb	300kg/ 661 lb	90 (3.54)	60 (2.36)	230 (9.05)	165 (6.49)	360 (14.1)	50 (1.96)	78 (3.07)	20 (0.78)	12.5kg/27.5 lb
LPR-V600A	400kg/ 881 lb	600kg/1323 lb	136 (5.35)	90 (3.54)	270 (10.6)	225 (8.85)	440 (17.3)	60 (2.36)	98 (3.85)	25 (0.98)	35kg/77.1 lb
LPR-V1200A	800kg/1764 lb	1200kg/2646 lb	175 (6.89)	120 (4.72)	430 (16.9)	280 (11.0)	620 (24.4)	70 (2.75)	117 (4.60)	30 (1.18)	85kg/ 187 lb
LPR-V1800A	1200kg/2646 lb	1800kg/3968 lb	210 (8.26)	140 (5.51)	540 (21.2)	335 (13.1)	735 (28.9)	80 (3.15)	138 (5.43)	35 (1.37)	150kg/ 330 lb

※ The lifting capacity is indicated by a value that is a third of the maximum holding power (safety factor 3). ※ For the lifting standard, see page 85.

Feature 1

ON-OFF rotating angle is very small for easy operation. (Patent pending)

Works well in lifting section steels such as H steels and workpieces in limited space.

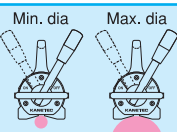


Feature 3

Large contact area (attractive face) enables balanced and stable holding.

Feature 5

Optimum V faces for various diameters of pipes and round steels.



Feature 7

Novel round body shape.

Employment of a round yoke to create an optimum magnetic structure has realized both small and light weight and holding power-to-gap characteristic with sufficient margin at the same time.

Feature 2

Employment of magnetic circuit that restricts return of handle to OFF side enables one-hand operation.

Feature 4

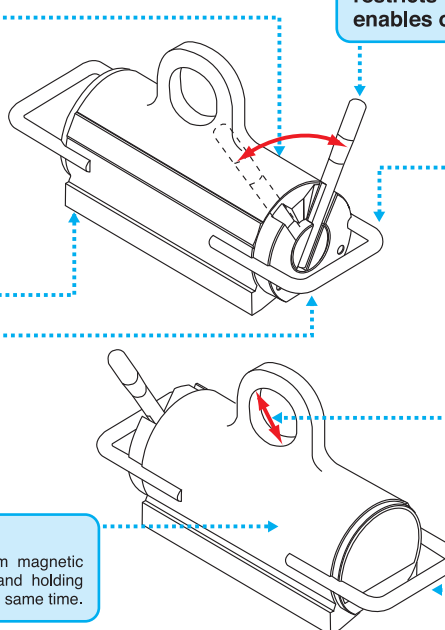
Guards facilitate easy relocation and positioning.

Feature 6

Large lifting hole for easy attachment of a hook.

Feature 8

Guards (grips) on the front and back protect its body.



MAGNETIC HOLDERS

MAGNETIC TOOLS

MAGNETIC TOOLS FOR WELDING OPERATION

LIFTING MAGNET

MAGBORE

CHIP & SLUDGE TRANSPORTERS

ENVIRONMENTAL EQUIPMENT

MAGNETIZERS AND DEMAGNETIZERS

MAGNETIC EQUIPMENT FOR TRANSPORTATION

MAGNETIC SEPARATORS

HIGH GRADE MAGNETIC SEPARATORS

MEASURING INSTRUMENTS

MAGNETIC MATERIALS

Model LPR-P PERMANENT MAGNETIC LIFMA*

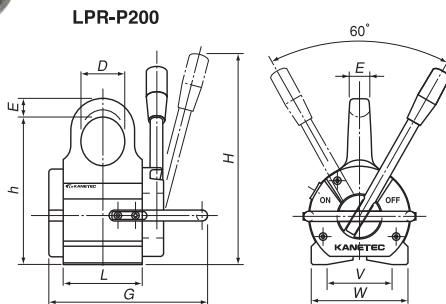
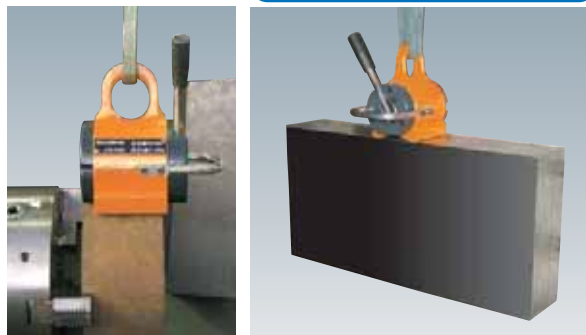


[Application]

The body length (length of the attractive face) is made shorter than its width to suit for balanced lifting of workpieces having a relatively short attractive face such as end faces of thick plates.

This model does not have a guard on the backside to facilitate setting workpieces near walls and on angle plate fixtures and lathes.

An example of lifting by LPR-P



Precaution for use

The permanent magnetic Lifma LPR Series are not of waterproof construction. Ensure no water will enter or stick to them. Rust and scratches on the attractive face give negative influence to the holding power. Therefore, please repair it periodically.

Model	Lifting Capacity		Dimensions								Mass
	Round Steel	Steel Plate	W	L	V	G	H	h	D	E	
LPR-P75	50kg/110 lb	75kg/165 lb	90 (3.54)	80 (3.15)	60 (2.36)	160 (6.29)	180 (7.08)	135 (5.31)	40 (1.57)	15 (0.59)	5kg/11 lb
LPR-P200	135kg/297 lb	200kg/440 lb	136 (5.35)	110 (4.33)	90 (3.54)	220 (8.66)	290 (11.4)	200 (7.87)	60 (2.36)	25 (0.98)	17kg/37 lb
LPR-P450	300kg/661 lb	450kg/992 lb	175 (6.89)	150 (5.90)	120 (4.72)	270 (10.6)	355 (13.9)	250 (9.84)	70 (2.75)	30 (1.18)	35kg/77 lb

*The lifting capacity is indicated by a value that is a third of the maximum holding power (safety factor 3). *The guard on the backside is not included. *For the lifting standard, see below.

Lifting standards

Steel plate lifting standard (Flat steel plates)

Thickness	Model							
	V150A	V300A	V600A	V1200A	V1800A	P75	P200	P450
t6	□900 (35.4) 600 (23.6) × 1300 (51.1)	□1200 (47.2) 900 (35.4) × 1550 (61.0)	□1300 (51.1) * 1200 (47.2) × 1400 (55.1)	— *	— *	□630 (24.8) 300 (11.8) × 1300 (51.1)	□900 (35.4) 600 (23.6) × 1350 (53.1)	□1200 (47.2) 900 (35.4) × 1500 (59.0)
t12	□850 (33.4) 600 (23.6) × 1200 (47.2)	□1250 (49.2) 900 (35.4) × 1700 (66.9)	□1450 (57.1) 1200 (47.2) × 1700 (66.9)	□1750 (68.9) 1500 (59.0) × 2000 (78.7) *	— *	□600 (23.6) 300 (11.8) × 1200 (47.2)	□1000 (39.3) 600 (23.6) × 1650 (64.9)	
t25	□650 (25.5) 600 (23.6) × 700 (27.5)	□950 (37.4) 900 (35.4) × 1000 (39.3)	□1250 (49.2) 1200 (47.2) × 1300 (51.1)	□1700 (66.9) 1500 (59.0) × 1900 (74.8)	□2100 (82.6) 1800 (70.8) × 2400 (94.4) *	□450 (17.7) 300 (11.8) × 650 (25.5)	□850 (33.4) 600 (23.6) × 1200 (47.2)	
t50	□500 (19.6) 600 (23.6) × 250 (9.84)	□700 (27.5) 900 (35.4) × 550 (21.6)	□1000 (39.3) 1200 (47.2) × 800 (31.5)	□1400 (55.1) 1500 (59.0) × 1300 (51.1)	□1700 (66.9) 1800 (70.8) × 1600 (62.9)	□350 (13.7) 300 (11.8) × 400 (15.7)	□700 (27.5) 600 (23.6) × 800 (31.5)	
t100	□350 (13.7) 600 (23.6) × 200 (7.87)	□550 (21.6) 900 (35.4) × 320 (12.6)	□750 (29.5) 1200 (47.2) × 450 (17.7)	□1050 (41.3) 1500 (59.0) × 700 (27.5)	□1300 (51.1) 1800 (70.8) × 900 (35.4)	□240 (9.44) 300 (11.8) × 180 (7.08)	□500 (19.6) 600 (23.6) × 400 (15.7)	

*...The thinner the thickness of plates are, the harder the handle operation becomes.

Round steel lifting standard (Round steel)

Round steel	Model							
	V150A	V300A	V600A	V1200A	V1800A	P75	P200	P450
Min. dia	φ75 (2.95) × 1400L	φ75 (2.95) × 2800L	φ100 (3.93) × 3000L	φ150 (5.90) × 3000L	φ200 (7.87) × 3000L	φ75 (2.95) × 750L	φ100 (3.93) × 1000L	φ100 (3.93) × 1500L
Max. dia	φ200 (7.87) × 300L	φ300 (11.8) × 350L	φ400 (15.7) × 500L	φ500 (19.6) × 400L	φ500 (19.6) × 600L	φ200 (7.87) × 150L	φ400 (15.7) × 120L	φ600 (23.6) × 150L
Pipe allowable dia *	φ75 (2.95) — 200 (7.87)	φ75 (2.95) — 200 (7.87)	φ100 (3.93) — 500 (19.6)	φ150 (5.90) — 700 (27.5)	φ200 (7.87) — 800 (31.5)	φ75 (2.95) — 200 (7.87)	φ100 (3.93) — 400 (15.7)	φ150 (5.90) — 600 (23.6)

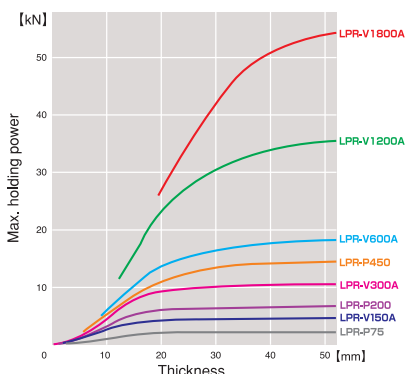
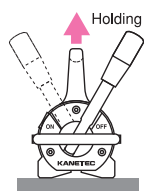
*...Kindly take note carefully that the capacity varies according to pipe wall thickness. Oval and bent pipes, even though they are short, are dangerous to lift. The lifting capacity varies according to diameters of round steel. When a workpiece is longer than 3 m, it is dangerous to lift with one unit only. At the maximum diameter, workpieces shorter than the attractive face cannot be lifted.

Important notice : These standards are made as a guide for actual work and do not mean to guarantee the absolute safety. The magnets can not always generate its full holding capacity due to the other factors than those in the above table. Please check them carefully before using these lifting magnets.

Relation between steel plate length and holding power

(Material SS400, surface roughness ▽)

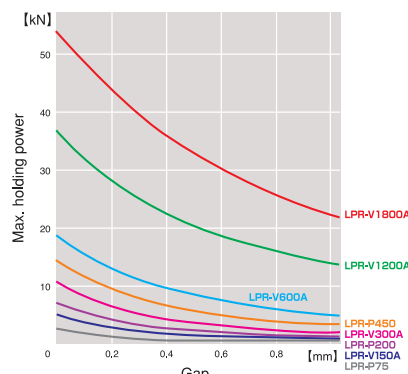
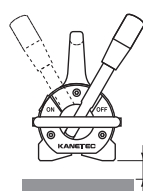
*Note that this is not the lifting capacity.



Relation between gaps and holding power

(Material SS400, thickness 50 mm, surface roughness ▽)

*Note that this is not the lifting capacity.



Balance for LPR

Balance for permanent magnetic Lifma*

A balance (beam) will be manufactured in accordance with the requirement for your particular applications and specifications to ensure safe lifting and transportation of long steel plates, round steels and pipes.

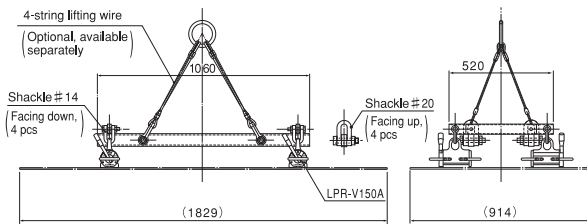
Model	Beam Length	Shackle	Mass	Applicable Lifma	Workpiece to Lift
LB-PRK306	1060 (41.7) × 520 (20.4)		23kg/50.7 lb	LPR-V150A × 4 units	3×6 plate, t3.2—t9
LB-PRK408	1720 (67.7) × 740 (29.1)	# 20 (0.78), # 14 (0.55)	36kg/79.3 lb	LPR-V150A × 6 units LPR-V300A × 4 units	4×8 plate, t3.2—t9 5×10 plate, t3.2—t9
LB-PRP160	1660 (65.3)	# 14 (0.55)	24kg/52.9 lb	LPR-V150A × 2 units LPR-V300A × 2 units	Max.250kgf, Length 4 m max Max.500kgf, Length 4 m max
LB-PRM306	1060 (41.7) × 520 (20.4)	# 20 (0.78), # 14 (0.55)	60kg/ 132 lb	LPR-M150 × 4 units	3×6 plate, t3.2—t9

*The lifting wire for exclusive use is optional. Please purchase Lifma (LPR) separately.

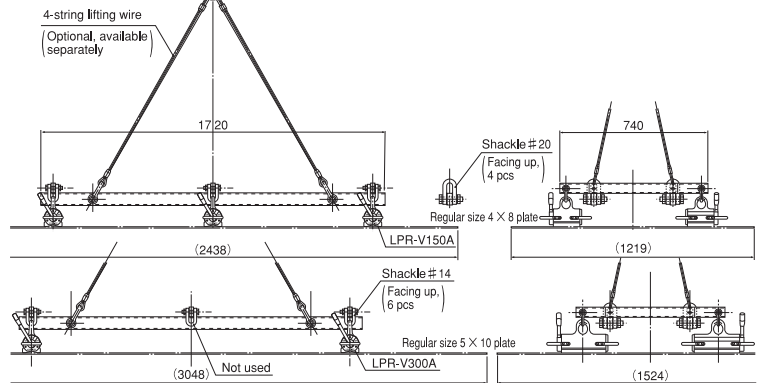
**When using this balance on stacked steel plates, auxiliary supporting work is required to lift one plate by one plate. (It is a dangerous practice to try to lift several plates collectively.)

Balance for thin, regular size plates

Model: LB-PRK306 (Exclusive use for lifting thin, regular size plates 3 × 6) LB-PRK408 (Dedicated to lifting thin, regular size plates 4 × 8 or 5 × 10)
<LB-PRK306>



<LB-PRK408>



Balance to be used exclusively for lifting round steels, pipes and section steels

Model: LB-PRP160

Applicable Lifma: LPR-V150A × 2 units (up to 250 kg)

LPR-V300A × 2 units (up to 500 kg)

Mass: About 24 kg (main unit) + about 10 kg (stand)

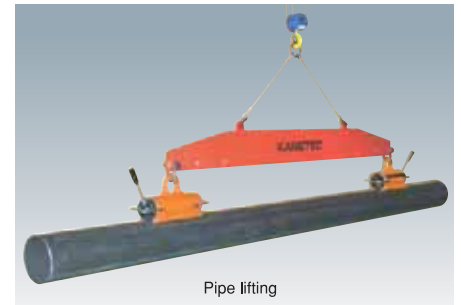
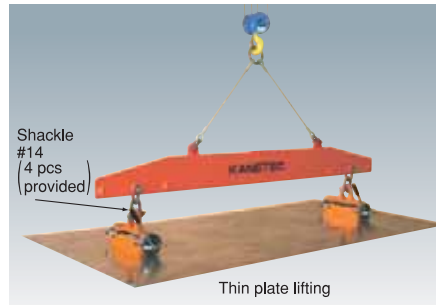
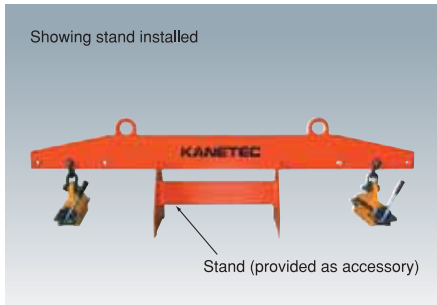
Applicable workpiece: H section steel V150...H100×100×4000, H200×200×3000

V300...H200×200×4000, H300×300×3000

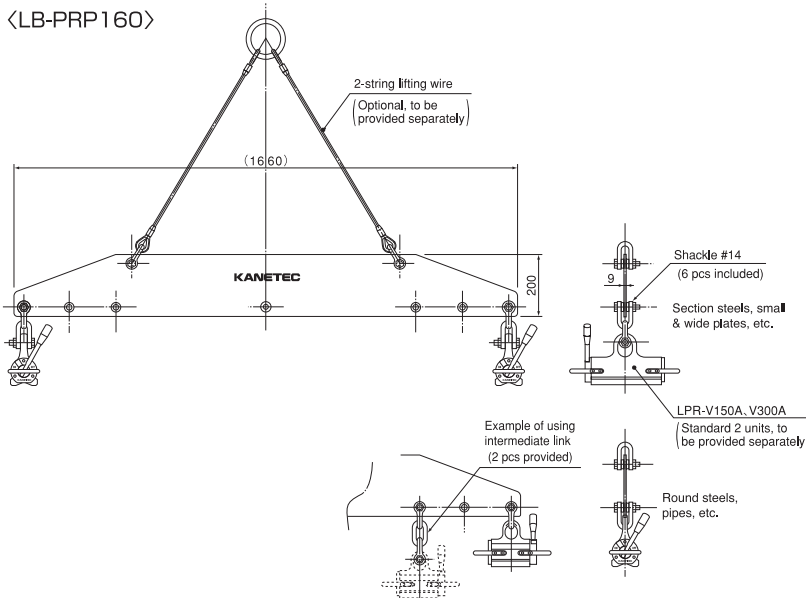
Round steel V150...φ75×2400, φ120×2000

V300...φ75×4000, φ165×2000

Caution: Steels longer than 4 m are dangerous to lift.



<LB-PRP160>



Magnet must not be placed in direction where gaps are produced on attractive face due to warping of steel plates.

Place magnets in direction where attractive face remains in close contact even though steel plates are warped.

MAGNETIC
HOLDERS

MAGNETIC
TOOLS

MAGNETIC TOOLS FOR
WELDING OPERATION

LIFTING
MAGNET

MAGBORE

CHIP & SLUDGE
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ENVIRONMENTAL
EQUIPMENT

MAGNETIZERS AND
DEMAGNETIZERS

MAGNETIC EQUIPMENT
FOR TRANSPORTATION

MAGNETIC
SEPARATORS

HIGH GRADE MAGNETIC
SEPARATORS

MEASURING
INSTRUMENTS

MAGNETIC
MATERIALS

Motor-driven balance for permanent magnetic Lifma*

Model: LB-PRM-306

Mass: About 60 kg

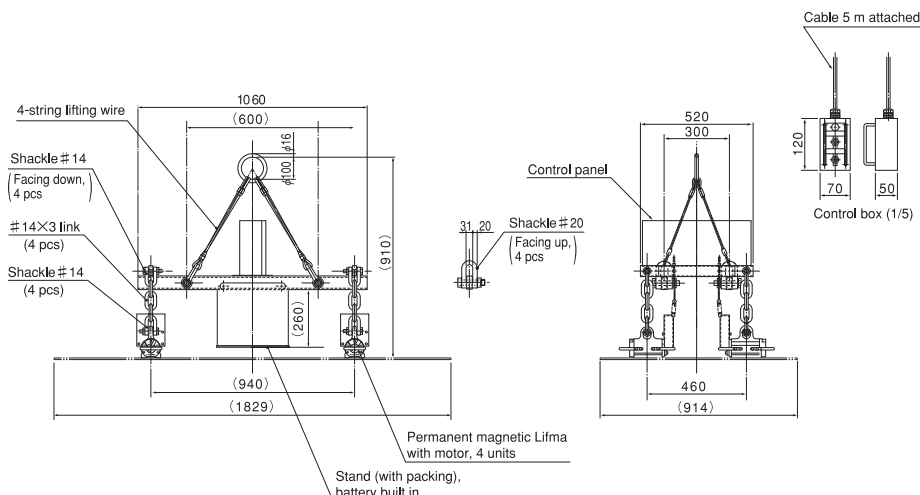
Conditions of use: t3.2 — 9 regular size 3 × 6 plates used

Use of 4 units of Lifma with motor

Accessory: Battery charger

- Several units of permanent magnetic Lifma can be turned on and off collectively by an electric motor by remote operation.
- The ON/OFF motor is driven by a battery to prevent accidents in the event of power failure. If the battery has been discharged or feeder cable failed, the ON/OFF state can be maintained.
- Since no power cable is needed, it can be used on various work sites.

※ When using this balance on stacked steel plates, auxiliary supporting work is required to lift one piece by one piece. (It is a dangerous practice to try to lift several plates collectively.)



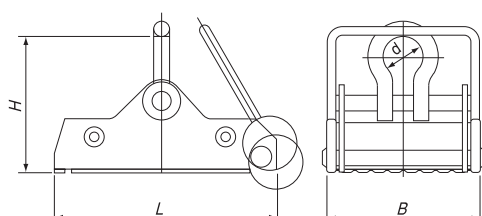
An example of configuration of LPR-MV1200W-S



Model PL PERMANENT MAGNETIC LIFMA*



PL-40B



[Application]

These Lifmas are suitable for transporting such raw materials as black iron plates and flat iron products and lifting and transporting semi-finished products having flat surfaces such as machine parts, press dies and plastic forming molds.

[Features]

- The use of a permanent magnet eliminates the need of electric power, thus eliminating troubles due to power interruption and failure of the power supply line. The strong magnetic force can be used semi-permanently.
- The employment of cam system facilitates attaching and detaching of workpieces.

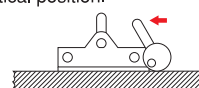


Precautions for us

The operation of the cam for attaching and detaching will apply physical friction to the workpiece. If they are used on finished surfaces such as a polished surface, such surface may be damaged.

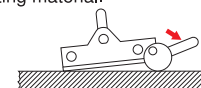
■Attraction

Place Lifma on the transporting material and pull the lever up in vertical position.



■Release

Put the lever in horizontal position to release Lifma from the transporting material.



[mm (in.)]

Model	Holding Power	Dimensions			Shade <i>d</i> (lifting ring ID)	Mass
		<i>B</i>	<i>L</i>	<i>H</i>		
PL-20B	200kg/440 lb	122 (4.80)	255 (10.0)	150 (5.90)	BC14 (0.55) (φ40 (1.57))	8.5kg/18 lb
PL-40B	400kg/881 lb	212 (8.34)		181 (7.12)	BB20 (0.78) (φ58 (2.28))	14.0kg/31 lb

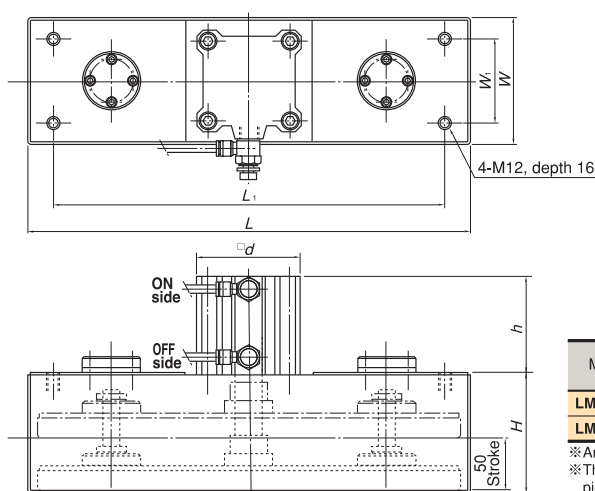
※The lifting capacity is indicated by a quarter of the maximum holding power.
※Dimension "H" up to the top end of the inner diameter of the shackle lifting ring.

Model LM-P UP-DOWN TYPE PERMANENT MAGNETIC LIFMA*



LM-P1242

(An example of special fabrication)



[Application]

Suitable for lifting and moving floor plates, pressed workpieces having concave or convex sections, iron doors of buildings, deck plates, guard rails cans, and so on.

[Features]

- The attraction is turned on and off by moving up and down an air cylinder, which facilitates remote operation and automated operation.
- Compared with the electromagnetic type, this model has a larger holding power for thin plates (less than 5 mm thick) and its capacity drops less when gaps are present. Accordingly, this model is most suitable for pressed workpieces having concave or convex sections.
- Energy saving type as no electric power source is required.
- The ON state is maintained when the air source is shut down and therefore held workpieces do not fall, enhancing safety.



An example of usage

[mm (in.)]

Model	Dimensions							Mass
	<i>W</i>	<i>L</i>	<i>H</i>	<i>h</i>	<i>W</i> ₁	<i>L</i> ₁	<i>d</i>	
LM-P1242	120 (4.72)	420	114.5 (4.50)	91.5 (3.60)	80 (3.15)	370 (14.5)	98 (3.85)	Approx. 17kg/37.4 lb
LM-P2442	240 (9.44)	(16.5)	120.5 (4.74)	131 (5.15)	150 (5.90)	300 (11.8)	142 (5.59)	Approx. 38kg/83.7 lb

※An air source, select valve and other air control equipment must be provided by the user.

※This model is not suitable for thick workpieces and workpieces stacked closely. The specifications vary according to workpieces to lift. Please contact us to select the best design.

MAGNETIC
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MEASURING
INSTRUMENTS

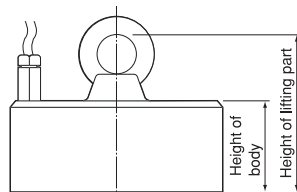
MAGNETIC
MATERIALS

Model **LMU** SMALL ELECTROMAGNETIC LIFMA*

Indoor spec.



LMU-20D



[Application]

Electromagnetic type lifting magnets used as a lifting section of cranes and hoists for transportation of steels in warehouses or machining shops or for mounting and dismounting workpieces to and from machine tools.

[Features]

- Lift and Release can be controlled electrically by remote operation.
- Small but strong electromagnetic power.
- A wide range of applications; transporting small workpieces with a single unit to transporting large steel plates with multiple units controlled together, attached to lifting beams.
- When an non-interruption power supply is used, safety can be ensured in the event of unexpected power failure.
- The applicable rectifiers are KR or RH-MW.
- A drip-proof type is also available.



Precaution for use

Rust and scratches on the attractive face adversely affects the holding power. Inspect/check periodically and make repairs.

[mm (in.)]

Model	Lifting Capacity	Dimensions		Eyebolt	Voltage	Power Consumption	Mass
		Main Unit	Lifting Part Height				
LMU-10D	250kg/ 551 lb	φ105 (4.13) × 60 (2.36)	108 (4.25)	M16 (0.62) (φ35 (1.37))	180 VDC	58W	4kg/ 8.8 lb
LMU-15D	600kg/1323 lb	φ156 (6.14) × 70 (2.75)	125 (4.92)	M20 (0.78) (φ40 (1.57))		110W	11kg/ 24.2 lb
LMU-20D	1200kg/2646 lb	φ206 (8.11) × 88 (3.46)	173 (6.81)	M30 (1.18) (φ60 (2.36))		145W	23kg/ 50.7 lb
LMU-25D	1800kg/3968 lb	φ256 (10.0) × 93 (3.66)	193 (7.59)	M36 (1.41) (φ70 (2.75))		210W	40kg/ 88.1 lb
LMU-30D	2500kg/5512 lb	φ306 (12.0) × 95 (3.74)	210 (8.26)	M42 (1.65) (φ80 (3.15))		290W	60kg/132.2 lb

※ Working rate at 50%ED (EFFECTIVE DUTS by cycle of repeating to electrify for 5minutes and to pause for 5 minutes).

※ Lifting capacity is indicated as 1/2 of maximum attraction with SS400 black steel face.

※ For the lifting standard, see page 91.

※ For continuous operation, use Lifma under 110VDC. But the capacity reduces by approx. 20% at 110VDC for 20mm thick steel plate.

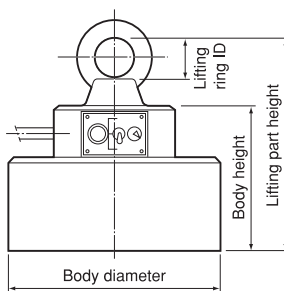
※ H Dimension indicates the size up to the upper end of inside diameter for eyebolt lifting. ※ Cord 2m is provided.

Model **LMU-SR** SMALL ELECTROMAGNETIC LIFMA*

Rectifier-built in type



LMU-25SRD



[Application]

Suitable for loading and unloading workpieces to and from the work table of machine tools, moving small steel materials and steel plates and for use as a single unit with a power supply built in.

[Features]

- A separate rectifier is not required. This unit has its own, rectifier built in.
- Easy to release the lifting material by the inverse exciting switch provided.
- The holding power is the same as LMU (see the holding power graph and lifting reference for model LMU).



Precaution for use

Rust and scratches on the attractive face adversely affects the holding power. Inspect/check periodically and make repairs.

[mm (in.)]

Model	Lifting Capacity	Dimensions		Eyebolt	Voltage	Power Consumption	Mass
		Main Unit	Lifting Part Height				
LMU-10SRD	250kg/ 551 lb	φ105 (4.13) × 130 (5.11)	189.5 (7.46)	M16 (0.62) (φ35 (1.37))	Single-phase, 200 VAC	60W	5kg/ 11.0 lb
LMU-15SRD	600kg/1323 lb	φ156 (6.14) × 142 (5.59)	212 (8.34)	M20 (0.78) (φ40 (1.57))		110W	13kg/ 28.6 lb
LMU-20SRD	1200kg/2646 lb	φ206 (8.11) × 160 (6.29)	270 (10.6)	M30 (1.18) (φ60 (2.36))		145W	25kg/ 55.1 lb
LMU-25SRD	1800kg/3968 lb	φ256 (10.0) × 165 (6.49)	295 (11.6)	M36 (1.41) (φ70 (2.75))		210W	43kg/ 94.8 lb
LMU-30SRD	2500kg/5512 lb	φ306 (12.0) × 170 (6.69)	319 (12.5)	M42 (1.65) (φ80 (3.15))		290W	63kg/138.9 lb

※ Working rate at 50%ED (EFFECTIVE DUTS by cycle of repeating to electrify for 5minutes and to pause for 5 minutes).

※ Lifting capacity is indicated as 1/2 of maximum attraction with SS400 black steel face.

※ For continuous operation, use Lifma under input voltage, 100VAC, but lifting capacity reduces by approx. 30% for 20mm thick steel plate.

※ H Dimension indicates the size up to the upper end of inside diameter for eyebolt lifting. ※ Cord 5m is provided.

Model RH-MW / KR-A·P

RECTIFIER FOR ELECTROMAGNETIC LIFMA*



RH-MW205A



KR-P203

[Application]

These units rectify AC power to DC and supply it to electromagnetic Lifma. All electromagnetic Lifmas require a rectifier. Three models are available; KR-P, A, RH-MW. Select them according to your purpose of usage.

■ RH-MW 《Rectifier with reverse exciting circuit》 (for holding release)

Workpieces with flat lifting surfaces, or made from material which tends to retain residual magnetism, may not be easy to release when the power supply is turned OFF. In these cases, a reverse current flow, is needed to cancel the residual magnetism, and complete the release.

[Features]

- The DC voltage can be varied in a range of 0 to 180V.
- External control input terminals are provided.
- An overvoltage protection function is incorporated.



Precautions for use

- The rectifier KR Series and RH Series use electronic PC boards and small relays inside the rectifiers and therefore, are not suitable for use in applications subjected to constant vibrations, such as on cranes, for example. Such use also voids the warranty even if a failure occurs within the warranty period. For installation in places that are subjected to constant vibrations, anti-vibration measures need to be taken. The external signal input wires must be shielding wires and must be limited to 10 m long maximum.
- Operation procedures and technical specifications of other manufactures lifting magnets should not be applied to our lifting magnets or, any other makes.

Model	Input	Output			Dimensions			Remote Switch	Ammeter	Auto Reverse	Mass
		Voltage	Current	Capacity	Width	Depth	Height				
KR-P203	Single phase 200 VAC	180 VDC	3A	540W	200 (7.87)	90 (3.54)	250 (9.84)	○	×	×	3kg/ 6.6 lb
KR-P208			8A	1440W							
KR-A203			3A	540W							
KR-A208			8A	1440W							
RH-MW205A	0-180 VDC	5A	900W	140 (5.51)	175 (6.89)	260 (10.2)	290 (11.4)	×	×	○	4.5kg/ 9.9 lb
RH-MW210A			10A	1800W							6kg/ 13.2 lb

An example of special fabrication of electromagnetic Lifma



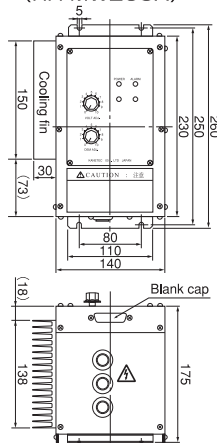
Lifma collecting iron powder from molten aluminum at 650°C

An example of fabrication of Lifma with beam 1

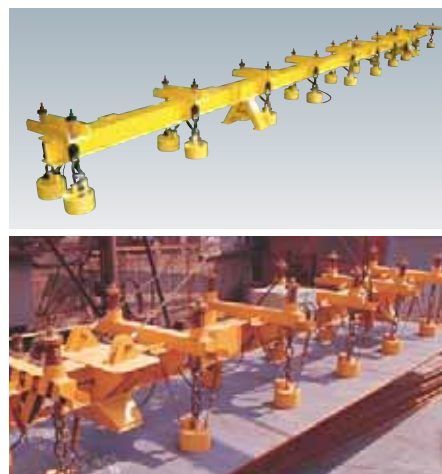
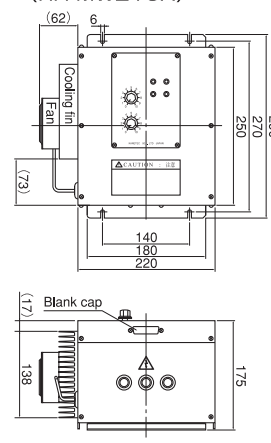


Other types are also available according to your applications and specifications.

〈RH-MW205A〉



〈RH-MW210A〉

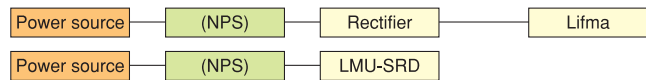


NON-INTERRUPT POWER SUPPLY

In some cases, the installation of a NON-INTERRUPT power supply (NPS) is requested for use of electromagnetic Lifma as a safety measure in the event of power failure.

This UPS needs to be fabricated according to types of rectifiers and required output capacity. Please consult with us in advance.

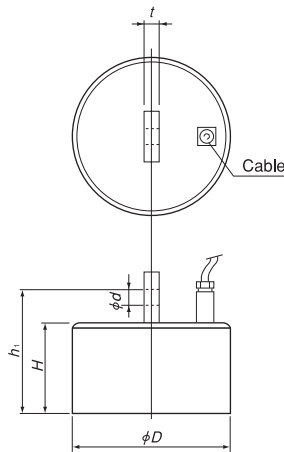
Connection diagram



Model LEP ELECTRO-PERMANENT MAGNETIC LIFMA*



LEP-25

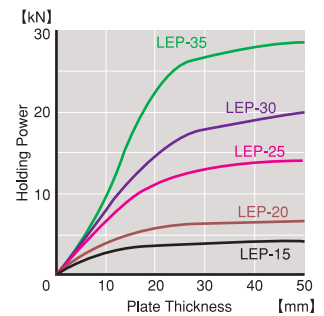


[Application]

These are electro-permanent magnetic type lifting and transporting magnets that enable the magnetization and demagnetization of the built-in permanent magnet to be controlled electrically. Suitable for steel plates and iron products that have a flat attractive face and can be held on the whole area.

[Features]

- Since a permanent magnet is used, the holding power is maintained in the event of power failure to enhance safety.
- Since holding and releasing is controlled electrically, these magnets can be operated remotely by use of pushbuttons.
- A system to demagnetize the permanent magnet to release the lifted workpiece. Thus, these magnets are not attracted by iron products in other operations, enhancing safety.
- Use the dedicated power source LEPR.



Precaution for use

Rust and scratches on the attractive face adversely affects the holding power. Inspect/check periodically and make repairs.

Model	Lifting Capacity	Dimensions						Shackle	Voltage	Power Consumption	Mass
		D	H	h ₁	d ₁	t					
LEP-15	100kg/ 220 lb	156 (6.14)	105 (4.13)	138 (5.43)	16 (0.62)	16 (0.62)	BC12 (0.47)	160 VDC		0.38kW	12kg/ 26.4 lb
LEP-20	150kg/ 330 lb	206 (8.10)	115 (4.52)	154 (6.06)	20 (0.78)	19 (0.74)	BC14 (0.55)			0.47kW	22kg/ 48.5 lb
LEP-25	350kg/ 771 lb	246 (9.68)	125 (4.92)	170 (6.69)		22 (0.86)	BC16 (0.62)			0.45kW	37kg/ 81.5 lb
LEP-30	500kg/1102 lb	296 (11.6)	135 (5.31)	198 (7.79)	25 (0.98)	28 (1.10)	BB20 (0.78)			0.57kW	60kg/132.0 lb
LEP-35	700kg/1543 lb	354 (13.9)	150 (5.90)	224 (8.81)	27 (1.06)	32 (1.26)	BB22 (0.86)			0.73kW	85kg/187.4 lb

※ Power on rating 10%ED (Repeating cycle of power on 2 sec. and pause 20 sec.)

※ The lifting capacity is indicated by a value that is a quarter of the maximum holding power.

※ Use these magnets in such a way that workpieces are being fully held on the entire attractive face of the LEPR magnet to properly lift, and LEPR should be centered for a stable lift.

※ A 3-m long cable is included.

Model LEPR RECTIFIER FOR PERMANENT ELECTROMAGNETIC LIFMA*

[Application]

Rectifies an input from an AC power source to DC and momentarily outputs attraction and demagnetization currents to permanent electromagnetic Lifma.

[Features]

- A lamp indicates when magnetization is continuing.
- Demagnetization can be adjusted depending on work situations.

Model	Input	Output			Dimensions			Mass	Accessories
		Voltage	Current	Capacity	Width	Depth	Height		
LEPR-14B	Single-phase, 200 VAC	160 VDC	9A	1.4kW	400 (15.7)	200 (7.87)	605 (23.8)	25kg/55.1 lb	Remote switch

Model LME BATTERY ACE*

Standard type



LME-17D

LME-30D



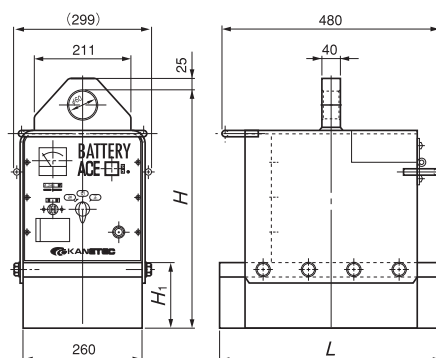
Cover opened

[Application]

The Battery Aces can offer about the same lifting and transporting capacity as electromagnetic types using a built-in battery where no power supply is available on indoor work sites. When they are mounted as a lifting means on cranes and hoists, they work well in organizing and arranging steel plates and steel materials and loading and unloading workpieces to and from large machine tools.

[Features]

- Suitable for transporting small steel plates, fractional-length materials and light weight steel frames.
- The optimum magnetizing circuit has been designed to double the gap performance.
- A cam switch that facilitates ON/OFF operation is employed.
- Easy to charge by simply opening the rear top cover.
- A new type of battery is used that withstands frequent charging/discharging cycles and has a longer life. The included charger is equipped with an overcharge prevention function to eliminate a fear of damaging the battery.
- Since no power cord is needed, they can be used on various work sites.
- There is no fear of accidental release of workpieces in the event of power failure or feeder cable breakage.
- The rigid body and guard acting as a grip also ensure high impact resistance and durability in severe work conditions.
- The remaining capacity of the battery can be checked at a glance on a 7-ranking level meter. When the battery power becomes low, the warning buzzer sounds.
- The ammeter tells the state of power application to the electromagnet.
- An additional battery, for highly frequent operations is also available. (Optional)
- These models may be equipped with a remote operation function. (Optional)
- For the purchase of batteries, please contact us.
- For the automatic workpiece attaching/detaching function, please consult with us in advance.



! Precaution for use

Rust and scratches on the attractive face adversely affects the holding power. Inspect/check periodically and make repairs.

[mm (in)]

Model	Lifting Capacity	Dimensions		Battery Cap.	Working Hours (50%ED)	Mass	Battery Charge	Accessories
		H	H ₁					
LME-17D	1700kg/3748 lb	459 (18.0)	95 (3.74)	12V	7—9h	Approx.115kg/253.5 lb	In 100 VAC	Charger 1 set
LME-30D	3000kg/6614 lb	504 (19.8)	140 (5.51)	25Ah	6—8h	Approx.165kg/363.8 lb	Out 12 VDC	

※ The lifting capacity is indicated by a value that is a half of the maximum holding power.

※ The working rate is 50%ED (power on 5 min. and pause 5 min.).

■ Steel plate lifting standard (Mill scale soft steel plate)

[mm (in)]

Work Thickness	Model	LME-17D			LME-30D		
		Square	×1000	×2000	Square	×1000	×2000
6					□1400 (55.1)	1800 (70.9)	900 (35.4)
9		□1300 (51.2)	1600 (62.9)	800 (31.5)	□1650 (65.0)	2500 (98.4)	1200 (47.2)
12		□1500 (59.0)	2200 (86.6)	1100 (43.3)	□1750 (68.9)	2700 (106.3)	1300 (51.2)
16					□1800 (70.9)	3000 (118.0)	1600 (62.9)
20		□1700 (66.9)	2800 (110.2)	1400 (55.1)			
25					□1850 (72.8)	3300 (129.9)	1700 (66.9)
30		□1600 (62.9)	2500 (98.4)	1300 (51.2)			
40		□1500 (59.0)	2300 (90.5)	1200 (47.2)	□1750 (68.9)	3000 (118.0)	1500 (59.0)
50		□1300 (51.2)	1700 (66.9)	800 (31.5)	□1700 (66.9)	2700 (106.3)	1400 (55.1)
100		□ 900 (35.4)	850 (33.5)	450 (17.7)	□1200 (47.2)	1500 (59.0)	700 (27.5)

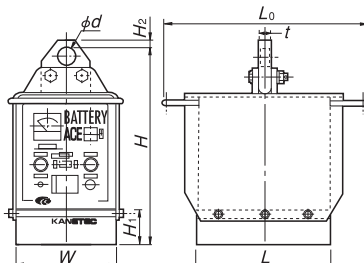
■ Section steel lifting standard

[mm (in)]

Work Model	Angle Steel		Ior H-shaped Steel		Channel Steel	
	Type	Length	Type	Length	Type	Length
LME-17D	75 (2.95) × 75 (2.95) × t 9 (0.35)		100 (3.93) × 75 (2.95)		100 (3.93) × 50 (1.96)	
	100 (3.93) × 100 (3.93) × t10 (0.39)	3000 (118)	150 (5.90) × 75 (2.95)	4000 (157)	150 (5.90) × 75 (2.95)	3000 (118)
	150 (5.90) × 150 (5.90) × t15 (0.59)		200 (7.87) × 150 (5.90)		200 (7.87) × 80 (3.15)	
	200 (7.87) × 200 (7.87) × t20 (0.78)		300 (11.8) × 150 (5.90)		300 (11.8) × 90 (3.54)	
LME-30D	75 (2.95) × 75 (2.95) × t 9 (0.35)		100 (3.93) × 75 (2.95)		100 (3.93) × 50 (1.96)	
	100 (3.93) × 100 (3.93) × t10 (0.39)	5000 (196)	150 (5.90) × 75 (2.95)	6000 (236)	150 (5.90) × 75 (2.95)	5000 (196)
	150 (5.90) × 150 (5.90) × t15 (0.59)		200 (7.87) × 150 (5.90)		200 (7.87) × 80 (3.15)	
	200 (7.87) × 200 (7.87) × t20 (0.78)		300 (11.8) × 150 (5.90)		300 (11.8) × 90 (3.54)	



LME-60LC



Steel plate lifting standard (Mill scale soft steel plate)

[mm (in.)]

Work Thickness	Model	LME-60LC, 60WC			
6	□1700 (66.9)	1000 (39.3) × 2500 (98.4)	2000 (78.7) × 1300 (51.2)		
9	□2000 (78.7)	1000 (39.3) × 3200 (126.0)	2000 (78.7) × 2000 (78.7)		
12	□2200 (86.6)	1000 (39.3) × 4500 (177.2)	2000 (78.7) × 2500 (98.4)		
16					
20					
25	□2400 (94.5)	1000 (39.3) × 5500 (216.5)	2000 (78.7) × 3000 (118.0)		
30					
40					
50					
100	□1700 (66.9)	1000 (39.3) × 2700 (106.3)	2000 (78.7) × 1500 (59.0)		

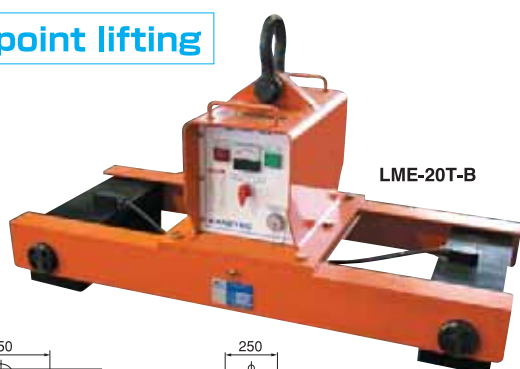
mm (in)

Model	Lifting Capacity	Dimensions								Battery Cap.	Working Hours (50%ED)	Mass	Battery Charge	Charging Time	Accessories
		W	L	L ₀	H ₁ (Floor to lifted height)	H ₂	d	t							
LME-60LC	6000kg/13230 lb	270 (10.6)	900 (35.4)	1100 (43.3)	755 (29.7)	159 (6.26)	46 (1.81)	118 (4.64)	60 (2.36)	12V 35Ah 2 pcs in series	6—8h	300kg/661 lb	Input 100 VAC Output 24 VDC	6—10h	Spare battery 1 set Charger (standard) 1 set Hydrometer
LME-60WC		450 (17.7)	540 (21.2)	740 (29.1)											

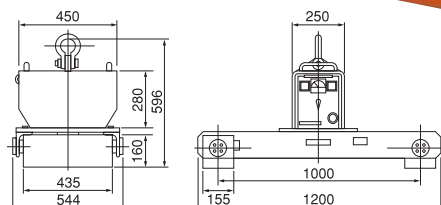
※The lifting capacity is indicated by a value that is a half of the maximum holding power. ※The working rate is 50%ED (power on 5 min. and pause 5 min.).

Model LME-TB BATTERY ACE*

2-point lifting



LME-20T-B



An example of fabrication



[Application]

A Battery Ace for long steel plates. Two oscillating magnets are installed on the beam at 1000 interval mm between axes. This follows deformation of steel plates to transport them safely. In particular, this model works well on thin steel plates.

[Features]

- Suitable for transportation of thin steel plates.
- The number of workpieces can also be controlled by using LME-M.
- Compared with the standard type Battery Ace, this model can lift long steel plates that are 30% to 100% longer.

[mm (in.)]

Work Thickness	Work Type	Square Shape	Rectangular Shape	
5—9		2000 (78.7) × 2000 (78.7)	1000 (39.3) × 3500 (137.8)	1500 (59.0) × 2700 (106.3)
10		2400 (94.5) × 2400 (94.5)		1500 (59.0) × 3500 (137.8)
12		2500 (98.4) × 2500 (98.4)		1500 (59.0) × 4000 (157.5)
14		2400 (94.5) × 2400 (94.5)	1000 (39.3) × 4000 (157.5)	1500 (59.0) × 3500 (137.8)
16—22		2200 (86.6) × 2200 (86.6)		1500 (59.0) × 3000 (118.0)
25—32		2000 (78.7) × 2000 (78.7)	1000 (39.3) × 3500 (137.8)	1500 (59.0) × 2500 (98.4)
36—50		1500 (59.0) × 1500 (59.0)	1000 (39.3) × 2500 (98.4)	1500 (59.0) × 1500 (59.0)

[mm (in.)]

Model	Lifting Capacity	Dimensions			Battery	Working Hours (50%ED)	Mass	Battery Charger	Charging Time	Accessories
		Holding Face	Height	Lifting Ring						
LME-20T-B	2000kg/ 4409 lb	155 (6.10) × 435 (17.1)	596 (23.4)	φ75 (2.95)	12V 35Ah	10—12	300kg/ 661 lb	Output battery 1 pc (12V)	10—15h	Spare battery 1 set Charger (standard), hydrometer Remote operation switch (with 3-m cable)

※The lifting capacity is indicated by a value that is a half of the maximum holding power. ※50%ED.....Repeating cycle of power on 5 min. and pause 5 min.

※The number-of-workpiece control type, special specifications, is also available.

MAGNETIC
HOLDERS

MAGNETIC
TOOLS

MAGNETIC TOOLS FOR
WELDING OPERATION

LIFTING
MAGNET

MAGBORE

CHIP & SLUDGE
TRANSPORTERS

ENVIRONMENTAL
EQUIPMENT

MAGNETIZERS AND
DEMAGNETIZERS

MAGNETIC EQUIPMENT
FOR TRANSPORTATION

MAGNETIC
SEPARATORS

HIGH GRADE MAGNETIC
SEPARATORS

MEASURING
INSTRUMENTS

MAGNETIC
MATERIALS

Model LME-V BATTERY ACE*

Round steel / section steel



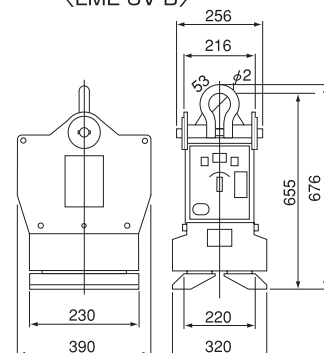
LME-10V-B

[Application]

A special type Battery Ace that can be specialized for lifting round steels and pipes or for lifting section steels by changing attachments.

Any attachment can be used to lift steel plates and flat steels, but works most effectively in lifting long steel plates that deform.

<LME-6V-B>



Attachments

No. □□-130 Open angle 130°		No.25-130 Round steel/pipe φ80—400mm Steel plate: Lifting capacity 2500 kg (Plate thickness 35 mm, mill scale plate)
No. □□-90 Open angle 90°		No.25-90 Round steel/pipe φ80—150mm Section steel: Length of one side 100—250mm Steel plate: Lifting capacity 2500 kg (Plate thickness 35 mm, mill scale plate)



Precaution for use

Rust and scratches on the attractive face adversely affects the holding power. Inspect/check periodically and make repairs.

[mm (in.)]

Model	Lifting Capacity (On mill scale steel plate 35 mm (1.37) or thicker)	Dimensions	Lifting Ring	Battery	Working Hours (50%ED)	Mass	Attachment	Battery Charger	Charging Time	Accessories
LME-6V-B	600kg/ 1323 lb	Attractive face 320 (12.6) × 230mm (9.05) Height to lifting ring 625mm (24.6)	φ 58 (2.28)	12V12Ah	8—10h	90kg/ 198 lb	No.6-130 No.6-90	Input 100 VAC, output battery 1 pc (12V)	5—7h	Spare battery: 1 set Charger (standard): 1 set Hydrometer
LME-10V-B	1000kg/ 2205 lb	Attractive face 390 (15.3) × 230mm (9.05) Height to lifting ring 715mm (28.2)	φ 75 (2.95)	12V35Ah	14—18h	250kg/ 551 lb	No.10-130 No.10-90		10—15h	
LME-25V-B	2500kg/ 5512 lb	Attractive face 390 (15.3) × 450mm (17.7) Height to lifting ring 715mm (28.2)			8—10h	300kg/ 661 lb	No.25-130 No.25-90			
LME-50V	5000kg/11023 lb	Attractive face 390 (15.3) × 900mm (35.4) Height to lifting ring 901mm (35.4)	φ118 (4.64)	12V35Ah 2 pcs in series		450kg/ 992 lb	No.50-130 No.50-90	Input 100 VAC, output battery 2 pcs in series (24V)	6—10h	

※ Two types of attachments are available for desired applications.

Maximum dimensions of angle steels to lift (L steel)

[mm (in.)]

Model	Length of one side	Then, the length is
LME- 6V-B	75 (2.95) — 200 (7.87)	Up to 1.7 m (66.9)
LME-10V-B	100 (3.93) — 250 (9.84)	Up to 2.5 m (98.4)
LME-25V-B	100 (3.93) — 250 (9.84)	Up to 6.0 m (236.2)
LME-50V	100 (3.93) — 250 (9.84)	Up to 10.0 m (393.7)

(When Attachment No. □□-90 used)

※ The lifting capacity is indicated by a value that is a half of the maximum holding power.

※ 50%ED.....Repeating cycle of power on 5 min. and pause 5 min.

Maximum dimensions of steel plates to lift (when Attachment No. □□—130 used)

[mm (in.)]

Model	LME-6V-B				LME-10V-B			
Thickness	Square Shape	Rectangular Shape			Square Shape	Rectangular Shape		
5— 7	350 (13.7) × 350 (13.7)	500 (19.6) × 300 (11.8)			600 (23.6) × 600 (23.6)	500 (19.6) × 650 (25.5)	1000 (39.3) × 400 (15.7)	
8— 12	450 (17.7) × 450 (17.7)	500 (19.6) × 400 (15.7)			700 (27.5) × 700 (27.5)	500 (19.6) × 800 (31.5)	1000 (39.3) × 450 (17.7)	
13— 16	550 (21.6) × 550 (21.6)	500 (19.6) × 600 (23.6)	1000 (39.3) × 300 (11.8)		750 (29.5) × 750 (29.5)	500 (19.6) × 1200 (47.2)	1000 (39.3) × 600 (23.6)	
17— 40	700 (27.5) × 700 (27.5)	500 (19.6) × 1000 (39.3)	1000 (39.3) × 500 (19.6)		900 (35.4) × 900 (35.4)	500 (19.6) × 1250 (49.2)	1000 (39.3) × 750 (29.5)	
45— 50	600 (23.6) × 600 (23.6)	500 (19.6) × 900 (35.4)	1000 (39.3) × 450 (17.7)		1000 (39.3) × 1000 (39.3)	500 (19.6) × 1750 (68.9)	1000 (39.3) × 1000 (39.3)	
75	550 (21.6) × 550 (21.6)	500 (19.6) × 600 (23.6)	1000 (39.3) × 300 (11.8)		900 (35.4) × 900 (35.4)	500 (19.6) × 1250 (49.2)	1000 (39.3) × 750 (29.5)	
100	450 (17.7) × 450 (17.7)	500 (19.6) × 400 (15.7)	1000 (39.3) × 200 (7.87)		700 (27.5) × 700 (27.5)	500 (19.6) × 1000 (39.3)	1000 (39.3) × 600 (23.6)	

[mm (in.)]

Model	LME-25V-B				LME-50V			
Thickness	Square Shape	Rectangular Shape			Square Shape	Rectangular Shape		
5— 7	900 (35.4) × 900 (35.4)	500 (19.6) × 1300 (51.2)	1000 (39.3) × 800 (31.5)		1400 (55.1) × 1400 (55.1)	1000 (39.3) × 1800 (70.9)	2000 (78.7) × 800 (31.5)	
8— 12	1000 (39.3) × 1000 (39.3)	500 (19.6) × 1600 (62.9)	1000 (39.3) × 900 (35.4)		1700 (66.9) × 1700 (66.9)	1000 (39.3) × 2500 (98.4)	2000 (78.7) × 1400 (55.1)	
13— 16	1100 (43.3) × 1100 (43.3)	500 (19.6) × 2000 (78.7)	1000 (39.3) × 1100 (43.3)		1800 (70.9) × 1800 (70.9)	1000 (39.3) × 3500 (137.8)	2000 (78.7) × 1800 (70.9)	
17— 40	1300 (51.2) × 1300 (51.2)	500 (19.6) × 2500 (98.4)	1000 (39.3) × 1700 (66.9)		1900 (74.8) × 1900 (74.8)	1000 (39.3) × 3800 (149.6)	2000 (78.7) × 1900 (74.8)	
45— 50	1500 (59.0) × 1500 (59.0)	500 (19.6) × 3500 (137.8)	1000 (39.3) × 2000 (78.7)		2000 (78.7) × 2000 (78.7)	1000 (39.3) × 4000 (157.5)	2000 (78.7) × 2000 (78.7)	
75	1200 (47.2) × 1200 (47.2)	500 (19.6) × 2500 (98.4)	1000 (39.3) × 1500 (59.0)		1500 (59.0) × 1500 (59.0)	1000 (39.3) × 2600 (102.4)	2000 (78.7) × 1150 (45.2)	
100	900 (35.4) × 900 (35.4)	500 (19.6) × 2000 (78.7)	1000 (39.3) × 850 (33.5)		1400 (55.1) × 1400 (55.1)	1000 (39.3) × 2000 (78.7)	2000 (78.7) × 1000 (39.3)	

Maximum dimensions of round steels and steel pipes to lift (when Attachment No. □□-130 used)

Model	LME-6V-B		LME-10V-B		LME-25V-B		LME-50V	
	Length		Length		Length		Length	
	Round Steel	Steel Pipe	Round Steel	Steel Pipe	Round Steel	Steel Pipe	Round Steel	Steel Pipe
80	1000 (39.3)	1500 (59.0)	2000 (78.7)	3000 (118.0)	4000 (157.5)	6000 (236.2)	7000 (275.6)	11000 (433.1)
100	900 (35.4)	1400 (55.1)	1900 (74.8)	2500 (98.4)	3500 (137.8)	5800 (228.3)	6000 (236.2)	10000 (393.7)
150	600 (23.6)	1250 (49.2)	1100 (43.3)	2100 (82.7)	2000 (78.7)	5000 (196.9)	3500 (137.8)	8000 (315.0)
200	350 (13.7)	1000 (39.3)	700 (27.5)	1750 (68.9)	1400 (55.1)	4100 (161.4)	2500 (98.4)	7000 (275.6)
250	300 (11.8)	850 (33.5)	600 (23.6)	1500 (59.0)	1250 (49.2)	3500 (137.8)	2200 (86.6)	6000 (236.2)
300	250 (9.84)	750 (29.5)	500 (19.6)	1350 (53.2)	1100 (43.3)	3000 (118.1)	1900 (74.8)	5000 (196.9)
350			350 (13.7)	1250 (49.2)	950 (37.4)	2750 (108.3)	1700 (66.9)	4200 (165.4)
400					800 (31.5)	2500 (98.4)	1300 (51.2)	4000 (157.5)

Model LME-M BATTERY ACE*

Adjustable, Control the number of sheets lifted!

[Application]

Battery Ace allows the magnetic force to be adjusted. Suited to lift one or more plates in stacks, or lift several stacked plates together and release/distribute them one by one.

[Features]

- “Forward (initial weak hold)”, “off” and “reverse” can be selected easily with a switch.
- The number of plates to lift can be adjusted by pressing and holding the weak excitation pushbutton switch, and turning the magnetic force variable adjust resistor.
- When the pushbutton switch is released after adjusting the number of plates, the strong excitation is automatically activated.
- All operations can also be performed remotely.
- The maximum magnetic force is the same as the standard type and can be adjusted steplessly.

! Precaution for use

Rust and scratches on the attractive face adversely affects the holding power. Inspect/check periodically and make repairs.

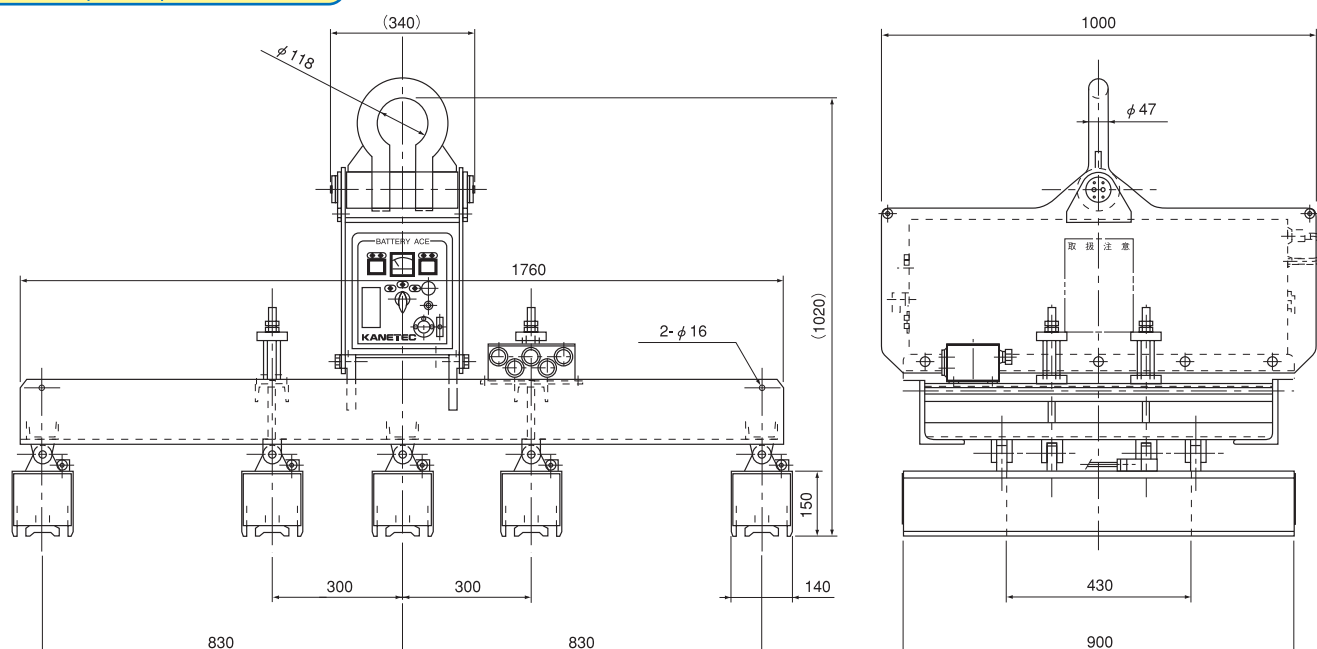


LME-60LM-A

Model	Lifting Capacity	Dimensions			Battery	Working Hours (50%ED)	Mass	Battery Charger	Charging Time	Accessories
		Holding Face	Height	Lifting Ring						
LME-15BM	1500kg/ 3307 lb	270 (10.6) X 350 (13.7)	543 (21.3)	φ 75 (2.95)	12V35Ah	8—10h	90kg/198 lb	Output battery 1 pc	10—15h	Remote operation box (with 3-m cable) Spare battery 1 pc or a set of 2 pcs Charger (standard) Hydrometer
LME-30BM	3000kg/ 6614 lb	280 (11.0) X 450 (17.7)	580 (22.83)				160kg/352 lb	Output battery 1 pc (12V)		
LME-60LM-A	6000kg/13227 lb	270 (10.6) X 900 (35.4)	755 (29.7)	φ118 (4.64)	12V35Ah 2 pcs in series	12—15h	300kg/661 lb	Output battery 2 pcs (24V)	6—10h	

*The lifting capacity is indicated by a value that is a half of the maximum holding power. ※50%ED.....Repeating cycle of power on 5 min. and pause 5 min.

An example of special fabrication



MAGNETIC HOLDERS
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MAGNETIC TOOLS FOR WELDING OPERATION
LIFTING MAGNET
MAGBONE
CHIP & SLUDGE TRANSPORTERS, ENVIRONMENTAL
MAGNETIZERS AND
MAGNETIC EQUIPMENT FOR TRANSPORTATION
SEPARATORS
HIGH GRADE MAGNETIC MEASURING INSTRUMENTS
MAGNETIC MATERIALS

Model **LM-EC** LARGE ELECTROMAGNETIC LIFMA*



[Application]

Most suitable for transporting iron wastes and iron lumps such as scraps, slabs and ingots.

[Features]

- Designed with electromagnetic coil in H-grade insulation for maximum magnetic effect and minimum power consumption.
- Robust and tough, designed to withstand severe operations.

An example of usage

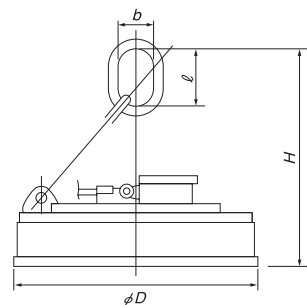


〈Standard Accessories〉

- DC power unit
- Operating pushbutton switch
- Instrument box
- Cable connector
- Cable reel

※LEM-40EC2 does not include a chain.

※Output voltage regulator and uninterruptible power unit are also manufactured, and available as an option.



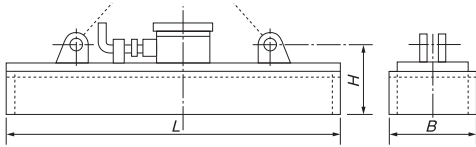
[mm (in.)]

Model	Max. Lifting Mass				Dimensions				Voltage	Current	Power Consumption	Mass	Applicable Power Unit	Duty Cycle
	Ingot	Pig Iron	Steel Cut Wastes	Chips	D	H	b	ℓ						
LM- 40EC2	1000kg/ 2205 lb	60kg/ 132 lb	20kg/ 44 lb	10kg/ 22 lb	400 (15.7)	—	—	—	220 VDC	2.5A	0.55kW	130kg/ 286 lb	LBR-04E	50%ED Repeating cycle of power on 5 min. and pause 5 min.
LM- 50EC2	1800kg/ 3968 lb	120kg/ 264 lb	90kg/ 198 lb	25kg/ 55 lb	500 (19.6)	610 (24.0)	70 (2.75)	140 (5.51)		4.3A	1.0kW	290kg/ 639 lb	LBR-05E	
LM- 60EC2	3000kg/ 6614 lb	250kg/ 551 lb	120kg/ 264 lb	40kg/ 88 lb	600 (23.6)	740 (29.1)	90 (3.54)	160 (6.29)		5.8A	1.28kW	400kg/ 880 lb	LBR-06E	
LM- 70EC2	5000kg/ 11020 lb	350kg/ 771 lb	200kg/ 441 lb	100kg/ 220 lb	700 (27.5)	880 (34.6)	110 (4.33)	180 (7.08)		18A	4.0kW	600kg/ 1323 lb	LBR-07E	
LM- 90EC2	9000kg/ 19840 lb	500kg/ 1102 lb	300kg/ 661 lb	200kg/ 441 lb	900 (35.4)	1050 (41.3)	150 (5.90)	220 (8.66)		28A	6.2kW	600kg/ 1323 lb	LBR-09E	
LM-110EC2	14000kg/ 30860 lb	900kg/ 1984 lb	500kg/ 1102 lb	300kg/ 661 lb	1100 (43.3)	1150 (45.2)	175 (6.88)	250 (9.84)		42A	9.2kW	1400kg/ 3086 lb	LBR-11E	
LM-130EC2	19000kg/ 41890 lb	1400kg/ 3086 lb	800kg/ 1764 lb	500kg/ 1102 lb	1300 (51.1)	1250 (49.2)	190 (7.48)	290 (11.4)		63A	13.9kW	1900kg/ 4189 lb	LBR-13E	
LM-150EC2	24000kg/ 52910 lb	1900kg/ 4189 lb	1100kg/ 2425 lb	800kg/ 1764 lb	1500 (59.0)	1330 (52.3)	210 (8.26)	350 (13.7)		74A	16.3kW	2900kg/ 6393 lb	LBR-15E	
LM-180EC2	31000kg/ 68340 lb	2700kg/ 5952 lb	1600kg/ 3527 lb	1100kg/ 2205 lb	1800 (70.8)	1450 (57.0)	230 (9.05)	370 (14.5)		110A	24.0kW	4200kg/ 9259 lb	LBR-18E	

Model **LM-EP** RECTANGULAR ELECTROMAGNETIC LIFMA*



(An example of Lifma made to order)



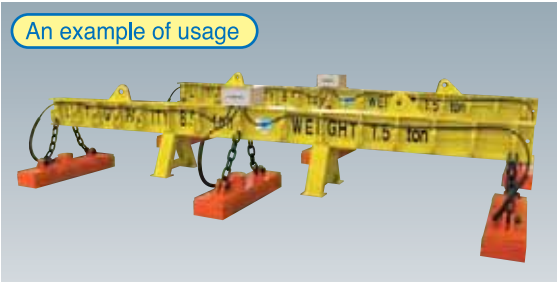
[Application]

When mounted on a balanced (beam), several LM-EP can be used for such operations as transporting, sorting, loading & unloading and shipping of steel plates.

[Features]

- The number of pieces to lift can be controlled accurately.
- Easy operation and trouble-free mechanism.
- The employment of a non-interruptible power supply prevents lifted workpieces from falling in the event of power failure.

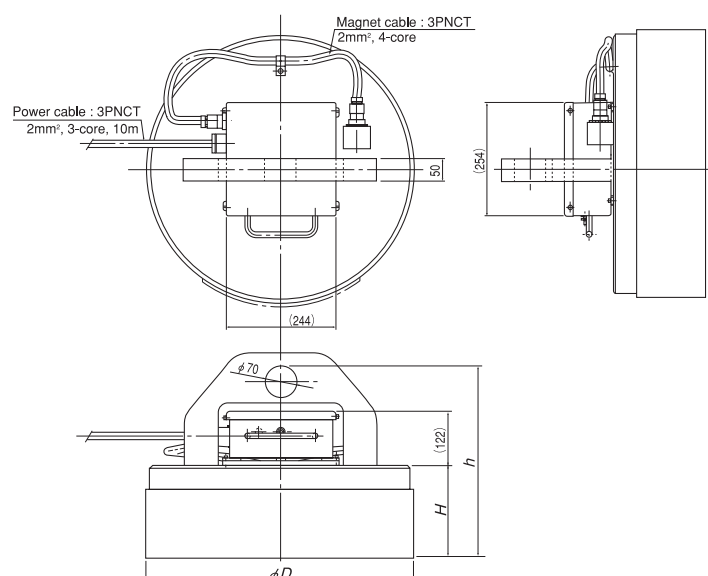
An example of usage



[mm (in.)]

Model	Max. Holding Power	Dimensions			Voltage	Current	Power Consumption	Mass	Duty Cycle	Remarks
		B	L	H						
LM-20120EP3	100kN (10000kgf)	200 (7.87)	1200 (47.2)	190 (7.48)	210 VDC	5.1A	1.07kW	180kg/ 396 lb	50%ED Repeating cycle of power on 5 min. and pause 5 min.	Power source board to be optimally designed according to number of pieces to control. The lifting chain, etc. are optional.
LM-20200EP3	170kN (17000kgf)		2000 (78.7)	180 (7.08)		8.0A	1.68kW	300kg/ 661 lb		
LM-30100EP3	150kN (15000kgf)	300 (11.8)	1000 (39.3)	180 (7.08)		6.0A	1.26kW	250kg/ 551 lb		
LM-30120EP3	180kN (18000kgf)		1200 (47.2)	200 (7.87)		7.1A	1.50kW	300kg/ 661 lb		
LM-30180EP3	260kN (26000kgf)		1800 (70.9)	190 (7.48)		9.0A	1.89kW	450kg/ 992 lb		
LM-40150EP3	300kN (30000kgf)	400 (15.7)	1500 (59.0)	220 (8.66)		12.3A	2.59kW	630kg/ 1389 lb		

Model LM-R LARGE ELECTROMAGNETIC LIFMA*



[Application]

Lifting steel plates and scraps (empty can pressing).

[Features]

- Built in rectifier, eliminating the need for a separate rectifier/controller.
- When the rectifier is removed from the LM-R, it can be located where needed to control the LM-R by remote operation. (The remote operation cable is optional.)
- A water-proof construction for use in the outdoors.
- The built-in reverse exciting circuit facilitates releasing lifted workpieces.

[mm (in.)]

Model	Max. Lifting Mass				Holding Power (Max.)	Dimensions			Input Voltage	Power Consumption	Working Rate	Mass
	Ingot	Pig Iron	Steel Cut Wastes	Chips		D	H	h				
LM-R45	1200kg/2646 lb	40/ 88— 70kg/154 lb	20/ 44— 40kg/ 88 lb	15kg/33 lb	56kN (5800kgf)	450 (17.7)	170 (6.69)	395 (15.5)	200 VAC	1φ Approx.420W	50%ED	220kg/485 lb
LM-R60	2000kg/4409 lb	100/220—150kg/330 lb	60/132—100kg/220 lb	20kg/44 lb	100kN (10000kgf)	600 (23.6)	205 (8.07)	430 (16.9)		1φ Approx.750W		400kg/880 lb

An example of fabrication of Lifma with beam 2

〈Lifting bundled pipes〉



〈Lifting steel plates〉



Other types are also available according to your applications and specifications.

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MAGNETIC
SEPARATORS

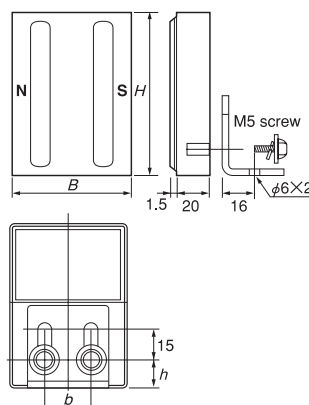
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Model KF-T STEEL SHEET SEPARATOR "FLOATER" * (THIN TYPE)

Thin type



[Application]

Most suitable for installation in narrow spaces because it is thin and compact.

[Features]

- Ultra-thin type 20mm thick.
- This separator can be installed in a wide variety of locations, for example, direct installation on a wall face or installation with the L-shaped attachment.
- The installing position is vertically adjustable with the L-shaped attachment.
- One set consists of two units.

Model	Dimensions				Mass
	B	H	b	h	
KF-T5A	62 (2.44)	87 (3.42)	25 (0.98)	13.5	0.7kg/1.5 lb×2
KF-T10	102 (4.01)	127 (5.00)	50 (1.96)	(0.53)	1.1kg/2.4 lb×2
KF-T20					1.6kg/3.5 lb×2

[mm (in)]

PRINCIPLE OF FLOATER

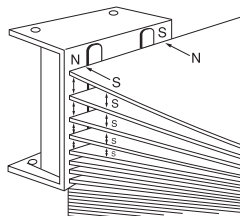
The Floater induces the same magnetic poles in stacked steel sheets to separate the sheets by the repelling force of the same poles.

FLOATING DISTANCE

When a pair of Floaters are positioned on each side of stacked sheets on the longitudinal sides, the distance the top first sheet is floated from the second sheet is as shown in the table.

This distance applies when the Floaters are positioned 50 mm away from the edge of sheets and the initial position of the first sheet is 50 mm below the top end of the Floaters.

Note, however, if sheets are warped or oil is sticking to them, the distance will become shorter.



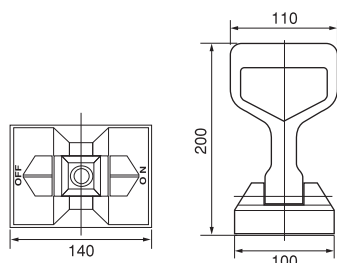
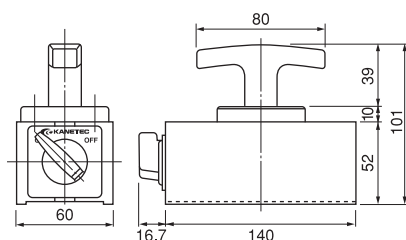
Test steel Model	Thickness				Size
	1.0	1.6	2.0	3.2	
KF-5B	18 (0.7)	14 (0.55)	10 (0.39)	5 (0.19)	150 (5.90) × 450 (17.7)
KF-10	14 (0.55)	12 (0.47)	6 (0.23)	—	300 (11.8) × 900 (35.4)
KF-20	26 (1.02)	17 (0.66)	9 (0.35)	—	
KF-30	33 (1.29)	26 (1.02)	18 (0.70)	7 (0.27)	
KF-40	34 (1.33)	28 (1.10)	20 (0.78)	10 (0.39)	
KF-T5A	5 (0.19)	3 (0.11)	2 (0.07)	—	80 (3.15) × 200 (7.87)
KF-T10	120 (4.72)	10 (0.39)	9 (0.35)	6 (0.23)	160 (6.29) × 300 (11.8)
KE-T20					

[mm (in)]

Model HL HAND LIFMA*



HL-15



HL-20A

[Application]

Most suitable for pulling out steel material or steel sheet and carrying material, metal mold, press die and so on.

[Features]

- A new cam mechanism is employed so as not to apply friction due to holding and releasing directly to the surface of workpieces to transport. (HL-20A)
- Workpieces are held and released quite smoothly.
- The magnetic force can be turned on and off by lever operation. (HL-15)
- The T-handle is robust and fixed for stable workpiece transportation. (HL-15)

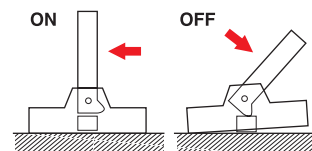
How to Use (HL-20A)

<Holding>

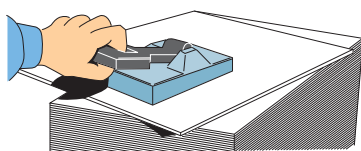
Place Hand Lifma on the carrying object with handle right up and pull it out after ensuring that it has attracted perfectly.

<Releasing>

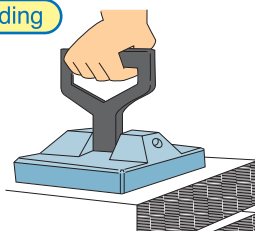
Hand Lifma releases the carrying object when the handle is turned in the off direction.



Releasing



Holding



Model	Holding Power		Dimensions			Handle Length	Mass
	Lateral Pulling	Lifting up	Width	Length	Height		
HL-15	350N (35kgf)	1.5kN (150kgf)	60 (2.36)	120 (4.72)	52 (2.04)	49 (1.92)	3.0kg/ 6.6 lb
HL-20A	500N (50kgf)	2kN (200kgf)	100 (3.93)	140 (5.51)	32 (1.26)	200 (7.87)	2.5kg/ 5.5 lb

[mm (in)]

*The holding power applies to 15mm thick soft steel. The holding power drops according to thicknesses and materials of workpieces. For safety, please use these products at a load that is one third or less of the values indicated in the table.

*Do not employ it as a hoist.

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Model SL TOUCHER



[Application]

A simple transportation tool by use of a magnet.

[Features]

- You can easily carry workpieces which would otherwise be difficult to handle with hands due to complex shapes or high temperatures. Simply attract/remove with one-touch mechanism.
- Useful for tacking or positioning small pieces in welding operation.
- Usable for a wide range of applications.

[mm (in)]

Model	Holding Power	Dimensions			Max. Height	Mass
		Width	Length	Height		
SL-1	500N (50kgf)	50 (1.96)	92 (3.62)	32 (1.26)	122 (4.80)	1kg/2.2 lb

※ The holding power is a value in a perpendicular direction on SS400, t10 steel sheet.

Model HMC MAGHAND*

Collection of bolts, screws and nails scattered around on the floor!

[Application]

These MAGHANDs are suitable for collecting iron pieces that are scattered around on the floor or mixed in media. Since they can also be used to remove and collect iron pieces from powder materials, they have a wide range of applications including machining, forging and food processing. They may also be useful in the household.

[Features]

- The magnetic force can be turned on and off simply by one-hand operation.
- These MAGHANDs have a powerful magnet for strong attraction and a wide attractive face.
- Model HMC-50 has a long arm to make it suitable for collecting iron pieces in pits and enclosures.
- Model HMC-T10 is very rigid as its body is cased with aluminum. (High temperature type)
- Model HMC-K50 has a square rectangler to make it best suitable for collecting chips from T grooves. It is also useful for collecting iron powder precipitated in coolant tanks as it is of simple waterproof type.

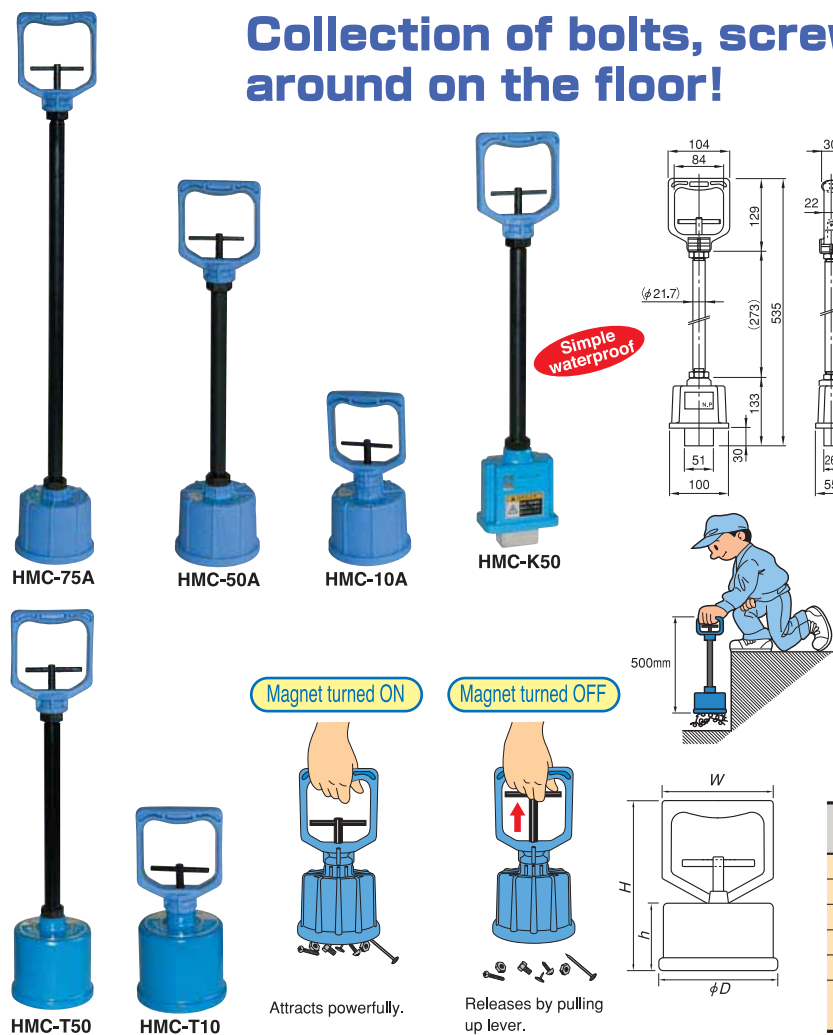
<Specifications>

■ Attracting amount: About 0.6 kg of M10 plain washers and about 0.7 kg of M4 x 10 screws.

[mm (in)]

Model	Dimensions				Mass
	φD	H	h	W	
HMC-10A	114	227 (8.93)	85	104	0.9kg/1.98 lb
HMC-50A	(4.48)	500 (19.6)	(3.34)	(4.09)	1.5kg/3.30 lb
HMC-75A		750 (29.5)			1.8kg/3.96 lb
HMC-T10	112	241 (9.48)	95		1.2kg/2.60 lb
HMC-T50	(4.40)	514 (20.2)	(3.74)		1.5kg/3.30 lb
HMC-K50	(51 (2.00) × 26 (1.02) × 30 (1.18)) × 535 (21.0)				1.6kg/3.52 lb

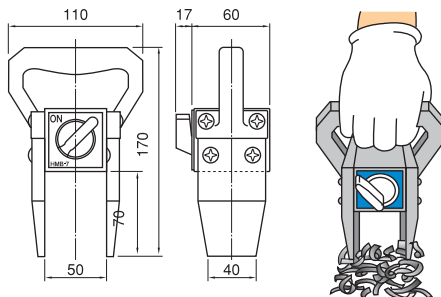
(See dimension drawing)



Model HMB HAND MAGNET



HMB-7



<Specifications>

- Capacity: Milling chips about 0.2 kg.
- M5 x 7 screws about 0.5 kg.

[Application]

This product is useful in wide applications such as in machine shops, casting factories, food and chemical factories, etc. for recovering iron chips, sorting materials of screws, etc., recovering chips in cast sand, etc.

[Features]

- Magnetic force is turned ON/OFF just by operating the lever lightly with a hand.
- Compact and strong holding power.

[mm (in)]

Model	Holding Power	Mass
HMB-7	250N (25kgf)	1.9kg/4.20 lb

※ The holding power applies to SS400, thickness 10mm and ground surface.