Tankless Water Heaters

Though Tankless water heaters have shown some serious concerns in its application, specifically freezing up, breaking down and not providing sufficient water, it seems that even those issues are not universal.

Installing the vent a little higher off the ground (minimum installation height is 12") may eliminate the daily freeze-ups in winter. Though not completely. Every technology has a few lemons, but if you rent the tankless heater, like we do, that is covered under warranty.

Sizing of tankless units is also essential. Though nothing is exact, as it all depends on homeowner habits , here are some guidelines to size:

- 1 bath home for 1 to 2 people: 140,000-Btu input with an energy factor of .82 or higher
- 2 bath home for 2 to 3 people: 190,000 Btu input with an energy factor of .82 or higher
- 3 bath home for 3 to 5 people: Twin tankless water heaters located close to points of use – larger for 2 – one large for 2 baths and smaller for third. One large tankless could also work with minimum 190,000 Btu input if flow rates remain within boundaries – that is, not all 3 baths are in use for a shower
- Home with 4+ baths – treated more like commercial setting, may require multiple tankless installations.

Though size is critical, so is location – the temperature of the incoming water will significantly impact the temperature of the water in your home, so installation in a very cold climate will require larger sizing and more frequent freeze-ups. As a homeowner with an "on demand" system, it will be up to you to check the vent every time it snows and ensure that the area is kept clear. A build up of ice is easy in this climate and any such build up will cause the system to shut down immediately.

Something to keep in mind: if you have a system in which the on demand or tankless water system feeds your home heating there are some additional factors to be aware of:

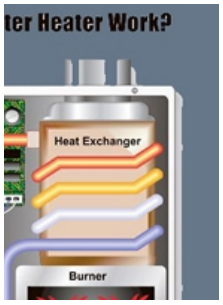
1. Any call for water at your taps will be served first. That is, if your furnace is on and you turn on the hot water to do the dishes, your kitchen sink will get the hot water and the furnace will wait.
2. What this means for you: if you have a large or Jacuzzi bathtub, your water on demand system will provide you with the water for that bath first. If you have an undersized system, you may not be able to get sufficiently hot water to fill the tub, particularly in the winter and your furnace will turn off while the system recovers completely.
3. How it works: the water coming into your house passes through the ground – so in the winter it is only slightly above freezing when it enters. A single pass through the water on demand system will warm it, but on very cold days more than one pass through will be required to provide hot water. This is why your home has a holding or mixing tank – to allow the water to pass through the system more than once.
4. The water is held and mixed in this tank until it reaches the temperature set in the home. This water is then used to supply the house. On a larger system this may not always be required. Once the call for water at the bathtub (In our earlier example) is stopped, the system will heat the water for the mixing tank(s) until it reaches the right temperature. Only then will the water be supplied to the furnace.

How it works:

When the home calls for hot water (the tap is turned on or if linked with the heating, the thermostat calls for heat) the flow sensor fires the burner. Water lines coil around the heat exchanger – see graphic below:

Pros:

- These units have lower operating costs – in a home of 3 people where the unit heats the house and provides hot water, gas costs roughly $35 - 75/ month (higher range in winter) – with all added fees and taxes included
- Endless hot water claims – depending on size and incoming water temperature, a larger unit, this may be the case so long as it's limits are respected.
- Small and space saving – typically all hung and the storage tank is just a little larger than a laundry tub
- Accurate temperature control



Cons:

- Unlimited hot water may lead to lingering use - thereby eliminating any cost savings
- High upfront costs—may not be recommended if homeowner does not plan to live in the house for an extended period
- Complicated installation and may require larger fuel lines
- Require electricity to operate
- Water can take time added to arrive – from 30 seconds to 2 minutes
- Untreated water or lack of mixing tank may lead to scalding