

Service bulletin

Overcoming temperature fluctuations



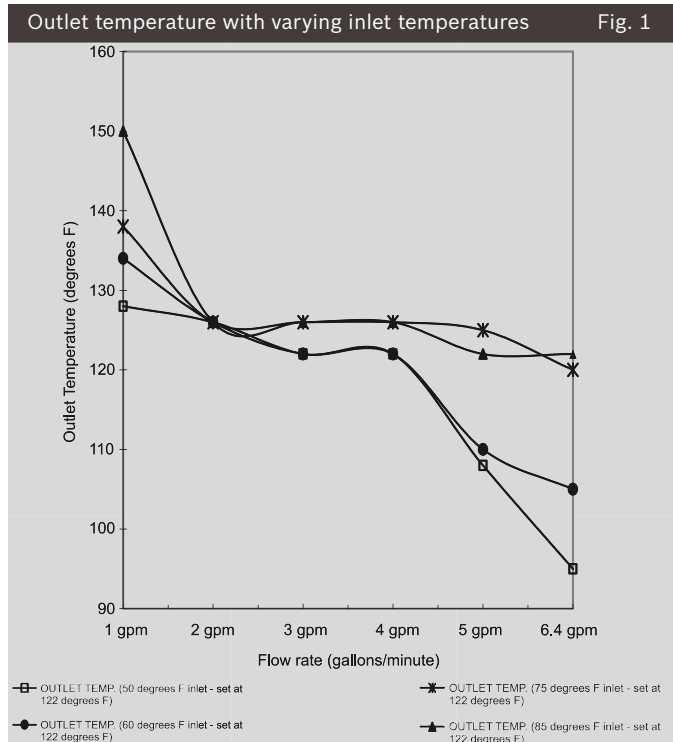
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Introduction

- ▶ Temperature fluctuations from hot to cold during use are typically caused by a restriction in the hot water plumbing. This slows the flow within the tankless heater, decreasing it below the activation flow rate, which shuts off the burners. The end result is nothing but cold water coming out of the outlet. Follow each step and test the hot water to see if it remains constant without turning cold before proceeding to the next step.
- ▶ Restrictions and low flowing fixtures are the common cause of temperature overshoot beyond set temperature on the appliance. Very warm inlet water temperatures, in addition to low flow, worsens the situation. See Fig. 1.

Tools needed:

- ▶ Various wrenches
- ▶ Container with known volume (like a gallon container)



Clean faucet aerators and shower heads

1. Check for restrictions in plumbing outlets, which could limit hot water flow and may contribute to heater deactivation. For sinks, remove faucet aerator. Flush and clean screen and reinstall. For showers, remove showerhead and flush. If plugged with mineral deposits, clean according to manufacturer's suggestions or replace showerhead. (If showerhead is wand style/hand held, corrugated tube connecting to head may be too restrictive. Use a larger tube or replace with a normal shower head.)

Clean heater's inlet filter screen

1. Inlet filter screen is located just inside the cold water inlet (right) at the bottom of the unit.
2. Remove filter and clean. If filter is damaged, replace filter.

Check for plumbing crossover

NOTE: A plumbing crossover can be caused by a failed washer at a single lever faucet, incorrect plumbing or a faulty mixing valve in the plumbing. The crossover will create back pressure on the hot water flow and prevent an adequate flow of water through the heater.

1. Close the installer supplied cold water shut off valve (if none installed, install before proceeding).
2. Open all hot water taps supplied by the heater. Wait 5 minutes and check all taps. The water flow should come to a complete stop at every tap.
3. Any water running, even a trickle, is a sign of a plumbing crossover. Consult a local plumber or service person for help. This condition must be corrected before the heater can operate properly.

Confirm water pressure

- ▶ Water pressure must stay above 30psi during heater operation. For installation on a private well system with the use of a pressure tank, the lowest pressure range setting recommended is 40-60 psi (2.07-3.45 bar). Consult your installer or local plumber for effective ways to maintain constant water pressure to the water heater when on a well system.

Check temperature balancing valves

- ▶ Heater deactivated by temperature balancing valves. If the outlet water temperature is set too high, the heater can produce temperatures that are too hot. A temperature balance shower valve will automatically mix in cold water to reduce such hot water temperature. In the event of any temperature instability at a fixture using a temperature balancing valve, refer to the valve manufacturer for instructions on internal adjustment setting. An adjustment should be made to minimize the amount of cold water the valve is adding. Additionally, the temperature setting on the heater can be lowered to prevent the temperature balance valve from mixing in too much cold.

Confirm activation rate of the heater

1. Fully open one hot water tap.
2. Return to heater and shut cold water supply valve.
3. Slowly open cold water supply valve just until the burners ignite.
NOTE: Use software diagnostics (if available) to confirm activation flow rate. See service bulletin TWH-G2-07 for availability and use of this diagnostic feature. If diagnostics are not available, proceed with the steps below.
4. Return to hot water tap and measure flow rate by timing how long it takes to fill a gallon container. A fill time of 78 seconds indicates a proper activation rate of 0.8 gallons per minute (GPM).
5. Repeat steps 4 and 5 a few times to check the accuracy of the test.

NOTE: A fill time less than 78 seconds indicates an activation rate above the required 0.8 GPM and a possible problem within the heater's water valve.

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