



Instructions for MB832 Manual Barrier Ver0614

Read all the instructions before starting

It is recommended that Loctite Blue brand thread sealant be used for all arm and pivot bolts as added protection against loosening.

Warning!!!

Do not install any metal signage on any swing overhead barrier gate arm due to the sharp edges of metal signage may cause injury. Use only plastic signage with rounded edges.

1. Securely bolt barrier base to a concrete pad using (4)1/2" X 12" J-Bolts with washers or drill and place 1/2" X 8" anchor bolts into existing concrete.
2. Plumb vertical legs in both directions, place washers or metal shims under base as necessary. Fill any voids with grout. Securely tighten base to pad.
3. Remove the three allen head bolts on each side of the Aluminum tube located at the beginning end of the arm tube. Do not remove the single allen head 20" from the end of the tube. This bolt holds the backing plate and is not removed.
(the fourth 20" allen head bolt is used arms over 18ft only)



The picture above illustrates the allen bolts and the position of the backing plate inside the aluminum tube.

4. Slide the Aluminum tube into the swing arm and line up the three holes on each side of the tube. Start all six allen bolts by hand before tightening, and tighten all bolts equally by making multiple tightening passes. Remember the steel bolt backing strips go to the inside of the arm.



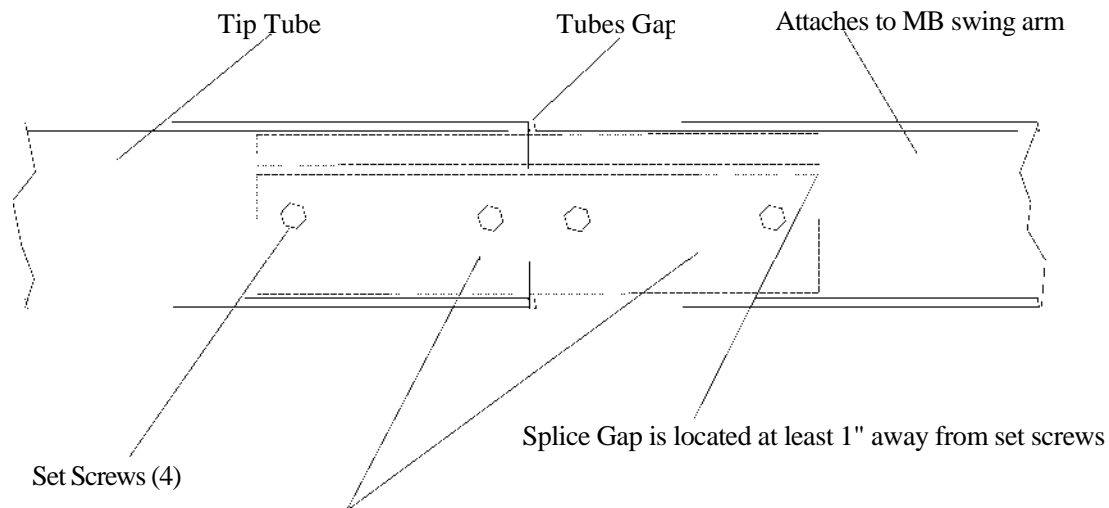
The picture above illustrates the arm bolted to the swing arm.

5. If the arm is over 16 ft arm it will use a two piece assembly consisting of a base tube with mounting holes pre-drilled and an extension tube.

6. Read all of step 6 before starting.

You will now carefully tap the aluminum extension tube (if supplied) over the splice attached to the base aluminum tube. Before tapping the extension tube on, line up the Phillips screws on the splice with the three allen head bolts so that the screws will be on the side of the aluminum arm when done. Use a soft wood block to cushion the blows from the hammer. Do not force the tube over the splice, it will tap on with light hammer taps. Finally before starting check for and file any aluminum burrs that might interfere with the installation. Remove the plastic End Cap while tapping tube on to avoid damage to it and then replace it.

Use the supplied #8 or #10 self drilling/ tapping sheet metal screws to lock the extension arm to the sleeve..



Details for Arm Splice (optional)

Detail for splicing MB832 Barrier Gate Arm

Base Tube
Split splice equally between base tube and tip tube.

Special Notes about Splice Installation:

- 6a) Check with a tape measure the splice which is located in the base tube to confirm that it is centered between the base and tip tubes. Re-center as necessary
- 6b) Also screw one screw into the tube with the splice BEFORE tapping the other tube into the splice so that the splice doesn't get knocked off center from the tapping the tubes together.
- 6c) Look at the arm to be sure that it is straight before screwing in all the screws.

6d) Make sure that the screws are placed on the sides of the tube and not the top.

6e) Make sure that the open part of the splice is not located where a screw would hit that area of the splice therefore not drilling into the splice but missing it.

6f) The splice is a tight fit and requires compressing the splice to get it into the tube. If for any reason it doesn't fit tightly then let us know and we will send out a replacement.

7. Add supplied self-stick reflector tape as desired- Stretch a string line down the arm to line up the reflective tape. Alternate the Red and Silver at 12" spacing.

Check the movement of the arm and counterbalance to make sure that it doesn't entrap person operating barrier or bystanders against any immovable objects.

Check all nuts and bolts monthly or any loosening and retighten.

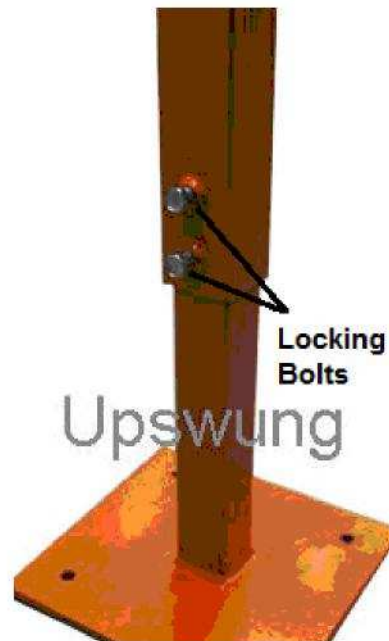
Warning!!!:

Do not install any metal signage on barrier gate arm due to the sharp edges of metal signage may cause injury. Use only plastic signage.

Instructions for Bolt-Down Cradle

(optional)

1. After installing the barrier gate and arm measure the height that you want the arm supported.
2. Extend the cradle out until you have the desired height dimension.
3. Mark the cradle and tighten the two locking bolts.
4. The MB824 may be slightly rotated in its oblong base bolt holes to line up with the cradle.



Drop Down Aluminum Prop Instructions (optional)

1. After barrier gate is installed, lower barrier arm to the desired down position by supporting the arm with a saw horse or other means at the point where the Prop will be installed.



2. Locate the Prop two thirds of the distance from the pivot point. Example: If your arm is 24ft, locate the prop at 16ft from the pivot point.
3. With the Prop in position, mark the Prop on each side at the centerline of the barrier tube and drill a 1/4" hole through the prop and the barrier tube on each side
4. The prop is made to be cut to size, once the prop is positioned and drilled, cut the excess Prop length 3/4 " from the center of the drilled hole on each leg of the Prop to remove excess Prop. Use a hacksaw or miter saw. WEAR EYE PROTECTION when cutting.
5. Use a file to round off the sharp edges and corners made from cutting.
6. Reinstall Prop and insert 1/4" supplied bolt and nut.
7. Tighten the nut to point just before it binds the Prop. The Prop should still swing freely.

Operation:

When barrier arm comes down the Prop will swing to the vertical position. Since the Prop swings, the position may not be exactly vertical. The arm can be raised slightly to allow gravity to plumb the Prop.

MB Series Barrier Gate Instructions

1. The MB series barrier gate is operated by pushing at the “Grab Point” located on the aluminum barrier gate about 12 inches from the steel swing arm assembly (see picture below) to raise or lower the arm. The part marked “handle” is not used in the normal operation of the MB series barrier gate it is an additional way to secure the arm only.

2. The SHADED AREAS in the picture below are possible pinch points in the operation of the barrier gate. Keep hands and other body parts clear of the shaded areas illustrated below. A safety label also identifies a pinch point in the smaller grey oval.



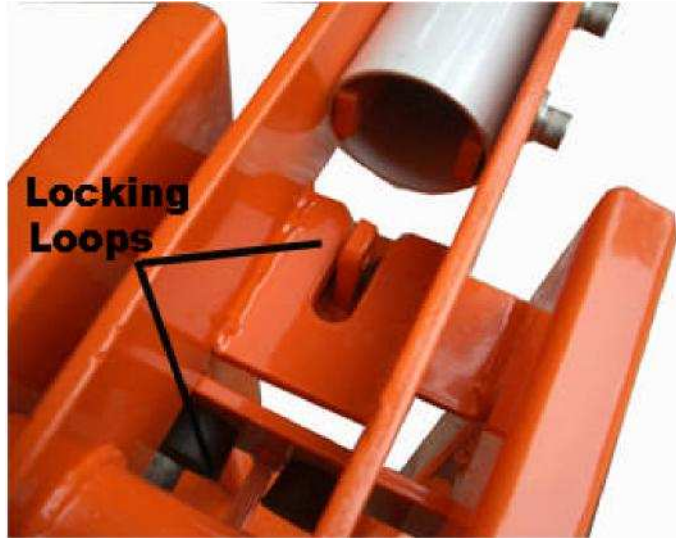
3. When the arm is up or down it must be secured at the locking loop with a padlock, bolt or carabineer. The arm will normally not move if left unsecured, but the arm can move unexpectedly if not secured from any external force. (see picture below for locking loops).

4. It is not recommended to operate the barrier gate in windy conditions; the arm could swing out of control from high wind loads.

5. It is recommended in high wind weather conditions that the arm is locked with a locking pin until weather passes.

Warning!!!:

Do not install any metal signage on barrier gate arm due to the sharp edges of metal signage may cause injury. Use only plastic signage.



5. Every 3 Months check all external bolts and tighten any loose bolts.
6. Every month check the pivot bolt, tighten as necessary until friction is felt when operating the arm and apply blue Locktite thread adhesive.
7. Commonly used arm locking devices available locally. In situations that require maximum holding power use the case hardened padlock or grade 8 bolt shown below.

<p>7/16-14 X 1-1/4" Grade 8 Bolt and Locknut</p>	<p>1 1/2" Padlock case hardened (high security)</p>	<p>"S" Hook 3 inch</p>

Linch Pin 1/4"

MB Semi-Automatic Barrier Gate Instructions Factory Installed Patent Pending

PART 1A: OPTIONAL ARM-DOWN MAGNET LOCK ASSEMBLY

1. Pictured below is the optional Arm Bracket magnet assembly for the arm-down magnetic lock. The arm bracket is shipped bolted to the swing and must be removed before the aluminum arm is bolted into place. The nutplate inside the aluminum tube replaces the shipping nut that holds the arm bracket in place for shipping. *This is optional and may not apply to your MB832.*



2. Pictured below is the magnet assembly for the arm-down magnetic lock. It is possible to adjust the arm up and down by loosening the adjustment bolt on each side and sliding the arm bracket up and down. Always try to maintain flat contact of both

parts of the magnet assembly. The frame mounting bracket can be slid in and out to help line up the magnetic plates horizontally.

3. Use 3/4" elbow conduit fitting to start conduit run from magnet. Magnet can be field wired for 12 or 24 VDC. See supplied magnet instructions. Mount conduit to frame to relieve stress off the magnet fitting. During construction do not leave magnet lead wires exposed to the elements, cover with conduit fitting to protect against moisture.

4. The magnet will lock when DC voltage is applied and maintained. It will unlock when voltage is removed. Also magnet produces a small amount of heat when engaged and will operate in cold climates. **DO NOT USE AC VOLTAGE ON THIS UNIT.**

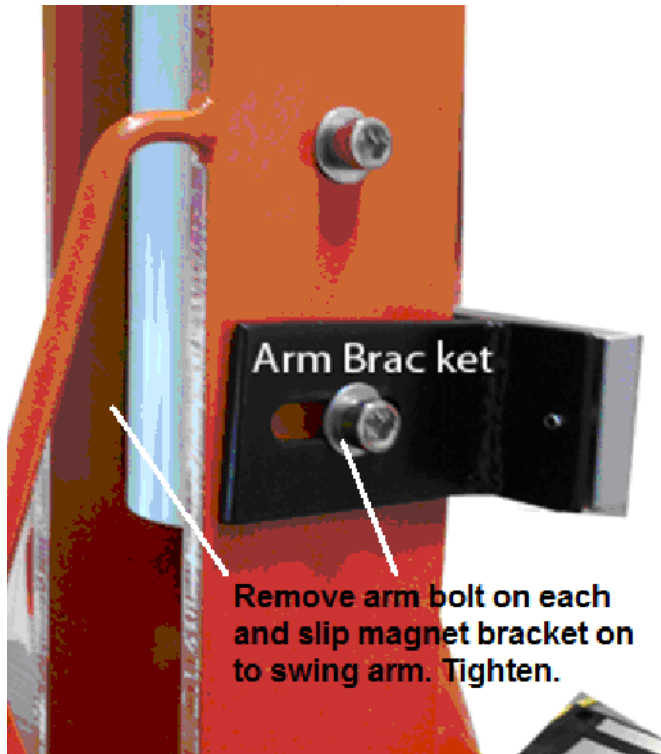
5. Test magnet by operating it, if the arm is locked and holding, the magnet is working. The locking system is a "fail-safe" system meaning that any failure in the system will release the arm for manual control.

6. Counterweights can be adjusted to change the speed that the arm moves once the magnet releases the arm. Unbolt the counterweight and move away from the pivot to increase upward speed or inward to decrease speed. Re-tighten bolt nuts to 40 ft-lbs.



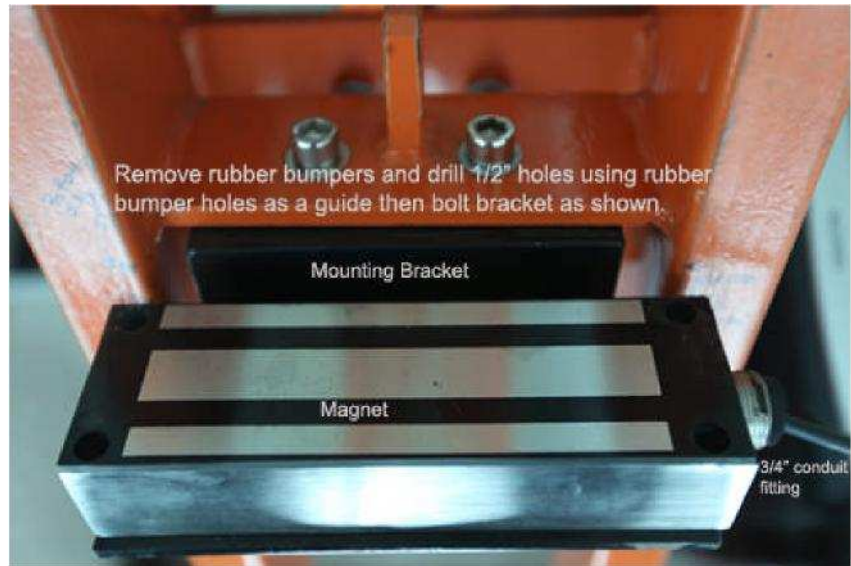
Pictured above is the magnet striker plate assembly for the arm-down magnetic lock.

PART 1B: OPTIONAL ARM-DOWN MAGNET RETROFIT INSTALLATION



The above picture shows the placement of the magnet bracket and the arm bracket which are to be installed. All nuts and bolts are shipped attached to the brackets for easier part identification. Refer to Part 1A for adjustments once magnetic brackets are installed.

1. Pictured above is the magnet striker plate assembly for the arm-down magnetic lock. Remove the two arm bolts one on each side and slip the bracket on to the swing arm. Tighten bolts.
2. On the base part of the MB832 unscrew the two rubber bumpers and use their hole location to enlarge holes to 1/2" inch. Bolt magnet bracket and magnetic to MB832 base as shown in picture below.
3. Pictured below is the magnet assembly for the arm-down magnetic lock. It is possible to adjust the arm up and down by loosening the adjustment bolt on each side and sliding the arm bracket up and down. Always try to maintain flat contact of both parts of the magnet assembly. The frame mounting bracket can be slid in and out to help line up the magnetic plates horizontally.



4. See diagram for magnet wiring and use 3/4" flex conduit to attach to the fitting on the side of the magnet. Be careful to clamp the conduit to the side of the MB832 to keep from breaking the magnet fitting.

PART 2A:

OPTIONAL ARM-UP MAGNET LOCK ASSEMBLY ADJUSTMENTS

1. Pictured below is the magnet assembly for the arm-up magnetic lock. It is possible to adjust the arm up position by loosening the adjustment bolt on each side and sliding the arm bracket sideways. Always try to maintain flat contact of both parts of the magnet assembly. The frame mounting bracket can be slid in and out to help line up the magnetic plates horizontally. The arm is factory adjusted to be set slightly off plum to the down position to facilitate automatic closure.

This is optional and may not apply to your MB832

2. Use 3/4" elbow conduit fitting to start conduit run from magnet. Magnet can be field wired for 12 or 24 VDC. See supplied magnet instructions. Mount conduit to frame to relieve stress off the magnet fitting. During construction do not leave magnet lead wires exposed to the elements, cover with conduit fitting to protect against moisture.

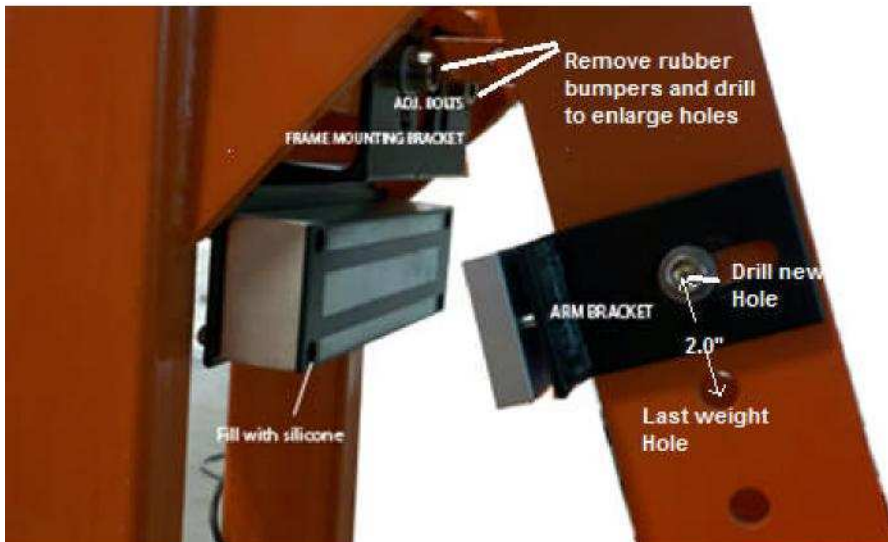


4. The magnet will lock when DC voltage is applied and maintained. It will unlock when voltage is removed. Also magnet produces a small amount of heat when engaged and will operate in cold climates. **DO NOT USE AC VOLTAGE ON THIS UNIT**

5. Test magnet by operating it, If the arm is locked and holding, the magnet is working. The locking system is a "fail-safe" system meaning that any failure in the system will release the arm for manual control.

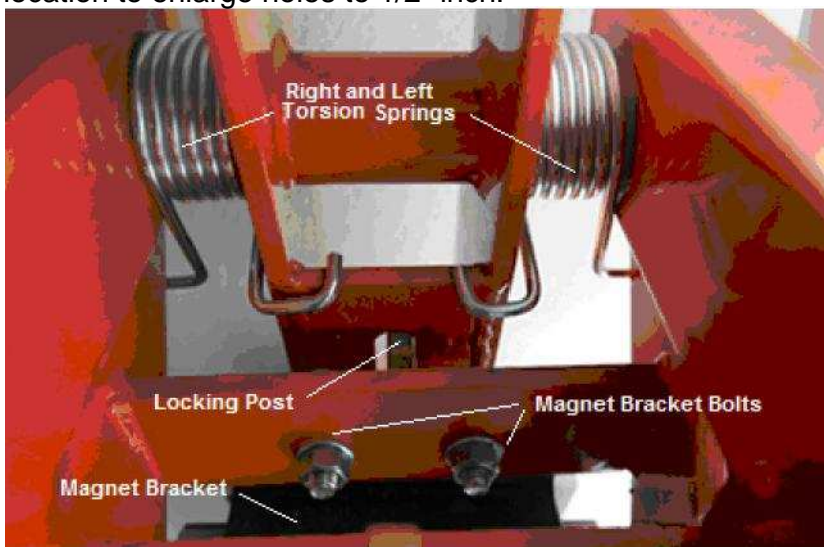
6. Counterweights can be adjusted to change the speed that the arm moves once the magnet releases the arm. Unbolt the counterweight and move away from the pivot to decrease downward speed or inward to increase speed. Re-tighten bolt nuts to 40 ft-lbs.

PART 2B: OPTIONAL ARM-UP MAGNET LOCK RETROFIT INSTALLATION.



The above picture shows the placement of the magnet bracket and the arm bracket which are to be installed. All nuts and bolts are shipped attached to the brackets for easier part identification. Refer to Part 2A for adjustments once magnetic brackets are installed.

1. Mark location and remove weights from swing arm.
2. Remove the swing arm from base by removing plastic pivot bolt caps and bolt assembly.
3. Drill a 1/2" Dia hole 2 inches from the last weight mounting hole closest to the swing arm pivot. Drill another hole on the opposite side of the swing arm in the same location.
4. On the base part of the MB832 unscrew the two rubber bumpers and use their hole location to enlarge holes to 1/2" inch.

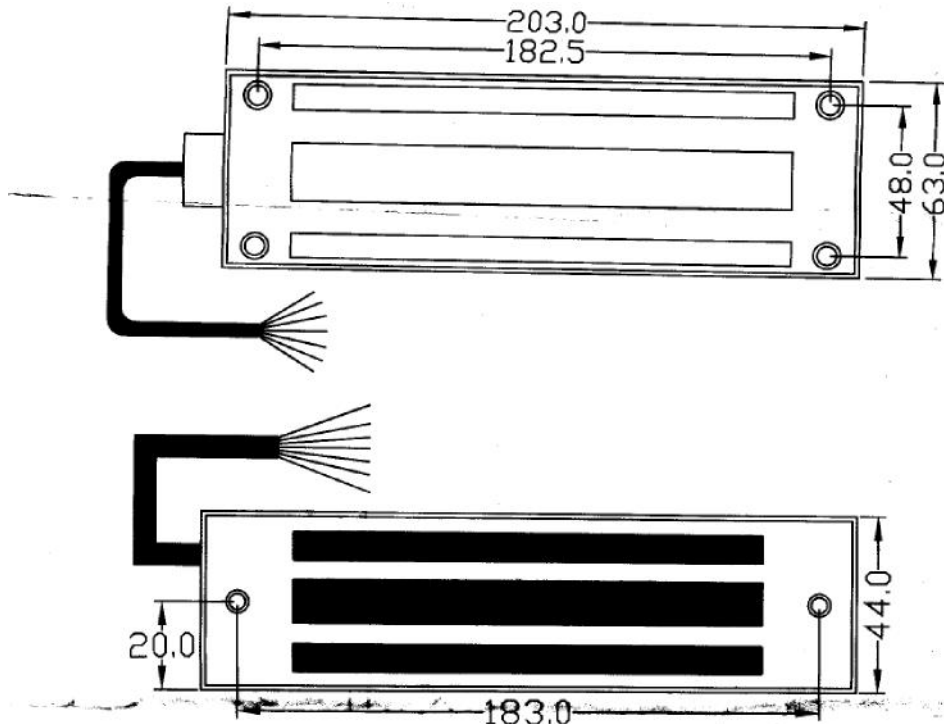


MB832 is viewed from above on the aluminum arm side, with swing arm in the vertical position. The rubber bumpers are removed and replaced with magnet bracket and bolted into place ready for final adjustments. Torsion springs are hooked into the base frame and swing arm.

Note: Right and Left spring configuration.

5. Slip on right and left torsion springs on to the pivot shaft as shown above. The purpose of the torsion springs is to give the arm a rotational “push” down until the weight of the arm takes over when the magnet is released.
6. Install swing arm back on to the base unit in reverse order from disassembly with torsion springs on swing arm pivot. Hook torsion spring ends to frame and swing arm as shown. (It is easier to slide the swing arm in horizontally while connecting torsion spring ends. Use a little Loctite on pivot bolt threads.
7. Remount weights keeping in mind that they may need to be located closer to the pivot point to let the arm float to the down position slowly. Test different weight locations for the desired effect.
8. See diagram for magnet wiring and use 3/4” flex conduit to attach to the fitting on the side of the magnet. Be careful to clamp the conduit to the side of the MB832 to keep from breaking the magnet fitting.

Magnet Wiring Table 12/ 24 VDC



WIRING INSTRUCTION: READ CAREFULLY

- (1) For 12V: Connect the red/black wires, green/orange wires and connect 12V source.
- (2) For 24v: Short black/green wires and connect red and orange ones to 24V source.
- (3) Reed switch dry contacts are rated max 3W(max switching contact 0.25A) at 30VDC/AC for safe operation. Do not exceed this rating.
- (4) Lock status sensor: FAS-CE1200LSWR/FAS-CE600LSWR

12V	24V	LOOK STATUS SENSOR (REED. SW.)
+ — Red — Black — Green — Orange -	+ — Red — Black — Green — Orange -	

MB Barrier General Solar Guidelines

There are many variations as to how solar can be used with the semi-automatic barrier gate without the control circuit board.

1. Battery Box: Supply a durable jobsite construction box which is waterproof and capable of holding 2-3 deep-cycle marine batteries. Use only deep-cycle batteries.
2. Follow the wiring instructions that came with the Charge Controller to wire the solar panel to charge controller, the batteries and the 12VDC output to be used on the MB semi-automatic barrier gate. The charge controller is installed in the battery box with the batteries.
3. The Battery box can be drilled on the sides or bottom for conduit connections to the MB semi-automatic barrier as needed. Avoid drilling the top of the battery box.
4. Battery clamps and wire (12 gauge) and be purchased at your local auto parts store.
5. Solar Panel(s) can be mounted on top of the battery box with aluminum or steel angle iron with the solar panel pointed in a Southerly direction.
6. Any variety of switch or button can be drilled and mount to the battery box to control the MB semi-automatic barrier.

Solar Panel Capacities

The magnet draws a continuous 12 watts 24/7. That means in an average 8 hour day of solar collection the solar panel must collect 36 watts/ hour to break even for battery storage. Since solar panels rarely collect their rated output and varying solar conditions the following guidelines should be followed.

Temperate southern climates: 80-100 watt panel

Colder Northern climates: 140-200 watt panel

MB Barrier Gate Arm Safety Tether

OPTIONAL SAFETY TETHER ASSEMBLY FOR VERY HIGH WIND CONDITIONS.

1. Remove plastic end cap and drill a 3/8" Dia. hole 2 3/8" inches O.C. from the tip of the aluminum arm and at the bottom of the arm as pictured below.



2. Start at the drilled shackle hole of step 1 thread the wire rope inside the tube through the length of the tube and around the swing arm (pictured below) and along the outside bottom of the arm, back to the drilled shackle hole on the outside of the arm.



3. Unscrew and remove the shackle pin and slip the shackle on to the tube with the inside and outside looped ends of the wire rope aligned with the shackle hole drilled at the bottom of the tube.



5. Screw the shackle pin through the inside and outside looped ends of the wire rope and tighten pin firmly.



6. Drill a 3/8" hole in the plastic end cap to accommodate the shackle and tap the end cap back into place. Glue in with adhesive silicone if needed to secure cap.



6. Secure the wire rope running along the outside bottom of the tube with supplied nylon ties to remove sagging and neaten up appearance. Also stainless steel wire ties can be purchased which are more durable.