

## CLEANER TROUBLESHOOTING GAS ENGINE DRIVEN PRESSURE CLEANERS

TROUBLE	POSSIBLE CAUSE	REMEDY
1. Poor cleaning action.	<ul style="list-style-type: none"> <li>A. Hard water.</li> <li>B. Low pressure.</li> <li>C. Little or no chemical being drawn.</li> <li>D. Improper chemical.</li> <li>E. Improper chemical mixture.</li> <li>F. Low discharge pressure.</li> </ul>	<ul style="list-style-type: none"> <li>A. Connect the machine to a water softner.</li> <li>B. See "Low operating pressure."</li> <li>C. See "machine will not draw chemical."</li> <li>D. Obtain proper chemical.</li> <li>E. Mix chemical per the label. Follow all the mixing, handling, application, and disposal instructions.</li> <li>F. See "Low operating pressure."</li> </ul>
2. Machine will not draw chemical.	<ul style="list-style-type: none"> <li>A. No chemical solution.</li> <li>B. Metering valve not open.</li> <li>C. Chemical line strainer clogged.</li> <li>D. Air leak in Chemical line.</li> <li>E. Air in system</li> <li>F. Metering valve clogged.</li> <li>G. Restrictor orifice too large or missing.</li> </ul>	<ul style="list-style-type: none"> <li>A. Replenish supply.</li> <li>B. Turn metering valve knob to open.</li> <li>C. Remove screen and clean.</li> <li>D. Tighten all fittings and hoses for the chemical line.</li> <li>E. Disassemble and clean.</li> <li>F. See "To Apply Chemical" in operation section.</li> <li>G. Install proper size orifice.</li> </ul>
3. Low operating pressure.	<ul style="list-style-type: none"> <li>A. Insufficeint water supply.</li> <li>B. Incoming water hose too small.</li> <li>C. Water supply hose too long.</li> <li>D. Belt slippage.</li> <li>E. Worn belt.</li> <li>F. Spray tip worn or wrong size.</li> <li>G. Dirty or worn check valves in water pump.</li> <li>H. Water supply hose kinked.</li> <li>I. Inlet filter screen clogged.</li> <li>J. Motor runs slow.</li> <li>K. Air leak in inlet plumbing.</li> <li>L. Defective water pump.</li> <li>M. Leaking discharge hose.</li> <li>N. Chemical metering valve open and sucking air.</li> <li>O. Defective unloader.</li> <li>P. Inlet ball valve not fully open (if so equipped).</li> <li>Q. Restricted coil.</li> </ul>	<ul style="list-style-type: none"> <li>A. The water supply must meet or exceed the maximum discharge volume specified in the PERFORMANCE section. <b>Float Tank</b> - minimum water inlet pressure of 40 PSI / 0.68 BAR <b>Supply Tank</b> - Tank needs to be refilled Tank Filter - Tank filter needs cleaned or replaced.</li> <li>B. Use larger water supply hose.</li> <li>C. Use shorter water supply hose.</li> <li>D. Tighten belt per instructions in <b>MACHINE MAINTENANCE</b> insert.</li> <li>E. Replace bely per <b>CLEANER EXPLODED VIEW</b>.</li> <li>F. Replace with spray tip specified in the GENERAL section of <b>MODEL SPECIFICATIONS</b>.</li> <li>G. See <b>PUMP TROUBLE SHOOTING</b>.</li> <li>H. Straighten hose.</li> <li>I. Clean water filter screen or hose inlet screen.</li> <li>J. See "Pump engine starts slow or overheats and stops."</li> <li>K. Tighten all fittings.</li> <li>L. See <b>PUMP TROUBLESHOOTING</b>.</li> <li>M. If a water leak is found, <b>DO NOT OPERATE THE MACHINE</b>. Shut down and replace hose.</li> <li>N. Resupply chemical, place soap screen in water, or shut off metering valve.</li> <li>O. Repair or replace unloader valve.</li> <li>P. Open inlet ball valve completely. (Handle parallel w/ valve boody).</li> <li>Q. See COIL BACK PRESSURECHECK on <b>MACHINE MAINTENANCE</b>.</li> </ul>
4. Excessive, unusual noise.	<ul style="list-style-type: none"> <li>A. Pump.</li> <li>B. Defective motor.</li> <li>C. Pulleys rubbing.</li> <li>D. Misalignment of pump &amp; motor</li> </ul>	<ul style="list-style-type: none"> <li>A. See <b>PUMP TROUBLESHOOTING</b>.</li> <li>B. Call service technician or take engine to Repair/Warranty station.</li> <li>C. Adjust shields or pulley(s).</li> <li>D. Realign pump and engine.</li> </ul>
5. Belts slipping.	<ul style="list-style-type: none"> <li>A. Belts too losse.</li> <li>B. Excessive back pressure.</li> <li>C. Defective water pump.</li> </ul>	<ul style="list-style-type: none"> <li>A. Tighten per instruction on <b>MACHINE MAINTENANCE</b>.</li> <li>B. See "Excessive Back Pressure."</li> <li>C. See <b>PUMP SERVICE</b>.</li> </ul>

## CLEANER TROUBLESHOOTING (CONT.) GAS ENGINE DRIVEN PRESSURE CLEANERS

TROUBLE	POSSIBLE CAUSE	REMEDY
6. Excessive back pressure.	<ul style="list-style-type: none"> <li>A. Spray tip built up with lime.</li> <li>B. Water pump turning too fast.</li> <li>C. Coil built up with lime.</li> <li>D. Relief valve defective.</li> </ul>	<ul style="list-style-type: none"> <li>A. Remove and clean, or replace spray tip with tip specified in GENERAL section of <b>MODEL SPECIFICATIONS</b>.</li> <li>B. See <b>MODEL SPECIFICATIONS</b>.</li> <li>C. Delime Coil.</li> <li>D. Remove and replace.</li> </ul>
7. Excessive vibration.	<ul style="list-style-type: none"> <li>A. Defective belt.</li> <li>B. Defective Pump.</li> <li>C. Defective accumulator.</li> </ul>	<ul style="list-style-type: none"> <li>A. Remove and replace using belt specified in CLEANER EXPLODED VIEW or the GENERAL section of <b>MODEL SPECIFICATIONS</b>.</li> <li>B. See <b>PUMP TROUBLESHOOTING</b>.</li> <li>C. Recharge/replace.</li> </ul>
8. Engine will not start.	<ul style="list-style-type: none"> <li>A. No fuel.</li> <li>B. Plugged fuel filter.</li> <li>C. Water in fuel.</li> <li>D. Defective or corroded battery cable.</li> <li>E. Defective engine.</li> </ul>	<ul style="list-style-type: none"> <li>A. Replenish fuel per owners manual.</li> <li>B. Change fuel filter.</li> <li>C. Drain and replenish fuel.</li> <li>D. Clean cables and cable ends.</li> <li>E. Call service technician</li> </ul>
9. Engine will not turn over.	<ul style="list-style-type: none"> <li>A. Pump frozen</li> <li>B. Defective Engine.</li> <li>C. Defective water pump</li> <li>D. Excessive back pressure.</li> </ul>	<ul style="list-style-type: none"> <li>A. Machine must be thoroughly warmed to above freezing.</li> <li>B. Call service technician or take motor to Repair/ Warranty station.</li> <li>C. See <b>PUMP SERVICE</b>.</li> <li>D. See "Excessive Back Pressure."</li> </ul>
10. Engine starts slow or overheats and stops.	<ul style="list-style-type: none"> <li>A. Improper fuel.</li> <li>B. Excessive back pressure.</li> <li>C. Defective engine.</li> <li>D. Dirt in fuel line or filters.</li> <li>E. Incorrect fuel level.</li> <li>F. Dirty air cleaner.</li> <li>G. Faulty spark plug.</li> <li>H. Engine overloaded.</li> </ul>	<ul style="list-style-type: none"> <li>A. Replenish fuel per owners manual.</li> <li>B. See "Excessive Back Pressure."</li> <li>C. Call service technician.</li> <li>D. Clean and replace fuel filters.</li> <li>E. Check oil level per engine owners manual.</li> <li>F. Change air filters per engine owners manual.</li> <li>G. Change spark plug and set gap per engine owners manual.</li> <li>H. See "Excessive Back Pressure."</li> </ul>
11. Engine operates erratically knocks or pings.	<ul style="list-style-type: none"> <li>A. Improper fuel.</li> <li>B. Dirt in fuel line or filters.</li> <li>C. Dirty air cleaner.</li> <li>D. Faulty spark plug.</li> <li>E. Engine overloaded.</li> </ul>	<ul style="list-style-type: none"> <li>A. Replenish fuel per owners manual.</li> <li>B. Clean and replace fuel filters.</li> <li>C. Change air filters per engine owners manual.</li> <li>D. Change spark plug and set gap per engine owners manual.</li> <li>E. See "Excessive Back Pressure."</li> </ul>
12. Slow supply tank fill from garden hose reel	<ul style="list-style-type: none"> <li>A. Shut off float valve screen plugged</li> </ul>	<ul style="list-style-type: none"> <li>A. Disassemble float valve and clean screen.</li> </ul>