



# TROUBLESHOOTING PRESSURE ISSUES ON BIDIRECTIONAL PUMPS

0100

## LEVELING AND STABILIZATION

**Pressure issues on Lippert bidirectional pumps can be divided into three categories:**

1. Hydraulic
2. Electrical
3. Component

### **HYDRAULIC**

Low pump pressure can be attributed to low fluid volume in the reservoir. If the volume of the hydraulic fluid is below the pickup tube in the reservoir, the system will intake air and there will be no fluid pressure, to retract or extend the jacks, depending on the operation to be performed.

#### Indications

Low fluid can be observed through the reservoir. If the fluid level in the reservoir is below 1/4 capacity, the pickup tube may not be able to intake fluid. The pump will sound as if it is free-wheeling, bearing no pressure and slides nor the jacks will not extend or retract, the fluid level is too low.

#### Resolutions

If jacks and/or slides are extended, add fluid to fill the reservoir to about 1/2 full. There will be air in the system so the retract process may be a bit static and uneven. When jacks/slides are completely retracted, top off the reservoir to within 1/2" of the top. Completely extend all jacks and slides and then immediately retract completely. Check reservoir for foam. Allow 15-20 minutes for foam to dissipate and cycle repeatedly until no foam remains, usually 3-4 cycles.

Contamination can prevent pressure on the system by blocking fluid flow to the slides or jacks.

#### Indications

Components can be inoperable or slow. Slides with two cylinders can have one cylinder actuate and the other not, causing the room to bind.

#### Resolutions

Check for blockage at the electronic or manual valves. On two-cylinder rooms, also check the flow divider for contamination. This contamination can be evident in only one hydraulic component or multiple.

### **ELECTRICAL**

Automatic pump shut off goes through the pressure switch. If the pump does not build enough pressure to open the pressure switch, the system does not shut off.

#### Indications

The pump motor will continue to run on even after the jacks have been completely retracted. The shut off happens when the power to the pump is shut off or the brain box reaches its 105-second shut off.

#### Resolutions

On the electrical side of this issue, LCI has always recommended a 12-volt minimum "under load" battery feed to the pump. Most occurrences of low voltage result in a disengaged breaker. A blown fuse or the touch panel indicated a "latched out" condition. This indicates a high amperage spike due to the loss of voltage. In the event that the fuse and breaker remain good and the touch panel does not latch out. A load test on the battery may



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show a voltage reading between 11.5 and 11.9 volts. This voltage is low enough to prevent shutoff pressure from building but not low enough to trip the safeties.

### **COMPONENT**

Component failure can be a cause of low pressure.

#### Indications

Pump motor sounds a constant freewheeling noise and the jacks do not move. The pickup tube may have fallen out of the pickup tube port into the reservoir or the shuttle valve is not seating properly and not allowing the pump to build pressure.

#### Resolutions

Pump must be replaced.

#### Indications

A hose or hose fitting at the jack can cause a jack to drift down when in the retracted position or the coach will drift down as the jack cannot maintain pressure. Even though jacks will retract completely and the system will shut off, the jack may drift down and an alarm will sound when the key is put in the run position.

#### Resolutions

Checking all fittings around leaking areas is always the first step. Overtightened fittings can cause leaks as well as loose fittings. Fittings should be tightened firmly but not too tight. Overtightened fittings must be replaced. Hoses with leaks at the fittings can be refitted with new fittings as the original crimp may have been bad. If they cannot be re-crimped, the hose must be replaced.

#### Indications

A damaged seal inside the jack can cause a jack to drift down when in the retracted position or the coach will drift down as the jack cannot maintain pressure. Usually indicated by fluid on the piston rod or more evidently in the foot pad. An internal leak may cause this as well. Even though jacks will retract completely and the system will shut off. The jack may drift down and an alarm will sound when the key is put in the run position.

#### Resolutions

An extremely leaking jack must be replaced. If the leak is not external, the jack must be tested for an internal leak (see LIP Sheet 0076). Replace jack if it fails the internal leak test.