

DLHONLINE



Magnetic Lifting & Handling Systems

Safe & efficient handling for manufacturing and assembly lines.



DLHONLINE



A world leader in magnetic technology

The safest, most efficient way to move ferrous loads



Eclipse Magnetics

100 years of manufacturing excellence



Serving some of the leading names in industry

JCB

Caterpillar

Corus

TATA Steels

NSK

BMW

Ford

Perkins

Fanuc

ABB Robotics

Yaskawa

A world leader in magnetic technology

With 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. 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.

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:-



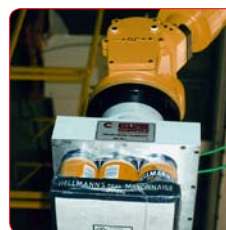
Simple, easy use
ready to use in minutes,
simple, safe operation.



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.



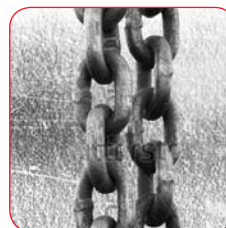
Single person or automated use
complete safety, minimal
training, labour efficient.



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



Optimises storage space
floor space optimised 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 HSE regulations and guidelines such as the Lifting Operations and Lifting Equipment Regulations 1998 (LOLER) and the Provision and Use of Work Equipment Regulations 1998 (PUWER) (UK Regulations).

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

Magnetic lifting and handling

Optimising 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
- Palletising/depalletising systems

Give your business the edge.....

A few of our many satisfied customers...



Tyzak Machine Blades

Product: Manually Switched Permanent Magnet (MSPM)

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.

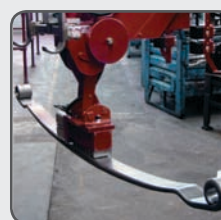


FG Wilson Generator Manufacture

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 3mm 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

| Product Type | Page | Material shape | | Recommended material thickness mm | | | | | | Bright |
|------------------|------|----------------|-------|--------------------------------------|-----|------|-------|-----|-----|--------|
| | | Flat | Round | 1-4 | 5-8 | 8-12 | 12-20 | 20+ | 50+ | |
| LM Lifters | 11 | ✓ | ✓ | | | | | ✓ | | ✓ |
| UL+ Lifters | 9 | ✓ | ✓ | | | | | ✓ | | ✓ |
| TP Lifters | 12 | ✓ | | | ✓ | ✓ | ✓ | ✓ | | ✓ |
| 90 Degree Lifter | 15 | ✓ | | | | | ✓ | ✓ | | ✓ |
| Battery Lifters | 16 | ✓ | ✓ | | | | | ✓ | ✓ | ✓ |
| Optimag E | 17 | ✓ | ✓ | | | ✓ | ✓ | ✓ | | ✓ |
| Optimag P | 18 | ✓ | | ✓ | ✓ | ✓ | ✓ | ✓ | | ✓ |

Note: Please speak to our sales department on specific requirements. This table is to show a rough guide to our products.

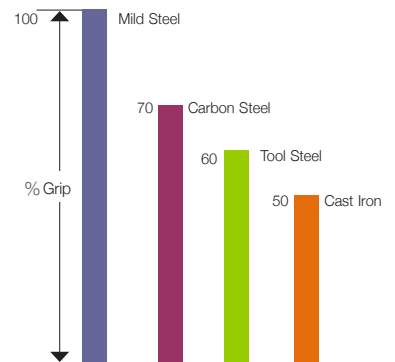
Important Key factors to consider

A guidance on key considerations when choosing the correct product. Please contact our sales department for more information or for any specific requirements.

Material Type

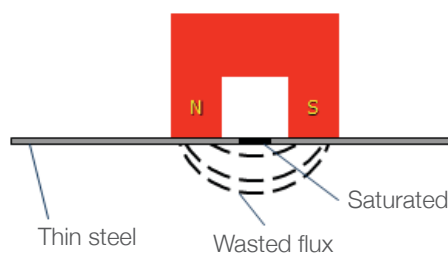
The scale opposite highlights the effect material type has on clamping forces.

Workpiece Material

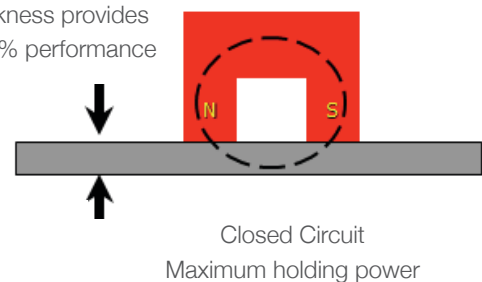


Material Thickness

To achieve maximum clamping force minimum materials should be observed.



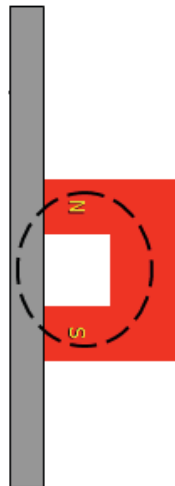
Minimum part thickness provides 100% performance





department for more information.

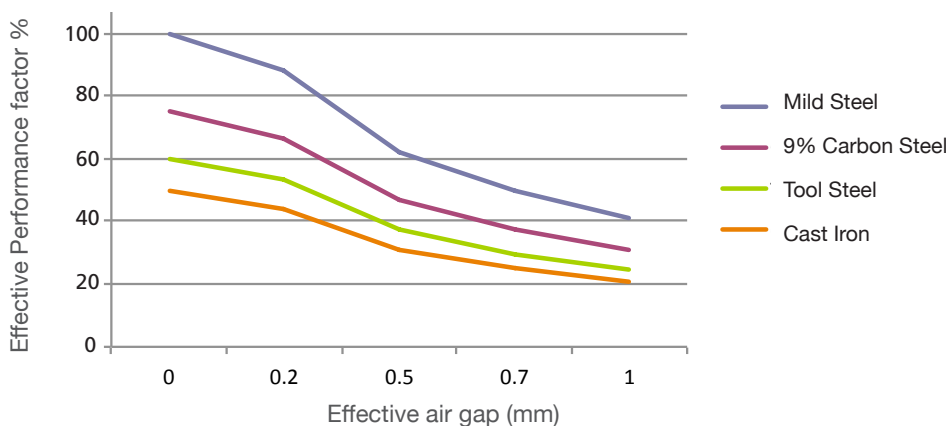
| | Surface finish | | Actuation method | | |
|--|----------------|--------|------------------|----------------|---------------|
| | Black | Scaled | Manual | Electronically | Pneumatically |
| | ✓ | ✓ | ✓ | | |
| | ✓ | ✓ | ✓ | | |
| | ✓ | | ✓ | | |
| | ✓ | | ✓ | | |
| | ✓ | ✓ | ✓ | | |
| | | | | ✓ |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



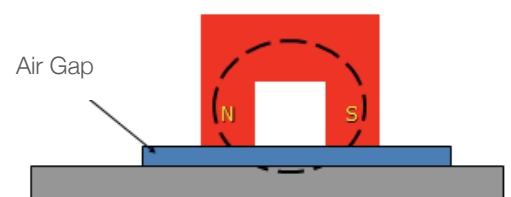
Please Note:- All specifications shown are based on a straight vertical lift. Should the load be rotated through 90° the safe working load will be reduced by 80% of the stated values.

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.



Semi - closed circuit
Reduced holding power

Ultralift^{PLUS}

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

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.

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

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

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.



Technical Data

| Product | Unit Weight kg | Max Length of load mm | Flat Section | | Round Section | | Dimensions mm | | | | | |
|---------|-------------------|--------------------------|--------------|----------------------|---------------|---------------------|------------------|-----|-----|-----|-----|-----|
| | | | SWL * kg | Thickness Min. mm | SWL kg | Diameter Max. mm | A | B | C | D | E | F |
| UL0125+ | 4 | 1500 | 125 | 20 | 50 | 200 | 152 | 64 | 74 | 69 | 101 | 155 |
| UL0250+ | 11 | 1500 | 250 | 25 | 100 | 300 | 218 | 94 | 96 | 92 | 155 | 214 |
| UL0500+ | 27 | 1500 | 500 | 30 | 200 | 400 | 266 | 123 | 128 | 122 | 224 | 300 |
| UL1000+ | 63 | 1500 | 1000 | 45 | 400 | 450 | 391 | 140 | 174 | 176 | 260 | 359 |
| UL2000+ | 157 | 2000 | 2000 | 70 | 800 | 600 | 493 | 195 | 227 | 233 | 368 | 477 |

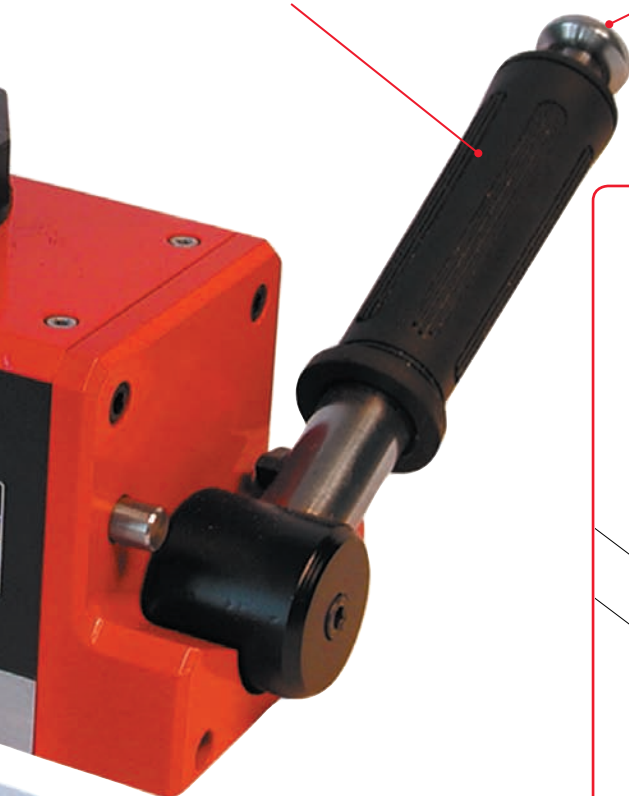
* Safe working load



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

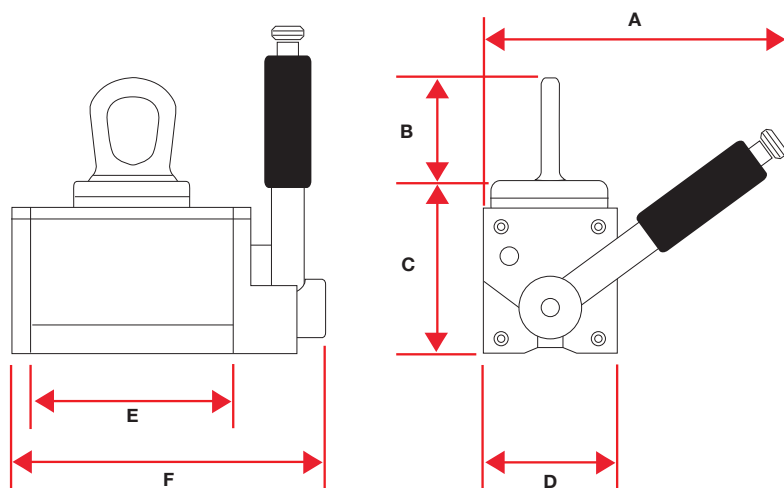
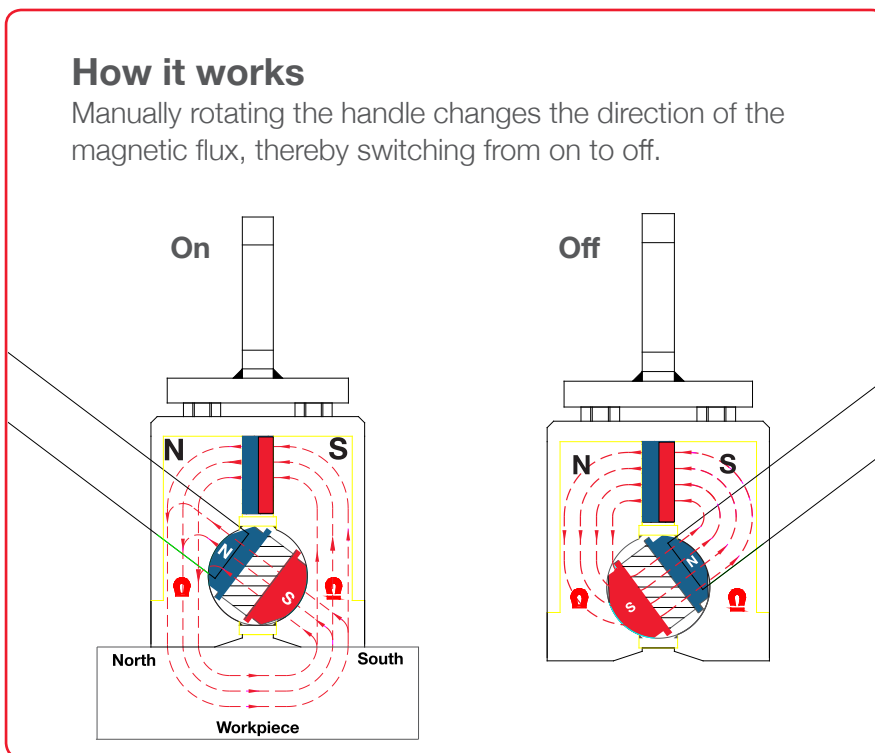
Secondary Safety

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



How it works

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



DLHONLINE

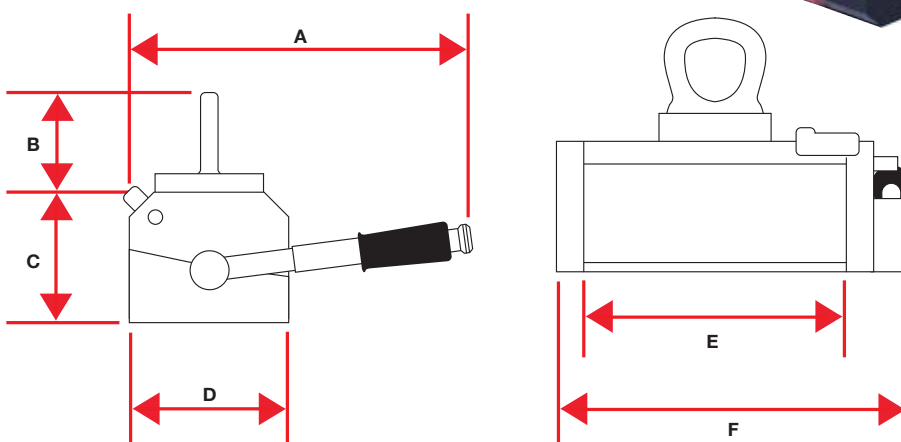
Ultralift LM Economy Range

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 | Unit Weight | Max. Length of load | Flat Section | | Round Section | | Dimensions | | | | | |
|---------|-------------|---------------------|--------------|----------------|---------------|---------------|------------|-----|-----|-----|-----|-----|
| | | | SWL* | Thickness Min. | SWL* | Diameter Max. | mm | | | | | |
| | kg | mm | kg | mm | kg | mm | A | B | C | D | E | F |
| LM0125 | 4.5 | 1500 | 125 | 20 | 50 | 250 | 150 | 54 | 62 | 76 | 110 | 150 |
| LM0250 | 8.5 | 1500 | 250 | 25 | 100 | 300 | 210 | 76 | 72 | 90 | 165 | 200 |
| LM0500 | 17.5 | 1500 | 500 | 30 | 200 | 400 | 281 | 103 | 88 | 106 | 225 | 243 |
| LM1000 | 36.5 | 1500 | 1000 | 45 | 400 | 450 | 391 | 113 | 103 | 136 | 325 | 365 |
| LM2000 | 79 | 2000 | 2000 | 70 | 800 | 600 | 483 | 170 | 132 | 186 | 400 | 526 |

*Safe working load

Ultralift TP

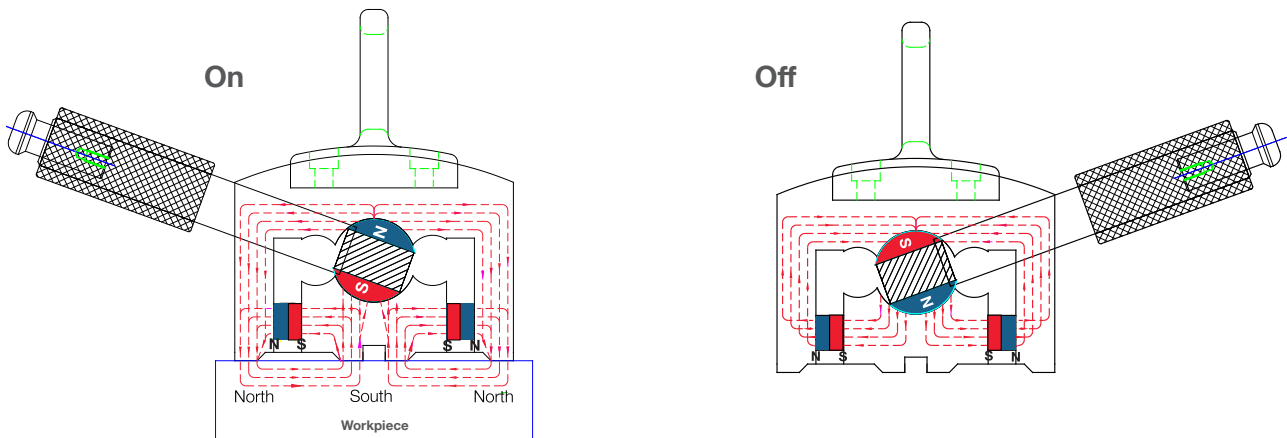
The thin plate specialist

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

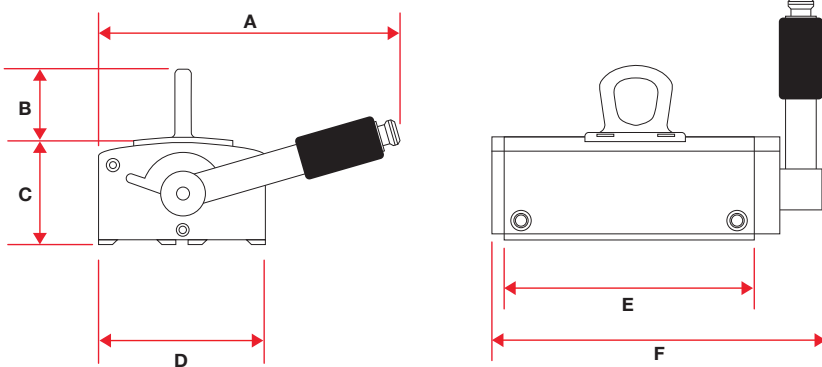


How it works

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



Technical Data



| Product | Unit Weight kg | Material Thickness | | | | | | | | Dimensions mm | | | | | |
|---------|-------------------|--------------------|----------------------|-----------|----------------------|-----------|----------------------|-----------|----------------------|------------------|----|----|-----|-----|-----|
| | | 5mm | | 6mm | | 8mm | | 10mm | | A | B | C | D | E | F |
| | | SWL kg | Length Max. mm | SWL kg | Length Max. mm | SWL kg | Length Max. mm | SWL kg | Length Max. mm | | | | | | |
| TP150 | 8 | 75 | 1500 | 100 | 1500 | 150 | 1500 | 200 | 1500 | 181 | 52 | 74 | 100 | 150 | 202 |
| TP300 | 15 | 150 | 2000 | 200 | 2000 | 300 | 2000 | 400 | 2000 | 181 | 52 | 74 | 100 | 300 | 352 |

Choosing a Manually Switchable Permanent Magnetic lifter

The tables below is a guide to determine a typical safe working load and load dimensions for each lifter option.

Flat parts

| Product | SWL* Flat kg | Max Length (X) mm | Max width (Y) (At material thicknesses shown). | Material Thickness (T) mm | | | | | | | | | | | | | |
|---------|-----------------|----------------------|---|------------------------------|---|---|---|---|----|----|----|----|----|----|----|----|----|
| | | | | 5 | 6 | 7 | 8 | 9 | 10 | 15 | 20 | 25 | 30 | 45 | 60 | 70 | 80 |

Ultralift Plus

| | | | | | | | | | | | | | | | | | | |
|---------|------|------|--|---|---|---|---|---|-----|-----|------|------|------|------|------|------|------|------|
| UL0125+ | 125 | 1500 | | X | X | X | X | X | 490 | 530 | 540 | 430 | 350 | 240 | 180 | 152 | 135 | 108 |
| UL0250+ | 250 | 1500 | | X | X | X | X | X | 688 | 791 | 820 | 860 | 700 | 480 | 360 | 305 | 270 | 216 |
| UL0500+ | 500 | 1500 | | X | X | X | X | X | 700 | 980 | 1260 | 1330 | 1400 | 960 | 720 | 610 | 540 | 432 |
| UL1000+ | 1000 | 1500 | | X | X | X | X | X | X | 600 | 755 | 910 | 1200 | 1500 | 1440 | 1220 | 1080 | 864 |
| UL2000+ | 2000 | 2000 | | X | X | X | X | X | X | X | X | X | 700 | 1290 | 1750 | 1850 | 1610 | 1290 |

Ultralift LM

| | | | | | | | | | | | | | | | | | | |
|--------|------|------|--|---|---|---|---|---|-----|-----|------|------|------|------|------|------|------|------|
| LM0125 | 125 | 1500 | | X | X | X | X | X | 490 | 530 | 540 | 430 | 350 | 240 | 180 | 152 | 135 | 108 |
| LM0250 | 250 | 1500 | | X | X | X | X | X | 688 | 791 | 820 | 860 | 700 | 480 | 360 | 305 | 270 | 216 |
| LM0500 | 500 | 1500 | | X | X | X | X | X | 700 | 980 | 1260 | 1330 | 1400 | 960 | 720 | 610 | 540 | 432 |
| LM1000 | 1000 | 1500 | | X | X | X | X | X | X | 600 | 755 | 910 | 1200 | 1500 | 1440 | 1220 | 1080 | 864 |
| LM2000 | 2000 | 2000 | | X | X | X | X | X | X | X | X | X | 700 | 1290 | 1750 | 1850 | 1610 | 1290 |

| Product | SWL* Flat kg | Max Length (X) mm | Max width (Y) (At material thicknesses shown). | Material Thickness (T) mm | | | | | | | | | |
|---------|-----------------|----------------------|---|------------------------------|---|---|---|---|----|----|----|----|--|
| | | | | 5 | 6 | 7 | 8 | 9 | 10 | 15 | 20 | 25 | |

Ultralift TP

| | | | | | | | | | | | | |
|-------|-----|------|--|------|------|------|------|------|------|------|------|------|
| TP150 | 200 | 1500 | | 1300 | 1440 | 1500 | 1500 | 1500 | 1500 | 1150 | 860 | 680 |
| TP300 | 400 | 2000 | | 2000 | 2000 | 2000 | 2000 | 2000 | 2000 | 1720 | 1290 | 1030 |

Round parts

| Product | SWL Round* kg | Max Length (X) mm | Max width (Y) (At material thicknesses shown). | Diameter (D) mm | | | | | | |
|---------|------------------|----------------------|---|--------------------|-----|-----|-----|-----|-----|-----|
| | | | | 50 | 100 | 200 | 300 | 400 | 450 | 500 |

Ultralift Plus

| | | | | | | | | | | | |
|---------|-----|--|--|------|------|------|------|-----|-----|-----|---|
| UL0125+ | 50 | | | 1600 | 820 | 200 | X | X | X | X | X |
| UL0250+ | 100 | | | 3500 | 1640 | 400 | 180 | X | X | X | X |
| UL0500+ | 200 | | | 3500 | 3280 | 800 | 360 | 210 | X | X | X |
| UL1000+ | 400 | | | X | 4000 | 1600 | 720 | 420 | 308 | X | X |
| UL2000+ | 800 | | | X | X | 3200 | 1480 | 840 | 616 | 370 | X |

Ultralift LM

| | | | | | | | | | | | |
|--------|-----|--|--|------|------|------|------|-----|-----|-----|---|
| LM0125 | 50 | | | 1600 | 820 | 200 | X | X | X | X | X |
| LM0250 | 100 | | | 3500 | 1640 | 400 | 180 | X | X | X | X |
| LM0500 | 200 | | | 3500 | 3280 | 800 | 360 | 210 | X | X | X |
| LM1000 | 400 | | | X | 4000 | 1600 | 720 | 420 | 308 | X | X |
| LM2000 | 800 | | | X | X | 3200 | 1480 | 840 | 616 | 370 | X |

Recommended use shown in WHITE.

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

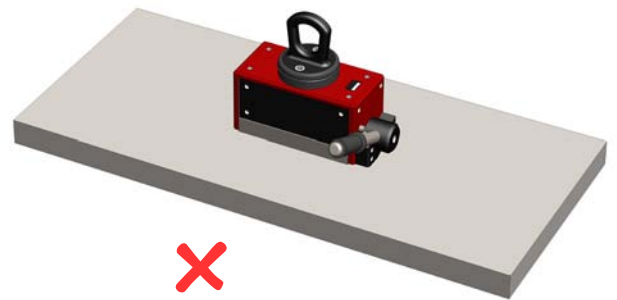
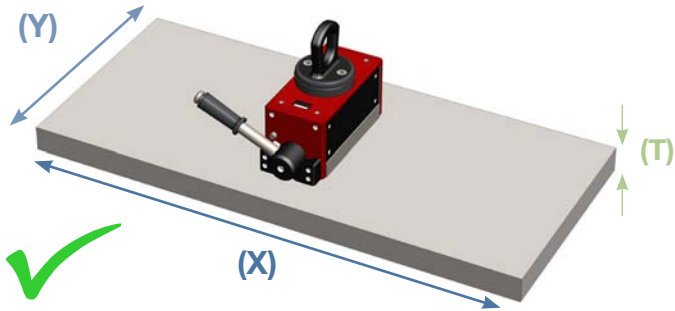
* Based on mild steel and bright finish.

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 over 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.

Do's and Don'ts

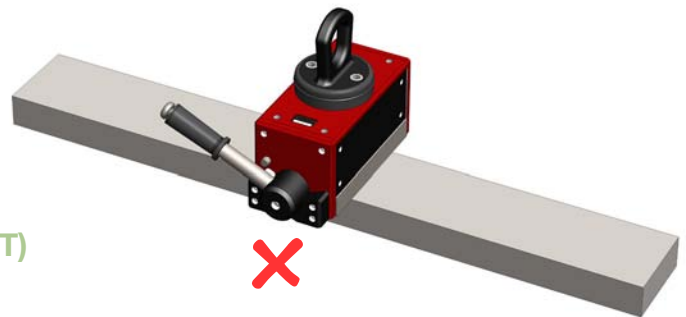
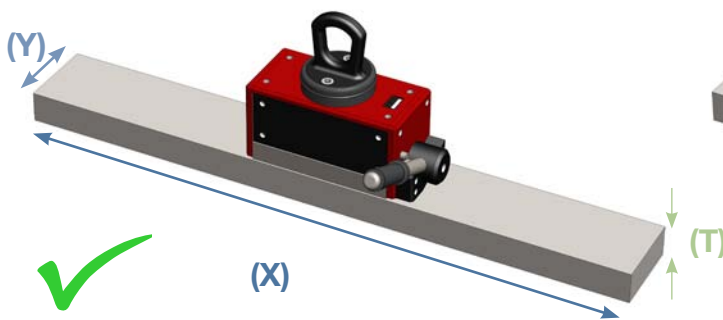
Positioning the lifter

Component wider than the length of the magnet



Magnet across increases clamping at possible point of peel.

Component width less than the magnet length

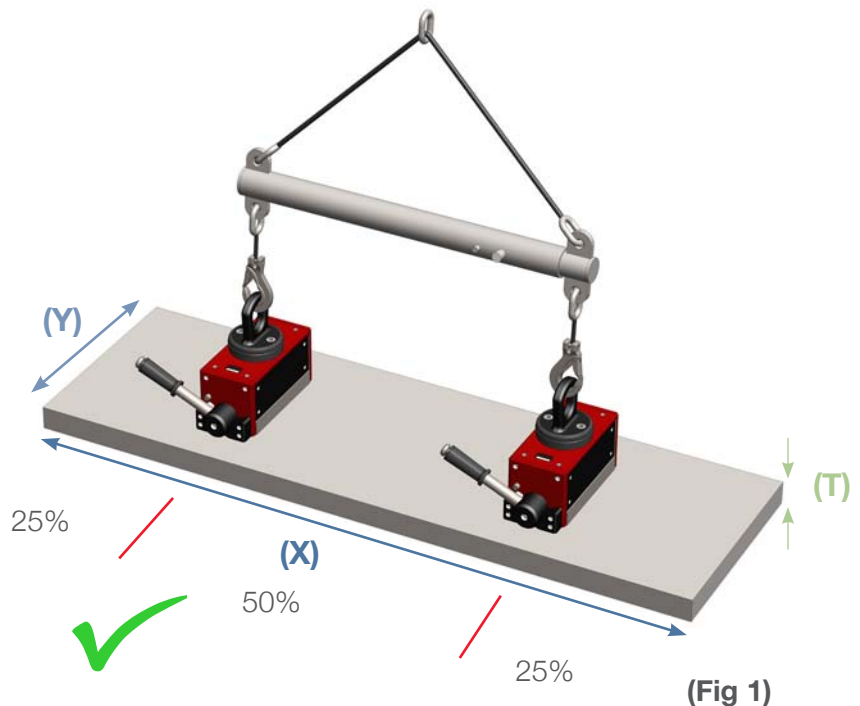


Parts longer than maximum recommended length

Once Max length or Max SWL is reached multiple magnets must be used. Ideal positioning shown. **(Fig 1)**

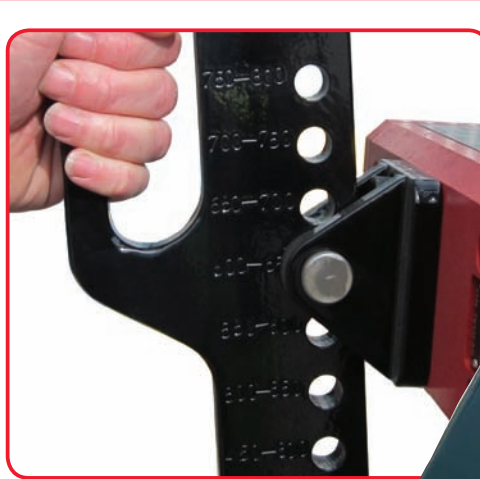
Contact our sales department for more information or for any specific requirements.

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

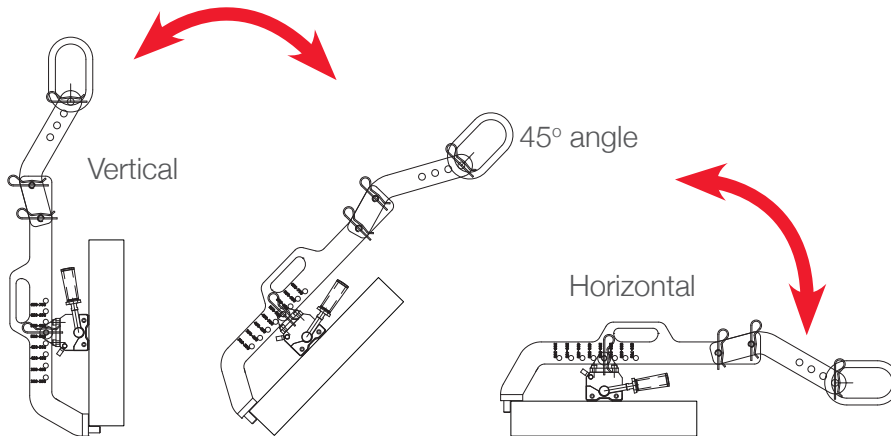


90° Disc and Plate Lifter

- 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



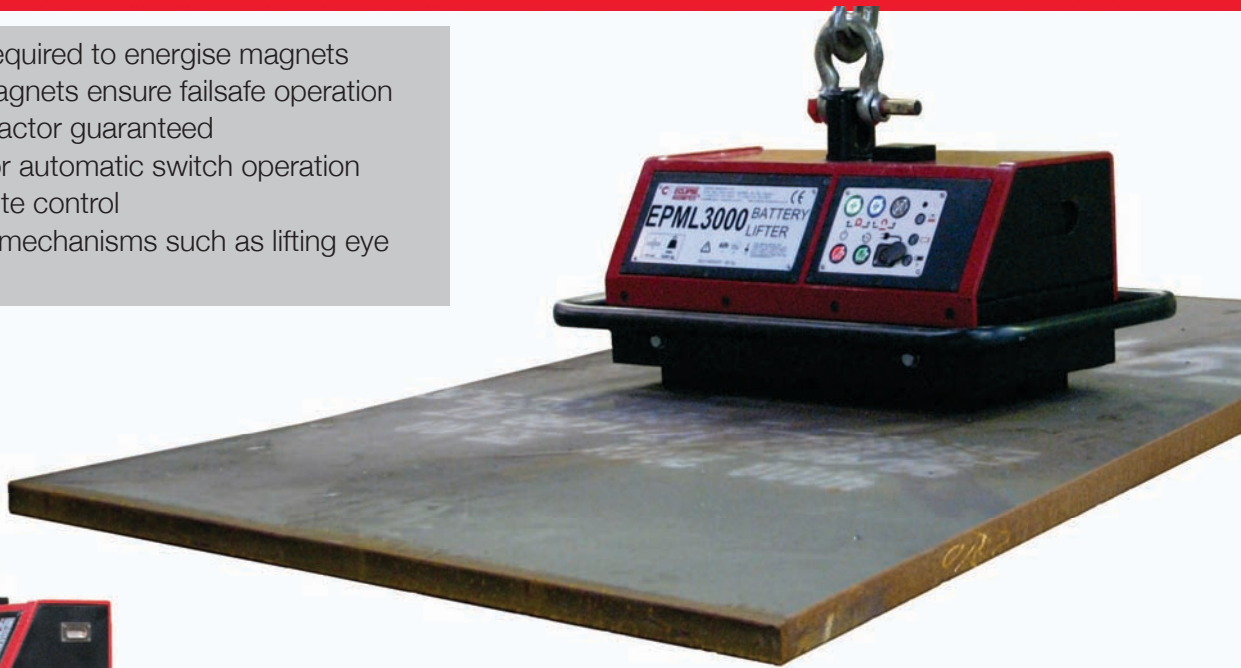
Technical Data

| Product | SWL kg | Load thickness Min. mm | Load thickness Max. mm | Load Diameter Min. mm | Load Diameter Max. mm |
|---------|-----------|------------------------------|------------------------------|-----------------------------|-----------------------------|
| LF125 | 125 | 20 | 55 | 250 | 600 |
| LF250 | 250 | 30 | 80 | 300 | 700 |
| LF500 | 500 | 40 | 125 | 350 | 800 |
| LF1000 | 1000 | 50 | 160 | 500 | 1000 |

90° lifter can lift round and rectangular items.

Battery Activated Magnetic Lifter

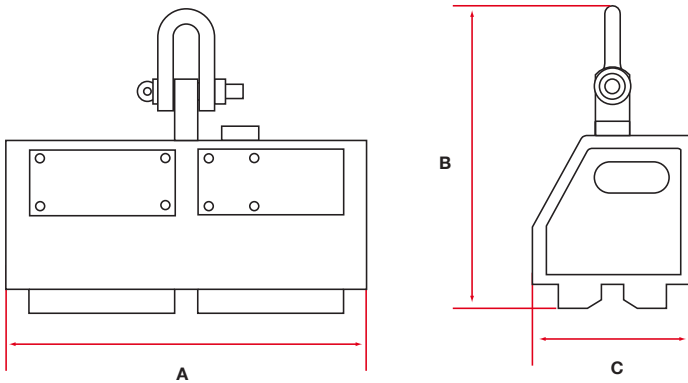
- Battery only required to energise magnets
- Permanent magnets ensure failsafe operation
- 2:1 lift safety factor guaranteed
- Push button or automatic switch operation
- Optional remote control
- Built in safety mechanisms such as lifting eye sensor



Re-chargeable batteries

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

Technical Data



| Product | Load profile | Unit Weight kg | SWL kg | Diameter Min. mm | Diameter Max. mm | Dimensions mm | | |
|-----------|--------------|-------------------|-----------|------------------------|------------------------|------------------|-----|-----|
| | | | | | | A | B | C |
| EPML1250R | Round | 175 | 1250 | 200 | 400 | 690 | 530 | 280 |
| EPML3000 | Flat | 164 | 3000 | N/A | N/A | 690 | 530 | 280 |

Optimag E

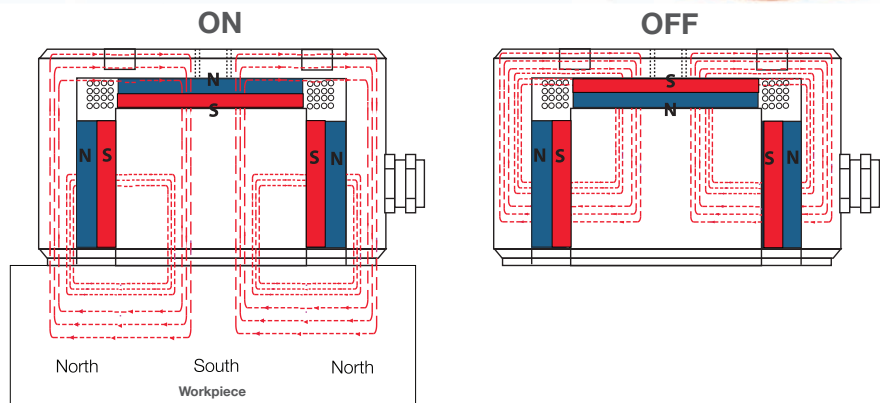
Electronically switchable permanent magnets (ESPM)

- 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 10mm thick

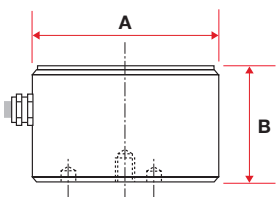


How it works

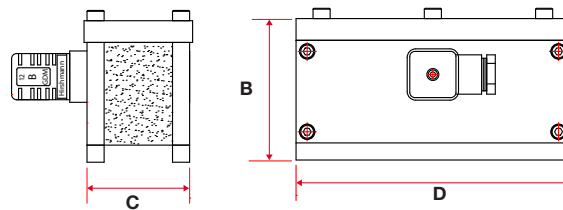
A single pulse of power switches the magnet by reversing the magnetic poles and in doing so changes the magnetic flux direction to hold or release the load. Magnetism is channelled to provide a deeper magnetic field making it ideal for thicker materials



Technical Data



Circular Optimag E



Rectangular Optimag E



ESPM Controller unit

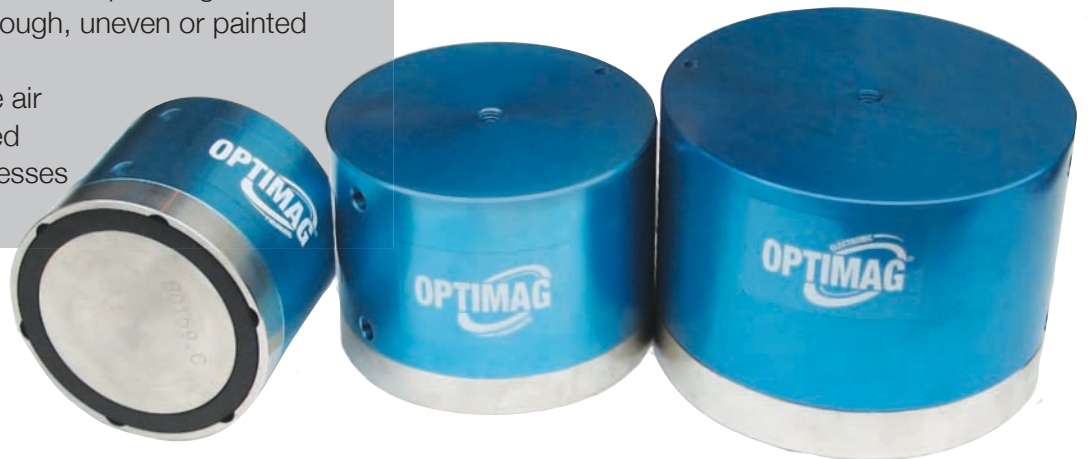
| Product | Lifting mm | SWL kg | Dimensions mm | | | | Unit Weight kg |
|--------------------|---------------|-----------|------------------|-----|-----|-----|----------------------|
| | | | A | B | C | D | |
| Circular | | | | | | | |
| ESPM80 | Flat | 85 | 80 | 55 | N/A | N/A | 1.8 |
| ESPM100 | Flat | 150 | 105 | 62 | N/A | N/A | 3 |
| ESPM125 | Flat | 250 | 130 | 80 | N/A | N/A | 6 |
| ESPM150 | Flat | 400 | 155 | 80 | N/A | N/A | 8.8 |
| Rectangular | | | | | | | |
| Optimag E164RF | Flat | 42 | N/A | 83 | 40 | 160 | 2.8 |
| Optimag E166RF | Flat | 84 | N/A | 83 | 60 | 160 | 3.8 |
| Optimag E177RF | Flat | 234 | N/A | 130 | 74 | 170 | 10.4 |
| Optimag E164RR | Round | 37 | N/A | 83 | 40 | 160 | 2.9 |
| Optimag E166RR | Round | 75 | N/A | 83 | 60 | 160 | 4 |
| Optimag E177RR | Round | 234 | N/A | 135 | 74 | 170 | 10.6 |

| Control Unit | Operating Voltage v | Rating | Dimensions mm | | |
|--------------------------|---------------------------|--------|------------------|--------|-------|
| | | | Width | Height | Depth |
| Optimag EC1 | 240 | 50 | 300 | 300 | 155 |
| Optimag EC2 | 240 | 100 | 300 | 300 | 155 |
| Optimag EC3 | 240 | 180 | 400 | 300 | 155 |
| Optimag EC1/2 Handset | N/A | N/A | 112 | 65 | 55 |
| Optimag EC3 Handset | N/A | N/A | 112 | 65 | 55 |

DLHONLINE Optimag P

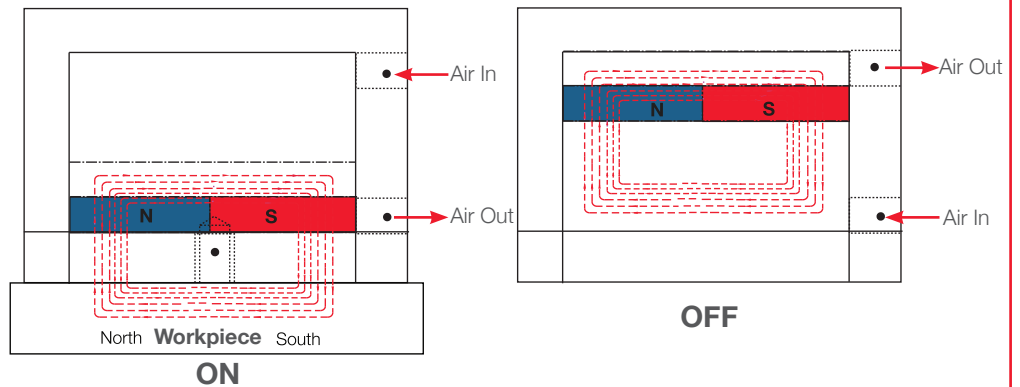
Pneumatically switchable permanent magnets (PSPM)

- 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 2mm thick

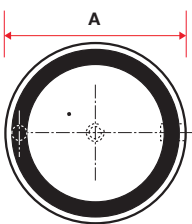


How it works

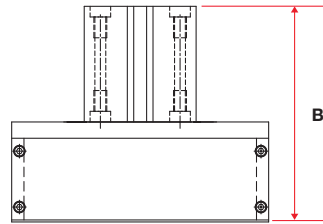
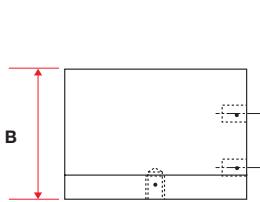
A pulse of air moves the magnet pack up and down thereby directing the magnetic flux into or away from the load. The air is required only for switching, a constant air source is not required during clamping.



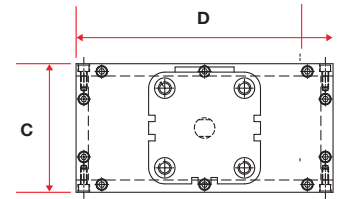
Technical Data



Circular Optimag P



Rectangular Optimag P



| Product | Lifting mm | SWL kg | Dimensions mm | | | | Unit Weight kg |
|--------------------|---------------|-----------|------------------|-------------|------------|-------------|----------------------|
| | | | Diameter A | Height B | Width C | Length D | |
| Circular | | | | | | | |
| PSPM100 | Flat | 18.8 | 100 | 85 | N/A | N/A | 1.50 |
| PSPM125 | Flat | 29 | 125 | 93 | N/A | N/A | 2.60 |
| PSPM150 | Flat | 59 | 153 | 109 | N/A | N/A | 4.40 |
| Rectangular | | | | | | | |
| Optimag 1020P | Flat | 75 | N/A | 168 | 100 | 200 | 6 |
| Optimag 2030P | Flat | 100 | N/A | 180 | 300 | 200 | 12 |

Choosing the correct product (ESPM and PSPM)

The tables below is a guide to determine a typical safe working load and load dimensions for each product.

Optimag E

| Product | Load Profile | Max. SWL kg | Rating | Max. length (X) | Max width (Y) (At material thicknesses shown). | Material Thickness (T) mm | | | | | | | |
|---------|--------------|----------------|--------|-----------------|---|------------------------------|----|----|----|----|----|----|----|
| | | | | | | 8 | 10 | 15 | 20 | 30 | 40 | 50 | 60 |

Circular

| | | | | | | | | | | | | | |
|---------|------|-----|-----|------|--|------|------|------|------|------|------|-----|-----|
| ESPM80 | Flat | 85 | 3.5 | 750 | | 500 | 500 | 500 | 731 | 487 | 365 | 292 | 243 |
| ESPM100 | Flat | 150 | 5 | 1000 | | 750 | 750 | 750 | 800 | 645 | 484 | 387 | 323 |
| ESPM125 | Flat | 250 | 9 | 1200 | | 1000 | 1000 | 1000 | 1200 | 896 | 672 | 538 | 448 |
| ESPM150 | Flat | 400 | 12 | 1500 | | 1200 | 1200 | 1200 | 1500 | 1147 | 1075 | 774 | 806 |

Rectangular

| | | | | | | | | | | | | | |
|---------------|------|-----|----|------|--|------|------|------|------|-----|-----|-----|-----|
| Optimag 164RF | Flat | 42 | 6 | 600 | | 600 | 600 | 600 | 452 | 301 | 226 | 180 | 150 |
| Optimag 166RF | Flat | 84 | 11 | 800 | | 800 | 800 | 800 | 677 | 452 | 339 | 271 | 226 |
| Optimag 177RF | Flat | 234 | 10 | 1500 | | 1500 | 1500 | 1342 | 1006 | 670 | 503 | 403 | 335 |

| Product | Load Profile | Max. SWL kg | Rating | Max. length (X) | Diameters (D) mm | | | | | | | | |
|---------------|--------------|----------------|--------|-----------------|---------------------|------|------|------|------|------|------|-----|-----|
| | | | | | 30 | 40 | 50 | 60 | 80 | 100 | 120 | 150 | 200 |
| Optimag 164RR | Round | 37 | 6 | | 1400 | 550 | 480 | X | X | X | X | X | X |
| Optimag 166RR | Round | 75 | 11 | | 1500 | 1500 | 1490 | 1190 | 650 | 390 | X | X | X |
| Optimag 177RR | Round | 234 | 10 | | N/A | N/A | N/A | 1500 | 1400 | 1200 | 1000 | 820 | 450 |

Optimag P

| Product | Load Profile | Max. SWL kg | Max. Length (X) mm | Max. width (Y) (At material thicknesses shown above). | Material Thickness (T) mm | | | | | |
|---------|--------------|----------------|-----------------------|--|------------------------------|------|------|------|-----|-----|
| | | | | | 3 | 5 | 8 | 10 | 15 | 20 |
| PSPM100 | Flat | 18.8 | 750 | | 750 | 630 | 404 | 324 | 216 | 162 |
| PSPM125 | Flat | 29 | 800 | | 800 | 800 | 590 | 474 | 320 | 240 |
| PSPM150 | Flat | 59 | 1000 | | 1000 | 1000 | 952 | 761 | 507 | 381 |
| PSPM200 | Flat | 106 | 1200 | | 1200 | 1200 | 1200 | 1140 | 760 | 570 |

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.

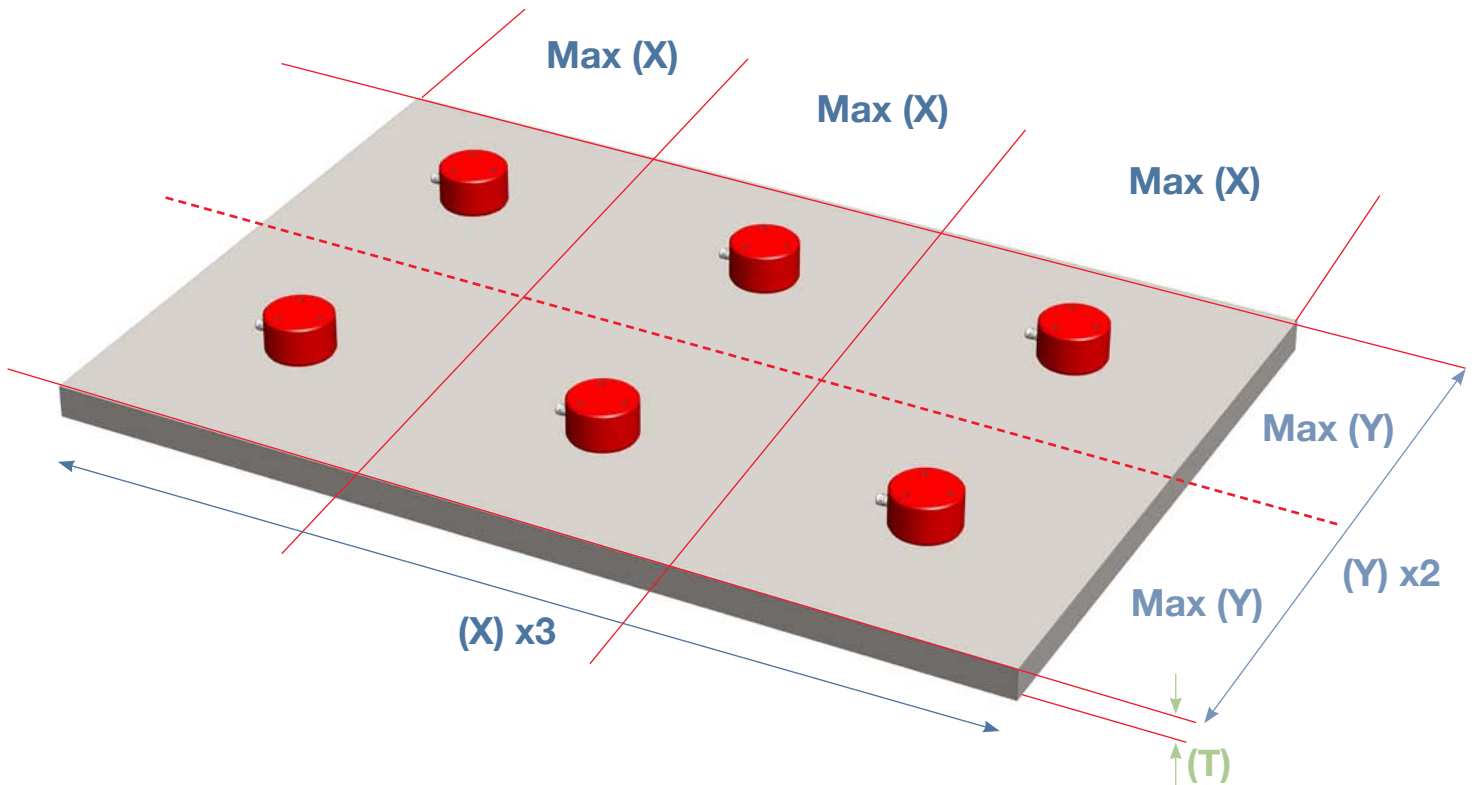
Once length / width (total area) exceeds the recommended dimensions for the thickness, additional magnets should be used. (See facing page).

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.



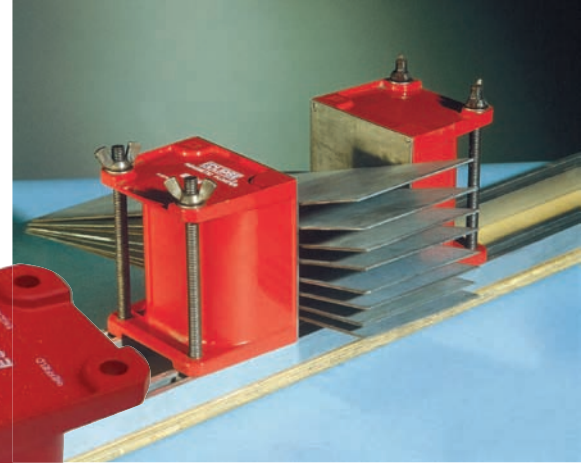
Optimag 166RR

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

DLHONLINE 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.



Standard magnetic sheet separator

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

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 **0.2mm to 3mm 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.

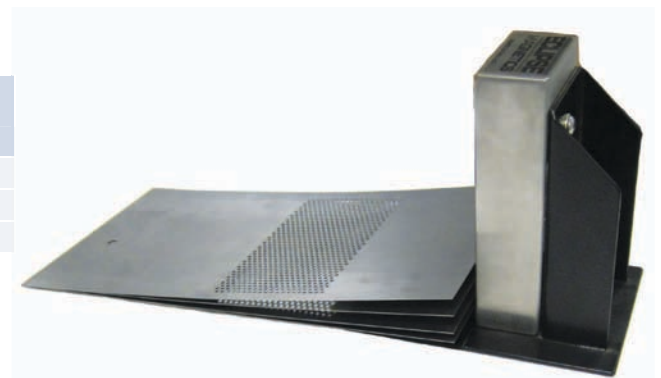
It's important to order the correct size of separator for the size of material to be separated. If the items are half the width of the separator the top items can flip onto the face of the separator instead of being separated.

Technical Data

| Product | Width mm | Height mm | Depth mm | Mounting hole size mm | Weight per pair kg |
|---------|-------------|--------------|-------------|--------------------------|-----------------------|
| E913 | 73 | 76 | 65 | M8 | 1.40 |
| E914 | 92 | 102 | 76 | M8 | 3.10 |
| E915 | 113 | 152 | 89 | M10 | 6.75 |

| Product | Magnetic material | Mounting hole size | Height |
|-------------------|-------------------|--------------------|--------|
| | | mm | mm |
| Ceramic | | | |
| SF100/C | Ceramic | 50 | 100 |
| SF200/C | Ceramic | 50 | 200 |
| SF300/C | Ceramic | 50 | 300 |
| SF400/C | Ceramic | 50 | 400 |
| SF500/C | Ceramic | 50 | 500 |
| Rare Earth | | | |
| SF100/R | Rare Earth | 50 | 100 |
| SF200/R | Rare Earth | 50 | 200 |
| SF300/R | Rare Earth | 50 | 300 |
| SF400/R | Rare Earth | 50 | 400 |
| SF500/R | Rare Earth | 50 | 500 |

All above ranges are 100mm wide, 50mm thick



Industrial made to order magnetic sheet separator

Service and maintenance

Full inspection and certification

All lifting systems should be serviced every 6 months by a competent person. Our fully trained engineers provide a full inspection and certification service. (Please refer to local territory 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.



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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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