Making Things Better®

OVER 25 NEW ITEMS!

# MAGNETS 101

Holding ~ Lifting ~ Fixturing ~ Fabrication ~ Welding and More

# Table of Contents

## Catalog Contents



## Product Group Descriptions

AUTOMATION

Engineered Industrial Magnetic Solutions for Automated Stacking, Destacking, Conveying, Lifting, Transferring, Tooling & Fanning of Metals

### Key Markets

- Automotive / Tier 1 & 2
- Stamping
- Heavy Equipment Fabrication
- Conveying
- Office Furniture & Appliance

MAG-MATE®

Magnetic Assemblies for Workholding, Lifting, Fixturing, Transferring, Sweeping, Welding, Tools, Raw Material & More

### Key Markets

- Fabrication
- Metalworking
- Welding
- Sling & Rigging
- Governments

USA M.A.D.E.™

IMI is proud to be a United States - based manufacturer of magnetic assemblies and our USA M.A.D.E™ logo is how we like to show it. You will find our USA M.A.D.E™ logo on any of our products that are **Manufactured • Assembled • Designed • Engineered** here, in the USA, at our facilities.

## Magnet Materials

**Flexible** magnetic strips are made of a Ferro-Magnetic powder with a polymer bonding. These **low** energy strips resist demagnetization and will not chip, crack or shatter. Flexible magnets form to any contour and are often used for labeling or advertising purposes. Flexible magnets can be cut, drilled or shaped. Maximum temperature 160°F (70°C).

**Ceramic** magnets are made of Strontium Ferrite (SrFe) in a sintering process. Ceramic magnets are staples in the electronic, automotive, medical, mining, oil industries, etc. Ceramic magnets are **medium strength** magnet material with a high resistance to demagnetization, long time stability (loses 0.5% of it's magnetic strength in 100 years), brittle material that has to be cut with diamond tipped blades. Maximum temperature 480°F (249°C).

**Alnico** magnets are made of Aluminum, Nickel and Cobalt (AlNiCo) in either a casting or sintering process. Used in application environments that have **high heat**, Alnico magnets offer **medium strength** and the best temperature characteristics of any standard magnet material. Alnico magnets have a medium resistance to demagnetization and are very hard and brittle. Machining or drilling cannot be accomplished by ordinary means. Maximum temperature 800°F (427°C)

**Rare Earth Neodymium-Iron-Boron** (NdFeB) magnets are made in sintered as well as bonded forms. Commonly referred to as Neo, this magnet material provides the **highest magnetic strength** of any magnet material, very high resistance to demagnetization and is ideal for applications requiring maximum strength in a limited area. Neo is usually coated or plated to prevent oxidization due to its high iron content and therefore grinding of Neo material must be avoided. Maximum temperature 180°F (82°C).

**Rare Earth Samarium Cobalt** (SmCo) magnets are made in a sintering process. Samarium Cobalt has the **highest magnetic strength** combined with **high temperature range** making it ideal for applications requiring very high strength in hot environments. Maximum temperature 392°F (200°C).

## Magnet Safety Factors

Our magnetic material meets Magnetic Materials Producers Association (MMPA) standards for physical quality and magnetic properties. Some magnetic material is brittle in nature and minor defects such as chips and hairline cracks are unavoidable.

When selecting a magnet for your application, consider the physical shape of the part (round, convex, concave, etc.) and the surface condition (rough, rusty, dirty, oily). Both can result in air gaps* between the contact points on the magnet & the work material, thereby reducing the magnetic power. These factors and the information in this catalog will aid in choosing the correct magnet for your application. If you have specific questions, our application experts can help you select the right magnet material for your application requirements.

- Work surface
- Temperature
- Direction of magnetization
- Finish
- Part size, thickness and weight
- Material - Ferrous or non-ferrous
- Gauss
- Contact area between magnet & part
- Continuous or intermittent operation
- Tolerance

*Air gap - The air, protective coating, paint, galvanizing, oil, rust, dirt, etc. between the magnet and the part.

## Loss of Magnetism

Under normal use conditions, a permanent magnet can experience a decrease in its original holding value. The most common factors which can cause a loss of strength include:

- Every day wear and tear on the magnet face such as: fine metal buildup on or between the magnet's poles, nicks or gouges in the magnet's poles, rust buildup, etc.
- Exposure to extreme temperatures: Ceramic Lifts lower than -76°F (-60°C) and higher than 300°F (148°C). Neodymium-Iron-Boron Rare Earth Lifts lower than -10°F (-22°C) and higher than 180°F (82°C). Electromagnet & Battery Lifts higher than 140°F (60°C).
- Severe blow or shock to the magnet. Do not use a blunt instrument to position the magnet on the load.
- Exposure to electrical currents. Never place the magnet next to a large motor or generator. Never use the magnet as part of a welding ground circuit.
- Exposure to vibration.

## Lift Magnet Safety Factors

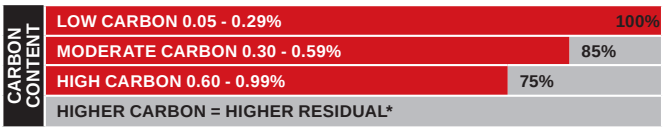
Lift magnets can be effective even when the surfaces of the magnet and/or load have dirt, paint, scale or other debris on them. However, the best efficiency of any magnetic lift is achieved when these surfaces are clean and the poles of the lift (the surfaces in contact with the load) have good, uninterrupted contact with the load.

**It is therefore recommended to:**
Avoid setting down the lift in places on the load that are dirty or have rough surface texture. Clear any foreign material from the load before setting the lift on it. Occasionally check the mechanical condition of the magnetic poles to make sure they are flat and have not been damaged during use. After using the lift, protect the pole surfaces with oil. This will keep the steel surface from rusting.

## Material Surface & Safe Lifting Conditions

Lifting ferrous items using a magnet requires a good look at the length, width and thickness of the item. Thin metals do not absorb as many of the magnetic flux lines (magnetic energy) as thicker metals. Thin metals also flex, causing the steel to peel-off the magnet. Equally important is the physical size, flatness, surface conditions and type of steel. The charts below illustrate how surface finish and Carbon content effect lifting value.

**PERCENTAGE OF STATED LIFTING POWER BY MATERIAL**




**PERCENTAGE OF STATED LIFTING POWER BY SURFACE FINISH**


* HIGH CARBON STEEL (TOOL STEEL) WILL ABSORB MAGNETISM & MAY MAGNETICALLY STICK TO STEEL SURFACES, SUCH AS THE MAGNET, OR ATTRACT FERROUS PARTICLES.

## Design Factor

***Design factor is the relation of the magnet's labeled lifting value compared to the magnets maximum lifting value under ideal conditions.*** Ideal conditions are when a magnet is new and pulled off a newly machined, thick, low carbon steel plate. ***The pounds of pull it takes to break the magnet away from the steel surface is the "maximum" lifting value.***

> ! Unless otherwise noted, lift magnet capacities are stated up to 50% of the actual value. These magnets may reach substantially higher holding values, but the surface condition of the part may affect the magnet's performance capabilities.

Design factor (de-rating) values are then determined by taking this maximum lifting value and dividing it by the manufacturers design factor. Design factors are minimum 2:1 and most cases 3:1. This means a magnet with a 3:1 design factor and labeled to lift 1,000 lbs will have a break-a-way force of approximately 3,000 lbs. The labeled lifting value is stated for the benefit and safety of the user, due to the fact that ideal conditions rarely exist in the field. The steel that you are lifting may have scale, rust, dirt, or coatings on its surface; or the surface of the magnet itself may be worn. Any of these conditions will cause lower lifting values. Pick a lift magnet that has a lifting value slightly higher than the weight of your part.

**DO NOT ADD** additional weight to your lifting requirements. If you have a 1,000 lb part and you buy a higher stated 2,000 lb lift magnet, it will result in a magnet that is much heavier, harder to handle and cost more than needed since the 2,000 lb magnet should have a Design Factor of 2:1 or 3:1. **Under no circumstances should you lift ferrous objects that weigh more than the stated lift magnet value**.

## ASME B30.20 Lifting Standards

The American Society of Mechanical Engineers has established standards for Below-the-Hook Lifting Devices. This standard applies to the marking, construction, installation, inspection, testing, maintenance, and operation of all lifting magnets when used for single or multiple steel piece handling operations in which the operator of the lifting magnet is required to manually position the lifting magnet on the load and manually guide the load during its movement, or in close proximity to people.

Lifting devices designed to this Standard shall comply with ASME B30.20, Below-the-Hook Lifting Devices.

***Industrial Magnetics, Inc. offer several lift magnet options that conform to, or even exceed, the ASME B30.20 standards***

## NEW Alnico Magnet Material

**Alnico** magnets are made of Aluminum, Nickel and Cobalt (AlNiCo) offer **medium strength** and the best temperature characteristics of any standard magnet material. Alnico magnets have a medium resistance to demagnetization and are very hard and brittle. Machining or drilling cannot be accomplished by ordinary means.

**Alnico Features**
- Ideal for high heat applications
- Maximum temperature 800°F (427°C)
- Tolerance ±0.005'' on all dimensions

### Alnico Rectangular Material

| Hold - lbs (kg) | Th. (in) | Wd. (in) | Ln. (in) | Wt. (lbs) | Model No. |
|---|---|---|---|---|---|
| 0.75 (0.34) | 0.25 | 0.25 | 1.00 | 0.01 | ABAR025X025X100 |
| 2.0 (0.90) | 0.375 | 0.375 | 1.50 | 0.05 | ABAR037X037X150 |
| 4.5 (2.04) | 0.50 | 0.50 | 2.00 | 0.15 | ABAR050X050X200 |

### Alnico Cylindrical Material

| Hold - lbs (kg) | Dia. (in) | Ln. (in) | Wt. (lbs) | Model No. |
|---|---|---|---|---|
| 0.75 (0.34) | 0.1875 | 1.00 | 0.01 | A5RC018X100 |
| 1.125 (0.51) | 0.250 | 2.00 | 0.05 | A5RC025X200 |
| 3.0 (1.36) | 0.375 | 2.00 | 0.05 | A5RC037X200 |
| 4.0 (1.81) | 0.500 | 3.00 | 0.15 | A5RC050X300 |
| 15.0 (6.80) | 0.750 | 0.375 | 0.05 | ADISC0750X0375 |
| 6.0 (2.72) | 0.875 | 3.00 | 0.50 | A5RC087X300 |

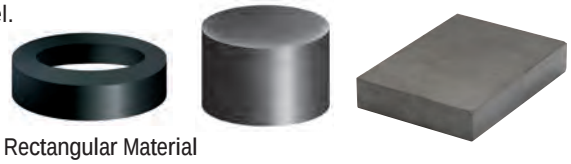
### Alnico Ring Material

| Hold - lbs (kg) | O.D. (in) | I.D. (in) | Ln. (in) | Wt. (lbs) | Model No. |
|---|---|---|---|---|---|
| 1.125 (0.51) | 0.8125 | 0.250 | 0.1875 | 0.005 | AWASH001 |

## Ceramic Magnet Material

Ceramic magnets are a non-metallic, non-conductive, hard, brittle material compound of iron oxide, Strontium Ferrite and small quantities of other metal oxides that can only be cut with a diamond wheel.

**Ceramic Features**
- Low cost, high energy material
- Performs best at temperatures below 480°F (249°C)
- Difficult to grind, machine or drill and can't be E.D.M.'d,
- Tolerance ±2% on O.D., Length & Width. ±.005'' on Thickness



### Ceramic Disc Material

| Hold - lbs (kg) | Dia. (in) | Ln. (in) | Wt. (lbs) | Grade | Model No. |
|---|---|---|---|---|---|
| 4.24 (1.92) | 0.875 | 1.000 | 0.11 | 5 | 7/8DIAX1C5 |

### Ceramic Ring Material

| Hold - lbs (kg) | O.D. (in) | I.D. (in) | Ln. (in) | Wt. (lbs) | Grade | Model No. |
|---|---|---|---|---|---|---|
| 0.36 (0.16) | 0.750 | 0.271 | 0.250 | 0.022 | 8 | F1409 |
| 0.75 (0.34) | 1.230 | 0.885 | 0.431 | 0.044 | 8 | F1407 |
| 0.84 (0.38) | 1.623 | 0.705 | 0.187 | 0.040 | 8 | F1406 |
| 3.5 (1.58) | 1.723 | 0.705 | 0.250 | 0.082 | 8 | F1405 |
| 9.5 (4.31) | 2.800 | 1.203 | 0.590 | 0.466 | 8 | 710006 |
| 5.5 (2.49) | 2.825 | 1.250 | 0.330 | 0.600 | 8 | 431005 |
| 20.5 (9.30) | 5.250 | 2.312 | 0.750 | 2.408 | 8 | 455005 |

### Ceramic Rectangular Material

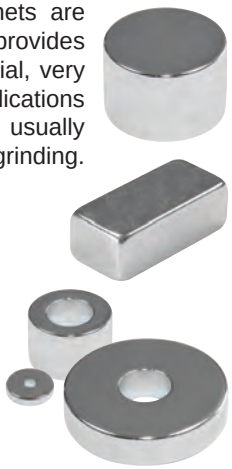
| Hold - lbs (kg) | Th. (in) | Wd. (in) | Ln. (in) | Wt. (lbs) | Grade | Model No. |
|---|---|---|---|---|---|---|
| 6.0 (2.72) | 0.375 | 0.875 | 1.875 | 0.11 | 8 | 5C458 |
| 5.0 (2.26) | 0.250 | 1 | 2 | 0.10 | 8 | 250X1X2C8 |
| 7.0 (3.17) | 0.500 | 1 | 2 | 0.15 | 8 | 500X1X2C8 |
| 9.0 (4.08) | 0.750 | 1 | 2 | 0.25 | 8 | 750X1X2C8 |
| 11.0 (4.99) | 1.000 | 1 | 2 | 0.35 | 8 | 1X1X2C8 |
| 15.0 (6.80) | 1.000 | 2 | 2 | 0.70 | 8 | 1X2X2C8 |
| 6.5 (2.95) | 0.187 | 4 | 4 | 0.75 | 8 | 187X4X4C5 |
| 8.5 (3.85) | 0.250 | 4 | 6 | 1.00 | 8 | 250X4X6C5 |
| 8.0 (3.62) | 0.312 | 4 | 4 | 0.83 | 8 | 312X4X4C5 |
| 10.5 (4.76) | 0.375 | 4 | 4 | 1.00 | 8 | 375X4X4C5 |
| 14.0 (6.35) | 0.500 | 4 | 6 | 2.00 | 8 | 500X4X6C8 |
| 18.5 (8.39) | 0.750 | 4 | 6 | 3.00 | 8 | 750X4X6C5 |
| 23.5 (10.66) | 1.000 | 4 | 6 | 4.00 | 8 | 1X4X6C8 |

## Rare Earth Magnet Material

**Rare Earth Neodymium-Iron-Boron** (NdFeB) magnets are commonly referred to as Neo. This magnet material provides the **highest magnetic strength** of any magnet material, very high resistance to demagnetization and is ideal for applications requiring maximum strength in a limited area. Neo is usually coated or plated to prevent oxidization, therefore, avoid grinding.

**Neodymium Features**
- Extremely powerful magnet
- Ideal for miniaturized applications
- Operates best at temperatures below 180°F (82°C)
- High resistance to demagnetization
- Nickel plated finish
- Tolerance ±0.005'' on all dimensions

***NOTE:*** *Avoid grinding, as flash fires may occur from rare earth material dust particles. Crystalline structured material is easily chipped, cracked or broken.*



### Rare Earth Ring Material

| Hold - lbs (kg) | O.D. (in) | I.D. (in) | Ln. (in) | Wt. (lbs) | Model No. |
|---|---|---|---|---|---|
| 0.2 (0.09) | 0.250 | 0.060 | 0.060 | 0.0002 | NE250060060NP35 |
| 4.2 (1.91) | 0.365 | 0.200 | 0.250 | 0.001 | NE365200250NP35 |
| 2.0 (0.90) | 0.375 | 0.136 | 0.100 | 0.001 | NE375136100NP35 |
| 19.0 (8.62) | 0.875 | 0.275 | 0.200 | 0.05 | NE875275200NP35 |

### Rare Earth Rectangular Material

| Hold - lbs (kg) | Th. (in) | Wd. (in) | Ln. (in) | Wt. (lbs) | Model No. |
|---|---|---|---|---|---|
| 23.25 (10.54) | 0.18 | 1.00 | 1.50 | 0.100 | NEO 3/16 RECTNP |
| 6.0 (2.72) | 0.34 | 0.25 | 0.75 | 0.018 | NE342575NP35 |
| 16.6 (7.53) | 0.50 | 1.00 | 1.00 | 0.030 | NE50100100NP35 |

### Rare Earth Cylindrical Material

| Hold - lbs (kg) | Dia. (in) | Ln. (in) | Wt. (lbs) | Model No. |
|---|---|---|---|---|
| 0.2 (0.09) | 0.120 | 0.060 | 0.0002 | NE1206NP35 |
| 0.3 (0.13) | 0.120 | 0.250 | 0.0002 | NE1225NP35 |
| 0.6 (0.27) | 0.120 | 0.500 | 0.0004 | NE1250NP35 |
| 0.6 (0.27) | 0.187 | 0.060 | 0.0004 | NE1806NP35 |
| 1.0 (0.45) | 0.220 | 0.100 | 0.001 | NE2210NP35 |
| 1.5 (0.68) | 0.220 | 0.250 | 0.003 | NE2225NP35 |
| 1.8 (0.81) | 0.220 | 0.500 | 0.007 | NE2250NP35 |
| 1.0 (0.45) | 0.250 | 0.100 | 0.001 | NE2510NP35 |
| 1.2 (0.54) | 0.250 | 0.125 | 0.002 | NE2512NP35 |
| 1.5 (0.68) | 0.250 | 0.187 | 0.002 | NE2518NP35 |
| 1.7 (0.77) | 0.250 | 0.200 | 0.003 | NE2520NP35 |
| 1.8 (0.81) | 0.250 | 0.250 | 0.003 | NE2525NP35 |
| 2.1 (0.95) | 0.250 | 0.500 | 0.007 | NE2550NP35 |
| 2.5 (1.13) | 0.310 | 0.060 | 0.006 | NE3106NP35 |
| 3.1 (1.40) | 0.320 | 0.250 | 0.006 | NE3225NP35 |
| 1.0 (0.45) | 0.375 | 0.060 | 0.002 | NE3706NP35 |
| 2.0 (0.90) | 0.375 | 0.100 | 0.003 | NE3710NP35 |
| 2.6 (1.18) | 0.375 | 0.125 | 0.004 | NE3712NP35 |
| 4.5 (2.04) | 0.375 | 0.187 | 0.006 | NE3718NP35 |
| 4.5 (2.04) | 0.375 | 0.200 | 0.006 | NE3720NP35 |
| 4.6 (2.08) | 0.375 | 0.250 | 0.007 | NE3725NP35 |
| 5.7 (2.58) | 0.375 | 0.375 | 0.011 | NE3737NP35 |
| 6.7 (3.04) | 0.375 | 0.500 | 0.015 | NE3750NP35 |
| 3.0 (1.36) | 0.500 | 0.060 | 0.003 | NE5006NP35 |
| 4.0 (1.81) | 0.500 | 0.125 | 0.007 | NE5012NP35 |
| 5.7 (2.58) | 0.500 | 0.187 | 0.010 | NE5018NP35 |
| 6.0 (2.72) | 0.500 | 0.200 | 0.010 | NE5020NP35 |
| 6.5 (2.94) | 0.500 | 0.250 | 0.013 | NE5025NP35 |
| 8.9 (4.03) | 0.500 | 0.375 | 0.020 | NE5037NP35 |
| 11.2 (5.08) | 0.500 | 0.500 | 0.026 | NE5050NP35 |
| 3.2 (1.45) | 0.750 | 0.060 | 0.020 | NE7506NP35 |
| 10.7 (4.76) | 0.750 | 0.250 | 0.026 | NE7525NP35 |
| 13.5 (6.12) | 0.750 | 0.375 | 0.030 | NE7537NP35 |
| 22.0 (9.98) | 0.750 | 0.500 | 0.045 | NE7550NP35 |

## Flexible Magnetic Strips

**Features**
- Conforms to any contour
- Can be cut, drilled or shaped
- Available in plain or adhesive back

In general, the following tolerances apply to all Magnetic Strips: Thickness: ±0.005'', Widths: 0'' to 2'' = ±0.015'' or 2'' to 3'' = ±0.030'', Lengths: ±1% or ±0.015'' whichever is greater. Temperature Range: operating temperatures -15°F to 160°F (-26°C to 71°C).

| Hold - lbs (kg) / ln. ft. | Th. (in) | Wd. (in) | Ln. (ft) | Wt. (lbs) | Model No. Plain Back | Model No. Adhesive Back |
|---|---|---|---|---|---|---|
| 2.0 (0.90) | 1/32 | 1/2 | 100 | 2.3 | MRN030X0050X100 | MRA030X0050X100 |
| 2.0 (0.90) | 1/32 | 1/2 | 200 | 4.6 | MRN030X0050X200 | MRA030X0050X200 |
| 3.0 (1.36) | 1/32 | 3/4 | 100 | 3.4 | MRN030X0075X100 | MRA030X0075X100 |
| 3.0 (1.36) | 1/32 | 3/4 | 200 | 6.8 | MRN030X0075X200 | MRA030X0075X200 |
| 4.0 (1.81) | 1/32 | 1 | 100 | 4.6 | MRN030X0100X100 | MRA030X0100X100 |
| 4.0 (1.81) | 1/32 | 1 | 200 | 9.2 | MRN030X0100X200 | MRA030X0100X200 |
| 12.0 (5.44) | 1/32 | 3 | 100 | 15.0 | MRN030X0300X100 | N/A |
| 12.0 (5.44) | 1/32 | 3 | 200 | 30.0 | MRN030X0300X200 | N/A |
| 3.0 (1.36) | 1/16 | 1/2 | 50 | 2.2 | MRN060X0050X050 | MRA060X0050X050 |
| 3.0 (1.36) | 1/16 | 1/2 | 100 | 4.4 | MRN060X0050X100 | MRA060X0050X100 |
| 5.0 (2.26) | 1/16 | 3/4 | 50 | 3.3 | MRN060X0075X050 | MRA060X0075X050 |
| 5.0 (2.26) | 1/16 | 3/4 | 100 | 6.6 | MRN060X0075X100 | MRA060X0075X100 |
| 6.0 (2.72) | 1/16 | 1 | 50 | 4.4 | MRN060X0100X050 | MRA060X0100X050 |
| 6.0 (2.72) | 1/16 | 1 | 100 | 8.8 | MRN060X0100X100 | MRA060X0100X100 |
| 18.0 (8.16) | 1/16 | 3 | 100 | 30.0 | MRN060X0300X100 | MRA060X0300X100 |
| 4.0 (1.81) | 1/8 | 1/2 | 50 | 5.0 | MRN120X0050X050 | MRA120X0050X050 |
| 4.0 (1.81) | 1/8 | 1/2 | 100 | 10.0 | MRN120X0050X100 | MRA120X0050X100 |
| 6.0 (2.72) | 1/8 | 3/4 | 50 | 7.0 | MRN120X0075X050 | MRA120X0075X050 |
| 6.0 (2.72) | 1/8 | 3/4 | 100 | 14.0 | MRN120X0075X100 | MRA120X0075X100 |
| 8.0 (3.63) | 1/8 | 1 | 50 | 9.5 | MRN120X0100X050 | MRA120X0100X050 |
| 8.0 (3.63) | 1/8 | 1 | 100 | 19.0 | MRN120X0100X100 | MRA120X0100X100 |
| 24.0 (10.89) | 1/8 | 3 | 50 | 38.0 | MRN120X0300X050 | MRA120X0300X050 |
| 24.0 (10.89) | 1/8 | 3 | 100 | 56.0 | MRN120X0300X100 | MRA120X0300X100 |

## Pre-Cut Magnetic Sheets

**Features**
- Available with adhesive or with white surface on one side
- Ideal for creating magnetic signs
- Plain back has one side with a white surface, the other is magnetic
- Adhesive back has one side with an adhesive side, the other is magnetic
- Cover up heating or cooling vents to save energy or create better working conditions

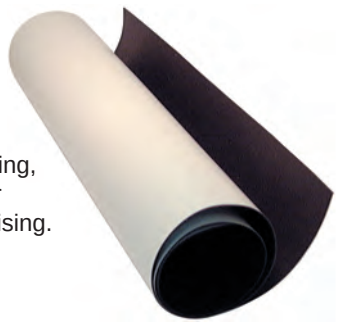
** Comes in packages of ten only.*
*Turn your business cards into magnetic business cards.*

| Hold - lbs (kg) / sq. ft. | Th. (in) | Wd. (in) | Ln. (in) | Wt. (lbs) | Model No. Plain Back | Model No. Adhesive Back |
|---|---|---|---|---|---|---|
| N/A | 1/50 | 2 | 3.5 | 0.2 | N/A | *RA020X0200X0003 |
| 196.0 (88.90) | 1/32 | 12 | 12 | 0.5 | RW030X1200X1200 | RA030X1200X1200 |
| 196.0 (88.90) | 1/32 | 12 | 18 | 0.9 | RW030X1200X1800 | RA030X1200X1800 |
| 196.0 (88.90) | 1/32 | 12 | 24 | 1.0 | RW030X1200X2400 | RA030X1200X2400 |

## White Magnetic Sheeting

**Features**
- Can be cut, drilled or shaped
- Conforms to any contour
- Can be written on
- 1/32" thick
- 24-3/8" width

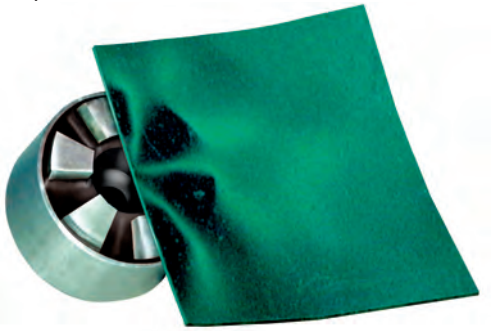
Use in your office, manufacturing, air vent covers or inventory for labeling applications or advertising.



| Hold - lbs (kg) / sq. ft. | Ln. (ft) | Wt. (lbs) | Model No. |
|---|---|---|---|
| 196.0 (88.90) | 1 | 1.24 | MRS030X2437X001 |
| 196.0 (88.90) | 10 | 13 | MRS030X2437X010 |
| 196.0 (88.90) | 25 | 31 | MRS030X2437X025 |

## Magnetic Viewing Film

This green film allows you to identify the magnetic field patterns of magnetic materials and assemblies. The viewing film can be used to check for damage to the magnet material within most types of magnet assemblies. Simply hold the film against the surface of any magnet and the pattern of the magnetic field is revealed. The 4'' square sheets are reusable.



**Part No. XX0016**

| | Hold - lbs (kg) | Dia. (in) | Ln. (in) | Tap Size | Depth | Wt. (lbs) | Model No. |
|---|---|---|---|---|---|---|---|
| A | 0.25 (0.11) | 1/4 | 1/2 | #6-32 | 1/4 | 0.01 | N250T |
| A | 1.30 (0.59) | 3/8 | 1/2 | #8-32 | 1/4 | 0.01 | N375T |
| A | 2.65 (1.20) | 1/2 | 1/2 | #10-24 | 1/4 | 0.01 | N500T |
| A | 4.35 (1.97) | 5/8 | 1/2 | #10-24 | 1/4 | 0.02 | N625T |
| A | 6.00 (2.72) | 3/4 | 1/2 | #10-24 | 1/4 | 0.03 | N750T |
| A | 7.50 (3.40) | 1 | 1/2 | #1/4-20 | 1/4 | 0.06 | N1000T |
| B | 15.50 (7.03) | 1 | 3/4 | #1/4-20 | 1/4 | 0.08 | N3T1002 |
| B | 26.00 (11.79) | 1-1/4 | 3/4 | #5/16-18 | 1/4 | 0.14 | N3T1252 |
| C | 45.00 (20.41) | 2 | 1/2 | #1/4 - Flat | - | 0.18 | C4H2000 |
| C | 50.00 (22.68) | 2 | 3/4 | #1/4 - Flat | - | 0.26 | C4H2002 |
| C | 60.00 (27.21) | 2 | 1 | #1/4 - Flat | - | 0.33 | C4H2004 |
| C | 90.00 (40.82) | 2-1/2 | 1 | #1/4 - Flat | - | 0.53 | C4H2504 |
| D | 145.00 (65.77) | 3 | 1 | #1/4 - Flat | - | 1.23 | C5H3004 |
| E | 3.00 (1.36) | 3/8 | 1/2 | #8-32 | .085 | 0.02 | R375 |
| E | 8.00 (3.63) | 1/2 | 1/2 | #10-32 | .150 | 0.03 | R500 |
| E | 22.00 (9.98) | 3/4 | 1/2 | #10-32 | .150 | 0.06 | R750 |
| E | 46.00 (20.86) | 1 | 1/2 | #1/4-20 | .150 | 0.10 | R1000 |
| E | 50.00 (22.68) | 1-1/4 | 1/2 | #5/16-18 | .150 | 0.16 | R1250 |
| F | 6.00 (2.72) | 1/2 | 1/2 | - | - | 0.05 | N500 |
| F | 18.00 (8.16) | 3/4 | 1-3/16 | #1/4-20 | 1/4 | 0.10 | NT750 |
| F | 43.00 (19.50) | 1 | 1-5/16 | #1/4-20 | 5/16 | 0.20 | NT1000 |
| F | 102.00 (46.26) | 1-1/2 | 2-1/16 | #5/16-18 | 5/16 | 0.60 | NT1500 |
| F | 172.00 (78.01) | 2 | 2-7/16 | #3/8-16 | 5/16 | 1.30 | NT2000 |
| G | 0.90 (0.41) | 06 mm | 20 mm | - | - | 0.02 | PF06N |
| G | 4.40 (1.99) | 10 mm | 20 mm | - | - | 0.03 | PF10N |
| G | 6.60 (2.99) | 13 mm | 20 mm | - | - | 0.04 | PF13N |
| G | 13.80 (6.26) | 16 mm | 20 mm | - | - | 0.06 | PF16N |
| G | 25.40 (11.52) | 20 mm | 25 mm | - | - | 0.14 | PF20N |
| G | 44.10 (20.00) | 25 mm | 35 mm | - | - | 0.30 | PF25N |
| G | 66.10 (29.98) | 32 mm | 40 mm | - | - | 0.50 | PF32N |
| H | 0.90 (0.41) | 06 mm | 20 mm | - | - | 0.02 | PF06S |
| H | 4.40 (1.99) | 10 mm | 20 mm | - | - | 0.03 | PF10S |
| H | 6.60 (2.99) | 13 mm | 20 mm | - | - | 0.04 | PF13S |
| H | 13.80 (6.26) | 16 mm | 20 mm | - | - | 0.06 | PF16S |
| H | 25.40 (11.52) | 20 mm | 25 mm | - | - | 0.14 | PF20S |
| H | 44.10 (20.00) | 25 mm | 35 mm | - | - | 0.30 | PF25S |
| H | 66.10 (29.98) | 32 mm | 40 mm | - | - | 0.50 | PF32S |
| I | 0.13 (0.05) | 1/4 | 1/2 | #8-32 | 3/32 | 0.01 | A250 |
| I | 0.72 (0.32) | 3/8 | 1/2 | #8-32 | 3/32 | 0.02 | A375 |
| I | 1.13 (0.51) | 1/2 | 1/2 | #10-32 | 5/32 | 0.03 | A500 |
| I | 1.54 (0.70) | 1/2 | 3/4 | #10-32 | 3/16 | 0.04 | A502 |
| I | 1.75 (0.79) | 1/2 | 1 | #10-32 | 1/4 | 0.05 | A504 |
| I | 1.19 (0.54) | 5/8 | 1/2 | #10-32 | 5/32 | 0.07 | A625 |
| I | 2.69 (1.22) | 3/4 | 1/2 | #10-32 | 5/32 | 0.06 | A750 |
| I | 4.56 (2.07) | 3/4 | 3/4 | #10-32 | 1/4 | 0.06 | A752 |
| I | 4.69 (2.13) | 3/4 | 1 | #10-32 | 1/4 | 0.08 | A754 |
| I | 4.00 (1.81) | 1 | 1/2 | #1/4-20 | 5/32 | 0.11 | A1000 |
| I | 7.25 (3.29) | 1 | 1 | #1/4-20 | 9/32 | 0.21 | A1004 |
| I | 12.50 (5.67) | 1-1/4 | 1-1/4 | #1/4-20 | 9/32 | 0.39 | A1256 |
| | | | | **Wall Th.** | | | |
| J | 0.025 (0.0113) | 3/16 | 1/4 | 0.018 | - | 0.01 | ABS1825 |
| J | 0.040 (0.0181) | 3/16 | 1/2 | 0.018 | - | 0.01 | ABS1850 |
| J | 0.055 (0.0249) | 1/4 | 1/4 | 0.032 | - | 0.01 | ABS2525 |
| J | 0.140 (0.0635) | 1/4 | 1/2 | 0.032 | - | 0.01 | ABS2550 |
| J | 0.060 (0.0272) | 5/16 | 1/4 | 0.032 | - | 0.01 | ABS3125 |
| J | 0.175 (0.0793) | 5/16 | 1/2 | 0.032 | - | 0.01 | ABS3150 |
| J | 0.100 (0.0453) | 3/8 | 3/8 | 0.032 | - | 0.01 | ABS3737 |
| J | 0.200 (0.0907) | 3/8 | 3/4 | 0.032 | - | 0.01 | ABS3775 |
| J | 0.225 (0.1021) | 1/2 | 1/2 | 0.032 | - | 0.03 | ABS5050 |
| J | 0.680 (0.3084) | 3/4 | 3/4 | 0.062 | - | 0.06 | ABS7575 |
| K | 0.13 (0.059) | 1/8 | 1/4 | 0.018 | - | 0.01 | RBS1225 |
| K | 0.37 (0.168) | 3/16 | 1/4 | 0.032 | - | 0.01 | RBS1825 |
| K | 0.88 (0.399) | 1/4 | 1/4 | 0.032 | - | 0.01 | RBS2525 |
| K | 0.95 (0.043) | 1/4 | 1/2 | 0.032 | - | 0.01 | RBS2550 |
| K | 1.00 (0.45) | 5/16 | 1/4 | 0.032 | - | 0.01 | RBS3125 |
| K | 2.63 (1.19) | 3/8 | 3/8 | 0.032 | - | 0.01 | RBS3737 |
| K | 3.13 (1.42) | 1/2 | 1/4 | 0.062 | - | 0.03 | RBS5025 |
| K | 4.63 (2.10) | 1/2 | 1/2 | 0.062 | - | 0.03 | RBS5050 |
| K | 5.40 (2.45) | 5/8 | 1/2 | 0.062 | - | 0.04 | RBS6250 |
| K | 7.50 (3.40) | 3/4 | 3/8 | 0.062 | - | 0.05 | RBS7537 |
| | | | | **Socket** | **Poles** | | |
| L | 8.00 (3.63) | 1-1/8 | 25/32 | #1/4-20 | 4 | 0.10 | AR1501 |
| L | 12.00 (5.44) | 1-3/8 | 25/32 | #1/4-20 | 6 | 0.30 | AR1502 |
| L | 35.00 (15.88) | 2-1/2 | 1-9/32 | #1/2-13 | 8 | 1.30 | AR1504 |

## Cylindrical Fixture Assemblies

**A:** Rare Earth Neodymium 1-Pole magnet in an Aluminum insulated cup. Powerful compact magnet that can be press fit or use tapped hole for mounting. +/- .003" diameter & .015" length. Maximum temperature 180°F (82°C).

**B:** Rare Earth 3-Pole magnet in an Aluminum insulated cup. Extended poles can be lightly machined. Can be press fit or use tapped hole for mounting. +/- .003" diameter & .015" length. Maximum temperature 180°F (82°C).

**C:** Rare Earth Neodymium 4-Pole magnet in an Aluminum insulated cup. Extended poles can be lightly machined. Can be press fit or use thru-hole for mounting. +/- .008" diameter & +/- .015" length. Maximum temperature 180°F (82°C).

**D:** Rare Earth Neodymium 3-Pole magnet in an Aluminum insulated cup. Maximum strength in a compact package. Can be press fit or use thru-holes for mounting. +/- .008" dia. & +/- .015" length. Maximum temperature 180°F (82°C). Mounting hole center 1-7/8".

**E:** Rare Earth Neodymium Island 2-Pole magnet in a steel cup. Ideal for shallow fixtures. Can not be press fit without additional insulation. Use tapped hole for mounting. +/- .005" dia. & +/- .015" length. Maximum temperature 180°F (82°C).

**F:** Rare Earth Neodymium parallel 2-Pole magnet in an Aluminum insulated cup. Flush face magnet, can be press fit or use tapped hole for mounting. +/- .008" diameter & +/- .015" length. Maximum temperature 180°F (82°C).

**G:** Rare Earth Neodymium parallel 2-Pole magnet in a brass insulated cup. Ideal for metric press fit applications. +/- .002" diameter & length. Maximum temperature 180°F (82°C).

**H:** Rare Earth Samarium Cobalt parallel 2-Pole magnet in a brass insulated cup. Ideal for high heat metric press fit applications. +/- .002 diameter & length. Maximum temperature 392°F (200°C).

**I:** Alnico Island 2-Pole magnet in a steel cup. Especially effective in mold applications. Can not be press fit without additional insulation. Use tapped hole for mounting. +/- .005" diameter & +/- .015" length. Maximum temperature 800°F (427°C).

**J:** Alnico magnet material shielded in a non-conductive sleeve, 1-Pole on each end. Insulator prevents loss of magnetic flux when inserted into steel components or fixtures. No mounting holes. +/-.001" diameter & +/- .005" length. Maximum temperature 800°F (427°C).

**K:** Rare Earth Neodymium magnet material shielded in a non-conductive sleeve, 1-Pole on each end. Insulator prevents loss of magnetic flux when inserted into steel components or fixtures. No mounting holes. +/- .001 diameter & +/- .005" length. Maximum temperature 180°F (82°C).

**L:** Alnico Multi-Pole magnet in an Aluminum insulated cup. Especially effective on thin metal or difficult applications. Counter sunk mounting hole for easy installation. +/- .006" diameter & +/- .015" length. Maximum temperature 300°F (148°C).


A


B


C


D


E


F


G&H


I


J&K


L

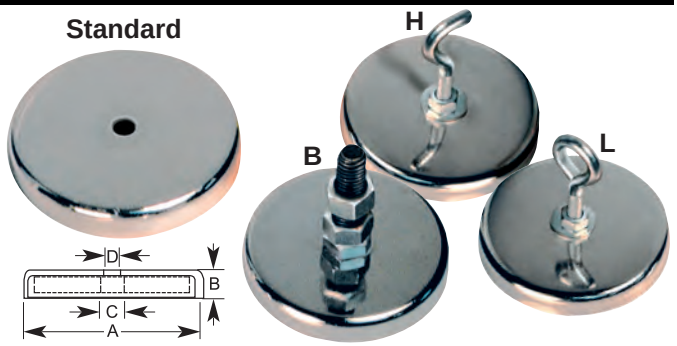
## Plated Cup Magnet Assemblies

Plated, low profile, cup magnets are ideal for: holding steel doors, hanging signs and lights, mounting antennas, retrieving steel items from tanks, vats, bins and lakes, holding tarps in place and more. Ceramic cup magnets are heat resistant up to 300°F (148°C). Rare Earth cup magnets are heat resistant up to 180°F (82°C) and are designated by the letter "R" at the end of the standard part number.

OPTION B: Plated cup & bolt furnished with 2 nuts.

OPTION H: Plated hook for hanging items from steel surfaces.

OPTION L: Plated cup with 3/8'' I.D. plated loop.




| Standard | | | | | | | Option B | | | Option H | | | Option L | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Hold - lbs (kg) | A (in) | B (in) | C (in) | D (in) | Wt. (lbs) | Model No. | Bolt Thread | Ht. (in) | Model No. | Hook I.D. | Ht. (in) | Model No. | Ht. (in) | Model No. |
| 7.0 (3.18) | 1.24 | 0.188 | 0.25 | 0.156 | 0.03 | MX1000 | 6-32 | 1.188 | MX1000B | - | - | - | - | - |
| 35.0 (15.88) | 1.24 | 0.188 | 0.25 | 0.125 | 0.03 | MX1000R | - | - | - | - | - | - | - | - |
| 11.0 (4.99) | 1.41 | 0.281 | 0.375 | 0.188 | 0.05 | MX1500 | 8-32 | 1.375 | MX1500B | - | - | - | - | - |
| 19.0 (8.62) | 2.03 | 0.313 | 0.859 | 0.188 | 0.10 | MX2000 | 10-24 | 1.063 | MX2000B | 0.406 | 2 | MX2000H | 1.75 | MX2000L |
| 47.5 (21.55) | 2.03 | 0.313 | 0.438 | 0.188 | 0.10 | MX2002R | 10-24 | 1.566 | MX2002RB | 0.406 | 2 | MX2002RH | 1.813 | MX2002RL |
| 74.0 (33.57) | 2.03 | 0.313 | 0.438 | 0.188 | 0.12 | MX2004R | 10-24 | 1.566 | MX2004RB | 0.625 | 2 | MX2004RH | 1.813 | MX2004RL |
| 5.0 (2.27) | 2.25 | 0.188 | - | - | 0.10 | - | 5/16-18 | 1.188 | MX2250B | - | - | - | - | - |
| 41.0 (18.60) | 2.63 | 0.375 | 1 | 0.281 | 0.30 | MX2500 | 1/4-20 | 2.120 | MX2500B | 0.625 | 3.25 | MX2500H | 2.25 | MX2500L |
| 100.0 (45.36) | 2.63 | 0.375 | 0.625 | 0.281 | 0.40 | MX2508R | 1/4-20 | 2.120 | MX2508RB | 0.625 | 3.25 | MX2508RH | 2.25 | MX2508RL |
| 45.0 (20.41) | 2.88 | 0.375 | 1 | 0.281 | 0.35 | MX2750 | 1/4-20 | 2.120 | MX2750B | 0.625 | 3.25 | MX2750H | - | - |
| 47.5 (21.54) | 3.18 | 0.438 | 1.203 | 0.281 | 0.53 | MX3000 | 1/4-20 | 2.180 | MX3000B | - | - | - | 2.25 | MX3000L |
| 95.0 (43.09) | 4.90 | 0.5 | 1.75 | 0.500 | 1.50 | MX5000 | 3/8-16 | 2.120 | MX5000B | - | - | - | - | - |

### Cup Magnets With Clamps

Option 1

Option 2

Option 3

| | | Magnet | | Opening | | | |
|---|---|---|---|---|---|---|---|
| Option | Hold - lbs (kg) | Dia. (in) | OAH (in) | Min. (in) | Max. (in) | Wt. (lbs) | Model No. |
| 1 | 7.0 (3.17) | 1.24 | 0.88 | 0.19 | 0.38 | 0.05 | MX1000NP01 |
| 1 | 11.0 (4.99) | 1.41 | 1.53 | 0.31 | 0.75 | 0.10 | MX1500NP01 |
| 1 | 19.0 (8.62) | 2.03 | 2.31 | 0.63 | 1.25 | 0.19 | MX2000NP01 |
| 1 | 41.0 (18.60) | 2.63 | 2.50 | 1.00 | 1.88 | 0.41 | MX2500NP01 |
| 1 | 7.0 (3.17) | 1.24 | 1.09 | 0.38 | 0.50 | 0.05 | MX1000SS01 |
| 1 | 11.0 (4.99) | 1.41 | 1.91 | 0.63 | 0.88 | 0.11 | MX1500SS01 |
| 1 | 11.0 (4.99) | 1.41 | 2.03 | 0.88 | 1.13 | 0.10 | MX1500SS02 |
| 1 | 11.0 (4.99) | 1.41 | 1.66 | 0.31 | 0.75 | 0.10 | MX1500WP03 |
| 1 | 11.0 (4.99) | 1.41 | 1.28 | 0.56 | 0.88 | 0.09 | MX1500WP01 |
| 1 | 11.0 (4.99) | 1.41 | 1.66 | 0.88 | 1.25 | 0.11 | MX1500WP02 |
| 1 | 19.0 (8.62) | 2.03 | 2.31 | 0.63 | 1.25 | 0.19 | MX2000WP01 |
| 1 | 41.0 (18.60) | 2.63 | 2.88 | 1.00 | 1.88 | 0.41 | MX2500WP01 |
| 2 | 19.0 (8.62) | 2.03 | 2.19 | 1.50 | 1.88 | 0.19 | MX2000VB02 |
| 3 | 7.0 (3.17) | 1.24 | 1.13 | 0.38 | 0.63 | 0.06 | MX1000ZP01 |
| 3 | 11.0 (4.99) | 1.41 | 1.53 | 0.75 | 1.13 | 0.13 | MX1500ZP01 |
| 3 | 11.0 (4.99) | 1.41 | 1.53 | 1.00 | 1.50 | 0.19 | MX1500ZP02 |
| 3 | 7.0 (3.17) | 1.24 | 1.13 | 0.38 | 0.63 | 0.06 | MX1000VB01 |
| 3 | 11.0 (4.99) | 1.41 | 1.53 | 0.75 | 1.13 | 0.13 | MX1500VB01 |
| 3 | 19.0 (8.62) | 2.03 | 2.31 | 2.00 | 2.50 | 0.22 | MX2000VB01 |

**OPTION 1:** Available with Nickel Plated (NP), Stainless Steel (SS) or White Plastic (WP) Coated Clamps.

**OPTION 2:** Black vinyl (VB) coated clamp for holding flashlights, spray cans, etc.

**OPTION 3:** Zinc Plated (ZP) or Black Vinyl (VB) Coated Clamps.

## ON/OFF Rare Earth Fixture Magnets


Switchable On/Off Rare Earth Magnetic MagJigs (popular with woodworkers) & MagBases, featuring Magswitch® technology, are simple, fast and strong clamps.

### Features

- Versatile – use anywhere on cast-iron or steel surfaces
- Easy On/Off controls all for fast, strong, and precise positioning
- Use at least two per fixture; add more for even greater holding force
- MagJigs flange 0.39" thickness secured with two #8 screws and will mount flush on 3/4" board – Use 40mm Forstner bit for large MagJig & 30mm for small MagJig

| Hold - lbs (kg) | Description | Magnet Dia. (in) | Magnet Dia. (mm) | Magnet Ht (in) | Overall Dimensions Ht (in) | Overall Dimensions Wd. (in) | Overall Dimensions Ln. (in) | Wt. (lbs) | Model No. |
|---|---|---|---|---|---|---|---|---|---|
| 95.0 (43.09) | MagBase | 1.18 | 30 | 0.75 | 1.84 | N/A | N/A | 0.29 | GP095 |
| 155.0 (70.30) | MagBase | 1.57 | 40 | 0.75 | 2.05 | N/A | N/A | 0.51 | GP155 |
| 95.0 (43.09) | MagJig | 1.18 | 30 | 0.75 | 1.84 | 1.34 | 2.25 | 0.33 | JF095 |
| 155.0 (70.30) | MagJig | 1.57 | 40 | 0.75 | 2.05 | 1.73 | 2.64 | 0.66 | JF155 |
| 190.0 (86.18) | MagJig | 2.36 | 60 | 1.50 | 2.75 | 2.25 | 3.87 | 1.35 | JF190 |

## Rectangular Fixture Assemblies

**A:** Ceramic magnet, 2,3 or 4-Pole assembly potted in an aluminum housing. Effective for holding heavy parts & holding against shear forces. Supplied without mounting holes, they can be drilled, tapped, milled, etc. on either end of the magnet. Maximum temperature 300°F (148°C).

**B:** Rare Earth magnet material, 2 or 3-Pole assembly potted in an aluminum housing. Effective for holding heavy parts & holding against shear forces. Supplied without mounting holes, they can be drilled, tapped, milled, etc. on either end of the magnet. Maximum temperature is 180°F (82°C).

**C:** Ceramic magnet (except LP2100R is Rare Earth) placed in a 400 Stainless Steel channel covered with 300 stainless steel. Use 1/4”-20 (m6) bolt or screws for mounting this non-corrosive 2-pole assembly. Maximum temperature 300°F (148°C). Rare Earth maximum temperature is 180°F (82°C).

**D:** Ceramic magnet sandwiched between steel pole pieces. Use 10-24 (m5) bolt or screws for mounting this non-corrosive 2-Pole assembly. Maximum temperature 300°F (148°C).

**E:** Paint rack magnet uses a 400 Stainless Steel channel covered with 300 stainless steel. Use 1/4”-20 (m6) bolt or screws for mounting this non-corrosive 2-Pole assembly. Maximum temperature 350°F (177°C).

**F:** Alnico Paint rack and indicator base magnet use two piece of Alnico 8 magnet material riveted between bright zinc plated 11 gauge steel pole pieces. Magnet has a 1/4”-20 tapped hole for mounting. Maximum temperature 800°F (427°C).

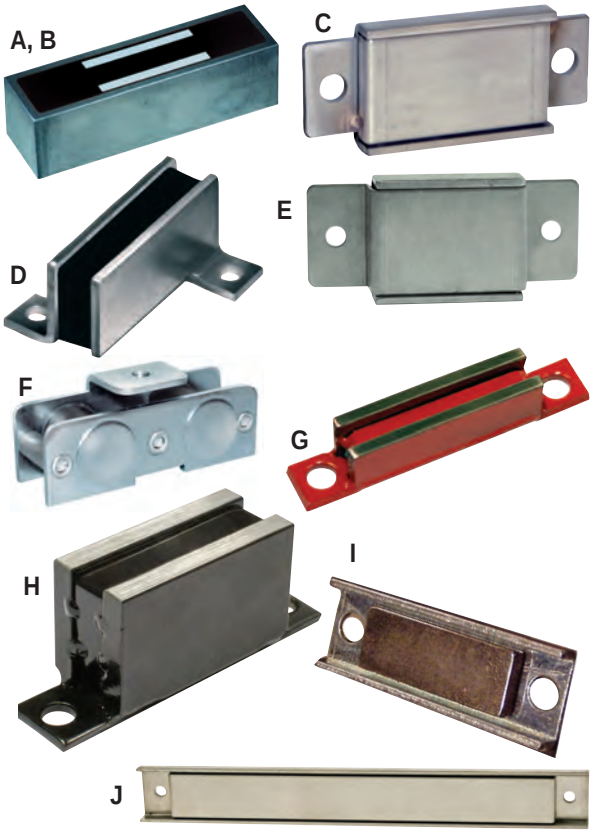
**G:** Rare Earth magnet material is sandwiched between steel pole pieces and welded to a stainless steel back plate. This extremely powerful assembly is painted black and fits narrow openings. Use 1/4”-20 (m6) bolt or screws for mounting this 2-Pole assembly. Maximum temperature is 180°F (82°C).

NEW **H:** Ceramic magnet material is sandwiched between steel pole pieces. All-welded construction with a stainless steel cover. No Epoxy. Can be used for holding and transferring of parts, or for aligning pieces during welding operations and as the holding elements on paint racks. Use 1/4”-20 (m6) bolt or screws for mounting this 2-Pole assembly. Maximum temperature is 480°F (248°C).

**I:** Nickel Plated Rare Earth magnet material is glued to a bright plated steel channel. This extremely powerful assembly is ideal for low profile applications that require strong pull pounds. Use 10-32 (m5) bolt or screws for mounting this 2-Pole assembly. Maximum temperature is 180°F (82°C).

**J:** Ceramic magnet material placed in a 400 Stainless Steel channel and covered. This full-length magnetic holding force gives generous room for various fastener heads. Use 10-24 (m5) bolt or screws for mounting this non-corrosive 2-Pole assembly. Maximum temperature 300°F (148°C).

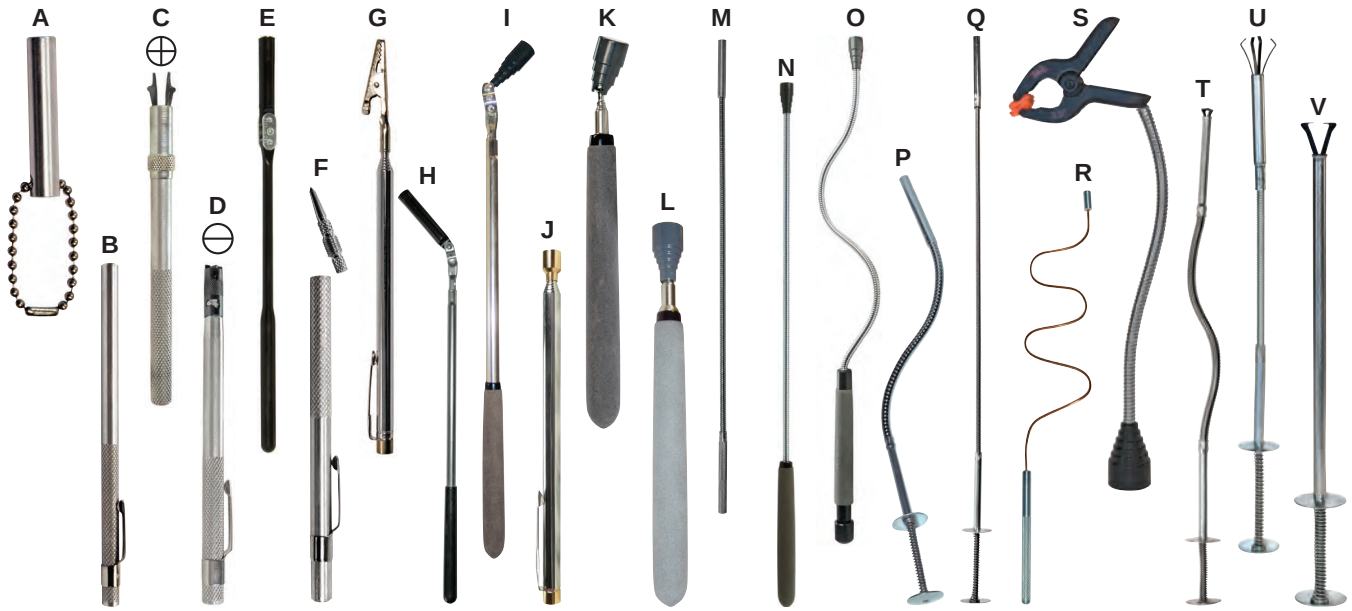
| | Hold - lbs (kg) | Th. (in) | Wd. (in) | Ln. (in) | No. of Poles | Wt. (lbs) | Model No. |
|---|---|---|---|---|---|---|---|
| A | 22.5 (10.21) | 1-1/4 | 1 | 4-1/2 | 2 | 0.64 | AC2100 |
| A | 27.5 (12.48) | 1-1/4 | 1 | 4-1/2 | 2 | 0.65 | AC2101 |
| A | 32.5 (14.75) | 1-1/4 | 1 | 4-1/2 | 2 | 0.66 | AC2102 |
| A | 45.0 (20.42) | 1-1/4 | 1 | 4-1/2 | 3 | 0.68 | AC2200 |
| A | 37.5 (17.01) | 1-1/4 | 1-1/4 | 4-1/2 | 2 | 0.84 | AC2103 |
| A | 55.0 (24.95) | 1-1/4 | 1-1/4 | 4-1/2 | 3 | 0.88 | AC2201 |
| A | 65.0 (29.49) | 1-1/4 | 1-7/8 | 4-1/2 | 3 | 1.19 | AC2203 |
| A | 75.0 (34.02) | 1-1/4 | 1-7/8 | 4-1/2 | 3 | 1.28 | AC2204 |
| A | 92.5 (41.96) | 1-1/4 | 2 | 4-1/2 | 4 | 1.26 | AC2301 |
| A | 97.5 (44.23) | 1-1/4 | 2-1/2 | 4-1/2 | 4 | 1.56 | AC2302 |
| A | 115.5 (52.39) | 1-1/4 | 2-1/2 | 4-1/2 | 4 | 1.75 | AC2303 |
| B | 92.5 (41.96) | 1-1/4 | 1 | 4-1/2 | 2 | 0.66 | AC2102R |
| B | 107.5 (48.76) | 1-1/4 | 1-1/4 | 4-1/2 | 2 | 0.84 | AC2103R |
| B | 170.0 (77.11) | 1-1/4 | 1-7/8 | 4-1/2 | 3 | 1.28 | AC2204R |
| | | | | | Ctrs (in) | | |
| C | 12.5 (5.67) | 3/8 | 1-3/8 | 3-1/4 | 2-5/8 | 0.10 | LP2100 |
| C | 43.5 (19.73) | 3/8 | 1-3/8 | 3-1/4 | 2-5/8 | 0.20 | LP2100R |
| C | 13.5 (6.12) | 7/16 | 1-3/8 | 3-1/4 | 2-5/8 | 0.30 | LP2101 |
| C | 14.5 (6.58) | 7/16 | 1-3/8 | 3-1/4 | 2-5/8 | 0.30 | LP2102 |
| C | 15.5 (7.03) | 9/16 | 1-3/8 | 3-1/4 | 2-5/8 | 0.30 | LP2103 |
| D | 17.5 (7.94) | 1 | 1-5/8 | 2 | 1-1/2 | 0.20 | 5C2565 |
| E | 10.0 (4.54) | 5/8 | 1-1/8 | 3-5/8 | 2-7/8 | 0.10 | SS2103 |
| E | 15.0 (6.81) | 5/8 | 1-5/8 | 3-5/8 | 2-7/8 | 0.30 | SS2100 |
| F | 30.0 (13.61) | 1 | 1-1/4 | 3 | 1-1/2 | 0.41 | SS2300 |
| G | 32.0 (14.52) | 5/8 | 1/2 | 3 | 2-1/2 | 0.10 | MX10354 |
| NEW H | 40.0 (18.14) | 1-3/8 | 7/8 | 3-1/4 | 2-3/4 | 0.55 | BP0040 |
| NEW H | 60.0 (27.21) | 1-3/8 | 1-1/4 | 3-1/4 | 2-3/4 | 0.70 | BP0060 |
| NEW H | 120.0 (54.43) | 1-3/8 | 1-1/4 | 5-1/4 | 4-1/2 | 1.35 | BP0120 |
| NEW H | 250.0 (113.39) | 2-1/4 | 1-7/8 | 5-1/4 | 4-1/2 | 3.25 | BP0250 |
| I | 14.0 (6.35) | 3/16 | 9/16 | 1-3/4 | 1.47 | 0.10 | MX0477 |
| J | 9.0 (4.09) | 9/16 | 1 | 2-1/2 | 2 | 0.20 | LC2360 |
| J | 21.0 (9.53) | 9/16 | 1 | 4-1/2 | 4 | 0.40 | LC2361 |
| J | 29.0 (13.16) | 9/16 | 1 | 6-1/2 | 6 | 0.60 | LC2362 |
| J | 60.0 (27.22) | 9/16 | 1 | 12-1/2 | 12 | 1.30 | LC2363 |
| J | 88.0 (39.92) | 9/16 | 1 | 18-1/2 | 18 | 1.80 | LC2364 |
| J | 25.0 (11.34) | 11/32 | 1-1/2 | 12 | 11 | 1.12 | MQ1129 |
| J | 63.0 (28.58) | 5/8 | 1-1/2 | 12 | 11 | 1.62 | MQ1130 |
| J | 150.0 (68.04) | 5/8 | 2-1/2 | 12 | 11 | 2.74 | MQ1132 |



## Pocket Tools & Retrievers

Ideal for reaching behind, underneath or around machinery and/or difficult to reach areas. The Fixed Shaft and Telescoping Shaft Magnetic Retrievers feature several Magnet Head styles that include the Fixed Head, Single Ball Swivel Joint and the Double Ball Swivel Hinge that allow for more control and functionality. Powerful Rare Earth magnet material, except where noted. All Rare Earth tools have a maximum temperature of 180°F (82°C).

Fixed Head | Single Ball | Double Ball




### Fixed Shaft Retrievers & Tools

| | Lift - lbs (kg) | Description | Shaft | Dia. (in) | Ln. (in) | Wt. (lbs) | Model No. |
|---|---|---|---|---|---|---|---|
| A | 4.0 (1.815) | Key chain retriever. Powerful Rare Earth magnet incased in an Aluminum Rod. | AL | 3/8 | 2 | 0.03 | KCR375 |
| B | 2.5 (1.134) | Pen sized magnetic tool. Sturdy clip holds magnet firmly in pocket. | AL | 5/16 | 6 | 0.06 | 906 |
| C | 2.5 (1.134) | Phillips head screw driver on one end, magnet on the other end. Comes with pocket clip. | AL | 5/16 | 5-1/4 | 0.06 | 145M |
| D | 2.5 (1.134) | Slotted head screw driver on one end, magnet on the other end. Comes with pocket clip. | AL | 5/16 | 5-1/4 | 0.05 | 127M |
| NEW E | 1.0 (0.453) | Double ball hinge head. Nonconductive nylon handle. | NY | 5/16 | 8-1/4 | 0.05 | 909 |
| F | 2.5 (1.134) | Precision ground carbide tip scribe is reversible. Magnet is located on the other end. | AL | 5/16 | 5 | 0.05 | 92CLP |

### Telescoping Shaft Retrievers & Tools

| | Lift - lbs (kg) | Description | Shaft | Dia. (in) | Ln. (in) | Ext. (in) | Wt. (lbs) | Model No. |
|---|---|---|---|---|---|---|---|---|
| G | N/A | Stainless steel pen sized pilot lighter with match holding alligator clip. | SS | 1/4 | 7-1/2 | 25-1/2 | 0.07 | PLO1 |
| H | 7.5 (3.402) | Double ball hinge head. Hex rod prevents magnet from swinging while in use. | ZP | 1/2 | 17 | 26-1/2 | 0.36 | 927 |
| I | 12.0 (5.444) | Double ball hinge head. Hex rod prevents magnet from swinging while in use. | ZP | 1/2 | 13 | 26 | 0.44 | 931 |
| J | 2.0 (0.908) | Stainless steel pen sized tool for tiny jobs. Comes with pocket clip. | CP | 5/16 | 5-1/2 | 25-1/2 | 0.07 | 240N |
| K | 7.0 (3.176) | Magnetic retriever w/ Single ball swivel head and nonslip solvent-resistant comfort grip. | SS | 5/8 | 8 | 35 | 0.19 | 925 |
| L1 | 5.0 (2.268) | Magnetic retriever w/ fixed head and nonslip solvent-resistant comfort grip. | SS | 3/8 | 6-1/2 | 32 | 0.14 | 923 |
| L2 | 7.0 (3.176) | | SS | 5/8 | 6-1/2 | 32 | 0.18 | 924 |
| L3 | 20.0 (9.072) | | ZP | 1-1/8 | 16-1/2 | 29 | 0.65 | 990SM |
| L4 | 14.0 (6.351) | Ex-long, heavy duty, magnetic retriever w/ fixed head & nonslip solvent-resistant comfort grip. | ZP/SS | 5/8 | 23-1/2 | 50 | 0.42 | 926 |

### Flexible/Bendable Shaft Retrievers & Tools

| | Lift - lbs (kg) | Description | Shaft | Dia. (in) | Ln. (in) | Wt. (lbs) | Model No. |
|---|---|---|---|---|---|---|---|
| M | 1.5 (0.681) | Rigid retrieving tool that becomes flexible by removing wire rod from the shaft. | ZP | 5/16 | 18 | 0.18 | 918F |
| NEW N | 8.0 (3.628) | Flexible retriever w/ fixed head and nonslip solvent-resistant comfort grip | ZP | 1/2 | 21 | 0.25 | 921 |
| O1 | 3.0 (1.361) | Flexible, dual purpose allows you to get in and around awkward spots. Bend shaft to a permanent position or remove inside wire to snake into position. | ZP | 3/8 | 20 | 0.31 | 928S |
| O2 | 7.0 (3.176) | | ZP | 5/8 | 20 | 0.35 | 929S |
| P | 2.0 (0.908) | Bendable retriever bends and holds its shape. Magnet is retracted until the button is pushed. | ZP | 5/16 | 17 | 0.26 | 915RM |
| Q | 2.0 (0.908) | Flexible retriever has a spring shaft that allows it to snake through tight areas. The magnet is retracted until the button is pushed. | ZP | 3/8 | 24 | 0.29 | 922RM |
| R1 | 3.0 (1.361) | Bendable copper shaft magnetic retriever. Fits into tight spots. Knurled aluminum handle. | CO | 5/16 | 25 | 0.11 | 900WF |
| R2 | 0.5 (0.227) | | CO | 0.175 | 20 | 0.08 | 900WFT |
| S | 20.0 (9.072) | Flexible arm clamp (max. opening of 1-1/4") with a magnet base that can hold lights, books, prints, spray nozzles & more. | CP | N/A | 13 | 0.45 | 990FLXCLP |

### Mechanical Finger Retrievers & Tools

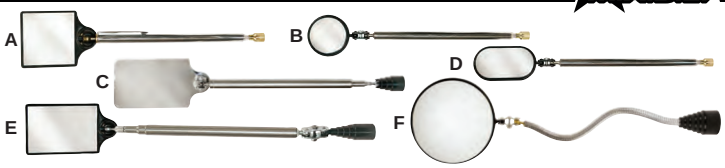
| | Description | Shaft | Dia. (in) | Ln. (in) | Wt. (lbs) | Model No. |
|---|---|---|---|---|---|---|
| T | Flexible two jaw mechanical finger with a spring/plunger handle control. Mechanical finger span of 1". | ZP | 3/8 | 17 | 0.25 | 715CF |
| U1 | Flexible four jaw mechanical finger with a spring/plunger handle control. Mechanical finger span of 1". | ZP | 1/2 | 13-1/2 | 0.20 | 612 |
| NEW U2 | | ZP | 1/2 | 23-1/2 | 0.30 | 622 |
| V1 | Rigid two jaw mechanical finger with a spring/plunger handle control. Mechanical finger span of 1". | ZP | 3/16 | 8 | 0.15 | 708 |
| T2 | | ZP | 3/16 | 12 | 0.22 | 712 |

**Shaft Material: AL = Aluminum, CO = Copper, CP = Chrome Plated Steel, NY = Nylon, SS = Stainless Steel & ZP = Zinc Plated Steel.**

## Inspection Mirror & Retrieving Magnet Combination Tools

USA M.A.D.E.

Mirror/Magnet combos have a Mirror and a powerful Rare Earth magnet on opposite ends. Use the magnet to retrieve metal items or as a magnetic base to hold the inspection mirror in place. 301G240 has a handy pocket clip. 375G990 has a flexible arm for mirror positioning.

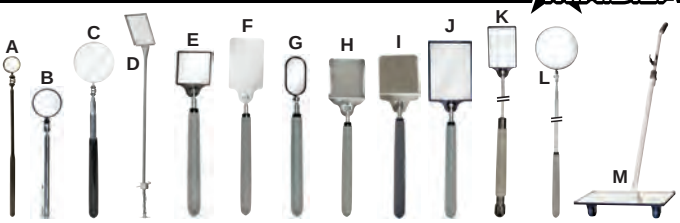



| Style | Mirror (in.) | Mirror | Lift - lbs (kg) | Magnet (in) | Shaft | Ln. (in.) | Ext. Ln. (in.) | Wt. (lbs.) | Model No | Replacement Mirror |
|---|---|---|---|---|---|---|---|---|---|---|
| A | 2 x 2 | Glass | 2.0 (0.908) | 5/16 Dia. | Chrome Plated Brass | 6-1/4 | 28 | 0.10 | 301G240 | 301RG |
| B | 1-1/2 Dia. | Glass | 2.0 (0.908) | 5/16 Dia. | Chrome Plated Brass | 6 | 23-1/2 | 0.10 | 306G240 | 306RG |
| C | 2 x 3 | Stainless | 7.0 (3.176) | 5/8 Dia. | Stainless Steel | 8-1/4 | 38 | 0.20 | 314S925 | 314SS-RH |
| D | 2 x 1-1/4 | Glass | 2.0 (0.908) | 5/16 Dia. | Stainless Steel | 6 | 24-1/4 | 0.10 | 315G240 | 315RG |
| E | 2-1/2 x 1-7/8 | Acrylic | 12.0 (5.444) | 1/2 Dia. | Stainless Steel | 7-3/4 | 34-1/2 | 0.25 | 321A931 | 321RA |
| NEW F | 3-7/8 Dia. | Glass | 20.0 (9.072) | 1-1/8 Dia. | Chrome Plated Steel | 14-1/4 | — | 0.55 | 375G990 | 375RG |

## Inspection Mirrors

USA M.A.D.E.

These Mirrors telescope or bend, have a slim profile and have joints that can swivel and/or rotate. Models 311 & 317 have a locking hinged mirror that allows for 180° of positioning. 321S-A can be bent to a permanent position or the inside stiffening wire can be removed to snake it into position. The 3714SW is a large dolly mounted inspection mirror with swivel wheels, 3" clearance and a flashlight clip.

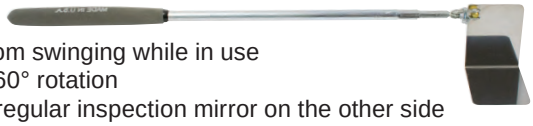



| Style | Mirror (in.) | Mirror | Shaft | Handle/Grip Type | Ln. (in.) | Ext. Ln. (in.) | Wt. (lbs.) | Model No | Replacement Mirror |
|---|---|---|---|---|---|---|---|---|---|
| NEW A | 7/8 Dia. | Glass | Nylon | Nylon | 8 | — | 0.01 | 302 | 302RG |
| B | 1-1/2 Dia. | Glass | Chrome Plated Brass | Pocket Clip | 4-1/2 | 24 | 0.07 | 306TR | 306RG |
| C1 | 2-1/4 Dia. | Glass | Stainless Steel | Non-slip, solvent-resistant | 7-3/4 | 14-1/2 | 0.25 | 309TR | 309RG |
| NEW C2 | 2-1/4 Dia. | Glass | Stainless Steel | Non-slip, solvent-resistant | 7 | 36-1/2 | 0.20 | 309S1 | 309RG |
| D1 | 1 x 1-1/2 | Glass | Stainless Steel | Plunger/Spring | 11 | — | 0.18 | 311 | 311RG |
| D2 | 1-3/4 x 2-1/2 | Glass | Stainless Steel | Plunger/Spring | 16-1/4 | — | 0.20 | 317 | 317RG |
| E | 2 x 2 | Acrylic | Stainless Steel | Non-slip, solvent-resistant | 7 | 29 | 0.21 | 312A | 312RA |
| F | 2 x 3 | Stainless | Stainless Steel | Non-slip, solvent-resistant | 7 | 28-1/2 | 0.18 | 314SS | 314SS-RH |
| G | 2 x 1-1/4 | Glass | Stainless Steel | Non-slip, solvent-resistant | 6-1/2 | 36-1/2 | 0.17 | 315 | 315RG |
| H | 3 x 2-1/4 | Glass | Stainless Steel | Non-slip, solvent-resistant | 7-1/2 | 36-1/2 | 0.15 | 316 | 316RG |
| I | 2-1/2 x 2 | Magnifier | Stainless Steel | Non-slip, solvent-resistant | 7-1/4 | 36-1/2 | 0.18 | 316M | 316MRG |
| J | 3-1/2 x 2-1/2 | Glass | Stainless Steel | Non-slip, solvent-resistant | 7-1/4 | 32-3/4 | 0.21 | 318 | 318RG |
| K | 2-1/2 x 1-7/8 | Acrylic | Stainless Steel | Non-slip, solvent-resistant | 25 | — | 0.35 | 321S-A | 321RA |
| L | 3-7/8 Dia. | Glass | Steel | Non-slip, solvent-resistant | 15-3/4 | 32-1/2 | 0.51 | 375 | 375RG |
| M | 7 x 14 | Glass | Aluminum | Vinyl bicycle grip | 49 | 74 | 5.25 | 3714SW | 3714RG |

## NEW Read Rite™ Inspection Mirror

USA M.A.D.E.

The Read Rite™ inspection mirror allows you to see a non-inverted image of numbers, letters, symbols and pictures in difficult viewing locations for the utmost accuracy in observation. Using a typical inspection mirror to read important numbers, such as model numbers or serial numbers, can lead to uncertainty or inaccuracy due to the inverted appearance of the image. The Read Rite™ inspection mirror shows the numbers as they would appear if they were visually accessible by the eye, eliminating deciphering or transcription errors.

- Stainless Steel Mirror - No glass to break
- Telescoping Hex rod shaft prevents mirror from swinging while in use
- Double Ball Hinge with adjustable tension, 360° rotation
- Dual-sided: Read Rite™ mirror on one side, regular inspection mirror on the other side

| Mirror (in.) | Mirror | Shaft | Handle/Grip Type | Ln. (in.) | Ext. Ln. (in.) | Wt. (lbs.) | Model No | Replacement Mirror |
|---|---|---|---|---|---|---|---|---|
| 3-1/2 x 2 | Stainless Steel | Stainless Steel | Non-slip, solvent-resistant | 15-1/2 | 28-1/2 | 0.50 | 390SS | 390RS |

## NEW Inspection Tool Kits

USA M.A.D.E.

Best of both worlds when you combined telescoping tools, mirror or magnifier with a Rare Earth magnetic retriever in a kit. Keep your tools protected and organized in the foam-lined snap-lock case. These tools have a nonslip, solvent-resistent grip. MMK200 is Non-conduction Nylon construction, including the grip, and does not come in a case.

MMK201

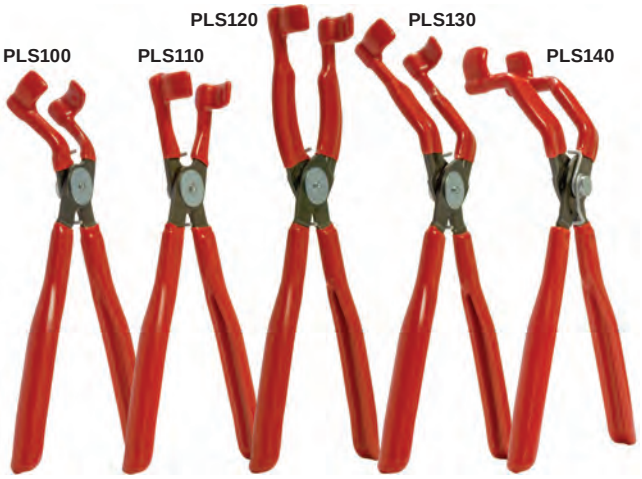
MMK204

| Mirror or Magnifier (in.) | Descripton | Lift - lbs (kg) | Shaft | Magnet (in) | Magnet Head | Ln. (in.) | Ext. Ln. (in.) | Wt. (lbs.) | Model No |
|---|---|---|---|---|---|---|---|---|---|
| 1-1/2 | Glass Mirror | 1 (0.45) | Nylon | 5/16 Dia. | Swivel | 8-1/4 | — | 0.05 | MMK200 |
| 1-3/4 x 2-1/2 | Acrylic Mirror | 14 (6.35) | Stainless Steel | 5/8 Dia. | Fixed | 7-1/2 | 34 | 0.60 | MMK201 |
| 1-3/4 x 2-1/2 | 3X Magnifier | 14 (6.35) | Stainless Steel | 5/8 Dia. | Fixed | 7-1/2 | 34 | 0.60 | MMK202 |
| 1-3/4 x 2-1/2 | Acrylic Mirror | 14 (6.35) | Stainless Steel | 5/8 Dia. | Swivel | 7-1/2 | 34 | 0.60 | MMK203 |
| 1-3/4 x 2-1/2 | 3X Magnifier | 14 (6.35) | Stainless Steel | 5/8 Dia. | Swivel | 7-1/2 | 34 | 0.60 | MMK204 |

## Spark Plug Boot Pliers

Insulated spark plug boot pliers grip boot to prevent wire damage, electrical shock and burns.

- Pliers handle and jaws are coated with a 90 durometer heavy-duty plastic for a sure grip
- PLS140 is ideal for use against the fire wall and on minivans
- PLS100S contains one of each pair of pliers. Be ready for any difficult to reach boot.




| Description | Ln. (in) | Wt. (lbs) | Model No. |
|---|---|---|---|
| 5 Piece Set - Spark Plug Boot Pliers (1 of ea. model) | — | 2.85 | PLS100S |
| Spark Plug Boot Pliers - 45° Angle | 9-3/4 | 0.50 | PLS100 |
| Spark Plug Boot Pliers - Straight | 9-1/2 | 0.50 | PLS110 |
| Spark Plug Boot Pliers - Straight | 11 | 0.60 | PLS120 |
| Spark Plug Boot Pliers - 45° Angle | 11 | 0.60 | PLS130 |
| Spark Plug Boot Pliers - 90° Angle | 10-1/4 | 0.65 | PLS140 |

## Nylon Spark Plug Boot Pliers

Spark plug boot pliers grip boot to prevent wire damage and burns to fingers from hot engines.

- Heavy-duty nylon construction insulates hands from electric shock
- Insulated for Automotive/Small Engine use only
- 20° Angle

| Description | Ln. (in) | Wt. (lbs) | Model No. |
|---|---|---|---|
| Nylon Spark Plug Boot Pliers - 20° Angle | 7 | 0.10 | PLS200N |

## Push Pin Pliers

Quickly remove plastic push pin anchors with center locking pin without damage to pins, anchors, fasteners or retainers.

- Steel frames with spring return
- Black oxided to resist rust
- Quick clean vinyl grip

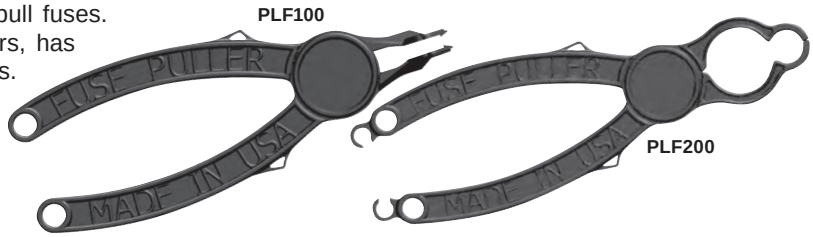
Push Pin


| Description | Ln. (in) | Wt. (lbs) | Model No. |
|---|---|---|---|
| 3 Piece set - (1 of ea. model) | — | 1.35 | PLP100S |
| Push Pin Pliers - Straight | 9-3/4 | 0.45 | PLP100 |
| Push Pin Pliers - 45° Angle | 9-1/2 | 0.45 | PLP110 |
| Push Pin Pliers - 90° Angle | 9 | 0.45 | PLP120 |

## NEW Nylon Fuse Pullers and Installers

Remove and install hard to reach or difficult to pull fuses. Fully insulated, 100% non-conductive Nylon pliers, has ergonomic grip, and finger stops to protect fingers. PLF100 is used on Flat blade type fuses in Automotive, ATO and mini fuses. PLF200 is for glass fuses in vintage automotive, appliance and industrial fuse application.

***Available 4th Quarter 2012***

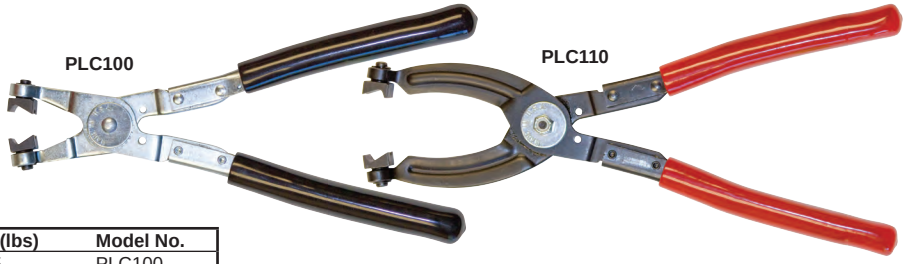


## Click Style Hose Clamp Pliers

Tired of breaking off reusable “click” style hose Clamps? These pliers have 360° swivel heads that provide access at any angle. Remove & install click clamps without destroying clamps! “Click” clamps are often found on power steering & other high pressure lines.

- Quick clean vinyl grip
- PLC100 has 2” jaws for small clips
- PLC110 has 4” jaws for larger or hard to reach clamps

“Click” Clamp




| Description | Ln. (in) | Wt. (lbs) | Model No. |
|---|---|---|---|
| Click Pliers - Straight | 9 | 0.45 | PLC100 |
| Click Pliers - Straight | 10-1/2 | 0.45 | PLC110 |

## Hose Clamp Pliers

Swivel jaws are slotted for positive holding/removal of plastic and or metal constant tension hose clamps. Jaws rotate 360° to grip at any angle and can be locked in three holding positions, freeing up hands.

- Pliers have a quick clean vinyl grip
- PLC200 is for use on Ford, GM, Chrysler, VW and other import vehicles for constant tension/Mobea (flat band) clamps
- PLC210 is for use on vintage automotive and agricultural vehicles, appliances, irrigation/spraying systems, or Corbin (single wire) clamps
- PLC220 has universal tips, right or left facing clamp for constant tension Mobea clamps


| Description | Ln. (in) | Wt. (lbs) | Model No. |
|---|---|---|---|
| Automotive Hose Clamp - Straight | 9 | 0.45 | PLC200 |
| Automotive/Agriculture/Appliance Hose Clamp - Straight | 9 | 0.45 | PLC210 |
| Extra Large Automotive Hose Clamp - 45° Angle | 10-1/2 | 0.55 | PLC220 |
| Extra Large Automotive Hose Clamp - Straight | 10-1/2 | 0.55 | PLC230 |

## Hose Clamp Plier Kits

Swivel jaws are slotted for positive holding/removal of plastic and or metal constant tension hose clamps. Jaws rotate 360° to grip at any angle and can be locked in three holding positions, freeing up hands.

- Pliers have a quick clean vinyl grip
- All kits contain three quick change heads for use on automotive/ agricultural vehicles, appliances, irrigation/spraying system, Corbin (single wire) clamps, Mobea (flat band) clamps, constant tension and click clamps

Mobea Clamp Heads

Corbin Clamp Heads

Click Clamp Heads


| Description | Ln. (in) | Wt. (lbs) | Model No. |
|---|---|---|---|
| Automotive Hose Clamp - Straight | 9 | 0.50 | PLC300K |
| Extra Large Automotive Hose Clamp - Straight | 10-1/2 | 0.60 | PLC310K |
| Extra Large Automotive Clamp - 45° Angle | 10-1/2 | 0.60 | PLC320K |

## Magnetic Print Holders

**Features**
- Holds papers, prints, charts and more to steel desks, partitions, machinery, etc.
- Holds through many layers of prints.

**Round Print Holders**

| Hold - lbs (kg) | Dia. (in) | Ht. (in) | OAH (in) | Wt. (lbs) | Model No. |
|---|---|---|---|---|---|
| 7.0 (3.18) | 1.24 | 0.188 | 0.6875 | 0.08 | PHMX1000 |
| 11.0 (4.99) | 1.41 | 0.281 | 1.0313 | 0.10 | PHMX1500 |
| 19.0 (8.62) | 2.03 | 0.313 | 1.0625 | 0.18 | PHMX2000 |
| 41.0 (18.60) | 2.63 | 0.375 | 1.125 | 0.38 | PHMX2500 |
| 47.5 (21.54) | 3.18 | 0.438 | 1.188 | 0.61 | PHMX3000 |

**Rectangular Print Holders**

| Hold - lbs (kg) | Ht. (in) | Wd. (in) | Ln. (in) | Wt. (lbs) | Model No. |
|---|---|---|---|---|---|
| 11.5 (5.22) | 1.3125 | 1.125 | 2.375 | 0.29 | PH2100 |
| 19.0 (8.62) | 1.3125 | 1.625 | 2.00 | 0.34 | PH2101 |
| 22.5 (10.21) | 1.3125 | 2.50 | 3.00 | 0.50 | PH2102 |

## Nail & Screw Holder

Never hold nails in your mouth again. Handy magnetic wristband nail and screw holder provides a safe and convenient place to keep fasteners and small tools.

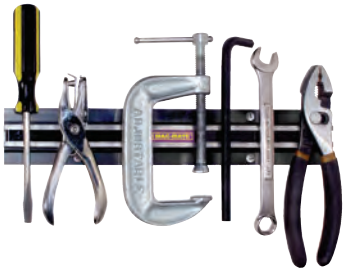
**Features**
- 10” Circumference
- Prevents dropping of tools or fasteners

| Type | Cup Dia. (in) | Cup Ht. (in) | Weight. (lbs) | Model No. |
|---|---|---|---|---|
| Wristband | 2-1/32 | 5/16 | 0.24 | MX2000W |

## Tool Holders

**Features**
- Ideal for keeping tools or drill bits close at hand & organized.
- Mount to walls, work benches, ladders, etc.
- 3/16’’ Mounting holes & screws provided.
- TH1800 & TH2400: the mounting holes are on 16” centers
- Durable construction

**Holds a 10 Lb. Hammer!**

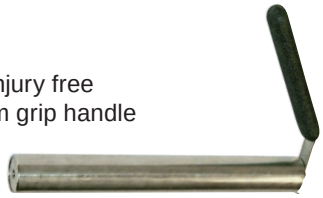


| Hold - lbs (kg) | Th. (in) | Ht. (in) | Ln. (in) | Wt. (lbs) | Model No. |
|---|---|---|---|---|---|
| 120.0 (54.44) | 1-1/8 | 2 | 12 | 2.00 | TH1200 |
| 180.0 (81.65) | 1-1/8 | 2 | 18 | 3.00 | TH1800 |
| 240.0 (108.87) | 1-1/8 | 2 | 24 | 4.00 | TH2400 |

## Magnetic Hand Sweepers

Captures ferrous nails, bolts, staples, chips, etc. from non-ferrous work areas. Wipe off collected metal with a shop rag or gloved hand.

**Features**
- Clean work surface fast and injury free
- Ergonomically positioned foam grip handle
- Stainless steel magnetic tube



| Length (in) | Weight. (lbs) | Model No. |
|---|---|---|
| 8 | 1.2 | HS0800C |
| 12 | 1.8 | HS1200C |

## Magnetics Floor & Shop Sweepers

USA M.A.D.E.



**SS:** Works on hard floors or carpeted areas. Clean shops, offices, retail stores right up to the edge of walls, machinery into corners with its unique wheel design.
**FS/IS:** Ideal for floors, parking lots and construction sites (IS is Self Cleaning)
**YS:** Aluminum and stainless steel construction for outdoor use. Hang the sweeper from vehicles, utility equipment or skid-steers



| Magnet Width (in) | Overall Width (in) | Depth (in) | Ht (in) | Wheel Dia (in) | Clearance (in) | Wt. (lbs) | Model No. |
|---|---|---|---|---|---|---|---|
| 19 | 19-1/2 | 3 | 40 | 1-1/4 | 3/4 | 7.0 | SS1800 |
| 12 | 16 | 5 | 42 | 6 | 2 | 11.0 | FS1200 |
| 24 | 28 | 5 | 42 | 6 | 2 | 22.0 | FS2400 |
| 36 | 40 | 5 | 42 | 6 | 2 | 31.0 | FS3600 |
| 24 | 30 | 6-7/8 | 42 | 6 | 2 | 46.0 | IS2400 |
| 24 | 24-1/2 | 5 | 2-11/16 | - | - | 35.0 | YS2400 |
| 36 | 36-1/2 | 5 | 2-11/16 | - | - | 39.0 | YS3600 |
| 48 | 48-1/2 | 5 | 2-11/16 | - | - | 52.0 | YS4800 |
| 60 | 60-1/2 | 5 | 2-11/16 | - | - | 86.0 | YS6000 |
| 84 | 84-1/2 | 5 | 2-11/16 | - | - | 91.0 | YS8400 |

## Mag-Maid Coolant Clean Out Tool

This powerful Rare Earth clean-up tool safely removes metal chips and debris from machinery and work areas. The large comfortable handle is attached to Rare Earth magnets inside the seam-welded, stainless steel tube. To clean this tool, pull the handle away from the stainless steel tube. Collected scrap metal will follow the magnet up the tube until it hits the stripper washer. Once the magnet is past the stripper washer, the magnetic influence will dissipate and the metal falls off. No need to pull or wipe off collected metal. Available in 15" or 36" lengths. Maximum temperature 180°F (82°C).

| Dia. (in) | Shaft Ln. (in) | Overall Ln. (in) | Wt. (lbs) | Model No. |
|---|---|---|---|---|
| 1 | 15 | 19.25 | 1.25 | MM1500EZ |
| 1 | 36 | 40.25 | 2.75 | MM3600EZ |

## Salvage Magnets

USA M.A.D.E.

**Features**

- Retrieves tools, parts, key rings, fishing tackle & more
- Powerful ceramic magnets for wet or dry applications
- HDR3045 has a durable stainless steel case and can retrieve broken drill bits from oil & water wells


| Lift - lbs (kg) | Size (in) | Wt. (lbs) | Model No. |
|---|---|---|---|
| 35.0 (15.88) | 3-1/2 Dia. | 1.07 | DT3500 |
| 50.0 (22.68) | 5-1/4 x 1-7/8 x 2-3/4 | 2.40 | DT0600 |
| 300.0 (136.08) | 3 Dia. x 5-3/4 L | 5.00 | HDR3045 |

## Clean-Out Retrievers

USA M.A.D.E.

**Features**

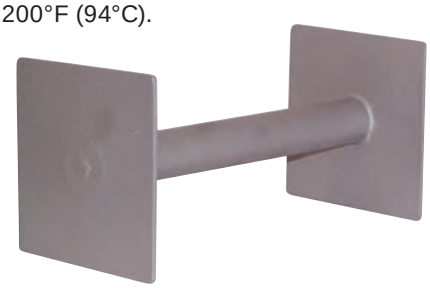
- Retrieve ferrous metal items from tanks, acid baths, oil reservoirs, heat bake ovens, etc.
- Alnico Magnet is attached to a 48 inch wood handle
- 300°F (148°C)

| Lift - lbs (kg) | Dia. (in) | Ln. (in) | Wt. (lbs) | Model No. |
|---|---|---|---|---|
| 12.0 (5.45) | 1-3/8 | 48 | 1.60 | COR12 |
| 35.0 (15.88) | 2-1/2 | 48 | 2.50 | COR35 |

## Magnetic Fluid Tank Cleaners

USA M.A.D.E.

Our fluid tank cleaners are designed to capture minute ferrous particles in fluid tanks. This powerful Rare Earth permanent magnet helps to eliminate scored hydraulic cylinders, clogged orifices & "O" ring wear while increasing bearing, seal and pump life. These magnets are 1" diameter and sit on the bottom of the tank continuously cleaning fluids. Max. temp. 200°F (94°C).

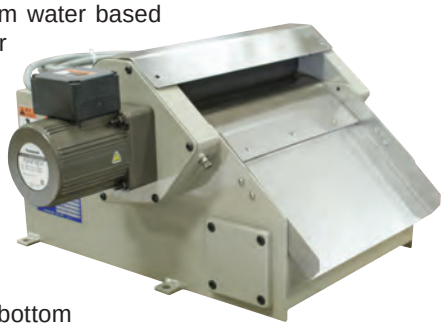


| Ht. (in) | Wd. (in) | Ln. (in) | Clearance | Wt. (lbs) | Model No. |
|---|---|---|---|---|---|
| 4 | 4 | 6 | 1-1/2 | 1.50 | TC0600R |
| 4 | 4 | 8 | 1-1/2 | 2.20 | TC0800R |

## Magnetic Coolant Filters

Magnetic coolant filters capture and remove ferrous metal chips and particles from water based coolants. Incorporate this magnetic filter in the coolant circulation system for continuous separation of metal contamination on processing machines such as:

- Precision grinding machine
- Cylindrical grinding machine
- Surface grinding machine
- Washing machine
- Honing machine
- Centerless grinding machine
- Rotary grinding machine
- Hardening machine



**Benefits**

- Reduces coolant replacement costs
- Use before paper filters to extend filter life
- Decreases equipment downtime
- Outlet can be located on right, left or bottom

## RapidFire Retriever®

**Features**
- Retrieve hot parts off cutting tables with speed & precision!
- Increase production while reducing the potential for injury
- Powerful Rare Earth magnet hold parts securely
- "On-Command" release with just a quick blast of shop air
- Actuate release with just one finger, it's as simple as the pull of a trigger

| Lift - lbs (kg) | Ln. (in) | Wt. (lbs) | Model No. |
|---|---|---|---|
| 35.0 (15.88) | 24 | 2.1 | RFR2400 |
| 35.0 (15.88) | 36 | 2.3 | RFR3600 |
| 35.0 (15.88) | 48 | 2.5 | RFR4800 |

## Long Reach Retrievers

Ideal for reaching behind, underneath or around machinery and/or difficult to reach areas. All Ceramic tools have a maximum temperature of 300°F (148°C).


The MX3000WAH Lightweight long reach retriever has a round magnet at a 45 degree angle. The MM06X38 is a long retriever for narrow areas with a rectangular magnet.

| | Lift - lbs (kg) | Magnet Dimensions (in) | Ln. (in) | Wt. (lbs) | Model No. |
|---|---|---|---|---|---|
| A | 47.5 (21.55) | 3-1/4 Diameter | 38 | 1.70 | MX3000WAH |
| B | 8.0 (3.63) | 1-3/8 x 6 | 39.7 | 3.00 | MM06X38 |

## ON/OFF Magnetic Tie-Downs

Magnetic Tie-Downs, featuring Magswitch® technology, work extremely well for temporary or portable holding of tarps, signs, banners, etc. No need to drill, bolt or weld mounting tabs to steel surfaces. Just place the magnet on the clean steel, push the handle slightly down and rotate 180° and the magnet is "On". Reverse steps to turn the magnet "Off".

**Features**
- On/Off Permanent Rare Earth magnet
- Locking On/Off handle
- Performs best when mounted on a clean smooth, flat, metal surface that is at least 1/4" thick
- Works on Flat and Round ferrous surfaces
- 4:1 Design Factor
- MTD137MS has M6 tapped holes on all sides.

| Hold - lbs (kg) | Ht. (in) | Wd. (in) | Ln. (in) | Wt. (lbs) | Model No. |
|---|---|---|---|---|---|
| 30 (11.34) | 3-1/2 | 1-1/2 Dia. | — | 0.70 | MTD030MS |
| 60 (18.15) | 4 | 2-3/4 Dia. | — | 1.95 | MTD060MS |
| 137 (249.48) | 5-3/4 | 2 | 3 | 3.75 | MTD137MS |

## Parts Retrievers

Remove Steel Parts from bins, boxes, kegs, tables or floors.

**Features**
- Easy release of collected parts or scrap
- Powerful light-weight magnet
- Durable aluminum housing
- Comfortable non-slip handle

| Handle | Lift - lbs (kg) | Ht. (in) | Wd. (in) | Ln. (in) | Wt. (lbs) | Model No. |
|---|---|---|---|---|---|---|
| Short | 5.0 (2.27) | 7-1/2 | 2-3/8 | 4-1/2 | 1.6 | PR7100 |
| Short | 7.0 (3.18) | 7-1/2 | 2-3/8 | 4-1/2 | 1.7 | PR7200 |
| Short | 11.0 (4.99) | 7-1/2 | 2-3/8 | 4-1/2 | 1.8 | PR7400 |
| Long | 5.0 (2.27) | 33-1/2 | 2-3/8 | 4-1/2 | 2.4 | PR7100-30 |
| Long | 7.0 (3.18) | 33-1/2 | 2-3/8 | 4-1/2 | 2.5 | PR7200-30 |
| Long | 11.0 (4.99) | 33-1/2 | 2-3/8 | 4-1/2 | 2.7 | PR7400-30 |

## ON/OFF Magnetic Utility Lifter

Stop bending over to lift and move steel pieces and scrap and reduce finger and toe injuries with this light-weight deep reach permanent magnetic lifter.

This Magnetic Utility Lifter, featuring Magswitch® technology, has a locking On/Off handle for safety. Rated up to 50 lbs.

| Lift - lbs (kg) | Length (in) | Wt. (lbs) | Model No. |
|---|---|---|---|
| 50.0 (22.68) | 28.5 | 5.5 | MCLVB01 |

## Power Grips

**Features**
- Effective holding against shear force
- Securely grips heavy parts
- Maximum Temp. 300°F (148°C)


| Lift - lbs (kg) | Ht. (in) | Wd. (in) | Ln. (in) | Poles | Wt. (lbs) | Model No. |
|---|---|---|---|---|---|---|
| 25.0 (11.34) | 2 | 3/4 | 2-1/8 | 2 | 0.40 | AC2100WLH |
| 51.5 (23.36) | 2-1/4 | 3/4 | 4 | 2 | 0.75 | AC2200WLH |
| 92.5 (41.96) | 2-3/4 | 1-7/8 | 5-1/4 | 4 | 2.40 | AC2201WLH |

## ON/OFF Power Grips

**Features**
- Magswitch® Technology
- On/Off Rare Earth Design
- Securely grips heavy parts
- Works on flat or pipe
- Max. Temp. 180°F (82°C)

| Lift - lbs (kg) | Ht. (in) | Wd. (in) | Magnet Dia. (in) | Wt. (lbs) | Model No. |
|---|---|---|---|---|---|
| 55.0 (24.95) | 3-3/4 | 4-1/4 | 1-1/2 | 0.75 | ACS055MS |
| 95.5 (43.09) | 4-1/2 | 4-1/4 | 2-1/4 | 2.40 | ACS095MS |

Lift value on pipe varies based on diameter and wall thickness.

## ON/OFF Cordless Power Grip

No more picking up sharp, hot or greasy steel with your hands. Experience fast pick-up and transport of small steel loads.

**Features**
- Push-Button, On/Off Controls
- Rare Earth permanent magnet will stay "On" if battery loses power
- Battery power "On" light, blinking light if battery needs recharging
- Includes charger and two batteries
- Up to 200 cycles per charge
- Works on flat or pipe
- Magswitch® Technology
- Max. Temp. 180°F (82°C)

| Lift - lbs (kg) | Ht. (in) | Wd. (in) | Ln. (in) | Wt. (lbs) | Model No. |
|---|---|---|---|---|---|
| 60 (27.22) | 8-1/4 | 3 | 7 | 4.0 | ACC060MS |

Lift value on pipe varies based on diameter and wall thickness.

## Low Profile Magnetic Retriever

- Retrieve hot parts
- Reduce employee injury
- Keep hands out of press
- Handle is bendable to almost any angle or curve

| Lift - lbs (kg) | Ht. (in) | Dia. (in) | Ln. (in) | Wt. (lbs) | Model No. |
|---|---|---|---|---|---|
| 7.0 (0.91) | 3/16 | 1-1/4 | 15 | 0.50 | IMPL1000 |
| 19.0 (8.62) | 5/16 | 2-1/32 | 15 | 0.63 | IMPL2000 |

## Grip Stick Retriever

Pick your lift Lbs., Magnet & Grip are interchangeable.
- Retrieve hot parts
- Keep hands out of press
- Reduce employee injury
- 10° angled handle

| Lift - lbs (kg) | Magnet Type | Ht. (in) | Wd. (in) | Ln. (in) | Wt. (lbs) | Model No. |
|---|---|---|---|---|---|---|
| 12.5 (5.67) | Ceramic | 7/8 | 1-3/8 | 14 | 0.65 | IMPL2100 |
| 43.5 (19.73) | Rare Earth | 7/8 | 1-3/8 | 14 | 0.65 | IMPL2104 |

## Magnetic TriggerLift®

Hand held lift grips parts with an easy to use trigger release.

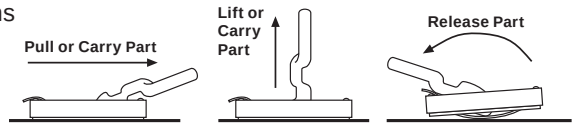
**Features**
- Retrieve hot parts from cutting tables
- One handed operation
- Permanent magnet
- Move parts faster and easier
- Aluminum housing
- Maximum Temp. 300°F (148°C)

| Lift - lbs (kg) | Ht. (in) | Wd. (in) | Ln. (in) | Wt. (lbs) | Model No. |
|---|---|---|---|---|---|
| 50.0 (22.68) | 4-13/16 | 2-3/8 | 3-3/8 | 1.50 | B090 |

## Magnetic Sheet Handlers

**Features**
- Lift or move sheets, plates, hot or oily parts
- Handle sheets stacked horizontally or vertically
- Protect workers from cuts, slivers, nicks & burns
- Increase productivity
- No electricity required

*Note: Not intended to be used with a crane*




| Lift - lbs (kg) | Th. (in) | Wd. (in) | Overall. Ln. (in) | Mag. Ln. (in) | Mag. Th. (in) | Wt. (lbs) | Max. Penetration (in) | Model No. |
|---|---|---|---|---|---|---|---|---|
| 50.0 (22.6) | 4 | 3-5/8 | 11-1/2 | 6-1/8 | 1-3/8 | 3.75 | 3/16 | B100 |
| 125.0 (56.7) | 4 | 7-1/4 | 11-1/2 | 6-1/8 | 1-3/8 | 8.25 | 5/16 | B250 |
| 200.0 (90.7) | 4 | 7-1/4 | 11-1/2 | 6-1/8 | 1-3/8 | 8.25 | 5/16 | B400 |
| 300.0 (136.0) | 4 | 7-1/4 | 11-1/2 | 6-1/8 | 1-3/8 | 8.25 | 5/16 | B600 |

## BasicLift™ Magnets

IMI's BasicLift™ is a powerful, no frills permanent ceramic lift magnet perfect for basic flat steel lifting. Featuring a lightweight and durable Stainless Steel design, the BasicLift™ has a full width cam to release the magnet from the steel surface and a tall lift lug for easy use with crane hooks and slings.

The BasicLift™ offers a good value for your dollar with strong lifting capacity and basic lifting features.

**Features**
- Heat resistant up to 300°F (148°C)
- Lightweight Design
- Durable Stainless Steel Casing
- Large Lift Lug
- Full Width Cam Release
- 2:1 Design Factor

| | Lift | | Overall | | | | Magnet | | Bail Opening | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Model No. | LBS | KG | Height (in) | Width (in) | Length (in) | Handle (in) | Wd. (in) | Ln. (in) | Height (in) | Width (in) | Wt. (lbs) |
| BL0400 | 400 | 181 | 5-1/2 | 5-5/8 | 7-1/2 | 12 | 4-1/2 | 3 | 2-3/4 | 2-3/4 | 13 |
| BL1000 | 1000 | 453 | 5-1/2 | 5-5/8 | 11 | 12 | 4-1/2 | 6-1/2 | 2-3/4 | 2-3/4 | 18 |
| BL1500 | 1500 | 680 | 5-1/2 | 5-5/8 | 14-1/2 | 12 | 4-1/2 | 10 | 2-3/4 | 2-3/4 | 28 |

| Lifting Value in lbs (kg) & *Maximum Sheet Length Due To Sag For Material Thickness For Single Magnet Use | | | | | | | |
|---|---|---|---|---|---|---|---|
| Model No. | 3/16" (6' Length) | 1/4" (6' Length) | 3/8" (8' Length) | 1/2" (8' Length) | 3/4" (8' Length) | 1" (10' Length) | 3" (10' Length) |
| BL0400 | 375 (170) | 400 (181) | 400 (181) | 400 (181) | 400 (181) | 400 (181) | 400 (181) |
| BL1000 | 725 (328) | 800 (362) | 875 (396) | 975 (442) | 1000 (453) | 1000 (453) | 1000 (453) |
| BL1500 | 875 (396) | 1000 (453) | 1400 (635) | 1400 (635) | 1500 (680) | 1500 (680) | 1500 (680) |

**NOTE:** Lifting Values for the BasicLift™ Magnets are stated at 50% of the actual value. We recommend when lifting sheets over 8', use 2 or more lifts on a spreader bar to prevent sheet flexing, sagging or peel-off. Thin material is susceptible to magnetic bleed through, resulting in two sheets being lifted at once. *These maximum sheet lengths are selected due to the sag characteristics of the specified sheet. The item to be lifted must cover the entire length and width of the magnetic poles to properly engage and release the part.

## Creative Lift® Magnets

Permanent lift magnets are ideal for handling steel plates, die castings, forgings, etc. They eliminate the need for clamping devices, slings or chains. One person can perform operations previously calling for two or more people.

**Features**
- Patented Non-Marring Roller Cam Release will easily release parts without gouging your valuable materials (U.S. Patent: 6,471,273 B1)
- Spring return handle
- Less torque required to release load
- "Jack Screw", Secondary Release
- Lift capacity clearly stated on magnet
- Durable Stainless Steel Casing
- Heat Resistant up to 300°F (148°C)
- 3:1 Design Factor
- **CONFORMS TO ASME B30.20 STANDARDS**

| | Lift | | Overall | | | | Magnet | | Bail Opening | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Model No. | LBS | KG | Height (in) | Width (in) | Length (in) | Handle (in) | Wd. (in) | Ln. (in) | Height (in) | Width (in) | Wt. (lbs) |
| CL0400 | 400 | 181 | 6-3/4 | 7-1/4 | 7-3/4 | 16 | 6-1/2 | 4 | 2-7/8 | 3 | 19 |
| CL1000 | 1000 | 453 | 6-3/4 | 7-1/4 | 10-3/4 | 16 | 6-1/2 | 7 | 2-7/8 | 3 | 33 |
| CL1500 | 1500 | 680 | 6-3/4 | 7-1/4 | 14-3/4 | 16 | 6-1/2 | 10-1/2 | 2-7/8 | 3 | 46 |
| CL2200 | 2200 | 998 | 7 | 10-1/2 | 15 | 16 | 9-3/4 | 11-1/4 | 2-7/8 | 3 | 84 |
| CL3000 | 3000 | 1360 | 7 | 10-1/2 | 19-1/4 | 16 | 9-3/4 | 15-1/4 | 2-7/8 | 3 | 109 |

| Lifting Value in lbs (kg) & *Maximum Sheet Length Due To Sag For Material Thickness For Single Magnet Use | | | | | | | |
|---|---|---|---|---|---|---|---|
| Model No. | 3/16" (6' Length) | 1/4" (6' Length) | 3/8" (8' Length) | 1/2" (8' Length) | 3/4" (8' Length) | 1" (10' Length) | 3" (10' Length) |
| CL0400 | 400 (181) | 400 (181) | 400 (181) | 400 (181) | 400 (181) | 400 (181) | 400 (181) |
| CL1000 | 600 (272) | 900 (408) | 1000 (453) | 1000 (453) | 1000 (453) | 1000 (453) | 1000 (453) |
| CL1500 | 800 (362) | 1000 (453) | 1500 (680) | 1500 (680) | 1500 (680) | 1500 (680) | 1500 (680) |
| CL2200 | 800 (362) | 1064 (482) | 1725 (782) | 2000 (907) | 2200 (998) | 2200 (998) | 2200 (998) |
| CL3000 | 800 (362) | 1100 (498) | 1800 (816) | 2700 (1224) | 3000 (1360) | 3000 (1360) | 3000 (1360) |

**NOTE:** Lifting Values for the Creative Lift® Magnets are stated at 33% of the actual value. We recommend when lifting sheets over 8', use 2 or more lifts on a spreader bar to prevent sheet flexing, sagging or peel-off. Thin material is susceptible to magnetic bleed through, resulting in two sheets being lifted at once. *These maximum sheet lengths are selected due to the sag characteristics of the specified sheet. The item to be lifted must cover the entire length and width of the magnetic poles to properly engage and release the part.

## PowerLift® Magnets

These compact yet powerful Rare Earth permanent lift magnets can be used on flat or round surfaces and contain an internal release On/Off device that does not contact or damage the surface of the part being lifted. Permanent magnetic lifts eliminate the fear of dropping the load being lifted due to power failures.

The locking system is performed by first pulling on the handle to release the lock pin, then rotating the handle to the desired position. The locking feature prevents the handle from being bumped partially "On" and avoids giving the operator a false feeling that the magnet is holding safely.

**Features**
- On/Off Rare Earth design
- RFID Enabled
- Lifts flat or round loads (see chart below)
- Easy internal manual release does not contact the load
- Heat resistant up to 180°F (82°C)
- Handle locks in both On and Off position
- 3:1 Design Factor
- **CONFORMS TO ASME B30.20 STANDARDS**


**Picture above:** A customized version of IMI's Vertical Lift Adaptor featuring two PowerLift® magnets, designed to lift ferrous metal from horizontal to vertical orientation or vise versa. Adjustable for various widths, thicknesses and shapes. Ask for Tech Sheet MG-02G for specifications.

| | Lift | | Overall | | Magnet | | | Handle | Bail | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Model No. | LBS | KG | Ht. (in) | Ln. (in) | Ht. (in) | Wd. (in) | Ln. (in) | Ln. (in) | Th. (in) | Ht. (in) | Wd. (in) | Wt. (lbs) |
| PNL0250 | 250 | 113 | 6-5/8 | 5 | 2-5/8 | 2-5/8 | 3-5/8 | 5-7/8 | 3/16 | 1-3/8 | 1-1/2 | 7 |
| PNL0800 | 800 | 363 | 8-7/8 | 7-7/8 | 3-7/8 | 3-5/8 | 6-3/8 | 6-7/8 | 1/2 | 2-3/8 | 1-3/4 | 22 |
| PNL1600 | 1600 | 726 | 8-7/8 | 10-3/4 | 4-3/4 | 4-7/8 | 9-1/8 | 6-3/4 | 5/8 | 3-1/2 | 2-1/4 | 53 |
| PNL2500 | 2500 | 1134 | 8-7/8 | 12-5/8 | 6-1/2 | 7-1/8 | 10-5/8 | 10-1/8 | 3/4 | 4-3/4 | 3-3/4 | 110 |
| PNL5000 | 5000 | 2268 | 18 | 16-1/2 | 8-3/8 | 9-1/4 | 14-7/8 | 16-3/4 | 7/8 | 6 | 4-3/4 | 325 |
| PNL6600 | 6600 | 2993 | 22-1/4 | 20 | 10-1/4 | 11-1/4 | 18-1/16 | 20-5/8 | 1-7/16 | 7-1/4 | 5-3/4 | 485 |

| Lifting Value in lbs (kg) & *Max Sheet Length Due To Sag For Material Thickness For Single Magnet Use | | | | | | | | Round Lifting Applications | | |
|---|---|---|---|---|---|---|---|---|---|---|
| Model No. | 1/4" (6' Lg) | 3/8" (8' Lg) | 1/2" (8' Lg) | 3/4" (8' Lg) | 1" (10' Lg) | 2" (10' Lg) | 3" (10' Lg) | Lift - lbs (kg) | Min. Dia. (in) | Min. Th. (in) |
| PNL0250 | 180 (81) | 250 (113) | 250 (113) | 250 (113) | 250 (113) | 250 (113) | 250 (113) | 125 (57) | 2 | 1/2 |
| PNL0800 | 270 (122) | 500 (226) | 615 (279) | 800 (363) | 800 (363) | 800 (363) | 800 (363) | 400 (181) | 3 | 1/2 |
| PNL1600 | CF | CF | 800 (362) | 1600 (726) | 1600 (726) | 1600 (726) | 1600 (726) | 800 (363) | 4 | 1 |
| PNL2500 | NA | NA | CF | CF | 1490 (675) | 2500 (1134) | 2500 (1134) | 1250 (567) | 5 | 2 |
| PNL5000 | NA | NA | NA | NA | CF | 2625 (1190) | 5000 (2268) | 2500 (1134) | 14 | 4 |
| PNL6600 | NA | NA | NA | NA | NA | NA | 6600 (2993) | 3300 (1496) | CF | CF |

**NOTE:** Lifting Values for the PowerLift® Magnets are stated at 33% of the actual value. We recommend when lifting sheets over 8', use 2 or more lifts on a spreader bar to prevent sheet flexing, sagging or peel-off. Thin material is susceptible to magnetic bleed through, resulting in two sheets being lifted at once. Round Item Lifting Values are based on ideal conditions. Pipe length, wall thickness, diameter and surface condition can all affect the magnet's performance. Please consult the factory before specifying these magnets for use on round materials. *These maximum sheet lengths are selected due to the sag characteristics of the specified sheet. The item to be lifted must cover the entire length and width of the magnetic poles to properly engage and release the part. **CF = Consult Factory NA = Not Applicable (Magnets listed will not turn "ON" on specified material thicknesses.)**

## VersaLift™ Magnets

Compact and powerful Rare Earth permanent lift magnet for use on flat or round surfaces. Contains an internal On/Off release device that does not contact or damage the surface of the part. More features than other lifts and manufactured in the USA (USA M.A.D.E.™).

**Features**

- Rare Earth Magnet with a Locking On/Off handle & Test load feature
- Supports custom pole shoes
- Lifts flat or round loads (see chart below)
- Heat resistant up to 180°F (82°C)
- Stationary Lift Lug(s)
- Vertical Lift Capable using the optional Lift Lug attachment
- Embedded RFID Chip
- 3:1 Design Factor
- **CONFORMS TO ASME B30.20 STANDARDS**

To operate Test Feature, pull spring loaded handle out and rotate it to the "TEST" position. Lift load approximately 2-3" to verify the magnet has the capacity to lift your load. Once verified, place load back down and turn the handle to the "ON" position. **Never complete entire lift operation in "TEST" position.**


**Shown with optional Vertical Lifting Lug attachment**

| | Lift | | Overall | | Magnet | | | Handle | Bail | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Model No. | LBS | KG | Ht. (in) | Ln. (in) | Ht. (in) | Wd. (in) | Ln. (in) | Ln. (in) | Th. (in) | Ht. (in) | Wd. (in) | Wt. (lbs) |
| VL0275 | 275 | 124 | 6-1/2 | 5 | 3-3/4 | 5 | 3-5/8 | 6 | 3/4 | 2-1/4 | 1-3/4 | 10 |
| VL0600 | 600 | 272 | 6-1/2 | 7 | 3-3/4 | 5 | 5-5/8 | 6 | 3/4 | 2-1/4 | 1-3/4 | 18 |
| VL1200 | 1200 | 544 | 6-1/2 | 11 | 3-3/4 | 5 | 10 | 6 | 3/4 | 2-1/4 | 1-3/4 | 34 |
| VL2500 | 2500 | 1134 | 10-1/2 | 14-1/2 | 5-1/2 | 7 | 13 | 8-3/4 | 3/4 | 2-1/4 | 1-3/4 | 119 |

| Lift Lug Adaptor | | |
|---|---|---|
| Part No. | Ln. (in) | Wt. (lbs) |
| VLLUG1 | 4-5/16 | 1.15 |
| VLLUG1 | 4-5/16 | 1.15 |
| VLLUG1 | 4-5/16 | 1.15 |
| VLLUG2 | 4-5/8 | 2.40 |

| Lifting Value in lbs (kg) & *Maximum Sheet Length Due To Sag For Material Thickness For Single Magnet Use | | | | | | | |
|---|---|---|---|---|---|---|---|
| Model No. | 1/4" (6' Length) | 3/8" (8' Length) | 1/2" (8' Length) | 3/4" (8' Length) | 1" (10' Length) | 2" (10' Length) | 3" (10' Length) |
| VL0275 | 150 (68) | 220 (99) | 240 (108) | 250 (113) | 275 (124) | 275 (124) | 275 (124) |
| VL0600 | 260 (117) | 435 (197) | 525 (238) | 550 (249) | 600 (272) | 600 (272) | 600 (272) |
| VL1200 | NA | 755 (342) | 960 (435) | 1165 (528) | 1200 (544) | 1200 (544) | 1200 (544) |
| VL2500 | NA | NA | NA | 1700 (771) | 1800 (816) | 2500 (1134) | 2500 (1134) |

| | Round Lifting Applications | | | Vertical Lift (Flat Only) | |
|---|---|---|---|---|---|
| Model No. | Maximum Lift - lbs (kg) | Maximum Lift at Minimum | Diameter / Thickness | Lift - lbs (kg) | Minimum Thickness |
| VL0275 | 137 (49) | 50 (22) | 2.00 In. / 0.12 In. | 68 (30) | 1.00 In. |
| VL0600 | 300 (136) | 130 (58) | 2.00 In. / 0.12 In. | 150 (68) | 1.00 In. |
| VL1200 | 600 (272) | 600 (272) | 4.00 In. / 0.50 In. | 300 (136) | 1.00 In. |
| VL2500 | 1250 (567) | 1250 (567) | 8.00 In. / 1.00 In. | 625 (283) | 3.00 In. |

**NOTE:** Lifting Values for the VersaLift™ Magnets are stated at 33% of the actual value. We recommend when lifting sheets over 8', use 2 or more lifts on a spreader bar to prevent sheet flexing, sagging or peel-off. Thin material is susceptible to magnetic bleed through, resulting in two sheets being lifted at once. Round Lifting Values are based on ideal conditions. Consult the factory before specifying these magnets for use on round materials. *Max. sheet lengths are selected due to sag characteristics of specified sheet. The item to be lifted must cover the entire length and width of the magnetic poles to properly engage and release the part. **CF = Consult Factory, NA = Not Applicable (Magnets will not turn "ON" with stated thicknesses.)**

## DynamicLift™ Magnets

These lightweight and powerful Rare Earth permanent lift magnets, featuring Magswitch® technology, can be used on flat or round surfaces and contain an internal release On/Off device that does not contact or damage the surface of the part being lifted. DynamicLifts™ have superior holding on thin gauge ferrous metals to comparable Rare Earth lift magnets.

**Features**

- On/Off Rare Earth design
- Easier actuation and Superior holding on material from 1/4" to 1" in thickness
- Lifts flat or round loads (see chart below)
- Heat resistant up to 180°F (82°C)
- Handle locks in "On" position
- 3:1 Design Factor
- **CONFORMS TO ASME B30.20 STANDARDS**

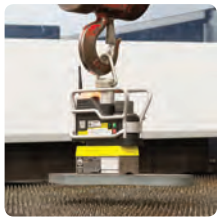

| | Lift | | Overall | | Magnet | | | Handle | Bail | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Model No. | LBS | KG | Ht. (in) | Ln. (in) | Ht. (in) | Wd. (in) | Ln. (in) | Ln. (in) | Th. (in) | Ht. (in) | Wd. (in) | Wt. (lbs) |
| DL0200 | 200 | 90 | 7-1/2 | 4-1/4 | 2-1/2 | 2 | 3 | 2-1/2 | 2/5 | 1-1/2 | 2-1/4 | 4.5 |
| DL0375 | 375 | 170 | 10 | 5-3/4 | 3 | 2-3/4 | 4-1/4 | 2-3/4 | 3/5 | 2-1/2 | 3-1/4 | 11.5 |
| DL0600 | 600 | 272 | 8 | 6-1/2 | 4 | 2-3/4 | 6-1/2 | 9 | 3/8 | 2-1/2 | 3-1/4 | 13 |
| DL1100 | 1100 | 498 | 8-1/2 | 10-3/4 | 4 | 4 | 10 | 8 | 3/8 | 2-1/2 | 3-1/4 | 32 |

| Lifting Value in lbs (kg) & *Max Sheet Length Due To Sag For Material Thickness For Single Magnet Use | | | | | | | | Round Lifting Applications | | |
|---|---|---|---|---|---|---|---|---|---|---|
| Model No. | 1/4" (6' Lg) | 3/8" (8' Lg) | 1/2" (8' Lg) | 3/4" (8' Lg) | 1" (10' Lg) | 2" (10' Lg) | 3" (10' Lg) | Lift - lbs (kg) | Min. Dia. (in) | Min. Th. (in) |
| DL0200 | 182 (82) | 197 (89) | 200 (90) | 200 (90) | 200 (90) | 200 (90) | 200 (90) | 100 (45) | 2 | 1/2 |
| DL0375 | 235 (106) | 333 (151) | 350 (158) | 355 (161) | 358 (162) | 375 (170) | 375 (170) | 187 (84) | 2-1/2 | 1/2 |
| DL0600 | 368 (166) | 475 (215) | 550 (249) | 575 (260) | 600 (272) | 600 (272) | 600 (272) | 300 (136) | 2-1/2 | 3/4 |
| DL1100 | 448 (203) | 592 (268) | 787 (356) | 855 (387) | 996 (451) | 1000 (453) | 1100 (498) | 550 (249) | 2-1/2 | 1 |

**NOTE:** Lifting Values for the DynamicLift™ Magnets are stated at 33% of the actual value. We recommend when lifting sheets over 8', use 2 or more lifts on a spreader bar to prevent sheet flexing, sagging or peel-off. Thin material is susceptible to magnetic bleed through, resulting in two sheets being lifted at once. Round Item Lifting Values are based on ideal conditions. Pipe length, wall thickness, diameter and surface condition can all affect the magnet's performance. Please consult the factory before specifying these magnets for use on round materials. *These maximum sheet lengths are selected due to the sag characteristics of the specified sheet. The item to be lifted must cover the entire length and width of the magnetic poles to properly engage and release the part. **CF = Consult Factory NA = Not Applicable (Magnets listed will not turn "ON" on specified material thicknesses.)**

## Remote Operated DynamicLift™ Magnet

The remote operated DynamicLift™, featuring Magswitch® technology, is a powerful Rare Earth permanent lift magnet that can be turned "on" or "off" using a remote control without the need of air or electricity! Not only does this give the operator freedom from electrical cords and air hoses, but also opens up a whole new range of lifting possibilities where accessibility to the magnet was cumbersome or impossible to reach, such as lifting above or below arm's length, into deep channels, loading or unloading CNC/cutting tables and operation from inside the forklift. Permanent magnetic lifts also eliminate the fear of dropping the load being lifted due to power failures.



**Features**

- Remote Operated, locking, On/Off Rare Earth permanent magnet will stay "on" if battery loses power
- Secondary manual release in case of battery failure
- Built in safety - a load sensor and a 3-button power off sequence prevent accidental release while under load
- Indicator lights for magnet operational state and battery strength
- Includes two, 12 volt rechargeable, Lithium-ion batteries (200 cycles per charge) and charger
- Custom pole shoes available for lifting rounds and more
- Internal release does not contact the load
- Easier actuation and Superior holding, to comparable Rare Earth lift magnets, on material from 1/4" to 1" in thickness
- 3:1 Design Factor
- Heat resistant up to 180°F (82°C)
- **CONFORMS TO ASME B30.20 STANDARDS**

| | Lift | | Overall | | | Magnet | | | Bail | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Model No. | LBS | KG | Ht. (in) | Wd. (in) | Ln. (in) | Ht. (in) | Wd. (in) | Ln. (in) | Th. (in) | Ht. (in) | Wd. (in) | Wt. (lbs) |
| DLR0600 | 600 | 272 | 12-1/2 | 4 | 8-1/2 | 4 | 2-3/4 | 6-1/2 | 3/8 | 2-1/2 | 3-1/4 | 20 |

| Lifting Value in lbs (kg) & *Maximum Sheet Length Due To Sag For Material Thickness For Single Magnet Use | | | | | | | |
|---|---|---|---|---|---|---|---|
| Model No. | 1/4" (6' Lg) | 3/8" (8' Lg) | 1/2" (8' Lg) | 3/4" (8' Lg) | 1" (10' Lg) | 2" (10' Lg) | 3" (10' Lg) |
| DLR0600 | 368 (166) | 475 (215) | 550 (249) | 575 (260) | 600 (272) | 600 (272) | 600 (272) |

**NOTE:** Lifting Values for the DynamicLift™ Magnets are stated at 33% of the actual value. We recommend when lifting sheets over 8', use 2 or more lifts on a spreader bar to prevent sheet flexing, sagging or peel-off. Thin material is susceptible to magnetic bleed through, resulting in two sheets being lifted at once. Please consult the factory before specifying these magnets for use on round materials. *These maximum sheet lengths are selected due to the sag characteristics of the specified sheet. The item to be lifted must cover the entire length and width of the magnetic poles to properly engage and release the part.

## Manhole Cover Lift Dolly System

Easily move heavy manhole covers up to 400 lbs. without worrying about your fingers, toes and back. This cover lift system uses a unique adjustable four-position hook with a four-length retractable handle for terrific leverage, even in tight spots. The three angle positions (90°, 105° and 120°) let you adjust the system for any lifting situation. The safety latch hook makes grabbing the magnet or spreader bar a one-person job.

Choose from steel or aluminum manhole dollies. Dollies include your choice of heavy-duty 6”, 10” or 12” Dia wheels that provide the stability to safely move the manhole cover away from the opening. The dolly folds up and handle breaks down for easy storage. When fully extended, the handle length is 64”; when folded and collapsed down it is 41” long.

- Reduce lost time injuries caused by handling covers
- Minimize stress & strain on your body—system does the heavy work for you
- Retractable four-length handle gives maximum leverage from any angle
- Ideal for survey crews, handle breaks down for easy storage & transportation
- Makes moving covers fast, easy and a one-person operation, eliminating the use of pry bars

***It doesn’t matter if you are 5’6” or 6’5”, the MCL Dolly can be adjusted to ergonomically accommodate any user.***

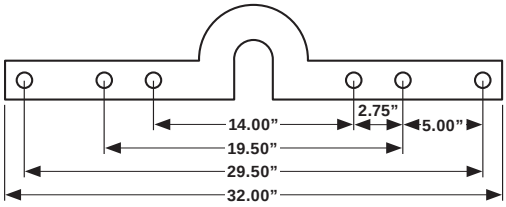
**Several magnet and hook configurations are available for use with your dolly**

Use each dolly with either a single magnet in the center of the manhole cover, or with two magnets and a spreader bar (magnets and spreader bar sold separately). When using two magnets on a spreader bar, the load is more balanced—ideal for large covers or heavily textured surfaces. The spreader bar has three location holes so you can place the magnets where you gain the best magnet-to-steel-ratio. A sample of common On/Off Locking Rare Earth magnet choices are listed in the table below. Contact us to for more information on other magnet options.

The optional cover lift Dolly Extension Hook lets you lift very large diameter manhole covers that might otherwise interfere with proper dolly operation. Use on covers up to 54” for 6” wheeled dollies, 50” for 10” wheeled dollies or 48” for 12” wheeled dollies.




***Manhole Cover Lift Spreader Bar Specifications***




***COVER SAMPLES AND RECOMMENDATIONS***

***DOLLY WITH SINGLE MAGNET***

*Textured - all high points on same plane*

***DOLLY WITH TWO MAGNETS ON A SPREADER BAR***

*Center Raised - Manhole Cover Cross Section*

*Low Center - Manhole Cover Cross Section*

| GENERAL GUIDE FOR LIFTING MANHOLE LIDS | |
|---|---|
| **Diameter of lids/covers** | **Magnet Size** |
| Up to 26” Diameter | PNL800/VL0600 |
| 30” to 35” Diameter | PNL1600/VL1200 |
| 36” Diameter & up | MCL660X2/MCL600X2 |

***Note:** Consult the factory for lids that have paving or non-clean surfaces. For single magnet use, the center section of the lid should have all high spots on the same plain. Heavily textured surfaces should use the MCL660X2/MCL600X2. For grates or vented lids, use PNL1600/VL1200 or MCL660X2/MCL600X2. Using the MCL660X2/MCL600X2 will keep the lid level and may reduce the distance the handle has to be lowered to get the lid out and back in.*

| Description | Typical Application | Wt. (lbs) | Model No. |
|---|---|---|---|
| Dolly, Steel, 6” wheels | Hard Surfaces | 46 | MCL2000W06 |
| Dolly, Steel, 10” wheels | Hard Surfaces & Gravel | 52 | MCL2000W10 |
| Dolly, Steel, 12” All Terrain wheels | All-Terrain | 52 | MCL2000W12 |
| Dolly, Aluminum, 6” wheels | Hard Surfaces | 29 | MCL3000W06 |
| Dolly, Aluminum, 10” wheels | Hard Surfaces & Gravel | 34 | MCL3000W10 |
| Dolly, Aluminum, 12”All Terrain wheels | All-Terrain | 34 | MCL3000W12 |
| Powerlift® Magnet, 660 lbs. | Covers or grates up to 26” in Diameter | 22 | PNL660 |
| Powerlift® Magnet only, 1300 lbs. | Covers or grates 30” to 35” in Diameter | 52 | PNL1300 |
| VersaLift™ Magnet, 600 lbs. | Covers or grates up to 26” in Diameter | 18 | VL0600 |
| VersaLift™ Magnet, 1200 lbs. | Covers or grates 30” to 35” in Diameter | 34 | VL1200 |
| Spreader Bar, includes (2) PNL660 magnets | Covers or grates 36” in Diameter & up | 51 | MCL660X2 |
| Spreader Bar, includes (2) VL0600 magnets | Covers or grates 36” in Diameter & up | 43 | MCL600X2 |
| Spreader Bar Only | Covers or grates 36” in Diameter & up | 7 | MCL660 |
| Dolly Hook Extension | Large Covers or grates | 3 | MCLHOOKEXT |
| Wheel Chocks 18” x 16” | 6” or 10” Wheel dollies on soft surfaces | 17.5 | MCLWC18X16 |
| Septic Lid Lift Adaptor with Manual Winch | Stabilizing leg for lifting large septic lids | 28 | MCLLEGM |
| Double Leg Chain Extension | For Lifting uncovered septic lids | 2.5 | MCLCHAIN |

## PowerArm™ - Vehicle Mounted

IMI's new Manhole PowerArm™ makes lifting and replacing manhole covers easier than ever. Just drive within 3 feet of the center of the manhole cover and let the Manhole PowerArm™ adjust to your location. The "Arm" has a 3 foot, 180° swing radius that allows the positioning of the magnet to the center of the manhole cover.

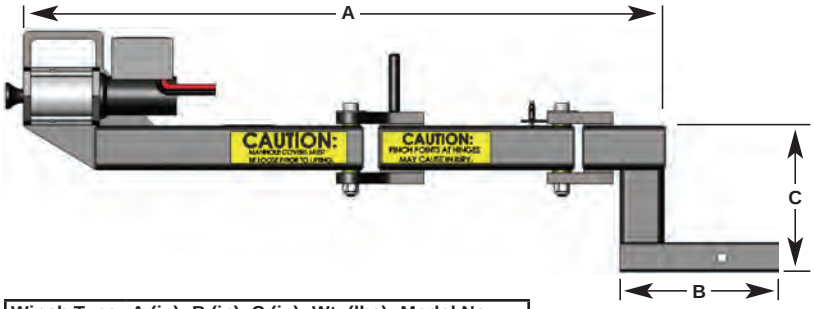
The deep reaching strength of our Rare Earth magnet (sold separately) penetrates textured surfaces often found on manhole covers. Once the magnet is centered, turn the magnet to the "lock-on" position and use the winch (electric or manual versions available) to start lifting the manhole cover. When the manhole cover is clear from its rim, swing the manhole cover away. Reverse the steps to replace the manhole cover.

The PowerArm™ Winch can also allow the operator to lower items such as camera tractors, large sewer nozzles, pipe plugs and more.

**COMMON SPECIFICATIONS:**
- 400 Lb. Lifting capacity
- Fits into standard 2" square receiver hitch
- Welded 2" x 3" tubular steel construction

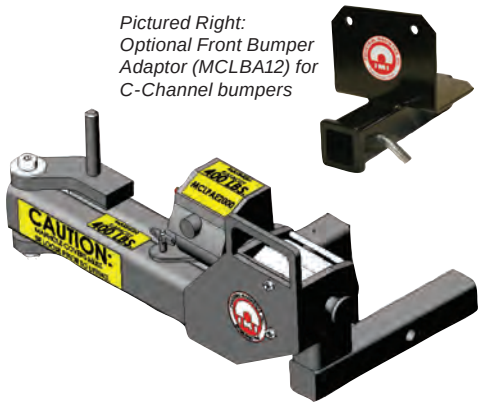
**ELECTRIC WINCH SPECIFICATIONS:**
- 12 VDC with power-up & power-down control, removable 15' remote control cord and a galvanized cable with latch hook
- 7-Way "Blade Style" trailer end connector

**MANUAL WINCH SPECIFICATIONS:**
- Worm Gear winch that will hold load when handle is released
- Fine adjustment load movement
- Polyester strap with Zinc-plated hook & safety latch




| Winch Type | A (in) | B (in) | C (in) | Wt. (lbs) | Model No. |
|---|---|---|---|---|---|
| Electric | 44 | 9 | 10 | 70 | MCLPAE2000 |
| Manual | 44 | 9 | 10 | 70 | MCLPAM2000 |

*Pictured Right: Optional Front Bumper Adaptor (MCLBA12) for C-Channel bumpers*




## ON/OFF Magnetic Utility Lifter

Stop bending over to lift and remove cast iron utility and valve box covers!

Reduce finger and toe injuries with this light-weight deep reach permanent magnetic lifter. The magnetic field penetrates textured surfaces of lids and allows the operator to ergonomically lift the casting out of the way.

This Magnetic Utility Lifter, featuring Magswitch® technology, has a locking On/Off handle for safety and makes removing covers quick and easy. Rated for small cast iron covers up to 50 lbs.

| Lift - lbs (kg) | Length (in) | Wt. (lbs) | Model No. |
|---|---|---|---|
| 50.0 (22.68) | 28.5 | 5.5 | MCLVB01 |

## Round Electromagnet Lifts

Round Electro Lift Magnets (RELM) provide concentrated holding power and a deep reaching magnetic field to lift thick, non-flexing, ferrous items.

**Features**

- No separate power supply required
- Control switch “On, Off and Release” functions
- Lower wattage requirements, higher lifting capacities and a lower unit weight than competitors
- Plug not included

**NOTE:** RELM’s are not intended to be used as scrap handling magnets. Picking up several pieces of steel at once is not recommended and may result in serious injury or property damage.

| | Magnet | | Bail | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| Lift - lbs (kg) | Dia. (in) | Ht. (in) | Ht. (in) | Wd. (in) | Th. (in) | Voltage | Watts | Wt. (lbs) | Model No. |
| 1200 (544.32) | 6-3/8 | 11-1/2 | 2-1/2 | 2 | 3/4 | 115 | 33 | 50.0 | RELM06 |
| 2500 (1133.99) | 8-3/8 | 12-7/8 | 2-7/8 | 2-1/4 | 3/4 | 115 | 51 | 75.0 | RELM08 |
| 6000 (2721.56) | 12-1/4 | 15-1/4 | 3-3/8 | 2-1/2 | 7/8 | 115 | 149 | 210.0 | RELM12 |
| 8000 (3628.74) | 16-3/4 | 15-1/2 | 3-1/2 | 2-1/2 | 7/8 | 115 | 260 | 300.0 | RELM16 |
| 13000 (5896.71) | 20 | 14-1/8 | 4 | 3-1/8 | 1 | 115 | 260 | 615.0 | RELM20 |

## Battery Lifts

Battery Lift Magnets (BLM) operate from a self-contained automotive type battery (not included), which results in maximum convenience, portability, versatility, and dependability. BLM’s make loading and unloading of thick non-flexing ferrous parts simple and fast. No need for external power cords. Ideal for remote locations. Built-in chargers and a visible power gauge. No fancy lights, whistles or bells that can malfunction.

**NOTE:** BLM’s are not intended to be used as scrap handling magnets. Picking up several pieces of steel at once is not recommended and may result in serious injury or property damage.

## Electromagnets and Power Supply

Electromagnets offer On/Off capability through the application of controlled DC electrical current, controlled holding power and on-command release of ferrous steel parts. Most electromagnets require specially designed power supplies to achieve optimum magnetic performance. IMI offers power supplies for all of your electromagnet applications. Continuous duty 158°F (70°C) to 192°F (89°C) temperature rise.

**Parallel Pole Electromagnets:** Ideal for Pick and Place or Lifting Applications where parts have flat surfaces and can be custom machined to specifically fit the application. Side mounted terminal blocks allow one set of lead wires from magnet to power supply (no splicing required, minimum 18 gauge leads). These electromagnets offer broad application potential due to their ability to deliver improved reach out through air gaps (i.e. painted, plated & coated surfaces).

**Rectangular & Round Island Pole Electromagnets:** Ideal for Pick and Place or Lifting applications where parts have uneven surfaces or odd shapes and provide concentrated holding power & high responsiveness in manual or automatic applications.

**Power Supply:** Designed for manual operation and uses 120 VAC and features Isolation Transformer Protection, a 10 foot grounded power cord & Fuse Protection. ***For more information on all available power supplies, contact us by phone, email or visit our website to request Tech Sheet AG-10B.***

**Rectangular Island Pole Electromagnets**

| Lift - lbs (kg) | Ht. (in) | Wd. (in) | Ln. (in) | Tap Size | No. of Holes | Spacing (in) | Watts | Wt. (lbs) | 24 VDC | 120 VAC |
|---|---|---|---|---|---|---|---|---|---|---|
| 55 (24.95) | 1-1/4 | 1-1/2 | 1-1/2 | 10-32 | 1 | Centered | 7.0 | 0.31 | ES2-111 | - |
| 100 (45.36) | 1-1/4 | 1-1/2 | 2-1/2 | 10-32 | 2 | 1 | 10.0 | 1.00 | ES2-121 | ESA-121 |
| 200 (90.72) | 1-1/2 | 2-1/2 | 2-1/2 | 1/4-20 | 1 | Centered | 16.0 | 2.00 | ES2-221 | ESA-221 |
| 400 (181.44) | 1-7/8 | 2-1/2 | 4-1/2 | 1/4-20 | 2 | 2 | 27.0 | 5.00 | ES2-241 | ESA-241 |
| 1000 (453.60) | 2-1/2 | 4 | 8 | 3/8-16 | 2 | 4 | 58.0 | 18.00 | ES2-482 | - |

**Round Island Pole Electromagnets**

| Lift - lbs (kg) | Dia. (in) | Ln. (in) | Tap Size | Watts | Wt. (lbs) | 24 VDC | 120 VAC |
|---|---|---|---|---|---|---|---|
| 6 (2.73) | 3/4 | 1-1/4 | 10-32 | 1.4 | 0.2 | ER2-071 | - |
| 7 (3.18) | 1 | 3/4 | 10-32 | 1.5 | 0.2 | ER2-101 | - |
| 12 (5.45) | 1 | 1-1/4 | 10-32 | 3.5 | 0.3 | ER2-102 | - |
| 22 (9.98) | 1-1/4 | 1-1/4 | 1/4-20 | 4.2 | 0.4 | ER2-103 | - |
| 40 (18.15) | 1-1/2 | 1-1/2 | 1/4-20 | 6.0 | 0.7 | ER2-104 | - |
| 75 (34.02) | 2 | 1-5/8 | 1/4-20 | 8.0 | 1.2 | ER2-201 | ERA-201 |
| 90 (40.83) | 2 | 2-1/2 | 1/4-20 | 14.0 | 2.0 | ER2-202 | ERA-202 |
| 185 (83.92) | 3 | 3 | 5/16-18 | 25.0 | 5.0 | ER2-303 | ERA-303 |
| 325 (147.42) | 4 | 3 | 3/8-16 | 30.0 | 9.0 | ER2-403 | - |

**Parallel Pole Electromagnets**

| Lift - lbs (kg) | Ht. (in) | Wd. (in) | Ln. (in) | Tap Size | Holes | Spacing (in) | Watts | Wt. (lbs) | 24 VDC |
|---|---|---|---|---|---|---|---|---|---|
| 40 (18.15) | 1-3/8 | 1 | 2 | 10-32 | 2 | 1 | 6 | 0.22 | EP2-121 |
| 85 (38.56) | 1-3/8 | 1 | 3 | 1/4-20 | 2 | 2 | 11 | 1.00 | EP2-131 |
| 105 (47.63) | 1-3/8 | 1 | 4 | 1/4-20 | 2 | 3 | 13 | 1.00 | EP2-141 |
| 235 (106.60) | 2-3/4 | 2 | 4 | 5/16-18 | 2 | 3 | 22 | 4.00 | EP2-242 |
| 310 (140.62) | 2-3/4 | 2 | 6 | 5/16-18 | 2 | 4.5 | 38 | 5.00 | EP2-262 |
| 465 (210.93) | 2-3/4 | 2 | 8 | 5/16-18 | 2 | 6.25 | 52 | 8.00 | EP2-282 |

**Power Supply**

| Ht. (in) | Wd. (in) | Ln. (in) | Watts | Wt. (lbs) | Model No. |
|---|---|---|---|---|---|
| 5 | 4 | 7-1/2 | 100 | 7.00 | PSA1210GB |

**Rectangular Electromagnet with 120 VAC cord**

**Round Electromagnet**

**Parallel Pole Electromagnet**

**Power Supply**

## Continuous Duty Surface Type Demagnetizers

Surface Type Demagnetizers are designed for stationary or portable use, providing continuous duty operation as work pieces pass the demagnetizer's face plate. This design allows for installation under, over or alongside conveyors for demagnetizing applications.

**Features**
- Durable, one-piece face plate
- On/Off switch
- Portable and/or stationary design
- Integrated side handles for hand held operation
- AC On Indicator (DSC423 Only)

*Note: 6 ft. cord with grounded plug on 120 VAC models only. 240 VAC models have a 6 ft. three wire cord without plug.*


| Ht. (in) | Wd. (in) | Ln. (in) | Demag Area (in) | Ctr. 1 (in) | Ctr. 2 (in) | Hole Dia. (in) | Wt. (lbs) | Amps (120 VAC) | Amps (240 VAC) | Amps (480 VAC) | Model No. |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 3-13/16 | 4-3/4 | 7-1/4 | 3 x 4.5 | 5-5/16 | 5-3/8 | 1/4 | 15.0 | 2.1 | 1.1 | - | DSC423 |
| 4-15/16 | 6-1/4 | 11-1/4 | 4 x 6 | 7-13/16 | 6-7/8 | 5/16 | 33.0 | 9.0 | 5.0 | 2.5 | DSC424 |

## Continuous Loop Type Demagnetizers

IMI's Loop Type Demagnetizers are designed with engineered efficiency and constructed to handle continuous applications. These units, designed with circular or rectangular pass through, can be selected for the shape and the material being processed to achieve maximum demagnetizing effectiveness. The standard pass through sizes range from 3" high x 6" wide to 18" high x 36" wide rectangular openings and a 2-7/8" diameter round opening size. We welcome requests for custom openings to meet your application. Most are available in 120, 240, and 480 VAC, single phase.

**Options**
- Aluminum framed parts conveyor
- Mounting frames and stands

| Overall | | | Opening Size | | VAC | | | | Model No. |
|---|---|---|---|---|---|---|---|---|---|
| Ht. (in) | Wd. (in) | Ln. (in) | Ht. (in) | Wd. (in) | 120 | 240 | 480 | Wt. (lbs) | 100% Continuous |
| 8 | 5-1/4 | 7 | 2-7/8 dia. | - | Y | - | - | 15 | DMC100 |
| 16 | 16 | 18 | 3 | 6 | - | Y | Y | 150 | DMC200 |
| 17 | 16 | 18 | 4 | 6 | - | Y | Y | 160 | DMC300 |
| 20 | 16 | 25 | 6 | 12 | - | Y | Y | 300 | DMC400 |
| 24 | 16 | 32 | 9 | 18 | - | Y | Y | 450 | DMC500 |
| 28 | 16 | 40 | 12 | 24 | - | Y | Y | 600 | DMC600 |
| 36 | 16 | 54 | 18 | 36 | - | Y | Y | 900 | DMC700 |



## Magnetizer/Demagnetizer

Keep those small screws and nuts in position. Insert a screwdriver or nut driver into the hole, pull it out and it's magnetized. Leave the magnetizer on the tool for extra strength. To demagnetize, pass the tool through one of the outside channels. Perfect for use with computers, magnetically sensitive equipment or anyone who uses a screwdriver.

| Dimensions (in) | Thru-Hole | Wt. (lbs) | Model No. |
|---|---|---|---|
| 1-1/8 cubed | 3/8 | 0.15 | M/D001 |

## Magnetic Welding Squares

**Features**

- Ideal for welders that need fast set-up and accurate holding of steel sheet stock, plate and tubing
- Hold work pieces at multiple angles
- Mounting holes for fixturing
- WS420, WS810 & WS820 models feature "Breakaway Handle"*
- Weld spatter resistant covers on certain models**


| Hold - lbs (kg) | Description | Th. (in) | Wd. (in) | Ln. (in) | Wt. (lbs) | Model No. |
|---|---|---|---|---|---|---|
| 23 (10.44) | Multi-Angle | 1/2 | 2-9/16 | 3-3/8 | 0.50 | WS11094 |
| 45 (20.42) | Multi-Angle Heavy Duty | 1 | 2-9/16 | 3-3/8 | 1.00 | WS11094X2 |
| 40 (18.14) | Inside 90°, Outside 45°/90° | 9/16 | 2-3/4 | 4-3/4 | 0.65 | WS100 |
| 55 (24.95) | Compact | 5/8 | 3-3/8 | 3-3/8 | 0.70 | WS300 |
| 110 (49.90) | Adjustable | 5/8 | 3-3/8 | 6-1/8 | 1.40 | WS302 |
| 75 (34.02) | Standard Heavy Duty | 3/4 | 4-3/8 | 3-3/4 | 1.00 | WS400 |
| 75 (34.02) | Covered Heavy Duty** | 3/4 | 4-3/8 | 3-3/4 | 1.00 | WS410 |
| 150 (68.04) | Extra Heavy Duty | 1-1/2 | 4-3/8 | 3-3/4 | 2.80 | WS420* |
| 160 (72.58) | Heavy Duty** | 7/8 | 8 | 8 | 4.75 | WS810* |
| 325 (147.42) | Super Heavy Duty** | 1-5/8 | 8 | 8 | 9.50 | WS820* |

## ON/OFF Magnetic Welding Squares

On/Off Permanent Rare Earth Magnetic welding squares, featuring Magswitch® technology, are ideal for welders that need fast set-up, accurate holding and precise placement of steel sheet stock, plate and tubing.

**Features**

- 5 common angles: 45, 75, 90, 105 & 135 degrees
- WSS300MS is a dual purpose tool, utilizing multi-angle square and a 300 AMP welding ground all in one
- Stays clean and chips fall off easily when magnet is turned off
- Heat resistant up to 180°F (82°C)


| Hold - lbs (kg) | Th. (in) | Wd. (in) | Ln. (in) | Wt. (lbs) | Model No. |
|---|---|---|---|---|---|
| 80 (36.28) | 1-1/4 | 2-7/8 | 2-1/2 | 0.40 | WSS200MS |
| 150 (68.03) | 1-7/8 | 3-1/2 | 3-3/8 | 1.20 | WSS300MS |

## ON/OFF Magnetic Welding Angles

Switchable On/Off Rare Earth magnetic Welding Angles, featuring Magswitch® technology, let welders set up, weld and move on to the next job in a flash. Simply place it on a work surface, turn it on and start welding. On/Off magnets easily allows debris to fall away. Can be used on flat or round steel or cast iron. Non-marring hold.

**Features**

- Pivoting Magnetic Welding Angles pivot to angles ranging from 22° to 270°, with locking handle and marked degree indicators.
- 90° Magnetic Welding Angles have Pre-drilled holes/slot allowing for quick adjustment or addition of more magnetic bases. Reversible for inside or outside hold.
- Adjustable Magnetic Welding Angles have two magnetic bases that rotate for virtually unlimited welding angles. Reversible for inside or outside hold.


| Hold - lbs (kg) | Angle Type | Ht. (in) | Wd. (in) | Ln. (in) | Wt. (lbs) | Model No. |
|---|---|---|---|---|---|---|
| 200 (90.71) | Pivoting | 9-1/4 | 1-5/8 | 9-1/4 | 3.00 | WSP200MS |
| 150 (68.04) | 90° | 8 | 1-3/4 | 8 | 3.00 | MWA0150MS |
| 550 (249.48) | 90° | 12 | 2-3/4 | 12 | 11.00 | MWA0550MS |
| 150 (68.04) | Adjustable | 8 | 5-1/2 | 8 | 3.40 | AWA0150MS |
| 550 (249.48) | Adjustable | 10 | 6-1/2 | 10 | 9.00 | AWA0550MS |

## Magnetic Welding Grounds

**Features**

- Powerful magnet attaches securely to steel work surfaces
- Spring loaded 1/2'' dia. stud assures constant electrical ground contact
- Release handle
- Holds 35 Lbs.


| Hold - lbs (kg) | Dia. (in) | Ht. (in) | Amps | Stud | Wt. (lbs) | Model No. |
|---|---|---|---|---|---|---|
| 35 (15.88) | 3-1/2 | 2-1/4 | 250 | Brass | 1.50 | WG250 |
| 35 (15.88) | 3-1/2 | 2-1/4 | 800 | Copper | 1.50 | WG800 |

## ON/OFF MagSquares

Switchable On/Off Rare Earth MagSquares, featuring Magswitch® technology, are extremely powerful. Fast work-holding on multiple sides of the MagSquare. Eliminates the need for tedious clamping. MagSquares can be used on flat or round steel or iron surfaces. Pre-Tapped holes on all sides for mounting. Locking On/Off handle.

| Hold - lbs (kg) | Magnet Ht. (in) | Overall Ht. (in) | Wd. (in) | Ln. (in) | Tap (mm) | Wt. (lbs) | Model No. |
|---|---|---|---|---|---|---|---|
| 150 (68.04) | 1-1/2 | 2-1/2 | 1-1/2 | 1-1/2 | 5 | 0.85 | MS0150MS |
| 400 (181.43) | 2-1/4 | 3-1/2 | 1-1/2 | 2-1/2 | 5 | 2.25 | MS0400MS |
| 550 (249.48) | 2-1/2 | 4-1/4 | 2 | 3 | 6 | 3.75 | MS0550MS |
| 1000 (453.60) | 3 | 5-3/4 | 2-3/4 | 4 | 10 | 10.50 | MS1000MS |

## ON/OFF Magnetic Welding Grounds

The switchable On/Off Rare Earth Magnetic Grounds, featuring Magswitch® technology, let welders set up, weld and move on to the next job in a flash, thanks to this new magnetic technology. Simply place it on a work surface, turn it on and start welding. Makes welding quicker and easier than ever before. Will work on flat or pipe.

| Hold - lbs (kg) | Ht. (in) | Wd. (in) | Ln. (in) | Amps | Wt. (lbs) | Model No. |
|---|---|---|---|---|---|---|
| 30 (13.61) | 2-1/2 | 1-1/8 | 2-1/4 | 200 | 0.50 | WG200MS |
| 56 (25.41) | 2-1/2 | 1-1/2 | 2-3/4 | 300 | 0.85 | WG300MS |
| 104 (47.18) | 2-1/2 | 2-3/4 | 4 | 600 | 2.85 | WG600MS |

## ON/OFF Magnetic Hanging Hooks

The switchable On/Off Rare Earth Magnetic hanging hooks, featuring Magswitch® technology, are perfect for temporary holding of lines, hoses, lights, tools and more. For use around the job site or shop. Quickly secure and hold just about anything, anywhere.

**Features**

- Can hold nuts, bolts, screws etc. to sides when turned on.
- Attaches to flat or round surfaces with ease.
- Locking On/Off Handle

| Hold - lbs (kg) | Ht. (in.) | Dia. (in.) | Wt. (lbs) | Model No. |
|---|---|---|---|---|
| 25 (11.34) | 3-1/2 | 1-1/2 | 0.70 | MHH025MS |
| 40 (18.15) | 4 | 2-3/4 | 1.95 | MHH040MS |

## ON/OFF Magnetic Mag-Pry™ by Fit Up Gear™

Strong, easy to use, On/Off magnetic pry bar, featuring Magswitch® technology, for material leveling and alignment also known as mismatch or high/low. Perfect for all plate and seam work, under foot, on vertical surfaces, even overhead.

**Features**

- Up to 100 times faster than traditional methods saving you time and money, pays for itself in days
- Non marring, On/Off Rare Earth Magnet with 1,100 lbs breakaway force and locking T-handle for safety
- Easy 180 degree On/Off actuation with no electricity needed
- Rapid and easy plate matching for seamless welds
- Eliminates need for welded tabs

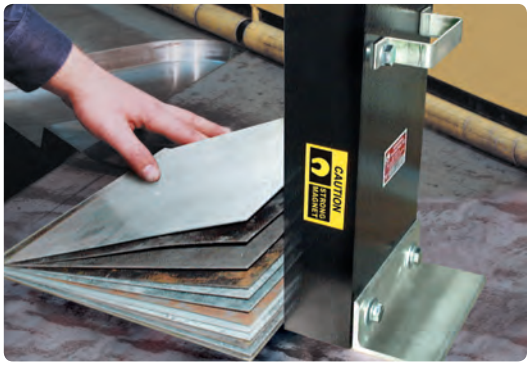
| Ht. (in) | Wd. (in) | Ln. (in) | Wt. (lbs) | Model No. |
|---|---|---|---|---|
| 3-1/2 | 5-7/8 | 19 | 10.0 | PB1000MS |

## Permanent Magnetic Sheet Fanners

USA M.A.D.E.

Permanent Magnetic Fanners handle steel sheets of almost any length, width or shape. The sheets near the top of the stack separate instantly from a 1/2” to 3/4” gap, depending on sheet thickness and size.

- Reduce costs and increase safety for destacking steel sheet stock
- A powerful magnetic field automatically separates sheets
- As the top sheet is removed, the next sheet instantly fans up
- Assists prying apart sticky, oily, pre-finished or polished sheets
- Eliminates die-damaging double blanking in automated operations
- Three powerful designs for optimum fanning performance
  - Thin Gauge Fanner (TNF), 20 to 30 Gauge
  - Medium Gauge Fanner (MGF), 12 to 22 Gauge
  - Thick Gauge Fanner (TKF), 7 to 12 Gauge
- Pre-tapped holes for mounting to your equipment
- Bolt on angle base plate and handle with mounting hardware included
- Durable welded construction




**For more information on this product, contact us by phone, email or visit our website to request Tech Sheet AG-05A.**

## Sheet Seeker® - Ergonomic Permanent Magnetic Fanners

USA M.A.D.E.

IMI’s SheetSeeker® (U.S. Patent: 6,845,976) is a breakthrough in magnetic sheet fanner technology. The magnetic circuit is lifted and locked into place for introduction to a stack of sheet steel. Once the stack is in place, the sliding magnet is unlocked and automatically centers on the top of the stack, fanning the sheet stock. As each sheet is lifted away, the magnet indexes down automatically, fanning to the bottom of the stack.


- Powerful, Rare Earth, automatic-indexing magnetic circuit
- Up to 60% lighter than standard sheet fanners with the same fanning strength
- Magnet automatically indexes down to ensure optimum fanning down to the last sheet
- Light-weight design and convenient top mounted carry handle allow for user-friendly transport
- Minimum height of 12” with custom designs and options available
- Fans from 30 gauge sheets to 3/16” plate
- Durable stainless steel construction

**For more information on this product, contact us by phone, email or visit our website to request Tech Sheet AG-05A.**

## Electromagnetic Sheet Fanners

USA M.A.D.E.

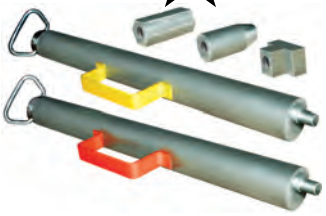
The On/Off capability of Electromagnetic Sheet Fanners provides operator safety during steel blank stacking and unbanding. In automated presses, the electromagnetic fanners can be controlled to operate simultaneously with other destacking equipment. Electromagnetic Sheet Fanners require special IMI power supplies that can provide for operation of single or multiple fanners. These power supplies (see Tech Sheet AG-10B) can be equipped with a variable output to adjust the magnetic strength to handle a variety of metal thicknesses.


- Reduce costs and increase safety for destacking steel sheet stock
- A powerful magnetic field automatically separates sheets
- As the top sheet is removed, the next sheet instantly fans up
- Assists prying apart sticky, oily, pre-finished or polished sheets
- Eliminates die-damaging double blanking in automated operations
- Safe and easy set-up with fanner turned off
- One size unit can handle a variety of metal thicknesses
- Ideal for automated presses

**For more information on this product, contact us by phone, email or visit our website to request Tech Sheet AG-05A.**

## Magnetic PinFanners™ - Permanent Magnetic Fanners

Use pallet mount Permanent Magnetic PinFanners™ with Hex, Round or T-Slot Pallet Pins in Stacking/Destacking, Blanking Lines and Press Feeding applications. PinFanners™ can be used to separate curved edge or odd shaped blanks. PinFanners™ stay right on the pallet, from the blanking line to the press, without any extra set up! Adjustable magnet positions ensure direct contact with the blank for maximum fanning ability. Mounted directly to the pallet, PinFanners® reduce maintenance down time on blanking lines.



**For more information on this product, contact us by phone, email or visit our website to request Tech Sheet AG-05A.**

## Air Cylinder Fanners - Permanent Magnetic Fanners

Air Actuated Cylinder Sheet Fanners have an air release system that pulls the magnet inside away from the face of the fanner for easy and safe removal of the fanner from the stack.

- Reduce costs and increase safety for destacking steel sheet stock
- A powerful, Rare Earth magnetic field automatically separates sheets
- As the top sheet is removed, the next sheet instantly fans up
- Assists prying apart sticky, oily, pre-finished or polished sheets
- Eliminates die-damaging double blanking in automated operations
- On/Off of an electromagnet with the benefit of a permanent magnet
- Allows for mid stack change over

Permanent Magnetic Fanners handle steel sheets of almost any length, width or shape. The sheets near the top of the stack separate instantly from a 1/2” to 3/4” gap, depending on sheet thickness and size.

**For more information on this product, contact us by phone, email or visit our website to request Tech Sheet AG-05B.**

## NEW Air Spring Fanners - Permanent Magnetic Fanners

Air Spring Fanners have an air spring system that pushes the magnet inside toward the face of the fanner when air pressure is present. When the air pressure is turned off or disconnected the air spring will deflate and the magnet will move away from the face of the fanner creating air gap that in essence turns the magnet off. This eliminates the risk of having metal accidently attracted to the fanner during transportation or stack changeovers.

- Powerful, Rare Earth, magnetic circuit
- On/Off capability helps prevent injury when introducing new materials to the fanner
- “Fail-Safe” mode automatically returns the magnet to the “Off” position with loss of air pressure
- Fans from 30 gauge sheets to 3/16” plate
- Durable stainless steel welded cover construction

**For more information on this product, contact us by phone, email or visit our website to request Tech Sheet AG-05B.**

## Air Knife Fanners - Permanent Magnetic Fanners

Permanent Magnet Sheet Fanners with Air Knives allow for ferrous and non-ferrous sheets to be separated in destacking applications. While the magnet force will work with all ferrous metals, the air knives separate all non-ferrous metals by pushing air in between the sheets causing them to rise up from one another.

- Reduce costs and increase safety for destacking ferrous and non-ferrous sheets
- A magnetic field automatically separates ferrous sheets
- Powerful air knives automatically separate non-ferrous sheets
- As the top sheet is removed, the next sheet instantly fans up
- Assists prying apart sticky, oily, pre-finished or polished sheets
- Eliminates die-damaging double blanking in automated operations

Permanent Magnetic Fanners handle steel sheets of almost any length, width or shape. The sheets near the top of the stack separate instantly.

**For more information on this product, contact us by phone, email or visit our website to request Tech Sheet AG-05B.**

## Transporter® - Cylinder Actuated (TPCA)

USA M.A.D.E.

Transporter® Magnets are ideal for use where vacuum cups and grippers are typically used for lifting and moving steel sheets, blanks, stamped parts and complete assemblies.

**Applications & Benefits**
- Automated press to press transfer systems
- Robotic “Pick & Place”
- Manual and automated machine loading/unloading
- Outlasts vacuum cups in most applications
- Grasps odd shaped or perforated parts
- Increases production and reduces shop air costs
- Designed for long, maintenance-free operation
- Operates effectively in any orientation
- Will not drop parts if system air-loss occurs
- Destacking (requires proper magnet selection)

**Cylinder Actuated Transporter® Magnets (TPCA)**
The patented Transporter® utilizes a powerful, Rare Earth, Permanent Magnet to pick and place metal parts in automated transfer and manually operated material handling applications. Offering more options for pick-up points on stamped, forged and formed parts or complete parts assemblies. Offers increased material handling safety and a significant reduction over vacuum cups in shop air costs.

Ideal for steel lifting applications in the Automotive, Appliance and Office Furniture industries and available in many standard and custom configurations to best suit the needs of your application.

**Features**
- Positively holds parts - no dropping
- Instantaneous pickup and release
- Permanent magnet requires no electricity

**Options**
- Solenoid control valves
- Custom designed magnet housings
- Alternate magnetic circuits for specific lifting requirements
- Magnet mounted control valves
- Magnets designed into ergonomic lifting systems

**For more information on this product, contact us by phone, email or visit our website to request Tech Sheet AG-01B.**

## Transporter® LP Low Profile (TPLP)

USA M.A.D.E.

**Applications & Benefits**
- Automated press to press transfer systems
- Robotic “Pick & Place”
- Manual and automated machine loading/unloading
- Outlasts vacuum cups in most applications
- Grasps odd shaped or perforated parts
- Increases production and reduces shop air costs
- Designed for long, maintenance-free operation
- Operates effectively in any orientation
- Will not drop parts if system air-loss occurs
- Class “A” blank protection with covered magnets
- Destacks without double-blanking with the right magnet for the application
- Reduces noise

**U.S. PATENT No. 6,538,544**

**Low Profile (TPLP) Transporter® Magnets**
The Transporter® LP is designed to directly replace vacuum cups with minor tooling and valve adjustments. Powerful Rare Earth magnets positively hold the parts during transfer, greatly reducing the chance of slipping and shifting of your part due to oily coatings. An optional “low-skid” boot is also available to increase grip on parts during transfer. A short burst of shop air pressure is applied in order to release parts.

- Powerful Rare Earth magnet positively holds parts - no dropping or shifting in the event of air loss
- Threads onto a variety of typical 3/8 NPT vacuum cup tooling, including quick disconnect adapters
- TPLP30 Models available with optional 3/8 BSPP Fitting - British Standard Pipe Parallel Thread
- Lightweight, low-profile design for minimal die clearance
- Easy installation on existing tooling booms or robotic face plates
- Instantaneous pick-up and release
- Uses up to 95% less air than vacuum cups

**For more information on this product, contact us by phone, email or visit our website to request Tech Sheet AG-01C.**

## Transporter® MagVac (TPMV)

The Transporter® MagVac combines magnet technology with vacuum cups to create a next generation lifting tool.

**Benefits**

- Powerful magnetic gripper combined with a vacuum cup for powerful holding
- Lift steel or perforated parts as well as aluminum and stainless steel
- Perfect for robotic systems, press transfer systems and all sheet metal applications
- Vacuum pads can be removed for single use as a standard lift magnet on ferrous parts
- No more replacing vacuum cups every week
- No dropping parts from loss of air (for ferrous parts), excess mill oil or weld slag
- Maximum temperature of 176°F (80°C)
- All suction cup pads are made from Thermoplastic Polyurethane/TPU

**For more information on this product, contact us by phone, email or visit our website to request Tech Sheet AG-01E.**

## Custom Transporter® Applications

Transporter® Technology is the use of permanent magnets to hold, lift and convey ferrous metal objects with the On/Off capabilities similar to an electromagnet. These permanent magnets use only a short blast of shop air to move the magnet away from the steel it is holding. Once the magnet is moved away from the steel, air gap is created and the part is released. If a power outage occurs during use, the “fail safe” of this tooling is always ON, protecting product and equipment from damage also reducing the chance of employee injuries.

IMI specializes in designing the right Transporter® magnet for your application based on the shape, weight and dimension of the part, how it is moved and the orientation of the part. IMI integrates Transporter® magnets with end-of-arm tooling, intelligent lift devices, under-the-hook lifting, robotic and PLC controlled systems. Let IMI design a material handling solution for you.

## Custom Length Channel Magnets

An additional center mounting hole is provided on channel magnets that are 24’’ or longer. Special mounting available upon request. Ceramic Magnet. Channel is 9/16” thick.

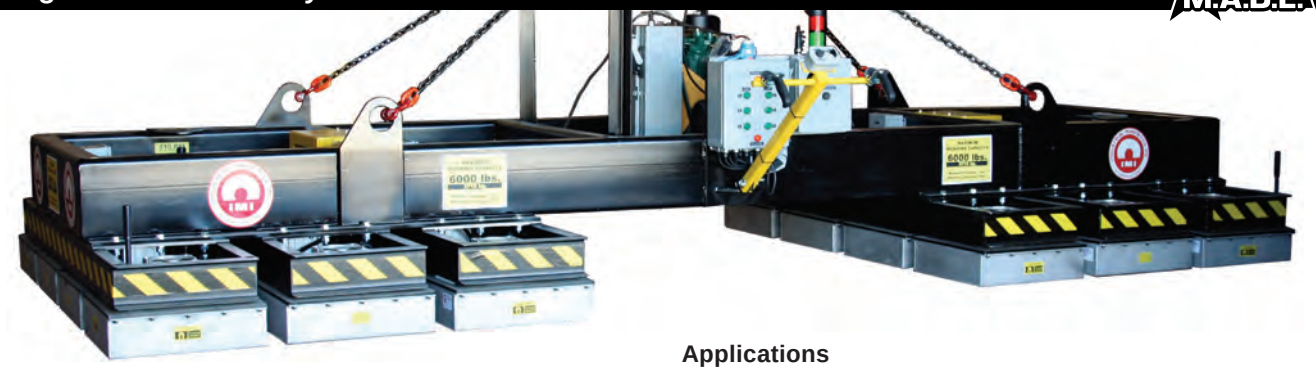
- Full length magnetic holding force
- Countersunk holes for mounting

*CUSTOM LENGTH -To be specified by customer. Most common lengths range from 12’’ to 48’’.

| Pull (lbs/in) | Wd. (in) | Model No. |
|---|---|---|
| 1.5 | 3/4 | MR1800 |
| 2.7 | 1 | MR1900 |
| 5 | 1-3/8 | MR2000 |
| 5.7 | 1-5/8 | MR2100 |
| 6.5 | 2-3/8 | MR2101 |

## Magnetic Sheet Lift Systems

USA M.A.D.E.



The Magnetic Sheet Lifter de-stacks steel sheets from pallets, racks and more. The unique design of this permanent magnetic lifting system allows one person to safely and effectively move and load sheets onto cutting tables, shear beds and other fabrication equipment.

The Magnetic Sheet Lifter features a series of adjustable position permanent magnet lifting heads to lift a wide variety of sheet lengths and widths. To release the sheets from the powerful magnetic heads, just push both release buttons on the handles. This activates the air cylinders located on the magnetic heads. Once activated, the cylinders lift the magnets up into a housing and release the sheet in its desired location.

**For more information on this product, contact us by phone, email or visit our website to request Tech Sheet AG-03A.**

**Applications**
- Stacking and destacking sheet steel
- Loading shears, punch presses, press brakes and burn tables
- Moving sheets/plates from pallets or racks to work stations

**Benefits**
- Allows one person to safely move sheet steel
- Reliability of a permanent magnetic lift with the On/Off capabilities similar to an electromagnet
- Fail-safe design (No battery backup required)
- Adjustable magnet positions lift a wide variety of sheet lengths and widths.
- Operates without the heat build up of electromagnets
- Won't drop load due to power outages or system air loss
- Only requires shop air for operation

**Features & Specifications**
- Transporter® Technology Magnets
- Structural tube framework
- Durable, welded construction
- Pneumatic release buttons on handles
- Adjustable magnet head assembly locations
- Pneumatic control valve provided
- 1/2 NPT inlet fittings
- Filter regulator with pressure gauge

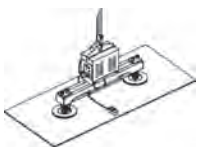
## Vacuum Lift Systems

**Benefits**
- Increase productivity, reducing cost
- One person operation
- Eliminate material damage
- Versatile handling of most materials
- Improve storage space
- Provide a low maintenance lifter
- Durable for long lasting service

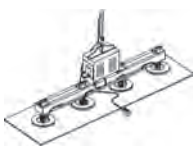
**Features**
- Ball mounted vacuum pads
- Push lock hose (designed for 250 psi)
- Individual slide valve for each vacuum pad allows manual isolation of vacuum pads not needed for attachment
- Muffler is spin on type for easy change out
- Conforms to ASME B30.20 standards

Single Pad

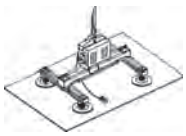
Twin Pads



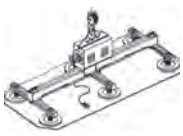
Quad Pads



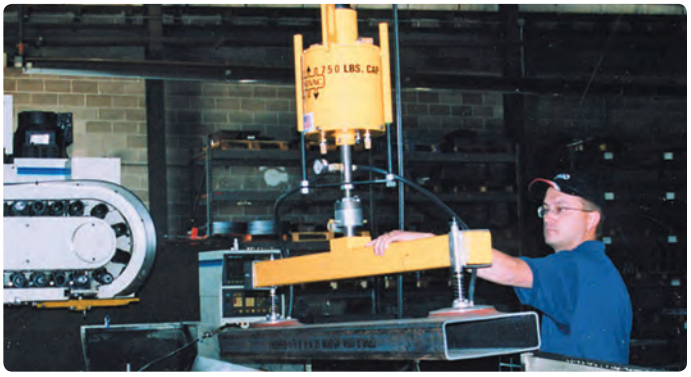
Twin Crossarms



Triple Crossarms



Quad Crossarms



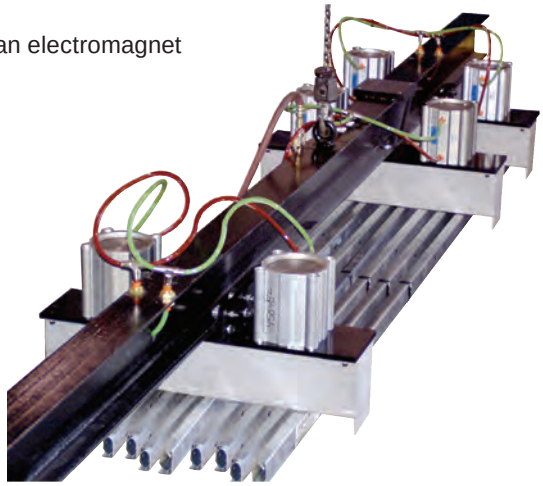
**For more information on this product, contact us by phone, email or visit our website to request Tech Sheet AG-04A.**

## Magnetic Tube Lift Systems

USA M.A.D.E.

**Applications**
- Loading/Unloading saws, cutting stations, welding cells and pallets
- Transferring tubes for hydroforming
- Moving single or multiple tubes between work stations
- Packaging, palletizing & depalletizing


**Benefits**
- Works on round, square & custom shaped tubing
- Reliability of a permanent magnetic lift with the On/Off capabilities of an electromagnet
- Fail-safe design (No battery backup required)
- Won't drop tubes due to system power or air loss
- Requires only shop air for operation



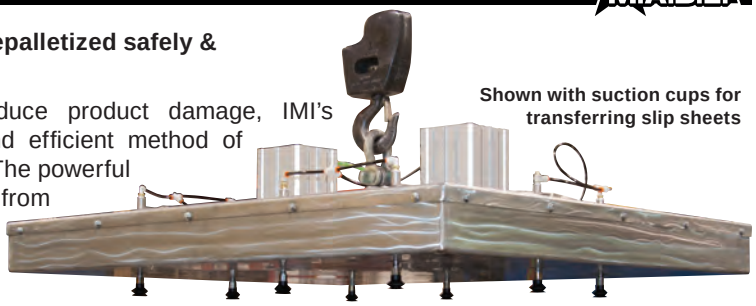
The Magnetic Tube Lifter transfers steel tubes from pallets, racks, work stations and more. The unique design of this permanent magnetic lifting system allows one person to safely and effectively move and load steel tubing in manual applications. Tube lifters can also be designed for automated applications to transfer tubes within a system. The Magnetic Tube Lifter features specially designed permanent magnetic lifting heads to lift a variety of tube shapes, diameters and wall thicknesses. To release tubes from the powerful magnetic heads, air cylinders located on the magnet assemblies are activated lifting the magnets up inside of the housing, allowing the tubes to be set down in the desired location.

**For more information on this product, contact us by phone, email or visit our website to request Tech Sheet AG-03B.**

## Magnetic Palletizers/Depalletizers

USA M.A.D.E.

**Transfer steel items that need to be palletized or depalletized safely & efficiently!**



**Shown with suction cups for transferring slip sheets**

Custom designed to increase production and reduce product damage, IMI's Magnetic Palletizers/Depalletizers provide a safe and efficient method of transferring items to or from pallets, boxes or cartons. The powerful permanent magnetic heads securely transfer products from accumulators to shipping containers without the need for additional holding devices.

Typically equipped with pneumatic releases, Palletizers/ Depalletizers are ideal for automated processes such as full or empty food and beverage cans, brake drums and rotors, jars with steel lids, paint cans, composite cans, batteries and more!

**Benefits**
- Reliability of a permanent magnet with the On/Off capabilities of an electromagnet
- Increased production for palletizing or depalletizing steel items
- Reduced repetitive labor
- Versatility in manual or automated applications, including automated sorting and counting of products

**For more information on this product, contact us by phone, email or visit our website to request Tech Sheet AG-03C.**

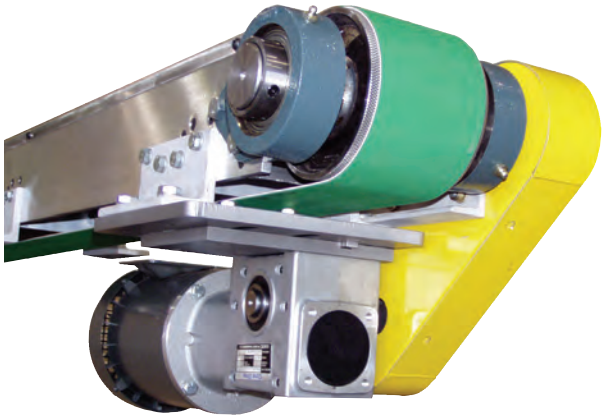
## Conveyors - Low Profile

**Features**
- Available in Magnetic and Non-Magnetic models
- Standard sizes to match your application requirements
- Low overall clearance design requires minimal installation space
- Magnetic unit circuits are the same width as the belt to hold parts firmly from edge to edge
- Low profile design allows for fast belt replacement, reducing downtime
- Oil and abrasion resistant urethane belts
- Endless belts for longer belt life and less maintenance
- Crowned take-up pulleys for accurate belt tracking
- Designed for easy tracking and take-up adjustments
- Crowned drive pulleys are knurled for positive belt traction and accurate alignment
- Gang or individual drive options are available

**For more information on this product, contact us by phone, email or visit our website to request Tech Sheet AG-08C.**

## Conveyors - Transferring & Feeding

USA M.A.D.E.



**Applications**
- Stacking/Destacking lines
- Part transfer between work stations and presses
- Press feeding
- Coil unloading

**Benefits**
- Eliminate laborious hand feeding
- Increase production speeds

**Features**
- Easy belt removal opposite of drive side
- Drive system can be mounted on either side of the conveyor and conveyors can be gang driven

IMI's Magnetic Transfer Conveyors are ideal for automating sheet handling in various industries including: Automotive, Appliance and Office Furniture. Magnetic Transfer Conveyors contain permanent, Perm-Electro or electromagnetic rails that eliminate costly manual handling and feeding of presses, while increasing production speeds and improving safety.

Maximum sheet size, thickness, weight, surface treatments, length and direction of transfer and the type of operation are all taken into consideration when designing a transfer conveyor for your application.

**For more information on this product, contact us by phone, email or visit our website to request Tech Sheet AG-08B.**

## Magnetic Skate Rail

USA M.A.D.E.

**Benefits**
- Prevents bending or flexing of large sheets during transfer, outboard of magnetic conveyors
- Reduces the need for additional magnetic conveyors

Magnetic Skate Rail is ideal for use in conjunction with Magnetic Transfer Conveyors in stacking, destacking and press feeding applications. These products work together to automate sheet handling in a variety of industries including Automotive, Office Furniture and Appliance.

Typically positioned on the outside edge of a steel blank and parallel to magnetic transfer conveyor(s), the powerful magnets hold steel blanks securely up against a series of rollers, preventing flexing or bending of the sheet as it is conveyed. The neoprene rollers allow blanks to roll easily, without marring, into the press. The magnet position can be adjusted to accommodate the size and thickness of different blanks.

**Applications**
- Stacking/Destacking Lines
- Press Feeding

**Features**
- Powerful permanent magnetic circuit
- Adjustable magnetic strength for different gauges
- Neoprene roller wheels prevent scratching

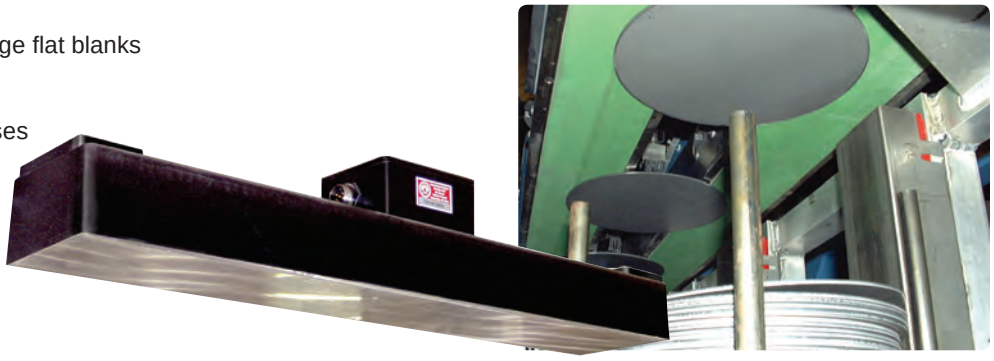
**For more information on this product, contact us by phone, email or visit our website to request Tech Sheet AG-08D.**

## Perm-Electro Hybrid Rail

USA M.A.D.E.

**Applications**
- For belt transfer of 22 to 12 gauge flat blanks and sheet stock
- Automated Sheet Handling
- Transfer of parts between presses
- Stacking
- Overhead Conveying

**Benefits**
- Automated press feeding
- Controlled Drop Points
- No battery backup required



IMI's Permanent-Electro Hybrid Rail is commonly used for automated conveying and transferring of steel sheets and parts in various industries including: Automotive, Appliance and Office Furniture. Hybrid Rail eliminates the need for time-consuming manual handling and feeding of presses. Magnetic hybrid rail increases production speeds and improves safety.

Hybrid Rail utilizes a powerful permanent magnetic circuit to move and hold steel objects during conveying. The coil is only energized for the amount of time required to release the part from the conveyor belt. This particular product is a permanent magnet with an electrical release. This fast acting On/Off action enables the magnets to be controlled for specific drop points throughout the conveying system.

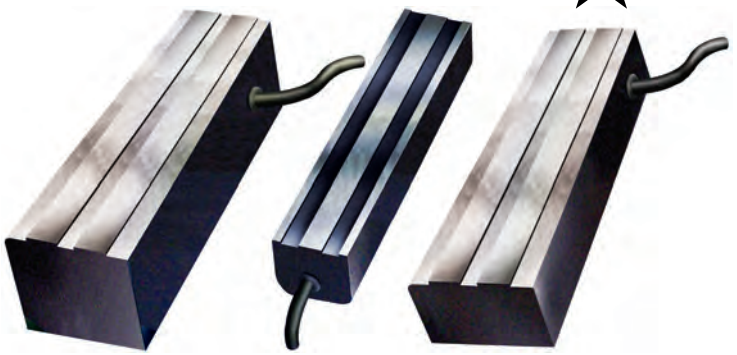
**For more information on this product, contact us by phone, email or visit our website to request Tech Sheet AG-08F.**

## Electromagnetic Conveying Rail

USA M.A.D.E.

IMI's Magnetic Electro-Rail is commonly used for automated conveying, transferring and lifting of steel sheets and parts in various industries including: Automotive, Appliance, and Office Furniture. Electro-Rail eliminates the need for costly and time-consuming manual handling and feeding of presses. Magnetic Electro-Rail increases production speeds and improves safety.

Using a powerful electromagnetic circuit to move and hold steel objects during conveying, these electromagnets provide On/Off capability and allow the user to control drop points throughout the system.



**For more information on this product, contact us by phone, email or visit our website to request Tech Sheet AG-08E.**

## Permanent Conveying Rail & Rolls/Pulleys

USA M.A.D.E.

**Benefits**
- Increased production rates
- Uniform part orientation and holding
- Powerful Permanent Magnets
- Straight, curved or radius designs

IMI's Magnetic Conveying Rail utilizes powerful permanent magnets to hold ferrous parts such as steel containers, composite cans, lids and more firmly in place during conveying. The magnetic rail is installed as a stationary component and allows the conveyor belting to ride over the top of it. The strong magnetic field holds parts tightly to the belt surface, even during vertical, inclined or horizontal conveying. Conveying speeds can be increased while eliminating the slipping or rolling of items.

Additional benefits include better utilization of space within a facility, noise reduction, correct part orientation and on-time material flow. IMI has a full line of quality magnetic components available in a wide variety of sizes and strengths to meet your application needs.

**For more information on this product, contact us by phone, email or visit our website to request Tech Sheet AG-06B.**

# TRAMP METAL

Don't forget about our **Tramp Metal Group** for separating unwanted ferrous metal from your product to purify, protect and more.

~ Gravity Feed
~ Conveyor Feed
~ Pneumatic Line
~ Liquid Line

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