



1217 E. 7th Street
 Mishawaka, IN 46544
 www.powergearus.com

T.I.P. Troubleshooting Information on Power Gear

Hydraulic Pump Diagnosis

Hydraulic pump noise or failure to operate correctly can be a very costly failure if the entire pump assy. is replaced. In order to reduce the cost of such repairs, Power gear has made individual pumps and motors available for service. This TIP sheet addresses steps necessary to diagnose and repair a failed pump. Pumps fail for a variety of reasons. Most prevalent is contamination, which can cause binding and heat build up resulting in gear failure. Diagnosing a failure in the pump is straight forward and easily done. Follow these steps to ensure a proper diagnosis. Refer to the appropriate service manual for replacement pump part numbers. The latest updated service manuals can be found on our website at www.powergearus.com.

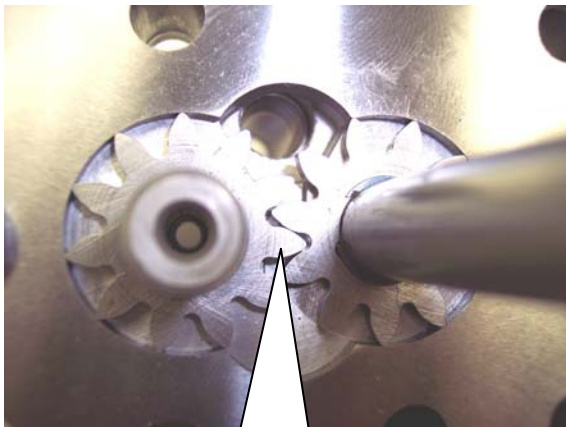
JACKS WILL NOT EXTEND, PUMP IS RUNNING	
PROBABLE CAUSE	CORRECTIVE ACTION
Fluid level low; pump cavitating	Fill tank to proper level with automatic transmission fluid see tip sheet 140
Pump harness faulty	Check for ground at the black wire for each solenoid valve. If none, repair the wire
	While pushing the button for "jacks down" check for 12 v + at the control wire for each solenoid valve, if none check for voltage at these wires where they exit the controller. If voltage is present, repair the wires.
	If no voltage is present check the controller for trouble codes. If no trouble codes check for proper signals on the 6 pin harness see "system will not turn on, indicator light does not light ". If proper signals are present, replace the controller.
Dump valve stuck open or faulty	It is possible to use a leg valve to diagnose by swapping the dump valve and one leg valve. If the system then builds pressure the dump valve is bad (the leg that now has the dump valve <u>will</u> malfunction). Replace dump valve and return leg valve to original position. If there still is no pressure the pump may be faulty.
Leg solenoid wires damaged	Check for 12 V + at leg coil wires from control while pushing the button "front" or "rear" for that jacks valve. If no 12 V + signal, check for continuity on each wire between coil and controller. Good wire = bad control. Check for ground at the black wire for each solenoid valve coil. Repair if necessary
Valve solenoids miswired	Check wiring diagrams



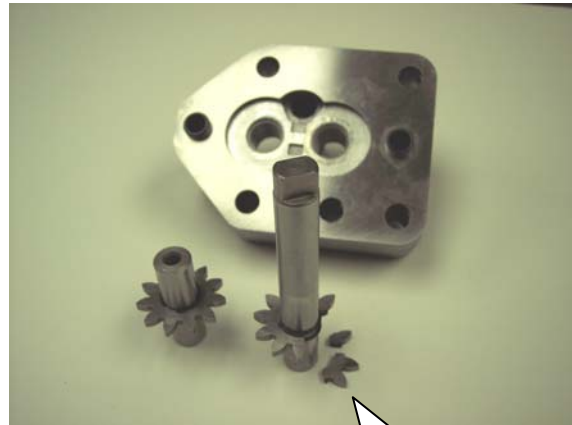
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1. If the above items do not solve the problem the pump itself may have failed. Inspect the pump by removing the pump to a clean, well lit area.
2. Remove the fluid from the reservoir and then remove the reservoir.
3. Remove the bolts holding the pump to the port plate and slowly pull the pump apart.
4. The pump is a very simple, but precisely machined item. Very tight tolerances must be maintained to keep the pump operating well. The two gears should be complete, without burs or chips. Make sure to remove the gears from the pump for inspection, as cracks can be very difficult to see.
5. The aluminum housing on either side of the gears may exhibit some marks from wear but no deep scratches. If the pump is damaged, replace the pump.
6. Once the pump has been replaced, re-assemble the pump onto the port plate.
7. Reinstall pump onto coach.
8. Fill to proper level and run jacks down to ground, wait 30 seconds, then retract (repeat 5 times) to bleed system of air.



Pump gears look OK to the naked eye.



Pump gears have failed. This was only detected after disassembly.



Pump kit part number 800301.
Replaces pumps for all 500278, 500348, 500350, 500453, 500465, 500506, 500507, 13-1100, 13-1104 pumps