Customer user instructions are printed on the yellow face card inside the GEM box make sure they are read before use! Use of other wiring directions could result in damage to your GEM unit and/or the motors.

Step by Step Wiring Procedures:

1. **Turn off power at the circuit breaker.** Check with a volt meter before wiring that you have 0 volts. Overload protection is not provided inside the GEM unit. Use properly sized circuit breaker and wire size based on horsepower of motors. See the wire chart on next page.

2. Do not remove the yellow face card screws, only open the junction (J) box below the GEM box.

3. Cut off drum (hand) switches, GEM units are not designed to be used in conjunction with switches. Strip main feed and motor wire inside the GR4 units are wired for 240VAC (2 wires + ground) Main feed black goes to GEM black the other main feed goes to GEM taped Red. Old GEM units 1995 to 2014 had an option of a GFI inside the GEM unit (GR4**G**) you needed 240VAC with a neutral (3+g). Old GFI units will be pre wired. Only hook up main feed wires to GEM supplied wires. It is unsafe to use a ground as a neutral. Use type 3 conduit hubs only.

4. Connect Motor #1-4 wires to GEM wires inside the J box. **Do not hook up color to color inside the motor!**

5. Open motor covers and configure motor wires as shown on the last page. If your motor has terminals inside, check for that motor diagram otherwise use the Standard T Numbered Wired motor drawing or the Standard color motor-wired drawing. Inspect wires inside each motor to ensure proper wire connections. Failure to do so could damage your motors. **You might have to move wires inside the motors even though the hand switches worked** (AO Smith motors! Regal Beloit). To reverse motor starting direction, swap wires inside the motor! Some motors have circuit protection and output wires from these might have different color wires. Also, some manufacturers pre-wire their motors with wires that don’t match GEM wires. Some substitutions are blue for a green (ground), and yellow for a white wire. All motors must be configured for 240VAC.

6. If part number on the left side of the door has an “A” then your unit is an Auto-Stop (Run) mode. Your unit will not work without the limit switch wires hooked up. **Check that your lift stops in both the up and the down direction!** An Auto-Stop unit must have GEM limit switch. Failure to do so could result in damage to your lift and/or the boat and is against code and not insured. If the Auto-Stop LED is lit then the unit is in Auto-Stop mode, if it is flashing fast the lift is at an up limit and if slow then the lift is at the down limit. Press Auto-Stop (run) button to turn on/off the Auto mode. **The motor with the limit switch must be on if the lift is moving or lift will not stop.** To level the lift, turn off the Auto-Stop mode (if equipped). Turn off all motors and adjust each side by turning one on at a time, raise or lower each one till level. Do not turn off or on any motors while the lift is moving. **The limit switch should be on motor 1.**

7. Turn off the unit when not in use. Make sure the owner reads operating instructions printed on the yellow face card. Test the GFI (if equipped) once every month and/or before each use. The emergency override holes bypasses the GFI protection, and if the GFI is buzzing stop or the GFI will be damaged! GEM units have a three second delay before switching directions. This ensures that all the motors turn on in the right direction.

8. A replacement transmitter (#7240) or a spare can be bought online at www.gemremotes.com. Loss of range or unit hiccups check battery, 2: 3 volts (Cr2032). Old, **6230 two button transmitters** will not work with this unit.
Use this chart to size wire and circuit protection. Measure the distance between the main breaker and the motors.

<table>
<thead>
<tr>
<th># of Motors</th>
<th>Motor HP</th>
<th>240 Volt AC Main Feed</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td><strong>Amps to run</strong></td>
</tr>
<tr>
<td>4</td>
<td>1/2</td>
<td>17.6</td>
</tr>
<tr>
<td>4</td>
<td>3/4</td>
<td>21.3</td>
</tr>
<tr>
<td>4</td>
<td>1</td>
<td>26.0</td>
</tr>
<tr>
<td>4</td>
<td>1 1/2</td>
<td>35</td>
</tr>
<tr>
<td>4</td>
<td>2</td>
<td>44.8</td>
</tr>
</tbody>
</table>

Breakers size is our recommendation. Please use motor label for proper size and code compliance.

### TROUBLESHOOTING:

1. Your remote works but the face card membrane switch buttons don’t. You need to plug in the M/S tail to the receiver board.
2. You must **cut off drum switches**: They worked, but the GEM unit only works in one direction. You need to rewire inside motors, Note GEM Org wire.
3. **1 or two motors turn in the wrong direction**: **Switch motor wires**, wires inside the motor, check motor name plate for reversing directions.
4. **Chatter or grumble in the contactor**: Turn off all the motors see that the contactors pull in for up and down. Turn on 2 motors at a time to see if they work. Turn on all switches check for low voltage, when system is running (override by pushing in contactor). Check wire size vs. run length all the way from the motors to the main breaker at the house. Example: 4 - 1hp motor wired at 240VAC 200 feet would need #4 wire to the GEM unit. The motor wire size should be ~1/4 the main feed size #10.
5. **Motor not working**: You must use GEM’s motor wire diagrams. **Regal Beloit (A.O. Smith) motors move GEM Orange wire to pin 2!!** GEM units works with 120/240VAC 1 phase, cap. start, induction run motors. Three phase motors require a special unit please check. 1 ½ horsepower motors and larger can have a capacitor start and a cap. run. The run cap. might not reverse or the run cap. can explode. It must be removed. This will increase the run amps that the motor will draw by three amps. Eastbay motors, 2 cap systems require no modifications.
6. Transmitter **does not work** a 3-second delay when switching direction. Check that LED on transmitter lights and check that the learn button LED lights when receiving from the transmitter. Relearn the transmitter, press the learn button 1 time and then push the Stop button the Learn LED should flash.
7. **Short range or lift hiccups**: If the red LED on the transmitter **flickers, replace the batteries 2**: 3Volt CR2032. Do not change the length of the antenna wire this will not help the range. You should have line of sight for the unit to have up to 300-foot range.
8. If the lift does not move, make sure all 4 motor switches are on. If the GEM unit is dead check that the LED flashes when turned on. If no flash then check your power you can also press in the middle of top contactor if the lift runs, you have main power but your 24 VAC transformer is not working. **Auto-Stop units must be hooked up to a limit switch**. A fast flash on the LEDs means that the up limit is reached a slow flash is for the down limit. If the led are flashing fast then slow then both limits are open check to see if it hooked up or wire damage. **It is against code and not covered by insurance to be used without a GEM limit switch.** **Motor #1 should have the limit switch attached at that motor**.
10. **Clearing the memory**: Press and hold the Learn/Clear button for seven seconds (LED will light) when the LED flashes stop pressing and memory will be cleared. Test to see if it works. To learn, press learn once, then press the Stop button on the transmitter. The Learn LED will flash 2 times.
11. **TROUBLESHOOTING: Old GEM GFI units** needs a neutral. **GFI will not reset if it sees a fault or it does not have 120VAC**. Turn off all 4 motor switches, check to see if the GFI resets press up and down. See if the contactor is pulling in, then turn on 1 motor at a time to find the fault. Test in both up and down direction. GEM GFI units need 3 wires + ground. **If you do not have 3 + G then you will need to remove the GFI and replace with a Decora on/off switch and rewire the transformer. You will not have GFI protection and we recommend that you add GFI breaker.**
12. **TROUBLESHOOTING: Wiring at 220VAC-240VAC 50 to 60Hz**: 4 motor or special ordered 240V only units do not have a white wire unless it is an old GEM GFI unit. Read the label, on top of the transformer BLK-ORG = 240 VAC. **Cap off** yellow wire. Find the ORG transformer wire, it should be hiding around the base of the contactor on the left it is taped to an ORG wire. **Attach the ORG transformer wire to L2.** The red wire taped to this wire is used for 208 vac connections don’t use.
13. **TROUBLESHOOTING: Wiring at 208VAC**: Rewire the transformer. Read the label on the transformer BLK-RED =208. Remove yellow wire from neutral bar and tape it off. Find Red transformer wire, it should be hiding around the base of the contactor on the left, it is taped to an ORG wire. **Attach Red transformer wire to L2.** The ORG wire that it was taped to is for 240 connections. GFI units need a 120vac to work.

Need more help? Call 239-642-0873 M-F 900-4:30 EST. See WWW.GEMREMOTES.COM for more information.
90% of motors are the 2 top left diagrams. If your motor has terminals then use that specific drawing below.
Otherwise, use the standard T# or colored wire drawings.

### Standard *T#* or # Wires
Wires Wired at 240 VAC.
AO Smith, Baldor, Dayton, Deco Electorgear, Emerson, GE, Iron Horse, Leeson, Lincoln, Marathon, WEG, SMC and other *T#*

1. Cap GEM White wire (not used).
2. Move Motor Orange from pin 1 to pin 5.
3. Move Motor White from 6 to pin 5.
4. FYI: GEM Blk to T1(P1), GEM Org to T4, GEM Red to T8(6)*.
5. Move Motor White from pin 1 to 3.
6. Attach (3) motor wires on #4

#### Wiring From GEM Unit
- GEM Org & Motor Red wires.
- To change motor direction, switch Motor Blk* & Motor Red wires.
- To change from 120 to 240VAC:
  1. Cap GEM White wire (not used).
  3. Move Motor Blue jumper from pin 4 to pin 5.
  4. GEM Orange is on pin 2!!!!!!
  5. Move Motor Black on pin 3!!!!!!

#### Century/MagneTek
Wired @ 240 VAC
1. Motor Org
2. Motor Red*
3. Motor Red*
4. Motor Org

#### Regal Beloit AO SMITH
Wired at 240 VAC.
Note: Brush switch Org might be pre-wired to Motor Black*. GEM Orange needs to be on pin 2. Also move Motor White and Motor Black wires to pin 4 and 3.

1. Move Motor White from 6 to pin 5.
2. Move Motor Orange from pin 1 to pin 5.
3. Move Motor Blue jumper from pin 4 to pin 5.
4. FYI: GEM Org & M Yellow together.

#### EMERSON
Wired at 240VAC
1. Motor Blue
2. Motor Red
3. Motor Blu
4. Motor Red*
5. Motor Org

#### BALDOR
(BALDOR *T#* NUMBERED WIRES
SEE NUMBERED WIRE DRAWING)
Wired at 240VAC
1. G Blk
2. G Org
3. Motor Red*(T8)
4. Motor WHT(T2)
5. Motor Blk* (T5)

#### Wiring From GEM Unit
*To change motor direction, switch Motor Black & Motor Red wires.
To change from 120 to 240VAC:
1. Place Motor Black on pin 3!!!!!!
2. Move Motor White from pin 1 to 3
3. GEM WHT not used
4. Move Motor Blue jumper from pin 3 to pin 2.

For EastBay Motor wiring Instructions goto GEMRemotes.com wire diagram 2000-2008