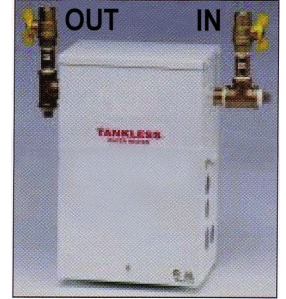


Tankless Electric Water Heaters...

the rest of the story

Tankless (aka instantaneous) water heaters are a hot topic these days. Modern tankless water heaters incorporate computer chips, an array of sensors and high-powered inputs. These brief case sized tankless units only heat when the hot water tap is open. The water is heated very rapidly as it flows through a heat exchange coil. The manufacturers of these units are making claims about big savings from energy efficiency, etc. "Why would anyone even consider an old-fashioned tank type water heater these days?" Unfortunately, they neglect to tell you the "down side" of the product. Most Americans are unfamiliar with this type of equipment and they might not be prepared to handle the special demands of this complicated device.

Proper sizing is critical with tankless equipment. Tankless water heaters are sized by flow rate as measured in gallons per minute (GPM). Typically a bathtub needs 4 GPM, showers 2.5 GPM, washing machines 3 GPM, dishwasher 3 GPM and each sink 2 GPM. Flow rates from older faucets and showerheads may be much higher. The size of unit needed is determined from your highest demand for hot water at any one time. Because tankless water heaters must heat water very fast, they have limited capacity and have difficulty supplying multiple hot water needs simultaneously. Adoption of this new technology has been slow because busy American households often require several hot water appliances to operate at the same time. Want to run the dishwasher or wash machine while showering? You may not be able to. If your demand is too great, a second tankless unit may be required or an energy efficient storage tank water heater may be a better *heater* solution. Also keep in mind that northern climates, the incoming ground water temperature is colder and tankless units are not recommended.



Typical tankless electric water heater.

Water quality is also an important issue with tankless heaters. The ads talk about long life, but in reality, unless the water is very pure, few will have longevity. Because of the extremely high temperatures needed to heat the water in the short trip through the heat exchange unit, many minerals precipitate out of the water and deposit on the coils of the unit shortening its life. This applies to both gas and electric units. Most warranties are voided if water hardness is too high, others provide delimiting instructions when a warning light illuminates. Moderately high dissolved solids (above 500 PPM) or moderately low pH are also problems. You may also need to have your water analyzed for carbon dioxide, chlorides, copper, iron and more. Read the warranty and to be sure hard water is covered. Traditional electric tank-type units are much more capable of handling diverse water conditions across the country.

One of the issues that have implications for your utility and customers is the untimely load these units place on the system. Family sized models require 240 volts and up to 150 amps capacity to operate! This level of demand almost always exceeds that of most residential service. In addition to the cost of the heater, significant wiring upgrades are usually required as well. Unfortunately, all of that demand (14 to 30kw) is pure uncontrollable peak load. Utilities are also faced with disgruntled customers who can no longer get by with their residential transformer and demand an upgrade.

These are not do-it-yourself installations and definitely not fix-it yourself products. One major brand is sold and serviced only by 'factory-trained technicians who carry 60+ page troubleshooting manuals and a treasure trove of electronic meters, pressure meters and thermometers due to the sensors and electronics aboard. Traditional electric tank-type water heaters have only four (4) service parts made up of only two (2) elements and two (2) thermostats. Service calls are relatively easy and straightforward. Parts are a lot cheaper than labor costs these days. Wonder what a service diagnosis and an electronic circuit board on tankless unit costs? Can you even find a qualified technician to work on one?

Tank-type water heaters are more 'forgiving'. The stored water acts like a buffer. This is how commercial applications, like hotels, can service large groups of guests who are taking showers at the same time. The same occurs in your customers' homes during family visits, holidays and other times of high usage.

How about all those promised energy cost savings? True, these microprocessor-controlled wonders do not lose much heat to 'standby' heat loss, however, unlike traditional electric elements, their efficiency drops with scale buildup. Their savings figures also come from comparisons to "low end", traditional steel heaters. A full size high efficiency water heater loses only about 5 degrees in 24 hours! Not much more savings to squeeze out there!

Next time you hear someone wanting a tankless water heater, tell them the "Rest Of The Story" Twice the installed cost of a tank heater, more service (if you can find it), short life, and no savings over a tank heater - some deal! So, wouldn't you prefer cost effective and hassle free water heating, with a Lifetime Warranted Electric Water Heater? Better for you and better for Bluestem Electric Cooperative, Inc., *also, **Bluestem will give you \$175.00 rebate towards the purchase of a High Efficiency Lifetime Electric Water Heater.***