



CATALOGUE ELECTRO-PERMANENT LIFTING MAGNETS

LENOIR-MEC
MAGNETIC SYSTEMS

 **MAGBAT**
EUROPE



A Magnetic Lifting Expert Since 1946 – MAGBAT Partner

Lenoir-Mec, a long-standing manufacturer of magnetic lifting solutions, puts its expertise of over 80 years at the service of industry professionals.

Our mission: to provide robust, secure and easy-to-integrate lifting solutions to increase productivity while ensuring operator safety.

Here we offer MAGBAT electro-permanent technology, adapted to the requirements of steel distributors, boilermaking workshops, oxy-cutters, plasma cutters, and many other steel handling professions.

Our magnetic lifting solutions for:

- Sheet metal and flat products
- Round, rectangular, square tubes
- I, H, U profiles and special profiles

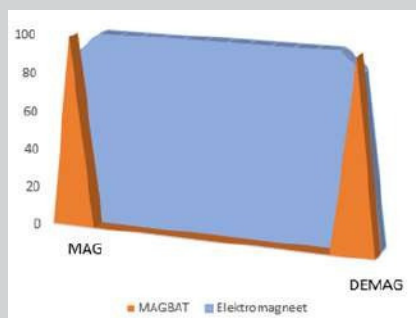


Permanent electromagnetism technology

Permanent electromagnets use an electric current for only a few seconds to reverse the polarity of the magnetic field. This state remains active until the next electrical impulse, which results in demagnetization. The effective magnetic force is generated by permanent magnets. Due to their independence from electric current, permanent electromagnets are 100% safe, do not require backup batteries, consume 95% less energy, and are maintenance-free.

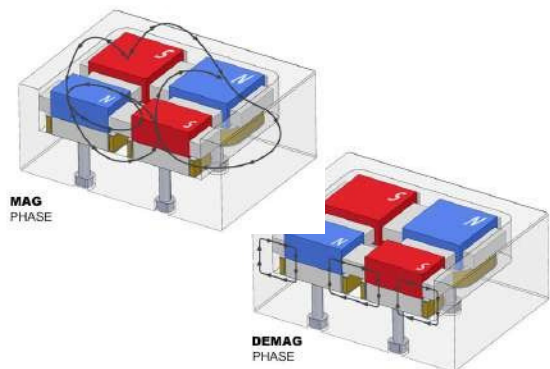
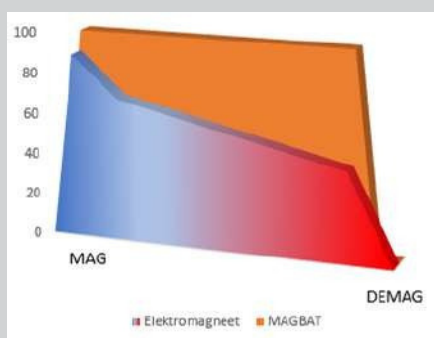
95% REDUCTION IN ENERGY CONSUMPTION

MAGBAT permanent electromagnets use an electric current for only a few seconds to reverse the polarity of the magnetic poles. Unlike electro-conventional magnets, which consume energy continuously throughout the lifting process, they do not require any permanent power supply.



NO OVERHEATING

Permanent electromagnets use fluent electric what during of the phases magnetization and demagnetization. Since the duration of current flow in the coils is very limited, these magnets remain cold, thus guaranteeing a constant magnetic force.



MAINTENANCE FREE

The coils of permanent electromagnets are not permanently energized, which extends their lifespan and makes them completely maintenance-free. In addition, there is no need to invest in backup batteries that require annual checks.

This eliminates interruptions, ensuring optimal production continuity.

NO RESIDUAL MAGNETISM

The magnetic field is localized, controlled and highly concentrated, extending from the North Pole to the South Pole across the workpiece. This means no residual magnetism remains, preventing any problems during any subsequent welding work.

NONE BATTERY OF SECOURS NECESSARY

Since the magnetic force of permanent electromagnets is generated by permanent magnets, it is completely independent of the electric current. In the event of a power outage, the magnetic force remains constant, making the use of backup batteries unnecessary.

9 safety devices



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

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.

LANDING DETECTION

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

PICK-UP CYCLE

Lifting is done in 2 phases, whereby the workpiece is first lifted at a lower preset force, 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%

2 BUTTON OPERATION

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

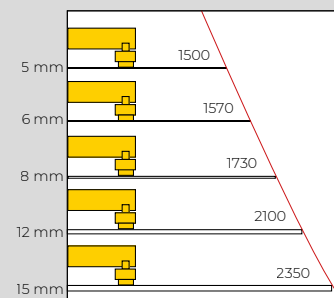
RADIO REMOTE CONTROL

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.



LAMP BLOCK

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

PICK-UP
 FULLMAG
 DEMAG
 ALARM

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.



SÉRIE :

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.

Small steel parts

No external power supply required



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.

Rechargeable battery

1000 cycles of lifting



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.

**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 = 15%
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.





LIFTING OF STEEL SHEETS

SAFETY FACTOR 3

Fully autonomous

Ongoing battery monitoring



MODELS

PRODUCT	WEIGHT (KG)	BATTERY (VDC)	LENGTH (MM)		WIDTH (MM)		T (MM)	CAPACITY (KG)	EPM QTY
			MIN.	MAX.	MIN.	MAX.	MIN.		
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

SÉRIE :

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



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 QTY
			MIN.	MAX.	MIN.	MAX.	MIN.		
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

LENOIR-MEC

MAGNETIC SYSTEMS

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