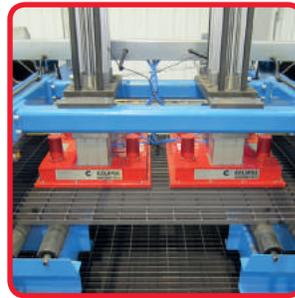


# Magnetic Lifting & Handling Systems

Safe & efficient handling for manufacturing and assembly lines.



The safest, most efficient way to move ferrous loads



# Eclipse Magnetics

100 years of manufacturing excellence



Serving some of the leading names in the industry

**JCB**

**Caterpillar**

**Corus**

**TATA Steels**

**NSK**

**BMW**

**Ford**

**Perkins**

**Fanuc**

**ABB Robotics**

**Yaskawa**

## **A world leader in magnetic technology**

With over 100 years of experience in the design and manufacture of high performance magnetic systems, we supply critical equipment to some of the leading names in the most demanding industries. Our magnetic technology is widely used in major development projects worldwide, all requiring a guarantee of premium performance.

## **Designing excellence**

We have a track record of producing high quality products backed by a commitment to total customer service. Our technical application teams have a wealth of experience, ensuring that many of our products are market leading innovations. All manufacturing is carried out using ISO 9001 certified quality management systems and we are ISO 14001 accredited. We are also fully conversant with specific industry certifications.

## **Unrivalled product range**

We serve worldwide markets with extensive magnetic product ranges including:- handling systems, magnetic filtration, foreign body removal systems, magnet assemblies and complex magnetic industrial equipment used in industries such as automotive, aerospace and nuclear. Many of our products are unique and covered by global patents.

## **Worldwide support**

We offer worldwide support through our offices in the UK, Canada and China. We also have numerous employees in various territories and a network of technically trained partners to provide local product support.

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Eclipse Tools North America Inc., is a wholly owned subsidiary of Spear & Jackson PLC, and is responsible for the sales, distribution and customer service of our group's magnetics, hand tools and metrology products under the professional brands Eclipse Magnetics, Neill Tools, Spear & Jackson, Bowers Group throughout North America.

# Improve your process efficiency

Ultimate speed & efficiency combined with total safety

Eclipse Magnetics' lifting and handling systems are based on fail-safe magnetic technology which delivers world class results. Ideal for applications ranging from light pick and place equipment to heavy steel stock movement, magnetic lifting is the most efficient solution for handling ferrous loads.

In comparison to other methods such as slings, chains, hooks and grabs, magnetic systems present major benefits to manufacturing, assembly and storage sites:



**Simple, easy use**  
ready to use in minutes,  
simple, safe operation.



**Increased number of lifts per hour**  
simple on-off operation,  
engages the load in seconds.



**Total safety....**  
incorporates numerous  
fail safe mechanisms.



**Precision lifting**  
magnetic lifting systems  
provide a greater lift control.



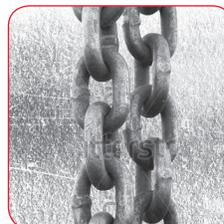
**Single person or automated use**  
complete safety, minimal  
training, labour efficient.



**Zero running costs**  
permanent magnetic  
technology does not require a  
sustained power source.



**Optimizes storage space**  
floor space optimized as  
access only required to one  
lifting face.



**No load damage**  
protects the product finish,  
ideal for painted or coated  
surfaces.



## Total Safety – the safest way to lift ferrous loads

Operation safety is the foremost consideration in the design of all our magnetic lifting and handling systems. Permanent magnetic technology with built in fail-safe mechanisms and a 3:1 lift safety factor (Battery lifter 2:1) ensures complete safety for all operations.

All our products comply with OH&S and OSHA regulations (Canada and US Regulations).

Our permanent lifters are also designed in accordance with ASME BS30.20-2010.

# Magnetic lifting and handling

Optimizing process efficiency in diverse applications

## Raw materials



Our lifting and handling systems are widely used for handling raw materials in primary production stages, such as:-

- Steel stockholders
- Steel production
- Steel fabrication shops
- Forgings and castings
- Tin products
- Coil handling
- Slab and plate transfer
- Profile picking

## Manufacturing



Maximum efficiency combined with total safety are key requirements for demanding manufacturing applications. Our products are widely used in:-

- Yellow goods manufacture
- Feed conveyors
- Digger blades
- Assembly lines
- Machine shops
- Mould making
- Bearing manufacture
- Canned food lines
- Paint cans
- Jar handling systems
- Tin can manufacture
- Turbo manufacture
- Springs
- Brake manufacture
- Engine block manufacture

## Automation



Speed and precision accuracy, for single or multi-part loads, are key reasons why our systems are widely used in automation applications such as:-

- Transfer lines
- Conveyor lines
- Pick and place equipment
- General engineering
- Robotics
- Packaging machinery
- Palletizing/depalletizing systems

# Give your business the edge.....

A few of our many satisfied customers...



## **Tyzak** **Machine Blades**

### **Product: Lifting Magnet**

The company manufacture shearing machine blades from raw black steel stock, the finished product is heat treated and has a ground finish.

Using traditional lifting systems, such as chains and slings, the size and profile of the parts were difficult to handle without marking the surface and edges of the load.

Eclipse Ultralift LM was specified to use at each stage of the process. This has resulted in faster more efficient lifting and now minimal damage occurs to the load during lifting.



## **JCB** **Construction Equipment**

### **Products: Electronically Switched Permanent Magnet (ESPM)**

This world renowned construction equipment OEM use ESPMs in many areas of production for clamping and transferring parts.

The ESPMs are used in process stages such as robotic pick and place of hydraulic cylinders and rams. They are used to feed and unload equipment during the manufacturing process. In addition they are used as a means of holding digger arms prior to tag welding.

Simple, fast loading and single surface contact have made a significant contribution to process efficiency.



## **FG Wilson** **Generator Manufacture**

### **Products: Pneumatically Switched Permanent Magnet (PSPM)**

This company manufacture large gas and diesel generators. Optimag P's were specified for lifting steel sheet which is used in the manufacture of enclosures for the generators.

The Optimags are mounted on a lifting frame. Optimag was the ideal solution for lifting single sheets of 0.12" steel. With single face contact and instant clamping to the load, the Optimags improved lifting speeds and efficiency.



## **Leyland DAF** **Automotive**

### **Products: Customised Magnetic Lifter**

Leyland DAF move thousands of truck components each week around their production and assembly site. It is vital that they have the most efficient, trouble free lifting systems.

Moving leaf springs into position to mount onto axle sub-assemblies was previously a manual process which involved several operatives. Introducing an Optimag P increased speed of the lift and reduced the operation to a single person task.

The spring manufacturer subsequently adopted the same method on their manufacturing line.

# Optimum Lifting & Handling Solutions

Important considerations when choosing your product

## Permanent Lifters



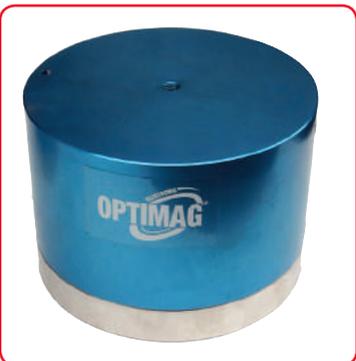
Manually Switchable Permanent Magnet

## Optimag E



Electronically Switchable Permanent Magnet (ESPM)

## Optimag P



Pneumatically Switchable Permanent Magnet (PSPM)

## Product Selector

A guide on how to use our standard products. Please speak to our sales department for more information.

Product Type	Page	Material shape		Recommended material thickness inches						Surface	
		Flat	Round	0.04-0.16	0.20-0.31	0.31-0.47	0.47-0.79	0.79 +	1.97 +	Bright	Black
UL+ Lifters	9	✓	✓					✓		✓	
LM Lifters	11	✓	✓					✓		✓	
TP Lifters	12	✓			✓	✓	✓	✓		✓	
90 Degree Lifter	15	✓					✓	✓		✓	
Battery Lifters	16	✓	✓					✓	✓	✓	
Optimag E	17	✓	✓			✓	✓	✓		✓	
Optimag P	18	✓		✓	✓	✓	✓	✓		✓	

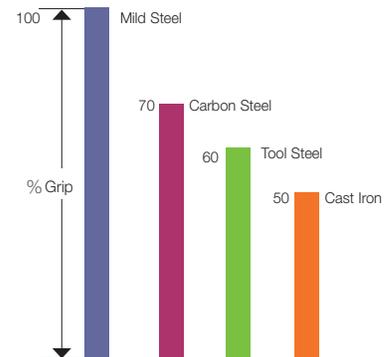
Note: Table is an approximate guide, for specific applications please contact us.

## Important factors to consider

### Material Type

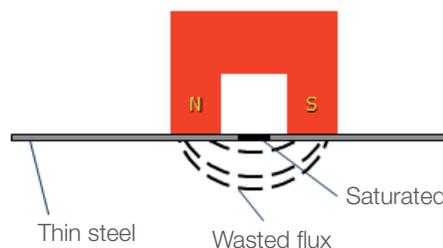
The scale opposite highlights the effect material type has on clamping forces.

### Workpiece Material

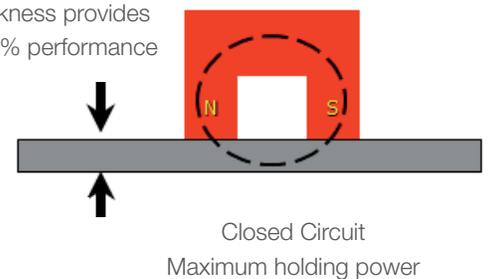


### Material Thickness

To achieve maximum clamping force minimum material thickness should be observed.



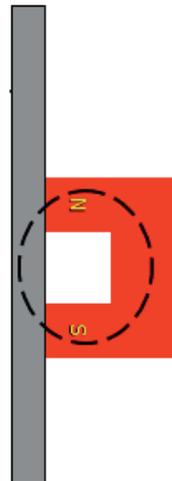
Minimum part thickness provides 100% performance





Department for more information.

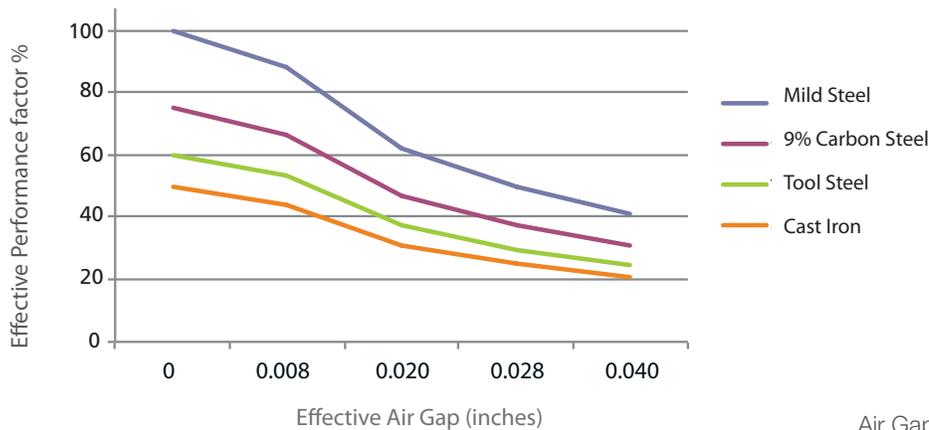
Surface finish		Actuation method		
Black	Scaled	Manual	Electronically	Pneumatically
✓	✓	✓		
✓	✓	✓		
✓	✓	✓		
✓		✓		
✓	✓		✓	
			✓	
				✓



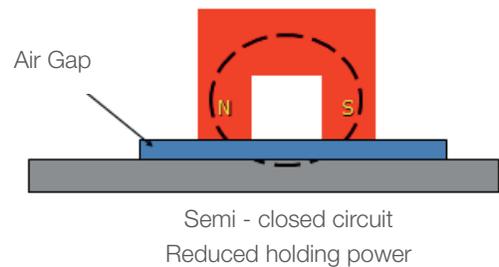
**Please Note:-** All specifications shown are based on a straight vertical lift. Should the load be rotated through 90° the safe working load will be reduced by 80% of the stated values.

### Air Gaps

An air gap between the magnet and the load will also affect lifter performance. The chart below shows the general effect on different materials.



As the air gap increases the magnetic performance reduces.



**Please note** information on these pages is an approximate guide, for specific applications please contact us.

# Ultralift<sup>PLUS</sup>

Premier Range

**3 YEAR  
WARRANTY**

The safest lift in the world

- The premier manually switchable magnetic lifter
- Provides fast and efficient lifting
- A range of built in safety features
- Guaranteed 3:1 safety factor

### Secondary Safety

**Safety button** - A safety catch locks the handle in the “on” position. This prevents any accidental release of the load once engaged.

**Handle** - After releasing the safety mechanisms, the magnet can be released easily, by using one hand.

**Space Saving** - Access only required to the load's top face allowing more efficient use of storage and handling areas.

### Primary Safety

**Safety Shim** – Ultralift Plus is the only permanent magnetic lifter to be supplied with a “safety shim” (internationally patented). This allows pre-testing of the load, irrespective of weight, material type, material thickness and surface condition. If it can be lifted with the safety shim in place, a 3:1 safety factor is guaranteed. This is ideal where the load, weight and size may vary.

### Primary Safety

**Lifting Eye** – once the lifting eye is under tension with the load a patented mechanism locks the handle ensuring that the raised load cannot be released either deliberately or accidentally.



## Technical Data

Product	Self Weight (lbs)	Safety Mechanism Activation Load (lbs) (Additional to Lifter Weight)	Dimensions (inches)						Length Max (inches)	Flat Section		Round Section	
			A	B	C	D	E	F		SWL* (lbs)	Thickness Min (inches)	SWL* (lbs)	Diameter Max (inches)
UL0275+	8.8	8.8	4.0	6.1	2.7	2.9	2.5	6.0	60	275	0.8	110	8
UL0550+	24.2	24.2	6.1	8.4	3.6	3.8	3.7	8.6	60	550	1.0	220	12
UL1100+	59.4	Self Weight	8.8	11.8	4.8	5.0	4.8	10.5	80	1100	1.2	440	16
UL2200+	138.6	Self Weight	10.2	14.1	6.9	6.9	5.5	15.4	120	2200	1.8	880	18
UL4400+	345.4	Self Weight	14.5	18.8	9.2	8.9	7.7	19.4	120	4400	2.2	1760	24

\*Safe working load

△\*\*Do not operate at maximum length and maximum diameter on the same item. ALWAYS work within SWL stated.

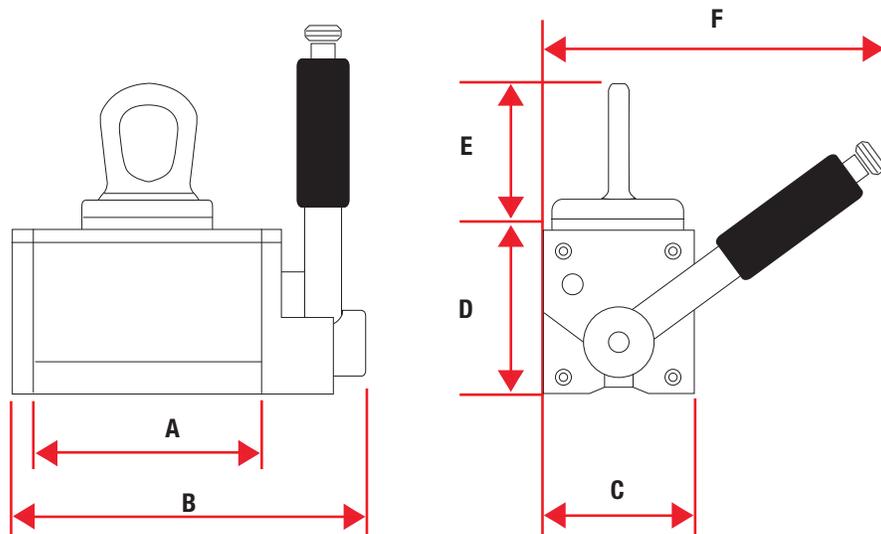
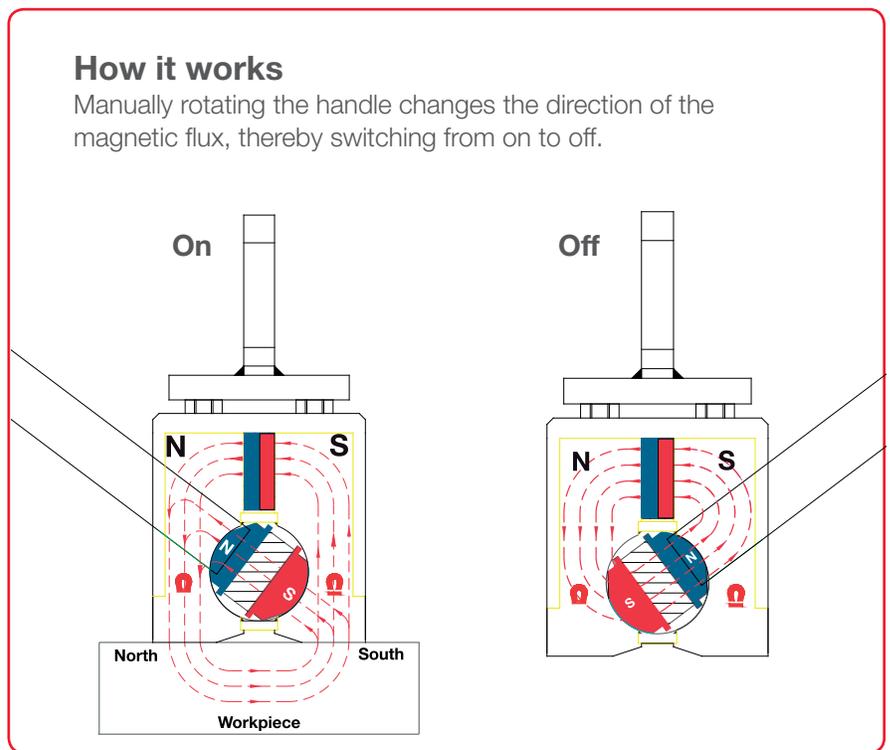


**No Running Costs** - No power required - no additional costs.

**High performance** - "Rare Earth" magnet material provides high performance.

### How it works

Manually rotating the handle changes the direction of the magnetic flux, thereby switching from on to off.



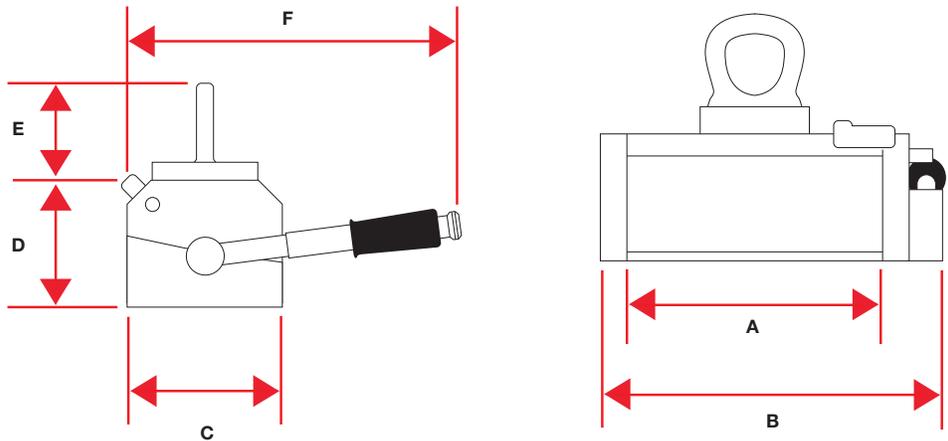
# Ultralift LM Economy Range

Safe, efficient, general purpose permanent magnetic lifter

- Standard manually switchable permanent magnetic lifter option
- Provides fast and efficient lifting
- Safety locking mechanism prevents accidental release of load



## Technical Data



Product	Self Weight (lbs)	Dimensions (inches)						Length Max (inches)	Flat Section		Round Section	
		A	B	C	D	E	F		SWL* (lbs)	Thickness Min (inches)	SWL* (lbs)	Diameter Max (inches)
LM0275	9.9	4.3	5.9	3.0	2.4	2.1	5.9	60	275	0.8	110	10
LM0550	18.7	6.5	8.3	3.5	2.8	3.0	7.9	60	550	1.0	220	12
LM1100	38.5	8.9	11.1	4.2	3.5	4.1	9.6	80	1100	1.2	440	16
LM2200	80.3	12.8	15.4	5.4	4.1	4.4	14.4	120	2200	1.8	880	18
LM4400	173.8	15.7	19.0	7.3	5.2	6.7	20.7	120	4400	2.2	1760	24

\*Safe working load

⚠ \*\* Do not operate at maximum length and maximum diameter on the same item. ALWAYS work within SWL stated.

# Ultralift TP

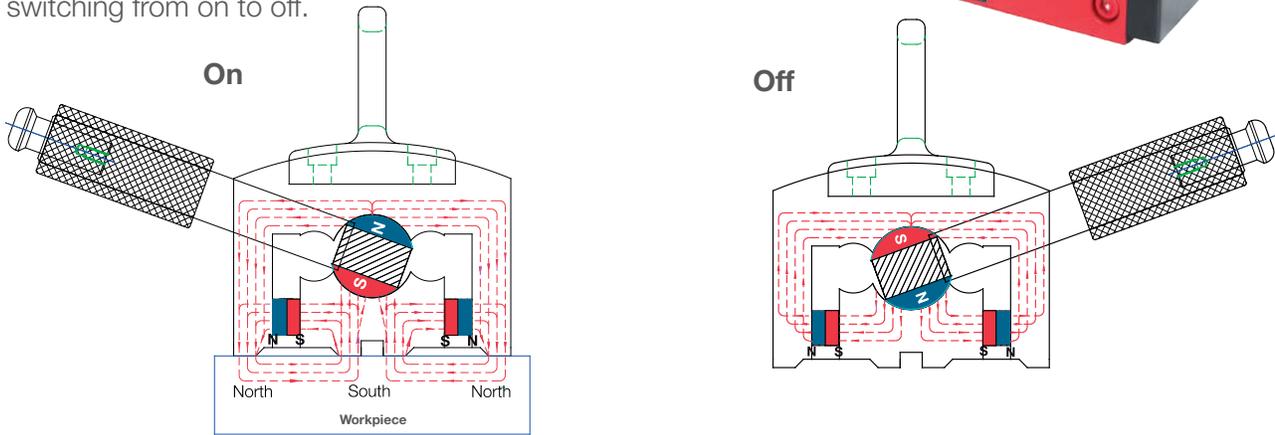
The thin plate specialist

- Permanent magnetic lifter for the safe lifting of thin plate and pressings.
- Guaranteed lifting of single plates
- Simple, quick operation

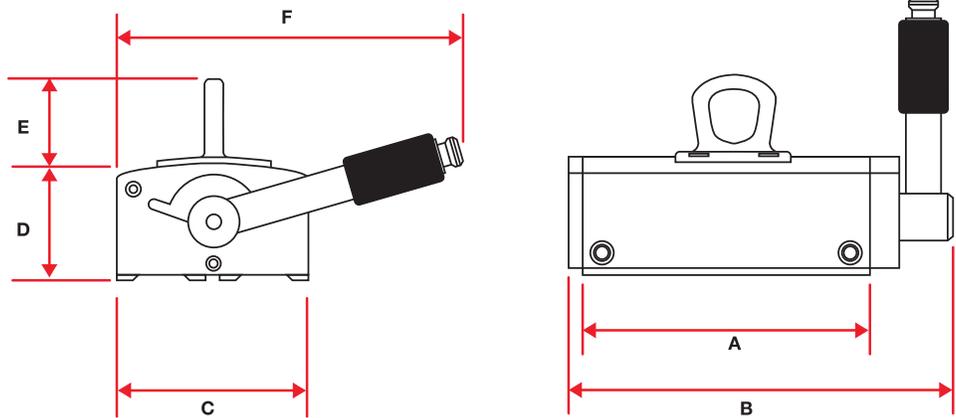


## How it works

Manually rotating the handle changes the direction of the magnetic flux, thereby switching from on to off.



## Technical Data



Product	Self Weight (lbs)	Dimensions (inches)						Length Max (inches)	Material Thickness			
		A	B	C	D	E	F		0.20 inches	0.25 inches	0.30 inches	0.40 inches
									SWL* (lbs)	SWL* (lbs)	SWL* (lbs)	SWL* (lbs)
TP330	18	6	8	4	3	3	7	60	165	220	330	440
TP660	33	12	14	4	3	3	7	80	330	440	660	880

\*Safe working load

# Choosing a Manually Switchable Permanent Magnetic Lifter

Use the tables below to determine safe working loads and load dimensions for each lifter option.

## Flat parts

Product	SWL* Flat lbs	Max Length (X) inches	Material Thickness (T) inches										Max Width (Y)
			0.40	0.60	0.80	1.00	1.20	1.80	2.40	2.80	3.20	4.00	
<b>Ultralift Plus</b>													Max Width (Y)  (At material thicknesses shown above)
UL0275+	275	60	18.9	19.7	20.7	16.6	13.9	9.2	6.9	5.9	5.2	4.1	
UL0550+	550	60	X	31.1	32.3	33.2	27.7	18.5	13.9	11.9	10.4	8.3	
UL1100+	1100	80	X	X	37.3	39.3	41.5	27.7	20.7	37.6	31.3	23.6	
UL2200+	2200	120	X	X	X	35.8	55.4	36.9	27.7	23.7	20.7	16.6	
UL4400+	4400	120	X	X	X	X	27.6	50.8	68.9	47.5	41.5	33.2	
<b>Ultralift LM</b>													
LM0275	275	60	18.9	19.7	20.7	16.6	13.9	9.2	6.9	5.9	5.2	4.1	
LM0550	550	60	X	31.1	32.3	33.2	27.7	18.5	13.9	11.9	10.4	8.3	
LM1100	1100	80	X	X	37.3	39.3	41.5	27.7	20.7	37.6	31.3	23.6	
LM2200	2200	120	X	X	X	35.8	55.4	36.9	27.7	23.7	20.7	16.6	
LM4400	4400	120	X	X	X	X	27.6	50.8	68.9	47.5	41.5	33.2	

Product	SWL* Flat lbs	Max Length (X) inches	Material Thickness (T) inches							
			0.20	0.25	0.28	0.30	0.35	0.40	0.60	0.80

## Ultralift TP

Product	SWL* Flat lbs	Max Length (X) inches	0.20	0.25	0.28	0.30	0.35	0.40	0.60	0.80	1.00	Max Width (Y)
TP330	440	60	51.2	56.7	59.1	59.1	59.1	59.1	45.3	33.9	26.8	Max Width (Y)
TP660	880	80	78.7	78.7	78.7	78.7	78.7	78.7	67.7	50.8	40.6	

## Round parts

Product	SWL Round* lbs	Diameter (D) inches							
		2.00	4.00	8.00	12.00	16.00	18.00	20.00	24.00

## Ultralift Plus

Product	SWL Round* lbs	2.00	4.00	8.00	12.00	16.00	18.00	20.00	24.00	Max Width (Y)	
UL0275+	110	63.0	32.3	7.9	X	X	X	X	X	Max Width (Y)  (At material thicknesses shown above)	
UL0550+	220	137.8	64.6	15.7	7.1	X	X	X	X		
UL1100+	440	137.8	129.1	31.5	14.2	8.3	X	X	X		
UL2200+	880	X	157.5	63.0	28.3	16.5	12.1	X	X		
UL4400+	1760	X	X	126.0	58.3	33.1	24.3	14.6	X		
<b>Ultralift LM</b>											
LM0275	110	63.0	32.3	7.9	X	X	X	X	X		
LM0550	220	137.8	64.6	15.7	7.1	X	X	X	X		
LM1100	550	137.8	129.1	31.5	14.2	8.3	X	X	X		
LM2200	1100	X	157.5	63.0	28.3	16.5	12.1	X	X		
LM4400	2200	X	X	126.0	58.3	33.1	24.3	14.6	X		

Recommended use shown in WHITE

RED shows typical reduction in load due to thickness of material. X - Cannot be used for stated dimensions.

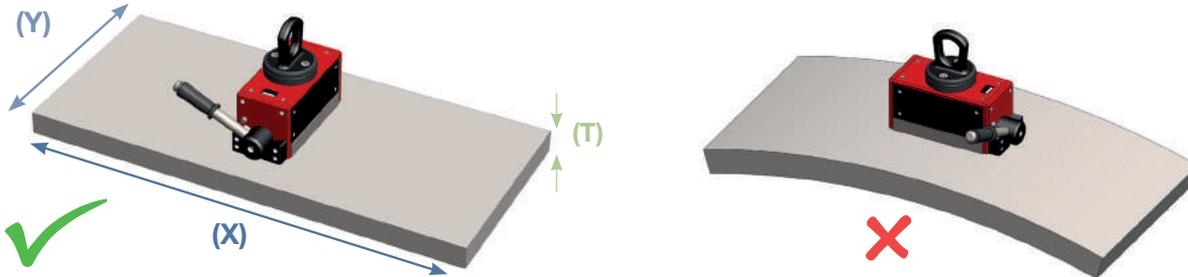
\* Based on mild steel and bright finish

This chart is to assist but once material thickness is identified maximum length can be shorter and width can be greater providing total area remains the same per magnet. Once length / width (total area) exceeds the recommended dimensions for the thickness, additional magnets should be used. (See page over). Number of magnets will continue to increase pro rata to plate size. Always position magnets to suit thickest material.

# Do's and Don'ts

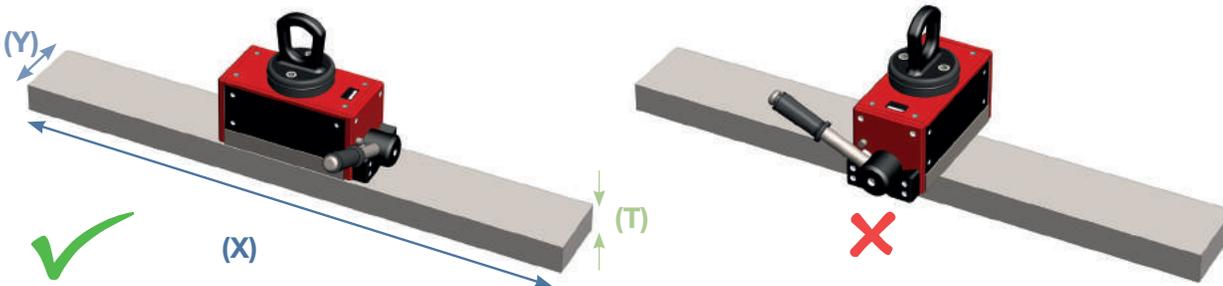
## Positioning the lifter

### Component wider than the length of the magnet



Magnet across increases clamping at possible point of peel.

### Component width less than the magnet length



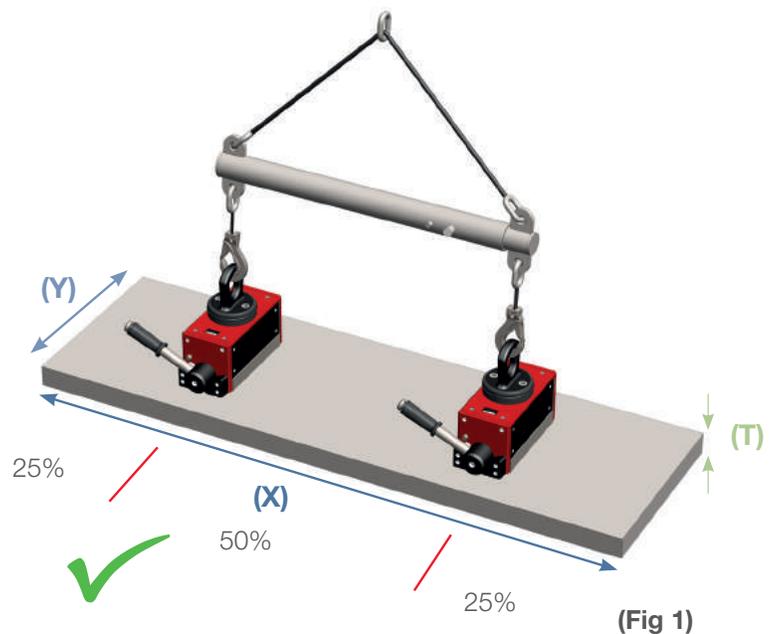
### Parts longer than maximum recommended length

Once Max length or Max SWL is reached multiple magnets must be used. Ideal positioning shown.

(Fig 1)

Contact our sales department for specific requirements.

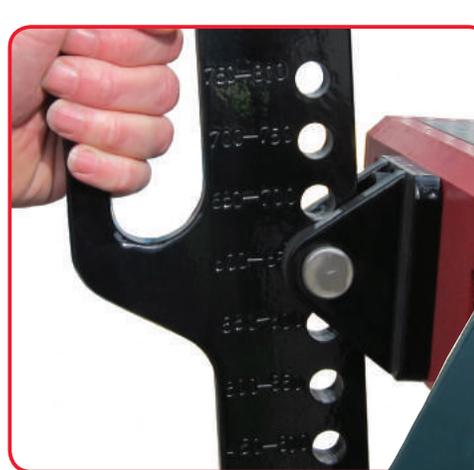
Lifting beams are available on request, please speak to our sales team for more information.



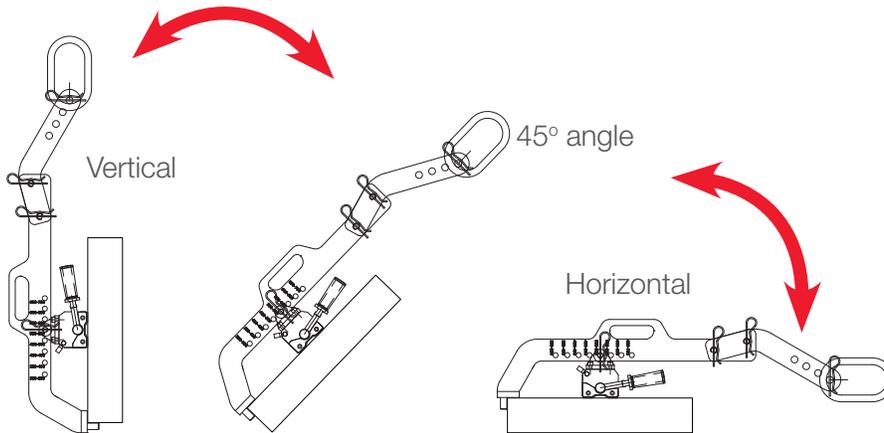
(Fig 1)

# 90° Disc and Plate Lifter

- Cost effective lifting frame with permanent lifting magnet.
- Ideal for lifting and rotating steel discs and plates in positioning and machine loading applications.
- Full adjustment and built in safety features.



## How it works



Adjustment for vertical lift for different loads.



## Technical Data

Product	SWL*	Load Thickness Min.	Load Thickness Max.	Load Diameter Min.	Load Diameter Max.
	lbs	inches	inches	inches	inches
LF125	275	0.79	2.17	9.8	23.6
LF250	550	1.18	3.15	11.8	27.6
LF500	1100	1.57	4.92	13.8	31.5
LF1000	2200	1.97	6.30	19.7	39.4

\*Safe working load

90° lifter can lift round and rectangular items.

# Battery Activated Magnetic Lifter

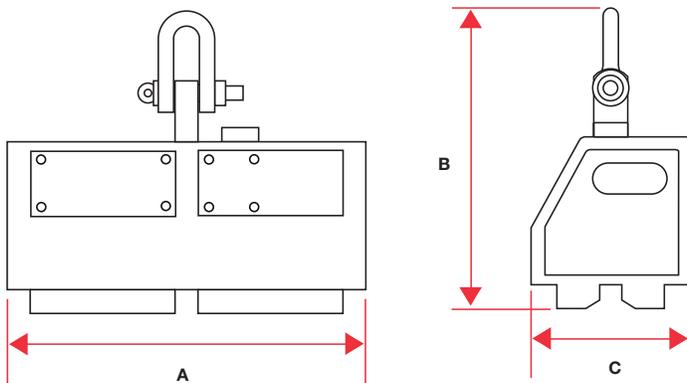
- Battery only required to energise magnets
- Permanent magnets ensure failsafe operation
- 2:1 lift safety factor guaranteed
- Push button or automatic switch operation
- Optional remote control
- Built in safety mechanisms such as lifting eye sensor



## Re-chargeable batteries

- Lifter has built in socket for charging the battery on site

## Technical Data



Product	Load profile	Unit Weight	SWL*	Diameter Min.	Diameter Max.	Dimensions inches		
		lbs	lbs	inches	inches	A	B	C
EPML1250R	Round	387.5	1650	7.9	15.7	27.2	20.9	11.0
EPML3000	Flat	363.0	5290	N/A	N/A	27.2	20.9	11.0

\*Safe working load

# Optimag E

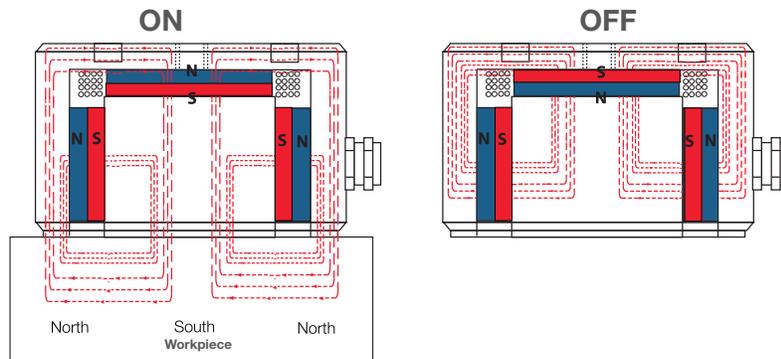
Electronically switchable permanent magnets (ESPM)

- Ideal for clamping or lifting loads with clean, even, flat surfaces
- Suitable for applications which require sensing or built-in PLC control
- Failsafe operation - lose power it will retain the hold
- Ideal for materials from 0.4" thick

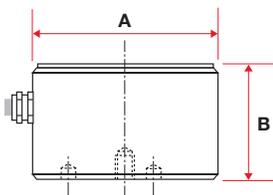


## How it works

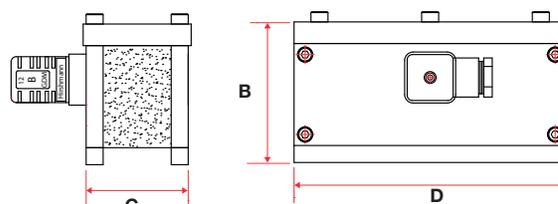
A single pulse of power switches the magnet by reversing the magnetic poles and in doing so changes the magnetic flux direction to hold or release the load. Magnetism is channelled to provide a deeper magnetic field making it ideal for thicker materials



## Technical Data



Circular Optimag E



Rectangular Optimag E



ESPM Controller

Product	Load Profile	SWL* lbs	Dimensions inches				Unit Weight lbs
			A	B	C	D	
<b>Circular</b>							
ESPM80C	Flat	190	3.1	2.2	N/A	N/A	3.3
ESPM100C	Flat	330	4.1	2.2	N/A	N/A	6.6
ESPM125C	Flat	550	5.1	3.1	N/A	N/A	12.6
ESPM150C	Flat	880	6.1	3.1	N/A	N/A	17.6
<b>Rectangular**</b>							
ESPM2166	Flat	215	N/A	3.3	2.4	6.3	8.4
ESPM2177H	Flat	660	N/A	5.1	3.0	6.7	24.3

Control Unit	Operating Voltage v	Rating	Dimensions inches		
			Width	Height	Depth
M24388/SC	240	50	11.8	11.8	6.1
M24388/DC	240	100	11.8	11.8	6.1
6001CONT	415	180	15.7	11.8	6.1
M24388/HAND	N/A	N/A	4.4	2.6	2.2
6001/MH	N/A	N/A	4.4	2.6	2.2

Standard 240V - alternate voltages made to order

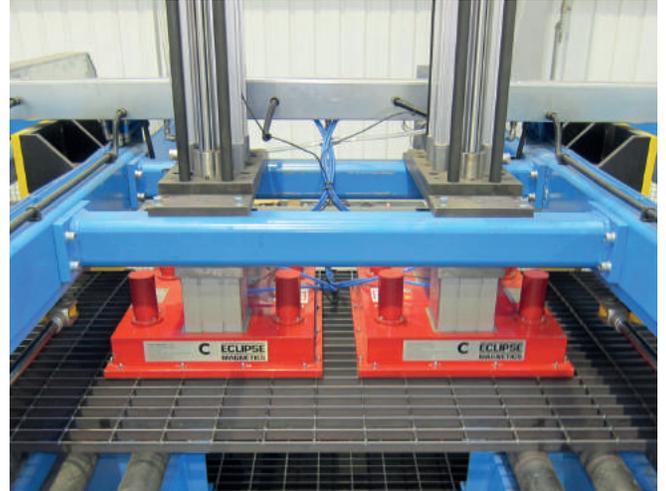
\*Safe working load

\*\*Can be manufactured to lift flat or round

# Optimag P

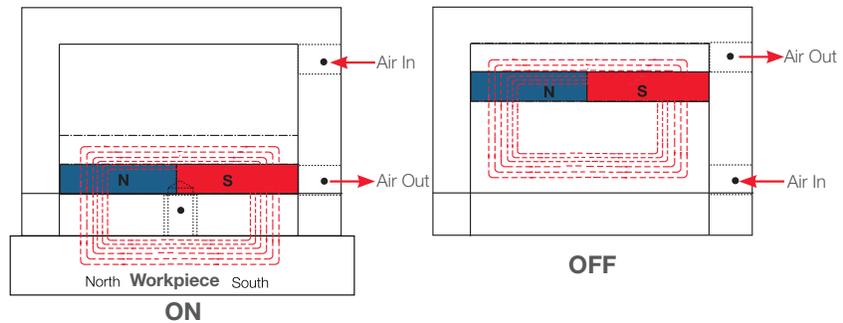
Pneumatically switchable permanent magnets (PSPM)

- Ideal for rigid, thin or perforated pressings or sheet
- Suitable for loads with rough, uneven or painted surfaces
- Failsafe operation - lose air clamping hold is retained
- Ideal for material thicknesses from 0.08" thick

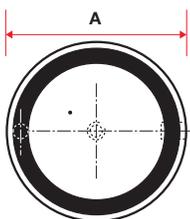


## How it works

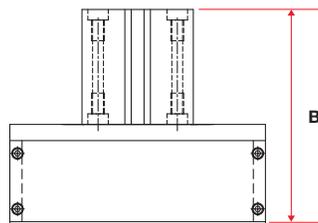
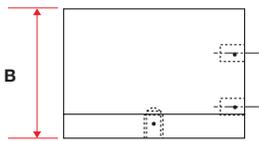
A pulse of air moves the magnet pack up and down thereby directing the magnetic flux into or away from the load. The air is required only for switching, a constant air source is not required during clamping.



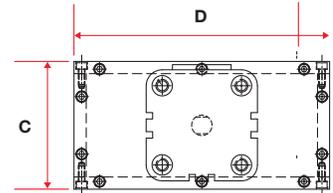
## Technical Data



Circular Optimag P



Rectangular Optimag P



Product	Load Profile	SWL*	Dimensions inches				Unit Weight lbs
			Diameter A	Height B	Width C	Length D	
<b>Circular</b>							
PSPM80C	Flat	18.7	3.1	3.1	N/A	N/A	2.2
PSPM100C	Flat	40.8	3.9	3.3	N/A	N/A	6.6
PSPM125C	Flat	63.9	4.9	3.7	N/A	N/A	10.6
PSPM150C	Flat	130.0	5.9	4.3	N/A	N/A	19.4
<b>Rectangular</b>							
PSPM1520	Flat	77.2	N/A	6.5	7.8	5.9	13.2
PSPM2030	Flat	220.5	N/A	7.9	11.8	7.9	32.4

\*Safe working load

# Choosing the correct product (ESPM and PSPM)

Use the table below to determine which product is suitable for your load dimensions

## Optimag E

Product	Load Profile	Max. SWL lbs	Rating	Max. Length (X) inches	Material Thickness (T) inches							
					0.3	0.4	0.6	0.8	1.2	1.6	2.0	2.4

### Circular

ESPM80C	Flat	185	7.7	24	X	23.6	23.6	23.6	23.6	18.0	14.4	11.8
ESPM100C	Flat	330	11.0	31	X	X	31.5	31.5	31.5	23.8	19.1	15.9
ESPM125C	Flat	550	19.8	39	X	X	X	39.4	39.4	31.7	25.4	21.1
ESPM150C	Flat	880	26.5	59	X	X	X	59.1	45.1	33.9	28.2	22.6

### Rectangular

ESPM284	Flat	92	13.2	16	15.7	15.7	15.7	15.7	15.7	13.3	10.0	8.3
ESPM286	Flat	108	24.3	20	19.7	19.7	19.7	19.7	19.7	16.6	12.44	10.0
ESPM2166	Flat	214	22.0	31	31.5	31.5	31.5	30.8	20.5	15.4	12.9	10.2
ESPM2246	Flat	322	33.1	39	39.4	39.4	39.4	37.1	24.7	18.5	14.8	12.4
ESPM2177H	Flat	660	26.5	47	47.2	47.2	47.2	47.2	42.3	31.7	25.4	21.1
ESPM2257	Flat	992	39.7	59	59.1	59.1	59.1	59.1	50.8	38.1	30.5	25.4
ESPM2347H	Flat	1322	52.9	59	59.1	59.1	59.1	59.1	59.1	50.8	40.6	33.9

Max Width (Y)

(At material thicknesses shown)

## Optimag P

Product	Load Profile	Max. SWL lbs	Max. Length (X) inches	Material Thickness (T) inches					
				0.1	0.2	0.3	0.4	0.6	0.8

### Circular

PSPM80C	Flat	18.7	15.7	15.7	15.7	13.4	10.8	7.2	5.4
PSPM100C	Flat	41.4	19.7	19.7	19.7	19.7	19.1	14.3	9.5
PSPM125C	Flat	63.9	23.6	23.6	23.6	23.6	23.6	20.4	12.3
PSPM150C	Flat	130.1	31.5	31.5	31.5	31.5	31.5	25.1	18.7

Max Width (Y)

(At material thicknesses shown)

### Rectangular

PSPM1520	Flat	TBA	N/A	Special Applications only. Please contact Eclipse for details								
PSPM2030	Flat	TBA	N/A									

Recommended use shown in WHITE

RED shows typical reduction in load due to thickness of material. X - Cannot be used for stated dimensions.

All details above are based upon the mild steel bright finish, if material is different please refer to material and air gap information page.

The chart is to assist but once material thickness is identified maximum length can be shorter and width can be greater providing total area remains the same per magnet.

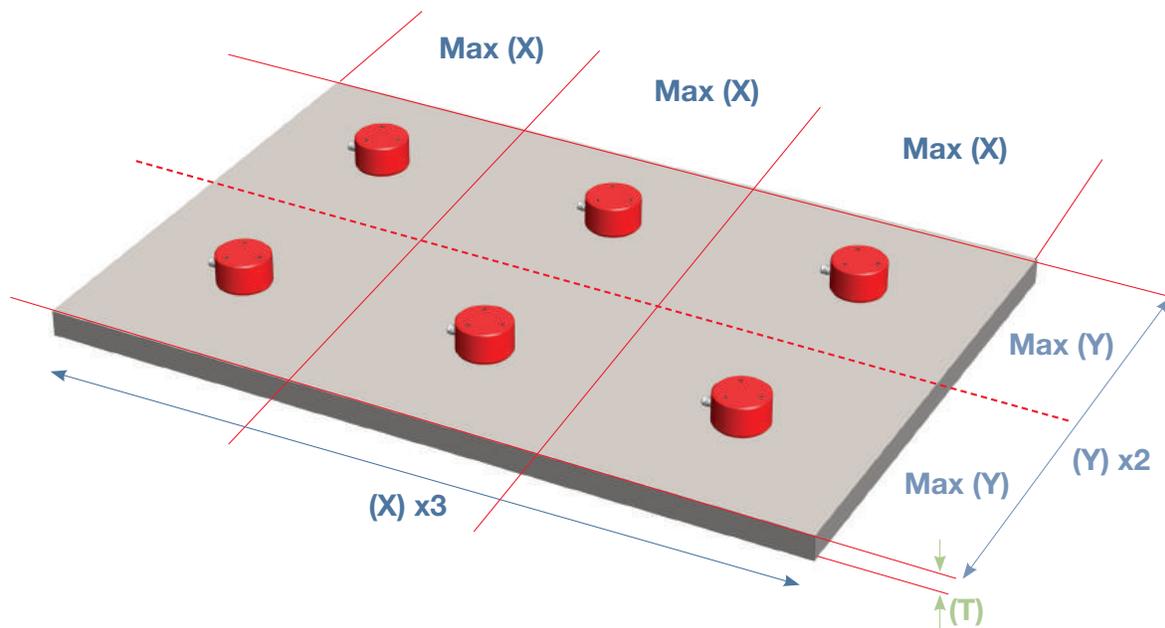
Once length / width (total area) exceeds the recommended dimensions for the thickness, additional magnets should be used. (See facing page).

Number of magnets will continue to increase pro-rata to plate size. Always position magnets to suit thickest material. Contact our sales department for more information or for any specific requirements.

# Using multiple lifters

## Positioning the ESPM or PSPM lifter

Once the load dimensions exceed the maximum stated, multiple lifters must be used. Ideal positioning is shown below.



Optimag 166RR

Rectangular Optimag E is supplied for lifting flat and round material. These can be supplied with V pole extensions.

# Handling Accessories

## Sheet separators

- Safe, fast, efficient removal of single sheets of steel, or pressings from stacks.
- Prevents lifting of two sheets together.
- Range of options for most situations including switchable units designed for high speed / high volume production lines.
- Ideal for use with Eclipse Magnetics lifting magnets.

Easily separates the top item from a stack of sheet steel or pressed products from the rest of the stack ready for automated or manual removal.

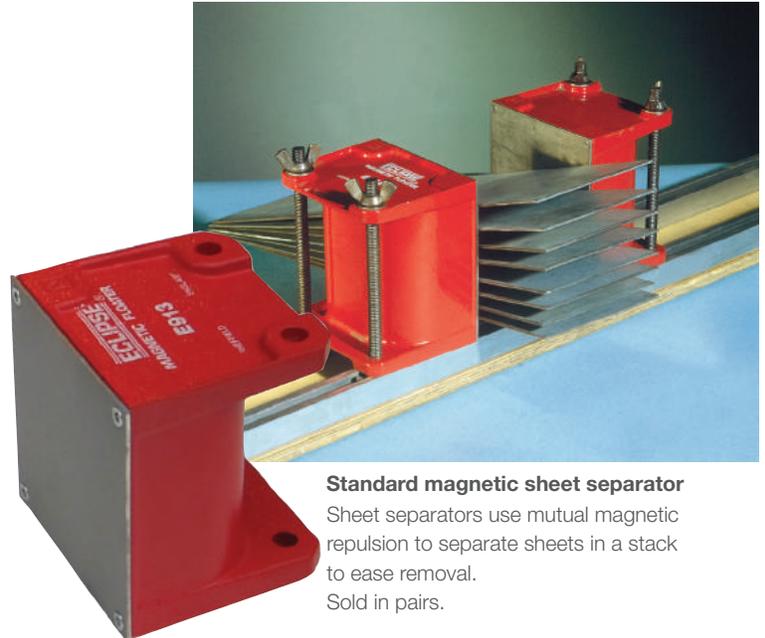
Typically separates material from **0.008" to 0.100" thick** but almost any shape or size can be accommodated by products in our range. Separation ability can be reduced if oil or treated oil is present on the sheets.

### Technical Data

Product	Width	Height	Depth	Mounting hole size	Weight per pair
	inches	inches	inches		lbs
E913	2.9	3.0	2.6	M8	3.09
E914	3.6	4.0	3.0	M8	6.83
E915	4.4	6.0	3.5	M10	14.88

Product	Magnetic material	Mounting hole size	Height
		inches	inches
SF100/C	Ceramic	2	4
SF200/C	Ceramic	2	8
SF300/C	Ceramic	2	12
SF400/C	Ceramic	2	16
SF500/C	Ceramic	2	20
SF100/R	Rare Earth	2	4
SF200/R	Rare Earth	2	8
SF300/R	Rare Earth	2	12
SF400/R	Rare Earth	2	16
SF500/R	Rare Earth	2	20

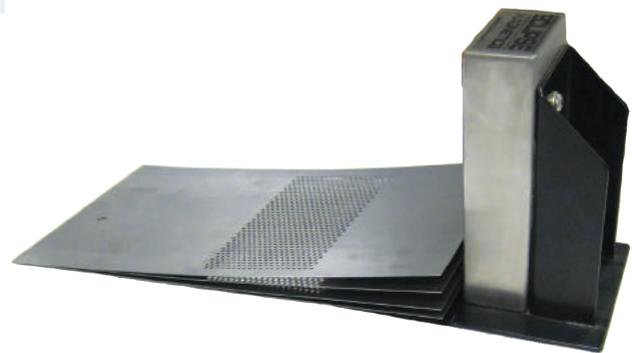
All above ranges are 4" wide, 2" thick



**Standard magnetic sheet separator**

Sheet separators use mutual magnetic repulsion to separate sheets in a stack to ease removal. Sold in pairs.

It's important to order the correct size of separator for the size of material to be separated. If the items are half the width of the separator the top items can flip onto the face of the separator instead of being separated.



**Industrial (made to order) magnetic sheet separator**

# Service and Maintenance

Full inspection and certification

**All lifting systems should be serviced every 12 months by a competent person.**

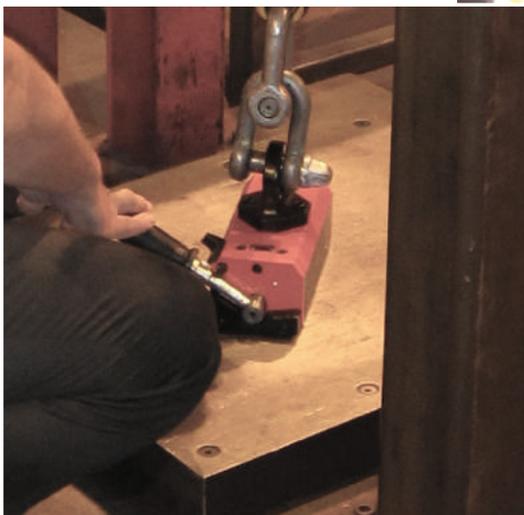
Our fully trained personnel provide a full inspection and certification service. Please refer to manual guidelines for inspection requirements.

## Periodic inspection

If the lifting magnet is being used in the EU then it must be inspected and maintained in accordance with the requirements of PUWER (1998) (UK Regulations).

For areas outside the EU the lifter must be inspected and maintained in compliance with the applicable standards for suspended load handling.

Should the data plates become detached or damaged please contact your supplier immediately for replacement plates.



## Other Products

In addition to our lifting and handling range, Eclipse Magnetics manufacture a wide range of high performance magnetic products for diverse applications.



Sub-micron filtration for industrial fluids



Workholding systems



Magnetic aids for workshop & general engineering applications



Magnetic materials & assemblies



Foreign body removal - separation & detection systems



Heating system filters

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While every effort has been made to ensure the accuracy of the information in this publication please note that specifications may change without notice.



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Innovative Magnetic Solutions

