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Revision Table:
Revision A (08/06/2010): Initial Release
Revision G (6/7/2012): Revised Pages 3, 29
Revision H (10/24/2012): Revised Logos
Foreword

The purpose of this Maintenance Manual is to provide qualified service personnel with information for servicing and maintaining Hy-Brid Lifts. All information in this manual must be read and understood before any attempt is made to service this machine.

The operation and safety manual is considered a part of the work platform and contains instructions and operating procedures essential to properly and safely operate the Custom Equipment Hy-Brid Lift. Users must read and understand all information in the Safety and Operations Manual before operation.

**DANGER**

THE OPERATION AND SAFETY MANUAL MUST BE READ AND UNDERSTOOD PRIOR TO OPERATING THE MACHINE.

THE USER/OPERATOR SHOULD NOT ACCEPT OPERATING RESPONSIBILITY UNTIL THE MANUAL HAS BEEN READ AND UNDERSTOOD AS WELL AS HAVING OPERATED THE LIFT UNDER SUPERVISION OF AN EXPERIENCED AND QUALIFIED OPERATOR.

BECAUSE THE MANUFACTURER HAS NO DIRECT CONTROL OVER MACHINE APPLICATION AND OPERATION, PROPER SAFETY PRACTICES ARE THE RESPONSIBILITY OF THE USER AND ALL OPERATING PERSONNEL.

**WARNING**

ANY MODIFICATION ON THIS MACHINE WITHOUT THE EXPRESS WRITTEN CONSENT OF THE MANUFACTURER IS PROHIBITED.

If there is a question on application and/or operation, contact:

**Custom Equipment, Inc.**  
2647 Hwy 175  
Richfield, WI 53076  
USA  
Phone: 262-644-1300  
Fax: 262-644-1320  
www.hybridlifts.com
Safety

Safety Symbols

<table>
<thead>
<tr>
<th></th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>🚨 DANGER</td>
<td>&quot;DANGER&quot; indicates an imminently hazardous situation, which, if not avoided, will result in death or serious injury.</td>
</tr>
<tr>
<td>🚨 WARNING</td>
<td>&quot;WARNING&quot; indicates a potentially hazardous situation, which, if not avoided, could result in death or serious injury.</td>
</tr>
<tr>
<td>🚨 CAUTION</td>
<td>&quot;CAUTION&quot; indicates a potentially hazardous situation which, if not avoided, could result in minor or moderate injury or damage to equipment.</td>
</tr>
</tbody>
</table>

General Rules and Precautions

Custom Equipment, Inc. designed the Hy-BrId Lift push-around scissor lift to be safe and reliable. It is intended for elevating personnel, along with their necessary tools and materials to overhead work locations.

An operator of any type of work platform is subject to certain hazards that cannot be protected by mechanical means. It is therefore essential that operators be competent, careful, physically and mentally fit and thoroughly trained in safe operation of this machine.

Although Custom Equipment, Inc. conforms to specified American National Standards Institute ANSI/SIA A92.3 Standard, it is the responsibility of the owner to instruct operators with the safety requirements made not only by Custom Equipment, Inc., but by the various safety boards in your area, as well as additional requirements set forth by ANSI A92.3. If you come across a situation that you think might be unsafe, stop the platform and request further information from qualified sources before proceeding.

⚠️ WARNING
MAINTENANCE INFORMATION IS FOR USE BY TRAINED PERSONNEL ONLY

⚠️ WARNING
NEVER REACH BETWEEN SCISSORS LINKS OR PROP UP PLATFORM UNLESS MAINTENANCE PINS ARE IN PLACE.
Safety Guidelines

Maintenance Lock
The maintenance lock must be placed into position whenever the machine is being serviced in the raised or partially raised position. Serious injury and/or death could result if maintenance lock is not used properly.

![Maintenance Pin Location When in Use](image1)

Figure 1: Maintenance Lock Pin Use

![Pin Storage Location](image2)

Figure 2: Maintenance Lock Pin Storage

**WARNING**

FAILURE TO COMPLY WITH THE LISTED SAFETY PRECAUTIONS MAY RESULT IN MACHINE DAMAGE, PERSONNEL INJURY OR DEATH.

- Never work under an elevated platform until maintenance locks have been engaged.
- Remove all rings, watches, and jewelry when performing any maintenance.
- Do not wear long hair unrestrained or loose fitting clothing and neckties which may become caught on or entangled in equipment.
- Observe and obey all warnings and cautions on machine and in manual.
- Keep oil, grease, water, etc. wiped from standing surfaces and handholds.
- Before making any adjustments, lubricating or performing any other maintenance, shut off all power controls.
- Battery should always be disconnected during replacement of electrical components.
- Keep all support equipment and attachments stowed in their proper place.
- Use only approved nonflammable cleaning solvents.
- After maintenance, inspect the machine as described for Pre-delivery.
Maintenance

Battery Maintenance
This unit is equipped with a deep cycle 12-volt battery. The care and maintenance of your battery has much to do with how well this unit functions. Battery wiring and water level should be checked monthly. **Do not overfill.** When the cells are too full, fluid will seep out when charging. The solution is at its proper strength when the battery is manufactured. Use distilled water and keep fluid up to proper level. When required, water should be added to battery after charging, unless water level is below the plates.

- Remove battery cabinet cover.
- Remove battery caps and check fluid level.
- Fill each cell (if needed) to split ring with distilled water.
- Reinstall caps.
- Wash all dirt, debris, acid, etc., off battery whenever corrosion is detected. Use a solution of 5-tsp. baking soda per quart of warm water.
- Coat terminals with a commercially available coating.

**Figure 3: Battery Maintenance**

---

**WARNING**

DO NOT OPERATE UNIT WHILE CHARGING.

**CAUTION**

NEVER ADD ACID TO BATTERY!

---

Charging the Battery
This unit is equipped with a deep cycle 12-volt battery. The care and maintenance of your battery has much to do with how well this unit functions. Battery wiring and water level should be checked monthly. **Do not overfill.** When the cells are too full, fluid will seep out when charging.

**Note:** The surrounding temperature greatly affects the power reserve within a battery.

**Example:** A battery that is 100% charged at 80°F (27°C) drops to 65% at 32°F (0°C) At 0°F (-18°C), this battery will drop to 40% efficiency.

**WARNING**

LEAD-ACID BATTERIES GENERATE EXPLOSIVE GASES. KEEP SPARKS AND FLAME AWAY FROM BATTERIES. DO NOT SMOKE WHILE CHARGING.

- Park the machine on a level surface.
- Plug charger into AC outlet until charged.
- For best battery life, leave charger plugged in until machine will be used again. The charger will maintain the battery charge.

The charger will not begin charging on severely discharged batteries.
The solution is at its proper strength when the battery is manufactured. Use distilled water and keep fluid up to proper level. When required, water should be added to battery after charging, unless water level is below the plates.

### Lubrication

<table>
<thead>
<tr>
<th>Item</th>
<th>Specification</th>
<th>Frequency of Lubrication</th>
</tr>
</thead>
<tbody>
<tr>
<td>Wheels</td>
<td>Teflon Spray</td>
<td>Quarterly</td>
</tr>
</tbody>
</table>

### Components requiring adjustment

Under normal use, no components should require adjustment. Contact the manufacturer if adjustments are required.

### Examination, repair, replacement of limited life components

With proper use, battery maintenance, and regular inspection, there are no limited life components that require routine replacement.
Safety devices and systems requiring checks
Check safety functions as part of daily inspection. Check that the electromagnetic brakes are holding.

Storage
After periods of storage, exposure to extremes of ambient conditions—heat, cold, moisture, dust etc., inspect the machine. Refer to the Pre-Delivery/ Frequent Inspection Checklist in the Maintenance Manual.

Major Alterations or Repairs
Any alterations must be approved by the manufacturer. Major repairs, which affect the stability, strength, or performance of the machine must also be approved by the manufacturer, recorded, and include machine inspection and testing. Never attach pipe racks, material lifting devices, or make any other alteration that is not part of the intended design of the machine.

Inspection and Regular Maintenance Checklists

CAUTION
FAILURE TO PERFORM INSPECTIONS AND PREVENTITIVE MAINTENANCE AT RECOMMENDED INTERVALS MAY RESULT IN THE UNIT BEING OPERATED WITH A DEFECT THAT MAY RESULT IN INJURY OR DEATH OF THE OPERATOR.

Regular inspection and conscientious maintenance is important to efficient economical operation of this machine. It will help to assure that equipment will perform satisfactorily with a minimum of service and repair. Make checks at the stated intervals or more frequently if required by local operating conditions. The following inspection checklists are required and included in this manual:

Pre-Start (Required before operation at each work shift)
Monthly Battery Maintenance
Frequent (Required at intervals not more than three months)
Pre-Delivery/Annual (Required at intervals not more than twelve months)

Monthly Battery Care

WARNING
THIS CHECKLIST MUST BE USED AT MONTHLY OR AFTER EVERY 100 HOURS OF USE. FAILURE TO DO SO COULD AFFECT THE SAFETY OF THE OPERATOR.

MODEL NUMBER ____________  SERIAL NUMBER ____________

1. Keep inspection records up-to-date.
2. Record and report all discrepancies to your supervisor.
3. A dirty machine cannot be properly inspected.
   Y-Yes/Acceptable   N-No/Unacceptable   R-Repaired

<table>
<thead>
<tr>
<th>Description</th>
<th>Y</th>
<th>N</th>
<th>R</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Remove battery cabinet cover.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2. Remove battery caps and check fluid level.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>3. Fill each cell (if needed) to split ring with distilled water.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>4. Reinstall caps.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>5. Wash all dirt, debris, acid, etc., off battery whenever corrosion is detected. Use a solution of 5-tsp. baking soda per quart of warm water.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>6. Coat terminals with a commercially available coating.</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

DATE ____________  INSPECTED BY ______________________________
## WARNING

**THIS CHECKLIST MUST BE USED AT THE BEGINNING OF EACH SHIFT OR AFTER EVERY SIX TO EIGHT HOURS OF USE. FAILURE TO DO SO COULD AFFECT THE SAFETY OF THE OPERATOR.**

**MODEL HB-P830  SERIAL NUMBER __________**

1. Keep inspection records up-to-date.
2. Record and report all discrepancies to your supervisor.
3. A dirty machine cannot be properly inspected.

<table>
<thead>
<tr>
<th>Description</th>
<th>Y</th>
<th>N</th>
<th>R</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Visual Inspections</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Check that there are no damaged, dented, or bent structural members.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>There are no loose or missing parts.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Check that warning and instructional labels are legible and secure. Ensure that load capacity is clearly marked.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Check the platform rails and safety gate for damage.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Platform and base controls are not missing, damaged, or disconnected.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Electrical cables and wires are not torn, frayed, or disconnected.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Hydraulic hoses are not torn or loose, and there are no leaks. Check that hoses and the cables have no worn areas or chafing.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Check the hydraulic fluid level with the platform fully lowered.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Check the tires for damage.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Check that all snap rings are secure in grooves on pivot pins.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Functional Tests</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Gate closes automatically and latches (alignment can be adjusted with screw on toe board or railing if necessary).</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Platform Controls: Check all switches and push buttons for proper operation.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Emergency Stop (Stops all movement)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Up/Down Controls (Elevates, Lowers, Enable button must be pressed)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Base Controls: Check all switches and push buttons for proper operation.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Emergency Stop (Stops all movement)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Key Switch (Selects Platform Control, Ground Control, or Off)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Up/Down Rocker Switch (Elevates, Lowers)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Wheels: Front and rear wheels rotate freely.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Brakes engage and hold when platform elevated.</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**DATE __________  INSPECTED BY __________________**
Frequent Inspection Checklist

**WARNING**

AERIAL PLATFORMS SHALL BE INSPECTED, SERVICED AND ADJUSTED TO MANUFACTURER’S REQUIREMENTS BY A QUALIFIED MECHANIC PRIOR TO EACH SALE, LEASE, OR RENTAL, AND EVERY 3 MONTHS OR 150 HOURS, WHICHEVER COMES FIRST.

*MODEL NUMBER HB-P830  SERIAL NUMBER ____________*

- Check each item listed below.
- Use proper operating, service, and maintenance manual for specific information and settings
- If an item is found to be unacceptable make the necessary repairs and check the “repaired” box.
- When all items are “acceptable”, the unit is ready for service.

<table>
<thead>
<tr>
<th>Description</th>
<th>Y</th>
<th>N</th>
<th>R</th>
</tr>
</thead>
<tbody>
<tr>
<td>Visual Inspections</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Perform all checks on the Pre-Start Inspection Checklist.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Inspect the condition of hydraulic fluid in reservoir. Oil should have a clear amber color.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Inspect the entire machine for signs of damage, broken welds, loose bolts, or improper repairs. (Check for corrosion, cracking, abrasion, etc.)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Check that all snap rings are secure in grooves on pivot pins.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Check if tires are leaning in or out.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Verify that bubble level is in place.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Verify that maintenance and inspection records are up to date.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Functional Tests</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Perform all checks on the Pre-Start Inspection Checklist.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Functions operate smoothly.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Functions operate over full range of motion.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Ground Controls override platform controls.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Check that the platform does not drift down with a full load.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Wheels lubricated if needed.</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Comments:

DATE _______________  INSPECTED BY ________________________________
Pre-Delivery/Annual Inspection Checklist

MODEL NUMBER: HB-P830  SERIAL NUMBER ___________

- Check each item listed below.
- Use proper operating, service, and maintenance manual for specific information and settings
- If an item is found to be unacceptable make the necessary repairs and check the “repaired” box.
- When all items are “acceptable”, the unit is ready for service.

<table>
<thead>
<tr>
<th>Check</th>
<th>Y</th>
<th>N</th>
<th>R</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Base:</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Inspect slide tracks for damage</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>All frame bolts tight</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Pump Secure</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>DC motor secure</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Battery Hold Downs Secure</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Batteries Fully Charged</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Counterweights secured</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Wheels: Grease Casters</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Wheels: Bolts/Nuts Tight</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Maintenance Locks: Pins in location</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>All Shields/Guards in place</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Hydraulic Oil Level 1” from top</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Check all hydraulic hoses for leaks</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Check all hydraulic fittings for leaks</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Scissors:</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Broken Welds</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Bent Beam Members</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>All rollers Turn Freely</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Ret. Rings Secure On Pivots</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Broken welds</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Platform:</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>All rails in place/secure</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>No bent rails</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>No broken welds</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Platform power outlet safe/working</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Entrance gate Closes Freely</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Operator/Service Manual Included</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Cables in place/secure</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Comments:</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

DATE ___________  INSPECTED BY ____________________________

Part #SUPO-615
REV H
This page intentionally left blank.
Does the machine have any function: Elevate/Lower?

- No
  - Is key switch turned on?
    - Yes
      - Connect battery. See wiring diagram.
    - No
      - Reset E-Stop buttons. Pull out at both upper control and lower control locations.
  - Yes
    - Are both E-Stop buttons off?
      - Yes
        - Is the battery connection? Check per wiring diagram.
      - No
        - Is the battery fully charged (and filled with water)?
          - Yes
            - Replace battery Or Replace charger (Load test battery, individually disconnected from machine) Place volt meter across battery terminals where charger is connected. If voltage rises on the battery, the charger is working.
          - No
            - Check for loose wiring connections. Check for ground connection at pump. See wiring diagrams. Check for continuity in connections. Use Voltmeter/Multi-meter at 400V setting.
      - Is short protection fuse at pump blown?
        - Yes
          - Replace 20-Amp AGC Fuse. If fuse continues to blow, steering actuator may need replacement.
        - No
          - Is key switch turned on?
            - Yes
              - Connect battery. See wiring diagram.
            - No
              - Reset E-Stop buttons. Pull out at both upper control and lower control locations.

- No
  - Is short protection fuse at pump blown?
    - Yes
      - Replace 20-Amp AGC Fuse. If fuse continues to blow, steering actuator may need replacement.
    - No
      - See Elevating & Lowering Problems Flowcharts

- Is there a different problem?
  - Yes
    - Contact CEI for further troubleshooting
  - No
    - Still no function?
      - Check for loose wiring connections. Check for ground connection at pump. See wiring diagrams. Check for continuity in connections. Use Voltmeter/Multi-meter at 400V setting.
      - Still no function?
        - Contact CEI for further troubleshooting

See Elevating & Lowering Problems Flowcharts

Contact CEI for further troubleshooting

Part #SUPO-615 HB-P830 Troubleshooting Flowchart
Revision A: Initial Release 08/06/2010
Does the machine have any function: (Elevate/Lower)

Yes

Is the battery fully charged (and filled with water)?

Yes

Is short protection fuse at pump blown?

Yes

Replace with 20 Amp AGC Fuse. If fuse continues to blow, steering actuator may need replacement.

No

Contact CEI for further troubleshooting.

No

See Elevating & Lowering Problems Flowcharts

Yes

Is key switch turned on?

Yes

Are both E-Stop buttons off?

Yes

Is the battery connection?

Check per wiring diagram.

Yes

Connect battery. See wiring diagram.

No

Reset E-Stop buttons. Pull out at both upper control and lower control locations.

Yes

Is the battery fully charged (and filled with water)?

No

Replace battery Or Replace charger

(Load test battery, individually, disconnected from machine)

Place volt meter across battery terminals where charger is connected. If voltage rises on the battery, the charger is working.

If batteries do not take charge

Replace battery Or Replace charger

See Elevating & Lowering Problems Flowcharts

No

Are both E-Stop buttons off?

Yes

Reset E-Stop buttons. Pull out at both upper control and lower control locations.

No

Check for loose wiring connections. Check for ground connection at pump. See wiring diagrams. Check for continuity in connections. Use Voltmeter/Multi-meter at 400V setting.

Contact CEI for further troubleshooting

Still no function?

Still no function?

Still no function?

Yes

Is short protection fuse at pump blown?

Is the battery fully charged (and filled with water)?

Contact CEI for further troubleshooting

Part #SUPO-615 HB-P830 Troubleshooting Flowchart
Revision A: Initial Release 08/06/2010
Does machine raise/lower?

Yes

Does pump operate?

Yes

Is emergency down valve open?

Is hydraulic fluid low?

Is down valve stuck open?

Is up/down switch damaged?

Contact CEI for further troubleshooting.

No

Check for power connection. See Hy-Brid Troubleshooting.

Is power solenoid damaged?

Replace solenoid.

Are diodes functioning properly?

Replace pump assembly.

Ascent speed slow or erratic?

Is emergency down valve open?

Flush valve by simultaneously pressing up switch at base and down switch on platform control for 30 sec.

Flush down valve by simultaneously pressing up switch at base and down switch on platform control for 30 sec. There may be foreign matter lodged.

No

Is down valve stuck open?

With platform lowered, fill pump reservoir to 1" below top of reservoir.

Replace rocker switch at upper or lower control.

Is down valve stuck open?

Flush valve by simultaneously pressing up switch at base and down switch on platform control for 30 sec. There may be foreign matter lodged.

Yes

Measure resistance across diode—Ohmmeter/multimeter at 40 kΩ setting. With black lead on stripe side and red on other side, should get a resistance reading. Switch leads, no reading. Replace bad diode.

Measure resistance across diode—Ohmmeter/multimeter at 40 kΩ setting. With black lead on stripe side and red on other side, should get a resistance reading. Switch leads, no reading. Replace bad diode.

Replace pump assembly.

Replace pump. May be worn or defective.

Is battery fully charged?

Charge battery.

Close emergency down valve.

Replace hydraulic hose.

Is battery charged?

Close emergency down valve.

Replace down solenoid.

Check for loose electrical connections.

Contact manufacturer to arrange replacement.

Is platform overloaded?

Remove overload. Lower to stowed position before continuing use.

Is key switch been turned off?

Turn key to on position.

Pull out emergency stop button at upper and lower controls.

ChARGE BATTERY.

Will not descend?

Are maintenance lock pins installed?

Check armguard limit switch and relay.

Is E-Stop activated?

Replace down solenoid.

Check for loose electrical connections.

Listen carefully near motor when not energized—may be running backwards. Replace pump.

Faulty check valve in pump?

Run unit up and then check for oil flow out of return line. Bad cylinder seal if oil is flowing from return line. Might be able to repair with seal kit, probably need to replace cylinder. If walls inside cylinder are scratched or pitted, cylinder needs replacement.

Coil mounting nut too tight?

Nut should only be lightly snug: 30 in.-lb. Replace coil and lightly tighten nut.

Damaged cylinder or damaged seal in cylinder?

Disassemble and clean. Look for residue in screen and on O-ring or damage to O-ring.

Foreign matter lodged in up or down valve?

Close emergency down valve.

Check cable connections.

Faulty down valve?

Close emergency down valve.

Check cable connections.

Faulty down valve?

Close emergency down valve.

Check cable connections.

Electrical problem?

Listen carefully near motor when not energized—may be running backwards. Replace pump.

Disconnect coil. Check if unit stops drifting. Check voltage at coil—should be 0 V when not energized.

Damaged cylinder or damaged seal in cylinder?

Coil mounting nut too tight?

Nut should only be lightly snug: 30 in.-lb. Replace coil and lightly tighten nut.

Faulty check valve in pump?
Replacement Parts

⚠️ **CAUTION**
USE ONLY MANUFACTURER APPROVED REPLACEMENT PARTS. USE OF NON-OEM PARTS WILL VOID WARRANTY.

⚠️ **DANGER**
REPLACEMENT OF THE FOLLOWING COMPONENTS WILL AFFECT THE STRENGTH, STABILITY, OR SAFETY FUNCTION OF THE UNIT: BATTERY, HYDRAULIC CYLINDER, AND ALL STRUCTURAL COMPONENTS.

Listed below are replacement parts that may be available and listed for reference. These represent current revisions. Refer to our website, [www.hybridlifts.com](http://www.hybridlifts.com) for more complete part listings and earlier revisions. Several parts are model, serial number, or manufacture date specific. Contact your dealer for replacement part availability and pricing.

**Safety and Control Decals**
Refer to Operator’s Manual for decal part numbers and locations.
### Main Power/Safety Circuit

<table>
<thead>
<tr>
<th>Item #</th>
<th>Part #</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>NA</td>
<td>B+ Power Connection Location on Pump</td>
</tr>
<tr>
<td>2</td>
<td>NA</td>
<td>B-“Ground” Connection Location on Pump</td>
</tr>
<tr>
<td>3</td>
<td>ELEC-746</td>
<td>Battery Charger</td>
</tr>
<tr>
<td>4</td>
<td>ELEC-073E</td>
<td>Key Switch</td>
</tr>
<tr>
<td>5</td>
<td>ELEC-073-1</td>
<td>Spare Key</td>
</tr>
<tr>
<td>6</td>
<td>ELEC-071-KIT</td>
<td>Emergency Stop Button with Contact Block</td>
</tr>
<tr>
<td>7</td>
<td>ELEC-639-1</td>
<td>Charger Cord (NEMA 5-15P/IEC-320 C-13)</td>
</tr>
<tr>
<td>8</td>
<td>1002100950</td>
<td>Lower Control Assembly</td>
</tr>
<tr>
<td>9</td>
<td>1002101250</td>
<td>Upper Control Assembly</td>
</tr>
<tr>
<td>10</td>
<td>ELEC-071-KIT</td>
<td>Emergency Stop Button with Contact Block</td>
</tr>
<tr>
<td>11</td>
<td>(ELEC-047)</td>
<td>Not available as a replacement part. Replace batteries with 12V, Group 27 Deep Cycle Marine Battery. Replacement weight must be minimum 50 lb.</td>
</tr>
<tr>
<td></td>
<td>(Not Pictured)</td>
<td>1002101750 Battery Cable Kit</td>
</tr>
<tr>
<td></td>
<td>(Not Pictured)</td>
<td>(No Part #) 7A AGC Fuse</td>
</tr>
</tbody>
</table>
## Elevate/Lower Circuit

<table>
<thead>
<tr>
<th>Item #</th>
<th>Part #</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>HYDR-050-4</td>
<td>Hydraulic Pump</td>
</tr>
<tr>
<td></td>
<td>(HYDR-032)</td>
<td>(Not Pictured) Hydraulic Fluid: Not available as a replacement part. Replace with Flomite #150, Dexron II, Mobil-DTE 2, or equivalent.</td>
</tr>
<tr>
<td>2</td>
<td>HYDR-665</td>
<td>Up Valve</td>
</tr>
<tr>
<td>3</td>
<td>HYDR-673</td>
<td>10V Coil</td>
</tr>
<tr>
<td>4</td>
<td>HYDR-674</td>
<td>12V Soleniod</td>
</tr>
<tr>
<td>5</td>
<td>HYDR-022-3</td>
<td>Low Pressure Hydraulic Line</td>
</tr>
<tr>
<td>6</td>
<td>HYDR-600-5</td>
<td>Hydraulic Hose</td>
</tr>
<tr>
<td>7</td>
<td>ELEC-133B</td>
<td>Rocker Switch</td>
</tr>
<tr>
<td>8</td>
<td>ELEC-133B</td>
<td>Rocker Switch</td>
</tr>
<tr>
<td>9</td>
<td>HYDR-044-FL3</td>
<td>Hirschmann Connector with Diode</td>
</tr>
<tr>
<td>10</td>
<td>HYDR-625</td>
<td>Pressure Compensated Flow Control</td>
</tr>
<tr>
<td>11</td>
<td>HYDR-600-5</td>
<td>Hydraulic Hose</td>
</tr>
<tr>
<td>12</td>
<td>HYDR-007-2F</td>
<td>Down Valve &amp; Coil</td>
</tr>
<tr>
<td>13</td>
<td>LAS-M115</td>
<td>E-Down Valve Actuator</td>
</tr>
<tr>
<td>14</td>
<td>HARD-650</td>
<td>1/16 Shaft Collar</td>
</tr>
<tr>
<td>15</td>
<td>1002100353</td>
<td>Hydraulic Cylinder</td>
</tr>
<tr>
<td>16</td>
<td>HARD-644</td>
<td>Emergency Down Cable</td>
</tr>
<tr>
<td></td>
<td>HARD-022</td>
<td>Retaining Ring, 1.25”</td>
</tr>
</tbody>
</table>

Part #SUPO-615
REV H
### Wheels/Brakes

<table>
<thead>
<tr>
<th>Item #</th>
<th>Part #</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>WHEE-706, WHEE-708, HARD-001-2</td>
<td>Wheel (8”), Raceway, &amp; DU Bearing</td>
</tr>
<tr>
<td>2</td>
<td>1000114707&amp;12/1000116207&amp;12</td>
<td>Caster Sides</td>
</tr>
<tr>
<td>3</td>
<td>1000115802</td>
<td>Brake Weldment</td>
</tr>
<tr>
<td>4</td>
<td>HARD-668</td>
<td>Spring</td>
</tr>
<tr>
<td>5</td>
<td>1000116002</td>
<td>Brake Actuator</td>
</tr>
<tr>
<td>6</td>
<td>WHEE-713</td>
<td>Swivel 8” Caster with brake</td>
</tr>
</tbody>
</table>

### Covers/Other

<table>
<thead>
<tr>
<th>Item #</th>
<th>Part #</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>1000510401</td>
<td>Cover, Left</td>
</tr>
<tr>
<td>2</td>
<td>1000510301</td>
<td>Cover, Right</td>
</tr>
<tr>
<td>3</td>
<td>HARD-633B</td>
<td>Cabinet Latch Handle</td>
</tr>
<tr>
<td>4</td>
<td>HARD-633E</td>
<td>Cabinet Latch Cam</td>
</tr>
<tr>
<td>5</td>
<td>HARD-086</td>
<td>Level</td>
</tr>
</tbody>
</table>
Warranty

LIMITED WARRANTY – Warranty Statement—North America Only

Custom Equipment, Inc. (the “Company”) warrants that all new units of equipment manufactured and sold by it conform to the Company’s latest published specifications. Also, that all purchased components and sub-assembled parts and assemblies shall be free from defect in material and/or workmanship for a period of 12 months from the date a new unit is placed into service, with the exception of batteries which are covered by the battery manufacturer for a period of ninety (90) days (pro-rated for one (1) year) on batteries. Further, that all structural components manufactured, purchased, and installed by Custom Equipment, Inc. shall be free of any defect in material and/or workmanship for a period of 60 months from the date a new unit is placed into service.

If the equipment owner/end-user experiences a failure or deficiency within the specified warranty period they must promptly notify an authorized Dealer service repair facility.

During the Warranty period, Custom Equipment, Inc. reserves the right to replace, repair, exchange, or to provide a new, used, or rebuilt component, assembly, sub-assembly, or weldment at their discretion, dependent upon circumstance, situation, and/or availability. For battery warranty, call the number listed on the battery for further instructions.

This Warranty Policy does NOT cover damage caused by; shipment, misuse of unit (includes operation beyond Factory established limits, loads, and/or specifications), failure to properly service and maintain the unit in accordance with the Company’s manuals or Factory Service Bulletins. Custom Equipment, Inc. DOES NOT accept any responsibility for alterations or modifications to the unit, or, damages caused by any natural disasters (such as fire, flood, wind and lightning).

THE PREVIOUS WARRANTY STATEMENT IS IN LIEU OF ALL OTHER WARRANTIES, EXPRESS OR IMPLIED, INCLUDING BUT NOT LIMITED TO THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE.

If field repair or parts replacement is necessary on any warranted components, Custom Equipment, Inc. will reimburse Authorized Dealers for direct labor costs incurred according to the Company’s current authorized Field Service Rate (FSR) and/or any established ‘Flat Rate Guides’. Custom Equipment does not pay labor on any consumable items such as batteries, brakes, or tire wear. In no event shall the Company be liable for any indirect, incidental, consequential, or special damage (including without limitation to loss of profits, loss of revenue, cost of capital, cost of substitute equipment, downtime, examination fees, claims of third parties, and injury to person or property) based upon any claim of breach of warranty, breach of contract, negligence, strict liability in tort, or any other legal theory. This limited warranty statement recognizes the risks and limitations of product failure between Custom Equipment, Inc. and the Buyer.

This written warranty is also understood to be the complete and exclusive agreement between the parties, superseding all prior agreements, oral or written and all other communications between the parties relating to the subject matter of this warranty. No employee, agent or distributor of the Company, or any other person is authorized to state or imply any additional warranties on behalf of the Company, nor to assume for the Company any other liability in connection with any of its products, unless made in writing, dated, and signed by an officer of the Company.