DOCKS \& LIIFTS

# OWNER'S MANUAL V-2000, V-3600 V-4600 V-2602 PWC 

## WIDE <br> Boat Lift Systems

Watch our customized boat lift setup and installation video:


MANUAL WINCH OR DC WINCH WITH ELECTRONIC CONTROL SYSTEM

## ! ATTENTION ! ATTENTION ! ATTENTION

Read and follow all safety rules and operating instructions carefully before attempting to install or operate lift system.

Congratulations on the purchase of your new FLOE Boat Lift!
Like you, I enjoy many kinds of waterfront activities, and I know that to have fun I need to keep my boat secure, protected, and accessible. Through my years of

DOCKS \& LIFTS experience, I've learned how boat lifts should not only protect your watercraft investment, but also be convenient and easy to use - and I have developed them accordingly.
The fact that you purchased a FLOE boat lift tells me that you research a product thoroughly. You will find a FLOE boat lift has many innovative features that will ensure years of dependable service, satisfaction, and enjoyment. Because your FLOE boat lift is engineered to lift and support a tremendous amount of weight, it is critical that you operate it safely. Anyone who operates this lift must read the entire owner's manual before operating the lift to make sure they are able to operate it properly and enjoy all of its features to the fullest. See you on the water!

Wayne Floe, CEO - FLOE International


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It may also be beneficial to view our series of lift vid- eos. See them on our website in streaming video.

## IMPORTANT SAFETY INFORMATION

Your safety and the safety of others is very important. We have provided many important safety messages in this manual and on your lift system. Always read and obey all safety messages.

If you do not understand any of these instructions, please ask your dealer.

This is the safety alert symbol. This symbol alerts you to

$\triangle$hazards that can cause serious injury or potential death to you and others, plus damage to the dock system. All safety messages will be preceded by the safety alert symbol and the word "DANGER", "CAUTION" or "WARNING."

## 1 DANGER

You will be killed or seriously injured if you don't follow instructions.

## 1 CAUTION

You can be killed or seriously injured if you don't follow instructions.

## 1. WARNING

Failure to take appropriate action could result in mechanical failure, product damage and/or cause serious injury or potential death.

All safety messages will identify the hazard and tell you how to reduce the chance of injury.

## ! WARNING

## IMPORTANT SAFEGUARDS

Read and follow all safety rules and operating instructions carefully before attempting to install dock system.

## 1 DANGER

Never allow anyone under this lift system, especially while it is being operated, or it is supporting the weight of a watercraft.

Stay clear of boat lift when someone if entering or exiting the lift with a boat. Never try to assist the boat's direction while it is in motion (either from inside or outside the boat).

Never work on or make adjustments to boat, boat lift, or boat lift accessories while the lift is supporting the weight of the boat.

This manual includes the latest information at the time it was printed. We reserve the right to make changes in the product after that time without notice. Keep this manual so it will be available to who ever is using this product.

## 1 CAUTION

. While operating the lift, keep all body parts, long hair, loose clothing, and jewelry away from all moving parts, including (but not limited to) the drive-train mechanism, cables, pulleys, and lift platform.
. Be sure the lift cradle is completely lowered before any adjustments or repairs are made to the winch.
. Always keep all people clear of the boat lift support structure and lifting cradle. Never swim or play near a boat lift, even if it's not being operated.
. Make sure the boat lift is completely clear of people or other obstructions prior to operating. Do not operate a boat lift with people inside the boat.

4 Never operate a boat lift with protective cover removed from drive train system.

If the boat lift system is not assembled, installed, or operated properly, mechanical failure, as well as serious injury or death, could result. See to it that all users understand that this lift system is a piece of heavy equipment that requires the use of good judgement and the knowledge of its dangers and limitations.

## 1 WARNING

Lift must be assembled and installed properly or mechanical failure and possible injury may occur.

Never overload a boat lift. See capacities/ specifications for important information regarding the boat's actual weight and boat lift capacity limitations.

Neveroperateaboatliftthatis notlevel. Under normal conditions a boat lift operates under extreme force. When the lift is not level, these forces are greatly multiplied and bodily injury or damage to the lift can result.
. Perform all inspections and maintenance on a regular basis. Replace any worn parts immediately to avoid potential liftfailure. Ensure all pulleys are operating properly and that all cables and their attach points are secure and free of excessive wear and fraying. See Inspections \& Maintenance section for all important details.

Bodily injury or damage to lift system may result if installation or removal of this lift is attempted without first reading and understanding the installation and removal section of this manual.

If this unit is equipped with a canopy, severe wind damage may occur if the lift is not securely held down to the lake bottom by screw anchors or by some other means.

FLOE lift systems have not been tested in brackish or salt water conditions. Lift failures due to installations in brackish or salt water locations will not be covered by FLOE's warranty. FLOE will not be responsible for incidental or consequential damages resulting from these installations.

Never install the lift system in a body of water whereas either the rising water or wave action will not always flow under the main lift beam. For example, do not install lift in bodies of water with significant water fluctuation or large water bodies that have excessive wave action.

This manual is intended to serve as an owner's use and maintenance guide for a lift that has been properly assembled by a qualified, trained professional. Detailed assembly instructions are packaged with the lift systems.

# All dealers should have reviewed the checklist below with retail customers upon purchase of a boat lift. If they did not cover this, retail customers must review thoroughly and understand the statements below. 



DOCKS \& LIFTS

## Certificate of Boat Lift Pre-Delivery

Date of Purchase $\qquad$ Boat Lift Model $\qquad$
Customer Delivery: Each item must be initialed by the selling dealer upon sale.
I understand that the boat lift must be properly assembled and must be tested prior to use with a boat.
I understand that a serious injury or death could occur if a boat lift is overloaded, not correctly assembled,
installed, maintained or not used properly.
I was given an owner's manual and I promise to read and understand it before using the boat lift.
I understand that it is my responsibility to get clarification on anything in the owner's manual that I don't fullly
understand before using the lift system.
I understand that I must educate all persons who will be around or using my boat lift as to how to do so safely.
I understand that people must stay clear of the boat lift when it is supporting the weight of the boat. No one
should ever swim under it, be on it, in the boat, or in any position that could cause harm to them if the lift
were to suddenly drop.
I understand safe operation of the lift requires people to stay clear of moving parts and pinch points.
I understand that a boat lift should never be overloaded under any circumstance. A boats published dry
weight is usually substantially lower than its actual loaded weight. Your boat should be weighed with fuel,
water, batteries and contents in order to know its actual weight.
I understand the total capacity of the boat lift is equal to the combination load limit of the two main end lift
beams. For instance, a lift with a 5,000 pound capacity has a load limit of 2,500 per lift end beam.
I understand that a 5,000 pound total boat weight could easily over-load one of the main lift beams on a
5,000 pound capacity lift. For instance, if the boat was positioned so that one main lift beam supported 3,000
pounds and the other only supported 2,000 pounds, the lift would be over-loaded. For this reason, FLOE
recommends that your total loaded boat weight doesn't exceed $85 \%$ of the lifts rated capacity and that you
locate and place the boat's center of gravity (balance point) in the center of the two lift beams.
I understand that the boat lift needs to be installed level and must be kept level while it is in use. A lift that
isn't level will have a reduced lifting capacity of $5 \%$ per 1" of being out of level.
I understand that I need to pull the drain plug on my boat if it is subject to water accumulation as this could
easily overload the boat lift.
I understand that I should never lift my boat if it has been swamped or has any significant additional water
weight in it that will overload the boat lift's capacity.
I understand that if my lift is equipped with a canopy it must be properly secured or it could blow over and
cause damage not covered under warranty.

Selling Dealership Name $\qquad$

SellingDealershipSignature $\qquad$
Print Name

## LIFT CAPACITIES

It's recommended that the total loaded weight of the water craft doesn't exceed $85 \%$ of the total lift capacity. The total capacity of a lift is the combined capacity of each of the boat lifts two main lifting beams.

## $!$ WARNING

Never exceed the lift's rated capacity. Doing so could cause structural/mechanical failure and serious injury or death.

Never exceed the weight capacity of either main lift beam. For instance a $5,000 \mathrm{lb}$ capacity boat lift is limited to $2,500 \mathrm{lbs}$ for each main lift beam. It is very easy for a $4,000 \mathrm{lb}$ boat to exceed the capacity of a 5,000 lb boat lift by not parking on the lift in the correct position.

## BEFORE PUTTING A BOAT ON THE LIFT YOU NEED TO KNOW THREE VERY IMPORTANT THINGS:

1. Determine the total loaded boat weight?

Weigh your boat loaded with fuel, water and everything in that you could ever have in it when it is parked on the boat lift. Not all manufacturers published boat weights are accurate because they don't account for motors, gear, fuel, water, etc.
2. Determine the boats center of gravity or CG? A boat's CG is the location under the boat hull which the boat will balance if sitting on a narrow object ((Illustration A). Your dealer or the manufacturer of the boat should be able to help you locate the boat's CG. Be sure that the motor and gear weight have been taken into consideration.


Illustration A: above shows the boat's balance point of center of gravity (CG).
3. Determine that the boats center of gravity (CG) is centered between the two main lift beams The boat should be parked so that the boat's CG or balance point is centered between the two main lift beams (Illustration B). Each of the lift beams should be supporting the same amount of weight.


Illustration B: shows the boat's center of gravity (CG) centered between the two main lift beams - each of the lift beams is supporting the same amount of weight.

Once you know that your boat is well within the boat lifts rated capacity and the location of the boat's CG develop a positioning method that will ensure that all users of the boat lift will park with the Boat's CG in the center of the lift. Here are a couple of suggestions to do this consitently:

- Use a motor stop.
- Note the proper location of the boat on the lift and use some sort of marking system or labels.
- If equipped with canopy, center the canopy over the boat when the boat's CG is in the center of the lift, park with the boat centered under the canopy.
- You can even hang an object such as a tennis ball so it just touches the windshield when the boat is properly positioned.

If your boat is not positioned properly, you can extremely overload one of the main lifting beams (See Illustration C, below).


Illustration C: shows a boat's center of gravity (CG) improperly positioned so that it extremely overloads one of the main lifting beams.

## HOW TO DETERMINE IF YOUR LIFT'S TOTAL CAPACITY IS ADEQUATE FOR YOUR BOAT

One way to determine whether the lift's capacity is adequate is to go to FLOE's website, www.floeintl.com/boat-lifts and click on the button that says "Try Our 'Design A Lift' Tool" (www.floeintl.com/designadock). This program will calculate optimal boat positioning and guide you to the best lift selection for your boat. Your dealer can also assist you in making the best choice.

The following simple exercise is a second, but less accurate way, to manually determine the lift capacity needed for your boat:

1. Obtain the boat's actual total weight including motor, fuel, water, equipment, accessories, etc. 2. Subtract the weight of the motor and fuel from this number.
2. Take the boat's weight, (the result of step 2), divide it in half and add the weight of the motor and fuel to that number. This number is the approximate weight that the rear lift beam will need to support.
3. Take this number and multiply by two. This will equal the approximate minimum rated lift capacity needed for the boat.

For instance: If the boat is an I/O that has a total loaded weight of 2900 lbs. and the fuel, motor and lower unit weigh approx. 800 lbs. it would be calculated as follows:

- 2900-800 = a boat only weight of 2100 lbs .
- $2100 / 2=1050 \mathrm{lbs}$. This is the approximate boat weight that will be supported by each lift beam (not including motor and fuel).
- $1050+800=1850$. This is the approximate actual weight that the rear beam will need to support.
- $1850 \times 2=3700$. This is the minimum overall boat lift capacity needed.

This example does not include any additional hardware or accessories that would affect the capacity needed.

## $!$ WARNING

You must weigh your boat fully loaded, including fuel, gear, etc. to get its accurate weight. It is common for published dry weights to be considerably lower than actual loaded weights. Lift and/or boat damage due to overloading is not covered by your warranty.


VSD-4600
Each lift beam has a total capacity of 2300 lbs and is rated to support one-half of the lift's total capacity.

## A WARNING

If watercraft is open to the accumulation of rain water, be sure boat's drain plug is pulled. Additional water weight may cause the maximum lift capacity to be exceeded, resulting in potential lift damage or bodily injury.

This is a guideline only. It is the operator's responsibility to ensure capacities are not exceeded.

LIFT DIMENSIONAL SPECIFICATIONS - V2000, 2602, v3600, v4600

| MODEL/ CAPACITY | WINCH OPTIONS | BUNKS | $\begin{aligned} & \text { BED } \\ & \text { TRAVEL } \end{aligned}$ | INSIDE WIDTH | OUTSIDE <br> WIDTH | FRAME <br> LENGTH |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| V -2000 lb. | 36" Crank Wheel 12 Volt DC | Full Length Bunks | $50^{\prime \prime}$ | 93.5 " | 109" | 102" |
| V -2602 lb. | 36" Crank Wheel 12 Volt DC | Full Length Bunks $($ standard) | 50 | 119" | $135 "$ | $66^{\prime \prime}$ |
| $\mathrm{V}-3600 \mathrm{lb}$. | 48" Crank Wheel 12 Volt DC | Pivoting Cradle Pads Full Length Bunks Pontoon Bunk Kit | $50^{\prime \prime}$ | 119" | 135 " | 114" |
| V -4600 In. | 48" Crank Wheel 12 Volt DC | Pivoting Cradle Pads Full Length Bunks Pontoon Bunk Kit | $50^{\prime \prime}$ | 119 " | 135 " | 114" |


| MODEL/ CAPACITY | LEVELING LEG TRAVEL | TRAVEL WITH EXTENSIONS* | GANOPY OPTION | GUIDE-IN OPTIONS | MAX INSIDE WIDTH WITH GUIDE-INS | WEICHT <br> (Does not include weight of winch or accessories \& options) |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| V -2000 lb. | 0-30" | 28.5-50.5" | 18', 20' | Double Vertical | 84.5" | 225 lbs |
|  |  |  |  | Single Vertical | 82" |  |
| V -2602 lb. | 0-30" | 28.5-50.5" | $12^{\prime}$ | Double Vertical | $110^{\prime \prime}$ | 268 lbs (Includes weight of standard bunks) |
|  |  |  |  | Single Vertical | 107.5 " |  |
| $\mathrm{V}-3600 \mathrm{lb}$. | 0-30" | 28.5-50.5" | $\begin{gathered} 20^{\prime}, 22^{\prime}, 24^{\prime}, \\ 26^{\prime}, 28^{\prime} \end{gathered}$ | Double Vertical | 110" | 372 lbs . |
|  |  |  |  | Single Vertical or horizontal with vertical bumpers | 107.5" |  |
| V -4600 In. | 0-30" | 28.5-50.5" | $\begin{aligned} & \hline 22^{\prime}, 24^{\prime}, \\ & 26^{\prime}, 28^{\prime} \end{aligned}$ | Double Vertical | 110" | 414 lbs . |
|  |  |  |  | Single Vertical or horizontal with vertical bumpers | 107.5" |  |

[^0]

## LIFT DIMENSIONAL SPECIFICATIONS - V2000, V3600, V4600



## WINCH SELECTION \& USE

You can customize your FLOE vertical lift with the winch style that best fits your needs and budget. The DC battery-powered winch offers an effortless way to raise and lower the cradle lift beams and boat by simply pushing a button. Another option is the manual winch. Although you supply the power with a manual winch, FLOE's gear-reduced winch system, combined with a large crank wheel and speed knob, makes it easy to raise and lower your boat.

## DC WINCH WITH ELECTRONIC CONTROL SYSTEM



Fig. 2 Advanced Switch Control with DC Winch
With the DC Winch with Advanced Switch Control (ASC) (Fig. 2), FLOE has combined the dependability of a custom 12 Volt DC StrongArm winch manufactured by Dutton-Lainson Company, and FLOE's advanced electronic control system to give you standard wired remote lift operation and the option of wireless remote lift operation. With the DC Winch with ASC, you can raise or lower your boat by pushing the up or down


Fig. 3 Wired Remote buttons on the standard wired remote pendant (Fig. 3). The wired remote's 30' cord enables you to place the winch opposite your dock, and still have the controls within easy reach of your dock or boat.

With the purchase of the optional wireless remote kit, the lift can be operated with a small hand-held transmitter. This transmitter (Fig. 4) also operates the interior light and optional floodlights. See pages 12 and 29 for more information on these optional features.

## SELECTING THE BATTERY

Before assembling or using the DC Winch with Electronic Control System, you need to select and purchase a suitable battery.
The following
 sections give
you guidelines for selecting the correct battery, and keeping it properly charged.

The recommended battery is a 12 -Volt, deep-cycle, Group 27 (case size), with 600 cold cranking amps and stud post terminals with wing nuts (lead top posts). An Interstate SRM-27 meets these criteria. FLOE does not provide the battery.


Battery boxes include a built in battery condition indicator to let you know the level of your charge.

If you are leaving your batteries in an unheated area for seasonal storage, ensure they are fully charged according to the manufacturer's instructions. If the batteries are left on the lift, unplug the wireless remote to ensure it does not drain the batteries.

## ! WARNING

When charging batteries, it is important to follow the manufacturer's instructions for both the battery and charging systems to ensure that batteries are not damaged by improper or over-charging.


## CHARGING THE BATTERY

In order to achieve peak lift performance and maximum battery life, the batteries must be properly charged and maintained. If the batteries are run down or faulty, the lift system will either move very slowly or not at all.
 Battery boxes include a built in battery condition indicator to let you know the level of your charge (Fig. 5).

## Two Charging Options:

Option \#1: Access the battery posts and charge the battery as you would normally. Charge the battery per manufacturer's instructions for both the battery and the charger.

Option \#2: To maintain a battery charge with the optional FLOE 12-Volt solar panel (Fig. 6). mount panel per included instructions and wire it to the battery as shown in Fig. 7. Be sure the panel faces the sun during peak daylight hours. A solar panel provides continuous charging on sunny days.

Fig. 7
Solar Panel
\& Battery
Diagram

SEASONA
There is no ne

storage. If you choose to do so, do not close or seal the bottom of the cover as this will trap moisture and encourage internal corrosion.
For battery care, disconnect the ring connectors and fully charge the battery according to manufacturer's instructions.

## A WARNING

All battery and motor connections must be corrosion free and tight. If not maintained properly, excessive heat will be generated which can melt the connections.

## CONNECTING THE BATTERY



The Advanced Switch Control (ASC) with DC Winch comes standard with an aluminum battery tray, plastic battery box, and the cabling to connect the battery to the electronic control panel. Attach the ring connector on the red power cord with the automatic overload circuit breaker to the positive side of the battery, and the black cord to the negative, as shown in Fig. 8. The circuit breaker will trip if an excessive amount of current is drawn through it. If this occurs, refer to the section on Troubleshooting the DC Winch on page 15 of this manual.

## ASSEMBLING THE DC WINCH WITH ADVANCED SWITCH CONTROL

Instructions for assembling the DC Winch with ASC are packaged with the winch. Refer to those instructions for detailed, step-by-step procedures for attaching the battery tray; installing the winch, eyebolt and lifting cable; attaching the magnet holders, and locating the wired remote. The following sections will give a brief overview of the electrical connection panel, how to connect the limit switch and its purpose, how to use the wired remote, and general lift operation methods. Refer to your instructions for additional information. Please read all warnings carefully.


DC WINCH ADVANCED SWITCH CONTROL (ASC)

The ASC is designed to allow for easy hook up of standard and optional components. Proper hook up to the panel will be addressed as each component is covered in this manual.

## LIMIT SWITCH CONNECTION AND IMPORTANT INFORMATION

The DC Winch ASC is equipped with an automatic upper magnetic safety limit switch. The two prong connector for the limit switch assembly plugs into the two prong connector on the Advanced Switch Contol box. The magnets for the limit switch are housed in two aluminum tubes. The first of these tubes, which contains the limit switch, is mounted to the inner side of the winch corner post, approximately 6 " below the upper clamp as shown in Fig. 11. The second magnet holder is attached to the top of the side cradle beam (flush with the outside edge) in line with the corner post and limit switch. When the cradle is raised, as the magnet holder on the cradle beam passes the limit switch on the corner post, the magnetic force triggers the switch. Fig. 12. Once a limit switch is triggered, it prevents the winch from raising the cradle bed beyond its normal travel limit. Exceeding this limit will cause severe damage to the winch or lift.


Fig. 11 Limit Switch Placement

SEE WARNING ON PAGE 17.


Fig. 12 Magnetic Holder Attachment

## IMPORTANT INFORMATION \& GENERAL MANITENANCE

- When used on a Floe Vertical Boat Lift, this winch must be properly assembled with two pulley blocks and a triple-line cable system. Any other assembly would greatly reduce the winch/cable capacity and is not recommended.
- Maximum winch capacity, with two pulley blocks and triple-line cabling, is 4600 lbs .
- For use on FLOE V-2000 - V-4600 lift models.
- It is normal to hear cable noise, such as pinging and popping, as the winch is lifting the boat.
- The winch will smell hot until the brake is broken in. (See label on control box for additional information.) Periodically check the drum of the winch, (the cylinder that the lifting cable winds onto), by lowering the cradle lift platform so that most of the cable is unwound. Visually inspect the drum for any excessive wear, or channeling. See the section on Inspections and Maintenance on pages 29 to 32 of this manual, for more information about how to inspect and maintain the cables on the lift and the gears of the DC winch.
- Grease the cable and the winch gears annually.
- This winch will smell hot and may smoke during the friction brake's break-in period.
- This winch is intended for intermittent use only. Continuous running in excess of three minutes can damage winch motor. After maximum run time the motor must cool for a minimum of five minutes.
- Additional information for winch operation is located on the electronic control.


## ! WARNING

The safety limit switch assembly must remain intact and working properly or damage may occur to the DC Winch With Electronic Control System and the boat lift.

## A WARNING

Submerging of the electronic components including the electric motor in water may cause lift failure that is not covered by warranty. When properly installed, the wave action will flow under the main lift beams and not break against them. This will ensure that the integrity of the lift frame and electrical system will not be compromised.

## 1. WARNING

The magnet holder on the cradle beam must remain intact and must be checked periodically. There should be no more than $1 / 2^{\prime \prime}$ gap between the inner edge of the side cradle beam and the corner post when the lift bed is shifted away from the corner post. If there is more than $1 / 2^{\prime \prime}$ gap, adjust the side cradle beam toward the corner post. (See your boat lift assembly instructions.)

## 1. WARNING

Do not operate winch without reading and understanding this warning and all other warnings on this lift and in the owners manual. (1) Do not exceed the winch's rated capacity. (2) Inspect the winch cable often to ensure it is not frayed. Replace as necessary. (3) Inspect the winch gears often to ensure they are not dangerously worn. Replace as necessary. (4) Grease the cable and the winch gears annually. (5) Do not rely on the safety limit switch to stop the upward bed travel.

## DC WINCH ROTATION

When using a DC winch the winch drum must always rotate from the inside to the outside when raising your boat. When wound correctly, the cable will go up the back of the winch, or the side closest to the corner post on which it is mounted.

If the cable is wound the wrong direction on the drum of the DC winch, the weight on the lift will fight the brake, so that the cradle lift beams may slowly lower, dropping your boat gradually back into the water. To correct this, simply use the wired remote to lower the lift and let it continue to run until the lift cradle beam raises again.

Fig. 13


## 1. WARNING

When raising your lift the winch cable must wrap around the drum from the inside to the outside or severe damage to winch and it's brake system may occur. It may also cause your boat to slowly lower to the water. If your winch is wound up backwards, simply lower the lift and continue running the winch until the lift platform raises.

## CONNECTING AND USING THE WIRED REMOTE

The DC Winch with Advanced System Control (ASC) comes standard with a wired remote control. The remote plugs into the 10 " ASC cord with a blue ring. If the plug is not installed properly, the lift will not operate. To raise the lift, simply press the "Up" button, to lower the lift press the "Down" button. (Fig. 15). The lift will stop auto-
 matically when it reaches the end of its up travel limit or when the button is released. Never rely completely on the limit switch. Read the warnings on pages 16-17 and the "Stop Here" section on page 17.
The corded remote has a 3-position key switch. The key is removable from all positions. OFF position disables the wired and wireless remotes. ON position provides wired and wireless power with the key in or out. In the WIRELESS position, only the wireless remote will work with the key in or out.
The wired remote is weather resistant but not waterproof and should not be exposed to the elements. Installation under a canopy system is recommended. If the remote is not covered by a canopy, unplug and store indoors when not in use. Turn the wired remote to
 the off position while storing the lift to ensure power is not beng drawn from the battery durng the off season.
NOTE: If the remote is accidentally submerged in water, to avoid corrosion on the contacts, it should be taken apart and blown out until it is dry.
If the lift is equipped with a canopy system, the cord on the remote should be attached with Velcro - one wrap to the canopy upright tube and the canopy hoop. Then run the cord forward from the frame's midpoint, or completely across the hoop, so that the pendant can be located for easy access from either the boat or the dock (Fig. 17). Refer to the assembly instructions packaged with the lift for details.
NOTE: If lift is not equipped with an optional canopy system for routing the wires to the dock side and it does not have the wireless remote option, the lift system should be installed so that the electrical connection panel is next to the dock.

## CONNECTING AND USING OPTIONAL WIRELESS REMOTE

An optional wireless remote control (Fig. 18) will allow operation of the lift from a distance. This remote includes a receiver, mounting post and two wireless trans-
 mitters. The wireless remote plugs into the 7-in. yellow plug on the ASC.

For more details, see the assembly instructions. Should the remote fail to perform properly these brief steps will help to diagnose the problem.

1. Lift moves without buttons pushed. Unplug the wireless remote and remove the batteries from the transmitter. Plug the radio remote receiver back in, and if the lift still moves, it is possible that the wireless receiver unit is faulty. If the lift does not move, replace the batteries in the transmitter to determine if it was transmitting when it should not have been. Leave the battery out of any transmitter determined to be faulty and contact your dealer.
2. Lift will not move when the transmitter button is pushed. Check to ensure that the batteries in all transmitters are good. If a transmitter has been dropped in the water, dry it out or replace it. If the problem persists, it may be due to radio interference in your area. When there are two remotes and both are transmitting at the same time, one signal will cancel out the other, even if the second transmitter is for another lift.

## $!$ DANGER

Never allow anyone on or under this lift system, especially while it is being operated or supporting the weight of a watercraft.

## ! WARNING

It is important that you never raise or lower the lift using the wireless remote until you are sure no one is on or near the lift.

## A WARNING

If the lift should raise or lower by itself without operating the remote control, disconnect the battery cable ring connectors immediately, if you are able to do so with-out the risk of injury Contact your localdealerorFLOE International.

## RAISING AND LOWERING LIFT MANUALLY

If there is no power to the DC winch, the lift bed can be manually lowered with the emergency handcrank packaged with the winch. Make sure battery power to the lift is disconnected
 before attempting to lower or raise the cradle lifting platform manually. Remove the plug on the side of the winch housing and insert the crank handle (Fig. 20). Turn counterclockwise to lower the lift. Continue turning until the cradle is fully lowered and there is slack in the cable. Turning clockwise will raise the lift.

## ! WARNING

Make sure battery power to the DC winch is disconnected before attempting to lower or raise lift manually.

## OPTIONAL LIGHTING KITS FOR DC WINCH SYSTEMS

See page 30 for information about the optional floodlight kit. Purchase of the optional wireless remote system and a canopy system are required for flood light kit to work properly.

## DC WINCH TROUBLESHOOTING

## A. Lift won't go up or down

1. Check to see if the key on the wired remote is turned to the ON position.
2. Check battery(s) condition and that it is properly charged. Each battery should have between 12.7 and 13.8 volts.
3. Check to see that all battery connections are corrosion free and tight.
4. Check plug connections from the Advanced Switch Control (ASC) going to limit switch and remote(s) to ensure they are plugged in properly and making positive contact.
5. Check the wire connections from the Advanced Switch Control (ASC) to the motor to ensure they are corrosion free and making positive contact. Connections are located under the motor cover.
6. Check auto reset circuit breaker or fuse. If the breaker has tripped it should reset after a couple of minutes when it cools down. If not sure it is working, you can bypass it. - If circuit breaker has tripped or fuse is blown chances are the motor is drawing too much current and it could blow the fuse or trip the breaker again. Check the following:
a. Is the lift overloaded or has it exceeded its max run/cycle on time
b. Is the brake improperly engaged

- With the winch units, the brake will drag if the cable is wound up backwards on the drum. Refer to decal on winch corner post.
- With VSD drive units, if the brake is not releasing while in operation it will drag and cause the drive to draw excessive current. You should hear the brake "click" on the outside end of the VSD power unit box when raising or lowering the lift.
c. Additionally there may be something causing friction in the system, such as a problem in the drive train, or the cable/pulley system has an issue.


## B. Lift will only work in one direction

If this occurs, you may have a problem with the end of travel limit switch(es).

1. Test the end of travel limit switch(es) by using the limit switch bypass plug located in the tool pouch.
2. To do this, un-plug the limit switch plug going into the ASC and replace it with the bypass plug.
3. If the cradle is up, press the down button and vice versa.
4. Use extreme CAUTION. When using the bypass plug the limit switches will no longer shut down the lift when it reaches the end of its travel. This means you must NOT run the lift either all of the way up or down.
5. When going up, stop short of the "Stop Here" decals located on the corner post.
6. When going down, stop as soon as the cradle stops moving.
See page 29-30 for additional information.

## MANUAL WINCH OPTION

FLOE offers manual winches for the V-2000 through V4200 lift models. (Fig. 21) The brake style winch is manufactured by Dutton-Lainson. It operates by maintaining pressure on the brake pad any time the winch is being cranked to raise the cradle lift beams. As the "dog" catches each cog of the sprocket, you will hear a clicking sound. This indicates that the brake is working properly, and that the drum is turning while the brake prevents


Fig. 21 Crank Wheel With Speed Knob the cable from unwinding uncontrollably. When you "back the wheel off" by turning it in a counterclockwise direction, the pressure on the brake is reduced, allowing the smooth lowering of the cradle lift beams and boat.
FLOE has matched a winch and cable pull style to each lift model to assure optimal performance.

## A. WARNING

When raising lift a clicking sound should be heard indicating proper rotation and brake function. If no sound is heard a fast uncontrollable spin-down could occur. Attempting to stop the crank wheel during an uncontrollable spin-down could result in severe injury.

## |MANUAL WINCH CRANK WHEEL

FLOE includes a "big wheel" with a speed knob attachment that makes using the winch easy. (Fig. 21) The 2602 lift comes with a 36 " wheel, while the large V models are packaged with 42 " wheels. These large-diameter wheels dramatically reduce the amount of effort that a regular crank handle would require to raise or lower the boat. The speed knob is easy to grasp and allows you to turn the wheel with one hand.

## RAISING AND LOWERING THE MAIN CRADLE LIFT BEAMS

Before raising or lowering the main cradle lift beams, it is important that you understand how to operate the remotes, what to do should the remotes fail, and how to ensure that the lift is both level and in adequate water depth. Please read the safety statements and information in this section carefully before connecting power to the lift and operating it for the first time. If the lift is equipped with a canopy, it is important to stop raising the boat before it or or any accessories make contact with the canopy frame or fabric.
NOTE: Many boats have plug-in style bow and stern lights that while plugged in are higher than the rest of the boat. Be sure these are removed when entering or exiting the lift or lowered prior to lifting the boat to its normal raised position.
When the main cradle lift beams are in their lowered position on a properly leveled lift in adequate water depth, the boat floats free of the bunks as it enters or leaves the lift. (See Fig. 14). When determining required water depth, take wavy conditions into consideration. There should be no chance of the boat hull lifting up on a wave and dropping down onto the bunks. Guidance on bunk placement is addressed in more detail on pages 17 \& 18 .
To maintain the optimum water level for proper lift operation, the minimum water depth is 29.5 " with the maximum of 69 " for all other vertical and VSD lifts.

## ! DANGER

Never work on or make adjustments to boat, boat lift, or boat lift accessories while the lift is supporting the weight of the boat.

## ! WARNING

Keep all body parts and clothing away from cables and moving parts. Do not attempt to stop the wheel if an uncontrollable spin-down should occur.


Fig. 14a: Properly Leveled Lift in Adequate Water Depth (no friction from hull hitting bunks).

## ! WARNING

The main cradle lift beams should never act as a wave-break. Make sure that the cradle lift platform is always either raised high enough so that the waves pass under it, or lowered completely beneath the water. Waves breaking against the cradle lift beam will cause unnecessary wear on the lift's frame.

Fig. 14b

Waves or spray from waves should not hit motor. Warranty is void if motor is covered with water


Lift Platform has not been raised sufficiently. Water is hitting the rear cradle lifting beam. DO NOT let cradle lift beam act as a wave-break!

## $!$ DANGER

Stay clear of boat lift when someone is entering or exiting the lift with a boat. Never try to assist the boat's direction while it is in motion (either from inside or outside the boat).


## PROPER HEIGHT "STOP HERE" DECAL

Never exceed the recommended height when raising the lift. A "Stop Here" arrow decal is located on the winch corner post (See Fig. 24). It is especially important to remember this when using a


Fig. 24
"Stop Here" Decal DC winch because, if there is a limit switch failure, the winch will continue to try to raise the boat. Going beyond the recommended height can cause damage to the winch, cables, accessories, or lift frame.

## A. WARNING

Do not raise the cradle lift beam platform beyond the "Stop Here" arrow decal on the corner post of the lift frame. Exceeding the maximum height can cause severe damage to the corner post and lift frame, winch, and cables, as well as your boat and accessories. See Fig. 24.

## VERTICAL LIFT - CABLING

As its name indicates, the vertical lift's cradle beams raise and lower vertically, or straight up and down, as opposed to the pivot or cantilever style lift which has a cradle that pivots back from the main frame. The advantage of the vertical lift style is that the cradle lift beams drop lower, thus requiring less water depth to float the boat onto the lift and the cradle lift platform also raises your boat much higher for greater protection. The winch cable winds or unwinds onto the winch drum which raises or lowers the lift. One end of the front leveling cable attaches to the front corner post leg, passes over a sheave inside the front cradle beam, through the beam itself, and then under a sheave at the opposite end of the front cradle lift beam. The cable is attached at its opposite end near the top of the other front corner post. As the winch cable raises or lowers the lift, the pulleys allow the cradle platform to travel up and down along the leveling cables. The front leveling cable, working with two corresponding cables in the side cradle beams, keeps the cradle platform both square as it travels up and down.

With the exception of the winch cables, all of FLOE's vertical lift cables are made of aircraft-quality stainless steel. Because stainless steel cables are not flexible enough to wind on a winch drum, FLOE uses the highest aircraftquality galvanized cables available for the winches.

## LEVELING BOAT LIFT INSTALLING AND LEVELING LIFT EASY LEVEL ${ }^{\text {™ }}$ LEVELING LEGS (PATENTED)

FLOE lifts come standard with FLOE's exclusive Easy-Level ${ }^{\text {TM }}$ Leveling Leg. With the EasyLevel ${ }^{\text {TM }}$ legs you can effortlessly raise, level, or lower the lift without getting in the water. Also, these legs allow for easy adjustment if the lift should settle or if the water level fluctuates measurably.

As you prepare to install and level the lift, keep in mind how crucial it is to prevent a boat hull from rubbing or hitting the bunks or lifting beams and causing undue pressure on the lift frame. Read the warning below, and refer back to Fig. 14a on page 13, which diagrams a properly leveled lift in adequate water depth.
To raise or lower the lift frame, simply turn the nut inside the leg as shown in Fig. 24. Turning clockwise will raise the lift, counterclockwise will lower it. Use a 3/4" socket with a socket wrench or a 14 volt (or larger) cordless drill (Fig. 26) to adjust. Each of the four legs adjusts independently so the lift can be perfectly leveled. As the lift is raised or lowered, alternate among all four legs

## $!$ WARNING

When positioning the lift it is important that it is placed in adequate water depth (Fig. 14a on page 11). The cradle must be lowered far enough for the boat to easily float on and off without touching the lift bunks. If the boat hull rubs on the bunks when entering or exiting the lift, the horizontal forces can cause severe damage to the lift and will void the warranty on affected components.

## ! WARNING

Never adjust leveling legs (up or down) with a boat on the lift. The added weight of the boat will apply extreme pressure to the adjustment system causing potential mechanical failure and/or serious bodily injury.
after 1-1/2" to 2" of adjustment - similar to tightening lug nuts on a tire rim. If the drill is working too hard, you are lifting too much on an individual leg and need to proceed to the other legs.


Fig. 24


Fig. 25


For leveling leg adjustment range, see boat lift specifications, page 5. The decal pictured in Fig. 24 and 25 has a useful measuring tape so that you can see the water level on each corner post. It is important that the water level reads the same on all four corner posts. Once you determine what leg extension measurement works best for your boat and lift, you can use a waterproof marker to draw a line at that point on the tape of one corner post. This will be very helpful in following seasons, either for you or especially for a hired installer who may be unfamiliar with your boat, shoreline, and lift.

## ! WARNING

Be sure people and objects are clear of the lift and the leveling leg during adjustment. As the lift is leveled, the entire lift frame will move, causing the potential creation of pinch points between the lift and dock system as well as the sand pad and lake bottom.

Fig. 26
Cordless Drill with Socket Attachment The 3/8" drive socket adapter bit shown in inset photo, along with a $3 / 4$ " socket, will allow you to use a cordless drill on the leveling nuts to lower or
 raise the lift's legs.

## FLOE TOOL KIT

FLOE has provided a kit with four tools for use with your VSD boat lift.

1. Flush Style Grease Gun Tip (Fig. 27)
(for greasing the ball-screw mechanism)
2. $3 / 8$ " Drive Socket Adapter Bit (Fig. 28)
3. Limit Switch Bypass Test Plug (Fig. 29) (See VSD Diagnostics on page 26 for instructions on how to use the byass plug.)

The Velcro backed tool kit can be attached to the lift frame, so that these tools are readily available when needed. The kit is made from solution dyed polyseter and has a fold-over flap to help protect these adapters from the elements.

## To attach the tool kit:

Remove the adhesive protective paper from the back of the vinyl pouch and place the tool kit on the corner post as shown, see Fig. 30. Now the tools will be easy for you or an installer to locate.


## WARNING

Never operate a boat lift that is not level. Under normal conditions aboatliftoperates under extreme force. When the lift is not level, these forces are greatly multiplied and bodily injury or damage to the lift can result.

## BOAT LIFT INSTALLATION \& REMOVAL OPTIONS

If the lift is in a climate where the lakes freeze during the winter months, it may need to be installed and removed on a seasonal basis. FLOE has several accessory options designed to make this easier. With the exception of the boat lift wheel kit system, these options will be mentioned only briefly. Detailed assembly and use instructions will be packaged with the lift accessories.

## BOAT LIFT WHEEL KITS

If the lift is in a location where it can be rolled straight in and out, we recommend using two pair of optional wheel kits (Fig. 31). Attach wheel kits to lift frame according to wheel kit assembly instructions included in your boat lift wheel kit.


To install the lift with the optional wheel kits in place:

1. Raise the leveling legs so they are fully retracted with a 14 volt (or larger) cordless drill or wrench and $3 / 4$ " socket.
2. Once the weight of the lift is supported by the wheels, roll the lift into position by hand, or pull it with a boat using a " Y " cable harness. (Fig. 32 \& 33)
3. Once the lift is in place, use a drill or wrench to lower the leveling legs until the lift is level and the wheels are off the bottom.


Lift being pulled into lake by boat

- OR- being pulled into shore by ATV to remove.


## FLOAT \& ROLL

The Float \& Roll takes the concept behind the boat lift wheel kit system a step farther. This system uses floats and wheels to provide easy installation and removal of the boat lift. It is especially useful if the lift must be floated into a slip or cannot be simply rolled into position.


The Float \& Roll comes standard with four molded tires, and can either be used separately, or in conjunction with two pairs of Boat Lift Wheel Kits. Although the boat lift wheel kits are not required, the additional tires do not interfere with the operation of the Float \& Roll and will add buoyancy when the lift is in the water.
A detailed instruction manual accompanies the optional Float \& Roll. Contact your dealer for additional information on the Float \& Roll, or any of the lift accessories. To see a Float \& Roll in use, view FLOE's free marine VHS or DVD video, "A Look Into FLOE Dock \& Lift Systems" or go to www.floeintl.com and play the video found under Boat Lifts > Accessories > Install/Removal.

## A WARNING

When using any of the installation and removal accessories with a power source (such as a boat, winch, or ATV), if the lift does not move easily, do not force it. Structural damage to the lift could result.

## INSTA-FLOAT

This system is similar to the Float \& Roll in its purpose, which is to make the lift installation and removal process easier, by floating the lift once in the water. There is, however, one important difference: The Insta-Float does not have its own wheels and is designed to be used in conjunction with two pairs of optional wheel kits.
A Float \& Roll may be a better option if it is going to be used for multiple lifts, or if it needs to be independently mobile.


Fig. 36 Insta-Float:
Must also have two sets of boat lift wheel kits installed.


Fig. 37 - Ideal bunk placement - Note that the bunks are spread out to the widest position on the boat hull. They sit nicely into the contour of the hull and the keel has plenty of clearance above the main lift beam. If possible, this is the most ideal bunk placement for non-inboards.


Fig. 38 - Bunk height recommended for inboards - The bunks are spread wide and the hull is lifted so that the running gear on an inboard can pass over the main lift beam without making contact.


Fig. 39 - Less desirable bunk placement - Ideally in the above example, the lift bunks would have been positioned wider as in Figs. 37-38. Doing so would have allowed the bunks to be set higher, preventing the vertical tubes from sticking so far below the main lift beam.

## BUNK SELECTION \& SET-UP

FLOE offers four different lift bunk styles to accommodate a wide variety of boat and pontoon hulls. Regardless of the style you select, it is important that you follow two important rules when installing the bunk system. 1. If the lift is in shallow water, make sure that the vertical support tubes are either set or cut short enough that they do not hit the lake bottom and prevent the main cradle lift beams from lowering completely. 2. Always adjust the height of the bunks so that the boat's hull does not touch the main cradle lift beams.

## FULL-LENGTH BUNKS

Full length bunks are excellent for stabilizing and providing superior support for most V-hull, Trihull, and tunnel-hull boats. Detailed instructions for setting up and adjusting the bunks are included with the bunk system. Ideal bunk placements are shown on the next page in Figs. 37-38. Fig. 39 shows an acceptable, but less desirable bunk placement.
 and slide it into position. Torque to 35 ft . lbs.


## DETERMINING THE PROPER WIDTH

The proper width of the bunk system depends on the contour of the boat hull. As a rule of thumb, the bunks should be spread as wide as possible. If the boat is on a trailer, measure the width that will provide optimal support and hull fit. The setup of the trailer bunks may provide a helpful guide. See Figs. 37-38.

## CRADLE PAD PIVOT BUNKS

Cradle pivot bunks are ideal for most lightweight V-hull watercraft. They can be located in a Vposition at both the front and rear of your boat, or turned so that the padded extrusions on the rear pair run parallel with the boat's hull. Like the full-length bunks, the cradle pads will adjust both vertically and horizontally (Fig 40). The support tube clamps adjust in the same way as the bunk clamps (Fig 41). This extensive adjustment capability gives you the flexibility to fit the system to your boat's hull design.
The best set-up will ensure that, as the boat is being raised, it does not lean to one side or the other and that once it is raised, the boat will be held completely stable.

## PROPER ADJUSTMENT

Ideally the pads in the rear will be spread out towards the edges of the hull to better distribute the boat's weight on the rear cradle lift beam. The front pivot pads should be positioned where they best support the hull and prevent the boat from leaning once the cradle lift platform begins to raise it out of the water. Fig. 42 shows wellpositioned cradle pad pivot bunks. Note that the support tubes do not extend below the main cradle lift beam. This prevents them from hitting the lake bottom when the cradle lift platform is in its lowered position. Refer to the instructions included in the cradle pad pivot bunks to install and adjust them.


Fig. 42: Properly Positioned Cradle Pads

## PONTOON FULL LENGTH BUNK/ GUIDE-IN SYSTEM FOR TWIN \& TRI-TOONS

Specially designed for pontoon boats, FLOE's pontoon guide-in/bunk system provides excellent guidance for a craft entering the lift. Constructed of aluminum and composite, this kit (when correctly installed) functions to both guide the boat into the lift and then raise and support the craft by its frame.


Fig. 43: Pontoon Guide-In Bunk Position Guidelines


If the lift is in shallow water and after final adjustment these tubes stick too far below the main lift beam, they may need to be cut off flush so that they do not hit the lake bottom and prevent the lift from lowering completely.

FIG 44
Pontoon Guide-In Bunk Position Minimum Clearance Guidelines


## GUIDE-IN SYSTEM SELECTION

## PRECISION PARK ${ }^{\text {TM }}$ CARPETED

 GUIDE-INS WITH BUMPERSVertical entry bumpers mounted to each side allow the boat's rub rail to make initial contact. The carpeted guides provide a continuous guide surface while two addi tional vertical bumpers make final contact with the boat's rub rail for perfect alignment. It is important to adjust the height of the carpeted guide-in system so that the midpoints of the upright bumpers are on a level with the rub rail of the boat. (See Fig. 46) The width of the guides should be set so that the lower hull has complete clearance and does not rub against the horizontal carpeted guides under normal operation of the boat.

Fig. 46 Precision Park ${ }^{\text {TM }}$

(Note offset style clamps, designed to allow optimal width adjustment.)

## PRO-PARK ${ }^{\text {T }}$

## VERTICAL GUIDES

The FLOE vertical guide-in system is designed to guide the boat by its rub rail so it never touches or mars the hull. It has an infinite adjustment range limited only by the width of the lift, to allow for a perfect fit. These are available in pairs of double guides or pairs of single guides. See Figs. 48-49.


## ADJUSTING THE GUIDES

1. With the guides on the lift, but not tightened, float the boat over the lift into its proper position.
2. Raise the lift platform until it holds the boat centered in place.
3. Slide the guides up to the boat's rub rail.
4. Remove the boat.
5. Raise the lift platform and tighten the guides to 35 ft . Ibs.

## SELECTING YOUR GUIDES

Technically, two pairs of single guides would be best to help safely guide the boat into the lift. However, FLOE recommends at least one pair of double guides for the lift's entry because this style has two vertical guides mounted ahead of the lift structure. The boat's initial impact with these outset guides will slow the watercraft and start to guide it by its rub rail before it even enters the lift.

## A WARNING

Always enter the lift slowly to avoid any severe impact. Severe impact could cause damage to the guide system, lift or boat.

## BOAT PLACEMENT \& MOTOR STOP

In order to properly distribute the weight of the boat on the lift, it is important that the boat is parked in the correct location. The best way to determine this location for your particular craft, is to log onto FLOE's website, www.floeintl.com, and click on the Boat Lift Selector Program. Because the majority of a standard boat's weight is typically in the back by parking further forward more of this weight gets transferred to the front lift beam. See Figs. 50 \& 51 .

## HOW TO POSITION A PONTOON BOAT

If you have a longer craft such as a pontoon boat that proportionally does not have a lot of weight in the back, it can be parked, depending upon its length, with more rear overhang (up to 2-7 ft.) and still achieve proper weight distribution. See Fig. 51. For instance, the back of an average 21' pontoon boat should overhang approximately 3' past the back end of the lift. For every additional foot of length, the stern can overhang 4" more beyond the rear of the lift. These are only general guidelines. Consult the Boat Lift Selector Program and your dealer for more information.
 time and prevent your motor from hitting the rear main cradle lift beam.

Adjust guides so that they are against your rub rail.

## A WARNING

Improper weight distribution on the main lift beams can cause the majority of the boat's weight to be supported by only one beam. This could cause an overload situation which could result in lift failure and potential bodily injury. If you do not know where your boat's balance point is, consult your dealer. When determining balance point, the Boat Lift Selector program on FLOE's website, www. floeintl.com, is a good starting point.


Fig. 51 - Boat shown in proper position so that an even amount of weight weight is transferred to the front beam. This canopy is positioned so that it covers the entire boat.

## PROPER CANOPY FRAME POSITIONING

The FLOE canopy system is adjustable vertically and horizontally. Detailed instructions on how to make these adjustments are included with the canopy system. Once the boat's proper position is known, follow the simple steps below to ensure proper canopy placement as shown in Figs. 51 \& 52.

1. With the boat in place, determine how far the canopy needs to extend beyond the rear of the lift. Remove boat and position the frame accordingly. (Normally this distance will be between 3.5 - 5 ft . for standard boats, and 4-8 ft. for longer pontoons.) Do not tighten at this point.

Note: It is recommended to allow at least 6" of extra coverage in both the front and rear of the boat and outdrive. When adjusting the horizontal position of a canopy frame, the frame will extend further off the front of the lift than off the rear. This depends on the length of the canopy and the position needed to cover the rear of the boat. If this front overhang is more than 11 -ft., or if the canopy is $26-\mathrm{ft}$. or larger, a canopy frame support system is needed as shown in Fig. 54. This will reduce flex and bowing in the canopy frame and give you an additional $2-\mathrm{ft}$. of overhang. The overhang on the end of the canopy should not exceed 13' from the end of the canopy to the canopy leg on either end of canopy.
2. Raise the boat to its maximum height and determine how high the canopy framework needs to be in order to clear the tallest point of the boat.
3. Remove the boat before making adjustments. Set the canopy frame height by adjusting the four vertical tubes and tightening each set bolt to $60-\mathrm{ft}$. lbs. See Fig. 54.
4. Tighten the horizontal adjustment bolts to 60-ft. Ibs.


Fig 52 - As you can see in Figs. 51 \& 52, the watercraft are completely covered from front to back and the fabric hangs down vertically over the boats side walls. This is the optimum canopy placement.

## A WARNING

If the canopy frame extends more than 11 ft . from the end of the lift, a canopy frame support is needed. This will add rigidity to the frame for up to an additional 2' of overhang and reduce the potential for wind damage.


The 26', 28', and 30' canopy systems come standard with the canopy support system.


## ! WARNING

Do not adjust canopy frame with fabric attached. When the bolts are loose or removed, a sudden wind could cause the entire frame structure to blow off the lift and damage it.

## END FRAME ADJUSTMENT

All canopy frames are equipped with the adjustable end frame feature. This feature makes installation and removal easier and pulls the canopy fabric tight for a great looking fit.

To adjust prior to installing or removing fabric:

1. Loosen center rail adjustment knob by turning it counterclockwise (See Fig. 54). This will allow the center rail to retract.
2. Using a $9 / 16$ " socket with either a wrench or a cordless drill, spin main rail adjustment bolts clockwise to retract each side (See Fig. 55).
3. Follow canopy fabric installation instructions.


Center rail adjustment knob.


Canopy main rail adjustment bolt.

## ! WARNING

When adjusting the main rail bolts, be especially careful when using a cordless drill. The drill has so much power that it would be easy to overextend the rails, which could cause the canopy fabric to overstretch or tear.

## CANOPY FABRIC INSTALLATION

1. Place fabric over the frame system and adjust where necessary for a uniform fit.
2. Attach canopy ends to frame by wrapping the Velcro around the bottom of the end hoops as shown in Fig. 56.
3. Use a 9/16" socket with either a wrench or a cordless drill, spin main rail adjustment bolts counterclockwise to extend each side until the fabric is snug. Do not over extend as too much pressure on the fabric can tear the seams or bend end hoops.
4. Push the top center of the end-hoop outward until the fabric is snug and tighten the center rail adjustment knob.
5. Attach all elastic belts by placing the Quick Clip ${ }^{T M}$ onto frame rail as shown in Figs. 57 \& 58.

Before attaching the quick clips to the frame, check each one to ensure that the elastic strap has been woven through the clip properly (see Fig. 57) and that a "tail" of at least one inch of strap material extends beyond the end of the clip.
When attaching the quick clips, alternate from one side of the frame to the other, and follow the three simple steps shown in Fig. 59. Once installed, the straps should be fairly taut, with an approximate tension of 20 lbs .

## ! WARNING

Do not attempt to install or remove canopy fabrics in windy conditions. Strong winds or wind gusts can make fabric handling extremely difficult and can cause a potentially dangerous situation.

## A WARNING

Do not adjust canopy frame with boat on lift. If lift failure were to occur, there is potential for serious bodily injury or even death. Damage may also result from the loosened framework making contact with the boat.

(2) Pull towards you

Fig 59

(3) Pull up and attach to frame


## ! WARNING

If the lift will be left without a boat on it for any extended amount of time, the canopy fabric should be removed to reduce the possibility of wind damage.

## CANOPY WIND PRECAUTION

If the lift has a canopy, it is possible for strong winds to move the lift system or blow it over. This is especially true if the lift does not have a boat on it. Even with a boat's weight, extreme winds can possibly move a boat lift causing potential damage. The possibility of wind damage to the lift or canopy may be reduced by anchoring the lift to the lake bottom with a screw-auger anchor system. Mesh end canopies are available for high wind areas (Fig. 59). Screw-auger anchors are commonly used to secure mobile homes and can be purchased at most hardware stores. They can also be purchased from a FLOE boat lift dealer.


Fig 59: Optional Screw-Auger Anchor System
Part \#511-03800-00 (two per set)

## CANOPY FABRIC REMOVAL

1. Detach all elastic belts and Velcro end straps.
2. Loosen the center rail adjustment knob so the end-hoop can retract.
3. Using a 9/16" socket with either a wrench or a cordless drill, spin main rail adjustment bolts clockwise to fully retract each side.
4. Remove fabric from frame.

## ! WARNING

In winter climates where the potential for snow accumulation exists, the fabric must be removed or the weight of the snow may cause damage to the canopy frame and/or canopy fabric. Canopy fabric should be stored clean and dry. This will help prevent the growth of mildew and fungus.

## CANOPY FOLDING INSTRUCTIONS

1. Lay canopy on a clean, flat surface with the top facing up.
2. Fold the sides of the canopy on the seam. Fold one end of the canopy to the seam. See Fig. 60.
3. Start at the end that is folded, measure in $16 "$, fold the canopy toward opposite end and continue folding until you reach the other side. The canopy should now be approximately 20" wide and resemble Fig. 61.
4. At one side, measure in 16 ", fold the canopy until you reach the opposite end. The canopy should now resemble Fig. 62.

## CANOPY FABRIC CARE \& CLEANING SOLUTION DYED POLYESTER (SDP)

 SDP is a woven fabric and will not support the growth of mildew. Mold and mildew needs "food" to grow on and polyester isn't a desirable substance for mold. Dirt or dust on the fabric is a perfect "food" for mildew growth, which makes regular cleaning important. There is no set time for when a fabric should be cleaned. The local environment has a great deal to do with determining cleaning frequency. Cleaning is required less frequently in a dry environment than in a humid one with heavy foliage cover. SDP has a finish applied to the fabric to deter mold and mildew growth, but does not make it mold-proof. Keeping the fabric free of dirt is important to deter mold growth.FLOE SDP fabrics will provide excellent protection to your boat from harmful sun exposure. Also, the combination of heat-sealed seams and the water repellent fabric will minimize rain from entering the boat. Heavy and/or persistent rainfall can increase the likelihood that a limited amount of water could pass through the fabric. It is recommend that the canopy be kept taut using FLOE's horizontal fabric tensioner and Quick-Clip with elastic tension belt system. A taut canopy fabric promotes water run-off and will minimize water penetration. Also, applying water repelling fabric treatments such as 303 may increase the water repellency further.

Cleaning: One of the best ways to keep SDP looking good and to delay the need for deep cleanings is to hose fabric off on a monthly basis with clean water. This practice will help prevent dirt from becoming deeply embedded in the fabric. In most environments, a thorough cleaning will be needed every two to three years.
To thoroughly clean SDP fabric, follow these simple steps:

1. Brush off loose dirt.
2. Hose down.
3. Prepare a cleaning mixture of water and mild natural soap (no detergents).
4. Use a soft bristle brush to clean.
5. Allow soap to soak in.
6. Rinse thoroughly.
7. Air dry completely before storage.

Re-Treating the Fabric: SDP fabrics are treated with a fluorocarbon finish which enhances water repellency. This finish is designed to last for years but will need to be replenished when you notice that water is not beading up as well as it usually does. The fabric manufacturer recommends 303 High Tech Fabric Guard ${ }^{\text {TM }}$ as the preferred re-treatment product. Reapply as needed. 303 High Tech Fabric Guard ${ }^{\text {TM }}$ can be purchased at most marine supply stores or online at 303 -products.com.

If a canopy fabric has any build-up of dust or dirt in the pores and it is in a moist environment where it cannot dry out regularly, it may cause mildew to grow on the fabric. Although this mildew can be removed, it can be very difficult or even impossible to remove the stain on the fabric left by the mildew. With darker colored fabrics, even if such a stain occurred it is much less visible to see.

## INSPECTIONS \& MAINTENANCE

- Check all structural fasteners annually to ensure that they are tight.
- Inspect all cables at least annually. Any frayed, deteriorating or visibly stressed cables must be replaced before the lift is used.
- Check all seven pulleys (sheaves) annually to make sure they are turning free and true. Ensure that the cables are running properly in the grooves or channels of the pulleys. Check the bushings or any signs of wear. If there is too much vertical play at the top and bottom of a pulley on its axis, (more than an $1 / 8$ "), replace the bushing, and if necessary, the sheave itself. See Figs. 67 \& 68.
- Visually inspect lift frame annually for cracks or damage. Replace any cracked or damaged parts before using lift.
- If the lift receives wind damage or is moved or blown over by the wind, a full inspection (preferably by a trained FLOE dealer or other knowledgeable professional) must be completed before the lift is used.
- Grease lift as outlined in this manual. See Fig. 71 on the following page.


## A WARNING

Pulleys with worn bushings can cause damage to the beam where they are located and cause excessive friction while the lift is being operated. This can also severely damage other components such as the drive train and cables.
$!$ WARNING
Do not use a boat lift with cables that show any abnormalities. If a cable breaks under pressure, the boat will drop suddenly causing potential damage to the boat, the boat lift, and can cause serious injury or death.

## INSPECTIONS \& MAINTENANCE continued



Fig. 67
Pulley with proper vertical orientation on its axis


Fig. 68 Pulley with too much side-to-side play (not vertically aligned)


Fig. 69 Side Cradle Lift Beam Pulleys
While Fig. 70 shows the location of all seven pulleys, this figure (69) specifically identifies the location of the side cradle lift beam pulley, which is a little more difficult to access. It can still be checked from the open end of the beam by using a long pry bar or flat screwdriver and pushing against the side of the top and bottom of the pulley to test for excessive side-to-side play (see Fig. 68).

## A. WARNING

Pulleys with worn bushings can cause damage to the beam where they are located and cause excessive friction while the lift is being operated. This can also severely damage other components such as the drive train and cables.

Fig. 70 Sheave Locations (Total of Seven)
There is one sheave that comes with the winch in a dou-ble-pull system. In the lift itself there is one sheave at each end of the two side cradle lift beams and one at each end of the front cradle lift beam.


Note: Pulley Block (comes with winch on V2002, V3400 \& V4200)

## A. WARNING

Always remove the boat and lower the lift bed completely before attempting any maintenance or repairs.

## GREASING THE DC WINCH

Although the DC winch does not need to be covered for seasonal storage you should grease the gears at least once a year. Access the gears from the opening on the top of the winch housing. Apply a high quality lithium grease to the topmost gear and then run the winch enough so that the grease is distributed to the other gears. (See Fig. 71)


## LEVELING ${ }^{\text {TM }}$ LEG

The Easy-Level ${ }^{\text {TM }}$ leveling leg must be greased at least once annually. This should be done prior to winter storage if the lift is removed seasonally. To grease, lower lift until the pad is fully retracted and the access holes line up, with the threaded rod clearly visible inside the hole. Apply a generous amount of quality lithium grease to the threaded rod as shown in Fig. 72. Remember to grease all four legs and extend them to distribute the grease, see Fig. 73.

Refer to pages 15-16 for more information and tips on using the leveling legs.


Fig. 72




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＊＊REPLACEMENT CORNER POST FULL ASSEMBLIES ARE AVAILABLE（ITEMS 65－68）


| DESCRIPTION |
| :---: | :---: |
| Ass'y, Side Cradle Beam (A) |
| HHCS, 5/8-11 x $21 / 2$ ss 18-8 |
| Nut, Jam 5/8-11 ss 18-8 |
| Beam, Side Cradle 97" |
| Spacer, Side Cradle Sheave |
| UHMW, 1/4" x 1/2" x 5" |
| Spacer, 1.297" (Side Cradle) |
| Cable, Side Leveling 154.875" |
| Ass'y, Sheave 5" $-5 / 16^{\prime \prime}$ Cable |
| Ass'y, Cradle Guide (Ext.) (INCLUDES ITEMS 40 \& 43) | Ass'y, Cradle Guide (Ext.) (INCLUDES ITEMS 40 \& 43)


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\begin{gathered}
\hline \text { DESCRIPTION } \\
\hline \text { Ass'y, Front Cradle Beam } \\
\hline \text { HHCS, } 5 / 8-11 \times 13 / 4 \text { ss } 18-8 \\
\hline \text { Nut, Jam 5/8-11 ss } 18-8 \\
\hline \text { Beam, Front Cradle - 101" } \\
\hline \text { Spacer, } 1.055^{\prime \prime} \text { (.090" Front) } \\
\hline \text { Cable, End Leveling - 181.25" } \\
\hline \text { Ass'y, Sheave 5" }-5 / 16^{\prime \prime} \text { Cable } \\
\hline
\end{gathered}
$$

| PART NUMBER |
| :--- |
| $111-00223-01$ |
| $001-70310-00$ |
| $001-70816-00$ |
| $002-01810-01$ |
| $007-07701-00$ |
| $007-09510-00$ |
| $111-00107-00$ |




| NO. |
| :---: |
| $63^{*}$ |
| 13 |
| 15 |
| 34 |
| 53 |
| 55 |
| 58 |

$$
\begin{gathered}
\hline \text { PART NUMBER } \\
\hline 111-00221-01 \\
\hline 001-70313-00 \\
\hline 001-70816-00 \\
\hline 002-01814-01 \\
\hline 006-10206-00 \\
\hline 006-11001-00 \\
\hline 007-07700-00 \\
\hline 007-09002-00 \\
\hline 111-00107-00 \\
\hline 111-00156-00 \\
\hline
\end{gathered}
$$




**REPLACEMENT CORNER POST FULL ASSEMBLIES ARE AVAILABLE (ITEMS 65-68)

SUB-ASSEMBLIES

| NO. | PART NUMBER | DESCRIPTION | QTY |
| :---: | :---: | :---: | :---: |
| $67^{* *}$ | $111-00396-02$ | Ass'y, Corner Post "C" $.09-74^{\prime \prime}$ | 1 |
| 16 | $001-70861-00$ | Nut, Nylock 5/16-18-Alum | 2 |
| 21 | $001-74402-00$ | CB, $5 / 16-18 \times 31 / 2$ ss $18-8$ | 2 |
| 31 | $002-00049-01$ | Post, Corner .090" WALL $-74^{\prime \prime}$ | 1 |
| 64 | $111-00234-01$ | Ass'y, Easy-Level Inner Leg V2000-VSD5K (Pont) | 1 |


| NO. | PART NUMBER | DESCRIPTION | QTY |
| :---: | :---: | :---: | :---: |
| 68** | 111-00397-02 | Ass'y, Corner Post "D" .09-74" | 1 |
| 16 | 001-70861-00 | Nut, Nylock 5/16-18-Alum | 2 |
| 21 | 001-74402-00 | CB, 5/16-18 3 1/2 ss 18-8 | 2 |
| 31 | 002-00049-01 | Post, Corner .090" WALL - 74" | 1 |
| 64 | 111-00234-01 | Ass'y, Easy-Level Inner Leg V2000-VSD5K (Pont) | 1 |
|  |  |  |  |
| NO. | PART NUMBER | DESCRIPTION | QTY |
| 69* | 111-00411-01 | Ass'y, Canopy/Winch Insert | 1 |
| 5 | 001-70207-00 | HHCS, 1/2-13 $\times 1$ 1/4" 18-8 ss | , |
| 17 | 001-71021-00 | FLAT WASHER, 1/2" 18-8 SS | 1 |
| 24 | 001-76072-00 | NUT, NYLOCK 1/2-13 ALUM. | 1 |
| 47 | 006-15022-00 | Cap, Vinyl-Canopy/Winch Insert | 1 |
| 70 | 911-14201-00 | Canopy/Winch Insert, 38" | 1 |

*REPLACEMENT CORNER POST FULL ASSEMBLIES ARE AVAILABLE (ITEMS 65-68)

V-2000 Frame Exploded Views $1 \& 2$
LIFT P/N 51 1-20080-00



V-2000 Frame Exploded Views 3-5
LIFT P/N 51 1-20080-00



V-2000 Frame Exploded Views 6 \& 7
LIFT P/N 51 1-20080-00

V-2000 Frame Exploded View 8
LIFT P/N 51 1-20080-00



V2602 BILL OF MATERIALS




SUB-ASSEMBLIES



PART NUMBER
$111-00059-00$
$001-70313-00$
$001-70886-00$
$002-03201-00$
$006-10206-00$
$006-11001-00$
$007-0700-00$
$007-09001-00$
$111-00107-00$
$111-00156-00$


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| PART NUMBER |
| :--- |
| $111-003944-02$ |
| $001-70861-00$ |
| $001-74402-00$ |
| $002-00049-01$ |
| $111-00234-01$ |
| $111-00411-01$ |

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| PART NUMBER |
| :--- |
| $111-00397-02$ |
| $0011-70861-00$ |
| $001-74402-00$ |
| $002-00049-01$ |
| $006-15200-00$ |
| $111-00234-01$ |

SUB-ASSEMBLIES

| NO. | PART NUMBER | DESCRIPTION | QTY |
| :---: | :---: | :---: | :---: |
| 68* | 111-00411-01 | Ass'y, Canopy/Winch Insert | 1 |
| 5 | 001-70207-00 | HHCS, 1/2-13 $\times 11 / 4^{\prime \prime} 18-8$ ss | 1 |
| 17 | 001-71021-00 | FLAT WASHER, 1/2" 18-8 SS | 1 |
| 24 | 001-76072-00 | NUT, NYLOCK 1/2-13 ALUM. | 1 |
| 47 | 006-15022-00 | Cap, Vinyl-Canopy/Winch Insert | 1 |
| 71 | 911-14201-00 | Canopy/Winch Insert, 38" | 1 |
|  |  |  |  |
| NO. | PART NUMBER | DESCRIPTION | QTY |
| 69* | 111-00469-00 | Ass'y, End Cradle 126.375" (.110") | 1 |
| 13 | 001-70310-00 | HHCS, $5 / 8-11 \times 13 / 4$ ss 18-8 | 2 |
| 15 | 001-70816-00 | Nut, Jam 5/8-11 ss 18-8 | 2 |
| 34 | 002-00204-00 | Beam, End Cradle 126.375" (.110") | , |
| 53 | 007-07701-00 | Spacer, 1.055" (.090" Front) | 2 |
| 55 | 007-09511-00 | Cable, Front Leveling 205.688" | 1 |
| 60 | 111-00107-00 | Ass'y, Sheave 5" - 5/16" Cable | 2 |




V-2602 Frame Exploded Views 1 \& 2
LIFT P/N $511-26080-00$


Exploded View 6
(a) (:)
(2) 19
-

(49)


| NOTE (VIEW 8): |
| :--- |
| CORNER "D" IS SHOWN. FOR |
| CORNERS "B" \& "C", ITEMS |
| $13,15,53 \& 60$ ARE EXEMPT |
| (QUANTITY OF 1 PER |
| CORNER). ITEM 34/69 IS |
| REPLACED WITH ITEM 72. |


V3600 BILL OF MATERIALS


*ITEMS 58-59 \& 63-69 ARE BROKEN DOWN FURTHER
**REPLACEMENT CORNER POST FULL ASSEMBLIES ARE AVAILABLE (ITEMS 64-67)




|  |  |  |  |  |  |  |  |
| :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- |
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| PART NUMBER |
| :--- |
| $111-00046-01$ |
| $001-70313-00$ |
| $001-70816-00$ |
| $002-04040-00$ |
| $006-10206-00$ |
| $006-11001-00$ |
| $007-07700-00$ |
| $007-09000-00$ |
| $111-00107-00$ |
| $111-00156-00$ |





| PART NUMBER |
| :--- |
| $11-00398-02$ |
| $001-70861-00$ |
| $001-74402-00$ |
| $002-00048-01$ |
| $11-00234-01$ |
| $11-00411-01$ |


| PART NUMBER |
| :--- |
| $111-00399-02$ |
| $001-70861-00$ |
| $001-74402-00$ |
| $002-00048-01$ |
| $006-15200-00$ |
| $111-00234-01$ |






DESCRIPTION
Nut, Nylock 5/16-18 - alum
CB, $5 / 16-18 \times 31 / 2$ ss $18-8$
Post, Corner .125" WALL - 74"

| 111-00234-01 | Cap, Vinyl 3" Sq. Lift Corner |
| :--- | :--- |

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Ass'y, Easy-Level Inner Leg V2000-VSD5K (Pont)
**REPLACEMENT CORNER POST FULL ASSEMBLIES ARE AVAILABLE (ITEMS 64-67)

| DESCRIPTION |  |
| :---: | :---: |
| Ass'y, Canopy/Winch Insert |  |



| PART NUMBER |
| :--- |
| $111-00469-00$ |
| $001-70310-00$ |
| $001-70816-00$ |
| $002-00204-00$ |
| $007-07701-00$ |
| $007-09511-00$ |
| $111-00107-00$ |







V-3600 Frame Exploded Views 3-6
LIFT P/N 51 1-36080-00




V-3600 Frame Exploded View B
LIFT P/N 51 1-36080-00





V4600 BILL OF MATERIALS | PART NUMBER |
| :--- |
| $002-04022-01$ |
| $002-04031-00$ |
| $002-04040-00$ |
| $002-04064-00$ |
| $002-04066-00$ |
| $002-0414000$ |
| $002-04314-00$ |
| $006-10202-00$ |
| $006-10206-00$ |
| $006-11001-00$ |
| $006-15022-00$ |
| $006-15200-00$ |
| $007-05023-00$ |
| $007-050791-01$ |
| $007-06201100$ |
| $007-07700-00$ |
| $007-07701-00$ |
| $007-09000-00$ |
| $007-09511-00$ |
| $007-15024-00$ |
| $111-00000-00$ |
| $111-00045-01$ |
| $111-00046-01$ |
| $111-00107-00$ |
| $11-00156-00$ |
| $111-00216-01$ |
| $111-00234-01$ |
| $111-00402-02$ |
| $111-00411-01$ |
| $111-00433-02$ |
| $111100434-02$ |
| 11110043502 |
| $11-00470-00$ |
| $911-14201-00$ |
| $911-15605-00$ |
| $911-20601-00$ |


*TTEMS 58-59 \& 63-69 ARE BROKEN DOWN FURTHER
**REPLACEMENT CORNER POST FULL ASSEMBLIES ARE AVAILABLE (ITEMS 64, 66-68)

SUB-ASSEMBLIES
SSEMBLIES


[^1]

| PART NUMBER |
| :--- |
| $111-00046-01$ |
| $001-70313-00$ |
| $001-70816-00$ |
| $002-04040-00$ |
| $006-10206-00$ |
| $006-11001-00$ |
| $007-07700-00$ |
| $007-09000-00$ |
| $111-00107-00$ |
| $111-00156-00$ |
| PART NUMBER |
| $111-00234-01$ |
| $001-26911-00$ |
| $001-71525-00$ |
| $001-71024-00$ |
| $001-71027-00$ |
| $001-76069-00$ |
| $002-04314-00$ |
| $007-05023-00$ |
| $007-05079-01$ |
| $007-15024-00$ |
| $111-00216-01$ |


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**REPLACEMENT CORNER POST FULL ASSEMBLIES ARE AVAILABLE (ITEMS 64, 66-68)

| DESCRIPTION | QTY |
| :---: | :---: |
| Ass'y, Corner Post "B" . $180-74$ " | 1 |
| Nut, Nylock 5/16-18- alum | 2 |
| CB, $5 / 16-18 \times 31 / 2$ ss $18-8$ | 2 |
| Post, Corner . 180 " WALL - 74" | 1 |
| Cap, Vinyl 3" Sq. Lift Corner | 1 |
| Ass'y, Easy-Level Inner Leg V2000-VSD5K (Pont) | 1 |

Ass'y, Easy-Level Inner Leg V2000-VSDJK (Ponif)


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|  |  |  |  |  |


| DESCRIPTION |
| :---: |
| Ass'y, End Cradle $126.375^{\prime \prime}\left(.145^{\prime \prime}\right)$ |
| HHCS, $5 / 8-11 \times 13 / 4$ ss $18-8$ |
| Nut, Jam $5 / 8-11$ ss $18-8$ |
| Beam, End Cradle $126.375^{\prime \prime}\left(.145^{\prime \prime}\right)$ |
| Spacer, $1.055^{\prime \prime}\left(.090^{\prime \prime}\right.$ Front) |
| Cable, Front Leveling 205.688" |
| Ass'y, Sheave $5^{\prime \prime}-5 / 16^{\prime \prime}$ Cable |


| NO. | PART NUMBER |
| :---: | :---: |
| 66** | 111-00433-02 |
| 15 | 001-70861-00 |
| 21 | 001-74402-00 |
| 31 | 002-00047-00 |
| 48 | 006-15200-00 |
| 63* | 111-00234-01 |
|  |  |
| NO. | PART NUMBER |
| 67** | 111-00434-02 |
| 15 | 001-70861-00 |
| 21 | 001-74402-00 |
| 31 | 002-00047-00 |
| 48 | 006-15200-00 |
| $63^{*}$ | 111-00234-01 |
|  |  |
| NO. | PART NUMBER |
| 68** | 111-00435-02 |
| 15 | 001-70861-00 |
| 21 | 001-74402-00 |
| 31 | 002-00047-00 |
| 48 | 006-15200-00 |
| 63* | 111-00234-01 |
|  |  |
| NO. | PART NUMBER |
| 69* | 111-00470-00 |
| 13 | 001-70310-00 |
| 15 | 001-70816-00 |
| 34 | 002-00206-00 |
| 53 | 007-07701-00 |
| 55 | 007-09511-00 |
| 60* | 111-00107-00 |





V-4600 Frame Exploded Views 3-6
LIFT P/N $511-46080-00$




# FLOE INTERNATIONAL, INC. BOAT LIFT SYSTEM 15 YEAR LIMITED WARRANTY 

FLOE INTERNATIONAL, INC. warrants, to the original purchaser, the FLOE boat lift system to be free from original defects in materials and workmanship under conditions and loads for which designed as outlined in the owner's manual from date of purchase as follows:

## NEW WARRANTY GUIDELINES EFFECTIVE SEPTEMBER 1, 2004

## TWO-YEAR PARTS AND LABOR WARRANTY

FLOE International, Inc. will repair or replace, at their option, any portion of the lift system which fails as a result of a defect in material or workmanship during the first two years ofter the date of purchase. FLOE INTERNATIONAL, INC. reserves the right to inspect and perform repairs at its main facility (F.O.B.) McGregor, Minnesota. Any failure due to product assembly by a FLOE dealer or consumer is not covered by this warranty. This full two-year warranty includes parts and labor on the boat lift system and accessories including the following: (warranty does not cover paint, plated surfaces, or finish).

Aluminum structure, guide-ins, bunk systems, motor stops, crank wheels, canopy frames, canopy fabriss (excluding color fading or marthing separate canopy fabrics), solar chargers, wheel kits, adjustable leveling legs, VSD drive train and electrical components, DC winches, corded and wireless remotes, cables, pulleys and installation and removal accessories.

Labor charges and mileage are covered within 40 miles from FLOE or the authorized FLOE dealership performing the repairs. Additional mileage/travel charges will apply if travel over 40 miles is required. If this charge applies, it is determined by the repairing dealer and must be paid by the customer to the dealer performing the repairs. Warranty does not cover damage, including broken welds, caused by improper installation or removal, or any damage of any sort caused by the use of power equipment.

## EXTENDED PARTS WARRANTY

In addition to this two-year parts and labor warranty, additional warranty coverage applies to specific parts of the lift and accessories. All warranty coverage beyond two years is for parts only. Labor and mileage costs for any warranty claim are not covered past two years.

## ALUMINUM STRUCTURE - 15-YEAR LIMITED WARRANTY

Defects in material and workmanship of structural components of the liff frame are covered fully for 10 years from the date of purchase. FLOE will provide replacement parts, on a non pro-rated basis, for ten years for these items if they are found to be defective. The lift frame consists of the aluminum framework making up the boat lift structure, including the lift cradle which is the portion of the liff frame that moves up and down as the boat lift is operated. It does not include the bunks or other accessories that are listed below. After this 10 -year parts warranty, an additional five-year pro-rated warranty covers these components as shown below.

| Year After Purchase | Consumer Portion of Current Retail Price | Year After Purchase | Consumer Portion of Current Retail Price |
| :---: | :---: | :---: | :---: |
| 11 | $40 \%$ | 14 | $70 \%$ |
| 12 | $50 \%$ | 15 | $90 \%$ |
| 13 | $60 \%$ |  |  |

## ACCESSORIES AND COMPONENTS - 10-YEAR LIMITED WARRANTY

Defects in material and workmanship of certain accesssories and components of FLOE lift systems are covered under a 10 -year pro-rated warranty. This pro-rated parts warranty begins after the two year parts and labor warranty. Items covered in this 10 --ear pro-rated warranty include lift bunks (excluding vinyl covering), guide-ins, motor stops and the canopy frame.

The pro-rated schedule on these items is as follows:

| Year After Purchase | Consumer Portion of Current Retail Price | Year After Purchase | Consumer Portion of Current Retail Price |
| :---: | :---: | :---: | :---: |
| 3 | $20 \%$ | 7 | $60 \%$ |
| 4 | $30 \%$ | 8 | $70 \%$ |
| 5 | $40 \%$ | 9 | $80 \%$ |
| 6 | $50 \%$ | 10 | $90 \%$ |

## ACCESSORIES AND COMPONENTS FIVE-YEAR LIMITED WARRANTY

Defects in material and workmanship of certain accessories and components of FLOE lift systems are covered under a five-year pro-rated warranty. This pro-rated parts warranty begins after the two-year parts and labor warranty. Items covered in this five-year pro-rated warranty include canopy fabrics (excluding color fading or matching separate canopy fabrics), manual winches, cables, adjustable leveling legs, drive trains, $D$ ( winches, wheel kits, corded remotes, limit switches, wireless systems and solar panels.

The pro-rated schedule of these items is as follows:

| Year After Purchase | Consumer Portion of Current Retail Price |
| :---: | :---: |
| 3 | $50 \%$ |
| 4 | $55 \%$ |
| 5 | $60 \%$ |

On these items, it is important to note the following exceptions:

- Warranty is void on all winches and drive-trains if they are submersed into water (including the initial two-year warranty).
- Warranty is void on ball-screws and ball nuts, winch gears, adjustable leveling legs, or any other item that failed due to improper maintenance or lubrication as noted in owner's manual.

All canopies are date coded. Date tag must be attached to canopy or warranty is void. Canopy fabric warranty does not cover valance or trim, as delamination may occur in high wind areas. If returning canopy for warranty repair, canopy must be cleaned prior to returning or a $\$ 100$ cleaning charge will be applied.

This warranty covers only the cost for replacement of materials due to defects in materials or workmanship, and represents the only warranty authorized by us. In order to receive performance under this warranty, all warranty repairs must be authorized in advance by FLOE INTERNATIONAL, INC.

## ADDITIONAL WARRANTY INFORMATION INCLUDING EXCLUSIONS AND OWNER'S RIGHTS

FLOE International, Inc. (manufacturer) will not be responsible for any costs incurred for, or as the result of, unauthorized repairs or improper assembly. Unauthorized repairs may void the warranty on the repaired part(s). This warranty does not cover damage, malfunction or faulty operation resulting from overload, misuse, wind, storms, ice, salt/brackish water applications, negligence, being hit by watercraft of any kind and any other 'Act of God'. Manufacturer's warranty coverage extends to private use only and is not applicable to commercial or rental use. Manufacturer is not responsible for damage or in-operability due to repairs made by unauthorized service personnel. Parts purchased by the manufacturer are warranted by the company that manufactured the part under the warranty schedule associated with the part in question. Manufacturer's warranty is extended to the original owner only and is non-transferable. Manufacturer reserves the right, at its own discretion, to inspect and perform repairs at its main facility in McGregor, MN. The customer is responsible for any and all freight charges incurred to transport the product to and from MGGregor, MN, with the exception of claims covered by the manufacturer's two-year parts and labor warranty which has provisions for service work to be completed up to 40 (forry) miles away from a FLOE dealership. Manufacturer's warranty claim process, specifications and pro-rate scheduling may change without notice and/or obligation.

## COMPLETING AND SUBMITTING YOUR WARRANTY CLAIM

To receive performance under this warranty, contact your authorized FLOE dealer. Be prepared to provide the following information so that the dealer can complete a warranty claim form: receipt and date of purchase; your name, address and telephone numbers; the serial or vehicle identification numbers; and a detailed description of the problem.

## there are NO OTHER EXPRESSED OR IMPLIED WARRANTIES

Our obligations under this warranty are limited to repair or replacement at our discretion and FLOE SHALL NOT BE LIABLE FOR INCIDENTAL OR CONSEQUENTIAL DAMAGES OF ANY KIND.

This Warranty gives you specific legal rights and you may have other rights which may vary from state to state.

Thank you for purchasing a quality FLOE boat lift. Understanding the information in this manual should help you to keep your boat lift in optimal working condition for many years of worry-free enjoyment.

Please take the time to record this important information for future reference:

Model
Number: $\qquad$
Serial
Number: $\qquad$
Date of
Purchase: $\qquad$

NOTE: All boat lifts are identified with a serial number. It is a good idea to save your receipt from the dealer.


FLOE INTERNATIONAL, INC.
48473 STATE HIGHWAY 65 • McGREGOR, MN 55760
www.floeintl.com


[^0]:    * Deep water extensions available. ** Does not include the weight of the bunks, guides, or other accessories.

[^1]:    징ㅇㅇㅇㅇㅇㅇㅇㅇㅇㅇㅇㅇ
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