

Table 6-1. Problems and solutions with pump operations

No Fluid Delivery	
Problems	Solutions
Fluid level in the reservoir is low.	Add the recommended oil; check the level on both sides of the tank's baffle to be certain that the pump suction is submerged.
Oil intake pipe or inlet filter is plugged.	Clean the filter; otherwise, remove the obstruction.
Air leak in the inlet line prevents priming or causes noise and irregular action of the control circuit.	Repair the leaks.
The pump shaft turns too slowly to prime itself (vane-type pumps only).	Check the appropriate manual's minimum speed recommendations.
The oil viscosity is too heavy to pick up the prime.	Use a lighter oil viscosity; follow the appropriate manual's recommended temperatures and services.
Shaft rotates in the wrong direction.	Reverse the rotation immediately to prevent seizure and parts from breaking due to lack of oil.
Pump shaft is broken, parts are broken inside the pump, or the shear pin or shear linkage is broken.	See the appropriate manual for replacement instructions.
Pump has dirt in it.	Dismantle and clean the pump; flush the system.
The stroke is incorrect on variable delivery pumps.	See the appropriate manual for instructions.
No Pressure in the System	
Pump does not deliver oil for any reasons given in above section.	Follow the remedies given.
<ul style="list-style-type: none"> • Relief-valve setting is not high enough. • Relief valve leaks. • Relief-valve spring is broken. 	<ul style="list-style-type: none"> • Increase the pressure setting of the valve; check the appropriate manual for the correct pressure. • Check the seat for score marks and reseal. • Replace the spring and readjust the valve.
Vane is stuck in the rotor slots (vane-type pumps only).	Inspect for wedged chips; inspect the oil for excessive viscosity.
The head is loose (very infrequent occurrence).	Tighten the head; check the appropriate manuals before tightening.
Oil to the tank recirculates freely through the system.	Check to see if a return line is open due to either a directional valve set in the open-center neutral position or some other valve is left open.
Control valves have internal leakage.	Block off various parts of the circuit to determine where the leak is; repair when located.
Noisy Pump	
Intake line, filter, or restricted intake pipe is partially clogged.	Clean out the intake or strainer, or eliminate the restrictions; ensure that the inlet line is open.

Table 6-1. Problems and solutions with pump operations (continued)

Noisy Pump (continued)	
Problems	Solutions
<ul style="list-style-type: none"> • Air leaks occur at the pump's intake piping joints. • Air leaks are present at the pump's shaft packing. • Air is drawn in through the inlet pipe openings. 	<ul style="list-style-type: none"> • Pour oil on the joints while listening for a change in the operating sounds; tighten the joints as required. • Pour oil around the shaft while listening for a change in the operating sounds; follow the appropriate manual instructions when changing the packing. • Ensure that the inlet and return lines are well below the oil level in the reservoir; add oil to the reservoir if necessary.
Air bubbles are present in the intake oil.	Use hydraulic oil that has a foam depressant.
Reservoir's air vent is plugged.	Clean or replace the breather.
Pump is running too fast.	See the appropriate manuals for recommended maximum speeds.
Oil viscosity is too high.	Use a lower oil viscosity; check the appropriate manuals for the recommended temperatures and services.
Coupling is misaligned.	Realign the coupling.
Pump vane is stuck (vane-type pump).	Inspect the pump for wedged chips or sticky oil; reassemble.
Parts are worn or broken.	Replace worn or broken parts.
External Oil Leaks	
Shaft packing is worn.	Replace the worn parts.
A head of oil is present on an inlet-pipe connection.	Keep all the joints tight; slight leakage may be necessary.
Excessive Wear	
Abrasive matter in the hydraulic oil is being circulated through the pump.	Install an adequate filter or replace the oil more often.
Oil viscosity is too low for working conditions.	Check the appropriate manual's recommendations or the lubrication chart for information.
Sustained high pressure occurs above the maximum pump rating.	Check the relief or regular valve's maximum setting.
Drive is misaligned or belt drive is tight.	Check the parts; correct the problem.
Air recirculation is causing a chatter in the system.	Remove the air from the system.
Broken Parts Inside the Pump Housing	
Excessive pressure above the maximum pump rating is present.	Check the relief or regulator valve's maximum setting.
Seizure occurs due to lack of oil.	Check the reservoir level, oil filter, and possibility of restriction in the inlet line.
Solid matter is being wedged in the pump.	Install a filter in the suction line.
Head screws are too tight.	Check appropriate manual's recommendations; adjust.

Table 6-2. Problems and solutions with actuating mechanism

Inoperative System	
Problems	Solutions
System fails because of any problem listed in Tables 6-1 through 6-5.	Follow recommended solution.
Mechanism Creeps (Stopped in Intermediate Position)	
Internal leakage occurs in the actuating cylinders or operating valves.	Replace the piston packing or cylinder, if the walls are scored; replace or repair the valve.
Longer Operating Times Than Specified	
Air is present in the system.	Bleed the system.
Actuating cylinder or directional-control valve has an internal leak.	Replace the piston packing or replace the cylinder if the walls are scored; replace or repair the valve; clean the unit to remove foreign matter; check the cam clearance.
Pump is worn.	Repair or replace the pump.
Action is sluggish on start up but less so after operating temperatures have increased, or action slows down after warm up. Depending on equipment and circuit design, could indicate that the oil viscosity is too high.	Check appropriate manual's lubrication order.
External Oil Leaks	
End caps leak.	Tighten caps, if possible, or replace the gasket.
Chevron seals leak.	Adjust or replace the seals.
Abnormal Packing-Gland Wear	
Cylinder is not securely fastened to the frame, causing it to vibrate.	Tighten the cylinder; check it periodically.
Cylinder and piston-rod extension are misaligned.	Check the parts; correct the problem.
Side load occurs on the piston rod.	Check for cylinder alignment or worn pins or ball joints.

Table 6-3. Problems and solutions with heating oil

Heating Caused by Power Unit (Reservoir, Pump, Relief Valve, Coolers)	
Problems	Solutions
Relief valve is set at a higher pressure than necessary; excess oil dissipated through increased slippage in various parts or through the relief valve or directional valve.	Check manual for the correct pressure; reset the relief valve.
Internal oil leaks occur due to wear in the pump.	Repair or replace the pump.
Oil viscosity is too high.	Check appropriate manual for correct oil viscosity to use at various temperatures.
Overhauled pumps may be assembled too tightly, which reduces clearances and increases friction.	Follow the appropriate manuals when rebuilding a pump.
Pump has leaking check or relief valves.	Repair or replace the valves.
Oil cooler or coolant functions improperly in cut off.	Inspect cooler; clean inside and outside; ensure that air flow or coolant flow around fins is not cut off.
Conditions in System Cause Excessive Heating	
Lines are restricted.	Replace the lines if they are crimped; remove any obstruction if lines are partially plugged.
Large pump deliveries do not unload properly.	Ensure that the open-center valves are neutralized and that any pressure-relieving valves are in the correct position. (Allow only small pumps to stay at high pressures when running idle for long periods.)
Radiation is insufficient.	Use artificial cooling.
Pump has internal leaks.	Locate leaks; replace the packing.
Reservoir is too small to provide adequate cooling.	Replace unit with a larger reservoir.
Valves or piping is undersized.	Check flow velocity through the lines and valves; compare them with the manual's recommendations. If velocity is excessive, install larger equipment.

Table 6-4. Problems and solutions with fluid motors

Motor Turns in the Wrong Direction	
Problems	Solutions
Conductors are crossed between the control valve and the motor.	Check circuit to determine the correct conductor connection between the control valve and motor.
Motor Does Not Turn or Does Not Develop Proper Speed or Torque	
System's overload-relief-valve adjustment is not set high enough.	Check system's pressure; reset the relief valve.
Relief valve sticks open.	Clean or replace the relief valve; adjust.
Oil to the reservoir freely recirculates through the system.	Check control-valve linkage; directional-control valve may be in open-center neutral.
Driven mechanism binds because of misalignment.	Check the motor shaft for alignment.
Pump does not deliver enough GPM or pressure.	Check pump's GPM and pressure; repair or replace.
Motor yoke is not set at the proper angle.	Adjust the pump's yoke angle.
External Oil Leak From the Motor	
Seals leak (drain may not be connected from motor to tank).	Check motor for 3rd line (a drain line that must go to tank used on piston and vane motors).
NOTE: See Table 6-1 for improper operation of pump.	

Table 6-5. Problems and solutions with accumulator operation

Sudden Drop in Accumulator Pressure (Position of Selector Valve is Changed)	
Problems	Solutions
Accumulator has an internal or external leak.	Repair the leak or replace the accumulator.
No Pressure When Pump Stops Running (Normal Pressure When Pump Was Running)	
Hydraulic line has a leaking gas or check valve.	Replace the check or the gas valve.
Sluggish Response for Accumulator	
Oil screen in the accumulator stops.	Dismantle the accumulator; clean the screen.
Gas precharge is not sufficient.	Precharge according to recommendations in the manual; check for gas leaks.
NOTE: Release all internal pressure before making repairs on accumulators.	