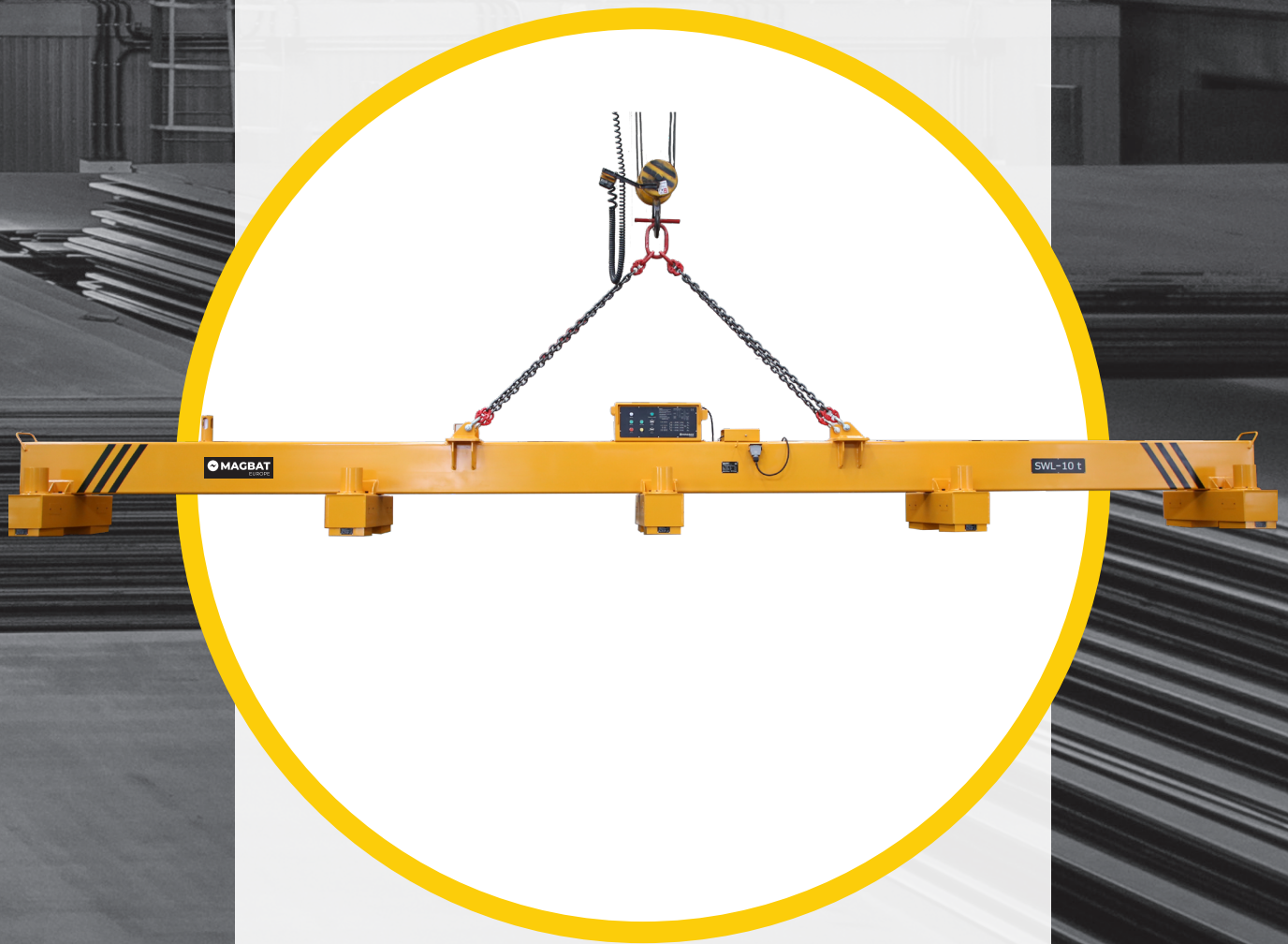




# MAGBAT

EUROPE



## **HMI - SERIE**

### **FIX ELECTRO PERMANENT MAGNETIC BEAMS**

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**LIFTING OF STEEL  
PLATES AND -STRIPS**



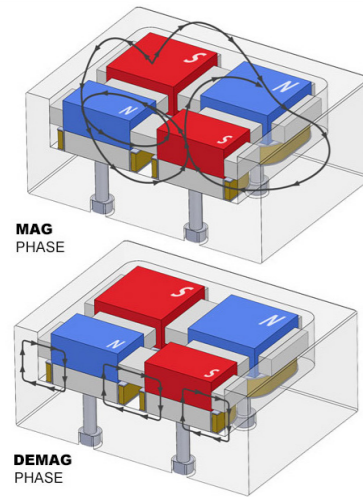
# HM1

## FIX ELECTRO PERMANENT MAGNETIC BEAM



FOR QUICK AND SAFE HANDLING OF STEEL PLATES AND -STRIPS

**SAFETY FACTOR 3**



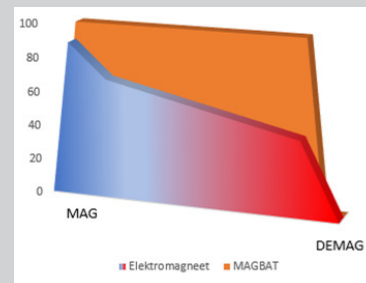
### TECHNOLOGY

MAGBAT-Electro Permanent Magnets (EPM) generate 95% energy savings and are totally safe, compared to traditional electromagnets. They only need electrical power during MAG and DEMAG phase. No power supply is required during operation.

The technology consists of an electro permanent magnetic circuit with alternating poles N / S, arranged according to the chessboard principle, placed in a magnetically neutral frame.

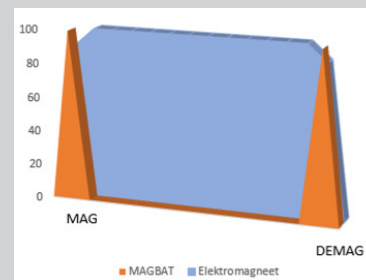
Each pole consists of a steel core, surrounded by magnets with a fix polarity (Neodymium). Located under the steel core, there is a magnet with reversible polarity (AlNiCo), around which an electric coil is wound.

When we send a short current pulse through the electric coil, the magnetic field moves from the inside to the outside of the system (and vice versa).



### CONSTANT POWER

Because no continuous current flows through the electric coils, electro permanent magnets do not heat up and the force remains constant. This contrasts with electromagnets that require continuous current and heat up, resulting in a loss of power.



### 95% LOWER 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.

### ADVANTAGES

- 100% safe. EPM only need electricity while activating or deactivating the magnet. The effective force is developed by permanent magnets.
- Predictable and constant force.
- More than 95% electricity savings compared to conventional electromagnets.
- No backup batteries required. The magnetic force remains in the event of a power failure.
- No heating of the magnet, longer life of the electric coils.
- No residual magnetism in the material.
- No interference with electronic environmental periphery.
- No moving parts, Low maintenance costs



## 9 SAFETY FUNCTIONS

### 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 and associated cam, mounted on the harp shackle of the hoisting chain, prevents accidental demagnetizing in the air.

### RADIO REMOTE CONTROL

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

### 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)

KG	100%	●	PICK-UP Very thin	Generated force 17%
KG	100%	●	PICK-UP Medium/thin	Generated force 25%
KG	100%	●	PICK-UP Medium/large	Generated force 35%
KG	100%	●	PICK-UP Large	Generated force 55%
KG	100%	●	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.

### 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)

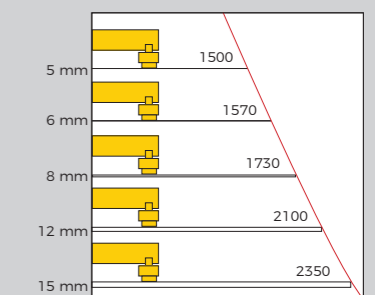
The electronic system continuously monitors the proper functioning of the magnet. Any abnormal situation is reported immediately and indicated by an error code on the help screen. In this way, errors can be immediately analysed and resolved.



### 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.



**MAGBAT**

THE SAFEST LIFTING MAGNET IN THE WORLD



# HM1 FIX ELECTRO PERMANENT MAGNETIC BEAM



FOR QUICK AND SAFE HANDLING OF  
STEEL PLATES AND -STRIPS  
**SAFETY FACTOR 3**

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

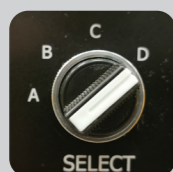
Depending on the thickness of the steel plate, the force can be adjusted, so that only 1 plate is guaranteed to be lifted.



**Percentage of total force at PICK UP:**  
 POSITION I = 15%  
 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 to indicate the status of the magnet**

**Landing detection system with inductive proximity switch against accidental demagnetizing in the air.**

**SPC-system for fast error analysis**

**Radio Remote Control**

**Clear control panel**

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

**Max. overhang of the steel sheet in function of the material thickness.**

S = mm	L = m
0	0
5	1.5
6	1.57
7	1.65
8	1.73
10	1.9
12	2.1
15	2.35
18	2.7
20	2.85

**Clear Maximum Load Instructions**

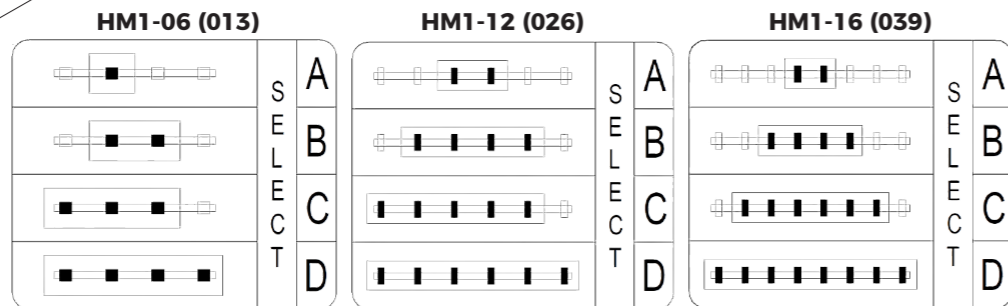
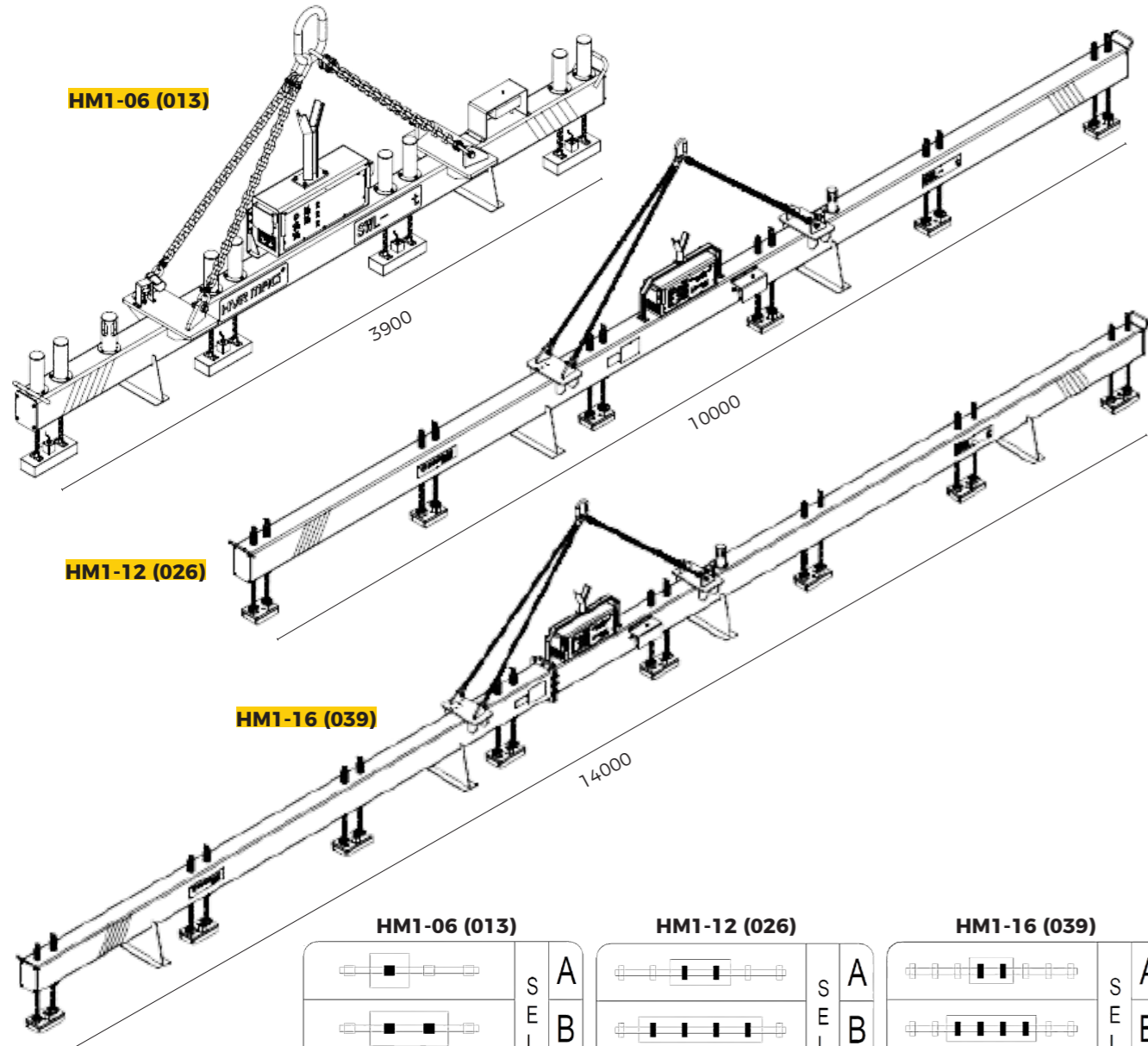
**MAGBAT EUROPE**

**SWL-10 t**

# HM1 SERIE

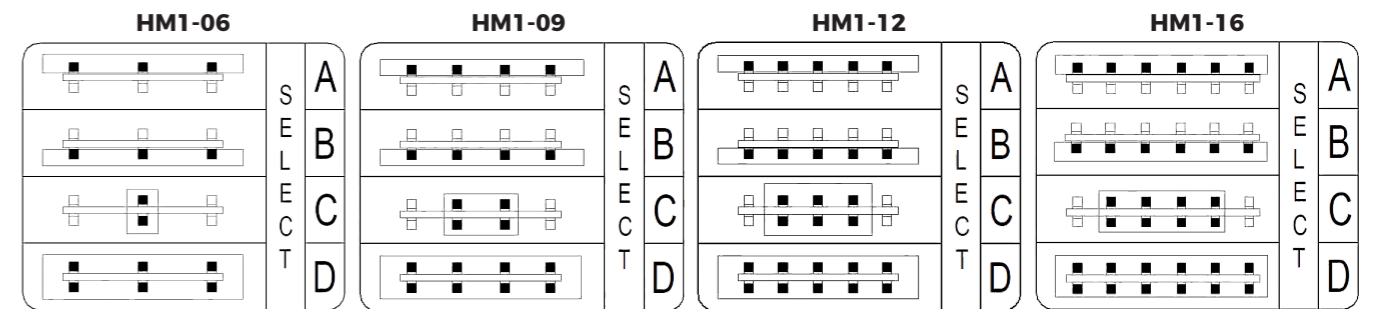
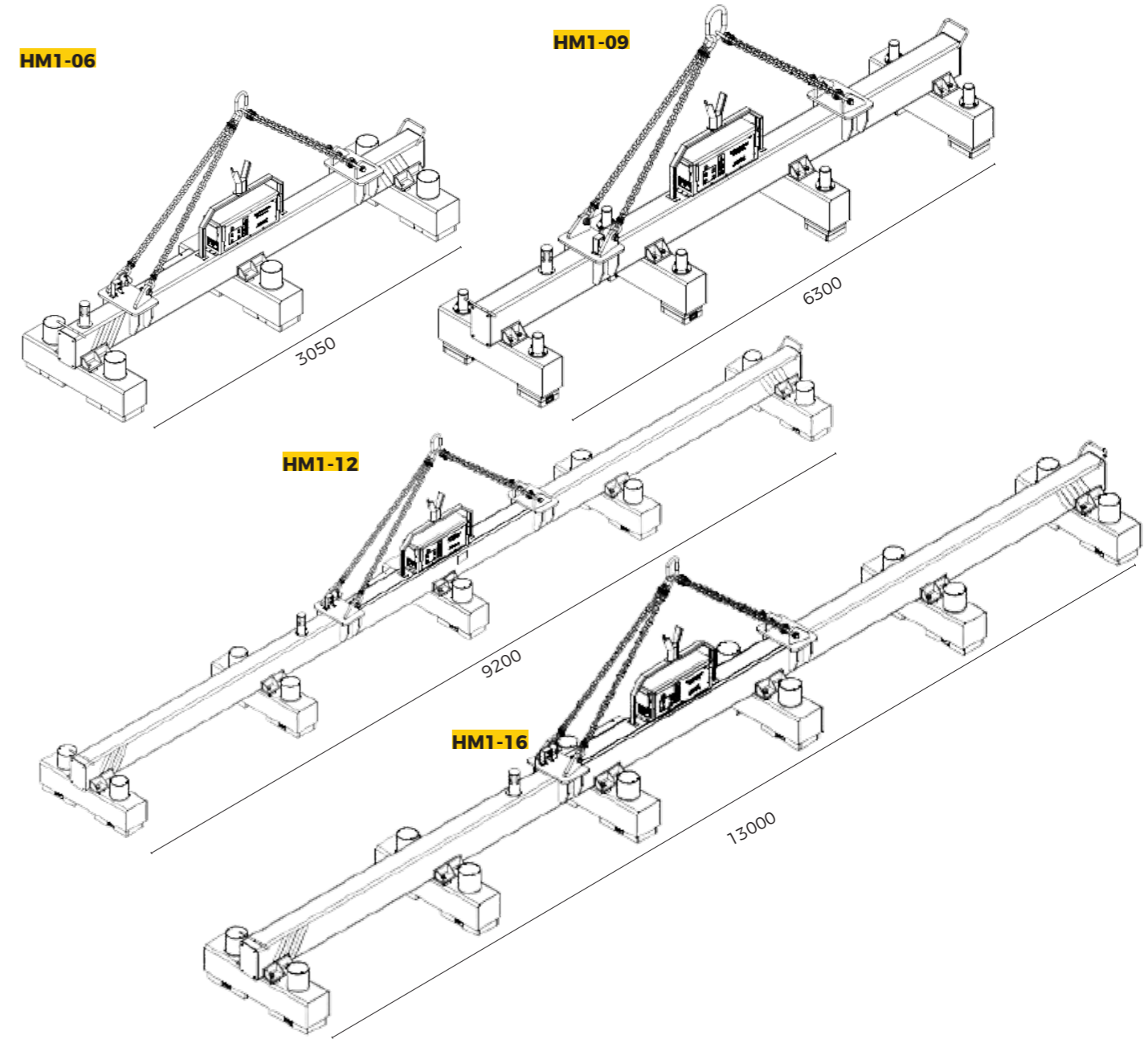
## FIX ELECTRO PERMANENT MAGNETIC BEAM

### STEEL STRIPS



Model	SWL (ton)	Strip dimensions (mm)					Weight (kg)
		Length		Width		Thickness	
		min.	max.	min.	max.	min.	
HM1-06-015	1,5	400	6000	60	1000	4	450
HM1-12-030	3	2300	12000	120	1000	4	1200
HM1-16-045	4,5	2300	16000	120	1000	4	1600

### STEEL PLATES



Model	SWL (ton)	Plate dimensions (mm)					Weight* (kg)
		Length		Width		Thickness	
		min.	max.	min.	max.	min.	
HM1-06	3-6-9	500	6000	500	3200	5	1000
HM1-09	5-8-10-12-16	2350	9000	500	3200	5	1400
HM1-12	5-8-10-12-15-20-24	5000	12000	500	3200	5	2000
HM1-16	10-14-20-24	2900	16000	500	3500	5	2800

\* Indicative weight, please refer to the indicative drawing for concrete information



MAGBAT-Europe is a leader in electro permanent magnet technology, focusing on the development and production of magnetic quick change systems for moulds and dies, magnetic clamping plates for metalworking machines, industrial lifting magnets and customer-oriented magnetic solutions.

With continuous focus on R&D, our philosophy is to pursue a fair win / win policy with our customers, create added value for employees, increase benefits for our customers, and make safe operation as a priority.

The unique advantages of the MAGBAT products are safety, energy saving, high efficiency, and environmental friendliness.

Our products are used in various sectors such as: steel construction, machine construction, shipbuilding, steel trade, railway and rolling material, injection moulding companies and various other industries.

We strictly adhere to the requirements of the quality certification standard ISO 9001: 2015.

From our headquarter in Oudenaarde (BE) we take care of the distribution, technical support, and after-sales service of our products

All these arguments make MAGBAT-Europe the most reliable partner for electro permanent magnetic equipment for industrial applications.

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**DEALER:**

We reserve the right to make adjustments and technical improvements.