

Hydronic Times

High Efficiency Hydronics • Domestic Hot Water • Solar

Newsletter of JTG Muir • Taco VDT Universal Circulators

**NEW
Lower Cost**

Taco VDT Universal Circulators Replaces 3-Speed Circulators

Resource Links:

Residential Hydronics
and Hot Water
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<http://flopro.taco-hvac.com>



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Get it right, every time with lower installation costs and energy savings

Just three circulators can now meet most variable load conditions experienced in residential and light commercial hydronic applications. No more guessing the right circulator for your needs. The VDT circulator adjusts to the system heating demand automatically. You get it right every time and your customer saves energy, up to 50%, without paying a premium. What a deal!

New lower pricing makes for win-win: \$\$\$

Now it makes sense to use a Taco VDT variable speed circulator where ever there are variable hydronic loads. Compare the cost a conventional on/off or 3 speed circulator plus the installed cost of a differential bypass valve and the Taco VDT costs less money to install!

The Taco VDT makes high tech very easy

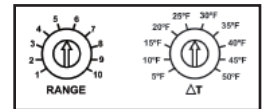
Install the circulator. Install the sensors. Set the dial. You are now a high efficiency genius!

The Taco VDT: Three circulators for all your Needs

008VDT: Are you zoning systems with manifolds and actuators? The 008VDT covers a lot territory for the right price. The 008VDT can delivery up to 75,000btus at 10 feet of head, a very common situation. **Compare cost/performance to:** Grundfos 15-58 three speed plus differential bypass installed.

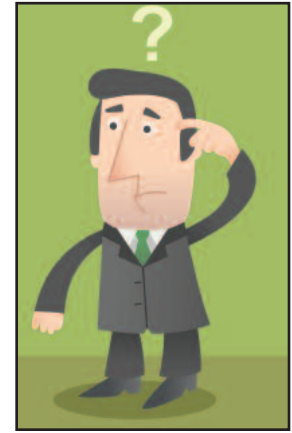
0013VDT: High Head Secondary Need a big circulator to handle a lot of manifolds/actuators? The 0013 VDT can handle up to 150,000btus at 20ft of head. Nice job to have. **Compare cost/performance to:** Grundfos 26-99F three speed plus differential bypass installed.

0012VDT: High Flow Low Head Lots of flow with lower head, lower pressure drop applications. **Compare cost to:** Grundfos 43-44FC three speed plus differential bypass installed.



The problem with on/off circulators:

Whats' wrong with what we have been doing for years? We have all sized circulators for largest heating load in the next 50 years for every job at every zone. We are required to size for the worse case. What is the cost? We use a lot of energy over pumping our jobs when there is no need and often end up creating velocity sound problems. Most heating systems spend most of their operating hours at 1/2 the rated heat requirement, or less, but the circulator is working at full speed using full speed energy whenever called upon. Matching the flow of a circulator to the actual heating load makes a lot of sense. Now we can get smaaaarter the easy way.



So how do you size a regular circulator now?

If you are like most hydronic contractors and distributors, you select a circulator that seems somewhere close to the correct size based on a guess at pressure drop and flow requirements. In fact, even the most careful circulator sizing is based on calculated estimates that usually are not close to the actual pressure drop in an installed system. Estimates with correction factors are the norm. This is why most circulators are over sized for the application. Many practical contractors will buy a 3 speed circulator and switch speeds until velocity noise goes away. This approach makes sense to manage sound but it does nothing for efficiency or comfort. With a VDT the guessing stops and better energy performance is achieved..every time.

Delta T vs Delta P:

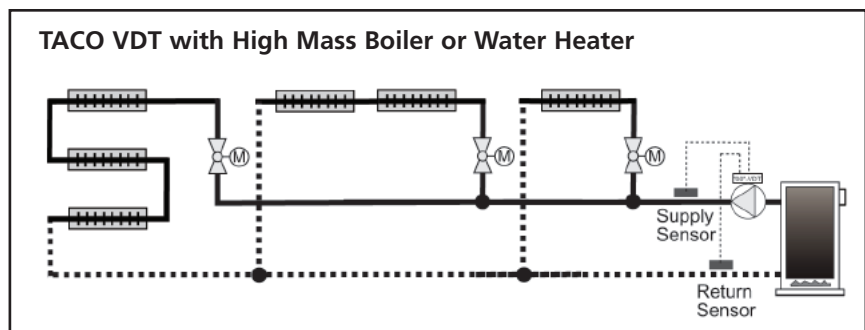
Variable speed Delta T beats out Euro Delta P technology:

A Taco VDT Delta T circulator measures the temperature difference between supply and return pipes and varies flow according to the heat required, just like a modulating boiler. You simply set the differential required for the job on a dial (usually 10 -20 delta T) and the circulator does all the thinking required to get it right every time, adjusting speed as the load and number of zone vary.

A Delta P circulator requires a complicated setup based upon estimated pressure drop calculation, which not what is actually happening in the system or you must perform a complicated commercial pressure balancing set up. These circulators were designed by European engineers for the European market that involves extensive training. Taco Delta T circulators responds to the actual, real time load rather than calculated estimates of pressure drop, which may or may not actually reflect the system requirements. While some Delta P circulators can deliver superior rated efficiencies, the actual field performance of a Delta P circulator will often fall far short of the calculated estimates. Leave it to Taco to delivery simple, smart solutions that are contractor friendly and effective in the real world.

Common uses:

Use a VDT circulator when utilizing multiple zone valves or radiant actuator to automatically adjust flow to changing loads. Use a VDT circulator to circulate directly from a high mass boiler or water heater. A VDT circulator is an ideal choice when changing the circulator of an existing cast iron boiler installation with unknown flow and head losses.



Proper VDT applications:

Taco VDT circulators are ideal for any variable load zoning conditions. They are also compatible with primary pumping to high mass on/off boilers and water heaters. Variable speed circulators are not compatible with primary pumping to low mass modulating boilers, which have their own modulating logic. ■

