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TROUBLESHOOTING YOUR FLEXIBLE IMPELLER PUMP

Low flow: Reduced flow will occur when the impeller is damaged. Bowed, missing, worn or ripped blades (see picture) will reduce flow. A worn cam, wearplate or cover plate will also reduce flow. The replacement of these parts, when worn, normally cures the problem. Another cause of low flow is an air leak. This can occur anywhere along the suction line, within the sea strainer, or within the pump. Check all hoses, hose clamps, fittings, gaskets and the pump water seal.

Not priming: All of the causes of low flow described above can also prevent the pump from priming.

How to prevent impeller failure: The main causes of premature impeller failure involve running the pump dry, with a restricted suction or with a blocked discharge. Confirm your inlet seacock is in the open position before engine start. You would be surprised how often this simple step is forgotten. Regularly clean your suction strainer and confirm all old impeller blades are removed when replacing your impeller. These steps will reduce the majority of system flow restrictions.

TROUBLESHOOTING YOUR DIAPHRAGM PUMP

Not priming: Any air leak or blockage along the suction line will prevent the pump from priming. Check your hose, hose clamps, fittings, and strainer. If your suction line checks out, the cause usually centers on a problem with the valves. Open up your pump and verify the valve o-ring is in place and there is not any debris clogging the valves. Valves occasionally swell or lose their resilience. This type of valve damage is not always visible. Luckily valves are relatively inexpensive and easy to replace.

Low pressure or automatic switch not shutting off: Slight swelling of the check valves is the most common cause of low pressure or the pump not automatically shutting off. If after valve replacement the problem persists, replace the pressure switch.

Leaking: A ripped or cracked diaphragm is normally the cause of liquid leaking out of the pump. Additional damage to the bearings and motor can be avoided if you catch the leak early.

Pump does not respond to electrical power: Bypass the pressure switch by removing the two wires attached to the switch and connect them momentarily together. If the pump turns over, your pressure switch requires replacement. If your pump remains lifeless after bypassing the switch, your motor needs replacement (some models have replaceable brushes).

TROUBLESHOOTING YOUR CENTRIFUGAL PUMP

Not priming (for self-priming models): Any air leak or blockage along the suction line will prevent the pump from priming. Check your hose, hose clamps, fittings, and strainer. If your suction line checks out, verify pump shaft rotation and impeller spacing (impeller spacing within a self-priming centrifugal is critical). Self-priming centrifugals require liquid in their housing to prime. If your pump has sat long enough for your liquid to evaporate, or your pump was just installed, verify that your pump housing has been filled. Also, verify your shaft rotation. A self-priming centrifugal pump will not prime when run in reverse.

Low flow: The most common reason for centrifugal pumps to experience low flow upon initial start up is reverse rotation. A centrifugal pump will deliver approximately 60% of their designed flow when rotated backwards. An air leak along the suction or line blockage anywhere in the system will reduce flow. Clear all lines, test for leaks, and verify your chosen line size, fittings and valves are not overly restricting your flow.

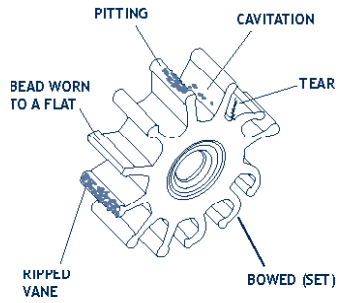
How to prevent premature seal failure: The typical mechanical seal is designed to last thousands of hours. The common causes of premature seal failure include running the pump dry (closed seacock or blocked suction), cavitation (restricting the inlet flow to the pump by reduced line size, clogged strainer or partially blocked or collapsed suction line), thermal shock (a quick change in temperature that shatters the ceramic element of the seal, and often occurs when a pump has been running dry long enough to heat up the seal significantly before fluid is allowed to enter the pump), and deadheading (running the pump with a closed discharge for extended periods of time).

TROUBLESHOOTING YOUR GEAR PUMP

Not priming: Any air leak or blockage along the suction line will prevent the pump from priming. Check your hose, hose clamps, fittings and strainer. Dry gears will also reduce the pump's ability to prime. Simply pour a small quantity of your liquid into the suction or discharge of the pump and try again. If none of these ideas work, disassemble your pump to inspect for wear as described in our picture. If excessive wear exists, you will need a rebuild kit or complete pump head.

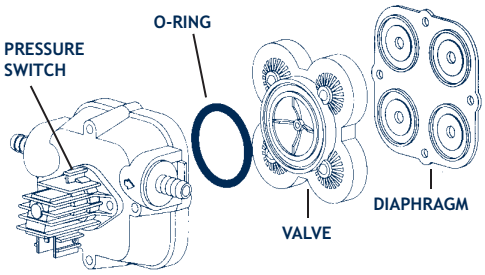
How to prevent premature pump failure: Gear pumps were designed to transfer or spray clean liquids. The close tolerances between both gears and the pump body are the key to its ability to deliver a strong suction and high discharge pressure. However, sand or debris will wear all contacting surfaces or even lock up the pump potentially causing motor or shaft damage.

FLEXIBLE IMPELLER



When To Replace Your Impeller

DIAPHRAGM

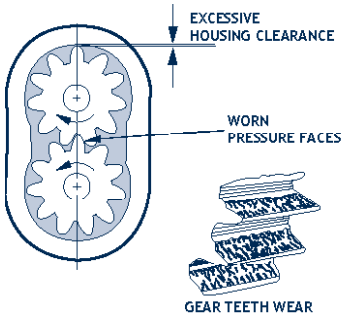


Troubleshooting Your Pump

CENTRIFUGAL

What Cavitation (Low NPSH) Will Do To Your Impeller

GEAR



When To Repair Your Gear Pump