

DEMAG

MAG

*With a simple touch
Great savings
and more safety*

TECNO-LIFT

**Permanent electro magnetic
heavy duty lifting systems**



TECNOMAGNETE™

Safety through power

Reliability - User friendly - Easy installation - Cost

TECNO-LIFT

The most intelligent way to move ferrous loads

Magnetism is the smartest way of handling ferrous loads. Tecnomagnete has continuously researched and developed permanent-electro magnets for 30 years, the only technology that combines safety, strength, convenience and power savings.

Tecnolift systems can handle loads with extreme easiness in the minimum area.

They are efficient because they always operate from the top without compressing or deforming the load.

The floor space is optimized as no empty areas are required around or in between the loads to get access for their pick up.

No other solution can grant the same level of performances and practical use.

TECNO-LIFT is the ideal solution for steel structural works, distribution and storage, service centers, metalworkings, shipbuildings, surface treatment and for all modern industries interested in increasing the efficiency of production process.



Quadsystem technology. Power and safety to square.

Quadsystem permanent-electro circuit: the power of an electromagnet joined to the independence of the permanent magnet.

The technology of the double magnet uses electrical power only for few seconds in activation "MAG" and deactivation "DEMAG" cycles.

Tecnomagnete designed and patented this unique and totally innovative technology, where the clamping surface is composed by square poles in chess-board disposition, able to generate great power exactly and only where it is needed: into the load.

The patented "neutral crown" guarantees a perfect insulation of the permanent magnets, avoiding any power losses and interferences with other metallic objects nearby.

Permanent safety

A permanent electro system is intrinsically safe being not affected by any electrical power failure.

No battery back up system is required. The high energy coming from the permanent magnets keeps the load safely clamped with constant force for indefinite period of time and it can be released only on the ground. The maximum safety level for the operator and for the machinery is granted, always!



Easy to use and convenient

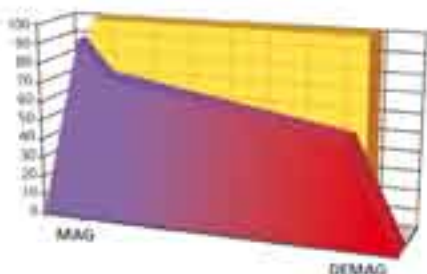
One single operator with a remote control can perform all picking-up, lifting, handling and releasing operations always staying at safe distance from the load.

No other manpower is required near the load. No other safety tools, belts, chains need to be managed and maintained.



Advantages versus the traditional electro-magnetic technology

Constant strength



High energy saving



Tecnolift permanent electro technology is a great leap ahead compared to the traditional electro magnetic lifters:

In performance: TECNO-LIFT is a cold system due to the absence of heat generation inside the magnets. The clamping force remains constant unlike the traditional electromagnets that are affected by the overheating of the coils in constant use.

In energy saving: TECNO-LIFT needs electrical supply only for few seconds, during the MAG and DEMAG phases. The electrical consumption is 95% less compared to a traditional electromagnet.

In operational costs:

The robust solid block construction of TecnoLift magnetic modules with no moving parts inside, no stress and no overheat in the magnet coils can grant a long reliability without specific maintenance. The expensive back up maintenance is also avoided.

In the production process:

TECNO-LIFT doesn't leave residual magnetism in the load. All problems caused normally by the residual magnetism on welding or precision machining operations are eliminated.

Flux concentration for a precise lifting

The Quadsystem technology allows to short circuit the magnetic flux within a very small depth making possible to lift one steel plate only even when limited thickness are involved.



Load stability and compactness.

The traditional wooden spacers between loads are no more necessary. The load condition is more compact, less overall size and, with no deformation it is more stable during the transportation.

Tailored Solutions

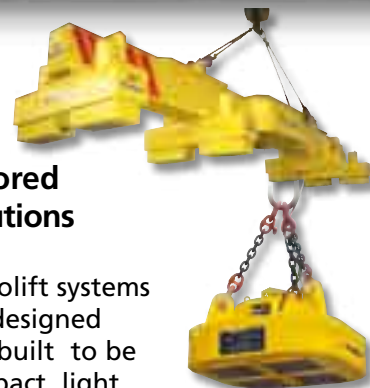
Tecnolift systems are designed and built to be compact, light weight, powerful and reliable.

The vast array of standard models provides various characteristics of polar geometry and magnetic strength to achieve the correct performance with relation to the load type to be handled (plates, blocks, slabs, profiles, coils, etc...)

All standard TecnoLift systems grant a safety factor of 1:3 between the weight of the load at its operative air-gap and the relevant magnetic force of the lifter.

Certified Quality

The TecnoLift systems respect the most common international norms. (UNI-EN 13155:2004). Manufacturing quality control, operating safety and constant performances are tested and certified.



Sheet handling



Telescopic beams

Plates, especially large ones, are particularly difficult load to handle. When attempting to move with traditional methods (hooks, chains, cables) the plates have a tendency to flex and deform, making the grip on the load unstable and dangerous.

The TM series beams pick up the load uniformly from above, without deformations or damage to the load. Specific selection of the thickness is possible even via radiocontrol to pick up single plate.



TM 4 series

For single plate handling up to 39.4 ft. Version with 4 cross beams with 2 modules each

The Telescopic Movement



The ability to lengthen or shorten the center distance between cross beams and select the modules to magnetize, make the TM beams extremely flexible to use. The telescopic movement is actuated by a dedicated hydraulic pump; the movement of the telescopic arms allows the handling of a complete range of big plates.



- medium plates: activate all the cross beams with the side modules in the closed position
- long plates: activate all the cross beams and extend the arms to the maximum opening
- narrow plates: activate only the left or right side modules

Model	beam weight ton	Load Characteristics				rated lift capacity max ton
		thickness min. in.	length min. in.	length max. in.	width min. in. max. in.	
TM 4/75 N	3.3	0.20	118	472	20 98	8.25
TM 4/100 N	3.3	0.20	118	472	20 138	11.0
TM 4/120 N	3.3	0.20	118	472	20 138	13.2
TM 4/140 N	3.3	0.30	118	472	20 138	15.4
TM 4/180 N	3.3	0.30	118	472	20 138	19.8

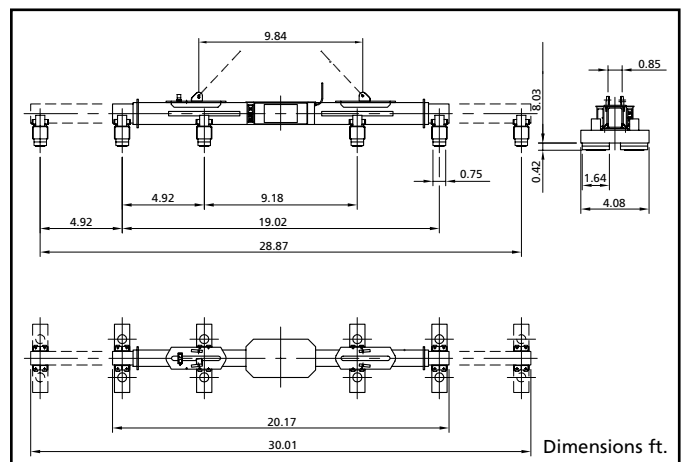
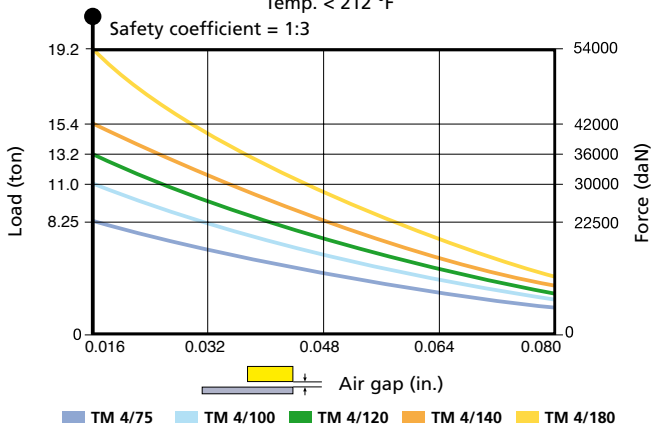
Modules Selection

It is possible to lift loads of various lengths, by simply selecting the magnetic modules necessary:

- shorter plates: activate only the center cross beams, excluding the others

Air Gap Curve

on flat surface in "Fe" minimum thickness 1.2" with all poles covered. Temp. < 212 °F





TECNOMAGNETE®

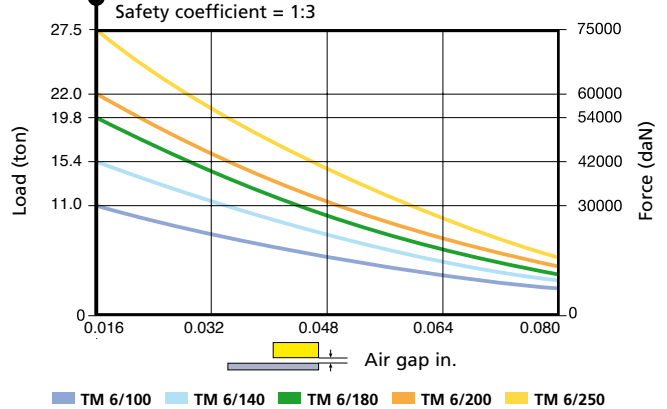


TM 6 series

For handling single plates up to 52.5 ft.
Version with 6 cross beams with 2 magnetic modules each

Air Gap Curve

on flat surface in "Fe" minimum thickness 1.2" with all poles covered.
Temp. < 212 °F
Safety coefficient = 1:3



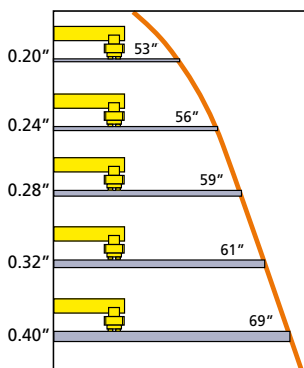
Whip Chart

The TECNO-LIFT lifting systems are designed with rigid structural characteristics and with a specific magnetomotive force coefficient (MMF) to guarantee handling even with significant values on the whip chart.



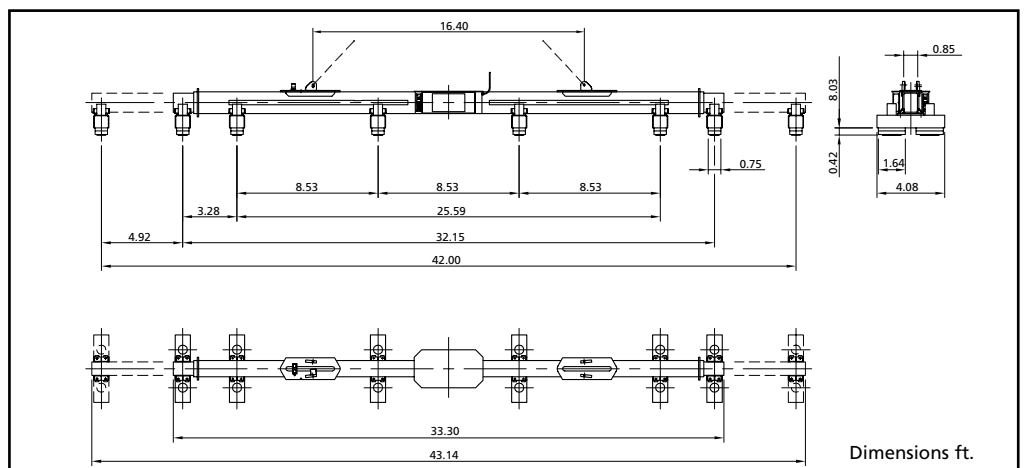
With the TECNO-LIFT systems it will be always possible to obtain the utmost performance in terms of load capacity and size, as specified in the technical specifics of these tables and performance tags on the lifters.

TM beams are available in TG version (6 or 8 cross beams) to handle sheets with thickness from 0.16" and capacity up to 11 ton.



Allowed whip chart values: the relationship between the end of the load ("wing") and the thickness of the same piece.

Model TM 6/N	beam weight ton	thickness		length		width		rated lift capacity max ton
		min. in.	max. in.	min. in.	max. in.	min. in.	max. in.	
TM 6/100 N	4.4	0.20	0.30	110	630	20	98	11.0
TM 6/140 N	4.4	0.20	0.30	110	630	20	138	15.4
TM 6/180 N	4.4	0.20	0.30	110	630	20	138	19.8
TM 6/200 N	4.4	0.30	0.30	110	630	20	138	22.0
TM 6/250 N	4.4	0.30	0.30	110	630	20	138	27.5



Sheet handling



BF 2 Fixed Beam

For plates handling with a maximum length of 19.7 ft. 2 cross beams with 2 magnetic modules each

They have the same characteristics as the TM series, but the 2 cross-beams are at fixed distance. This system is used when the plates come in constant sizes and do not require the telescopic device.

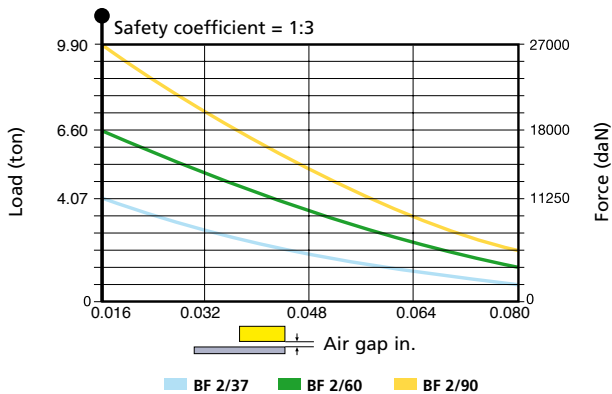


BF /TG version available for loads with thicknesses from 0.06"



Air Gap Curve

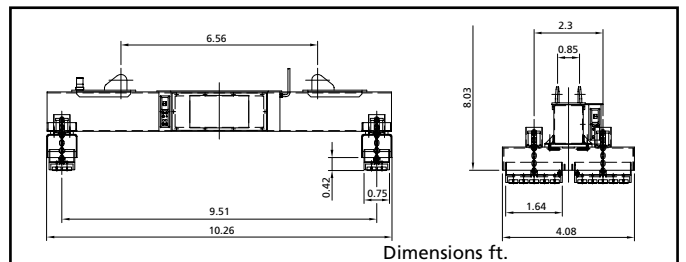
on flat surface in "Fe" minimum thickness 1.2" with all poles covered. Temp. < 212 °F



Model	beam weight ton	Load Characteristics				rated lift capacity max ton
		thickness. min. in.	length max in.	width min. in.	max in.	
BF 2/37	1.43	0.20	126	20	98	4.07
BF 2/60	1.43	0.20	126	20	138	6.60
BF 2/90	1.43	0.30	126	20	138	9.90



BFS with multiple cross beams for standard strips handling



GTR Magnetic Cross-beams

The magnetic cross-beams come separate without beams in sets of 4 or 6 (respectively GTR 4/N and GTR 6/N) complete with controller and accessories, ready to be installed on existing beams. Magnetically equivalent to TM 4/N and TM 6/N

Model	weight ton	Load Characteristics				rated lift capacity max ton
		thickness. min. in.	length max in.	width min. in.	max in.	
GTR 4/75 N	1.15	0.20	472	20	98	8.25
GTR 4/100 N	1.15	0.20	472	20	138	11.0
GTR 4/120 N	1.15	0.20	472	20	138	13.2
GTR 4/140 N	1.15	0.30	472	20	138	15.4
GTR 4/180 N	1.15	0.30	472	20	138	19.8



Model	weight ton	Load Characteristics				rated lift capacity max ton
		thickness. min. in.	length max in.	width min. in.	max in.	
GTR 6/100 N	1.71	0.20	630	20	98	11.0
GTR 6/140 N	1.71	0.20	630	20	138	15.4
GTR 6/180 N	1.71	0.20	630	20	138	19.8
GTR 6/200 N	1.71	0.30	630	20	138	22.0
GTR 6/250 N	1.71	0.30	630	20	138	27.5



TECNOMAGNETE®



TB Tilting beams

For handling single plates up to 39.4 ft. long in vertical or horizontal position.

The fix beam with the simple and effective tilting system of the magnetic modules is the perfect solution for operations where vertical axis plates need to be placed in a horizontal axis or vice versa (typically from storage to a cutting table, laser, plasma, etc...)

Supplied with a special radio remote control "belt use" RC/B.



Model TB	Load Characteristics				rated lift capacity max ton
	thickness. min. in.	length min. in.	max in.		
TB 4/35	0.15	98	236		3.85
TB 4/100	0.20	118	472		11
TB 6/35	0.15	98	472		3.85

TT Fix beams for cutting systems

Fix beams for cutting systems

For handling single plates and skeletons after the cutting operation is completed.

TT modular systems are tailor made by designing them to the size of the plate and the cut pieces.

They allow easy and fast loading & unloading operations on any type of cutting machines (plasma, oxyacetylene, laser, high definition). In particular they free the bench from cut plate and skeleton in a single move to make the machine immediately available.



TT /O Standard model for any sheet surface with a minimum piece size of 11.8"x11.8". and a thickness between 0.16" and 1" mm.

Model TT /O	weight ton	Load Characteristics				rated lift capacity max ton
		piece min in.	thickness min - max in.	length max in.	width max in.	
TTO /045	2.03	12x12	0.15 - 1	59	118	1.10
TTO /060	2.42	12x12	0.15 - 1	59	157	1.32
TTO /080	3.19	12x12	0.15 - 1	78	157	2.20
TTO /100	3.74	12x12	0.15 - 1	59	260	2.20
TTO /120	4.18	12x12	0.15 - 1	98	196	3.30
TTO /150	5.06	12x12	0.15 - 1	98	236	3.30

Other versions:

TT/L for laser cutting systems; minimum piece size 2.8"x 2.8", min thickness 0.08".

TT/H for heavy weight pieces

Block handling



SML single modules

For handling single plates or semi finished blocks.

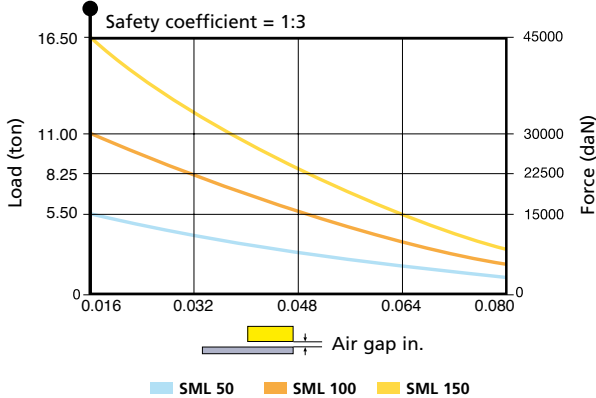
SML permanent electro-magnetic modules are the ideal answer for handling blocks with limited air gap.

- Excellent ratio between weight of the lifter and its capacity.
- Multipole circuit to uniformly spread the force across the working area.

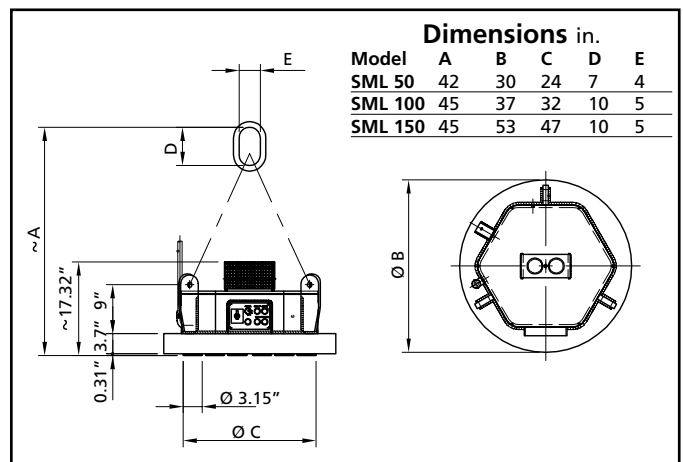


Air Gap Curve

on flat surface in "Fe" minimum thickness 1.2" with all poles covered.
Temp. < 212 °F



Model SML	module weight lbs	Load Characteristics					
		thickness min. in.	length min. in. max. in.		width min. in. max. in.		rated lift capacity max ton
SML 50	1000	0.30	39	196	39	98	5.5
SML 100	1540	0.30	39	196	39	98	11.0
SML 150	2200	0.30	39	196	39	98	16.5





TECNOMAGNETE®

SMH single modules

For handling single thick slabs and forged blocks.

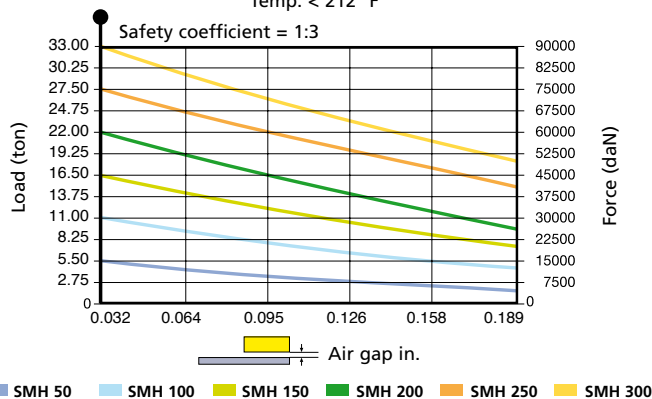
SMH permanent electro-magnetic modules are designed for lifting loads with big operational air gaps.

- 4-pole circuit for high force concentration.
- High magnet strength.



Air Gap Curve

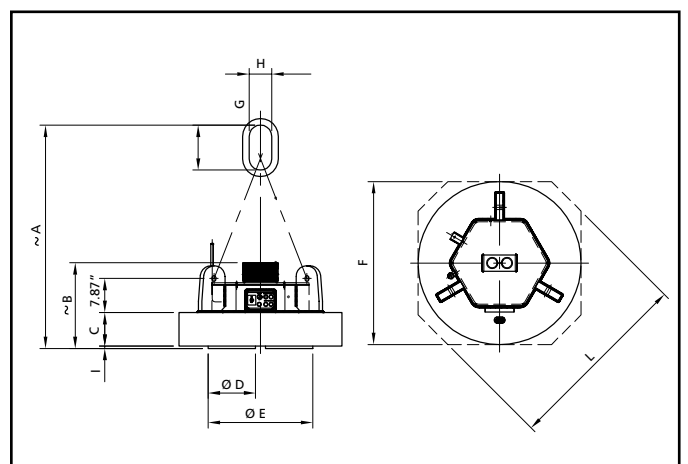
on flat surface in "Fe" minimum thickness 3.9" with all poles covered.
Temp. < 212 °F



Dimensions in.

Model	A	B	C	D	E	F Ø	G	H	I	L
SMH 50	50	20	5	8	18	31	7	4	0.6	
SMH 100	62	21	7	10	22	35	10	5	0.6	
SMH 150	62	22	8	11	24	34	10	5	0.6	40
SMH 200	69	23	9	12	28	38	12	6	0.6	44
SMH 250	70	25	11	13	30	43	14	7	0.7	
SMH 300	70	25	11	14	32	45	14	7	0.7	51

Model SMH	module weight lbs	thickness.		length		width		rated lift capacity max ton
		min. in.	max. in.	min. in.	max. in.	min. in.	max. in.	
SMH 50	1340	1.20	1.96	196	236	196	98	5.5
SMH 100	2090	1.20	1.96	196	236	196	98	11.0
SMH 150	2860	1.57	1.96	196	236	196	98	16.5
SMH 200	3850	1.57	1.96	196	236	196	98	22.0
SMH 250	4730	3.15	1.96	196	236	196	98	27.5
SMH 300	5940	3.15	1.96	196	236	196	98	33.0

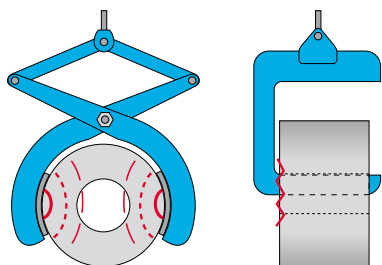


Coils - Billets and Slabs handling



The TECNO-LIFT line provides a vast array of solutions dedicated for the handling of compact coils of various morphology and dimensions, without weight limitations.

TECNO-LIFT always comes in contact with the material surface gently from the top, without compression or deformations.



TECNO-LIFT avoids all the problems associated with conventional methods of lifting represented by clamps and C-hooks which require constant pressure on the load.



CH

Modules for handling cold-rolled coils with a horizontal eye. Complete with automatic load-centering system.

CV / T

Modules for handling cut coils, vertical eye (slitting lines).



CV

Modules for handling cold-rolled coils, vertical eye.



CO

Modules for handling open coils, vertical eye (annealing process).



Model CV / T	weight lbs	Load Characteristics			
		Ext. Ø min - max in.	Int. Ø max in.	Height min - max in.	rated lift capacity max ton
CV / T 10	1100	22-39	18	5.5-12	1.10
CV / T 15	1240	31-51	24	2.0-10	1.65
CV / T 30	1340	23-45	20	0.8-20	3.30
CV / T 40	2640	31-57	20	1.2-20	4.40
CV / T 50	3300	31-70	20	1.2-20	5.50



TECNOMAGNETE®



BL

Permanent-electro magnetic modules for handling layers of billets up to 1100° F – in the core.

Versions:

BL /S single module for billets up to 19.68 ft. length

BL /D double modules for billets up to 41.30 ft length



BR

Modules for handling slabs
Typical application: on harbour cranes, to load/unload ships.

Versions:

BR /S single module for slabs with length 3.28 - 26.24 ft.

BR /D double modules for slabs with length 19.68 - 39.37 ft.

BR /W "twin" module with mechanical auto-leveling system for loads 19.68 - 39.37 ft. length



BAT GRIP

3 Ton capacity permanent-electro lifters with battery.

Equipped with a remote control, this lifter is capable to be used for a long period independent of the power supply (est 7 days), because the energy is only used for a fraction of a second during the MAG/DEMAG phase.

Sections - Rails - Profiles - Rounds - Pipes - Tanks



RD

Modules for lifting rounds.

For the movement of round loads only. The modules "V" groove design adapts to the morphology of the load allowing the centering of the module on the load during clamping phase.

Model RD	weight lbs	Load Characteristics		
		Diameter min - max in.	length min - max in.	rated lift capacity max ton
RD 20	660	11-15.7	31-78	2.20
RD 30	1700	4-14	39-236	3.85
RD 60	2130	14-32	39-78	6.60
RD 80	3200	12-27.5	39-196	8.80
RD 100	5280	12.2-39	59-275	11.0
RD 150	5940	12.2-47	59-275	16.5



RDP version available for polygonal and irregular shape loads

CS

Modules for lifting tanks.

For the movement of round loads of oversized dimensions and thin wall thickness. Tailor made solutions for the movement of tanks, containers, in total safety without deformation of the load.



TU

Modules for lifting tubes - round and square.

For the lifting of layers of tube without welding and round loads of various types





TP

For handling beams and profiles.

Modular systems combining the benefits of safe lifting, compactness and convenience. Their specific and unique pole design permits the rotation of the load on the ground for the inspection or for the storage in the correct position between the racks.



Model TP	weight lbs	Load Characteristics		
		HEA - HEB - IPE - IPN min - max in.	length min - max in.	rated lift capacity max lbs
TP 1/100	550	3.15-23.6	39-236	2200
TP 2/200	2150	3.15-23.6	236-472	4400
TP 3/200	2750	3.15-23.6	39-472	4400
TP 4/400	3520	3.15-23.6	236-708	8800
TP 5/400	4730	3.15-23.6	39-708	8800
TP 6/400	5500	3.15-23.6	118-944	8800

Dedicated solution

The TECNOMAGNETE can be equipped with accessories for various applications:

- **MRS - Fifth wheel**
to rotate the load according to the application.

- **4HV - Supplementary hooks**
Allow the use of the beam in a traditional manner, with chains and rope, without dismantling the TECNOMAGNETE system. Useful when the load is non ferrous or has non-standard geometry.

- **SRM**
Manual 90° rotation system for the cross-beams. Useful for profiles and narrow loads.

- **DPV - Ring to the hook combination**
Allows the use of the beam alternately with single and double crane hoists. Chains and ring housing built-in.



Characteristics, Accessories and Equipments



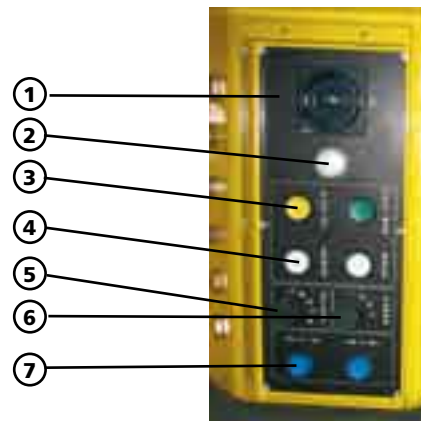
When it comes to safety and trust, no detail can be overlooked or left to chance: thousands of TECNO-LIFT systems installed all over the world are our main credentials. Every system represents a study in optimizing the function of real time productivity.

Special attention is dedicated to the safety: various electromechanical systems check for accurate magnetism on the load and detect any problems that may occur during the magnetization, clamping of load, moving the load and the accidental demagnetization during the material handling.

with 75% of the total possible magnetization strength, only once the load is lifted from the ground the second MAG cycle is executed allowing 100% of the total magnetization power (FULL MAG). This provides a definite minimum safety margin to the load that can be handled in complete safety.



All the magnetic modules are made from a solid piece of steel; this creates a greater protection against accidental impacts with higher reliability. Elastic suspension system are used since the application requires it to equally distribute the weight of the load among the different pick up points avoiding dangerous overloading.



Control Unit
In a compact IP54 cabinet to allow fast activation and deactivation cycles (max 7 sec)

1- Push button panel
Is integrated in the body of the lifter and contains the basic functions (ON/OFF, PICK-UP, FULL MAG, DEMAG, SAFE)

2- The electronic UCS saturation control system controls the correct value of the current absorbed to ensure that the modules reached the full magnetic saturation.

3- PICK-UP, FULL MAG*
The TECNO-LIFT system uses a double magnetization cycle test the load according to its weight and airgap condition. Pick-up cycle is executed first

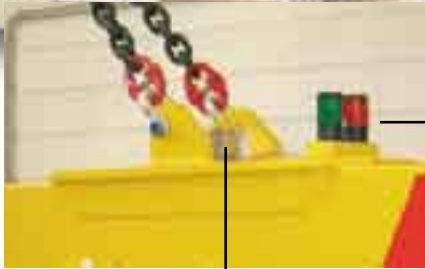
4- Safe button: The user is obligated to press 2 buttons at the same time (SAFE and DEMAG) to release the load, this reduces the chances of an accidental load release.

5- Cross Beam Selections*. Allows the magnetization pattern of the modules: only the center ones, all the cross beams, only one side (narrow loads) left or right.

6- The push button remote includes the **APC Power adjustment control.** This is a 4 level selector that can reduce the magnetic depth to pick up the load from stack.

7- For the TM4 and TM6 systems, the remote control also includes the **OPEN and CLOSE** buttons for the telescopic portions of the beams.

*only available for specific TECNOLIFT models – see chart)



Lamp Block

To display the status of the system: Normal operation / Pick Up phase / Alarms

DAUTANAC

Is the safety contact that allows the magnetization / demagnetization only when the chains are slack. This contact prevents the accidental demagnetization when the load is suspended.

Chains:

are high strength steel 80.



Drum Reel

Enables an easy installation of the system on any type of crane. The cable length is 39.37 ft. and it comes with the appropriate mounting plate.



RC / N

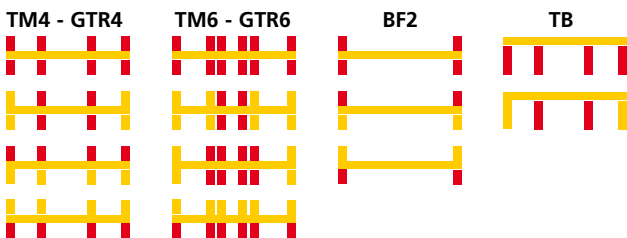
Remote Control

Enables the operation of the system (pickup/ full mag/ safe/ open/ close) from outside the working area and away from the load.

The new model is ergonomic, with emergency stop button and APC power adjustment knob. Supplied with frequency regulator, two re-chargeable batteries and charger (110V or 220V) for the transmitter.

RC / S: simple remote control
RC / B: "belt use" remote control

Cross Beam magnetization selector



Standard supply table

	Standard ●													Optional □					
	TM4	TM6	BF2	GTR4	GTR6	TB	TT	SML	SMH	CV	CO	CH	BL	BR	BAT	TP	RD	TU	CS
Structure - High strength tubular steel	●	●	●	□	□	●	●	-	-	-	-	-	□	□	-	●	-	●	●
Elastic suspension system for modules	●	●	●	●	●	●	-	-	-	-	-	-	-	-	-	●	-	●	-
Integrated control Unit	●	●	●	-	-	●	●	●	●	-	-	-	-	-	-	●	●	●	●
Stand alone controller	-	-	-	●	●	-	-	□	□	●	●	●	●	●	-	□	□	□	□
Double cycle magnetization PICK-UP/FULL MAG	●	●	●	●	●	●	●	●	●	●	●	●	●	●	-	●	●	●	●
Hydraulic telescoping system	●	●	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Remote control RC/*	N	N	N	N	N	B	N	N	N	-	-	-	-	-	S	N	-	-	-
Remote control for crane cabin	-	-	-	-	-	-	-	□	□	□	□	□	□	□	-	□	□	□	□
APC power adjustment	●	●	●	●	●	●	●	●	●	□	-	-	-	□	-	-	□	□	-
Safe Button	●	●	●	●	●	●	●	●	●	●	●	●	●	●	-	●	●	●	●
DAUTANAC	●	●	●	●	●	●	-	●	●	●	-	-	□	●	●	-	-	-	-
UCS Saturation control unit	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●
Lamp Block	●	●	●	●	●	●	●	●	●	●	●	●	●	●	-	●	●	●	●
Chains	●	●	●	□	□	●	●	●	●	●	●	●	●	●	-	●	●	●	●
Drum Reel	□	□	□	□	□	□	□	□	□	□	□	□	□	□	-	□	□	□	□
Installation kit	□	□	□	□	□	□	□	□	□	□	□	□	□	□	-	□	□	□	□
SRM - Module rotation device	□	□	□	□	□	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Please visit our website to download technical questionnaires.



A world of magnetic solutions

Here is a strong statement:
 Tecnomagnete has revolutionized the world of work holding!
 Do you want a stronger one? The QuadSystem!



This permanent electro magnetic system generates a concentrated and predetermined force that is highly effective to clamp steel parts on machine tools, moulds for injection molding and dies for metal stamping machines, and the handling of ferrous loads.

We've believed in the force of our QuadSystem patent and many companies have believed in this powerful innovative technology. The large variety of applications of over 100,000 systems sold world wide gave all our customers a sharp competitive edge with safety and flexibility.

Nowadays, with the global network of our subsidiaries and commercial partners we are at your disposal to show you state of the art technical solutions for all applications and increase your success.

Tecnomagnete: all the magnetism of the leader.

We reserve the right to make changes related to the technological progress.

TL-12/07 USA

Headquarters:
ITALY TECNOMAGNETE spa

www.tecnomagnete.com

USA TECNOMAGNETE Inc
 6655 Allar Drive,
 Sterling Hts, MI 48312
 Tel.: +1 586 276 6001
 Fax: +1 586 276 6003
 infousa@tecnomagnete.com

Subsidiaries:
 China Tecnomagnete Shanghai R.O.
 France Tecnomagnete S.A.R.L.
 Germany Tecnomagnete GmbH
 Japan Tecnomagnete Y.K. Ltd
 Singapore Tecnomagnete Singapore R.O.
 Sweden Tecnomagnete A.B.
 USA Tecnomagnete Inc.

Distributor:

