eZ TIPS technical resources provided by ZORO

Condensate Pump Selection Guide

Condensate Pumps

A condensate pump is a specific type of pump used to pump the condensate (water) produced in an HVAC (heating or cooling), refrigeration, condensing boilers, furnaces or steam systems. They may also be used to pump the condensate produced from latent water vapor in any of the following gas mixtures:

- Conditioned (cooled or heated) building air
- Refrigerated air in cooling and freezing systems
- Steam in heat exchangers and radiators
- The exhaust stream of very-high-efficiency furnaces

When selecting a new condensate pump it is important to have an accurate head measurement, GPM (gallons per minute), HP (horsepower), and voltage rating.

Appropriately sizing a pump for head volume and pump lift is important for the life expectancy of the equipment and to reduce the amount of power the pump will consume over its lifetime.

Pump Head Measurement

This is the linear vertical measurement of the maximum height a specific pump can deliver a liquid to the pump outlet. A pump can only deliver a liquid to a maximum height because the weight of the liquid above the pump mechanism becomes greater than the forces which are attempting to turn the pump or move the piston or diaphragm. By measuring vertically from the pump outlet to the point at which gravity takes over the flow of water in the drain line will give an accurate measurement of the pump's head measurement.

GPM

The GPM, gallons of condensate water the pump can remove in a minute, is typically 2-3 times the system condensing rate. This is typical on small receiver tanks, on larger condensate collection tanks a system heat balance is worth reviewing. A capacity of 1-1/2 times the condensing rate may be adequate. This oversizing allows the pump to run 1/3—1/2 of an hour under full load conditions. Refer to the owners manual that came with your furnace or condensing system to determine the amount of condensate the furnace creates. Place a bucket under the furnace's drain and record the amount of condensate produced in an hour for an accurate GPM estimate of condensate drainage.

Horsepower

As used in homes and individual heat exchangers, condensate pumps are often small and rated at a fraction of a horsepower. Typically horsepower is rated on the pump head measurement and the required GPM. Average residential applications ranges from 1/30hp to 1/50hp. Light commercial and larger than average HVAC systems can require up to a 1/3hp pump and larger collection bins. As horsepower increases the GPM and head pressure of the condensate pump increases as well.

Example:
1/50hp @ 12' pump head = 67 GPH
1/30hp @ 12' pump head = 37 GPH

Voltage

Most residential applications require either 115 or 120v power applications. Larger systems or special applications require 230v pumps which are available in equal or higher horse power than the 115/120v pumps.

Compact Submersible Condensate Pump: This type of pump sits inside the collection bin with the discharge and power cord exiting sealed holes in the lid.

Low Profile Condensate Pump: This type of pump has a smaller reservoir making them fit into smaller compact spaces.

Split Condensate Pump: Designed for ductless split systems or wall unit cooling systems where there is no room or outlet for a standard condensate pump.

Information sources include W.W. Grainger, Ferguson Supply, Federal Corp.com

If you are still having difficulty choosing a Condensate Pump, please contact us at askzoro@zoro.com or 855-289-9676

Document Create Date: 11 March 2013
Last Review: 24 March 2014