



24VOLT DC VL DIRECT DRIVE INSTRUCTIONS

(Applies to P/Ns 3711241, 3711243, 3711245, 3711246,
3711247, 3711249)

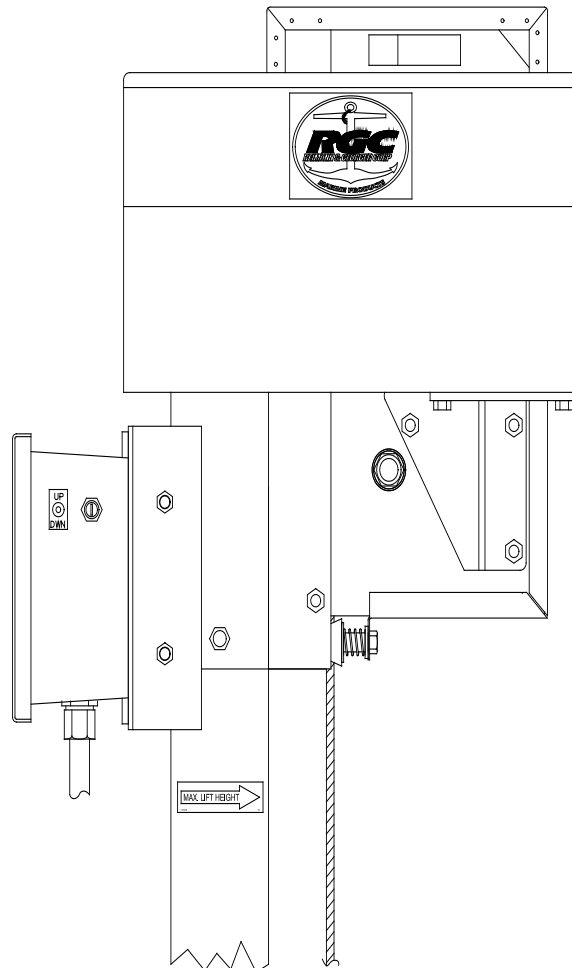


TABLE OF CONTENTS

CHAPTER	TITLE	PAGE
1	SAFETY	1
1.1	Introduction	1
1.2	Safety Definitions	1
1.3	Equipment Safety Labels	1
1.4	Installation Safety	1
1.5	Operating Safety	2
1.5.1	General	2
1.5.2	Safety When Raising the Boat	2
1.5.3	Safety When Lowering the Boat	2
2	SPECIFICATIONS	3
2.1	Technical Data	3
2.2	Motor Specifications	3
3	INSTALLATION AND SETUP	4
3.1	Pre-Installation Checks	4
3.2	Upgrade Installation–Handwheel / Hub Removal	4
3.3	Winch Input Coupler Installation	5
3.4	Mounting the Direct Drive	5
3.5	Coupler Alignment and Gap Adjustment	7
3.6	VL Direct Drive Cover	8
3.7	Control Box Mounting	9
3.8	Connecting the Battery	10
4	OPERATION.....	13
4.1	Pre-Operative Checks	13
4.2	Testing Winch Operation	15
4.3	Raising and Lowering the Platform	15
4.4	Securing Lift When Not In Use	16
4.5	Remote Control Information	16
4.5.1	Programming Remote	16
4.5.2	Code Learning Transmitter	16
4.5.3	Channel Memory Clear	17
4.5.4	Programming Channel Relay	17
4.5.5	Programming Channel Output	17
5	TROUBLESHOOTING.....	18
6	PARTS LIST.....	19
6.1	Common Drive Assembly	19
6.2	Drive Cover Assembly	19
6.3	Manual 1HP 15:1 Gear Box	19
6.4	Gem Remote 1 HP 15:1 Gear Box	20
6.5	Manual 3/4HP 25:1 Gear Box	20
6.6	Manual 3/4HP 15:1 Gear Box	20
6.7	Gem Remote 3/4HP 25:1 Gear Box	20
6.8	Gem Remote 3/4HP 15:1 Gear Box	20

LIST OF FIGURES

FIGURE	DESCRIPTION	PAGE
3-1	Handwheel / Winch Hub Removal	5
3-2	Direct Drive Mounting	6
3-3	Coupler Alignment and Gap Adjustment	7
3-4	VL Direct Drive Guard	8
3-5	Control Box Mounting	9
3-6 a, b	Control Boxes.....	10
3-7a	Battery Connection for Manual Control Box	11
3-7b	Battery Connection for RC Control Box	12
4-1	Receiver Layout	16

1 SAFETY

1.1 INTRODUCTION

Your Reimann & Georger Corporation Marine Products 24V DC direct power drive mounts in place of the standard handwheel to lift your boat out of the water. The exclusive right angle design minimizes the intrusion of dock space. A Remote Control option is available which is covered in a separate manual for this unit.

Your power drive is well-designed and well-built. However, like any other equipment, it can malfunction or become hazardous in the hands of an inexperienced and/or untrained user. Therefore, read this manual and your related vertical lift manual thoroughly before operating the power drive to provide maximum safety for all operating personnel, and to get the maximum benefit from your equipment.



WARNING:

AN INSTALLED POWER DRIVE BECOMES AN INTEGRAL PART OF THE ASSOCIATED VERTICAL LIFT. THEREFORE, DO NOT USE THE POWER DRIVE TO OPERATE THE LIFT WITHOUT STUDYING BOTH THIS MANUAL AND THE VERTICAL LIFT MANUAL. FAILURE TO DO THIS CAN LEAD TO MISUSE OF THE DRIVE AND/OR LIFT WITH RESULTING DAMAGE AND/OR PERSONAL INJURY. CONTACT YOUR RGC® MARINE DEALER IF YOU HAVE ANY QUESTIONS.

1.2 SAFETY DEFINITIONS

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

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

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

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

1.3 EQUIPMENT SAFETY LABELS

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

1.4 INSTALLATION SAFETY

1. Do not install or use the drive if it shows any signs of damage.
2. Ensure that all bolts and nuts are fastened securely prior to operation.
3. Do not weld or otherwise modify any part of the drive assembly. Such alterations may damage the drive and/or the winch and void the associated warranties.

1.5 OPERATING SAFETY

1.5.1 General

1. Before allowing anyone to operate the drive, be sure they fully understand the proper operating procedure and the use of all controls and connections for both the drive and the lift.
2. Completely remove any user or dealer installed locking devices before operating the lift.
3. Do not operate the drive and the lift under the influence of drugs, alcohol, or medication.
4. Do not exceed the rated maximum capacity of the lift. This can damage the drive, lift and/or boat with resulting serious personal injury.
5. Never allow anyone into the boat when suspended in the lift.
6. Never operate the drive without the cover installed over the drive assembly. Keep fingers and clothing clear of all moving parts of the lift and direct drive.
7. Do not attempt to make any adjustments on the lift or drive during operation.
8. Disconnect and lock out the power source when not using the drive to prevent unauthorized use.
9. Never use the drive installation or any part of the lift to hang or store any auxiliary equipment such as boating hardware.

1.5.2 Safety When Raising the Boat

1. The power drive shaft must turn clockwise to raise the platform. The brake pawl on the winch must click, indicating that the brake is operative.
2. Do not try to raise the boat beyond the maximum lifting height of the platform. This can cause lift and drive damage.



WARNING:

IF THE POWER DRIVE SHAFT MUST TURN COUNTERCLOCKWISE TO RAISE THE PLATFORM, YOU HAVE REEVED THE WINCH INCORRECTLY. THE DRIVE WILL IMMEDIATELY ENCOUNTER STRONG RESISTANCE WHICH CAN DAMAGE THE DRIVE AND/OR WINCH AND BREAK THE CABLE.

1.5.3 Safety When Lowering the Boat

1. The power drive shaft must turn counter-clockwise when lowering the platform.



WARNING:

IF THE DRIVE SHAFT MUST TURN CLOCKWISE TO LOWER THE PLATFORM, YOU HAVE REEVED THE WINCH INCORRECTLY. THE BRAKE PAWL WILL NOT BE EFFECTIVE WHICH CAN CAUSE AN UNCONTROLLED SPIN-DOWN OR “FREEWHEEL” OF THE WINCH SHAFT. IF FREEWHEELING OCCURS, NEVER TRY TO STOP IT.

2. Counter-clockwise rotation of the power drive shaft allows the self-activating brake mechanism to provide a controlled lowering of the platform.



WARNING:

NEVER RELEASE THE BRAKE PAWL OF THE WINCH. THIS CAN TRIGGER AN UNCONTROLLED SPIN-DOWN OR “FREEWHEEL” OF THE WINCH SHAFT.

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

2 SPECIFICATIONS

2.1 TECHNICAL DATA

VLDD ASSY #	MOTOR	GEAR REDUCER
3711241	3/4 HP 24VDC	25:1
3711243	3/4 HP 24VDC	15:1
3711245*	3/4 HP 24VDC	25:1
3711246*	3/4 HP 24VDC	15:1
3711247	1 HP 24VDC	15:1
3711249*	1 HP 24VDC	15:1

*Remote control units, come with 2 remote transmitters.

2.2 MOTOR SPECIFICATIONS

HORSEPOWER:	3/4 HP	1 HP
VOLTAGE:	24 VDC	24 VDC
RPM:	1800	1800
SERVICE FACTOR:	1.0	1.0
AMPS:	29	39

Two group 27 deep cycle batteries are recommended for powering the drive unit. The control box power cable connecting to the battery cable and the battery cable are each 10 feet long.

3 INSTALLATION AND SETUP

The following instructions apply to the direct drive only. Instructions for the optional remote control panel are in the manual specifically for this item.

3.1 PRE-INSTALLATION CHECKS

1. Ensure that the vertical lift has been properly installed as described in your lift manual.
2. Check that the winch is reeved properly. Do not install the direct drive until the winch is reeved as described in your lift manual.
3. Do not install or use the drive if it shows any signs of damage.
4. Ensure that you are using the proper VL Direct Drive Assembly for your lift as listed below:

VLDD ASSY #	VL MODEL	CONTROL TYPE
3711241	VL3500, VL4500, VL50124SR09, VL40124P, VL70132TP	MANUAL
3711245	VL3500, VL4500, VL50124SR09, VL40124P, VL70132TP	REMOTE (GEM)
3711243	VL60124	MANUAL
3711246	VL60124	REMOTE (GEM)
3711247	VL80124	MANUAL
3711249	VL80124	REMOTE (GEM)

5. Do not weld or otherwise modify any part of the drive assembly. Such alterations may damage the drive and/or the winch and void the associated warranties.
6. Two people will be needed to mount this drive onto the winch. 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.



WARNING:

THE DRIVE IS TOO HEAVY TO SAFELY MOUNT IT SINGLE-HANDEDLY. ATTEMPTING THIS CAN CAUSE EQUIPMENT DAMAGE AND/OR PERSONAL INJURY.

7. For installing this drive, you will need two 9/16" wrenches, one 1/2" wrench, one 9/32" wrench, one 3/4" deep wall socket with ratchet and a #2 Phillips screwdriver.

3.2 UPGRADE INSTALLATION – HANDWHEEL / HUB REMOVAL

1. Remove all weight from the lifting platform. Lower the platform to relieve cable tension, but do not lower it enough to create excessive slack in the winch cable.



WARNING:

FAILURE TO REMOVE ALL WEIGHT FROM THE PLATFORM BEFORE INSTALLING THE DRIVE CAN CAUSE EQUIPMENT DAMAGE AND/OR PERSONAL INJURY.

2. Remove the winch cover and hold the input shaft with a suitable clamping device to prevent it from rotating.

3. Remove the handwheel by removing the 1/2" locknut (3/4" socket) and washer that is fastened to the winch input shaft, located in the center of the handwheel. Refer to Figure 3-1.
4. Proceed to section 3.3.

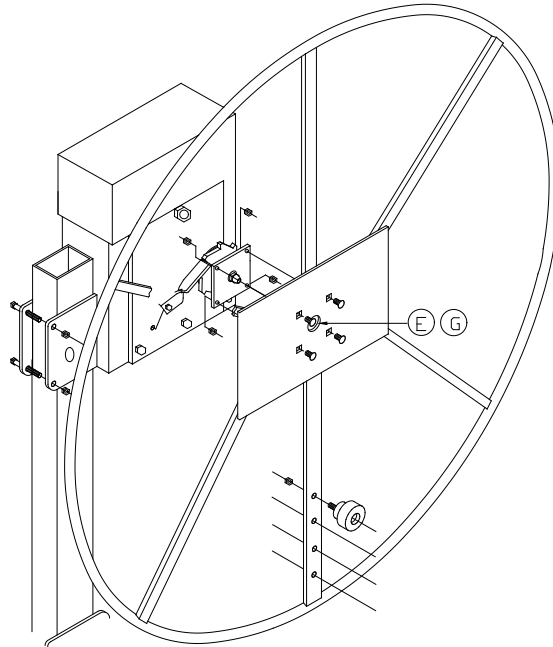


Figure 3-1
Handwheel / Winch Hub Removal



WARNING:

DO NOT REMOVE THE BRASS WASHER FROM THE WINCH INPUT SHAFT. THE SPRING LOADED WINCH BRAKE PAWL MUST REMAIN ENGAGED DURING THE POWER DRIVE INSTALLATION.

3.3 WINCH INPUT COUPLER INSTALLATION

1. Refer to Figure 3-2, screw the acme coupler (8) clockwise onto the winch input shaft. The coupler must pinch the brass washer and brake sprocket tightly against the friction disk.
2. Verify that the brake pawl is engaged on the brake sprocket.
3. Install 1/2" washer (E) onto the end of the input shaft.
4. Install and securely fasten the 1/2"-20 locknut (G) onto input shaft. Tighten using a 3/4" socket/ratchet.

3.4 MOUNTING THE DIRECT DRIVE

1. Unpack the drive by removing the 5/16 X 3/4 bolt from the mounting plate to which the motor is attached. Do not remove the 1/4 X 1" bolt from the wood frame.
2. Refer to Figure 3-2, from the direct drive mounting bracket, remove the 3/8 X 1" bolt (A), nut (F), lock washer (D), and flat washer (C), save to reuse.
3. Remove from the winch the 3/8 nut (F), lock washer (D), and flat washer (C) off the 3/8 X 1" carriage bolt that is pressed into the winch wall and 3/8 X 6-1/2" bolt that holds the winch wall spacer. DO NOT remove either of these bolts.
4. Insert rubber spider onto direct drive coupler.

5. Make sure the fingers on the direct drive and winch shaft couplers are properly aligned. You may need to turn the winch shaft coupler to do this.
6. Lightly moisten rubber spider with water to assist in mating the couplers.
7. Mount the direct drive assembly to the winch as shown. Install and hand tighten washer and nuts onto the winch supplied bolts. Install the 3/8 x 1" bolt (A), supplied with mounting bracket, from the inside of winch wall to outside of mounting bracket. Lightly fasten.
8. Position mounting bracket for best alignment, then securely fasten all 3/8 flat washers, lock washers, and hex nuts.
9. Using a 9/32" wrench, remove from reducer the installed 1/8" red pipe plug. Install the vent plug supplied with unit.



CAUTION:
FAILURE TO DO THIS COULD, IN PROLONGED USE, BLOW THE REDUCER SEALS AND VOID YOUR WARRANTY.

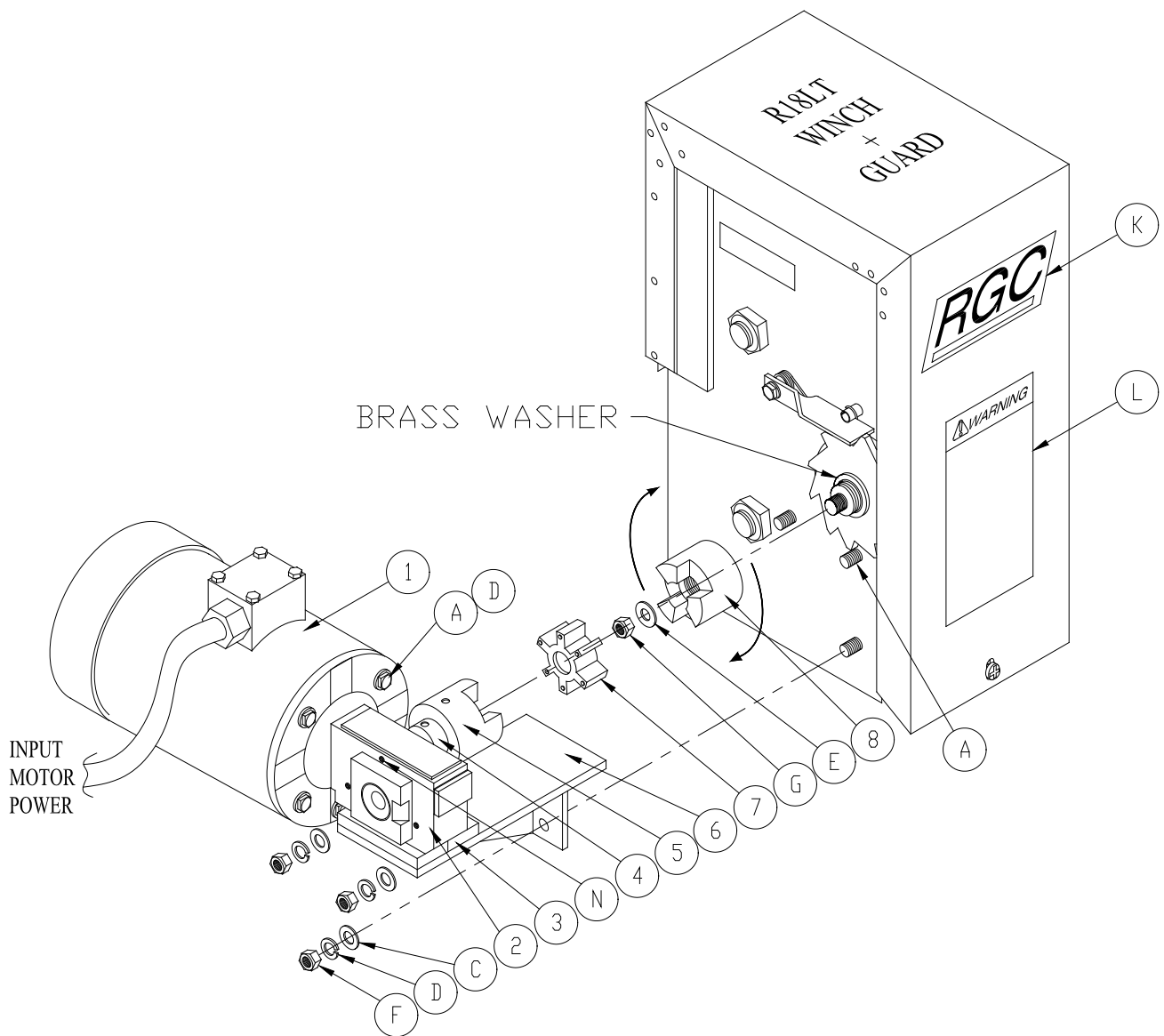


Figure 3-2
Direct Drive Mounting

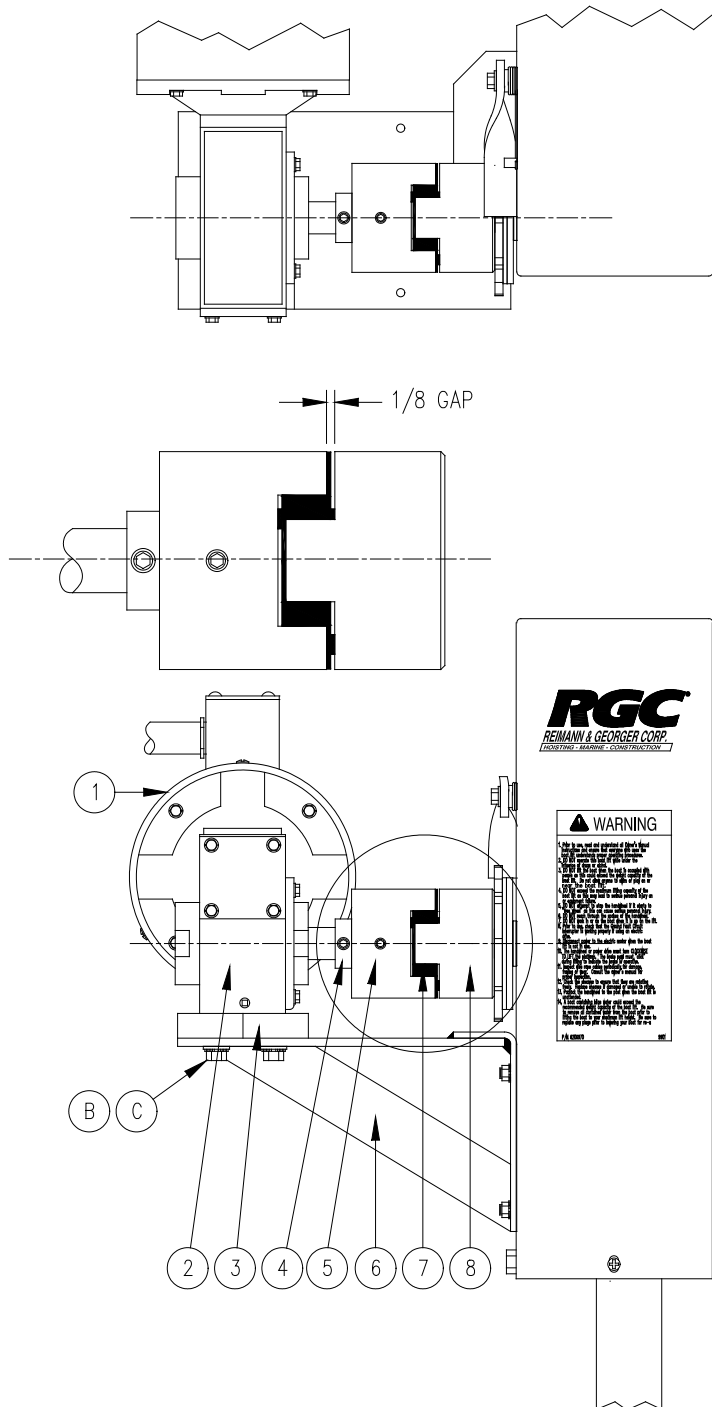


Figure 3-3
Coupler Alignment and Gap Adjustment

3.5 COUPLER ALIGNMENT AND GAP ADJUSTMENT

1. Refer to Figure 3-3. The center line of the direct drive coupler must align with the center line of the winch input shaft coupler. Align if necessary, by loosening the gearbox mounting bolts and positioning the gearbox as required. Re-tighten bolts.



CAUTION:
FAILURE TO PROPERLY ALIGN THESE CENTER LINES CAN CAUSE EQUIPMENT DAMAGE.

2. With the winch shaft coupler threaded tightly against the brake sprocket, measure the gap between the couplers. A 1/8" gap is required to ensure proper brake operation.



CAUTION:
FAILURE TO MAKE THE PROPER GAP ADJUSTMENT CAN CAUSE EQUIPMENT DAMAGE.

3. If adjustments are required to achieve this 1/8" gap, use the supplied Allen wrenches to loosen the coupler and shaft collar set screws on the gearbox output shaft. Make the proper adjustments to this coupler position.
4. Tighten all hardware after making the adjustments.
5. There will be a 1/8" gap between the two couplers when the platform is raised. This gap closes when the brake is released and the platform is lowered.

3.6 VL DIRECT DRIVE COVER INSTALLATION

1. Refer to Figure 3-4, Using a #2 Phillips screwdriver, fasten the long winch mounting bracket to the backside of cover with 1/4 -20 x 1" machine screws.
2. Fasten short mounting bracket to the gearbox mounting plate with 1/4 -20 x 1" machine screws.
3. Remove screws from backside of winch cover and install VL Direct Drive Cover over drive assembly. Fasten cover to bracket on gearbox mounting plate with 1/4 -20 x 1" machine screws. Fasten cover to winch using previously removed screws.

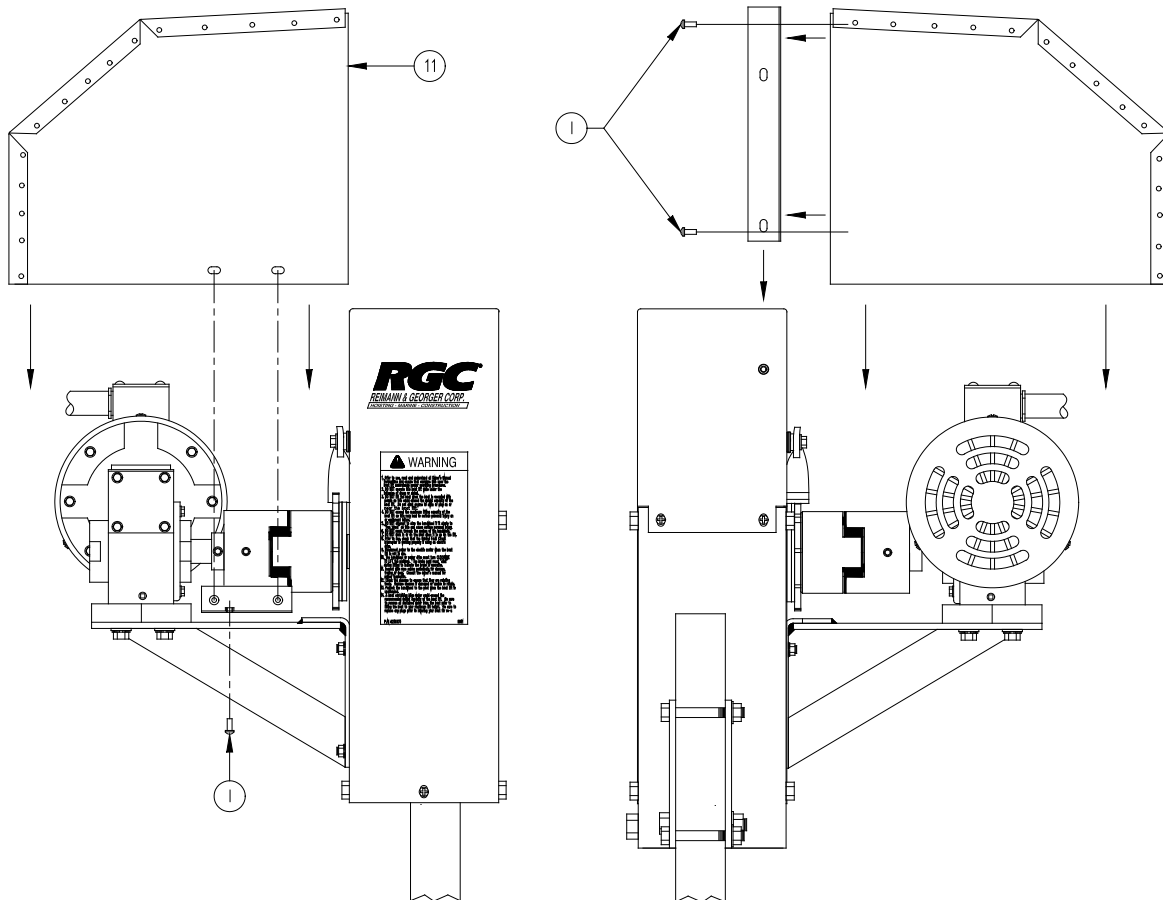


Figure 3-4
VL Direct Drive Cover Installation



WARNING:

NEVER OPERATE THE DIRECT DRIVE WITHOUT THE MOTOR GUARD IN PLACE. THIS CAN CAUSE SERIOUS PERSONAL INJURY.

3.7 CONTROL BOX MOUNTING

1. Refer to Figure 3-5. Mount the RC control box onto the winch bracket using mounting bracket (10).
2. Figure 3-6a shows the manual control box which only has a power (on/off) switch and the control (up/down) switch. Figure 3-6b shows the remote control box which has a key switch and an up/down switch. When the key switch is in the central position, neither the remote fob nor the manual switch will work. When turned in one direction only the up/down switch will work and the remote fob will not, when turned in the other direction, only the remote fob will work, but not the up/down switch.

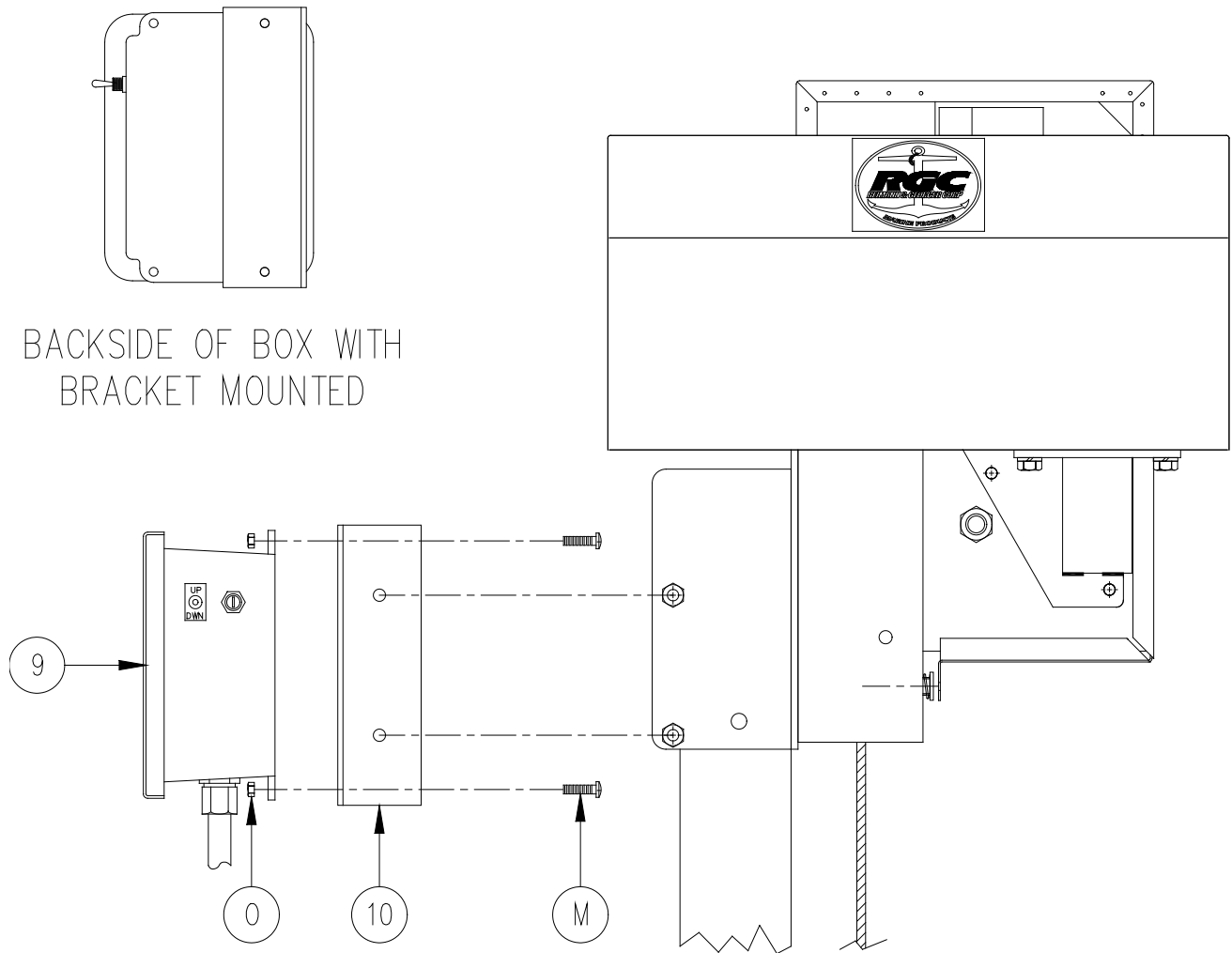


Figure 3-5
Control Box Mounting to winch bracket

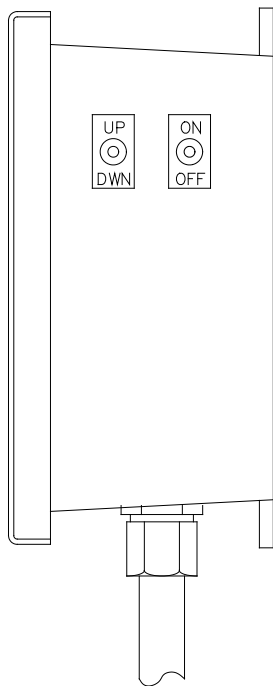


Figure 3-6a
Manual Control Box

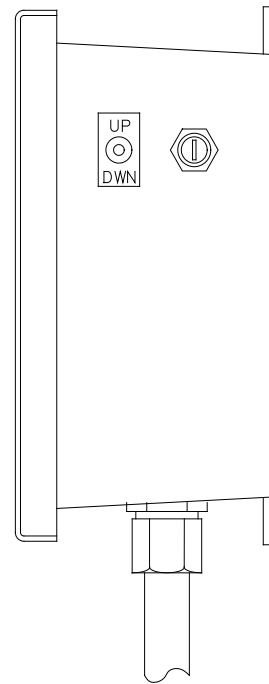


Figure 3-6b
Remote Control Box

3.8 CONNECTING THE BATTERIES

1. Refer to either Figure 3-7a Manual or 3-7b Remote control. Connect the battery cable to the two batteries by connecting the black & red wire to the positive terminal of battery #1, and the black wire to the negative terminal of battery #2. Connect jumper cable (12) to the negative terminal of battery #1 and to the positive terminal of battery #2. If the cable end does not fit battery stud, rotate jumper cable end for end.
2. Connect the power cable from the control box to the battery power cable.

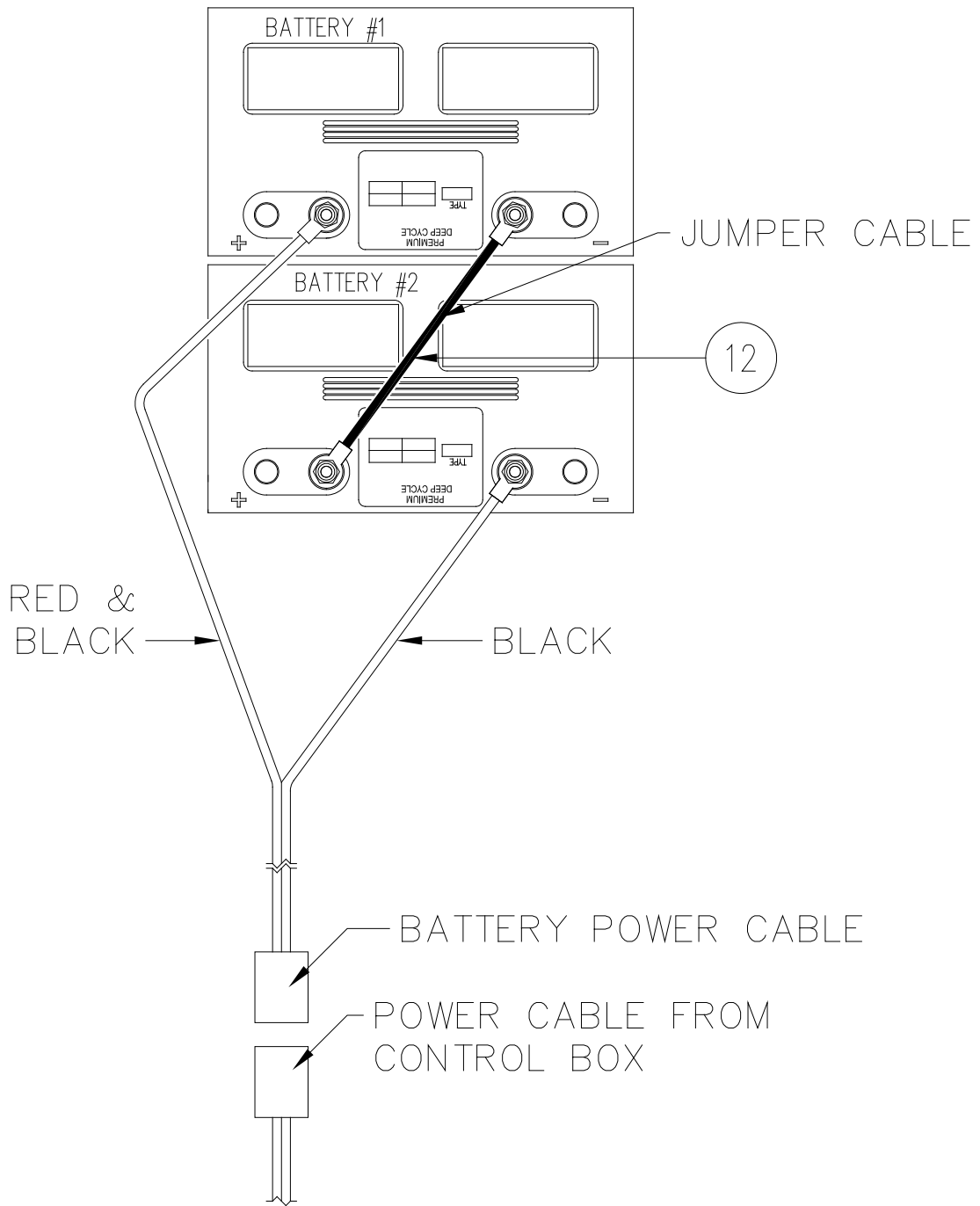


Figure 3-7a
Battery Connection for Manual Control Box

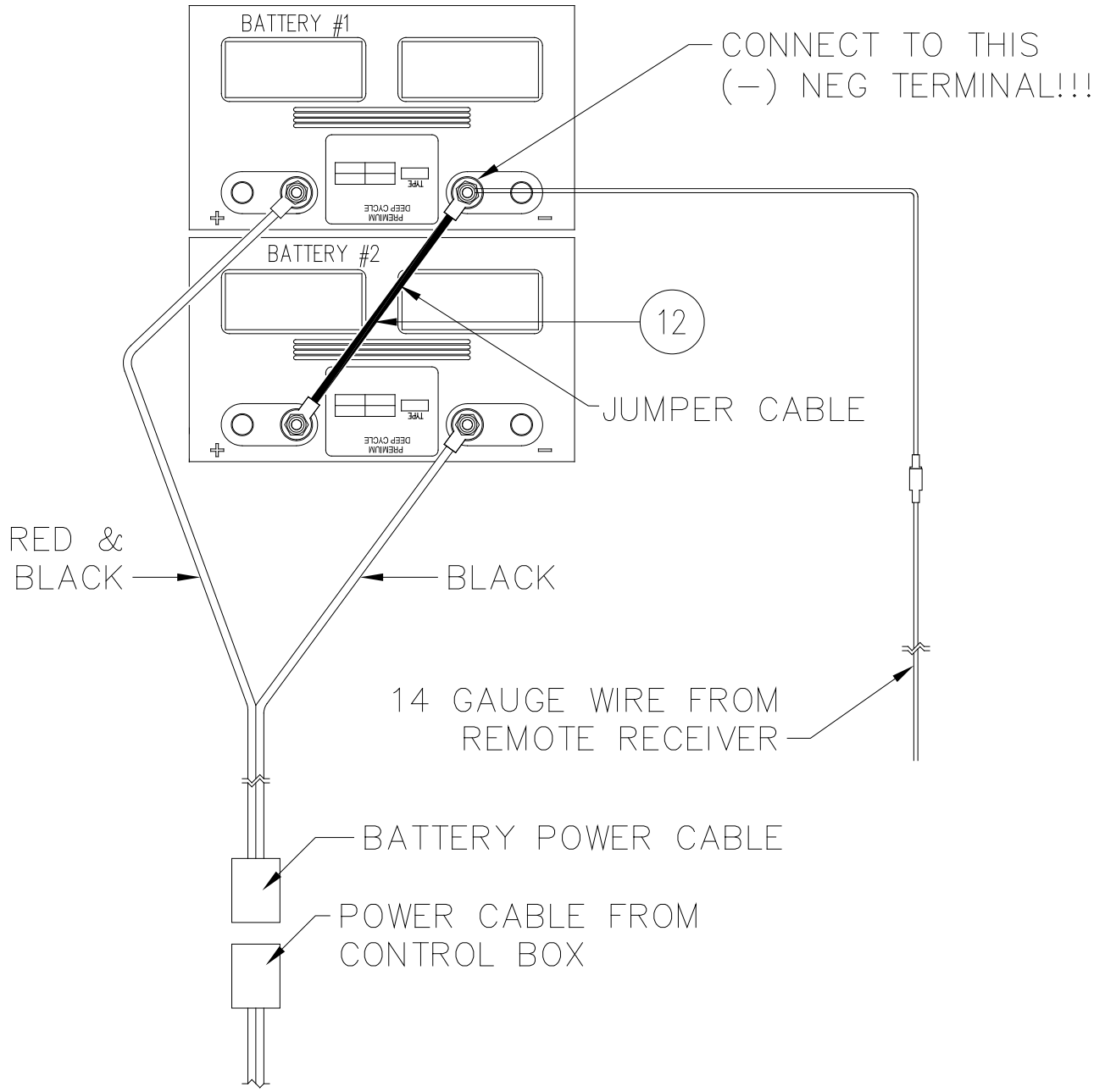


Figure 3-7b
Battery Connection for RC Control Box

4 OPERATION

4.1 PRE-OPERATIVE CHECKS

1. Review the following Pre-Lifting Checklist. Only those who have read and understood this manual, the vertical lift manual; and related equipment manuals are qualified to do this inspection.
 - 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 your vertical lift manual 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 the installation chapter of the vertical lift manual.
 - 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 the installation chapter of the vertical lift manual. Then tighten the jam nuts to the cable nuts to lock the position.
 - Ensure the winch is securely fastened to vertical leg "A".
 - Ensure the center lines of the couplers on the winch input shaft and gearbox output shaft are properly aligned.
 - Ensure that the coupler on the winch input shaft is pinching the brass washer and brake sprocket tightly against the friction disk.
 - Ensure that there is a 1/8" gap between the winch input shaft and gearbox output shaft couplers with the platform in the raised position.
 - Ensure set screw securing wire rope end to the drum is tight and in good condition.
 - Ensure the guards are in place before operating the winch.
 - Ensure the cover is installed over the direct drive assembly.
 - Ensure the vent plug is installed on the gearbox.

- Ensure the plastic caps are installed onto the tops of the vertical legs and the ends of the upper short horizontal tubes.
- Read the lift manual and Ensure that everyone understands the proper operating procedure.
- Understand the use of all controls and connections provided with the direct drive.
- Do not use the lift or direct drive if either shows any signs of damage.
- Ensure that all bolts and nuts are fastened securely prior to operation.
- Check that the winch is reeved properly. See the reeving instructions in your vertical lift manual.
- Never try lifting anything other than a boat with this lift.
- Do not operate the lift under the influence of drugs, alcohol, or medication.
- Never try to lift or launch your boat in rough water conditions. This can damage your boat and/or the lift.

4.2 TESTING WINCH OPERATION

After the lift installation is complete, it is important that the winch functions properly. Test the winch operation as follows:

1. Hold the switch in the UP position to raise the empty platform about one-fourth the way up. Then release the switch. If the winch is functioning properly, the brake mechanism will hold the platform at any position. The direct drive must turn clockwise when raising the platform. The brake pawl must click, indicating that the brake is operative.



WARNING:

IF THE DIRECT DRIVE SHAFT MUST TURN COUNTERCLOCKWISE TO RAISE THE PLATFORM, YOU HAVE REEVED THE WINCH INCORRECTLY. THE DRIVE WILL IMMEDIATELY ENCOUNTER STRONG RESISTANCE WHICH CAN DAMAGE THE DRIVE AND/OR WINCH AND BREAK THE CABLE.

2. Repeat Step 1 in the half, three-quarters, and full lift positions.
3. Lower the empty platform to repeat steps 1 and 2 with your boat on the lift. The direct drive shaft must turn counter-clockwise when lowering the platform. This counter-clockwise rotation allows the self-activating brake mechanism to stop the platform lowering as soon as the operator releases the switch from the DOWN position. Make sure this brake mechanism is operative.



WARNING:

IF THE DRIVE SHAFT MUST TURN CLOCKWISE TO LOWER THE PLATFORM, YOU HAVE REEVED THE WINCH INCORRECTLY. THE BRAKE PAWL WILL NOT BE EFFECTIVE WHICH CAN CAUSE AN UNCONTROLLED SPIN-DOWN OR “FREEWHEEL” OF THE WINCH SHAFT. IF FREEWHEELING OCCURS, NEVER TRY TO STOP IT. DO NOT USE THE LIFT IN THIS CONDITION.

4. Contact your authorized dealer if the winch mechanism fails to perform as described in this section. Do NOT tamper with the winch mechanism.

4.3 RAISING AND LOWERING THE PLATFORM

1. Raise the platform by holding the switch in the UP position until the platform is at the desired level. The switch can be released any time to stop the platform movement and the self-activating brake mechanism will hold the platform at that height. Do not try to raise the boat beyond the maximum lifting height of the platform. This can cause lift and direct drive damage.
2. Platform should be raised a minimum of 1 foot between bottom of boat and highest potential water table height for your geographic area.



WARNING:

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

3. Lower the platform by turning and holding the switch in the DOWN position. The switch can be released any time to stop the platform movement. Do not continue lowering the platform after the boat floats freely from it. Excessive winch cable slack may cause cable, lift, and winch damage.



WARNING:

NEVER RELEASE THE BRAKE PAWL OF THE WINCH. THIS CAN TRIGGER AN UNCONTROLLED SPIN-DOWN OR “FREEWHEEL” OF THE WINCH SHAFT.

4. Check the lift periodically for frayed cables and/or binding pulleys.

- Never operate the direct drive from inside the boat or lift.
- Keep fingers and clothing clear of all moving parts of the lift and power drive. Keep people clear during operation of the lift.

4.4 SECURING LIFT WHEN NOT IN USE

At the end of operation, secure the lift to prevent unauthorized use. Proceed as follows:

- Raise the platform to the desired height.
- Disconnect and lock out the power source to prevent unauthorized use of the lift when it is unattended.

4.5 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.

4.5.1 Reprogramming Your Remote Control

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

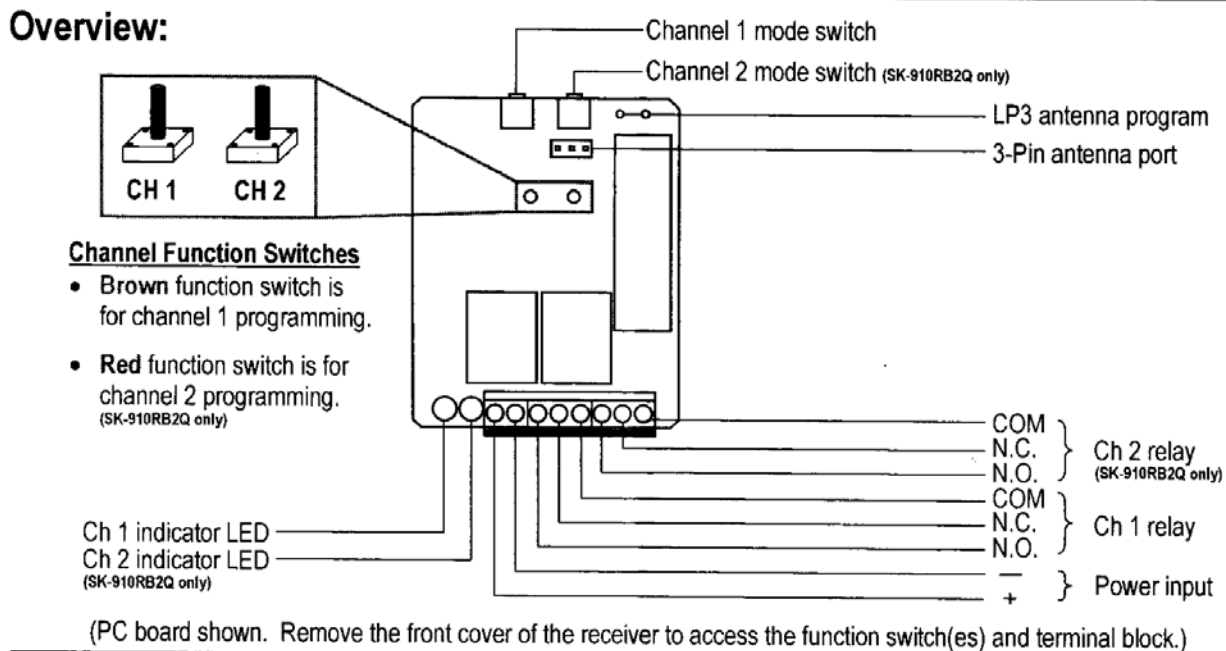


Fig. 4-1
Receiver layout

4.5.2 Code Learning a New Transmitter Button

- Press the channel mode switch of the desired channel for 3 seconds or more. The channel's LED will start to flash quickly to indicate that it is in learning mode.

2. While the LED is flashing, press the button of the transmitter to be learned one time. The receiver's channel indicator LED will flash once to indicate the transmitter button has been successfully learned. After the button has been learned, the receiver will automatically exit learning mode. To learn further codes, repeat step 2 to re-enter learning mode.

Note:

- a) The channel mode switch(es) can be found at the rear of the receiver's case (see Fig. 4-1).
- b) The channel's indicator LED will flash a maximum of 15 seconds. If no transmitter button is pressed during this time, the receiver will exit code learning mode, and the LED will turn off.
- c) If the code being learned has already been learned, the channel indicator LED will turn steady ON and then start flashing again. The code will not be learned a second time.
- d) One channel can learn the codes of a maximum of 15 transmitter buttons. If you attempt to learn a sixteenth transmitter code, the earliest code learned will be deleted and the new code will be learned.

4.5.3 Channel Memory Clear

To clear all codes from a channel's memory, press the channel's mode switch for 3 seconds or more until the channel indicator LED flashes. Release, and then press the switch again for 3 seconds or more until the LED stops flashing. The LED will then flash twice to indicate that all codes associated with that channel have been deleted.

4.5.4 Programming Each Channel Relay Output Mode

Each channel relay can be programmed for one of five output functions. The five functions are:

- 1) 4-Second Timed Output – 1 flash – not used in this application
- 2) Toggle Output – 2 flashes – not used in this application
- 3) Latch Output – 3 flashes – not used in this application
- 4) Validity Output – 4 flashes – used for channel #1 and #2 (UP & DOWN)
- 5) 1-Second Timed Output – 5 flashes – not used in this application

4.5.5 Programming Each Channel Output Mode

1. Hold down the channel function switch (see Fig. 5-1) for 3 or more seconds. The channel's LED will flash a number of times equal to the output mode that it is in.
2. To change a channel's function, press the channel's function switch. Each press moves to the next function in the sequence of flashes.
3. After changing functions, count the number of times the channel LED flashes to verify the channel is set to the correct function.
4. To exit function programming, hold the appropriate function switch for 3 seconds, or wait 15 seconds.

5 TROUBLESHOOTING

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

The troubleshooting guide for the associated vertical lift is in the vertical lift instruction manual.

SYMPTOM	CAUSE AND CORRECTIVE ACTION
Power drive does not start when switch is turned to either the UP or DOWN position.	<p>Poor electrical connection—clean as required and insure that all connections are tight.</p> <p>Power drive wired improperly—contact your dealer.</p>
Power drive starts, but winch resists platform raising.	<p>Winch has been reeved incorrectly—winch must turn clockwise to raise platform. See Chapter 3 of the vertical lift manual.</p> <p>Shaft bearings corroded - inspect/lubricate/replace.</p> <p>Sheaves binding—inspect/lubricate/replace.</p> <p>Winch cable is rubbing against the winch frame—repeat winch reeving if necessary as described in Chapter 3 of your vertical lift manual.</p>
Power drive is turning winch, 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 of the vertical lift manual.</p> <p>One or more cables are broken—replace as required.</p> <p>Sheaves binding—inspect/lubricate/replace.</p> <p>One or more cables are excessively worn—replace as required and follow monthly wire rope inspection procedure described in Chapter 5 of your vertical lift manual.</p> <p>Load exceeds rated capacity—the rated capacity in pounds is the first two digits of your lift number times 100. For example, a VL 35108 has a rated capacity of 35 x 100 or 3500 lbs. Reduce load weight as needed.</p> <p>Broken winch chain - replace</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>

6 PARTS LIST

6.1 VL DIRECT DRIVE 24V DC COMMON ASSEMBLY

REF #	PART #	QTY	PART DESCRIPTION
1	6537052	1	MOTOR - LEESON 3/4HP 24VDC
1	6537053	1	MOTOR - LEESON 1HP 24VDC
2	6703123	1	GEAR REDUCER 25:1
2	6703280	1	GEAR REDUCER 15:1
3	3708478	2	DRIVE SPACER BLOCKS
4	5800114	1	COLLAR 1" I.D. (REDUCER OUTPUT SHAFT)
5	6704741	1	REDUCER COUPLER - LOVEJOY
6	3718047	1	DRIVE MOUNTING BRKT
7	6704731	1	RUBBER SPIDER
8	3777290	1	WINCH COUPLER - ACME
12	5441115	1	BATTERY JUMPER CABLE 16" BLACK
A	5896247	1	3/8-16 X 1" HHCS (MOTOR MTG & WINCH WALL)
B	5896249	4	3/8-16 X 1-1/2" HHCS (REDUCER MTG)
C	5896406	5	3/8 WASHER FLAT SAE (REDUCER MTG & WINCH WALL)
D	5806243	5	3/8 WASHER SPLIT LOCK
E	5806410	1	1/2 WASHER FLAT USS (COUPLER ACME)
F	5803638	1	3/8-16 BRONZE HEX NUT
G	5895301	1	1/2-20 LOCKNUT (COUPLER ACME)
	5806187	1	3/16" ALLEN WRENCH (COUPLERS)
	5806184	1	5/32" ALLEN WRENCH (COLLAR)
	NA	1	3/16 X 3/16 X 1-1/4" KEY (MOTOR SHAFT)
	NA	3	PLASTIC ZIP TIES
N	NA	1	VENT PLUG - REDUCER
K	6206978	1	DECAL "RGC MARINE LOGO" (WINCH COVER)
L	6206970	1	DECAL VL "WARNING" (WINCH COVER)

6.2 VL DIRECT DRIVE COVER ASSEMBLY R18LT

REF #	PART #	QTY	PART DESCRIPTION
11	3707025	1	VL DIRECT DRIVE COVER ASSY R18LT Consisting of;
	3707020	1	VL DIRECT DRIVE COVER
	3707023	1	REDUCER SIDE MTG ANGLE (short)
	3707022	1	WINCH SIDE MTG ANGLE (long)
H	5806365	2	#8-18 X 1/2" SCREW SHEETMETAL (COVER MTG)
I	5806241	7	1/4-20 X 1/2" SCREW MACHINE (COVER MTG)
J	5896240	2	8-32 X 1/2" SCREW MACHINE (SWITCH MTG)
	6206978	1	DECAL "RGC MARINE LOGO"

6.3 3711247 VL DIRECT DRIVE 24V DC MANUAL CONTROL BOX 1 HP 15:1

REF #	PART #	QTY	PART DESCRIPTION
9	3711330	1	VLDD MANUAL CONTROL BOX 24VDC 1 HP
10	3711420	1	CONTROL BOX MOUNT BRACKET
M	5896238	2	SCREW PH MS 1/4-20X1-1/2PHILSS
O	5893101	2	NUT HEX NYLOCK 1/4-20 SS

6.4 3711249 VL DIRECT DRIVE 24V DC REMOTE CONTROL BOX 1 HP 15:1

REF #	PART #	QTY	PART DESCRIPTION
9	3711351	1	VLDDRC CONTROL BOX 24VDC 1 HP GEM
10	3711420	1	CONTROL BOX MOUNT BRACKET
M	5896238	2	SCREW PH MS 1/4-20X1-1/2PHILSS
O	5893101	2	NUT HEX NYLOCK 1/4-20 SS

6.5 3711241 VL DIRECT DRIVE 24V DC MANUAL CONTROL BOX 3/4 HP 25:1

REF #	PART #	QTY	PART DESCRIPTION
9	3711342	1	VLDD MANUAL CONTROL BOX 24VDC 3/4 HP
10	3711420	1	CONTROL BOX MOUNT BRACKET
M	5896238	2	SCREW PH MS 1/4-20X1-1/2PHILSS
O	5893101	2	NUT HEX NYLOCK 1/4-20 SS

6.6 3711243 VL DIRECT DRIVE 24V DC MANUAL CONTROL BOX 3/4 HP 15:1

REF #	PART #	QTY	PART DESCRIPTION
9	3711342	1	VLDD MANUAL CONTROL BOX 24VDC 3/4 HP
10	3711420	1	CONTROL BOX MOUNT BRACKET
M	5896238	2	SCREW PH MS 1/4-20X1-1/2PHILSS
O	5893101	2	NUT HEX NYLOCK 1/4-20 SS

6.7 3711245 VL DIRECT DRIVE 24V DC REMOTE CONTROL BOX 3/4 HP 25:1

REF #	PART #	QTY	PART DESCRIPTION
9	3711348	1	VLDDRC CONTROL BOX 24VDC 3/4 HP GEM
10	3711420	1	CONTROL BOX MOUNT BRACKET
M	5896238	2	SCREW PH MS 1/4-20X1-1/2PHILSS
O	5893101	2	NUT HEX NYLOCK 1/4-20 SS

6.8 3711246 VL DIRECT DRIVE 24V DC REMOTE CONTROL BOX 3/4 HP 15:1

REF #	PART #	QTY	PART DESCRIPTION
9	3711348	1	VLDDRC CONTROL BOX 24VDC 3/4 HP GEM
10	3711420	1	CONTROL BOX MOUNT BRACKET
M	5896238	2	SCREW PH MS 1/4-20X1-1/2PHILSS
O	5893101	2	NUT HEX NYLOCK 1/4-20 SS

TWO YEAR LIMITED WARRANTY

Reimann & Georger Corporation Marine Products

This product is warranted by RGC® Marine Products to the original purchaser to be free from defects in material and workmanship under normal use for a period of two years from the date of purchase.

During the warranty period, and upon proof of purchase, the product will be repaired or replaced (with the same or similar model) at our option, without charge for either parts or labor when serviced at RGC® Marine Products.

Upon completion of repair, the unit will be returned to the customer freight prepaid. The warranty will not apply to this product if it has been misused, abused, or altered.

NEITHER THIS WARRANTY OR ANY OTHER WARRANTY, EXPRESS OR IMPLIED, INCLUDING IMPLIED WARRANTIES OF MERCHANTABILITY, SHALL EXTEND BEYOND THE WARRANTY PERIOD. NO RESPONSIBILITY IS ASSUMED FOR ANY INCIDENTAL OR CONSEQUENTIAL DAMAGES. SOME STATES DO NOT ALLOW EXCLUSION OR LIMITATION OF INCIDENTAL OR CONSEQUENTIAL DAMAGES, SO THE ABOVE LIMITATIONS OR EXCLUSIONS MAY NOT APPLY TO YOU.

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