

Tankless water heaters

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More and more we are seeing tankless water heaters, both for replacing our regular hot water tank and for hot water radiant heating. Do they work? Where did they come from? Are they proven technology or new gadgets?

MOST OF THE WORLD IS TANKLESS

Actually, we may want to ask: "Where have we been?" You see, only in North America do we waste energy by keeping a large tank of water continuously hot. And during the air conditioning season, we not only pay to heat the water but cool the house, which is warmer, from summer temperatures and heat loss coming from that same hot water tank. Everywhere else in the world, people use instantaneous or tankless hot water heaters. These devices produce a lot of heat over a short period of time and they heat the water as it is used. More heat for a short period of time ends up being much more economical than moderate heat over a long period of time. I remember in Europe having a small gas burner right over the sink. The hot water didn't have to go far. Of course, many years ago the technology for tankless hot water was not highly sophisticated so North Americans somehow got started using smaller burners to heat up water more slowly and then storing it in tanks. This reservoir of hot water was hidden and out of the way. As we increased our hot water use, rather than thinking of changing the technology, we simply made larger tanks. Then, once large tanks were an absolute and unquestionable part of our culture and we wanted greater efficiency, we simply made more efficient burners for these large tanks.

Suddenly, in the last few years we have seen more and more tankless hot water heaters being advertised in North America. Why was it that imports of tankless water heaters didn't make any headway in North America until now? My guess is because we developed the habit of using vast quantities of hot water in our showers, and the European and Japanese tanks couldn't supply that much hot water that fast. So we ignored them and kept on heating large tanks full of water.

INTRODUCE THE LOW FLOW SHOWER HEAD

What changed? We now all use low flow shower heads, and the tankless water heaters can keep up with them. So suddenly, the barriers are down, and we have come to discover that the highest of high tech has evolved into these devices, while we were sleeping.

The first photo shows a Bosch water heater from Germany and the second photo shows a Rinnai water heater from Japan. Both are very small. That's all you require for your water heating needs. Both are high efficiency gas appliances. There are no more stand-by losses from the tanks. Both are made of modular parts for easy replacement or repair.

The Rinnai unit includes full computerized operation. It will deliver from 15,000 to 180,000 btu's of heat, depending on the demand. Thermostats can be set, directly from the bathroom, and each family member can adjust the temperature to what they like. The flame adjusts according to the temperature of the water coming in and how fast the water runs through the unit.

The early tankless heaters had a tendency to clog up with calcium because they significantly reduced the water flow through the unit. The modern units have less restriction and anti-calcium piping. If you live in a high calcium area and have a problem, you can easily arrange shut-off valves before and after the unit. Together with spigots, this would allow you to flush the unit with a vinegar solution to dissolve any calcium, without even opening the heater.

Unless you place your tankless heater closer to the bathroom than the old tank, you will still be waiting for the hot water to get to the faucet. Many European gas heaters are actually small units located openly on the wall above the sink -- that is instant! When you run a long distance from the heater to the faucet you might be better to be studying the use of a delivery pump that brings the hot

water through the pipes to your bathroom, without wasting water down the drain, before you turn on the faucet.

DRAWBACKS TO TANKLESS HEATERS

What are the remaining draw backs to tankless water heaters in North America? As with most energy conservation measures, the up front costs are higher than our standard energy wasting tanks but payback is generally reasonable. Electric units work well but require 240volts at 60 to 90 amps , more than most North American homes have available -- sometimes requiring expensive new electrical entry panels that could make them a poor payback. If you have old wasteful shower heads, or one of those 9 head showers, it could have problems delivering hot water fast enough. If you have a hot tub, you can still fill it up, but it takes longer. On the other hand, even after having filled the hot tub, you don't have to wait for the hot water tank to warm back up. In some areas the ground water in winter time is far colder than elsewhere, far colder than many countries that successfully use nothing but tankless water heaters, making it difficult for some tankless heaters to meet our demands. If you want to install a tankless heater in Canada be sure that you get references from installations in your area, call those references and see if the unit you are looking at is capable of dealing with the temperature of your incoming water -- some do, some don't.

And then there is the cost of maintenance. Tankless heaters are far more complicated than either gas or electric water heater tanks. Regular maintenance is part of the very strict warranty fine print, and can cut down on the overall cost effectiveness of going tankless.

DO YOUR HOMEWORK

So you need to do your homework, but if it is time to replace your old hot water tank, it is indeed worth looking at the possibility of an energy saving tankless water heater.

THE MICROWAVE OPTION

Just to tease you, by 2010 we will be seeing microwave tankless water heaters coming on the market that will be exceptionally good at dealing with cold ground water temperatures without high electrical demands. That may just change the entire water heating market. --- OOOPS -- 2016 UPDATE from www.TanklessHotWaterGuide.ca "It has now been more than 5 years since we wrote this article on the Wanderport Corporation and their microwave tankless system. In theory the idea was actually brilliant; unfortunately they were unable to come up with a product that could be mass produced. They appear to currently be in the energy drink business now, somewhat of a drastic change if you ask me."

DIY?

I would put out one caution: some tankless water heaters are showing up on the retail shelves of the big renovation centres. I can't really support this because it is important that the installer insure that there is proper water pressure and proper gas pressure for these appliances to work properly, and the weekend warrior doesn't have the tools necessary to test and balance that properly. The number of complaints about poor performance of DIY installations supports my hesitation to take this device out of the hands of a qualified plumber.

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