

THERMAL EXPANSION IN WATER HEATERS

When water is heated, it expands. Reacting to physical law, water expands in volume as the temperature rises. If a backflow device is not installed, the water could potentially expand and exceed the capacity of the heater and be forced back into the piping system. With a backflow device installed, water cannot expand into the water main. The best solution to thermal expansion is to control the pressure it generates within the normal, safe operating range, well below the emergency setting of a water heater's pressure relief valve.

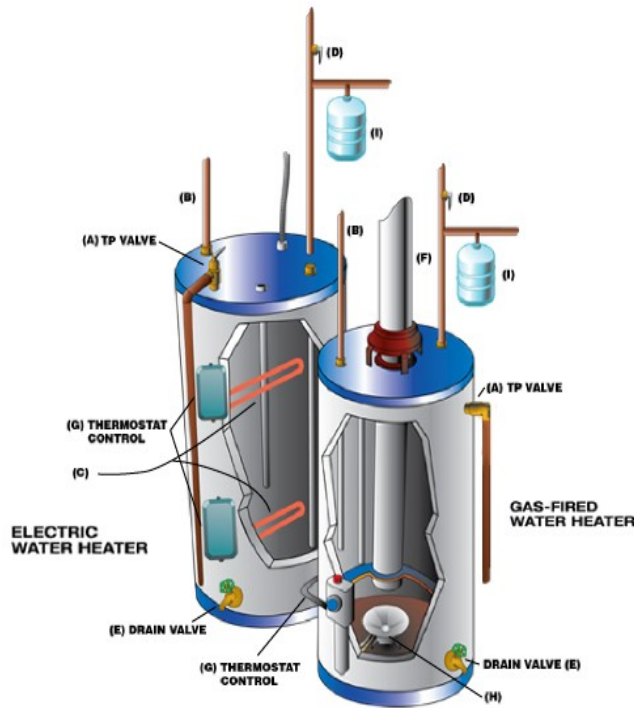
Definitions you need to know...

Thermal Expansion— Water expands when heated creating an increase in water pressure. The thermal expansion tank acts as shock absorber for increase water pressure.

Backflow— a hydraulic condition, caused by a difference in pressure, in which non-potable water or other fluids flow into a potable water system.

Backflow Device— This is a plumbing product actually called a double check valve assembly (two check valves inline) which eliminates the chance of the potable (drinking) water supply from being contaminated with a questionable water source (ex: reclaimed water). For Volusia County Utilities the backflow device is installed directly after the customers' potable water

Help us to preserve the quality of our drinking water supply. If at any time you notice a change in the look, smell or taste of your drinking water from Volusia County Utilities, please contact our office at 386-822-6465.



If you have any questions regarding the information provided in this brochure, please call 386-822-6465

Information in this brochure was received from Joe Sinardi and Les O'Brien.



Protecting your home against cross-connections



Without proper protection devices, something as useful as your garden hose has the potential to poison you home's water supply. In fact, over half of the nation's cross-connections involve unprotected garden hoses.



Cross-connection and Backflow



What is cross-connection?

A cross-connection is a permanent or temporary piping arrangement that can allow your drinking water to be contaminated if a backflow condition occurs.

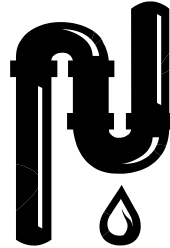
What is Backflow?

It is just what it sounds like. The water is flowing in the opposite direction from its normal flow. With the direction of flow reversed, due to a change in pressure, backflow can allow contaminants to enter our drinking water system through cross-connections.

When can a cross-connection occur?

A potentially hazardous cross-connection occurs every time someone uses a garden hose sprayer to apply insecticides or herbicides to their lawn. Another cross-connection occurs when someone uses his or her garden hose to clear a stoppage in their sewer line.

Without a backflow prevention device between your hose and the hose bib (spigot or outside faucet), the contents of the hose anything it is connected to can backflow into the piping system and contaminate your drinking water.



This hazardous situation can sometimes affect more than a single home. In 1977, an entire town in North Dakota had to be rationed drinking water from the National Guard water trucks while the town's water distribution system was flushed and disinfected following a contamination by DDT. Investigation determined that two residents spraying DDT had made direct cross-connections to their homes. A backflow condition had occurred, sucking the DDT through the home piping systems and out into the town's water distribution system.



Backflows due to cross-connections are serious plumbing problems. They can cause sickness and even death. However, they can be avoided by the use of proper protection devices. Each spigot at your home should have a hose-bib vacuum breaker installed. This is a simple device, which can be purchased at any plumbing or hardware store. Installation is as easy as attaching your garden hose to a spigot.

