

# LIFTING MAGNETS

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


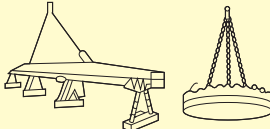

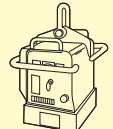
An example of lifting by use of LPR-VN type

An example of lifting by use of LM-X type



Beams dedicated to LPR-VN/LPH that can lift long steel plates, round bars and pipes safely are available according to your applications.

## Types and features

Type	Permanent magnetic Lifma*	Electromagnetic Lifma*	Permanent electromagnetic Lifma*	Battery Ace*
				
Features	<ul style="list-style-type: none"> <li>No power source is required. No fear of electrical problems such as power failure.</li> <li>No power panel or rectifier is required to make this type usable in any places.</li> <li>Small, but powerful magnetic force.</li> </ul>	<ul style="list-style-type: none"> <li>The strength of magnetic force can be adjusted easily and the number of plates to lift can be controlled.</li> <li>Larger and coupled configuration is possible.</li> <li>Remote operation and automation of work is possible.</li> </ul>	<ul style="list-style-type: none"> <li>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.</li> <li>Power consumption is very low.</li> <li>Remote operation and serial connection enables automation.</li> </ul>	<ul style="list-style-type: none"> <li>No wiring or power source is required to make this type usable in any places.</li> <li>No fear of problems due to power failure or cable breakage.</li> <li>A battery is incorporated to enhance mobility. Remote operation is also possible.</li> </ul>
Model	LPR-VN, LPH	LMU, LM	LEP	LME

Maintenance of the Lifma\* and Battery Ace\* is also available (for a fee). When you require such maintenance, please contact us.

## The lifting capacity varies largely depending on workpiece conditions such as thickness.

### Facts to keep in mind when using the Lifma

#### Holding power

The holding power varies largely depending on various conditions such as the thickness of workpieces to lift, clearance between the workpiece and the magnet and material of the workpiece. See the graphs on the right side.

#### Maximum holding power

The holding power that is obtained under the conditions that the workpiece to hold has a sufficient thickness, the surface of the workpiece is free of dust and projections to enable close contact, the workpiece is held on the whole attractive face and the material of the workpiece is mild steel SS400 is the upper limit and this power is expressed as the max. holding power.

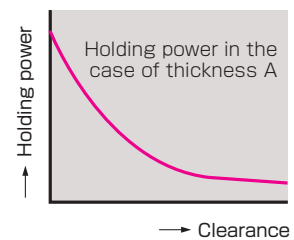
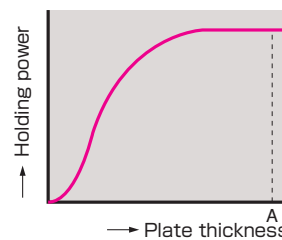
#### Lifting capacity

The holding power that can be obtained under the most favorable conditions is called the max. holding power. A half of the max. holding power is defined as the lifting capacity of the electromagnetic Lifma (LMU, LMU-SR, LM-EP) and Battery Ace; a third for the permanent magnetic Lifma, LPR-VN, LPH and permanent electromagnetic Lifma LEP-Q; and a quarter for permanent magnetic Lifma PL and permanent electromagnetic Lifma LEP. However, when workpieces to lift are thin, it is difficult to lift the weight indicated by the lifting capacity. (When workpieces are thinner, the holding power drops.)

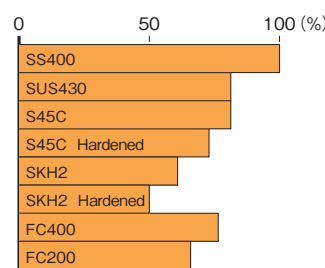
#### Determining sizes of workpieces to lift

Determine the size of workpieces to lift such as steel plates in consideration of such conditions as the plate thickness, distortion, clearance caused by dust, etc., attractive area, material and balance of workpieces lifted and the safety factor.

### Change in holding power by plate thickness and clearance



### Difference in holding power by materials



### Difference in holding power by attractive face roughness



Model **LPR-VN** SMALL PERMANENT MAGNETIC LIFMA\*

All types for steel plates and round steel bars!



Double safety measures employed

Safety stopper  
Handle lock

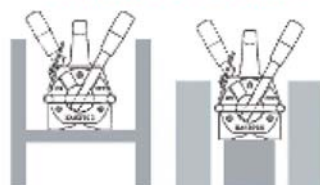
When operating the handle of LPR-VN75 and LPR-VN150, be sure that the safety stopper will not interfere with the lifting fixture.

Narrowest handle operating angle in the industry

Patented



Exhibits its ability in lifting section steel such as H-section steel and workpieces in small space.



Precautions for use

When you plan to use the Lifma for special steel materials such as hardened materials, please consult with us prior to purchasing the Lifma. The permanent magnetic Lifma LPR-VN Series are not of waterproof construction. Ensure no water will enter or adhere to them. Rust and scratches on the attractive face affect the holding power adversely. Repair it periodically.

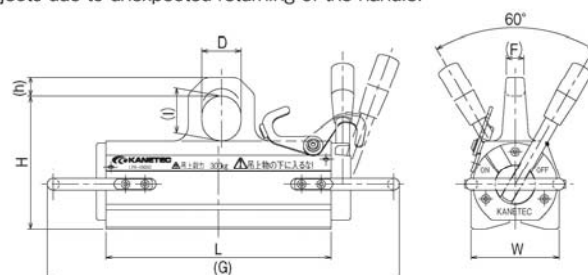
Permanent magnetic Lifma with enhanced operability and safety.

[Application]

Permanent magnetic type lifting magnets used as a lifting section of cranes and hoists for transportation of steel materials in warehouses and machining shops or for loading and unloading 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 steel materials.

[Features]

- All types are capable of lifting steel plates and round steel bars.
- These are of permanent magnetic type requiring no power source. Thus, there is no risk of falling workpieces due to power failure or failure of wiring systems.
- Powerful magnetic force but compact and light weight.
- The narrowest handle operating angle of 60 degrees (patented) in the industry facilitates the ON/OFF operation in small space.
- In addition to the conventional handle lock mechanism, a safety stopper is provided as a standard accessory. These double safety measures prevent falling of lifted objects due to unexpected returning of the handle.



Model	Lifting Capacity		Dimensions								Mass	
	Steel Plate	Steel bar	W	L	G	h	H	D	F	I		
LPR-VN75	75kg/ 165 lb	50kg/ 110 lb		80 (3.14)	160 (6.29)		15			15		5.5kg/ 12.1 lb
LPR-VN150	150kg/ 330 lb	100kg/ 220 lb	90 (3.54)	130 (5.11)	260 (10.2)	(0.59)	135 (5.31)	40 (1.57)		45 (1.77)		8kg/ 17.6 lb
LPR-VN300	300kg/ 661 lb	200kg/ 440 lb		230 (9.05)	360 (14.1)		20 (0.78)			18 (0.70)		14kg/ 30.8 lb
LPR-VN600	600kg/ 1322 lb	400kg/ 880 lb	119 (4.68)	330 (12.9)	500 (19.6)	(0.98)	184 (7.24)	60 (2.36)		25 (0.98)	65 (2.55)	35kg/ 77.1 lb

\*The lifting capacity is indicated by a value that is a third (safety factor 3) of the max. holding power.  
\*\*LPR-VN75 is not provided with a rear guard.

Lifting standards

Steel plate lifting standard (Flat steel plates)

Thickness	Model (LPR-VN)			
	75	150	300	600
16	□630(24.8)	□900(35.4)	□1200(47.2)	□1300(51.1)
	300(11.8) × 1300(51.1)	600(23.6) × 1300(51.1)	900(35.4) × 1550(61.0)	1200(47.2) × 1400(55.1)※
112	□600(23.6)	□850(33.4)	□1250(49.2)	□1450(57.0)
	300(11.8) × 1200(47.2)	600(23.6) × 1200(47.2)	900(35.4) × 1700(66.9)	1200(47.2) × 1700(66.9)
125	□450(17.7)	□650(25.5)	□950(37.4)	□1250(49.2)
	300(11.8) × 650(25.5)	600(23.6) × 700(27.5)	900(35.4) × 1000(39.4)	1200(47.2) × 1300(51.1)
150	□350(13.7)	□500(19.6)	□700(27.5)	□1000(39.4)
	300(11.8) × 400(15.7)	600(23.6) × 400(15.7)	900(35.4) × 550(21.6)	1200(47.2) × 800(31.5)
1100	□240(9.44)	□350(13.7)	□550(21.6)	□750(29.5)
	300(11.8) × 180(7.08)	600(23.6) × 200(7.87)	900(35.4) × 320(12.5)	1200(47.2) × 450(17.7)

※If plates are thinner, the handle operation becomes harder. The handle operation also becomes harder when there is clearance. The return of the handle at the time of OFF operation becomes faster.

Round steel bar lifting standard (Mill scale)

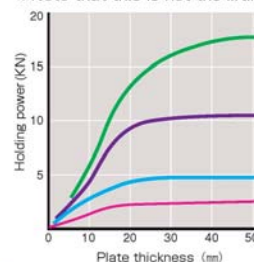
Steel bar	Model (LPR-VN)			
	75	150	300	600
Min. dia.	φ 50(1.96) × 750(29.5)L	φ 50(1.96) × 1500(59.0)L	φ 50(1.96) × 3000(118)L	φ 100(3.93) × 3000(118)L
Max. dia.	φ 200(7.87) × 150(5.90)L	φ 200(7.87) × 300(11.8)L	φ 300(11.8) × 350(13.7)L	φ 400(15.7) × 400(15.7)L
Pipe allowable dia.※	φ 50(1.96) - 200(7.87)	φ 50(1.96) - 200(7.87)	φ 50(1.96) - 300(11.8)	φ 100(3.93) - 500(19.6)

※Keep in mind that the capacity drops when lifting pipes or workpieces the max. diameter of which is smaller than the attractive face. For long workpieces, consider the use of several beams.

Note: This table is presented as a guide for actual work, but does not guarantee absolute safety. The Lifma may not perform at its maximum capacity depending on factors other than the conditions shown in the table. Check such factors fully prior to using the Lifma.

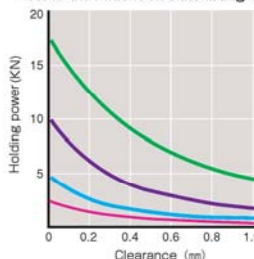
Relation between steel plate thickness and holding power

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



Relation between clearance and holding power

(Material SS400, thickness 50 mm, surface roughness ▽▽)  
※Note that this is not the lifting capacity.



Keep in mind that the capacity of the Lifma varies largely depending on the thickness and material of workpieces, clearance and other factors.

MAGNETIC TOOLS & EQUIPMENT FOR WELDING OPERATION  
LIFTING MAGNET  
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CHIP & SLUDGE CONVEYANCE EQUIPMENT  
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MAGNETIZER AND ENVIRONMENTAL EQUIPMENT  
MAGNETIC EQUIPMENT FOR CONVEYANCE  
MAGNETIC SEPARATORS  
MEASURING TOOLS  
MEASURING INSTRUMENTS  
MAGNETIC MATERIALS



# LIFTING MAGNETS

## Model LPH LARGE PERMANENT MAGNETIC LIFMA\*

All types for steel plates and round steel bars!

**Permanent magnetic Lifma with smooth operation and enhanced safety realized by pursuing the optimum magnetic circuit to the limit.**

### [Application]

Permanent magnetic type lifting magnets used as a lifting section of cranes and hoists for transportation of steel materials in warehouses and machining shops or for loading and unloading 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 steel materials.

### [Features]

- All types are capable of lifting steel plates and round steel bars.
- The ON/OFF handle operating force has been reduced to a half max. of that of the conventional models. The operability in lifting thin workpieces and pipes that are difficult to lift with conventional models has been improved. (Patented)
- In addition to the conventional handle lock mechanism, a safety stopper is provided as a standard accessory. These double safety measures prevent falling of lifted objects due to unexpected returning of the handle. (Design registered)
- These are of permanent magnetic type requiring no power source. Thus, there is no risk of falling workpieces due to power failure or failure of wiring systems.



### Precautions for use

When you plan to use the Lifma for special steel materials such as hardened materials, please consult with us prior to purchasing the Lifma.

The permanent magnetic Lifma LPH Series are not of waterproof construction. Ensure no water will enter or adhere to them.

Rust and scratches on the attractive face affect the holding power adversely. Repair it periodically.



LPH-1000



LPH-1500

Optimum magnet array realized by KANETEC's original magnetism analysis technology.

Patented

Smooth handle operation for thin sheets!

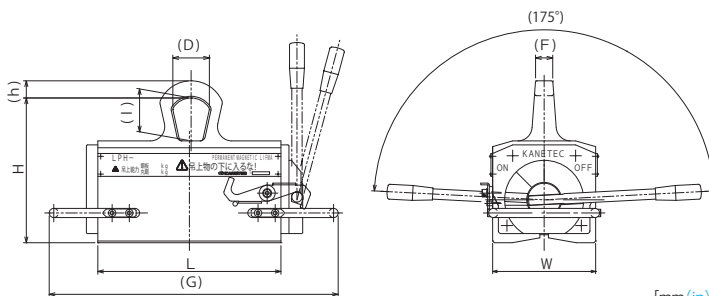
Double handle lock mechanism for enhanced safety

Design registered

Front & rear guards (grips) provided. Protects the main unit. Easy to move and position the Lifma.

Handle fixing groove when magnetic force ON  
Handle fixing stopper

Sizes of round steel workpieces to lift expanded.



Model	Lifting Capacity		Dimensions								Mass
	Steel Plate	Steel bar	W	L	G	h	H	D	I	F	
LPH-1000	1000kg/ 2205 lb	600kg/ 1323 lb	180	320 (12.5)	505 (19.8)	30 (1.18)	253 (9.96)	65 (2.55)	75 (2.95)	30	80kg/ 176 lb
LPH-1500	1500kg/ 3307 lb	800kg/ 1764 lb	7.08	400 (15.7)	585 (23.0)	35 (1.37)	268 (10.5)	75 (2.95)	85 (3.34)	30 (1.18)	100kg/ 220 lb
LPH-2000	2000kg/ 4410 lb	900kg/ 1984 lb	205	500 (19.6)	685 (26.9)	38 (1.49)	281 (11.0)	80 (3.14)	97 (3.81)	35 (1.37)	130kg/ 286 lb

\*The lifting capacity is indicated by a value that is a third (safety factor 3) of the max. holding power.

### Lifting standards

#### Steel plate lifting standard (Flat steel plates)

Thickness	Model (LPH)		
	1000	1500	2000
t6	□1450 (57.0) 1500 (59.0) × 1400 (55.1)	□1650 (64.9) 1500 (59.0) × 1800 (70.8)	
t12	□1600 (62.9) 1500 (59.0) × 1650 (64.9)	□1700 (66.9) 1500 (59.0) × 1900 (74.8)	□1800 (70.8)
t25	□1550 (61.0) 1500 (59.0) × 1600 (62.9)	□1550 (61.0) 1500 (59.0) × 1600 (62.9)	□1750 (68.8) 1800 (70.8) × 1700 (66.9)
t50	□1300 (51.1) 1500 (59.0) × 1200 (47.2)	□1100 (43.3) 1500 (59.0) × 800 (31.5)	□1300 (51.1) 1800 (70.8) × 950 (37.4)
t100	□1000 (39.4) 1500 (59.0) × 650 (25.5)		

\*If plates are thinner, the handle operation becomes harder. The handle operation also becomes harder when there is clearance. The return of the handle at the time of OFF operation becomes faster.

#### Round steel bar lifting standard (Mill scale)

Steel bar	Model (LPH)		
	1000	1500	2000
Min. dia.	φ 100 (3.93) × 3000 (118.1) L	φ 100 (3.93) × 3000 (118.1) L	φ 150 (5.90) × 3000 (118.1) L
Max. dia.	φ 500 (19.6) × 300 (11.8) L	φ 500 (19.6) × 400 (15.7) L	φ 500 (19.6) × 450 (17.7) L
Pipe allowable dia.※	φ 100 (3.93) - 700 (27.5)	φ 100 (3.93) - 700 (27.5)	φ 150 (5.90) - 700 (27.5)

\*The capacity varies depending on the wall thickness of pipes. If pipes are oval or curved, lifting them, even if they are short, is risky. In the case of pipes, the handle operation is harder than when handling steel plates.

\*In the case of pipes of thin wall thickness, the handle operation becomes difficult. The return of the handle at the time of OFF operation becomes faster.

\*The lifting capacity varies depending on the diameters of round steel bars. When workpieces are longer than 3 m, it is very dangerous to lift them with one unit of the Lifma since they cannot be held in balance. For long workpieces, consider the use of several beams.

\*Keep in mind that the capacity drops when lifting pipes or workpieces the max. diameter of which is smaller than the attractive face or workpieces the max. diameter of which is shorter than the lifting standard length (LPH2000).

MAGNETIC TOOLS & EQUIPMENT FOR MAINTENANCE OPERATION  
LIFTING MAGNET  
MAGBORER  
CHP & SLIDGE  
CONVENIENCE EQUIPMENT  
ENVIRONMENTAL  
MAGNETIZER AND  
DEMAGNETIZER  
FOR CONVENIENCE  
MAGNETIC EQUIPMENT  
SEPARATORS  
POWERFUL MAGNETIC  
TOOLS  
MEASURING  
INSTRUMENTS  
MAGNETIC  
MATERIALS

## Model LPR-VN-WP DRIP-PROOF SMALL PERMANENT MAGNETIC LIFMA\*

### Drip-proof specification



LPR-VN600-WP

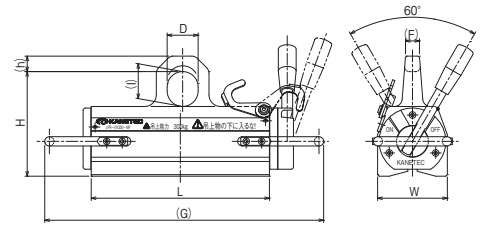


### Precautions for use

When you plan to use the Lifma for special steel materials such as hardened materials, please consult with us prior to purchasing the Lifma. These Lifmas are not of waterproof construction. Do not use them in water or places where they are subjected to water pressure nor leave them outdoor.

### [Application]

Unlike the standard type (indoor use), these Lifmas are of drip-proof construction and can be used for outdoor work.



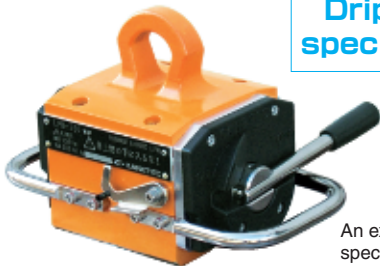
When operating the handle of LPR-VN75-WP and LPR-VN150-WP, be sure that the safety stopper will not interfere with the lifting fixture.

Model	Lifting Capacity		Dimensions								Mass	
	Steel Plate	Steel bar	W	L	G	h	H	D	F	I		
LPR-VN 75-WP	75kg/ 165 lb	50kg/ 110 lb		80 (3.14)	160 (6.29)		15 (0.59)	135 (5.31)	40 (1.57)	15 (0.59)	45 (1.77)	5.5kg/12.1 lb
LPR-VN150-WP	150kg/ 330 lb	100kg/ 220 lb	90 (3.54)	130 (5.11)	260 (10.2)							8kg/17.6 lb
LPR-VN300-WP	300kg/ 661 lb	200kg/ 440 lb		230 (9.05)	360 (14.1)	20 (0.78)				18 (0.70)		14kg/30.8 lb
LPR-VN600-WP	600kg/ 1322 lb	400kg/ 881 lb	119 (4.68)	330 (12.9)	500 (19.6)	25 (0.98)	184 (7.24)	60 (2.36)	25 (0.98)	65 (2.55)		35kg/77.1 lb

\*The lifting capacity is indicated by a value that is a third (safety factor 3) of the max. holding power.  
 ※LPR-VN75-WP is not provided with a rear guard. ※For the lifting standard, see Model LPR-VN.

## Model LPH-WP DRIP-PROOF LARGE PERMANENT MAGNETIC LIFMA\*

### Drip-proof specification



An example of special fabrication

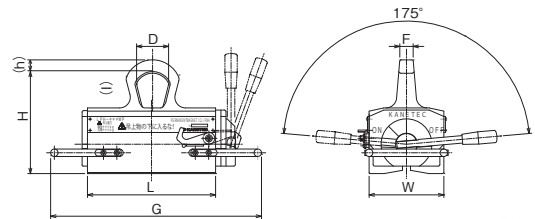


### Precautions for use

When you plan to use the Lifma for special steel materials such as hardened materials, please consult with us prior to purchasing the Lifma. These Lifmas are not of waterproof construction. Do not use them in water or places where they are subjected to water pressure nor leave them outdoor.

### [Application]

Unlike the standard type (indoor use), these Lifmas are of drip-proof construction and can be used for outdoor work.



Model	Lifting Capacity		Dimensions								Mass	
	Steel Plate	Steel bar	W	L	G	h	H	D	I	F		
LPH-1000WP	1000kg/ 2204 lb	600kg/ 1322 lb	180 (7.08)	320 (12.5)	505 (19.8)	30 (1.18)	253 (9.96)	65 (2.55)	75 (2.95)	30 (1.18)		80kg/176 lb
LPH-1500WP	1500kg/ 3306 lb	800kg/ 1763 lb		400 (15.7)	585 (23.0)	35 (1.37)	268 (10.5)	75 (2.95)	85 (3.34)			100kg/220 lb
LPH-2000WP	2000kg/ 4409 lb	900kg/ 1984 lb	205 (8.07)	500 (19.6)	685 (26.9)	38 (1.49)	281 (11.0)	80 (3.14)	97 (3.81)	35 (1.37)		130kg/286 lb

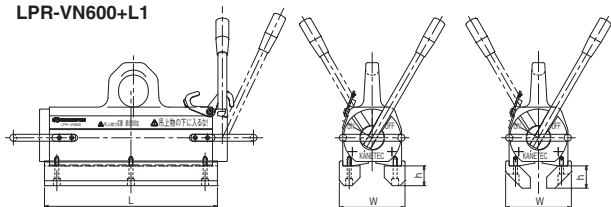
\*The lifting capacity is indicated by a value that is a third (safety factor 3) of the max. holding power.  
 ※For the lifting standard, see Model LPH.

## Model LPR-VN+L SECTION STEEL LIFTING PERMANENT MAGNETIC LIFMA\*

### An example of lifting by use of LPR-VN+L



LPR-VN600+L1

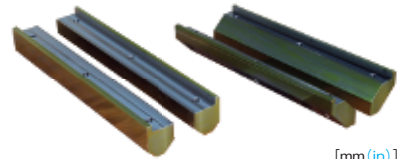


### [Application]

These Lifmas are the standard type permanent magnetic Lifma LPR-VN to which an adapter to lift L-shaped steel has been added and designed to facilitate transportation of L-shaped steel.

### [Features]

- Without the adapter, these Lifmas can be used as the standard model LPR-VN.
- An adapter for different section steel materials can be installed by use of the adapter mounting hole.



Model	Included Adapter	Dimensions			Mass
		L	W	h	
LPR-VN300+L1	Lifting of steel in mountain style	240 (9.44)	110 (4.33)	25 (0.98)	19kg/ 41 lb
LPR-VN300+L2	Lifting of steel in valley style			35 (1.37)	
LPR-VN300+L3	Lifting of steel in mountain style Lifting of steel in valley style	240 (9.44)	110 (4.33)	25 (0.98)	24kg/ 41 lb (ex)
LPR-VN600+L1	Lifting of steel in mountain style			35 (1.37)	
LPR-VN600+L2	Lifting of steel in valley style	350 (13.7)	133 (5.23)	40 (1.57)	45kg/ 99 lb
LPR-VN600+L3	Lifting of steel in mountain style Lifting of steel in valley style			45 (1.77)	
				40 (1.57)	55kg/121 lb (ex)
				45 (1.77)	

\*The adapter comes with mounting bolts and tightening tool. (\*) The total mass includes two adapter types.

### LPR-L lifting standard

Model	Applicable Workpiece Size (per unit)
LPR-VN300+L1	Lifting in mountain style L40 (1.57) - 150 (5.90) × 4m (157) max.
LPR-VN300+L2	Lifting in valley style L50 (1.96) - 200 (7.87) × 2m (78.7) max.
LPR-VN600+L1	Lifting in mountain style L75 (2.95) - 300 (11.8) × 4m (157) max.
LPR-VN600+L2	Lifting in valley style L90 (3.54) - 450 (17.7) × 2m (78.7) max.



### Precautions for use

When you plan to use the Lifma for special steel materials such as hardened materials, please consult with us prior to purchasing the Lifma. If an adapter is attached, the capacity will drop because of magnetic leakage. Do not lift flat steel plates or round steel bars with an adapter attached.



Keep in mind that the capacity of the Lifma varies largely depending on the thickness and material of workpieces, clearance and other factors.

MAGNETIC TOOLS & EQUIPMENT : FORMING OPERATION  
 LIFTING : MAGNETIC  
 MAGBORG\*  
 CHIP & SLUDGE : CONVEYANCE EQUIPMENT  
 MAGNETIC EQUIPMENT : ENVIRONMENTAL  
 MAGNETIZER AND : DEMAGNETIZER  
 MAGNETIC EQUIPMENT : FOR CONVEYANCE  
 MEASURING : POWERFUL MAGNETIC : SEPARATORS  
 MEASURING : MAGNETIC : SEPARATORS  
 MEASURING : INSTRUMENTS : TOOLS  
 MAGNETIC : MATERIALS : INSTRUMENTS

# LIFTING MAGNETS

## Model HL HAND LIFMA\*



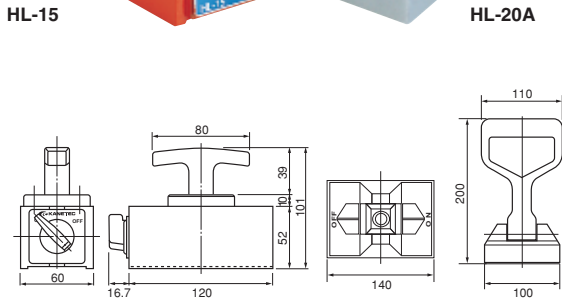
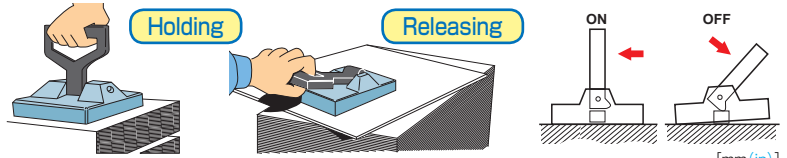
### [Application]

Suitable for pulling out steel materials or steel plates and carrying metal frames, raw materials, press molds, semi-finished products, etc.

### [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 held by hand comfortably for stable workpiece transportation. (HL-15)

### How to use (HL-20A)



Model	Max. Holding Power		Lifting Capacity	Dimensions			Handle Length	Mass
	Lateral	Lift		Width	Length	Height		
HL-15	350N (35kgf)	1.5kN (150kgf)	20kg/44.1 lb	60 (2.36)	120 (4.72)	52 (2.04)	49 (1.92)	3.0kg/6.6 lb
HL-20A	500N (50kgf)	2 kN (200kgf)	30kg/66.1 lb	100 (3.93)	140 (5.51)	32 (1.26)	200 (7.87)	2.5kg/5.5 lb

※The holding power is based on a test piece of 15 mm thick soft steel. The holding power and lifting capacity drop depending on the thicknesses, materials of workpieces and other factors. ※Do not use this Lifma for a hoist.

## Model PL PERMANENT MAGNETIC LIFMA\*

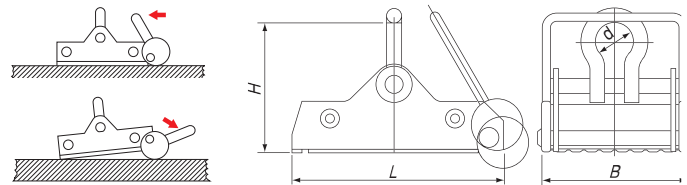


### ■ Holding

Place the Lifma on a workpiece to transport and pull the lever upright.

### ■ Releasing

Put the lever in the horizontal position to release the Lifma from the workpiece.



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

※The lifting capacity is indicated by a quarter of the max. holding power.  
※The dimension "H" is up to the top end of the inside diameter of the shackle.

### Steel plate lifting standard (Mill scale soft steel plate) [mm (in)]

Model	Thickness	PL-20B		PL-40B	
		Width	Length	Width	Length
5-7	□450 (17.7)	350 (13.7)	550 (21.6)	□950 (37.4)	650 (25.5) × 1300 (51.1)
	□500 (19.6)	350 (13.7)	700 (27.5)	□1100 (43.3)	750 (29.5) × 1500 (59.1)
13-16	□550 (21.6)	400 (15.7)	700 (27.5)	□1000 (39.4)	700 (27.5) × 1400 (55.1)
17-25	□550 (21.6)	400 (15.7)	700 (27.5)	□950 (37.4)	650 (25.5) × 1300 (51.1)
26-40	□450 (17.7)	350 (13.7)	550 (21.6)	□750 (29.5)	550 (21.6) × 1000 (39.4)
41-65	□350 (13.7)	250 (9.84)	500 (19.6)	□600 (23.6)	450 (17.7) × 700 (27.5)
66-100	□250 (9.84)	200 (7.87)	300 (11.8)	□500 (19.6)	350 (13.7) × 700 (27.5)

### [Application]

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

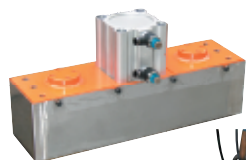
### [Features]

- These are of permanent magnetic type requiring no power source. Thus, there is no risk of falling workpieces due to power failure or failure of wiring systems.
- The employment of a cam system facilitates holding and releasing of workpieces.

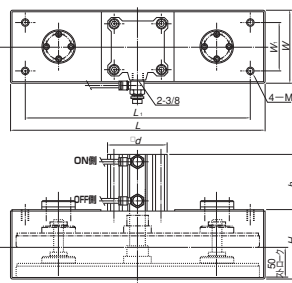
### ⚠ Precautions for use

When you plan to use the Lifma for special steel materials such as hardened materials, please consult with us prior to purchasing the Lifma. The operation of the cam to hold and release workpieces exerts physical friction to the workpieces. Therefore, the surfaces finished by polishing, for example, may be scratched. Do not use the Lifma for workpieces whose width or length is short and the cam operation does not work on them. Operate the ON/OFF select cam by a foot.

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



An example of usage



### [Application]

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

### [Features]

- The attraction is turned on and off by moving up and down the built-in magnet with an air cylinder, which facilitates remote operation and automated operation.
- Compared with the electromagnetic type, this model has a larger holding power on thin sheets (less than 5 mm thick) and its capacity drops less when clearance is present. Accordingly, this model is most suitable for lifting pressed workpieces having concave or convex sections.
- Energy saving type as no electric power source is required.
- The ON state is maintained if the air source is shut down and therefore there is no risk of falling workpieces, thus enhancing safety.

LM-P1242  
An example of special fabrication

Model	Dimensions								Air Pressure	Mass
	W	L	H	h	W <sub>1</sub>	L <sub>1</sub>	d	M		
LM-P1242	120 (4.72)	420 (16.5)	112 (4.40)	93.5 (3.68)	80 (3.14)	370 (14.5)	98 (3.85)	M12, (0.47) depth 14 (0.55)	0.49 MPa or over	Approx. 17kg/ 37 lb
LM-P2442	240 (9.44)	119 (4.69)	133 (5.23)	150 (5.90)	300 (11.8)	142 (5.59)	M20, (0.78) depth 30 (1.18)			Approx. 38kg/ 83 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.



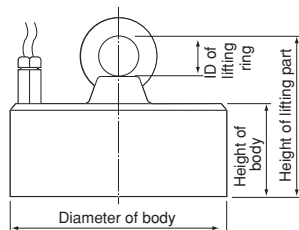
## Model LMU SMALL ELECTROMAGNETIC LIFMA\*



LMU-20D

### Indoor specification

Rectifier required additionally



Working rate 50% ED  
(Repeating cycle of power on 5 minutes and pause 5 minutes)



### Precaution for use

Rust and scratches on the attractive face affect the holding power adversely. Repair it periodically.

### [Application]

Electromagnetic type lifting magnets used as a lifting section of cranes and hoists for transportation of steel materials in warehouses and machining shops or for loading and unloading workpieces to and from machine tools.

### [Features]

- Attracting and releasing workpieces 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 attached to beams controlled together.
- When an uninterruptible power supply is used, safety can be ensured in the event of unexpected power failure.
- The applicable rectifier is KR or RH-MW.

### Maximum allowable number of small electromagnetic Lifmas LMU and waterproof electromagnetic Lifmas LMU-UW for Rectifier KR·RH

Rectifier	Small electromagnetic Lifma				
	LMU-10D	LMU-15D LMU-UW15	LMU-20D LMU-UW20	LMU-25D LMU-UW25	LMU-30D
KR-P203	6	4	3	2	1
KR-A203					
KR-P208	16	10	8	5	4
KR-A208					
RH-MW205B	11	7	5	3	2
RH-MW210B	22	15	11	7	5

[mm (in)]

Model	Lifting Capacity	Dimensions		Eyebolt ID	Rated Voltage	Rated Current	Mass
		Main Unit	Lifting part height				
LMU-10D	250kg/ 551 lb	φ 105 (4.13) × 60 (2.36)	108 (4.25)	M16 (0.62) (φ 35 (1.37))	180 VDC	0.3A	4kg/ 8.8 lb
LMU-15D	600kg/ 1323 lb	φ 156 (6.14) × 70 (2.75)	125 (4.92)	M20 (0.78) (φ 40 (1.57))		0.6A	11kg/ 24.2 lb
LMU-20D	1200kg/ 2646 lb	φ 206 (8.11) × 88 (3.46)	173 (6.81)	M30 (1.18) (φ 60 (2.36))		0.8A	23kg/ 50.7 lb
LMU-25D	1800kg/ 3968 lb	φ 256 (10.0) × 93 (3.66)	193 (7.59)	M36 (1.41) (φ 70 (2.75))		1.2A	40kg/ 88.1 lb
LMU-30D	2500kg/ 5512 lb	φ 306 (12.0) × 95 (3.74)	210 (8.26)	M42 (1.65) (φ 80 (3.15))		1.6A	60kg/ 132.2 lb

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

※For continuous operation, use the Lifma at 110 VDC or below. Note that when the thickness of steel plates to lift is 20 mm, the listed lifting capacity drops by approx. 20%.

※The height of lifting part is up to the top end of the inside diameter of the eyebolt.

※Cable 2 m is included. ※For workpieces having poor attractive conditions such as scraps and waste materials, use LM-EC2.

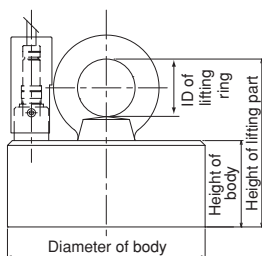
## Model LMU-UW WATERPROOF ELECTROMAGNETIC LIFMA\*

### Waterproof specification

Rectifier required additionally



LMU-UW15



## Full waterproof type joins small electromagnetic Lifma Series!

### [Application]

Electromagnetic type lifting magnets used as a lifting section of cranes and hoists for transportation of steel materials in underwater work environment as well as outdoor work sites.

### [Features]

- These Lifmas can be used underwater up to 3 atm (equivalent to 30 m max. water depth).
- Attracting and releasing workpieces can be controlled electrically by remote operation.
- A rectifier is required additionally.
- When an uninterruptible power supply is used, safety can be ensured in the event of unexpected power failure. (To study specifications, see the holding power graphs and lifting reference of Model LMU.)

Working rate 50% ED (Repeating cycle of power on 5 minutes and pause 5 minutes)

[mm (in)]

Model	Lifting Capacity	Dimensions		Eyebolt ID	Rated Voltage	Rated Current	Mass	Applicable Rectifier
		Main Unit	Lifting Part Height					
LMU-UW15	600kg/ 1322 lb	φ 156 (6.14) × 75 (2.95)	130 (5.11)	M20 (0.78) (φ 40 (1.57))	180 VDC	0.6A	13kg/ 28.6 lb	KR-P203/P208
LMU-UW20	1200kg/ 2645 lb	φ 206 (8.11) × 90 (3.54)	175 (6.88)	M30 (1.18) (φ 60 (2.36))		0.9A	25kg/ 55.1 lb	KR-A203/A208
LMU-UW25	1800kg/ 3968 lb	φ 256 (10.0) × 96 (3.77)	196 (7.71)	M36 (1.41) (φ 70 (2.75))		1.2A	45kg/ 99.2 lb	RH-MW205B/MW210B

※The lifting capacity is indicated by a value that is a half of the max. holding power. ※For workpieces having poor attractive conditions such as scraps and waste materials, use LM-EC2.

※For continuous operation, use the Lifma at 110 VDC or below. Note that when the thickness of steel plates to lift is 20 mm, the listed lifting capacity drops by approx. 20%.

※The height of lifting part is up to the top end of the inside diameter of the eyebolt. ※Cable 2 m is included.

### Lifting reference for use of single unit «Mill scale soft steel plate»

[mm (in)]

Model	LMU-10D	LMU-15D	LMU-20D	LMU-25D	LMU-30D
	LMU-10SRD	LMU-15SRD	LMU-20SRD	LMU-25SRD	LMU-30SRD
Thickness					
5	600 (23.6) × 600 (23.6)	700 (27.5) × 700 (27.5)	800 (31.5) × 800 (31.5)	900 (35.4) × 900 (35.4)	1000 (39.4) × 1000 (39.4)
9		850 (33.4) × 850 (33.4)	1000 (39.4) × 1000 (39.4)	1200 (47.2) × 1200 (47.2)	1300 (51.1) × 1300 (51.1)
12	700 (27.5) × 700 (27.5)		1100 (43.3) × 1100 (43.3)		1600 (62.9) × 1600 (62.9)
16		1000 (39.4) × 1000 (39.4)		1500 (59.0) × 1500 (59.0)	
25	550 (21.6) × 550 (21.6)		1300 (51.1) × 1300 (51.1)		1700 (66.9) × 1700 (66.9)
50	400 (15.7) × 400 (15.7)	700 (27.5) × 700 (27.5)	1000 (39.4) × 1000 (39.4)	1250 (49.2) × 1250 (49.2)	1500 (59.0) × 1500 (59.0)
100	300 (11.8) × 300 (11.8)	500 (19.6) × 500 (19.6)	700 (27.5) × 700 (27.5)	800 (31.5) × 800 (31.5)	1000 (39.4) × 1000 (39.4)

※For distorted steel plates and out-of-balance load, a larger safety factor needs to be used. In such a case, please consult with us.

### Lifma selection standard for steel plate size

[mm (in)]

Steel Plate	Width	914 (35.9)	914 (35.9)	1219 (47.9)	1219 (47.9)	1524 (60.0)	1524 (60.0) - 1826 (71.8)
	Length	1829 (72.0)	3658 (144)	2438 (95.9)	4877 (192)	3048 (120)	6096 (240)
Lifma	Size	3 × 6	3 × 12	4 × 8	4 × 16	5 × 10	5 - 6 × 20
	Number of unit in parallel				2		
Total number of units	Number of units in series	2		3		4	
	Number of units in series	2		3		4	
	Total number of units	4		6		8	

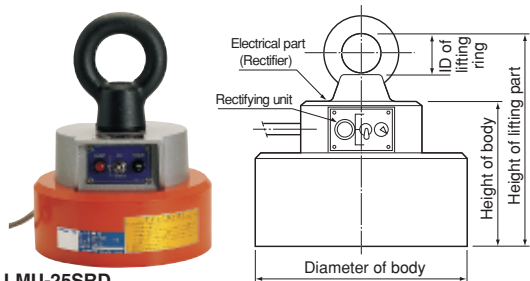
※When you plant to use two or more Lifmas by suspending them from one beam, please consult with us.

MAGNETIC TOOLS & EQUIPMENT  
 LIFTING MAGNET  
 MAGBORG  
 MAGNETIC EQUIPMENT  
 CHIP & SLUDGE CONVEYANCE EQUIPMENT  
 ENVIRONMENTAL EQUIPMENT  
 MAGNETIZER AND ENVIRONMENTAL EQUIPMENT  
 MAGNETIC EQUIPMENT FOR CONVEYANCE  
 MAGNETIC SEPARATORS  
 POWERFUL MAGNETIC SEPARATORS  
 MEASURING INSTRUMENTS  
 TOOLS  
 MAGNETIC MATERIALS

# LIFTING MAGNETS

## Model LMU-SR SMALL ELECTROMAGNETIC LIFMA\*

### Rectifier built-in type



LMU-25SRD

#### [Application]

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

#### [Features]

- These Lifmas incorporate a rectifier and do not require a rectifier to be installed additionally.
- A reverse excitation switch is provided to release lifted workpieces easily.
- The holding power is the same as LMU. (To study specifications, see the holding power graphs and lifting reference of Model LMU.)



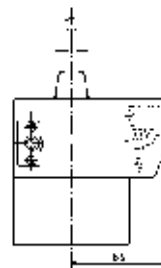
#### Precaution for use

Rust and scratches on the attractive face affect the holding power adversely. Repair it periodically.

Working rate 50% ED (Repeating cycle of power on 5 minutes and pause 5 minutes)

Model	Lifting Capacity	Dimensions		Eyelet ID	Input Voltage	Power Consumption	Mass
		Main Unit	Lifting part height				
LMU-10SRD	250kg/551 lb	φ 105 (4.13) × 130 (5.11)	189.5 (7.46)	M16 (0.62) (φ 35 (1.37))	Single-phase 200 VAC	60W	5kg/ 11.0 lb
LMU-15SRD	600kg/1323 lb	φ 156 (6.14) × 142 (5.59)	212 (8.34)	M20 (0.78) (φ 40 (1.57))		110W	13kg/ 28.6 lb
LMU-20SRD	1200kg/2646 lb	φ 206 (8.11) × 160 (6.29)	270 (10.6)	M30 (1.18) (φ 60 (2.36))		145W	25kg/ 55.1 lb
LMU-25SRD	1800kg/3968 lb	φ 256 (10.0) × 165 (6.49)	295 (11.6)	M36 (1.41) (φ 70 (2.75))		210W	43kg/ 94.8 lb
LMU-30SRD	2500kg/5512 lb	φ 306 (12.0) × 170 (6.69)	319 (12.5)	M42 (1.65) (φ 80 (3.15))		290W	63kg/ 138.9 lb

\*The lifting capacity is indicated by a value that is a half of the max. holding power. \*\*For workpieces having poor attractive conditions such as scraps and waste materials, use LM-EC2. \*\*For continuous operation, use the Lifma at input voltage 100 VAC. However, the capacity drops by approx. 30% for 20 mm thick steel plate. \*\*Cable 2 m is included. \*\*The height of lifting part is up to the top end of the inside diameter of the eyelet.



LMU-10SRD and 15SRD have an electrical part that is larger than the magnet main unit.

## Model LM SMALL RECTANGULAR ELECTROMAGNETIC LIFMA\*

### Rectifier required additionally



LM-1040

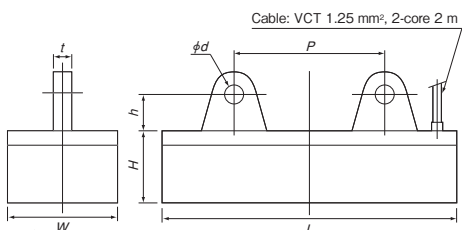
#### [Application]

Suitable for feeding and transporting a fixed amount of small parts and workpieces and for moving and transporting steel materials, steel plates, castings and forgings.

#### [Features]

- Small but very large lifting capacity.
- Workpieces can be held and released by remote control. Depending on applications, an uninterruptible power supply may be used together to enhance safe operations in the event of power failure.
- Flexible usage; feeding small materials with a single unit to transporting large workpieces with several units combined.
- Select a rectifier according to your applications.

Working rate 50% ED (Repeating cycle of power on 5 minutes and pause 5 minutes)



#### Precaution for use

Rust and scratches on the attractive face affect the holding power adversely. Repair it periodically.

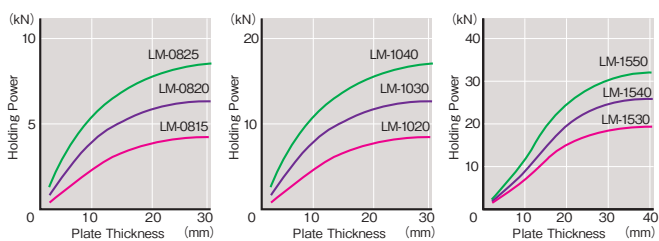
#### Maximum allowable number of rectangular electromagnetic Lifmas LM for Rectifier KR·RH

Rectangular electromagnetic Lifma	Rectifier							
	LM-0815	LM-0820	LM-0825	LM-1020	LM-1030	LM-1040 LM-1530	LM-1540	LM-1550
KR-P203	8	4	4	3	2	1	1	1
KR-A203								
KR-P208	21	12	10	8	5	4	3	3
KR-A208								
RH-MW205B	15	9	7	5	3	3	2	2
RH-MW210B	30	18	15	11	7	6	4	4

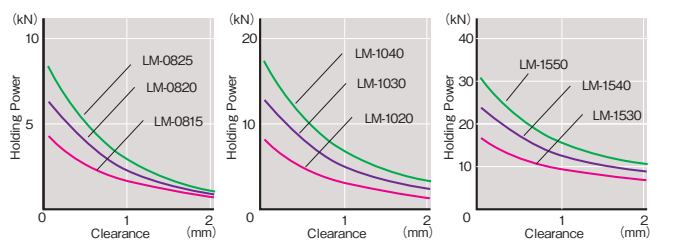
Model	Lifting Capacity	Dimensions							Applicable Shackles	Rated Voltage	Rated Current	Mass			
		Main Unit			Lifting part										
		W	L	H	h	t	φ d	P							
LM-0815	200kg/ 440 lb	80 (3.15)	150 (5.90)	70 (2.75)	20 (0.78)	12 (0.47)	12 (0.47)	-	180 VDC	0.3A	5kg/11.0 lb				
LM-0820	300kg/ 661 lb										200 (7.87)	BC 8 (0.31)	7kg/15.0 lb		
LM-0825	400kg/ 881 lb										250 (9.84)		9kg/19.8 lb		
LM-1020	400kg/ 881 lb										200 (7.87)		11kg/24.2 lb		
LM-1030	600kg/1323 lb	100 (3.93)	300 (11.8)	90 (3.54)	25 (0.98)	19 (0.74)	16 (0.62)	200 (7.87)	1.2A	16kg/35.2 lb					
LM-1040	800kg/1764 lb	150 (5.90)	400 (15.7)	100 (3.93)	35 (1.37)	22 (0.86)	20 (0.78)	-	180 VDC	1.3A	22kg/48.5 lb				
LM-1530	900kg/1984 lb										300 (11.8)	BC16 (0.62)	27kg/59.5 lb		
LM-1540	1200kg/2646 lb										400 (15.7)		200 (7.87)	1.4A	27kg/59.5 lb
LM-1550	1500kg/3307 lb										500 (19.6)		250 (9.84)	1.9A	36kg/79.3 lb
								2.0A	45kg/99.0 lb						

\*\*The lifting part φ d refers to the inside diameter of the hinge lifting hole. The models whose "p" dimension is not indicated have a hinge in one place in the center. \*\*Cable 2 m is included. \*\*The lifting capacity is indicated by a value that is a half of the max. holding power. The max. holding power is based on a test piece of 30 mm or thicker steel plate with no clearance. It varies according to not only the thickness of steel plates, but sizes of clearance and warping of steel plates.

### Change in holding power by plate thickness



### Change in holding power by clearance



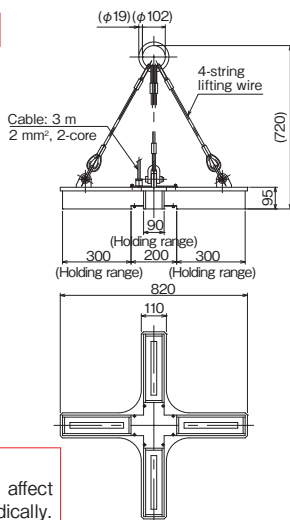
Model **LM-X** CROSS TYPE ELECTROMAGNETIC LIFMA\*

Lifma specially designed for doughnut-shaped workpieces!

Control unit required additionally



LM-X800



[Application]

Designed for moving and transporting workpieces that have a doughnut shape or concave part in the center

[Features]

- The employment of a cross-type magnet enables one unit of the Lifma to move and transport workpieces that have a doughnut shape or concave part in the center that used to require several units of the Lifma.
- Capable of transporting flat steel plates and specified-length steel plates also.

A special size is also available.

Working rate 50% ED (Repeating cycle of power on 5 minutes and pause 5 minutes)

Model	Dimensions			Voltage	Current	Power Consumption	Mass	Applicable Rectifier
	Width	Depth	Height					
LM-X800	820 (32.2)	820 (32.2)	95 (3.74)	180 VDC	4.4A	0.79Kw	70kg/ 154 lb	RH-MW210B

[Sizes of workpieces that can be lifted]

- Workpieces having a doughnut shape or concave part in the center (mill scale): Max. φ800 × φ270 × t145 mm
- Flat steel plates (holding direction specified): ① 16 - 50 φ × 1300 (φ1300) and ② 16 - 22 □2000 (φ2000) mm
- Specified-length steel plates (holding direction specified) : Nominal 3 × 6 plate: thickness 6 - 50 × 914W × 1829L  
Nominal 4 × 6 plate: thickness 6 - 28 × 1219W × 2438L

! **Precaution for use**

Rust and scratches on the attractive face affect the holding power adversely. Repair it periodically.

Model **KR-A·P / RH-MW** RECTIFIER FOR ELECTROMAGNETIC LIFMA\*



RH-MW205B



KR-P203

[Application]

These units rectify an input from an AC power source to DC and output it to the electromagnetic Lifma. All electromagnetic Lifmas require the use of a rectifier. Three models are available; KR-P, A, RH-MW. Select a suitable model according to your purpose of usage.

■ RH-MW <Rectifier with demagnetization circuit>

When workpieces with a flat attractive face or made of material which tends to retain residual magnetism such as FC are lifted, it is difficult to release them only by turning off the power. In such a case, they need to be demagnetized to cancel the residual magnetism.

[Features]

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

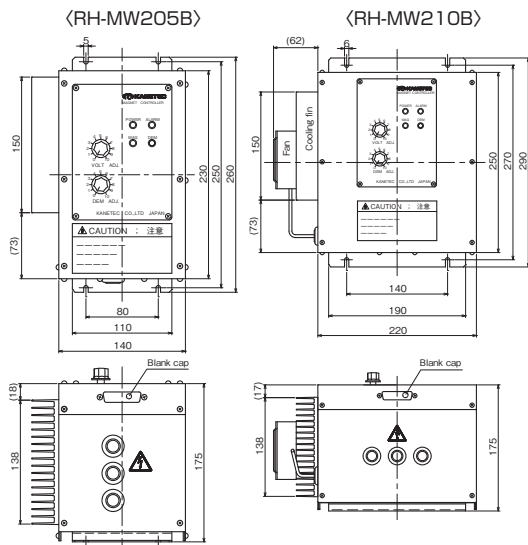
! **Precaution for use**

● The rectifier KR Series and RH Series use electronic PC boards and small relays inside the rectifiers and therefore, are not suitable for use, for example, on cranes where they are subjected to vibrations constantly. For installation in places that are subjected to constant vibrations, anti-vibration measures need to be provided. The external signal input cables must be shielded cables and must be limited to 10 m long max.

● For failures due to use of lifting magnets made by other manufacturers, we may not be able to answer technical questions. Such use also voids the warranty even if a failure occurs within the warranty period.

Model	Input	Output		Dimensions			Remote Switch	Ammeter	Demag. Function	Mass	
		Voltage	Current	Capacity	Width	Depth					Height
KR-P203	Single-phase 200 VAC, 50/60 Hz	180 VDC	3A	540W	200 (7.87)	90 (3.54)	250 (9.84)	○	×	×	3 kg/ 6.6 lb
8A			1440W								
KR-A203			3A	540W							
KR-A208			8A	1440W							
RH-MW205B	0-180 VDC	180 VDC	5A	900W	140 (5.51)	175 (6.89)	260 (10.2)	×	○	(Demag.)	4.5kg/ 9.9 lb
RH-MW210B			10A	1800W	282 (11.1)	290 (11.4)	290 (11.4)				

※ External operation is necessary for ON/OFF. Input signals must be provided by the customer.  
※ For the terminal wiring diagram of RH-M, see page 77.

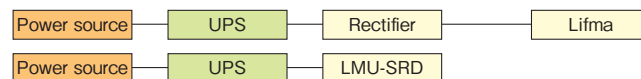


Model **LBB** UNINTERRUPTIBLE POWER SUPPLY

In some cases, the installation of an uninterruptible power supply (UPS) is requested for use of the 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.

※ The cooler is of fluorocarbon-free type. For more information, please contact us.

■ Connection diagram



! Keep in mind that the capacity of the Lifma varies largely depending on the thickness and material of workpieces, clearance and other factors.

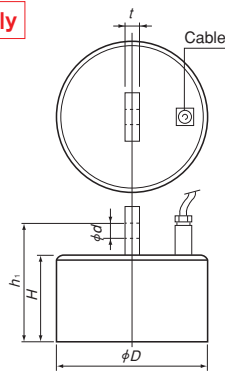
MAGNETIC TOOLS & EQUIPMENT FOR WELDING OPERATION  
LIFTING MAGNET  
MAGBONE\*  
MAGNETIC EQUIPMENT FOR CONVEYANCE  
CHIP & SLUDGE CONVEYANCE EQUIPMENT  
MAGNETIZER AND ENVIRONMENTAL EQUIPMENT  
MAGNETIC EQUIPMENT FOR DEMAGNETIZER  
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MAGNETIC SEPARATORS  
MEASURING MAGNETIC SEPARATORS  
MEASURING TOOLS  
MEASURING INSTRUMENTS  
MAGNETIC MATERIALS



# LIFTING MAGNETS

## Model LEP PERMANENT ELECTROMAGNETIC LIFMA\*

Control unit required additionally



LEP-25 Power on rating 10% ED

### [Application]

These are permanent electromagnetic type lifting and transporting magnets that enable the magnetization and demagnetization of the built-in permanent magnet to be controlled electrically. Suitable for transportation of 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 workpieces is controlled electrically, the magnet can be operated remotely by use of pushbuttons.
- A system to demagnetize the permanent magnet to release the lifted workpiece. Thus, the magnet is not attracted by iron products in other operations, thus enhancing safety.
- Use the dedicated control unit LEPR-P.



### Precaution for use

Rust and scratches on the attractive face affect the holding power adversely. Repair it periodically.

[mm (in)]

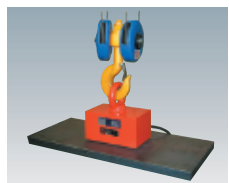
Model	Lifting Capacity	Dimensions					Applicable Shackle	Rated Voltage	Power Consumption	Mass	Applicable Control Unit
		D	H	h <sub>1</sub>	d	t					
LEP-15	100kg/ 220l b	156 (6.14)	105 (4.13)	138 (5.43)	16 (0.62)	16 (0.62)	BC12 (0.47)	160VDC	0.38kW	12kg/ 26.4 lb	LEPH-MW210A
LEP-20	150kg/ 330 lb	206 (8.10)	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	

\*The lifting capacity is indicated by a value that is a quarter of the max. holding power.

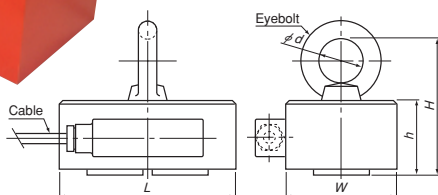
\*Use the Lifma in such a way that workpieces are fully held on the whole attractive face. \*Cable 3 m is included.

## Model LEP-Q PERMANENT ELECTROMAGNETIC LIFMA\*

Control unit required additionally



An example of usage



LEP-Q752

## Operability of the electromagnet and safety of the permanent magnet realized simultaneously

### [Application]

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

### [Features]

- Electricity is applied momentarily, only 0.2 second; power saving.
- Electricity is used only when holding and releasing workpieces. The holding power is maintained in the event of power failure to enhance safety.
- Use the dedicated control unit LEPR-P.

[mm (in)]

Model	Lifting Capacity	Dimensions					Eyebolt	Electrical Capacity	Mass	Applicable Control Unit
		W	L	h	H	phi d				
LEP-Q502	200kg/441 lb	100 (3.93)	160 (6.29)	67 (2.63)	122 (4.80)	40 (1.57)	M20 (0.78)	1.48kVA	8kg/17.6 lb	LEPR-P290
LEP-Q504	400kg/882 lb	160 (6.29)	205 (8.07)	60 (2.36)	152 (5.98)	60 (2.36)	M30 (1.18)	2.96kVA	13kg/28.6 lb	
LEP-Q752	500kg/1102 lb	135 (5.31)	220 (8.66)	120 (4.72)	205 (8.07)	80 (3.14)	M42 (1.65)	4.03kVA	27kg/59.5 lb	
LEP-Q754	1000kg/2205 lb	220 (8.66)	235 (9.25)	80 (3.14)	235 (9.25)	80 (3.14)	M42 (1.65)	8.06kVA	45kg/99.2 lb	

\*The lifting capacity is indicated by a value that is a third (safety factor 3) of the max. holding power.

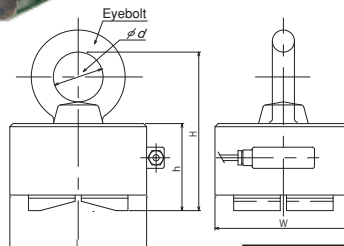
## Model LEP-QV V-TYPE PERMANENT ELECTROMAGNETIC LIFMA\*

Control unit required additionally



LEP-QV752

An example of special fabrication



## Designed to lift round steel bars and pipes!

### [Application]

This is a permanent electromagnetic type lifting and transporting magnet that enables the magnetization and demagnetization of the built-in permanent magnet to be controlled electrically. As the attractive face is V shape, this is suitable to transport round steel bars and pipes.

### [Features]

- Electricity is applied momentarily, only 0.2 second; power saving.
- Electricity is used only when holding and releasing workpieces. The holding power is maintained in the event of power failure to enhance safety.
- Use the dedicated control unit LEPR-P.

[mm (in)]

Model	Dimensions					Eyebolt	Max. Dia. to Lift	Electrical Capacity	Mass	Applicable Control Unit
	W	L	h	H	phi d					
LEP-QV754	220 (8.66)	220 (8.66)	140 (5.51)	255 (10.0)	80 (3.14)	M42 (1.65)	Round bar/pipe: phi 50 (1.96) - phi 400 (15.7)	8.06kVA	50kg/ 110 lb	LEPR-P290

### Precaution for use

Rust and scratches on the attractive face affect the holding power adversely. Repair it periodically.

## Model LEPH POWER UNIT FOR PERMANENT ELECTROMAGNETIC LIFMA\*



LEPH-MW210A

### [Application]

This control unit rectifies an input from an AC power source to DCV and instantaneously outputs current for magnetization and demagnetization to the permanent electromagnetic Lifma.

### [Features]

- Compared with conventional models, the size has been reduced significantly. (70% reduction in volume)
- Maintenance free due to the non-contact type.

[mm (in)]

Model	Input	Output		Dimensions			Mass	Accessory
		Voltage	Current	Width	Depth	Height		
LEPH-MW210A	Single-phase 200 VAC	160VDC	10A	220 (8.66)	175 (6.88)	290 (11.4)	6kg/ 13.2 lb	Operation switch (with cable 3 m)

### Maximum allowable number of permanent electromagnetic Lifma LEP for Control Unit LEPH

Control unit	Permanent electromagnetic Lifma				
	LEP-15	LEP-20	LEP-25	LEP-30	LEP-35
LEPH-MW210A	3	3	3	2	1

## Model LEPR-P POWER UNIT FOR PERMANENT ELECTROMAGNETIC LIFMA\*



LEPR-P290

### [Application]

This unit rectifies an input from an AC power source to DCV and instantaneously outputs current for magnetization and demagnetization to the permanent electromagnetic Lifma.

### [Features]

- This is equipped with a protection function※ to prevent overheating of the Lifma by continuous and repeated supply of electricity.
- A pendant type push button switch is included as a standard accessory.

[mm (in)]

Model	Input	Output		Dimensions			Mass	Accessory
		Voltage	Current	Width	Depth	Height		
LEPR-P290	Single-phase 200 VAC	90VDC	Max. 90A	460 (18.1)	220 (8.66)	505 (19.8)	20kg/ 44.1 lb	Operation switch (with cable 3 m)

※When the magnetization operation or demagnetization operation is performed five times successively per minute on the control unit, the unit will be brought into an alarm state and will not accept further operation for safety. To reset the alarm state, turn off the source power once and then turn it on again.

### Maximum allowable number of permanent electromagnetic Lifma LEP-Q/QV for Control Unit LEPR

Control unit	Permanent electromagnetic Lifma			
	LEP-Q502	LEP-Q504	LEP-Q752	LEP-Q754 LEP-QV754
LEPR-P290	5	2	2	1

### LEP/LEP-Q Steel plate lifting standard (Soft steel plate) [mm (in)]

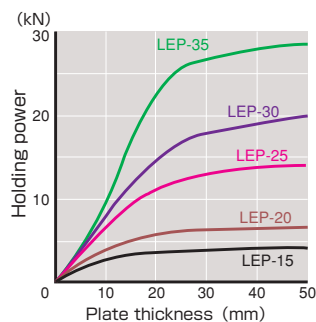
Model	LEP-15	LEP-20	LEP-25	LEP-30	LEP-35	LEP-Q502	LEP-Q504	LEP-Q752	LEP-Q754
t5		□900 (35.4)	□1000 (39.4)	□1100 (43.3)	□1100 (43.3)	□850 (33.4)	□1220 (48.0)	□930 (36.6)	□1300 (51.1)
t9	□800 (31.5)	□950 (37.4)			□1500 (59.0)	□900 (35.4)	□1260 (49.6)	□1000 (39.4)	□1400 (55.1)
t12			□1200 (47.2)	□1400 (55.1)				□1030 (40.5)	□1450 (57.0)
t16	□730 (28.7)	□880 (34.6)			□1600 (62.9)	□850 (33.4)	□1220 (48.0)		
t25	□600 (23.6)	□750 (29.5)	□1100 (43.3)	□1300 (51.1)		□760 (29.9)	□1070 (42.1)	□1070 (42.1)	□1500 (59.0)
t50	□450 (17.7)	□550 (21.6)	□840 (33.0)	□1000 (39.4)	□1100 (43.3)	□550 (21.6)	□780 (30.7)	□870 (34.2)	□1230 (48.4)

### LEP-QV Lifting standard (Round steel bar)

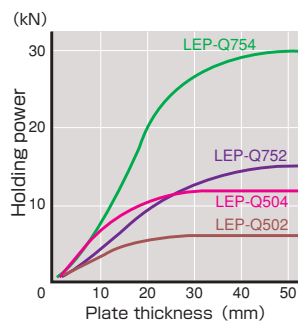
Model	Diameter				
	φ 50	φ 100	φ 200	φ 300	φ 400
LEP-QV754	3m (118)	3m (118)	1m (39.4)	0.5m (19.6)	0.3m (11.8)

※The capacity varies depending on the diameter of round steel bars. When a workpiece is longer than 3 m, it is dangerous to lift it with one unit only. In the case of steel pipes, the capacity varies depending on the wall thickness. Check it prior to lifting workpieces.

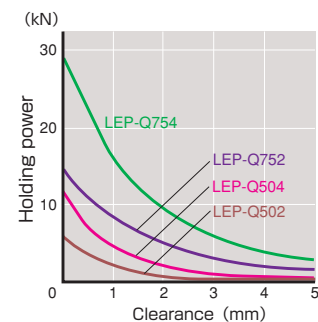
### LEP Change in holding power by plate thickness



### LEP-Q Change in holding power by plate thickness



### LEP-Q Change in holding power by clearance



Keep in mind that the capacity of the Lifma varies largely depending on the thickness and material of workpieces, clearance and other factors.

# LIFTING MAGNETS

## Model LME Model LME / BATTERY ACE\*

The Battery Ace is designed to lift and transport workpieces using a function equivalent to the electromagnetic type with a built-in battery on indoor work sites where no power supply is available. This is useful as a lifting section of cranes and hoists for keeping steel plates and steel materials in order or distributing materials and loading and unloading workpieces to and from machine tools.

### Common specifications of the Battery Ace (standard type, automatic holding and releasing type): LME-F/FJ

- The rigid body and guard acting as a grip also ensure high impact resistance and durability in severe work conditions.
- Since no power cord is needed, the Battery Ace 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.
- When the battery power becomes low, the warning buzzer will sound.
- The electrical unit of all models is of non-contact type to reduce the rate of occurrence of failures due to wear of the relay.
- The battery operating time has been increased by 40% max. per day (when compared with the old model).
- When two or more workpieces are held, workpieces that are held in an unstable state can be released by turning the cam switch from "ON" to "OFF" in the case of LME-F or by pressing the [SEPARATE] button in the case of LME-FJ so that the remaining workpieces can be transported safely.
- All models employ a construction to allow the battery to be removed from the back.
- A removable rechargeable spare battery is included with all models as a standard accessory. The Battery Ace can be used simply by connecting the connector.

Working rate 50% ED (Power on 5 minutes and pause 5 minutes)

## Size reduced 30% max.! Gap performance improved significantly by optimum design!



Standard type

LME-30F

### Features of LME-F

- A cam switch is used for easy ON/OFF operation.



- A remote operation function is also available. (Optional)

### Two types selectable by functions

### Features of LME-FJ

- The auto/manual operation can be selected with the operation switch. In the auto mode, an operation to repeat holding and releasing workpieces can be automated to enable the work to be conducted without remote input. (Holding and releasing repeated each time the Battery Ace touches down on the floor.)
- A proximity sensor mounted in the auto operation detecting section prevents malfunction in poor environment due to contamination, powder, etc. to ensure safe and reliable transportation.
- The pushbutton switch on the operation panel enables manual operation of lifted objects.

Lifted object automatic holding/releasing type



LME-30FJ

A type equipped with an automatic function to control the number of sheets (Model LME-EMJ) is also available.

All models Battery removable from back! Easy change & quick start!

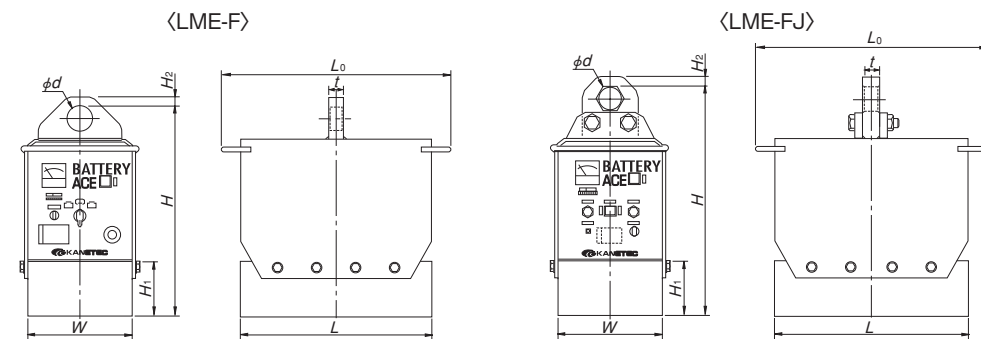


- Cycle-service long-life battery Model EB25 is available optionally. Change to the cycle-service battery is possible without voltage adjustment. This is recommendable for users who use the Battery Ace very often.
- ※ The battery for LME-10F/10FJ is the motorcycle battery.

For the purchase of batteries, please contact us.

**Precaution for use**

- If an alarm is issued repeatedly, the life of the battery becomes shorter. Replace it with a charged battery at an early stage.
- Rust and scratches on the attractive face affect the holding power adversely. Repair it periodically.



Model	Lifting Capacity	Dimensions								Battery Capacity	Working Hours (50%ED)	Mass	Battery Charger	Accessories
		W	L	L <sub>0</sub>	H	H <sub>1</sub>	H <sub>2</sub>	d	t					
LME-10F	1000kg/2205 lb	220 (8.66)	300 (11.8)	440 (17.3)	404 (15.9)	90 (3.54)	24 (0.94)	40 (1.57)	25 (0.98)	12V 12Ah	Max. 8 hours	Approx. 60kg/ 132.3 lb	Input 100 VAC Output 12 VDC	Charger:1set Spare battery:1set
LME-17F	1700kg/3748 lb	263 (10.3)	380 (14.9)	520 (20.4)	469 (18.4)	95 (3.74)	25 (0.98)	60 (2.36)	40 (1.57)	12V 28Ah	Max. 7 hours	Approx. 130kg/ 286.6 lb		
LME-30F	3000kg/6614 lb	263 (10.3)	490 (19.2)	520 (20.4)	514 (20.2)	140 (5.51)	25 (0.98)	60 (2.36)	40 (1.57)	12V 28Ah	Max. 7 hours	Approx. 180kg/ 1028.9 lb		

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

Model	Lifting Capacity	Dimensions								Battery Capacity	Working Hours (50%ED)	Mass	Battery Charger	Accessories
		W	L	L <sub>0</sub>	H	H <sub>1</sub>	H <sub>2</sub>	d	t					
LME-10FJ	1000kg/2205 lb	220 (8.66)	300 (11.8)	440 (17.3)	445 (17.5) - 456 (17.9)	90 (3.54)	16 (0.62)	40 (1.57)	25 (0.98)	12V 12Ah	Max. 8 hours	Approx. 65kg/ 143.3 lb	Input 100 VAC Output 12 VDC	Charger:1set Spare battery:1set
LME-17FJ	1700kg/3748 lb	263 (10.3)	380 (14.9)	490 (19.2)	516 (20.3) - 527 (20.7)	95 (3.74)	25 (0.98)	60 (2.36)	40 (1.57)	12V 28Ah	Max. 7 hours	Approx. 140kg/ 308.7 lb		
LME-30FJ	3000kg/6614 lb	263 (10.3)	490 (19.2)	520 (20.4)	561 (22.0) - 572 (22.5)	140 (5.51)	25 (0.98)	60 (2.36)	40 (1.57)	12V 28Ah	Max. 7 hours	Approx. 190kg/ 418.9 lb		

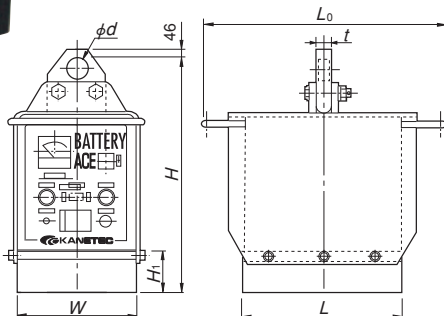
※ The lifting capacity is indicated by a value that is a half of the max. holding power.





Lifted object automatic holding/releasing type

When two or more workpieces are held, workpieces that are held in an unstable state can be released by pressing the [SEPARATE] button so that the remaining workpieces can be transported safely.



LME-60ELJ

**[Features]**

- Model LME-60EWJ is recommended for wide and relatively thick steel plates up to 6 tons.
  - Model LME-60ELJ is most suitable for steel plates that tend to warp as well as long steel plates and section steels.
  - Auto/Manual can be selected with the operation switch. In the auto mode, an operation to repeat holding and releasing workpieces can be automated to enable the work to be conducted without remote input. (Holding and releasing repeated each time the Battery Ace touches down on the floor.)
  - The pushbutton switch on the operation panel enables manual operation of lifted objects.
  - The battery remaining capacity is clearly indicated on the 7-rank level meter. When the remaining capacity approaches the end, it is warned by the buzzer.
  - The ammeter allows you to check the supply of electricity to the electromagnet.
- For the purchase of batteries, please contact us.



**Precaution for use**

- If an alarm is issued repeatedly, the life of the battery becomes shorter. Replace it with a charged battery at an early stage.
- Rust and scratches on the attractive face affect the holding power adversely. Repair it periodically.

Working rate 50% ED (Power on 5 minutes and pause 5 minutes)

Model	Lifting Capacity	Dimensions							Battery Capacity	Working Hours (50%ED)	Mass	Battery Charger	Charging Time	Accessories	
		W	L	L <sub>0</sub>	H (Touch down on floor-lifting)		H <sub>1</sub>	d							t
LME-60ELJ	6000kg/ 13230lb	270 (10.6)	900 (35.4)	1100 (43.3)	707 (27.8) – 717 (28.3)		159 (6.25)	118 (4.64)	60 (2.36)	12V, 28Ah 2 units in series	Max. 8 hours	Approx. 300kg/ 661.5 lb	Input 100 VAC Output 24 VDC	6-10h	Charger: 1 set Spare battery: 1 set
LME-60EWJ		450 (17.7)	540 (21.2)	740 (29.1)											

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

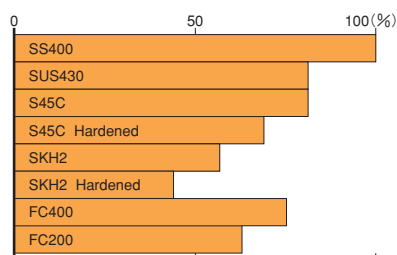
**Steel plate lifting standard (Mill scale soft steel plate)**

Plate thickness	Model	LME-10F, 10FJ			LME-17F, 17FJ			LME-30F, 30FJ			LME-60ELJ, 60EWJ		
		Square	×500	×1000	square	×1000	×2000	square	×1000	×2000			
6		□550 (21.6)	600 (23.6)	300 (11.8)	□1300 (51.1)	1600 (62.9)	800 (31.5)	□1400 (55.1)	1800 (70.8)	900 (35.4)	□1700 (66.9)	1000 (39.4) × 2500 (98.4)	2000 (78.7) × 1300 (51.1)
9		□650 (25.5)	800 (31.5)	400 (15.7)	□1500 (59.0)	2200 (86.6)	1100 (43.3)	□1650 (64.9)	2500 (98.4)	1200 (47.2)	□2000 (78.7)	1000 (39.4) × 3200 (125)	2000 (78.7) × 2000 (78.7)
12								□1750 (68.8)	2700 (106)	1300 (51.1)	□2200 (86.6)	1000 (39.4) × 4500 (177)	2000 (78.7) × 2500 (98.4)
16		□800 (31.5)	1100 (43.3)	600 (23.6)				□1800 (70.8)	3000 (118)	1600 (62.9)			
20		□900 (35.4)	1400 (55.1)	850 (33.4)	□1700 (66.9)	2800 (110)	1400 (55.1)						
25		□1100 (43.3)	2000 (78.7)	1200 (47.2)				□1850 (72.8)	3300 (129)	1700 (66.9)	□2400 (94.4)	1000 (39.4) × 5500 (216)	2000 (78.7) × 3000 (118)
30		□1000 (39.4)	1800 (70.8)	1000 (39.4)	□1600 (62.9)	2500 (98.4)	1300 (51.1)						
40		□950 (37.4)	1600 (62.9)	900 (35.4)	□1500 (59.0)	2300 (90.5)	1200 (47.2)	□1750 (68.8)	3000 (118)	1500 (59.0)			
50		□800 (31.5)	1200 (47.2)	600 (23.6)	□1300 (51.1)	1700 (66.9)	800 (31.5)	□1700 (66.9)	2700 (106)	1400 (55.1)			
100		□550 (21.6)	600 (23.6)	300 (11.8)	□900 (35.4)	850 (33.4)	450 (17.7)	□1200 (47.2)	1500 (59.0)	700 (27.5)	□1700 (66.9)	1000 (39.4) × 2700 (106)	2000 (78.7) × 1500 (59.0)

**Section steel lifting standard**

Model	Steel type	Angle Steel		I or H-shaped Steel		Channel Steel	
		Size	Length	Size	Length	Size	Length
LME-10F, 10FJ		75 (2.95) × 75 (2.95) × t 9 (0.35)	2000 (78.7)	100 (3.93) × 75 (2.95)	2500 (98.4)	100 (3.93) × 50 (1.96)	2000 (78.7)
		100 (3.93) × 100 (3.93) × t 10 (0.39)		150 (5.90) × 75 (2.95)		150 (5.90) × 75 (2.95)	
		150 (5.90) × 150 (5.90) × t 15 (0.59)		200 (7.87) × 150 (5.90)		200 (7.87) × 80 (6.14)	
		200 (7.87) × 200 (7.87) × t 20 (0.78)		300 (11.8) × 150 (5.90)		300 (11.8) × 90 (3.54)	
LME-17F, 17FJ		75 (2.95) × 75 (2.95) × t 9 (0.35)	3000 (118)	100 (3.93) × 75 (2.95)	4000 (157)	100 (3.93) × 50 (1.96)	3000 (118)
		100 (3.93) × 100 (3.93) × t 10 (0.39)		150 (5.90) × 75 (2.95)		150 (5.90) × 75 (2.95)	
		150 (5.90) × 150 (5.90) × t 15 (0.59)		200 (7.87) × 150 (5.90)		200 (7.87) × 80 (6.14)	
		200 (7.87) × 200 (7.87) × t 20 (0.78)		300 (11.8) × 150 (5.90)		300 (11.8) × 90 (3.54)	
LME-30F, 30FJ		75 (2.95) × 75 (2.95) × t 9 (0.35)	5000 (196)	100 (3.93) × 75 (2.95)	6000 (236)	100 (3.93) × 50 (1.96)	5000 (196)
		100 (3.93) × 100 (3.93) × t 10 (0.39)		150 (5.90) × 75 (2.95)		150 (5.90) × 75 (2.95)	
		150 (5.90) × 150 (5.90) × t 15 (0.59)		200 (7.87) × 150 (5.90)		200 (7.87) × 80 (6.14)	
		200 (7.87) × 200 (7.87) × t 20 (0.78)		300 (11.8) × 150 (5.90)		300 (11.8) × 90 (3.54)	

**Difference in holding power by materials**



Keep in mind that the capacity of the Lifma varies largely depending on the thickness and material of workpieces, clearance and other factors.

MAGNETIC TOOLS & EQUIPMENT  
 LIFTING MAGNET  
 MAGBONE\*  
 CHIP & SLUDGE CONVEYANCE EQUIPMENT  
 ENVIRONMENTAL EQUIPMENT  
 MAGNETIZER AND DEMAGNETIZER  
 MAGNETIC EQUIPMENT FOR CONVEYANCE  
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 TOOLS  
 MAGNETIC MATERIALS

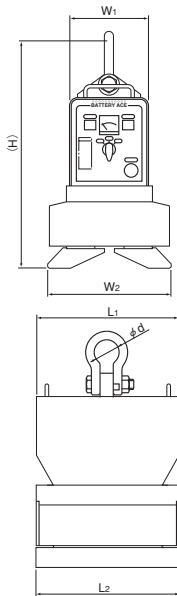
# LIFTING MAGNETS

## Model LME-V BATTERY ACE\*

### Round steel bar/section steel



LME-25EV



#### [Application]

A special type Battery Ace that can be specialized for lifting round steel bars and pipes or for lifting section steel by changing attachments. Any attachment can be used to lift steel plates and flat steel, but works most effectively in lifting long steel plates that warp.

**Working rate 50% ED (Power on 5 minutes and pause 5 minutes)**

#### ■ Attachments

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



#### Precaution for use

Rust and scratches on the attractive face affect the holding power adversely. Repair it periodically.

[mm(in)]

Model	Lifting Capacity	Dimensions					Lifting Ring "d"	Battery	Working Hours (50%ED)	Mass	Attachment	Charger	Charging Time	Accessories
		W <sub>1</sub>	W <sub>2</sub>	L <sub>1</sub>	L <sub>2</sub>	H								
LME-6EV	600kg/ 1323 lb Plate thickness 35 mm min., mill scale steel plate	184 (7.24)	320 (12.5)	366 (14.4)	230 (9.05)	625 (24.6)	φ 58 (2.28)	12V, 12Ah	Max. 9 hours	90kg/198 lb	No.6-130 No.6-90	Input 100 VAC Output 12 VDC	10-15h	Spare battery: 1 set Charger: 1 set
LME-10EV	1000kg/ 2205 lb Plate thickness 35 mm min., mill scale steel plate	250 (9.84)	390 (15.3)	450 (17.7)	350 (13.7)	715 (28.1)	φ 75 (2.95)	12V, 28Ah	Max. 16 hours	250kg/551 lb	No.10-130 No.10-90			
LME-25EV	2500kg/ 5512 lb Plate thickness 35 mm min., mill scale steel plate	250 (9.84)	390 (15.3)	450 (17.7)	450 (17.7)	715 (28.1)			Max. 9 hours	300kg/661 lb	No.25-130 No.25-90			
LME-50EV	5000kg/ 11025 lb Plate thickness 35 mm min., mill scale steel plate	330 (12.9)	390 (15.3)	1000 (39.4)	900 (35.4)	857 (33.7)	φ 118 (4.64)	12V, 28Ah 2 units in series	Max. 9 hours	450kg/992 lb	No.50-130 No.50-90			

※ Two types of attachments are included, which can be interchanged according to applications.

### ■ Maximum dimensions of angle steel to lift (L steel)

Model	Length of one side	Then, the length is
LME-6EV	75 (2.95) - 200 (7.87)	Up to 1.7 m (66.9)
LME-10EV	100 (3.93) - 250 (9.84)	Up to 2.5 m (98.4)
LME-25EV	100 (3.93) - 250 (9.84)	Up to 6.0 m (236.2)
LME-50EV	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 max. holding power.

### ■ Maximum size of steel plates to lift (when Attachment No. □□-130 used)

[mm(in)]

Model	LME-6EV		LME-10EV		LME-25EV		LME-50EV					
	Square	Rectangular	Square	Rectangular	Square	Rectangular	Square	Rectangular				
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 (39.4) × 400 (15.7)	900 (35.4) × 900 (35.4)	500 (19.6) × 1300 (51.2)	1000 (39.4) × 1400 (55.1)	1000 (39.4) × 1800 (70.9)	2000 (78.7) × 800 (31.5)		
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 (39.4) × 450 (17.7)	1000 (39.4) × 1000 (39.4)	500 (19.6) × 1600 (62.9)	1000 (39.4) × 900 (35.4)	1700 (66.9) × 1700 (66.9)	1000 (39.4) × 2500 (98.4)	2000 (78.7) × 1400 (55.1)	
13 - 16	550 (21.6) × 550 (21.6)	500 (19.6) × 600 (23.6)	1000 (39.4) × 300 (11.8)	750 (29.5) × 1200 (47.2)	500 (19.6) × 600 (23.6)	1000 (39.4) × 1100 (43.3)	500 (19.6) × 2000 (78.7)	1000 (39.4) × 1100 (43.3)	1800 (70.9) × 1800 (70.9)	1000 (39.4) × 3500 (137.8)	2000 (78.7) × 1800 (70.9)	
17 - 40	700 (27.5) × 700 (27.5)	500 (19.6) × 1000 (39.4)	1000 (39.4) × 500 (19.6)	900 (35.4) × 900 (35.4)	500 (19.6) × 1250 (49.2)	1000 (39.4) × 750 (29.5)	1300 (51.2) × 1300 (51.2)	500 (19.6) × 2500 (98.4)	1000 (39.4) × 1700 (66.9)	1900 (74.8) × 3800 (149.6)	2000 (78.7) × 1900 (74.8)	
45 - 50	600 (23.6) × 600 (23.6)	500 (19.6) × 900 (35.4)	1000 (39.4) × 450 (17.7)	1000 (39.4) × 1000 (39.4)	500 (19.6) × 1750 (68.9)	1000 (39.4) × 1000 (39.4)	1500 (59.0) × 1500 (59.0)	500 (19.6) × 3500 (137.8)	1000 (39.4) × 2000 (78.7)	2000 (78.7) × 4000 (157.5)	2000 (78.7) × 2000 (78.7)	
75	550 (21.6) × 550 (21.6)	500 (19.6) × 600 (23.6)	1000 (39.4) × 300 (11.8)	900 (35.4) × 900 (35.4)	500 (19.6) × 1250 (49.2)	1000 (39.4) × 750 (29.5)	1200 (47.2) × 1200 (47.2)	500 (19.6) × 2500 (98.4)	1000 (39.4) × 1500 (59.0)	1500 (59.0) × 2600 (102.4)	1000 (39.4) × 2000 (78.7)	2000 (78.7) × 1150 (45.2)
100	450 (17.7) × 450 (17.7)	500 (19.6) × 400 (15.7)	1000 (39.4) × 200 (7.87)	700 (27.5) × 700 (27.5)	500 (19.6) × 1000 (39.4)	1000 (39.4) × 600 (23.6)	900 (35.4) × 900 (35.4)	500 (19.6) × 2000 (78.7)	1000 (39.4) × 850 (33.5)	1400 (55.1) × 1400 (55.1)	1000 (39.4) × 2000 (78.7)	2000 (78.7) × 1000 (39.4)

### ■ Maximum size of round steel bars and steel pipes to lift (when Attachment No. □□-130 used)

[mm(in)]

Model	LME-6EV		LME-10EV		LME-25EV		LME-50EV	
	Length		Length		Length		Length	
Diameter	Steel bar	Steel Pipe	Steel bar	Steel Pipe	Steel bar	Steel Pipe	Steel bar	Steel Pipe
80	1000 (39.4)	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 (39.4)	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\*



Controlled number of plates to lift

LME-60ELM

[Application]

This Battery Ace allows the magnetic force to be adjusted. Suitable for lifting one plate from stacked plates.

[Features]

- "ON" (forward) (weak), "OFF" and "REV" (reverse) can be selected easily with a switch.
- The magnetic force can be adjusted steplessly by while holding the WEAK pushbutton switch pressed, turning the magnetic force adjust knob.
- 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.

Working rate 50% ED (Power on 5 minutes and pause 5 minutes)



**Precaution for use**

Rust and scratches on the attractive face affect the holding power adversely. Repair it periodically.

[mm (in)]

Model	Lifting Capacity	Dimensions			Battery	Working Hours (50%ED)	Mass	Battery Charger	Charging Time	Accessories
		Attractive face	Height	Lifting ring ID						
LME-15FM	1500kg/ 3307 lb	280 (11.0) × 350 (13.7)	464 (18.2)	φ 60 (2.36)	12V, 28Ah	Max. 8 hours	100kg/220 lb	Input 100 VAC Output 12 VDC	10-15h	Remote operation switch (cable 3 m included) Spare battery: 1 set Charger: 1 set
LME-30FM	3000kg/ 6614 lb	280 (11.0) × 450 (17.7)	521 (20.5)				160kg/352 lb			
LME-60ELM	6000kg/13227 lb	270 (10.6) × 900 (35.4)	755 (29.7)				300kg/661 lb			

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

Model **LME-T** BATTERY ACE\*

2-point lifting



LME-20ETJ

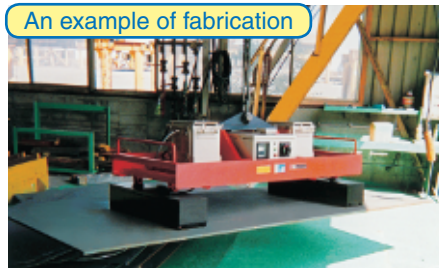
[Application]

This Battery Ace, equipped with two swivel type magnets mounted on a beam at a 1000 mm interval, can lift long steel plates. This Battery Ace can follow warping of steel plates to transport them safely. Especially, it works well on thin steel sheets.

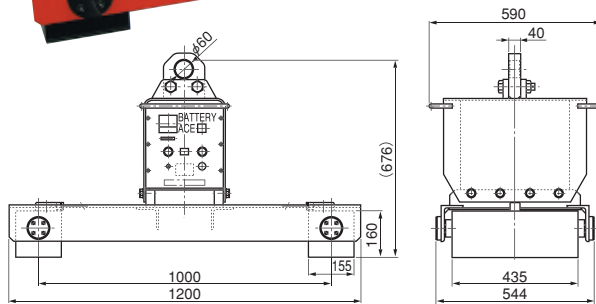
[Features]

- Suitable for transporting thin steel sheets.
- Capable of lifting steel sheets that are 30% to 100% longer than sheets lifted by the standard type Battery Ace.

An example of fabrication



[mm (in)]



**Precaution for use**

Rust and scratches on the attractive face affect the holding power adversely. Repair it periodically.

Plate Thickness	Square	Rectangular		Specified Length			
5-9	2000 (78.7) × 2000 (78.7)	1000 (39.4) × 3500 (137.8)	1500 (59.0) × 2700 (106.3)	914 (35.9) × 1829 (72.0) (Nominal 3 × 6)	1219 (47.9) × 2438 (95.9) (Nominal 4 × 8)	1524 (60.0) × 3048 (12.0) (Nominal 5 × 10)	
	10	2400 (94.5) × 2400 (94.5)	1500 (59.0) × 3500 (137.8)				
12	2500 (98.4) × 2500 (98.4)	1000 (39.4) × 4000 (157.5)	1500 (59.0) × 4000 (157.5)				
	14	2400 (94.5) × 2400 (94.5)	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 (39.4) × 3500 (137.8)	1500 (59.0) × 2500 (98.4)				
	36-50	1500 (59.0) × 1500 (59.0)	1000 (39.4) × 1500 (59.0)				

[mm (in)]

Model	Lifting Capacity	Dimensions			Battery	Working Hours (50%ED)	Mass	Battery Charger	Charging Time	Accessories
		Attractive face	Height	Lifting ring ID						
LME-20ETJ	2000kg/ 4409 lb	155 (6.10) × 435 (17.1) 2 units	701 (27.6)	φ 75 (2.95)	12V28Ah	Max. 8 hours	290kg/639 lb	Input 100 VAC Output 12 VDC	10-15h	Spare battery: 1 set Charger: 1 set

※The lifting capacity is indicated by a value that is a half of the max. holding power. ※The number-of-workpiece control type, special specifications, is also available.



Keep in mind that the capacity of the Lifma varies largely depending on the thickness and material of workpieces, clearance and other factors.

MAGNETIC TOOLS & EQUIPMENT  
FOR WELDING OPERATION  
LIFTING  
MAGNET  
MAGBORG  
MAGNETIZER AND ENVIRONMENTAL EQUIPMENT  
MAGNETIZER AND ENVIRONMENTAL EQUIPMENT  
MAGNETIC EQUIPMENT FOR CONVEYANCE  
MAGNETIC EQUIPMENT FOR CONVEYANCE  
MEASURING INSTRUMENTS  
MAGNETIC MATERIALS



# LIFTING MAGNETS

## Model LM-EC LARGE ELECTROMAGNETIC LIFMA\*

**Control unit required additionally**

(Quoted when requested)

### [Application]

Suitable for transporting mainly iron wastes and iron lumps such as scraps, slabs and ingots.

### [Features]

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

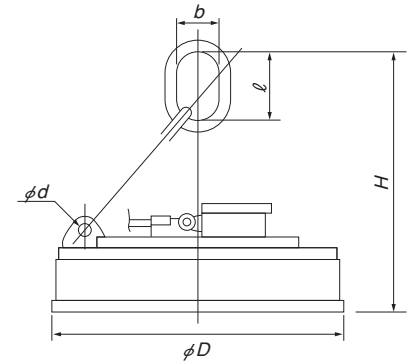
※LM-40EC2 has no chain. (Eyebolt included)

※An output voltage variable unit and uninterruptible power supply are available according to applications.

LM-90EC2



### An example of usage



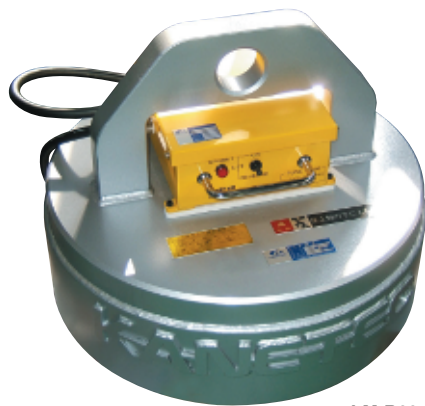
[mm (in)]

Model	Max. Lifting Mass				Dimensions						Voltage	Current	Power Consumption	Mass	Applicable Control Unit	Working Rate
	Ingot	Pig iron	Steel cut wastes	Chips	D	H	b	l	d							
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)	600 (23.6)	70 (2.75)	140 (5.51)	18 (0.70)		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)	820 (32.2)	110 (4.33)	180 (7.08)	22 (0.86)		18A	4.0kW	400kg/ 880 lb	LBR-07E		
LM-90EC2	9000kg/ 19840 lb	500kg/ 1102 lb	300kg/ 661 lb	200kg/ 441 lb	900 (35.4)	1060 (41.7)	150 (5.90)	220 (8.66)	28 (1.10)		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)	1140 (44.8)	175 (6.88)	250 (9.84)	32 (1.25)		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)	38 (1.49)		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)	1480 (58.2)	210 (8.26)	350 (13.7)	44 (1.73)		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)	1620 (63.7)	230 (9.05)	370 (14.5)	54 (2.12)		110A	24.0kW	4200kg/ 9259 lb	LBR-18E		

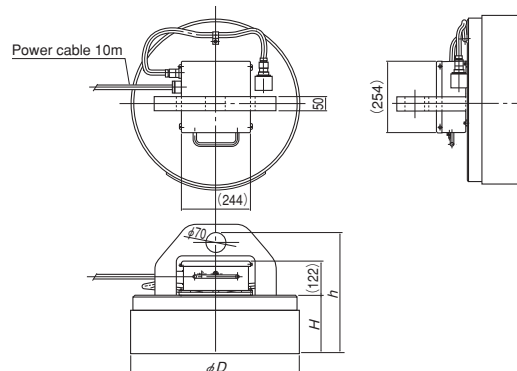
※1: M42 eyebolt ※The control unit carries an operation pushbutton switch, instrument box, cable connector and cable reel.

## Model LM-R RECTIFIER BUILT-IN LARGE ELECTROMAGNETIC LIFMA\*

### An example of special type



LM-R60-S



### [Application]

Suitable for lifting steel plates and scraps.

### [Features]

- These Lifmas incorporate a rectifier and therefore require no control unit to be installed separately.
- When the rectifier is removed, remote operation becomes possible. (The remote operation cable, however, is optional.)
- A drip-proof construction for use outdoors.
- ※If the rectifier is secured on a wall, the construction is no more drip-proofed.
- The built-in reverse excitation 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 ( 5600kgf)	450 (17.7)	170 (6.69)	395 (15.5)	200 VAC	1 φ 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)	200 VAC	1 φ Approx. 750W	50% ED	400kg/ 880 lb

**Model LM-EP RECTANGULAR ELECTROMAGNETIC LIFMA\* FOR STEEL PLATE**

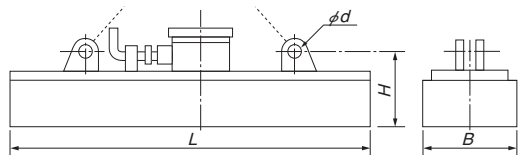
**Control unit required additionally**

(Quoted when requested)

LM-40150EP3



(The photo shows an example of special order)



**[Application]**

Mounted on a beam for such operations as transporting, sorting, dewatering and shipping of steel plates.

**[Features]**

- The number of pieces to lift can be controlled accurately by the control unit.
- Easy-to-operate and trouble-free mechanism.
- The employment of an uninterruptible power supply prevents lifted workpieces from falling in the event of power failure.

**An example of fabrication**



[mm (in)]

Model	Max. Holding Power	Dimensions				Voltage	Current	Power Consumption	Mass	Working Rate	Remarks
		B	L	H	D						
LM-20120EP3	100kN (10000kgf)	200 (7.87)	1200 (47.2)	190 (7.48)	24 (0.94)	210 VDC	5.1A	1.07kW	180kg/ 396 lb	50%ED  (Repeating cycle of power on 5 min. and pause 5 min.)	The control unit is optimally designed according to the number of pieces to control. The lifting chain, etc. are optional.
LM-20200EP3	170kN (17000kgf)		2000 (78.7)		32 (1.25)		8.3A	1.74kW	340kg/ 749 lb		
LM-30100EP3	150kN (15000kgf)	300 (11.8)	1000 (39.4)	180 (7.08)	26 (1.02)		6.0A	1.26kW	250kg/ 551 lb		
LM-30120EP3	180kN (18000kgf)		1200 (47.2)		200 (7.87)		7.1A	1.50kW	300kg/ 561 lb		
LM-30180EP3	260kN (26000kgf)		1800 (70.9)		190 (7.48)		9.1A	1.90kW	450kg/ 992 lb		
LM-40150EP3	300kN (30000kgf)	400 (15.7)	1500 (59.0)	220 (8.66)	35 (1.37)		11.9A	2.50kW	550kg/ 1389 lb		

**Model LEP-QL LARGE PERMANENT ELECTROMAGNETIC LIFMA\***

**Long beam type designed for large workpieces**

**Control unit required additionally**

(Quoted when requested)



LEP-QL30140  
An example of special fabrication



**[Application]**

Permanent electromagnetic Lifmas that allow electrical control of magnetizing and demagnetizing the built-in permanent magnet. Suitable for transporting steel plates and iron products that have a flat attractive face and can be held on the whole face.

**[Features]**

- A power-saving type requiring only momentary supply of electricity (power on).

[mm (in)]

Model	Max. Holding Power	Dimensions				Electrical Capacity	Mass	Remarks
		W	L	H	d			
LEP-QL3074	120kN (12000kgf)	300 (11.8)	740 (29.1)	110 (4.33)	24 (0.94)	11.5kVA	180kg / 396 lb	The control unit is quoted when requested. The lifting chain is optional.
LEP-QL30107	180kN (18000kgf)		1070 (42.1)		30 (1.18)	17.2kVA	250kg / 551 lb	
LEP-QL30140	240kN (24000kgf)		1400 (55.1)		35 (1.37)	22.9kVA	330kg / 727 lb	

**An example of special Lifma with beam**

(Lifting bundled pipes)



(Lifting steel plates)



Other types are available according to your requirements and specifications.



Keep in mind that the capacity of the Lifma varies largely depending on the thickness and material of workpieces, clearance and other factors.

MAGNETIC TOOLS & EQUIPMENT : FORMING OPERATION  
 LIFTING : MAGNET  
 MAGBORE\*  
 MAGNETIZER AND ENVIRONMENTAL EQUIPMENT : CHIP & SLUDGE CONVEYANCE EQUIPMENT : DEMAGNETIZER  
 MAGNETIC SEPARATORS : FOR CONVEYANCE  
 POWERFUL MAGNETIC SEPARATORS  
 MEASURING : MEASURING TOOLS  
 MAGNETIC MATERIALS : INSTRUMENTS