Owner's Manual

SHORESTATION® HYDRAULIC BOAT LIFT

U.S. Patent Nos. 8,777,513

Models:

LTPM408HS, LTPM608HS, LTPM8010HS, LTPM10010HS, LTPM10016HS, LTPM15010HS, LTPM15016HS, LTPM20010HS, LTPM20016HS

Congratulations on the purchase of your ShoreStation hydraulic boat lift! ShoreStation has been dedicated to providing innovative, high quality, and reliable boat lifts since 1959. Our founder Byron Godbersen built the brand with the philosophy "We build it best…or we don't build it". That tradition continues today and ensures that your boating experience will be enhanced by the performance of your ShoreStation boat lift.

Thank you for choosing ShoreStation. Please study this manual carefully BEFORE operating your lift and keep it in a safe place for future reference. If you have questions or concerns about the operation and/or service of your lift, please contact us at (800) 859-3028 or email shorestation@midwestindustries.com.

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Safety Definitions

Safety messages are presented throughout this document and labels affixed to the product. The messages alert you to potential hazards to you and/or property. The signal words **DANGER**, **WARNING**, and **CAUTION** are preceded by an alert symbol ⚠ and communicate the severity of potential hazard. The severity of each type of message is defined as follows:

- **DANGER** indicates a hazardous situation which, if not avoided, will result in death or serious injury.
- **WARNING** indicates a hazardous situation which, if not avoided, could result in death or serious injury.
- **CAUTION**, used with the safety alert symbol, indicates a hazardous situation which, if not avoided, could result in minor or moderate injury.

⚠ WARNING

DO NOT INSTALL OR OPERATE A LIFT WITHOUT STUDYING THIS MANUAL AND INFORMATION ON LABELS INCLUDED WITH THE LIFT. FAILURE TO DO SO CAN LEAD TO IMPROPER OPERATION RESULTING IN SERIOUS PERSONAL INJURY AND/OR PRODUCT DAMAGE. IF YOU HAVE FURTHER QUESTIONS AFTER REVIEWING THIS INFORMATION, CONTACT A SHORESTATION REPRESENTATIVE AT (800) 859-3028.

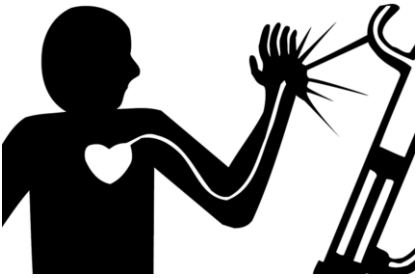
Safety Instructions

Every installation presents unique conditions that the customer should evaluate before operating the equipment. The following instructions must be followed, but may not encompass all potential hazards:

⚠ WARNING

- This lift must be installed and setup by a qualified contractor. Do not operate the lift unless the setup and inspection of the lift has been completed by a qualified installer.
- Review all operating instructions before operating the lift.
- Never use this equipment to lift people. People must exit the boat prior to lifting it out of the water.
- Never use this equipment to lift overhead. Install the lift so the load remains at or below the dock level.
- This equipment is designed to lift boats. Never use it to lift other items.
- Never exceed the stated capacity of the lift.
- Do not allow children to operate or play on the equipment.
- Do not install or use the lift if there are any signs of damage.
- The wireless control system should only be operated if the operator has clear vision of the lift equipment and its surrounding location.
- Never install or work on the equipment without first verifying that the A/C power supply (if present) is protected by a functioning Ground Fault Circuit Interrupt (GFCI) in accordance with National Electric Code section 210.8 and any additional local code requirements.
- Do not modify the equipment unless you have received direct written approval from the manufacturer (ShoreStation).

DANGER



DO NOT GO NEAR LEAKS!

- **High pressure oil easily punctures skin causing serious injury, gangrene or death.**
- **If injured, seek emergency medical help. Immediate surgery is required to remove oil.**
- **Do not use finger or skin to check for leaks.**
- **Lower load or relieve hydraulic pressure before loosening fittings.**

Overview and Terminology

ShoreStation permanent lift systems have 4 main components: the hydraulic Power Unit, Lift tubes, Platform, and Bunks. The components are illustrated in Figure 1 and Figure 2 Figure 2below.

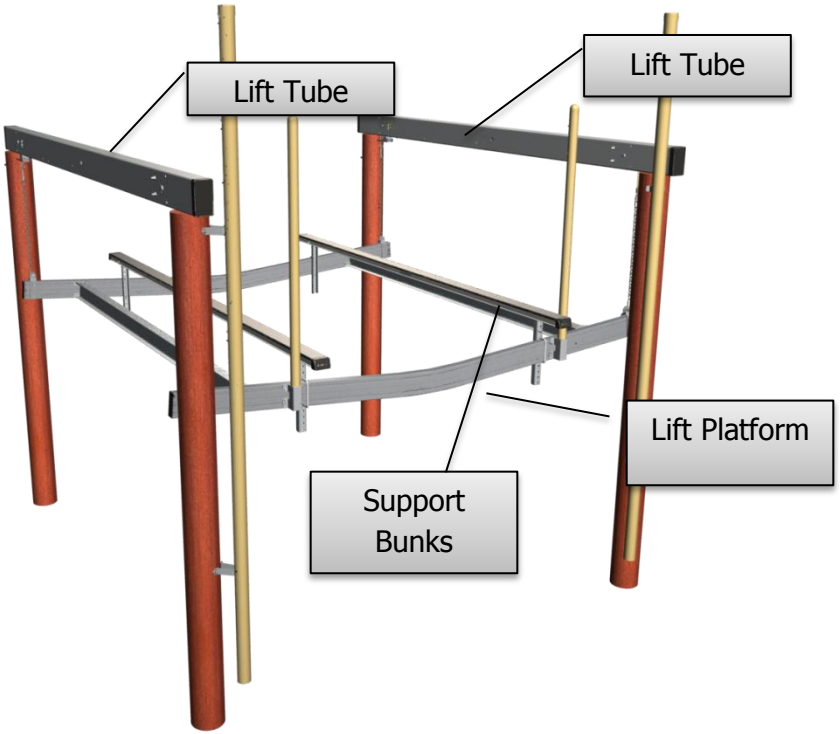


Figure 1 – ShoreStation Boat Lift Components

The Hydraulic Power Unit (HPU) is a 24 VDC powered hydraulic system (Figure 2). This system converts the electric power stored within the batteries into hydraulic pressure. The pressure is delivered to the lift tube through hoses and causes the lift cylinders inside the lift tubes to retract.

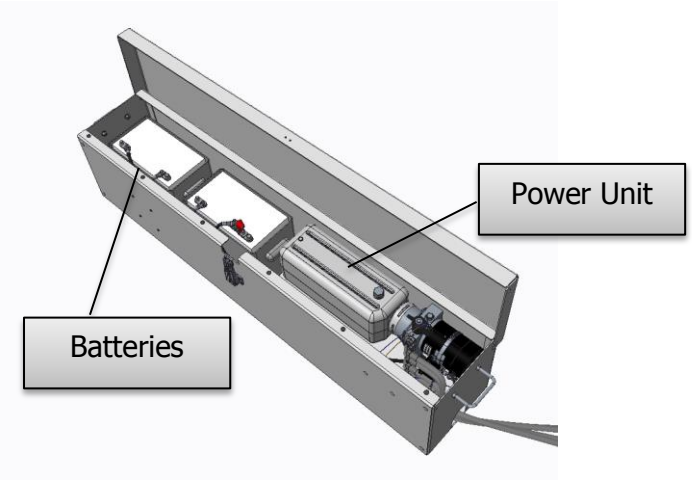


Figure 2 - Hydraulic Power Unit (HPU300 shown)

The retract motion pulls the lift cables and generates the lifting motion of the boat lift platform. The internal structure of the lift tubes is show in Figure 3.

The system charge is maintained by either a solar panel or an A/C powered Battery Tender®. The charge source should be constantly connected to the lift batteries. The lift can operate without the charging source present, but permanent battery damage could result if the batteries are run too low.

The ShoreStation hydraulic boat lifts come standard with two operating controls: Wireless and Dock Box. The Wireless system allows you to operate the lift remotely but should only be used when you have clear vision of the entire lift and surroundings. The Dock Box provides a hard-wired control of

the lift. The operation of both is described in the Controls section of this document.

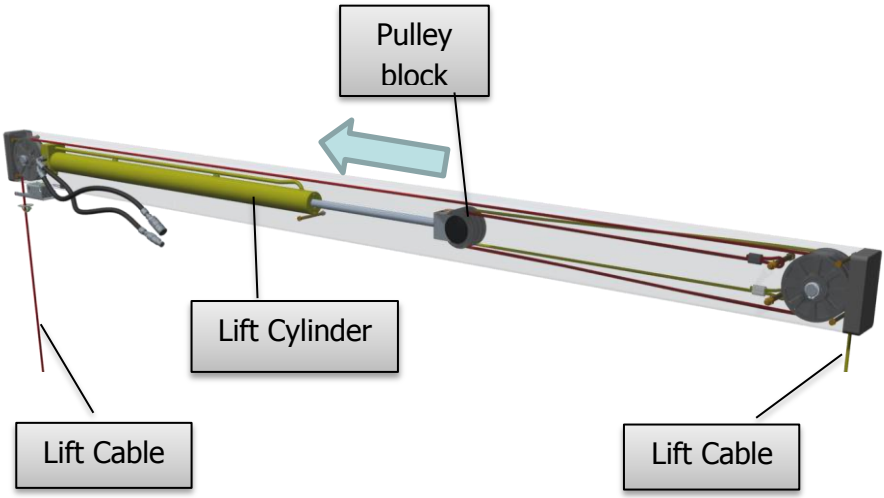


Figure 3 - Lift Tube Internal Structure

Lift Operation

There are two methods of operating the lift: wired dock switch (Figure 4) and wireless remote (Figure 5).

Wired Dock Switch Operation

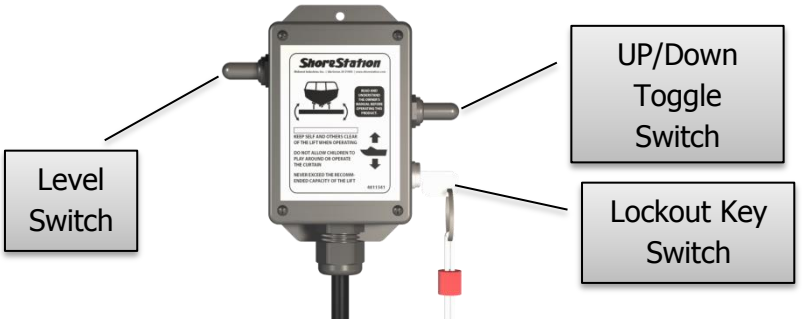


Figure 4 - Wired Dock Switch

Step 1 – Unlock the lift

The lockout switch disables the lift control system (wired and wireless). To unlock it, insert the key and turn clockwise 90 degrees (horizontal).

Step 2 – Run the lift UP or DOWN using the Toggle Switch

Follow all warnings and instruction printed on the Dock Switch Box. Press the rocker switch up to run the lift up. Press the toggle switch down to run the lift down.

Step 3 – Lock the lift

When finished using the lift, disable it by turning the lockout key counter clockwise 90 degrees (vertical) and remove the key.

Wireless Operation

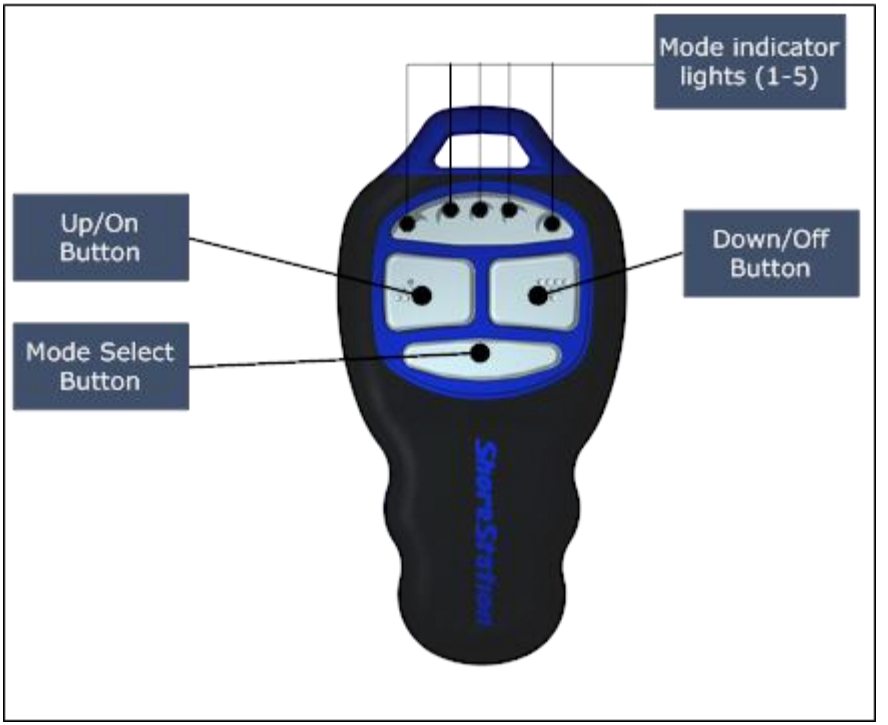


Figure 5 – Wireless Remote Control

⚠WARNING

NEVER LIFT YOUR BOAT WITH PEOPLE IN IT. DOING SO COULD RESULT DEATH OR SERIOUS INJURY!

⚠WARNING

OPERATE THE LIFT ONLY WHEN YOU HAVE CLEAR VIEW OF THE LIFT AND SURROUNDING AREA.

Step 1 – Unlock the key fob

Lock mode is indicated by all 5 Mode Indicator lights flashing when a button is pressed on the key fob. The key fobs will automatically go into 'lock mode' after 3 minutes. In 'lock mode' the transmitter will not react until it is unlocked. To unlock the key fob, hold both the **Up** and **Down** buttons at the same time for 3 seconds. *The mode indicator light* will flash indicating that the key fob is unlocked and will operate the lift. If no button is pressed for 3 minutes, the key fob will automatically go into lock mode.

Step 2 – Up and down functions

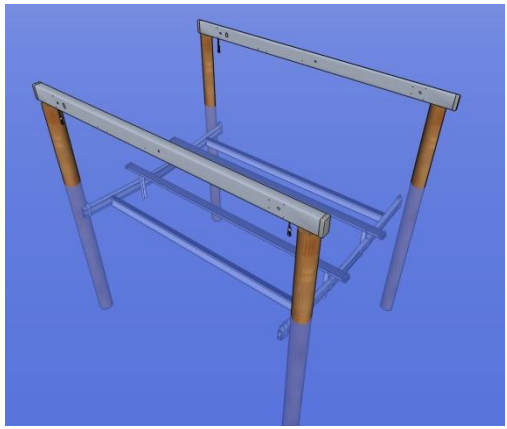
Press and hold the **Up** button to run the lift up. Press and hold the **Down** button to run the lift down.

Step 3 – Locking the key fob

The key fob will automatically go into lock mode after 3 minutes or you can lock the key fob by holding both the *Up* and *Down* buttons at the same time for 3 seconds. The flashing *mode indicator light* will turn off indicating the key fob is in lock mode.

Loading Your Boat into the Lift

Step 1 – Lower the lift



Before loading your boat into the lift, be sure the platform has been lowered into the water deep enough to ensure the boat will float over the top of the cradle and support bunks. It is a good idea to use tape to mark the lift cables. This mark should be placed to refer to the water line when the platform is at sufficient depth. This reference mark is helpful if your lift is in an area where the tide changes the water level.

If you are approaching the lift in the boat, lower the lift using the wireless remote to your reference mark.

⚠WARNING

DO NOT ATTEMPT TO LOAD OR UNLOAD YOUR BOAT WHEN LARGE WAVES, WAKES, OR HIGH WINDS ARE PRESENT. DOING SO COULD CAUSE DAMAGE TO YOUR LIFT AND/OR BOAT.

Step 2 – Prepare to drive into the lift

The first time your boat is put on the lift, the proper position of the boat should be marked or referenced so that the driver can easily identify the correct position of the boat on the lift. This avoids accidentally driving too far into the lift and causing damage to the lift or boat.

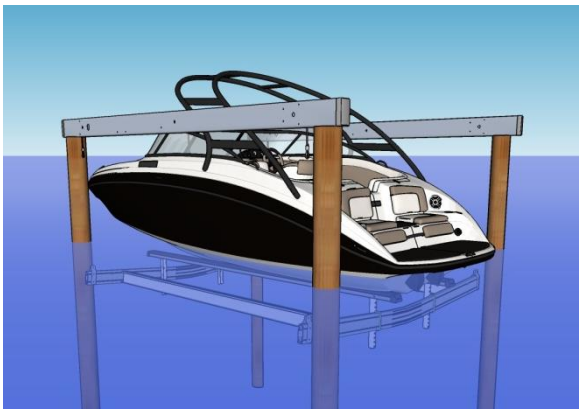
When approaching the lift, unlock the remote control by pressing the UP and DOWN buttons at the same time for more than 3 seconds until the mode 1 light starts to flash.

Ensure that your lift platform is low enough by looking at the reference mark the lift. If needed, use the remote control to run the lift down or up to properly position the lift platform.

Step 3 – Drive into the lift

With the remotes unlocked and the boat lift platform lowered, slowly drive into the lift at idle speed and stop the boat when positioned at the reference mark.

Use mode 1 (first light flashing) of the remote control to run the lift up until the boat is secured by the lift platform and all passengers can safely disembark from the boat. Do not raise the boat totally out of the water with passengers in the boat.



Step 4 – Fully lift the boat

Hold the up button on the remote control or on the dock switch to raise the boat. Continue running the lift until the limit switches turn the lift off. If limit switches are not installed, run the lift until both sides (port and starboard) stop moving. This ensures that both lift cylinders are fully retracted and the lift platform is level. Avoid running the lift for more than a few seconds when both sides are not moving.

Step 5 – Lock out the lift and remotes

Turn the lockout switch to the off position (vertical) and remove the key.

The remote controls will automatically lock if not used for more than 3 minutes. You can lock the remotes before the 3 minute period by holding both the UP and DOWN buttons on the remote until the light stops flashing.

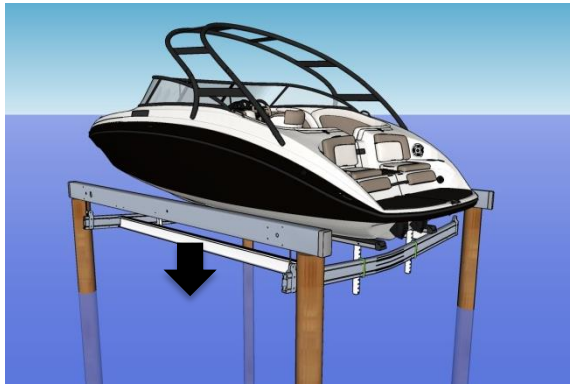
Unloading Your Boat from the Lift

Step 1 – Unlock the lift

Unlock your boat lift by inserting the lockout switch key and turning to the on position (90 degrees clockwise).

Step 2 – Lower the boat

Lower the boat using the dock switch until the boat is in the water enough to safely start the motor while still being secured by the lift platform.



⚠WARNING

DO NOT ATTEMPT TO LOAD OR UNLOAD YOUR BOAT WHEN LARGE WAVES, WAKES, OR HIGH WINDS ARE PRESENT. DOING SO COULD CAUSE DAMAGE TO YOUR LIFT AND/OR BOAT.

Step 3 – Prepare to drive out of the lift

Unlock the remote control by holding the UP and DOWN buttons until the mode 1 light flashes.

Ensure that the waterway surrounding the lift is clear of people and other objects. Start the boat and put into idle reverse. **Do not attempt to 'power off' the lift.**

With the boat in idle reverse, lower the lift using the remote control until the boat is free to move. Carefully navigate the boat out of the lift.

⚠ WARNING

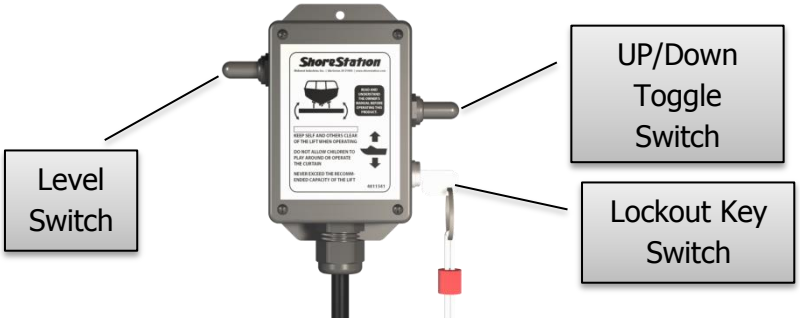
Never leave the boat running while unattended in the lift.

If your location experiences heavy currents due to tide or other actions, or if you plan to leave the lift unattended for more than a day, raise the lift platform out of the water using the remote control to avoid damage and debris accumulation on the lift.

Leveling the Boat Lift

Step 1 – Unlock the lift

Unlock your boat lift by inserting the lockout switch key and turning to the on position (90 degrees clockwise).



Step 2 – Run the lift DOWN

Hold the toggle switch DOWN to start running the lift down.

Step 3 – Adjust the lift with the Level Switch

While running down, press the level switch forward or backward to adjust the level of the platform.

⚠ WARNING

The level switch levels the lift manually. You must be able to see the entire lift and boat to ensure the lift is adjusting correctly. Incorrectly adjusting the lift could cause the lift to become more out of level and damage the lift and/or boat.

Lift Maintenance

ShoreStation Hydraulic lifts are low maintenance systems; however, all mechanical systems require frequent inspection and proper maintenance procedures to ensure proper, safe performance. The following procedures must be performed:

Before and after every operation

- Check the lift at every operation for hydraulic leaks and damage to the hydraulic hoses and fittings. Have any worn or damaged components replaced by your ShoreStation dealer before operating the lift.
- Check all lift cables and extension chains for signs of wear or fraying. Have any worn or damaged components replaced by your ShoreStation dealer before operating the lift.
- If an A/C Battery Tender is used to charge the lift batteries, check the system to make sure it is powered and charging correctly after operating the lift. If an error condition exists (alternating lights), unplug the Battery Tender for a few seconds and plug back in to ensure the system recharges while unattended.
- If a solar panel is used to charge the lift batteries, check the panel to make sure it is clean and clear of debris.

Every Season

- Remove the storage pins from the lift tubes by running the lift UP to make sure it is fully UP. This will free any load against the pins making them easier to remove.
- Visually check all hydraulic fittings and hoses for signs of leaks or damage.
- Check the hydraulic fluid level with the lift fully raised to make sure the reservoir is at least ¾ full. The reservoir level is highest when the lift is fully UP. If additional fluid is

required, contact your ShoreStation dealer to get the correct type of fluid for your system.

- Check the color of the hydraulic fluid. If the fluid appears to be 'milky', it could be contaminated. The oil should be changed by your ShoreStation dealer.
- Clean the solar panel (if used) using window cleaner.
- Make sure the Battery Tender (if used) is functioning. Refer to the instruction manual provided with the Battery Tender system.
- Use a battery tester to test the lift batteries to make sure they are able to charge.
- Check all battery connections to make sure they are tight and not corroded. Connections should be carefully cleaned to ensure reliable lift performance. Contact your dealer to clean the connections if you are not familiar with the process.
- Check any structural connections between the lift and wood dock, beam and piling components. Have any components that show signs of deterioration replaced by your installer.

Every 5 Years

- A full lift inspection should be performed by a ShoreStation dealer every 5 years to ensure the dock and lift structure is sound.
- The hydraulic fluid should be changed every 5 years (depending on use and condition). The fluid change should only be performed by a qualified ShoreStation dealer.

Winter Storage Procedures

Lift Preparation

If the boat is to be stored and unused for the winter season the lift should be fully raised and storage pins installed. The storage pins lock the lift cylinder to counter any unattended operation or drift. Contact your ShoreStation dealer for the HK-LOCK storage pin kit. **If locking pins are installed, the lockout key switch must be removed and tagged with a reminder to remove pins before lift use.**

The lift must be stored in the fully raised position to fully retract the lift cylinders. This protects the seal surfaces of the cylinder from long exposure to the marine environment.

Battery Storage and Preparation

The lift batteries can be stored on the lift as long as the charging source (Solar Panel or A/C Battery Tender) continues to charge the system. If the charging source is removed, the batteries should be fully charged and then unplugged from the system. If left connected, the control system will continue to draw a small amount of power and could draw the batteries too low and shorten the life of the batteries.

If you live in a location that will experience extreme cold in the winter, it is best to leave the solar panel or battery tender connected and powered to keep the batteries charged.

Other Storage Considerations

Your lift's hydraulic power unit can be disconnected and stored away from the lift. This should be considered if your lift's location has high risk of flooding, lightening, hurricane activity, or any other severe weather events. The lift platform will not drop and can continue to hold the boat in place with the power unit disconnected.

Warranty

For warranty registration and information, please go to http://www.shorestation.com/service/. Click on the 'Register Your Lift' to access the online warranty registration form.

Technical Specifications

Part information and specifications are available on ShoreStation's PartSmart system. To access this system via the internet, go to: http://shorestation.com/parts/PartSmart.htm

System Voltage	24V DC
Lift Battery Requirements	MARINE DEEP CYCLE BATTERY MARINE CRANKING AMPS (MCA) 625 AMPS RESERVE CAPACITY OF OR EQUAL TO 180 MINUTES @ 25 AMP DRAW
Wireless Remote Battery	23A 12V (requires 2)
Battery Fuse	BLUE SEA SYSTEMS # 5187 200A MRBF TERMINAL
Control Fuse	5A Mini Spade
Solar Panel option	20W, 24V DC Nominal Peak Power 20wp Maximum Power Voltage(Vmp) 36.0v Maximum Power Current(Imp) 0.56A Short – Circuit Current(Isc) 0.61A Open – Circuit Voltage(Voc) 43.0v Optimized Cell Efficiency(%) 17.2%
AC Charger option	Deltran® Battery Tender Plus 24V @ 2.5A Input Voltage / Frequency 100 to 132 VAC / 50 / 60 Hz Input Current (Maximum) 1.5 Amps RMS @ 100 VAC Output Current 2.5 Amps DC Output Voltage 24 Volts DC
Hydraulic Fluid	JAX Marine-Guard Blue Series ISO 22, 32, 46, 68, 100 Passes: U.S. Coast Guard Static Sheen Test requirements (as defined in 40 CFR Part 435, Subpart A, Appendix 1). Additionally, JAX Marine-Guard hydraulic oils are non-toxic to aquatic/marine life, as determined by U.S. EPA testing of Pimephales promelas (fathead minnow), Oncorhynchus mykiss (rainbow trout) and Mysidopsis bahia (shrimp) see EPA EPA-821-R-02-012. MSDS: http://www.jax.com/open/msds/MarineGuardBlueSeries_MSDS.pdf