

# Shore Tracker<sup>®</sup> Marine Railway System

## ASSEMBLY INSTRUCTIONS

### **INTRODUCTION**

Before you begin the assembly and installation, please read these instructions completely. Then study the illustrations to become familiar with the components of the Shore Tracker Marine Railway System and the method of installation. By taking just a few minutes to look these pages over, the installation can be easily completed in an afternoon.

### **TOOLS REQUIRED**

Ratchet and sockets: 1/2", 9/16", 3/4", 15/16"

Open end wrenches: 9/16", 3/4"

### **LAYOUT CONSIDERATIONS**

1. Rise not to exceed 2' over 10' in length
2. Tracks should be level across (from side to side)
3. Set the first two sections far enough back from the shoreline where ice buildup may accumulate.
4. For best results use 220V power. When using 110V power, run at least #10 solid wire to the unit.

### **TYPES OF TRACK SECTIONS**

1. Starter: This is the land end of the track where the winch is mounted.
2. Middle: These sections add to the length of the entire system.
3. End: This is the lake end of the track where the pulley is attached and the cable reverses direction.

## **TRACK SECTION ASSEMBLY**

*Refer to diagram #2 for the following steps:*

1. Select a work area near the installation site. A flat surface such as concrete, blacktop or deck is best. Beginning with the Middle sections, lay out two 3" X 10' Rails (A) about 5' apart with the "C" or open side facing outward with the holes downward. Place the Cross Braces (B) inside the Rails flat side against the ground according to diagram #2. For best appearance, face all Cross Braces the same direction. Insert the ½" X 1" bolts from the outside in and apply the locknuts on the inside. To assure a proper fit, assemble the complete section and hand-tighten all bolts. Once all pieces are in place, tighten completely.
2. Attach Splice Plates (C) to one end of all other sections using ½" X 1" bolts and standard nuts (not lock nuts) and leave the bolts only hand tight. They will be further tightened once the track sections are mated.
3. Next, assemble the Starter section. This is similar to the Middle sections, but has bracing to accommodate the winch and motor assembly. The Starter section uses four Cross Braces. The first two Cross Braces (D) make up the mounting surface for the winch assembly. These two Cross Braces are similar in appearance to the other Cross Braces except they are heavier and have the winch mounting holes drilled in them. These should be bolted to the Rail sections with the flat surfaces UP. Holes will be off-center to the left (facing the lake). Use one bolt only on each side of winch mount cross braces (D). The distance needed for the winch is 18" outside to outside. To assure proper hole alignment for the winch plate, it is advisable to leave these bolts hand tightened until the winch assembly is bolted into place. The remaining two Cross Braces are the regular type (B).
4. Assemble the End section in the same manner as the Middle sections with one exception: the addition of the pre-assembled End Brace with the pulley (E). The End Brace is attached to the last two holes of the Rails. The Angle Brackets on this Brace are attached sharing the same holes, nuts and bolts as the last Cross Brace. Assemble hand tight before fully tightening.
5. Now you are ready to begin putting all the track sections together. Carry the Starter section to the prepared site and desired location. Mount the winch plate with ½" bolts and locknuts. Tighten all remaining nuts and bolts. Attach a Middle section to the Starter section using the Splice Plates with ½" X 1" bolts and regular nuts. Before tightening, make sure all Rail surfaces are flush ON TOP. In most installations, these two (or more if necessary) sections will remain out of the water. This assures adequate space for storage of the water craft and carriage when not in use during the winter months.
6. Next, carry the End section to the shoreline and attach one Middle section using the Splice Plates. Place foam billets or other suitable flotation devices (small row boat works well) under the End section and slide the two sections out into the water. Using the Splice Plates, regular nuts and bolts, mate the remaining sections and float them outward until all sections are in place.
7. Thread the cable through the pulley on End section and drape it over the track with the cable ends near shore. Make sure that the cable is not crossed or tangled. Float assembly of Middles and End section to the desired final location of the track (distance from dock, etc.) and attach to the Middle section coming off the Starter on shore. Once again, check the positioning and if it requires no further adjustment, simultaneously remove all the flotation devices and let the assembly settle to the bottom.

## **CARRIAGE ASSEMBLY**

*Refer to diagram #1 and #4 for the following steps:*

1. Examine the welded Carriage End Frame (E-2) and locate the drilled hole in the center of the longest side of the frame. This drilled hole should be below center, indicating which side of the frame is on top. Place the Carriage End Frame on your work surface with drilled hole closest to the ground. Place a double-flanged wheel (F) inside the square frame and insert a greasable axle (diagram #4) bolt from the outside in. The metal tab will prevent the bolt head from turning. Apply the lock nut on the inside and tighten. **DO NOT OVER TIGHTEN** as this may damage the end frames. Repeat for the remaining three wheels.
2. Set the Carriage End Frames with wheels in place on the track. Again, make sure the drilled hole is closest to the bottom of the frame. (You will notice that more of the wheel protrudes from the bottom of the frame than from the top) Attach the Side Rails (G) to the Carriage End Frames at the desired Carriage length of 8', 9' or 10'. Use  $\frac{1}{2}$ " X 1" bolts with locknuts and tighten. Secure the Carriage in place with a short piece of rope.
3. Attach the Adjustable Carriage Extensions (H) to the carriage assembly at the desired width by inserting  $\frac{1}{2}$ " X 1" bolts from the inside and regular nuts from the outside. (This width can be approximated by adding 8" to the beam of your watercraft and is easily adjusted for a better fit after final assembly) Do this on all four corners.
4. Next, you will be attaching the Side Tubes and Mooring Posts with braces. These braces are left and right hand. It is best to sort them into two piles and place one from each pile near the four corners before you begin.
5. To the Adjustable Carriage Extensions you will now attach a Mooring Post Brace (I) with angled, notched end up with  $\frac{1}{2}$ " X 1" bolt through the Mooring Post Brace and then through the fifth hole in on the Adjustable Carriage Extension. Apply a regular nut and hand-tighten. Repeat on all four corners.
6. Now attach the Mooring Post (J) and side Tube Brace (K) with a  $\frac{1}{2}$ " X 3" bolt through the angled, notched end of the Side Tube Brace then through the Mooring Post and finally through the first hole in the Adjustable Carriage Extension and regular nut. Hand-tighten. Repeat on all four corners.
7. Carriage Side Tube (L) is attached using a  $\frac{1}{2}$ " X 3-1/2" bolt through the Mooring Post first, then through the Side Tube and the Mooring Post Brace. Apply a regular nut to the inside. Repeat on all four corners.
8. Using a  $\frac{1}{2}$ " X 1-3/4" bolt and regular nut, secure the Side Tube Brace to the Side Tube and hand-tighten. Repeat on all four corners. Proceed to tighten all bolts until snug.
9. You are now ready to attach the front Keel Support Board (M) by placing the board across the end of the carriage closest to the winch, flush with the frame. Line up the holes drilled in the frame with those drilled in the board and the front board bracket. Use  $\frac{3}{8}$ " X 2" bolts from the top, through metal flat, board and frame and regular nuts below.

## **CRADLE BRACKET ASSEMBLY**

*Refer to diagram #3 for the following steps:*

1. Place the Cradle Bracket Bottom (N) across the carriage frame as illustrated and use ½" X 3 bolts and regular nuts to attach bottom plate. Hand-tighten.
2. Attach the pre-drilled board (O) to the Cradle Bracket Top (P) with 3/8" X 2" carriage bolts and regular nuts. Tighten.
3. Attach the assembled Cradle Bracket Top to the Cradle Bracket Bottom with ½" X 1" bolts and lock nuts.

## **FULL-LENGTH BUNK ASSEMBLY**

*Refer to diagram # 7 for the following steps:*

1. Place the bunk bottom bracket (Q) across the carriage frame, as illustrated. Use four ½" X 3" bolts and four regular nuts to attach two bottom plates (R) under the flange of the carriage frame. Tighten by hand. Repeat for three remaining bottom brackets.
2. Full-length bunks are shipped with different length riser tubes (S) to achieve different bunk heights. Choose the tube of the desired length and bolt it to the bunk bottom bracket with a ½" X 3" bolt and a regular nut. If the riser tube is bolted through bottom hole #1, only one bolt is needed. If hole #2 or hole #3 is used you MUST put a second bolt through the hole under the bolt holding the riser tube. This will prevent the bunk from pivoting too far. Repeat for the three remaining riser tubes.
3. Place the 10-foot bunk top (T) over the riser tube. For each riser tube, use a ½" X 3 ½" bolt, two flat washers and a regular nut to secure bunk top to the tube. Repeat for remaining bunk.
4. Adjust the bunks to miss any ribs on the boat bottom. Tighten all bolts.

## **FULL-LENGTH PONTOON BUNK ASSEMBLY**

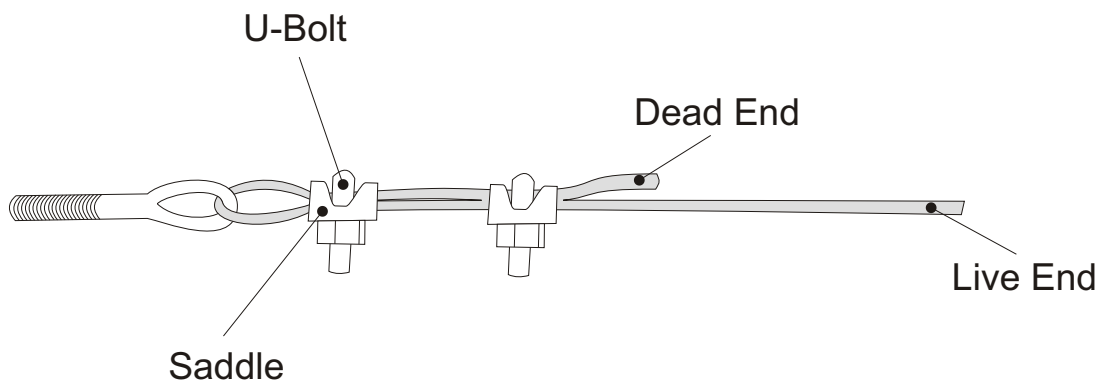
*Refer to diagram # 8 & 9 for the following steps:*

1. Determine the center to center distance of your pontoons and set the bunks to match this dimension. The end of the bunks that has more wood over-hanging, goes to the rear of the carriage.
2. Place a 1/2" x 4" shim under the side of the bunk that is over the extension (or outside) portion of the carriage. Make sure that the shim is flush with the edge of the bunk bracket, and that the U-bolt pinches the shim securely. Use 2 U-bolts per bracket, as shown.
3. The angle braces with the wood on them are to protect the pontoons from damage by the angle bracket.

**WARNING: Do not attempt to adjust the bunks with the boat on the carriage!**

## **CABLE ATTACHMENT**

1. Begin by inserting the Eye-Bolt in the center hole on the front of the carriage frame with one regular nut on each side of the frame. Install tension winch on rear of the carriage (see page 6).
2. In step #7 of the Track Section Assembly instructions, you threaded the cable through the pulley at the end of the track. Now as you face the water take the cable end coming off the right hand side of the pulley and run it under the carriage to the winch. Be sure you have the correct cable end so the cable is not crossing itself. (See diagram #1 of completed installation)
3. Now refer to diagram #5. Facing the winch (your back to the lake), thread the cable under the far left groove of the front sheave (figure 1). Then under the second groove of the rear sheave, over the top to the second groove of the front sheave (figure 2), under to the third groove of the rear sheave, and so on until all the grooves are filled (figure 3). Notice that the cable is straight across the top of the sheaves and angled across the bottom.
4. The cable end coming off the winch will be threaded through the eye-bolt at the front of the carriage. Fold back 8" or so and apply two cable clamps and tighten firmly. The U bolt of the clamp goes over the dead end of the cable, and the live (working) end of the cable sits in the saddle of the clamp.
5. Take the cable end coming from the left side of the lake-end pulley and thread through the rear of the carriage on to the tension winch (diagram #6). At this point you should untie the rope you have securing the carriage. Adjust the cable tension with tension winch.
6. You can determine if the cable is tight enough by using this test: Grasp the cable a few feet in front of the carriage and pull up. If the carriage moves more than two (2) inches, you need to tighten it further.
7. At this point, cable installation has been completed. However, be aware that the first few times you use your new system the cable will stretch slightly. Keep a close eye on this and tighten as needed. If you notice lurching and jerking as you lower the carriage, it is probably due to a loose cable and/or the wheels on the carriage need lubrication.



# Safety

**The manual drum switch, or remote control box, must be mounted in a location high enough to prevent children from reaching and offers visibility of the entire track system without putting the operator in the path of the carriage.**

The operator should have control of the winch operation at all times, watching the track and movement of the carriage to insure that there are no obstructions, people, animals or any other objects in the path of the carriage.

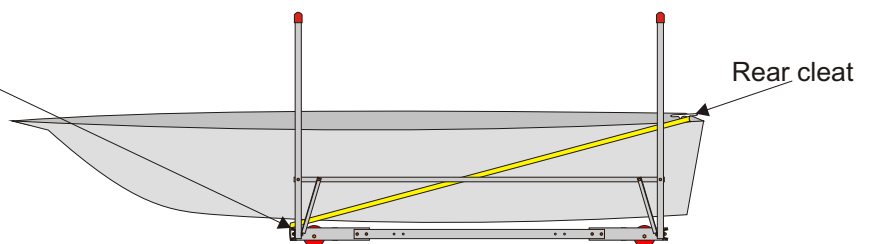
For safety reasons, D.H. Docks & Tracks does not recommend the use of limit switches on our track systems. The use of a limit switch will void any warranty offered by D.H. Docks & Tracks. Using a limit switch to stop the carriage in the proper position on the track may not be reliable.

Always be sure that the boat is properly secured to the carriage before moving the carriage up the track. The best way to secure the boat is with a pair of ShoreTracker nylon tie-downs; they have a loop formed at one end which easily slips over a cleat, the other end is permanently tied to the carriage end frame. This makes launching and retrieving your boat effortless and safe. The boat will be held in the proper position each time the carriage begins moving up the track.

Initially, it is best to get the boat on the carriage and out of the water to permanently affix the tie-downs. (Accomplishing this may require several in and out's with the boat temporarily tied to the carriage.) Make sure that the boat is forward as far as possible and centered (left to right) on the carriage. *Generally, 2/3's of the weight is in the rear 1/3 of the boat and we want that weight on the carriage, not hanging off the back.*

Once you are satisfied with the position on the carriage; place the loop of the tie-down over a rear cleat, pull tight and tie the other end around the 3" extension, near the front wheels. Do this on both sides of the boat, with equal tension on the tie-downs to even the load on them as the boat ascends the track. NOTE: If you are using rope instead of ShoreTracker nylon tie-downs, make sure it is a non-stretch type rope, of adequate strength for the weight of your boat!

Permanently tie the mooring lines to *this point* on the carriage. The other end of the line should have a loop that you hook onto the rear cleat of the boat. When the boat floats; the lines will go slack, allowing you to unhook them and place the loop over a mooring post while you are out boating.



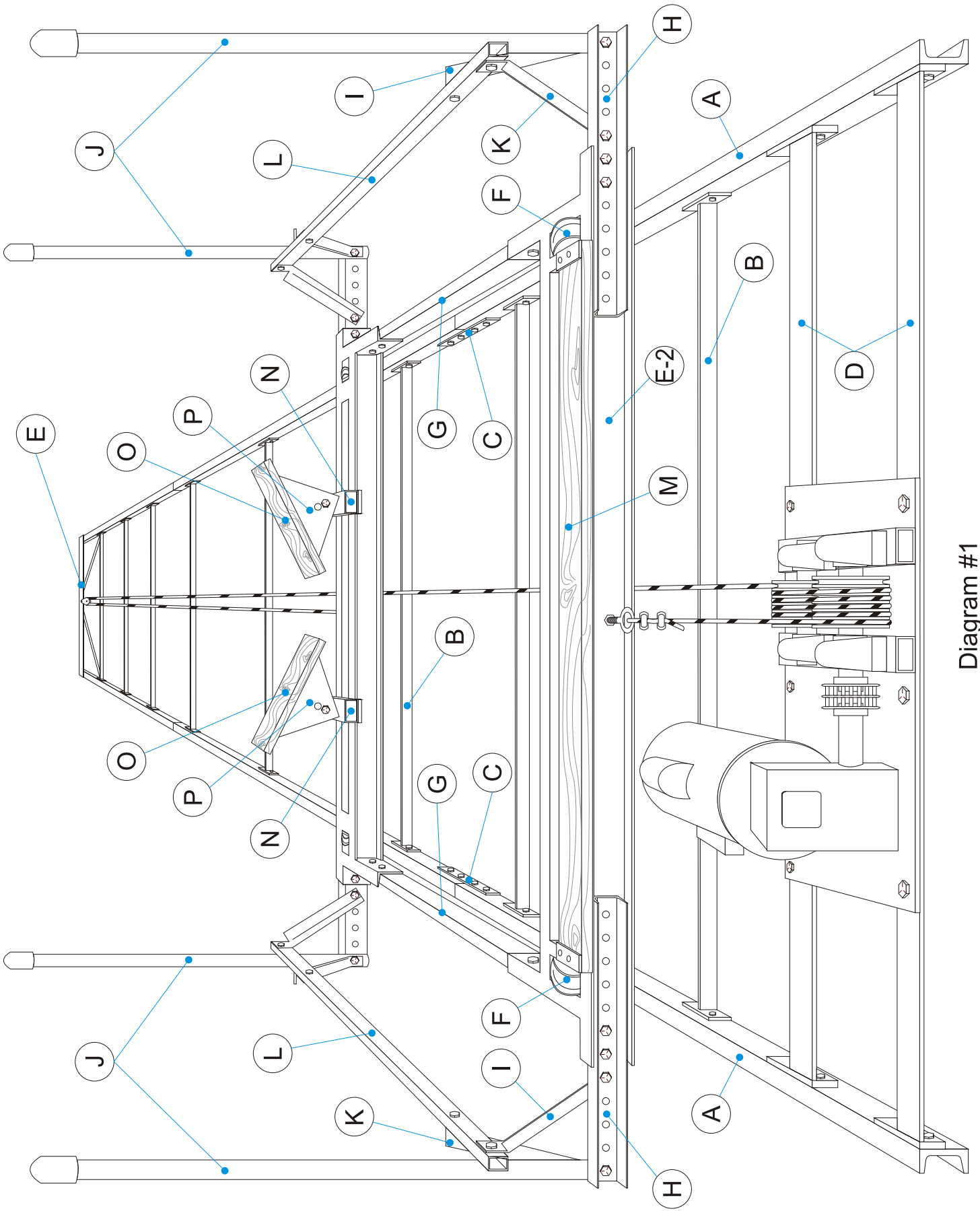
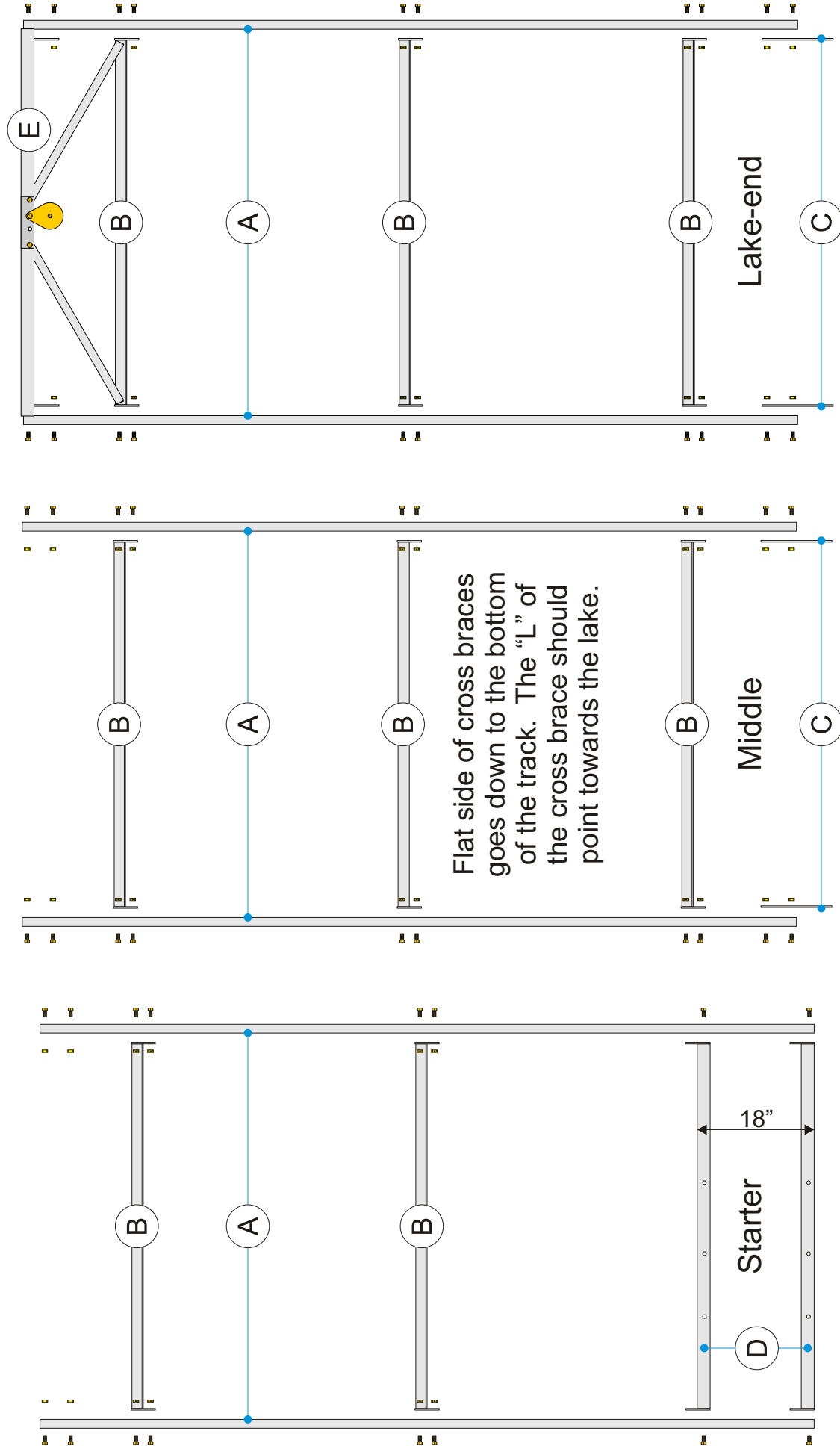


Diagram #1



Flat side of cross braces goes down to the bottom of the track. The "L" of the cross brace should point towards the lake.

Winch mount cross braces use only one bolt per side, flat side up with holes left of center.

1/2 x 1" Bolts

Center-lock Nuts on Cross Braces

Regular Nuts on Splice Plates

Diagram #2



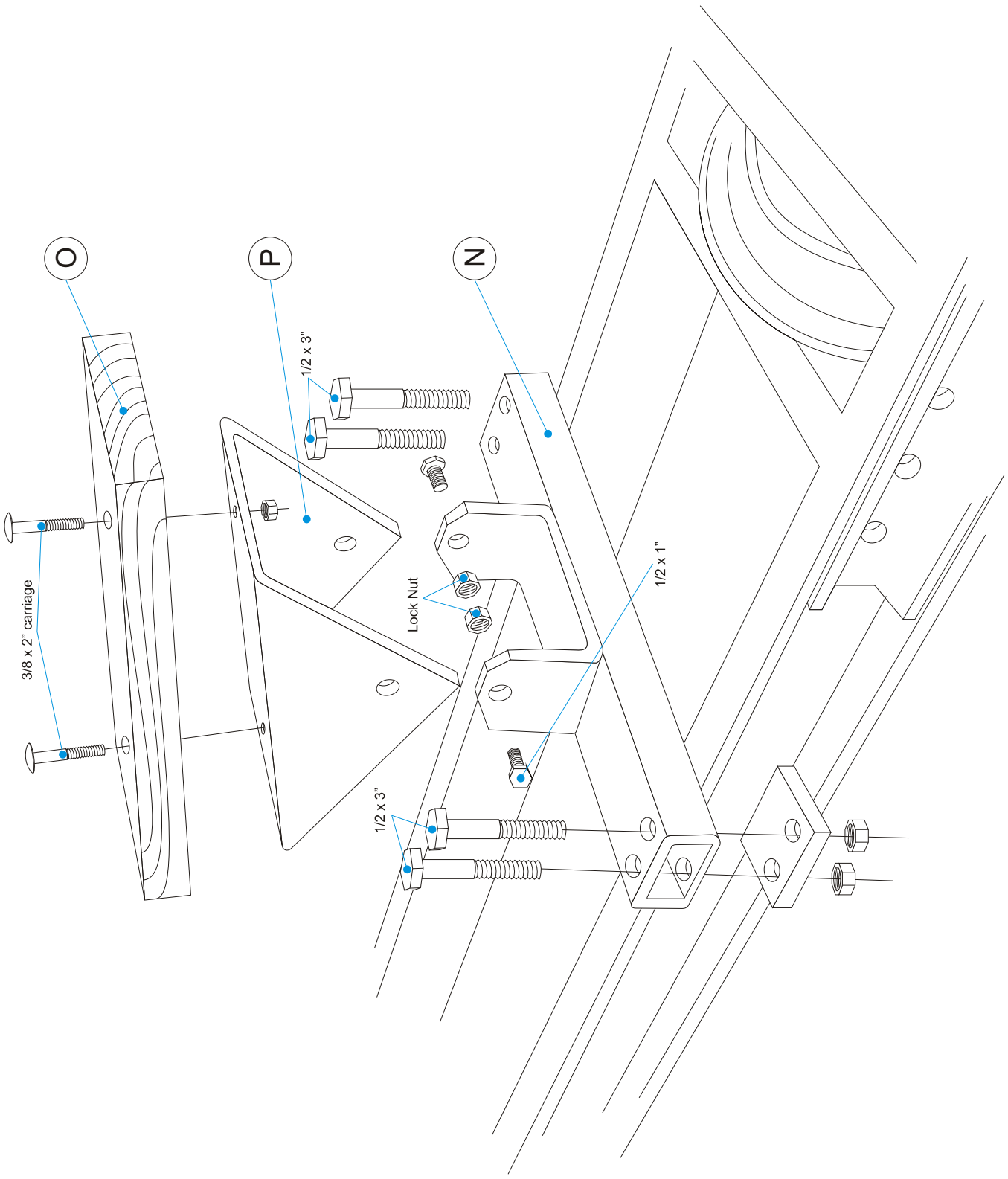
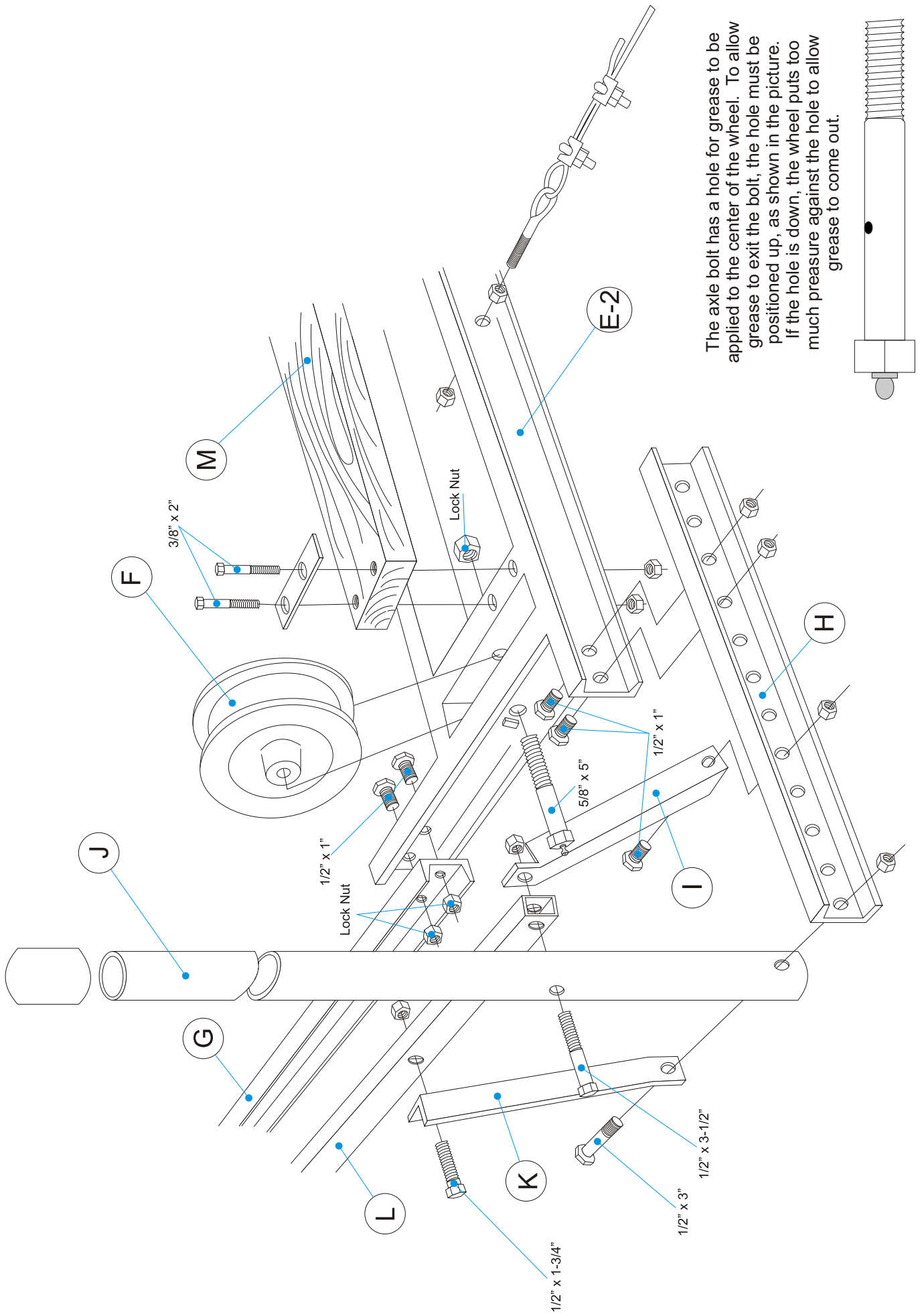


Diagram #3



The axle bolt has a hole for grease to be applied to the center of the wheel. To allow grease to exit the wheel, the hole must be positioned up, as shown in the picture. If the hole is down, the wheel puts too much pressure against the hole to allow grease to come out.

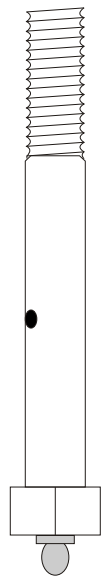


Diagram #4

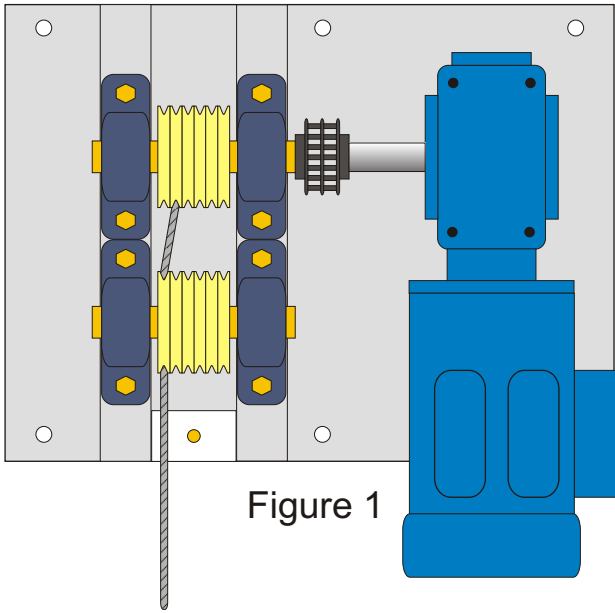


Figure 1

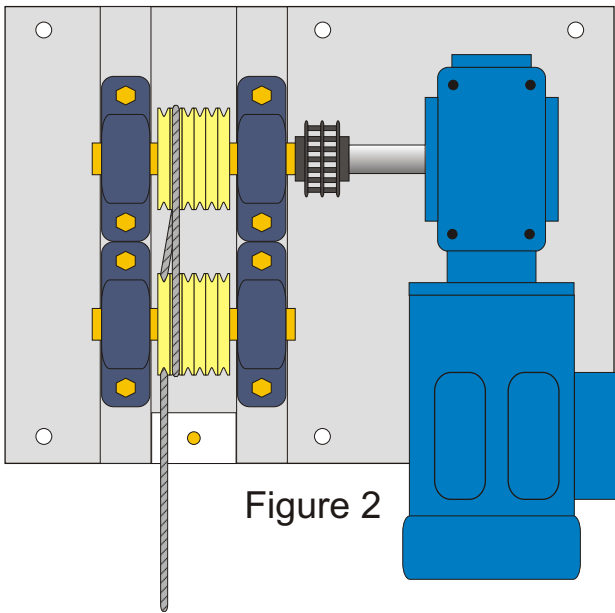


Figure 2

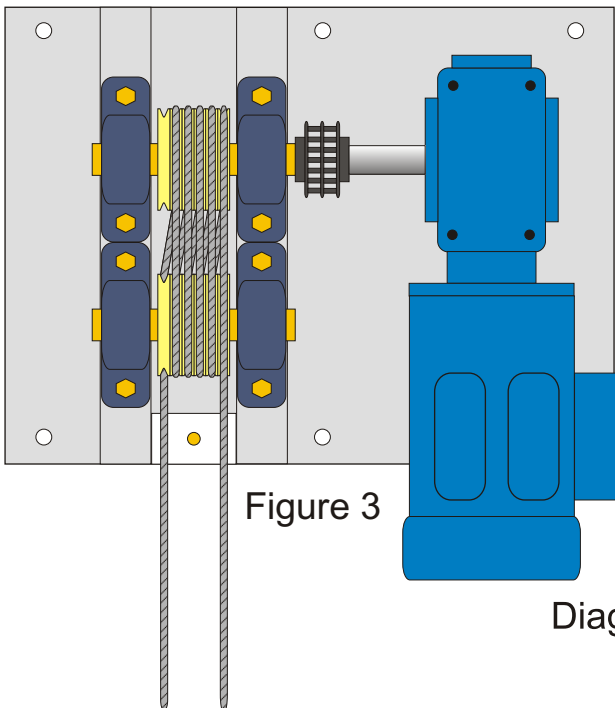
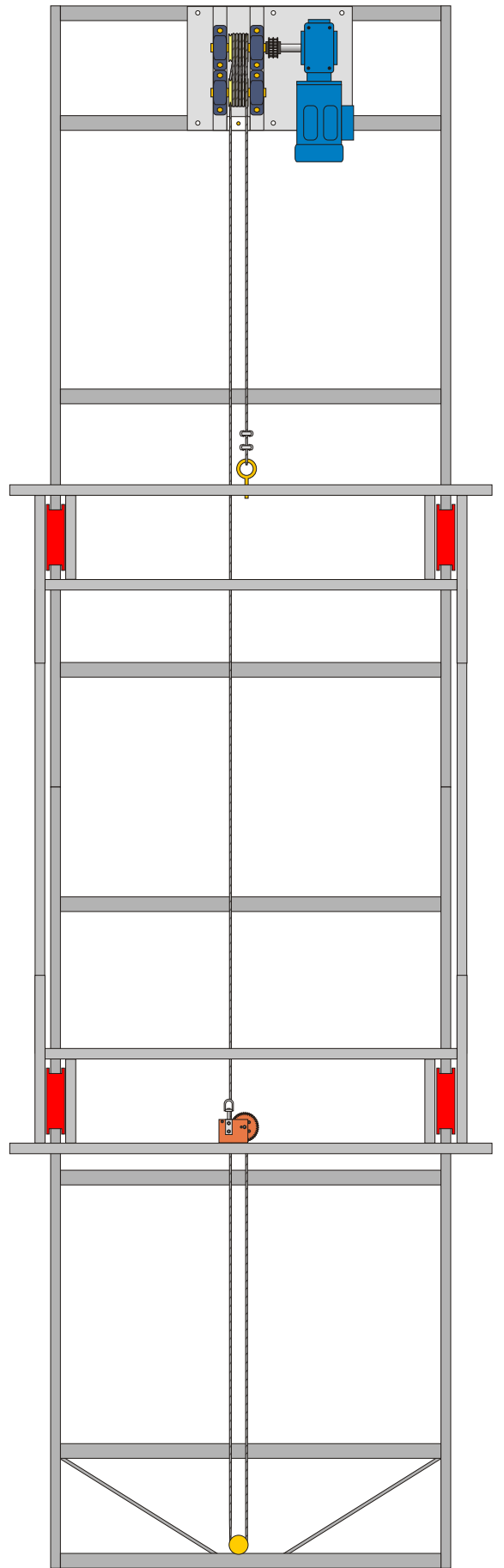


Figure 3

Diagram #5



The cable tension winch mounts to the rear end of the carriage, on the flat side of the channel iron. Use 3/8" bolts, flat washers and nuts provided. The bolts should pass through the winch, then the carriage frame, with the nuts on the outside of the carriage frame. The middle bolt goes through both the tension winch and the plastic wear block. The cable goes through the small hole in the center of the wear block and through the carriage frame. Route the cable from inside the spool to the outside through hole "A", then back into the spool through hole "B". Pull the cable to the bottom side of the spool. Tape around the spool over the cable with electric or duct tape. Feed any excess cable back so there is not a loop on the outside of the spool. As you wind the cable onto the spool it will cover the end, preventing it from slipping. Tighten the cable so that you cannot move the carriage more than 2" back and forth on the track by hand. Hint: It is possible to use an impact wrench to spin the winch faster than by hand. Leave the loop drive off the shaft and put the nut on, using a 3/4" deep socket with a 12" extension on an impact wrench or drill, turn the nut clockwise (tighten). Use power only until the cable becomes snug, then put the loop on over the nut and finish tightening by turning the loop by hand. **Always tension cable by hand turning only!**

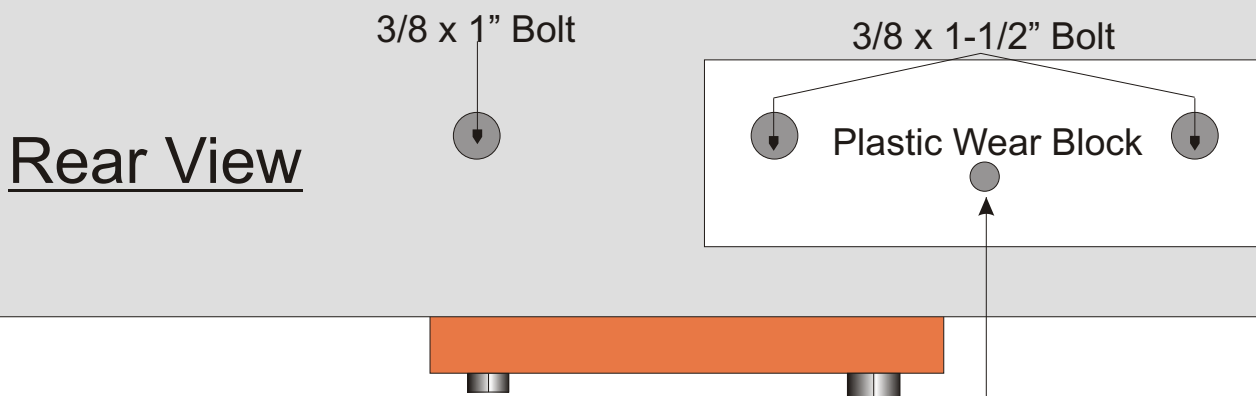
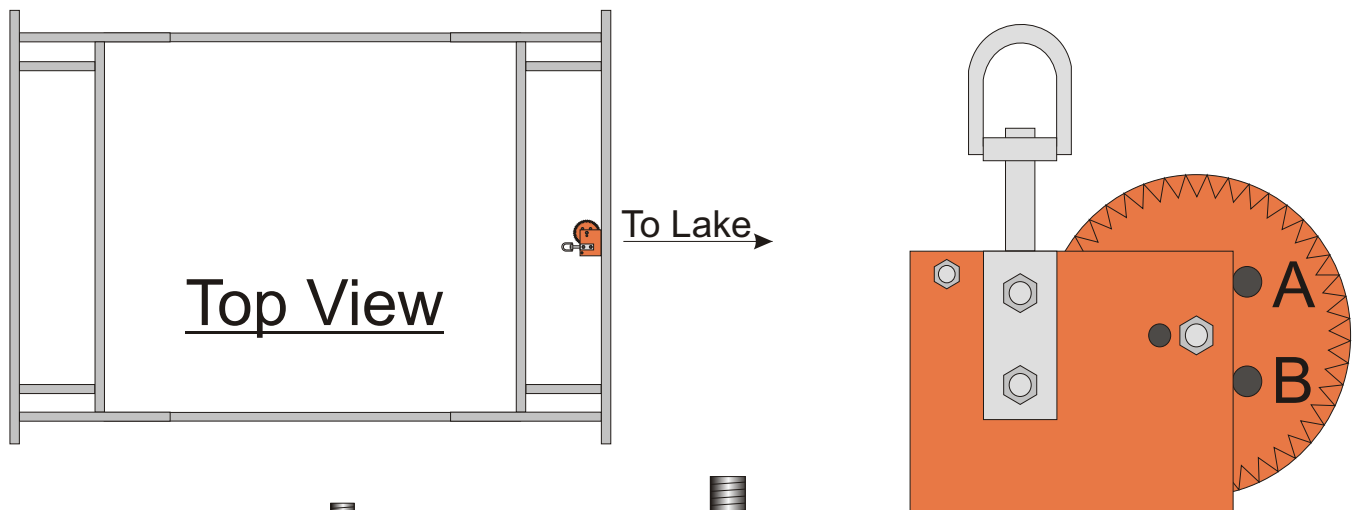


Diagram #6 Cable Hole

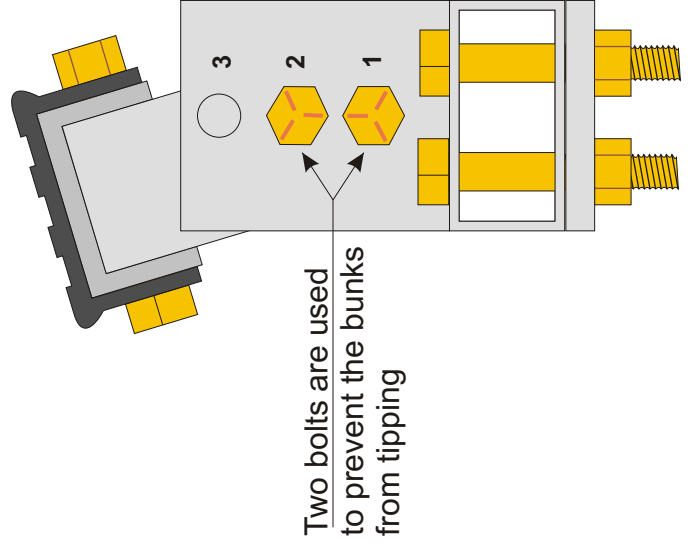
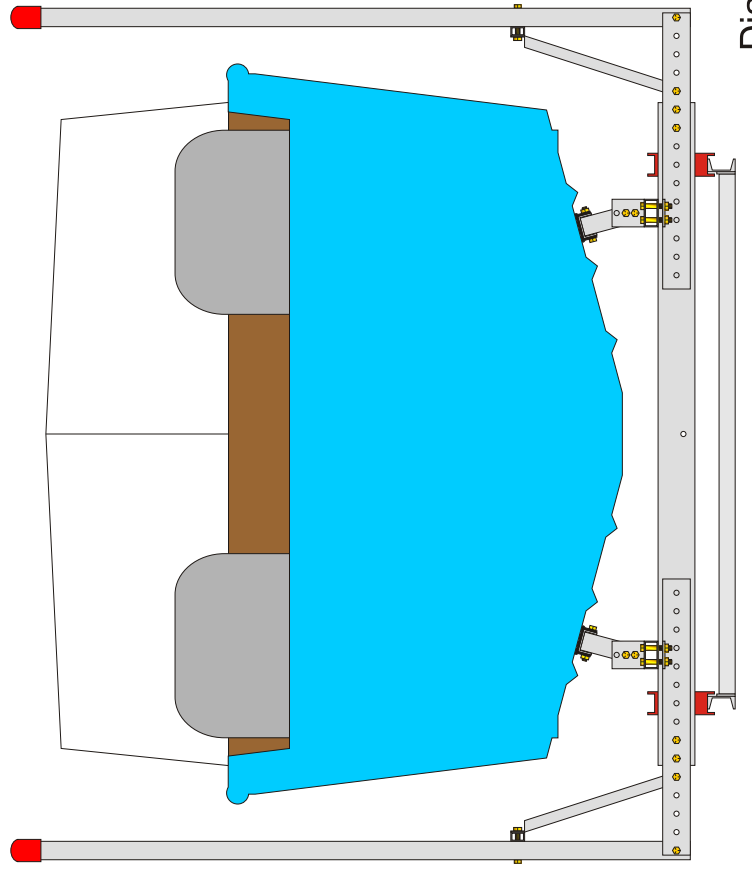
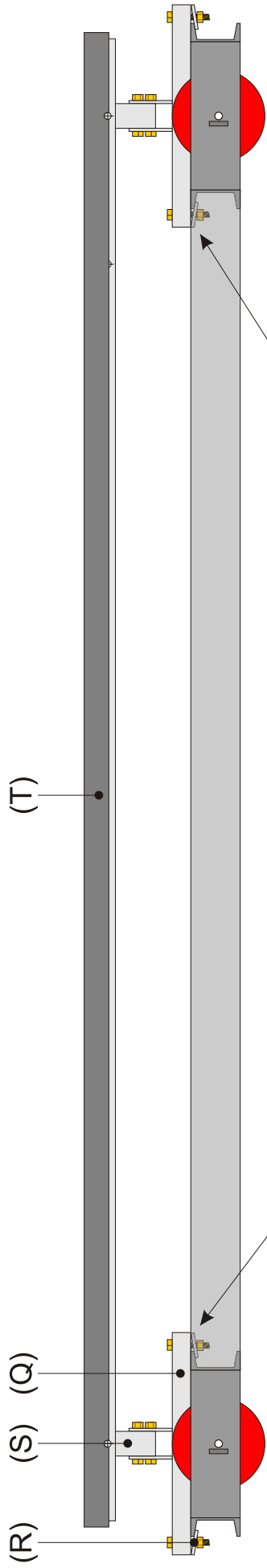


Diagram #7



*It's the Good Life...*

## Full length Pontoon Bunks

First, determine the center to center distance of your pontoons and set the bunks to match this dimension. The end of the bunks that has more wood over-hanging, goes to the rear of the carriage. Place a 1/2" x 4" shim under the side of the bunk that is over the extension (or outside) portion of the carriage. Make sure that the shim is flush with the edge of the bunk bracket, and that the U-bolt pinches the shim securely. Use 2 U-bolts per bracket, as shown. The angle braces with the wood on them are to protect the pontoons from damage by the angle bracket.

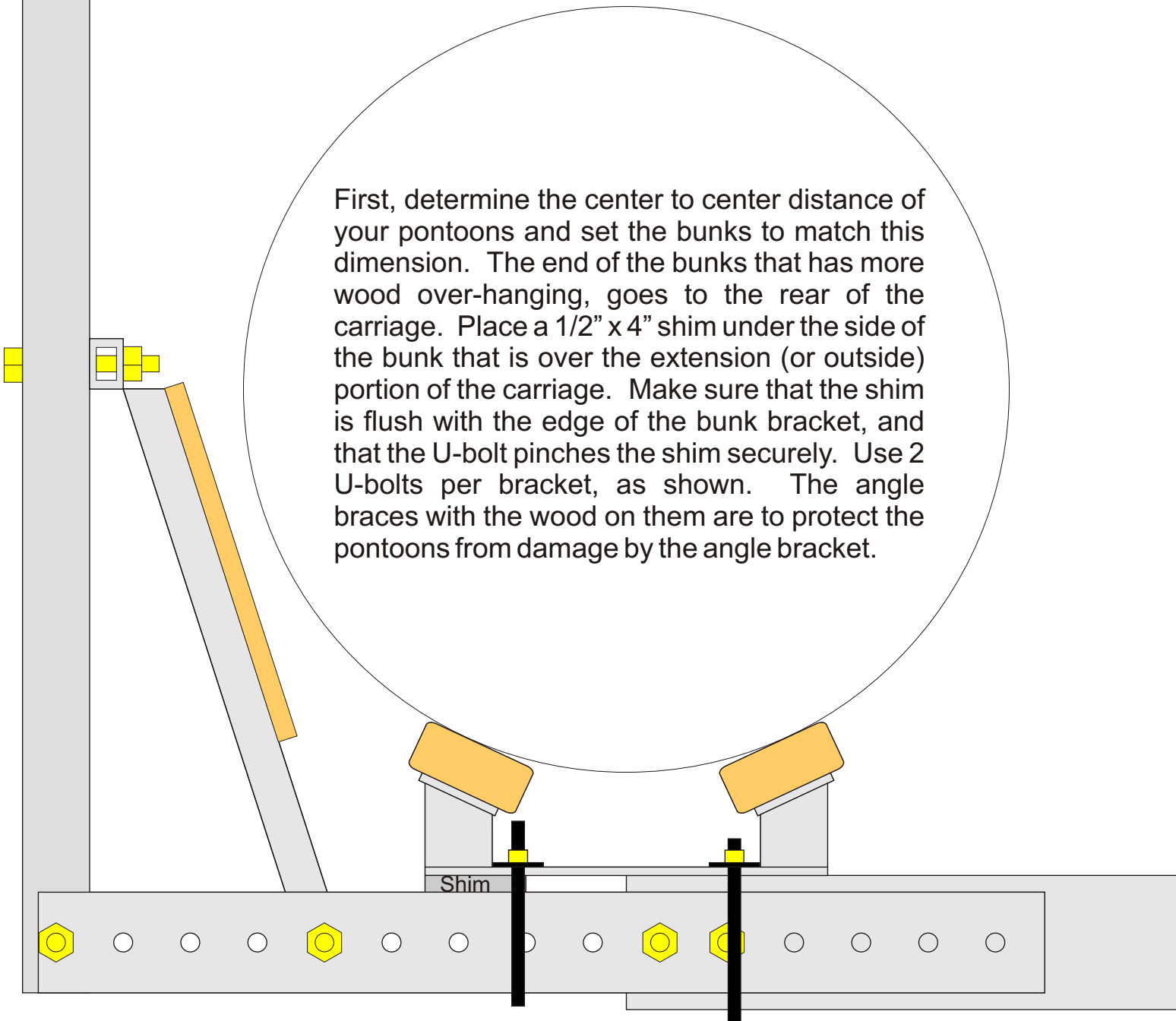


Diagram # 8

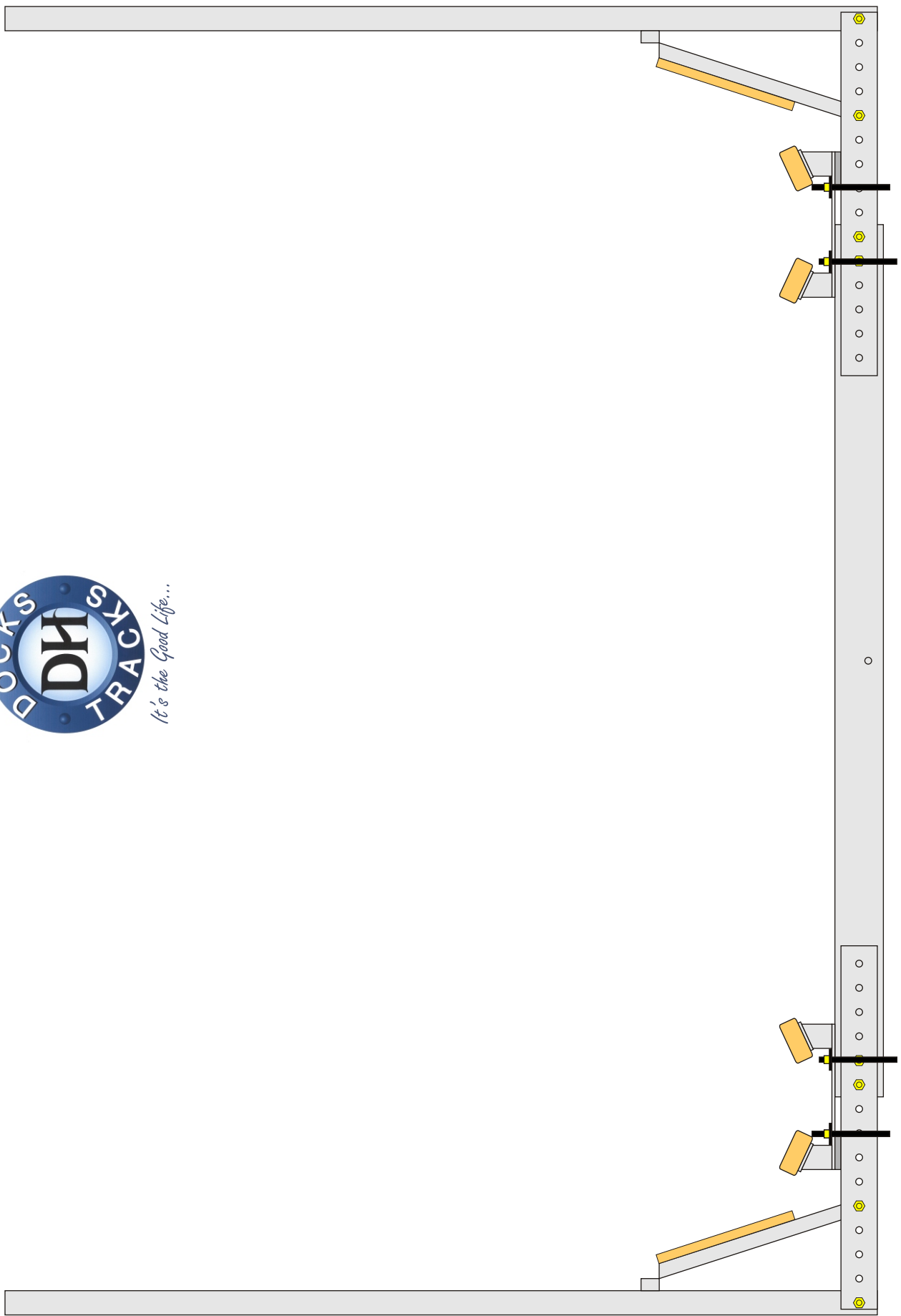
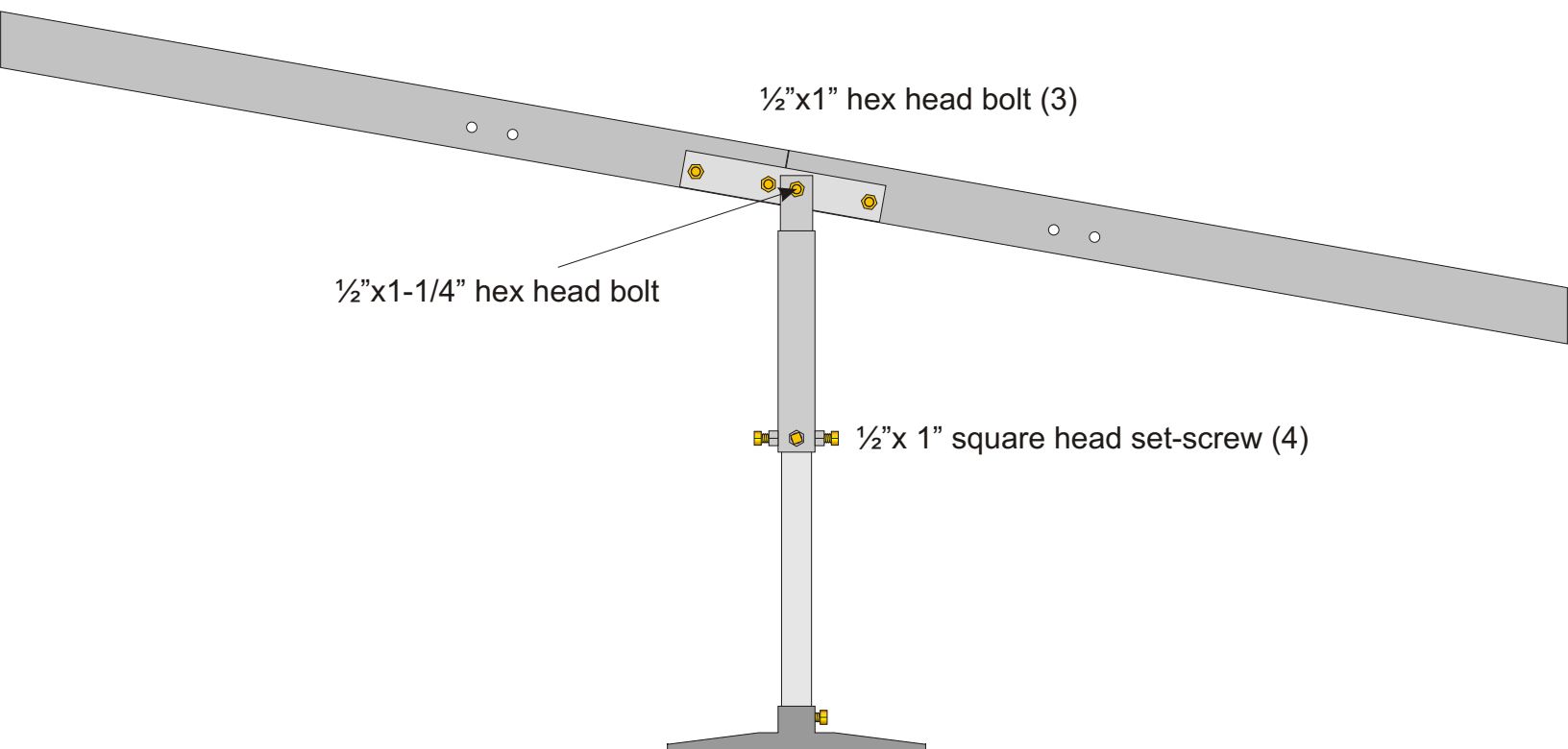


Diagram #9



*It's the Good Life...*

## ShoreTracker Support Leg



Support legs go on the bolt next to, and lake-side of the joint.

(From shore; 3rd hole of splice plate)

A 1/2" x 1-1/4" bolt is necessary to attach to rail.

The support leg must be plumb.

Be sure that the foot pad is on a firm bottom that will support the weight of the boat as it travels the track.

**Tighten all set-screws securely.**

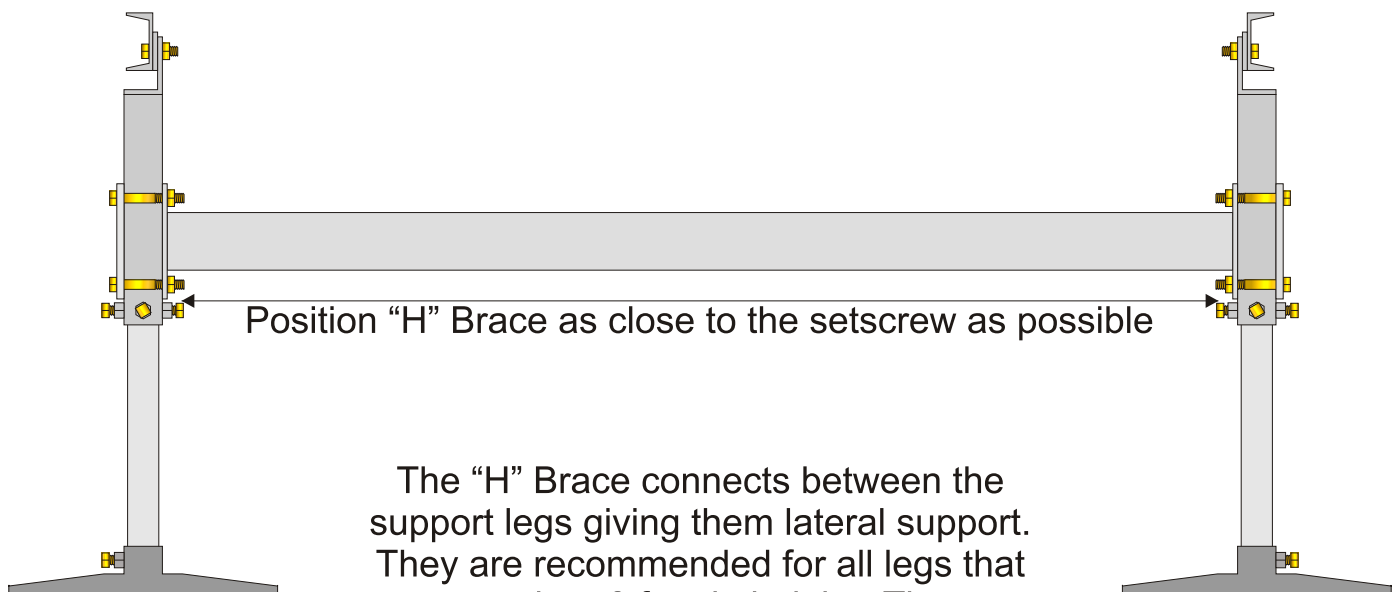
**Tighten all bolts securely.**





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## ShoreTracker "H" Brace



The "H" Brace connects between the support legs giving them lateral support. They are recommended for all legs that are more than 2 feet in height. They can easily be added to existing systems. They use 4 bolts per side to sandwich the square part of the leg between 2 flat plates. No drilling is necessary to install.

Support legs go on the bolt next to, and lake-side of the joint.

(From shore; 3rd hole of splice plate)

A 1/2" x 1-1/4" bolt is necessary to attach to rail.

The support leg must be plumb.

Be sure that the foot pad is on a firm bottom that will support the weight of the boat as it travels the track.

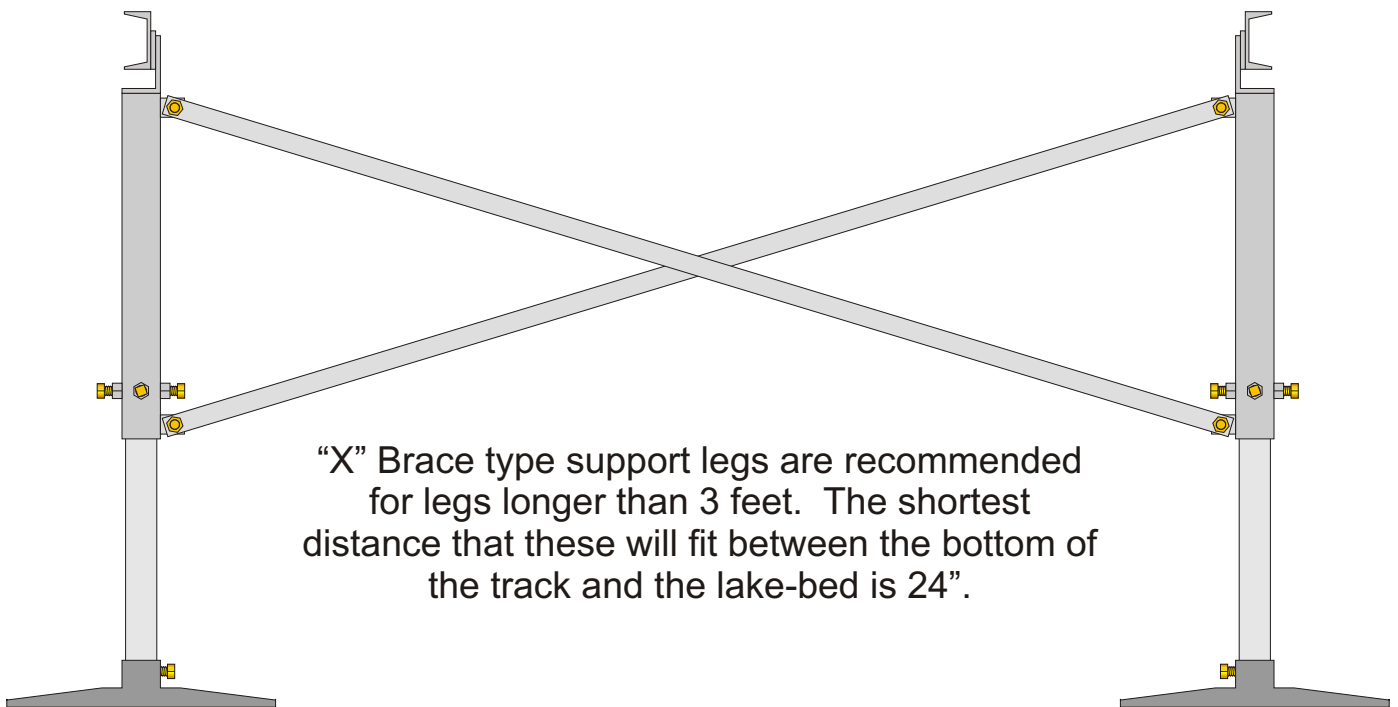
**Tighten all set-screws securely.**

**Tighten all bolts securely.**



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## ShoreTracker "X" Brace Support Legs



"X" Brace type support legs are recommended for legs longer than 3 feet. The shortest distance that these will fit between the bottom of the track and the lake-bed is 24".

Support legs go on the bolt next to, and lake-side of the joint.  
(From shore; 3rd hole of splice plate)

A 1/2" x 1-1/4" bolt is necessary to attach to rail.

The support leg must be plumb.

Be sure that the foot pad is on a firm bottom that will support the weight of the boat as it travels the track.

**Tighten all set-screws securely.**

**Tighten all bolts securely.**

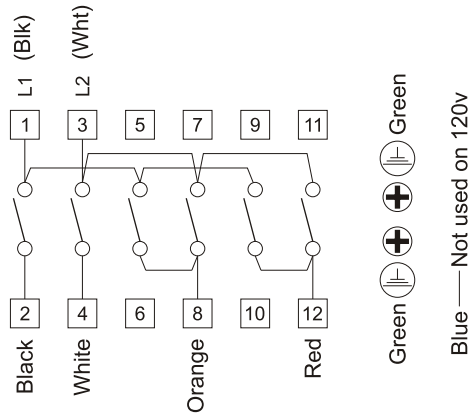


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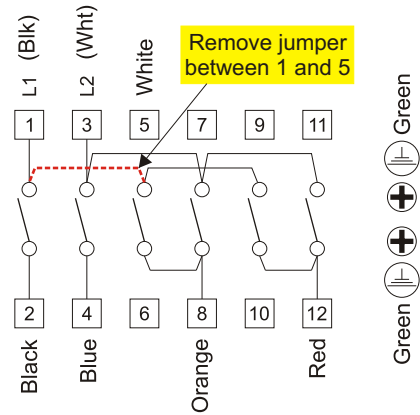
Salzer Switch

Leeson 1-1/2 HP  
model #116940

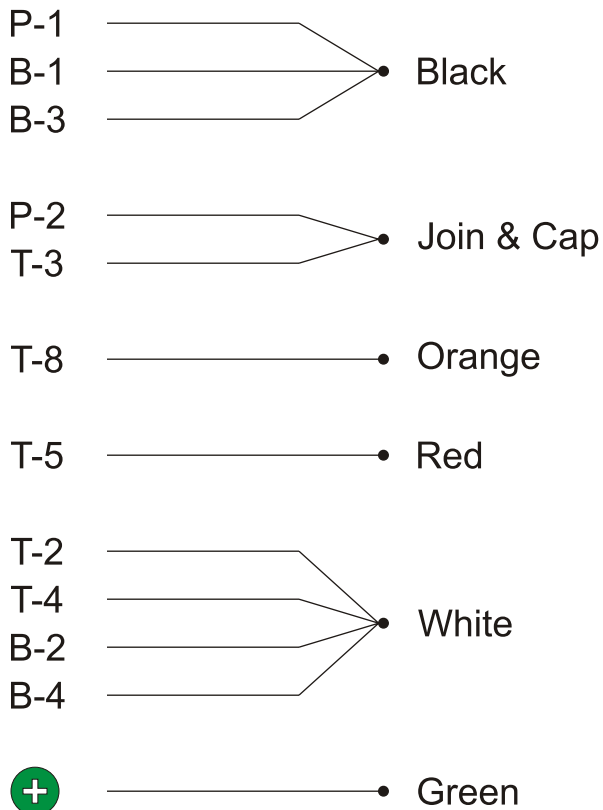
## 120 volt



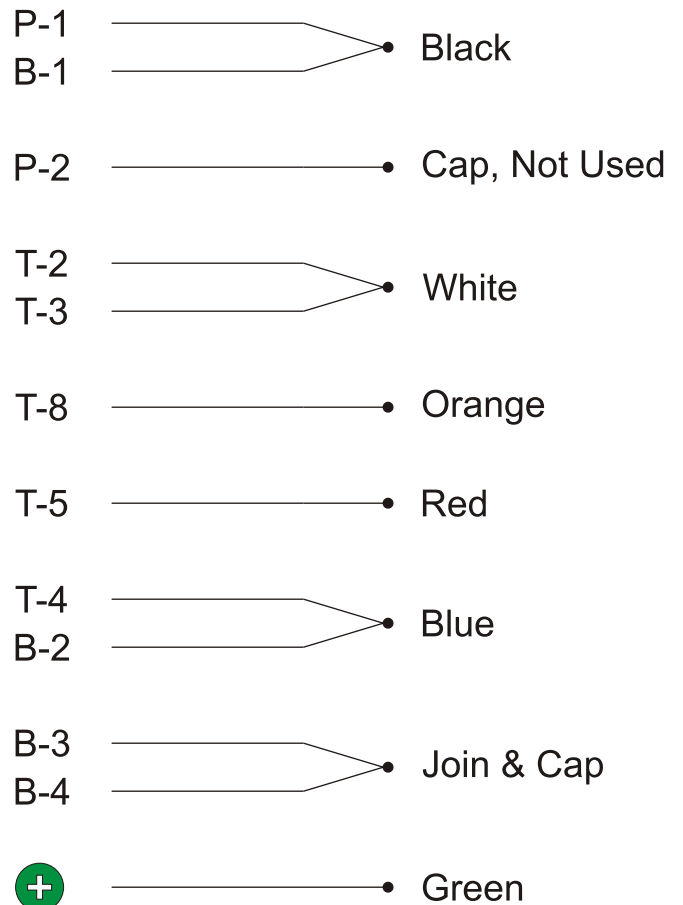
## 240 volt



### Motor connections



### Motor connections



T-5 & T-8 are rotation leads

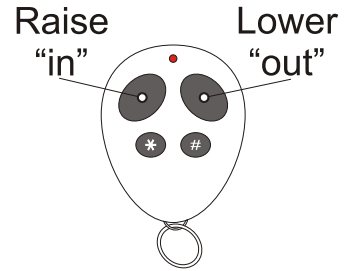
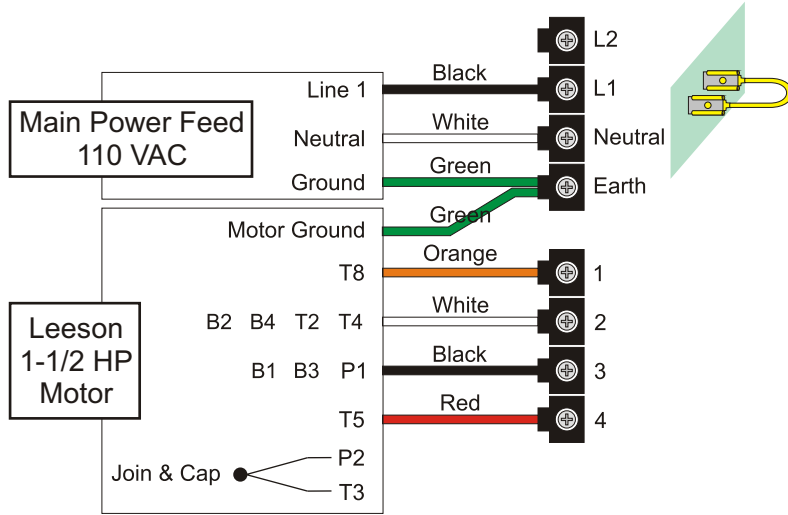
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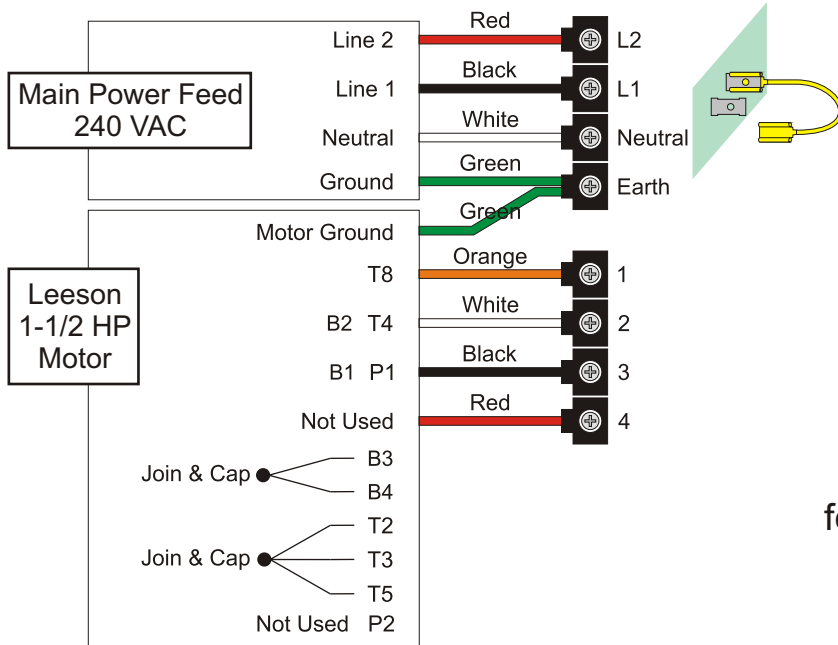
## Aqua-Matic Remote Control Wiring Blue 1-1/2 HP #116940

### 120 volt

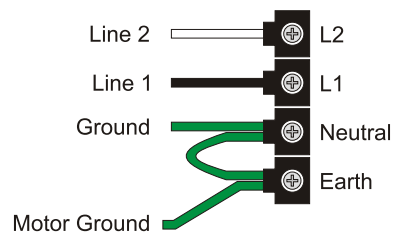


The drum switch must be removed from the motor before installing the remote control. Please save the drum switch and wiring instructions. In case of a remote failure, the drum switch can be re-installed and the system can be operated manually.

### 240 volt



Alternate 240 VAC Wiring (3-wire)



***Important:***  
Yellow jumper wire  
**MUST** be unplugged  
for **ALL 240 volt** applications!!!