



# VERSA-MATIC®

Symptom:	Potential Cause(s):	Recommendation(s):
<b>Pump Cycles Once</b>	Deadhead (system pressure meets or exceeds air supply pressure). Air valve or intermediate gaskets installed incorrectly. Bent or missing actuator plunger.	Increase the inlet air pressure to the pump. Pump is designed for 1:1 pressure ratio at zero flow. (Does not apply to high pressure 2:1 units). Install gaskets with holes properly aligned. Remove pilot valve and inspect actuator plungers.
<b>Pump Will Not Operate / Cycle</b>	Pump is over lubricated. Lack of air (line size, PSI, CFM). Check air distribution system. Discharge line is blocked or clogged manifolds. Deadhead (system pressure meets or exceeds air supply pressure). Blocked air exhaust muffler. Pumped fluid in air exhaust muffler. Pump chamber is blocked.	Set lubricator on lowest possible setting or remove. Units are designed for lube free operation. Check the air line size and length, compressor capacity (HP vs. cfm required). Disassemble and inspect main air distribution valve, pilot valve and pilot valve actuators. Check for inadvertently closed discharge line valves. Clean discharge manifolds/piping. Increase the inlet air pressure to the pump. Pump is designed for 1:1 pressure ratio at zero flow. (Does not apply to high pressure 2:1 units). Remove muffler screen, clean or de-ice, and re-install. Disassemble pump chambers. Inspect for diaphragm rupture or loose diaphragm plate assembly. Disassemble and inspect wetted chambers. Remove or flush any obstructions.
<b>Pump Cycles and Will Not Prime or No Flow</b>	Cavitation on suction side. Check valve obstructed. Valve ball(s) not seating properly or sticking. Valve ball(s) missing (pushed into chamber or manifold). Valve ball(s)/seal(s) damaged or attacked by product. Check valve and/or seat is worn or needs adjusting. Suction line is blocked. Excessive suction lift. Suction side air leakage or air in product. Pumped fluid in air exhaust muffler.	Check suction condition (move pump closer to product). Disassemble the wet end of the pump and manually dislodge obstruction in the check valve pocket. Clean out around valve ball cage and valve seat area. Replace valve ball or valve seat if damaged. Use heavier valve ball material. Worn valve ball or valve seat. Worm fingers in valve ball cage (replace part). Check Chemical Resistance Guide for compatibility. Check Chemical Resistance Guide for compatibility. Inspect check valves and seats for wear and proper setting. Replace if necessary. Remove or flush obstruction. Check and clear all suction screens or strainers. For lifts exceeding 20' of liquid, filling the chambers with liquid will prime the pump in most cases. Visually inspect all suction-side gaskets and pipe connections. Disassemble pump chambers. Inspect for diaphragm rupture or loose diaphragm plate assembly.
<b>Pump Cycles Running Sluggish/Stalling, Flow Unsatisfactory</b>	Over lubrication. Icing. Clogged manifolds. Deadhead (system pressure meets or exceeds air supply pressure). Cavitation on suction side. Lack of air (line size, PSI, CFM). Excessive suction lift. Air supply pressure or volume exceeds system hd. Undersized suction line. Restrictive or undersized air line. Suction side air leakage or air in product. Suction line is blocked. Pumped fluid in air exhaust muffler. Check valve obstructed. Check valve and/or seat is worn or needs adjusting. Entrained air or vapor lock in chamber(s).	Set lubricator on lowest possible setting or remove. Units are designed for lube free operation. Remove muffler screen, de-ice, and re-install. Install a point of use air drier. Clean manifolds to allow proper air flow Increase the inlet air pressure to the pump. Pump is designed for 1:1 pressure ratio at zero flow. (Does not apply to high pressure 2:1 units). Check suction (move pump closer to product). Check the air line size, length, compressor capacity. For lifts exceeding 20' of liquid, filling the chambers with liquid will prime the pump in most cases. Decrease inlet air (press. and vol.) to the pump. Pump is cavitating the fluid by fast cycling. Meet or exceed pump connections. Install a larger air line and connection. Visually inspect all suction-side gaskets and pipe connections. Remove or flush obstruction. Check and clear all suction screens or strainers. Disassemble pump chambers. Inspect for diaphragm rupture or loose diaphragm plate assembly. Disassemble the wet end of the pump and manually dislodge obstruction in the check valve pocket. Inspect check valves and seats for wear and proper setting. Replace if necessary. Purge chambers through tapped chamber vent plugs. Purging the chambers of air can be dangerous.
<b>Product Leaking Through Exhaust</b>	Diaphragm failure, or diaphragm plates loose. Diaphragm stretched around center hole or bolt holes.	Replace diaphragms, check for damage and ensure diaphragm plates are tight. Check for excessive inlet pressure or air pressure. Consult Chemical Resistance Chart for compatibility with products, cleaners, temperature limitations and lubrication.
<b>Premature Diaphragm Failure</b>	Cavitation. Excessive flooded suction pressure. Misapplication (chemical/physical incompatibility). Incorrect diaphragm plates or plates on backwards, installed incorrectly or worn.	Enlarge pipe diameter on suction side of pump. Move pump closer to product. Raise pump/place pump on top of tank to reduce inlet pressure. Install Back pressure device (Tech bulletin 41r). Add accumulation tank or pulsation dampener. Consult Chemical Resistance Chart for compatibility with products, cleaners, temperature limitations and lubrication. Check Operating Manual to check for correct part and installation. Ensure outer plates have not been worn to a sharp edge.
<b>Unbalanced Cycling</b>	Excessive suction lift. Undersized suction line. Pumped fluid in air exhaust muffler. Suction side air leakage or air in product. Check valve obstructed. Check valve and/or seat is worn or needs adjusting. Entrained air or vapor lock in chamber(s).	For lifts exceeding 20' of liquid, filling the chambers with liquid will prime the pump in most cases. Meet or exceed pump connections. Disassemble pump chambers. Inspect for diaphragm rupture or loose diaphragm plate assembly. Visually inspect all suction-side gaskets and pipe connections. Disassemble the wet end of the pump and manually dislodge obstruction in the check valve pocket. Inspect check valves and seats for wear and proper setting. Replace if necessary. Purge chambers through tapped chamber vent plugs.

For additional troubleshooting tips contact After Sales Support at [service.warrenrupp@idexcorp.com](mailto:service.warrenrupp@idexcorp.com) or 419-524-8388