

Tankless Water Heater Overview

Courtesy of All About Homes
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Basics and Benefits:

- Also known as “On-Demand” water heaters
- 2 Types of systems: Point of use and Whole house
- Multiple heaters can be installed in series
- Mount on walls and take considerably less space than traditional tanks
- Installation can qualify home owner for a \$300 federal energy tax credit
- Efficiency gains come from lack of standby heat loss – the energy wasted to heat water for storage and the heat lost when heated water is not used
- Manufacturers claim up to 50% energy reduction. Peoples Energy estimates the savings is approximately \$100 per year.
- Average life of a traditional water heater is 7 years. Average life of a tankless water heater is about 20 years
- You should NEVER run out of hot water!

Inspection:

- Very similar to the inspection of a traditional water heater. Check for:
 - o Venting
 - o Pressure relief
 - o Leaking/Corrosion
 - o Combustion air
 - o Proper gas lines and shut offs
- With tankless water heaters we must also check for:
 - o Proper sizing – check to make sure hot water delivery will meet homeowners needs

Sizing:

- If you want to be happy with your tankless system, this is critical!

- Three things to consider:
 - o Flow rate required in home
 - o Temperature of incoming cold water
 - o Desired temperature of out-going hot water
- Flow rate:
 - o Must consider what you want to be able to run simultaneously
 - o Examples of flow rates:
 - Shower 2.5 GPM
 - Tub 4.0 GPM
 - Dishwasher 1.5 GPM
 - Sink 2.2 GPM
 - Washer 2.0 GPM

These flow rates are based on modern flow-restricted fixtures. Older fixtures in older homes will have significantly higher flow rates.

- o Example: You want to run a shower, a dishwasher and a sink simultaneously, the desired water temperature is 110 degrees and the incoming water temperature is 40 degrees. You need a machine that can produce a flow rate of 6.2 GPM with a temperature rise of 70 degrees.

The largest capacity Bosch 2700ES will produce 5.0 GPM at a temperature rise of 65 degrees. It is priced around \$1100. It has a BTU rating of 199,000 – larger than any residential furnace. This machine is still not big enough for our scenario so we would likely need at least 2 machines. A 75 gallon traditional water heater could be installed for approximately \$1000 and would run all home fixtures simultaneously.

Challenges:

- Our cold ground water requires a 33 to 50% increase in temperature rise for a tankless water heater than the same water heater in a southern climate. As a result, our climate makes it very expensive to install enough capacity in tankless heaters to meet our demands.
- Flow rates generally have to be .65 to .75 GPM in order for tank to turn on...so you can't dribble water out of a faucet and get hot water
- All have electronic pilot lights so if the power is out, there will be no hot water to the home
- Can require up to 10x more gas than a conventional water heater – some areas around the Chicagoland area do not have the appropriate gas pressure and/or gas regulators to support these high BTU machines. Check with your gas company prior to installing a tankless system.