



OPERATION MANUAL

DYNAMICLIFT™ - RARE EARTH LIFT MAGNET

MAG-MATE®

 **magswitch** technology

TOLL FREE: 888.582.0822

CONFORMS TO ASME B30.20 STANDARDS

Introduction

READ AND UNDERSTAND THIS MANUAL BEFORE INSTALLATION AND OPERATION OF YOUR DYNAMICLIFT™ PRODUCT.

If used unsafely or improperly, there is a possibility that property damage or personal injury can result. The responsibility for safe operation ultimately rests with you, the operator.

HOLDING VALUES:

Your DynamicLift™ Magnet carries a “usable” holding or lifting value, which you will find stated on the magnet. This value is obtained by pulling a new magnet in a perpendicular motion off of a newly machined, thick piece of steel. This type of test is conducted under what we term “ideal conditions”. The pounds of pull it takes to break the magnet away from the steel surface is the “maximum” holding value. De-rated values are then determined by taking this maximum holding value and dividing by three (33%). De-rated values are what we refer to as the “usable” value of the magnet. This “usable” holding 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 holding or lifting

may have scale, rust, dirt, or coatings on its surface; or the surface of the magnet itself may be worn. Any of these condition will cause lower holding values for your DynamicLift™ Magnet.

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:

- Everyday 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.
- Rare Earth Magnet Material exposure to extreme temperatures (*Lower than -10°F (-22°C) and higher than 180°F (82°C)*)
- Severe blow or shock to the magnet
- Exposure to electrical current

Before The Lift Operation & Safety Measures

ALWAYS ensure that all operators are qualified to operate the lifting Magnet and are familiar with ASME B30.20 lifting standards.

ALWAYS ensure all Electronics are working properly and battery is charged. The green light on the power button of the unit will blink if the battery is low. If the Battery power is depleted, the light will not come on. Important: the magnet will stay in the position it was in before the battery drained – On or OFF, it will NOT shut off if power lost.

ALWAYS inspect the lifting device to ensure that it is in good working order. Maintain inspection and records of same as per ASME B30.20.

ALWAYS ensure that the lifted materials will not come into contact with any obstruction while being carried.

ALWAYS use the entire lift pole surface. Curved stock should be in-line with groove.

DO NOT turn the Magnet “ON” unless it is in contact with Ferro-Magnetic metal. The magnets can be left “ON” or “OFF” indefinitely without harm, however when they are in the “ON” position, and near ferromagnetic materials, there will be a powerful magnetic attraction.

DO NOT exceed the rated Lifting Value of the magnet. This may result in an unsafe or dangerous condition. Read General Lifting Information section of manual.

DO NOT use this product if the unit or Remote is damaged or is not working properly. Severe injury can occur if this device is not used properly and safely.

DO NOT operate an unsafe or ‘out-of-service’ tagged Magnet, or one with missing parts or labels.

DO NOT operate a lifting Magnet when Capacity, Weight or Safety Markings are missing, damaged or obscured.

DO NOT use underwater or in a hazardous environment unless specifically designed for that purpose.

DO NOT attempt to alter/disassemble this product or remove/obscure product labeling in any way. This will void the warranty and may result in an unsafe or dangerous condition.

DO NOT hoist a load if it is flexing and/or unbalanced. Magnet peel-off may occur and the load may fall.

DO NOT attempt to position the magnet by pounding on the sides of the unit.

Important General Safety Measures & Information

ALWAYS be aware of where the remote is while handling the unit. The unit can be actuated from the remote or on the Lifter.

ALWAYS ensure that the lifting hoist is capable of lifting the combined weight of the load plus the Magnet.

ALWAYS avoid use on painted or finish coated surfaces as these will reduce the magnetic bond and the finish may be damaged.

ALWAYS ensure that the full face of the Magnet is in contact with the load. Maximum lifting capacity will only be achieved when the full face of the magnet is in contact with the load being lifted.

ALWAYS ensure that everyone remains clear of the suspended/lifted load.

ALWAYS perform a Test Lift of no more than 2-3 inches (10 cm) to ensure that the bond is sufficient to lift the load, the load is not flexing, and the load is level.

ALWAYS ensure that when stacked sheets are present, that only one sheet is being lifted at a time.

ALWAYS avoid sudden jerking or Shock force as this may cause the Magnet to lose its hold and potentially damage the unit.

ALWAYS use Caution to ensure that it is safe to release the Magnet, that people are

clear of Danger if the load should fall or become dangerous.

ALWAYS ensure that the Magnet is stored in the “OFF” position when not in contact with metal.

ALWAYS keep contact pole areas & surface of the load clean and free of debris.

ALWAYS immediately stop using the lifting Magnet if any improper performance or conditions exist during the lift.

ALWAYS protect pole surfaces from rust after use by treating with some oil and store magnet in a dry environment.

ALWAYS use the charger only in the approve voltage capacity. Each Unit comes with a charger and two batteries. We recommend you keep one battery in the charger at all times.

DO NOT turn the Magnet “ON” unless it is in contact with Ferro-Magnetic metal. The magnets can be left “ON” or “OFF” indefinitely without harm, however when they are in the “ON” position, and near ferromagnetic materials, there will be a powerful magnetic attraction.

DO NOT exceed the rated Lifting Value of the magnet. Please refer to the label on the individual magnet for the safe working load.

Important General Safety Measures & Information Continued

DO NOT allow the lifted object to alter its plane from horizontal. Never lift load at an angle in excess of 5° from horizontal

DO NOT operate or expose this lifting device at temperatures greater than 120 degrees Fahrenheit (49°C).

DO NOT use a Magnetic lifter for OVERHEAD LIFTING.

DO NOT carry people or allow people to ride on materials being lifted.

DO NOT lift a load higher than necessary or leave a lifted load unattended.

DO NOT disengage the lift before firmly setting down the load on the floor or support & making sure the load is steadied.

DO NOT weld in close proximity to the magnet or use the magnet as a part of the ground circuit during a welding operation

DO NOT place the magnet directly onto a grounded floor. Use a non-conductive spacer

After The Lift Operation & Safety Measures

ALWAYS check Lifting Magnet to ensure that no damage occurred and that is still complies with all requirements above.

ALWAYS wipe off any debris or contaminants that became attracted to the Magnet that would prevent a safe lift in the future.

ALWAYS notify the designated person in your company of any problems or concerns regarding the operation of the Magnet.

ALWAYS store the Magnet in a safe location and in the "OFF" position to ensure that no damage can occur or accidental contact with metal be made. Ensure that the storage area is free of humidity, debris, shavings etc.

ALWAYS file any burrs that would interfere with full contact. For safe operation, the bottom surface of the Magnet must always be Flat and Smooth. If necessary, it is possible to sand the Magnet face smooth using 400 grit sandpaper and a flat surface.

Operating Instructions

ACTUATING THE MAGNET "ON"

Actuation of the unit with the Remote Control

1. Ensure magnet is positioned correctly in full contact with load
2. Ensure power is on (Power button light is active)
3. Press green "ON" button on remote once to actuate magnet
4. LOOK for amber lights to become active on indicator light dome
5. LISTEN for motor sound
6. TEST small lift before moving load

Actuation of the unit without the Remote Control

1. Ensure magnet is positioned correctly in full contact with target
2. Ensure power is on (Power button light is active)
3. Press green "ON" button on magnet housing once to actuate magnet
4. LOOK for amber lights to become active on indicator light dome
5. LISTEN for motor sound
6. TEST small lift before moving load

ACTUATING THE MAGNET "OFF"

Actuation of the unit with the Remote Control

1. Ensure target load is settled, lift ring is in lowest position and cable is slightly slack.
2. Press the release sequence on the remote control once: OFF > ON > OFF
3. LOOK for amber lights to begin flashing on indicator light dome
4. WAIT Three seconds
5. LISTEN for motor sound
6. LOOK for amber lights to become inactive on indicator light dome
7. TEST small lift to ensure target is fully released

Actuation of the unit without the Remote Control

1. Ensure target load is settled, lift ring is in lowest position and cable is slightly slack.
2. Press the release sequence on the magnet housing once: OFF > ON > OFF
3. LOOK for amber lights to begin flashing on indicator light dome
4. WAIT Three seconds
5. LISTEN for motor sound
6. LOOK for amber lights to become inactive on indicator light dome
7. TEST small lift to ensure target is fully released

Troubleshooting Instructions

BEFORE ATTEMPTING ANY TROUBLESHOOTING, VERIFY LOAD IS SECURED IN A SAFE CONDITION AND READ MANUAL THOROUGHLY.

If this lifter malfunctions and cannot deactivate, immediately cease operations with this magnet assembly. Follow the steps outlined below to deactivate the magnet. If problems persist, please call 888-582-0822 for help with further troubleshooting or servicing.

Troubleshooting Deactivation (Perform before using Manual Release)

1. Ensure target load is settled, lift ring is in lowest position and cable is slightly slack.
2. If using remotely, attempt to deactivate device with buttons on the lifter
3. Replace remote batteries if needed
4. Turn power to unit off, wait 10 seconds, turn power to unit on
5. Check that power button is solid green, replace battery if necessary

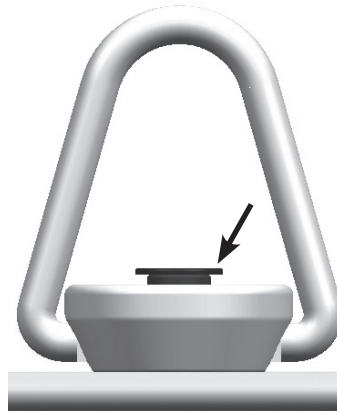
Manual Release Operation (Use only when Powered Actuation fails)

1. Ensure target load is settled, lift ring is in lowest position and cable is slightly slack.
2. Remove the Manual Actuation Lever by pulling up vertically on the black knurled cylinder next to the indicator light dome
3. Screw Manual Actuation Lever into Manual Actuation Lever Attachment Point
4. Ensure Manual Actuation Lever is completely screwed in
5. Depress the Override Button (silver) with one hand and rotate the lever 180 degrees counter clockwise with the other.
6. The magnet should now be deactivated.
7. Release the Override Button
8. Unscrew the lever and replace in the storage sleeve

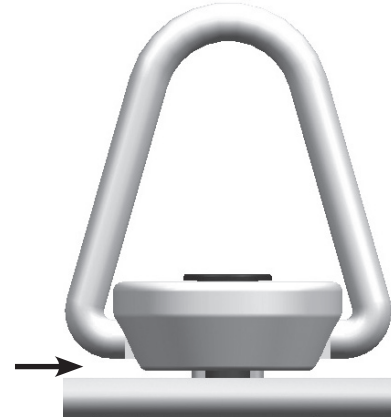
Illustrations & Part Callouts

LOCKOUT MECHANISM

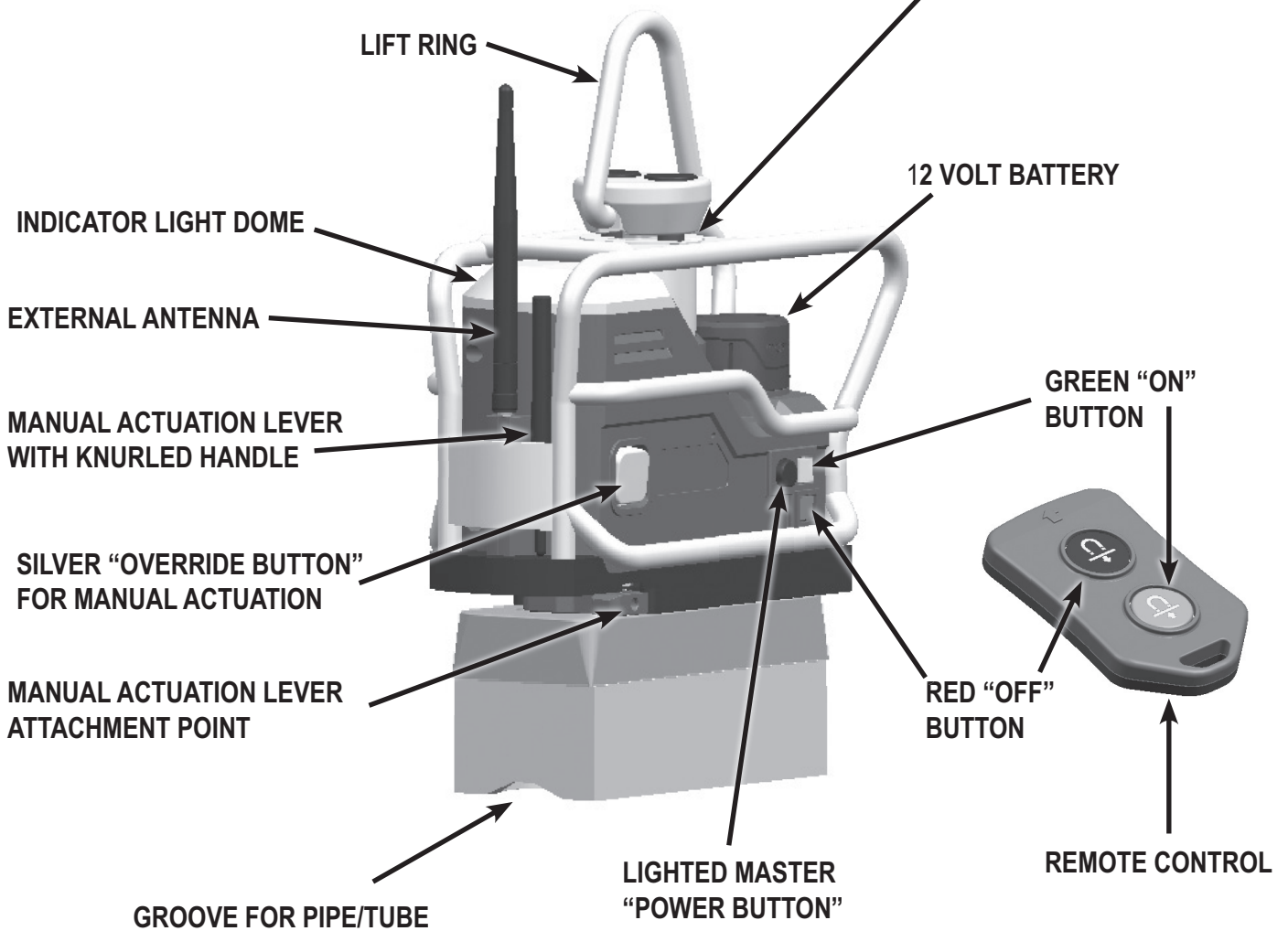
- This cordless electric lifter is equipped with a control lockout mechanism which is triggered while the unit is under load
- When lifting a load, this lifter's controls will not function manually or remotely until the load is completely supported, and the lift ring is resting on the top of the unit
- To enable the electronics, the ring must not be supported by any chains, cables, shackles, or other method of attachment



A. Controls Active (Lockout Disengaged)
Note Fastener Heads Visible



B. Controls Inactive (Lockout Engaged) Fastener Heads Hidden, Gap Visible Below Ring



NOTE: This product contains PTFE lubricant. For MSDS information contact Industrial Magnetics, Inc.. Duty Cycle is 100%.

General Lifting Information & Precautions

Even though a magnet works through non-magnetic bodies such as dirt and non-ferrous materials in general the best efficiency of any magnetic lift is achieved when the poles (the areas or surfaces of the magnetic lift which make contact with the load) make complete contact with the load. It is therefore recommended to:

1. Never stand under load being lifted or lift over any people. Always use extra caution. Only use on thick material that does not flex or bend.
2. Clear any foreign material from the load as much as possible before setting the magnetic lift on it. Avoid, as much as possible, setting down the lifter in places on the load that are very dirty or deformed.
3. Check the surface condition of the magnetic poles to make sure they are flat and not damaged or corroded during its time in use.
4. Thin or large sheets that sag may cause the sheet to peel off the face of the magnet. (See chart below)
5. Check the surface of the DynamicLift™ and materials clean and free of chips, oil, slag, welding-beads, dirt, etc. This can be done by wiping the surface of the magnet off frequently with a wire brush, or shop rag.
6. After a period of time the pole faces may become somewhat rounded, reducing the magnets effectiveness. Poles can be resurfaced up to 0.80" maximum.

EFFECTS OF UNBALANCED LOADS

Maximum lift force achieved by a magnet is when the direction of force is perpendicular (90°) to the metal surface. If a load is tipped at an angle shear forces, slide forces, friction, peeling forces associated with moments, cantilevers, impact forces associated with bumping the load as it is conveyed can cause the lift to fail.

- Check magnet/load balance by raising the load off the ground by a few 2" - 3" only.
- Never lift a load at an angle in excess of 5° from horizontal.
- If unbalanced: Lower load, reposition magnet and test the magnet/load again.

Percentage Of Stated Lifting Power By Material

CARBON CONTENT	Low Carbon 0.05 - 0.29%	100%
	Moderate Carbon 0.30 - 0.59%	85%
	High Carbon 0.60 - 0.99%	75%
	Higher Carbon = Higher Residual**	

Percentage Of Stated Lifting Power By Surface Finish

SURFACE FINISH	▼ ▼ ▼ Ground Surface	100%
	▼ ▼ Rough Machined	100%
	▼ Foundry Finish	85%
	~ Rough Cast	65%

** High Carbon steel (Tool Steel) will absorb magnetism and may magnetically stick to steel surface, such as the magnet or attract ferrous particles.

Lifting Value in lbs (kg) & *Maximum Sheet Length Due To Sag For Material Thickness For Single Magnet Use								Round Lifting Applications			Magnet Weight
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)	Max. Lift - lbs (kg)	Min. Dia. (in)	Min. Th. (in)	
DLR0600	368 (166)**	475 (215)	550 (249)	575 (260)	600 (272)	600 (272)	600 (272)	300 (136)	2-1/2	3/4	20 lbs

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.

Annual Calibration, Repair and Recertification Services

To ensure that your DynamicLift™ Rare Earth Lift Magnet is performing to its optimal level, an annual calibration check at our facility is recommended. Under an "Ideal Conditions" environment, our state of the art equipment will perform a series of tests to determine the current "de-rated" holding value of your magnet. This holding value must meet or exceed the value stated on your DynamicLift™ Rare Earth Lift Magnet.

If the stated holding value is met, and you do not require any additional maintenance, we will return the magnet to you along with written documentation of the test results.

If the stated holding value is not met, we will contact you with the results of the test and our recommendations for returning the magnet to its original condition. Options may include; the resurfacing of the magnet's poles or the repair of any broken components.

INSTRUCTIONS: Please contact our customer service department at (888) 582-0822 to obtain your Customer Supplied Material (CSM) number. At this time, you will be required to supply a P.O.# for the test procedure described under "Annual Calibration". Current fees for this procedure can be obtained by contacting the number listed above. Please include your contact information and shipping address with your DynamicLift™ Rare Earth Lift Magnet and send to:

Industrial Magnetics, Inc.
 1385 M-75 South
 Boyne City, MI 49712
 CSM# _____, Attn: Quality Assurance, Calibration

Note: Customer is responsible for shipping to and from Industrial Magnetics, Inc., and any authorized repairs to the DynamicLift™ Rare Earth Lift Magnet.

FCC COMPLIANCE AND WARNING

- 1) THIS DEVICE COMPLIES WITH PART 15 OF THE FCC RULES. OPERATION IS SUBJECT TO THE FOLLOWING TWO CONDITIONS: (1) THIS DEVICE MAY NOT CAUSE HARMFUL INTERFERENCE, AND (2) THIS DEVICE MUST ACCEPT ANY INTERFERENCE RECEIVED, INCLUDING INTERFERENCE THAT MAY CAUSE UNDESIRE OPERATION.
- 2) NOTE: THE MANUFACTURER IS NOT RESPONSIBLE FOR ANY RADIO OR TV INTERFERENCE CAUSED BY UNAUTHORIZED MODIFICATIONS TO THIS EQUIPMENT. SUCH MODIFICATIONS COULD VOID THE USER'S AUTHORITY TO OPERATE THE EQUIPMENT.

Limited Warranty

These products are covered by a One Year Limited Warranty on Material and Workmanship. Warranty is Non-Transferable. We reserve the right to inspect all product claims under warranty. Any alteration of the device voids this warranty. User assumes all risk for the proper use of this device and for ensuring product suitability for intended application. This warranty shall not cover any incidental or consequential damages due to the improper use or failure of this device. These products are covered under International and U.S. Patents 6,707,360 & 7,012,495. Additional patents pending.

INDUSTRIAL MAGNETICS, INC.

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AUTOMATION

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TRAMP METAL

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