



# INSTALLATION & OPERATION MANUAL

## PERMANENT MAGNET LIFT ASSEMBLY



**TOLL FREE: 888.582.0823**

**PNEUMATICALLY ACTUATED  
VERSIONS WITH OR WITHOUT CONTROLS**

---

***THIS IS A GENERIC USAGE AND SAFETY MANUAL.  
SEE EQUIPMENT DRAWING FOR SPECIFIC MAGNET INFORMATION.  
IF UNAVAILABLE, CALL THE NUMBER ABOVE.***

### **CONTENTS**

---

<b>Precautions &amp; Safety Measures</b>	<b>Pg 1-2</b>
<b>Product Description</b>	<b>Pg 2</b>
<b>Installation Instructions</b>	<b>Pg 3</b>
<b>Operation Instructions</b>	<b>Pg 3</b>
<b>Maintenance</b>	<b>Pg 3</b>
<b>Trouble shooting</b>	<b>Pg 4</b>
<b>Parts list</b>	<b>Pg 4</b>

### **PRECAUTIONS & SAFETY MEASURES**

---

**PRECAUTIONS:** Although a magnet can provide adequate holding through small amounts of non-ferrous materials such as dirt; in general, the greatest effectiveness of any magnetic lift is achieved when the magnet face(s)\* makes complete contact with the load. Therefore, it is recommended to:

- Clear any foreign material from the part before setting the magnetic lift on it. Avoid setting the lift down in places that are very dirty or where the part is deformed.
- Periodically check the condition of the magnetic contact face(s) to ensure that it is flat and has not been accidentally damaged during its time in use.

900413.A (02/17)

## **INDUSTRIAL MAGNETICS, INC.**

1385 S M 75 • Boyne City, Michigan 49712 • Phone: (231) 582-3100 • Fax: (231) 582-2704 • [www.magnetics.com](http://www.magnetics.com) • [imi@magnetics.com](mailto:imi@magnetics.com)



**888-582-0823**



**888-582-0822**



**888-582-0821**

## **PRECAUTIONS & SAFETY MEASURES (CONTINUED)**

---

- Keep the contact surface of the magnets and material to be lifted clean and free of chips, oil, slag, welding beads, dirt, etc. This can be accomplished by frequently wiping the surface of the magnet with a wire brush or shop rag with the magnet in the release mode.
- DO NOT hoist a load weighing more than the lift's holding capacity.
- DO NOT hoist a load if it is unbalanced.
- DO NOT hoist a load before ensuring perfect magnet contact. First, make a test lift of 2 to 3 inches above the stack or table
- DO NOT release the load before ensuring that the load is rigidly supported on the floor or other adequate support.
- DO ensure load has steadied before lowering.
- DO ensure that load is balanced.
- DO NOT perform welding operations in close proximity to the magnet(s).
- DO NOT use the magnet lift system as part of the welding system ground circuit.
- DO NOT place the magnet lift system directly on to a conductive floor used as a welding ground plane. Use a non-conductive spacer.
- DO NOT lift people or loads with people on them.
- DO NOT leave suspended loads unattended.
- DO NOT operate the lift system with missing parts or damaged or malfunctioning lift magnet(s).
- DO NOT remove or obscure any product labeling.
- DO NOT lift loads higher than necessary.
- ALWAYS use the entire contact surface of all the system magnets.
- ALWAYS keep magnet contact face perfectly flat and parallel to the surface of the load.

## **PRODUCT DESCRIPTION**

---

The Industrial Magnetics Lifting System (referred to as "System" in remainder of manual) consists of the following:

- **Magnet Lifting Pod** consisting of a magnet, housing & release cylinder. The cylinder, upon receiving an air signal from a control valve moves the magnet within the housing. By stroking the cylinder out, the cylinder moves the magnet toward the housing face and into the grip position. By stroking the cylinder in, the cylinder moves the magnet away from the housing face and into the release position.
- **Lifting bale** for interface with customer's crane hook. *See equipment drawing for actual interface.*
- **Load sensor** valve (some models) wired or plumbed into magnet release circuit. Prevents part release unless magnet and attached part are supported from below.
- **Controls** (Some Models) wired or plumbed to provide grip and release functions of magnet.

# INSTALLATION INSTRUCTIONS

---

## MECHANICAL

- Attach hoist hook to the System lift bale or stud. Ensure hoist and hook are capable of supporting the magnet and the heaviest part. When using a Gorbelt G-Force or similar Intelligent Lift Device consult the equipment drawing to determine the type of attachment that is necessary.

## PNEUMATIC

- The magnet will require a control valve (supplied by IMI or others) to actuate the release cylinder. The valve should be a 4-way, 2 position unit with a Coefficient of Flow (Cv) of .7 or greater. The valve can be solenoid or air pilot operated or manually actuated dependent upon the control scheme chosen by the user. The valve cylinder ports are to be plumbed to the cylinder inlets using adequately sized tubing or hard piping.
- Note that most systems will have the air supplied via a coil-hose wound around the lift cable or chain. The valve can then be supplied from this hose.
- Any switches or pilot valves used to operate the control valve may be furnished by others.

## OTHER

- Crane Controls for Up/Down functions may be supplied by others.

# OPERATING INSTRUCTIONS

---

There are a wide variety of control packages supplied with magnetic lifters. Please see the manual supplied with the equipment for specifics.

In general, there is a GRIP button and a RELEASE button. The buttons may be inhibited by the Load Sensor or by a third PROOF button. The Load Sensor prevents the operation of the GRIP and/or the RELEASE button unless the load is supported from below. The PROOF button may be used in conjunction with an Anti-Tie Down device.

1. Operator slowly moves system to position magnet pod onto part
2. Operator pushes "GRIP" button. Allow approximately 1/2 second for magnet to grip part.
3. Use UP / DOWN buttons to control hoist.
4. Operator moves the system with part to the unload position or area.
5. Once the part is properly set down, the load sensor (if equipped) will allow the function of the "RELEASE" button.
6. The operator pushes the "RELEASE" button. Allow approximately 1/2 second for magnet to release part.

# MAINTENANCE

---

## MECHANICAL

- Attachment feature should be inspected on a regular schedule. Look for loose bolts, cracked cap or deformed bale.
- Inspect magnet pods for damage to magnet housing
- Inspect magnet pod supports. Look for loose bolts. Check for damaged adjustment knobs, cracked welds or bent pivot pins.
- Clean magnet faces at least daily with a rag or gloved hand to minimize collected tramp metal.

## ELECTRICAL/PNEUMATIC

- Inspect for wiring and tubing damage (Nicks / Cuts).
- Periodically check valves and fittings for wear/leakage.

## **TROUBLESHOOTING**

---

### **If magnets will not cycle from one mode to the other:**

- Check Air Pressure at source and at magnet. Pressure must match that shown on equipment drawing.
- If proper Air Pressure is present, perform the following check:
  - Place magnet in Release mode then remove to a service area.
  - Place magnet in Grip mode.
  - Pass a piece of scrap steel fastened to a non-ferrous stick or rod under each magnet.

### **Warning: Do not hold the scrap steel in your hand. Injury may result.**

- Working magnets will readily attract the scrap. Non-working magnets will not attract the scrap.
- Inspect each magnet cylinder.
- Remove the non-working magnet for servicing. Consult IMI for replacement parts or disassembly advice.
  
- If magnets will not release the sheet, plate or parts:
  - Check for voltage if solenoid type, or for air flow restrictions.
  - Check for proper valve operation and tubing connections.

## **SPARE PARTS**

---

### ***CONSULT EQUIPMENT AND ACCOMPANYING SPARE PARTS LIST FOR SPECIFIC MAGNET SYSTEM***

## **COMMENTS OR CONCERNS?**

---

We believe Industrial Magnetix, Inc. offers the finest Lifting Magnets available today. Great pride has gone into the design and manufacture of this unit. Any comments or concerns should be directed to our Customer Service Department at 1-888-582-0823. **We appreciate the opportunity to serve you!**

900413.A (02/17)

## **INDUSTRIAL MAGNETICS, INC.**

1385 S M 75 • Boyne City, Michigan 49712 • Phone: (231) 582-3100 • Fax: (231) 582-2704 • [www.magnetix.com](http://www.magnetix.com) • [imi@magnetix.com](mailto:imi@magnetix.com)

**AUTOMATION**

**888-582-0823**

**MAG-MATE®**

**888-582-0822**

**TRAMP METAL**

**888-582-0821**