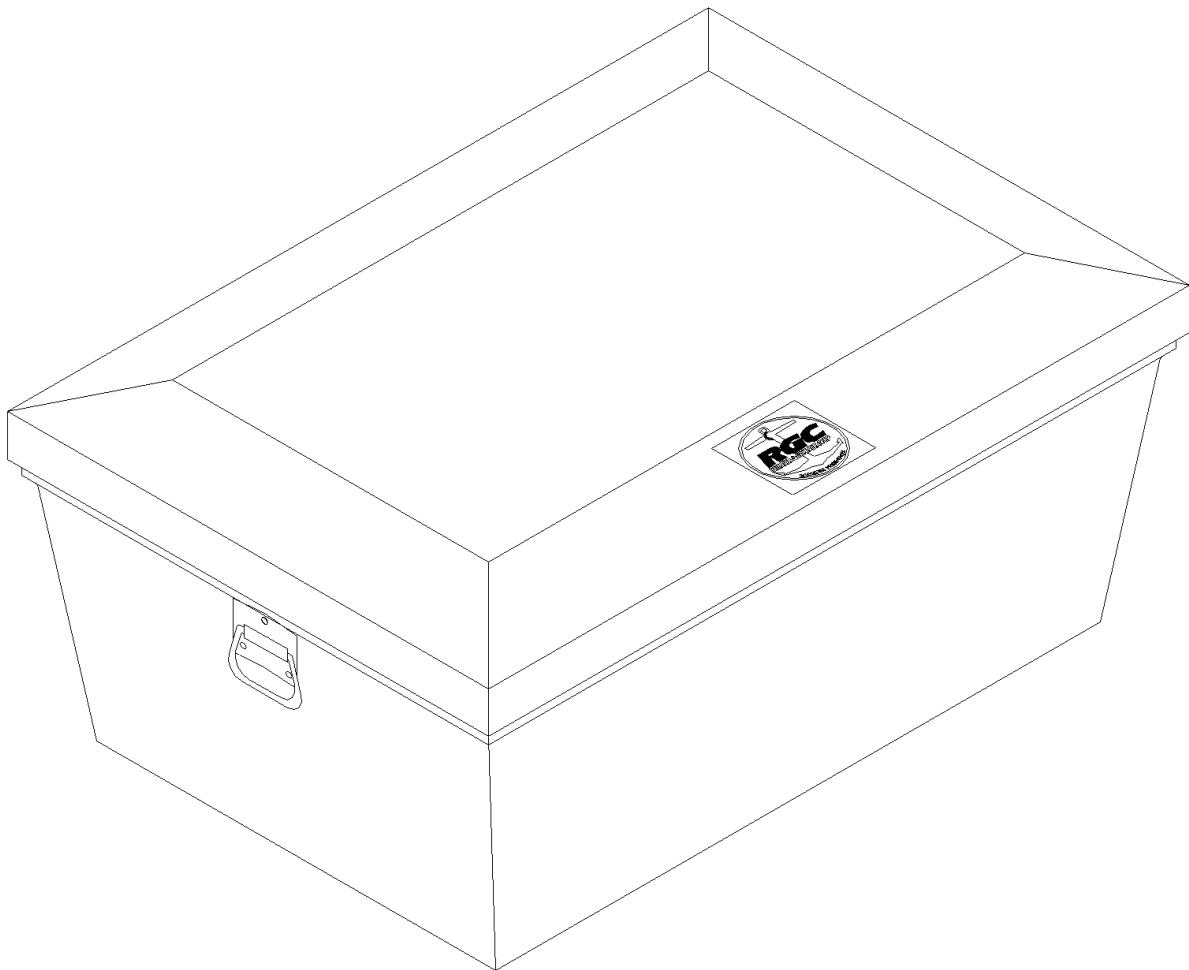




24V HL/HVL POWER UNIT INSTRUCTIONS

(Applies to P/N 3636111, 3641617, 4136110, 4136111, and 4136114)



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1. SAFETY

1.1. INTRODUCTION

Your Reimann & Georger Corporation Marine Products Hydraulic 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.

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 that, 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. When lifting any part of this equipment, be sure of your footing, bend your knees and lift with your legs, and hold the equipment close to your body while lifting.
2. Do not use the lift, control box, or the remote control if any item shows any signs of damage. Immediately replace any components found to be defective.
3. Do not expose the internal control box components or remote control to water or inclement weather conditions. Do not store any articles in the control box, as this can damage the pump or electrical system.
4. Understand the use of all controls and connections provided with the control box.
5. Never operate the lift with a substitute hydraulic power supply. Use only the control box provided with the lift.
6. Do not allow persons other than authorized service personnel to repair any part of this equipment.
7. Do not work on or in the boat when it is suspended above the water on the lift. Lower the lift platform fully before performing any maintenance or repair. Do not disconnect any hydraulic lines unless the lift is fully lowered.
8. All hydraulic power unit accessories such as A/C charger, solar panel, solar panel mounting bracket, and power unit shelf bracket shall be commercially manufactured, and shall be properly maintained and installed. Consult the manufacturer's separate instructions provided for these accessories.
9. Poor or improper maintenance could lead to equipment damage or failure.

1.5. OPERATING SAFETY

1. Do not operate the equipment while under the influence of drugs, alcohol, or medication.
2. Before allowing anyone to operate the lift, be certain they fully understand the proper operating procedure.
3. Never adjust or service the lift during operation or while connected to the control box. Completely lower the lift before making any repair or adjustment.
4. Do not adjust the components in the control box while operating the lift. Never operate the remote control or hydraulic power unit when connecting or disconnecting hydraulic hoses.
5. 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.

2. SPECIFICATIONS

2.1. TECHNICAL DATA

P/N	Control Box Model	Applications	Remote Controller	Pump	Maximum Down Pressure (psi)	Maximum Up Pressure (psi)	Pump Flow at full load (GPM)
3636111	HVL 24V Std	HVL4K-7K	24V GEM	24V MTE	2200	2800	2.5
3641617	HVL 24V Std	HVL4K-7K	24V GEM	24V Bucher	2200	2800	2.25
4136113	HL 24V HD	HL9K-12K	24V GEM	24V Bucher	2200	2800	2.5
4136110	HL 24V Std	HL4K-9K	24V GEM	24V Bucher	2100	2300	2.25
4136111	HL 24V Std	HL4K-9K	24V GEM	24V MTE	2300	2300	2.5
4136114	HL 24V HD	HL9K-12K	24V GEM	24V MTE	2300	2300	2.5

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. There are two product nameplates for each lift; the nameplate on the HL lift is located at the top of the Right-Hand Forward Lift Arm, the nameplate on the HVL lift at the top of 'B' leg and another nameplate inside the control box. Each 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 your own lift information from both nameplates below for future reference.

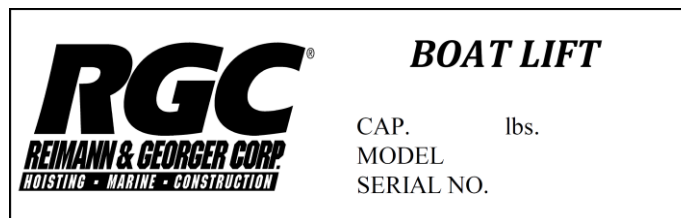


Figure 2-1 Typical Product Nameplate

HYDRAULIC LIFT NAMEPLATE INFORMATION

MODEL _____

SERIAL NUMBER _____

CAPACITY RATING _____

CONTROL BOX NAMEPLATE INFORMATION

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. **AC Charger**—Provides an additional method of recharging 12 volt DC batteries. Compensating for either high usage of boat lift, or insufficient solar energy to recharge battery completely.
2. **24V DC Solar Panel**—Provides an additional method of recharging the 12 volt DC batteries. Compensating for either high usage of boat lift, or lack of an electric power source to recharge battery completely.
3. **Solar Panel mounting bracket kit**—Provides a mounting of the solar panel above the canopy. The solar panel bracket mounts on the vertical canopy extension leg and can be positioned to optimize afternoon sun.

2.4. BATTERY OPTIONS

1. Two BCI Group Size 27 Marine Deep-Cycle Batteries, with at least 160 minutes Reserve Capacity rating. We recommend the following batteries: U.S. Battery Model 27 TMX, Trojan Battery Model 27 TMX or Rolls Battery Engineering Model 27112XJM. Marine batteries have a typical service life of 1-3 years in boat lift applications.
2. One 24V lithium battery with at least 200 Amp continuous discharge rating, and a nominal capacity of at least 100 Ah (2.4KWh), along with a suitable charger.

Such batteries are typically rated for 10 years or >10,000 cycles of the boat lift, can be stored outdoors in winter to -50°F at any state of charge, and can store more energy than lead-acid batteries for use on consecutive cloudy days. The disadvantages of lithium batteries are the high up-front cost, and slow to no charging when the battery is below 41°F.

3. INSTALLATION AND SETUP

3.1. MAKING POWER CONNECTIONS

1. Refer to the boat lift manual for important installation and safety information relating to your boat lift.
2. Before making any hydraulic connections, 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.



WARNING:

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

3. Remove the shipping cap from the hydraulic fluid reservoir and replace it with the included breather cap.



CAUTION: THE SHIPPING CAP MUST BE REMOVED PRIOR TO OPERATION TO PREVENT DAMAGE TO THE HYDRAULIC RESERVOIR.

4. Wipe the mating surfaces of the hose couplings as well as the control box couplings with a clean rag prior to making connection. Insert the hoses through the flexible cable boot in the back of the control box. Connect the hose couplings. The quick disconnects supplied are screw to connect and can be connected under pressure. If the quick connect fittings are difficult to attach, relieve some of the pressure by pushing in on the tip of the male hose connector, for example by pressing the connector against a clean, hard surface. Use caution not to damage the fitting.
5. Install the batteries in the control box. Connect the (-) terminal of battery 1 to the (+) terminal of battery 2 with the included short black battery cable. Connect the red battery cable from the motor to the (+) terminal of battery 1. Connect the longer black battery cable from the motor to the (-) terminal of battery 2. Tighten each wing nut with a pair of pliers, as even a slightly loose connection can cause the battery terminals to heat up. Keep terminals clean with a corrosion-protective coating.



WARNING:

FOLLOW THE SAME SAFETY RULES WHEN WORKING INSIDE THE POWER SUPPLY 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.

6. Verify that the system is switched “on” using the on/off switch located inside the power supply box on the side of the electrical control box. Ensure that the hydraulic fluid reservoir does not run empty during operation.

7. If the optional solar panel(s) are supplied, the solar panels must be mounted in a suitable location. Mount the solar panels so they face toward the south. Route the cables through the flexible cable boot in the back of the control box. If a single 24V panel is supplied, connect the red wire to the positive terminal of battery 1 and the black wire to the negative terminal of battery 2 as shown below. If two 12V panels are supplied, connect one panel to each battery as shown below.

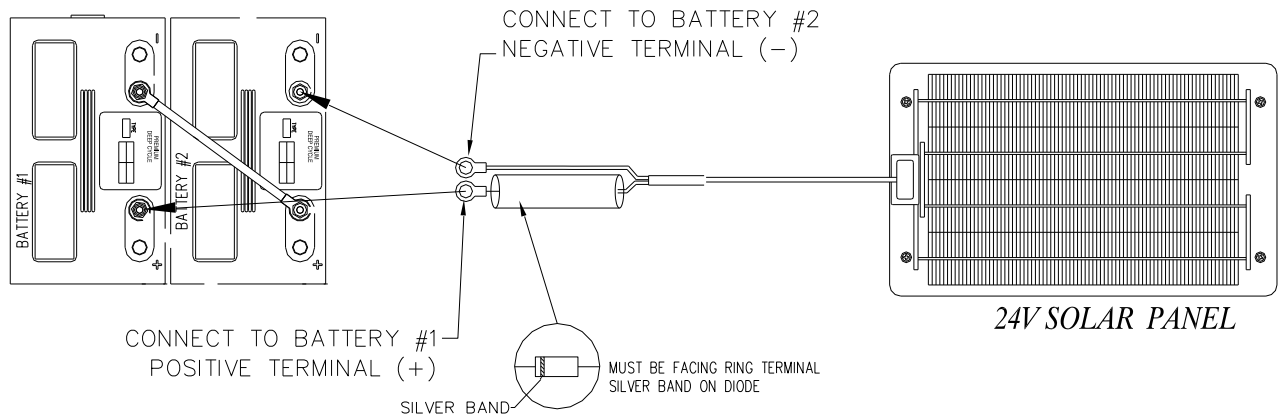


Figure 3-1 24V SOLAR PANEL (OPTIONAL)

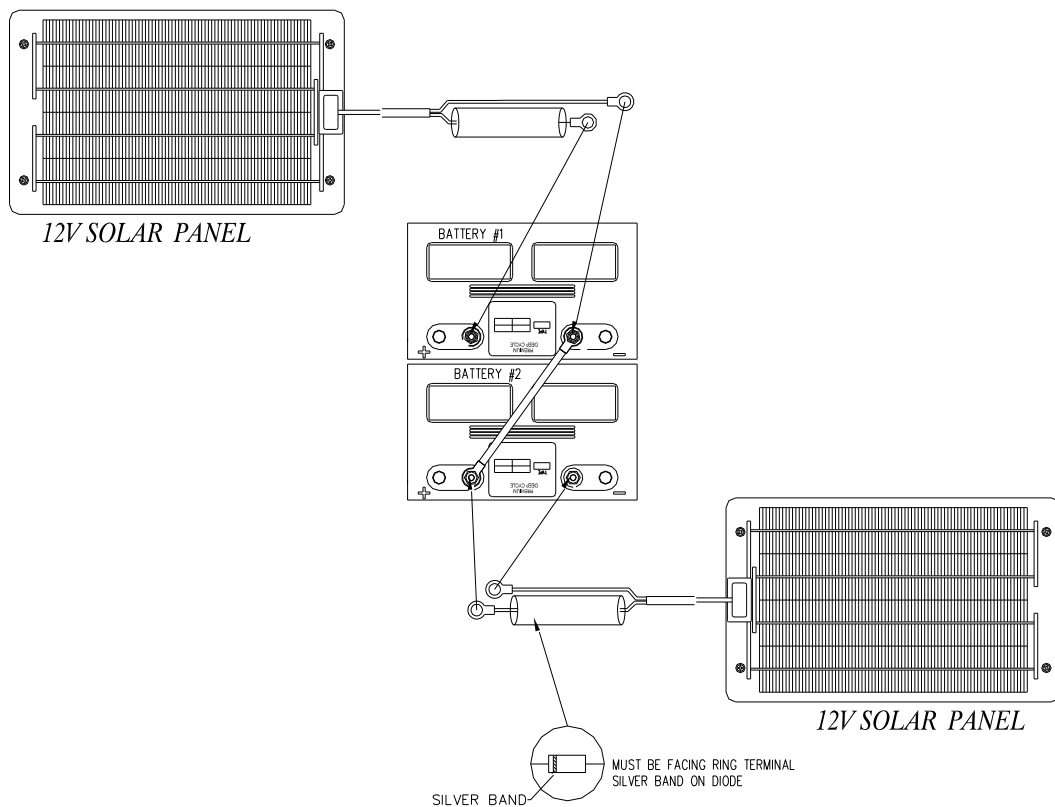


Figure 3-2 2x 12V SOLAR PANEL (OPTIONAL)

8. If the optional Dual 12/24V charger is supplied, mount the charger inside the control box. The charger has two output channels. Connect one output to each battery: the red wire to the positive battery terminal and the black wire to the negative terminal. Run the AC power cord through the flexible cable boot in the back of the control box and plug the AC charger in.

4. OPERATION & MAINTENANCE

Refer to your boat lift manual for information about safe operation. Press the “up” button on the remote control to raise the lift, and the “down” button to lower the lift.

To toggle the accessory lights (if equipped), hold the “up” and “down” buttons simultaneously.

If the marine batteries in the control box are low on charge, the lift will not respond to the remote control. Use the “up” and “down” buttons located on the remote control receiver unit inside the control box, and recharge the 12V batteries.

4.1. BATTERY MAINTENANCE

1. Avoid dipping below 50% battery state of charge. This will greatly shorten the life of the batteries. If the solar panel is unable to keep the batteries charged, we recommend the A/C charger option. A larger solar panel may be sufficient, but solar may not be practical for daily boat lift usage in cloudy climates.
2. The following table lists maximum monthly full lifting cycles (down and up), using a single 24V solar panel, to keep the battery capacity at a steady state energy level. The capacity of the batteries will allow for additional cycles for any particular month. The values assume all-day exposure with typical seasonal weather.

Month	Cloudy northern climate	Sunny southern climate
January	2 cycles	27 cycles
February	8	29
March	14	29
April	18	31
May	21	27
June	22	25
July	24	28
August	24	31
September	19	29
October	12	29
November	4	28
December	1	25

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 AC charger.
 - c. Booster charge the battery at mid-season.
3. For serviceable lead-acid batteries, 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.

4.2. 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.

Reprogramming Your GEM Remote Control (yellow transmitter with 3 blue buttons)

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

1. Press the LEARN button once and release located on the GEM control box mounted inside the fiberglass dock box.
2. Press the STOP button within 5 seconds of pressing the LEARN button to program the transmitter.

4.3. ANNUAL INSPECTION

At least once a year, the lift must be inspected using the following procedure. Do not allow anyone to use the lift until this maintenance is completed.

1. Inspect all hydraulic lines, fittings, and hoses for leaks and risk of rupture.
 - a. Inspect each hydraulic line, fitting, and hose for breaks, cracks, worn spots, bulges, chemical attack, kinks, or other damage. Never try to stop any detected leak with body parts. Do not put your face close to any suspected leak. Hold a piece of cardboard close to suspected leaks and inspect the cardboard for signs of hydraulic oil.
 - b. Replace any damaged lines, fittings, or hoses immediately. Never repair the part.

4.4. STORAGE PROCEDURE

1. Disconnect and store battery fully charged to prevent from freezing.
2. If temperatures below -20°F (-29°C) are expected, then disconnect all hydraulic cylinders, hoses, and control box and store these parts in a warm, dry area.

4.5. HYDRAULIC SYSTEM FLUSH

It is recommended that as part of an annual maintenance program, the hydraulic system be drained and fresh Vegetable Grade hydraulic oil installed. RGC recommends CITGO Aqua Marine Hydraulic 46, GULF GREEN NS AW 46 (or equivalent biodegradable oil) be used.



WARNING:

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



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.

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

5. TROUBLESHOOTING

The following chart is intended to assist with troubleshooting your hydraulic 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 manufacturer's warranty before attempting any repair or maintenance.

SYMPTOM	CAUSE AND CORRECTIVE ACTION
Power Unit does not function.	Check for blown 20A fuse (located inside GEM RC box). Check for broken wires or poor connections on switches and motor. See schematic figure 5-1.
Hoses cannot be connected.	<p>System is pressurized. Depressurize the hoses as follows:</p> <ol style="list-style-type: none"> 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.	<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 AC charger is plugged in correctly.</p> <p>Check the voltage output of the solar panel. For 12V models, open circuit voltage should be about 24-27V when exposed to full sunlight. For 24V models, voltage should be about 44V.</p> <p>Verify that the polarity (positive or negative) of the solar panel matches the battery's polarity.</p>
Battery terminal becomes hot.	Verify cable is clean and tight on battery terminal
Solar Panel- no output.	<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.</p> <p>Verify the solar panel has a voltage output. Unplug solar panel and check voltage at plug with voltmeter. The voltage should be between 24-27V in direct sunlight for 12V models, or 44V for 24V models. If not, the solar panel, cable or diode could be damaged.</p>
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.
Remote control not functioning.	The remote control is designed to stop working if the battery drops below 11 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
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.	Batteries are low. If the batteries are becoming low, the remote control will stop functioning at about 22 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 18 Volts. Charge the batteries using a 10A charger.
Power unit 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 Chapter 3 in the lift manual.</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>
Cylinders fail to hold the platform in a given position.	<p>Check hose connections.</p> <p>Contact your authorized dealer- tampering with the hydraulic system can cause equipment damage that may invalidate your warranty.</p>
Lift does not go down.	Check wiring on switches and solenoid. Verify 24V+ is at the ‘DOWN’ solenoid. Disconnect wire from ‘Down’ solenoid, use a voltmeter to check voltage output to solenoid when energizing in the down direction.
Lift does not go up.	Check wiring on switches and solenoid. Verify 24V+ is at the ‘UP’ solenoid. Disconnect wire from ‘UP’ solenoid, use a voltmeter to check voltage output to solenoid when energizing in the up direction.
Pump motor will not run.	Check the white wire on the motor start solenoid. Verify +24V is at the motor start solenoid. Use a voltmeter to check voltage output to white wire on solenoid when energizing in both “up” and “down” direction. If voltage is present while operating the lift, the motor or motor solenoid is bad. If voltage is not present, the diodes in the circuit are bad.

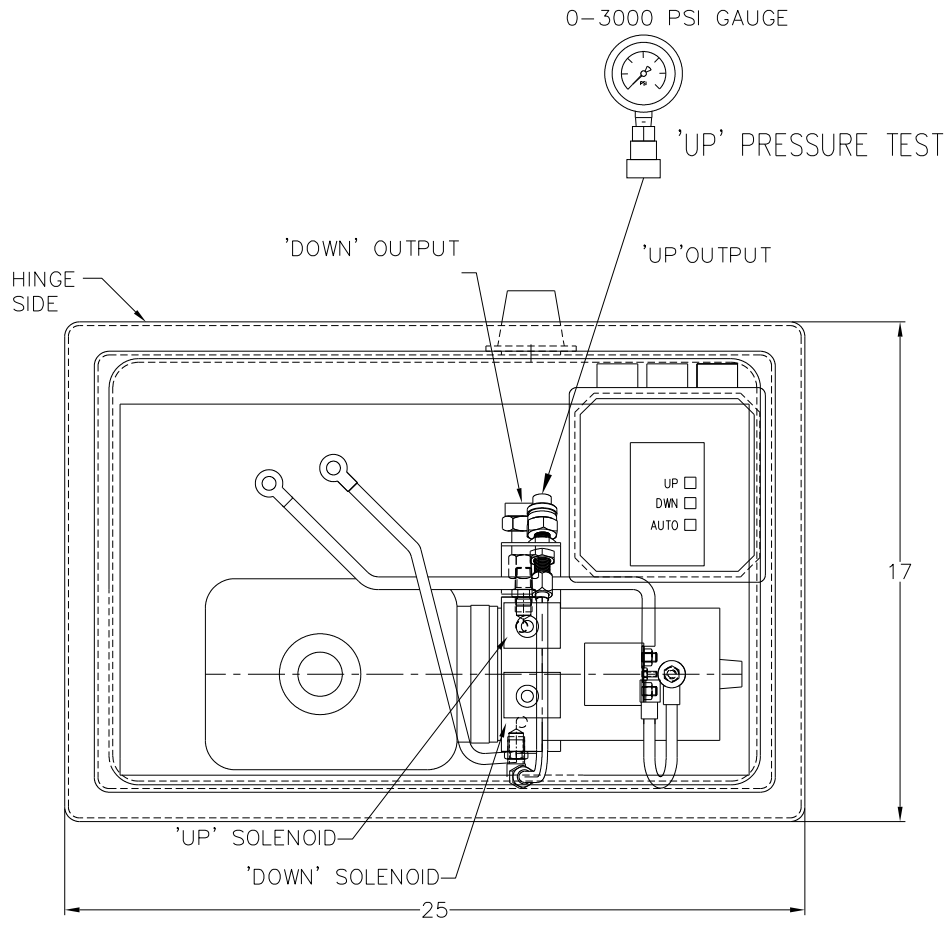


Figure 5-1 HL & HVL Power Unit Pressure Test

Refer to section 2.1 for specified pressures.

NOTE: Do not exceed recommended pressure settings. Contact your authorized dealer. Tampering with the hydraulic system can cause equipment damage that may invalidate your warranty.

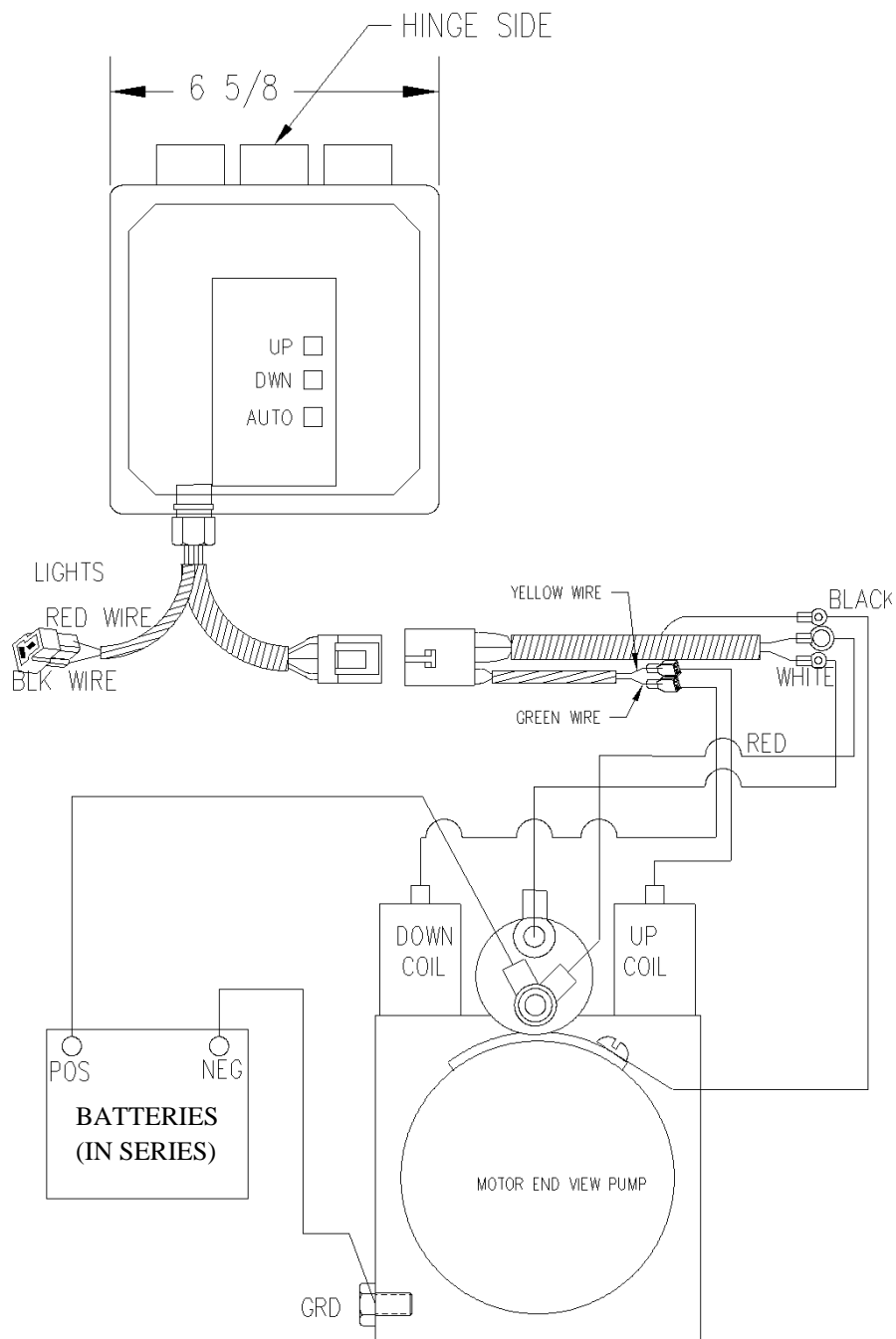


Figure 5-2 HL & HVL Power Unit Electrical Schematic

6. 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 Section 6.

6.1. 3636111 / 4136111 24VDC STANDARD DUTY POWER UNITS

REF #	QTY	DESCRIPTION	P/N
1	1	24VDC HYDRAULIC PUMP UNIT	6941181
3	1	HYDRAULIC TUBE SUPPORT BRACKET	3641467
4	1	REMOTE CONTROL UNIT	3654112
5	1	REMOTE CONTROL UNIT MOUNTING ASSY	4107417
6	1	HL/HVL CONTROL BOX ENCLOSURE LARGE	4136206
10	1	ADAPTER 9/16JICM X 1/4NPTM BULKHEAD	5641070
11	1	ADAPTER 1/4NPTM X 9/16SAEM	5641072
12	1	ADAPTER 90D 9/16SAEM X 9/16JICM	5641074
13	2	SCREW FH SOC 3/8-16 X 1	5806313
14	4	NUT HEX NYLOCK THIN 10-24 SS	5893100
15	4	WASHER FLAT SAE #10 SS	5894102
16	4	SCREW PH MS 10-24X3/4 PHIL SS	5894136
17	1	DECAL INSTALL BREATHER CAP	6206210
18	1	COUPLING 1/4 NPT FEMALE (SCREW STYLE)	6041364
19	1	COUPLING 1/4 NPT MALE (SCREW STYLE)	6041365
20	1	HYDRAULIC TUBE	6041901
21	1	TAG MODEL "BOAT LIFT"	6206211
23	1	WAFER BOARD	7841080
-	1	RC WIRE HARNESS	3641373
-	1	BATTERY CABLE BLACK 14.5"	5441115
-	1	BATTERY CABLE BLACK 29.5"	5441125
-	1	BATTERY CABLE RED 29.5"	5441130

6.2. 4136114 24VDC HEAVY DUTY POWER UNITS

REF #	QTY	DESCRIPTION	P/N
1	1	24VDC HYDRAULIC PUMP UNIT	6941181
3	1	HYDRAULIC TUBE SUPPORT BRACKET	3641467
4	1	REMOTE CONTROL UNIT	3654112
5	1	REMOTE CONTROL UNIT MOUNTING ASSY	4107417
6	1	HL/HVL CONTROL BOX ENCLOSURE LARGE	4136206
10	1	ADAPTER 9/16JICM X 1/4NPTM BULKHEAD	5641070
11	1	ADAPTER 1/4NPTM X 9/16SAEM	5641072
12	1	ADAPTER 90D 9/16SAEM X 9/16JICM	5641074
13	2	SCREW FH SOC 3/8-16 X 1	5806313
14	4	NUT HEX NYLOCK THIN 10-24 SS	5893100
15	4	WASHER FLAT SAE #10 SS	5894102
16	4	SCREW PH MS 10-24X3/4 PHIL SS	5894136
17	1	DECAL INSTALL BREATHER CAP	6206210
18	1	COUPLING 1/4 NPT FEMALE (SCREW STYLE)	6041364
19	1	COUPLING 1/4 NPT MALE (SCREW STYLE)	6041365
20	1	HYDRAULIC TUBE	6041901
21	1	TAG MODEL "BOAT LIFT"	6206211
23	1	WAFER BOARD	7841080
-	1	RC WIRE HARNESS	3641373
-	1	BATTERY CABLE BLACK 14.5"	5441115
-	1	BATTERY CABLE BLACK 29.5"	5441125
-	1	BATTERY CABLE RED 29.5"	5441130

6.3. 3641617/4136110 24VDC HEAVY DUTY POWER UNITS

REF #	QTY	DESCRIPTION	P/N
1	1	24VDC HYDRAULIC PUMP UNIT	6941081
3	1	HYDRAULIC TUBE SUPPORT BRACKET	3641366
4	1	REMOTE CONTROL UNIT	3654112
5	1	REMOTE CONTROL UNIT MOUNTING ASSY	4107417
6	1	HL/HVL CONTROL BOX ENCLOSURE LARGE	4136206
10	1	ADAPTER 9/16JICM X 1/4NPTM BULKHEAD	5641070
11	1	ADAPTER 1/4NPTM X 9/16SAEM	5641072
12	1	ADAPTER 90D 9/16SAEM X 9/16JICM	5641074
13	2	SCREW FH SOC 3/8-16 X 1	5806313
14	4	NUT HEX NYLOCK THIN 10-24 SS	5893100
15	4	WASHER FLAT SAE #10 SS	5894102
16	4	SCREW PH MS 10-24X3/4 PHIL SS	5894136
18	1	COUPLING 1/4 NPT FEMALE (SCREW STYLE)	6041364
19	1	COUPLING 1/4 NPT MALE (SCREW STYLE)	6041365
20	1	HYDRAULIC TUBE	6041901
21	1	TAG MODEL "BOAT LIFT"	6206211
23	1	WAFER BOARD	7841080
-	1	RC WIRE HARNESS	3641373
-	1	BATTERY CABLE BLACK 14.5"	5441115
-	1	BATTERY CABLE BLACK 29.5"	5441125
-	1	BATTERY CABLE RED 29.5"	5441130

6.4. CONTROL BOX ASSEMBLY

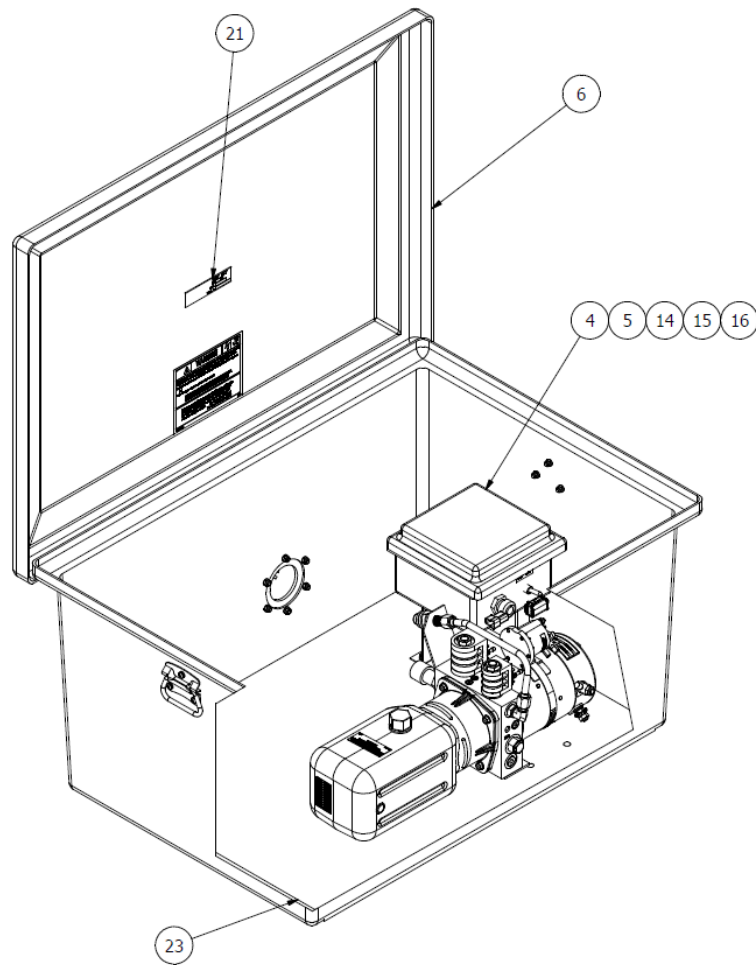
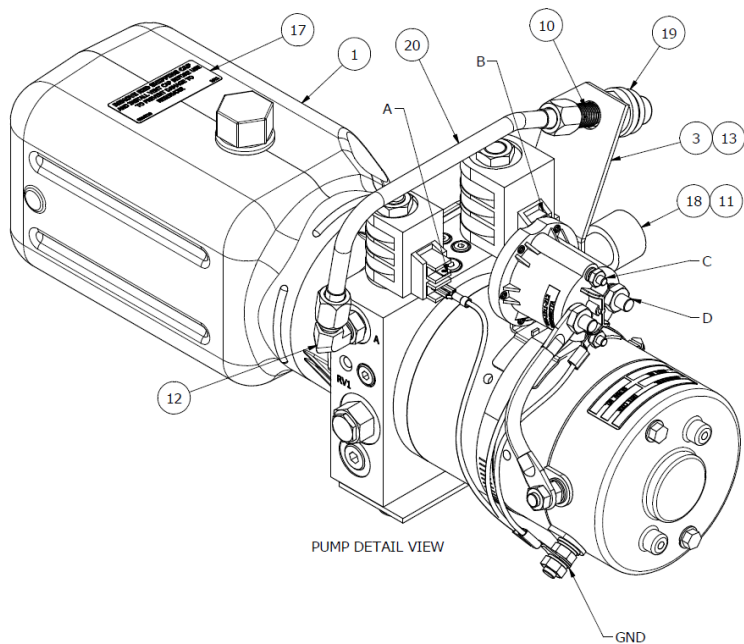


Figure 6-1 - Control Box Assembly



Pump Wiring

Terminal	Description	Connection (wire color)
A	“Up” coil	Harness (green)
B	“Down” coil	Harness (yellow)
C	Energize motor	Harness (white)
D	Always 24V	Harness (red) Batt cable (red)
GND	Ground	Harness (black) Batt cable (black)

Figure 6-2 - Pump Detail View

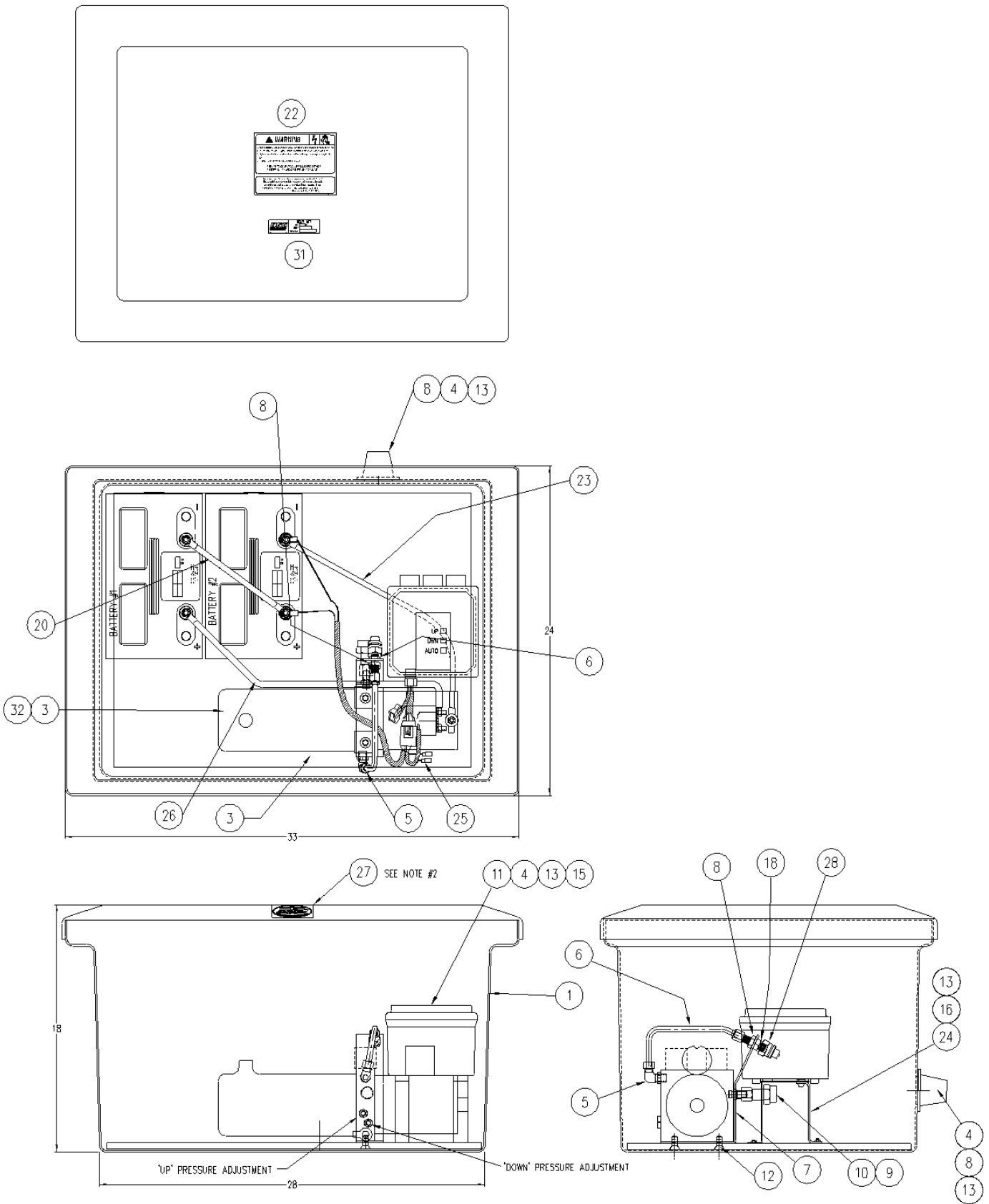


Figure 6-3 – 3641617 & 4136110 HL/HVL 24VDC Power Unit Assembly

LIMITED PRODUCT WARRANTY

Reimann & Georger Corporation

Marine Products

RGC Marine products, hereafter referred to as the “Manufacturer”, extend 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. 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 hydraulic unit, cylinders, hoses, bearings and remote control.

B. 15-YEAR LIMITED WARRANTY ON HL 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 ONE-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 ONE (1) YEAR 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, P.O. Box 681, Buffalo, NY 14240.

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 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.

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 hydraulic unit, cylinders, hoses, bearings and remote control.

B. 5-YEAR LIMITED WARRANTY ON HL 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.