**Shippensburg Pump Company, Inc.**

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## Re: How to size a condensate replacement pump and motor assembly on a unit that no longer has a nameplate indicating operating conditions.

Since the flow rate (GPM) of a condensate pump is typically the same as the receiver size (in gallons), first determine the volume of the tank in gallons. Two formulas are available depending on the physical shape of the receiver. Both formulas below calculate the volume of the receiver in gallons, assuming the dimensions of the receiver are measured in inches:

- If rectangular shape, use (Length x Width x Height) / 231.0
- If cylindrical shape, use (Radius^2 x 3/14 x Length) / 231.0

Next, determine the discharge pressure of the pump by following the step below:

1. Measure the vertical lift (in feet) from the discharge of existing pump to the place where the discharge water is going
2. Divide the result by 2.31. The result is PSIG.
3. Determine what back pressure (if any) exists.
4. Add the valves from Step 1 and Step 3 plus an additional 5-10 PSIG for a safety margin to obtain the discharge pressure of the pump.

This assuming discharge pressure is sized correctly. Finally remember to check the temperature of the condensate. If temperature is above 200°F, you may need to use a low NPSH pump – Model P.

Sincerely,

Shipco® Marketing and Sales Department