



OPERATION MANUAL MANHOLE COVER LIFT POWERARM

MAG-MATE® TOLL FREE: 888.582.0822

Electric and Manual Winch Instructions

Introduction & Safety Precautions

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

Please read and understand this Operation Manual prior to installing and using your Manhole Cover Lift PowerArm. Pay particular attention to the General Safety Information. Your PowerArm & Winch is a very powerful machine. If used unsafely or improperly, there is a possibility that property damage or personal injury can result. The responsibility for safe operation of this winch ultimately rests with you, the operator.

SAFETY PRECAUTIONS

1. Maximum working load capacity is not to exceed 400 lbs.(181 kg.). DO NOT OVERLOAD. Overloads can damage the winch and/or the wire rope and create unsafe operating conditions.
2. DO NOT "move" your vehicle if the winch is bearing a load.
3. ALWAYS STAND CLEAR OF WIRE ROPE OR STRAP, HOOK AND WINCH. IN THE UNLIKELY EVENT OF ANY COMPONENT FAILURE IT'S BEST TO BE OUT OF HARM'S WAY.
4. INSPECT EQUIPMENT FREQUENTLY. A frayed wire rope or strap must be replaced immediately. Always replace wire rope with the manufacturer's identical replacement part. Periodically check the winch installation to ensure that all bolts are tight.
5. USE HEAVY LEATHER GLOVES when handling wire rope. DO NOT LET WIRE ROPE SLIDE THROUGH YOUR HANDS.
6. NEVER WINCH WITH LESS THAN 5 TURNS of wire rope AROUND THE WINCH DRUM since the wire rope end fastener may NOT withstand full load.
8. KEEP CLEAR OF WINCH, TAUT WIRE ROPE OR STRAP AND HOOK WHEN OPERATING WINCH. Use caution when handling the hook. If your finger should become trapped in the hook, you could lose your finger.
9. NEVER HOOK THE WIRE ROPE OR STRAP BACK ONTO ITSELF.
10. NEVER USE YOUR POWERARM & WINCH FOR LIFTING OR MOVING PEOPLE.
11. NEVER OBSCURE THE WARNING AND INSTRUCTION LABELS.
12. NEVER RELEASE FREESPOOL CLUTCH WHEN THERE IS A LOAD ON THE WINCH (Electric Winch Model Only).
13. DO NOT OPERATE POWERARM & WINCH WHEN UNDER THE INFLUENCE OF DRUGS, ALCOHOL OR MEDICATION.

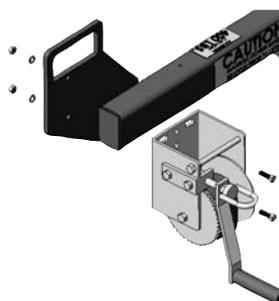
Winch Installation

1. WINCH MOUNTING AND CABLE / STRAP / ROPE ATTACHMENT
– For maximum strength and safety, the winch should be mounted with three 3/8" bolts (M10), washers and lock washers.
2. Position the winch over the holes in the structural support. As you position the winch, make sure that the cable, wire rope or strap winds in the proper rotation on the drum. Electric winch can be mounted on either side of the mounting plate as long as the cable spool is at the end of the PowerArm (See Diagram to the right).
3. Secure winch to the structural support using bolts, washers and nuts supplied. Note: In order to gain access to the hardware directly under the wire rope drum, it may be necessary to unspool the cable, wire rope or strap from the winch drum.

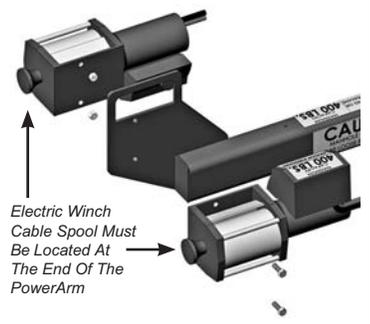
See Winch Manufacturer's Manual for Specific Operation Instructions and Unit Features

WINCH MOUNTING DIAGRAMS

*Pictured:
Manual Winch*



*Pictured:
Electric Winch*



PowerArm Setup & Operation

1. Make sure the Winch is securely attached to the Mounting Plate.
2. While in the folded position (Figure 1), Insert the PowerArm into your vehicle's Reese Hitch or equivalent 2" x 2" receiver. Line up hole in PowerArm and hitch. Secure with Hitch Pin (not included).
3. Tighten Hitch Stability Bolt. (Figure 2).
4. Remove Position Locking Pin located on the top of the PowerArm and extend into Operating Position (Figure 3).
5. Make sure the manhole cover is clean of dirt and other debris. If manhole cover is packed with dirt or snow, use a hammer to knock it loose. Manhole Cover must be loose prior to lifting.
6. Center Magnet on the Manhole Cover and rotate the handle of the magnet to the "ON" position. There will be resistance as the handle moves until it gets to the "ON" position.
7. Attach Hook securely to Magnet and use winch control/handle to begin lifting Manhole Cover. See Winch manual for operating instructions.
8. When the Manhole Cover is lifted, slowly rotate the PowerArm until the cover is clear of the opening.
9. Reverse steps to return the PowerArm to Storage (Folded) Position.

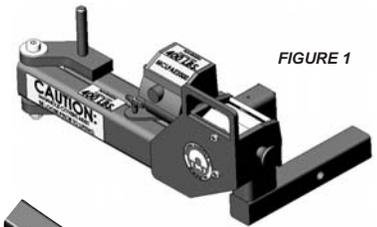


FIGURE 1

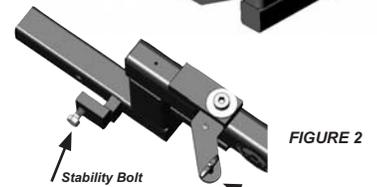


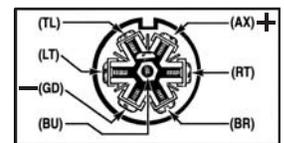
FIGURE 2



FIGURE 3

Electric Winch Wiring Assembly

The power cable for the Winch has been terminated in a 7-Pole, blade-style Round RV-type connector. The connector used is the "trailer end" and will mate with the "tow vehicle end" fitted near the hitch of most newer trucks. The wiring diagram (right) depicts the connection of the cable for the Winch. The Winch connects only to the auxiliary power terminal (**AX, Red**) and the ground terminal (**GD, Black**). The auxiliary terminal on the tow vehicle end must be connected to a constant, 12VDC circuit. **Wire Identification:** (**GD**) Attach to Ground, (**TL**) Tail / Park, (**LT**) Left Turn, (**RT**) Right Turn, (**AX**) Auxiliary, (**EB**) Electric Brake, (**BU**) Reverse.



Maintenance

MANUAL WINCH MAINTENANCE – Always make sure the Handle (or loop drive ring) and nut are tightened against drive shaft before operating winch. This winch has been fully lubricated; but, for continued smooth performance and increased life, occasional greasing of gears and reel shaft and an occasional drop of oil on drive shaft bearings are recommended. If winch is operated with a drill, frequent greasing may be necessary. Check often enough to establish an appropriate schedule. The winch finish can be protected and will provide longer service if it is periodically washed with water and wiped with light oil or wax.

Keep winch in good working order. Damaged or severely-worn parts create unnecessary dangers and could result in personal injury or property damage.

ELECTRIC WINCH MAINTENANCE – To prevent unauthorized use of the winch, remove pendant control and store in a clean dry area such as the glove box. The clutch knob has been adjusted and permanently locked in place with a thread locking compound at the factory. Do not attempt to readjust the knob.

KEEP A TIGHTLY WOUND WIRE ROPE DRUM. Do not allow the wire rope to become loosely wound. A loosely-wound spool allows a wire rope under load to work its way down into the layers of wire rope on the drum. When this happens, the wire rope may become wedged within the body of the windings damaging the wire rope. To prevent this problem, keep the wire rope tightly and evenly wound on the drum at all times. A good practice is to rewind the wire rope under tension after each use.

DO NOT ALLOW WINCH MOTOR TO OVERHEAT. Remember, the winch is for intermittent use only. During long or heavy pulls the motor will get hot. For pulling at rated capacity, allow motor to cool after 20 seconds of "On" time. At loads less than 50% of rated capacity, allow to cool after.

PREVENT KINKS BEFORE THEY OCCUR. Result of kinking is that each strand pulls a different amount causing strands under greatest tension to break and reduce load capacity of wire rope. The wire rope must be replaced if kinked.

Comments or Concerns?

We believe Industrial Magnetics, Inc. offers the finest Manhole Cover Lift Systems available today. Great pride has gone into the design and manufacture of this unit. Any comments or concerns should be directed to our Customer Service Department at 1-888-582-0822. **We appreciate the opportunity to serve you!**

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