EN

ELECTRO PERMANENT MAGNETS

GENERAL CATALOGUE

MAGBAT EUROPE

MAGBAT-Europe specializes in electro-permanent magnet technology, with a focus on distributing magnetic quick-change systems for molds and dies, magnetic clamping plates for metalworking machines, industrial lifting magnets, and customized magnetic solutions.

As the exclusive partner of HVR-Magnetics, MAGBAT-Europe manages commercialization and after-sales service across Europe. In close collaboration with HVR Magnetics, we develop equipment tailored to the specific needs of the European market.

With a strong emphasis on R&D, our philosophy is to pursue a fair win-win approach with our customers, generate added value for our employees, enhance benefits for our clients, and prioritize safe operation above all.

The unique advantages of MAGBAT products include safety, energy efficiency, high performance, and environmental sustainability. Our products are utilized across various sectors including steel construction, machinery manufacturing, shipbuilding, steel trade, railway and rolling stock, injection molding, and numerous other industries.

We strictly adhere to the ISO 9001:2015 quality certification standards.

MAGBAT
EUROPE

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BATTERY-POWERED ELECTRO-PERMANENT LIFTING MAGNETS

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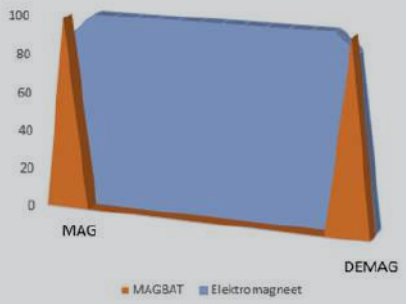
Electro permanent magnetic technology

Electro-permanent magnets utilize electrical current for only a few seconds to molecularly invert (magnetize) the magnet. This state remains active until the next electrical pulse (demagnetize). **The effective magnetic force is generated by permanent magnets.** Due to their independence from electric current, electro-permanent magnets are 100% safe, require no backup batteries, consume 95% less energy, and are maintenance-free.

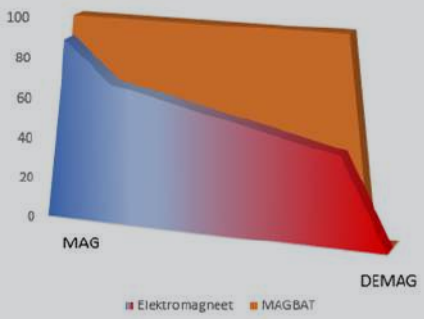
95% LESS ENERGY CONSUMPTION

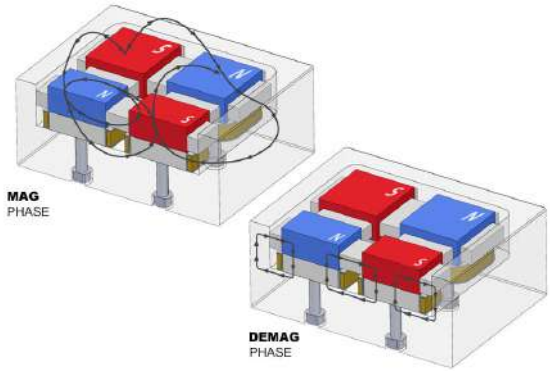
MAGBAT electro permanent magnets use electrical current for only a few seconds to reverse the polarity of the magnetic poles. This contrasts with electromagnets that continuously consume electrical power during the entire lifting process.



NO HEATING OF THE MAGNET

As Electro-Permanent Magnets exclusively utilize electrical current solely during the phases of magnetization and demagnetization, the duration of current passing through the electrical coils is restricted. Consequently, electro-permanent magnets remain cool, ensuring a consistent magnetic force.





MAINTENANCE FREE

Since the coils of electro-permanent magnets are not continuously under voltage, they possess an extended lifespan and require no maintenance. Additionally, there's no need for expensive backup batteries that need annual inspections. As a result, downtime is eliminated, ensuring your production remains uninterrupted.

NO RESIDUAL MAGNETISM

Everything that goes in goes out.
The magnetic field flows locally, controlled and highly concentrated, from the North Pole to the South Pole, across the workpiece. As a result, no residual magnetism remains, and there are no issues during potential welding projects afterward.

NO BACKUP BATTERIES NECESSARY

Since the magnetic force in electro-permanent magnets is generated by permanent magnets, they are independent of electrical current. In case of a power outage, the magnetic force remains constant. Expensive backup batteries are therefore unnecessary.

9 safety features

ELECTRO PERMANENT MAGNETIC TECHNOLOGY

The electric current is only used to invert the magnetic field, while the effective force is generated by permanent magnets. In the event of a power failure, the magnetic force remains permanently present = 100% safe

PICK-UP CYCLE

Lifting is done in 2 phases, whereby the workpiece is first lifted at a lower preset force (PICK-UP), immediately followed by FULLMAG (100% of the total force)

PICK-UP Very thin	Generated force 17%
PICK-UP Medium/thin	Generated force 25%
PICK-UP Medium/large	Generated force 35%
PICK-UP Large	Generated force 55%
FULL - MAG Always	Generated force 100%

SPC-SYSTEM (SYSTEM PERFORMANCE CHECK)

The electronic system continuously monitors the proper functioning of the magnet. Any abnormal situation is reported immediately and indicated by an error code on the help screen. In this way, errors can be immediately analysed and resolved.

SAFETY FACTOR 3:1

To lift safely, a possible air gap between the contact surface of the magnet, and the steel to be lifted, must be considered. That is why all our magnets are designed with a minimum safety factor of 3: 1 measured at an air gap of 0.4 mm.

2 BUTTON OPERATION

To start the demagnetization cycle, 2 buttons (SAFE + DEMAG) must be pressed consecutively on the remote control.

LAMP BLOCK

The status of the magnet is visually indicated by a clear LED lamp block. The load may only be moved horizontally when the green lamp lights up continuously!

PICK-UP **FULLMAG**
DEMAG **ALARM**

LANDING DETECTION

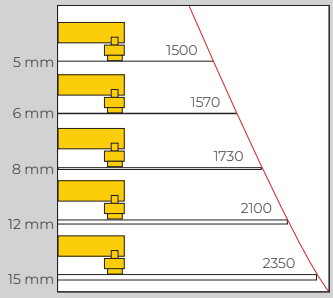
An inductive proximity switch detects when the magnet is suspended in the air, and prevents accidental demagnetisation.

RADIO REMOTE CONTROL

The magnet is operated from a safe distance. The operator should not come in the immediate vicinity of the load.

INSTRUCTION PANEL

With clear safety instructions for the user regarding:
- Maximum weight of the load in function of material thickness
- Maximum wing in function of the deflection of the material.



SERIE:

HM1

Fixed electro permanent magnetic beam

Lifting long steel plates and strips is a dangerous and time-consuming activity. Using traditional plate clamps or chains will cause the load to bend and deform and makes lifting unstable and dangerous.

The HM1 electro-permanent magnet beams are the economical solution to this problem.
The load is clamped uniformly from above, without deformation and / or damage of the steel plate.

PICK-UP CYCLE

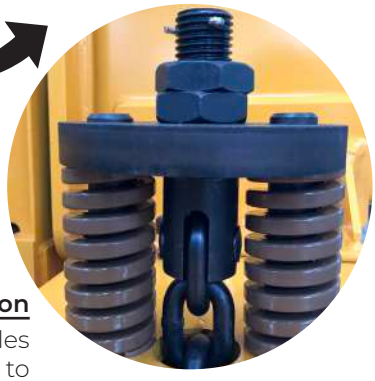
The lifting force can be precisely adjusted based on the thickness of the steel plate, ensuring that only a single plate is lifted at a time.

Percentage of total force at PICK-UP:
POSITION I = 17%
POSITION II = 25%
POSITION III = 35%
POSITION IV = 55%

SELECTION MAGNETIC MODULES

A corresponding number of magnet modules can be selected via a 4-position switch, depending on the dimensions of the steel plate to be lifted.

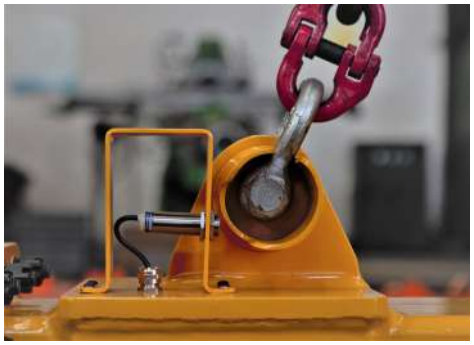
Reinforced lamp block
for clear indication of magnet status



Flexible suspension
of the magnet modules for perfect adaptation to the steel plate

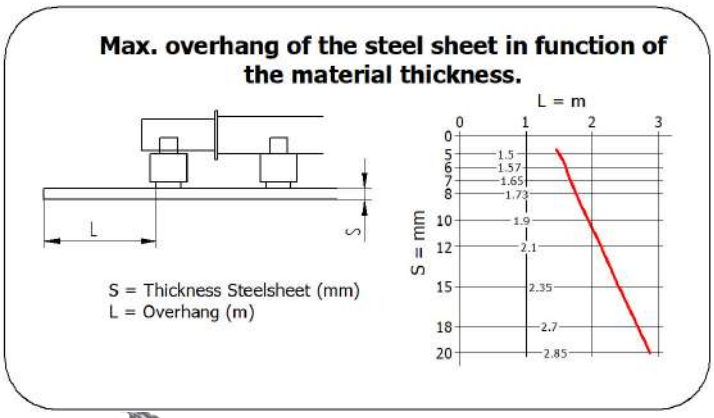
THE ECONOMIC SOLUTION FOR LIFTING STEEL PLATES ≥ 5 MM

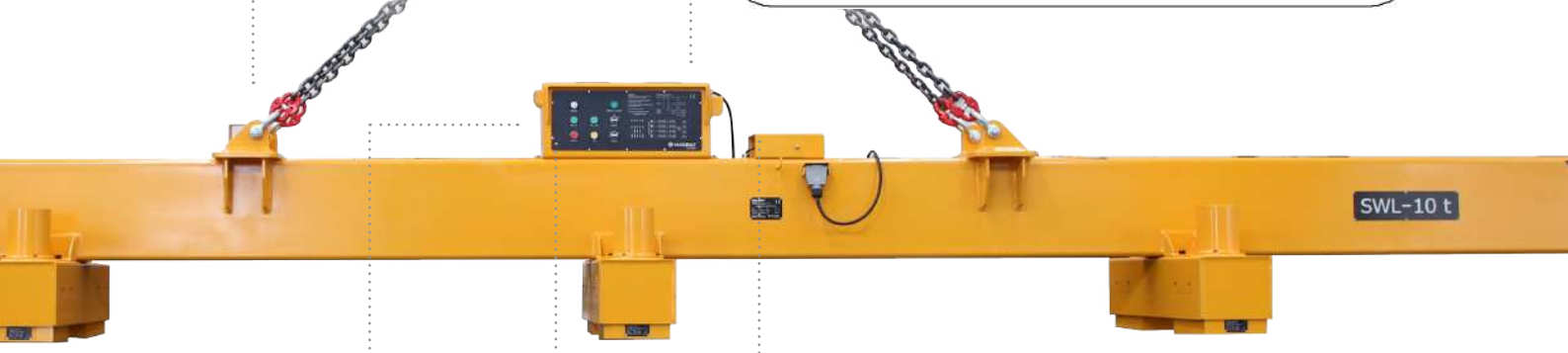
SAFETY FACTOR 3



Landing detection system
to prevent accidental demagnetization during lifting

Maximum load instructions





SPC-system
with real-time error detection and indication

Radio remote control

Clear control panel

SERIE:

HM1

Fixed electro-permanent magnetic beam

Thickness ≥5mm

Multiple magnet modules

Selective control of magnet groups

LIFTING OF STEEL PLATES

PRODUCT	WEIGHT (KG)	LENGTH (MM)		WIDTH (MM)		T (MM)	CAPACITY (KG)	EPM
		MIN.	MAX.	MIN.	MAX.	MIN.		QTY
HM1-03-025	450	500	3000	500	2000	3	2500	4
HM1-04-040	456	250	4000	500	3500	5	4000	4
HM1-06-030	900	500	6000	500	2500	5	3000	6
HM1-06-060	1000	500	6000	500	2500	5	6000	6
HM1-06-090	1100	500	6000	500	2500	5	9000	6
HM1-06-240	1600	500	6000	580	3500	8	24000	6
HM1-09-050	1200	2350	9000	500	2500	5	5000	8
HM1-09-080	1300	2350	9000	500	2500	5	8000	8
HM1-09-100	1400	2350	9000	500	2500	5	10000	8
HM1-09-120	1500	2350	9000	500	2500	5	12000	8
HM1-09-160	1600	2350	9000	500	2500	5	16000	8
HM1-12-050	1600	5000	12000	500	3200	5	5000	10
HM1-12-080	1800	5000	12000	500	3200	5	8000	10
HM1-12-100	2000	5000	12000	500	3200	5	10000	10
HM1-12-150	2200	5000	12000	500	3200	5	15000	10
HM1-12-200	2400	5000	12000	500	3200	5	20000	10
HM1-12-240	2800	5000	12000	500	3200	5	24000	12
HM1-16-100	2600	8300	16000	500	3200	5	10000	12
HM1-16-140	2700	8300	16000	500	3200	5	14000	12
HM1-16-200	2900	8300	16000	500	3200	5	20000	12
HM1-16-240	3000	8300	16000	600	3200	5	24000	12

LIFTING OF STEEL STRIPS

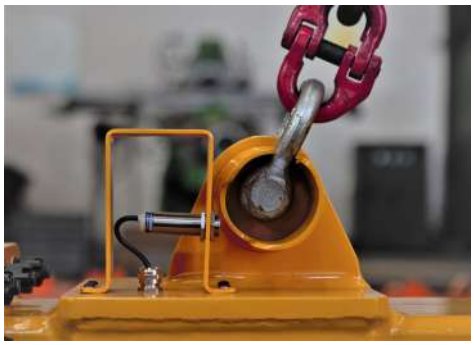
PRODUCT	WEIGHT (KG)	LENGTH (MM)		WIDTH (MM)		T (MM)	CAPACITY (KG)	EPM
		MIN.	MAX.	MIN.	MAX.	MIN.		QTY
HM1-06-010/S	430	400	6000	60	400	4	1000	4
HM1-06-015/S	450	400	6000	60	1000	4	1500	4
HM1-12-030/S	1200	2000	12000	120	1000	6	3000	6
HM1-16-025/S	950	2000	16000	200	800	6	2500	8
HM1-16-045/S	1600	2000	16000	120	1000	6	4500	8

Other dimensions on request

SERIE:

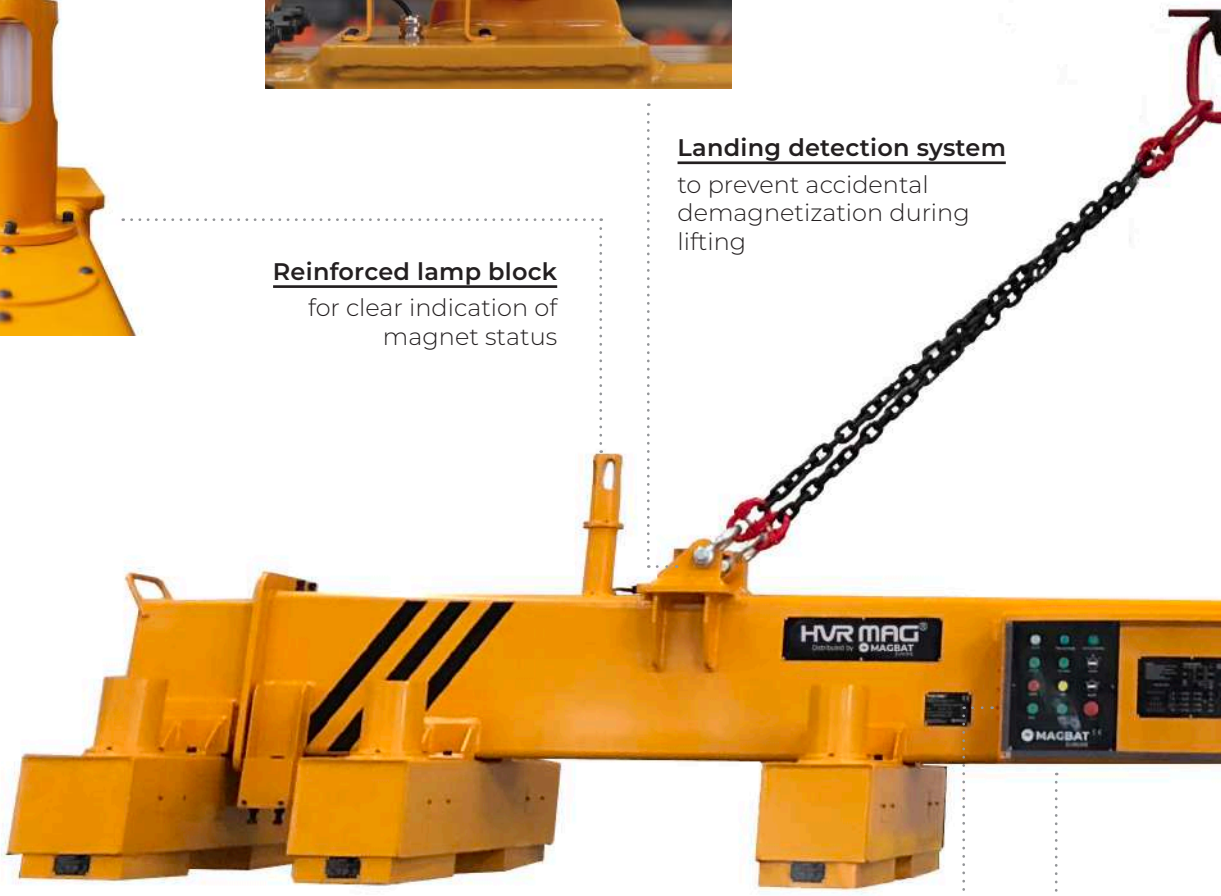
HM2

Telescopic electro permanent magnetic beam



Landing detection system
to prevent accidental demagnetization during lifting

Reinforced lamp block
for clear indication of magnet status



Flexible suspension
of the magnet modules for perfect adaptation to the steel plate

SPC-system
with real-time error detection and indication

LIFTING OF STEEL PLATES ≥ 5 MM IN VARIOUS LENGHTS

SAFETY FACTOR 3

Radio remote control

Telescopic system
driven by an electric motor and screw spindle

Stable guidance of the telescopic arms via **adjustable steel rollers**

Clear control panel

SERIE:

HM2

Telescopic electro-permanent magnetic beam

Handling large steel plates can be challenging. Traditional chains and hooks often cause the load to bend and deform, leading to unstable and hazardous transport. The HM2 series electro-permanent magnet beams solve this problem by lifting the load evenly from the top, preventing any deformation or damage.

PICK-UP CYCLE

The lifting force can be precisely adjusted based on the thickness of the steel plate, ensuring that only a single plate is lifted at a time.

Percentage of total force at PICK-UP:
POSITION I = 17%
POSITION II = 25%
POSITION III = 35%
POSITION IV = 55%

TELESCOPIC SYSTEM

Powered by a combination of an electric motor and screw spindle, the telescopic system allows the arms to extend and retract quickly and in perfect sync. This feature ensures that the magnetic beam can be easily adjusted to the length of the steel plate, minimizing deflection and deformation.

SELECTION MAGNETIC MODULES

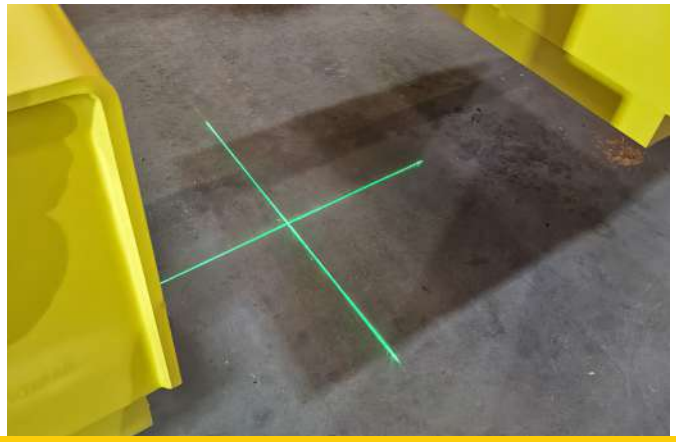
The HM2 traverses offer exceptional flexibility, even in confined spaces. A 4-position switch allows you to select the appropriate number of magnet modules based on the steel plate's dimensions. Additionally, you can adjust the center distance between crossbeams and individually select magnet modules, providing unmatched versatility.

PARKING UNIT

The convenient parking unit for the lifting ring is included as standard for attaching the magnetic traverse.

LASER PROJECTION

For applications where efficiency and precision are crucial, we offer optional laser projection. The projected cross allows the magnet to be positioned exactly at the marked center of the steel plate.



Thickness ≥5mm

Selective control of magnet groups

Multiple magnetic modules

Handling plates with wide range of variation in length

STEEL PLATES 12M

PRODUCT	WEIGHT (KG)	LENGTH (MM)		WIDTH (MM)		T (MM)	CAPACITY (KG)	EPM
		MIN.	MAX.	MIN.	MAX.	MIN.		QTY
HM2-12-050	2350	3000	12000	500	3000	5	5000	8
HM2-12-080	2500	3000	12000	500	3000	5	8000	8
HM2-12-100	2650	3000	12000	500	3000	5	10000	8
HM2-12-120	2800	3000	12000	500	3000	5	12000	8
HM2-12-150	2950	3000	12000	500	3000	5	15000	8
HM2-12-200	3350	3000	12000	500	3200	5	20000	8
HM2-12-240	3550	3000	12000	500	3200	5	24000	8

STEEL PLATES 16M

PRODUCT	WEIGHT (KG)	LENGTH (MM)		WIDTH (MM)		T (MM)	CAPACITY (KG)	EPM
		MIN.	MAX.	MIN.	MAX.	MIN.		QTY
HM2-16-090	3300	3000	16000	500	3500	5	9000	12
HM2-16-120	3400	3000	16000	500	3500	5	12000	12
HM2-16-160	3600	3000	16000	500	3500	5	16000	12
HM2-16-200	3800	3000	16000	500	3500	5	20000	12
HM2-16-240	4000	3000	16000	500	3500	5	24000	12
HM2-16-350	10000	3000	16000	500	4200	15	35000	12
HM2-16-500	11000	3000	16000	500	4200	15	50000	12

Other dimensions on request

ADVANTAGES OF ELECTRIC-POWERED SYSTEMS OVER HYDRAULIC SYSTEMS

- Electric-powered telescopic systems operate faster than hydraulic systems.
- Electric motors are maintenance-free, whereas hydraulic pumps require regular upkeep.
- No risk of oil leaks, ensuring a clean and efficient system.
- Superior guidance with robust steel rollers instead of nylon blocks.
- Greater reliability with no risk of hydraulic cylinders bending under sudden impact.

SERIE:

HM3

Fix electro permanent magnetic beam

The HM3 electro-permanent magnetic beam offers the perfect solution for lifting thin steel sheets starting from 3 mm thickness. Its 4-position switch allows you to adjust the PICK-UP force based on the sheet's thickness, ensuring that only a single steel sheet is lifted at a time.
The number of magnetic modules is adjusted depending on the sheet's length. Thanks to the even distribution of the magnetic modules, the steel sheet remains fully supported, eliminating sagging and ensuring safe handling and transport.

MODELS

PRODUCT	WEIGHT (KG)	LENGTH (MM)		WIDTH (MM)		T (MM)	CAPACITY (KG)	EPM
		MIN.	MAX.	MIN.	MAX.	MIN.		QTY
HM3-03-010	550	500	3000	1000	2500	3	1000	6
HM3-06-006	400	1000	6000	60	300	3	500	4
HM3-06-020	700	1000	6000	1000	2500	3	2000	12
HM3-09-030	1000	1000	9000	1000	2500	3	3000	18
HM3-12-040	1300	1000	12000	1000	2500	3	4000	24

Other dimensions on request

LIFTING OF THIN STEEL PLATES ≥ 3MM

SAFETY FACTOR 3

- Thickness range from 3 to 18 mm
- For single steel plate
- Without picking up the next/second sheet

SERIE:

HM4

Fixed electro-permanent magnetic beam

The HM4 electro-permanent magnet beam offers the perfect solution for space constraints, making it ideal for vertical storage of steel sheets.

These highly powerful magnetic modules feature a safety factor of 3:1, specifically calculated for shear force.

Steel plates can be effortlessly lifted in or out of storage racks from a distance, ensuring complete safety for the operator.

As the crane moves downward, the integrated tilting system ensures that the steel strip lands horizontally, whether on the ground or on the table of a cutting machine.

REMOTE CONTROL

The TELETEC remote control allows the operator to keep their hands free while managing the overhead crane.

INTEGRATION

All functions can be seamlessly integrated into your current overhead crane remote control system.

Thickness ≥5mm

For single steel plate

Without picking up the next/second sheet

LIFTING AND TILTING OF VERTICAL STEEL PLATES AND -STRIPS

SAFETY FACTOR 3

MODELS

PRODUCT	WEIGHT (KG)	LENGTH (MM)		WIDTH (MM)		T (MM)	CAPACITY (KG)	EPM
		MIN.	MAX.	MIN.	MAX.	MIN.		QTY
HM4-06-040	900	2000	6000	1200	3200	5	4000	4
HM4-06-080	1300	1700	6000	800	2500	5	8000	4
HM4-12-070	2200	500	12000	1200	3200	5	7000	6
HM4-12-120	2400	500	12000	1200	3200	5	12000	6
HM4-13,5-090	1800	500	13500	165	3000	5	9000	6

Other dimensions on request

SERIE:

HM5

Fixed electro-permanent magnetic beam

HM5 electro-permanent magnetic beams are designed to efficiently load the cutting machine and unload the cut parts along with the frame in a single, seamless movement.

Customizable to match the minimum size of the cut pieces, these beams are tailored to meet your specific requirements.

FAST RETURN ON INVESTMENT

The HM5 electro-permanent magnetic beam minimizes machine downtime, significantly boosting production capacity, allowing you to accept more orders and achieve a faster return on investment.

ERGONOMIC—INCREASED SAFETY

With HM5, operators no longer need to climb on and off the machine for unloading, improving working conditions and enhancing overall safety.

FLEXIBILITY

The HM5 allows operators to choose specific zones for clearing, providing flexibility based on the area that needs to be addressed.

ROI CALCULATION EXAMPLE

- Daily cutting capacity: 10 steel plates
- Cost per hour: €50
- Time to load and unload without HM5: 20 minutes
- Downtime per day: 200 minutes = 3.3 hours
- Time to load and unload with HM5: 3 minutes
- Downtime per day: 30 minutes = 0.5 hours
- Daily profit: €140
- Additional production capacity per day: 2.8 hours
- Annual profit: €140 x 220 days = €30,800
- Additional production capacity per year: 616 hours

LOADING AND UNLOADING CUTTING MACHINES IN ONE MOVE

SAFETY FACTOR 3

Thickness range of 1.5~100mm

Without picking up the next/second sheet

Use for laser, plasma, flame cutting system

OXY & PLASMA CUTTING

PRODUCT	LENGTH	WIDTH	THICKNESS (MM)		MIN.CUTTED PIECES (MM)	CAPACITY (KG)
	MAX.	MAX.	MIN.	MAX.		
HM5-03-015/P	3000	1500	5	40	250x250	1500
HM5-06-040/P	6000	2000	5	40	250x250	4000
HM5-06-060/P	6000	2500	5	40	250x250	6000
HM5-09-085/P	9000	3000	5	40	250x250	8500
HM5-12-115/P	12000	3000	5	40	250x250	11500

Other dimensions on request

LASERCUTTING

PRODUCT	LENGTH	WIDTH	THICKNESS (MM)		MIN.CUTTED PIECES (MM)	CAPACITY (KG)
	MAX.	MAX.	MIN.	MAX.		
HM5-03-015/L	3000	1500	1,5	30	80x80	1000
HM5-06-020/L	6000	1500	1,5	30	80x80	2000
HM5-06-030/L	6000	2000	1,5	30	80x80	3000
HM5-09-040/L	9000	2000	1,5	30	80x80	4000

Other dimensions on request

OXY CUTTING

PRODUCT	LENGTH	WIDTH	THICKNESS (MM)		MIN.CUTTED PIECES (MM)	CAPACITY (KG)
	MAX.	MAX.	MIN.	MAX.		
HM5-03-040/O	3000	2000	5	80	300x300	4000
HM5-06-100/O	6000	2500	5	80	300x300	10000

Other dimensions on request

SERIE:

HM6

Fixed electro-permanent magnetic beam

The HM6 magnetic beams feature electro-permanent magnetic modules that create an ultra-deep magnetic field, ideal for handling stacks of steel sheets with ease.

SIMPLIFIED SHEET SEPARATION

Our cutting-edge technology enables precise sheet-by-sheet release with just a push of a button. Each press ensures the controlled release of exactly one steel plate.

NO BACK-UP BATTERIES NEEDED

The HM6's electro-permanent magnet technology, powered by permanent magnets, eliminates the need for any back-up batteries.

ENERGY EFFICIENT

The HM6 only consumes electricity to switch the magnet's polarity. No power is needed during operation, making the HM5 electro-permanent magnetic beam up to 95% more energy-efficient than conventional electromagnets.

MODELS

PRODUCT	LENGTH	WIDTH	THICKNESS (MM)		CAPACITY (KG)
	MAX.	MAX.	MIN.	MAX.	
HM6-03-025	3000	1500	5	60	2500
HM6-06-060	6000	2000	5	60	6000
HM6-09-110	9000	2500	5	60	11000
HM6-12-170	12000	3000	5	60	17000

Other dimensions on request

LIFTING OF MULTIPLE STEEL SHEETS

SAFETY FACTOR 3

6-8 sheets (6mm)	4 sheets (8-10mm)	3 sheets (12-16mm)	2 sheets (20-25mm)

TIP:
The HM6 electro-permanent magnetic beam is the ideal solution for efficient and secure loading and unloading of trucks carrying stacks of steel plates.

SERIE:

HS

Electro-permanent magnetic beam

Lifting profiles is both time-consuming and risky. Profiles are frequently stacked, complicating their handling.
Standard profile clamps often cause long profiles to bend, increasing transport risks and potential damage to the profiles.
The HS-electro-permanent magnetic beams securely clamp profiles from above, allowing for safe lifting and transport without deformation or damage.

PICK-UP CYCLE

The lifting force can be adjusted according to the profile's thickness, ensuring only one profile is picked up at a time.

Percentage of total force at PICK-UP:
POSITION I = 17%
POSITION II = 25%
POSITION III = 35%
POSITION IV = 55%

MAGNET MODULE SELECTION

The appropriate number of magnet modules can be selected using a 4-position switch, tailored to the dimensions of the profile to be lifted.

Radio remote control

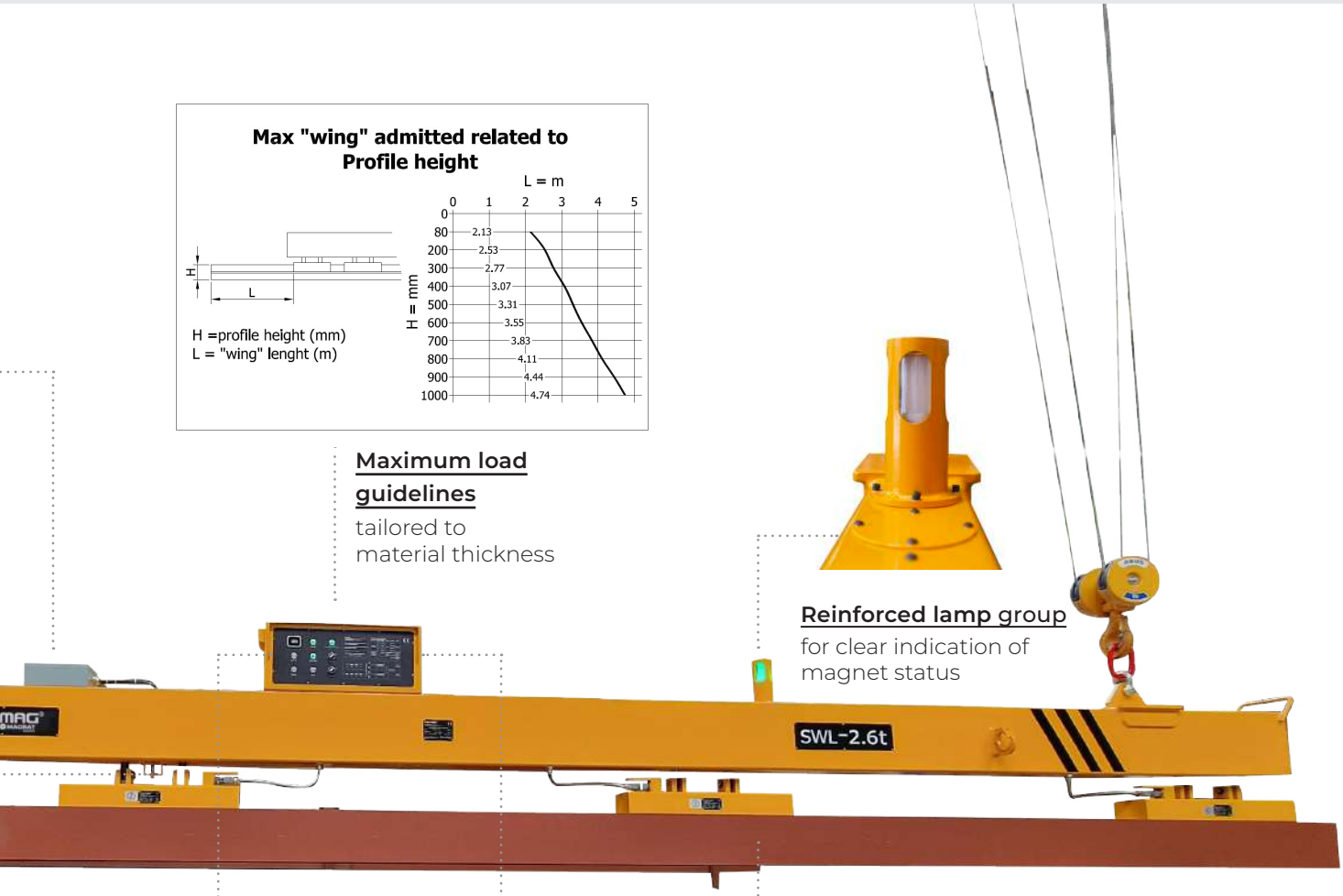
Optional safety hooks
for secure lifting of profile bundles

Landing detection system
to prevent accidental demagnetization during lifting

LIFTING OF HEA-HEB-IPE-IPN PROFILES

SAFETY FACTOR 3

Maximum load guidelines
tailored to material thickness



Reinforced lamp group
for clear indication of magnet status

SPC system
with real-time error detection and indication

Control panel
featuring digital LED-lit push buttons for enhanced usability

Slim magnetic poles,
designed to fit profiles as narrow as 80mm

SERIE:

HS

Electro-permanent magnetic beam

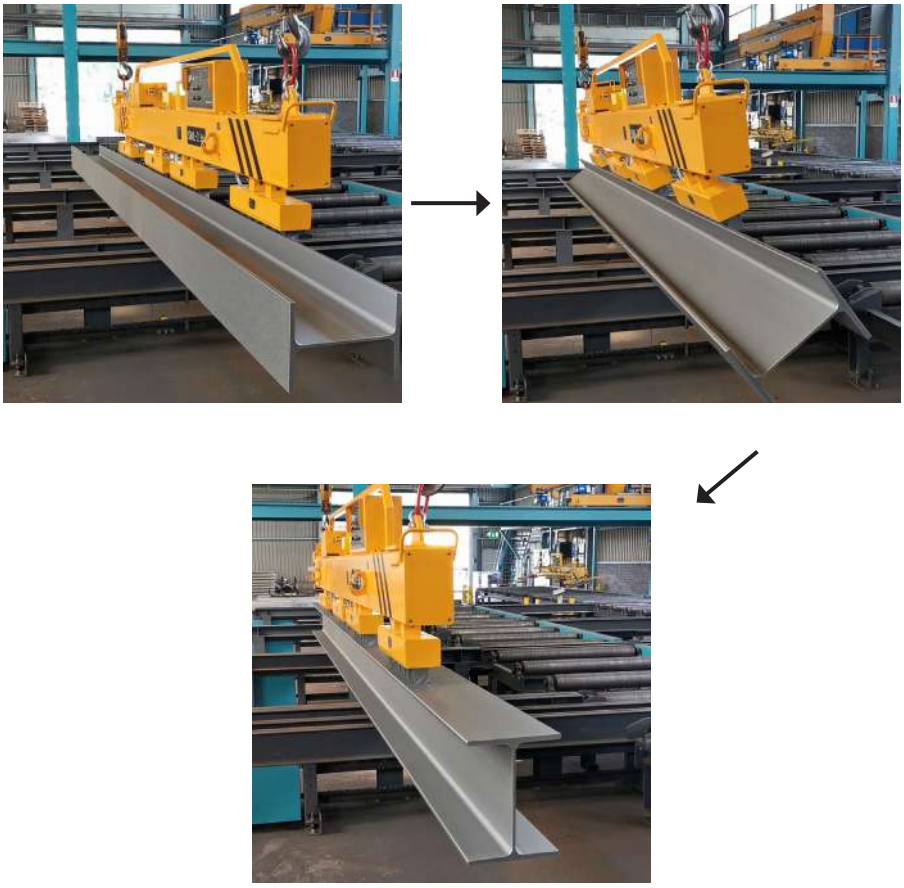
H and I profiles

L profiles

Single rectangular tubes

Liftng and tilting

EXAMPLE OF TILTING PROFILES



MODELS

PRODUCT	WEIGHT (KG)	LENGTH (MM)		WIDTH (MM)		CAPACITY (KG)	EPM
		MIN.	MAX.	MIN.	MAX.		QTY
HS-06-013	500	3000	6000	80	600	1300	2
HS-12-026	900	3000	12000	80	600	2600	4
HS-15-026	1000	1000	15000	80	600	2000	4
HS-18-039	1400	3000	18000	80	600	3900	6
HS-24-052	2100	3000	24000	80	600	5200	6

Other dimensions on request

SERIE:

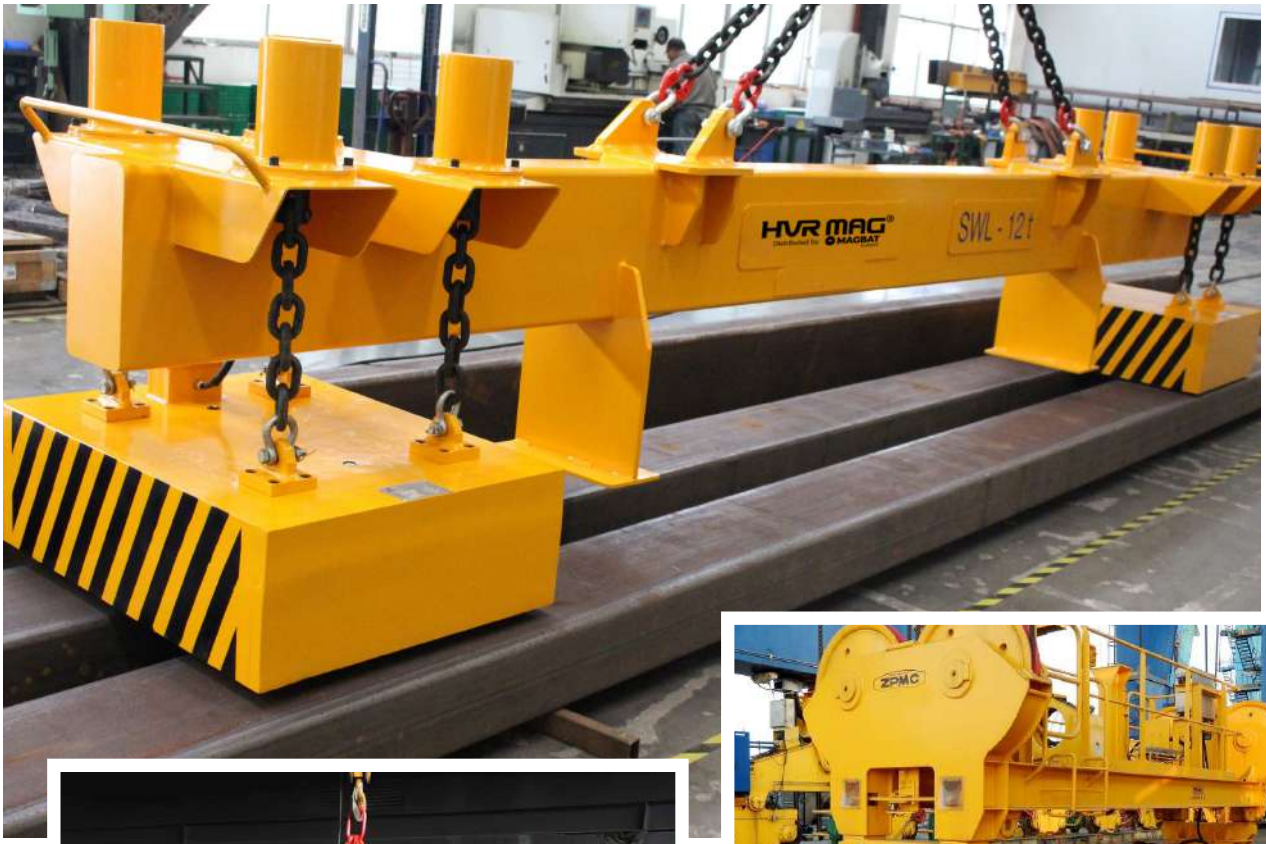
HB

Electro-permanent magnetic modules

LIFTING OF SLABS AND BILLETS

SAFETY FACTOR 3 AT AIRGAP 4 MM

HB electro-permanent magnet modules are engineered to handle large air gaps effectively, making them the ideal solution for lifting slabs and billets.



Models and sizes on request

Thick steel billets and slabs

Flexible design of different working conditions

SERIE:
HC

Electro-permanent magnetic modules

LIFTING OF COILS

SAFETY FACTOR 3

Our comprehensive range of electro-permanent magnet modules is specifically developed for the quick and secure handling of coils, whether with a horizontal (HC/H) or vertical eye (HC/V).

Unlike conventional coil grippers, the material of the coils remains undamaged and uncompressed. Additionally, by allowing coils to be stored side by side, you can save up to 30% in storage space.
The electronic control unit comes with an interface, enabling seamless integration into automated processes.

Horizontal lifting

Vertical lifting

SERIE:

HT

Electro-permanent magnetic modules

LIFTING OF TUBES

SAFETY FACTOR 3

The HT series is specifically designed for the quick and safe handling of individual pipes, rows, or bundles, ensuring no damage to the coating or paint layer.

A space- and cost-efficient solution, eliminating the need for wooden spacers.
Equipped with electro-permanent magnet modules and an integrated electronic control unit.

STANDARD REMOTE CONTROL

Operate via the built-in digital push buttons or the standard-supplied radio remote control.

Models and sizes on request

SERIE:
HR

Electro-permanent magnetic modules

LIFTING OF ROUNDS

SAFETY FACTOR 3

HR magnetic modules are exclusively designed for lifting cylindrical workpieces. The integrated V-shape conforms to the workpiece, ensuring easy centering and secure lifting.

Models and sizes on request

SERIE:

HBEP

Electro-permanent lifting magnets with lithium battery

A full range of electro-permanent lifting magnets featuring an integrated lithium battery, designed for lifting both flat and cylindrical workpieces.

EXTENDED AUTONOMY

With the built-in rechargeable lithium battery, the lifting magnet can complete over 1000 cycles before requiring a recharge.

EFFORTLESS OPERATION

The control panel is easy to use, featuring illuminated digital push buttons for smooth operation.

AUTO-FUNCTION

Activate the auto-function to manage the MAG and DEMAG cycle through the proximity switch positioned under the lifting eye. Perfect for rapid unloading, such as in cutting machine applications.

- Safety factor of 3:1
- 6 models ranging from 500 kg to 5000 kg - High-autonomy lithium battery technology
- Option for manual or automatic operation
- 4 levels of pick-up force, allowing you to lift a single steel sheet from a stack
- Proximity switch to prevent accidental demagnetization during lifting

TIP:
The AUTO function allows you to link multiple magnets on a lifting beam. All magnets are activated at the same time through their proximity switch during lifting, making it easier to handle long, heavy workpieces.

FOR FLAT AND ROUND PARTS

SAFETY FACTOR 3

MAXIMUM SAFETY

The magnet activates with a short electrical pulse, while permanent magnets generate the holding force. The 3:1 safety factor ensures reliable performance, even when dealing with rough or dirty workpieces.

ENERGY EFFICIENT

Consumes 95% less energy than conventional electromagnets. A brief current pulse is all that's needed to activate or deactivate the magnet. The robust rechargeable battery provides more than 1000 cycles before requiring recharging.

ERGONOMIC DESIGN

No power cable needed.

Easy to operate: Manually via the control panel or switch automatically between MAG and DEMAG using the proximity switch. The switch prevents mid-air demagnetization and starts the MAG and DEMAG cycle when AUTO mode is selected.

- Small steel parts
- No external power supply required
- Rechargeable battery
- 1000 cycles of lifting
- Lifting capacity of 500kg,1000kg, 1500kg, 2000kg, 3000kg, 5000 kg

MODELS

PRODUCT	WEIGHT (KG)	BATTERY (VDC)	MIN. THICKNESS (MM)	SWL FLAT (KG)	SWL ROUND (KG)
HBEP-005	51	60	4	500	250
HBEP-010	73	60	6	1000	500
HBEP-015	88	60	6	1500	750
HBEP-020	118	60	8	2000	1000
HBEP-030	185	60	10	3000	1500
HBEP-050	502	72	20	5000	2500

SERIE:

HBEPP

Fixed electro-permanent magnetic beam with battery supply

Handling steel sheets and strips can be challenging. When using traditional chains, slings, or hooks, loads often bend or deform, leading to unstable and unsafe transport. However, with HBEPP electro-permanent magnet beams, the load is lifted evenly from the top, eliminating the risk of deformation or damage.

PICK-UP CYCLE

The PICK-UP force can be adjusted according to the thickness of the steel plate, ensuring that only one plate is lifted at a time.

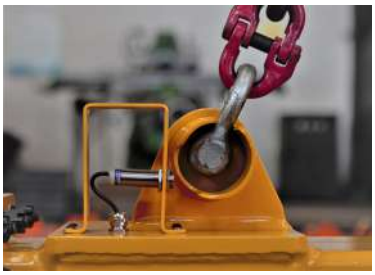
Percentage of total force at PICK-UP:
POSITION I = 17%
POSITION II = 25%
POSITION III = 35%
POSITION IV = 55%

SELECTION OF MAGNETIC MODULES

Based on the size of the material to be lifted, the appropriate number of magnetic modules can be easily selected using a 4-position switch.

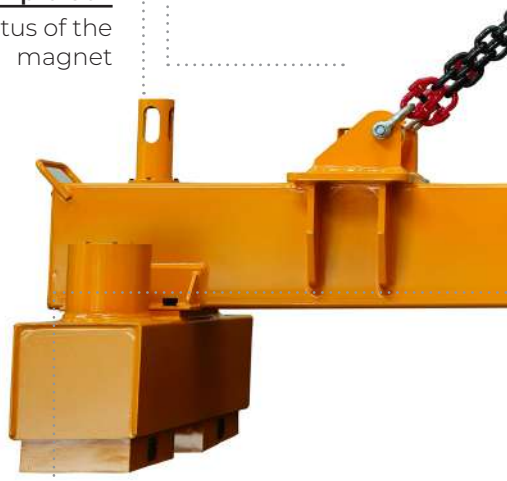
INNOVATIVE BATTERY TECHNOLOGY

With only a brief pulse of electric current needed for magnetisation and demagnetisation, a fully charged battery can complete over 300 cycles. The battery status is continuously monitored and clearly displayed for convenience.



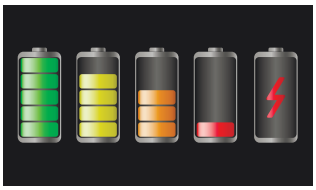
Landing detection system
with inductive proximity switch against accidental de-magnetisation in the air

Reinforced lamp block
to indicate the status of the magnet



SPC system
with indication of any System errors

Continuous **battery monitoring**



LIFTING OF STEEL SHEETS

SAFETY FACTOR 3

Rechargeable battery group
with integrated charger
230V/50Hz

Radio remote control

Support
for chain and lifting ring

Clear control panel
for PICK-UP, MAG, SAFE, DEMAG, selection and power control

Electro permanent magnetic modules,
elastically suspended for perfect adaptation to the product to be lifted.

SERIE:

HBEPP

Fixed electro-permanent magnetic beam with battery supply

MODELS

PRODUCT	WEIGHT (KG)	BATTERY (VDC)	LENGTH (MM)		WIDTH (MM)		T (MM)	CAPACITY (KG)	EPM
			MIN.	MAX.	MIN.	MAX.	MIN.		QTY
HBEPP-03-010	500	72	500	3000	500	1500	5	1000	4
HBEPP-06-030	950	72	500	6000	1200	2500	5	3000	6
HBEPP-06-060	950	72	500	6000	500	2500	5	6000	6
HBEPP-06-090	950	72	500	6000	500	2500	5	9000	6
HBEPP-06-120	1950	72	500	6000	500	2500	5	12000	6
HBEPP-09-080	1250	72	2500	9000	500	3000	5	8000	8
HBEPP-09-120	1750	72	2500	9000	500	3000	5	12000	8
HBEPP-12-050	1695	72	5000	12000	500	3000	5	5000	10
HBEPP-12-100	2010	72	5000	12000	500	3000	5	10000	10
HBEPP-12-180	2850	120	1700	12000	1000	3200	5	18000	16
HBEPP-16-200	4650	120	2000	16000	1500	3500	5	20000	16
HBEPP-16-250	4860	120	2000	16000	1500	3500	5	25000	16

Other dimensions on request

Fully autonomous

Ongoing battery monitoring

Built-in rechargeable battery system

Thickness ≥5mm

OPTION
Fork lift adaptation for handling steel plates stored outdoors. Thanks to the integrated rechargeable battery group, an addittonal power supply is not necessary.

SERIE:

HBEPP/S

Fixed electro-permanent magnetic beam with battery supply

Lifting steel strips can be challenging due to their length and flexibility. Often stored in racks, they can be hard for operators to access. The battery-powered HBEPP series of electro-permanent magnet beams makes lifting steel strips effortless.

SUPER SLIM DESIGN

Easily lowers into racks where steel strips are stored, without any difficulty.

LANDING DETECTION SYSTEM

Features an in-tube landing detection system that ensures the steel strip can be safely released.

- Small steel parts
- No external power supply required
- Rechargeable battery
- 500 cycles of lift
- For flat and cilindrical parts

LIFTING OF STEEL STRIPS

SAFETY FACTOR 3

TIP:
The magnetic poles can be designed with an integrated V-shape, allowing the safe lifting of cylindrical workpieces.

MODELS

PRODUCT	WEIGHT (KG)	BATTERY (VDC)	LENGTH (MM)		WIDTH (MM)		T (MM)	CAPACITY (KG)	EPM
			MIN.	MAX.	MIN.	MAX.	MIN.		QTY
HBEPP-06-006/S	435	72	400	6000	60	400	5	600	4
HBEPP-06-010/S	950	72	400	6000	60	400	5	1000	4
HBEPP-06-015/S	470	72	400	6000	150	1000	5	1500	4
HBEPP-12-030/S	1300	72	2300	12000	150	1000	6	3000	6
HBEPP-15-025/S	1090	72	2000	15000	200	800	5	2500	8
HBEPP-16-045/S	1750	72	2300	16000	150	1000	6	3000	8

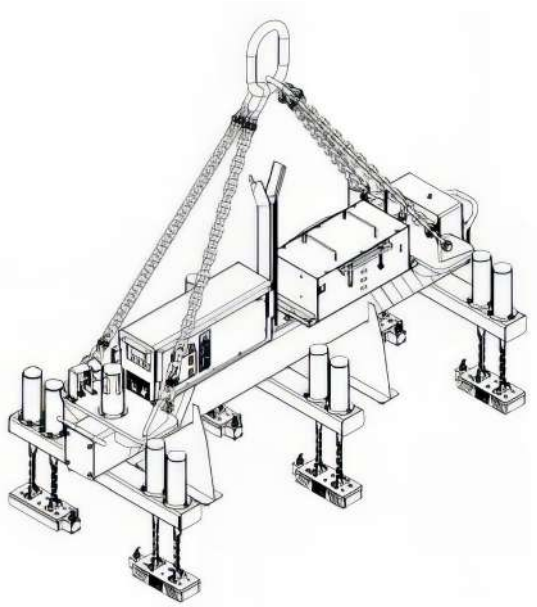
Other dimensions on request

SERIE:

HBEPP/L

Fixed electro-permanent magnetic beam with battery supply

Lifting thin steel plates can be both time-consuming and hazardous.
Due to their size and flexibility, steel plates tend to sag, heightening the risk of accidents. This series of electro-permanent magnet beams provides even clamping, allowing the plate to be lifted and moved with minimal deformation, quickly and safely.



MODELS

PRODUCT	WEIGHT (KG)	BATTERY (VDC)	LENGTH (MM)		WIDTH (MM)		T (MM)	CAPACITY (KG)	EPM
			MIN.	MAX.	MIN.	MAX.	MIN.		QTY
HBEPP-06-005/L	500	72	400	6000	60	300	3	500	4
HBEPP-03-008/L	465	72	500	3000	900	1500	2	750	6
HBEPP-06-030/L	1440	72	2000	6000	1200	2500	3	3000	8

Other dimensions on request

LIFTING OF THIN STEEL SHEETS

SAFETY FACTOR 3

- Thickness ≥3mm
- Selective control of magnet groups
- Multiple magnet modules

SERIE:

HBEPP/T

Manual telescopic electro-permanent magnetic beam with battery supply

This electro-permanent magnet traverse features a telescopic system. Both arms can be easily retracted or extended in sync using a manual lever. This design makes the magnetic beams ideal for lifting steel plates of varying lengths. When the telescopic system is retracted, the magnetic force is focused on a smaller area, enabling the lifting of heavy, shorter parts.

LANDING DETECTION SYSTEM

The system includes a cam mounted on the anchor shackle and a proximity switch, ensuring that demagnetization does not occur while the load is in the air.

SYNCHRONIZED TELESCOPIC SYSTEM

Featuring an L&R screw spindle, the telescopic system moves in and out smoothly, operated by a manual lever for ease of use.

LIFTING OF PLATES AND STEEL PARTS

SAFETY FACTOR 3

Thickness ≥5mm

MODELS

PRODUCT	WEIGHT (KG)	BATTERY (VDC)	LENGTH (MM)		WIDTH (MM)		T (MM)	CAPACITY (KG)	EPM
			MIN.	MAX.	MIN.	MAX.	MIN.		QTY
HBEPP-06-020/T	780	72	1000	6000	500	3000	5	2000	4
HBEPP-06-060/T	1030	72	1000	6000	500	3000	5	6000	4

Other dimensions on request

SERIE:

HBEPB

Battery-powered electropermanent lifting magnet for slabs

POWERFUL, SAFE, AND FULLY WIRELESS

The highest standards in safety, efficiency, and energy savings.
Our latest battery-powered electro-permanent lifting magnet is specifically designed for handling steel slabs up to 35 tons.
With its electro-permanent technology, this solution is highly energy-efficient and 100% fail-safe—the load remains securely held even in the event of a power outage.

Safety factor 3 at Airgap 4 mm

Automated operation

High Autonomy

HOW ELECTRO-PERMANENT MAGNETISM WORKS

- A short electrical pulse is required only to activate or deactivate the magnetic field.
- No continuous power supply needed to maintain the grip—extremely energy-efficient.
- Guaranteed safety – even in case of power failure, the load remains securely held.

SAFETY & COST REDUCTION

Traditional slab unloading often requires many workers inside the ship's hold. By using our magnetic lifting technology, this number is minimised, resulting in:

- Lower operational costs
- Improved workplace safety and reduced risk of accidents

Fast and safe slab unloading with our battery-powered lifting magnet, integrated with a harbour crane

LIFTING OF STEEL SLABS AND BILLETS

SAFETY FACTOR 3

Flexible slab handling without power cables—our lifting magnet integrated with a reach stacker.

TECHNICAL SPECIFICATIONS

FEATURE	SPECIFICATION
Lifting capacity	Up to 35 tons
Power supply	Battery-powered
Battery performance	> 300 lifting cycles per charge (MAG + DEMAG)
Technology	Electro-permanent
Safety	Load remains secured without continuous power
Integration	Reach stackers, harbour cranes and forklifts

SERIE:

HBEPS

Electro-permanent lifting magnets with lithium battery

Full range of electro-permanent lifting magnets with integrated lithium batteries for lifting I, H, and L profiles.

HIGH AUTONOMY

Equipped with a rechargeable lithium battery, the lifting magnet can perform over 1,000 cycles before requiring a recharge.

EASY OPERATION

Features a user-friendly control panel with illuminated digital push buttons for ease of use.

AUTO-FUNCTION

The MAG and DEMAG cycle is automatically controlled by a proximity switch located below the lifting eye. This feature is perfect for quick discharges, such as in sawing machines.

- Safety factor 3:1
- Lithium battery technology with high autonomy
- Manual or automatic operation
- 4 Levels PICK-UP force for lifting 1 single profile from a stack.
- Proximity switch against accidental demagnetization in the air.

FOR I, H and L PROFILES

SAFETY FACTOR 3

The proximity switch prevents demagnetization in the air and initiates the MAG and DEMAG cycle when AUTO mode is selected.

MAXIMUM SAFETY

A short current pulse activates the magnet, with the lifting force provided by permanent magnets. The 3x safety factor ensures reliable operation, even with rough or dirty workpieces.

ENERGY EFFICIENT

Consumes 95% less energy than traditional electromagnets. A brief current pulse is sufficient to activate or deactivate the magnet, and the robust rechargeable battery provides over 1,000 cycles before recharging is needed.

ERGONOMIC

No need for a power cable. Manual operation is done via the magnet's control panel.

NEW! Automatic switching between MAG and DEMAG through the proximity switch, which prevents demagnetization in the air and triggers the cycle when AUTO mode is engaged.

- Small steel parts
- No external power supply required
- Rechargeable battery
- 1000 cycles of lifting

TIP: The AUTO function allows multiple magnets to be combined on a lifting beam. All magnets are activated simultaneously via their proximity switch when hoisting begins, making it simple to lift long, heavy parts.

MODELS

PRODUCT	WEIGHT (KG)	BATTERY (VDC)	I, H AND L PROFILES MAX. LENGTH (MM)	CAPACITY (KG)
HBEPS-650A	140	60	3000	500

SERIE:

HBEPS

Electro-permanent lifting magnets with battery supply

Lifting profiles is a time-consuming task, often posing risks to both operators and the environment. Modern sawing lines, equipped with light curtains, further complicate operator movement within the production area. The battery-powered HBEPS electro-permanent magnet traverse offers a fast and efficient solution for loading and unloading saw lines.

PICK-UP CYCLE

The PICK-UP force can be adjusted based on the thickness of the profile, ensuring that only a single profile is lifted at a time.

Percentage of total force at PICK-UP:
POSITION I = 17%
POSITION II = 25%
POSITION III = 35%
POSITION IV = 55%

SELECTION OF MAGNETIC MODULES

Magnetic modules can be selected according to the length of the profile to be lifted, using a 4-position switch for easy customization.

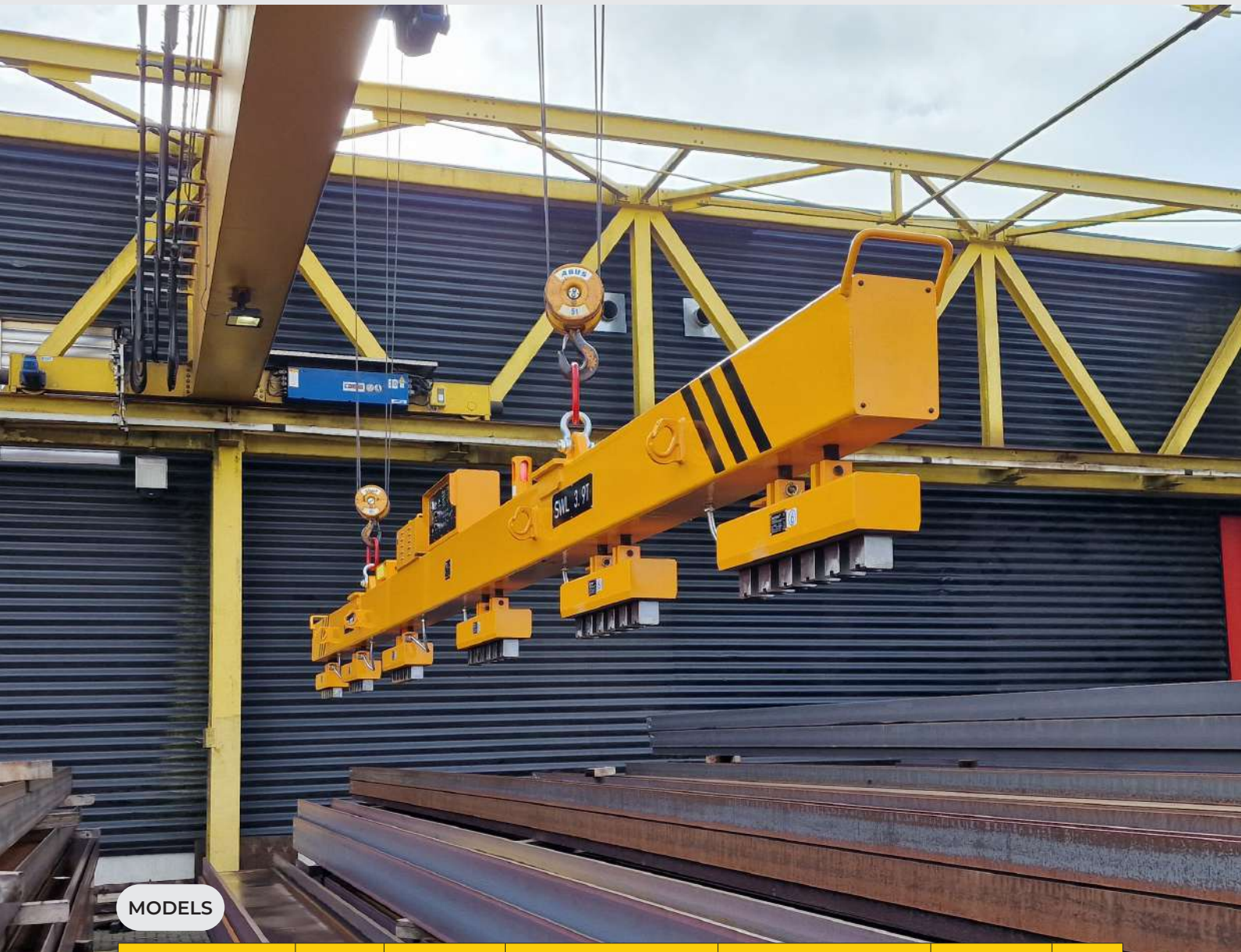
INNOVATIVE BATTERY TECHNOLOGY

With only a brief pulse of electric current needed for magnetisation and demagnetisation, a fully charged battery can handle over 300 cycles. The battery status is continuously monitored and clearly displayed for ease of use.

EXAMPLE OF TILTING PROFILES

LIFTING OF HEA-HEB-IPE-IPN PROFILES

SAFETY FACTOR 3



MODELS

PRODUCT	WEIGHT (KG)	BATTERY (VDC)	LENGTH (MM)		HEA-HEB-IPE-IPN		CAPACITY (KG)	EPM
			MIN.	MAX.	MIN.	MAX.		QTY
HBEPS-03-006	140	60	200	3000	80	600	650	1
HBEPS-06-013	595	72	1000	6000	80	600	1300	2
HBEPS-10-017	720	72	1000	10000	80	600	1700	2
HBEPS-12-026	1220	72	1000	12000	80	600	2600	4
HBEPS-15-026	1400	72	1000	15000	80	600	2600	4
HBEPS-18-039	1831	72	1000	18000	80	600	3900	6

Other dimensions on request

SERIE:

HBEPS

Electro-permanent magnetic beam with battery supply

Radio remote control

Continuous battery monitoring

Safety hooks (OPTION)
for lifting bundles of profiles

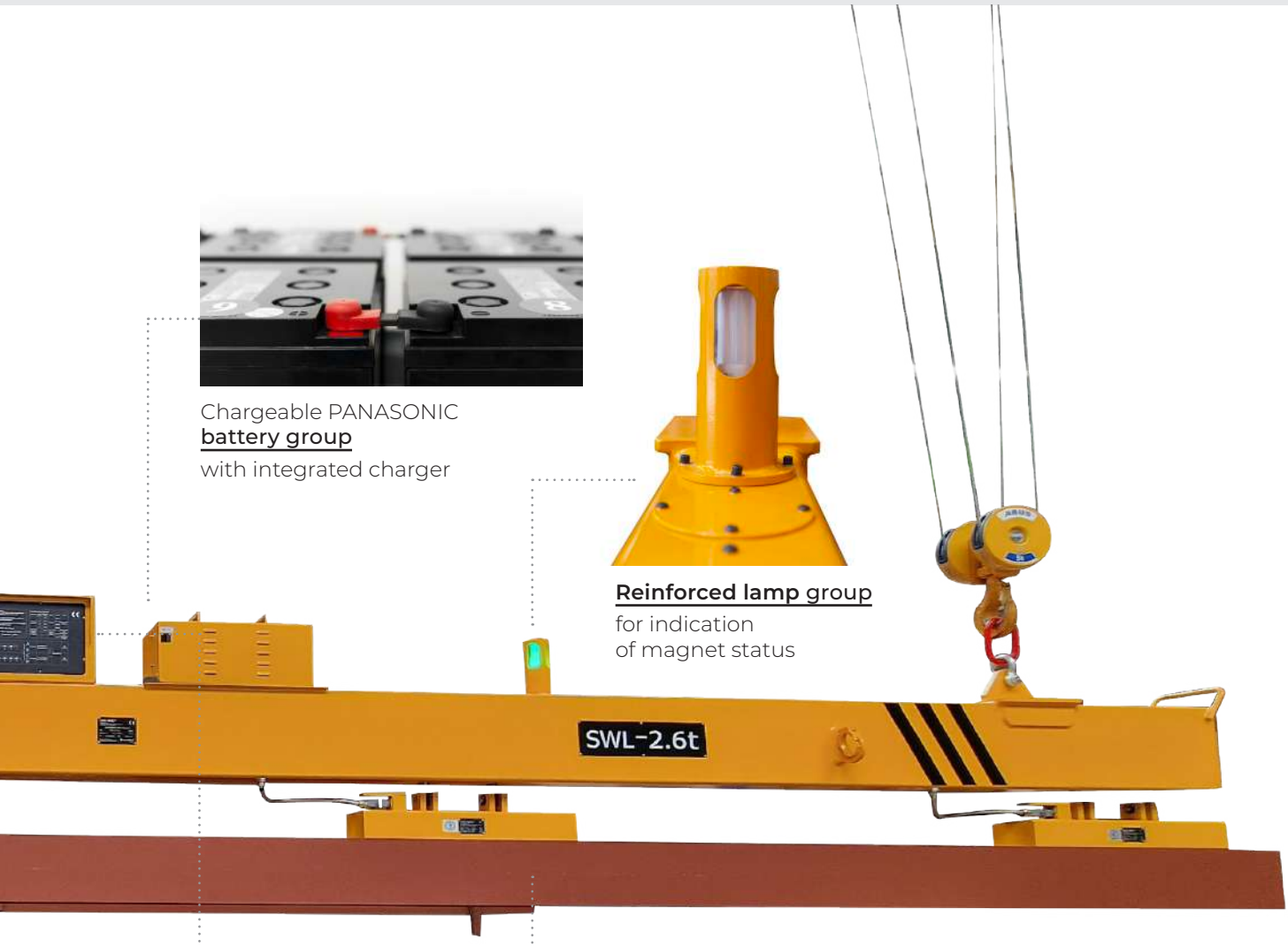
Landing detection system
prevents accidental demagnetisation in the air

SPC system
with indication of any System errors

Fully autonomous

Ongoing battery monitoring

Built-in rechargeable battery system



Chargeable PANASONIC
battery group
with integrated charger

Reinforced lamp group
for indication
of magnet status

Control panel
with digital LED
illuminated push buttons

Slim magnetic poles,
which fit within
profiles from 80mm width.

Magnets for industrial automation

Besides their use in lifting and workholding, electro-permanent magnets serve as magnetic grippers for robots. They are ideal for picking, lifting, loading, placing, and transferring ferrous parts, as well as for acting as magnetic clamps in welding lines.

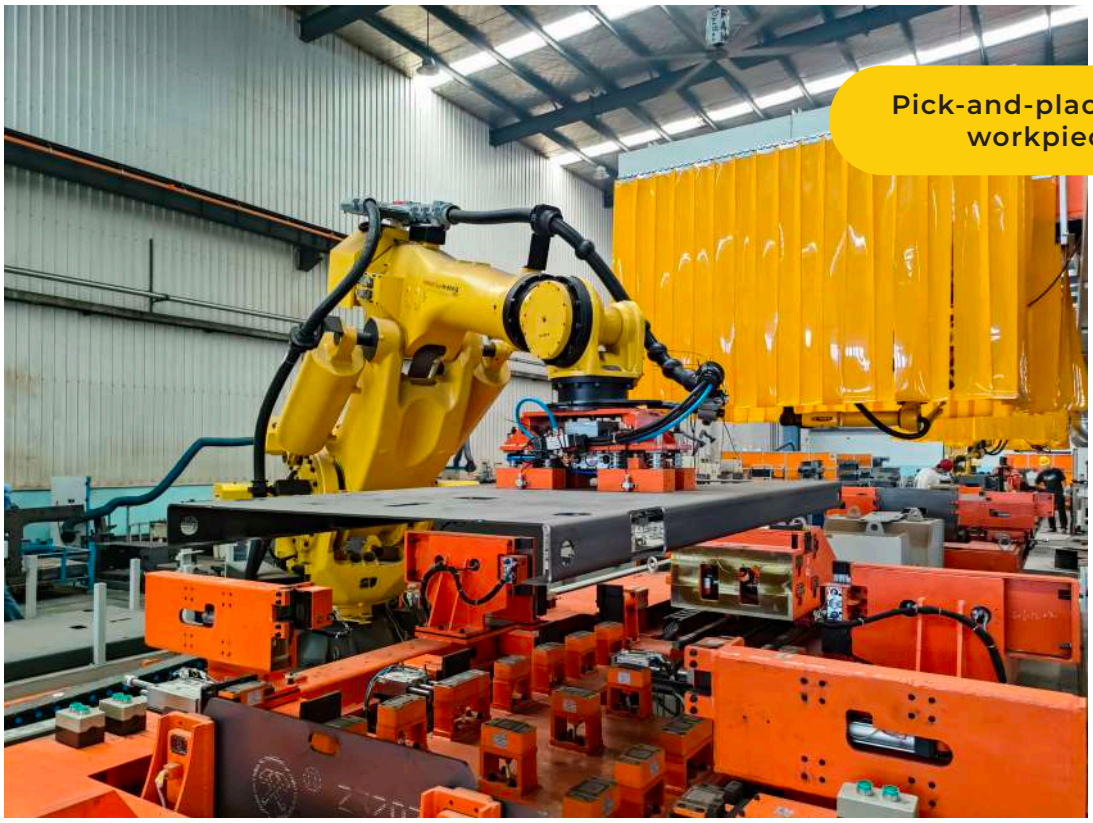
As Industry 4.0 continues to advance, electro-permanent magnets will see increasingly widespread use in smart factories, particularly in automation applications.

KEY ADVANTAGES

- Magnetic grippers can handle a wide range of material sizes and shapes, including items with holes.
- Magnets retain their magnetic state during power failures.
- Energy-efficient operation
- Minimal maintenance required
- Compact yet highly powerful
- Control units can be easily integrated into a robot's PLC system.
- Control unit can be integrated into the robot's PLC system

- Transfer lines
- Pick-and-place equipment robotics
- Palletising/depalletising systems
- Bin Picking Applications
- Robotics
- Conveyor lines
- Packaging machinery
- Welding lines

Magnetic grippers for Pick-and-Place Robots



Pick-and-place of flat workpieces

Pick-and-place operations for structural steel, such as H-beams, angle iron, square tubes, and pipes.

Magnetic grippers for Gantry Robots

Pick-and-place of flat workpieces

Pick-and-place operations for structural steel, such as H-beams, angle iron, square tubes, and pipes.

Magnetic grippers for use on a cutting line or cutting table

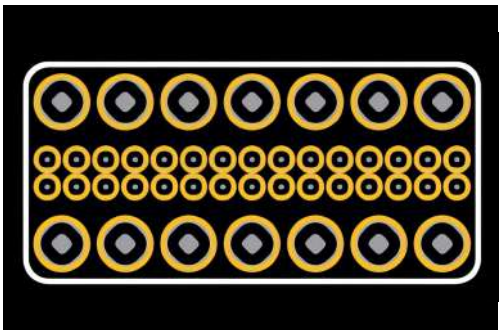
The dot matrix end-effector and adaptive flexible gripping system are designed to meet the challenges of workpieces in heavy industry, which often vary significantly in shape and type. To ensure a secure grip on various workpieces, this product features a specially designed flexible end-effector. The system is simple, versatile, user-friendly, reliable, and ready to use without complex installation, allowing it to easily adapt to different workpieces.

Additionally, it is equipped with intelligent visual control, enabling it to accurately pick up irregularly shaped workpieces while avoiding contact with surrounding items and scrap material.

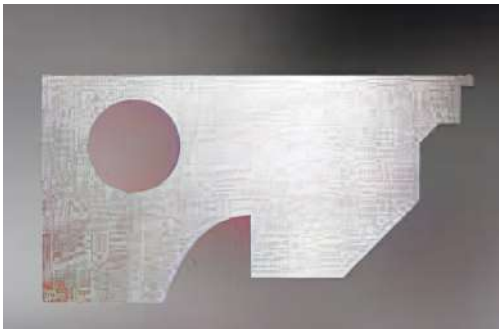
Magnetic grippers designed to handle various-shaped workpieces

Magnetic gripper

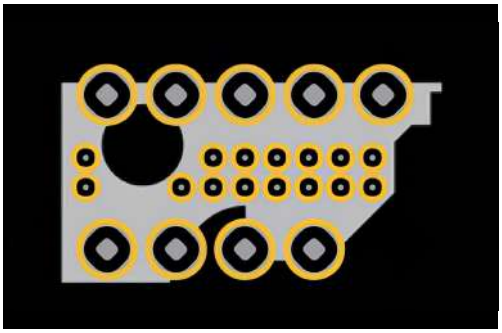
Magnetic poles arrangement

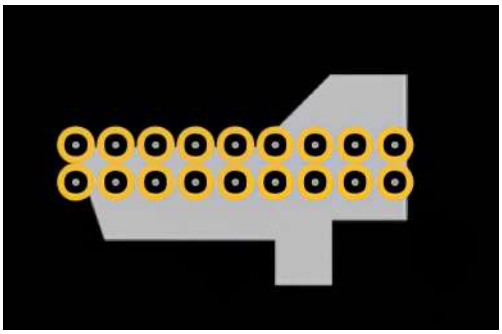


Workpiece



Activated magnetic poles





Magnetic grippers for various-shaped workpieces

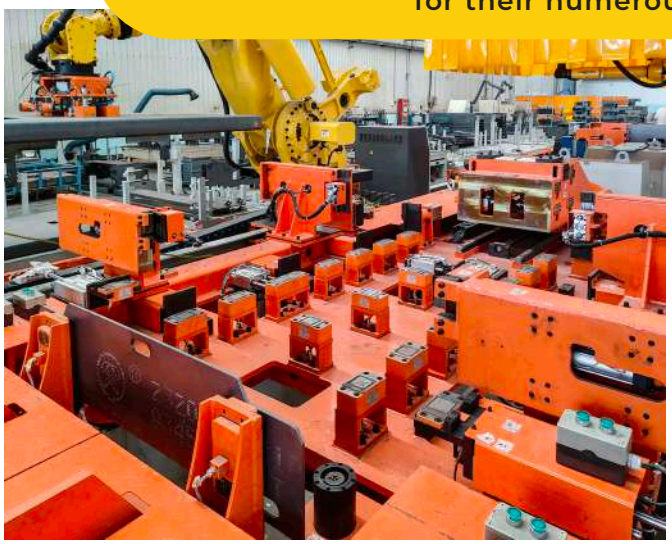
HVRMAG
惠威磁电

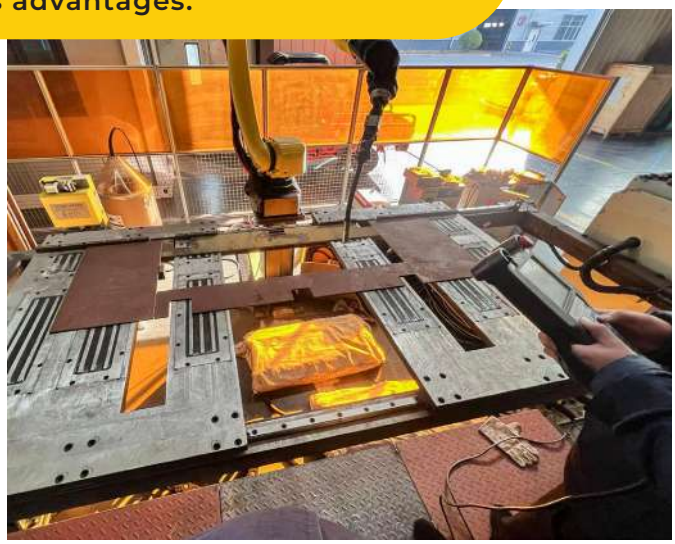
HVRMAG
惠威磁电

HVR MAG
HVR MAG

Magnetic grippers for welding applications

Electro-permanent magnetic chucks, as workholding fixtures for metal machining operations like turning, milling, grinding, planing, and drilling, are extensively used in machining centers for their numerous advantages.





They can be easily attached to any magnetically conductive metal surface, providing a secure grip on steel plates of various sizes and shapes. This greatly enhances safety during the welding process.

Electro-permanent magnetic chucks

Electro-permanent magnetic chucks, as workholding fixtures for metal machining operations like turning, milling, grinding, planing, and drilling, are extensively used in machining centers for their numerous advantages.

- **Strong & uniform holding force for high machining accuracy**
- **Can hold ferrous work pieces larger than the machine table**
- **No heat generation**
- **Supports 5-side machining**
- **Maintenance-free**
- **Stress- and deformation-free clamping**
- **Vibration-damping clamping protects the spindle, tools, and workpiece.**

Magnetic chucks for milling

Magnetic chucks for lathes

Magnetic chucks for grinding

Magnetic quick change systems

Fast

Safe

Efficient

Our **magnetic quick-change systems** dramatically reduce mould changeover times, minimizing downtime and maximizing productivity. Discover how these systems excel in:

Stamping

Efficient mould changes for the metal industry

Our systems provide a secure, precise hold on moulds during stamping. Using electro-permanent magnets, you can switch moulds quickly and safely, with no need for continuous power.

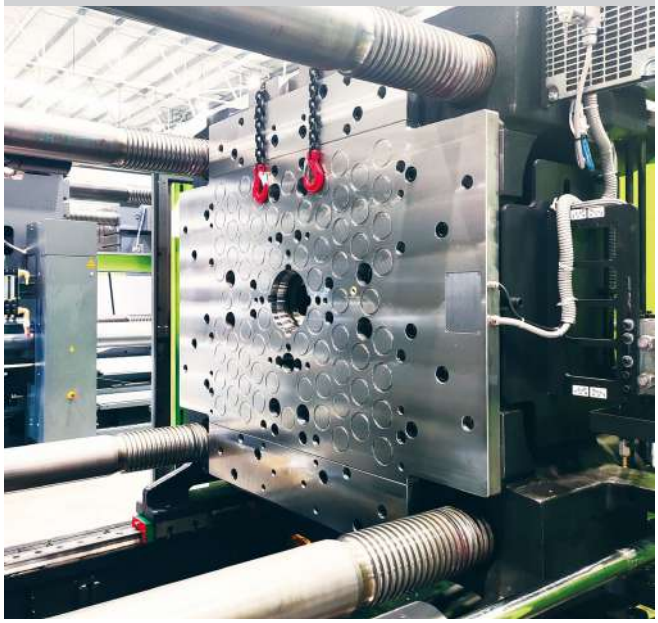
- Accelerate production cycles with minimal downtime.
- High precision for metalworking processes.
- Safe and reliable, even during power outages.

Injection moulding

Flexible solutions for injection moulding machines

Our quick-change systems make switching moulds in injection moulding machines fast and seamless, perfect for short production runs and a variety of mould sizes.

- Quick mould changes without compromising product quality.
- Versatile: adaptable to different mould sizes.
- Energy-efficient and low maintenance.



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Dealer:

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