

## Permanent lifting magnet

# ELM

Serial number:

Date of purchase:

This manual is for ELM types: ELM.125, ELM.250, ELM.500, ELM.1000 and ELM.2000

Congratulations on purchasing this premium permanent lifting magnet. At Euroboor we strive to exceed our customers' expectations by developing and providing premium and innovative portable drilling, cutting and lifting solutions. We believe that a professional like you must be able to rely on a professional supplier. Which has led us to become a major player in the industrial world, with our own factory and several offices worldwide. All because we have always listened to our customers and to the demands from the market.

Our vision is focused on developing innovative portable tools that add value for our customers and facilitate them in their daily work. We never lose sight of sustainability, time savings and cost savings.

Enjoy your new lifting magnet!

Before operating your new permanent lifting magnet, please first read all instructions. You find the instructions in this manual and on the warning label on your lifting magnet. With proper use, care and maintenance your lifting magnet will provide you with years of premium performance.

**TO REDUCE THE RISK OF INJURY USER MUST READ AND UNDERSTAND ALL INSTRUCTIONS**

To view all our offices and their contact information please visit:  
[www.euroboor.com](http://www.euroboor.com)

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# 1. Safety

## 1.1 General safety instructions

Do not use this lifting magnet before you have thoroughly read and completely understood this manual, specifically the “General safety instructions” including the figures, specifications, safety regulations and the signs indicating DANGER, WARNING and CAUTION. Please also observe the relevant national industrial safety regulations. Non-observance of the safety instructions can lead to severe injuries.

This manual should be kept for later use and enclosed with the lifting magnet, should it be passed on or sold.

### Work area

1. Keep your work area clean and well lit. Cluttered and dark work areas increase the chance of accidents.
2. Keep bystanders, children and visitors away while using a lifting magnet. Distractions can cause you to lose control.
3. Never stand or walk underneath the lifting magnet.
4. Guide the load by holding the corners, make sure to keep the load away from your body.
5. Never transport your workpiece with the lifting magnet over or past people.
6. Never use the lifting magnet for transporting or lifting people.
7. Always warn people who are around your working area when you start your lifting job.
8. Never leave a hoisted lifting magnet unattended.

### Personal safety

1. Stay alert, watch what you are doing and use common sense when using a lifting magnet. Do not use the lifting magnet while tired or under the influence of drugs, alcohol, or medication. A moment of inattention while operating a lifting magnet may result in serious personal injury.
2. Dress properly. Do not wear magnetizable clothing or jewelry.
3. Use safety equipment. Always wear non-skid safety shoes and a hard hat for optimal safety.
4. Users of the lifting magnet who have a pacemaker or other medical equipment should never use the lifting magnet without first consulting a medical specialist.

## 2. Delivery

The complete delivery of your Euroboor lifting magnet consists of:

- Euroboor lifting magnet
- User manual
- Test certificate

**Note:** Always check your lifting magnet on delivery. If the lifting magnet is damaged or incomplete immediately contact your supplier or Euroboor.

### **3. Warranty and service**

#### **Warranty**

Euroboor B.V. warrants this lifting magnet to be free of material defects and workmanship errors under normal use for a period of 12 months after date of purchase.

This 12 month period can be extended to 24 months in total by registering the product on our website: <https://euroboor.com/support/register/>.

This warranty expires when:

- The operating and maintenance instructions as stated in this manual have not been followed
- The use of the lifting magnet is considered as being other than normal
- Natural wear and tear cause by use in accordance with operating instructions
- Repairs or replacements are not in accordance to and done by specifications by Euroboor or any authorized Euroboor dealer.

#### **Service**

To maximize the lifetime of your Euroboor lifting magnet always use service and parts from an official Euroboor distribution channel. Whenever in need of such, always contact original point of sales or if no longer existent the distributor of Euroboor products in your country.

## **2. Construction and specifications**

### **2.1 Construction**

All Euroboor lifting magnets (ELM) have been produced with NdFeB magnetic materials. To switch the magnet on and off, you turn the handle which can be found on the side of the lifting magnet. On top of the lifting magnets you find shackles for lifting and the bottom of the lifting magnets are equipped with a V slot for lifting cylindrical workpieces.

On the top of the lifting magnet you also find a small slider, which pulls in and pushes out the safety bolt. This safety bolt ensures that the handle stays in to "on" position while you are working on your lifting job.

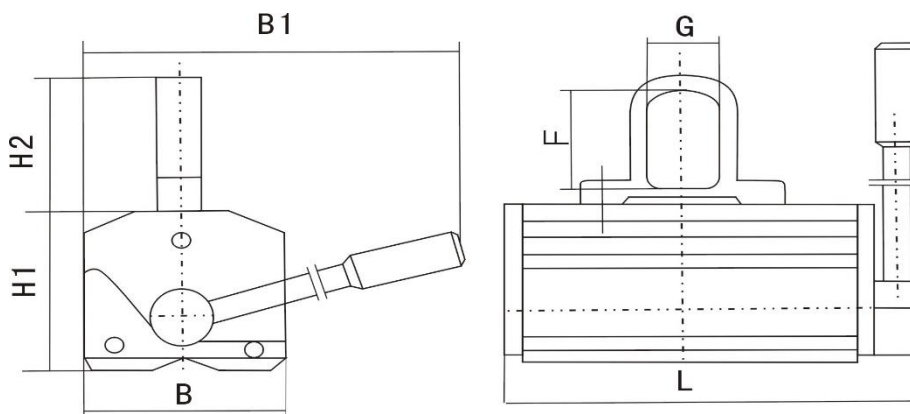
## 2.2 Specifications


### Metric

ELM types	Rated lifting strength	L	B	H1	H2	B1	F	G	Dead weight
	kg	mm	mm	mm	mm	mm	mm	mm	Kg
ELM.125	125	137	62	66	45	119.5	31.5	21	4.4
ELM.250	250	199	90	95	68	175	50	38	10.8
ELM.500	500	263	115	107	78	224.5	58	42	21.2
ELM.1000	1000	303	150	140	88	265.5	64	50	42
ELM.2000	2000	414	190	195	102	415	76	56	104.8

### Imperial

ELM types	Rated lifting strength	L	B	H1	H2	B1	F	G	Dead weight
	lbs	inch	inch	inch	inch	inch	inch	inch	lbs
ELM.125	250	5 25/64	2 7/16	2 19/32	1 49/64	4 45/64	1 15/64	53/64	8.8
ELM.250	500	7 53/64	3 35/64	3 47/64	2 43/64	6 57/64	1 31/32	1 1/2	21.6
ELM.500	1000	10 23/64	4 17/32	4 7/32	3 5/64	8 27/32	2 9/32	1 21/32	42.4
ELM.1000	2000	11 59/64	5 29/32	5 33/64	3 15/32	10 29/64	2 33/64	1 31/32	84
ELM.2000	4000	16 19/64	7 31/64	7 43/64	4 1/64	16 11/32	2 63/64	2 13/64	209.6



 **Warning:** Always ensure that the weight and dimensions of the workpiece do not exceed the maximum permitted values.

Metric

Model	Load Plate Max	Load round Max	Plate Min Thickness	Round Min-max thickness	Work max. length	Operation temperature
	kg	kg	mm	mm	mm	°C
ELM.125	125	60	15	∅ 40 - ∅ 80	2000	<80
ELM.250	250	125	25	∅ 50 - ∅ 100	2500	<80
ELM.500	500	250	30	∅ 100 - ∅ 250	3000	<80
ELM.1000	1000	500	40	∅ 150 - ∅ 380	3500	<80
ELM.2000	2000	1000	55	∅ 180 - ∅ 450	4000	<80

Imperial

Model	Load Plate Max	Load round Max	Plate Min Thickness	Round Min-max thickness	Work max. length	Operation temperature
	lbs	lbs	inch	inch	inch	°F
ELM.125	250	120	19/32	∅ 1 37/64 - ∅ 3 5/32	78 47/64	<176
ELM.250	500	250	63/64	∅ 1 31/32 - ∅ 3 15/16	98 27/64	<176
ELM.500	1000	500	1 3/16	∅ 3 15/16 - ∅ 9 27/32	118 7/16	<176
ELM.1000	2000	1000	1 37/64	∅ 5 29/32 - ∅ 14 61/64	137 51/64	<176
ELM.2000	4000	2000	2 11/64	∅ 7 3/32 - ∅ 17 23/32	157 31/64	<176



## 3. Operation

### 3.1 Prior to use

Check the lifting magnet for possible damage; Before using the lifting magnet, you must carefully check the protective components or slightly damaged components to ensure they are operating perfectly and as intended.

Damaged protective components must be repaired or replaced according to specifications by Euroboor or any authorized Euroboor dealer.

**DO NOT** let children come into contact with the lifting magnet. Supervision is required when inexperienced operators use this lifting magnet.

1. During operation always make sure the surface on which you are going to attach the lifting magnet is clear of any rust, burr and debris. This ensures that the lifting magnet has a better grip on the surface.
2. Pull the slider on top of the magnet to the middle of the magnet, so that the safety bolt is pulled in.
3. Then switch the handle in the "on" position.
4. Release the slider; this will push out the safety bolt and it will lock the handle.
5. Start your lifting job.



**Warning:** Overloading is forbidden. Never let anybody walk underneath the workpiece you are lifting.



**Warning:** Never place the magnet over a large hole or bore.

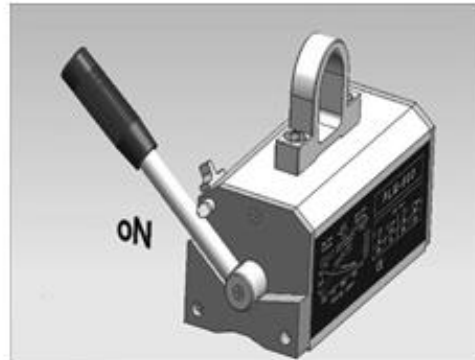
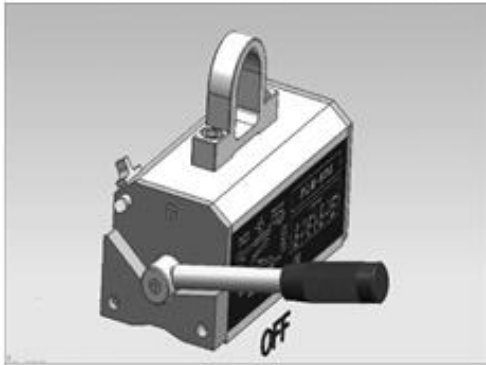


**Warning:** Never release the handle before the slider has locked it in position

Always make sure that the temperature of the components as well the ambient temperature is between 80°C to -40°C. Minimize vibrations and avoid impact and collisions.

**Note:** When you are lifting cylindrical workpieces always make sure the cylindrical workpiece contacts both V slots of the lifting magnet. The actual lifting capacity will generally be 30% of the rated lifting capacity ( see chapter 4.2).

1. When you have finished your lifting job and want to turn off the magnet simply pull the slider on top of the magnet to the middle of the magnet, so that the safety bolt is pulled in and switch the handle to the off position.
2. Release the slider.
3. The lifting magnet is now in neutral condition and can be taken from the workpiece



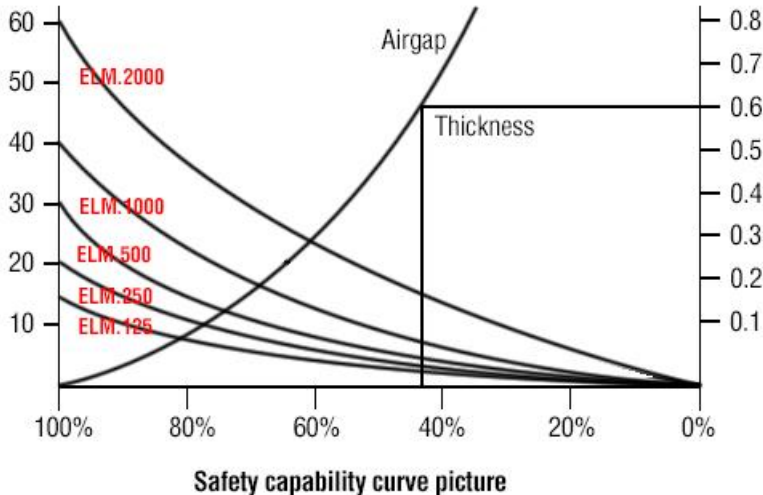
- Only switch the magnet to the "On" position when you have placed it correctly on the workpiece.
- Only switch the magnet to the "Off" position when you have placed the workpiece on a stable surface.
- **Never** lift more than one workpiece at a time.
- The magnet must remain fully horizontal during transport of the workpiece.

**Note:** After having finished your lifting job, light workpieces and other small magnetizable material might stick to the magnet after it has been switched off.

### 3.2 Main factors which influence the lifting capacity

- Thickness of the workpiece
- Quality of the workpiece

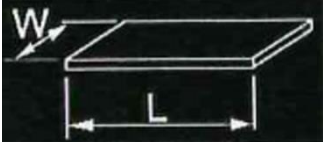
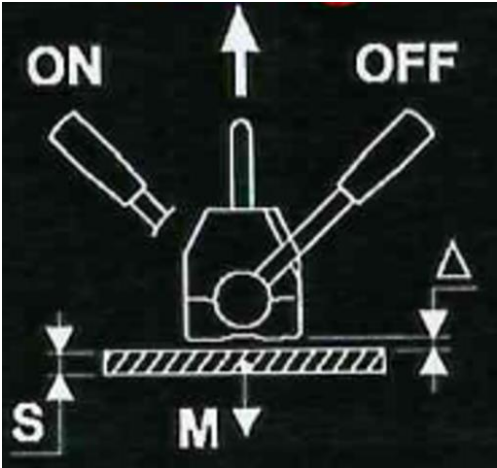
Before you start your lifting job always check the safety by looking at the percentage of steel thickness opposed to the lifting capacity of your lifting magnet. You can do so by plotting the thickness of your workpiece against the capacity curve.



First you calculate the surface roughness (Ra). If this is less than 6.3  $\mu\text{m}$  there will be no lifting surface gap and you will have 100% lifting capacity. But when the surface roughness is above 6.3  $\mu\text{m}$  you need to calculate the percentage that the lifting magnet can reach looking at the air gap lifting capacity curve shown in the chart above.

- The composition of the steel component.

After measurement, if the low-carbon steel component is regarded as a reference and the coefficient of the lifting capacity is fixed: the coefficient for medium-carbon steel is 0.95; the coefficient for non-carbon steel is 0.90; the coefficient for low-alloy steel is 0.75, and the coefficient for cast iron is 0.50.



ELM.125

	▲ <0.1 mm / 0.0039 inch			▲ = 0.1 - 0.3 mm / 0.0039 - 0.012 inch			▲ = 0.3 - 0.5 mm / 0.012 - 0.0197 inch		
	L max	W max	M max	L max	W max	M max	L max	W max	M max
S ≥ 15 mm	1500 mm	1000 mm	125 kg	1500 mm	1000 mm	90kg	1200 mm	800 mm	65 kg
S ≥ 19/32 inch	59-1/16 inch	39-3/8 inch	250 lbs	59-1/16 inch	39-3/8 inch	180 lbs	47-1/4 inch	31-1/2 inch	130 lbs
S = 10 mm	1200 mm	800 mm	85 kg	1200 mm	800 mm	65 kg	1000 mm	500 mm	45 kg
S = 25/64 inch	47-1/4 inch	31-1/2 inch	170 lbs	47-1/4 inch	31-1/2 inch	130 lbs	39-3/8 inch	19-11/16 inch	90 lbs
S = 5 mm	1000 mm	500 mm	50 kg	1000 mm	500 mm	40 kg	800 mm	500 mm	25 kg
S = 13/64 inch	39-3/8 inch	19-11/16 inch	100 lbs	39-3/8 inch	19-11/16 inch	80 lbs	31-1/2 inch	19-11/16 inch	50 lbs
∅ 40 - ∅ 80 mm	2000 mm		60 kg	1850 mm		50 kg	1700 mm		30 kg
∅ 1-37/64 inch - 3-5/32 inch	78-47/64 inch	-	120 lbs	72-53/64 inch	-	100 lbs	66-59/64 inch	-	60 lbs

ELM.250

	▲ <0.1 mm / 0.0039 inch			▲ = 0.1 - 0.3 mm / 0.0039 - 0.012 inch			▲ = 0.3 - 0.5 mm / 0.012 - 0.0197 inch		
	L max	W max	M max	L max	W max	M max	L max	W max	M max
S ≥ 25 mm	2000 mm	1500 mm	250 kg	2000 mm	1500 mm	190 kg	1500 mm	1000 mm	120 kg
S ≥ 63/64 inch	78-47/64 inch	59-1/16 inch	500 lbs	78-47/64 inch	59-1/16 inch	380 lbs	59-1/16 inch	39-3/8 inch	240 lbs
S = 15 mm	2000 mm	1200 mm	200 kg	2000 mm	1200 mm	150 kg	1500 mm	1000 mm	100 kg
S = 19/32 inch	78-47/64 inch	47-1/4 inch	400 lbs	78-47/64 inch	47-1/4 inch	300 lbs	59-1/16 inch	39-3/8 inch	200 lbs
S = 10 mm	1500 mm	1200 mm	180 kg	1500 mm	1000 mm	135 kg	1100 mm	1000 mm	85 kg
S = 25/64 inch	59-1/16 inch	47-1/4 inch	360 lbs	59-1/16 inch	39-3/8 inch	270 lbs	43-5/16 inch	39-3/8 inch	170 lbs
S = 8 mm	1500 mm	1000 mm	120 kg	1500 mm	1000 mm	95 kg	1100 mm	800 mm	65 kg
S = 5/16 inch	59-1/16 inch	39-3/8 inch	240 lbs	59-1/16 inch	39-3/8 inch	190 lbs	43-5/16 inch	31-1/2 inch	130 lbs
S = 6 mm	1200 mm	800 mm	70 kg	1000 mm	800 mm	55 kg	900 mm	800 mm	35 kg

S = 15/64 inch	47-1/4 inch	31- 1/2 inch	140 lbs	39-3/8 inch	31-1/2 inch	110 lbs	35- 7/16 inch	31-1/2 inch	70 lbs
∅ 50 - ∅ 100 mm	2500 mm		125 kg	2500 mm		95 kg	2000 mm		60 kg
∅ 1- 31/32 inch - 3-15/16 inch	98- 27/64 inch	-	250 lbs	98- 27/64 inch	-	190 lbs	78- 47/64 inch	-	120 lbs

ELM.500

	▲ <0.1 mm / 0.0039 inch			▲ = 0.1 - 0.3 mm / 0.0039 - 0.012 inch			▲ = 0.3 - 0.5 mm / 0.012 - 0.0197 inch		
	L max	W max	M max	L max	W max	M max	L max	W max	M max
S ≥ 30 mm	3000 mm	1500 mm	500 kg	3000 mm	1500 mm	380 kg	2500 mm	1500 mm	260 kg
S ≥ 1 3/16 inch	118-7/16 inch	59-1/16 inch	1000 lbs	118-7/16 inch	59-1/16 inch	760 lbs	98-27/64 inch	59-1/16 inch	520 lbs
S = 20 mm	2500 mm	1500 mm	380 kg	2500 mm	1500 mm	280 kg	2000 mm	1500 mm	190 kg
S = 25/32 inch	98-27/64 inch	59-1/16 inch	760 lbs	98-27/64 inch	59-1/16 inch	560 lbs	78-47/64 inch	59-1/16 inch	380 lbs
S = 15 mm	2000 mm	1500 mm	300 kg	2000 mm	1500 mm	220 kg	1800 mm	1500 mm	150 kg
S = 19/32 inch	78-47/64 inch	59-1/16 inch	600 lbs	78-47/64 inch	59-1/16 inch	440 lbs	70-55/64 inch	59-1/16 inch	300 lbs
S = 10 mm	1500 mm	1500 mm	220 kg	1500 mm	1500 mm	170 kg	1200 mm	1000 mm	110 kg
S = 25/64 inch	59-1/16 inch	59-1/16 inch	440 lbs	59-1/16 inch	59-1/16 inch	340 lbs	47-1/4 inch	39-3/8 inch	220 lbs
∅ 100 - ∅ 250 mm	3000 mm	-	250 kg	3000 mm	-	200 kg	2500 mm	-	150 kg

Ø 3- 15/16 inch - 9-27/32 inch	118- 7/16 inch		500 lbs	118- 7/16 inch		400 lbs	98- 27/64 inch		300 lbs
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ELM.1000

	▲ <0.1 mm / 0.0039 inch			▲ = 0.1 - 0.3 mm / 0.0039 - 0.012 inch			▲ = 0.3 - 0.5 mm / 0.012 - 0.0197 inch		
	L max	W max	M max	L max	W max	M max	L max	W max	M max
S ≥ 40 mm	3000 mm	2000 mm	1000 kg	3000 mm	2000 mm	750 kg	2500 mm	1500 mm	650 kg
S ≥ 1 37/64 inch	118-7/16 inch	78-47/64 inch	2000 lbs	118-7/16 inch	78-47/64 inch	1500 lbs	98-27/64 inch	59-1/16 inch	1300 lbs
S = 30 mm	3000 mm	2000 mm	800 kg	3000 mm	2000 mm	600 kg	2500 mm	1500 mm	400 kg
S = 1 3/16 inch	118-7/16 inch	78-47/64 inch	1600 lbs	118-7/16 inch	78-47/64 inch	1200 lbs	98-27/64 inch	59-1/16 inch	800 lbs
S = 20 mm	2500 mm	1500 mm	600 kg	2500 mm	1500 mm	450 kg	2000 mm	1000 mm	300 kg
S = 25/32 inch	98-27/64 inch	59-1/16 inch	1200 lbs	98-27/64 inch	59-1/16 inch	900 lbs	78-47/64 inch	39-3/8 inch	600 lbs
S = 15 mm	2500 mm	1500 mm	500 kg	2500 mm	1500 mm	380 kg	2000 mm	1000 mm	230 kg
S = 19/32 inch	98-27/64 inch	59-1/16 inch	1000 lbs	98-27/64 inch	59-1/16 inch	760 lbs	78-47/64 inch	39-3/8 inch	460 lbs
S = 10 mm	2000 mm	1000 mm	350 kg	2000 mm	1000 mm	260 kg	1500 mm	1000 mm	180 kg

S = 25/64 inch	78- 47/64 inch	39- 3/8 inch	700 lbs	78- 47/64 inch	39-3/8 inch	520 lbs	59- 1/16 inch	39-3/8 inch	360 lbs
∅ 150 - ∅ 380 mm	3500 mm		500 kg	3000 mm		380 kg	2500 mm		320 kg
∅ 5- 29/32 inch - 14- 61/64 inch	137- 51/64 inch	-	1000 lbs	118- 7/16 inch	-	760 lbs	98- 27/64 inch	-	640 lbs

ELM.2000

	▲ <0.1 mm / 0.0039 inch			▲ = 0.1 - 0.3 mm / 0.0039 - 0.012 inch			▲ = 0.3 - 0.5 mm / 0.012 - 0.0197 inch		
	L max	W max	M max	L max	W max	M max	L max	W max	M max
S ≥ 55 mm	3500 mm	2000 mm	2000 kg	3500 mm	1850 mm	1500 kg	3000 mm	2000 mm	1000 kg
S ≥ 2 11/64 inch	137-51/64 inch	78-47/64 inch	4000 lbs	137-51/64 inch	72-53/64 inch	3000 lbs	118-7/16 inch	78-47/64 inch	2000 lbs
S = 45 mm	3500 mm	2000 mm	1800 kg	3500 mm	1850 mm	1350 kg	3000 mm	2000 mm	900 kg
S = 1 49/64 inch	137-51/64 inch	78-47/64 inch	3600 lbs	137-51/64 inch	72-53/64 inch	2700 lbs	118-7/16 inch	78-47/64 inch	1800 lbs
S = 35 mm	3000 mm	2000 mm	1500 kg	3000 mm	1800 mm	1150 kg	2500 mm	1500 mm	750 kg
S = 1 3/8 inch	118-7/16 inch	78-47/64 inch	3000 lbs	118-7/16 inch	70-55/64 inch	2300 lbs	98-27/64 inch	59-1/16 inch	1500 lbs
S = 20 mm	2500 mm	1500 mm	900 kg	2500 mm	1200 mm	680 kg	2000 mm	1000 mm	450 kg
S = 25/32 inch	98-27/64 inch	59-1/16 inch	1800 lbs	98-27/64 inch	47-1/4 inch	1360 lbs	78-47/64 inch	39-3/8 inch	900 lbs

S = 15 mm	2500 mm	1500 mm	500 kg	2500 mm	1100 mm	380 kg	2000 mm	1000 mm	250 kg
S = 19/32 inch	98- 27/64 inch	59- 1/16 inch	1000 lbs	98- 27/64 inch	43- 5/16 inch	760 lbs	78- 47/64 inch	39-3/8 inch	500 lbs
∅ 180 - ∅ 450 mm	4000 mm		1000 kg	3500 mm		750 kg	3000 mm		600 kg
∅ 7- 3/32 inch - 17- 23/32 inch	157- 31/64 inch	-	2000 lbs	137- 51/64 inch	-	1500 lbs	118- 7/16 inch	-	1200 lbs

## 4. Maintenance and safety

While carrying and using the lifting magnet beware of bumping into objects in your work area and the roughness of the surfaces you are working on, as not to damage your lifting magnet and your surroundings.

After having used the lifting magnet and before storing it, you can use oil to protect the lifting magnet.



**Warning :** Please read this user manual carefully and thoroughly before using the lifting magnet.

- Always use a hook equipped with a safety latch to attach to your lifting magnet.
- Check the slider on top of your magnet and the safety bolt regularly. Make sure that slider can move flexibly and that the safety bolt locks firmly.
- When your lifting magnet is not in contact with ferromagnetic material then don't try to turn the handle ( you will notice that this is also almost impossible to do).
- Maintenance of your lifting magnet but be done by strictly following the instructions and only by professionals.
- It is prohibited to modify the lifting magnet in any way as this may affect the safety.
- The lifting magnet has to undergo a capability test every year to check the safety of all the component to ensure safe use.
- Whenever the main body and/or turning parts are damaged beyond repair, the lifting magnet has to be discarded.
- Never remove warning or instruction plates from the lifting magnet

## 5. Environmental



Separate collection. This product must not be disposed of with normal household waste.



Separate collection of used products and packaging allows materials to be recycled and used again. Re-use of recycled materials helps prevent environmental pollution and reduces the demand for raw materials.

Local regulations may provide for separate collection of electrical products from the household, at municipal waste sites or by the retailer when you purchase a new product.