



Pump Operations

UDOR Diaphragm Pumps

CAREFULLY READ AND FOLLOW THESE INSTRUCTIONS BEFORE OPERATING YOUR UDOR PUMP. FAILURE TO FOLLOW THESE INSTRUCTIONS MAY DAMAGE PUMP AND VOID WARRANTY.

- 1. HOW THE PUMP WORKS (The diaphragm is what separates the pump oil from the spray material.)**
 Each piston **DOWNSTROKE** lowers the piston-attached diaphragm, drawing spray material into pump head. As piston passes below cylinder sleeve side openings, oil is pulled into lower diaphragm cavity. During each piston **UPSTROKE** the cushion of oil between the piston and the diaphragm hydraulically pushes and cushions the diaphragm as the piston tops out. This discharges the fluid in the pump head. The lower diaphragm cavity oil cushion also lubricates the diaphragm and piston ensuring minimal mechanical wear. **REMEMBER** low oil level causes excessive mechanical wear on diaphragms and internal components. The transparent oil sight guage makes oil checks easy. Keep filled to mark on sight guage.
- 2. BEFORE OPERATING SYSTEM**
 Open Suction Valve and check tightness of suction lines, fittings and filter.
- 3. DO NOT RUN PUMP WITH A STARVED SUCTION**
 The diaphragm pump will not suffer if run dry due to an empty tank. However, a “starved” suction due to a clogged strainer or a closed suction valve will cause premature failure of the pump diaphragms. **NOTE:** Only use filter screens that are between 10 & 20 mesh. Never use a fine filter screen with a diaphragm pump.
- 4. SUCTION VALVE (To prevent pump damage, shut down system before closing suction valve.)**
 This valve is in the system to close off tank flow for emergency system repair or if strainer screen requires unexpected cleaning after a tank refill. (Strainer screen should be cleaned just before each tank refill.)
- 5. MAINTAIN PROPER OIL LEVEL**
 The crankcase oil plays a dual role. It lubricates all moving parts and is hydraulically functional in the pumping capacity. Oil supports the diaphragm during each pressure stroke. It is important to maintain the recommended oil level, marked on the oil sight guage.
- 6. DO NOT OVER SPEED PUMP**
 UDOR diaphragm pumps are designed to operate at or below a specific speed. Over speeding will cause valves and diaphragms to prematurely fail and could cause other internal damage. Refer to the performance chart of your specific pump for maximum operating speed.
- 7. PULSATION DAMPENER INTRODUCTION**
 It is the nature of diaphragm pumps to have some pulsation. This is caused by sudden changes in piston direction. The pulsation dampener has one function in the pumping system, reduce pulsation by providing a cushion of air to bump against. The UDOR pulsation dampener uses a rubber bladder to separate the air cushion from the solution being pumped.
- 8. PULSATION DAMPENER SETTING**
 The basic rule is to fill the pulsation dampener to twenty percent (20%) of the system working pressure. If you have your spraying pressure set at 100 psi, the setting for the pulsation dampener should be 20 psi. Always shut down the pump before adding air to the pulsation dampener or checking its pressure. Air supply can be from a compressor or a manual type pump. The dome containing air is small. Take care to apply the pressure guage evenly on the air valve to prevent air from leaking out of the pulsation dampener. It is not uncommon to lose 5-10 psi when checking pulsation dampener pressure. **NOTE:** 2-cylinder diaphragm pumps may require more air than 20% of operating pressure. 20 psi is the minimum pulsation dampener pressure. **DO NOT RUN PUMP WITH LESS THAN 20 PSI IN THE PULSATION DAMPENER.**