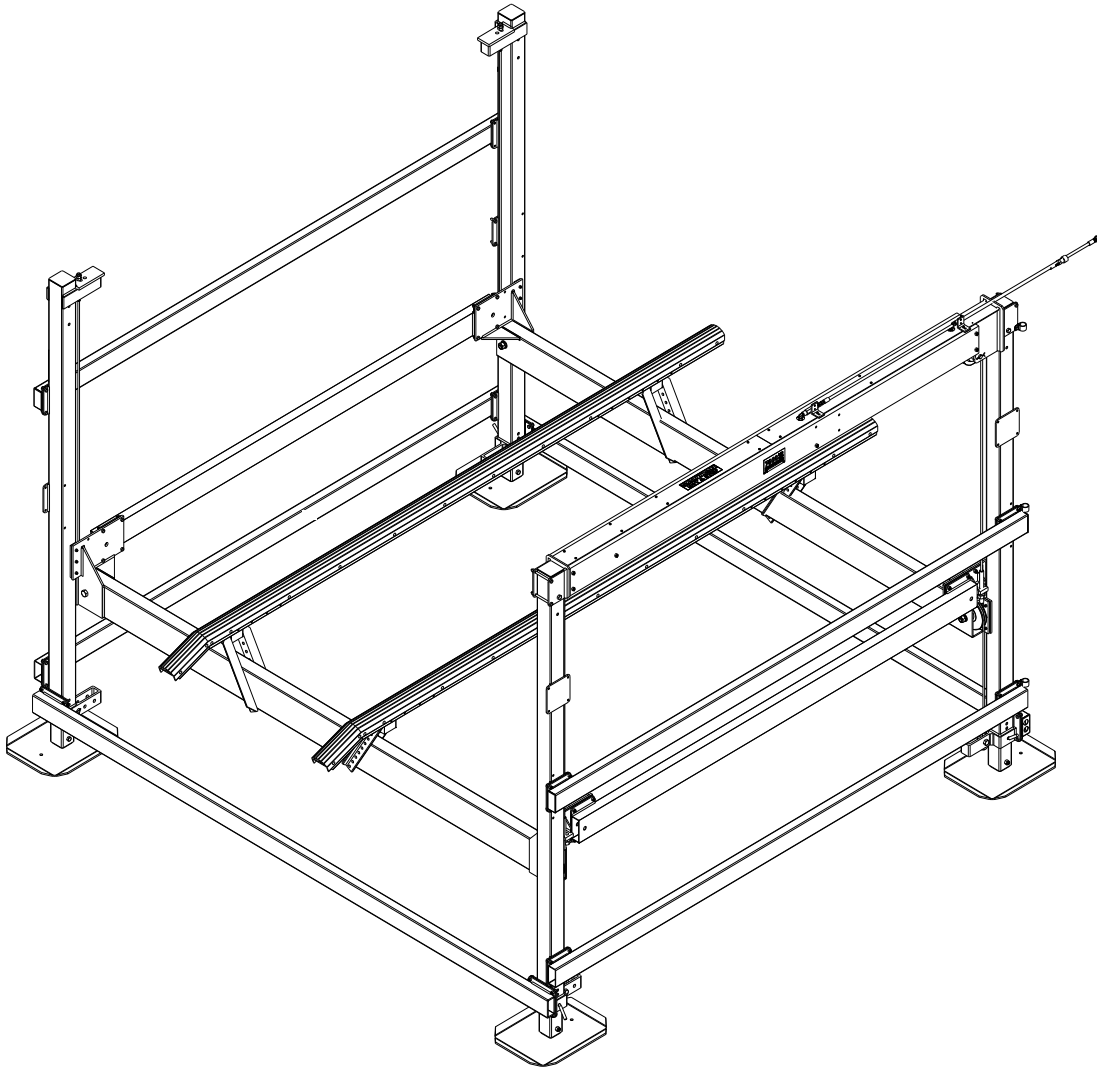




# HVLS VERTICAL LIFT INSTRUCTIONS

(Applies to P/N's 3654491, 3654492, 3654493, 3654494, 3654505, 3654570,  
3654660, 3654540, 3654670, 3654680, 3654690)



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# PRE-LIFTING CHECKLIST

The lift and related equipment must be thoroughly inspected prior to each use. Only those who have read and understood this entire manual and related equipment manuals are qualified to do this inspection. This checklist is to be used as a guideline in conjunction with the maintenance and inspection procedures outlined in this manual. It is recommended that the inspection be maintained as a permanent record.

- Ensure the lift installation will clear all power lines and obstructions.
- Ensure all structural members of the lift are free of defects and damage that may affect the integrity.
- Ensure that an electric drive, if used, has been inspected and installed by a certified electrician in accordance with local electrical codes. A Ground Fault Circuit Interrupter (G.F.C.I.) must be installed by your electrician and work properly.
- Ensure that any user or dealer installed locking devices have been removed before operating the lift.
- Operate the lift first without, and then with, your boat on the platform to test the operation of both the lift and the winch.
- Ensure the boat is properly positioned on the lift before doing any raising or lowering.
- Ensure the lift is not being used beyond its rated capacity.
- Ensure any drain plug is in place on the boat before launching.
- Conduct the wire rope inspection procedure described in Chapter 5 at least monthly.
- Ensure the leg pins connect the vertical legs to the adjustable legs. Ensure the leg height has been properly adjusted according to the water depth.
- Ensure the frame and platform fastenings are tight.
- Ensure the lower diagonal braces are installed in each corner.
- Ensure the frame is level and square according to the dimensions shown in Figure 3-6, Chapter 3.
- Ensure the cable end loops of the load and spreader tubes are fastened to the bracket at the bottom of each vertical leg.
- Ensure the cable studs opposite the cable end loops in the platform assembly are tight. If tightening is needed, follow the sequence described in Section 3.8 of Chapter 3. Then tighten the jam nuts to the cable nuts to lock the position.

# 1. SAFETY

## 1.1. INTRODUCTION

Your Reimann & Georger Corporation Marine Products Aluminum Vertical Lift has been engineered to provide lifting performance, long term economics and safety advantages that no other type can match. However, even a well-designed and well-built lift can malfunction or become hazardous in the hands of an inexperienced and/or untrained user. Therefore, read this manual and related equipment manuals thoroughly before operating your lift to provide maximum safety for all operating personnel, and to get the maximum benefit from your equipment.



### **WARNING:**

**DO NOT OPERATE THIS LIFT WITHOUT STUDYING THIS ENTIRE MANUAL. FAILURE TO DO THIS CAN LEAD TO EQUIPMENT MISUSE WITH RESULTING DAMAGE AND/OR SERIOUS PERSONAL INJURY. CONTACT YOUR RGC® MARINE DEALER IF YOU HAVE ANY QUESTIONS.**

## 1.2. SAFETY DEFINITIONS

A safety message alerts you to potential hazards that could hurt you or others or cause property damage. The safety messages or signal words for product safety signs are **DANGER**, **WARNING**, and **CAUTION**. Each safety message is preceded by a safety alert symbol and is defined as follows:

**DANGER:** Indicates an imminently hazardous situation which, if not avoided, **will** cause death or serious injury. This safety message is limited to the most extreme situations.

**WARNING:** Indicates a potentially hazardous situation which, if not avoided, **could** result in death or serious injury.

**CAUTION:** Indicates a potentially hazardous situation which, if not avoided, **may** result in minor or moderate injury. It may also be used to alert against unsafe practices and property-damage-only accidents.

## 1.3. EQUIPMENT SAFETY LABELS

These labels warn you of potential hazards that could cause injury. Read them carefully. If a label comes off or becomes illegible, contact a Reimann & Georger Corporation dealer for a free replacement.

## 1.4. EQUIPMENT AND PERSONNEL SAFETY

1. Do not use the lift if it shows any signs of damage.
2. Do not exceed the rated maximum lifting capacity of this equipment.
3. When using a direct drive or motorized friction drive, understand the use of all controls and connections provided with it.



### **WARNING:**

**ALL ELECTRIC DRIVES MUST BE INSTALLED AND INSPECTED BY A CERTIFIED ELECTRICIAN IN ACCORDANCE WITH LOCAL ELECTRICAL CODES. THIS INSTALLATION MUST INCLUDE A PROPERLY WORKING GROUND FAULT CIRCUIT INTERRUPTER. (G.F.C.I.)**

4. Never try lifting anything other than a boat with this equipment.
5. Never allow people in the boat any time it is suspended above the water on the platform.



### **WARNING:**

**DO NOT STAND OR WALK ON THE PLATFORM WHILE IT IS IN ANY RAISED POSITION. THIS CAN CAUSE SERIOUS PERSONAL INJURY.**

6. Do not allow anyone to swim or play under, near or on the lift at any time.

## 1.5. INSTALLATION SAFETY

1. Ensure that all bolts and nuts are fastened securely prior to operation.
2. Ensure the pulleys spin freely. If any pulley binds, replace it immediately.
3. Do not weld or otherwise modify the lift. Such alterations may weaken the structural integrity of the lift and void the warranty.
4. All lifting accessories such as pontoon brackets, pivoting bunks, and guide-ons, must be commercially manufactured, have a rated load capacity equal to that of the lift, and be properly maintained and installed.
5. Ensure that the frame is level and square.
6. The following precautions must be observed when lifting any part of this equipment:
  - a. Be sure of your footing.
  - b. Bend your knees and lift with your legs.
  - c. Hold the equipment section close to your body when lifting.
7. Wear heavy leather gloves when handling wire rope. Insufficient hand protection when handling wire rope can cause personal injury.

## 1.6. OPERATING SAFETY

### 1.6.1. General

1. Never use this equipment beyond its rated capacity. This can damage the lift and/or boat with resulting serious personal injury.
2. Before allowing anyone to operate the lift, be certain they fully understand the proper operating procedure.
3. Completely remove any user or dealer installed locking devices before operating the lift.
4. Follow the Pre-Lifting Checklist before operating.
5. Do not try lifting or launching your boat in rough water conditions. This can damage your boat and/or the lift.
6. The boat must be secured on the lift before raising or lowering. Failure to do this can cause equipment damage and/or serious personal injury.
7. Keep people and pets clear during operation of the lift.
8. Keep fingers and clothing clear of all moving parts.
9. Check the lift periodically for frayed cables and/or binding pulleys.
10. Do not attempt to make any adjustments on the lift while it is being operated.
11. Do not operate the lift under the influence of drugs, alcohol, or medication.
12. Never use the lift to hang or store any auxiliary equipment such as boating hardware.

## 1.7. 1.7 MAINTENANCE AND STORAGE SAFETY

1. At least once a year, the lift must be thoroughly inspected as described in the Maintenance chapter of this manual.
2. Completely lower the platform before performing any type of maintenance or repair.



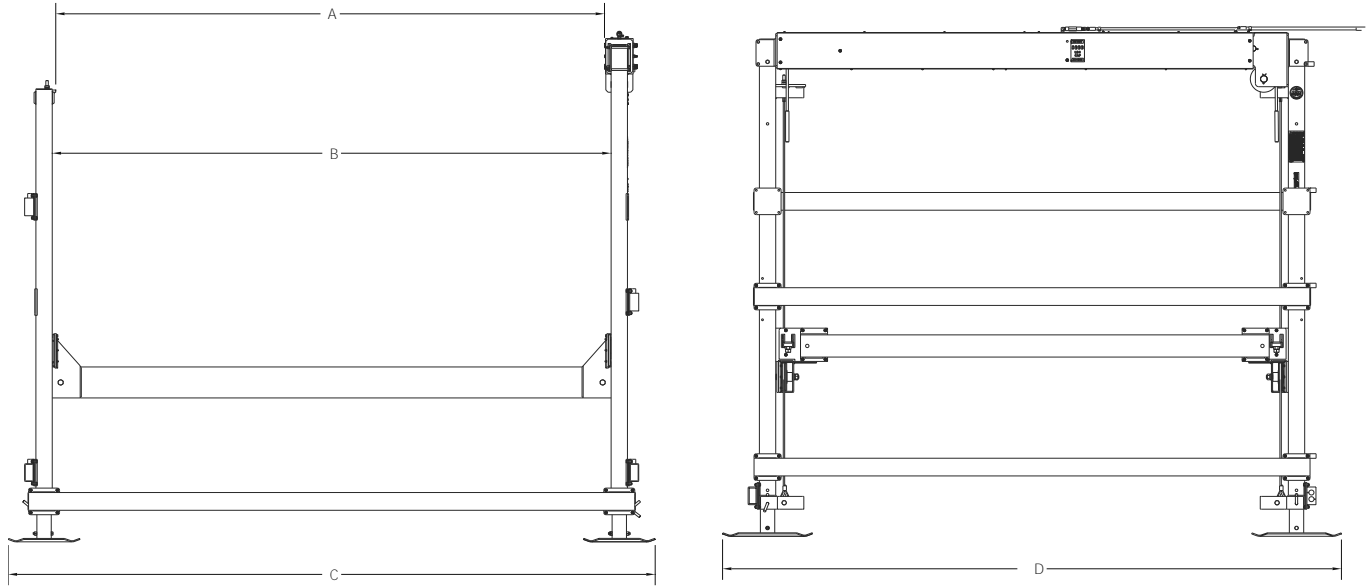
### **WARNING:**

**NEVER ALLOW ANYBODY TO WORK IN OR ON THE BOAT WHEN IT IS SUSPENDED ABOVE THE WATER ON THE LIFT.**

3. Immediately replace any components found to be defective as described in Chapter 5—Inspection and Maintenance.

## 2. SPECIFICATIONS

### 2.1. TECHNICAL DATA



Model	Weight Capacity (lbs)	Maximum Beam (in) A	Inside Width Between Legs (in) B	Cradle Travel (in)	Overall length (in, incl. feet) D	Overall width (in, incl. feet) C	Minimum platform height (in)	Lifting speed with full load (sec, down/up)	Approx. Shipping weight (lbs)
HVLS50124	5000	121	124	60	138	144	9	20/60	697
HVLS50124T	5000	121	124	72	138	144	9	24/72	630
HVLS70108T	7000	105	108	72	138	128	11	30/75	680
HVLS70124T	7000	121	124	72	138	144	11	30/75	785
HVLS80124	8000	121	124	72	138	144	10	40/100	856
HVLS80132	8000	129	132	72	138	152	10	40/100	924
HVLS100132	10000	129	132	72	158	152	10	50/120	1128

\*Measured from top of load tube to bottom of feet when the adjustable legs are fully retracted.

- Measurements are approximate.

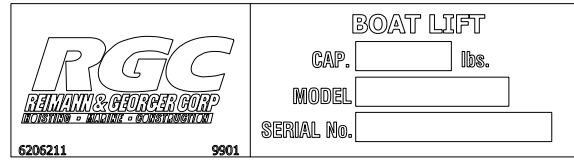
- All lifts include low-maintenance polymer sheaves, stainless steel hardware, and stainless wire rope.

- HVLS80124, HVLS80132, AND HVLS10132 – All come in standard and short hose versions: standard length is 32' used for more options like placing the control box on the dock and short length is 5' normally used with the control box shelf.

- Adjustable extension legs, vinyl-clad aluminum or carpeted wooden bunks, and AC or DC control box are required to complete installation.

## 2.2. NAMEPLATE AND SERIAL NUMBER TAG

It is important to identify your lift completely and accurately whenever ordering spare parts or requesting assistance in service. The lift has a product nameplate located at the top of vertical leg “D”. The label shows the model and serial numbers and capacity rating. The lift label should appear as the sample nameplate shown in Figure 2-1. Record the model, serial number, and capacity rating in this manual for future reference.



Typical Product Nameplate

MODEL \_\_\_\_\_

SERIAL NUMBER \_\_\_\_\_

CAPACITY RATING \_\_\_\_\_

## 2.3. OPTIONAL EQUIPMENT

The following options are available which enable you to customize your lift for your particular operation. Installation instructions are provided as part of each option kit.

1. **Acrylic Canopy** – Boats tucked neatly under the heavy duty canopy are protected from the elements, reducing the need for boat coverings. Various canopy sizes and colors are available.
2. **Full Length Guide-On** – Cushioned guide-ons make entering the lift easy in various water conditions.
3. **Motor Stop** – Assists in positioning boat on the lift for balanced lifting.
4. **Transport Kit** – Makes installation and removal of boat lift easier. You can purchase the complete kit or desired components.
5. **Pontoon Deck Brackets** – These brackets are designed to lift pontoon boats from under the deck. The vertical leg bumper kit is included which supplies carpeted side bumpers. Wood for bunks is not supplied.
6. **Pontoon Cradles** – Cradle brackets designed for lifting pontoon boats from under the pontoons. The vertical leg bumper kit is included which supplies carpeted side bumpers. Wood for bunks is not supplied.
7. **Deep Water Extension Legs** – Adjustable legs available in pairs with bracing. Standard lengths are 4’, 6’, 8’, and 10’.
8. **Upper / Lower Bumper Kit**—This cushioned wood kit mounts onto your lift in key locations to protect your boat while entering and exiting the lift in various water conditions. This is both a “stand alone” kit and a kit automatically supplied with the pontoon deck brackets and pontoon cradles.
9. **Hydraulic Power Unit Shelf**- This kit includes a shelf frame, support braces and hardware to attach to the leg ‘C’ on the lift.
10. **Solar Panel** – Slowly recharges battery when lift is unused. Extends interval between full recharges.
11. **AC Charger** – Recharges battery between periods of high usage or when insufficient solar energy is available.



### 3. INSTALLATION AND SETUP

#### 3.1. PRE-INSTALLATION CHECKS

1. Do not assemble the lift if any part shows any sign of damage.
2. Do not weld or otherwise modify the lift. Such alterations may weaken the structural integrity of the lift and void the warranty.
3. This product has been supplied with stainless steel hardware to protect against a harsh marine environment and provide outstanding performance. Due to the chemistry and surface condition of stainless steel, there is a natural tendency for the hardware to “gall, lock up, or seize” during assembly. To prevent this from occurring, it is **highly recommended** that the anti-seize supplied in the hardware bag be applied to the mating surfaces of all stainless steel fasteners before assembly. Lubricants containing molybdenum disulfide, graphite, mica or talc may also be used.



#### **CAUTION:**

**DO NOT EXCEED THE MAXIMUM TORQUE RATING ON ALL BOLTS**



#### **WARNING:**

**FAILURE TO APPLY A SUITABLE LUBRICANT TO THE MATING SURFACES OF STAINLESS STEEL THREADED FASTENERS MAY CAUSE GALLING AND/OR SEIZING OF ASSEMBLY.**

4. All lifting accessories such as pontoon brackets, pivoting bunks, guide-ons, and slings shall be commercially manufactured, have a rated load capacity equal to that of the lift, and be properly maintained and installed. Consult the manufacturer’s separate instructions provided for these accessories.



#### **WARNING:**

**ALL ELECTRIC DRIVES MUST BE INSTALLED AND INSPECTED BY A CERTIFIED ELECTRICIAN IN ACCORDANCE WITH LOCAL ELECTRICAL CODES. THIS INSTALLATION MUST INCLUDE A PROPERLY WORKING GROUND FAULT CIRCUIT INTERRUPTER. (G.F.C.I.)**

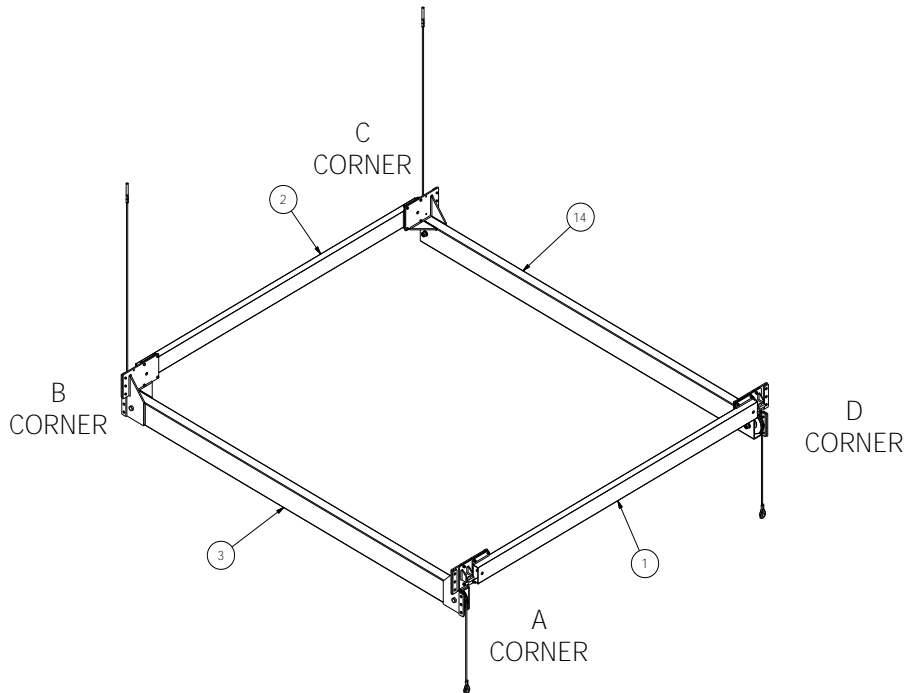
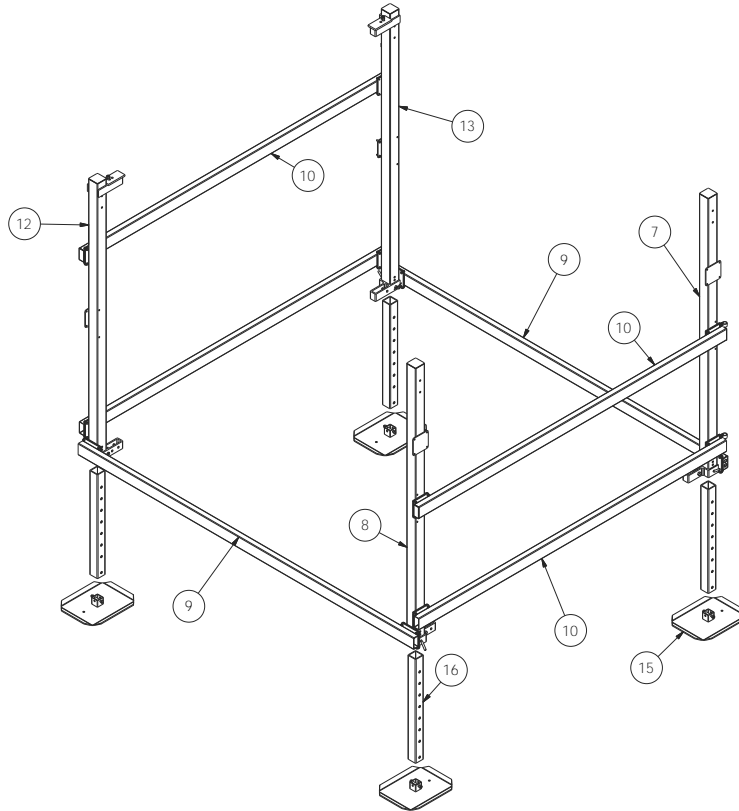
### 3.2. PRIOR TO SETUP

The part reference numbers and letters used in the subassembly drawings of sections 3.3 through 3.9 are listed in the parts lists of Section 7. Place one bag of hardware at each corner.



#### CAUTION:

**INSERT ALL BOLTS FROM THE INSIDE OF THE LIFT TO PREVENT DAMAGE TO YOUR BOAT. THE NUTS FASTEN ONTO THE OUTSIDE FACE OF THE LIFT. THE ONLY BOLTS THAT MAY BE INSERTED FROM THE OUTSIDE OF THE LIFT ARE THOSE ON THE BOTTOM PARTS OF THE BRACES.**



**Vertical Lift Frame & Platform Assembly**

The lift may be placed on either side of your dock. The cylinder is mounted onto vertical leg A and D.

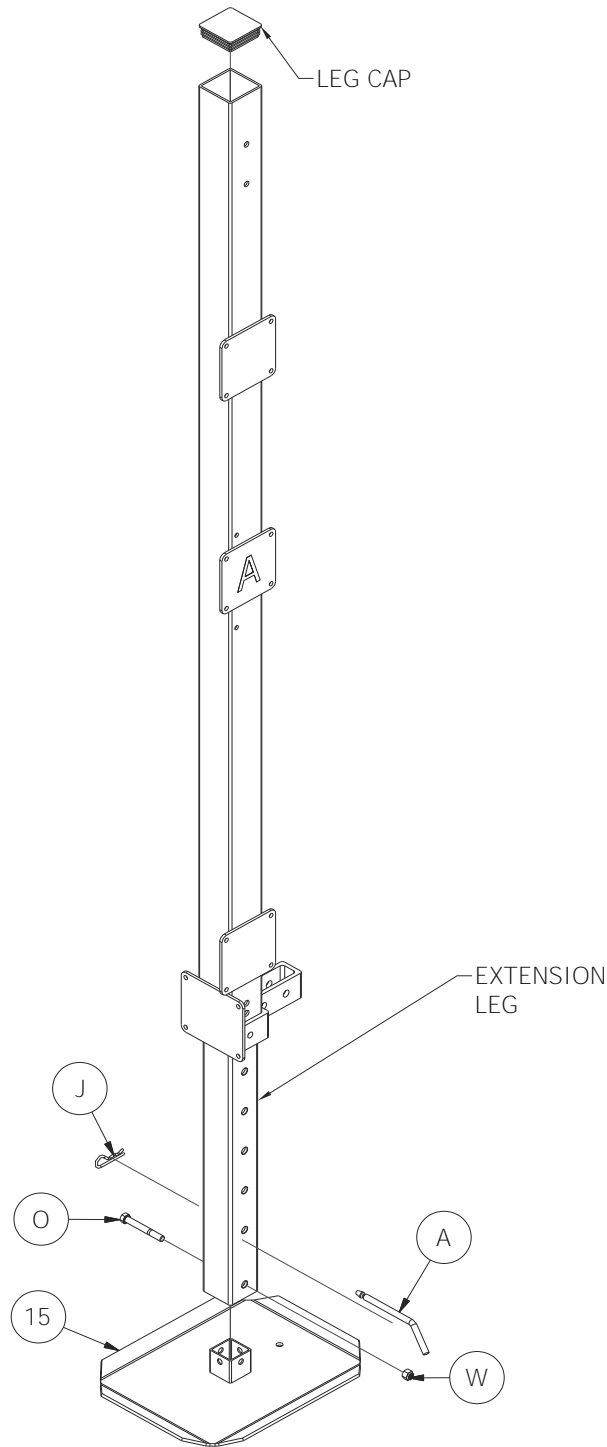


**WARNING:**

**BOAT MUST BE POSITIONED PROPERLY ON LIFT. IF WEIGHT OF BOAT IS NOT EQUAL ON BOTH FRONT AND REAR LOAD TUBES, THE LIFT WILL NOT OPERATE PROPERLY, CAUSING DAMAGE TO THE LIFT.**

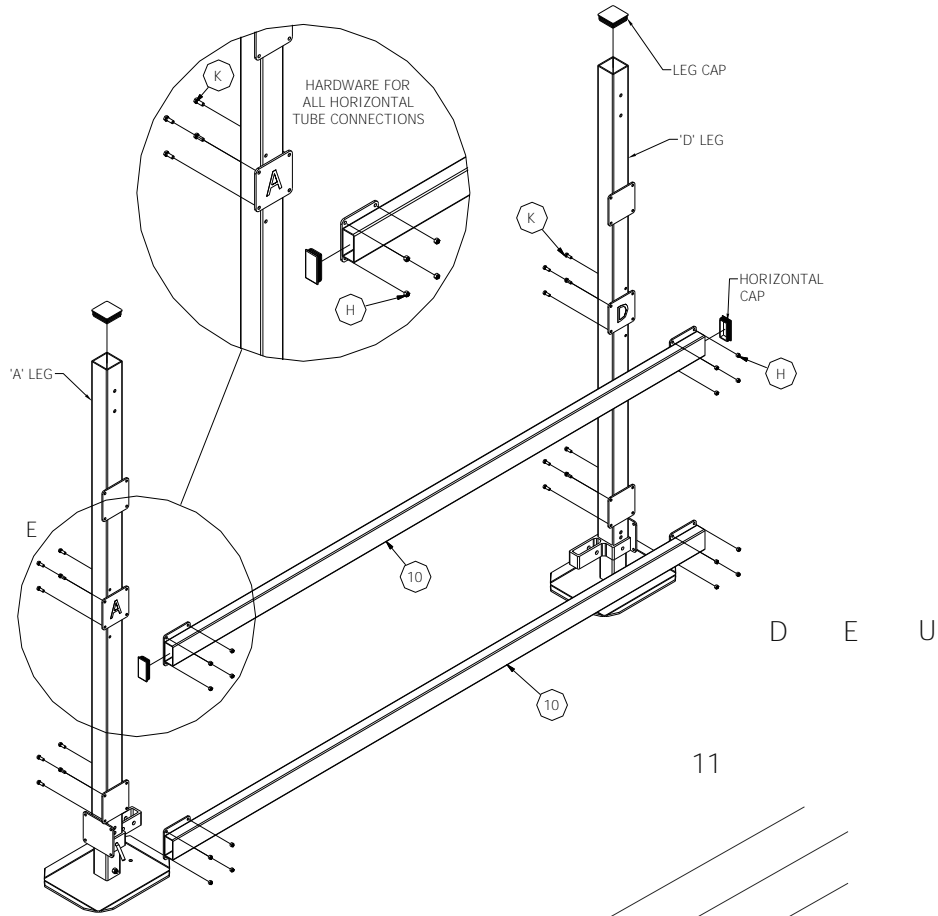
**3.3. VERTICAL LEG ASSEMBLY**

1. Fasten an extension leg (16) onto each of the foot plates (15) using supplied hardware (O&W). Insert these subassemblies into the bottoms of each of the vertical legs A, B, C, and D.
2. Adjust the leg height according to water depth: the deeper the legs are in the water, the higher the vertical legs should be mounted onto the extension legs. Connect the extension legs to the vertical legs with supplied VL Hitch Pins (A). Secure the hitch pins (A) with cotter pins (J).



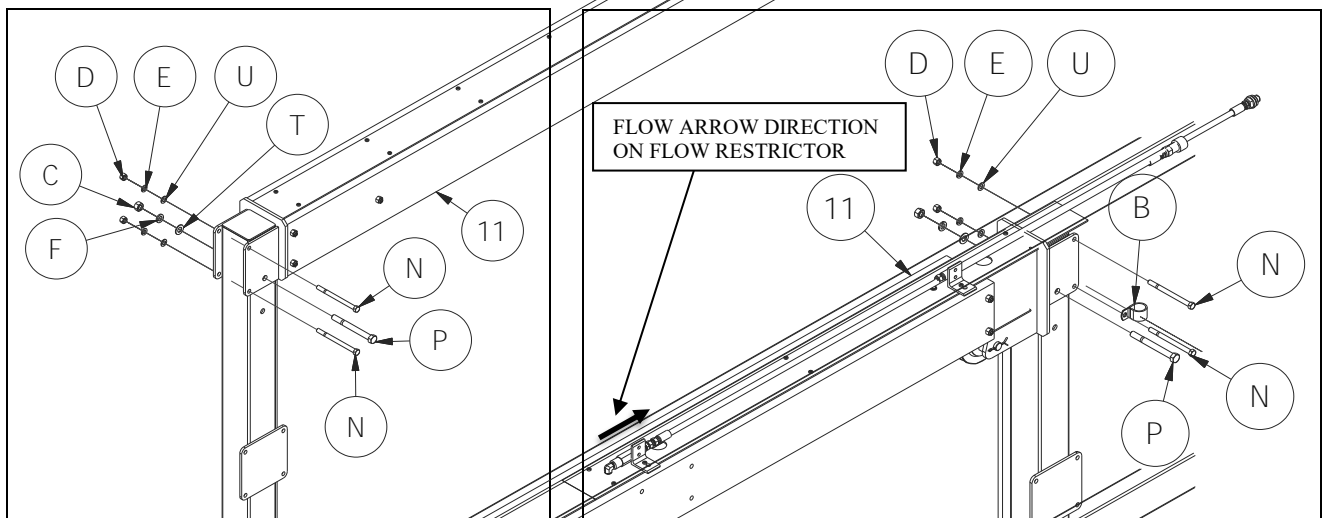
### 3.4. FRAME SIDE ASSEMBLY

1. Attach a pair of short horizontal tubes (10) between vertical legs A and D with hardware shown (H&K), but do not tighten. Repeat for legs B and C.



**Frame Side Assembly**

2. Install hydraulic cylinder assembly (11) to vertical leg "A" and "D".

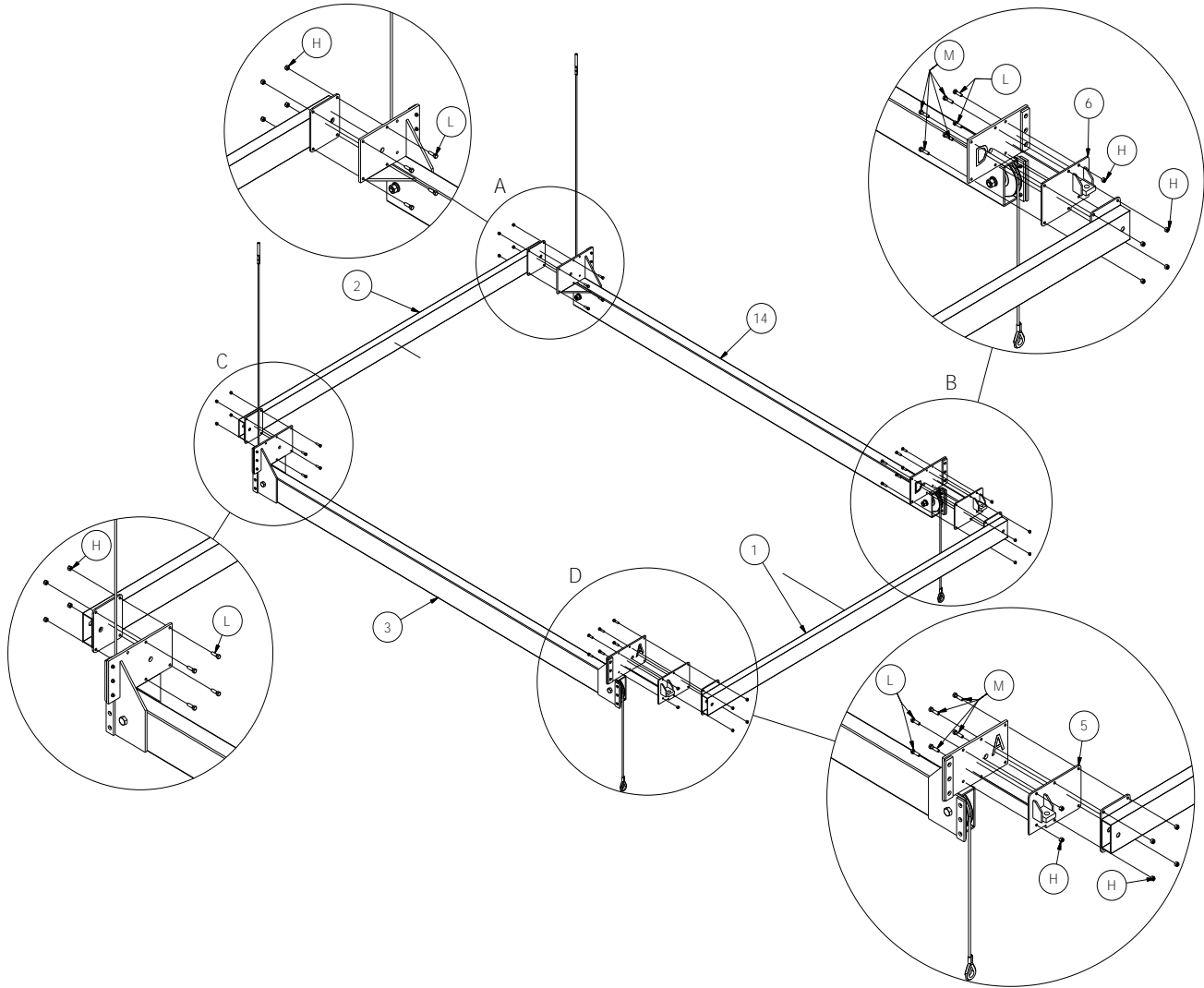


**HVLS Hydraulic Cylinder Mounting**

3. Lay the assembled sides down on the ground with the foot plates (15) facing one another and aligned, about 9 feet apart.
4. Square the side assemblies by adjusting the verticals to achieve the same measured distance between them at both top and bottom. Tighten all fasteners (B, C, D, E, F, N, P, T, U). Re-measure and align if necessary.

### 3.5. PLATFORM ASSEMBLY

1. Position both load tubes (3&4) and spreader tubes (1&2) on the ground as shown in the diagram.
2. At each corner of the platform, align the holes in the spreader tube (1&2) with the holes in the load tube (3&4). At the A leg location place "A" anchor mount spreader weldment and at the B leg location place a "B" anchor mount spreader weldment and then fasten the tubes together.



Platform Assembly

### 3.6. MOUNTING THE PLATFORM TO THE FRAME

1. Ensure all platform fastenings are tight before mounting onto the frame.
2. Lift one of the frame sides and position it along a spreader tube side of the platform.
3. Place a platform corner onto each of the foot plates so that the frame side stands.
4. Repeat Steps 2 and 3 for the other side of the lift.



#### CAUTION:

**THE LOAD AND SPREADER TUBES OF THE PLATFORM ARE ALREADY REEVED. WHEN PLACING THE ASSEMBLED PLATFORM INTO THE FRAME, ENSURE THE CABLE LOOPS ARE PASSING OVER THE SHEAVES AND POINTING TOWARDS THE BOTTOM BRACKET OF EACH VERTICAL LEG. EQUIPMENT MALFUNCTION AND DAMAGE WILL RESULT IF THE PLATFORM IS NOT ORIENTED THIS WAY.**

5. Fasten a long horizontal tube (9) across each end to connect the two sides using hardware. **DO NOT TIGHTEN.**
6. Square the frame by adjusting the verticals to achieve the same measured distance between them at both top and bottom. Tighten all fasteners. Re-measure and align if necessary.
7. Install the (8) plastic caps provided onto the tops of the four vertical legs and the ends of the upper short horizontal tubes.

### 3.7. PLATFORM REEVING AND ADJUSTMENT

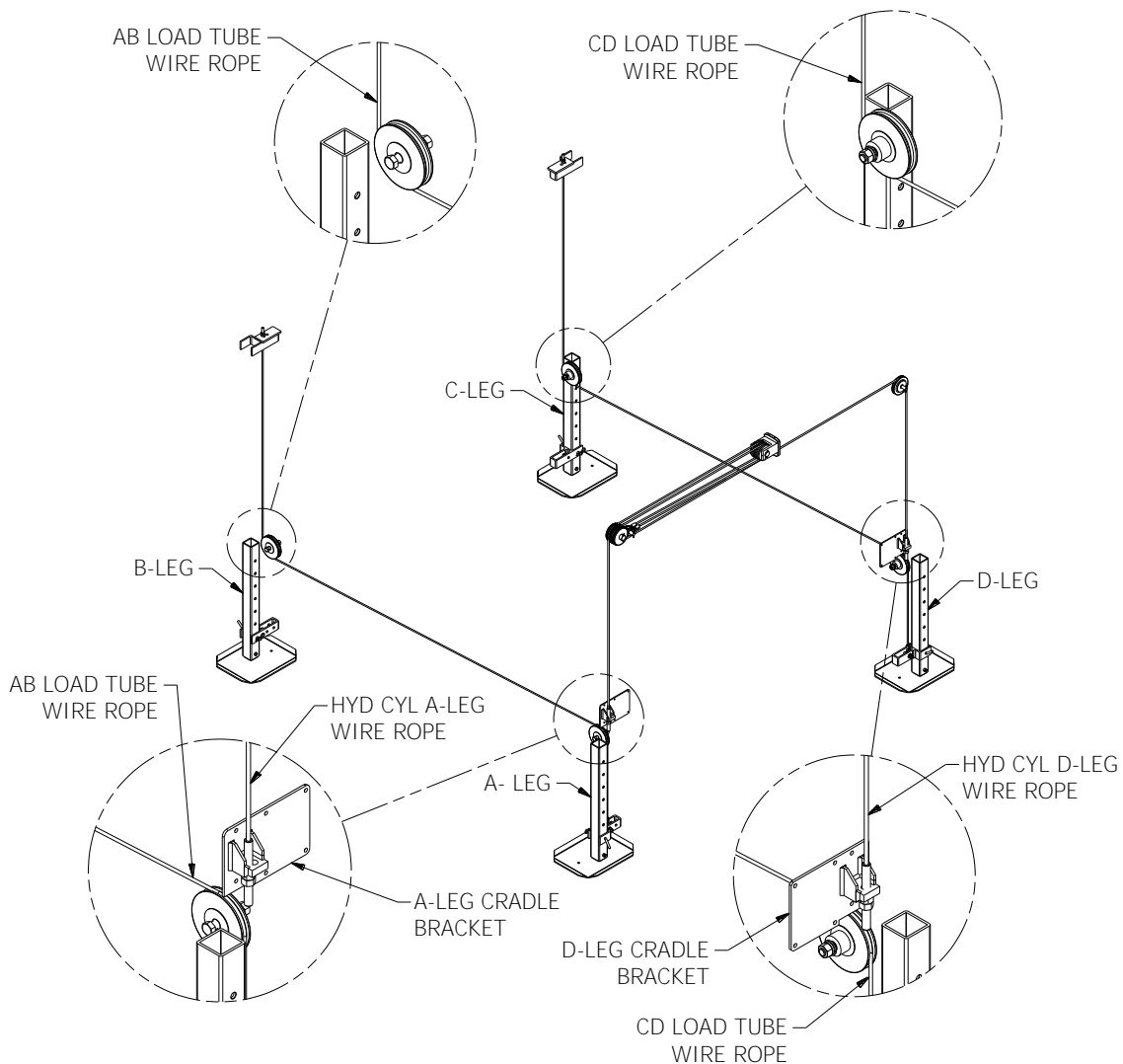
1. Position the platform near the bottom end of its lifting range. Ensure the platform is level.
2. The load tubes are already reeved. Fasten the cable end loops to the bracket provided at the bottom of the A and D vertical legs. Do not overtighten!



#### CAUTION:

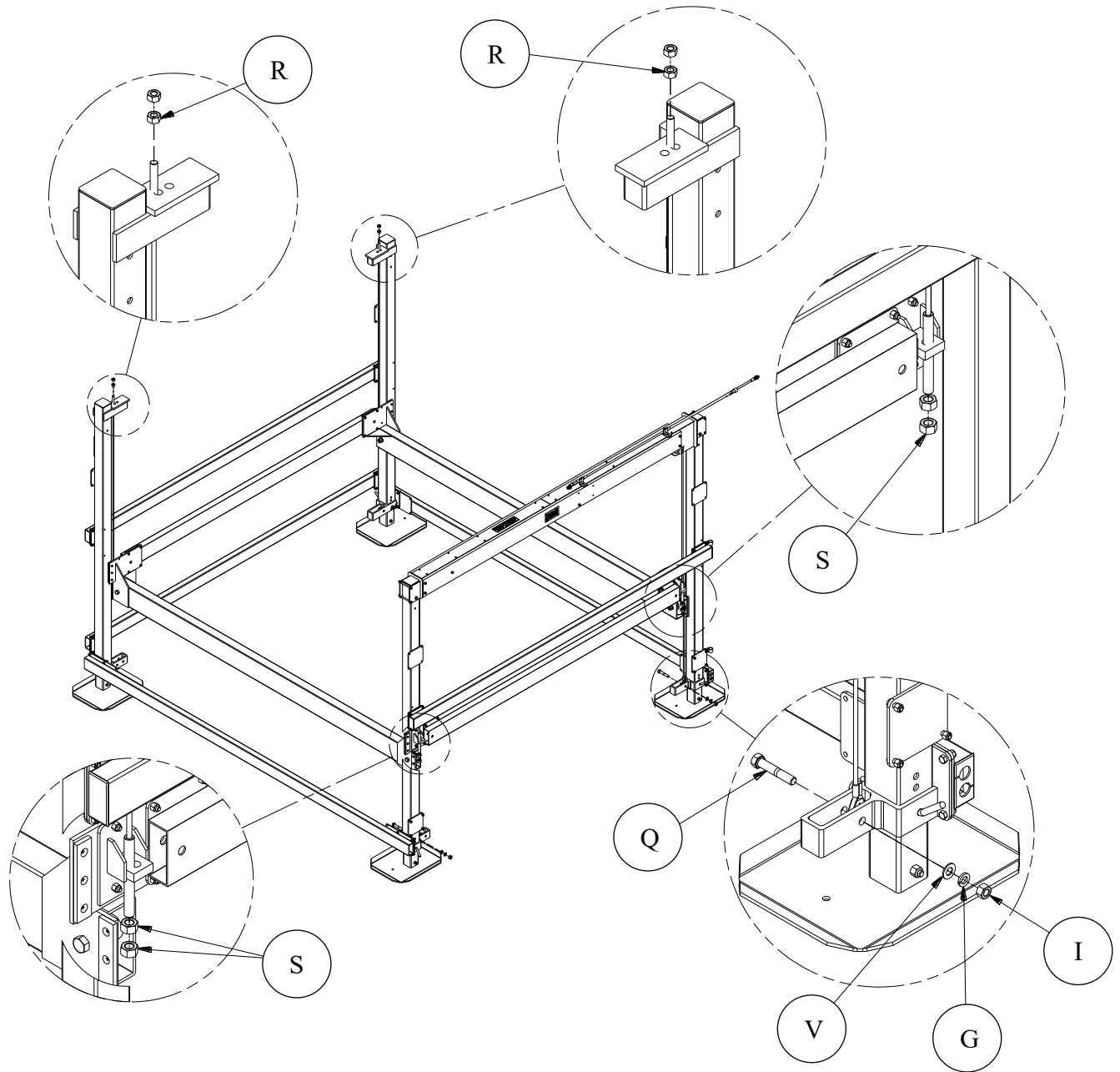
**WEAR HEAVY LEATHER GLOVES WHEN HANDLING WIRE ROPE. FAILURE TO DO THIS CAN CAUSE SERIOUS PERSONAL INJURY.**

3. Using a 7/8" open end wrench for 5K/7K and 1-1/8" open-end wrench for larger, tighten the cable studs opposite the cable end loops in the following order.  
Step 1: Tighten down the nut to add tension to the A-B Load tube cable at the top of the "B" leg.  
Step 2: Tighten down the nut to add tension to the C-D Load tube cable at the top of the "C" leg.
4. Add and tighten the jam nuts to the cable nuts to lock the position.
5. During operation, when the platform is being lifted, it is normal for the one cable in the C-D load tube to alternate from being tense to going slack. If you notice this, it is not necessary to further tighten down the nuts.
6. If the boat is not lifting level because the stern is lifting higher or lower than the bow, the cylinder assembly cables are not adjusted properly. Repeat the first two substeps under Step 3.7 above.



### 3.8. REEVING THE HYDRAULIC CYLINDER ASSEMBLY

1. Using a 7/8" open end wrench for 5K/7K and 1-1/8" open-end wrench for larger, tighten the cable nuts (S) on the cable stud.
2. Tighten down the nut (R) to add tension to the AB Load Tube Cable at vertical leg A.
3. Tighten down the nut (R) to add tension to the C-D Load tube cable at vertical leg D.
4. Add and tighten the jam nuts (R) to the cable nuts (R) to lock the position.
5. During operation, when the platform is being lifted, it is normal for the cable in the A-B & C-D load tube to alternate from being tense to going slack. If you notice this, it is not necessary to further tighten down the nuts.
6. If the boat is not lifting level because the stern is lifting higher or lower than the bow, the load tube cables are not tight enough. Repeat steps two thru four above.



Hydraulic Cylinder Cable Reeving

### 3.9. HYDRAULIC HOSE ROUTING

If routing hoses to the side opposite the cylinder assembly:

1. The hydraulic hoses are assembled onto the hydraulic cylinder assembly. Route and secure the hydraulic hoses down along leg C, through the lower horizontal tube, up along leg D and connect into the power unit.
2. Clamps have been provided to attach the hoses to existing mounting holes on the lift. Plastic caps have been provided to protect the hoses inside the lower horizontal tube.



#### **CAUTION:**

**WHEN ROUTING HOSES, MAKE SURE THE HOSES ARE PROTECTED FROM DAMAGE AROUND SHARP CORNERS AND POSSIBLE DAMAGE FROM YOUR BOAT.**

### 3.10. MOVING LIFT TO OPERATING POSITION

1. The following precautions must be observed when moving your lift for any reason:
  - a. Be sure of your footing.
  - b. Bend your knees and lift with your legs.
  - c. Hold the lift section close to your body when lifting.
2. After moving your lift to the operating position, ensure that the frame is square and that the lift sets level.



#### **CAUTION:**

**SEVERE OUT OF LEVEL INSTALLATION MAY CAUSE BINDING, RESULTING IN EQUIPMENT DAMAGE.**



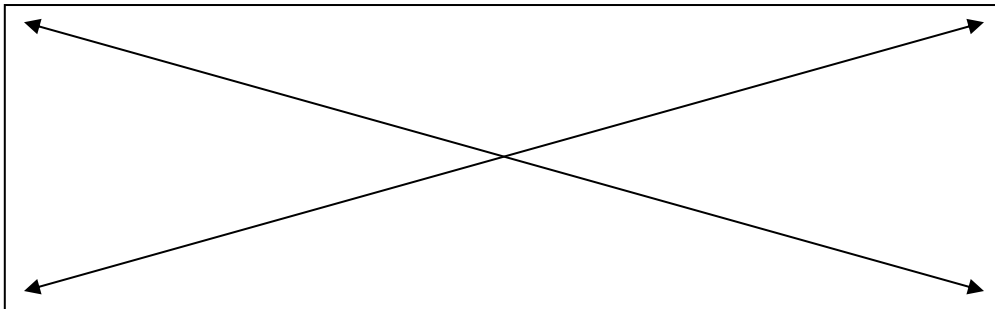
#### **CAUTION:**

**FRAME MUST BE SQUARE TO PREVENT DAMAGE AND/OR IMPROPER FITTING OF CANOPY FABRIC IF SO EQUIPPED.**

3. Verify frame is square by measuring the diagonal distance from the outside of frame corner to opposite corner. Repeat for alternate corners. The **difference between the two measurements shall not exceed 1/4 of an inch.**

#### **Frame Diagonal Measurement Diagram**

(Measure to Outside Corners)





## 4. OPERATION

### 4.1. BEFORE OPERATING THE LIFT

1. Review and follow all the safety precautions given in Chapter 1.
2. Do not use the lift if it shows any signs of damage.
3. Insure that all bolts and nuts are fastened securely prior to operation.
4. Ensure that the frame is square and that the lift sits level.



#### **WARNING:**

**IF THE FRAME IS NOT SQUARE OR THE LIFT IS NOT LEVEL, BINDING MAY RESULT. THIS CAN CAUSE PERSONAL INJURY AND/OR EQUIPMENT DAMAGE.**

5. Never try lifting anything other than a boat with this lift.



#### **WARNING:**

**NEVER TRY TO USE THIS EQUIPMENT BEYOND ITS RATED CAPACITY. THIS CAN DAMAGE THE LIFT AND/OR BOAT RESULTING IN PERSONAL INJURY.**

**THE BOAT MUST BE PROPERLY POSITIONED ON THE LIFT BEFORE DOING ANY RAISING OR LOWERING. FAILURE TO DO THIS CAN CAUSE PERSONAL INJURY AND/OR EQUIPMENT DAMAGE.**

6. Never try to lift or launch your boat in rough water conditions. This can damage your boat and/or the lift.
7. Follow the Pre-Lifting Checklist before operating.
8. Read and know the instructions and insure that everyone understands the proper operating procedure.
9. Understand the use of all the controls and connections provided with the power supply and the remote transmitter.

### 4.2. TESTING LIFT OPERATION

After the lift installation is complete, it is important to test it for proper functioning before any load is applied. Proceed as follows:

1. Use the up/down switch inside the control box to cycle the lift up and down. Insure that the hydraulic hoses are not binding or being pinched by any part of the lift.



#### **WARNING:**

**DO NOT STAND OR WALK ON THE LIFT PLATFORM WHILE IT IS IN ANY RAISED POSITION. THIS CAN CAUSE SERIOUS PERSONAL INJURY.**

2. The loading platform should move up and down smoothly without excessive stress or squeaking.
3. After cycling the lift a couple of times, inspect all hardware to insure that they are still secure and tight. Also test the remote control and underwater lighting system.
4. Contact your authorized dealer if the hydraulic system fails to perform as described in this section. Do NOT tamper with either system.

### 4.3. TESTING LIFT WITH REMOTES

1. To unlock the remotes, press the two blue buttons simultaneously, this will unlock the unit. To lock the remote, press the two blue buttons simultaneously will lock the unit.
2. Press the 'UP' button to make the lift go in the upward direction. Press 'DOWN' to make the lift go in the downward direction.

#### 4.4. RAISING AND LOWERING THE PLATFORM

1. Position the boat so that the boat's center of gravity is between forward load tube and rear foot.
2. Carefully raise the platform until the bunks "capture" the boat. Stop the lift and check to see that the bunks have automatically positioned themselves to the shape of the hull, as they were installed to do in Chapter 3. If this has occurred, continue bringing the boat out of the water until it is about 1 foot above the surface.



#### **WARNING:**

**NEVER ALLOW PEOPLE IN THE BOAT ANY TIME IT IS SUSPENDED ABOVE THE WATER ON THE LIFT.**

3. Keep fingers and clothing clear of all moving parts. Keep people clear during operation of the lift.
4. Stop the lift again and check the stability of the lift. Insure that it is remaining level and will not topple over.
5. Continue lifting the boat, closely observing the position of the lift, until the platform is in the fully upright and over center position.
6. Remove the boat from the lift and check to see that the lift is still level. If not, the legs will have to be re-adjusted.



#### **CAUTION:**

**ALWAYS ADJUST THE HEIGHT OF THE LIFT TO LIMIT WAVE ACTION AGAINST THE HULL. WAVE ACTION CAN SERIOUSLY DAMAGE THE LIFT AND/OR YOUR BOAT.**

7. Two weeks after installation, check to see that the lift is still level, as it may have settled over time. Readjust the legs as described above and repeat this inspection and adjustment procedure at the frequency found necessary.
8. After removing the boat from the lift, re-tighten the bunk bolts as required.

#### 4.5. SECURING LIFT WHEN NOT IN USE

1. Make the lift visible by leaving the platform in any elevated position when it is not loaded with a boat. This prevents the lift from being a hidden underwater obstruction, and protects the bunks from prolonged water immersion.
2. Lock out your control box to prevent unauthorized use when your boat lift is unattended. Never assume you will find the lift in the same condition that you left it.
3. When storing the boat on the lift, the following additional precautions must be observed:
  - a. When storing the boat, the platform must be in the upright over center gravity lock position for maximum safety. The over center position will prevent the boat from lowering if any hydraulic leak occurs.
  - b. Position the boat on the platform so that the boat's center-of-gravity is between the forward load tube and the rear foot plates when in the down position.
  - c. Prevent rainwater from accumulating in your boat when leaving it on the lift for long term storage. A boat that has water in it from a rainstorm could exceed the recommended weight capacity of the lift. **Just 1 gallon of water weighs over 8 pounds.** Be sure to remove the plug while the boat is up on the lift. Make sure you replace the plug prior to launching your boat.

## 5. INSPECTION AND MAINTENANCE

### 5.1. GENERAL MAINTENANCE RULES

1. Do not allow persons other than authorized service personnel to repair this equipment.
2. If slings are used, inspect them for deterioration. Replace them immediately if they are worn.
3. Do not weld or otherwise modify the lift. Such alterations may weaken the structural integrity of the lift and invalidate your warranty.
4. Completely lower the lift before performing any type of maintenance or repair.
5. Immediately replace any components found to be defective.



#### **WARNING:**

**BEFORE STARTING ANY MAINTENANCE ON THE LIFT, DISCONNECT AND LOCK OUT THE POWER SUPPLY TO PREVENT ACCIDENTAL OPERATION.**



#### **CAUTION:**

**POOR OR IMPROPER MAINTENANCE CAN LEAD TO EQUIPMENT DAMAGE OR FAILURE.**

### 5.2. WIRE ROPE INSPECTION PROCEDURE

Inspect the wire rope prior to each use for signs of wear, damage, or pinching. Inspect the entire wire rope working length. Thoroughly inspect the rope sections that pass over sheaves or drums, or that make opposing turns. Inspect wire rope and end attachments carefully. While inspecting, examine sheaves, guards, guides, drums, flanges, and other surfaces contacting wire rope during operation. Correct any condition harming the rope in use or other damage or worn surfaces at this time.

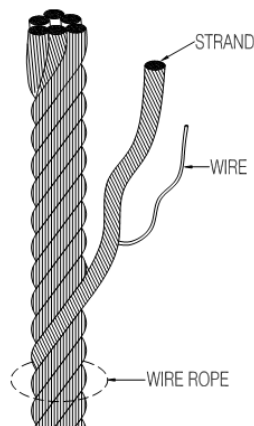


#### **CAUTION:**

**WEAR HEAVY LEATHER GLOVES WHEN HANDLING WIRE ROPE. INSUFFICIENT HAND PROTECTION WHEN HANDLING WIRE ROPE CAN CAUSE PERSONAL INJURY.**

Remove and immediately replace wire rope with one or more of the following defects:

1. Corrosion
2. Broken wires:
  - (a) One or more valley breaks. A valley break is a wire break occurring in the valley between two adjacent strands.
  - (b) Six randomly distributed broken wires in one rope lay. A rope lay is the length of rope along which one strand makes a complete revolution around the rope. See Figure 5-1. Keeping the rope clean and wound evenly on the winch drum will increase its life and efficiency.
3. Abrasion: Scrubbing, flattening or peening causing loss of more than one-third of the original diameter of the outside wires.
4. Kinking: Severe kinking, crushing, bird caging or other damage causing distortion of the rope structure. Bird caging is a bulging in the cable caused by the individual wires becoming untwisted. This untwisting of individual wires is usually caused by impact loading on the cable (such as a sudden stop).



**Wire Rope Components**

5. Heat damage: Evidence of any heat damage caused by a torch or by contact with electrical wires.
6. Reduction of more than 1/64 inch from a nominal 5/16-inch or less diameter cable. Reduction of more than 1/32 inch from a nominal 3/8-inch to 1/2-inch diameter cable.

### 5.3. ANNUAL INSPECTION

At least once a year, the lift must be thoroughly inspected using the following procedure.



#### **WARNING:**

**DO NOT ALLOW ANYBODY TO USE THE LIFT UNTIL THIS MAINTENANCE IS COMPLETED.**

1. Tighten all bolts.
2. Clean cylinder rods.
3. Check that all the pivot pins are lubricated properly.
4. Check frame thoroughly for defects.
5. Inspect all hydraulic lines, fittings and hoses for leaks and risks of rupture as follows:
  - a. Inspect each hydraulic line, fitting, and hose for breaks, cracks, worn spots, bulges, chemical attack, kinks or any other damage. Never try to stop any detected leak with any body parts. Do not put your face close to suspected leaks. Hold a piece of cardboard close to suspected leaks and then inspect the cardboard for signs of hydraulic oil.
6. Replace a damaged line, fitting or hose immediately. Never repair the part.

### 5.4. REMOTE CONTROL INFORMATION

The remote transmitter can de-program due to either a power loss (dead battery) or electrical interference, which will require re-programming of the transmitter.

Proper function of the RC system is dependent upon several factors that are not controllable by the manufacturer. RGC is not responsible for the following: Improper installation, Low battery, Natural occurrences, Use other than intended, Location of panel, receiver or transmitter too close to interfering metal objects, Multiple RC panels within 15 feet of each other, Use in area with external interference such as radio, cell phone, and TV towers or a natural magnetic field, Blocked or shielded antenna, Other transmitter interference from cell phones, cordless phones, wireless systems, CB and mobile transmitters, computer and industrial equipment, electric motors, even fluorescent lights.

See the instruction manual on the power unit for re-programming the receiver & transmitter.

### 5.5. STORAGE PROCEDURE

1. Position boat on platform so the lower unit of the motor is against the optional motor stop (if used).
2. A boat that has water in it from a rain storm could exceed the recommended weight capacity for the lift. Just 1 gallon of water weighs over 8 pounds. Be sure to remove the plug while the boat is up on the lift. Make sure you replace the plug prior to launching your boat.
3. Protect your lift as far as possible from damage caused by environmental factors such as airborne fallout, chemicals, tree sap, and weather hazards.
4. Never use the lift to hang or store any auxiliary equipment such as boating hardware.
5. Do not allow anyone to swim or play near the lift at any time.



#### **CAUTION:**

**DO NOT STORE THE LIFT IN THE WATERWAY IF FREEZING TEMPERATURES ARE EXPECTED. THIS WILL CAUSE EQUIPMENT DAMAGE.**

6. Disconnect and store battery to prevent from freezing.
7. Disconnect and store hydraulic cylinders, hydraulic hoses, and control box in a warm dry area if temperatures below -20°F are expected.

## 5.6. HYDRAULIC SYSTEM FLUSH

It is recommended that as part of an annual maintenance program, the hydraulic system be drained and fresh aqua-marine grade hydraulic oil installed. RGC recommends CITGO Aqua Marine Hydraulic 46 (or equivalent biodegradable oil) be used.

1. Lower the platform until the cylinder is fully retracted.



### **WARNING:**

**FOLLOW THE SAME SAFETY RULES WHEN WORKING INSIDE THE CONTROL BOX AND AROUND THE BATTERY THAT APPLY TO ANY CAR OR BOAT BATTERY. A BATTERY CAN EXPLODE AND CAUSE PERSONAL INJURY AND/OR EQUIPMENT DAMAGE.**

2. Disconnect couplings between cylinder hoses and control box.
3. Unscrew reservoir oil fill cap.
4. Siphon old oil from reservoir using a hand siphon or vacuum pump. If not available, remove the 12-volt battery from control box, and very carefully tip over the control box to drain oil from reservoir into a bucket.
5. Remove reservoir from pump assembly to inspect oil filter screen. Be careful not to damage O-ring seal for reservoir. If necessary, clean the filter screen with soap and water.
6. Reassemble reservoir and pump assembly, then fill reservoir with fresh CITGO Aqua Marine Hydraulic 46.



### **WARNING:**

**LIQUID UNDER HIGH PRESSURE CAN PIERCE THE SKIN, CAUSING DEATH OR SERIOUS INJURY. IN CASE OF INJURY, GET IMMEDIATE MEDICAL ATTENTION.**

7. Depressurize cylinder hoses as follows:
  - a. Depressurize the cylinder hose with male coupling by wrapping a rag around the coupling (to prevent spray) and carefully pressing the end button against a hard flat surface. Use caution to avoid damaging the coupling button.
  - b. Depressurize the cylinder hose with female coupling by wrapping a rag around coupling (to prevent spray) and carefully press the internal button using a 3/8" bolt. Be very careful not to damage the internal O-rings. Be sure that both couplings are kept clean at all times.
9. Clean the lower cylinder hose coupling and reconnect to the control box.
10. Connect a spare coupling or remove quick-disconnect from the upper cylinder hose assembly.
11. While holding open hose end over a suitable container, press the UP button until cylinders are fully extended.
12. Reverse the hoses so that the spare fittings are on lower cylinder hose.
13. Be sure to keep reservoir filled with new oil.
14. While holding open hose end over a suitable container, press the DOWN button until cylinders are fully retracted.
15. Repeat steps 10 to 13 until oil coming from disconnected hose is clean. Then reconnect hose couplings to control box.
16. As these procedures are performed, additional oil may need to be added to the reservoir. Perform a final check of oil level with cylinders fully retracted.

## 6. TROUBLESHOOTING

The following chart is intended to assist with troubleshooting your vertical lift. While not all inclusive, the chart outlines the most common causes of a problem and the recommended course of action.

NOTE: Disassembling the power supply may invalidate its warranty. Consult the manufacturer's warranty before attempting any repair or maintenance.

SYMPTOM	CAUSE AND CORRECTIVE ACTION
Hoses cannot be connected.	<p>System is pressurized. Depressurize the hoses as follows:</p> <ol style="list-style-type: none"> <li>a. Depressurize the male fitting by carefully pressing the button on the end of the nipple or by briefly tapping the down switch. Use caution to avoid damaging the nipple button.</li> <li>b. Depressurize the female fitting by tapping the "up" switch briefly, which will depressurize the pump. If necessary, depressurize the female fitting on the hose by carefully pressing the internal button using a 3/8" bolt. Be careful not to damage the internal O-rings. Wrap the fitting with a rag while depressurizing to prevent spray. Keep the connectors clean.</li> </ol>
Battery does not keep a charge.	<p>Check the battery fluid levels, age, and time of last booster charge. The battery must be booster charged at the beginning and end of the season using a 10A charger.</p> <p>Verify solar panel or a/c charger is plugged in correctly.</p> <p>Check the voltage output of the solar panel. Output should be about 14-18 volts when exposed to light.</p> <p>Verify that the polarity (positive or negative) of the solar panel matches the battery's polarity.</p> <p>Verify that the solar panel gets an adequate amount of light and the lift usage is within the monthly seasonal limits. The solar panel may be mounted up to 50 feet away from the battery if necessary. You may also order a bracket to mount the solar panel on top of the canopy. The remote control should only be drawing about 5 mA, and the pump 20 mA. The solar panel has an output of about 750 mA in direct sunshine.</p>
Battery terminal becomes hot.	Verify cable is clean and tight on battery terminal
Remote control not functioning.	The remote control is designed to stop working if the battery drops below 10 volts to alert the user that the battery is getting low. If the lift operates with the up/down switch in the power supply, but not with the remote, charge the battery using a 10A booster charger.

SYMPTOM	CAUSE AND CORRECTIVE ACTION
Power supply is operating properly, but platform raising is either difficult or impossible.	<p>Platform is binding because frame is either not square or not set level in the water—refer to Section 3.10.</p> <p>Load exceeds rated capacity— reduce load weight as needed.</p> <p>User or dealer installed locking devices are in place—remove these.</p> <p>Auxiliary equipment such as boating hardware is being improperly hung on lift—remove this equipment permanently.</p> <p>Hoses to cylinders are leaking fluid in line, have a poor connection, or are kinked.</p> <p>Hydraulic system malfunctioning—contact your authorized service center.</p>
Lift is operating properly, but platform raising is either difficult or impossible.	<p>Platform is binding because frame is either not square or not set level in the water—refer to Sections 3.6 and 3.7.</p> <p>One or more wires are broken—refer to Section 5. 2</p> <p>Sheaves binding—inspect/lubricate/replace.</p> <p>One or more cables are excessively worn—replace as required and follow monthly wire rope inspection procedure described in Section 5.2.</p>
Boat is not lifting level—stern is lifting higher or lower than the bow.	Frame is not level in the water—relocate pin connections between the adjustable and vertical legs.
Boat shifts position when operating the lift.	Boat is not properly secured on the lift—failure to properly secure boat can cause equipment damage and/or serious personal injury.
Lowest platform position is too high or low relative to the water.	Connections between the vertical and adjustable legs need readjusting—do this with the Item C leg pin
Boat is getting damaged during raising or lowering operations.	One or more bolts are installed improperly--all bolts except those on the bottom parts of the braces must be installed from the inside of the lift.

SYMPTOM	CAUSE AND CORRECTIVE ACTION
Fluid overflows reservoir.	It is normal to see some fluid overflow from the reservoir when the platform is cycled all the way down the first few times.
Lift stops after a split second.	Battery is low. If the battery is becoming low, the remote control will stop functioning at about 11 volts. The lift can still be operated using the up/down switch in the power supply, but the pump motor will stop and the green solenoid light will shut off if the voltage drops below 9 volts. Charge the battery using a 10A charger.
Remote control range is limited.	Check battery in key chain transmitter. If the range is only limited while in your boat, try holding the transmitter over your head. Proximity to cell phone towers, power lines, and other electromagnetic interference can also reduce remote control range.
Cylinder fails to hold the platform in a given position as described in the test procedure of Section 4.2	Check hose connections.  Contact your authorized dealer—tampering with the hydraulic system can cause equipment damage that may invalidate your warranty.
Lift does not go down.	Turn the speed control knob counter clockwise. This valve only limits the downward speed of the lift. If that does not solve the problem, check that the black wire is connected to the left coil on the pump, and the yellow wire is on the right coil.  Sheaves binding—inspect/lubricate/replace.
Lowest platform position is too high or low relative to the water.	Connections between the vertical and adjustable legs need readjusting as described in Chapter 3.
Boat is not lifting level—stern is lifting higher or lower than the bow.	Frame is not level in the water—relocate pin connections between the adjustable and vertical legs.
Boat shifts position when operating the lift.	Boat is not properly secured on the lift—failure to properly secure boat can cause equipment damage and/or serious personal injury.



## 7. PARTS LISTS

Each reference number or letter in the following parts lists can be matched with the reference number or letter referred to in both the text and illustrations of Chapter 3, Installation and Setup.

### 7.1. LIFTS

Lift Model	Lift P/N	Bundle 1	Bundle 2	Bundle 3	Hardware Carton of Parts
HVLS50124	3654491	3654501	3654502	3654503	3653498
HVLS50124T	3654492	3654504	3654502	3654506	3653498
HVLS70108T	3654493	3654507	3654508	3654519	3653499
HVLS70124T	3654494	3654507	3654508	3654519	3653499
HVLS80124	3654570	3654595	3654508	3654596	3654597
HVLS80124 SHORT HOSES	3654680	3654595	3654508	3654681	3654597
HVLS80132	3654660	3654595	3654661	3654662	3654537
HVLS80132 SHORT HOSES	3654690	3654595	3654661	3654691	3654537
HVLS100132	3654540	3654534	3654535	3654536	3654537
HVLS100132 SHORT HOSES	3654670	3654534	3654535	3654671	3654537

### 7.2. BUNDLES

#### 7.2.1. HVLS50124 BUNDLE 1 OF 3 - 3654501

REF.	PART NUMBER	QTY	DESCRIPTION
8	3654442	1	A-LEG
12	3654482	1	B-LEG
13	3654483	1	C-LEG
7	3654431	1	D-LEG
15	3653402	4	FOOT PLATE

#### 7.2.2. HVLS50124T BUNDLE 1 OF 3 - 3654504

REF.	PART NUMBER	QTY	DESCRIPTION
8	3654444	1	A-LEG
12	3654477	1	B-LEG
13	3654484	1	C-LEG
7	3654433	1	D-LEG
15	3653402	4	FOOT PLATE

#### 7.2.3. HVLS70108T/HVLS70124T BUNDLE 1 OF 3 - 3654507

REF.	PART NUMBER	QTY	DESCRIPTION
8	3654444	1	A-LEG
12	3654478	1	B-LEG
13	3654484	1	C-LEG
7	3654433	1	D-LEG
15	3653403	4	FOOT PLATE

#### 7.2.4. HVLS80124/HVLS80132/HVLS80124 AND HVLS80132 SHORT HOSES BUNDLE 1 OF 3 - 3654595

REF.	PART NUMBER	QTY	DESCRIPTION
8	3654557	1	A-LEG
12	3654556	1	B-LEG
13	3654558	1	C-LEG
7	3654550	1	D-LEG
15	3653403	4	FOOT PLATE

**7.2.5. HVLS100132/HVLS100132 SHORT HOSES BUNDLE 1 OF 3 - 3654534**

REF.	PART NUMBER	QTY	DESCRIPTION
8	3654557	1	A-LEG
12	3654551	1	B-LEG
13	3654558	1	C-LEG
7	3654550	1	D-LEG
15	3653403	4	FOOT PLATE

**7.2.6. HVLS50124/HVLS50124T BUNDLE 2 OF 3 - 3654502**

REF.	PART NUMBER	QTY	DESCRIPTION
10	3654459	3	SIDE HORIZONTAL
9	3654457	2	END HORIZONTAL
1	3605902	1	AD SPREADER
2	3641325	1	BC SPREADER

**7.2.7. HVLS70108T/HVLS70124T/HVLS80124/HVLS80124 SHORT HOSES BUNDLE 2 OF 3 - 3654508**

REF.	PART NUMBER	QTY	DESCRIPTION
10	3654459	4	SIDE HORIZONTAL
9	3654457	2	END HORIZONTAL
1	3607986	1	AD SPREADER
2	3641328	1	BC SPREADER

**7.2.8. HVLS80132/HVLS80132 SHORT HOSES BUNDLE 2 OF 3 - 3654661**

REF.	PART NUMBER	QTY	DESCRIPTION
10	3654459	4	SIDE HORIZONTAL
9	3654456	2	END HORIZONTAL
1	3654541	2	SPREADER

**7.2.9. HVLS100132/HVLS100132 SHORT HOSES BUNDLE 2 OF 3 - 3654535**

REF.	PART NUMBER	QTY	DESCRIPTION
10	3654460	4	SIDE HORIZONTAL
9	3654456	2	END HORIZONTAL
1	3610593	2	SPREADER

**7.2.10. HVLS50124 BUNDLE 3 OF 3 - 3654503**

REF.	PART NUMBER	QTY	DESCRIPTION
3	3641315	1	AB LOAD TUBE
14	3641320	1	CD LOAD TUBE
11	3654469	1	HVL5K HYDRAULIC CYLINDER ASSY

**7.2.11. HVLS50124T BUNDLE 3 OF 3 - 3654506**

REF.	PART NUMBER	QTY	DESCRIPTION
3	3641360	1	AB LOAD TUBE
14	3641365	1	CD LOAD TUBE
11	3654470	1	HVL5KT HYDRAULIC CYLINDER ASSY

**7.2.12. HVLS70108T/HVLS70124T BUNDLE 3 OF 3 - 3654519**

REF.	PART NUMBER	QTY	DESCRIPTION
3	3641363	1	AB LOAD TUBE
14	3641444	1	CD LOAD TUBE
11	3654467	1	HVL7KT HYDRAULIC CYLINDER ASSY

**7.2.13. HVLS80124 BUNDLE 3 OF 3 - 3654596**

REF.	PART NUMBER	QTY	DESCRIPTION
3	3641362	1	AB LOAD TUBE
14	3688208	1	CD LOAD TUBE
11	3654580	1	HVL8K HYDRAULIC CYLINDER ASSY

**7.2.14. HVLS80124 SHORT HOSES BUNDLE 3 OF 3 - 3654681**

REF.	PART NUMBER	QTY	DESCRIPTION
3	3641362	1	AB LOAD TUBE
14	3688208	1	CD LOAD TUBE
11	3654682	1	HVL8K HYDRAULIC CYLINDER ASSY - SHORT HOSES

**7.2.15. HVLS80132 BUNDLE 3 OF 3 - 3654662**

REF.	PART NUMBER	QTY	DESCRIPTION
3	3654736	1	AB LOAD TUBE
14	3654737	1	CD LOAD TUBE
11	3654580	1	HVL8K HYDRAULIC CYLINDER ASSY

**7.2.16. HVLS80132 SHORT HOSES BUNDLE 3 OF 3 - 3654691**

REF.	PART NUMBER	QTY	DESCRIPTION
3	3654736	1	AB LOAD TUBE
14	3654737	1	CD LOAD TUBE
11	3654682	1	HVL8K HYDRAULIC CYLINDER ASSY - SHORT HOSES

**7.2.17. HVLS100132 BUNDLE 3 OF 3 - 3654536**

REF.	PART NUMBER	QTY	DESCRIPTION
3	3654736	1	AB LOAD TUBE
14	3654737	1	CD LOAD TUBE
11	3654560	1	HVL10K HYDRAULIC CYLINDER ASSY

**7.2.18. HVLS100132 SHORT HOSES BUNDLE 3 OF 3 - 3654671**

REF.	PART NUMBER	QTY	DESCRIPTION
3	3654736	1	AB LOAD TUBE
14	3654737	1	CD LOAD TUBE
11	3654672	1	HVL10K HYDRAULIC CYLINDER ASSY – SHORT HOSES

7.2.19. HVLS50124/HVLS50124T - HARDWARE CARTON OF PARTS - 3653498

REF.	PART NUMBER	QTY	DESCRIPTION
5	3653510	1	"A" ANCHOR MOUNT SPREADER WELDMENT
6	3653515	1	"D" ANCHOR MOUNT SPREADER WELDMENT
	<b>3653456</b>	<b>2</b>	<b>A/D CORNER HARDWARE BAG OF BOLTS – includes:</b>
H	5840103	11	3/8-16 NUT NYLOCK ALUMINUM
K	5896247	8	3/8-16 X 1 HEX BOLT SS
L	5896248	3	3/8-16 X 1-1/4 HEX BOLT SS
O	5896292	1	1/2-13 X 4 HEX BOLT SS
W	5897018	1	1/2-13 NUT NYLOCK SS
	<b>3653473</b>	<b>2</b>	<b>B/C CORNER HARDWARE BAG OF BOLTS – includes:</b>
H	5840103	15	3/8-16 NUT NYLOCK ALUMINUM
K	5896247	15	3/8-16 X 1 HEX BOLT SS
O	5896292	1	1/2-13 X 4 HEX BOLT SS
W	5897018	1	1/2-13 NUT NYLOCK SS
	<b>3653496</b>	<b>1</b>	<b>CAP BAG - includes</b>
	6403794	4	BLACK CAP 2" X 4"
	3641620	2	BLACK CAP 2" X 4" WITH HOLES
	6403750	3	BLACK CAP 3.5" X 3.5"
	<b>3653489</b>	<b>1</b>	<b>CABLE HARDWARE BAG OF BOLTS – includes:</b>
G	5806246	5	5/8" WASHER SPLIT LOCK
I	5893642	4	3/4-16 NUT SS
Q	5896306	4	5/8-11 X 3-1/2 HEX BOLT SS
R	5896380	5	5/8-11 NUT SS
S	5896397	8	9/16-12 NUT SS
V	5896414	5	5/8" WASHER FLAT SS
	<b>4100900</b>	<b>1</b>	<b>LEG PIN BAG – includes:</b>
A	4100505	4	LEG PIN 4"
J	5893781	4	HAIRPIN COTTOR PIN
	<b>3653493</b>	<b>1</b>	<b>HYD CYL MOUNT HARDWARE BAG OF BOLTS – includes:</b>
B	5800867	5	HOSE CLAMP 1"
C	5803612	2	1/2-13 NUT SILICON BRONZE
D	5803638	4	3/8-16 NUT SILICON BRONZE
E	5806243	4	3/8" WASHER SPLIT LOCK
F	5806244	2	1/2" WASHER SPLIT LOCK
N	5896263	4	3/8-16 X 5 HEX BOLT SS
P	5896294	2	1/2-13 X 5 HEX BOLT SS
T	5896400	2	1/2" WASHER FLAT SAE SS
U	5896406	4	3/8" WASHER FLAT SAE SS

7.2.20. HVLS70108T/HVLS70124T - HARDWARE CARTON OF PARTS - 3653499

REF.	PART NUMBER	QTY	DESCRIPTION
5	3653520	1	"A" ANCHOR MOUNT SPREADER WELDMENT
6	3653525	1	"D" ANCHOR MOUNT SPREADER WELDMENT
	<b>3653457</b>	<b>2</b>	<b>A/D CORNER HARDWARE BAG OF BOLTS – includes:</b>
H	5840103	18	3/8-16 NUT NYLOCK ALUMINUM
K	5896247	12	3/8-16 X 1 HEX BOLT SS
L	5896248	2	3/8-16 X 1-1/4 HEX BOLT SS
M	5896249	4	3/8-16 X 1-1/2 HEX BOLT SS
O	5896292	1	1/2-13 X 4 HEX BOLT SS
W	5897018	1	1/2-13 NUT NYLOCK SS
	<b>3653473</b>	<b>2</b>	<b>B/C CORNER HARDWARE BAG OF BOLTS – includes:</b>
H	5840103	16	3/8-16 NUT NYLOCK ALUMINUM
K	5896247	12	3/8-16 X 1 HEX BOLT SS
L	5896248	4	3/8-16 X 1-1/4 HEX BOLT SS
O	5896292	1	1/2-13 X 4 HEX BOLT SS
W	5897018	1	1/2-13 NUT NYLOCK SS
	<b>3653496</b>	<b>1</b>	<b>CAP BAG - includes</b>
	6403794	2	BLACK CAP 2" X 4"
	3641620	2	BLACK CAP 2" X 4" WITH HOLES
	6403750	4	BLACK CAP 3.5" X 3.5"
	<b>3653489</b>	<b>1</b>	<b>CABLE HARDWARE BAG OF BOLTS – includes:</b>
G	5806246	5	5/8" WASHER SPLIT LOCK
I	5893642	4	3/4-16 NUT SS
Q	5896306	4	5/8-11 X 3-1/2 HEX BOLT SS
R	5896380	5	5/8-11 NUT SS
S	5896397	8	9/16-12 NUT SS
V	5896414	5	5/8" WASHER FLAT SS
	<b>4100900</b>	<b>1</b>	<b>LEG PIN BAG – includes:</b>
A	4100505	4	LEG PIN 4"
J	5893781	4	HAIRPIN COTTOR PIN
	<b>3653493</b>	<b>1</b>	<b>HYD CYL MOUNT HARDWARE BAG OF BOLTS – includes:</b>
B	5800867	5	HOSE CLAMP 1"
C	5803612	2	1/2-13 NUT SILICON BRONZE
D	5803638	4	3/8-16 NUT SILICON BRONZE
E	5806243	4	3/8" WASHER SPLIT LOCK
F	5806244	2	1/2" WASHER SPLIT LOCK
N	5896263	4	3/8-16 X 5 HEX BOLT SS
P	5896294	2	1/2-13 X 5 HEX BOLT SS
T	5896400	2	1/2" WASHER FLAT SAE SS
U	5896406	4	3/8" WASHER FLAT SAE SS

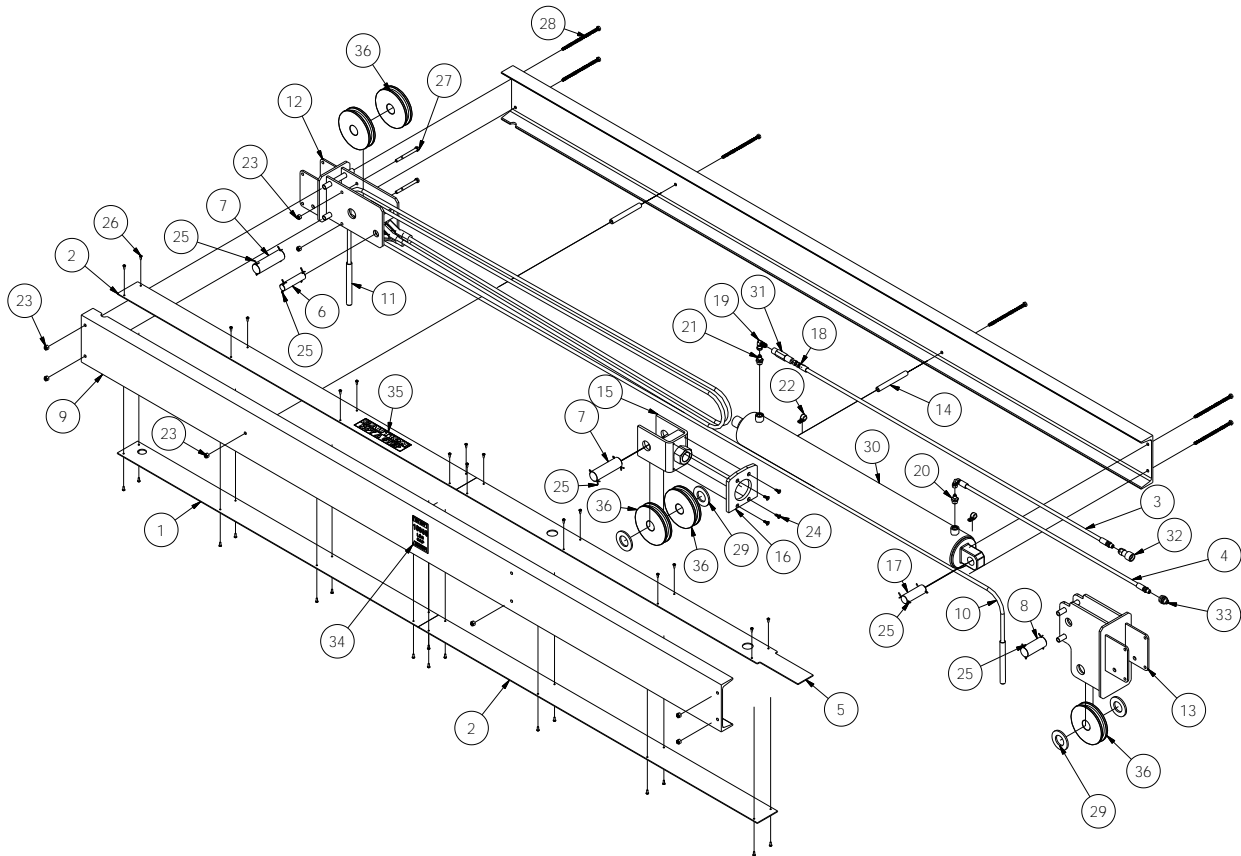
7.2.21. HVLS80124/HVLS80124 SHORT HOSES - HARDWARE CARTON OF PARTS - 3654597

REF.	PART NUMBER	QTY	DESCRIPTION
5	3653520	1	"A" ANCHOR MOUNT SPREADER WELDMENT
6	3653525	1	"D" ANCHOR MOUNT SPREADER WELDMENT
	<b>3653457</b>	<b>2</b>	<b>A/D CORNER HARDWARE BAG OF BOLTS – includes:</b>
H	5840103	18	3/8-16 NUT NYLOCK ALUMINUM
K	5896247	12	3/8-16 X 1 HEX BOLT SS
L	5896248	2	3/8-16 X 1-1/4 HEX BOLT SS
M	5896249	4	3/8-16 X 1-1/2 HEX BOLT SS
O	5896292	1	1/2-13 X 4 HEX BOLT SS
W	5897018	1	1/2-13 NUT NYLOCK SS
	<b>3653483</b>	<b>2</b>	<b>B/C CORNER HARDWARE BAG OF BOLTS – includes:</b>
H	5840103	16	3/8-16 NUT NYLOCK ALUMINUM
K	5896247	12	3/8-16 X 1 HEX BOLT SS
L	5896248	4	3/8-16 X 1-1/4 HEX BOLT SS
O	5896292	1	1/2-13 X 4 HEX BOLT SS
W	5897018	1	1/2-13 NUT NYLOCK SS
	<b>3653494</b>	<b>1</b>	<b>CAP BAG - includes</b>
	6403794	4	BLACK CAP 2" X 4"
	3641620	2	BLACK CAP 2" X 4" WITH HOLES
	6403750	4	BLACK CAP 3.5" X 3.5"
	<b>3654598</b>	<b>1</b>	<b>CABLE HARDWARE BAG OF BOLTS – includes:</b>
G	5806246	2	5/8" WASHER SPLIT LOCK
I	5893642	4	3/4-16 NUT SS
Q	5896306	2	5/8-11 X 3-1/2 HEX BOLT SS
R	5896380	2	5/8-11 NUT SS
S	5896397	4	9/16-12 NUT SS
V	5896414	2	5/8" WASHER FLAT SS
	<b>4100900</b>	<b>1</b>	<b>LEG PIN BAG – includes:</b>
A	4100505	4	LEG PIN 4"
J	5893781	4	HAIRPIN COTTOR PIN
	<b>3653493</b>	<b>1</b>	<b>HYD CYL MOUNT HARDWARE BAG OF BOLTS – includes:</b>
B	5800867	5	HOSE CLAMP 1"
C	5803612	2	1/2-13 NUT SILICON BRONZE
D	5803638	4	3/8-16 NUT SILICON BRONZE
E	5806243	4	3/8" WASHER SPLIT LOCK
F	5806244	2	1/2" WASHER SPLIT LOCK
N	5896263	4	3/8-16 X 5 HEX BOLT SS
P	5896294	2	1/2-13 X 5 HEX BOLT SS
T	5896400	2	1/2" WASHER FLAT SAE SS
U	5896406	4	3/8" WASHER FLAT SAE SS

7.2.22. HVLS80132/HVLS100132/HVLS80132 SHORT HOSES/HVLS100132 SHORT HOSES -  
**HARDWARE CARTON OF PARTS - 3654537**

REF.	PART NUMBER	QTY	DESCRIPTION
5	3654733	1	"A" ANCHOR MOUNT SPREADER WELDMENT
6	3654734	1	"D" ANCHOR MOUNT SPREADER WELDMENT
	<b>3653457</b>	<b>2</b>	<b>A/D CORNER HARDWARE BAG OF BOLTS - includes:</b>
H	5840103	18	3/8-16 NUT NYLOCK ALUMINUM
K	5896247	12	3/8-16 X 1 HEX BOLT SS
L	5896248	2	3/8-16 X 1-1/4 HEX BOLT SS
M	5896249	4	3/8-16 X 1-1/2 HEX BOLT SS
O	5896292	1	1/2-13 X 4 HEX BOLT SS
W	5897018	1	1/2-13 NUT NYLOCK SS
	<b>3653483</b>	<b>2</b>	<b>B/C CORNER HARDWARE BAG OF BOLTS - includes:</b>
H	5840103	16	3/8-16 NUT NYLOCK ALUMINUM
K	5896247	12	3/8-16 X 1 HEX BOLT SS
L	5896248	4	3/8-16 X 1-1/4 HEX BOLT SS
O	5896292	1	1/2-13 X 4 HEX BOLT SS
W	5897018	1	1/2-13 NUT NYLOCK SS
	<b>3653494</b>	<b>1</b>	<b>CAP BAG - includes</b>
	6403794	4	BLACK CAP 2" X 4"
	3641620	2	BLACK CAP 2" X 4" WITH HOLES
	6403750	4	BLACK CAP 3.5" X 3.5"
	<b>3654538</b>	<b>1</b>	<b>CABLE HARDWARE BAG OF BOLTS - includes:</b>
G	5893630	2	7/8" WASHER SPLIT LOCK
I	5893620	2	7/8-9 NUT SS
Q	5893612	2	7/8-9 X 3-1/2 HEX BOLT SS
R	5896381	4	3/4-10 NUT SS
S	5893642	4	3/4-16 NUT SS
V	5893625	2	7/8" WASHER FLAT SS
	<b>4100900</b>	<b>1</b>	<b>LEG PIN BAG - includes:</b>
A	4100505	4	LEG PIN 4"
J	5893781	4	HAIRPIN COTTOR PIN
	<b>3653493</b>	<b>1</b>	<b>HYD CYL MOUNT HARDWARE BAG OF BOLTS - includes:</b>
B	5800867	5	HOSE CLAMP 1"
C	5803612	2	1/2-13 NUT SILICON BRONZE
D	5803638	4	3/8-16 NUT SILICON BRONZE
E	5806243	4	3/8" WASHER SPLIT LOCK
F	5806244	2	1/2" WASHER SPLIT LOCK
N	5896263	4	3/8-16 X 5 HEX BOLT SS
P	5896294	2	1/2-13 X 5 HEX BOLT SS
T	5896400	2	1/2" WASHER FLAT SAE SS
U	5896406	4	3/8" WASHER FLAT SAE SS

### 7.3. CYLINDER ASSEMBLY EXPLODED VIEW - HVL10K SHOWN, OTHERS SIMILAR



ITEM	PART NUMBER	DESCRIPTION	QTY	BASE UNIT
1	3641573	HVL CABLE END COVER PLT 10K BOTTOM	1	EA
2	3641574	HVL END COVER PLT 10K TOP CABLE	2	EA
3	3641955	HVL HOSE ASSY 36"X1/4" W/FTG'S STRAIGHT	1	EA
4	3641960	HVL HOSE ASSY 32" X1/4" W/FTG'S 90D	1	EA
5	3653397	HVL COVER PLT TOP CYL END 10K	1	EA
6	3653410	HVL CLEVIS PIN 1X4-1/8 17-4 SS 7K	1	EA
7	3653411	HVL CLEVIS PIN 1-1/2X 4-15/16 17-4 SS 7K	2	EA
8	3653418	HVL CLEVIS PIN 1-1/2X 3-11/16 17-4 SS 10K	1	EA
9	3654561	HVL CYL SUPT CHAN 10K	2	EA
10	3654562	HVL CABLE ASSY SS 1/2X291.188	1	EA
11	3654563	HVL CABLE ASSY SS 1/2X165.375	1	EA
12	3654566	HVL CYL MTG BRKT (A)LEG 10K BLACK	1	EA
13	3654584	HVL CYL MTG BRKT (D)LEG 10K BLACK	1	EA
14	3654732	C CHANNEL SPACER	2	EA
15	3654738	CLEVIS BLACK HVL10K	1	EA
16	3654741	HVL10K CYL GUIDE PLATE POLYMER	1	EA
17	3670074	PIN,CLEVIS 1.25X3.75 SS	1	EA
18	5636411	ADAPTER 1/4NPTM X 7/16JICM	1	EA
19	5636412	ADAPTER 90D 9/16JICF SWIVEL X 1/4NPTM	1	EA
20	5636413	ADAPTER 3/4-16SAE X 7/16JICM	1	EA
21	5636414	ADAPTER 3/4-16SAEM X 9/16JICM	1	EA
22	5800864	CLAMP,SUPPORT 5/8" DIAM.	2	EA
23	5840103	NUT HEX NYLOCK 3/8-16 ALUM	8	EA
24	5892802	SCREW FH SOC 1/4-20 X 3/4" SS	4	EA
25	5893645	PIN,COTTER 1/8 X 2 SS	10	EA
26	5894101	SCREW PHIL HD MS 10-24 X 3/8 SS	32	EA
27	5896259	HHCS 3/8-16 X 4 SS	2	EA
28	5896276	HHCS 3/8-16 X 7 SS	6	EA
29	5896411	WASHER FLAT SAE 1-1/2" SS	4	EA
30	6036426	CYLINDER TANG-THREAD 36" STROKE 4.5" BORE	1	EA
31	6041010	FLOW REGULATOR HL 2.0GPM	1	EA
32	6041364	COUPLING 1/4 NPT FEMALE (SCREW STYLE)	1	EA
33	6041365	COUPLING 1/4 NPT MALE (SCREW STYLE)	1	EA
34	6206318	DECAL "10000 LBS CAP" VERTICAL	1	EA
35	6236412	DECAL "CAUTION NOT A STEP"	1	EA
36	7341968	SHEAVE POLYMER 6 OD X 1.5 BORE X 1.25 W	5	EA



## LIMITED PRODUCT WARRANTY

Reimann & Georger Corporation

### Marine Products

RGC Marine products, hereafter referred to as the “Manufacturer”, extends this limited warranty to the original purchaser of this product. The original purchaser, hereinafter referred to as the “Buyer”, is defined as the first legal owner of this product other than an authorized distributor or dealer who has bought the product from the Manufacturer for resale to the public. **The Buyer must complete and return the Warranty Registration section of the provided Warranty Card to make this limited warranty effective.**

### CONSUMER PRODUCT PROVISIONS

**I. ARTICLE I—CONSUMER PRODUCT PROVISIONS: THE FOLLOWING PROVISIONS SHALL BE APPLICABLE IF THIS PRODUCT IS BEING PURCHASED FOR PERSONAL, FAMILY OR HOUSEHOLD PURPOSES.**

**THE CONSUMER PRODUCT PROVISIONS CONTAINED IN THIS ARTICLE I SHALL APPLY UNLESS THIS PRODUCT IS BEING PURCHASED SOLELY FOR COMMERCIAL OR INDUSTRIAL USE, IN WHICH EVENT THE PROVISIONS CONTAINED IN ARTICLE II BELOW SHALL APPLY AND THE PROVISIONS CONTAINED IN THIS ARTICLE I SHALL BE INAPPLICABLE.**

**A. 2-YEAR LIMITED WARRANTY**

The Manufacturer warrants to the Buyer that all supplied parts shall be free of defects in material and workmanship for a period of two (2) years from date of original purchase. This limited warranty covers the cost of all parts and labor needed to repair any item that is found to be defective in material and workmanship. Items covered include cables, sheaves, chains, motors, reducers, switches, control panels and ground fault circuit interrupters.

**B. 15-YEAR LIMITED WARRANTY ON VL/PL SERIES ALUMINUM FRAME EXTRUSION**

The Manufacturer warrants to the Buyer that the frame and extrusions shall be free of defects in material and workmanship for a period of fifteen (15) years from date of original purchase. This limited warranty covers the cost of all parts and labor needed to repair any item that is found to be defective in material and workmanship.

**C. MANUFACTURER’S OBLIGATIONS**

The Manufacturer’s sole obligation under either of these limited warranties is the replacement or repair, at the Manufacturer’s discretion, of parts found to be defective.

**D. NO SPECIAL, INCIDENTAL OR CONSEQUENTIAL DAMAGES**

**IN NO EVENT SHALL THE MANUFACTURER BE LIABLE TO THE BUYER OR ANY PERSON FOR ANY INDIRECT, SPECIAL, INCIDENTAL, OR CONSEQUENTIAL LOSSES OR DAMAGES CONNECTED WITH THE USE OF THE PRODUCT UNDER WARRANTY. SUCH DAMAGES FOR WHICH THE MANUFACTURER SHALL NOT BE RESPONSIBLE INCLUDE, BUT ARE NOT LIMITED TO, LOST TIME AND CONVENIENCE, LOSS OF USE OF THE PRODUCT, THE COST OF A PRODUCT RENTAL, COSTS OF GASOLINE, TELEPHONE, TRAVEL, OR LODGING, THE LOSS OF PERSONAL OR COMMERCIAL PROPERTY, AND THE LOSS OF REVENUE.**

Some States do not allow the exclusion or limitation of incidental or consequential damages, so the above limitation or exclusion may not apply to you.

**E. NO LIABILITY IN EXCESS OF PURCHASE PRICE**

**IN NO EVENT SHALL THE MANUFACTURER’S OBLIGATIONS UNDER THIS LIMITED WARRANTY EXCEED THE PURCHASE PRICE OF THE PRODUCT.**

**F. NO EXTENSION OF STATUTE OF LIMITATIONS**

**ANY REPAIRS PERFORMED UNDER EITHER OF THESE WARRANTIES SHALL NOT IN ANY WAY EXTEND THE TWO-YEAR AND FIFTEEN-YEAR STATUTES OF LIMITATIONS CONTAINED IN THIS LIMITED WARRANTY.**

**G. PROCEDURE FOR WARRANTY PERFORMANCE**

If the product fails to perform to the Manufacturer's specifications, the Buyer must contact the dealer from whom the product was purchased. The Buyer must provide the dealer with the applicable model and serial numbers, the date of purchase, and the nature of the problem.

**H. PREAPPROVAL OF LABOR COSTS**

All labor costs related to a dealer's performance of the warranty obligations under this limited warranty must be pre-approved by Reimann & Georger Corp. Marine Products.

**I. NO OTHER EXPRESS WARRANTIES**

**THE MANUFACTURER IS NOT SUBJECT TO ANY EXPRESS WARRANTIES OTHER THAN THOSE SET FORTH ABOVE.**

**J. LIMIT ON DURATION OF IMPLIED WARRANTIES**

**THE DURATION OF ANY IMPLIED WARRANTIES UNDER APPLICABLE STATE LAW RELATING TO THE PURCHASE OF THIS PRODUCT SHALL BE LIMITED TO A PERIOD OF TWO (2) YEARS FROM THE DATE OF PURCHASE.**

Some States do not allow limitations on how long an implied warranty lasts, so the above limitations may not apply to you.

**K. QUESTIONS REGARDING LIMITED WARRANTY**

Any questions regarding this limited warranty or the procedure which the consumer should follow in order to obtain performance of any warranty obligation may be addressed to either the dealer from whom this product is purchased or to Reimann & Georger Corp. Marine Products, 1849 Harlem Road, Buffalo, NY 14212.

**L. EXCLUSIONS FROM LIMITED WARRANTY. THIS LIMITED WARRANTY DOES NOT COVER ANY OF THE FOLLOWING:**

1. Equipment which has been abused, damaged, used beyond rated capacity, or which is damaged or has defects caused by repairs or service completed by persons other than authorized service personnel.
2. Costs of repairing damage caused by environmental factors which include, but are not limited to, airborne fallout, chemicals, tree sap, salt, ocean spray, and water hazards.
3. Damage caused by acts of God which include, but are not limited to, hailstorms, windstorms, tornadoes, sandstorms, lightning, floods, and earthquakes.
4. Damage under conditions caused by fire or accident, by abuse or negligence, by improper installation, by misuse, by incorrect operation, by "normal wear and tear", by improper adjustment or alteration, by alterations not done by the Manufacturer, or by failure of product parts from such alterations.
5. Costs of repairing damage caused by poor or improper maintenance, costs of normally scheduled maintenance, or the cost of replacing any parts unless done as the result of a repair covered by your two-year limited warranty.
6. Costs of modifying the product in any way once delivered to the Buyer, even if such modifications were added as a production change on other products made after the Buyer's product was built.

**M. RIGHT TO MODIFY PRODUCT**

The Manufacturer has the right to modify this product at any time without incurring any obligation to make the same or similar modifications on products previously purchased.

**N. NO AUTHORITY TO ALTER WARRANTY**

No agent, representative, distributor or dealer has any authority to alter the terms of this warranty in any way.

**O. SPECIFIC LEGAL RIGHTS**

This warranty gives you specific legal rights and you may also have other rights which vary from State to State.

## **COMMERCIAL PRODUCT PROVISIONS**

**II. ARTICLE II—COMMERCIAL PRODUCT PROVISIONS: THE FOLLOWING PROVISIONS SHALL BE APPLICABLE ONLY IF THIS PRODUCT IS BEING PURCHASED SOLELY FOR COMMERCIAL OR INDUSTRIAL USE. IF THIS PRODUCT IS BEING PURCHASED FOR PERSONAL, FAMILY OR HOUSEHOLD PURPOSES, THE PROVISIONS CONTAINED IN THIS ARTICLE II SHALL NOT BE APPLICABLE AND THE PROVISIONS CONTAINED IN ARTICLE I ABOVE SHALL APPLY.**

### **A. 1-YEAR LIMITED WARRANTY**

The Manufacturer warrants to the Buyer that all supplied parts shall be free of defects in material and workmanship for a period of one (1) year from date of original purchase. This limited warranty covers the cost of all parts and labor needed to repair any item that is found to be defective in material and workmanship. Items covered include cables, sheaves, chains, motors, reducers, switches, control panels and ground fault circuit interrupters.

### **B. 5-YEAR LIMITED WARRANTY ON VL/PL SERIES ALUMINUM FRAME EXTRUSION**

The Manufacturer warrants to the Buyer that the frame and extrusions shall be free of defects in material and workmanship for a period of five (5) years from date of original purchase. This limited warranty covers the cost of all parts and labor needed to repair any item that is found to be defective in material and workmanship.

### **C. MANUFACTURER'S OBLIGATIONS**

The Manufacturer's sole obligation under either of these limited warranties is the replacement or repair, at the Manufacturer's discretion, of parts found to be defective.

### **D. NO SPECIAL, INCIDENTAL, OR CONSEQUENTIAL DAMAGES**

**IN NO EVENT SHALL THE MANUFACTURER BE LIABLE TO THE BUYER OR ANY PERSON FOR ANY INDIRECT, SPECIAL, INCIDENTAL, OR CONSEQUENTIAL LOSSES OR DAMAGES CONNECTED WITH THE USE OF THE PRODUCT UNDER WARRANTY. SUCH DAMAGES FOR WHICH THE MANUFACTURER SHALL NOT BE RESPONSIBLE INCLUDE, BUT ARE NOT LIMITED TO, LOST TIME AND CONVENIENCE, LOSS OF USE OF THE PRODUCT, THE COST OF A PRODUCT RENTAL, COSTS OF GASOLINE, TELEPHONE, TRAVEL, OR LODGING, THE LOSS OF PERSONAL OR COMMERCIAL PROPERTY, AND THE LOSS OF REVENUE.**

### **E. NO LIABILITY IN EXCESS OF PURCHASE PRICE**

**IN NO EVENT SHALL THE MANUFACTURER'S OBLIGATIONS UNDER THIS LIMITED WARRANTY EXCEED THE PURCHASE PRICE OF THE PRODUCT.**

### **F. NO EXTENSION OF STATUTE OF LIMITATIONS**

**ANY REPAIRS PERFORMED UNDER EITHER OF THESE WARRANTIES SHALL NOT IN ANY WAY EXTEND THE RESPECTIVE STATUTES OF LIMITATIONS CONTAINED IN THIS LIMITED WARRANTY.**

### **G. WAIVER OF OTHER WARRANTIES**

**THESE EXPRESS WARRANTIES ARE IN LIEU OF AND EXCLUDE ANY AND ALL OTHER WARRANTIES, EXPRESS OR IMPLIED, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE.**

### **H. PROCEDURE FOR WARRANTY PERFORMANCE**

If the product fails to perform to the Manufacturer's specifications, the Buyer must contact the dealer from whom the product was purchased. The Buyer must provide the dealer with the applicable model and serial numbers, the date of purchase, and the nature of the problem.

**I. PREAPPROVAL OF LABOR COSTS**

All labor costs related to a dealer's performance of the warranty obligations under this limited warranty must be pre-approved by Reimann & Georger Corp. Marine Products.

**J. EXCLUSIONS FROM WARRANTY. THIS LIMITED WARRANTY DOES NOT COVER ANY OF THE FOLLOWING:**

1. Equipment which has been abused, damaged, used beyond rated capacity, or which is damaged or has defects caused by repairs or service completed by persons other than authorized service personnel.
2. Costs of repairing damage caused by environmental factors which include, but are not limited to, airborne fallout, chemicals, tree sap, salt, ocean spray, and water hazards.
3. Damage caused by acts of God which include, but are not limited to, hailstorms, windstorms, tornadoes, sandstorms, lightning, floods, and earthquakes.
4. Damage under conditions caused by fire or accident, by abuse or negligence, by improper installation, by misuse, by incorrect operation, by "normal wear and tear", by improper adjustment or alteration, by alterations not done by the Manufacturer, or by failure of product parts from such alterations.
5. Costs of repairing damage caused by poor or improper maintenance, costs of normally scheduled maintenance, or the cost of replacing any parts unless done as the result of a repair covered by your one-year limited warranty.
6. Costs of modifying the product in any way once delivered to the Buyer, even if such modifications were added as a production change on other products made after the Buyer's product was built.

**K. RIGHT TO MODIFY PRODUCT**

The Manufacturer has the right to modify this product at any time without incurring any obligation to make the same or similar modifications on products previously purchased.

**L. NO AUTHORITY TO ALTER WARRANTY**

No agent, representative, distributor, or dealer has any authority to alter the terms of this warranty in any way.

**M. SPECIFIC LEGAL RIGHTS**

This warranty gives you specific legal rights, and you may also have other rights which vary from State to State.