



OWNER'S MANUAL
VSD6000 Pontoon,
VSD6500, VSD6500/8000,
VSD6500/8000 Pontoon, VSD8000,
VSD10000, VSD10000STD
24 Volt DC/120 Volt AC
Boat Lift Systems
(patented Easy-Level Leg System)



Retain this manual for future reference



ATTENTION



ATTENTION



ATTENTION

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

Visit our website at www.floeintl.com

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 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

A handwritten signature in black ink that reads "Wayne Floe".

CONTENTS

Letter from Wayne Floe	2	Determining Proper Width	18
Important Safety Information	3	Determining Proper Height	20
Important Safeguards	3-4	Vertical Guide-In Selection & Adjustment ..	21
Certification of Boat Lift Delivery	5	Selecting Guides	21
Boat Lift Capacities	6	Adjusting Guides	21
Is your lift's capacity		Boat Placement/Motor Stop	22
adequate for your boat?	7	Proper Canopy Frame Positioning	22-23
Boat Lift Dimensional Specifications	8	Canopy Fabric Installation	24
Drive Train & Ball Screw	9	Canopy Wind Precaution	24
Advanced Switch Control	9	Canopy Fabric Removal	24
Electrical System	10	Canopy Fabric Folding Instructions	25
Batteries & Charging Options	10-11	Canopy Fabric Care & Cleaning	25
Limit Switch Connection	12	Optional Canopy Lighting Package	26
Raise/Lower Main Cradle Lift Beam	12-13	Inspections & Maintenance	26-28
Wired Remote		VSD pre-installation check list	30
& Optional Wireless Remote	13-14	VSD-6000, 6500, 8000, 10000	
Leveling Boat Lift	14-15	Exploded Views & Parts Lists	31-70
Boat Lift Installation & Removal Options ..	16	Warranty & Registration	71-73
Boat Lift Wheel Kits	16		
Float & Roll	17		
Full Length Bunk Set Up	17		

It may also be beneficial to view the lift portion of FLOE's marine video, "A Look Into FLOE Dock & Lift Systems." See it on our website in streaming video.

Please retain this manual for future reference

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 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.”

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



DANGER

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



CAUTION

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



WARNING

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



WARNING

IMPORTANT SAFEGUARDS

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



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 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).
- ⚠ 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 whoever is using this product.



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.
- ⚠ 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.

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.
- ⚠ 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.
- ⚠ Never operate a boat lift that is not level. 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 lift failure. 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.
- ⚠ Never lift a tour boat with water filled ballast bags. This extra weight will overload the lift.
- ⚠ 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.
- ⚠ The electrical system is not designed to be substantially saturated, immersed or submerged in water. FLOE will not be responsible for incidental or consequential damages resulting from electrical damages in these situations.

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.



Certificate of Boat Lift Pre-Delivery

Date of Purchase ____/____/____ Boat Lift Model _____

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 fully 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.
- _____ I understand that I must discontinue using the lift immediately and contact my FLOE dealer if any unusual sounds or functionality are present.
- _____ I understand I must follow all inspection and maintenance procedures as outlined in my owner's manual.

Selling Dealership Name _____

Selling Dealership Signature _____

Print Name

Customer Signature _____

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 lb capacity boat lift is limited to 2,500 lbs for each main lift beam. It is very easy for a 4,000 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 consistently:

- 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 (Illustration C).



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.
3. 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.
4. 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.
- $2100 / 2 = 1050$ 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.

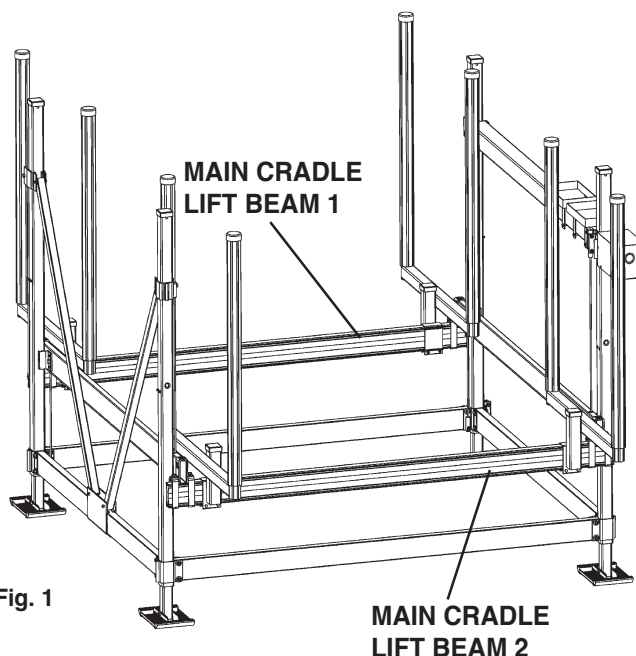


Fig. 1

LIFT	TOTAL CAPACITY PER LIFT BEAM
VSD-6000.....	3000 lbs
VSD-6500.....	3250 lbs
VSD-8000.....	4000 lbs
VSD-10000.....	5000 lbs
VSD-10000STD.....	5000 lbs



WARNING

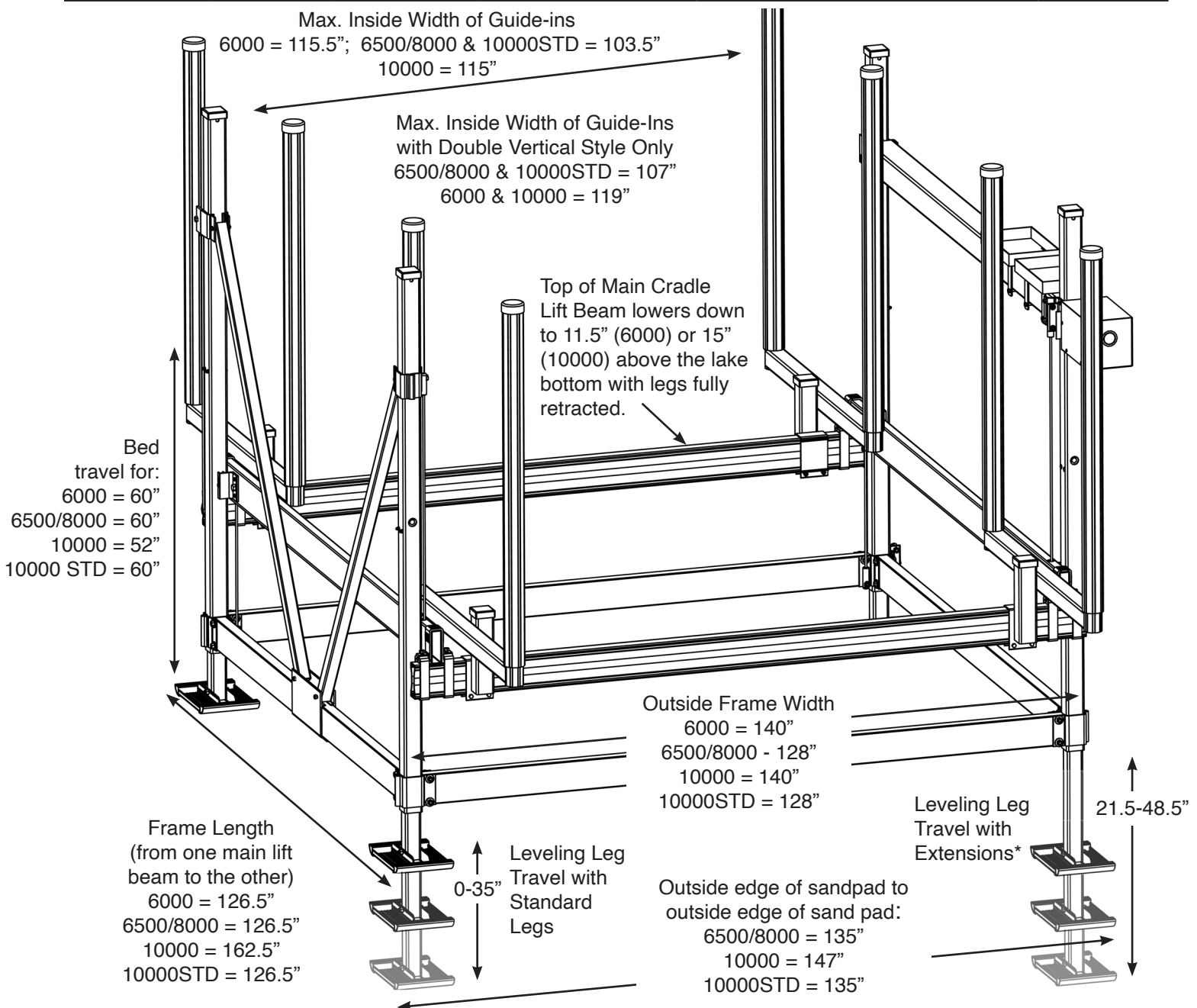
If watercraft is open to the accumulation of rain water, be sure boat's drain plug is pulled. Additional water weight may cause the maximum lift capacity to be exceeded, resulting in potential lift damage or bodily injury.

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

LIFT DIMENSIONAL SPECIFICATIONS Specifications may change without notice.

MODEL/ CAPACITY	DRIVE TRAIN	BUNKS	BED TRAVEL	INSIDE WIDTH	OUTSIDE WIDTH	FRAME LENGTH
VSD-6000	Screw-Drive	Cradle Pads	60"	132"	140"	126.5"
VSD-6500/8000	Screw-Drive	Cradle Pads	60"	116"	135"	126.5"
VSD-10000	Screw-Drive	Cradle Pads	52"	132"	140"	162.5"
VSD-10000STD	Screw-Drive	Cradle Pads	60"	116"	135"	126.5"

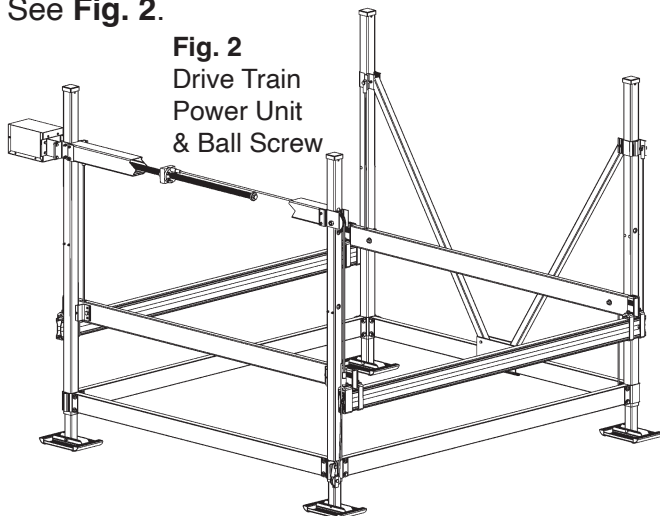
MODEL/ CAPACITY	LEVELING LEG TRAVEL	TRAVEL WITH EXTENSIONS*	CANOPY OPTION	GUIDE-IN OPTIONS	MAX INSIDE WIDTH WITH GUIDE-INS	WEIGHT**
VSD-6000	0-35"	21.5 - 48.5"	24', 26', 28', 30', 32'	vertical	115.5"	747 lbs.
VSD-6500/8000	0-35"	21.5 - 48.5"	24', 26', 28', 30', 32'	double vertical	119"	731 lbs.
VSD-10000 W	0-35"	21.5 - 48.5"	28', 30', 32', 36'	vertical	103.5"	
VSD-10000 STD	0-35"	21.5 - 48.5"	22", 24", 26", 28", 30", 32"	double vertical	107"	1,010 lbs.
				vertical	115.5"	796 lbs
				double vertical	119"	
				vertical	103.5"	
				double vertical	107"	



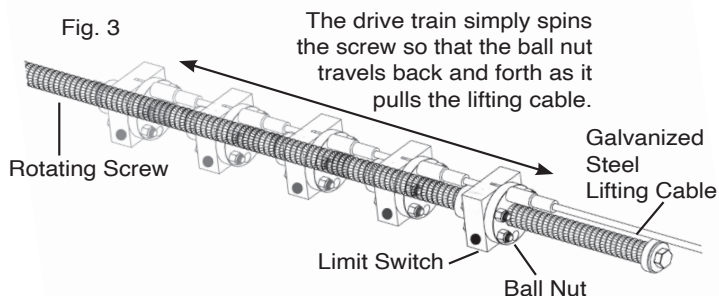
* Deep water extensions available. ** Does not include the weight of the bunks, guides, or other accessories.

DRIVE TRAIN & BALL SCREW

This boat lift is equipped with FLOE's exclusive Vertical Screw Drive (VSD) drive train technology. The VSD system replaces the common winch style drive-train common to most boat lifts. It uses a DC or AC powered, high-torque electric motor along with a ball-screw and ball-nut mechanism. See **Fig. 2**.



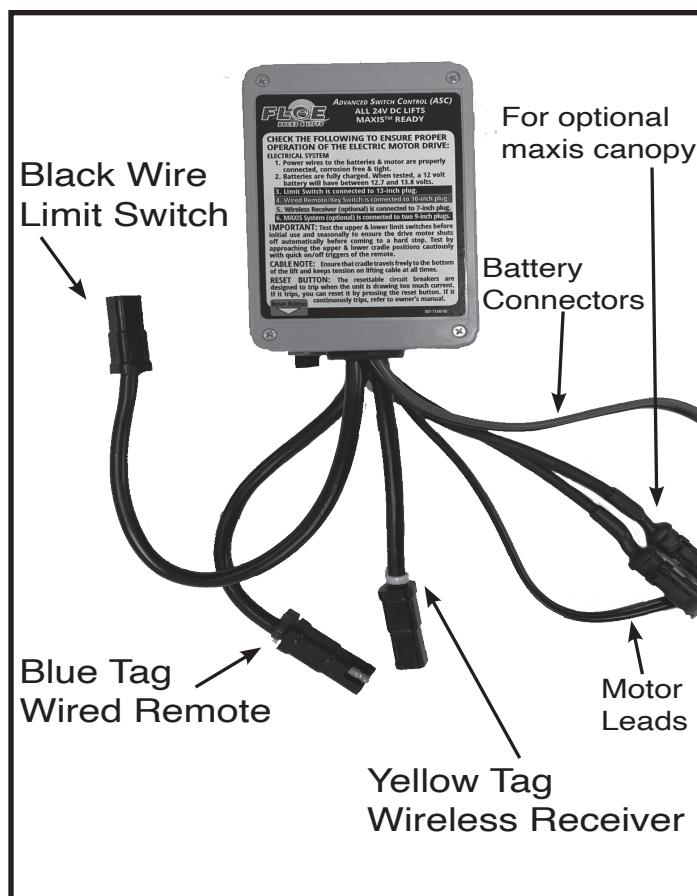
When operated, the motor turns the ball-screw, allowing the ball-nut to travel back and forth along the screw. This raises and lowers the lift as shown in **Fig. 3**.



Maintenance and trouble-shooting tips for the exclusive drive-train system are addressed later in this manual.

This efficient drive train has enabled FLOE to design a lift for mid-sized boats that is easily powered by a 24-Volt battery system or a 120-Volt AC power system, and to develop a line of optional accessories to keep the batteries charged effortlessly.

To prepare your VSD lift for operation, you should first understand the basics for setting up the electrical features of the lift, and especially the importance of the limit switch safety feature.



Advanced Switch Control (ASC) 24 volt DC powered unit (above).

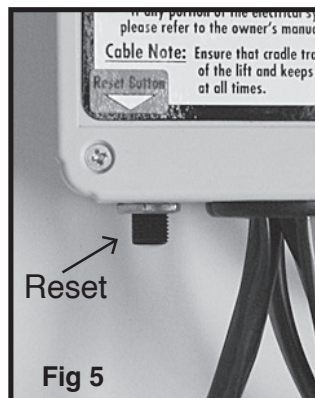
ADVANCED SWITCH CONTROL (ASC)

The electrical connection panel (**Fig. 4**) is located on a separate box. It is designed to allow for easy hook up of standard and optional components as well as the resetting of tripped circuits.

- The black wire is for the limit switch.
- The blue wire is for the wired remote/key switch.
- The yellow wire is for the wireless receiver.

The resettable circuit breakers are designed to trip if there is a short in the wires. The DC version has one reset for the radio remote receiver and the optional flood lights.

The AC version has two resets, one for the radio remote receiver and optional flood lights and the other reset is for the drive motor. If one trips you can reset it by pressing in the reset button (**Fig. 5**). If it continuously trips refer to the trouble shooting section of this book.



CHECK THE FOLLOWING TO ENSURE PROPER OPERATION OF THE ELECTRIC MOTOR DRIVE

Electrical System:

1. Power wires to the batteries & motor are properly connected, corrosion free & tight.
2. Batteries are fully charged. When tested a 12 volt battery will have between 12.7 and 13.8 volts.
3. Limit Switch is connected to 13-in. plug.
4. Wired Remote/Key Switch is connected to 10" plug.
5. Wireless Receiver (optional) is connected to 7" plug.

Important:

- Test the upper & lower limit switches before initial use and seasonally to ensure the drive motor shuts off automatically before coming to a hard stop. Test by approaching the upper & lower cradle positions cautiously with quick on/off triggers of the remote.
- If any portion of the electrical system is submerged, please refer to the owner's manual for corrective action.

Cable Note:

- Ensure that cradle travels freely to the bottom of the lift and keeps tension on lifting cable at all times.

120 VOLT AC WARNING

For the AC power connection please contact a licensed electrical contractor to ensure a safe connection. You must have 120v/20amp service to the connection on VSD drive train.



! WARNING

Batteries that are improperly connected can cause damage to the lift system, the batteries, and a potential explosion.

SELECTING THE BATTERIES FOR 24-VOLT DC MODELS

Batteries are not included with the lift system. The recommended batteries (**Fig. 6**) are two 12-Volt, deep-cycle, Group 27 (case size), with 600 cold cranking amps and stud post terminals with wing nuts. An Interstate SRM-27 meets this criteria.



Fig. 6

CONNECTING THE BATTERIES

The DC lift comes standard with two battery trays and plastic battery boxes, as well as the wiring kit to connect them to the lift's control panel. The two 12-volt batteries connect together in series to create a 24-volt system. It is important that the two deep-cycle batteries are connected to the cables leading from the electrical connection panel exactly as shown in **Fig. 7** below. This 24-volt system will reduce the amperage draw on the batteries, and maximize battery life.

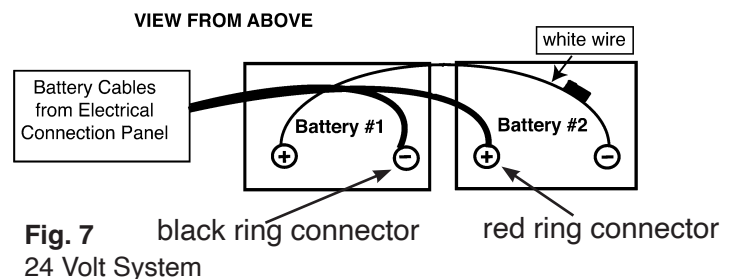


Fig. 7 black ring connector red ring connector
24 Volt System

Keep the cables from the connection panel inside the battery boxes by running them through the first box, and then into the second. The white battery interconnect wire should also be neatly contained within the battery boxes (**Fig. 8**).

Fig. 8 Battery Boxes & Trays

(Note how cabling is neatly stowed and completely contained within the battery boxes.)



CHARGING THE BATTERIES

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. 10**).

Three Charging Options:

Option #1. To charge the batteries with a 12-volt deep cycle charger, remove the battery box lids to access the battery posts and charge each battery individually, as you would normally. Connect the charger's positive (red) clamp to the positive terminal on Battery #1, then connect the negative (black) clamp to the negative terminal on Battery #1. Repeat these steps for Battery #2.

Option #2. To charge both batteries at once, use a 24-volt DC deep cycle charger. A charger that meets this criteria is a Schumacher SE-70MA 12/24 volt deep cycle charger, which can be found at www.schumacherproducts.com. Follow these simple steps:

- **Step 1:** Remove the battery box lids. Connect the charger's positive (red) clamp to the positive post on Battery #2 (**Fig. 7**).

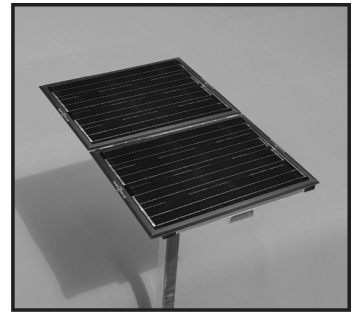
- **Step 2:** Connect the negative (black) clamp to the negative terminal of Battery #1. Charge the batteries per manufacturers' instructions for both the battery and the charger.

*Note: You will attach the charger's clamps to the same battery posts that the cables coming from the drive train box control panel use. The same applies to the solar panel hook-up. **Never attach the connectors for the charger or solar panel to the same battery terminals used by the white interconnect-battery wire.***

Option #3. To maintain battery charge with the optional FLOE 24-Volt solar panels, mount panels per instructions included with panels and wire it to the batteries. Be sure the panels face the sun during peak daylight hours. A solar panel provides continuous charging on sunny days. The mount is shown in **Fig. 11**.

Solar panels will only maintain a charge on batteries. Be sure batteries are fully charged before installing a solar panel.

Fig. 11
24 Volt Solar Panel



REPLACING BATTERIES

Always replace both batteries at the same time with the same size, brand, and preferably the same lot number. Unmatched batteries and from different lots will cause a constant drain on the batteries and shorten the life of the batteries.

! 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.

SEASONAL BATTERY STORAGE

Fully charge the battery according to the manufacturer's instructions.

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



Fig 10

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.

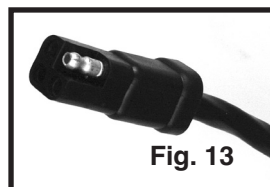
When charging batteries, it is important to follow the manufacturer's instructions for both the battery and charging systems to ensure that batteries are not damaged by improper or over charging.

LIMIT SWITCH CONNECTION

The VSD system is equipped with automatic upper and lower magnetic safety limit switches. The magnets for these switches are mounted to the ball nut and travel with it along the rotating ball screw (see **Fig. 3** on page 6). The limit switches are contained within an aluminum housing as shown in **Fig. 12**. As the ball nut and its magnets pass over a limit switch, the magnetic force trips the switch. Once a limit switch is triggered, it prevents the drive-train system from going beyond its normal extended or retracted travel limits. Exceeding these limits will cause severe damage to the lift or drive-train system. The four prong limit switch plugs into the electrical connection black 4 prong plug (**Fig. 13**).



Limit Switch 4 Prong Plug



! WARNING

Prior to entering or exiting the lift with your boat, you must first ensure that the lift's bunk system is lowered far enough so that no boat hull contact is made with the bunk system. Powering on or off the bunk system can cause severe damage not covered by the warranty. See **Fig. 14b**

! CAUTION

If the lift should raise or lower by itself without operating the remote control, disconnect the battery cable ring connectors from the battery posts immediately, if you are able to do so without the risk of injury. Contact your local dealer or FLOE International, Inc.

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 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. 14a**). 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 31" and the maximum is 81" for the VSD 7500 & 10,000 models. And a minimum of 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

Never operate the lift if the limit switch housing is removed, loose, or in any way disconnected. Doing so can cause severe unwarranted damage to the lift and serious personal injury or death.

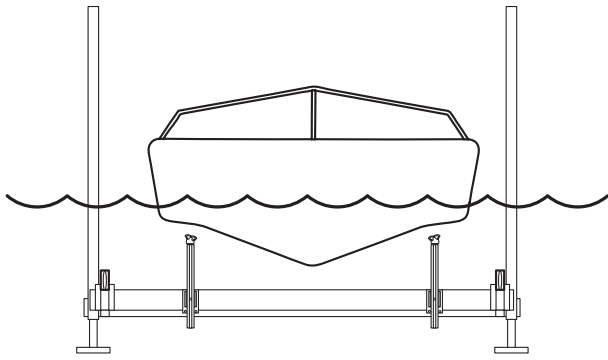


Fig. 14a: Properly Leveled Lift in Adequate Water Depth (no friction from hull hitting bunks).

! 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.

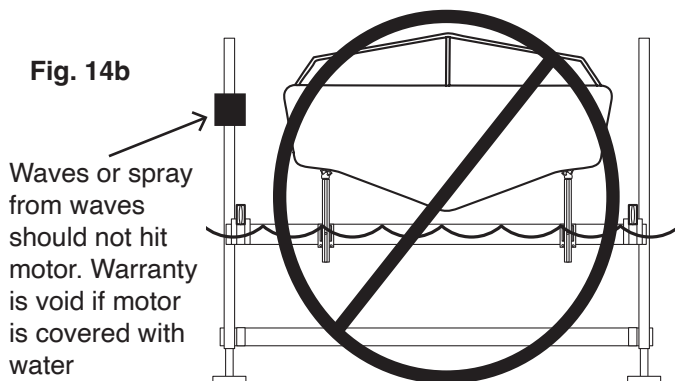


Fig. 14b
Lift Platform has not been raised sufficiently.
Water is hitting the rear cradle lifting beam.
DO NOT let cradle lift beam act as a wave-break!

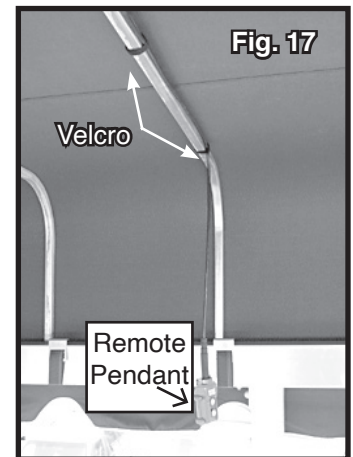
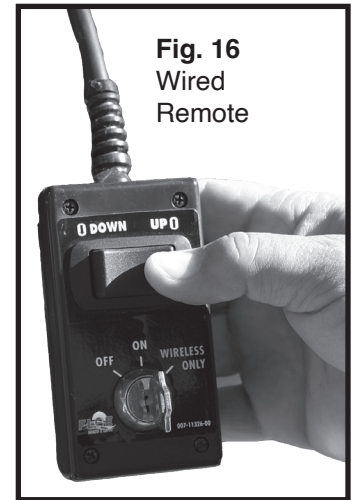
CONNECTING AND USING THE WIRED REMOTE

VSD lifts come standard with a wired remote control. The wired remote plugs into the 10-in. blue plug on the ASC. To raise the lift, simply press the "UP" button, to lower the lift press the "DOWN" button (**Fig. 16**). The lift will stop automatically when it reaches the end of its up or down travel limit or when the button is released.

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 being drawn from the battery during 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.



! 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.

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 transmitters. The wireless remote plugs into the 7-in. yellow plug on the ASC. For more details, see the assembly instructions.



Fig. 18

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.

LEVELING BOAT LIFT INSTALLING AND LEVELING LIFT EASY LEVEL™ LEVELING LEGS (PATENTED)

FLOE vertical lifts come standard with FLOE's exclusive Easy-Level™ Leveling Leg. With the Easy-Level™ 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

! 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.

! 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).

! 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.

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



Fig. 24



Fig. 25

lift is raised or lowered, alternate among all four legs 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.

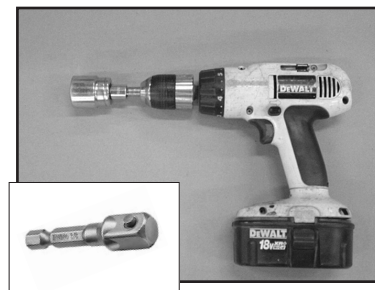
For leveling leg adjustment range, see boat lift specifications, page 8. The decal pictured in **Fig. 24** and **25** has a useful measuring tape so that you can see the water level on each corner post. It is important that the water level reads the same on all four corner posts. Once you determine what 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

Drill will come to a sudden stop when leg is fully extended or retracted. When approaching the end of the leg's travel, reduce the speed of the drill. This will prevent you from twisting your wrist or accidentally dropping the drill. Do not use an impact wrench to adjust as this will cause damage to the lift.

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 29 for instructions on how to use the bypass 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 polyester 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.



Fig. 27



Fig. 28

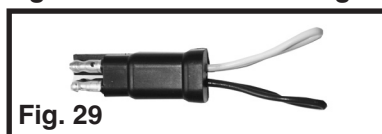


Fig. 29



Fig. 30

⚠ WARNING

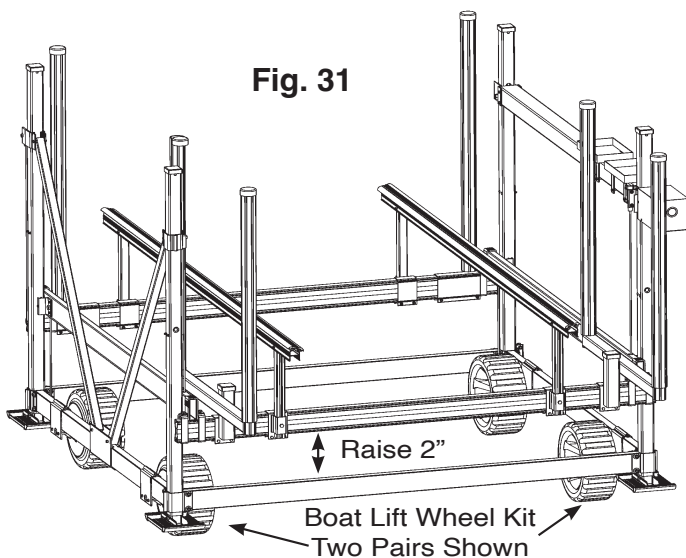
Never adjust leveling legs (up or down) with a boat on the lift. The added weight of the boat will apply extreme pressure to the adjustment system causing potential mechanical failure and/or serious bodily injury.

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.

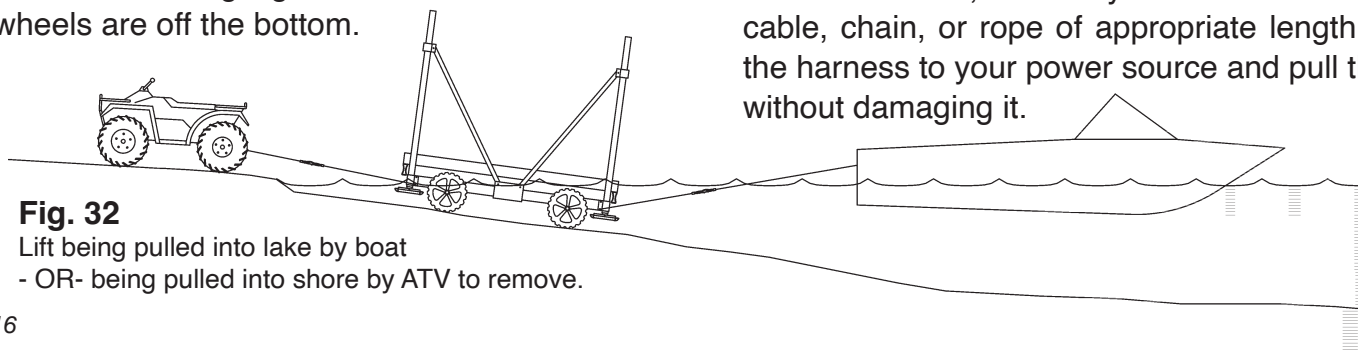
BOAT LIFT WHEEL KITS

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.

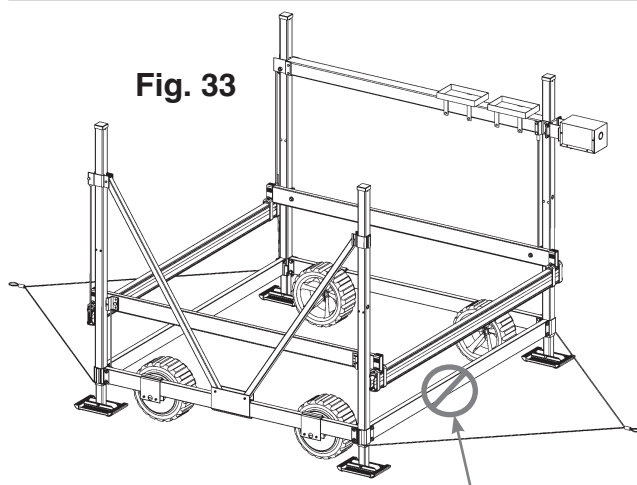


! WARNING

The wheels **must not** touch the lake bottom once the lift has been installed. The weight of the boat and lift must be supported by the sand pads only.

! WARNING

Never tie a rope, chain or cable to the center of a lift's frame beam. This can bend or break the beam. Always use a "Y" cable harness set-up to more equally distribute the pressure on the frame.



CABLE & PULLEY SYSTEM

Boat lift wheel kits can be combined with the optional Cable & Pulley System to enable you to harness the power of a boat alone, or use in combination with an ATV, winch, or other similar means, to install and remove your lift. This system consists of "Y" harness cable assemblies, which can be added to each side of the lower lift frame (**Fig. 33**).

The "Y" harness will distribute the weight on the frame of the lift, so that you can then attach a cable, chain, or rope of appropriate length from the harness to your power source and pull the lift without damaging it.

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.

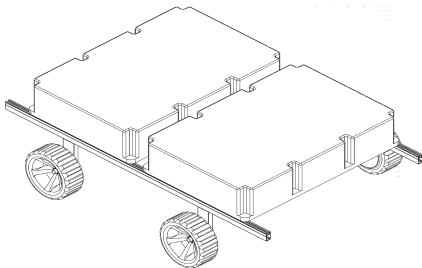


Fig. 35

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 DVD video, *A Look Into FLOE Dock & Lift Systems*, or watch it online at www.floeintl.com under "Boat Lift Accessories – Install/Removal."

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.**

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 (cont. on pg. 18)

Full length bunks are excellent for stabilizing and providing superior support for most V-hull, Tri-hull, 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 a & b.**

Fig. 37c shows an acceptable, but less desirable bunk placement.

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.

NOTE: Boat Lift Cradle Beam may sit out of level on brand new installation. This is an intentional design which allows for cable stretch over time. Once the weight of the boat is applied, the cradle should sit within 1 inch level. For a more detailed explanation of this, please scan the QR code below to watch our Tech Tip video that explains more about this design.





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

CRADLE PAD PIVOT BUNKS

Cradle pivot bunks are ideal for most lightweight V-hull watercraft. They can be located in a V-position 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.

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. 37a, b, c & d**. **Fig 37e** shows pads for an outboard motor.



WARNING

Never operate a boat lift that is not level. 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.

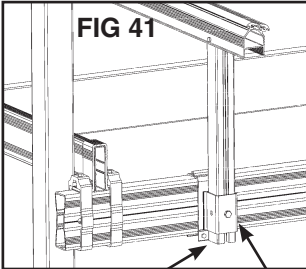


FIG 41

To adjust the width, loosen the bolts on the lower part of the clamp and slide it into position. Torque to 35 ft. lbs.

⚠ DANGER

Never attempt to adjust the bunk system (or any boat lift component) with the weight of the boat on it. Doing so could kill or cause serious bodily injury due to a fast dropping boat.

To adjust the height, loosen the clamp bolt and raise the tube to the proper location. Torque to 45 ft. lbs.

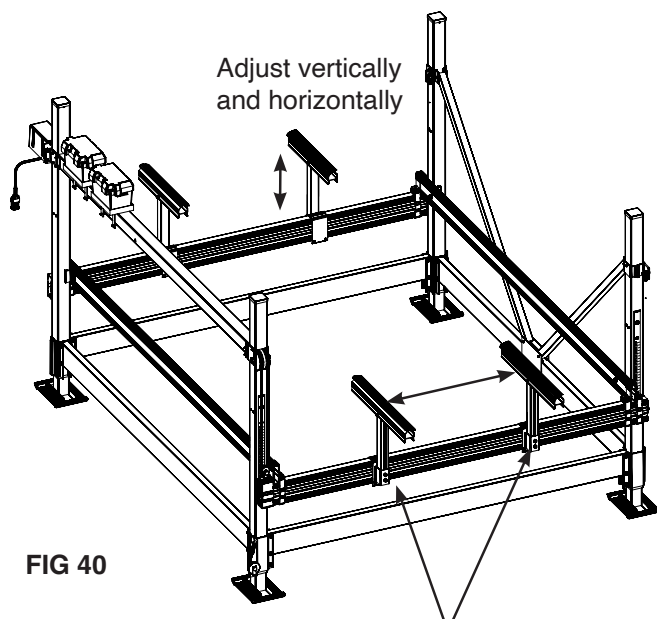


FIG 40

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.

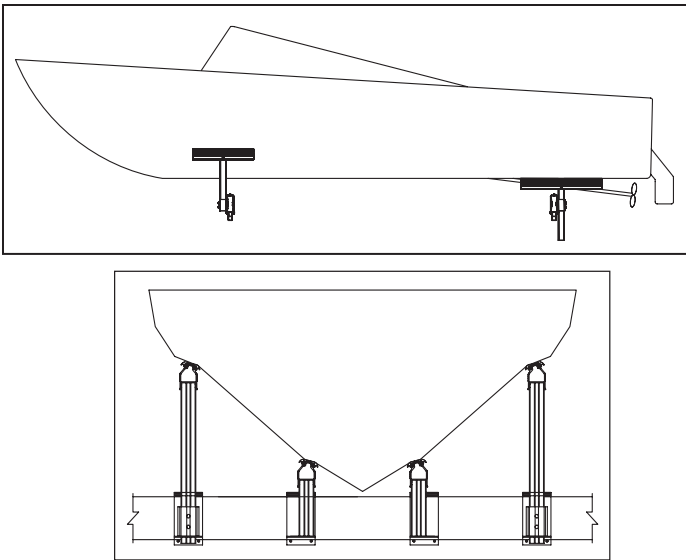


Fig. 37d Ideal bunk placement. Note that the bunks are spread out to the widest position on the boat hull. They sit nicely into the contour of the hull and the keel has plenty of clearance above the main lift beam. If possible, this is the most ideal bunk placement for non-inboards.

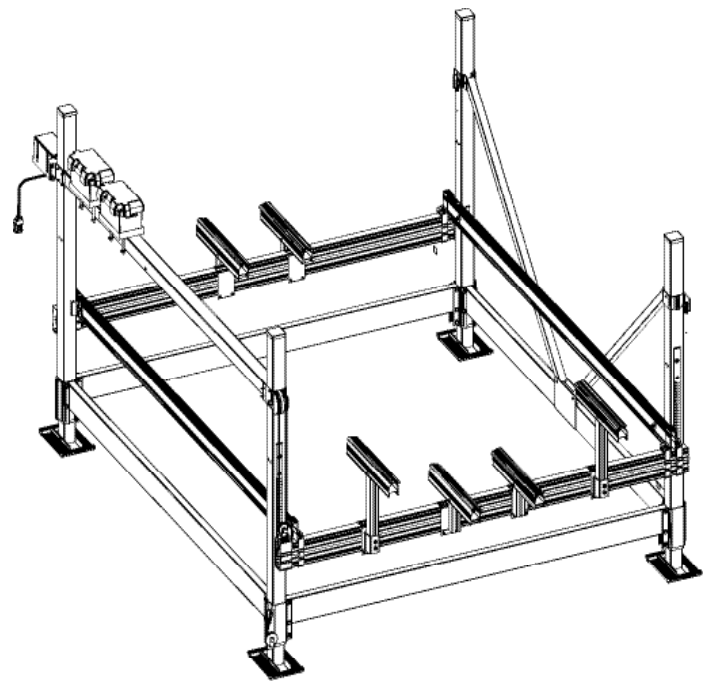


Fig. 37e. Note the pads for an outboard motor.

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 well-positioned 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.

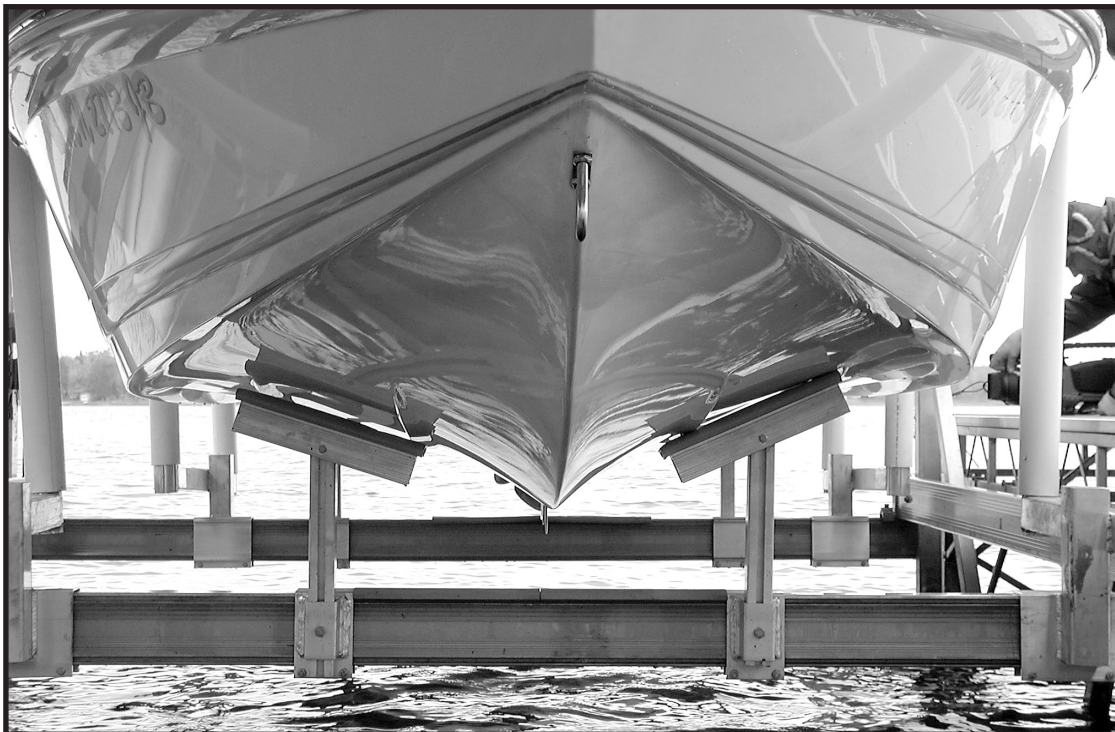


Fig. 42: Properly Positioned Cradle Pads

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.

DETERMINING HEIGHT FOR PONTOON BUNK/GUIDE-IN SYSTEM

As a general rule, when entering or exiting the lift, the top of the bunk/guide-in system should be approximately 5 1/2" out of the water and there should be 1/2" of clearance between the side of the float and the guide edge of the bunk system. See **Fig. 43**. When raised, the bunks should carry the weight of the boat by supporting the pontoon boat frame and the pontoons should clear the main cradle lift beams by at least one inch. (**Fig. 44**).

The assembly instructions packaged with the kit provide more detailed information on installation and adjustment.

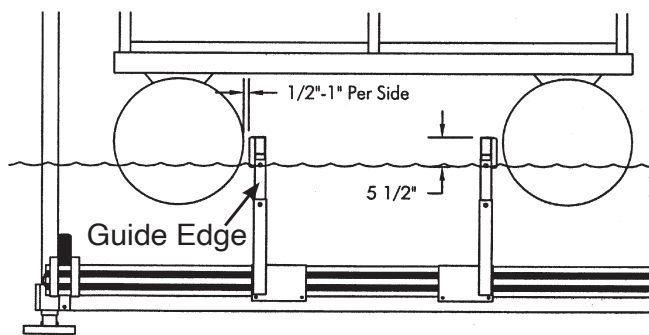
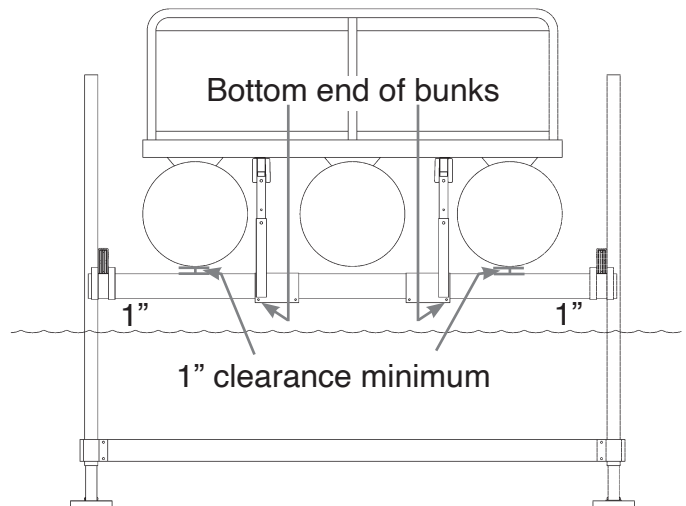


Fig. 43: Pontoon Guide-In Bunk Position Guidelines

PONTOON CRADLE PAD BUNKS

Cradle pad pontoon bunks are great for water depths as low as two feet. The four pairs of pads support the pontoons in the front and rear. Four guide-ins help you land the pontoon effortlessly. When lowering the bunks, ensure guide-ins are above the water to guide you in. See assembly instructions on how to set and adjust bunks.



**FIG 44
Pontoon Guide-In Bunk Position
Minimum Clearance Guidelines**

If the lift is in shallow water and after final adjustment the bottom ends of the bunks 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.

PRO PARK™ 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. 47-48**.

SELECTING YOUR VERTICAL PVC GUIDE-INS

Technically, two pairs of single guides would 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 it and start to guide the craft by its rub rail before it even enters the lift.



! WARNING

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



Adjust guides so that they are against your rub rail.

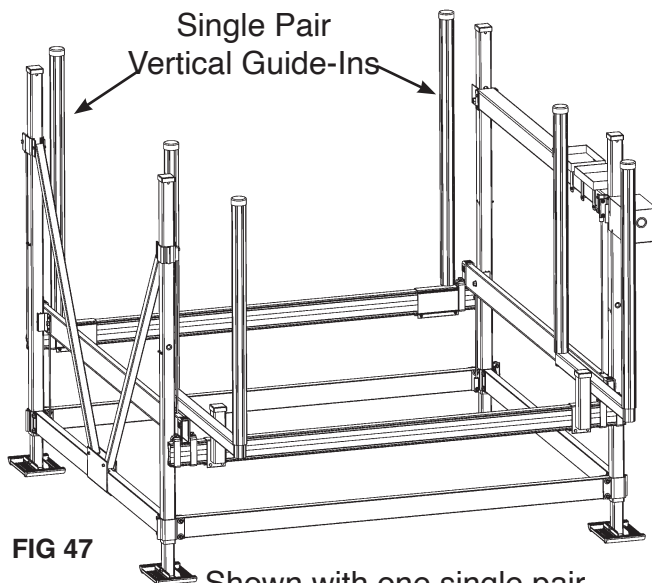


FIG 47

Shown with one single pair and one double pair

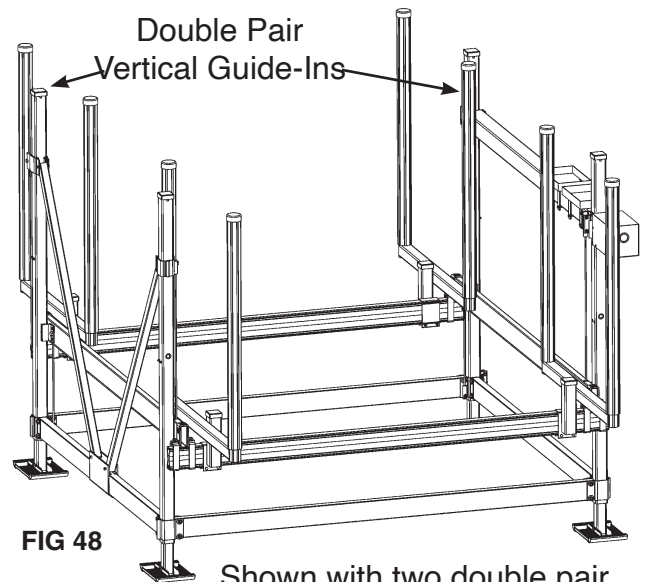


FIG 48

Shown with two double pair

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 35ft. lbs.

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.

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. 50, 51, & 52**.

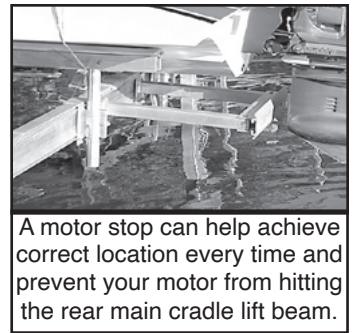
1. With the boat in place, determine how far the canopy needs to extend beyond the rear of the lift. Remove boat and position the frame accordingly. (Normally this distance will be between 3.5 - 5 ft. for standard boats, and 4 - 8 ft. for longer pontoons.) **Do not tighten at this point.**

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-ft. or larger, a canopy frame support system is needed as shown in **Fig. 53** (the

26', 28' & 30' canopy systems come standard with the canopy support system). This will reduce flex and bowing in the canopy frame and give you an additional 2-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 45-ft. lbs. See **Fig. 53**.

4. Tighten the horizontal adjustment bolts to 45-ft. lbs.



A motor stop can help achieve correct location every time and prevent your motor from hitting the rear main cradle lift beam.



Fig. 50 - Boat shown in proper position so that an even amount of weight is transferred to the front beam. The canopy is positioned so that it covers the entire boat.



Fig. 51

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.

As you can see in **Figs. 50, 51 & 52**, the watercraft are completely covered from front to back and the fabric hangs down vertically over the boat's side walls. This is the optimum canopy placement.



Fig. 52

! 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.

! 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.

! WARNING

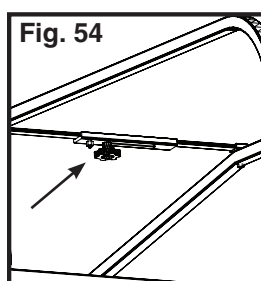
Do not adjust canopy frame with fabric attached. When the bolts are loose or removed, a sudden wind could cause the entire frame structure to blow off the lift and damage it.

END FRAME ADJUSTMENT

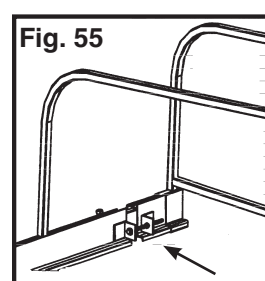
All canopy frames are equipped with the adjustable end frame feature. This feature makes installation and removal easier and pulls the canopy fabric tight for a great looking fit.

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.

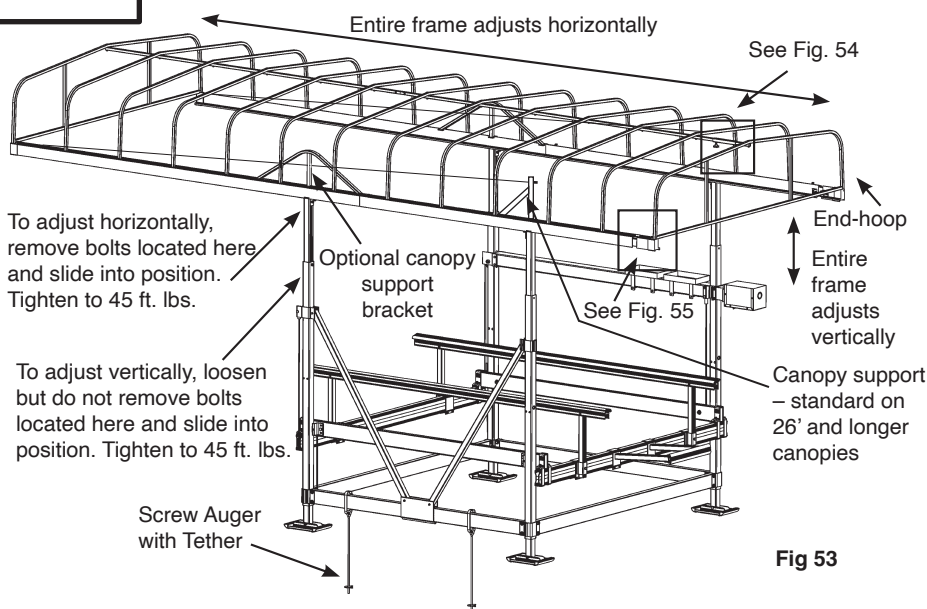


Fig 53

! WARNING

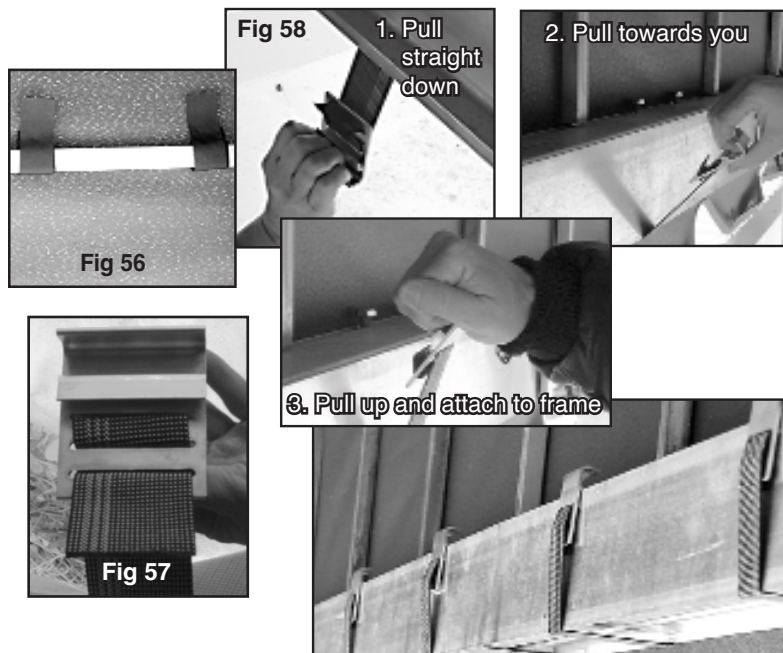
Do not adjust canopy frame with boat on lift. If lift failure were to occur, there is potential for serious bodily injury or even death. Damage may also result from the loosened framework making contact with the boat.

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™* 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. 58**. Once installed, the straps should be fairly taut, with an approximate tension of 20 lbs.



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

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.

WARNING

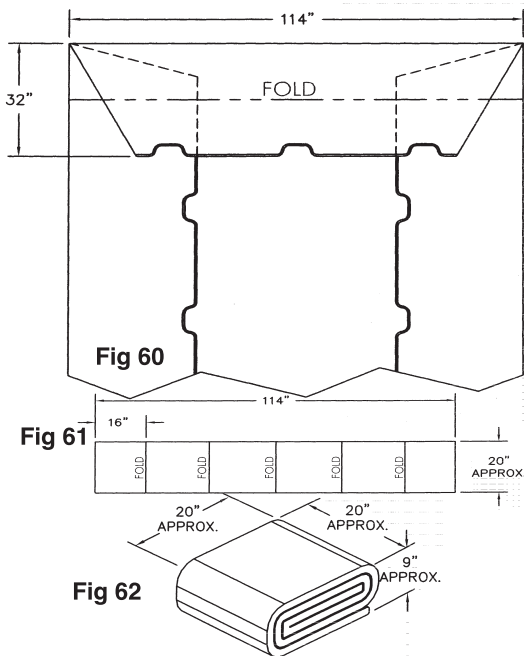
In winter climates where the potential for snow accumulation exists, the fabric must be removed or the weight of the snow may cause damage to the canopy frame and/or canopy fabric. Canopy fabric should be stored clean and dry. This will help prevent the growth of mildew and fungus.

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 over-extend the rails, which could cause the canopy fabric to overstretch or tear.

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 recommended 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™ as the preferred re-treatment product. Reapply as needed. 303 High Tech Fabric Guard™ 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.



WARNING

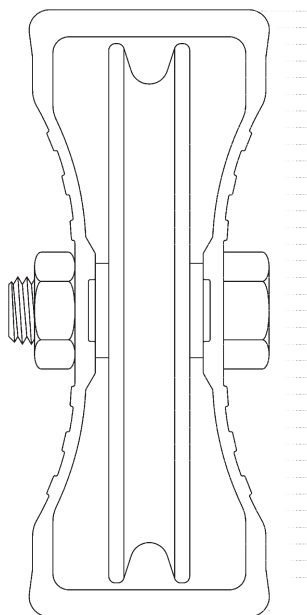
Pulleys with worn bushings can cause damage to the beam where they are located and cause excessive friction while the lift is being operated. This can also severely damage other components such as the drive train and cables.



WARNING

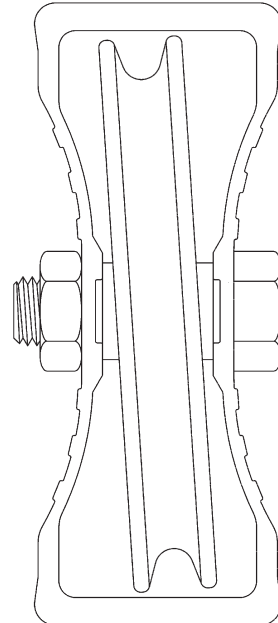
Do not use a boat lift with cables that show any abnormalities. If a cable breaks under pressure, the boat will drop suddenly causing potential damage to the boat, the boat lift, and can cause serious injury or death.

Fig 67



Pulley with proper vertical orientation on its axis

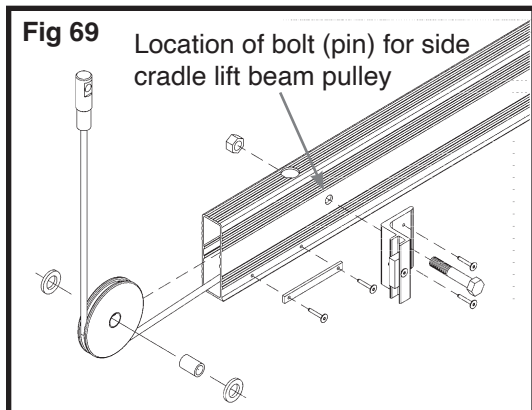
Fig 68



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

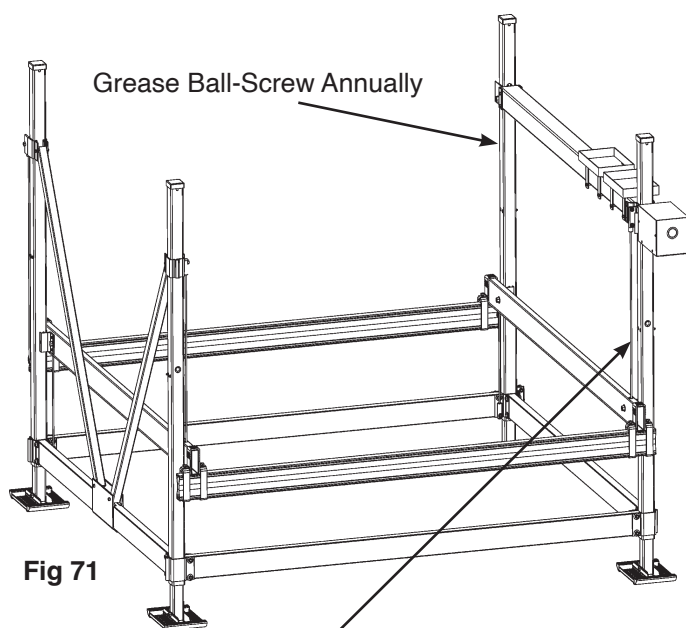
SIDE CRADLE LIFT BEAM PULLEYS

The side cradle lift beam pulley, which is a little more difficult to access can be seen in **Fig. 69**. 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**)



! WARNING

Loose fasteners can cause instability in the lift frame resulting in premature wear to the lift structure and create a structurally unsafe boat lift. Damage due to loose fasteners or improper assembly and/or maintenance will void warranty .



Grease Easy-Level Leveling Legs Annually (one on each corner post, for a total of four)

Circles indicate pulley locations

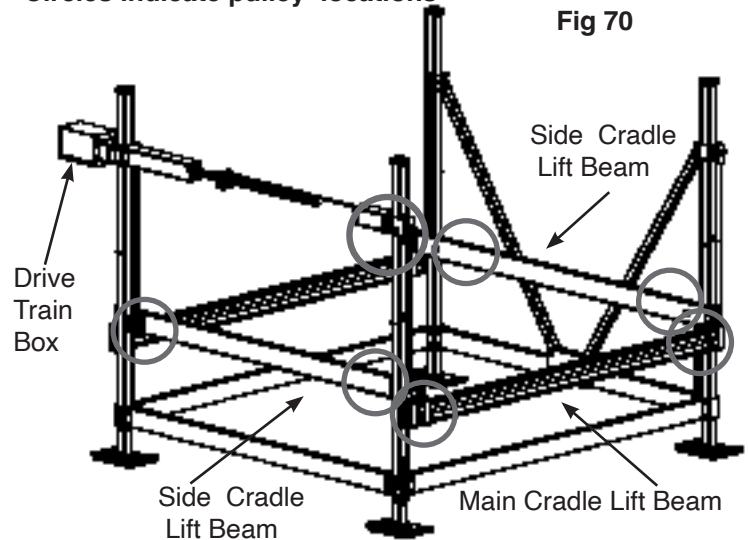


Fig. 70 Location of Sheaves

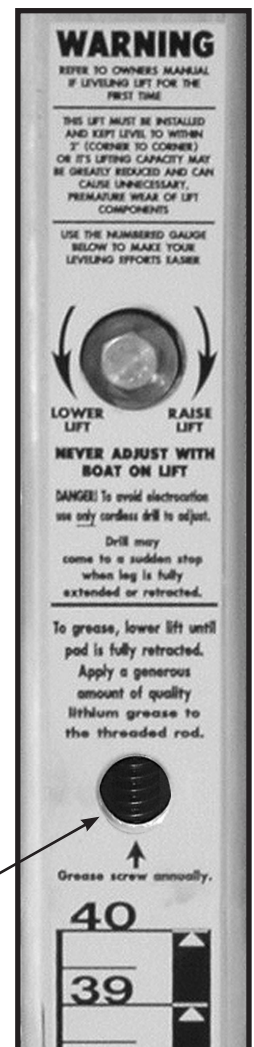
There is one pulley in the corner post opposite the drive train box, one at each end of the two side cradle lift beams, and one at each end of the front cradle lift beam. Total of seven pulleys.

GREASING THE EASY-LEVEL LEVELING LEG

The Easy-Level 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.

Refer to pages 11-12 for more information and tips on using the leveling legs.



GREASE HOLE

Fig 72

GREASING THE BALL-SCREW

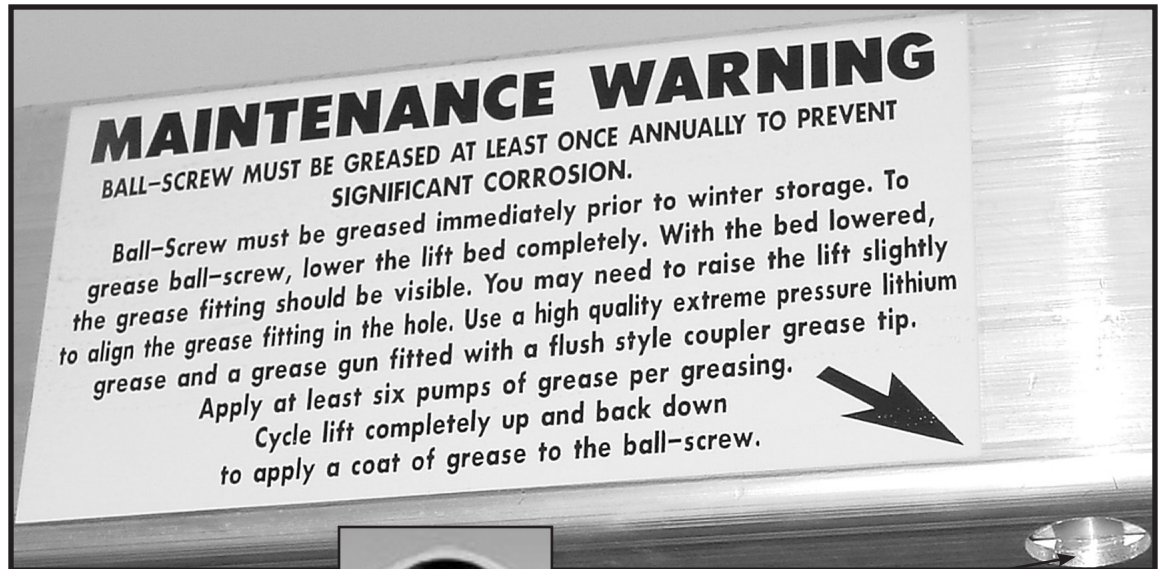
It is important to grease the ball-screw mechanism annually to prevent significant corrosion. The ball-screw must be greased immediately prior to winter storage. To grease the ball-screw, lower the lift bed completely. With the bed lowered, the grease fitting should be visible. It may be necessary to raise the lift slightly to align the grease fitting in the hole. Use a high quality extreme pressure lithium grease and a grease gun fitted with a flush style grease tip as shown in **Fig. 73** below. A lithium grease that meets these specifications is AeroShell Gadus S2 V220 2. Apply at least six pumps of grease per greasing. Cycle lift completely up and back down to apply a coat of grease to the ball-screw.



Fig. 73

Flush-Style Grease Gun Tip

Use a flush style coupler grease tip like the one included in your tool kit for your grease gun. Similar adapters are available through NAPA automotive parts stores. (NAPA part number 715 1215)

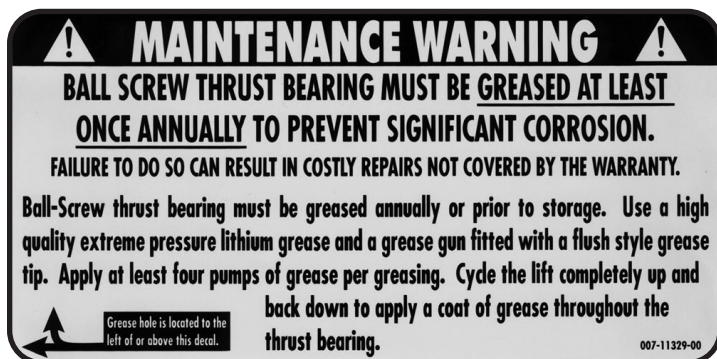


Flush Style Fitting

This fitting allows mess-free greasing access to the ball-screw mechanism.

GREASING THE THRUST BEARING

It is important to grease the thrust bearing mechanism annually to prevent significant corrosion. See maintenance warning decal below and on your lift.



WARNING

If the lift should raise or lower by itself without operating the remote control, disconnect the battery cable ring connectors from the battery posts immediately, if you are able to do so without the risk of injury. Contact your local dealer or FLOE International, Inc.

WARNING

Always remove the boat and lower the lift bed completely before attempting any work.

WARNING

Never attempt to remove the brake mechanism with the boat on the lift. If the brake was loosened, the boat's weight would cause the cradle of the lift to lower rapidly, causing potential serious injury or death.

WARNING

Before removing the power unit, the cradle lift beams must be completely lowered until there is slack in the main lifting cables. Failure to do so will cause the boat and lift cradle to suddenly crash downward.

VSD TROUBLESHOOTING GUIDE

DIAGNOSTICS FOR 24 VOLT VSD POWER UNIT

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, tight, and wired properly. (See **Fig. 7** on page 10)
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 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, unplug 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.

TROUBLESHOOTING OPTIONAL LIGHT SYSTEM

The optional light system has a circuit breaker on the Advanced Switch Control (ASC) (**Fig. 5** on page 6)

If the circuit breaker trips:

Step 1: Check to see if the light bulb(s) is good.

Step 2: Check to see if the wireless remote is working by trying to raise and lower the lift. If the wireless remote is not working, see the trouble-shooting steps on page 10.

Step 3: Check wiring to make sure coating has not rubbed away exposing the internal wires.

TROUBLESHOOTING CONTINUED

HOW TO MANUALLY LOWER THE LIFT (24V VSD)

1. Remove the above rubber plug.
2. Remove the bottom cover and disconnect the motor and brake wires. Reinstall the cover.
3. Spin drive train shaft clockwise using a cordless drill & socket adaptor/socket. (Provided in tool kit).
4. Immediately reinstall the plug to prevent water entry.

HOW TO MANUALLY LOWER THE LIFT (120V VSD)

1. Disconnect the 120V AC power cord from the ASC.
2. Remove the above rubber plug.
3. Remove the bottom cover and disconnect the motor plug. Reinstall the cover.
4. Spin drive train shaft clockwise using a cordless drill & socket adaptor/socket. (Provided in tool kit).
5. Immediately reinstall the plug to prevent water entry.

MAINTENANCE-FREE MOTOR

Both the 120 Volt and the 24-Volt lifts use a high-torque motor. This is an extremely efficient and durable internally geared motor that has the brake built into it. Its sealed oil-filled gear box keeps the internal gears permanently lubricated, making the motor virtually maintenance-free.

VSD Pre-installation Check List

Prior to installing your lift please follow this check list to confirm proper operation:

1. Raise the lift up to confirm operation of upper limit switch. Approach the upper-limit cautiously by pressing the UP button in short bursts as you near the top of the lift travel. A properly working limit switch will stop the lift before the ball screw reaches its limit of travel. If the limit switch does not stop the lift and the ball-nut reaches the end of the ball-screw you will be able to see the drive unit twisting slightly, indicating that the motor is trying to run. Also, you probably would have heard the ball nut hitting the metal stop at the end of the screw. The brake will still click when stopped at the limits.

2. Lower the lift down to confirm operation of lower limit switch. Again, as you approach the bottom of the lift travel press the DOWN button in short bursts. The lift should stop with a small amount of slack in the lifting cable after the cradle contacts the lift frame. If the limit switch does not stop the lift and the ball-nut reaches the end of the ball-screw you will be able to see the drive unit twisting slightly indicating that the motor is trying to run. Also, you probably would have heard the ball nut hitting the metal stop at the end of the screw.

If either limit switch does not stop the lift correctly, contact your FLOE dealer and do not use the lift until the problem is corrected.

3. Listen for unusual noises during lift operation. Squeaking may indicate that the lift may not have been greased. The ball screw **MUST** be greased before using the lift. Please see owners' manual for details.

4. If you have a wireless remote it would be a good idea to test it at this time. There is no need to go all the way to the limit switches since those were tested above. Also check the mast light if you have one. The lights come on when their buttons are pressed and go off after about 15 minutes.

VSD 6000 PONTOON FRAME BILL OF MATERIALS

LIFT P/N 511-60075-01

NO.	PART NUMBER	DESCRIPTION	QTY
1	001-16369-00	HHCS, 3/4-16 x 4" Grade 5 Plain	1
2	001-23877-00	SHCS, 1/2-20 x 1 1/2" (Black)	2
3	001-26911-00	Pin, Dowel 3/16" x 7/8"	4
4	001-28669-00	Pin, Groove 5/32"x 1.125" Zinc	4
c	001-29156-00	Nut, Jam Nylock 1/2-20 18-8 ss	1
6	001-33092-00	Flat Washer, SAE 3/4" Zinc	1
7	001-70040-00	HHCS, 1/2-20 x 2" 18-8 ss	1
8	001-70107-00	HHCS, 3/8-16 x 1 1/4" 18-8 ss	9
9	001-70110-00	HHCS, 3/8-16 X 1 3/4" 18-8 ss (NOT SHOWN IN EXP VIEWS)	4
10	001-70171-00	HHCS, 3/8-16 x 3 1/2" 18-8 ss	2
11	001-70118-00	HHCS, 3/8-16 x 3 3/4" 18-8 ss	2
12	001-70121-00	HHCS, 3/8-16 x 4 1/2" 18-8 ss	1
13	001-70123-00	HHCS, 3/8-16 x 5" 18-8 ss	1
14	001-70124-00	HHCS, 3/8-16 x 5 1/2" 18-8 ss (NOT SHOWN IN EXP VIEWS)	4
15	001-70125-00	HHCS, 3/8-16 x 6" 18-8 ss	7
16	001-70203-00	HHCS, 1/2-13 x 3/4" 18-8 ss	2
17	001-70211-00	HHCS, 1/2-13 x 2" 18-8 ss	8
18	001-70212-00	HHCS, 1/2-13 x 2 1/4" 18-8 ss	3
19	001-70213-00	HHCS, 1/2-13 x 2 1/2" 18-8 ss	2
20	001-70215-00	HHCS, 1/2-13 x 3" 18-8 ss	2
21	001-70219-00	HHCS, 1/2-13 x 4" 18-8 ss	14
22	001-70223-00	HHCS, 1/2-13 x 5" 18-8 ss	6
23	001-70225-00	HHCS, 1/2-13 x 6" 18-8 ss	1
24	001-70363-00	HHCS, 3/4-10 x 2 1/2" ss	4
25	001-70365-00	HHCS, 3/4-10 x 3" ss	3
26	001-70394-00	HHCS, 3/4-16 x 2" ss	1
27	001-70817-00	Nut, 3/4-10 Jam ss	7
28	001-70819-00	Nut, 1" 8 Jam ss	2
29	001-70861-00	Nut, Nylock 5/16-18 - Alum.	8
30	001-71017-00	Flat Washer, 3/8" SAE ss 18-8 (NOT SHOWN IN EXP VIEWS)	8
31	001-71021-00	Flat Washer, 1/2" 18-8 SS	3
32	001-71022-00	Flat Washer, 1/2" USS ss 18-8	32
33	001-71024-00	Flat Washer, 5/8"x1 25"x.060 SS	16
34	001-71027-00	Flat Washer, 1/2" USS ss 18-8	4
35	001-74404-00	CB, 5/16-18 x 5" ss 18-8	8
36	001-76069-00	Flat Washer, 5/8 (Lift) Nylon	8
37	001-76071-00	Nut, Nylock 3/8-16 Alum.	29
38	001-76072-00	Nut, Nylock 1/2-13 Alum.	37
39	002-00076-01	Post, Corner Lifting "A"	1
40	002-00077-01	Post, Corner Motor "B"	1
41	002-00078-01	Post, Corner "C & D"	2
42	002-04032-00	U-Clamp, Side Cradle	4
43	002-04204-00	Clamp, Cradle - 1.75"	7
44	002-04205-00	Clamp, Cradle Lift - 3.875"	1
45	002-04207-00	Clamp, Frame (Lifting) - 8"	1
46	002-04208-00	Clamp, Frame (Outer) - 8"	3
47	002-04209-00	Clamp, Frame (RF LR) (Welded to Corner Post)	2
48	002-04210-00	Clamp, Upper (Universal) - 4"	2
49	002-04211-00	Clamp, Upper (Front) - 4"	1
50	002-04212-00	Clamp, Upper (Rear)	1
51	002-04216-00	Clamp, V-Brace (Male)	1
52	002-04217-00	Clamp, V-Brace (Female)	1
53	002-04223-01	Clamp, 4.5" Ball Screw 6-8000 VSD	1
54	002-04224-00	Clamp, Pulley (Inner)	1
55	002-04226-00	Guide, Cradle	2
56	002-04227-00	Clamp, Frame (LF RR) (Welded to Corner Post)	2
57	002-04230-00	Clamp, Pulley (Outer)	1
58	002-04241-00	Holder, Cable - 4" Sheave	1

NO.	PART NUMBER	DESCRIPTION	QTY
59	002-04245-00	Bracket, Level Leg - 4"	4
60	002-04258-00	Spacer, 8" Frame Beam	4
61	002-04291-00	V-Brace - 86.250"	2
62	002-04332-00	Beam, 8" Frame - 130"	2
63	002-04334-00	Beam, Front Cradle - 139"	1
64	002-04351-00	Beam, 6" Frame - 108"	2
65	002-04356-00	Beam, Side Cradle (A) 6-8000#	1
66	002-04357-00	Beam, Side Cradle (B) 6-8000#	1
67	003-40001-00	Grommet, Motor, VSD	4
68	006-10021-00	Sleeve, UHMW Ball Screw Support	1
69	006-10202-00	Pad, Wear - 1/2 x 7/8" x 2"	2
70	006-10207-00	Spacer, Side Cradle Sheave	8
71	006-10208-00	Spacer, Front Cradle Sheave	4
72	006-11002-00	UHMW, 1/2" x 6.5" x .25"	4
73	006-15016-00	Cap, Vinyl - Lg, Windch Post	1
74	006-15500-00	Cap, Vinyl 4.500" Sq. x 1.5"	3
75	006-22202-00	Sleeve, Steel 1" x 2.25" Lg.	1
76	007-05013-00	Plate, End Stop (Ball Screw)	1
77	007-05023-00	Bevel Gear, Top 1:1	4
78	007-05068-00	Clevis, Lifting Cable Pulley	1
79	007-05079-01	Screw, Bevel Gear Adjustment	4
80	007-05126-00	Fitting, Grease M8 X 1 (Flush)	2
81	007-05222-00	Key, 1/4" SQ x 3" Long	1
82	007-05224-00	Coupler, Rigid 1" x 2" x 3"	1
83	007-05500-00	Pin, Sheave - 1" x 6.688"	1
84	007-07625-00	Sheave, 2" Clevis	1
85	007-07626-00	Sheave, 2" Clevis	1
86	007-07704-00	Spacer, 1.297 Side Cradle	4
87	007-07705-00	Spacer, 1.938" Front Cradle	2
88	007-07708-00	Spacer, Pulley 6000-8000#	2
89	007-09105-00	Cable, Side Leveling - 190.5"	2
90	007-09154-00	Cable, Front Leveling 233.625"	1
91	007-09161-00	Cable, Lifting - 237.0" 6-8000#	1
92	007-15024-00	Bevel Gear, Bottom (Fab)	4
93	007-93534-00	Nut, Round M30 x 1.5 (Zinc Plated)	1
94	007-15015-00	Ball Screw, 40-10 mm 1930.4 mm	1
95	111-00140-00	Weldment, 14" Sand Pad	4
96	111-00188-02	Ass'y, Side Cradle Right	1
97	111-00189-02	Ass'y, Side Cradle Left	1
98	111-00198-00	Ass'y, 7" Lifting Sheave	2
99	111-00199-00	Ass'y, 6" Side Level Sheave	4
100	111-00200-00	Ass'y, 7 1/4" Sheave	2
101	111-00249-00	Ass'y, Ball Nut Block 6-8000#	1
102	111-00251-00	Ass'y, Cradle Guide	4
103	111-00311-00	Ass'y, Bearing Block w/ Bearing	1
104	111-00348-00	Ass'y, 6000# Pontoon Cradle	1
105	111-00423-01	Weldment, Inner Leg 6-8000#	4
106	111-00424-01	Ass'y, Inner Leg 6-8000	4
107	111-00425-01	Ass'y, Corner Post "A" Lifting	1
108	111-00426-01	Ass'y, Corner Post "B" Motor	1
109	111-00427-01	Ass'y, Corner Post "C"	1
110	111-00428-01	Ass'y, Corner Post "D"	1
111	111-00429-01	Weld't, Ball Screw Tube 6-8000#	1
112	111-00430-01	Ass'y, Ball Screw Tube 6-8000#	1
113	111-60750-00	Ass'y, Limit Switch 6000-8000	1
114	911-08502-00	Beam, Cradle 3.125 x 8 - 139"	1
115	911-10501-00	Spacer, 6" Frame Beam - 2.203"	4
116	911-21302-00	Canopy Insert, Lrg. Lift - 44"	1

VSD 6000 PONTON FRAME BILL OF MATERIALS – SUB-ASSEMBLIES

LIFT P/N 511-60075-01

NO.	PART NUMBER	DESCRIPTION	QTY
96	111-00188-02	Ass'y, Side Cradle Right	1
24	001-70363-00	HHCS, 3/4-10 x 2 1/2" ss	2
27	001-70817-00	Nut, 3/4-10 Jam ss	2
66	002-04357-00	Bearm, Side Cradle (B) 6-8000#	1
70	006-10207-00	Spacer, Side Cradle Sheave	4
72	006-11002-00	UHMW, 1/2" x 6.5" x .25"	2
86	007-07704-00	Spacer, 1.297" Side Cradle	2
89	007-09105-00	Cable, Side Leveling - 190.5"	1
99	111-00199-00	Ass'y, 6" Side Level Sheave	2
102	111-00251-00	Ass'y, Cradle Guide	2

NO.	PART NUMBER	DESCRIPTION	QTY
97	111-00189-02	Ass'y, Side Cradle Left	1
24	001-70363-00	HHCS, 3/4-10 x 2 1/2" ss	2
27	001-70817-00	Nut, 3/4-10 Jam ss	2
65	002-04356-00	Bearm, Side Cradle (A) 6-8000#	1
70	006-10207-00	Spacer, Side Cradle Sheave	4
72	006-11002-00	UHMW, 1/2" x 6.5" x .25"	2
86	007-07704-00	Spacer, 1.297" Side Cradle	2
89	007-09105-00	Cable, Side Leveling - 190.5"	1
99	111-00199-00	Ass'y, 6" Side Level Sheave	2
102	111-00251-00	Ass'y, Cradle Guide	2

NO.	PART NUMBER	DESCRIPTION	QTY
104	111-00348-00	Ass'y, 6000# Pontoon Cradle	1
25	001-70365-00	HHCS, 3/4-10 x 3" ss	2
27	001-70817-00	Nut, 3/4-10 Jam ss	2
63	002-04334-00	Bearm, Front Cradle - 139"	1
71	006-10208-00	Spacer, Front Cradle Sheave	4
84	007-07705-00	Spacer, 1.938" Front Cradle	2
90	007-09154-00	Cable, Front Leveling 233.625"	1
100	111-00200-00	Ass'y, 7 1/4" Sheave	2

NO.	PART NUMBER	DESCRIPTION	QTY
106	111-00424-01	Ass'y, Inner Leg 6-8000	1
3	001-26911-00	Pin, Dowel 3/16" x 7/8"	1
4	001-26969-00	Pin, Groove 5/32" x 1.125" Zinc	1
31	001-71024-00	Flat Washer, 5/8"x1.25"x.060 SS	4
34	001-71027-00	Flat Washer, 1/2" USS ss 18-8	4
35	001-76069-00	Flat Washer, 5/8 (Lift) Nylon	2
59	002-04245-00	Bracket, Level Leg - 4"	1
77	007-05023-00	Bevel Gear, Top 1:1	1
79	007-05079-01	Screw, Bevel Gear Adjustment	1
92	007-15024-00	Bevel Gear, Bottom (Fab)	1
105	111-00423-01	Weldment, Inner Leg 6-8000#	1

NO.	PART NUMBER	DESCRIPTION	QTY
107	111-00425-01	Ass'y, Corner Post "A" Lifting	1
28	001-70819-00	Nut, 1"-8 Jam ss	2
29	001-70861-00	Nut, Nylock 5/16-18 - Alum.	2
35	001-74404-00	CB, 5/16-18 x 5" ss 18-8	2
39	002-00076-01	Post, Corner Lifting "A"	1
47	002-04209-00	Clamp, Frame (RF LR)	1
54	002-04224-00	Clamp, Pulley (Inner)	1
57	002-04230-00	Clamp, Pulley (Outer)	1
74	006-15500-00	Cap, Vinyl 4.500" Sq. x 1.5"	1
83	007-05500-00	Pin, Sheave - 1" x 6.688"	1
88	007-07708-00	Spacer, Pulley 6000-8000#	2
98	111-00198-00	Ass'y, 7" Lifting Sheave	2
106	111-00424-01	Ass'y, Inner Leg 6-8000	1

NO.	PART NUMBER	DESCRIPTION	QTY
108	111-00426-01	Ass'y, Corner Post "B" Motor	1
8	001-70107-00	HHCS, 3/8-16 x 1 1/4" 18-8 ss	1
29	001-70861-00	Nut, Nylock 5/16-18 - Alum.	2
31	001-71021-00	Flat Washer, 1/2" 18-8 SS	1
35	001-74404-00	CB, 5/16-18 x 5" ss 18-8	2
38	001-76072-00	Nut, Nylock 1/2-13 Alum.	1
40	002-00077-01	Post, Corner Motor "B"	1
56	002-04227-00	Clamp, Frame (LF RR)	1
73	006-15016-00	Cap, Vinyl - Lg. Winch Post	1
106	111-00424-01	Ass'y, Inner Leg 6-8000	1
116	911-21302-00	Canopy Insert, Lg. Lift - 44"	1

NO.	PART NUMBER	DESCRIPTION	QTY
109	111-00427-01	Ass'y, Corner Post "C"	1
29	001-70861-00	Nut, Nylock 5/16-18 - Alum.	2
35	001-74404-00	CB, 5/16-18 x 5" ss 18-8	2
41	002-00078-01	Post, Corner "C & D"	1
47	002-04209-00	Clamp, Frame (RF LR)	1
74	006-15500-00	Cap, Vinyl 4.500" Sq. x 1.5"	1
106	111-00424-01	Ass'y, Inner Leg 6-8000	1

NO.	PART NUMBER	DESCRIPTION	QTY
110	111-00428-01	Ass'y, Corner Post "D"	1
29	001-70861-00	Nut, Nylock 5/16-18 - Alum.	2
35	001-74404-00	CB, 5/16-18 x 5" ss 18-8	2
41	002-00078-01	Post, Corner "C & D"	1
56	002-04227-00	Clamp, Frame (LF RR)	1
74	006-15500-00	Cap, Vinyl 4.500" Sq. x 1.5"	1
106	111-00424-01	Ass'y, Inner Leg 6-8000	1

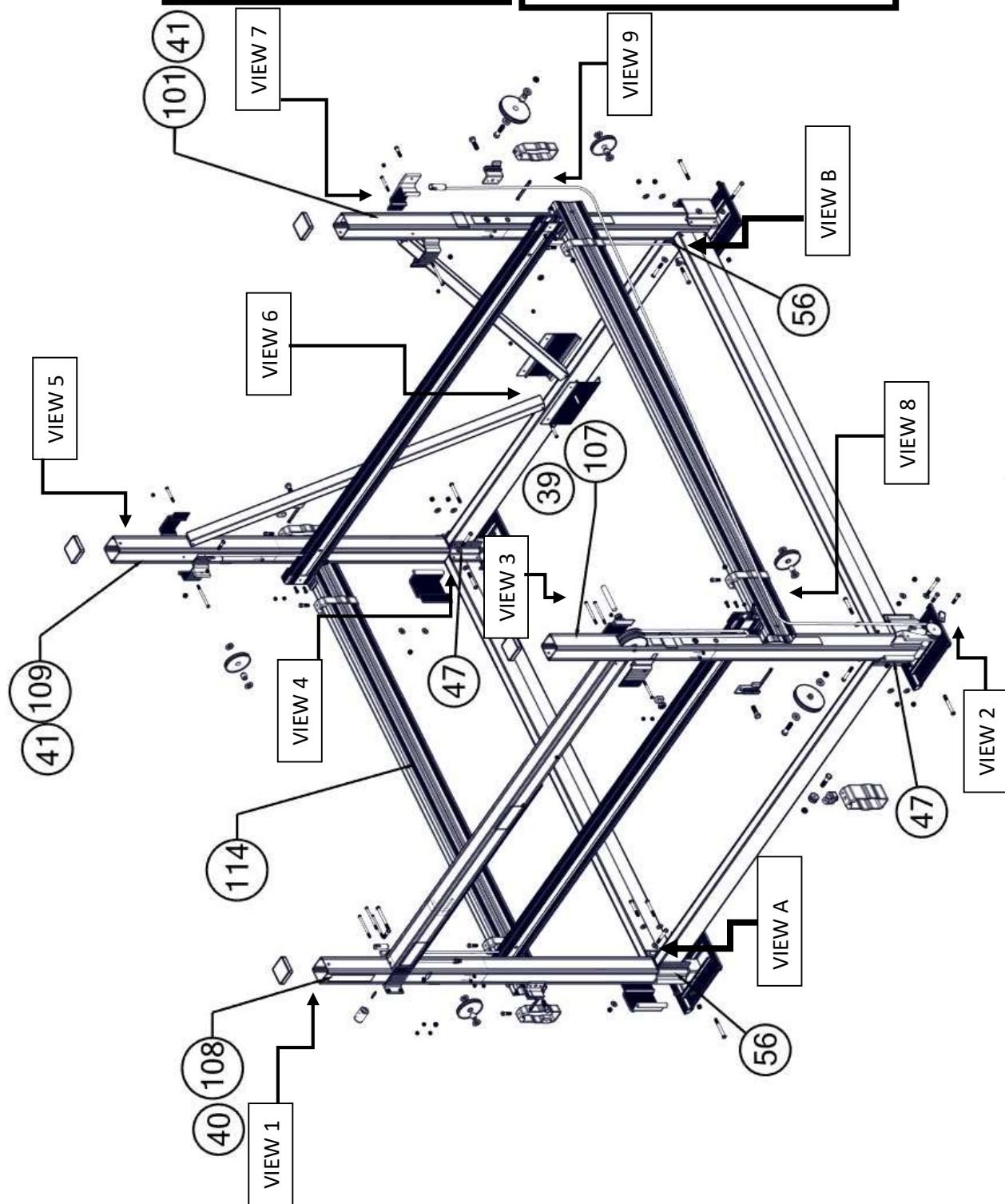
NO.	PART NUMBER	DESCRIPTION	QTY
112	111-00430-01	Ass'y, Ball Screw Tube 6-8000#	1
1	001-16369-00	HHCS, 3/4-16 x 4" Grade 5 Plain	1
2	001-23877-00	SHCS, 1/2-20 x 1 1/2" (Black)	2
5	001-29156-00	Nut, Jam Nylock 1/4-20 18-8 ss	1
6	001-33092-00	Flat Washer, SAE 3/4" Zinc	1
7	001-70040-00	HHCS, 1/2-20 x 2" 18-8 ss	1
13	001-70123-00	HHCS, 3/8-16 x 5" 18-8 ss	1
15	001-70203-00	HHCS, 1/2-13 x 3/4" 18-8 ss	2
20	001-70215-00	HHCS, 1/2-13 x 3" 18-8 ss	2
31	001-71021-00	Flat Washer, 1/2" 18-8 SS	2
37	001-76071-00	Nut, Nylock 3/8-16 Alum.	1
38	001-76072-00	Nut, Nylock 1/2-13 Alum.	2
68	006-10021-00	Sleeve, UHMW Ball Screw Support	1
75	006-22202-00	Sleeve, Steel 1" x 2.25" Lg.	1
76	007-05013-00	Plate, End Stop (Ball Screw)	1
80	007-05126-00	Fitting, Grease M8 X 1 (Flush)	2
81	007-05222-00	Key, 1/4" SQ x 3" Long	1
82	007-05224-00	Coupler, Rigid 1" x 2" x 3"	1
91	007-09161-00	Cable, Lifting - 237.0" 6-8000#	1
93	007-93534-00	Nut, Round M30 x 1.5 (Zinc Plated)	1
94	011-15015-00	Ball Screw, 40-10 mm 1930.4 mm	1
101	111-00249-00	Ass'y, Ball Nut Block 6-8000#	1
103	111-00311-00	Ass'y, Bearing Block w/ Bearing	1
111	111-00429-01	Weldt, Ball Screw Tube 6-8000#	1
113	111-60750-00	Ass'y, Limit Switch 6000-8000	1

VSD 6000 PONTON FRAME EXPLODED VIEW MAIN

LIFT P/N 511-60075-01

NOTE:

ADDITIONAL VIEWS ON
PAGES 36-40

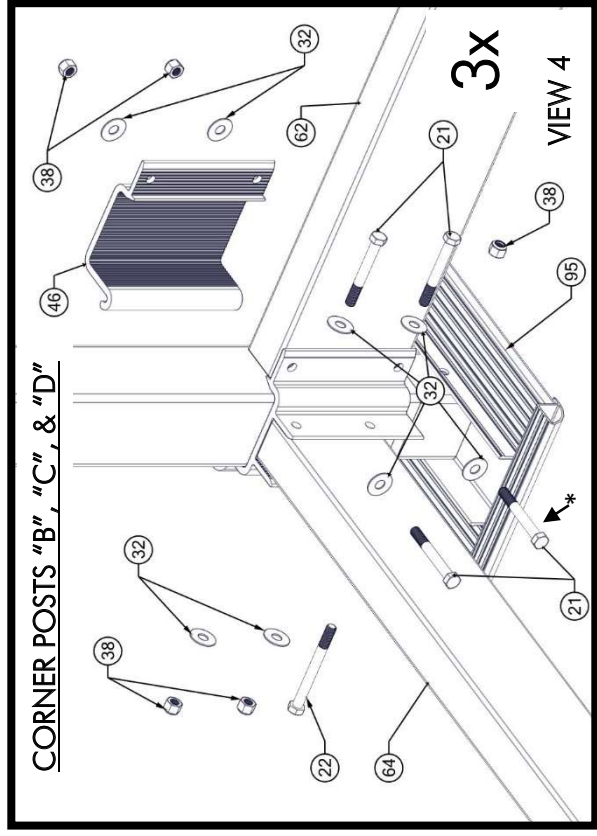
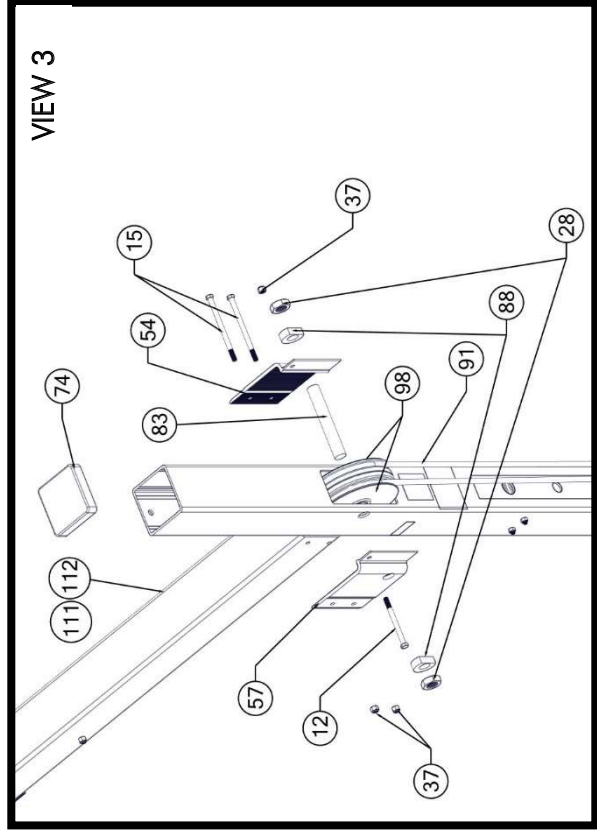
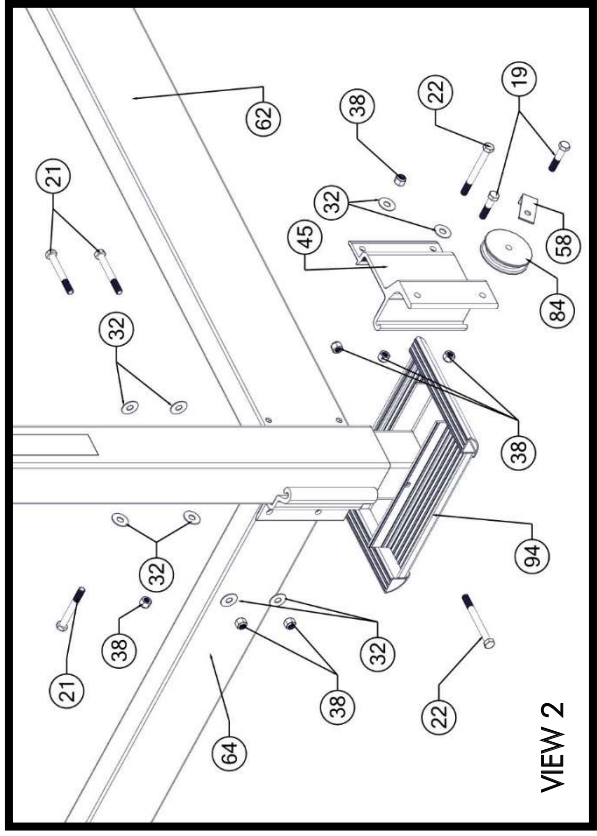
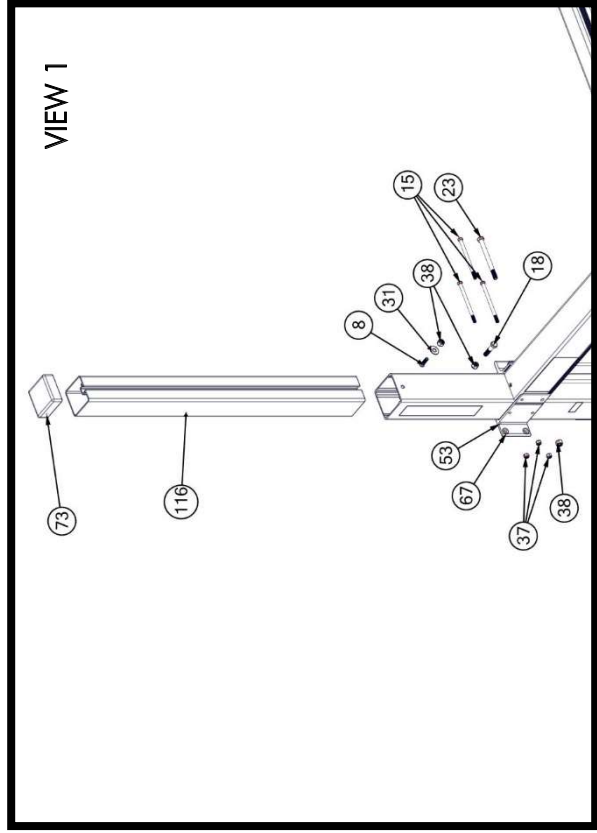


VIEW A

VIEW B

VSD 6000 PONTOON FRAME EXPLODED VIEWS 1-4

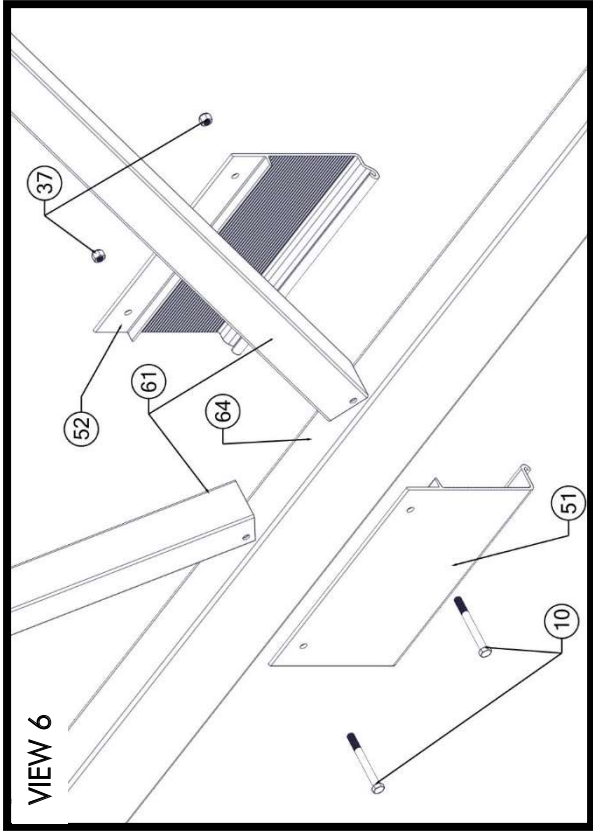
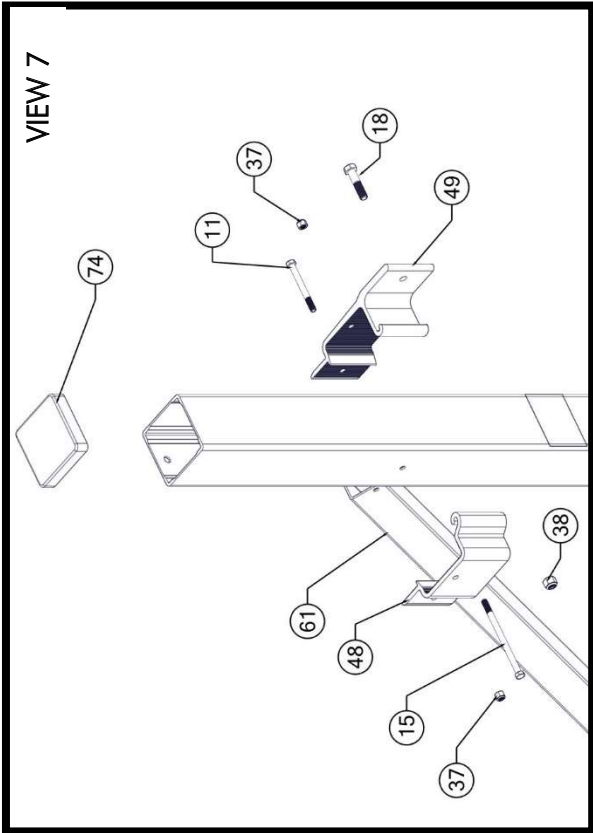
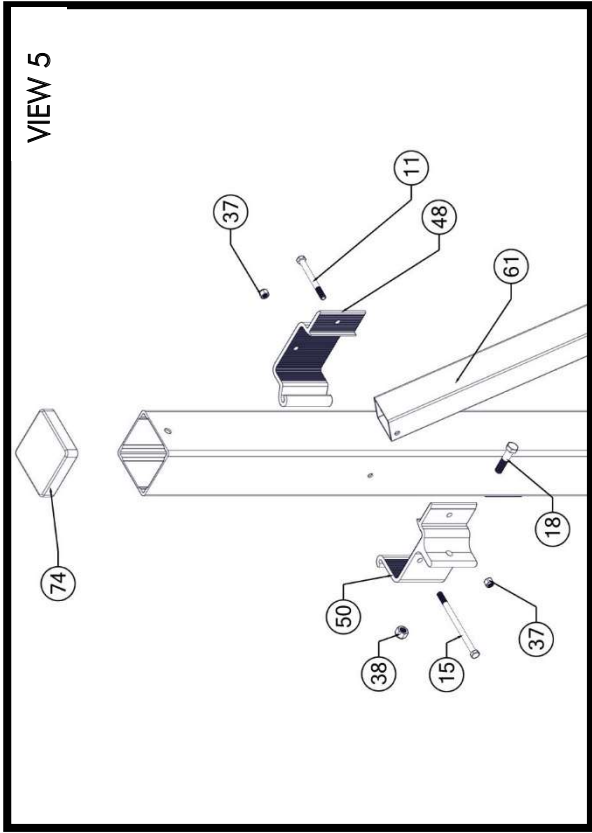
LIFT P/N 511-60075-01



NOTE
VIEW 4:
CORNER
"B" IS
SHOWN.
BOTTOM
BOLT
(MARKED)
IS
REPLACED
WITH ITEM
22 AT
CORNER
"D". FOR
CORNER
"C", SAME
ITEMS ARE
USED AS
SHOWN IN
VIEW 4.

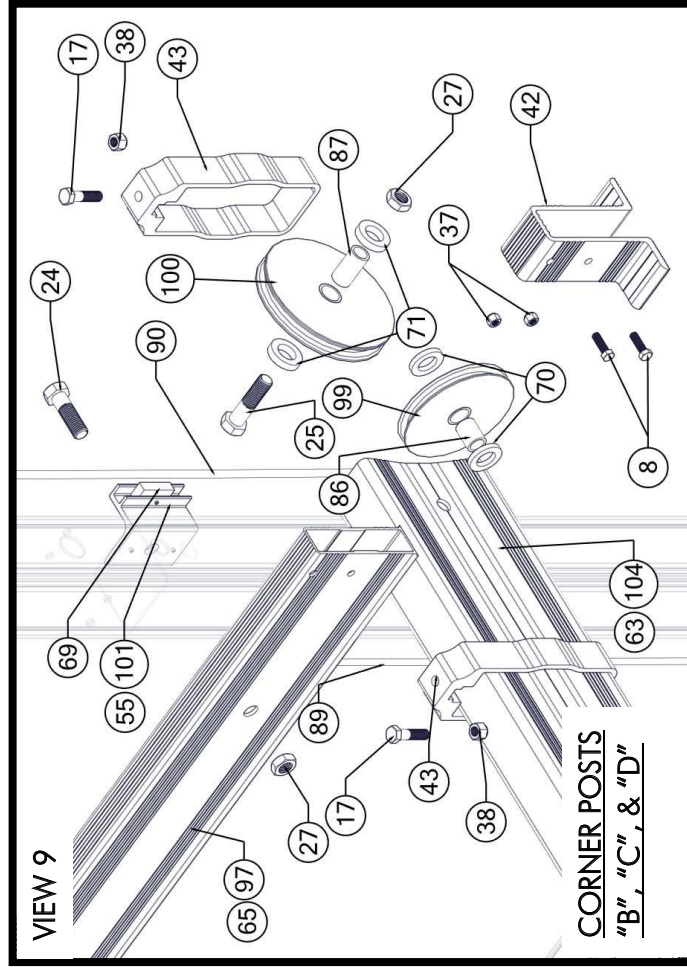
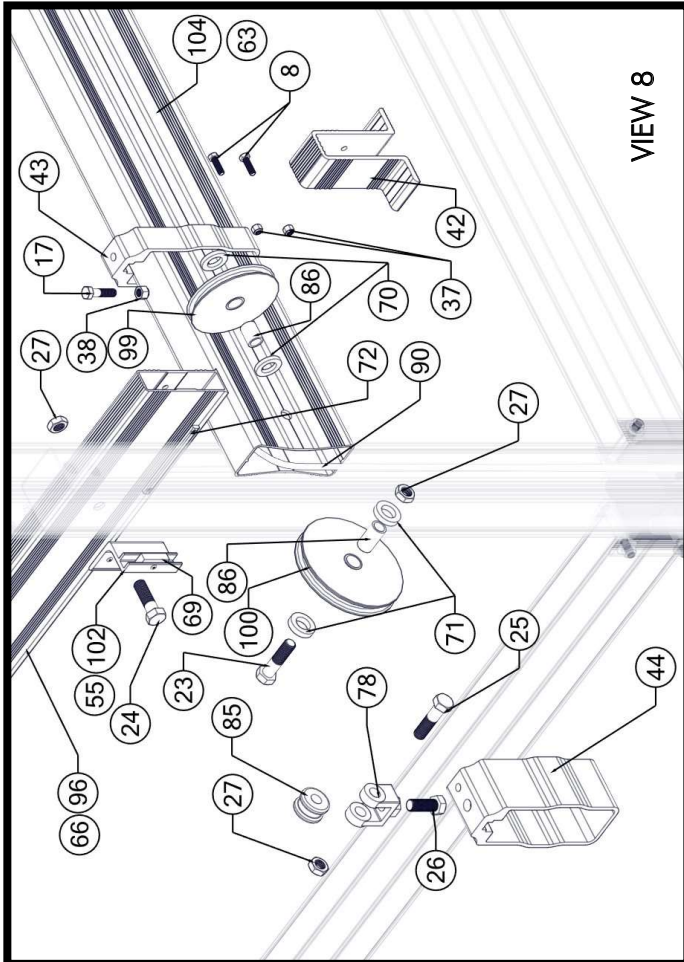
VSD 6000 PONTOON FRAME EXPLODED VIEWS 5-7

LIFT P/N 511-60075-01



VSD 6000 PONTON FRAME EXPLODED VIEWS 8 & 9

LIFT P/N 511-60075-01

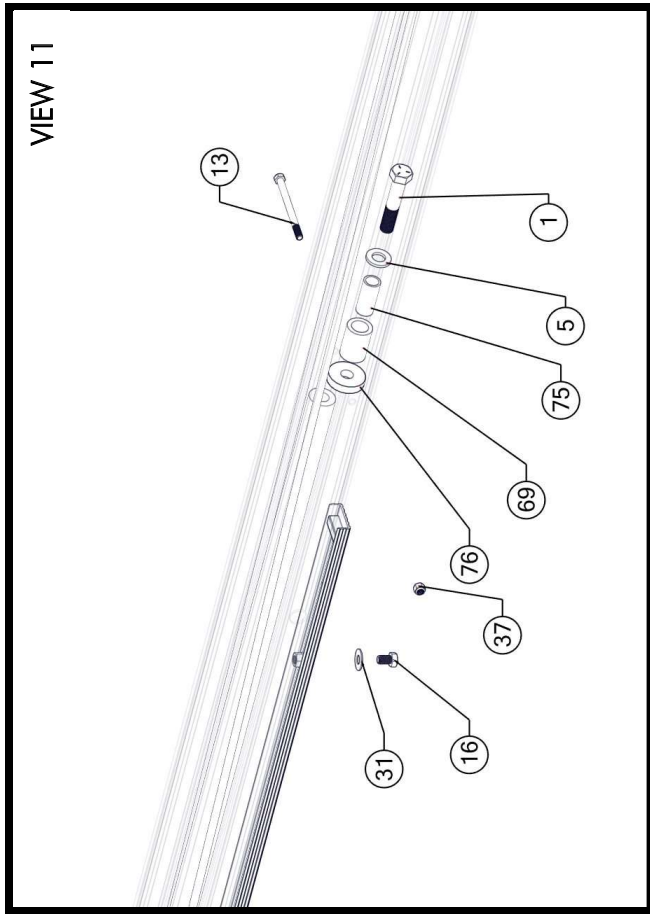
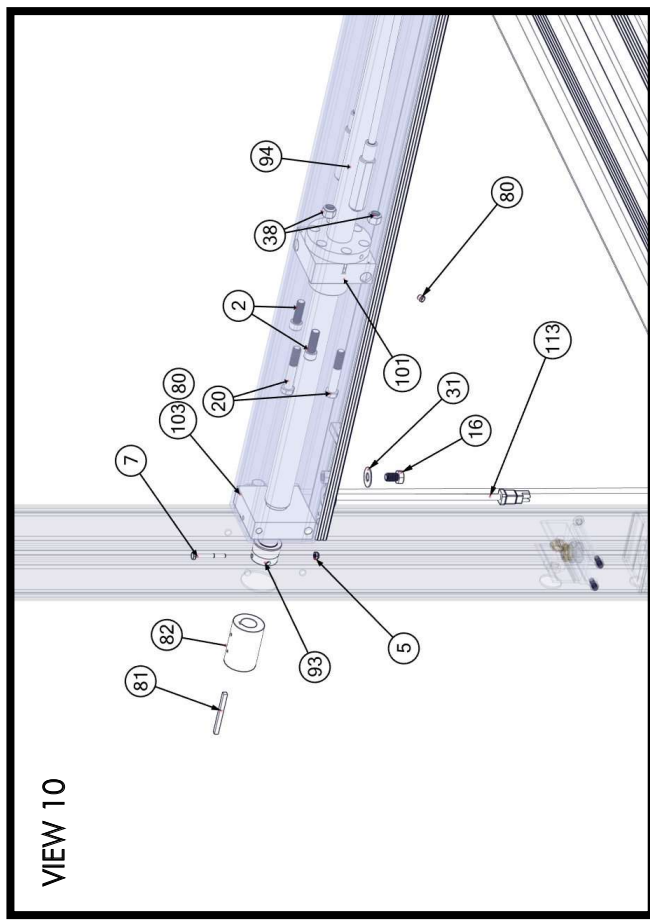


NOTE (VIEW 9):

CORNER "D" IS SHOWN IN THIS VIEW. FOR CORNERS "B" & "C", ITEMS 25, 27, 71, 87, AND 100. ARE EXEMPT. ITEMS 63 & 104 ARE REPLACED WITH ITEM 114.

VSD 6000 PONTON FRAME EXPLODED VIEWS 10 & 11

LIFT P/N 511-60075-01



LIFT P/N 511-60075-01

Diagram illustrating the assembly of a corner post. The components are labeled with numbers in circles:

- 3: Corner post cap
- 4: Corner post cap
- 33: Corner post cap
- 35: Corner post cap
- 36: Corner post cap
- 37: Corner post cap
- 38: Corner post cap
- 39: Corner post cap
- 40: Corner post cap
- 41: Corner post cap
- 42: Corner post cap
- 43: Corner post cap
- 44: Corner post cap
- 45: Corner post cap
- 46: Corner post cap
- 47: Corner post cap
- 48: Corner post cap
- 49: Corner post cap
- 50: Corner post cap
- 51: Corner post cap
- 52: Corner post cap
- 53: Corner post cap
- 54: Corner post cap
- 55: Corner post cap
- 56: Corner post cap
- 57: Corner post cap
- 58: Corner post cap
- 59: Corner post cap
- 60: Corner post cap
- 61: Corner post cap
- 62: Corner post cap
- 63: Corner post cap
- 64: Corner post cap
- 65: Corner post cap
- 66: Corner post cap
- 67: Corner post cap
- 68: Corner post cap
- 69: Corner post cap
- 70: Corner post cap
- 71: Corner post cap
- 72: Corner post cap
- 73: Corner post cap
- 74: Corner post cap
- 75: Corner post cap
- 76: Corner post cap
- 77: Corner post cap
- 78: Corner post cap
- 79: Corner post cap
- 80: Corner post cap
- 81: Corner post cap
- 82: Corner post cap
- 83: Corner post cap
- 84: Corner post cap
- 85: Corner post cap
- 86: Corner post cap
- 87: Corner post cap
- 88: Corner post cap
- 89: Corner post cap
- 90: Corner post cap
- 91: Corner post cap
- 92: Corner post cap
- 93: Corner post cap
- 94: Corner post cap
- 95: Corner post cap
- 96: Corner post cap
- 97: Corner post cap
- 98: Corner post cap
- 99: Corner post cap
- 100: Corner post cap
- 101: Corner post cap
- 102: Corner post cap
- 103: Corner post cap
- 104: Corner post cap
- 105: Corner post cap
- 106: Corner post cap

VSD 6500/8000 FRAME BILL OF MATERIALS

LIFT P/N 511-80075-01

NO.	PART NUMBER	DESCRIPTION	QTY
1	001-16369-00	HHCS, 3/4-16 x 4" Grade 8 Plain	1
2	001-23877-00	SHCS, 1/2-20 x 1 1/2" (Black)	2
3	001-26811-00	Pin, Dowel 3/16" x 7/8"	2
4	001-71525-00	Spring Pin, 5/32" x 1-1/8" 420 SS Slotted	4
5	001-29156-00	Nut, Jam Nylock 1/4-20 18-8 SS	1
6	001-33092-00	Flat Washer, SAE 3/4" Zinc	1
7	001-70040-00	HHCS, 1/2-20 X 2" 18-8 SS	1
8	001-70107-00	HHCS, 3/8-16 x 1 1/4" 18-8 ss	8
9	001-70110-00	HHCS, 3/8-16 X 1 3/4" 18-8 ss (NOT SHOWN IN EXP VIEWS)	4
10	001-70147-00	HHCS, 3/8-16 x 3 1/2" 18-8 ss	2
11	001-70118-00	HHCS, 3/8-16 x 3 3/4" 18-8 ss	2
12	001-70121-00	HHCS, 3/8-16 x 4 1/2" 18-8 ss	1
13	001-70123-00	HHCS, 3/8-16 x 5" 18-8 ss	1
14	001-70124-00	HHCS, 3/8-16 x 5 1/2" 18-8 ss (NOT SHOWN IN EXP VIEWS)	4
15	001-70125-00	HHCS, 3/8-16 x 6" 18-8 ss	7
16	001-70203-00	HHCS, 1/2-13 x 3/4" 18-8 ss	2
17	001-70207-00	HHCS, 1/2-13 x 1-1/4" 18-8 ss	1
18	001-70211-00	HHCS, 1/2-13 x 2" 18-8 ss	8
19	001-70212-00	HHCS, 1/2-13 x 2 1/4" 18-8 ss	3
20	001-70213-00	HHCS, 1/2-13 x 2 1/2" 18-8 ss	1
21	001-70215-00	HHCS, 1/2-13 x 3" 18-8 ss	2
22	001-70219-00	HHCS, 1/2-13 x 4" 18-8 ss	14
23	001-70223-00	HHCS, 1/2-13 x 5" 18-8 ss	6
24	001-70225-00	HHCS, 1/2-13 x 6" 18-8 ss	1
25	001-70363-00	HHCS, 3/4-10 x 2 1/2" ss	4
26	001-70365-00	HHCS, 3/4-10 x 3" ss	4
27	001-70394-00	HHCS, 3/4-16 x 2" ss	1
28	001-70817-00	Nut, 3/4-10 Jam ss	7
29	001-70819-00	Nut, 1"-8 Jam ss	2
30	001-70861-00	Nut, Nylock 5/16-18 - Alum.	8
31	001-71017-00	Flat Washer, 3/8" SAE ss 18-8 (NOT SHOWN IN EXP VIEWS)	8
32	001-71021-00	Flat Washer, 1/2" 18-8 SS	3
33	001-71022-00	Flat Washer, 1/2" USS ss 18-8	32
34	001-71024-00	Flat Washer, 5/8"x1.25"x.060 SS	16
35	001-71027-00	Flat Washer, 1/2" USS ss 18-8	4
36	001-74404-00	CB, 5/16-18 x 5" ss 18-8	8
37	001-76069-00	Flat Washer, 5/8 (Lift) Nylon	8
38	001-76071-00	Nut, Nylock 3/8-16 Alum.	29
39	001-76072-00	Nut, Nylock 1/2-13 Alum.	36
40	002-00076-01	Post, Corner Lifting "A"	1
41	002-00077-01	Post, Corner Motor "B"	1
42	002-00078-01	Post, Corner "C & D"	2
43	002-04032-00	U-Clamp, Side Cradle	4
44	002-04204-00	Beam, 8" Frame - 118"	2
45	002-04204-00	Clamp, Cradle - 1.75"	7
46	002-04205-00	Clamp, Cradle Lift - 3.875"	1
47	002-04893-00	Clamp, Frame (Lifting) - 8"	1
48	002-04208-00	Clamp, Frame (Outer) - 8"	3
49	002-04209-00	Clamp, Frame (RF LR) 4	2
50	002-04210-00	Clamp, Upper (Universal) - 4"	2
51	002-04211-00	Clamp, Upper (Front) - 4"	1
52	002-04212-00	Clamp, Upper (Rear)	1
53	002-04215-00	Beam, End Cradle (127")	1
54	002-04216-00	Clamp, V-Brace (Male)	1
55	002-04217-00	Clamp, V-Brace (Female)	1
56	002-04223-01	Clamp, 4.5" Ball Screw 6-8000 VSD	1
57	002-04224-00	Clamp, Pulley (Inner)	1
58	002-04226-00	Guide, Cradle	2
59	002-04227-00	Clamp, Frame (LF RR) (Welded to Corner Post)	2

NO.	PART NUMBER	DESCRIPTION	QTY
60	002-04230-00	Clamp, Pulley (Outer)	1
61	002-04241-01	Holder, Cable - 4" Sheave	1
62	002-04245-00	Bracket, Level Leg - 4"	4
63	002-04258-00	Spacer, 8" Frame Beam	4
64	002-04291-00	V-Brace - 86.250"	2
65	002-04351-00	Beam, 6" Frame - 108"	2
66	002-04356-00	Beam, Side Cradle (A) 6-8000#	1
67	002-04357-00	Beam, Side Cradle (B) 6-8000#	1
68	003-40001-00	Grommet, Motor, VSD	4
69	006-10021-00	Sleeve, UHMW Ball Screw Support	1
70	006-10202-00	Pad, Wear - 1/2 X 7/8" X 2"	2
71	006-10207-00	Spacer, Side Cradle Sheave	8
72	006-10208-00	Spacer, Front Cradle Sheave	4
73	006-11002-00	UHMW, 1/2" x 6.5" x .25"	4
74	006-15016-00	Cap, Vinyl - Lg. Winch Post	1
75	006-15500-00	Cap, Vinyl 4.500" Sq. x 1.5"	3
76	006-22202-00	Sleeve, Steel 1" x 2.25" Lg.	1
77	007-05013-00	Plate, End Stop (Ball Screw)	1
78	007-05023-00	Bevel Gear, Top 1:1	4
79	007-05068-00	Clevis, Lifting Cable Pulley	1
80	007-05079-01	Screw, Bevel Gear Adjustment	4
81	007-05126-00	Fitting, Grease M8 X 1 (Flush)	2
82	007-05222-00	Key, 1/4" SQ x 3" Long	1
83	007-05224-00	Coupler, Rigid 1" x 2" x 3"	1
84	007-05500-00	Pin, Sheave - 1" x 6.688"	1
85	007-07625-01	Sheave, 4" Clamp	1
86	007-07626-00	Sheave, 2" Clevis	1
87	007-07704-00	Spacer, 1.257 Side Cradle	4
88	007-07705-00	Spacer, 1.938" Front Cradle	2
89	007-07708-00	Spacer, Pulley 6000-8000#	2
90	007-09106-00	Cable, Side Leveling - 190"	2
91	007-09111-00	Cable, Front Leveling 219.75"	1
92	007-09161-00	Cable, Lifting - 237.0" 6-8000#	1
93	007-15024-00	Bevel Gear, Bottom (Fab)	4
94	007-93534-00	Nut, Round M30 x 1.5 (Zinc Plated)	1
95	011-15015-00	Ball Screw, 40-10 mm 1930.4 mm	1
96	111-00139-01	Ass'y, Front Cradle Beam -127"	1
97	111-00140-00	Weldment, 14" Sand Pad	4
98	111-00188-03	Ass'y, Side Cradle VSD6-10K Std. (R)	1
99	111-00189-03	Ass'y, Side Cradle VSD6-10K Std. (L)	1
100	111-00198-00	Ass'y, 7" Lifting Sheave	2
101	111-00199-00	Ass'y, 6" Side Level Sheave	4
102	111-00200-00	Ass'y, 7 1/4" Sheave	2
103	111-00249-00	Ass'y, Ball Nut Block 6-8000#	1
104	111-00251-00	Ass'y, Cradle Guide	4
105	111-00311-00	Ass'y, Bearing Block w/ Bearing	1
106	111-00423-01	Weldment, Inner Leg 6-8000#	4
107	111-00424-01	Ass'y, Inner Leg 6-8000	4
108	111-00425-01	Ass'y, Corner Post "A" Lifting	1
109	111-00426-01	Ass'y, Corner Post "B" Motor	1
110	111-00427-01	Ass'y, Corner Post "C"	1
111	111-00428-01	Ass'y, Corner Post "D"	1
112	111-00429-01	Weld't, Ball Screw Tube 6-8000#	1
113	111-00430-01	Ass'y, Ball Screw Tube 6-8000#	1
114	111-60750-01	Ass'y, Limit Switch 6000-8000 Pon.	1
115	911-08501-00	Beam, Cradle 3.125 x 8 - 127"	1
116	911-10501-00	Spacer, 6" Frame Beam - 2.203"	4
117	911-21302-00	Canopy Insert, Lrg. Lift - 44"	1
118	001-76354-00	Nut, 3/4-10 Alum.	1
119	001-71077-00	Lock Washer, 3/4" Split SS	1

VSD 6500/8000 FRAME BILL OF MATERIALS – SUB-ASSEMBLIES

LIFT P/N 511-80075-01

NO.	PART NUMBER	DESCRIPTION	QTY
96	111-00139-01	Ass'y, Front Cradle Beam -127"	1
26	001-70365-00	HHCS, 3/4-10 x 3" ss	2
28	001-70817-00	Nut, 3/4-10 Jam ss	2
53	002-04215-00	Beam, End Cradle (127")	1
72	006-10208-00	Spacer, Front Cradle Sheave	4
88	007-07705-00	Spacer, 1.938" Front Cradle	2
90	007-09111-00	Cable, Front Leveling 219.75"	1
101	111-00200-00	Ass'y, 7 1/4" Sheave	2

NO.	PART NUMBER	DESCRIPTION	QTY
98	111-00188-03	Ass'y, Side Cradle VSD6-10K Std. (R)	1
25	001-70363-00	HHCS, 3/4-10 x 2 1/2" ss	2
28	001-70817-00	Nut, 3/4-10 Jam ss	2
67	002-04357-00	Beam, Side Cradle (B) 6-8000#	1
71	006-10207-00	Spacer, Side Cradle Sheave	4
73	006-11002-00	UHMW, 1/2" x 6.5" x .25"	2
87	007-07704-00	Spacer, 1.297 Side Cradle	2
90	007-09106-00	Cable, Side Leveling - 190"	1
101	111-00199-00	Ass'y, 6" Side Level Sheave	2
104	111-00251-00	Ass'y, Cradle Guide	2

NO.	PART NUMBER	DESCRIPTION	QTY
99	111-00189-03	Ass'y, Side Cradle VSD6-10K Std. (L)	1
25	001-70363-00	HHCS, 3/4-10 x 2 1/2" ss	2
28	001-70817-00	Nut, 3/4-10 Jam ss	2
66	002-04356-00	Beam, Side Cradle (A) 6-8000#	1
71	006-10207-00	Spacer, Side Cradle Sheave	4
73	006-11002-00	UHMW, 1/2" x 6.5" x .25"	2
87	007-07704-00	Spacer, 1.297 Side Cradle	2
90	007-09106-00	Cable, Side Leveling - 190"	1
101	111-00199-00	Ass'y, 6" Side Level Sheave	2
104	111-00251-00	Ass'y, Cradle Guide	2

NO.	PART NUMBER	DESCRIPTION	QTY
107	111-00424-01	Ass'y, Inner Leg 6-8000	1
3	001-26911-00	Pin, Dowel 3/16" x 7/8"	1
4	001-71525-00	Spring Pin, 5/32" x 1.1/8" 420 SS Slotted	1
32	001-71024-00	Flat Washer, 5/8"x1.25"x.060 SS	4
34	001-71027-00	Flat Washer, 1/2" USS ss 18-8	1
37	001-76069-00	Flat Washer, 5/8 (Lift) Nylon	2
62	002-04245-00	Bracket, Level Leg - 4"	1
78	007-05023-00	Bevel Gear, Top 1:1	1
80	007-05079-01	Screw, Bevel Gear Adjustment	1
94	007-15024-00	Bevel Gear, Bottom (Fab)	1
108	111-00423-01	Weldment, Inner Leg 6-8000#	1

NO.	PART NUMBER	DESCRIPTION	QTY
108	111-00425-01	Ass'y, Corner Post "A" Lifting	1
29	001-70819-00	Nut, 1"-8 Jam ss	2
30	001-70861-00	Nut, 5/16-18 - Alum.	2
36	001-74404-00	CB, 5/16-18 x 5" ss 18-8	2
40	002-00076-01	Post, Corner Lifting "A"	1
49	002-04209-00	Clamp, Frame (RF LR) (Welded to Corner Post)	1
57	002-04230-00	Clamp, Pulley (Inner)	1
60	002-04230-00	Clamp, Pulley (Outer)	1
75	006-15500-00	Cap. Vinyl 4.500" Sq. x 1.5"	1
84	007-05500-00	Pin, Sheave - 1" x 6.688"	1
89	007-07708-00	Spacer, Pulley 6000-8000#	2
100	111-00198-00	Ass'y, 7" Lifting Sheave	2
107	111-00424-01	Ass'y, Inner Leg 6-8000	1

NO.	PART NUMBER	DESCRIPTION	QTY
109	111-00426-01	Ass'y, Corner Post "B" Motor	1
17	001-70207-00	HHCS, 1/2-13 x 1 1/4" 18-8 ss	1
30	001-70861-00	Nut, Nylock 5/16-18 - Alum.	2
32	001-71021-00	Flat Washer, 1/2" 18-8 SS	1
33	001-74404-00	CB, 5/16-18 x 5" ss 18-8	2
39	001-76072-00	Nut, Nylock 1/2-13 Alum.	1
41	002-00077-01	Post, Corner Motor "B"	1
59	002-04227-00	Clamp, Frame (LF RR) (Welded to Corner Post)	1
74	006-15016-00	Cap. Vinyl - Lg. Winch Post	1
107	111-00424-01	Ass'y, Inner Leg 6-8000	1
117	911-21302-00	Canopy Insert, Lrg. Lift - 44"	1

NO.	PART NUMBER	DESCRIPTION	QTY
110	111-00427-01	Ass'y, Corner Post "c"	1
30	001-70861-00	Nut, Nylock 5/16-18 - Alum.	2
33	001-74404-00	CB, 5/16-18 x 5" ss 18-8	2
42	002-00078-01	Post, Corner "C & D"	1
49	002-04209-00	Clamp, Frame (RF LR) (Welded to Corner Post)	1
75	006-15500-00	Cap. Vinyl 4.500" Sq. x 1.5"	1
107	111-00424-01	Ass'y, Inner Leg 6-8000	1

NO.	PART NUMBER	DESCRIPTION	QTY
111	111-00428-01	Ass'y, Corner Post "D"	1
30	001-70861-00	Nut, Nylock 5/16-18 - Alum.	2
33	001-74404-00	CB, 5/16-18 x 5" ss 18-8	2
42	002-00078-01	Post, Corner "C & D"	1
59	002-04227-00	Clamp, Frame (LF RR) (Welded to Corner Post)	1
75	006-15500-00	Cap. Vinyl 4.500" Sq. x 1.5"	1
107	111-00424-01	Ass'y, Inner Leg 6-8000	1

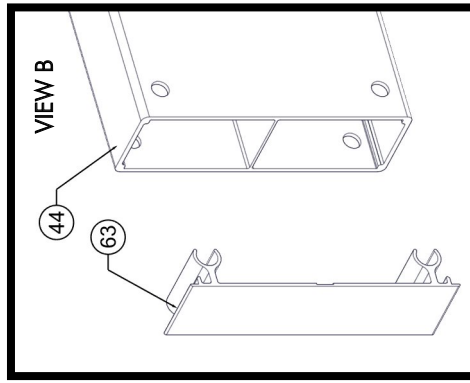
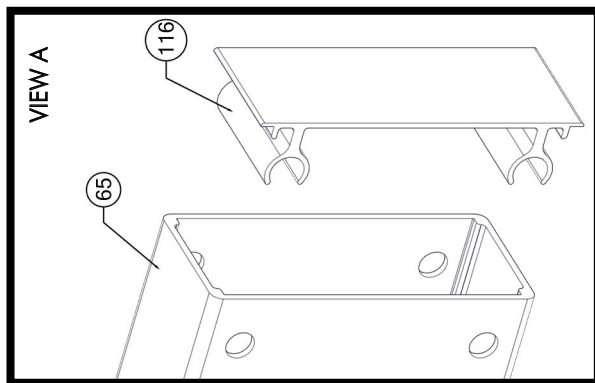
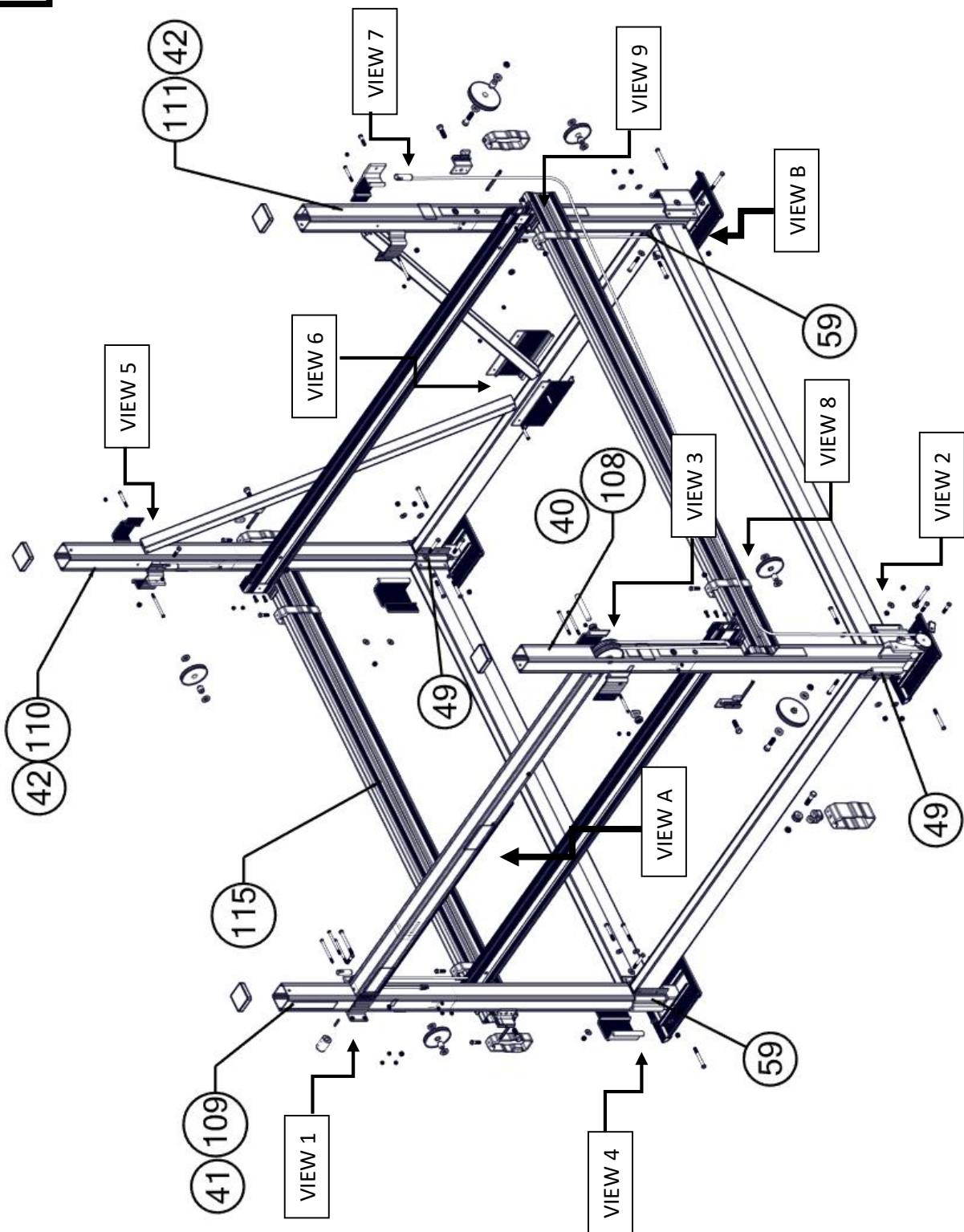
NO.	PART NUMBER	DESCRIPTION	QTY
113	111-00430-01	Ass'y, Ball Screw Tube 6-8000#	1
1	001-16369-00	HHCS, 3/4-16 x 4" Grade 8 Plain	1
2	001-23877-00	SHCS, 1/2-20 x 1 1/2" (Black)	2
5	001-29156-00	Nut, Jam Nylock 1/2-20 18-8 SS	1
6	001-33092-00	Flat Washer, SAE 3/4" Zinc	1
7	001-70040-00	HHCS, 1/2-20 x 2" 18-8 SS	1
13	001-70123-00	HHCS, 3/8-16 x 5" 18-8 ss	1
16	001-70203-00	HHCS, 1/2-13 x 3/4" 18-8 ss	2
21	001-70215-00	HHCS, 1/2-13 x 3" 18-8 ss	2
32	001-71021-00	Flat Washer, 1/2" 18-8 SS	2
34	001-74423-00	CB 1/4-20 x 2" ss 18-8	1
35	001-75001-00	Nylock, 1/4-20 Alum.	1
38	001-76071-00	Nut, Nylock 3/8-16 Alum.	1
39	001-76072-00	Nut, Nylock 1/2-13 Alum.	2
69	006-10021-00	Sleeve, UHMW Ball Screw Support	1
76	006-22202-00	Sleeve, Steel 1" x 2.25" Lg.	1
77	007-05013-00	Plate, End Stop (Ball Screw)	1
81	007-05122-00	Fitting, Grease M8 X 1 (Flush)	2
82	007-05222-00	Key, 1/4" SQ x 3" Long	1
83	007-05224-00	Coupler, Rigid 1" x 2" x 3"	1
92	007-09161-00	Cable, Lifting - 237.0" 6-8000#	1
94	007-93534-00	Nut, Round M30 x 1.5 (Zinc Plated)	1
95	111-15015-00	Ball Screw, 40-10 mm 1930.4 mm	1
103	111-00249-00	Ass'y, Ball Nut Block 6-8000#	1
105	111-00311-00	Ass'y, Bearing Block w/ Bearing	1
112	111-00429-01	Weld't, Ball Screw Tube 6-8000#	1
114	111-60750-00	Ass'y, Limit Switch 6000-8000 Pon.	1

VSD 6500/8000 FRAME EXPLODED VIEW MAIN

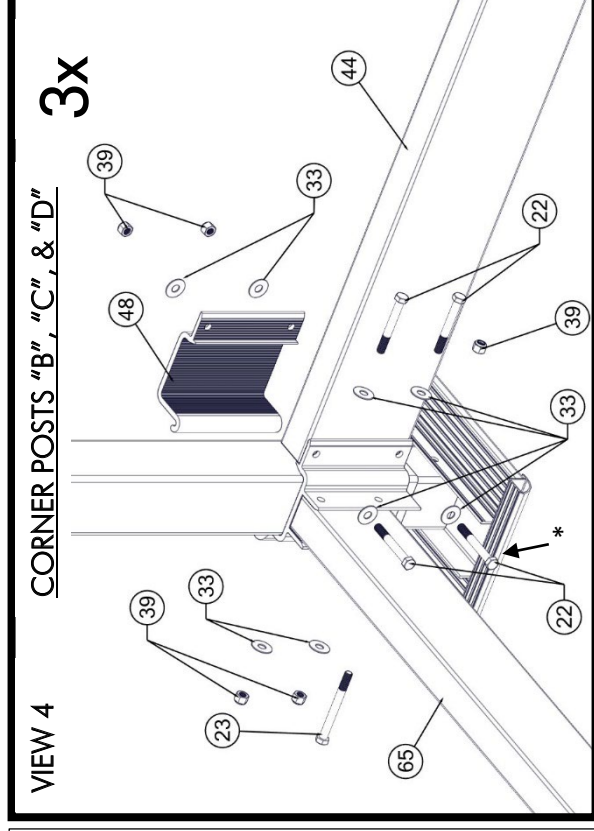
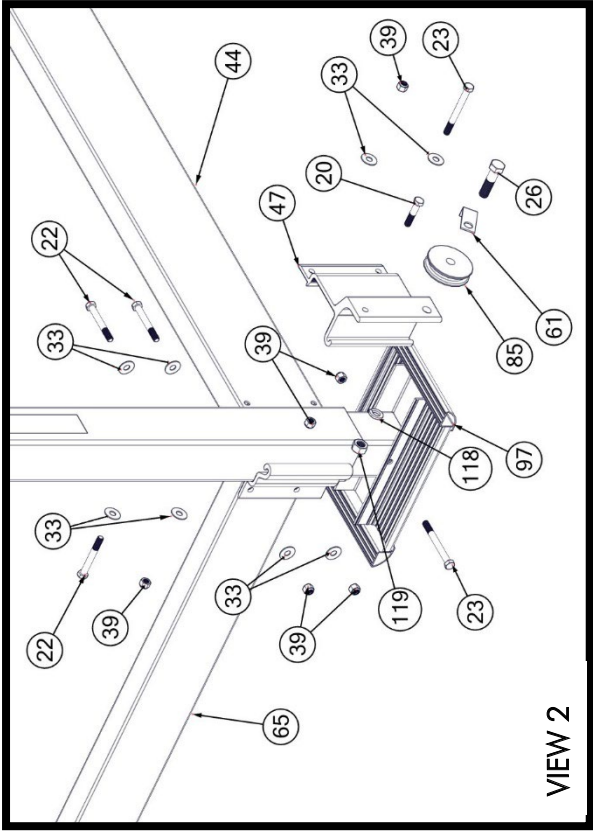
LIFT P/N 511-80075-01

NOTE:

ADDITIONAL VIEWS ON
PAGES 36-40



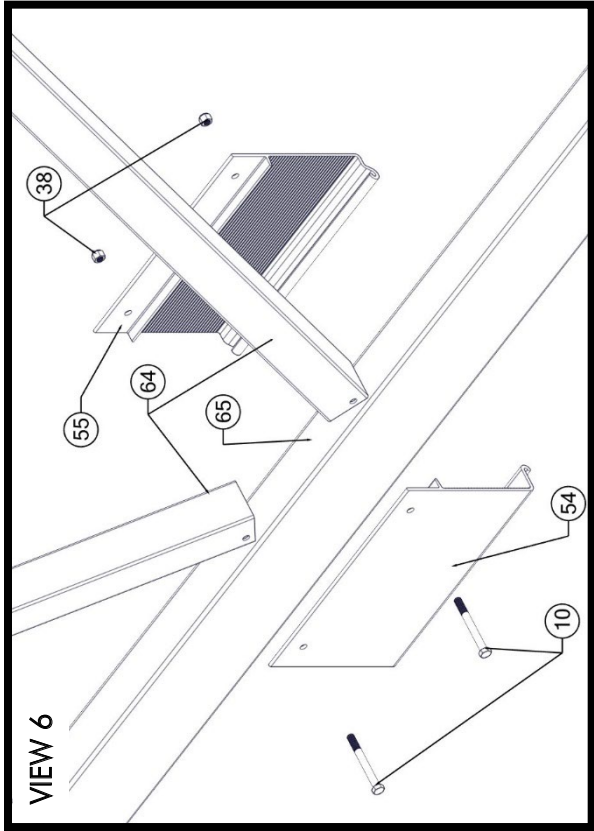
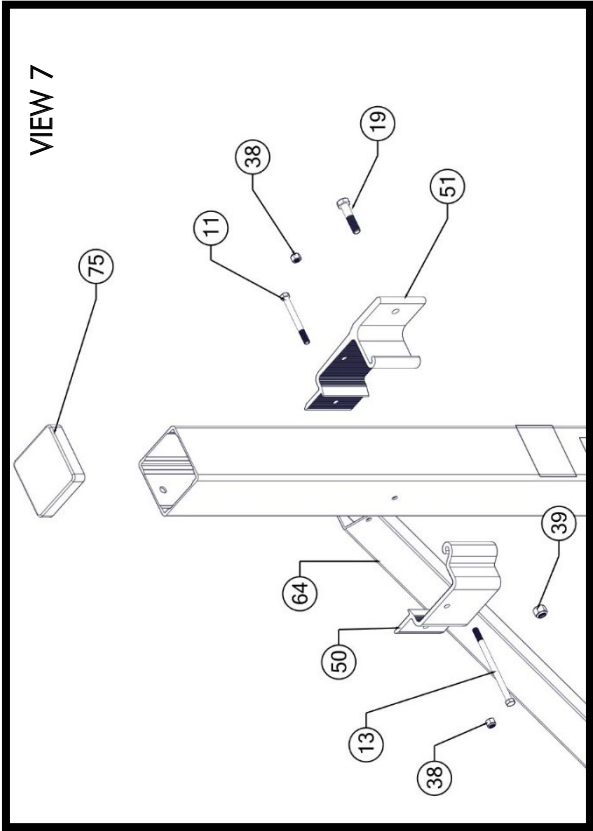
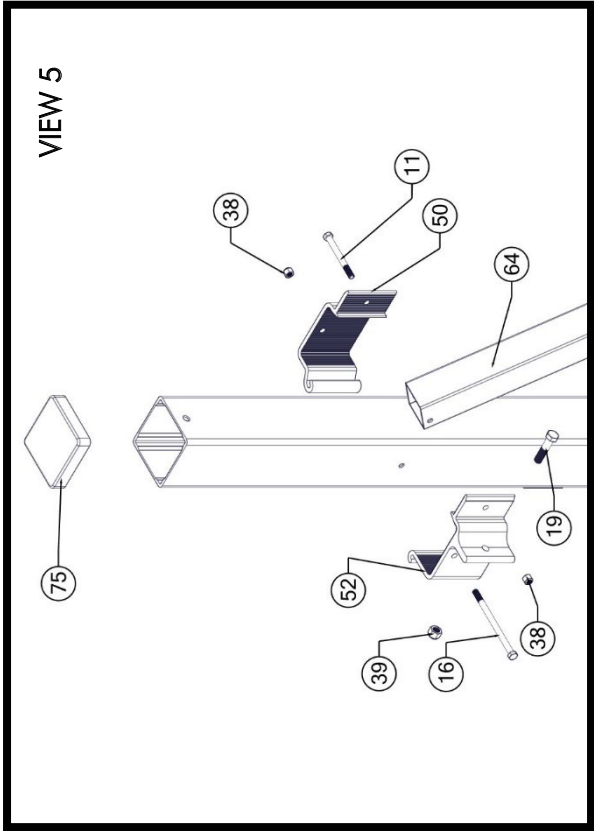
LIFT P/N 511-80075-01



NOTE
(VIEW 4):
CORNER
"B" IS
SHOWN
BOTTOM
BOLT
(MARKED)
IS
REPLACED
WITH ITEM
23 AT
CORNER
"D". FOR
CORNER
"C", SAME
ITEMS ARE
USED AS
SHOWN
IN VIEW 4

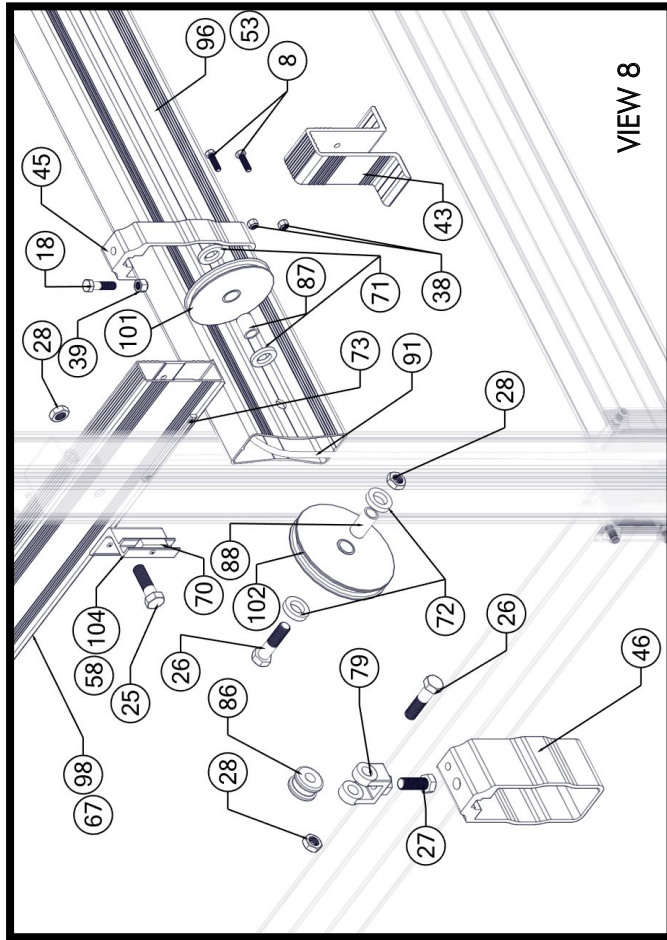
VSD 6500/8000 FRAME EXPLODED VIEWS 5-7

LIFT P/N 511-80075-01



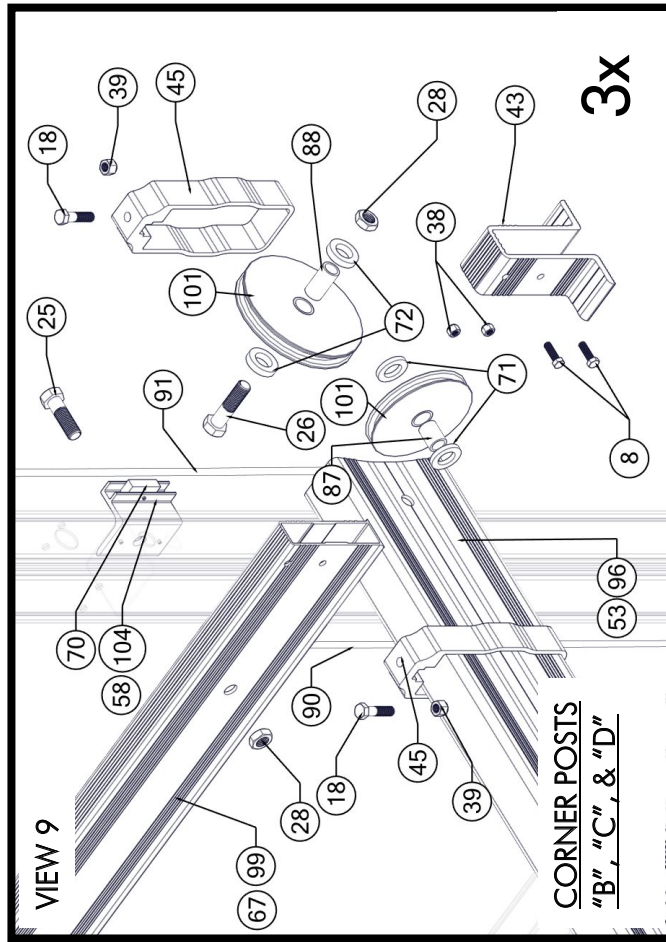
VSD 6500/8000 FRAME EXPLODED VIEWS 8 & 9

LIFT P/N 511-80075-01



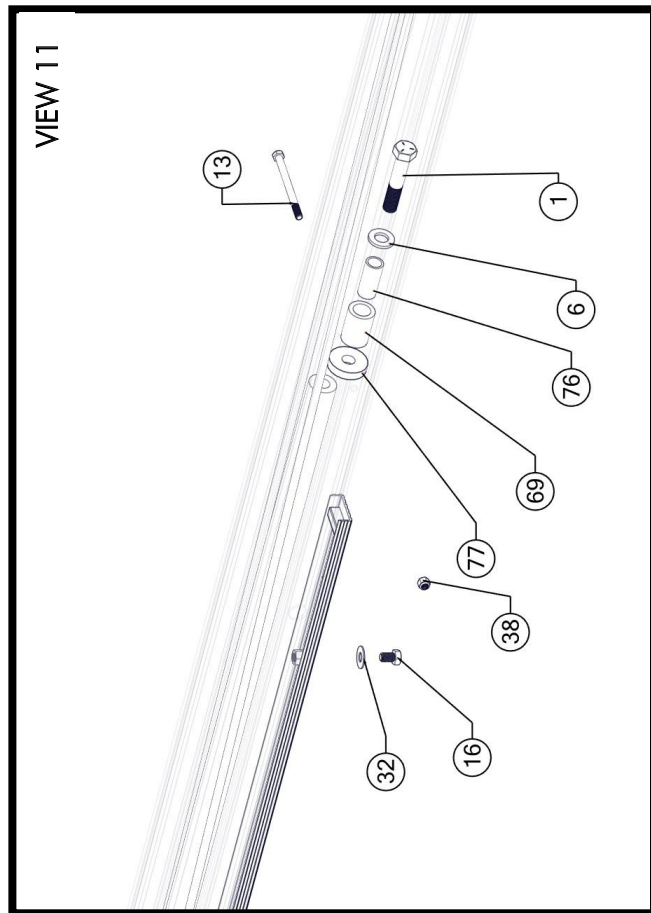
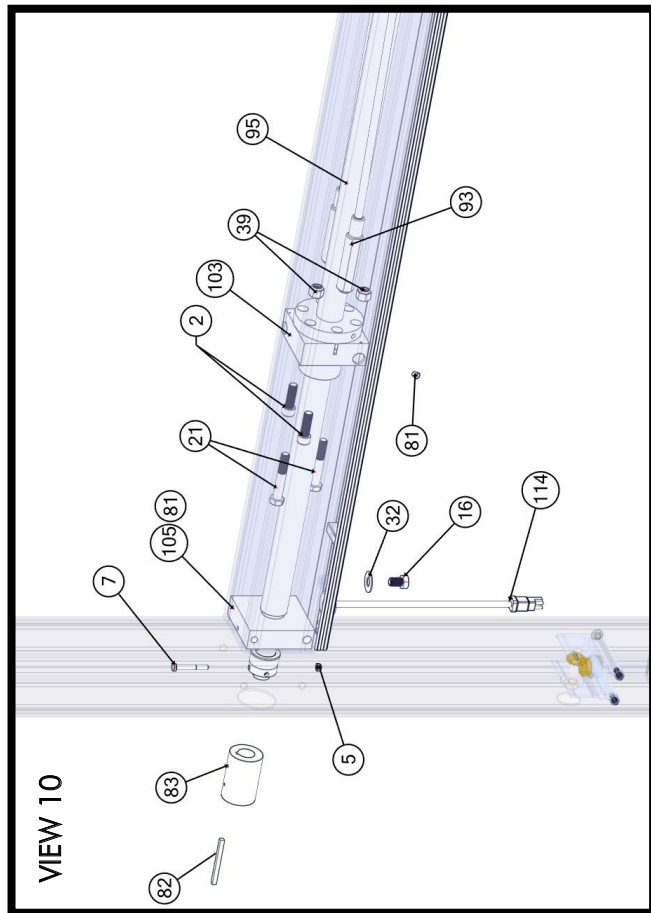
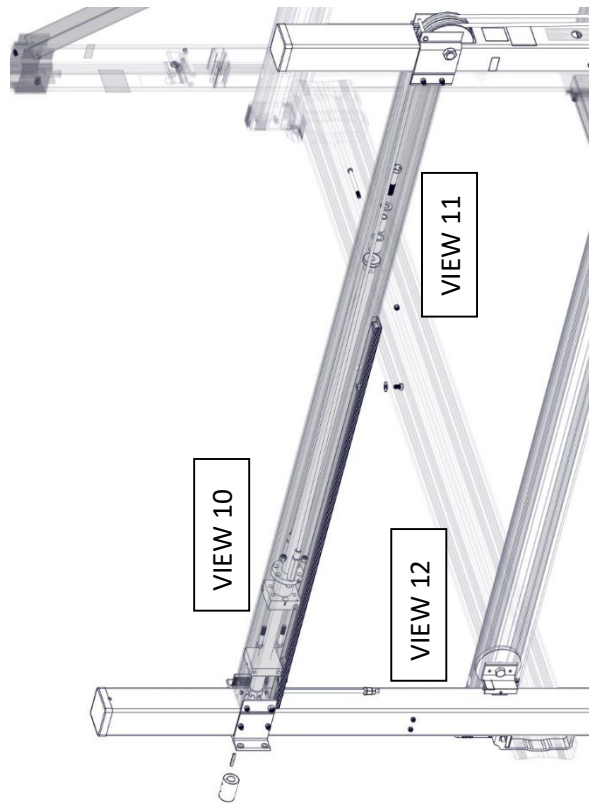
NOTE (VIEW 9):

CORNER "D" IS SHOWN IN THIS VIEW. FOR CORNERS "B" & "C", ITEMS 26, 28, 72, 88 AND 102 ARE EXEMPT. ITEMS 53 & 96 ARE REPLACED WITH ITEM 115.



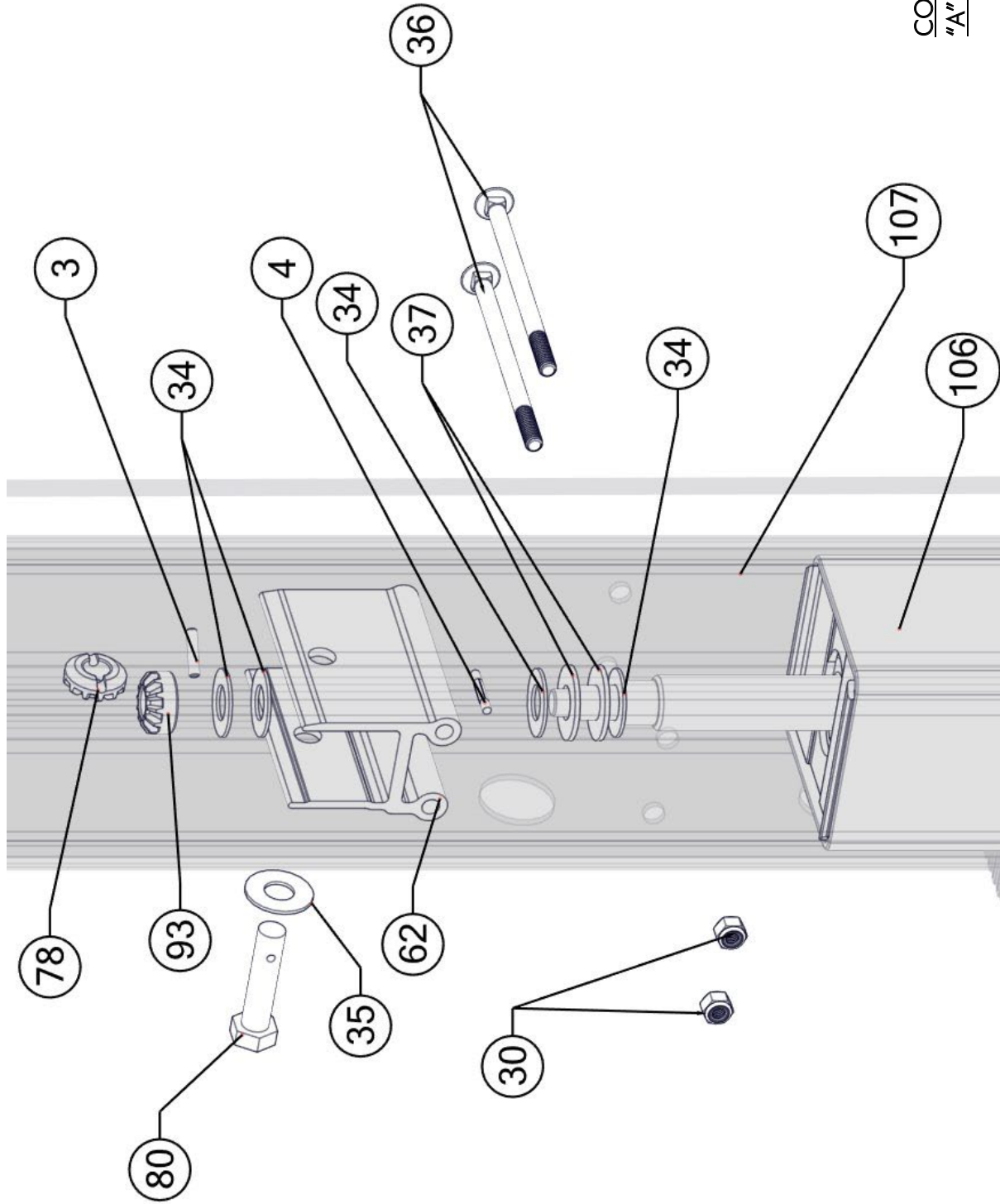
VSD 6500/8000 FRAME EXPLODED VIEWS 10 & 11

LIFT P/N 511-80075-01



VSD 6500/8000 FRAME EXPLODED VIEW 12

LIFT P/N 511-80075-01



CORNER POSTS
"A", "B", "C", & "D"

VSD 6500/8000 PONTOON FRAME BILL OF MATERIALS

LIFT P/N 511-80085-00

NO.	PART NUMBER	DESCRIPTION	QTY
1	001-16369-00	HHCS, 3/4-16 x 4" Grade 8 Plain	1
2	001-23877-00	SHCS, 1/2-20 x 1 1/2" (Black)	2
3	001-26911-00	Pin, Dowel 3/16" x 7/8"	4
4	001-11625-00	Spring Pin, 5/32" x 1 1/8" 420 SS Slotted	4
5	001-29155-00	Nut, Jam Nylock 1/2-20 18-8 ss	1
6	001-33092-00	Flat Washer, SAE 3/4" Zinc	1
7	001-70040-00	HHCS, 1/2-20 x 2" 18-8 ss	1
8	001-70107-00	HHCS, 3/8-16 x 1 1/4" 18-8 ss	9
9	001-70110-00	HHCS, 3/8-16 x 1 3/4" 18-8 ss (NOT SHOWN IN EXP VIEWS)	4
10	001-70117-00	HHCS, 3/8-16 x 3 1/2" 18-8 ss	2
11	001-70118-00	HHCS, 3/8-16 x 3 3/4" 18-8 ss	2
12	001-70121-00	HHCS, 3/8-16 x 4 1/2" 18-8 ss	1
13	001-70123-00	HHCS, 3/8-16 x 5" 18-8 ss	1
14	001-70124-00	HHCS, 3/8-16 x 5 1/2" 18-8 ss (NOT SHOWN IN EXP VIEWS)	4
15	001-70125-00	HHCS, 3/8-16 x 6" 18-8 ss	7
16	001-70203-00	HHCS, 1/2-13 x 3/4" 18-8 ss	2
17	001-70207-00	HHCS, 1/2-13 x 1 1/4" 18-8 ss	1
18	001-70211-00	HHCS, 1/2-13 x 2" 18-8 ss	8
19	001-70212-00	HHCS, 1/2-13 x 2 1/4" 18-8 ss	3
20	001-70213-00	HHCS, 1/2-13 x 2 1/2" 18-8 ss	1
21	001-70215-00	HHCS, 1/2-13 x 3" 18-8 ss	2
22	001-70219-00	HHCS, 1/2-13 x 4" 18-8 ss	14
23	001-70223-00	HHCS, 1/2-13 x 5" 18-8 ss	6
24	001-70225-00	HHCS, 1/2-13 x 6" 18-8 ss	1
25	001-70363-00	HHCS, 3/4-10 x 2 1/2" ss	4
26	001-70365-00	HHCS, 3/4-10 x 3" ss	4
27	001-70394-00	HHCS, 3/4-16 x 2" ss	1
28	001-70817-00	Nut, 3/4-10 Jam ss	7
29	001-70819-00	Nut, 1"-8 Jam ss	2
30	001-70861-00	Nut, Nylock 5/16-18 - Alum.	8
31	001-71021-00	Flat Washer, 3/8" SAE ss 18-8 (NOT SHOWN IN EXP VIEWS)	8
32	001-71027-00	Flat Washer, 1/2" 18-8 SS	3
33	001-71022-00	Flat Washer, 1/2" USS ss 18-8	32
34	001-71024-00	Flat Washer, 5/8"x1.25"x.060 SS	16
35	001-71027-00	Flat Washer, 1/2" USS ss 18-8	4
36	001-74404-00	CB, 5/16-18 x 5" ss 18-8	8
37	001-76069-00	Flat Washer, 5/8 (Lift) Nylon	8
38	001-76071-00	Nut, Nylock 3/8-16 Alum.	29
39	001-76072-00	Nut, Nylock 1/2-13 Alum.	36
40	002-00076-01	Post, Corner Lifting "A"	1
41	002-00077-01	Post, Corner Motor "B"	1
42	002-00078-01	Post, Corner "C & D"	2
43	002-04032-00	U-Clamp, Side Cradle	4
44	002-04202-00	Beam, 8" Frame - 118"	2
45	002-04204-00	Clamp, Cradle - 1.75"	7
46	002-04205-00	Clamp, Cradle Lift - 3.875"	1
47	002-04893-00	Clamp, Frame (Lifting) - 8"	1
48	002-04208-00	Clamp, Frame (Outer) - 8"	3
49	002-04209-00	Clamp, Frame (RT LR) 4	2
50	002-04210-00	Clamp, Upper (Universal) - 4"	2
51	002-04211-00	Clamp, Upper (Front) - 4"	1
52	002-04212-00	Clamp, Upper (Rear)	1
53	002-04215-00	Beam, End Cradle (127")	1
54	002-04216-00	Clamp, V-Brace (Male)	1
55	002-04217-00	Clamp, V-Brace (Female)	1
56	002-04223-01	Clamp, 4.5" Ball Screw 6-8000 VSD	1
57	002-04224-00	Clamp, Pulley (Inner)	1
58	002-04226-00	Guide, Cradle	2
59	002-04227-00	Clamp, Frame (LF RR) (Welded to Corner Post)	2

NO.	PART NUMBER	DESCRIPTION	QTY
60	002-04230-00	Clamp, Pulley (Outer)	1
61	002-04241-01	Holder, Cable - 4" Sheave	1
62	002-04245-00	Bracket, Level Leg - 4"	4
63	002-04258-00	Spacer, 8" Frame Beam	4
64	002-04346-00	V-Brace, 8k Pontoon - 97.25"	2
65	002-04367-00	Beam, 6" Frame 8k Pont. - 144"	2
66	002-04370-00	Beam, Side Cradle 8k Pont. (B)	1
67	002-04389-00	Beam, Side Cradle 8k Pont. (A)	1
68	003-40001-00	Grommet, Motor, VSD	4
69	006-10021-00	Sleeve, UHMW Ball Screw Support	1
70	006-10202-00	Pad, Wear - 1/2 x 7/8" x 2"	2
71	006-10207-00	Spacer, Side Cradle Sheave	8
72	006-10208-00	Spacer, Front Cradle Sheave	4
73	006-11002-00	UHMW, 1/2" x 6.5" x .25"	4
74	006-15016-00	Cap, Vinyl - Lg. Winch Post	1
75	006-15500-00	Cap, Vinyl 4.500" Sq. x 1.5"	3
76	006-22202-00	Sleeve, Steel 1" x 2.25" Lg.	1
77	007-05013-00	Plate, End Stop (Ball Screw)	1
78	007-05023-00	Bevel Gear, Top 1:1	4
79	007-05068-00	Clevis, Lifting Cable Pulley	1
80	007-05079-01	Screw, Bevel Gear Adjustment	4
81	007-05126-00	Fitting, Grease M8 X 1 (Flush)	2
82	007-05222-00	Key, 1/4" SQ x 3" Long	1
83	007-05224-00	Coupler, Rigid 1" x 2" x 3"	1
84	007-05500-00	Pin, Sheave - 1" x 6.688"	1
85	007-07625-01	Sheave, 2" Clevis	1
86	007-07626-00	Sheave, 4" Clevis	1
87	007-07704-00	Spacer, 1.287 Side Cradle	4
88	007-07705-00	Spacer, 1.938" Front Cradle	2
89	007-07708-00	Spacer, Pulley 6000-5000#	2
90	007-09101-00	Cable, Side Leveling 8k Pont. -226.5"	2
91	007-09111-00	Cable, Lifting - 8000# Pontoon - 309"	1
92	007-09163-00	Cable, Lifting - 8000# Pontoon - 309"	1
93	007-15024-00	Bevel Gear, Bottom (Fab)	4
94	007-93534-00	Nut, Round M30 x 1.5 (Zinc Plated)	1
95	011-15015-00	Ball Screw, 40-10 mm 1930.4 mm	1
96	111-00139-01	Ass'y, Front Cradle Beam -127"	1
97	111-00140-00	Weldment, 14" Sand Pad	4
98	111-00487-00	Ass'y, Side Cradle 8k Pont. "A"	1
99	111-00488-00	Ass'y, Side Cradle 8k Pont. "B"	1
100	111-00198-00	Ass'y, 7" Lifting Sheave	2
101	111-00199-00	Ass'y, 6" Side Level Sheave	4
102	111-00200-00	Ass'y, 7 1/4" Sheave	2
103	111-00249-00	Ass'y, Ball Nut Block 6-8000#	1
104	111-00251-00	Ass'y, Cradle Guide	4
105	111-00311-00	Ass'y, Bearing Block w/ Bearing	1
106	111-00423-01	Weldment, Inner Leg 6-8000#	4
107	111-00424-01	Ass'y, Inner Leg 6-8000	4
108	111-00425-01	Ass'y, Corner Post "A" Lifting	1
109	111-00426-01	Ass'y, Corner Post "B" Motor	1
110	111-00427-01	Ass'y, Corner Post "C"	1
111	111-00428-01	Ass'y, Corner Post "D"	1
112	111-00356-00	Weldt, Ball Screw Tube 8k Pont. - 144.338"	1
113	111-00349-00	Ass'y, Ball Screw Tube 8k Pont.	1
114	111-60750-01	Ass'y, Limit Switch 6000-5000 Pon.	1
115	911-10501-00	Beam, Cradle 3.125 x 8 - 127"	1
116	911-10501-00	Spacer, 6" Frame Beam - 2.203"	4
117	911-21302-00	Canopy Insert, Lrg. Lift - 44"	1
118	001-76354-00	Nut, 3/4-10 Alum.	1
119	001-71077-00	Lock Washer, 3/4" Split SS	1

VSD 6500/8000 PONTOON FRAME BILL OF MATERIALS

LIFT P/N 511-80085-00

NO.	PART NUMBER	DESCRIPTION	QTY
96	111-00139-01	Ass'y, Front Cradle Beam -127"	1
26	001-70365-00	HHCS, 3/4-10 x 3" ss	2
28	001-70817-00	Nut, 3/4-10 Jam ss	2
53	002-04215-00	Beam, End Cradle (127")	1
72	006-10208-00	Spacer, Front Cradle Sheave	4
88	007-07705-00	Spacer, 1.938" Front Cradle	2
90	007-09111-00	Cable, Front Leveling 219.75"	1
102	111-00200-00	Ass'y, 1 1/4" Sheave	2

NO.	PART NUMBER	DESCRIPTION	QTY
98	111-00497-00	Ass'y, Side Cradle 8k Pon. "A"	1
25	001-70365-00	HHCS, 3/4-10 x 2 1/2" ss	2
28	001-70817-00	Nut, 3/4-10 Jam ss	2
67	002-04369-00	Beam, Side Cradle 8k Pon. (A)	1
71	006-10207-00	Spacer, Side Cradle Sheave	4
73	006-11002-00	UHMW, 1/2" x 6.5" x 25"	2
87	007-07704-00	Spacer, 1.297 Side Cradle	2
90	007-09101-00	Cable, Side Leveling 8k Pon. -226.5"	1
101	111-00199-00	Ass'y, 6" Side Level Sheave	2
104	111-00251-00	Ass'y, Cradle Guide	2

NO.	PART NUMBER	DESCRIPTION	QTY
99	111-00498-00	Ass'y, Side Cradle 8k Pon. "B"	1
25	001-70365-00	HHCS, 3/4-10 x 2 1/2" ss	2
28	001-70817-00	Nut, 3/4-10 Jam ss	2
66	002-04370-00	Beam, Side Cradle 8k Pon. (B)	1
71	006-10207-00	Spacer, Side Cradle Sheave	4
73	006-11002-00	UHMW, 1/2" x 6.5" x 25"	2
87	007-07704-00	Spacer, 1.297 Side Cradle	2
90	007-09101-00	Cable, Side Leveling 8k Pon. -226.5"	1
101	111-00199-00	Ass'y, 6" Side Level Sheave	2
104	111-00251-00	Ass'y, Cradle Guide	2

NO.	PART NUMBER	DESCRIPTION	QTY
107	111-00424-01	Ass'y, Inner Leg 6-8000	1
3	001-26911-00	Pin, Dowel 3/16" x 7/8"	1
4	001-71625-00	Spring Pin, 5/32" x 1-1/8" 420 SS Slotted	1
32	001-71024-00	Flat Washer, 5/8"x1.25"x.060 SS	4
35	001-71027-00	Flat Washer, 1/2" USS ss 18-8	1
37	001-76069-00	Flat Washer, 5/8" (Lift) Nylon	2
62	002-04245-00	Bracket, Level Leg -4"	1
78	007-05023-00	Bevel Gear, Top 1:1	1
80	007-05079-01	Screw, Bevel Gear Adjustment	1
93	007-15024-00	Bevel Gear, Bottom (Fab)	1
106	111-00423-01	Weldment, Inner Leg 6-8000#	1

NO.	PART NUMBER	DESCRIPTION	QTY
108	111-00425-01	Ass'y, Corner Post "A" Lifting	1
29	001-70819-00	Nut, 1"-8 Jam ss	2
30	001-70861-00	Nut, Nylock 5/16-18 - Alum.	2
36	001-74404-00	CB, 5/16-18 x 5" ss 18-8	2
40	002-00076-01	Post, Corner Lifting "A"	1
49	002-04209-00	Clamp, Frame (RF LR) (Welded to Corner Post)	1
57	002-04224-00	Clamp, Pulley (Inner)	1
60	002-04230-00	Clamp, Pulley (Outer)	1
75	006-15500-00	Cap, Vinyl 4.500" Sq. x 1.5"	1
84	007-05500-00	Pin, Sheave - 1" x 6.688"	1
89	007-07708-00	Spacer, Pulley 6000-8000#	2
100	111-00198-00	Ass'y, 7" Lifting Sheave	2
107	111-00424-01	Ass'y, Inner Leg 6-8000	1

NO.	PART NUMBER	DESCRIPTION	QTY
109	111-00426-01	Ass'y, Corner Post "B" Motor	1
17	001-70207-00	HHCS, 1/2-13 x 1 1/4" 18-8 ss	1
30	001-70861-00	Nut, Nylock 5/16-18 - Alum.	2
32	001-71021-00	Flat Washer, 1/2" 18-8 SS	1
36	001-74404-00	CB, 5/16-18 x 5" ss 18-8	2
39	001-76072-00	Nut, Nylock 1/2-13 Alum.	1
41	002-00077-01	Post, Corner Motor "B"	1
59	002-04227-00	Clamp, Frame (LF RR) (Welded to Corner Post)	1
74	006-15016-00	Cap, Vinyl - Lg, Winch Post	1
107	111-00424-01	Ass'y, Inner Leg 6-8000	1
117	911-21302-00	Canopy Insert, Lg. Lift - 44"	1

NO.	PART NUMBER	DESCRIPTION	QTY
110	111-00427-01	Ass'y, Corner Post "C"	1
30	001-70861-00	Nut, Nylock 5/16-18 - Alum.	2
36	001-74404-00	CB, 5/16-18 x 5" ss 18-8	2
42	002-00078-01	Post, Corner "C & D"	1
49	002-04209-00	Clamp, Frame (RF LR) (Welded to Corner Post)	1
75	006-15500-00	Cap, Vinyl 4.500" Sq. x 1.5"	1
107	111-00424-01	Ass'y, Inner Leg 6-8000	1

NO.	PART NUMBER	DESCRIPTION	QTY
111	111-00428-01	Ass'y, Corner Post "D"	1
30	001-70861-00	Nut, Nylock 5/16-18 - Alum.	2
36	001-74404-00	CB, 5/16-18 x 5" ss 18-8	2
42	002-00078-01	Post, Corner "C & D"	1
59	002-04227-00	Clamp, Frame (LF RR) (Welded to Corner Post)	1
75	006-15500-00	Cap, Vinyl 4.500" Sq. x 1.5"	1
107	111-00424-01	Ass'y, Inner Leg 6-8000	1

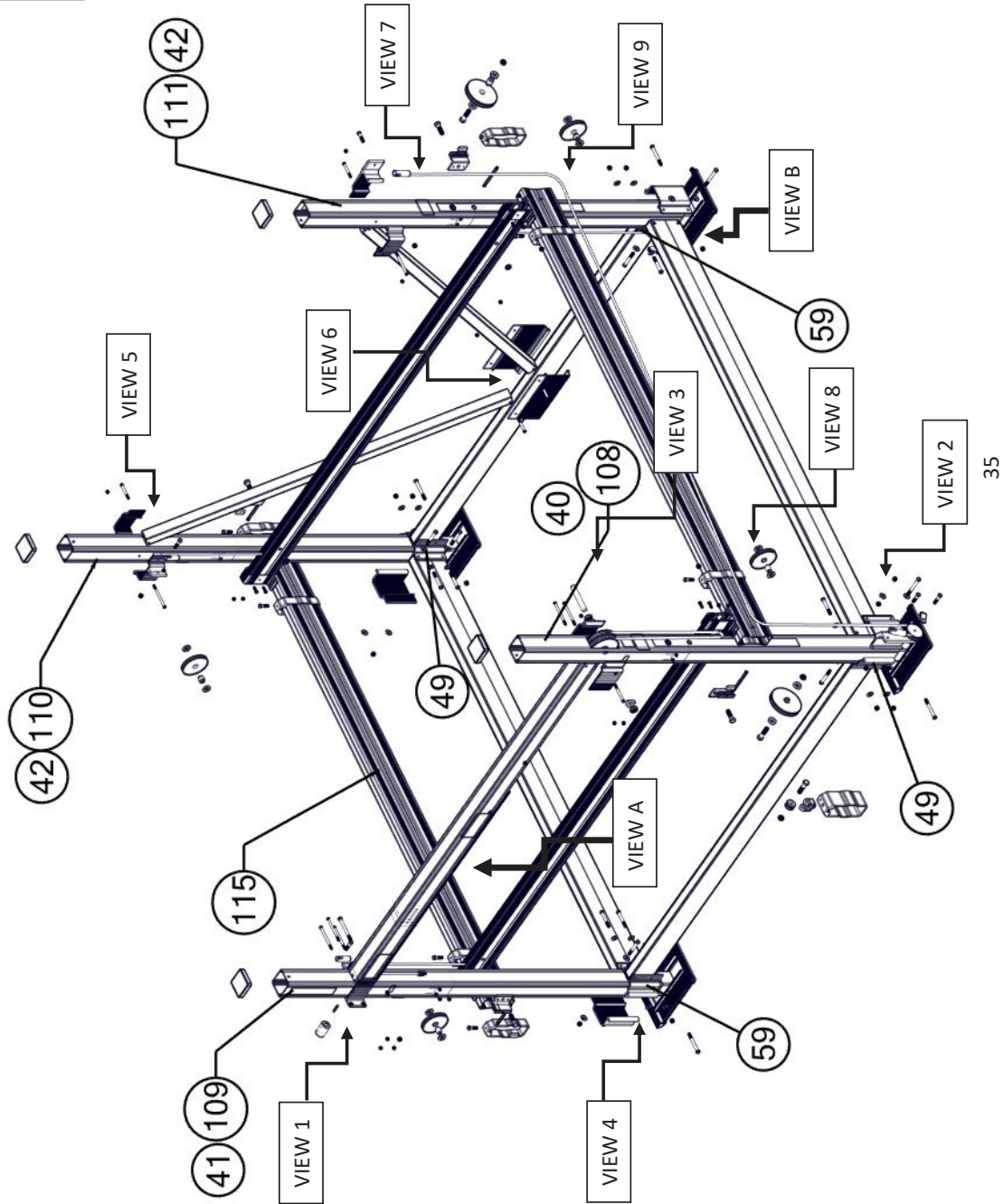
NO.	PART NUMBER	DESCRIPTION	QTY
1	111-00349-00	Ass'y, Ball Screw Tube 8k Pon.	1
2	001-16369-00	HHCS, 3/4-16 x 4" Grade 8 Plain	1
5	001-23877-00	SHCS, 1/2-20 x 1 1/2" (Black)	2
6	001-29156-00	Nut, Jam Nylock 1/2-20 18-8 ss	1
7	001-33092-00	Flat Washer, SAE 3/4" Zinc	1
13	001-70123-00	HHCS, 3/8-16 x 5" 18-8 ss	1
16	001-70203-00	HHCS, 1/2-13 x 3/4" 18-8 ss	2
21	001-70215-00	HHCS, 1/2-13 x 3" 18-8 ss	2
32	001-71021-00	Flat Washer, 1/2" 18-8 SS	2
38	001-76071-00	Nut, Nylock 3/8-16 Alum.	1
39	001-76072-00	Nut, Nylock 1/2-13 Alum.	2
69	006-10021-00	Sleeve, UHMW Ball Screw Support	1
76	006-22202-00	Sleeve, Steel 1" x 2.25" Lg.	1
77	007-05013-00	Plate, End Stop (Ball Screw)	1
81	007-05126-00	Fitting, Grease M8 X 1 (Flush)	2
82	007-05222-00	Key, 1/4" SQ x 3" Long	1
83	007-05224-00	Coupler, Rigid 1" x 2" x 3"	1
92	007-09163-00	Cable, Lifting - 8000# Pontoon - 309"	1
94	007-93534-00	Nut, Round M30 x 1.5 (Zinc Plated)	1
95	011-15015-00	Ball Screw, 40-10 mm 1930.4 mm	1
103	111-00249-00	Ass'y, Ball Nut Block 6-8000#	1
105	111-00311-00	Ass'y, Bearing Block w/ Bearing	1
112	111-00356-00	Weld't, Ball Screw Tube 8k Pon. - 144.938"	1
114	111-60750-01	Ass'y, Limit Switch 6000-8000 Pon.	1

VSD 6500/8000 PONTOON FRAME EXPLODED VIEW MAIN

LIFT P/N 511-80085-00

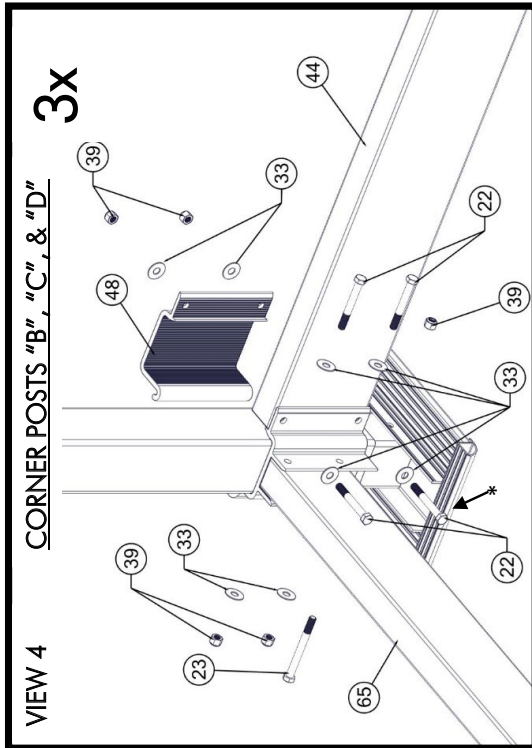
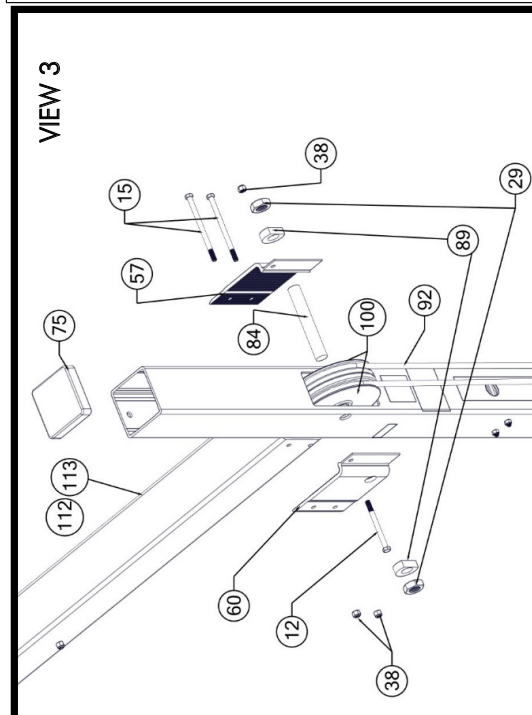
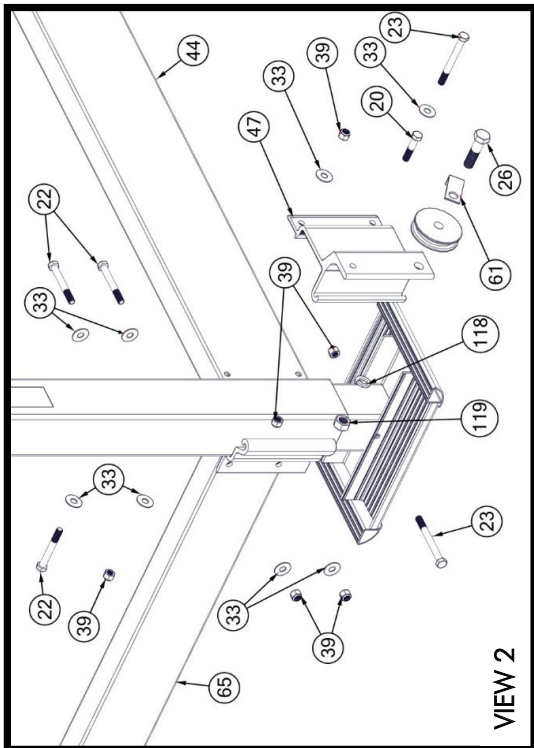
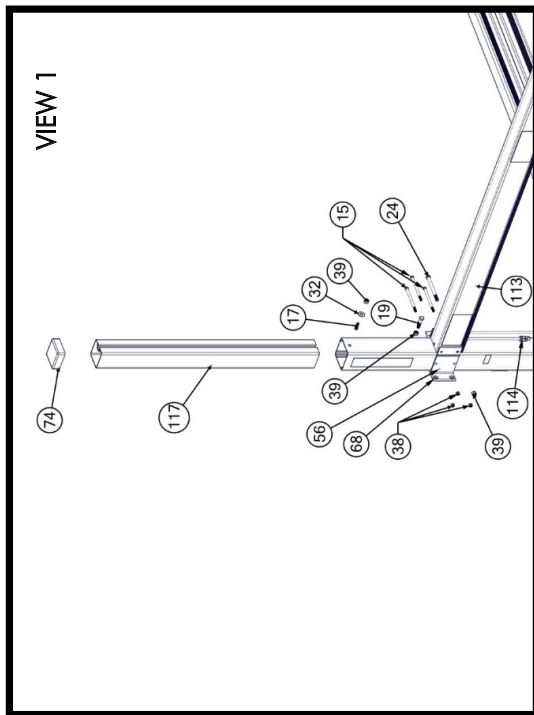
NOTE:

ADDITIONAL VIEWS ON
PAGES 36-40



VSD 6500/8000 PONTOON FRAME EXPLODED VIEWS 1-4

LIFT P/N 511-80085-00



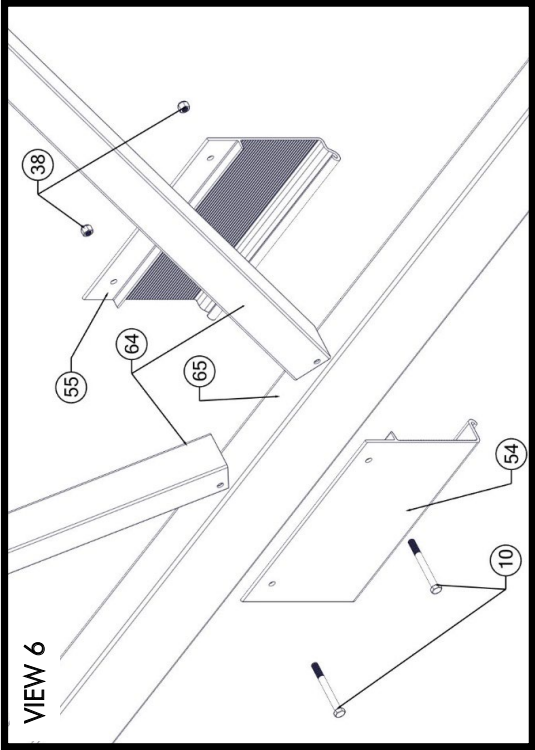
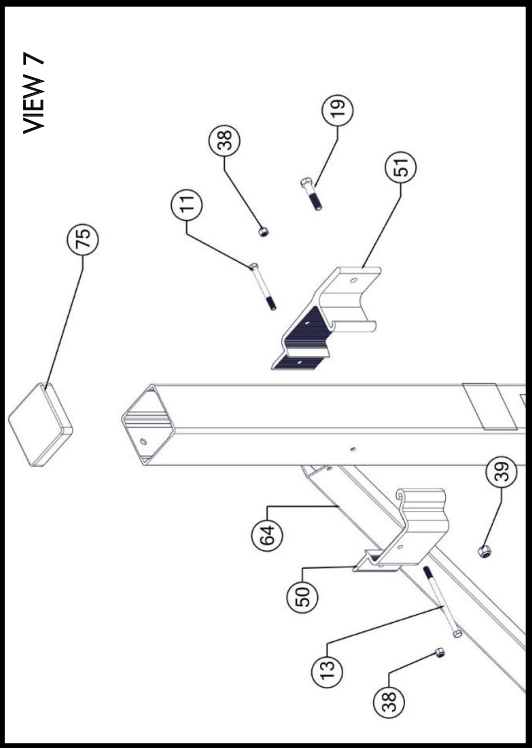
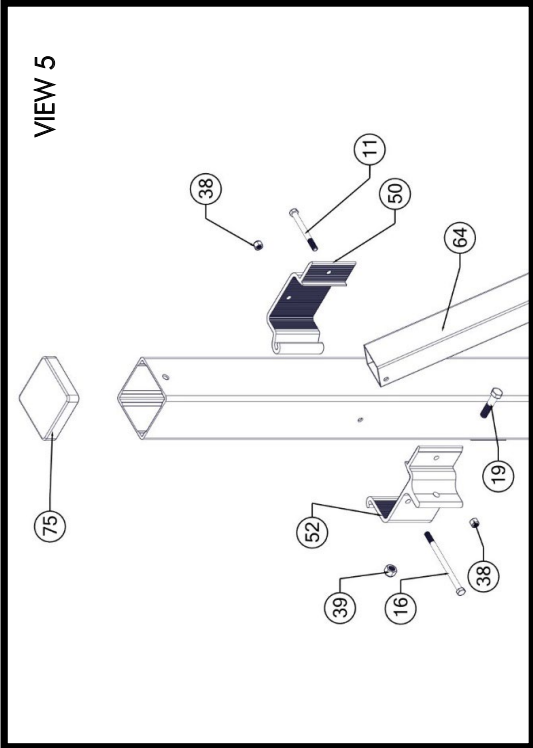
NOTE
(VIEW 4):

CORNER
"B" IS
SHOWN.
BOTTOM
BOLT
(MARKED)
IS
REPLACED
WITH ITEM
23 AT
CORNER
"D" FOR
CORNER
"C". SAME
ITEMS ARE
USED AS
SHOWN IN
VIEW 4.

3x

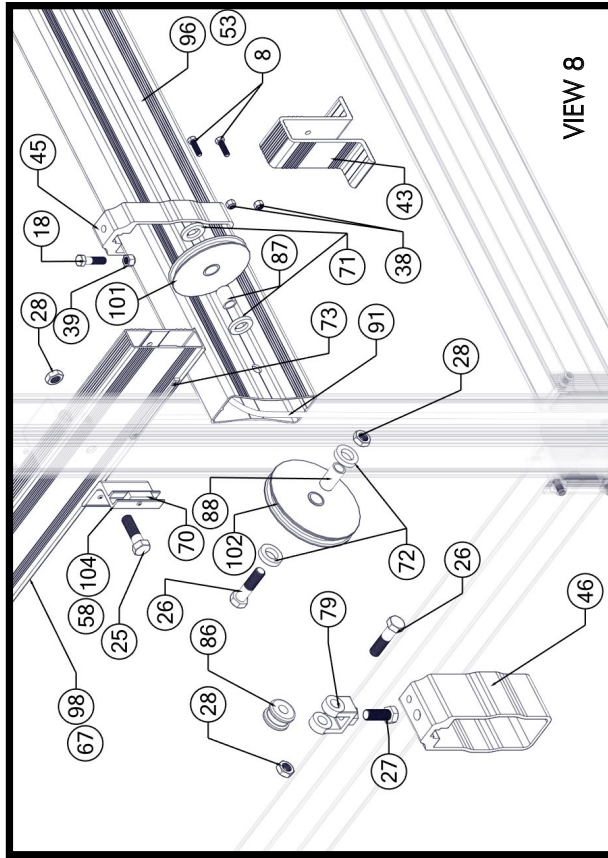
VSD 6500/8000 PONTOON FRAME EXPLODED VIEWS 5-7

LIFT P/N 511-80085-00

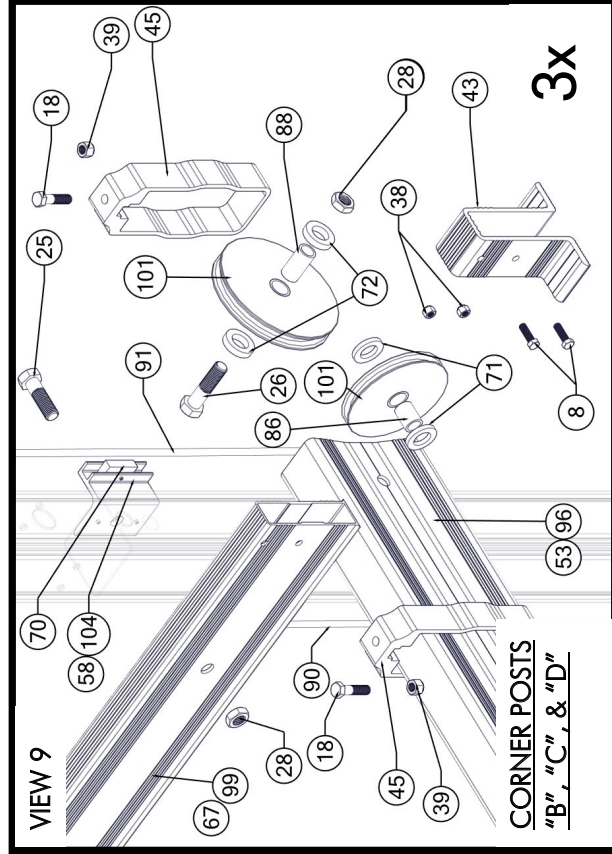


VSD 6500/8000 PONTOON FRAME EXPLODED VIEWS 8 & 9

LIFT P/N 511-80085-00



VIEW 8



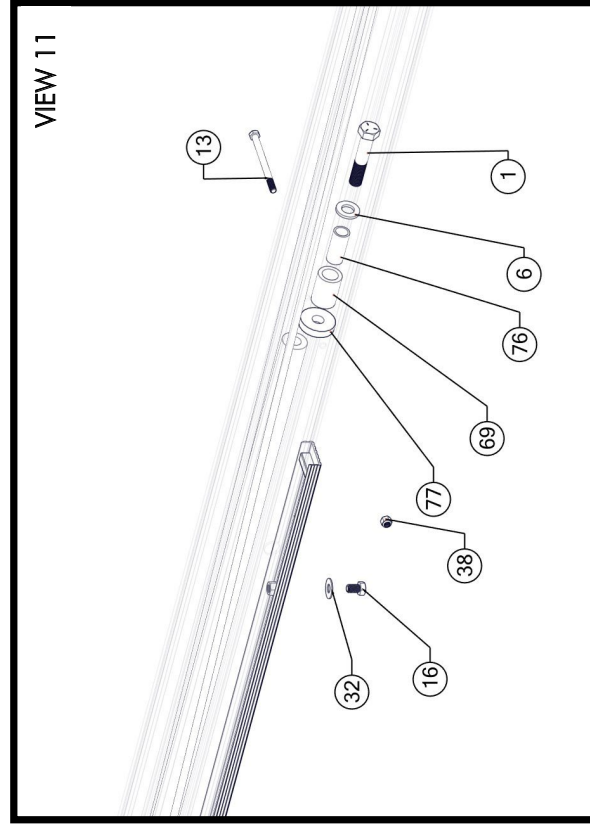
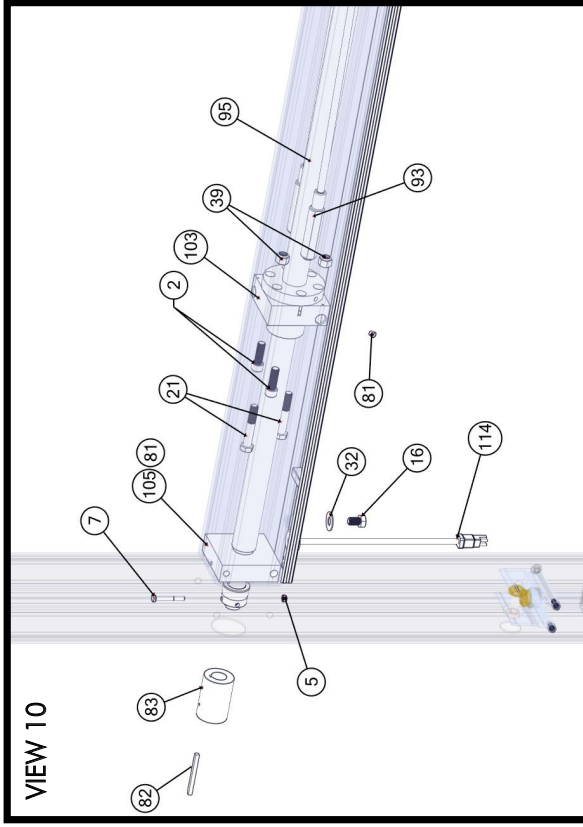
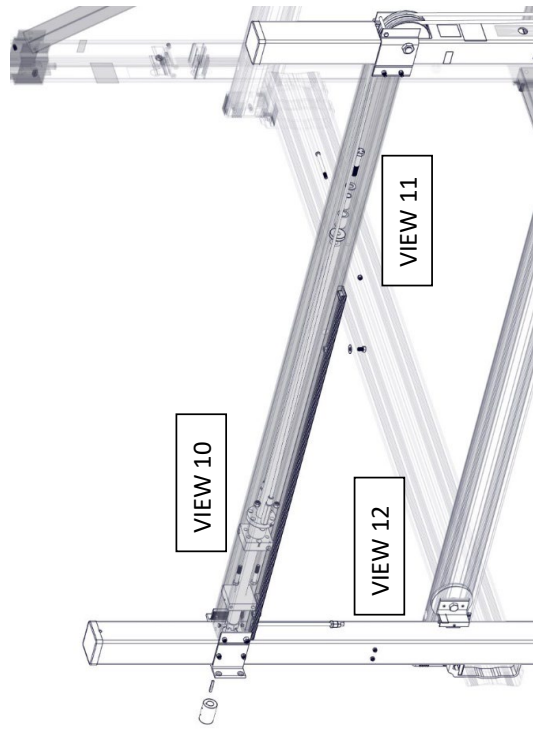
VIEW 9

3x

NOTE (VIEW 9):
CORNER "D" IS SHOWN IN THIS VIEW. FOR CORNERS "B" & "C", ITEMS 26, 28, 72, 88 AND 102 ARE EXEMPT. ITEMS 52 & 95 ARE REPLACED WITH ITEM 115.

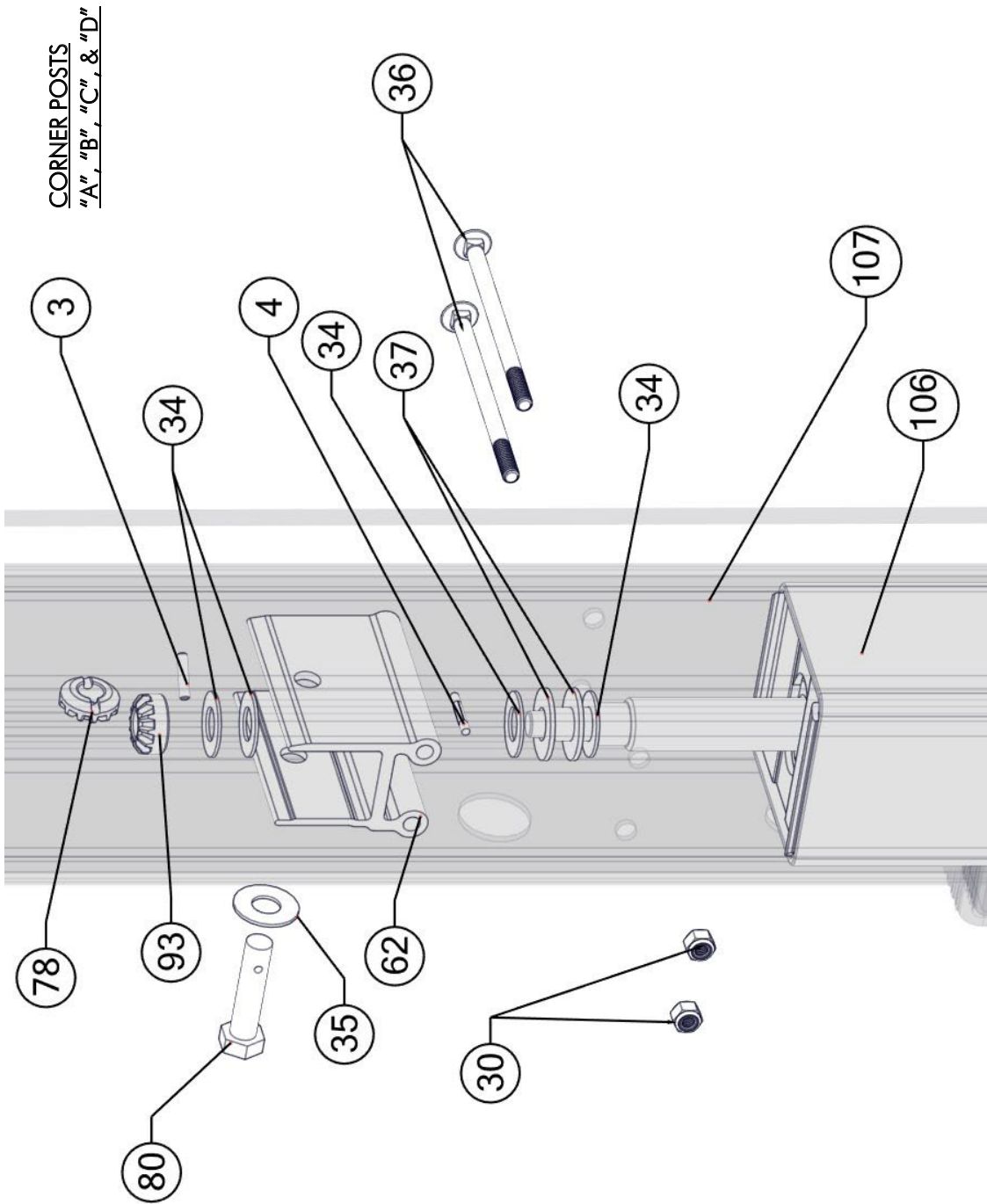
VSD 6500/8000 PONTOON FRAME EXPLODED VIEWS 10 & 11

LIFT P/N 511-80085-00



VSD 6500/8000 PONTON FRAME EXPLODED VIEW 12

LIFT P/N 511-80085-00



VSD 10,000 STANDARD FRAME BILL OF MATERIALS

LIFT P/N 511-90070-00

NO.	PART NUMBER	DESCRIPTION	QTY
1	001-23369-00	SHCS, 7/16-14 x 4" (Black)	1
2	001-23877-00	SHCS, 1/2-20 x 1 1/2" (Black)	2
3	001-26911-00	Pin, Dowel 3/16" x 7/8"	4
4	001-26969-00	Spring Pin, 5/32" x 1-1/8" 420 SS Slotted	1
5	001-29156-00	Nut, Jam Nylon 1/4-20 18-8 SS	1
6	001-93531-00	SHCS, M24-3.0 x 160mm	1
7	001-70040-00	HHCS, 1/4-20 X 2" 18-8 SS	1
8	001-70107-00	HHCS, 3/8-16 x 1 1/4" 18-8 ss	8
9	001-70110-00	HHCS, 3/8-16 x 1 3/4" 18-8 ss (NOT SHOWN IN EXP VIEWS)	4
10	001-70117-00	HHCS, 3/8-16 x 3 1/2" 18-8 ss	2
11	001-70118-00	HHCS, 3/8-16 x 3 3/4" 18-8 ss	2
12	001-70121-00	HHCS, 3/8-16 x 4 1/2" 18-8 ss	1
13	001-70123-00	HHCS, 3/8-16 x 5" 18-8 ss	1
14	001-70124-00	HHCS, 3/8-16 x 5 1/2" 18-8 ss (NOT SHOWN IN EXP VIEWS)	4
15	001-70125-00	HHCS, 3/8-16 x 6" 18-8 ss	4
16	001-70203-00	HHCS, 1/2-13 x 3/4" 18-8 ss	2
17	001-70207-00	HHCS, 1/2-13 x 1-1/4" 18-8 ss	1
18	001-70211-00	HHCS, 1/2-13 x 2" 18-8 ss	8
19	001-70212-00	HHCS, 1/2-13 x 2 1/4" 18-8 ss	3
20	001-70213-00	HHCS, 1/2-13 x 2 1/2" 18-8 ss	1
21	001-93532-00	Nut, M24-3.0	1
22	001-70219-00	HHCS, 1/2-13 x 4" 18-8 ss	14
23	001-70223-00	HHCS, 1/2-13 x 5" 18-8 ss	6
24	001-70225-00	HHCS, 1/2-13 x 6" 18-8 ss	2
25	001-70363-00	HHCS, 3/4-10 x 2 1/2" ss	4
26	001-70365-00	HHCS, 3/4-10 x 3" ss	4
27	001-70394-00	HHCS, 3/4-16 x 2" ss	1
28	001-70817-00	Nut, 3/4-10 Jam ss	8
29	001-70819-00	Nut, 11-8 Jam ss	2
30	001-70861-00	Nut, Nylon 5/16-18 - Alum.	8
31	001-71017-00	Flat Washer, 3/8" SAE ss 18-8 (NOT SHOWN IN EXP VIEWS)	8
32	001-71021-00	Flat Washer, 1/2" 18-8 SS	3
33	001-71022-00	Flat Washer, 1/2" USS ss 18-8	32
34	001-71024-00	Flat Washer, 5/8x1.25x.060 SS	16
35	001-71027-00	Flat Washer, 1/2" USS ss 18-8	4
36	001-74404-00	CB, 5/16-18 x 5" ss 18-8	8
37	001-76069-00	Flat Washer, 5/8 (Lift) Nylon	8
38	001-76071-00	Nut, Nylon 3/8-16 Alum.	28
39	001-76072-00	Nut, Nylon 1/2-13 Alum.	37
40	002-00076-01	Post, Corner Lifting "A"	1
41	002-00077-01	Post, Corner Motor "B"	1
42	002-00078-01	Post, Corner "C" & "D"	2
43	002-04032-00	U-Clamp, Side Cradle	4
44	002-04202-00	Beam, 8" Frame - 118"	4
45	002-04204-00	Clamp, Cradle - 1.75"	7
46	002-04205-00	Clamp, Cradle Lift - 3.875"	1
47	002-04893-00	Clamp, Frame (Lifting) - 8"	1
48	002-04208-00	Clamp, Frame (Outer) - 8"	3
49	002-04209-00	Clamp, Frame (R/L) 4	2
50	002-04210-00	Clamp, Upper (Universal) - 4"	2
51	002-04211-00	Clamp, Upper (Front) - 4"	1
52	002-04212-00	Clamp, Upper (Rear)	1
53	002-04215-00	Beam, End Cradle (127")	1
54	002-04216-00	Clamp, V-Brace (Male)	1
55	002-04217-00	Clamp, V-Brace (Female)	1
56	111-04257-00	Ass'y, Ball Screw Clamp - 4.5" (Includes Clamp: 002-04257-00 & Grommets: 003-40001-00 Qty:4)	1
57	002-04224-00	Clamp, Pulley (liner)	1
58	002-04226-00	Guide, Cradle	2
59	002-04227-00	Clamp, Frame (LF RR) (Welded to Corner Post)	1
60	002-04230-00	Clamp, Pulley (Outer)	1

NO.	PART NUMBER	DESCRIPTION	QTY
61	002-04241-01	Holder, Cable - 4" Sheave	1
62	002-04245-00	Bracket, Level Leg - 4"	4
63	002-04258-00	Spacer, 8" Frame Beam	4
64	002-04291-00	V-Brace - 86.250"	2
65	002-04351-00	Beam, 6" Frame - 108"	2
66	002-04356-00	Beam, Side Cradle (A) 6-8000#	1
67	002-04357-00	Beam, Side Cradle (B) 6-8000#	1
68	003-40001-00	Grommet, Motor, VSD	4
69	006-10210-00	H Block, UHMW Support - Ball Screw	1
70	006-10202-00	Pad, Wear - 1/2 x 7/8" x 2"	2
71	006-10207-00	Spacer, Side Cradle Sheave	8
72	006-10208-00	Spacer, Front Cradle Sheave	4
73	006-11002-00	UHMW, 1/2" x 6.5" x 25"	4
74	006-15016-00	Cap, Vinyl - Lg, Winch Post	1
75	006-15500-00	Cap, Vinyl 4.500" Sq. x 1.5"	3
76	007-05390-00	Plate, End Stop (Ball Screw) 10K Std.	1
77	007-05232-00	Plate, Steel (Ball Screw)	1
78	007-05023-00	Bowl Gear, Top 1:1	4
79	007-05068-00	Clevis, Lifting Cable Pulley	4
80	007-05079-01	Screw, Bowl Gear Adjustment	1
81	007-05126-00	Fitting, Grease M8 X 1 (Flush)	2
82	007-05222-00	Key, 1/4" SQ x 3" Long	1
83	007-05224-00	Coupler, Rigid 1" x 2" x 3"	1
84	007-05500-00	Pin, Sheave - 1" x 6.69" Zinc Yellow	1
85	007-07625-01	Sheave, 4" Clamp	1
86	007-07626-00	Sheave, 2" Clevis	1
87	007-07704-00	Spacer, 1.297 Side Cradle	4
88	007-07705-00	Spacer, 1.938" Front Cradle	2
89	007-07708-00	Spacer, Pulley 6000-8000#	2
90	007-09106-00	Cable, Side Leveling - 190"	2
91	007-09111-00	Cable, Front Leveling 219.75"	1
92	007-09165-00	Cable, Lifting - 216.0" 10K Std.	1
93	007-15024-00	Bowl Gear, Bottom (Fab)	4
94	007-93534-00	Nut, Round M30 x 1.5 (Zinc Plated)	1
95	011-15025-00	Ass'y, Ball Screw 10,000#	1
96	111-00139-01	Ass'y, Front Cradle Beam - 127"	1
97	111-00140-00	Weldment, 14" Sand Pad	4
98	111-00188-03	Ass'y, Side Cradle VSD6-10K Std. (R)	1
99	111-00189-03	Ass'y, Side Cradle VSD6-10K Std. (L)	1
100	111-00199-00	Ass'y, 6" Side Level Sheave	2
101	111-00200-00	Ass'y, 7" Lifting Sheave	4
102	111-00200-00	Ass'y, 7 1/4" Sheave	2
103	111-00332-00	Ass'y, Ball Nut Block	1
104	111-00331-00	Ass'y, Cradle Guide	4
105	111-00338-00	Ass'y, Bearing Block w/ Bearing	1
106	111-00197-00	Weldment, Inner Screw Leg 10K	4
107	111-00136-00	Ass'y, 10000# Inner Leg	4
108	111-00520-00	Ass'y, Corner Post "A" Lifting 10KS	1
109	111-00521-00	Ass'y, Corner Post "B" Motor 10KS	1
110	111-00522-00	Ass'y, Corner Post "C" 10KS	1
111	111-00523-00	Ass'y, Corner Post "D" 10KS	1
112	111-00532-00	Weld't, Ball Screw Tube 10K Standard	1
113	111-00531-00	Ass'y, Ball Screw Tube 10K Standard	1
114	111-90070-00	Ass'y, Limit Switch 10K Standard	1
115	911-08501-00	Beam, Cradle 3.125 x 8 - 127"	1
116	911-10501-00	Spacer, 6" Frame Beam - 2.203"	4
117	911-21302-00	Spacer, Insert, Lg, Lift - 44"	1
118	001-71077-00	Lock Washer, 3/4" Split SS	1
119	001-76354-00	Nut, 3/4-10 Alum	1
120	007-08307-00	Bar, Cable End Attachment 10K	2

VSD 10,000 STANDARD FRAME BILL OF MATERIALS – SUB-ASSEMBLIES

LIFT P/N 511-90070-00

NO.	PART NUMBER	DESCRIPTION	QTY
96	111-00139-01	Asy, Front Cradle Beam - 127"	1
26	001-70365-00	HHCS, 3/4-10 x 3" ss	2
28	001-70817-00	Nut, 3/4-10 Jam ss	2
53	002-04215-00	Beam, End Cradle (127")	1
72	006-10208-00	Spacer, Front Cradle Sheave	4
88	007-07705-00	Spacer, 1 938" Front Cradle	2
90	007-09111-00	Cable, Front Leveling 219.75"	1
101	111-00200-00	Asy, 7 1/4" Sheave	2

NO.	PART NUMBER	DESCRIPTION	QTY
98	111-00188-03	Asy, Side Cradle VSD6-10K Std. (R)	1
25	001-70369-00	HHCS, 3/4-10 x 2 1/2" ss	2
28	001-70817-00	Nut, 3/4-10 Jam ss	2
67	002-04357-00	Beam, Side Cradle (B) 6-8000#	1
71	006-10207-00	Spacer, Side Cradle Sheave	4
73	006-11002-00	UHMW, 1/2" x 6.5" x .25"	2
87	007-07704-00	Spacer, 1.297 Side Cradle	2
90	007-09106-00	Cable, Side Leveling - 190"	1
101	111-00199-00	Asy, 6" Side Level Sheave	2
104	111-00251-00	Asy, Cradle Guide	2

NO.	PART NUMBER	DESCRIPTION	QTY
99	111-00189-03	Asy, Side Cradle VSD6-10K Std. (L)	1
25	001-70369-00	HHCS, 3/4-10 x 2 1/2" ss	2
28	001-70817-00	Nut, 3/4-10 Jam ss	2
66	002-04356-00	Beam, Side Cradle (A) 6-8000#	1
71	006-10207-00	Spacer, Side Cradle Sheave	4
73	006-11002-00	UHMW, 1/2" x 6.5" x .25"	2
87	007-07704-00	Spacer, 1.297 Side Cradle	2
90	007-09106-00	Cable, Side Leveling - 190"	1
101	111-00199-00	Asy, 6" Side Level Sheave	2
104	111-00251-00	Asy, Cradle Guide	2

NO.	PART NUMBER	DESCRIPTION	QTY
107	111-00136-00	Asy, 10000# Inner Leg	1
3	001-26911-00	Pin, Dowel 3/16" x 7/8"	1
4	001-71525-00	Spring Pin, 5/32" x 1 1/8" 420 SS Slotted	1
32	001-71024-00	Flat Washer, 5/8"x1.25"x.040 SS	4
34	001-71027-00	Flat Washer, 1/2" USS ss 18-8	1
37	001-76069-00	Flat Washer, 5/8 (Lift) Nylon	2
62	002-04245-00	Bracket Level Leg - 4"	1
78	007-05023-00	Bevel Gear, Top 1:1	1
80	007-05079-01	Screw, Bevel Gear Adjustment	1
94	007-15024-00	Bevel Gear, Bottom (Fab)	1
106	111-00197-00	Weldment, Inner Screw Leg 10K	1

NO.	PART NUMBER	DESCRIPTION	QTY
108	111-00520-00	Asy, Corner Post "A" Lifting 10KS	1
29	001-70819-00	Nut, 1"-8 Jam ss	2
30	001-70861-00	Nut, Nylock 5/16-18 - Alum.	2
36	001-74404-00	CB, 5/16-18 x 5" ss 18-8	2
40	002-00076-01	Post, Corner Lifting "A"	1
49	002-04209-00	Clamp, Frame (RF LR) (Welded to Corner Post)	1
57	002-04224-00	Clamp, Pulley (Inner)	1
60	002-04230-00	Clamp, Pulley (Outer)	1
75	006-15500-00	Cap, Vinyl 4.500" Sq. x 1.5"	1
84	007-05500-00	Pin, Sheave - 1" x 6.69" Zinc Yellow	1
89	007-07708-01	Spacer, Pulley 6000-8000#	2
100	111-00198-00	Asy, 7" Lifting Sheave	2
107	111-00136-00	Asy, 10000# Inner Leg	1

NO.	PART NUMBER	DESCRIPTION	QTY
109	111-00521-00	Asy, Corner Post "B" Motor 10KS	1
17	001-70207-00	HHCS, 1/2-13 x 1 1/4" 18-8 ss	1
30	001-70861-00	Nut, Nylock 5/16-18 - Alum.	2
32	001-71021-00	Flat Washer, 1/2" 18-8 SS	1
33	001-74404-00	CB, 5/16-18 x 5" ss 18-8	2
39	001-76072-00	Nut, Nylock 1/2-13 Alum.	1
41	002-04323-00	Post, Corner Motor "B"	1
59	002-04227-00	Clamp, Frame (LF RR) (Welded to Corner Post)	1
74	006-15016-00	Cap, Vinyl - Lg. Winch Post	1
107	111-00136-00	Asy, 10000# Inner Leg	1
117	911-21302-00	Canopy Insert, Lrg. Lift - 44"	1

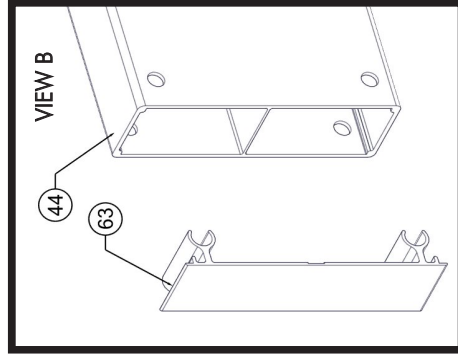
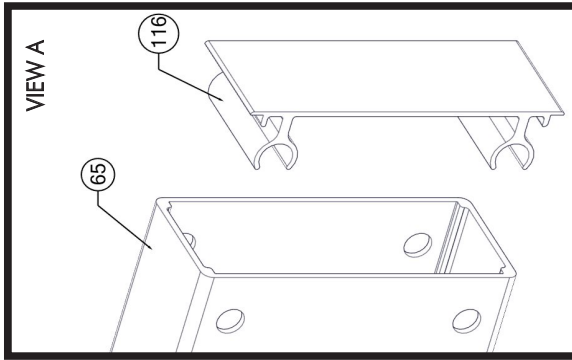
NO.	PART NUMBER	DESCRIPTION	QTY
110	111-00522-00	Asy, Corner Post "C" 10KS	1
30	001-70861-00	Nut, Nylock 5/16-18 - Alum.	2
33	001-74404-00	CB, 5/16-18 x 5" ss 18-8	2
42	002-04324-00	Post, Corner "C & D"	1
49	002-04209-00	Clamp, Frame (RF LR) (Welded to Corner Post)	1
75	006-15500-00	Cap, Vinyl 4.500" Sq. x 1.5"	1
107	111-00136-00	Asy, 10000# Inner Leg	1

NO.	PART NUMBER	DESCRIPTION	QTY
111	111-00523-00	Asy, Corner Post "D" 10KS	1
30	001-70861-00	Nut, Nylock 5/16-18 - Alum.	2
33	001-74404-00	CB, 5/16-18 x 5" ss 18-8	2
42	002-04324-00	Post, Corner "C & D"	1
59	002-04227-00	Clamp, Frame (LF RR) (Welded to Corner Post)	1
75	006-15500-00	Cap, Vinyl 4.500" Sq. x 1.5"	1
107	111-00136-00	Asy, 10000# Inner Leg	1

NO.	PART NUMBER	DESCRIPTION	QTY
113	111-00531-00	Asy, Ball Screw Tube 6-8000#	1
1	001-23369-00	SHCS, 7/16-14 x 4" (Black)	1
2	001-23877-00	SHCS, 1/2-20 x 1 1/2" (Black)	2
5	001-29156-00	Nut, Jam Nylock 1/4-20 18-8 SS	1
6	001-93531-00	SHCS, M24-3.0 x 160mm	1
7	001-70040-00	HHCS, 1/4-20 x 2" 18-8 SS	1
13	001-70123-00	HHCS, 3/8-16 x 5" 18-8 ss	1
16	001-70203-00	HHCS, 1/2-13 x 3/4" 18-8 ss	2
21	001-93532-00	Nut, M24-3.0	1
32	001-71021-00	Flat Washer, 1/2" 18-8 SS	2
76	007-05390-00	Plate, End Stop Ball Screw 10K Std.	1
77	007-05232-00	Plate, Steel Ball Screw	1
38	001-76071-00	Nut, Nylock 3/8-16 Alum.	1
39	001-76072-00	Nut, Nylock 1/2-13 Alum.	2
69	006-10210-00	H Block, UHMW Support - Ball Screw	1
81	007-05126-00	Fitting, Grease M8 X 1 (Flush)	1
82	007-05222-00	Key, 1/4" SQ x 3" Long	1
83	007-05224-00	Coupler, Rigid 1" x 2" x 3"	1
92	007-09165-00	Cable, Lifting - 216.0" 10K Std.	1
94	007-93534-00	Nut, Round M30 x 1.5 (Zinc Plated)	1
95	011-15025-00	Asy, Ball Screw 10,000#	1
103	111-00332-00	Asy, Ball Nut Block	1
105	111-00338-00	Asy, Bearing Block - 10,000#	1
112	111-00532-00	Weldt, Ball Screw Tube 10K Standard	1
114	111-90070-00	Asy, Limit Switch 10K Standard	1
120	007-08307-00	Bar, Cable End Attachment 10K	2

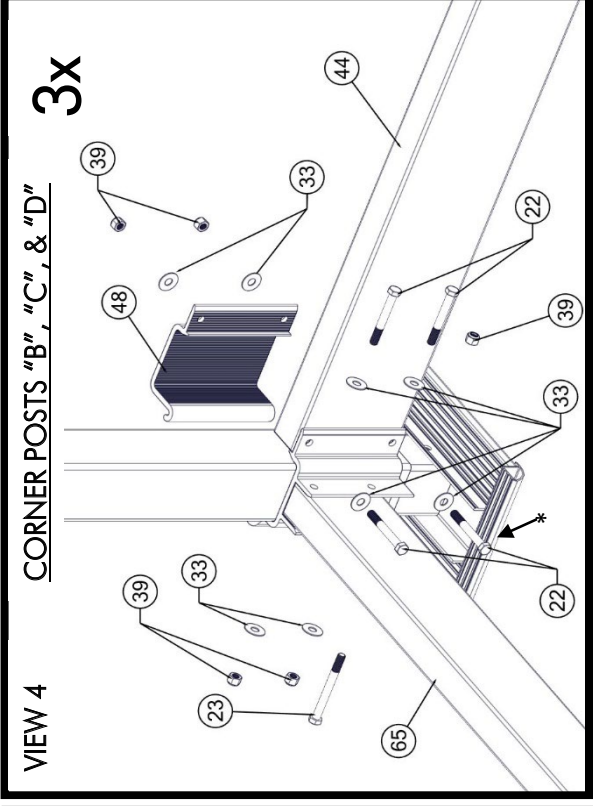
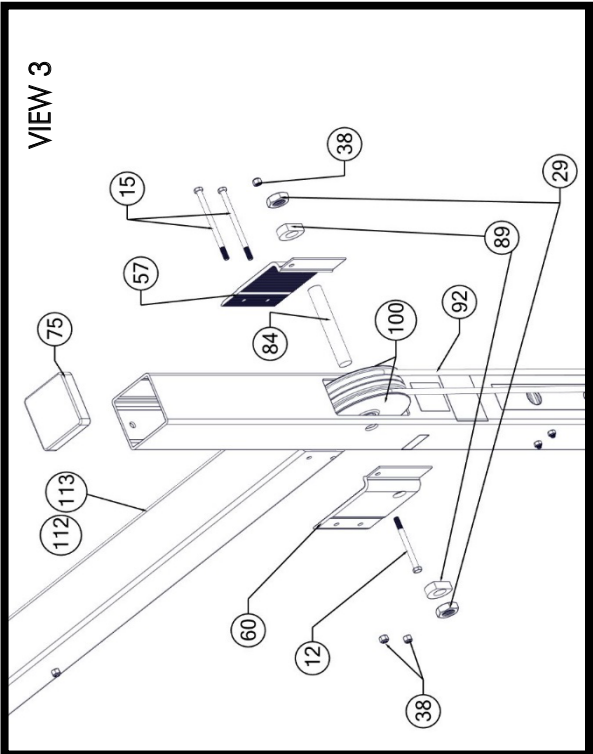
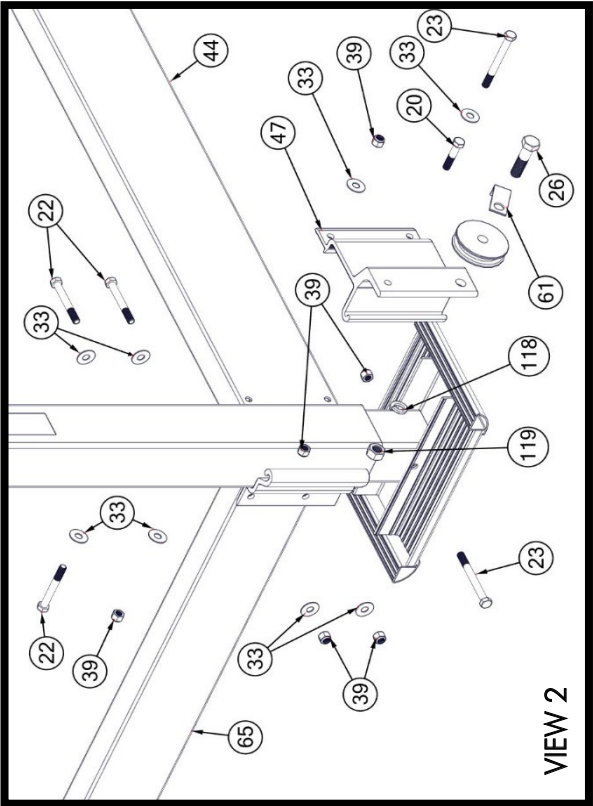
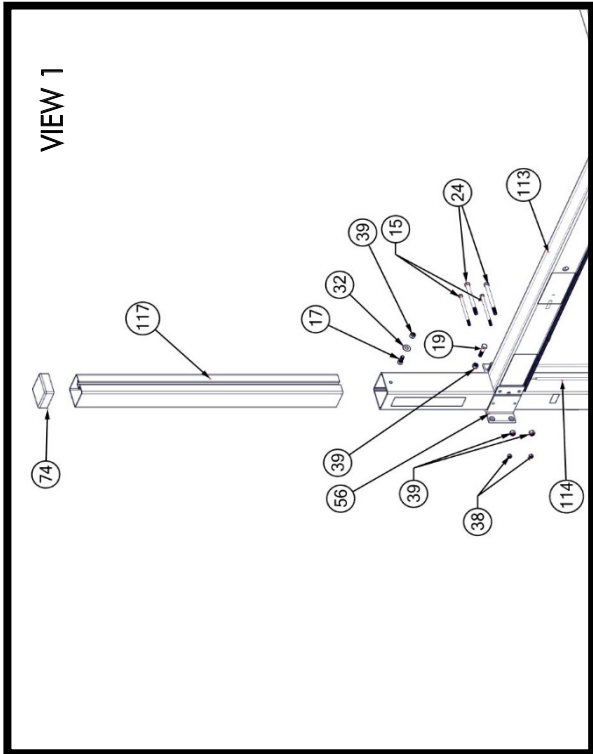
LIFT P/N 511-90070-00

ADDITIONAL VIEWS ON
PAGES 36-40



VSD 10,000 STANDARD FRAME EXPLODED VIEWS 1-4

LIFT P/N 511-90070-00



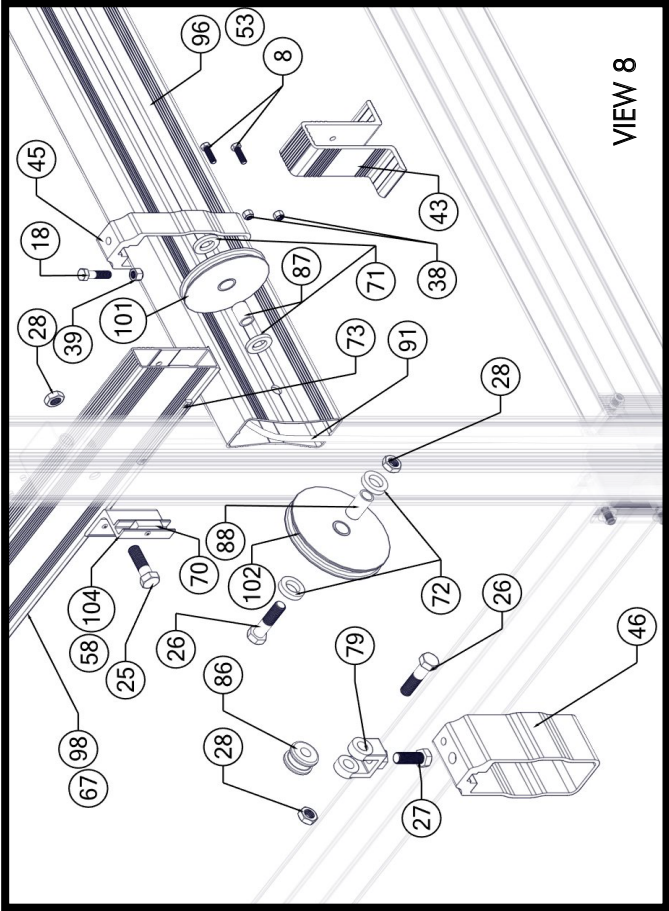
NOTE
VIEW 4:
CORNER
"B" IS
SHOWN.
BOTTOM
BOLT
(MARKED)
IS
REPLACED
WITH ITEM
23 AT
CORNER
"D". FOR
CORNER
"C", SAME
ITEMS ARE
USED AS
SHOWN
IN VIEW 4.

LIFT P/N 511-90070-00

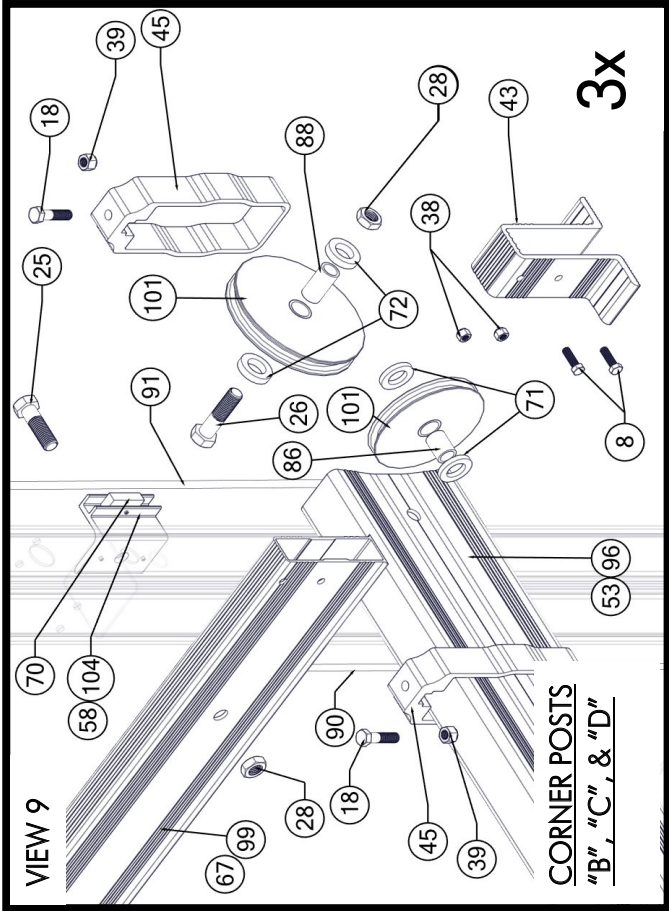


VSD 10,000 STANDARD FRAME EXPLODED VIEWS 8 & 9

LIFT P/N 511-90070-00

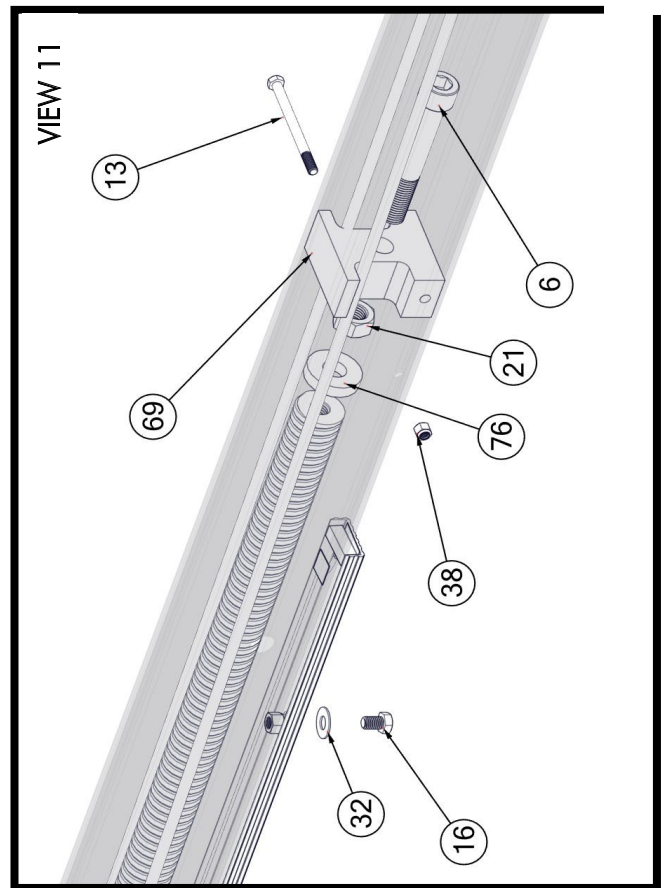
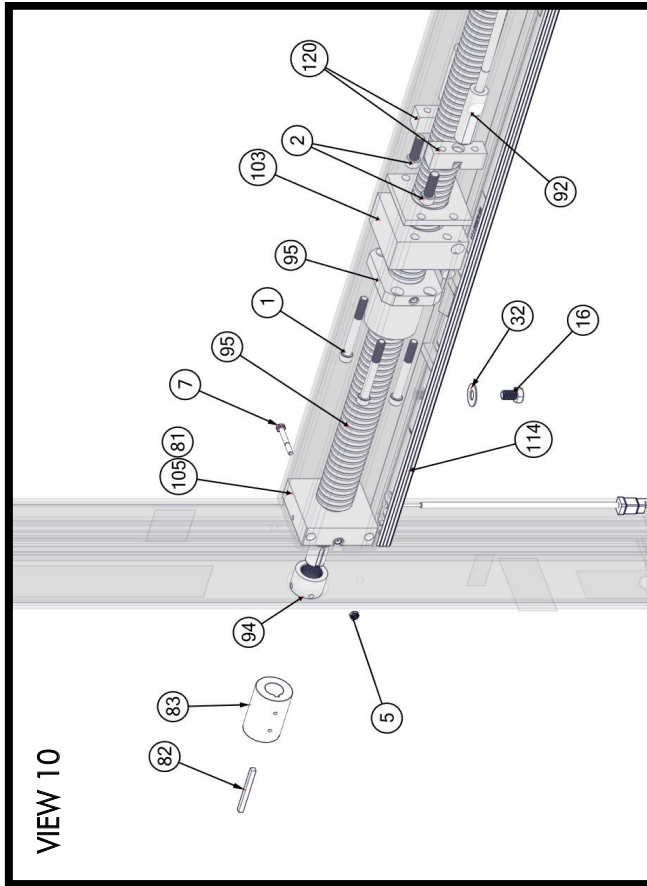
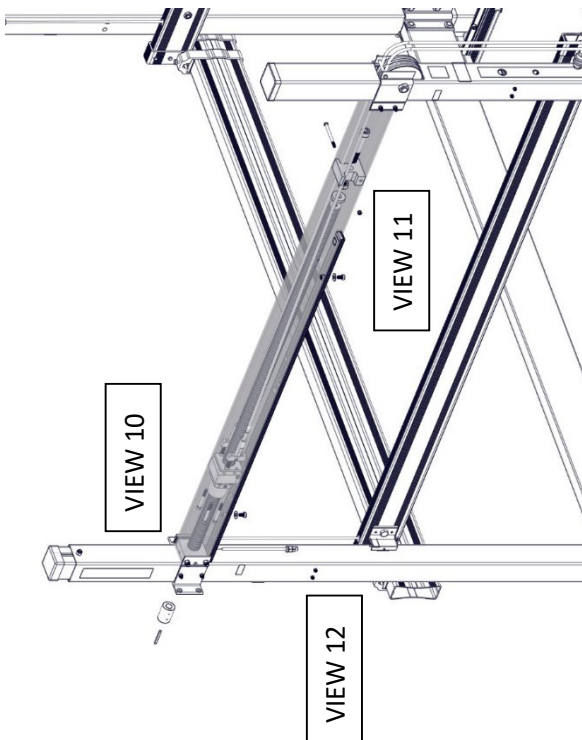


NOTE (VIEW 9):
CORNER "D" IS SHOWN IN THIS VIEW. FOR CORNERS "B" & "C", ITEMS 26, 28, 72, 88 AND 102 ARE EXEMPT. ITEMS 53 & 96 ARE REPLACED WITH ITEM 115.



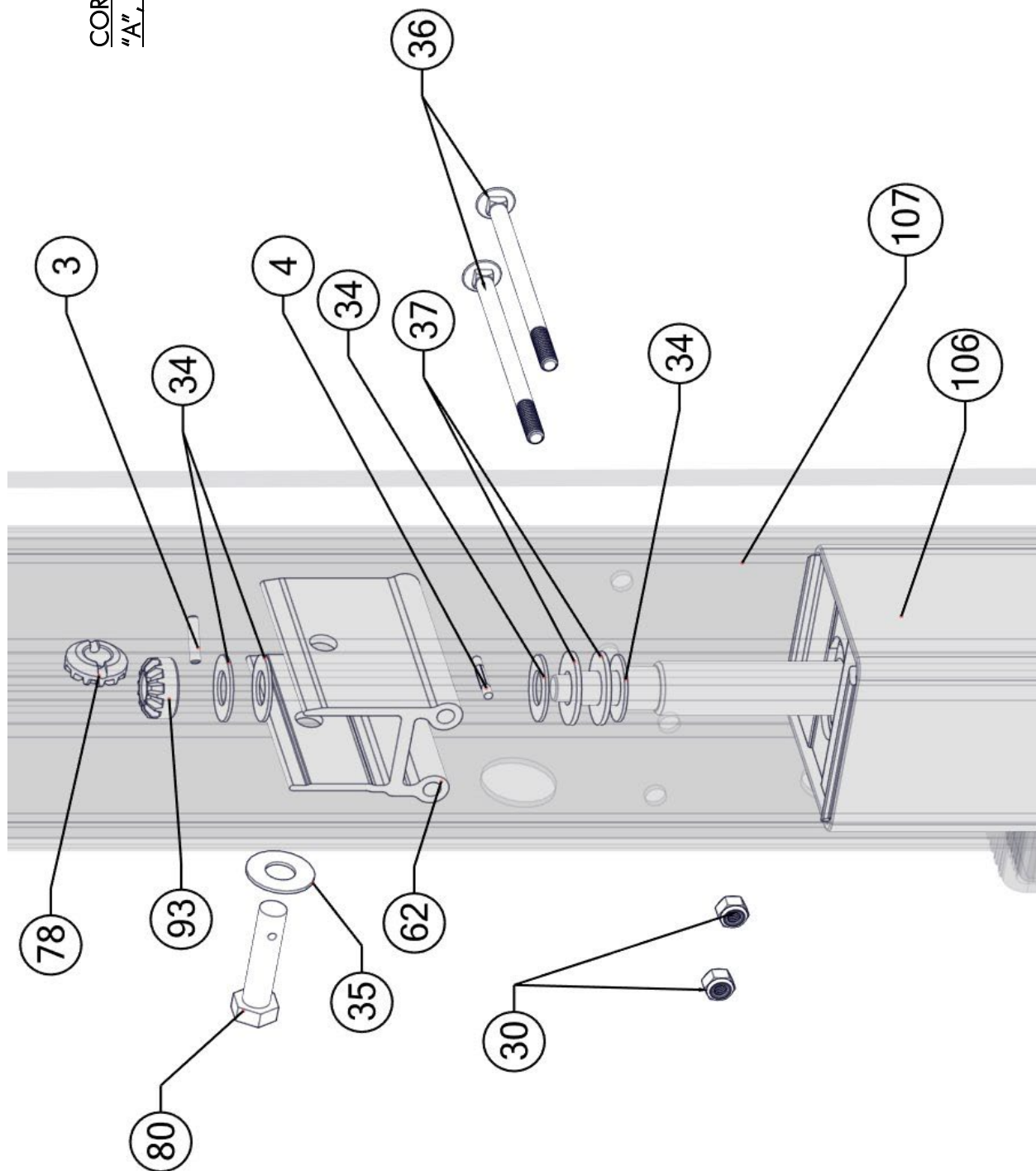
VSD 10,000 STANDARD FRAME EXPLODED VIEWS 10 & 11

LIFT P/N 511-90070-00



VSD 10,000 STANDARD FRAME EXPLODED VIEW 12

LIFT P/N 511-90070-00



CORNER POSTS
"A", "B", "C", & "D"

VSD 10,000 LIFT FRAME BILL OF MATERIALS

LIFT P/N 511-90075-01

NO.	PART NUMBER	DESCRIPTION	QTY
1	001-23369-00	SHCS, 7/16-14 x 4" (Black)	4
2	001-26911-00	Pin, Dowel 3/16" x 7/8"	4
3	001-71525-00	Spring Pin, 5/32" x 1-1/8" 420 SS Slotted	4
4	001-29156-00	Nut, Jam Nylock 1/2-20 18-8 ss	1
5	001-70040-00	HHCS, 1/2-20 x 2" 18-8 ss	1
6	001-70107-00	HHCS, 3/8-16 x 1 1/4" 18-8 ss	8
7	001-70110-00	HHCS, 3/8-16 x 1 3/4" 18-8 ss (NOT SHOWN IN EXP VIEWS)	4
8	001-70117-00	HHCS, 3/8-16 x 3 1/2" 18-8 ss	2
9	001-70118-00	HHCS, 3/8-16 x 3 3/4" 18-8 ss	2
10	001-70123-00	HHCS, 3/8-16 x 5" 18-8 ss	3
11	001-70124-00	HHCS, 3/8-16 x 5 1/2" 18-8 ss (NOT SHOWN IN EXP VIEWS)	4
12	001-70125-00	HHCS, 3/8-16 x 6" 18-8 ss	4
13	001-70203-00	HHCS, 1/2-13 x 3/4" 18-8 ss	2
14	001-70207-00	HHCS, 1/2-13 x 1 1/4" 18-8 ss	2
15	001-70211-00	HHCS, 1/2-13 x 2" 18-8 ss	8
16	001-70212-00	HHCS, 1/2-13 x 2 1/4" 18-8 ss	3
17	001-70213-00	HHCS, 1/2-13 x 2 1/2" 18-8 ss	4
18	001-70219-00	HHCS, 1/2-13 x 4" 18-8 ss	18
19	001-70223-00	HHCS, 1/2-13 x 5" 18-8 ss	6
20	001-70225-00	HHCS, 1/2-13 x 6" 18-8 ss	4
21	001-70363-00	HHCS, 3/4-10 x 2 1/2" ss	4
22	001-70365-00	HHCS, 3/4-10 x 3" ss	4
23	001-70394-00	HHCS, 3/4-16 x 2" ss	1
24	001-70817-00	Nut, 3/4-10 Jam ss	7
25	001-70819-00	Nut, 1"-8 Jam ss	2
26	001-70861-00	Nut, Nylock 5/16-18 - Alum	8
27	001-71017-00	Flat Washer, 3/8" SAE ss 18-8 (NOT SHOWN IN EXP VIEWS)	2
28	001-71021-00	Flat Washer, 1/2" 18-8 SS	8
29	001-71022-00	Flat Washer, 1/2" 18-8 USS ss 18-8	41
30	001-71024-00	Flat Washer, 5/8" x 1.25" x .060" SS	16
31	001-71027-00	Flat Washer, 1/2" USS ss 18-8	4
32	001-74404-00	CB, 5/16-18 x 5" ss 18-8	8
33	001-76069-00	Flat Washer, 5/8 (Lift) Nylon	8
34	001-76071-00	Nut, Nylock 3/8-16 ALUM.	26
35	001-76072-00	Nut, Nylock 1/2-13 ALUM.	43
36	001-76354-00	Nut, 3/4-10 Alum.	1
37	001-93531-00	SHCS, M24-3.0 x 160 mm CI 12.9 Z	1
38	001-93532-00	Nut, M24-3.0 DIN 93.4 Z Cl.8	1
39	002-04032-00	U-Clamp, Side Cradle	4
40	002-04204-00	Clamp, Cradle - 1.75"	7
41	002-04205-00	Clamp, Cradle Lift - 3.875"	1
42	002-04210-00	Clamp, Upper (Universal) - 4"	2
43	002-04211-00	Clamp, Upper (Front) - 4"	1
44	002-04212-00	Clamp, Upper (Rear)	2
45	002-04226-00	Guide, Cradle	2
46	002-04245-00	Bracket, Level Leg - 4"	4
47	002-04254-00	Holder, Cable - 4" Sheave	1
48	111-004257-00	Ass'y, Ball Screw Clamp - 4.5" (Includes Clamp: 002-04257-00 & Grommets: 003-40001-00 Qty:4)	1
49	002-04258-00	Spacer, 8" Frame Beam	8
50	002-04292-00	V-Brace - 94.375"	2
51	002-04323-00	Post, Corner (Motor)	1
52	002-04324-00	Post, Corner	2
53	002-04325-00	Post, Corner (Lifting)	1
54	002-04326-00	Clamp, Frame (Outer) LR	1
55	002-04327-00	Clamp, Frame (Outer) LF RR	2
56	002-04328-00	Clamp, Frame (Lifting) - 12.5"	1
57	002-04329-00	Clamp, Frame (LF RR) - 12.5" (Welded to Corner Post)	2
58	002-04330-00	Clamp, Frame (RF LR) - 12.5" (Welded to Corner Post)	2
59	002-04331-00	Beam, Side Cradle - 162.5"	1

NO.	PART NUMBER	DESCRIPTION	QTY
60	002-04333-00	Beam, 8" Frame - 144"	2
61	002-04335-00	Weldment, Clamp, V-Brace (Male)	1
62	002-04336-00	Weldment, Clamp, V-Brace (Female)	1
63	002-04337-00	Clamp, Pulley (Inner)	1
64	002-04338-00	Clamp, Pulley (Outer)	1
65	002-04341-00	Beam, Side Cradle-162.5" (B)	1
66	006-10201-00	Pad, Wear - 1/2 x 7/8" x 2"	2
67	006-10207-00	Spacer, Side Cradle Sheave	8
68	006-10208-00	Spacer, Front Cradle Sheave	4
69	006-10209-00	Block, UHMW Support-Ball Screw	1
70	006-11002-00	UHMW, 1/2" x 6.5" x .25"	4
71	006-15016-00	Cap, Vinyl - Lg. Winch Post	1
72	006-15500-00	Cap, Vinyl 4, 500" Sq. x 1.5"	4
73	007-05023-00	Bevel Gear, Top 1:1	4
74	007-05068-00	Clevis, Lifting Cable Pulley	1
75	007-05079-01	Screw, Bevel Gear Adjustment	4
76	007-05126-00	Fitting, Grease M8 x 1 (Flush)	2
77	007-05222-00	Key, 1/4" SQ x 3" long	1
78	007-05224-00	Coupler, Rigid 1"x2"x3"	1
79	007-05231-00	Plate, End Stop (Ball Screw)	1
80	007-05232-00	Plate, Steel (Ball Screw)	1
81	007-05550-00	Pin, Sheave - 1" x 6.69" Zinc Yellow	1
82	007-07627-00	Sheave, 3" Clevis	1
83	007-07628-00	Sheave, 4" Clamp	1
84	007-07704-00	Spacer, 1.297 Side Cradle	4
85	007-07705-00	Spacer, 1.938" Front Cradle	2
86	007-07709-00	Spacer, Pulley, 312"	2
87	007-07710-00	Spacer, Pulley, 312"	1
88	007-09151-00	Cable, Side Leveling-222/750"	2
89	007-09152-00	Cable, Front Leveling 231.625	1
90	007-09162-00	Cable, Lifting-286.5" 10000#	1
91	007-15024-00	Bevel Gear, Bottom (Fab)	4
92	007-93534-00	Nut, Round M30 x 1.5 (Zinc Plated)	1
93	011-15020-00	Ball Screw, 50-10mm - 2159 mm (NOT SHOWN IN EXP VIEWS)	1
94	011-15025-00	Ass'y, Ball Screw 10.000# (USES #92 & #76)	1
95	111-00136-00	Ass'y, 10000# Inner Leg	4
96	111-00140-00	Weldment, 14" Sand Pad	4
97	111-00197-00	Weldment, Inner Screw Leg 10K	4
98	111-00199-00	Ass'y, 6" Side Level Sheave	4
99	111-00200-00	Ass'y, 7.14" Sheave	2
100	111-00251-00	Ass'y, Cradle Guide (USES #46 & #67)	4
101	111-00319-00	Ass'y, Corner Post 10000 (A)	1
102	111-00320-00	Ass'y, Corner Post 10000 (B)	1
103	111-00321-00	Ass'y, Corner Post 10000 (D)	1
104	111-00322-00	Ass'y, Corner Post 10000 (C)	1
105	111-00323-00	Ass'y, Side Cradle Right	1
106	111-00324-00	Ass'y, Side Cradle Left	1
107	111-00326-00	Ass'y, 10000# Ball Screw tube	1
108	111-00327-00	Weld't, Front/Rear Frame	2
109	111-00328-00	Weld't, Rear Cradle	1
110	111-00329-00	Weld't, Front Cradle	1
111	111-00330-00	Ass'y, Front Cradle	1
112	111-00331-00	Weld't, Ball Screw Tube-10000#	1
113	111-00332-00	Ass'y, Ball Nut Block	1
114	111-00338-00	Ass'y, Bearing Block-10.000#	1
115	111-00367-00	Ass'y, 7" Lifting Sheave	2
116	111-90000-00	Ass'y, Limit Switch 10000#	1
117	911-21302-00	Canopy Insert, Lrg. Lift - 44"	1

VSD 10,000 LIFT FRAME BILL OF MATERIALS

LIFT P/N 511-90075-01

NO.	PART NUMBER	DESCRIPTION	QTY
95	111-00136-00	Ass'y, 10000# Inner Leg	1
2	001-26911-00	Pin, Dowel 3/16" x 7/8"	1
3	001-71525-00	Spring Pin, 5/32" x 1-1/8" 420 SS Slotted	1
28	001-71021-00	Flat Washer, 1/2" 18-8 SS	2
30	001-71024-00	Flat Washer, 5/8" x 1.25" x .060" SS	4
33	001-76069-00	Flat Washer, 5/8 (Lift) Nylon	2
46	002-04245-00	Bracket, Level Leg - 4"	4
73	007-05023-00	Bevel Gear, Top 1:1	1
75	007-05079-01	Screw, Bevel Gear Adjustment	1
91	007-05024-00	Bevel Gear, Bottom (Fib)	1
97	111-00197-00	Weldment, Inner Screw Leg 10K	1

NO.	PART NUMBER	DESCRIPTION	QTY
101	111-00319-00	Ass'y, Corner Post 10000 (A)	1
14	001-70207-00	HHCS, 1/2-13 x 1 1/4" 18-8 ss	1
25	001-70819-00	Nut, 1"-8 Jam ss	2
26	001-70861-00	Nut, Nylon 5/16-18 - Alum	2
29	001-71022-00	Flat Washer, 1/2" 18-8 USS ss 18-8	2
32	001-74404-00	CB, 5/16-18 x 5" ss 18-8	2
35	001-76072-00	Nut, Nylon 1/2-13 ALUM.	1
53	002-04325-00	Post, Corner (Lifting)	1
58	002-04330-00	Clamp, Frame (RF LR) - 12.5"	1
63	002-04337-00	Clamp, Pulley (Inner)	1
64	002-04338-00	Clamp, Pulley (Outer)	1
72	006-15500-00	Cap. Vinyl 4.500" Sq. x 1.5"	1
81	007-05550-00	Pin, Sheave - 1" x 6.69" Zinc Yellow	1
86	007-07709-00	Spacer, Pulley .312"	2
87	007-07710-00	Spacer, Pulley .312"	1
95	111-00136-00	Ass'y, 10000# Inner Leg	1
115	111-00367-00	Ass'y, 7" Lifting Sheave	2

NO.	PART NUMBER	DESCRIPTION	QTY
102	111-00320-00	Ass'y, Corner Post 10000 (B)	1
14	001-70207-00	HHCS, 1/2-13 x 1 1/4" 18-8 ss	1
26	001-70861-00	Nut, Nylon 5/16-18 - Alum	2
28	001-71021-00	Flat Washer, 1/2" 18-8 SS	1
32	001-74404-00	CB, 5/16-18 x 5" ss 18-8	2
35	001-76072-00	Nut, Nylon 1/2-13 ALUM.	1
51	002-04323-00	Post, Corner (Motor)	1
57	002-04329-00	Clamp, Frame (LF RR) - 12.5"	1
71	006-15016-00	Cap. Vinyl - Lg. Winch Post	1
94	111-00136-00	Ass'y, 10000# Inner Leg	1
117	911-21302-00	Canopy Insert, Lrg. Lift - 44"	1

NO.	PART NUMBER	DESCRIPTION	QTY
103	111-00321-00	Ass'y, Corner Post 10000 (D)	1
26	001-70861-00	Nut, Nylon 5/16-18 - Alum	2
32	001-74404-00	CB, 5/16-18 x 5" ss 18-8	2
52	002-04324-00	Post, Corner	1
57	002-04329-00	Clamp, Frame (LF RR) - 12.5"	1
72	006-15500-00	Cap. Vinyl 4.500" Sq. x 1.5"	1
95	111-00136-00	Ass'y, 10000# Inner Leg	1

NO.	PART NUMBER	DESCRIPTION	QTY
104	111-00322-00	Ass'y, Corner Post 10000 (C)	1
26	001-70861-00	Nut, Nylon 5/16-18 - Alum	2
32	001-74404-00	CB, 5/16-18 x 5" ss 18-8	2
52	002-04324-00	Post, Corner	1
58	002-04324-00	Clamp, Frame (RF LR) - 12.5"	1
72	002-04330-00	Cap. Vinyl 4.500" Sq. x 1.5"	1
93	111-00136-00	Ass'y, 10000# Inner Leg	1

NO.	PART NUMBER	DESCRIPTION	QTY
105	111-00323-00	Ass'y, Side Cradle Right	1
21	001-70363-00	HHCS, 3/4-10 x 2 1/2" ss	2
23	001-70817-00	Nut, 3/4-10 Jam ss	2
65	002-04341-00	Beam, Side Cradle - 162.5" (B)	1
67	006-10207-00	Spacer, Side Cradle Sheave	4
70	006-11002-00	UHMW, 1/2" x 6.5" x .25"	2
84	007-07704-00	Spacer, 1.297 Side Cradle	2
88	007-09151-00	Cable, Side Leveling-222.750"	1
98	111-00199-00	Ass'y, 6" Side Level Sheave	2
100	111-00251-00	Ass'y, Cradle Guide (USES #46 & #67)	2

NO.	PART NUMBER	DESCRIPTION	QTY
106	111-00324-00	Ass'y, Side Cradle Left	1
21	001-70363-00	HHCS, 3/4-10 x 2 1/2" ss	2
24	001-70817-00	Nut, 3/4-10 Jam ss	2
59	002-04331-00	Beam, Side Cradle - 162.5"	1
67	006-10207-00	Spacer, Side Cradle Sheave	4
70	006-11002-00	UHMW, 1/2" x 6.5" x .25"	2
84	007-07704-00	Spacer, 1.297 Side Cradle	2
88	007-09151-00	Cable, Side Leveling-222.750"	1
98	111-00199-00	Ass'y, 6" Side Level Sheave	2
100	111-00251-00	Ass'y, Cradle Guide (USES #46 & #67)	2

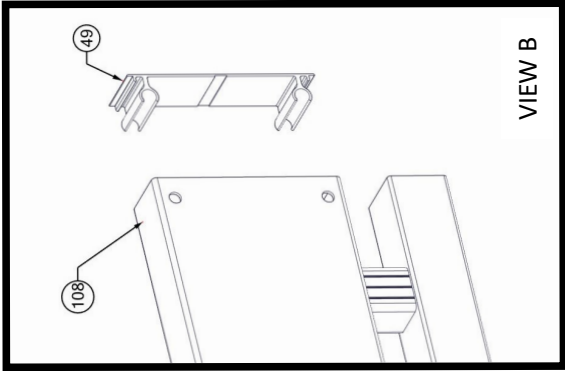
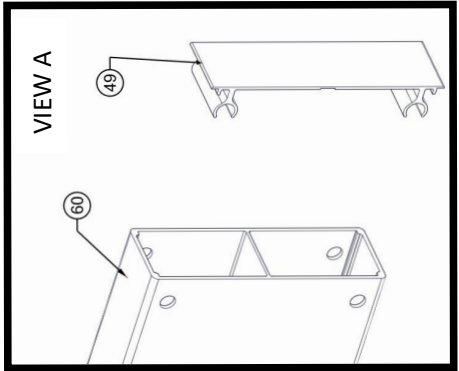
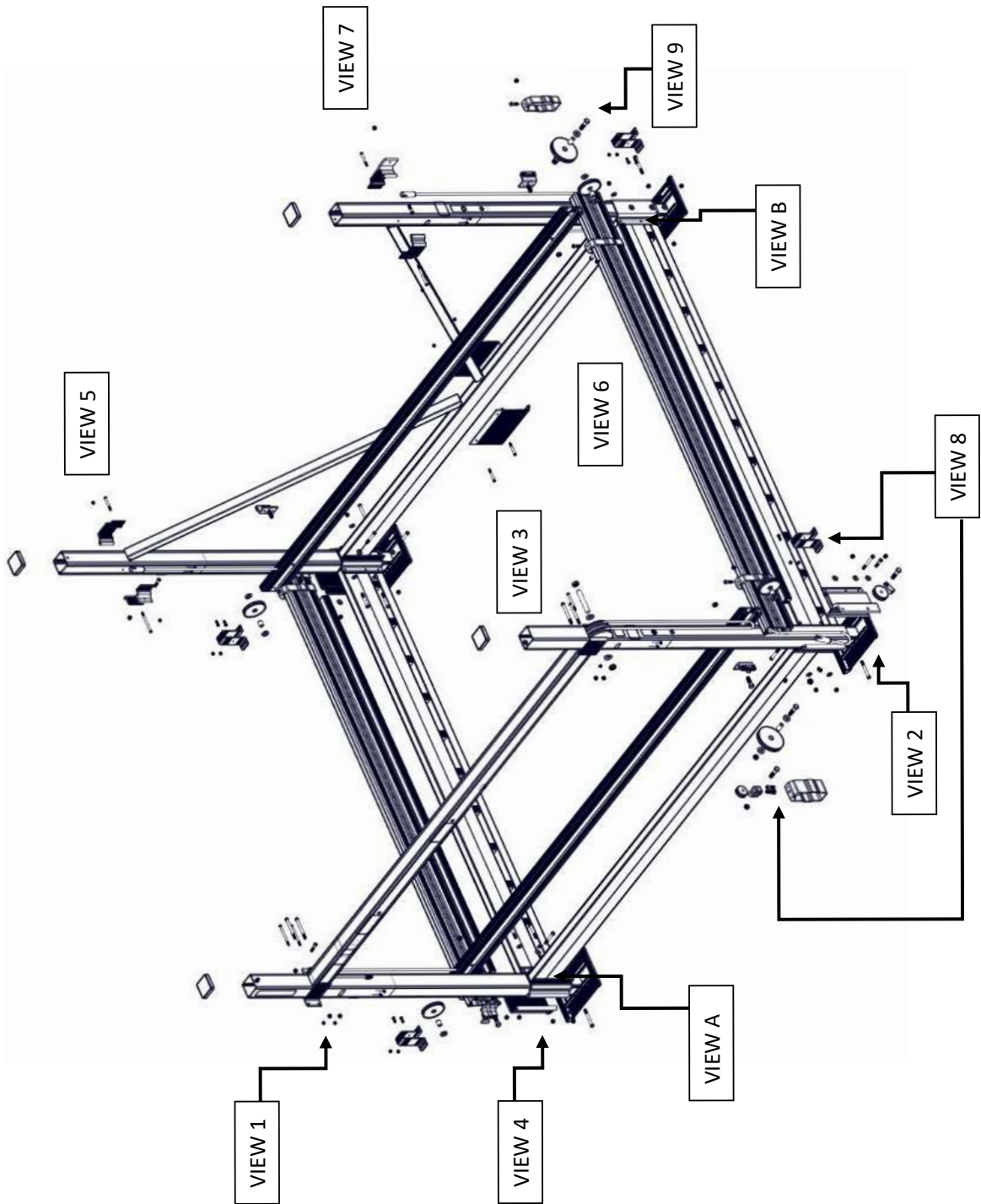
NO.	PART NUMBER	DESCRIPTION	QTY
107	111-00326-00	Ass'y, 10000# Ball Screw tube	1
1	001-23369-00	SHCS, 7/16-14 x 4" (Black)	4
4	001-29156-00	Nut, Jam Nylon 1/2-20 18-8 ss	1
5	001-70040-00	HHCS, 1/2-20 x 2" 18-8 ss	1
10	001-70123-00	HHCS, 3/8-16 x 5" 18-8 ss	1
13	001-70203-00	HHCS, 1/2-13 x 3/4" 18-8 ss	2
28	001-71021-00	Flat Washer, 1/2" 18-8 SS	2
34	001-76071-00	Nut, Nylon 3/8-16 ALUM	1
37	001-93531-00	SHCS, M24-3.0 x 160 mm Cl12.9 Z	1
38	001-93532-00	Nut, M24-3.0 DIN 93.4 Z CL8	1
69	006-10209-00	Block, UHMW Support-Ball Screw	1
76	007-05126-00	Fitting, Grease M8 x 1 (Flush)	1
77	007-05222-00	Key, 1/4" SQ x 3" long	1
78	007-05224-00	Coupler, Rigid 1"x2"x3"	1
79	007-05231-00	Plate, End Stop (Ball Screw)	1
80	007-05232-00	Plate, Steel (Ball Screw)	1
90	007-09162-00	Cable, Lifting-286.5" 10000#	1
92	007-93534-00	Nut, Round M30 x 1.5 (Zinc Plated)	1
94	011-15025-00	Ass'y, Ball screw 10,000# (USES #94 & #77)	1
112	111-00331-00	Weldt, Ball Screw Tube-10000#	1
113	111-00338-00	Ass'y, Ball Nut Block	1
114	111-00338-00	Ass'y, Bearing Block-10,000#	1
116	111-90010-00	Ass'y, Limit Switch 10000#	1

NO.	PART NUMBER	DESCRIPTION	QTY
111	111-00330-00	Ass'y, Front Cradle	1
22	001-70365-00	HHCS, 3/4-10 x 3" ss	2
24	001-70817-00	Nut, 3/4-10 Jam ss	2
68	006-10208-00	Spacer, Front Cradle Sheave	4
85	007-07705-00	Spacer, 1.938" Front Cradle	2
89	007-09152-00	Cable, Front Leveling 231.625	1
99	111-00200-00	Ass'y, 7 1/4" Sheave	2
110	111-00329-00	Weldt, Front Cradle	1

VSD 10,000 LIFT FRAME EXPLODED VIEW MAIN

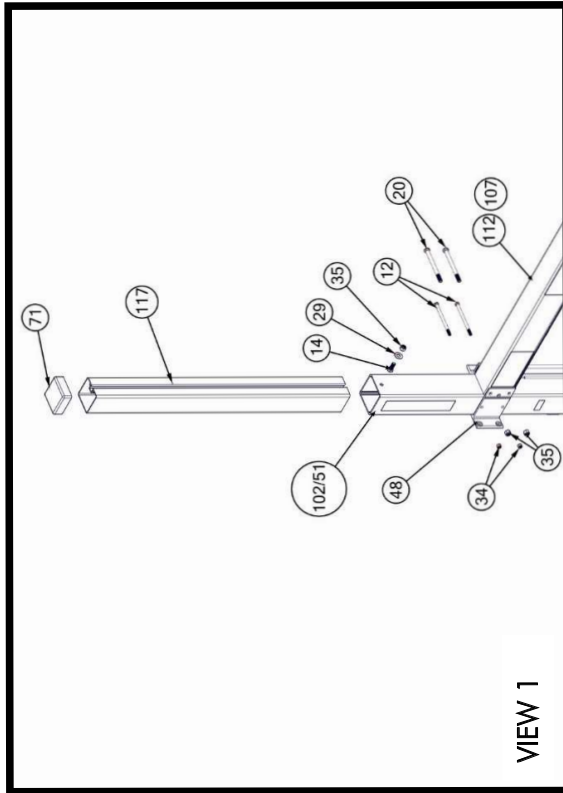
LIFT P/N 511-90075-01

NOTE:
ADDITIONAL VIEWS ON
PAGES 36-40



VSD 10,000 LIFT FRAME EXPLODED VIEWS 1-4

LIFT P/N 511-90075-01

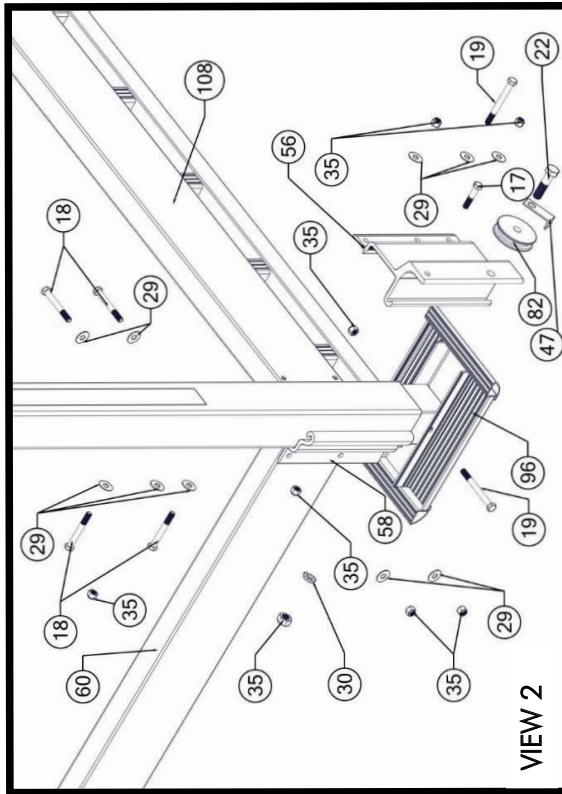


VIEW 1

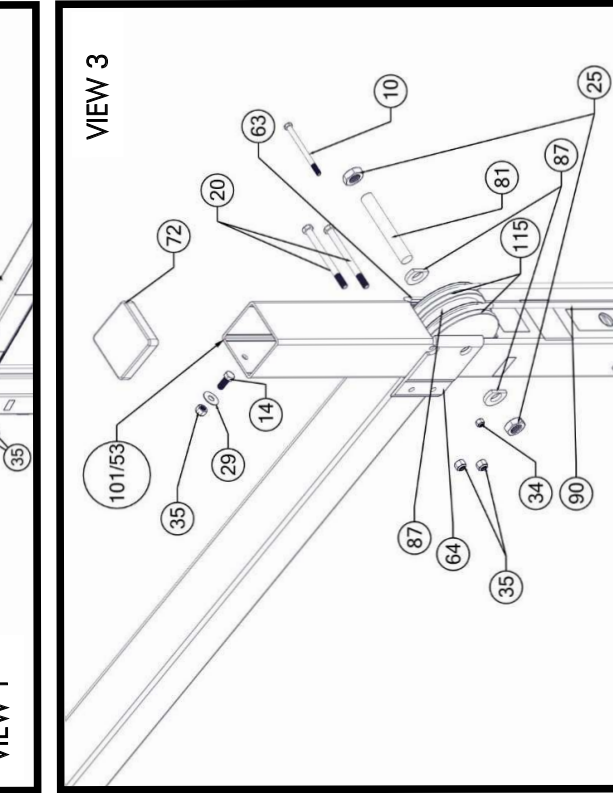
NOTE (VIEW 4):

CORNER "C"
USES ITEM 58
IN PLACE OF
57 AND ITEM
54 IN PLACE
OF ITEM 55.

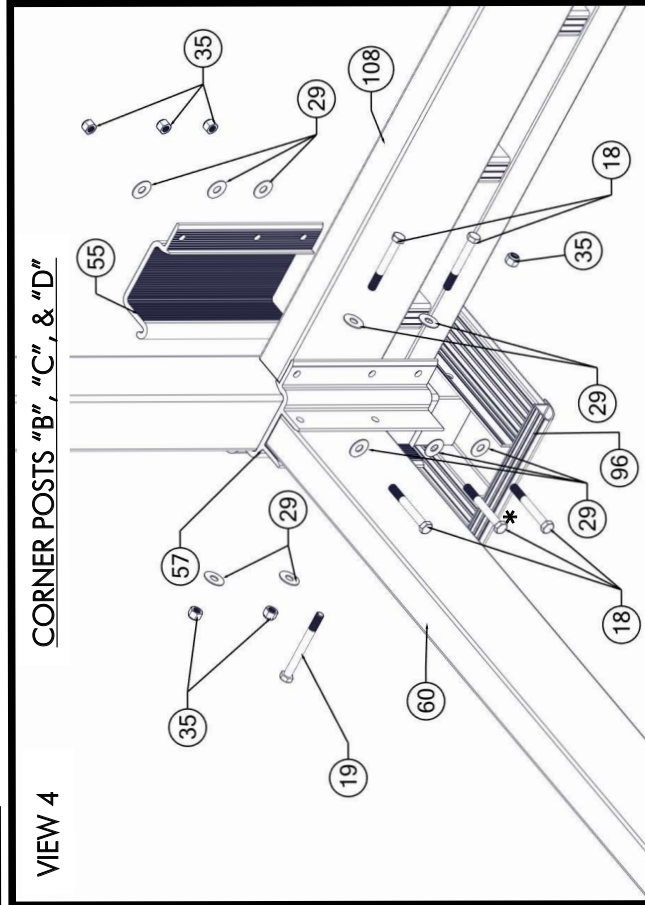
CORNER "D"
USES SAME
ITEMS. ITEM 18
HAS QUANTITY
OF (4). MIDDLE
BOLT
(*MARKED) IS
REPLACED
WITH ITEM 19.



VIEW 2



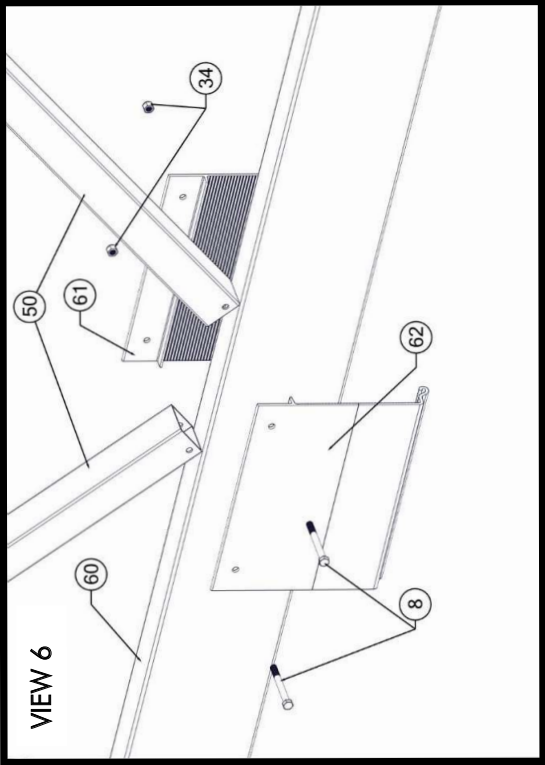
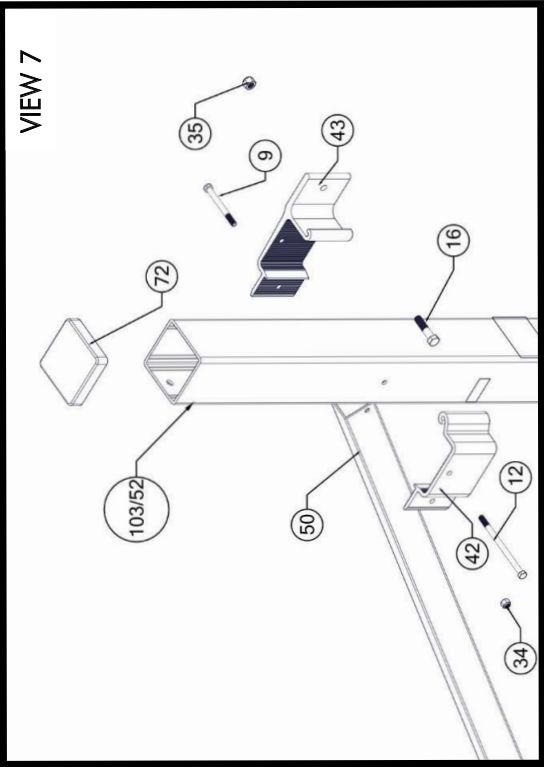
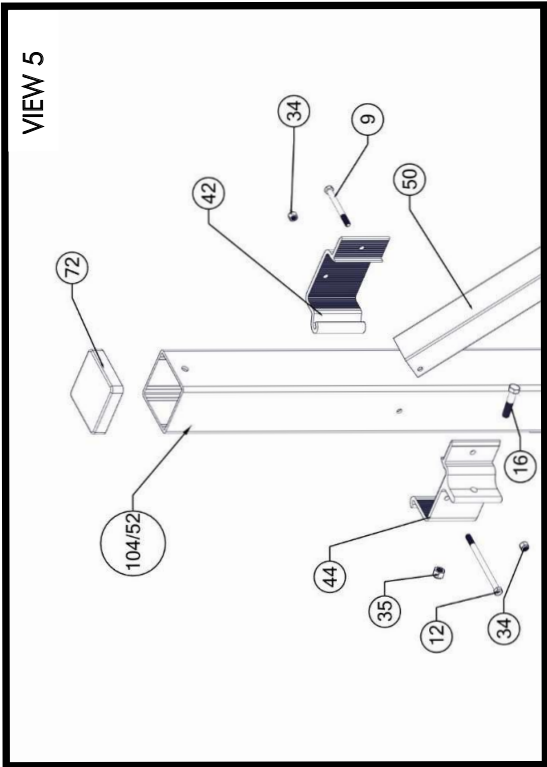
VIEW 3



VIEW 4
CORNER POSTS "B", "C", & "D"

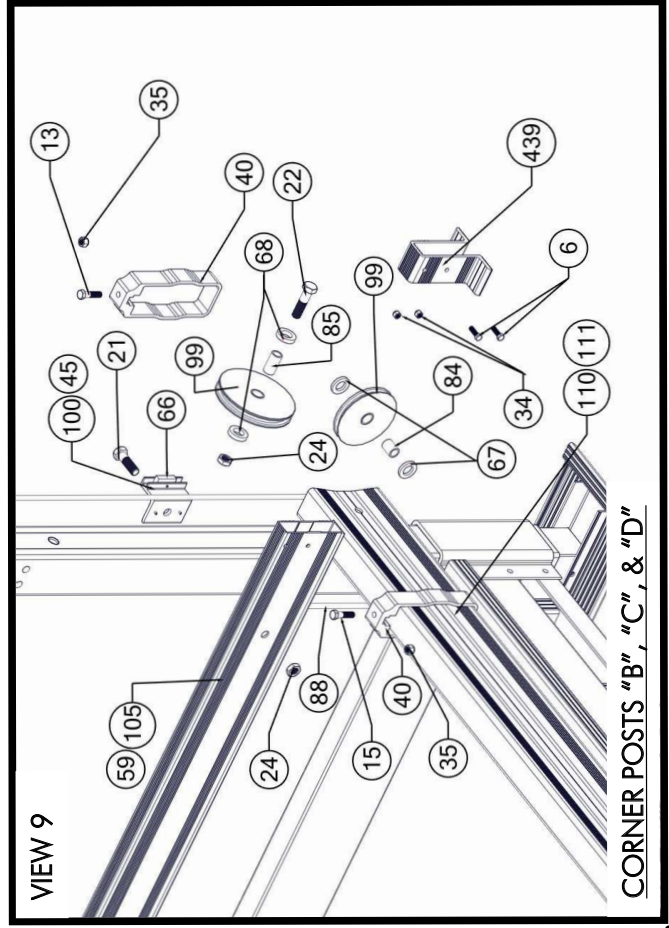
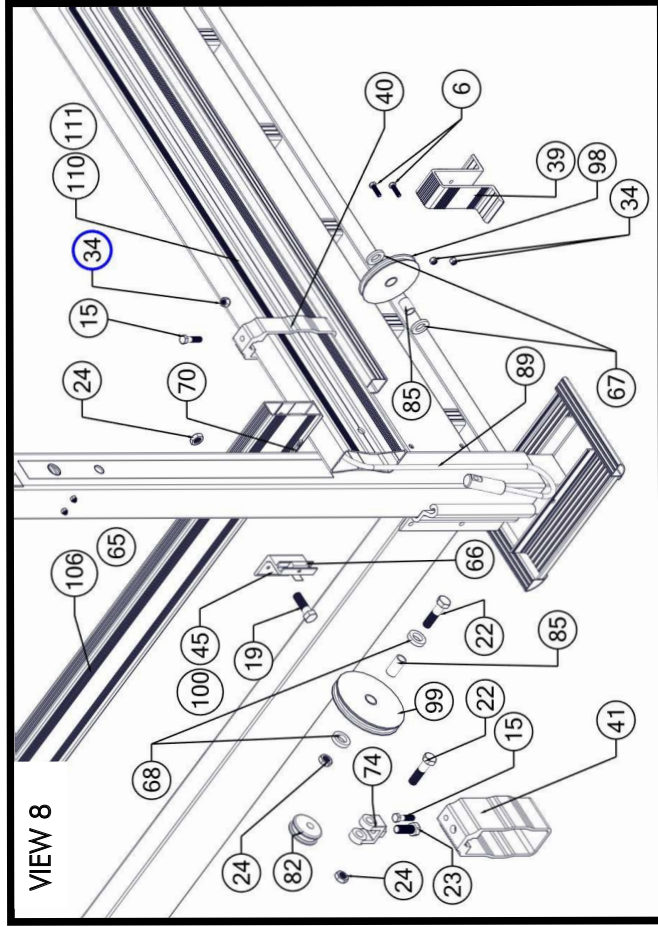
VSD 10,000 LIFT FRAME EXPLODED VIEWS 5-7

LIFT P/N 511-90075-01



VSD 10,000 LIFT FRAME EXPLODED VIEWS 8 & 9

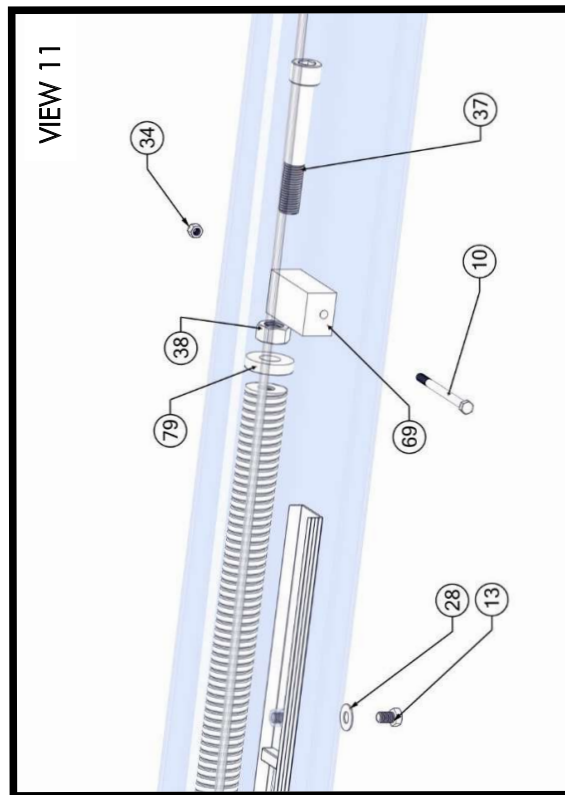
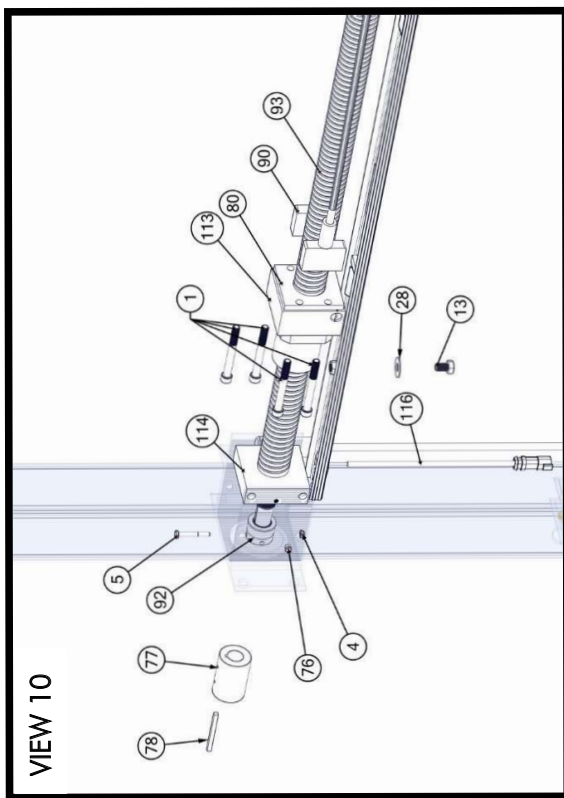
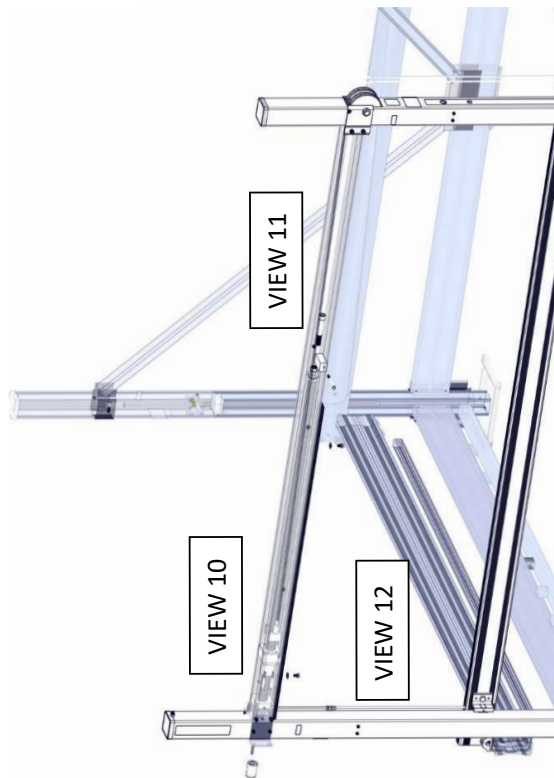
LIFT P/N 511-90075-01



NOTE (VIEW 9):
CORNER "D" IS SHOWN IN THIS VIEW. FOR CORNERS "B" & "C", ITEMS 20, 22, 69, 88, AND 98 ARE EXEMPT. ITEMS 109 & 110 ARE REPLACED WITH ITEM 108.

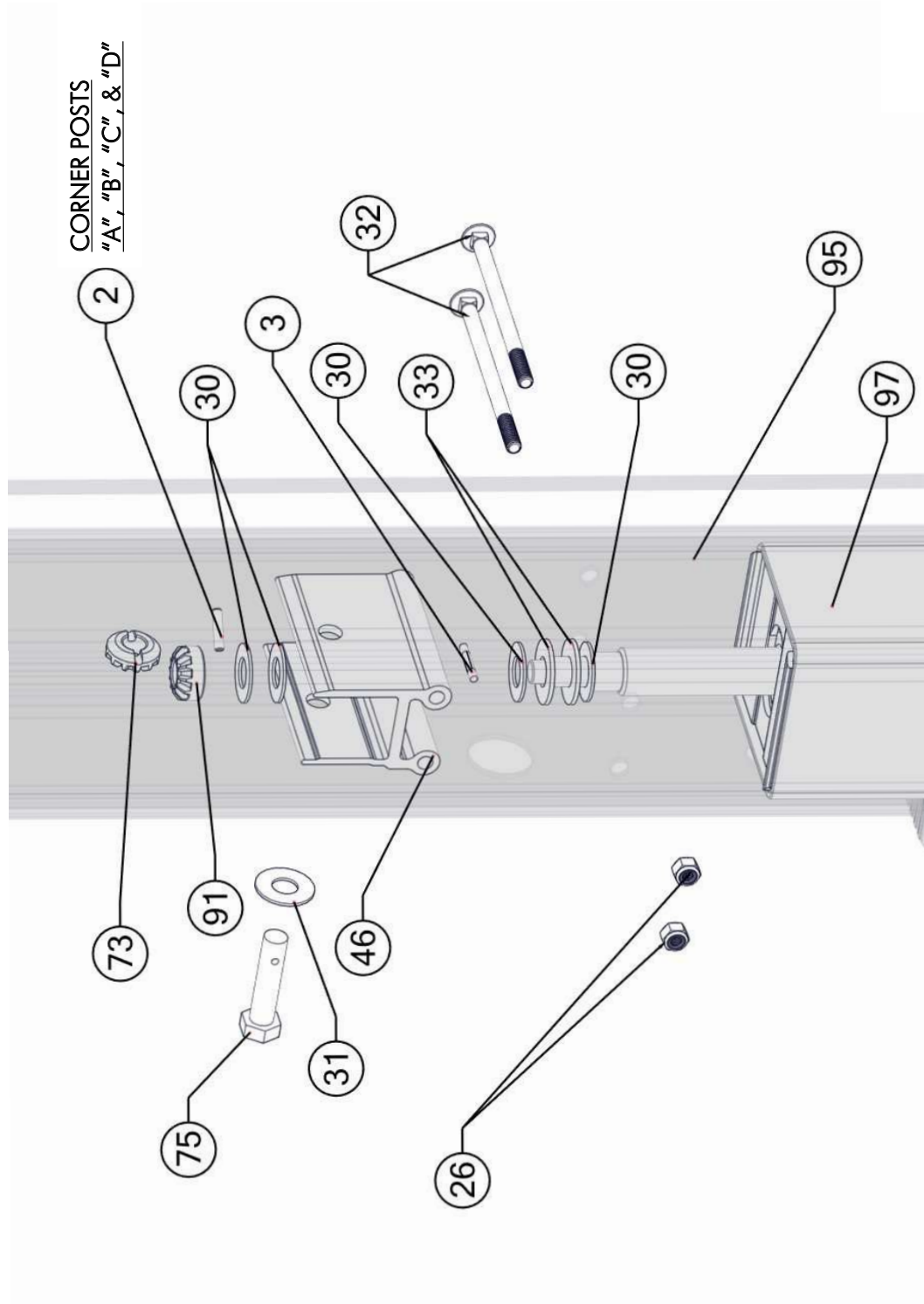
VSD 10,000 LIFT FRAME EXPLODED VIEWS 10 & 11

LIFT P/N 511-90075-01



VSD 10,000 LIFT FRAME EXPLODED VIEW 12

LIFT P/N 511-90075-01



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 after 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 fabrics (excluding color fading or matching 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 lift 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 lift 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 accessories 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-year 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, DC 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 McGregor, 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 (forty) 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.

FLOE manufactures an extensive line of other products



MODULAR SECTIONAL DOCKS – FLOE's Sectional Docks are a great value and ideal for lake lots with minimal space or hilly terrain where roll-in systems won't work. The docks sections break down in seconds with no tools for easy stacking storage.



FLOE open and enclosed trailers are available in many styles and sizes to accommodate your needs. FLOE trailers have an aluminum frame that resists corrosion and never rusts. Aluminum construction allows for a light trailer while still offering the strength you need.



The Cargo Max XRT Trailer is a world-class combination of style, durability and simplicity. The trailer is engineered with a high-strength extruded aluminum frame and an ultra-rugged high-density polyethylene trailer body. It can haul and be towed by ATVs, and is great for yard work, hunting, camping, cabin travel, construction, rental, shopping and almost any other use imaginable.



Surfing, absolutely! Wake boarding and skiing, you better believe it. Tubing, of course. A martini cruise at sunset or a quick trip to your favorite restaurant – whatever you decide to do, the Varatti Z22 delivers. Our philosophy is, we build the boat, you decide what to do with it. The Varatti Z22 has no restrictions on fun.



The Afina 3950 is the ultimate expression of our challenge to the status quo. Instead of simply following a checklist, we decided to completely reimagine what your boat should be. From unique features like power windows and a retractable roof providing integrated climate control to a hull that planes quickly coupled with easy maneuverability, this elevates boating into an art form.

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: _____
Serial
Number: _____
Date of
Purchase: _____

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

Your authorized FLOE Dealer:



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

*All material copyright © 2023 FLOE International, Inc. Unauthorized reproduction is strictly prohibited.
Specifications subject to change without notice.*