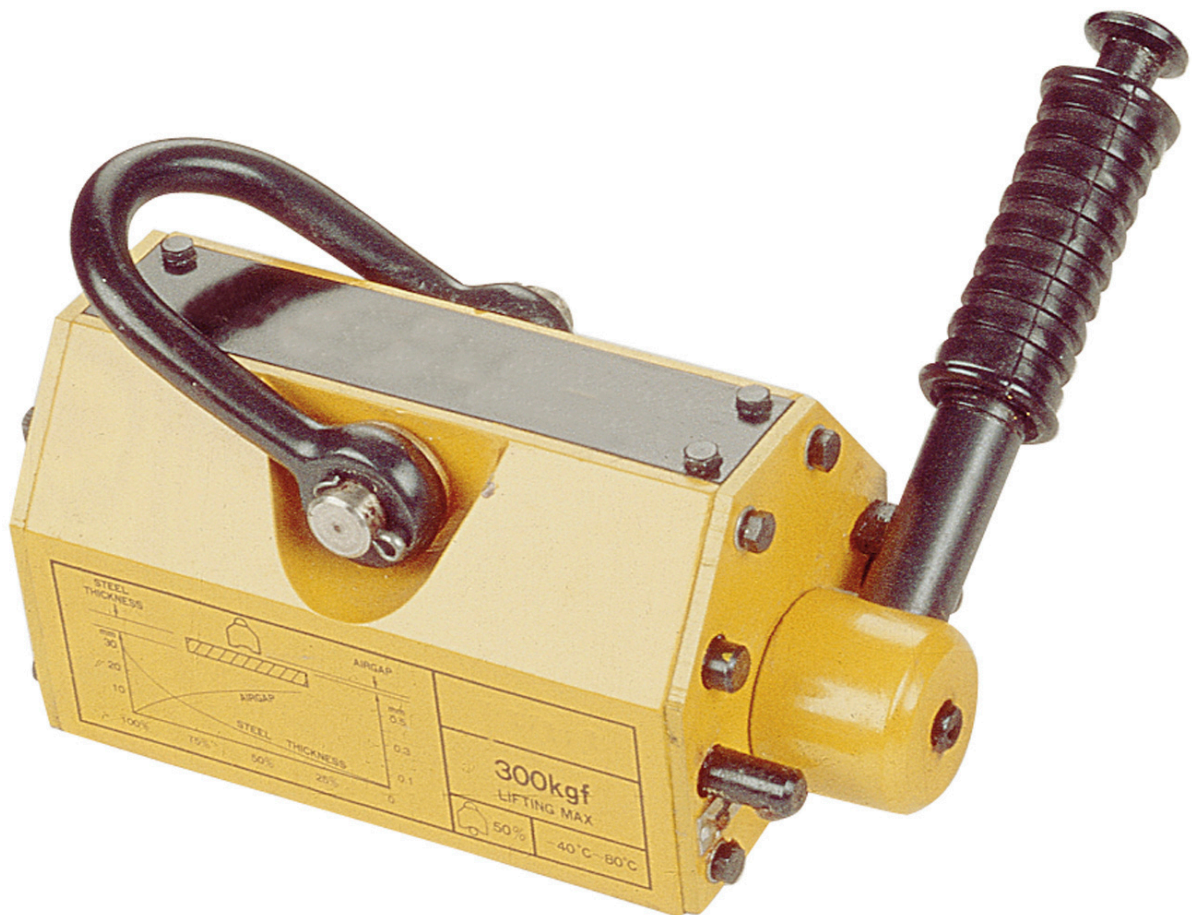




MODEL PML MAGNETIC LIFTERS

Operating Instructions



Introduction

Model PML magnetic lifters are designed for lifting, lowering and transporting single horizontal sheets, flat and round sections of steel and other ferro magnetic materials. The units have been manufactured in accordance with recognised international engineering standards.

Incorrect handling when using the units may cause danger to the user and other third parties and potential damage to the hoist, the unit and other property. The operating company is responsible for ensuring all users are properly instructed and trained in the use of the equipment prior to first use.

These operating instructions are designed to familiarise the user with the product and enable them to use it to its full extent, they also contain important information on how to operate the product in a safe and effective manner. Following these instructions will help to avoid danger, reduce downtime and repair costs and ensure reliability and long product lifetime.

These instructions should be made available at the place where the unit is used. As well as following these instructions users should operate within local regulations and health and safety guidelines.

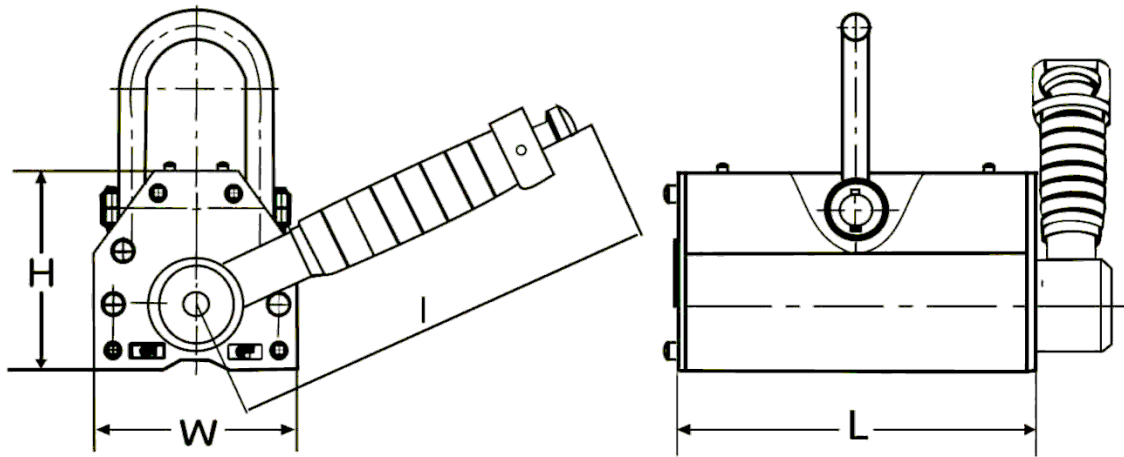
The protective measures will only provide safe use conditions if the unit is operated correctly and maintained according to the instructions, the operating company is responsible for the safe use of the equipment by suitably trained and experienced personnel.

Construction and Specification

The unit is a permanent magnet operated by use of an on and off lever, it has a shackle fitted on the top for attachment to a suitable hoist unit. The base is rebated to provide a suitable holding face for cylindrical materials.

Dimensions

| MODEL | Rated Lifting Capacity | Cylindrical Lifting Capacity | Maximum pull-off strength | W | L | H | I | Maximum Operating Temperature | Unit Weight |
|---------|---|------------------------------|---------------------------|-----|-----|-----|-----|-------------------------------|-------------|
| | Kgf | Kgf | Kgf | mm | mm | mm | mm | °C | Kg |
| PML-1 | 100 | 30 | 350 | 62 | 92 | 67 | 126 | 80 | 3 |
| PML-3 | 300 | 100 | 1050 | 92 | 162 | 91 | 155 | 80 | 10 |
| PML-6 | 600 | 200 | 2100 | 122 | 232 | 117 | 196 | 80 | 24 |
| PML-10 | 1000 | 300 | 3500 | 176 | 258 | 163 | 285 | 80 | 50 |
| PML-20 | 2000 | 600 | 7000 | 234 | 378 | 212 | 426 | 80 | 125 |
| PML-30 | 3000 | 1000 | 10500 | 286 | 458 | 261 | 521 | 80 | 220 |
| PML-60* | 6000 | 2000 | 19200 | 296 | 720 | 266 | 700 | 80 | 398 |
| | *The PML-60 unit is only available to special order, contact us for details | | | | | | | | |



Inspection Before First Use

The unit should be inspected according to national and international safety standards which apply in the user's territory and should additionally be inspected:

- In accordance with the operating companies internal risk assessments
- Prior to first operation
- Before the unit is put back into use after storage
- After repair
- At least annually by a competent person

The inspection should consist of a visual inspection and function test ensuring that all safety devices are complete and operational and should be documented and recorded in accordance with local regulations. In the event of any doubt reference should be made to a competent person. Any paint damage should be repaired to avoid corrosion and all moving parts should be lightly lubricated. If heavily contaminated the unit should be thoroughly cleaned before inspection.

Inspection before starting work.

- Ensure the hand lever is secure and moves easily.
- Ensure that the safety latch is operational.
- Check the pole shoes for flatness.
- Check the entire unit for cracks, damage or deformation.
- Make sure that the load to be lifted does not exceed the lifting capacity of the unit.
- The load must be stiff enough so that it cannot disengage by deflection, in the case of a long flexible load it is recommended that a spreader beam and several lifting magnets are used.
- If it is not possible for the entire face of the pole shoe to contact the load the load capacity should be reduced according to the actual contact area.
- Ensure that the surface of the load in the location where the magnet is to be placed is free from scale, grease, paint, contamination or any surface coating so that the poles of the shoe can make good contact.

Calculation of Lifting Capacity

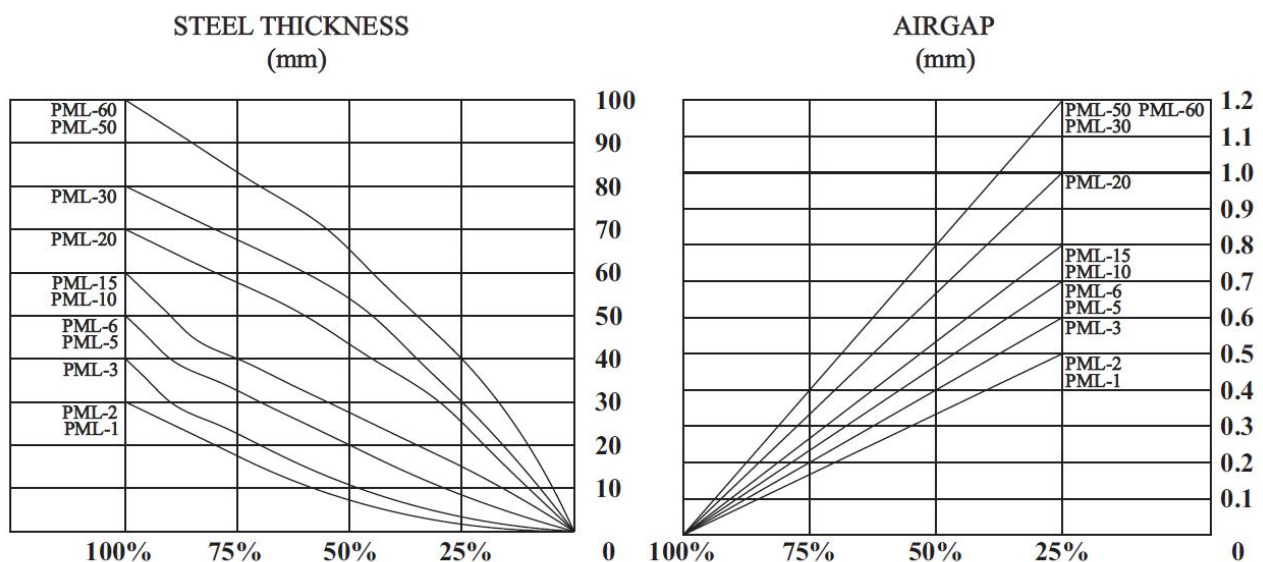
The lifting capacity of the unit is calibrated using low-carbon steel as a reference giving an efficiency of 100%. The lifting capacity for medium-carbon steel should be reduced by 5%, for high-carbon steel by 10%, for low-alloy steel by 25% and for cast iron by 50%.

The lifting capacity is influenced by the thickness of the material being lifted. Before the lifting operation begins it is necessary to calculate the percentage reduction in lifting capacity using the material thickness/capacity curve below.

The capacity is also affected by surface finish if the finish is less than 6.3um, there will be no air gap between the load and the unit, the lifting capacity will be 100%. If the surface roughness is more the lifter air gap should be estimated using the air gap/lifting capacity curve shown in the performance chart below.

Combine these two factors and calculate the lifting capacity. The curves are also shown on the two sides of lifter.

Note: Any obstacle or gap between the magnet and the load reduces the lifting capacity of the unit.



Safety capacity curve

Operation

The surface of the item being lifted should be free of paint, surface coatings, grease, dirt, scale and swarf.

Lower the unit onto the item to be lifted using the selected lifting machine or hoist, the hook of the hoist should have a safety catch and the bowl of the hook should be large enough to allow the unit to articulate. The centreline of the unit should be above the centre of gravity of the component being lifted.

When lifting and handling cylindrical components, the cylindrical surface should contact the Vee groove of lifter on at least two faces, **for cylindrical items the actual lifting capacity should be reduced to 30% of the rated lifting capacity.**

Once in place on the face of the load move the operating handle from **OFF** to **ON** until the lifter can be felt to be holding, make sure the security key on the handle is automatically locked then start to hoist.

During the lifting operation do not overload the unit, the working temperature range of the unit is -40°C to +80°C. There should be no heavy vibration and care should be taken to ensure the load does not impact on any obstructions as this may detach the load.

Do not move the load until the working area is clear, do not lift above personnel, in the vicinity of strong magnetic fields or in potentially explosive atmospheres.

Do not leave the load unattended or clamped in a suspended position for an extended period.

Do not use the unit for the lifting of persons.

When the lifting operation is finished, press down the button to disengage the security key from the security pin, turn the handle from **ON** to **OFF** until the unit can be felt to release. The lifter is now in the neutral condition and can be lifted away from the load.

Inspection and maintenance

- While carrying and using the permanent magnetic lifter avoid damage to the operating face of the unit, damage can result in the unit failing to lift effectively. After use, the lifting face should be cleaned and protected with a thin coat of oil.
- To avoid accidents please read the operating instructions carefully and know the contents before using this device. If unsure, please contact us for further information.
- Check the operation of the handle frequently. Make sure that the security key can be moved easily, and the security pin can be locked firmly.
- When the unit is not in contact with ferromagnetic material do not operate the handle.
- Maintenance must only be carried out according to manufacturer's instructions by suitably qualified and authorized personnel.
- Any paint damage should be touched up to avoid corrosion.
- The product should not be modified in any way.
- The unit should be examined and tested by a competent person at least once per year or according to local regulations.

Note: Use in aggressive environments may require shorter inspection intervals

- If any part of the equipment becomes damaged it should be discarded and replaced.