## CAT Pumps: 2SF Troubleshooting Guide

| PROBLEM | PROBABLE CAUSE | SOLUTION |
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| **Low pressure** | •Worn nozzle. | •Replace with properly sized nozzle. |
| | •Belt slippage. | •Tighten belt(s) or install new belt(s). |
| | •Air leak in inlet plumbing. | •Tighten fittings and hoses. Use PTFE liquid or tape. |
| | •Pressure gauge inoperative or not registering accurately. | •Check with new gauge. Replace worn or damaged gauge. |
| | •Relief valve stuck, partially plugged or improperly adjusted. | •Clean/adjust relief valve. Replace worn seats/valves and o-rings. |
| | •Inlet suction strainer (filter) clogged or improperly sized. | •Clean filter. Use adequate size filter. Check more frequently. |
| | •Abrasives in pumped liquid. | •Install proper filter. |
| | •Leaky discharge hose. | •Replace discharge hose with proper rating for system. |
| | •Inadequate liquid supply. | •Pressurize inlet and install C.A.T. |
| | •Severe cavitation. | •Check inlet conditions. |
| | •Worn seals. | •Install new seal kit. Increase frequency of service. |
| | •Worn or dirty inlet/discharge valves. | •Clean inlet/discharge valves or install new valve kit. |
| **Pulsation** | •Faulty Pulsation Dampener. | •Check precharge. If low, recharge, or install a new dampener. |
| | •Foreign material trapped in inlet/discharge valves. | •Clean inlet/discharge valves or install new valve kit. |
| **Water leak** | | |
| •Under the manifold | •Worn V-Packings, Hi-Pressure or Lo-Pressure Seals. | •Install new seal kit. Increase frequency of service. |
| | •Worn adapter spacer o-rings. | •Install new o-rings. |
| •Into the crankcase | •Humid air condensing into water inside the crankcase. | •Install oil cap protector. Change oil every 3 months or 500 hours. |
| | •Excessive wear to seals and V-Packings. | •Install new seal kit. Increase frequency of service. |
| **Knocking noise** | | |
| •Inlet supply | •Inadequate inlet liquid supply. | •Check liquid supply. Increase line size, pressurize or install C.A.T. |
| •Bearing | •Broken or worn bearing. | •Replace bearing. |
| •Pulley | •Loose pulley on crankshaft | •Check key and tighten set screw. |
| **Oil leak** | | |
| •Crankcase oil seals. | •Worn crankcase oil seals. | •Replace crankcase oil seals. |
| •Crankshaft oil seals and o-rings. | •Worn crankshaft oil seals or o-rings on bearing cover. | •Remove bearing cover and replace o-rings and/or oil seals. |
| •Drain plug | •Loose drain plug or worn drain plug o-ring. | •Tighten drain plug or replace o-ring. |
| •Bubble gauge | •Loose bubble gauge or worn bubble gauge gasket. | •Tighten bubble gauge or replace gasket. |
| •Rear cover | •Loose rear cover or worn rear cover o-ring. | •Tighten rear cover or replace o-ring. |
| •Filler cap | •Loose filler cap or excessive oil in crankcase. | •Tighten filler cap. Fill crankcase to specified capacity. |
| **Pump runs extremely rough** | | |
| •Inlet conditions | •Restricted inlet or air entering the inlet plumbing | •Correct inlet size plumbing. Check for air tight seal. |
| •Pump valves | •Stuck inlet/discharge valves. | •Clean out foreign material or install new valve kit. |
| •Pump seals | •Leaking V-Packings, Hi-Pressure or Lo-Pressure seals. | •Install new seal kit. Increase frequency of service. |

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| **Premature seal failure** | •Scored plungers. | •Replace plungers. |
| | •Over pressure to inlet manifold. | •Reduce inlet pressure per specifications. |
| | •Abrasive material in the liquid being pumped. | •Install proper filtration at pump inlet and clean regularly. |
| | •Excessive pressure and/or temperature of pumped liquid. | •Check pressure and inlet liquid temperature. |
| | •Running pump dry. | •DO NOT RUN PUMP WITHOUT LIQUID. |
| | •Starving pump of adequate liquid. | •Increase hose one size larger than inlet port size. Pressurize and install C.A.T. |
| | •Eroded manifold. | •Replace manifold. Check liquid compatibility. |