

Troubleshooting Guide for Common Challenges

Rev. 12/11/15

Problem	Symptoms	Causes	Solution
Pump will not go into gear	No indication that pump is in gear	Parking brake is not applied	Start from beginning. Apply parking brake
	Watch for 3 signs that pump is in gear 1. reading on speedometer 2. sound of pump engaging 3. indicator light in cab and at pump panel is illuminated green	Road/pump switch is not in correct position	Place Road/pump switch in pump position ensure green indicator light is illuminated
		Gear shifter is not in correct gear	Place gear shifter in proper gear
Pump will not go in gear after 1 st attempt	No indication that pump is in gear (There are 3 signs a pump is in gear)	Road/pump switch malfunctioned	Follow manufacturer's instruction for placing pump in gear manually
Pump will not go in gear after 2 nd attempt	No indication that pump is in gear (There are 3 signs a pump is in gear)	Road pump switch malfunctioned or Mechanical failure	Direct Supply Engine to pump water through your pump. Open appropriate intakes and discharges.
Pump will not supply its rated capacity <u>2 stage pump</u>	RPM's do match pressure on UL plate. Max capacity not achieved. Intake may have no reading or high vacuum	Transfer valve in wrong position	Place transfer valve in volume/parallel position to supply max capacity
		Swing check valve may be blocked by debris	Remove blind cap or intake valve from main intake on pump. Push on swing check valve with a long object to remove debris
		Blockage in pump piping or impeller	Place additional supply line in service, reduce discharge pressure, or back flush pump
Pressure drops while drafting	Low vacuum reading on intake gauge	Air leak from valves, packing, or other pump devices	Ensure all valves not used are closed and blind caps are tight Ensure enough water is covering strainer
	Increased vacuum reading	Blocked intake or strainer	Remove blockage and continue to flow water

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Pump is overheating while pump is in gear	Overheat light and indicator is on & pump is very hot to touch	Possibly lack of flow through pump	Open discharge Open circulating valve Open tank fill, unless tank fill only runs off 1 st stage of pump
Engine temperature gauge is indicating overheating of engine compartment	Temperature reading is above normal range	Engine is overheating, not enough air flow to cool engine	Open auxiliary cooler Operate fan clutch Check grill in front of radiator for debris Use radiator fill valve
Relief valve does not work or is slow reacting	When lines are opened & closed relief valve does not control pressure increases	Blocked strainer in pilot valve to discharge relief valve	Remove strainer and wash out sediment. Turn relief valve off & on under pressure of 150psi for 1 minute.
		Relief valve is broken	Turn off relief valve and monitor pump gauges
Primer pump will not evacuate air and water adequately	Primer pump is running when primer is engaged	Engine RPM too low	Increase RPM's
		No oil in reservoir	Add oil
		Vent hole in oil reservoir cap is clogged preventing the siphon effect	Loosen cap or unclog cap to ensure the siphon effect
Intake pressure in relay increases above 100psi	Intake >100psi	Hose lines being shut down or intake pressure has increased	Open dump line discharge to maintain residual intake pressure of 50psi Changes in pressure above 10psi to below 100psi should not be adjusted nor should dump lines be utilized. Expect some fluctuation in relay.
Pump will not operate in series/pressure position	Pressures can not be achieved	Swing check valve is blocked	Remove blind cap or intake valve from main intake on pump. Push on swing check valve with a long object to remove debris Back flush pump

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Supply line collapses while beginning to flow water or placing additional lines in service	Intake gauge is low or reads zero Water coming out of ground around barrel of hydrant	Kinks or vehicle on top of supply line	Remove kinks in supply line; move vehicle
		Burst supply line	Shut down and replace section with 2 sections
		Supply line not supplying the same amount of water being discharged	Throttle down until you get an increased intake reading. Reduce flow in other line or shut down Ask Supply Engine for more water Place 2 nd supply line in service
		Hydrant not opened all the way	Open hydrant completely
No pressure reading on master pressure gauge	All 3 signs that pump is in gear are present	Tank to pump or intake is closed (No water in pump)	Ensure proper valves are open. Operate primer pump
		Master gauge is defective	Check individual line gauge for that discharge
Pump will not supply sufficient pressures above >200psi	RPM's are normal compared to UL plate	Transfer valve in wrong position	Place in series/pressure for pressures above >200psi
		Swing check valve blocked	Place pump in volume/parallel And back to series/pressure again. Listen for swing check valve to slam close. If not, remove remove blind cap or intake valve from main intake on pump. Push on swing check valve with a long object to remove debris Back flush pump

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Pump will not prime	Water will not fill hard sleeve. No vacuum reading Possibly leaking water prior to attempting prime	Drain or bleeder valve left open	Ensure master drain, bleeders, drains, & auxiliary cooler are closed
		Intake valve open	Close intake valves completely and tighten cap Ensure tank to pump is closed if no water is in tank
		Open discharge or circulating line/ booster line	Close discharges, booster line cooling valves, and circulating lines.
		Intake relief valve leaking	Blind cap and tighten
		Hard sleeves are not air tight	Tighten hard sleeve couplings
		Pump packing is leaking air	Re adjust packing, take out of service
		Not operating primer long enough	Prime should be achieved in 15-20 seconds, operate primer until water is on ground and discharge is flowing water at 50-100psi. Do not operate longer than >30seconds
		Malfunctioning primer pump	See solutions in previous problems in "Primer pump will not evacuate air and water adequately" on page 3 of this guide