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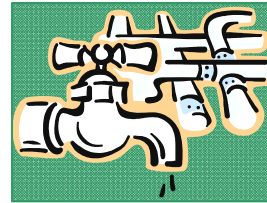
PROTECT YOUR WATER HEATER FROM



Cross Connection Control and Backflow Preventers

A cross connection is an actual or potential connection between a potable water supply and a source of possible contamination or pollution. These cross connections must be protected from water flowing in a reverse direction, or a backflow.

During a backflow event, pollutants or contaminants could be pulled or pushed back into the potable drinking water system.



To prevent this from happening, a dual check valve, which is a backflow preventer, is installed at the water service connection to your premises.

Thermal Expansion Danger

In the past, when water expanded from heat in your hot water heater, the water would flow back into the potable water system.

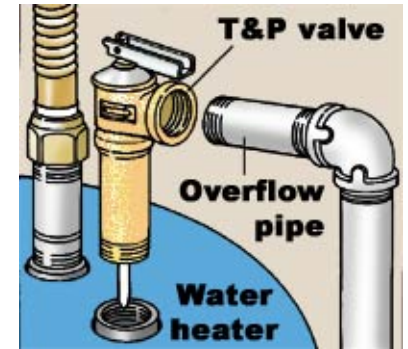
With a dual check valve installed on the water line coming into your home, expanded water from a water heater cannot return to the potable water system. It is now a “closed” system so that expanded water has no place to go.

Water is not compressible. When water is heated in a closed system, the expanded volume has no space in which it can be accommodated. As a result, the water

creates a dangerous pressure increase in the internal plumbing system.

This pressure may cause the relief valve on a hot water heater to open, losing water down the drain or, sometimes, all over the floor.

The relief valve, sometimes referred to as the “pop-off” valve, or T & P valve, is not designed as an operating



control. When this valve is used on a daily basis, it isn't safe. Deposits can collect on the valve seat and springs start to deteriorate. This wear and tear can make the valve fail in a short period of time.

Dangerous conditions may exist during thermal expansion even if the relief valve does not operate. Fluctuating internal pressures can collapse the center flue of a gas water heater creating the presence of carbon monoxide gas or even a water heater explosion.

Even though the relief valve may operate during thermal expansion, internal high pressures occurring repeatedly can accelerate tank leakage and shorten water heater life. This is true if the water is heated with gas, electricity or solar power.

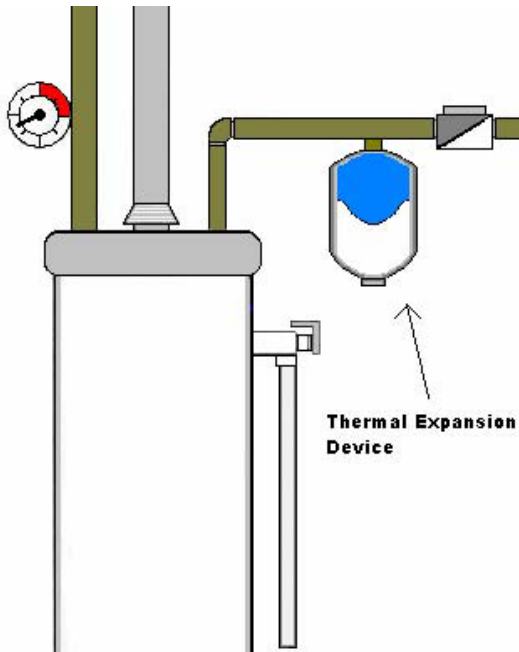
How You Can Ensure Protection from Thermal Expansion

The solution is a thermal expansion device.

Recognizing the danger of thermal expansion from heating water, the International Plumbing Code has required a thermal expansion device in Section 607.3.2:

***Backflow prevention device or check valve.** Where a backflow prevention device, check valve or other device is installed on a water supply system utilizing storage water heating equipment such that thermal expansion causes an increase in pressure, a device for controlling pressure shall be installed.*

Please note: a tankless, on demand, style water heater works differently and does not require a thermal expansion device.



Protection from thermal expansion is provided in a plumbing system by the installation of a thermal expansion tank. The tank provides a space to hold and store the additional expanded water volume. When the hot water tap is turned on, the pressurized air cushion within the tank forces the stored hot water back into the system. This allows you to use it and not waste the water you just paid to heat. A 40 gallon water heater can lose about 1/2 gallon every time the heating cycle peaks.

Water heaters installed in compliance with the current plumbing code will have the required T & P valve and a thermal expansion tank. If there is any doubt that both the T & P valve and a thermal expansion tank is in place and in good working order, the homeowner should contact a licensed plumber.

Why Installation of a Backflow Preventer is Required on a Water Service

Backflow events do occur. In the United States, there are documented cases of illness, injury and even death resulting from backflow of hazardous substances. Recognizing this risk, the Colorado Primary Drinking Water Regulations require public water systems to be protected from cross connections and backflow contamination.

A detailed cross-sectional diagram of a dual check valve. It shows two check valve assemblies in series. The top assembly is labeled 'Primary check valve assembly' and the bottom one is labeled 'Secondary check valve assembly'. Arrows indicate the flow direction from 'Inlet' at the top to 'Outlet' at the bottom. The diagram shows the internal ball-and-seat mechanism of each valve.

A Dual Check Valve

For Further Information, contact the Cross Connection Control Program at (970) 375-4882 or e-mail to ccc@ci.durango.co.us