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 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.
☐ Ensure the A-B load tube cable is properly reeved and fastened for correct winch operation.
☐ Ensure set screw securing wire rope end to the drum is tight and in good condition.
☐ Ensure the guards are in place.
☐ Ensure the plastic caps are installed onto the tops of the vertical legs and the ends of the upper short horizontal tubes.
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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 SERIOUS PERSONAL INJURY AND/OR DAMAGE. CONTACT YOUR RGC® MARINE DEALER IF YOU HAVE ANY QUESTIONS.

WARNING:
DO NOT SERVICE THE HYDRAULIC LIFT WITH YOUR BOAT ON THE LIFT. DO NOT SERVICE THE HYDRAULIC LIFT WITH LOAD TUBES IN THE RAISED POSITION. DO NOT DISCONNECT ANY HYDRAULIC LINES UNLESS THE LIFT IS COMPLETELY LOWERED.

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, control box, or the remote control if any item shows any signs of damage.
2. Do not expose the internal control box components or remote control to water or inclement weather conditions.
3. Understand the use of all controls and connections provided with the control box.
4. Never operate the lift with a substitute hydraulic power supply. Use only the control box provided with the lift.
5. Do not store any articles in the control box, as this can damage the pump or electrical system.
6. Do not allow persons other than authorized service personnel to repair any part of this equipment.
7. Do not exceed the rated maximum lifting capacity of this equipment.
8. Never try lifting anything other than a boat with this equipment.
9. Never allow people in the boat any time it is suspended above the water on the platform or when the lift is in use.

10. Do not stand or walk on the loading platform while it is in any raised position.

11. Do not allow anyone to swim or play under, near or on the lift at any time. Raise the bunks out of the water when leaving the lift unattended to allow swimmers to see its location.

12. Never use the lift to hang or store any auxiliary equipment such as boating hardware.

13. Never operate the lift during an electrical storm.

**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.)

**WARNING:**

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

### 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.

13. A clear visual path is required when using a remote transmitter. Obstacles, radio frequency interference, and weak transmitter batteries will degrade the performance and range of your remote transmitter.

14. Never adjust or service the lift during operation or while connected to the control box.

15. Do not adjust the components in the control box while operating the lift.

16. Completely lower the platform before performing any type of maintenance or repair.

17. Never allow anybody to work in or on the boat when it is suspended above the water on the lift.

18. At end of operation, secure the control box and the lift to prevent unauthorized use. Never assume you will find the equipment in the same condition in which you left it.

19. Never operate the remote control or hydraulic power unit when connecting or disconnecting hydraulic hoses.

20. Do not operate the lift when under the influence of drugs, alcohol, or medication.

1.6.2 Safety When Raising the Boat

1. Do not try to raise the boat beyond the maximum lifting height of the platform.

1.6.3 Safety When Lowering the Boat

1. Do not continue lowering the platform after the boat floats freely. Excessive slack in winch cable may cause binding.

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

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<th>MODEL</th>
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<th>HVL401116</th>
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<td>4000 lbs.</td>
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<tr>
<td>Maximum Beam</td>
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<td>116”</td>
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<tr>
<td>Lifting Height*</td>
<td>68”</td>
<td>68”</td>
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<tr>
<td>Overall Width (Including Feet)</td>
<td>116”</td>
<td>124”</td>
</tr>
<tr>
<td>Overall Length (Including Feet)</td>
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<td>12’ Full Length Bunks</td>
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<td>Hydraulic Power Unit – 12V</td>
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<td>Std.</td>
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<tr>
<td>S.S. Hardware</td>
<td>Std.</td>
<td>Std.</td>
</tr>
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<td>Lifting speed with full load</td>
<td>60 sec. up direction, 20 sec. down direction</td>
<td>60 sec. up direction, 20 sec. down direction</td>
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**DRIVE TYPE OPTIONS**

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<tr>
<td>Shipping Weight</td>
<td>485 lbs.</td>
<td>500 lbs.</td>
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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 and serial numbers, and capacity rating for future reference.

![Typical Product Nameplate](image)

**BOAT LIFT**

CAP. lbs.  
MODEL SEGMENT  
SERIAL NO.  

Figure 2-1. 
Typical Product Nameplate

MODEL HVL4000  
SERIAL NUMBER  
CAPACITY RATING 4000 LBS.
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 Pivoting Bunks**—Full length cushioned bunks cradle and center the boat for secure lifting. Provided as standard equipment.

3. **Full Length Guide-On**—Cushioned guide-ons make entering the lift easy in various water conditions.

4. **Motor Stop**—Assists in positioning boat on the lift for balanced lifting.

5. **VL Transport Kit**—Makes installation and removal of boat lift easier. You can purchase the complete kit or desired components.

6. **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.

7. **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.


9. **VL 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.

10. **VL Hydraulic Power Unit Shelf**—This kit includes a shelf frame, support braces and hardware to attach to the leg ‘C’ on the lift.
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. 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.)

**WARNING:**
DO NOT SERVICE THE HYDRAULIC LIFT WITH YOUR BOAT ON THE LIFT. DO NOT SERVICE THE HYDRAULIC LIFT WITH LOAD TUBES IN THE RAISED POSITION. DO NOT DISCONNECT ANY HYDRAULIC LINES UNLESS THE LIFT IS COMPLETELY LOWERED.

3.2 PRIOR TO SETUP

The part reference numbers and letters used in the subassembly drawings of sections 3.3 through 3.9 are the same as those shown in Figure 3-1 and listed in the parts lists of Chapter 7.

![Frame Assembly](image)

Figure 3-1
Frame Assembly

The lift may be placed so that columns B & C are on your dock side as shown in Figure 3-2. The hydraulic beam assembly remains on the outside of the lift. The hydraulic power unit can be located on the dock or with optional power unit shelf bracket mounted on column C.
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.

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.

3.3 VERTICAL LEG ASSEMBLY

1. Refer to Figure 3-3. Fasten an extension leg onto each of the foot plates using supplied hardware. Insert these subassemblies into the bottoms of each of the vertical legs A, B, C, and D.

2. Connect the extension legs to the vertical legs with supplied Leg Pins and secured with cotter hairpins. 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.
3.4 FRAME SIDE ASSEMBLY

1. Refer to Figure 3-4. Fasten a pair of short horizontal tubes between vertical legs B and C with hardware shown. DO NOT TIGHTEN.
2. Refer to Section 3-9 and Figure 3-9. Install hydraulic cylinder assembly to columns A and column D. Use hardware shown.
3. Fasten a short horizontal tube near bottom of vertical legs A and D with hardware shown. DO NOT TIGHTEN.
4. Lay the assembled sides down on the ground with the foot plates facing one another and aligned, about 9 feet apart.
5. Square the side assemblies by adjusting the verticals to achieve the same measured distance between them at both top and bottom. Refer to “Y” Dim. in Figure 3-6. Tighten all fasteners. Remeasure and align if necessary.

3.5 PLATFORM ASSEMBLY

1. Refer to Figure 3-5. Position both load tubes and spreader tubes on the ground as shown in the diagram.
2. Carefully remove the 5/8” hex nut and washers, if supplied, from each end of both spreader tubes, but DO NOT remove the bolts from the tubes. This will prevent the sheaves from falling out.
3. At each corner of the platform, align the holes in the spreader tube with the holes in the load tube. Fasten the tubes together. Then refasten the 5/8” hex nut and washers, if supplied.

![Figure 3-5 Platform Assembly](image)

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 across each end to connect the two sides using hardware shown in Figure 3-4. DO NOT TIGHTEN.
6. Square the frame by adjusting the verticals to achieve the same measured distance between them at both top and bottom. Refer to “X” Dim. in Figure 3-6. Tighten all fasteners. Remeasure and align if necessary.
7. Install the eight (8) plastic caps provided onto the tops of the four vertical legs and the ends of the upper short horizontal tubes.

![Diagram of frame with X and Y dimensions](image)

<table>
<thead>
<tr>
<th>MODEL</th>
<th>“X” DIM</th>
<th>“Y” DIM</th>
</tr>
</thead>
<tbody>
<tr>
<td>HVL40108</td>
<td>108 IN.</td>
<td>98 IN.</td>
</tr>
<tr>
<td>HVL40116</td>
<td>116 IN.</td>
<td>98 IN.</td>
</tr>
</tbody>
</table>

Note: Values shown are approx.

3.7 MOUNTING THE LOWER DIAGONAL BRACES

1. Position a lower diagonal brace on the inside of vertical leg “B” as shown in Figure 3-7. **Loosely** fasten with hardware shown.

2. Position the opposite end to align with the hole on the plate of the long horizontal tube as shown. Fasten with hardware shown.

3. Tighten the lower diagonal brace to leg “B”.

4. Repeat Steps 1 through 3 for each corner.

**CAUTION:**

THE FOUR LOWER DIAGONAL BRACES ARE MOUNTED ONLY TO THE TWO LONG HORIZONTAL TUBES. NEVER TRY TO MOUNT THESE BRACES TO ANY OF THE SHORT HORIZONTAL TUBES.

5. Ensure the frame is square and that it satisfies the dimensions shown in Figure 3-6. About 1/4 to 1/2 inch difference between the upper and lower measurements is permitted.
3.8 PLATFORM REEVING AND ADJUSTMENT

1. Position the platform near the bottom end of its lifting range. Ensure the platform is level.

2. Refer to Figure 3-8. The load tubes are already reeved. Fasten the cable end loops to the bracket provided at the bottom of vertical legs A & D.

   **CAUTION:**
   DO NOT “JAM TIGHT” THESE LOWER CABLE ANCHORS OR YOU WILL BREAK OFF THE BRACKET PLATES.

   **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, tighten the cable studs opposite the cable end loops in the following order. The following step numbers correspond to the step numbers shown in Figure 3-8.
   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 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 the first two substeps under Step 3 above.

3.9 VL HYDRAULIC CYLINDER ASSY MOUNTING

1. Refer to Figure 3-9. Install hydraulic cylinder assembly to vertical leg “A” and “D”. Use fasteners detail A thru H and install fasteners detail AA, AB, AC & AD.

3.10 VL HYDRAULIC SHELF FRAME (OPTIONAL)

1. Refer to Figure 3-10. Install VL hydraulic power unit shelf frame to leg “D”. Use fasteners AE, AF & AG to attach the shelf frame and diagonal brace.
Figure 3-9
HVL Hydraulic cylinder Mounting

Figure 3-10
HVL Hydraulic Power Unit Shelf Mounting
3.11 REEVING THE HYDRAULIC CYLINDER ASSEMBLY

1. Refer to Figure 3-11. Using a 7/8" open-end wrench, tighten the cable nuts on the cable stud.
2. Tighten down the nut to add tension to the AB Load Tube Cable at vertical leg A.
3. Tighten down the nut to add tension to the C-D Load tube cable at vertical leg D.
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 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.

Figure 3-11
Hydraulic Cylinder Cable Reeving
3.12 HYDRAULIC HOSE ROUTING

1. Refer to Figure 3-12. The hydraulic hoses are assembled onto the hydraulic cylinder assembly. You must route and secure the hydraulic hoses down along the vertical column C, through the lower horizontal tube, up along column 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.

Figure 3-12
Hydraulic Hose Routing
3.13 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. Ensure 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 ensure 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. Ensure 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 ensure that they are still secure and tight. Also test the remote control.

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 RAISING AND LOWERING THE BOAT

1. Position the boat so that the boat’s center of gravity is between forward load tube and rear load tube.

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 bunk manual. 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. Ensure 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 fully raised.

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.

4.4 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.

**WARNING:**
DO NOT STORE BUNKS IN THE WATER, RAISE PLATFORM ABOVE WATER WHEN NOT USED TO PREVENT BUNK DAMAGE DUE TO WAVE AND ROUGH WATER.

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 fully raised for maximum safety.
   b. Position the boat on the platform so that the boat’s center-of-gravity is between the forward load tube and the rear load tube.
   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. Do not weld or otherwise modify the lift. Such alterations may weaken the structural integrity of the lift and invalidate your warranty.

3. Completely lower the lift 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.

**WARNING:**

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

5. Immediately replace any components found to be defective.

**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).
5. Heat damage: Evidence of any heat damage caused by a torch or by contact with electrical wires.

![Wire Rope Components](image)

Figure 5-1. Wire Rope Components

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.
   b. Replace a damaged line, fitting or hose immediately. Never repair the part.

5.4 BATTERY MAINTENANCE

1. Use a 12 volt, group 27 marine deep-cycle battery with a minimum of 500 CCA, or with a reserve capacity of 160 amp hours or more. We recommend the following batteries: U.S. Battery Model 27 TMX, Trojan Battery Model 27 TMX or Rolls Battery Engineering Model 27112XJM. Reserve capacity is the most important feature.

2. The lift has an energy capacity of about 20 full cycles using a new battery with a reserve capacity of 160 amp hours. However, avoid dipping below 50% battery capacity because the solar panel will have trouble recovering from such a deep draw. For constant usage, we recommend that the battery be hooked up to an AC charger on a full time basis. We recommend the following chargers: Guest Charge Pro Model 2608 (6 Amp) or Guest Charge Pro Model 2611 (10 Amp).
3. The following table lists maximum monthly full lifting cycles (down and up), using a single solar panel, to keep the battery capacity at a steady state energy level. The capacity of the battery will allow for additional cycles for any particular month. The values assume all-day exposure with typical seasonal weather.

<table>
<thead>
<tr>
<th>Month</th>
<th>Cloudy northern climate</th>
<th>Sunny southern climate</th>
</tr>
</thead>
<tbody>
<tr>
<td>January</td>
<td>2 cycles</td>
<td>27 cycles</td>
</tr>
<tr>
<td>February</td>
<td>8</td>
<td>29</td>
</tr>
<tr>
<td>March</td>
<td>14</td>
<td>29</td>
</tr>
<tr>
<td>April</td>
<td>18</td>
<td>31</td>
</tr>
<tr>
<td>May</td>
<td>21</td>
<td>27</td>
</tr>
<tr>
<td>June</td>
<td>22</td>
<td>25</td>
</tr>
<tr>
<td>July</td>
<td>24</td>
<td>28</td>
</tr>
<tr>
<td>August</td>
<td>24</td>
<td>31</td>
</tr>
<tr>
<td>September</td>
<td>19</td>
<td>29</td>
</tr>
<tr>
<td>October</td>
<td>12</td>
<td>29</td>
</tr>
<tr>
<td>November</td>
<td>4</td>
<td>28</td>
</tr>
<tr>
<td>December</td>
<td>1</td>
<td>25</td>
</tr>
</tbody>
</table>

4. If the solar panel does not keep the battery charged, try any of the following:
   a. Move the solar panel to an area with less obstructed sunlight.
   b. Add a second solar panel, or add an a/c charger.
   c. Booster charge the battery at mid season.

5. Check water level in battery every three months. If the water level is low, fill it up with distilled water. Booster charge the battery with a 2A charge using a 10A charger in the beginning and end of the season.

5.5 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.

Lock/Unlock remote unit

To unlock or lock your remote units, press the two blue buttons simultaneously on your remote. The display will indicate locked or unlocked mode.

Reprogramming Your Remote Control

In the event that you may need to reprogram your remote control unit, please follow these step instructions:

1. Hold down both the red button (located on the black RC box) and the “UP” button (located on the hand held remote) at the same time for five (5) seconds.

   Note: If black box does not have red button on the outside use the next procedure below.

2. Release “RED” button (located on the black RC box) and continue to hold down the “UP” button (located on the hand held remote) for an additional five (5) seconds.
1. Remove cover from black RC box. A see-through cover control unit is inside this box. Hold down “black” button (located on the side of the see-through control unit) until red light flashes once in the see-through control unit located in corner.

2. Release the “black” button then hold down the “UP” button (located on the hand held remote) for five (5) seconds. You may have to repeat these two (2) steps more than once to reset your remote control unit.

5.6 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 or wind chill factors below minus 20 degrees F are expected.

5.7 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. Fully lower the platform.

[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.

**CAUTION:**  
IF THE PROBLEM WITH THE POWER SUPPLY IS NOT CERTAIN, ALWAYS FOLLOW THE MANUFACTURER'S WARRANTY POLICY BEFORE ANY OTHER REPAIR OR MAINTENANCE IS ATTEMPTED.

<table>
<thead>
<tr>
<th>Symptom</th>
<th>Cause and Corrective Action</th>
</tr>
</thead>
</table>
| Hoses cannot be connected. | System is pressurized. Depressurize the hoses as follows:  
  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.  
  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. |
| Battery does not keep a charge. | 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.  
  Verify solar panel or a/c charger is plugged in correctly.  
  Check the voltage output of the solar panel. Output should be about 14-18 volts when exposed to light.  
  Verify that the polarity (positive or negative) of the solar panel matches the battery’s polarity.  
  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. |</p>
<table>
<thead>
<tr>
<th>SYMPTOM</th>
<th>CAUSE AND CORRECTIVE ACTION</th>
</tr>
</thead>
<tbody>
<tr>
<td>Lift is operating properly, but platform raising is either difficult or</td>
<td>Platform is binding because frame is either not square or not set level in the water—refer to Sections 3.6 and 3.7.</td>
</tr>
<tr>
<td>impossible.</td>
<td></td>
</tr>
<tr>
<td></td>
<td>One or more wires are broken—refer to Section 5.2</td>
</tr>
<tr>
<td></td>
<td>Sheaves binding—inspect/lubricate/replace.</td>
</tr>
<tr>
<td></td>
<td>One or more cables are excessively worn—replace as required and follow monthly wire rope inspection procedure described in Section 5.2.</td>
</tr>
<tr>
<td></td>
<td>Load exceeds rated capacity— Reduce load weight as needed.</td>
</tr>
<tr>
<td></td>
<td>User or dealer installed locking devices are in place—remove these.</td>
</tr>
<tr>
<td></td>
<td>Auxiliary equipment such as boating hardware is being improperly hung on lift—remove this equipment permanently.</td>
</tr>
<tr>
<td>Boat is not lifting level—stern is lifting higher or lower than the bow.</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Frame is not level in the water—relocate pin connections between the adjustable and vertical legs.</td>
</tr>
<tr>
<td></td>
<td>Frame is level in the water but spreader tube cables are not tight enough—</td>
</tr>
<tr>
<td></td>
<td>1. Tighten down the cable stud nut to add tension to the B-C spreader tube cable.</td>
</tr>
<tr>
<td></td>
<td>2. Tighten down the cable stud nut to add tension to the A-D spreader tube cable. Check that the B-C and A-D spreader tube cables are equal in tension and</td>
</tr>
<tr>
<td></td>
<td>that the platform is level.</td>
</tr>
<tr>
<td>Boat shifts position when operating the lift.</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Boat is not properly secured on the lift—failure to properly secure boat can cause equipment damage and/or serious personal injury.</td>
</tr>
<tr>
<td>Lowest platform position is too high or low relative to the water.</td>
<td>Connections between the vertical and adjustable legs need readjusting—do this with the Item C leg pin shown in Figure 3-3.</td>
</tr>
<tr>
<td>Boat is getting damaged during raising or lowering operations.</td>
<td></td>
</tr>
<tr>
<td></td>
<td>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.</td>
</tr>
<tr>
<td>Remote control range is limited.</td>
<td></td>
</tr>
<tr>
<td></td>
<td>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</td>
</tr>
<tr>
<td></td>
<td>phone towers, power lines, and other electromagnetic interference can also reduce remote control range.</td>
</tr>
<tr>
<td>SYMPTOM</td>
<td>CAUSE AND CORRECTIVE ACTION</td>
</tr>
<tr>
<td>----------------------------------------------</td>
<td>--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------</td>
</tr>
<tr>
<td>Remote control range is limited.</td>
<td>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.</td>
</tr>
<tr>
<td>Fluid overflows reservoir.</td>
<td>It is normal to see some fluid overflow from the reservoir when the platform is cycled all the way down the first few times.</td>
</tr>
<tr>
<td>Lift stops after a split second.</td>
<td>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.</td>
</tr>
<tr>
<td>Power supply is operating properly, but platform raising is either difficult or impossible.</td>
<td>Platform is binding because frame is either not square or not set level in the water—refer to Section 3.10.</td>
</tr>
<tr>
<td></td>
<td>Load exceeds rated capacity— reduce load weight as needed.</td>
</tr>
<tr>
<td></td>
<td>User or dealer installed locking devices are in place—remove these.</td>
</tr>
<tr>
<td></td>
<td>Auxiliary equipment such as boating hardware is being improperly hung on lift—remove this equipment permanently.</td>
</tr>
<tr>
<td></td>
<td>Hoses to cylinders are leaking fluid in line, have a poor connection, or are kinked.</td>
</tr>
<tr>
<td></td>
<td>Hydraulic system malfunctioning—contact your authorized service center.</td>
</tr>
<tr>
<td>Cylinder fails to hold the platform in a given position as described in the test procedure of Section 4.2</td>
<td>Check hose connections.</td>
</tr>
<tr>
<td></td>
<td>Contact your authorized dealer—tampering with the hydraulic system can cause equipment damage that may invalidate your warranty.</td>
</tr>
<tr>
<td>Lift does not go down.</td>
<td>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.</td>
</tr>
<tr>
<td></td>
<td>Sheaves binding—inspect/lubricate/replace.</td>
</tr>
<tr>
<td>Lowest platform position is too high or low relative to the water.</td>
<td>Connections between the vertical and adjustable legs need readjusting as described in Chapter 3.</td>
</tr>
<tr>
<td>Boat is not lifting level—stern is lifting higher or lower than the bow.</td>
<td>Frame is not level in the water—relocate pin connections between the adjustable and vertical legs.</td>
</tr>
<tr>
<td>Boat shifts position when operating the lift.</td>
<td>Boat is not properly secured on the lift—failure to properly secure boat can cause equipment damage and/or serious personal injury.</td>
</tr>
</tbody>
</table>
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 #3641030 HVL 40108 BOAT LIFT BUNDLES – see figure 3-1, 7-4

7.1.1 #3641104 HVL Common Bundle #1

<table>
<thead>
<tr>
<th>REF #</th>
<th>PART #</th>
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<th>DESCRIPTION</th>
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</thead>
<tbody>
<tr>
<td>1</td>
<td>3603809</td>
<td>4</td>
<td>FOOT PLATE ASSY 9x14-1/4</td>
</tr>
<tr>
<td>2</td>
<td>3689702</td>
<td>4</td>
<td>LOWER DIAGONAL BRACE 31- 1/4</td>
</tr>
<tr>
<td>3</td>
<td>3641445</td>
<td>1</td>
<td>HVL VERTICAL LEG (A) WLDMT 4K</td>
</tr>
<tr>
<td>4</td>
<td>3641322</td>
<td>1</td>
<td>HVL VERTICAL LEG (B) ASSY 4K</td>
</tr>
<tr>
<td>5</td>
<td>3641450</td>
<td>1</td>
<td>HVL VERTICAL LEG (C) WLDMT 4K</td>
</tr>
<tr>
<td>6</td>
<td>3608006</td>
<td>1</td>
<td>VERTICAL LEG (D) WLDMT 4K</td>
</tr>
</tbody>
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7.1.2 #3641107 HVL 40108 Bundle 2 of 3

<table>
<thead>
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<tr>
<td>7</td>
<td>3603853</td>
<td>3</td>
<td>VL HORIZONTAL TUBE 108” 3-4K</td>
</tr>
<tr>
<td>8</td>
<td>3689708</td>
<td>2</td>
<td>VL HORIZONTAL TUBE 116” 3-4K 6x10-1/2</td>
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<tr>
<td>9</td>
<td>3641395</td>
<td>1</td>
<td>HVL SPREADER TUBE ASSY (BC) 4K</td>
</tr>
<tr>
<td>10</td>
<td>3603784</td>
<td>1</td>
<td>SPREADER TUBE ASSY (AD) 4K</td>
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7.1.3 #3641135 HVL 40108 Bundle 3 of 3

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<tbody>
<tr>
<td>11</td>
<td>3641302</td>
<td>1</td>
<td>HVL LOAD TUBE (AB) ASSY 40108</td>
</tr>
<tr>
<td>12</td>
<td>3641304</td>
<td>1</td>
<td>HVL LOAD TUBE (CD) ASSY 40108</td>
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<tr>
<td>15</td>
<td>3641344</td>
<td>1</td>
<td>HVL CYL/HOSE ASSY 4K</td>
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7.2 #3641035 HVL 40116 BOAT LIFT BUNDLES – see figure 7-4

7.2.1 #3641104 HVL Common Bundle #1

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<tr>
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<td>FOOT PLATE ASSY 9x14-1/4</td>
</tr>
<tr>
<td>2</td>
<td>3689702</td>
<td>4</td>
<td>LOWER DIAGONAL BRACKET 31- 1/4</td>
</tr>
<tr>
<td>3</td>
<td>3641445</td>
<td>1</td>
<td>HVL VERTICAL LEG (A) WLDMT 4K</td>
</tr>
<tr>
<td>4</td>
<td>3641322</td>
<td>1</td>
<td>HVL VERTICAL LEG (B) ASSY 4K</td>
</tr>
<tr>
<td>5</td>
<td>3641450</td>
<td>1</td>
<td>HVL VERTICAL LEG (C) WLDMT 4K</td>
</tr>
<tr>
<td>6</td>
<td>3608006</td>
<td>1</td>
<td>VERTICAL LEG (D) WLDMT 4K</td>
</tr>
</tbody>
</table>

7.2.2 #3641111 HVL 40116 Bundle 2 of 3

<table>
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<tbody>
<tr>
<td>7</td>
<td>3603853</td>
<td>3</td>
<td>VL HORIZONTAL TUBE 108” 3-4K</td>
</tr>
<tr>
<td>8</td>
<td>3689711</td>
<td>2</td>
<td>VL HORIZONTAL TUBE 124” 4-7K 6x10-1/2</td>
</tr>
<tr>
<td>9</td>
<td>3641395</td>
<td>1</td>
<td>VL SPREADER TUBE ASSY (BC) 4K</td>
</tr>
<tr>
<td>10</td>
<td>3603784</td>
<td>1</td>
<td>VL SPREADER TUBE ASSY (AD) 4K</td>
</tr>
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</table>

7.2.3 #3641145 HVL 40116 Bundle 3 of 3

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<tbody>
<tr>
<td>11</td>
<td>3641312</td>
<td>1</td>
<td>VL LOAD TUBE ASSY A-B 40116</td>
</tr>
<tr>
<td>12</td>
<td>3641314</td>
<td>1</td>
<td>VL LOAD TUBE ASSY C-D 40116</td>
</tr>
<tr>
<td>15</td>
<td>3641344</td>
<td>1</td>
<td>HVL4K CYLINDER /HOSE ASSEMBLY see section 7.6</td>
</tr>
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### 7.3 VL Extension Legs

<table>
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<tr>
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<tr>
<td>13</td>
<td>as ordered</td>
<td>4</td>
<td>VL Extension Legs 29-1/2”–10’</td>
</tr>
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</table>

### 7.4 VL Bunks 1.6-4K

<table>
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<th>DESCRIPTION</th>
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</thead>
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<tr>
<td>3603778</td>
<td>1</td>
<td>1</td>
<td>VL Wood Bundle 1.6-4K</td>
</tr>
<tr>
<td>3679355</td>
<td>4</td>
<td>4</td>
<td>VL SS Carton 1.6–4K</td>
</tr>
<tr>
<td>3603936</td>
<td>4</td>
<td>4</td>
<td>VL/AR Cradle Bracket – Std</td>
</tr>
<tr>
<td>3603937</td>
<td>4</td>
<td>4</td>
<td>VL Cradle Bracket Flat 15-7/8</td>
</tr>
<tr>
<td>3603938</td>
<td>4</td>
<td>4</td>
<td>VL Cradle Bracket Ang 15-7/8</td>
</tr>
<tr>
<td>3605977</td>
<td>1</td>
<td>1</td>
<td>VL Bunk SS Bag of Bolts 1.6–4K</td>
</tr>
</tbody>
</table>

### 7.5 #3641211 HVL4K Hardware Carton – see figure 3-9, 3-10, 3-11

<table>
<thead>
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<th>REF #</th>
<th>PART #</th>
<th>QTY</th>
<th>DESCRIPTION</th>
</tr>
</thead>
<tbody>
<tr>
<td>3641215</td>
<td>1</td>
<td>HYDRAULIC MOUNTING S.S. BAG OF BOLTS consisting of;</td>
<td></td>
</tr>
<tr>
<td>A</td>
<td>5896257</td>
<td>2</td>
<td>3/8-16 X 3-1/2 HHCS</td>
</tr>
<tr>
<td>B</td>
<td>5896406</td>
<td>2</td>
<td>3/8 WASHER SAE</td>
</tr>
<tr>
<td>C</td>
<td>5806243</td>
<td>2</td>
<td>3/8 WASHER SPLIT LOCK</td>
</tr>
<tr>
<td>D</td>
<td>5896377</td>
<td>2</td>
<td>3/8-16 NUT HEX</td>
</tr>
<tr>
<td>E</td>
<td>5896290</td>
<td>1</td>
<td>1/2-13 X 3-1/2 HHCS</td>
</tr>
<tr>
<td>F</td>
<td>5896400</td>
<td>1</td>
<td>1/2 WASHER SAE</td>
</tr>
<tr>
<td>G</td>
<td>5806244</td>
<td>1</td>
<td>1/2 WASHER SPLIT LOCK</td>
</tr>
<tr>
<td>H</td>
<td>5896379</td>
<td>1</td>
<td>1/2-13 NUT HEX</td>
</tr>
<tr>
<td>AA</td>
<td>5896309</td>
<td>2</td>
<td>5/8-11 X 2” HHCS</td>
</tr>
<tr>
<td>AB</td>
<td>5896414</td>
<td>2</td>
<td>5/8 WASHER SAE</td>
</tr>
<tr>
<td>AC</td>
<td>5806246</td>
<td>2</td>
<td>5/8 WASHER SPLIT LOCK</td>
</tr>
<tr>
<td>AD</td>
<td>5896380</td>
<td>2</td>
<td>5/8-11 NUT HEX</td>
</tr>
<tr>
<td>AH</td>
<td>5800867</td>
<td>8</td>
<td>HOSE CLAMP 1”</td>
</tr>
<tr>
<td>17</td>
<td>3641405</td>
<td>2</td>
<td>ANCHOR WELDMENT</td>
</tr>
<tr>
<td>S</td>
<td>6403794</td>
<td>6</td>
<td>PLUG PLASTIC—2 X 4 X 1/8W</td>
</tr>
<tr>
<td>R</td>
<td>3641620</td>
<td>2</td>
<td>CAP PLASTIC 2 X 4 X 1/8W -HOLE</td>
</tr>
<tr>
<td>I</td>
<td>3629961</td>
<td>1 Pkg.</td>
<td>3” LEG PIN &amp; HAIRPIN SET (4 EACH)</td>
</tr>
<tr>
<td>J</td>
<td>5896247</td>
<td>18</td>
<td>3/8-16 X 1” HHCS</td>
</tr>
<tr>
<td>K</td>
<td>5896268</td>
<td>1</td>
<td>3/8-16 X 2-3/4” HHCS</td>
</tr>
<tr>
<td>L</td>
<td>5896288</td>
<td>1</td>
<td>1/2-13 X 3” HHCS</td>
</tr>
<tr>
<td>M</td>
<td>5840103</td>
<td>19</td>
<td>3/8-16 LOCKNUT NYLOCK ALUM</td>
</tr>
<tr>
<td>N</td>
<td>5836107</td>
<td>1</td>
<td>1/2-13 LOCKNUT NYLOCK</td>
</tr>
<tr>
<td>P</td>
<td>3641235</td>
<td>1 Pkg.</td>
<td>HVL Cable Hardware 4K consisting of;</td>
</tr>
<tr>
<td>T</td>
<td>5896248</td>
<td>8</td>
<td>3/8-16 X 1-1/4” HHCS</td>
</tr>
<tr>
<td>U</td>
<td>5896290</td>
<td>2</td>
<td>1/2-13 X 3-1/2” HHCS</td>
</tr>
<tr>
<td>V</td>
<td>5896400</td>
<td>2</td>
<td>1/2 WASHER SAE</td>
</tr>
<tr>
<td>W</td>
<td>5806244</td>
<td>2</td>
<td>1/2 WASHER SPLIT LOCK</td>
</tr>
<tr>
<td>O</td>
<td>5896397</td>
<td>8</td>
<td>9/16-12 NUT HEX</td>
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### 7.6 HVL Power Units – see figure 7-4

<table>
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<th>REF#</th>
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<tr>
<td>19</td>
<td>3641326</td>
<td>1</td>
<td>HVL Control Box 12V</td>
</tr>
<tr>
<td>19</td>
<td>3641329</td>
<td>1</td>
<td>HVL Control Box 24V</td>
</tr>
<tr>
<td>19</td>
<td>3641336</td>
<td>1</td>
<td>HVL Control Box 120V AC</td>
</tr>
<tr>
<td></td>
<td>4110020</td>
<td>1</td>
<td>HVL AC Charger Kit (Optional)</td>
</tr>
<tr>
<td></td>
<td>4105785</td>
<td>1</td>
<td>HVL Solar Panel Kit (Optional)</td>
</tr>
<tr>
<td></td>
<td>4100595</td>
<td>1</td>
<td>HVL Lighting Kit (Optional)</td>
</tr>
</tbody>
</table>

### 7.7 3641220 HVL Power Unit Shelf & Hardware (Optional) – see figure 3-10, 7-4

<table>
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<tr>
<td>20</td>
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<td>HVL Shelf Frame</td>
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<tr>
<td>21</td>
<td>3641525</td>
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<td>HVL Shelf Diag. Brace</td>
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<tr>
<td>22</td>
<td>4100583</td>
<td>1</td>
<td>HVL Shelf Bracket</td>
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<tr>
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<td>3641225</td>
<td>1</td>
<td>HVL Shelf Bag of Bolts consists of following:</td>
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<tr>
<td>AE</td>
<td>5896248</td>
<td>4</td>
<td>3/8-16 X 1-1/4&quot; HHCS</td>
</tr>
<tr>
<td>AF</td>
<td>5840103</td>
<td>8</td>
<td>3/8-16 Locknut Nylock Alum</td>
</tr>
<tr>
<td>AG</td>
<td>5896247</td>
<td>4</td>
<td>3/8-16 X 1&quot; HHCS</td>
</tr>
<tr>
<td>REF #</td>
<td>PART #</td>
<td>QTY</td>
<td>DESCRIPTION</td>
</tr>
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<td>3</td>
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<td>SHEAVE BUSHING 7/8” OD X 1.47” LG</td>
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<td>2</td>
<td>5/8” USS WASHER</td>
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<tr>
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<td>6036418</td>
<td>1</td>
<td>FLOW REGULATOR</td>
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<td>5896414</td>
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<td>5/8” SAE WASHER</td>
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<tr>
<td>7</td>
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<td>5896380</td>
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<td>5/8-11 HEX NUT</td>
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<td>SHEAVE 3-3/8 SGL</td>
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<td>MOUNTING BRACKET (D) POWDER COAT</td>
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<td>3/8” TUBE 37-DEGREE TO SAE -12 STRAIGHT FITTING</td>
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<td>CYLINDER ROD CLEVIS</td>
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<td>CYLINDER CLEVIS PIN 4” LG</td>
</tr>
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<td>5</td>
<td>1/8” X 2” COTTER PIN</td>
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<td>SHEAVE 4-1/8 DBL 1-1/4” BORE</td>
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<td>COVER TUBE 92”</td>
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<td>MOUNTING BRACKET (A) POWDER COAT</td>
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<td>HHCS 3/4-10 X 3-1/2 SS</td>
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<td>WASHER FLAT SAE 3/4 SS</td>
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<td>NUT HEX NYLOCK 3/4-10 SS</td>
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<td>5/8-11 X 3” LG HHCS</td>
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<td>CYLINDER GUIDE PLATE</td>
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<td>5892801</td>
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<td>1/4-20 X 1” PHILLIP FLAT HEAD SCREW</td>
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<td>3/8 TUBE 37-DEGREE TO 1/4 PIPE 90-DEGREE FITTING</td>
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<td>1/4 TUBE 37-DEGREE TO SAE-12 STRAIGHT FITTING</td>
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Figure 7-1
HVL 4K Hydraulic Cylinder Assembly- exploded view
Figure 7-2
HVL 40108 Load Tube Assemblies

32
Figure 7-3
HVL 40116 Load Assemblies
Figure 7-4
Complete HVL 4K Assembly
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 OR 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.