

Installation, Operation & Maintenance Manual

Permatrol Lift magnets are ideal for handling steel plate and shapes, forgings, die-castings and other thick, non-flexing parts in your facility. This magnet requires only a momentary flow of electric current to attach parts to or release parts from the holding face of the magnet. The unique design of these magnets does not require a continuous flow of electricity to hold parts. The magnets use less energy than a continuous duty electromagnet and are not affected by a sudden loss of electrical power during the lifting or pick-up process eliminating the need for a battery back-up system.

The Permatrol Lift magnet requires a short duration DC voltage pulse to change from the drop state to the lift state and vice-versa. The specifications for the required pulse are as follows:

Voltage – 110 VDC minimum

Current required per magnet –

Model	Amps
PME0404 (& variants, PME0404A)	4.1
PME0375 (& variants, PME0375A)	5.8
PME0750 (& variants, PME0750A)	7.1
PME1500 (& variants, PME1500A)	14.2

Pulse Duration – 1.0 second maximum

Electrical Connection – Brad Harrison Mini

Installation

Physical

Each Permatrol Lift or Lift System is to be attached to the end user's crane or hoist with a clevis and pin. Consult shop drawing of magnet for actual interface.

Typically, the Permatrol Lift is not rigidly mounted to the spreader bar to allow the magnets to accommodate some flexing in the part being lifted.

To facilitate handling, magnet weights and dimensions are listed below:

Model	Weight (lb.)	Dimensions (H x W x L)
PME0404	12	3.50 x 4 x 4.00
PME0375	43	6.50 x 5 x 6.25
PME0750	81	7.50 x 5 x 10.00
PME1500	161	6.50 x 5 x 22.00

The heights shown in the table **do not** include lift lugs. Consult shop drawings for actual magnet and lift lug dimensions. Weights for the Permatrol variants are shown on the magnet system drawings issued for each job.

Electrical

Wire magnet to appropriate power supply

Adhere to the National Electrical Code and all applicable local codes with respect to conductor size versus cable length between magnet(s) and the AC power source.

Operation

Energizing the coil using a momentary contact controls the Permatrol Lift magnets. Momentary contact is part of the power supply. External signals for GRIP and RELEASE are supplied to the power supply.

To lift or hold a load or part –

Lower the magnet to the load or part to be lifted.

Apply “GRIP” signal

The magnet will now hold the load or part for as long as required to move it. No additional power is required.

To place or drop a load or part –

Lower the magnet and attached load or part to the desired location.

Ensure that no part of the operator’s body is in the drop zone or otherwise under the part or load.

Apply “RELEASE” signal

The magnets will now release the part.

Move the magnet into position to perform the next lift.

Operation Notes:

Magnet must be placed fully and completely on load to be lifted before magnet GRIP signal is issued.

IMPORTANT

Safe operating practices dictate that magnetic lifts should not be used to the maximum limit of their lift capability. One-half to one third of the test load is accepted as a safe standard.

Never stand under a load being lifted. Always use caution when working with any lift system.

Use Permatrol Lifts only on loads that do not flex or bend.

Parts under ½ inch thick or larger sheets that sag may begin to peel off the face of the magnet. Should this condition occur, redistribute the magnets over the sheet to reduce the sag. In some cases, additional magnets may be required.

Maintenance

Keep the contact faces of the Permatrol Lift and the part to be lifted as clean and as free of chips, oil, slag, weld beads and dirt as possible. This can be accomplished by wiping the surface frequently with a wire brush or shop cloth.

After extensive use, the pole faces may become rounded, reducing the effectiveness of the magnets. The magnet pole faces can be machined or ground to remove .010 inch to .015 inch of material. It is recommended that IMI perform this in our shop if possible. Note that the magnet must be in the off or RELEASE state to perform this operation.

The electrical connector and cable should be inspected regularly for wear or damage.

The following items can be replaced in IMI’s shop, as proper replacement requires disassembly of the magnet:

Pole faces (alternate to refinishing)
Cable connector
Magnet coil

Optional Equipment

The following items are available at additional cost. They are offered to enhance the performance and usefulness of IMI's Permatrol Lifts.

Remotely-mounted Power Supply/Controller.

Pendant Station, with cable. Can be wired to Power supply/Controller or to the magnet

Magnet Cables in 3 ft., 6 ft., 12 ft. & 20 ft. lengths.

Custom Designed spreader beams & Custom Lift Lugs.