



Belyea Bros.

Since 1908

Heating & Cooling



The quick facts on Tankless Hot Water Systems (also known as Instant Hot systems):

- The average annual operating cost of a conventional gas hot water tank ranges between \$150-\$300 depending on the capacity (electric tanks cost more to operate).
- Storage tank water heaters raise and maintain water temperatures usually between 120F-140F (49C-60C). If no hot water is drawn from the tank (and cold water enters the tank), the heater will operate periodically to maintain the water temperature.
- “Standby losses” (heat conducted and radiated from the walls of the tank, and through the flue pipe), represent 10%-20% of a household’s annual water heating costs when using a conventional tank.
- Tankless hot water systems deliver hot water on demand rather than storing hot water.
- They are space saving and energy saving.
- Tankless units are common in Japan and Europe.
- A tankless unit has a heating device that is activated by the flow of water created when a hot water tap is turned on. Once activated, the unit delivers a constant supply of hot water. However, the specific output (in gallons per minute) of the unit limits the rate of the hot water flow.
- Water heating accounts for 20% or more of an average household’s annual energy expenditures.
- You should try and select an appropriate unit by estimating the amount of hot water required during your peak demand (it is worth remembering that some usage adaptation is necessary when learning to use more energy efficient systems).
- The following gives you a rough idea of the water flow required for various appliances:
 1. Faucets: 0.75 gallons – 2.5 gallons per minute (estimated)
 2. Low-flow showerheads: 1.2 gallons – 2 gallons per minute (estimated)
 3. Standard showerheads: 2.5 gallons – 3.5 gallons per minute (estimated)
 4. Be aware some specialty showerheads like rainforest or multiple jet devices can use up to 13 gallons per minute.
 5. Clothes & dishwashers: 1 gallon – 2.5 gallons per minute (estimated)
- Add up the flow rates of the number of devices you would want to operate at any **one** time to estimate your peak usage.
- The next factor to consider is the incoming water temp as most manufacturers advertise the flow delivery rate of a unit before factoring in the type of temp rise required in Toronto in January. We work on the assumption that during the winter a tankless system has to raise the incoming water by between 70F-77F to deliver water at temps up to 120F out of the tap.
- The most successful applications of these systems are with customers committed to creating an energy saving household with energy star rated dishwashers and washing machines (most of which use their own internal heating elements and therefore do not require hot water delivery), and who are willing to modify some of their usage in order to create a more efficient home.