

Centrifugal Pump Troubleshooting Guide

CLICK ANYWHERE on THIS PAGE to RETURN to WATER & WELL PUMP MANUALS & INFORMATION at InspectApedia.com

This “TROUBLESHOOTING” information is intended to guide in the general determination of pump problems and their solutions. Each manufacturer normally provides a description of warranty conditions. Some pump warranties are immediately voided if the unit is disassembled. Be sure to thoroughly read the owner's manual and warranty.

Installation and parts manuals are provided only as reference tools. Neither the manufacturer nor the Seller makes any representation or warranty of any kind to the Buyer that he or she is qualified to neither install nor make any repairs to the product. In fact, the manufacturer and the Seller expressly state that installation, repairs and parts replacements should be undertaken by qualified and competent technicians or contractors and not by the Buyer. The Buyer assumes all risk and liability arising out of his or her installation or repair to the original product.

Little or no discharge

- Casing not initially filled with water. (Fill pump casing---prime pump)
- Total head too high. (Shorten suction and/or head)
- Suction lift too high , or too long (Lower suction lift, install foot valve and prime, or shorten length of suction line)
- Impeller plugged (Clean impeller)
- Hole or air leak in suction line (Repair or replace; do not use Teflon tape;use pipe sealing compound)
- Foot valve too small (Match foot valve to piping or install one size larger foot valve)
- Foot valve or suction line not submerged deep enough in water (Submerge lower in water--at least 3 feet)
- Impeller damaged (Replace impeller)
- Insufficient inlet pressure or suction head (Increase inlet pressure by adding more water to tank or increasing back pressure)
- Suction piping too small (Increase to pump inlet size or one size larger)
- Motor wired incorrectly (Check wiring diagram)
- Casing gasket or "O" ring leaking (Replace)
- Suction or discharge valve closed (Open)
- Pump flow is greater than well flow capacity (Match pump flow to well capacity)

Loss of suction

- Air leak in suction line (Repair & replace)
- Suction lift too high (Lower suction lift, install foot valve and prime)

- Insufficient inlet pressure or suction head (Increase inlet pressure by adding more water to tank or increasing back pressure)
- Clogged foot valve check valve or strainer (Unclog)
- Defective foot valve or check valve (Replace)
- Defective priming hose bibb on suction pipe (Replace)
- Defective well (Repair or replace)

Motor Overheats and Shuts Off (Overload)

- Motor voltage does not match power supply voltage (Check motor connection against wiring diagram on the motor nameplate and against the power supply voltage)
- Improper wire size (Consult with a licensed electrician or refer to the National Electrical Code for definite guide to wire size and circuit protection devices)
- Impeller is rubbing against pump case or not turning freely (Dismantle pump, unclog or replace the impeller)
- Low voltage at the motor (Make sure electrical connections are tight)

Pump leaks at shaft

Worn mechanical seal (Replace mechanical seal)

Pump vibrates and/or makes excessive noise

- Mounting plate or foundation not rigid enough (Reinforce)
- Foreign material in pump (Dismantle pump and clean)
- Impeller damaged (Replace impeller)
- Worn motor bearings (Replace bearings)
- Suction lift too high (Lower suction lift, install foot valve and prime)

Pump will not deliver water or develop pressure

- No priming water in casing (Fill pump casing)
- Mechanical seal leaking (Replace mechanical seal)
- Leak in suction line (Repair or replace)
- Discharge line is closed and priming air has nowhere to go (Open)
- Suction line or valve is closed (Open)
- Pump is down (Replace worn parts)
- Foot valve or check valve is leaking (Replace valve)
- Suction screen clogged (Clean or replace)

Pump will not prime

- No priming water in casing (Fill pump casing)
- Mechanical seal leaking (Replace mechanical seal)

- Leak in suction line (Repair or replace)
- Discharge line is closed and priming air has nowhere to go (Open)
- Suction line or valve is closed (Open)
- Pump is down (Replace worn parts)
- Foot valve or check valve is leaking (Replace valve)
- Suction screen clogged (Clean or replace)

Pump will not start or run

- Improperly wired (Check wiring against diagram on motor)
- Blown fuse or open circuit breaker (Replace fuse, reset circuit breaker)
- Loose or broken wiring (Tighten connections, replace broken wiring)
- Stone or foreign object lodged in impeller (Dismantle pump and remove foreign object)
- Motor shorted out (Replace motor)
- Thermal overload has opened circuit (Allow unit to cool, restart after reason for overload has been determined)