

New Boat House Lift Instructions

Boat House

A boat house is a covered structure designed to keep your boat or other watercraft covered and out of the elements. Most boat houses are constructed using wood, although other materials such as steel can also be used. A boat house lift is designed to hang from the joists in the roof of the boat house. Typically a boat house lift is designed to hang from (3) three joists. Joist #1 holds your motor and gear unit, which turns the pipe for the lift. Joists #2 & #3 support the pipe and pulleys that the cable runs through as the cables raises and lowers the boat on the boat lift. If you have a larger boat or you just want to add strength to the joists, you can double up the roof joists. If using steel joists instead of wood, joists are boxed and typical support brackets are used. If using steel i-beams, special i-beam brackets are used which clamp to the i-beam and require no drilling.

CAUTION**Drilling through the side of an i-beam destroys its structural integrity**

Gear Unit

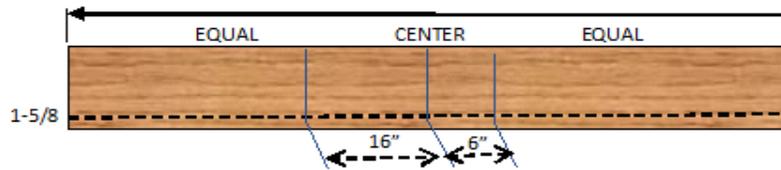
Assemble motor and gear unit.

1. Attach large pulley to shaft of gear on the gear side of the pulley, using the Allen wrench provided
2. Mount the motor to the gear unit using the (4) bolts on the gear unit. DO NOT tighten the nuts.
3. Put the belt on the (2) pulleys. Pulleys should be line up
4. Tighten the motor mounting nuts when belt has about 1" play when pinched at a point between the pulleys. Adjust as necessary for smooth operation.

Mounting Gear Unit

A flat-plate hoist should be mounted up and down with the motor at the bottom. However, in some instances the hoist must be mounted horizontal, with the pulley facing down. If mounting horizontal, it is important that the back plate does not torque on the beam. This can cause bowing of the back plate and bending of the beam.

1. Make sure that board is not bowed or tilted.
2. Locate middle of the board- Draw a line perpendicular to the bottom of the board.
3. Draw a horizontal line 1-5/8" from the bottom of the board.
4. Mark the horizontal line 16" to the left of the center line, and 6" to the right of the center line.
5. Drill 1/2" or 9/16" diameter holes at the points marked in Step #4
6. Bolt gear unit to the joist that is not supporting the blocks and strap hangers. The hoist and pipe supports are to be mounted to the center of the slip.
7. Add washers if needed between the gear unit and the board to prevent gears from binding and/or to prevent the steel plate from bending.
8. Mounting Twin Hoists- Never mount one hoist to the front and one to the back. The back of the boat is the heaviest. They should always be mounted on either side of each other in order to balance, distributing the weight evenly to each hoist.



Caution Do not over tighten the bolts holding up the gear unit. If too tight, the plate can bend to the beam if not perfectly straight.

Pipe

- Pipe is schedule 40 with a diameter of 2" ID/ 2-38" OD galvanized pipe.
- Drill holes in pipe for cable and gear unit bolt.
- The pipe bolts to the gear unit.
- Never mount hoist to the middle of the pipe.
- When installed properly, there will be no load at all on the hoist. This could cause the pipe to bow or bend, causing friction and rapid wearing of the gears, which will lead both the motor and the hoist to fail.
- A full length of pipe must be used for the lift. NEVER weld two short pieces of pipe together.
- Make sure the hole in the pipe for the cable is in a perfect line from pulley to pulley.

CAUTION: Pipe Bowing

- The pipe acts as a lever as it enters the gear and must be completely straight.
- If the pipe is bowing or bending in one direction, that means that there is an uneven pull. The pipes deflection will point you to the problem.

Pipe Supports- are used to ensure that the pipe is level and doesn't bind or bow.

- While mounting the pipe supports, it's important that everything is SQUARE to the whole gear plate. If your boat house is not square, then the pipe will go "crooked" into the gear plate.

Measuring Alignment:

1. Measure from the left side of the gear extending in a straight line to the end joist that houses the back pipe support. Do the same for the right side.
2. If left measurement is 12'6" and the right is 13', then you are out of alignment by 6".
3. Add a block or washers to bring everything back into alignment.

Cable

- Examine your cable regularly
- Cable is made of metal and will wear over time. It is typical to replace cable every 2 years or after a tropical storm or hurricane.
- Proper installation of the cable to the pipe is very important. Make sure the hole in the pipe for the cable is in a perfect line from pulley to pulley. Cables should be perpendicular to the pipe. Always drill a hole through the drive pipe, using one piece for the front and one for the back. This will ensure that the pull will be even on both sides while the cable wraps.
- Make sure cable is winding off opposite sides of the pipe this gives you opposing forces on the pipe, creating a non load-bearing pipe.

- After using the lift, if you notice an ongoing issue with the cable “back lashing,” you will need to add cable weights.

Cable Winders

- Cable winders are an upgrade and are optional
- They increase the life of the cable and can increase the speed of the lift.
- They decrease the lifting capacity of the hoist

Pulleys

- Lifting points should not be any more than 9-10’ apart.
- Pulley mount straps should be hung at a 45degree angle to the boat.
- If using a sling kit, make sure the pulleys are mounted 1’ – 2’ wider than each side of the boat. This ensures the slings are pulling out and away from the hull of the boat.

Control Switch

- Mount switch so that the wires come from the bottom of the switch box
- DO NOT OPERATE ON AN EXTENSION CORD! A qualified electrician should install and/or should check electrical system before using.
- The large gear on the gear unit should turn clockwise when the lift is being lowered.

Installation Instructions for most Boat House Lifts (*Applications may vary*)

1. Mount flat plate to joist that will not be used to hold the pulley mount straps/tie off plates or pipe supports. This will be at the center of the slip.
2. Pipe supports are designed to mount on joists not supporting the pulley mount straps/tie off plates and should be installed so that the pipe is level and doesn’t bind in the “V” or gear unit. A “V” pipe support will mount before and after the lifting point. Add washers if needed between “V” and wood. Pipe should have some play at both ends as well as the gear unit gears.

3. Pulley mount straps are mounted on the joists at 45 degree angles toward the boat. (fig)

Pulleys must be placed farther apart than the width of your boat. This allows the slings to pull away from the boat when lifting it. Typical joist spacing is 10-12’ apart.

Note the nuts on the the lower bolt in the upper pulley should be tightened completely using all available threads. This ensures the sheave does not turn on the threads. There should be no more than 1.5” between the pulley mount straps (?)

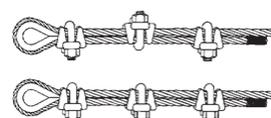
4. Tie off Plates Attach as shown on the diagram for the kit you purchased (Double lined only) (?)

5. Cable- one section for the front and one for the back. A hole is drilled in the pipe and the cable is ran perpendicular to the pipe. Do not run at an angle. SECURING CABLE: The correct way to attach cable

The Right Way



The Wrong Way



clamps is shown below. The “U” section of the clamp is in contact with the cables “dead end”.
REMEMBER: Never saddle a dead horse.????

6. Grease all pulleys, pipe supports, & (3) grease fittings on the gear plate before operations.

Proper placement of Cradles & Boat Slings

Proper placement of the boat cradle/ sling is very important in order to avoid lift failures and prevent the cable from breaking .

- The lifting points of the boat should be no further than 9-10’ apart
- The bow (front) of the boat is the lightest. It is Ok for the bow to go unsupported on a boat house lift
- The back of the transom (back of boat) is the heaviest part of the boat. It should hang no further than 18-19” from the first lifting point. If too much weight is in the back, the weight of the stern will lift the bow of the boat, putting extra weight on the rear cables which could cause the cables to break.
- Cradles: it is preferable for the cradle to only use two bunks because it ensures that the boat will be centered on the lift. If your application causes for four bunks, it is imperative that you pay attention to the boat placement when lifting making sure the bunks are even on both sides. If they are uneven, it can cause the cable to break.
- Slings: Be sure that the cable to slings is as straight as possible all the way to the pear ring of the sling. Any inward pull will cause stress on the lift.



CAUTIONCAUTION**CAUTION***

- DO NOT ALLOW ANYONE in the boat while raising or lowering the Lift!
- DO NOT ALLOW ANYONE between the boat and the dock!
- DO NOT ALLOW ANYONE under the boat!

Wooden Overhead Joists- Side Mounted

1. This application is typically used on boats that need more overhead space.
2. Instead of running down the middle of the slip, the pipe will be pushed to one side.

3. The gear unit is mounted to the joist not being used to support the pulleys or pipe supports.
4. The gear unit and pipe supports are positioned directly above the lifting points on one side of the slip.
5. Typical joist spacing is 10' to 12' apart.
6. The pulley mount straps are mounted on the same joists as the pipe supports at a 45° angles toward the boat.
7. The pulleys hang at the end of the pulley mount strap directly above the lifting point of the cradle and slings.

Maintenance

Before Every Use:

1. Inspect cables for frayed strands.
2. Inspect slings/ cradle for any major wear.
3. Inspect cable clamps to ensure they are secure.
4. Inspect pipe to ensure that it is straight.
5. Inspect motor & gear for any obvious trouble spots
6. Inspect electric cable for any expose wires.

Monthly or As Needed:

1. Gear unit has (3) grease fittings, (1) between the large gear and the flat plate and (2) on the square blocks. These should be well lubricated.
2. The gear itself should also be kept lubricated, the teeth and the edge of the large gear below the teeth. *****CAUTION*** FAILURE TO GREASE THE UNIT WILL CAUSE THE UNIT TO FAIL.**
3. The pulleys turn on stainless steel bolts, the bolts should be lubricated periodically with 30 weight oil.

4. All nuts should be checked periodically for tightness. Check hardware for any rust. If rust is found, scrub the spot and spray cold galvanize in the area. If rust is too severe, replace immediately.
5. Be sure that the insects, birds, etc. do not build nests in the motor. Clean any debris from the motor once a month or as needed.
6. Be sure to periodically check the belt driving the gear plate. Make sure the belt has at least ½” of play. If belt is too tight or too loose the lift will not operate.
7. Cable does not last indefinitely. Cable should be replaced once a year or as needed. Cable should be inspected regularly to be sure there are no broken strands and that it is not rusting. Periodically lubricate cables. **If cable shows wear within a couple of weeks of installation, review installation for any trouble spots.**
8. Cable clamp nuts should also be checked regularly for tightness.
9. Monitor slings for wear and tear. Keep a look out for any deterioration.

Lift Operation:

1. NEVER OPERATE THE LIFT WITH A PERSON INSIDE THE BOAT!
2. Make sure everyone is clear of the lift, not touching any cables, slings, cradle, electric wire, etc.
3. Move the Toggle switch into the appropriate position to either raise or lower the boat lift.
4. Never leave the toggle switch unattended. ALWAYS REMAIN ATTENTIVE TO THE LIFT!!
5. DO NOT lower slings/ cradle to the mud, this will cause the cable to “back lash”.
6. Never raise the slings/ cradle all the way to the roof. This will put too much stress on the cable.
7. Find the desired position of the boat either up or down and simply return the toggle switch to the center neutral position.
8. Never leave your slings in the water for longer than 24 hours.

Trouble Shooting

Check Your Voltage

1. Make sure you have enough voltage to lift your boat (see figure for correct wire size)
2. NEVER use a generator or extension cord to power your boat lift
 - Neither the generator or extension cord produce enough of a consistent voltage to power your motor correctly, which can cause damage to the motor.
 - Extension cords also produce an inconsistent voltage but also, the thermal protection is removed from the inside of the boat motor which causes the motor to run hot which could burn up the motor.

SIGNS YOUR HOIST IS IN A BIND OR BEING USED AS LOAD BEARING:

1. The hoist will not lift.
2. The gear unit is squealing loudly.
3. Metal shavings are coming from the worm housing.
4. Unit freezes or locks up when turned by hand.
5. Gear or back plate bearings break.

CABLE CRAWL

- What is Cable Crawl
 - Cable crawl is a common but very dangerous problem.
 - Happens when the cable wraps around the drive pipe, allowing the cable to “crawl” on top of itself.
 - This is danger because it can cause the cable to start wrapping backward causing the it to lift at a different ration than the other three lifting point.
 - The section that “crawled” will now be lifting at different ratio than the other 3 points causing the lift to either bind and stop lifting or it can cause enough damage to the cable that it could break and drop the boat.
- Causes of Cable Crawl
 - Improper cable installation
 - Using too much cable. With too much cable wrapping around the pipe, the farther out the cable will have to track causing the cable to beging to pull back, thus beginning the “crawl.
 - Using old cable which has begun to fray or break causing the cable to want to grab on to itself.

1. Calculating your boats weight

- Check the weight of your load versus the lifting capacity of your boat lift hoist.
- When calculating the weight of your boat don't forget the motor, fuel, boating gear, ballast tanks, etc.

FULL WEIGHT:	8.5 LBS X 1 GALLON
WATER WEIGHT:	8.5 LBS X 1 GALLON
TUNA/ WAKEBOARD TOWERS	+/- 400 LBS
6" CRADLE BEAM:	12.5 LBS X 1 FOOT

