

Webster Fuel Pumps & Valves

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Oil Pump Questions

Some of the answers to the questions below may be brief and to the point. Please refer to factory literature or Webster's website for more in-depth and detailed information.

- What are the differences between a supply pump and a transfer pump? Basically no difference, both are transferring oil from a remote location. Supply pumps are usually 20-100 psi. and transfer pumps 100-300 psi.
- Why do some pumps rotate clockwise while others rotate counter-clockwise? All burner manufacturers have unique designs that call for different pump applications.
- What is the difference between a single stage and two-stage pump? Single stage pumps are recommended for no more than 10" of inlet vacuum (10ft of lift), and two stage pumps are recommended for no more than 15" of vacuum (15ft of lift). Single stage pumps typically have one gear set, and two stage pumps have two or more gears for added lift capabilities.
- How do you size a pump? All these parameters need to be considered in order to size a pump correctly. (1) Nozzle firing rate (2) Required pressure (3) RPM (4) Rotation (5) Mounting; flange or hub type, shaft length and diameter.
- What do all the numbers in a part number mean? Each manufacturer has it's own unique code. Please refer to the appropriate Webster literature for specific code breakdowns. A typical pump code breakdown would tell you if the pump is single or two stage, RPM, rotation, indicate pressure range, flow rate, nozzle type, and location of the nozzle port.
- What is the function of an oil safety valve? The oil safety valve is a normally closed valve. Oil will flow through the valve when vacuum is created at the discharge end of the valve. This valve should be installed just prior to the burner pump in any gravity or pressurized system. The valve will prevent tank siphoning and oil leaks in the event of line breaks. Typically used with a supply pump to prevent excessive pressure at the inlet of the burner fuel unit.
- Can any motor be used with an oil pump? No, motors are sized according to the operating pressure of the pump. An increase in pump pressure would require an increase in HP. Also, rotation and speed must be considered.
- How do you check for air leaks? A vacuum gauge will determine the existence of air in the suction line. Install the gauge in the suction line just prior to the burner pump. If at all possible, shut the oil supply off at the source. Start the burner pump for a few seconds or until the pump pulls a vacuum. Shut the pump off. If the gauge does not show or hold a vacuum, an air leak is present.
- If a pump is under pressure, how do I connect gauges? Relieve any pressure in the system. The oil supply needs to be cutoff and the pump shut down. Typically you have a pressure gauge installed at the gauge or pressure port of the pump and a vacuum gauge installed at the inlet.
- When should a check valve be used? Where should it be placed? Check valves are used in systems where you have a vertical column of oil at the discharge of a supply pump. The installation of the check valve will allow oil to run in one direction and not back through the pump. Check valves are installed prior to a vertical column of pipe just after the supply pumps discharge.

- When should a vacuum breaker be used? Why is it needed? Vacuum breakers are used in loop supply pump system just prior to where you have a vertical column of oil returning back to a tank. Do to the weight of the oil in that column, the valve will introduce air into the system and will allow that vertical column of oil to dump back into the tank and will keep your oil line from siphoning.
- What is the recommended type of coupling between the pump and motor? Any three piece or flexible coupling should work fine.
- What happens if I use a larger pump the necessary? In a case like this it is recommended to pipe the unit "two pipe" using the supply and return from the pump. Therefore any oil not being used from the discharge will get rerouted back to the tank.

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