

Ask an Expert: Considering a tankless water heater? Here's what to know before buying

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for the Mercury News

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Q Do tankless water heaters live up to their claims of saving energy and delivering "endless" hot water?

A Tankless water heaters are also referred to as "demand", "instantaneous" or "flash" heaters because they heat water only as needed. They have been popular for years in Japan and Europe, but the market for tankless units is now heating up in the United States. These heaters take up less space, generally last at least 20 years, and can truly provide "endless hot water" if they are chosen properly. Also, because tankless units do not have the standby heat losses of storage tank heaters, they are expected to consume less energy and cost less to operate.

The term instantaneous can be misleading, however. Tankless water heaters can take up to 10 seconds to completely fire up and fully raise the water temperature. This can cause a longer wait for hot water and more cold water to be wasted down the drain. An on-demand hot water circulation pump (www.gothotwater.com) can help address this issue.

How much energy can you save with a tankless

heater? It depends how much hot water you use, and whether you have one or more than one unit. According to the U.S. Department of Energy, if your household uses 41 gallons or less of hot water a day, tankless heaters can be 24 to 34 percent more energy efficient than conventional hot water heaters. If your hot water usage is higher - around 86 gallons a day - a tankless heater would be 8 to 14 percent more energy efficient. For energy savings of up to 50 percent, you would need to install a tankless heater at every place in the house where hot water is used. Read more at www.eere.energy.gov/.

Tankless units are available in natural gas, propane, or electric models and can be used similarly to conventional tank types: located centrally for whole-house use, or at individual points of use.

For tankless water heaters to perform as expected, the proper type of unit must be selected and users must understand that a unit is limited by its minimum and maximum flow rate. For example, most tankless units require a hot water flow of at least 0.5 gallons per minute to operate. And, if a unit is not sized to accommodate desired simultaneous uses, such as for two showers, shower times will probably need to be staggered. Otherwise, excess demand will override the heating capacity of the unit.

Tankless units should be sized based on a household's required hot water flow and the temperature rise required for the fixture with the largest flow rate.

Because cold water needs to be heated rapidly, tankless water heaters demand more gas flow or power than storage tank heaters. A single gas unit sized for a typical household will require a 3/4-inch gas line, rather than the usual 1/2-inch gas line. Similarly, electric units demand a lot of power and generally require larger cable and a larger capacity

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main electrical panel.

For greatest energy savings, purchase a unit with an electronic ignition rather than a pilot light, and don't be tempted to lengthen your showers once you have "endless" hot water.

Have a question for one of our experts? E-mail home@mercurynews.com.

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