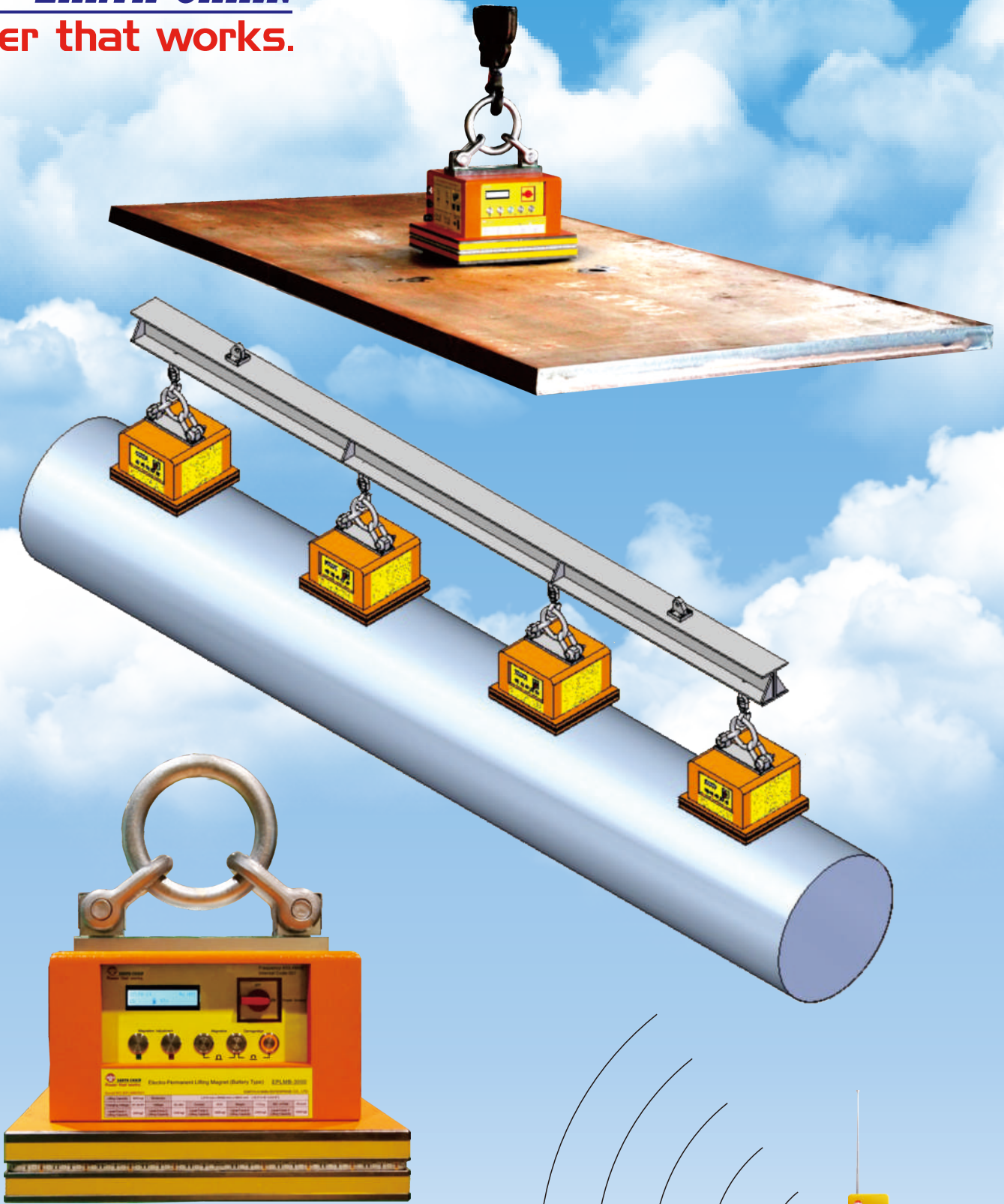




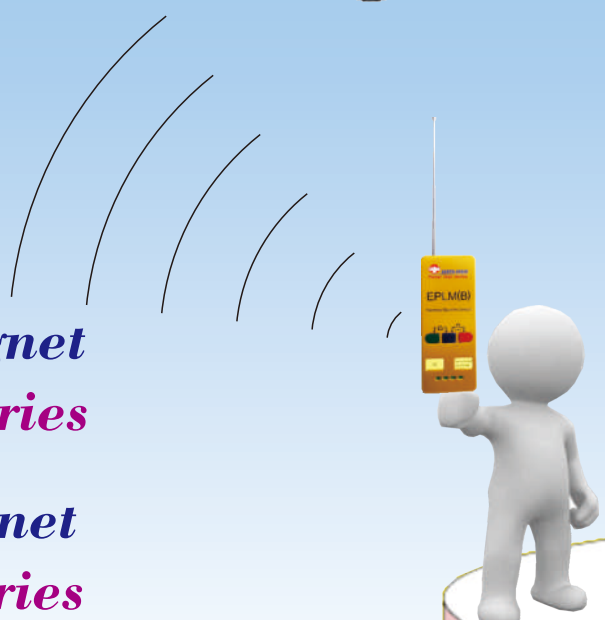
EARTH-CHAIN

Power that works.



***Electro-Permanent Lifting Magnet
(Battery Type) EPLM(B) Series***

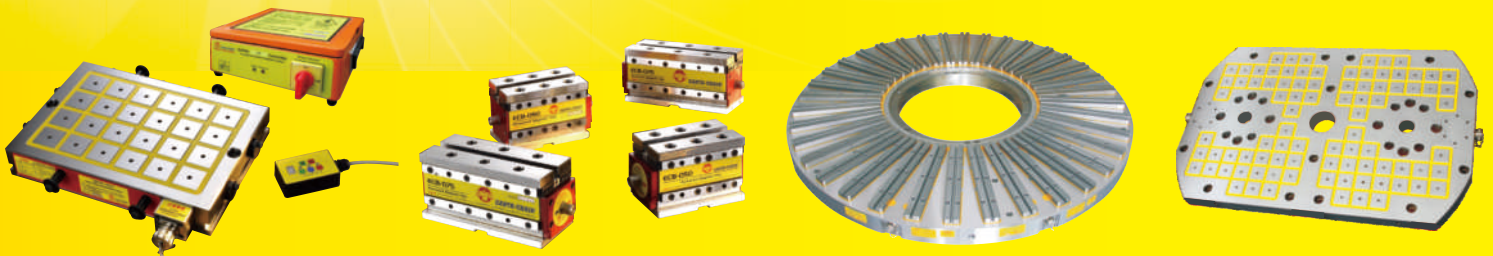
***Electro-Permanent Lifting Magnet
EPLM Series***



EARTH-CHAIN ENTERPRISE CO., LTD.



Professional Manufacturer of Magnetic Tools

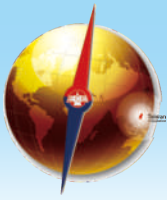


Earth-Chain Enterprise was established in 1988, specializing in manufacturing magnetic tools for industrial applications, which are marketed around the world under ECE brand. Owns various patented technologies and products under continuous developments for innovations and improvements as well as with over 40 patents. At present, the customized products have reached more than 50%, providing customers with the most complete product application technology.

Develop MagVise magnetic workholding system is suitable for CNC vertical and horizontal Machining Center, Double Column machining center, vertical and horizontal Lathe and Quick Mold change system for plastic injection machine to improve productive efficiency for customers.

In response to the needs of the CNC automation market, Earth-Chain develops the human-machine interface touch screen built-in intelligent IC signal feedback device, the programmable driven machine tool integrates the magnetic clamping system and links with the robot arm device to reduce the labor time and operation complexity required for future industrial applications.

Prospecting toward the future, Earth-Chain introduces Industry 4.0 to actively invest the market in the supply chain and continuously provide excellent products and services for industrial users, who will advance with us to promote businesses and social improvements for sustainable developments.



Electro-Permanent Lifting Magnet (Battery Type) EPLM(B) Series



**Safety Factor
3.3 times!**



Feature:

1. Battery type Permanent magnet electronic control structure design, with Neodymium (NdFeB). No electric power supply required to keep magnetic chuck ON and provides maximized safety in case of power failure.
2. Low-voltage safety warning system, can detect the lithium battery power through the screen at any time.
3. With explosion proof Lithium battery, the charger can be setting 110V~220V.
EPLM (B) can be used for operating 160 cycles after the battery is fully charged.
EPLM (D) can be used for operating 100 cycles after the battery is fully charged.
4. The magnetism is divided into 5 levels, it can be adjusted the best magnetic force level for different workpieces.
5. Modular design can be freely expanded the output port, and the number of EPLM (B) Lifters are according to the application.
6. The numbers of EPLM (B) can be operated by wireless remote control the maximum can be 10 pcs EPLM (B) Lifter. Under unobstructed environment, the wireless remote control distance can be 20 meters.
7. Custom-made : Replaceable induction block will be alternative option according to different workpiece sizes or shapes to meet the various applications requirements.
8. Proximity sensor device: When the hoisting and lifting is started the wireless remote control device can't carry out any operation to prevent potential risk of workpiece dropping caused by mistouch the button.

Application:

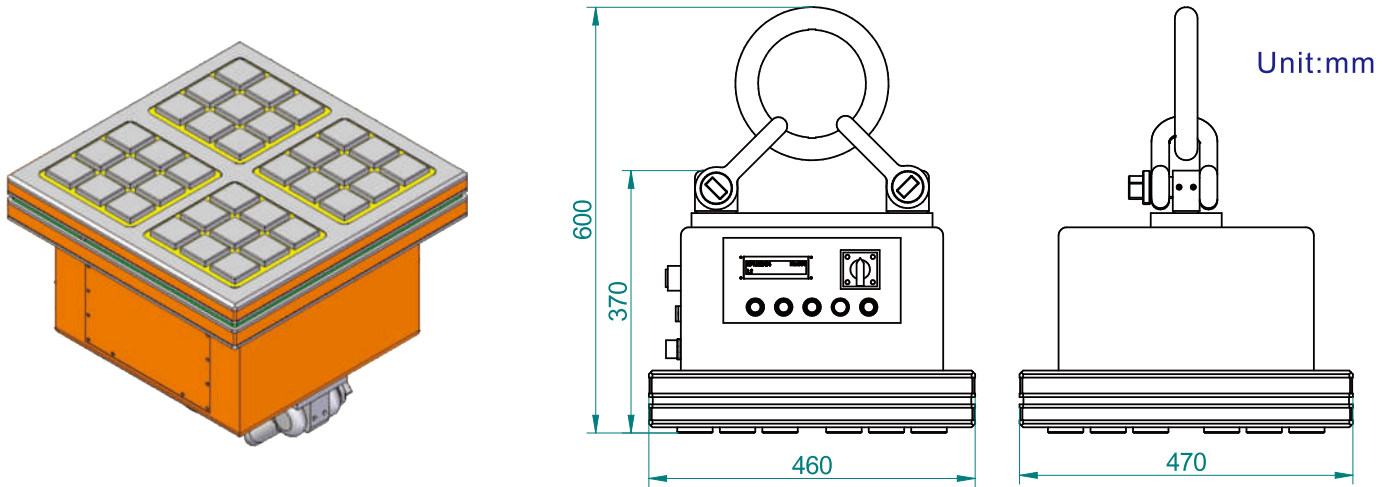
Suitable for large iron and steel plate lifting and moving.

Warning!

Do not operate at temperatures above 80°C (176°F).

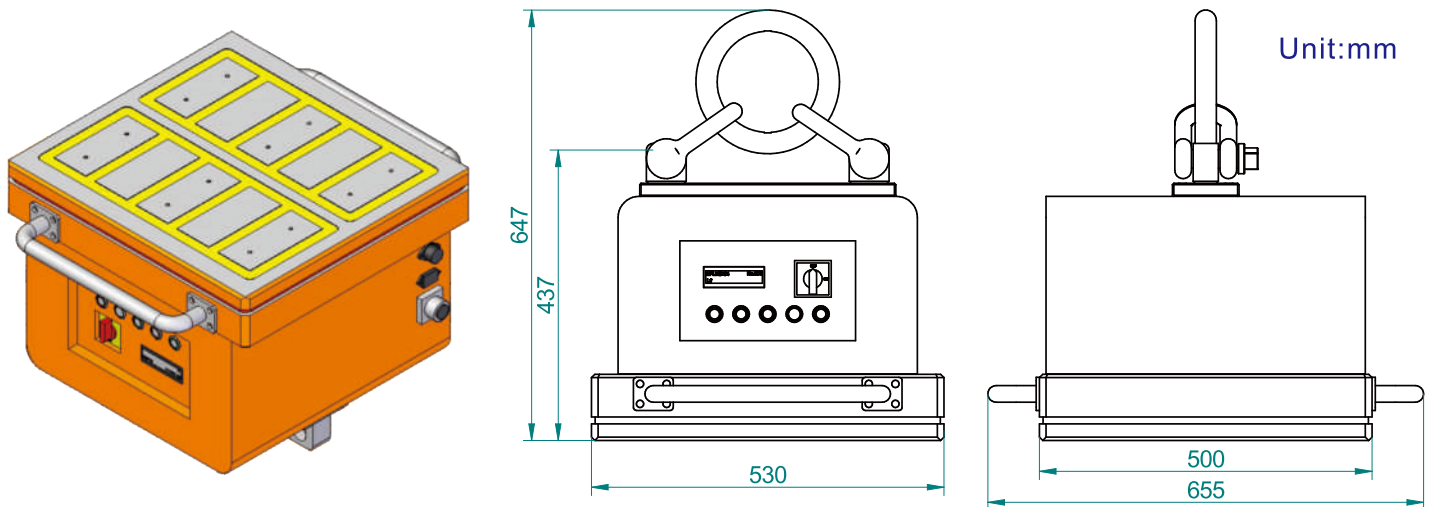
Specification

- EPLM (B):
1. Suitable for flat and thin workpieces above 5mm.
 2. EPLM (B) can be used for operating 160 cycles after the battery is fully charged.



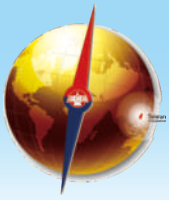
Lifting Capacity	3000 kgf	Safety Factor	3.3 times	Dimension	L460 mm x W470 mm x H600 mm (18.1"x18.4"x23.5")				
Charging Voltage	DC 54.6V	Voltage	DC 48V	Current	60 A	Weight	172 kg	NO. of Pole	36 pole
Level Force 1 Lifting Capacity	600 kgf (1320 lbf)	Level Force 2 Lifting Capacity	1200 kgf (2640 lbf)	Level Force 3 Lifting Capacity	1800 kgf (3960 lbf)	Level Force 4 Lifting Capacity	2400 kgf (5280 lbf)	Level Force 5 Lifting Capacity	3000 kgf (6600 lbf)

- EPLM-D (B):
1. Suitable for steel plates, molds, cylindrical iron or irregular castings workpiece. (Special accessories are required-EPLM (B)-IB Series, see the detail of Option Accessories Page 3)
 2. EPLM-D(B) can be used for operating 100 cycles after the battery is fully charged.



Lifting Capacity	4000 kgf	Safety Factor	3.5 times	Dimension	L530 mm x W500 mm x H647 mm (20.9"x19.7"x25.4")				
Charging Voltage	DC 71V	Voltage	DC 63V	Current	20 A	Weight	270 kg	NO. of Pole	10 pole
Level Force 1 Lifting Capacity	800 kgf (1760 lbf)	Level Force 2 Lifting Capacity	1600 kgf (3520 lbf)	Level Force 3 Lifting Capacity	2400 kgf (5280 lbf)	Level Force 4 Lifting Capacity	3200 kgf (7040 lbf)	Level Force 5 Lifting Capacity	4000 kgf (8800 lbf)

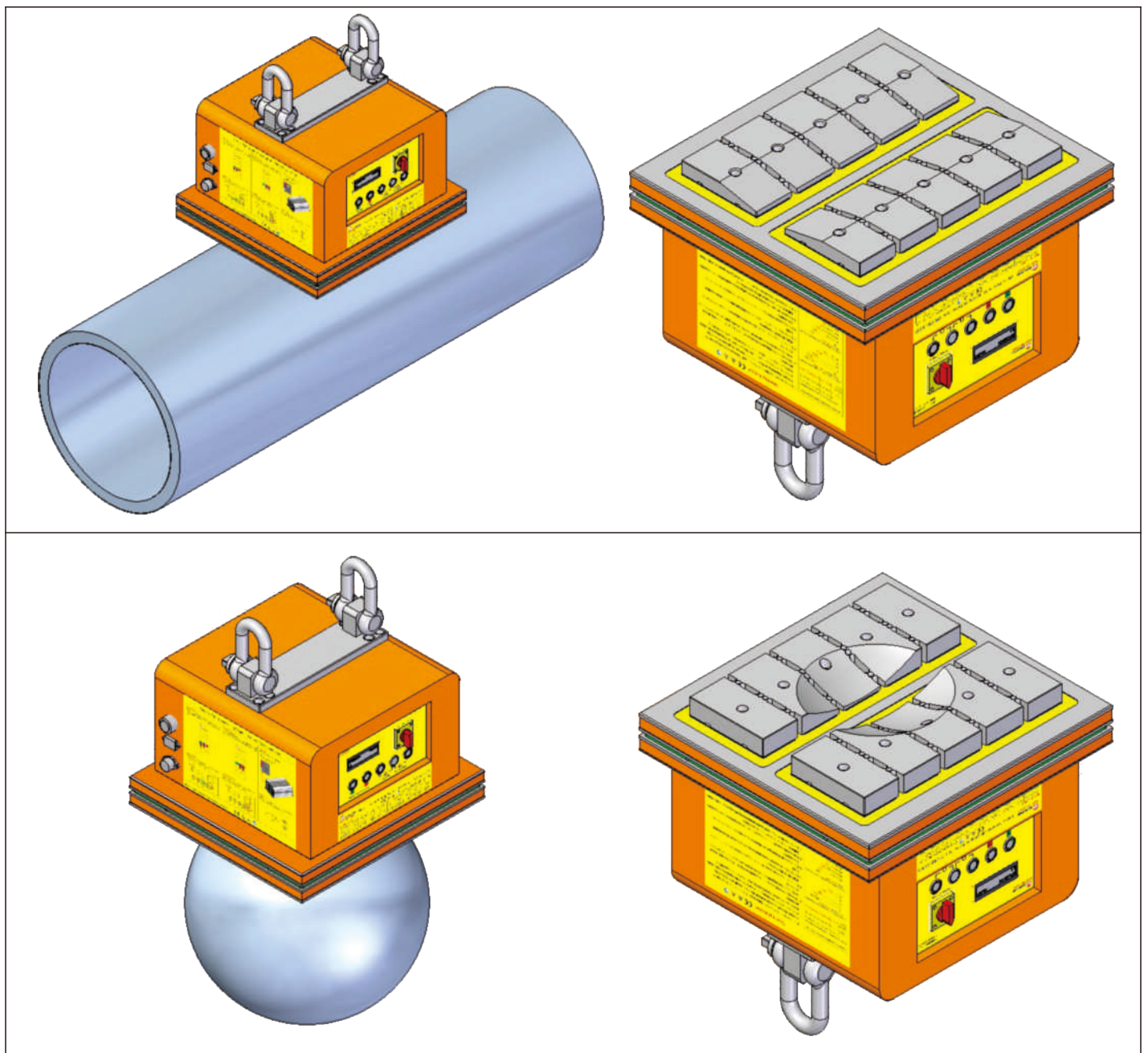
1. The Magnetic forces will changes depending on the thickness, attractive face roughness and quality of material and clearance between the workpiece with EPLM(B).
2. When lifting round steel, the maximum lifting capacity is 2,000kgf due to installation of V-shaped EPLM (B)-IB.



Electro-Permanent Lifting Magnet (Battery Type) EPLM(B) Series

Option Accessories – Induction Block: EPLM (B)-IB Series

1. Induction Block EPLM (B)-IB series could be machining according to varies workpiece shapes to increase workpiece touch surface for improving lifting capacity.
2. The EPLM (B) series can be used with different Induction blocks EPLM (B)-IB for the variety workpiece shapes required.
3. Induction block EPLM (B)-IB Series can be replaced and used for various type of workpiece such as steel plates, iron blocks, molds, cylindrical iron or irregular castings etc. for more application efficiency.



When lifting round steel, the maximum lifting capacity is 2,000kgf due to installation of V-shaped EPLM (B)-IB.

Safety sensor

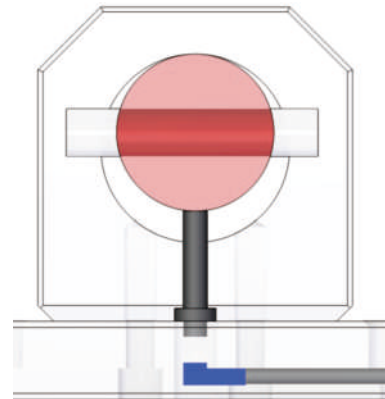
With Safety sensor system, to prevent potential risk of workpiece dropping caused by mistouch the button.

With safety sensor, when the hook is pulled up, the demagnetization could not be conducted. If the operator mistouches the button, the buzzer (alarm) will sound and the LED flashes red light to alert the operator (Fig I)

Fig I



When the hook is pulled up, the safety sensor below will not be touched the hook and the magnetization/demagnetization could not be conducted.

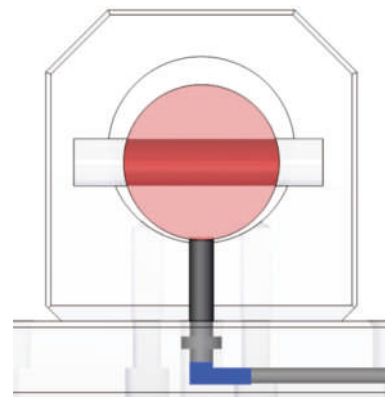


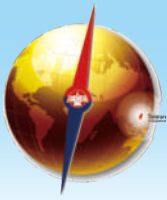
The workpiece must be placed on the ground, the hook is slack and then demagnetization could be conducted. (Fig II)

Fig II



When the hook is slack, the hook will touch the safety sensor below will be united and the magnetization/demagnetization could be conducted.





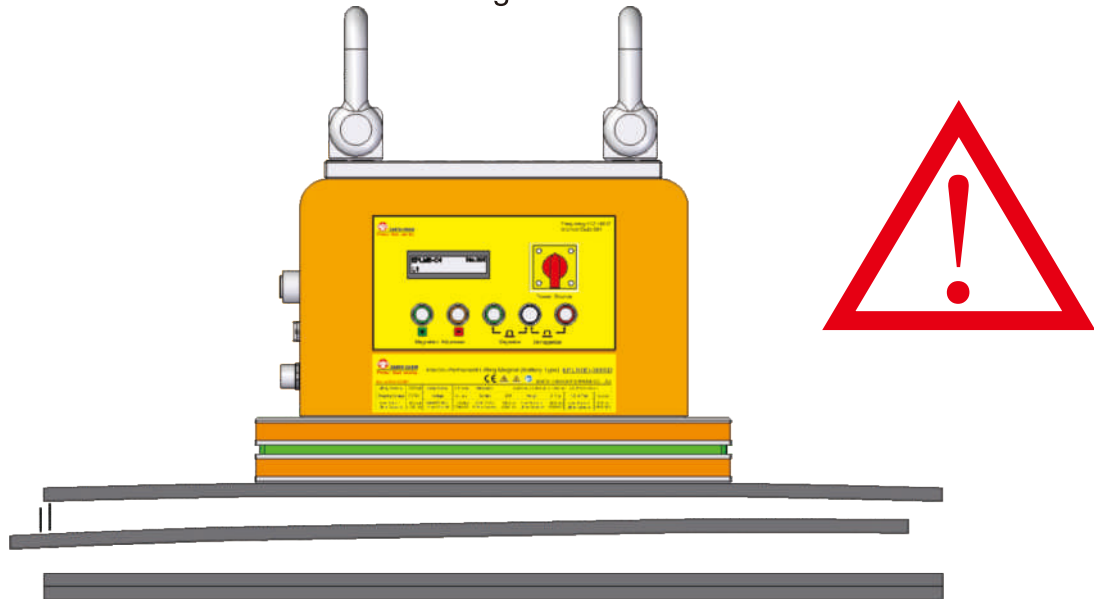
Electro-Permanent Lifting Magnet (Battery Type) EPLM(B) Series

Five levels magnetism force setting

The magnetism is designed with an adjustable function and divided into 5 levels. Can be adjusted the magnetism based on the thickness of the workpiece. Thickness of workpiece above 5mm can be quickly lift/move.

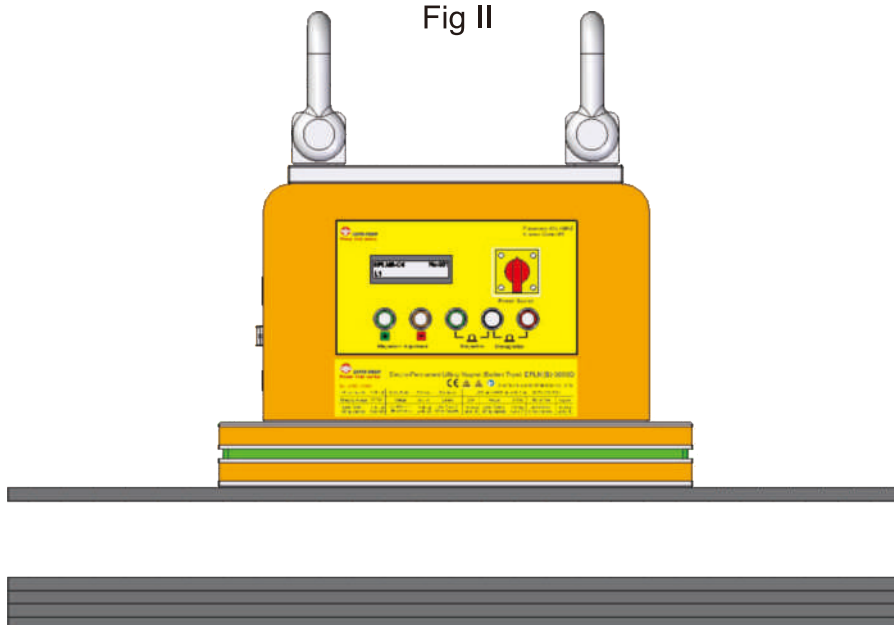
When the workpiece is thinner and stacking in several layers plates pile up, if the magnetic force of the 5 levels excessive magnetism it will cause danger due to lift other workpieces (Fig. 1).

Fig I

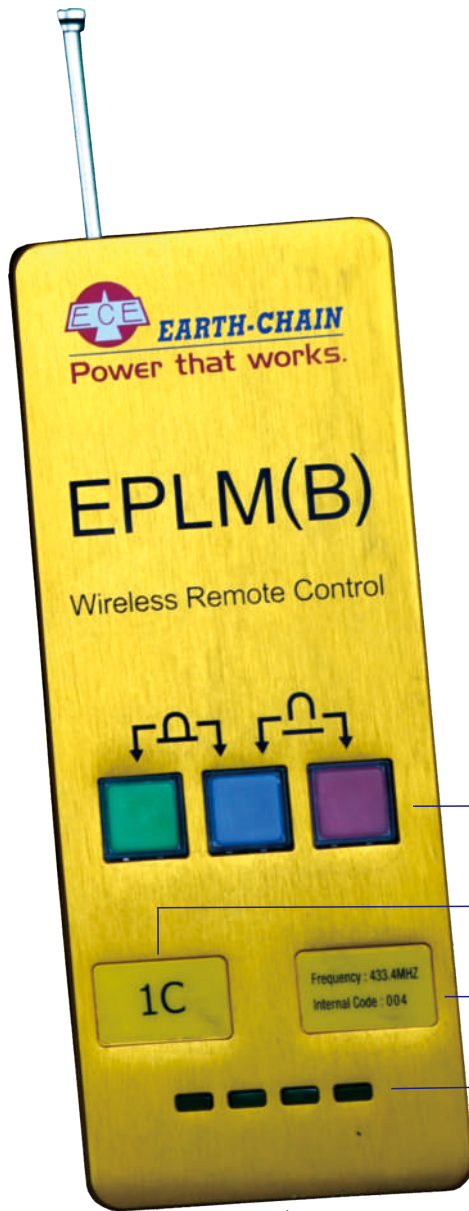


To reduce the magnetism to lower magnetic force level till to make sure the EPLM (B) lift will not lift other workpieces and then use this magnetic level to proceed with the operation. (Figure II).

Fig II



Function:
Wireless Remote Control



C. Frequency number

Each (wireless) Remote Control with 1 controlled frequency number, for EPLM (B) wireless operation.

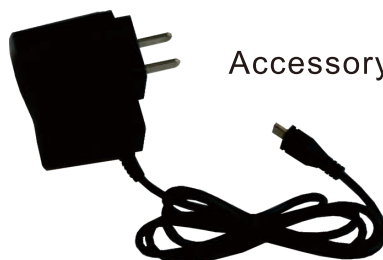
D. Battery levels

1. The battery levels will be displayed in lights numbers show electricity of remote wireless control when magnetized / demagnetized.
2. When battery power is 1 bar (0~25%) left, please charge it instantly.

Lights Numbers				Electricity of remote control
■	■	■	■	75~100 %
■	■	■	■	50~75 %
■	■	■	■	25~50 %
■	■	■	■	0~25 %

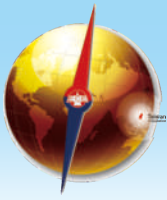
E. Power Input Port

1. Remote control can be fully charged by taking 2 hours charging period, A fully charged Remote control can be used for operating 400 cycles.
2. Input power is 110V~240V, standardized for international general voltage specification.



Accessory: Charger





Electro-Permanent Lifting Magnet (Battery Type) EPLM(B) Series

A. Magnetization/ Demagnetization

<p>Magnetization : Press and hold the green magnetize and the blue safety buttons together for one second to start magnetization cycle. The green light on magnetize button illuminates, indicating magnetization is complete.</p>	<p>Demagnetization : Press and hold the red demagnetize and the blue safety buttons together for one second to start demagnetization cycle. The red light on demagnetize button illuminates, indicating demagnetization is complete.</p>
---	---

B. Setting number of EPLM (B) quantity

1. E.g.: 1C = 1 EPLM (B) chuck, T2C = 2 EPLM (B) chucks. The maximum of one wireless remote control can be 10 EPLM (B) chucks. (Shown as below illustration)
2. Each of the EPLM (B) has an individual frequency code for wireless remote control link.

<p>1C = Control 1x EPLM (B)</p>	<p>T2C = Control 2 x EPLM (B) simultaneously</p>	<p>T3C = Control 3 x EPLM (B) simultaneously</p>
<p>T4C = Control 4 x EPLM (B) simultaneously</p>	<p>T8C = Control 8 x EPLM (B) simultaneously</p>	

Function:

A. Hook module

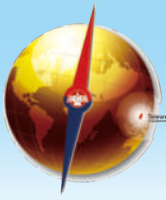
With safety sensor, only when the hook is loose, the demagnetization conduct could be done to prevent potential risk of workpiece dropping caused by mistouch the button.



E. Side View:



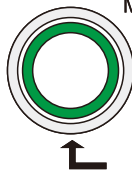
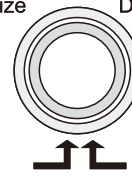
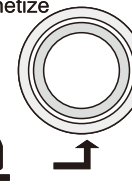
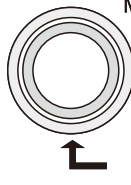
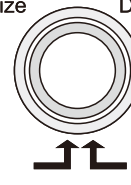

1. When abnormal status occurred such as low voltage or incorrect operation, the buzzer (alarm) will sound and the screen will displays the cause of the abnormality.
2. Charging port: Connect the input power for charger.
3. Label: Magnetization/demagnetization and charger instructions of remote control.



Electro-Permanent Lifting Magnet (Battery Type) EPLM(B) Series

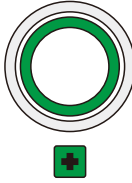
B. Panel


1. Status: Display Current status such as battery power, low voltage or operating error.
2. Power Switch.
3. Magnetization

<p>MAG. Magnetize</p> 	<p>SAFETY Demagnetize</p> 	<p>DEMAG Demagnetize</p> 	<p>MAG. Magnetize</p> 	<p>SAFETY Demagnetize</p> 	<p>DEMAG Demagnetize</p> 
<p>Magnetization Press MAG and SAFETY buttons for 1 second simultaneously, then the green light of the MAG button ON mean magnetization is completed.</p>			<p>De-Magnetization Press DEMAG and SAFETY buttons for 1 second simultaneously, then the red light of the DEMAG button ON mean demagnetization is completed.</p>		

4. Magnetism adjustment:

Magnetism Adjustment






Relative magnetic force strength percentage table

Level No.	1	2	3	4	5
%	20	40	60	80	100





- Make sure the EPLM(B) is on demagnetization state then adjust the magnetism to the required level and then magnetization.
- The magnetism is designed with an adjustable function and divided into 5 levels. Can be adjusted the magnetism based on the thickness of the workpiece.
(Thickness of workpiece above 5mm can be quickly lift/move).

C. Specification :



EARTH-CHAIN
Power that works.

Electro-Permanent Lifting Magnet (Battery Type) **EPLM(B)-3000**

EARTH-CHAIN ENTERPRISE CO., LTD.

Serial NO.EPLM(B)

Lifting Capacity	3000 kgf	Safety Factor	3.3 times	Dimension	L470 mm x W460 mm x H600 mm (18.5"x18.1x23.6")				
Charging Voltage	DC 54.6V	Voltage	DC 48V	Current	60A	Weight	172 kg	NO. of Pole	36 pole
Level Force 1 Lifting Capacity	1320 lbf	Level Force 2 Lifting Capacity	2640 lbf	Level Force 3 Lifting Capacity	3960 lbf	Level Force 4 Lifting Capacity	5280 lbf	Level Force 5 Lifting Capacity	6600 lbf

D. LED Lamp

To display the status of the system: Magnetization, demagnetization or incorrect operation. The red light flashes to warning the operator, the status display can be viewed the case of the abnormality.

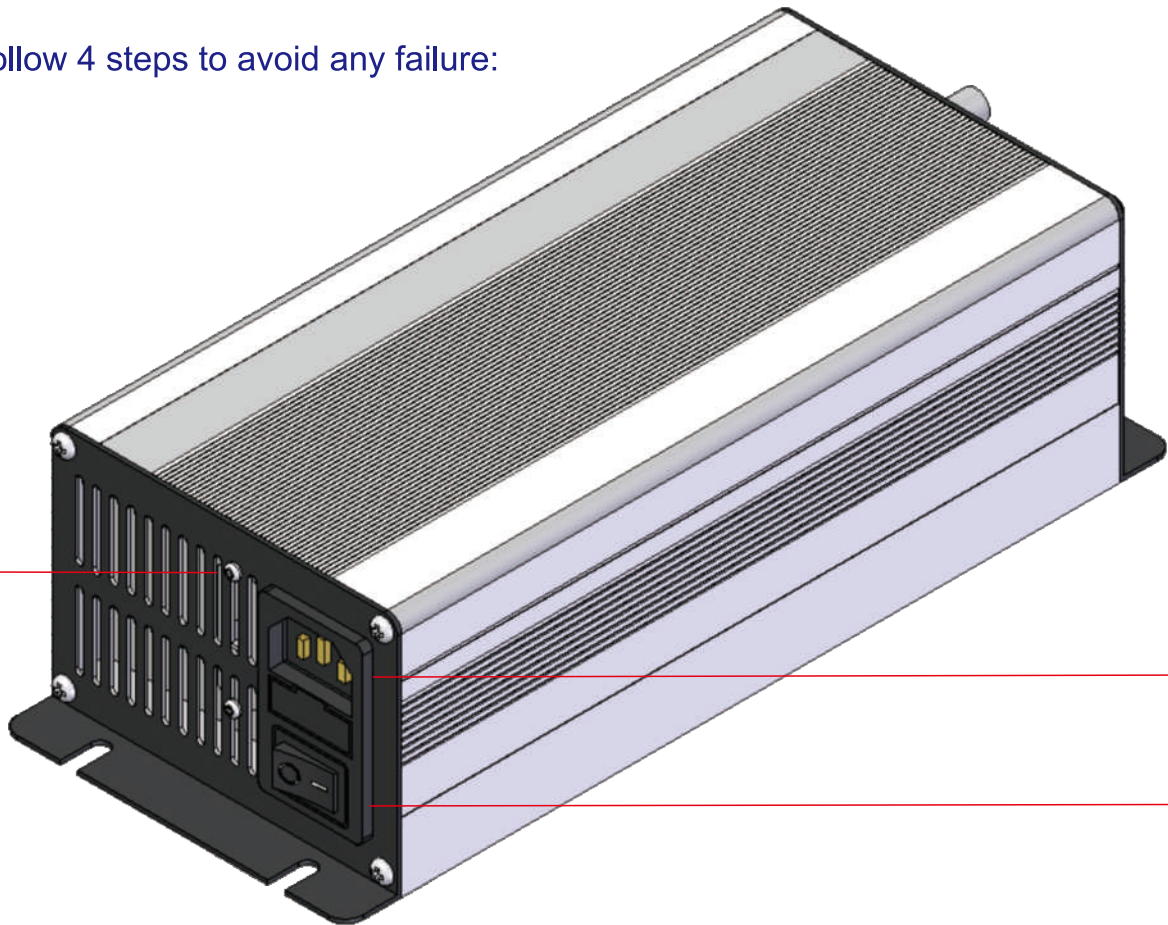
Accessory: Charger

The battery could be fully charged by taking 2 hours charging period.

EPLM (B) can be used for operating 160 cycles after the battery is fully charged.

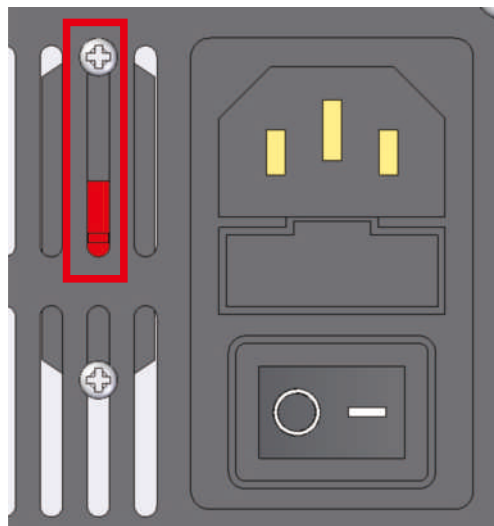
EPLM (D) can be used for operating 100 cycles after the battery is fully charged.

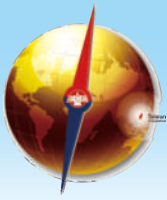
Please follow 4 steps to avoid any failure:



A. Voltage setting

The voltage can be set 110V or 220V. The upward adjustment is set to 110V, and the downward adjustment is set to 220V. Below example shows the voltage is 220V setting.

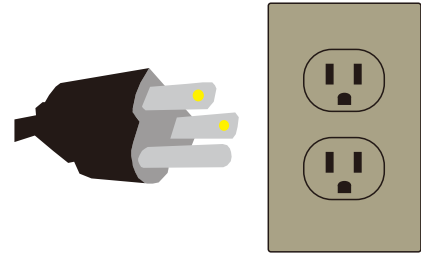




Electro-Permanent Lifting Magnet (Battery Type) EPLM(B) Series

B. Power input socket

Please plug it into 110V or 220V socket and plug the charger voltage into the other end.



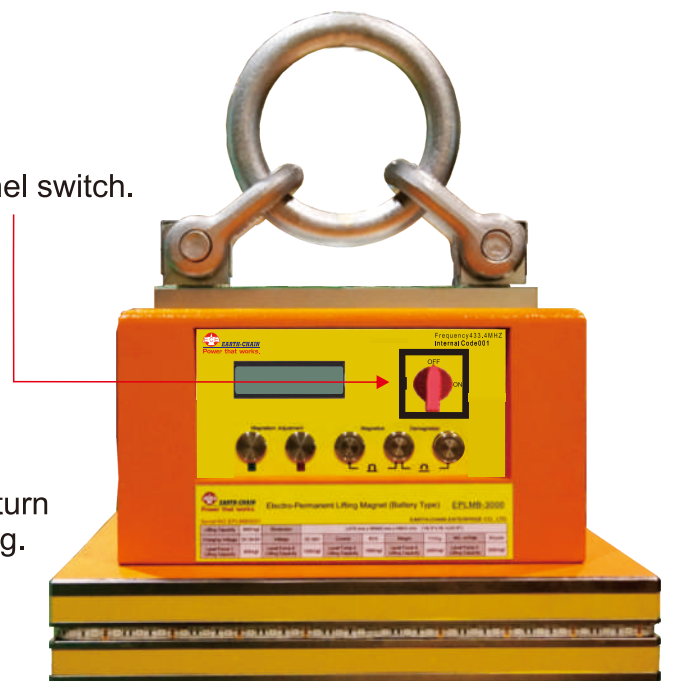
C. Power output cable

Please insert the power output cable into the charger socket (on the right side of the panel).



D. Turn off the panel switch

Before charging, please turn off the panel switch.

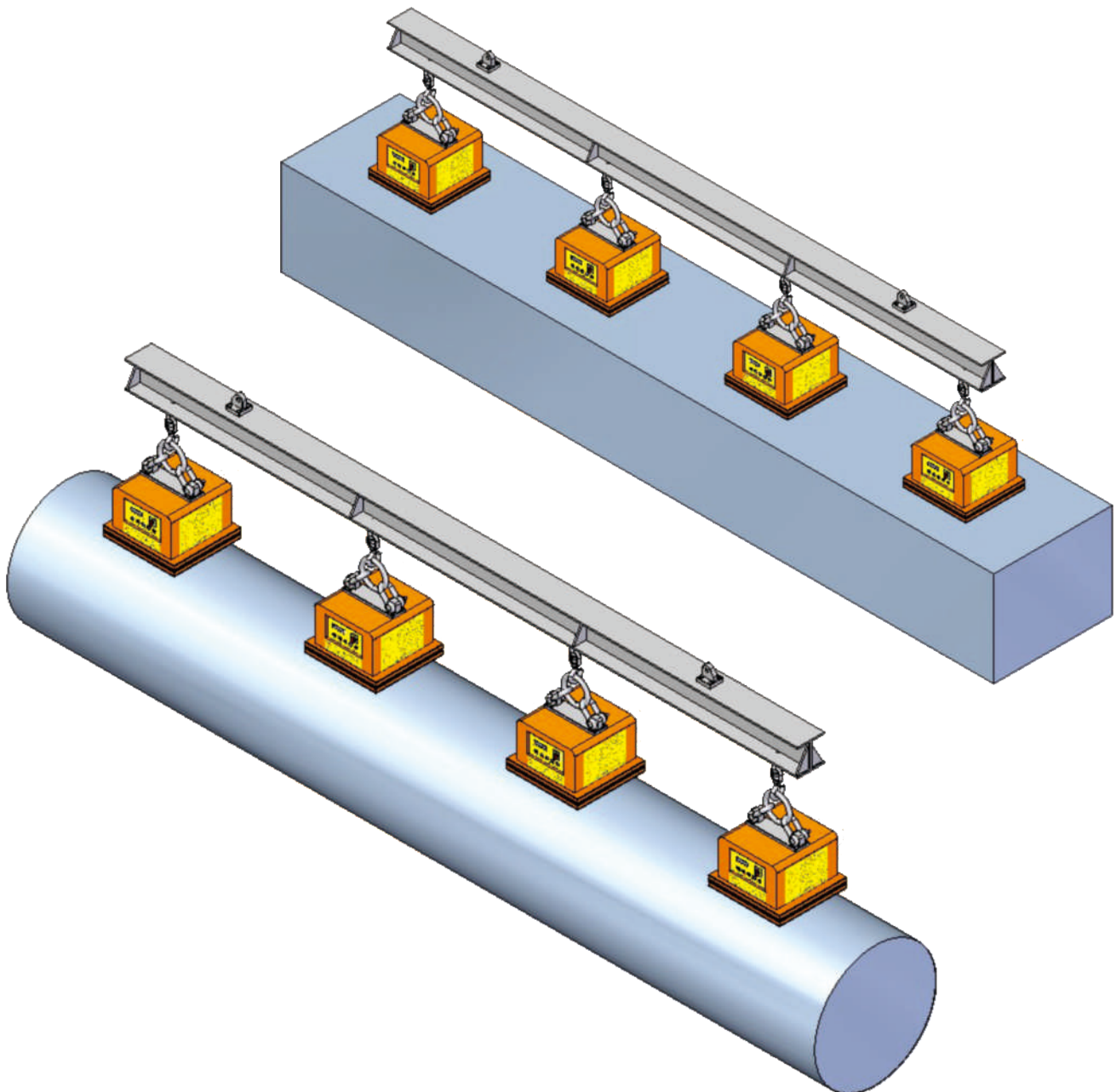


E. Turn on the charger power switch

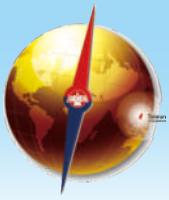
After completing the above steps, then turn on the charger power switch for charging.

EPLM (B)-L Spreader Bars

1. Spreader bars help keep large or irregular loads under control during transport.
2. Can be free to set up position, numbers and distance of EPLM (B) according to the dimension of workpiece and application for lifting balance, safety and convenience.
3. Operated by wireless remote control, a single operator can control multiple EPLM (B) Lifter simultaneously which can easily lift large workpieces and greatly reduce the time for personnel to operate the lifting workpiece.



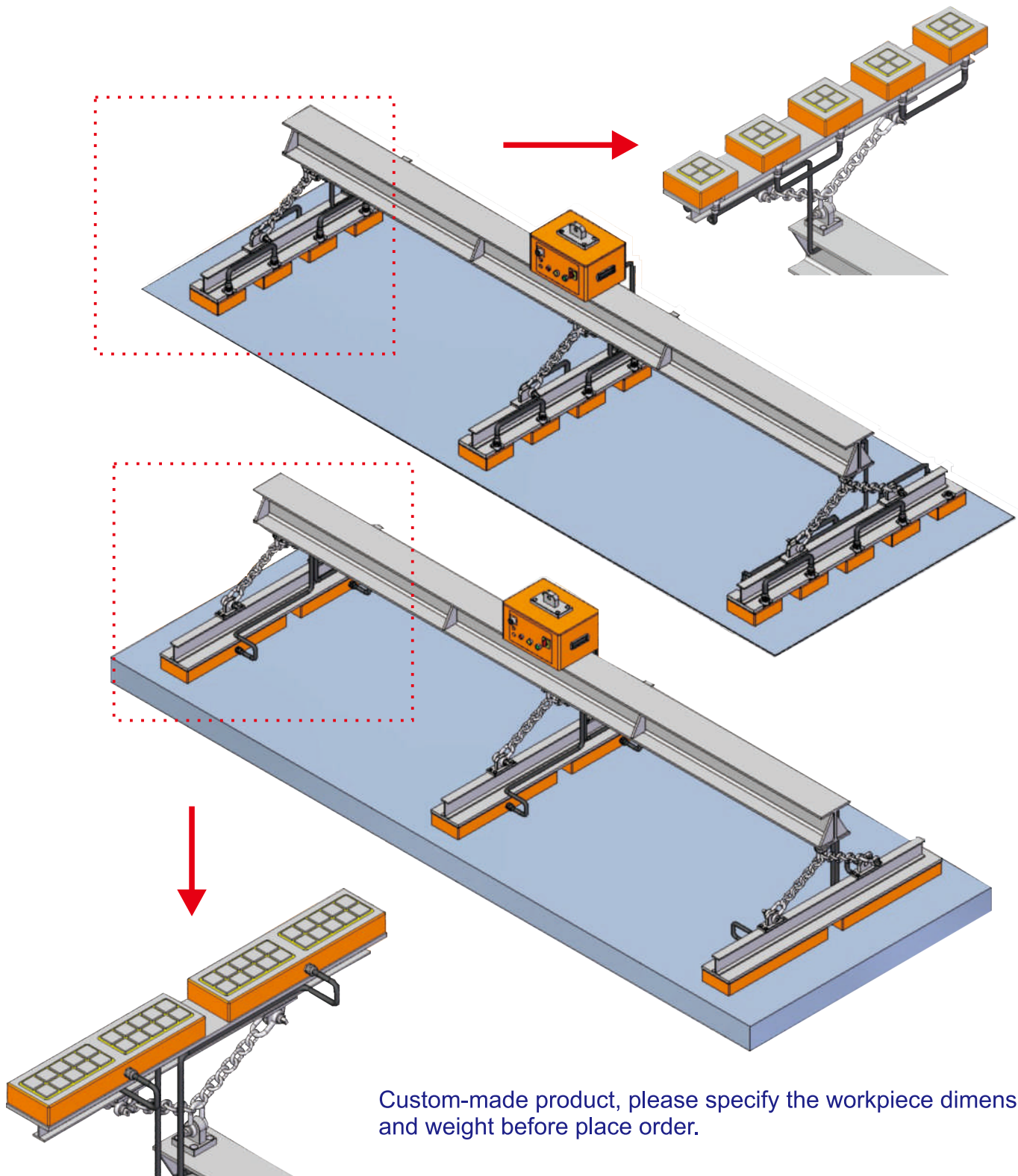
Custom-made product, please specify the workpiece dimension and weight before place order.



Electro-Permanent Lifting Magnet (Battery Type) EPLM(B)S Series (Custom-made)

EPLM (B)-L Spreader Bars

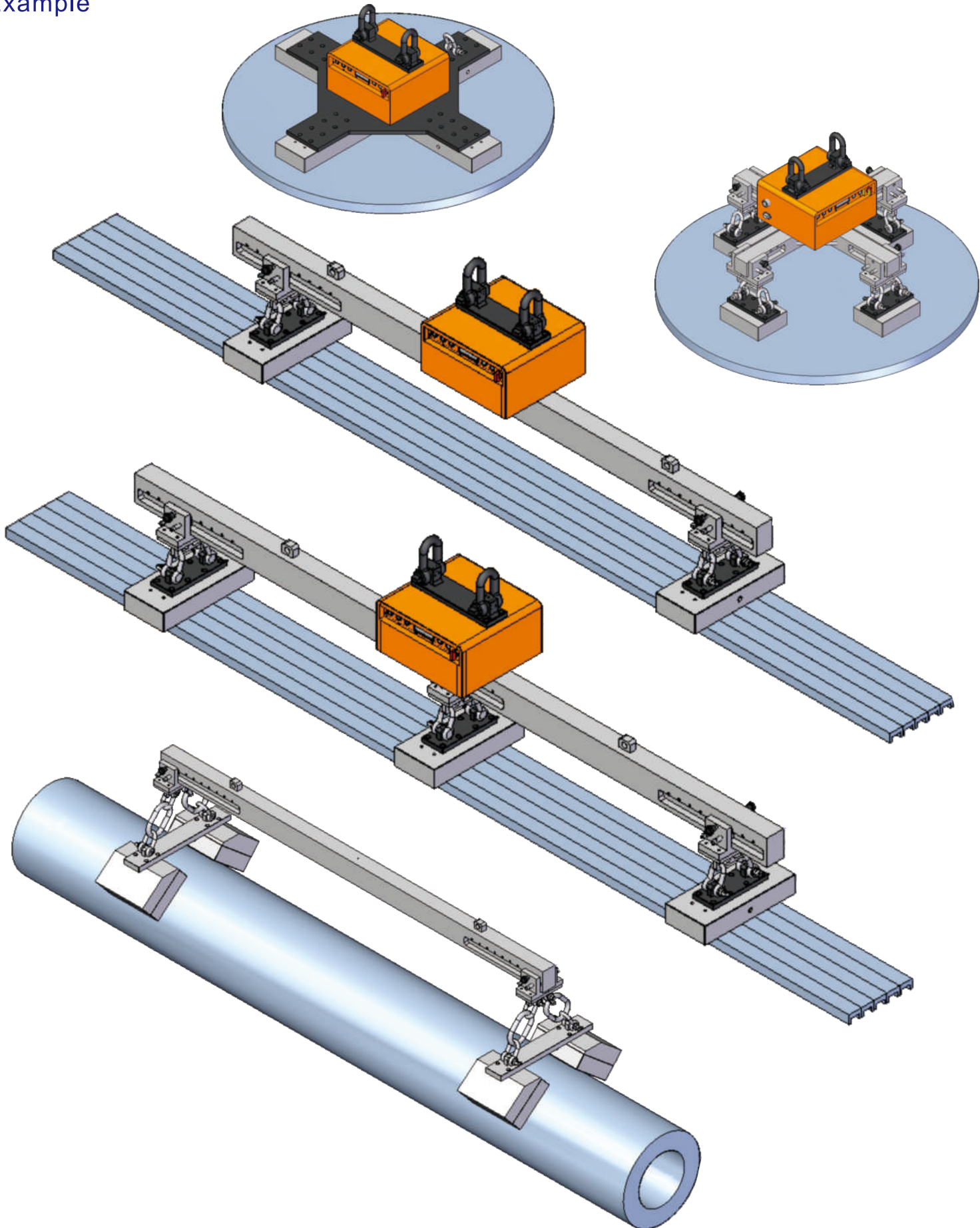
Electro-Permanent Lifting Magnet (battery type) EPLM (B)S series is Custom-Made professionally. It could be customized according to workpiece shape, size and weight, with Custom-Made structure design to meet the different application of customers' various industries.

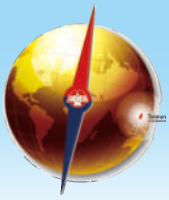


Custom-made product, please specify the workpiece dimension and weight before place order.

Electro-Permanent Lifting Magnet (Battery Type) EPLM(B)S Series (Custom-made)

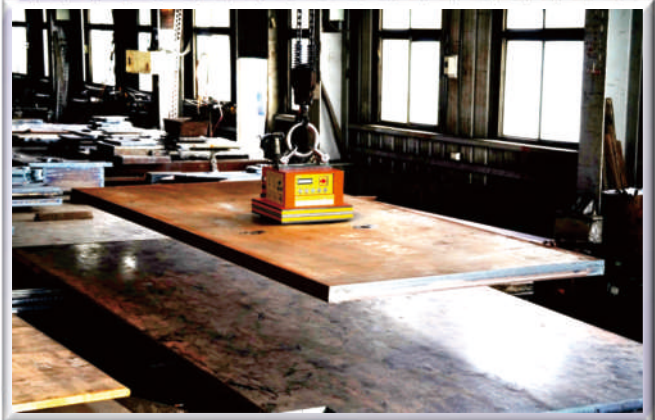
Example





Electro-Permanent Lifting Magnet (Battery Type) EPLM(B) Series

Working Example



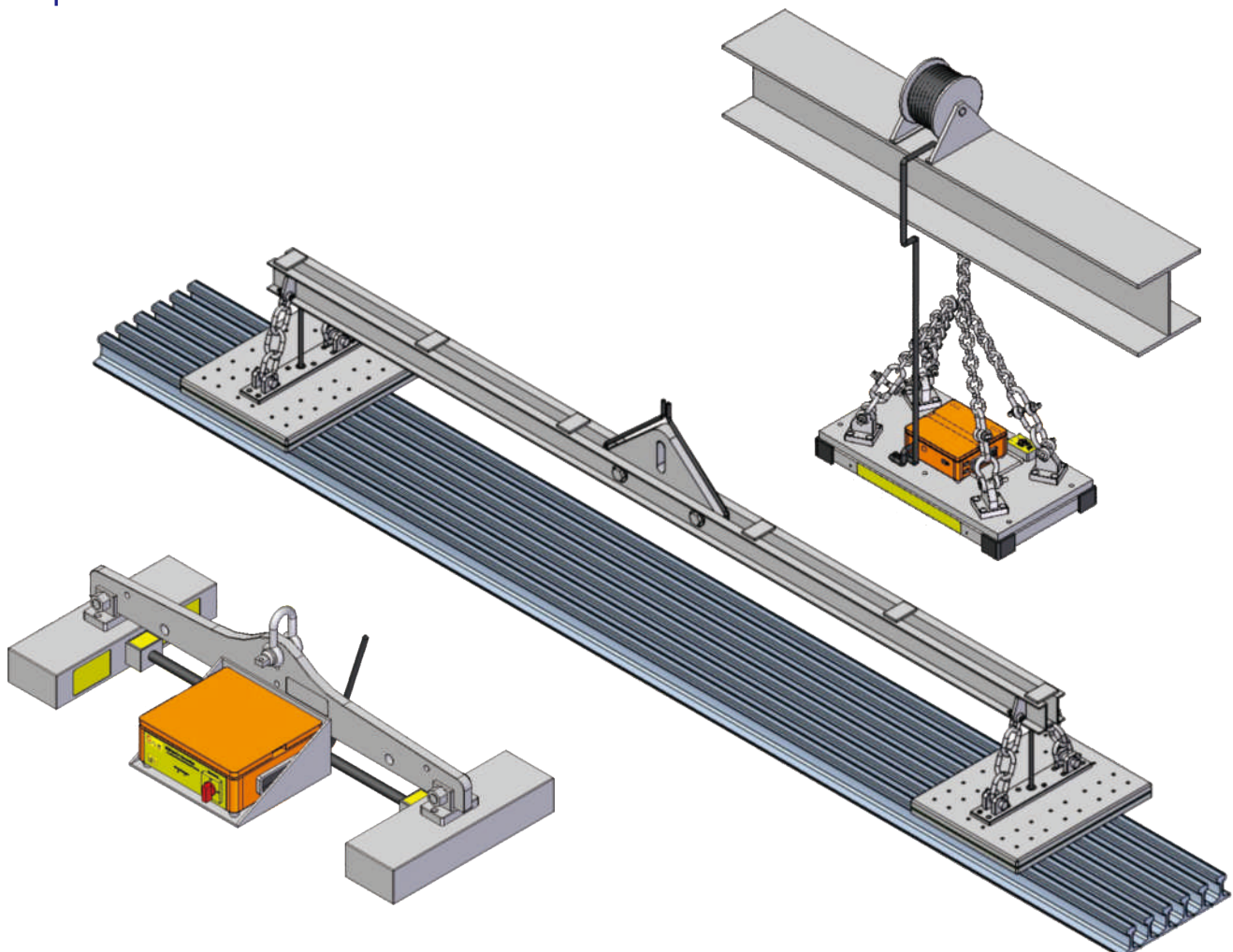
Feature:

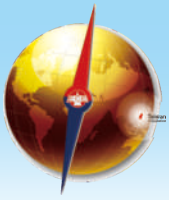
1. Battery type Permanent magnet electronic control structure design, with Neodymium (NdFeB). No electric power supply required to keep magnetic chuck ON and provides maximized safety in case of power failure.
2. The magnetism is divided into 8 levels, it can be adjusted the best magnetic force level for different workpieces.
3. Modular design can be freely expanded the output port, and the number of EPLMS Lifters are according to the application.
4. The EPLMS series can be operated by wireless remote control and the distance can be 20 meters under unobstructed environment.
5. Custom-made : Replaceable induction block will be alternative option according to different workpiece sizes or shapes to meet the various applications requirements.
6. Proximity sensor device: When the hoisting and lifting is started the wireless remote control device can't carry out any operation to prevent any incorrect operation causing the workpiece drop down.

Application:

Suitable for large iron and steel plate lifting and moving.

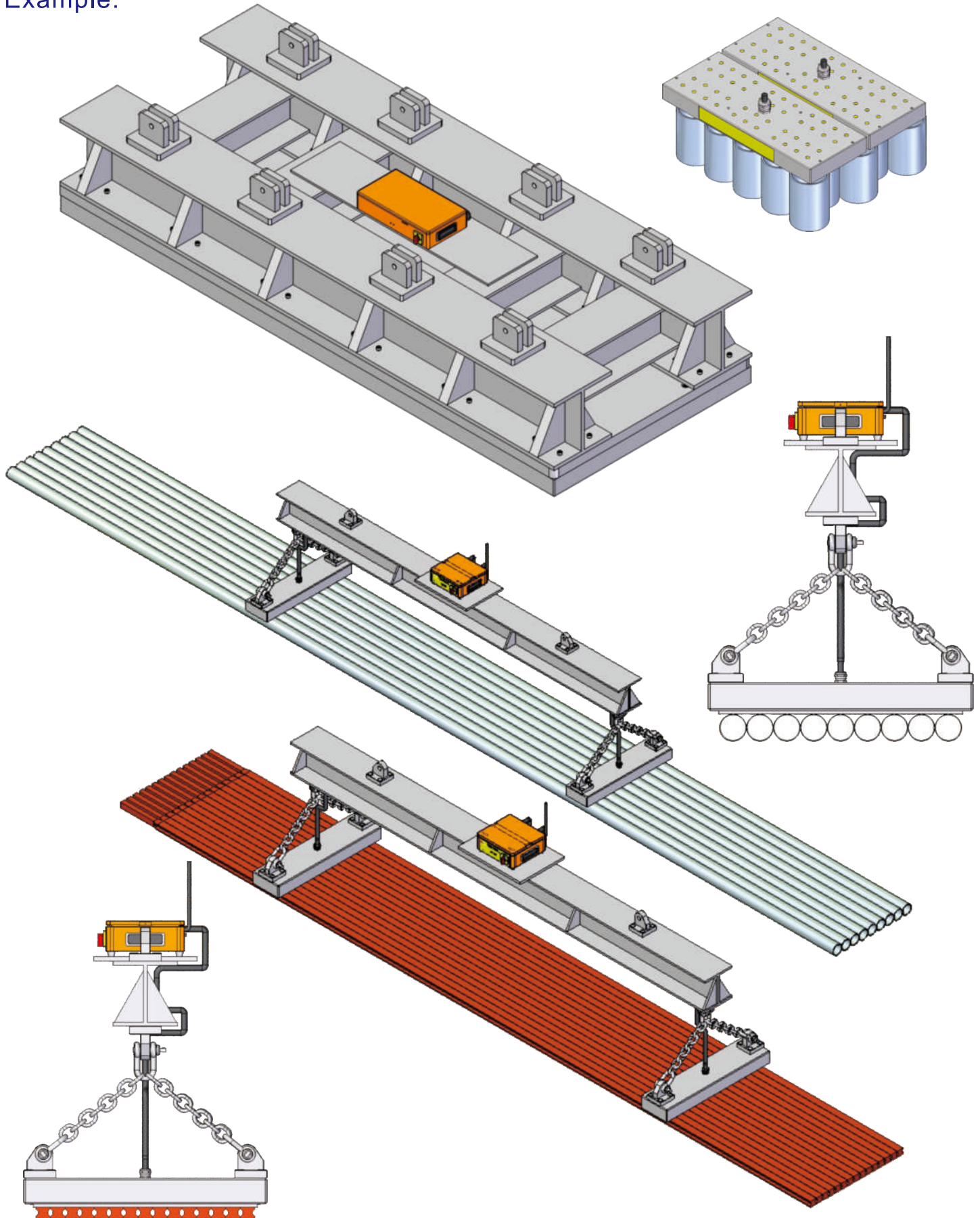
Example:





Electro-Permanent Lifting Magnet *EPLMS Series* (Custom-made)

Example:





OUR OTHER PRODUCTS SYSTEM

EARTH-CHAIN Ultimate Excellent Magnetic force
Power that works. Simultaneous Precision

Mag Vise Magnetic Workholding
(5 sides machining)



EEPM Series
Electro-Permanent Magnetic Chuck



ECB Series
Permanent Magnetic Clamping Block



EARTH-CHAIN Ultimate Excellent Magnetic force
Power that works. Simultaneous Precision

Mag Vise Magnetic Workholding
(5 sides machining)



EEPM-C Series
Electro-Permanent Magnetic Chuck Connection Type




EEPM-CIR/CRS Series
Electro-Permanent Magnetic Chuck




EARTH-CHAIN Ultimate Excellent Magnetic force
Power that works. Simultaneous Precision


Plastic Injection Molding Machines
Quick Mold Change System



Productivity
Convenience
Safety
Environmental protection



EEPM-PIM Series
Electro-Permanent Magnetic Chuck



EARTH-CHAIN Ultimate Excellent Magnetic force
Power that works. Simultaneous Precision

Subs Force **1.5 times!**

More power. More safety
Light weight. Less dimension
Lower price



FLM Series
LIFTING MAGNET



www.earth-chain.com

EARTH-CHAIN ENTERPRISE CO.,LTD.

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