

Basic and Rules Relating to Backflow Prevention

THERMAL EXPANSION:

THERMAL EXPANSION is created when the water in a piping system is closed and subjected to heat. A water heater in a residence heating the water will cause the water in the piping system to expand. For example, water heated from 90° Fahrenheit to 140° Fahrenheit in a typical 40-gallon water heater will cause the volume of the water to increase by nearly ½ gallon. As the water expands, pressure increases.

Thermal Expansion left unchecked can cause some annoying and costly problems. The Temperature and Pressure Relief Valve (T&P Valve) may start to leak continuously; ballcocks in toilets may be damaged; faucets may leak; washing machine hoses may burst. In extreme cases the water heater itself may rupture. When a closed system is created it is important to provide Thermal Expansion Protect.

THERMAL EXPANSION PROECTION:

It is very important to provide some form of protection for thermal expansion when a closed system is created. Especially on small water distribution piping; like a residence. The piping system in a typical residence is very small and the piping could easily be affected by a small amount of expansion.

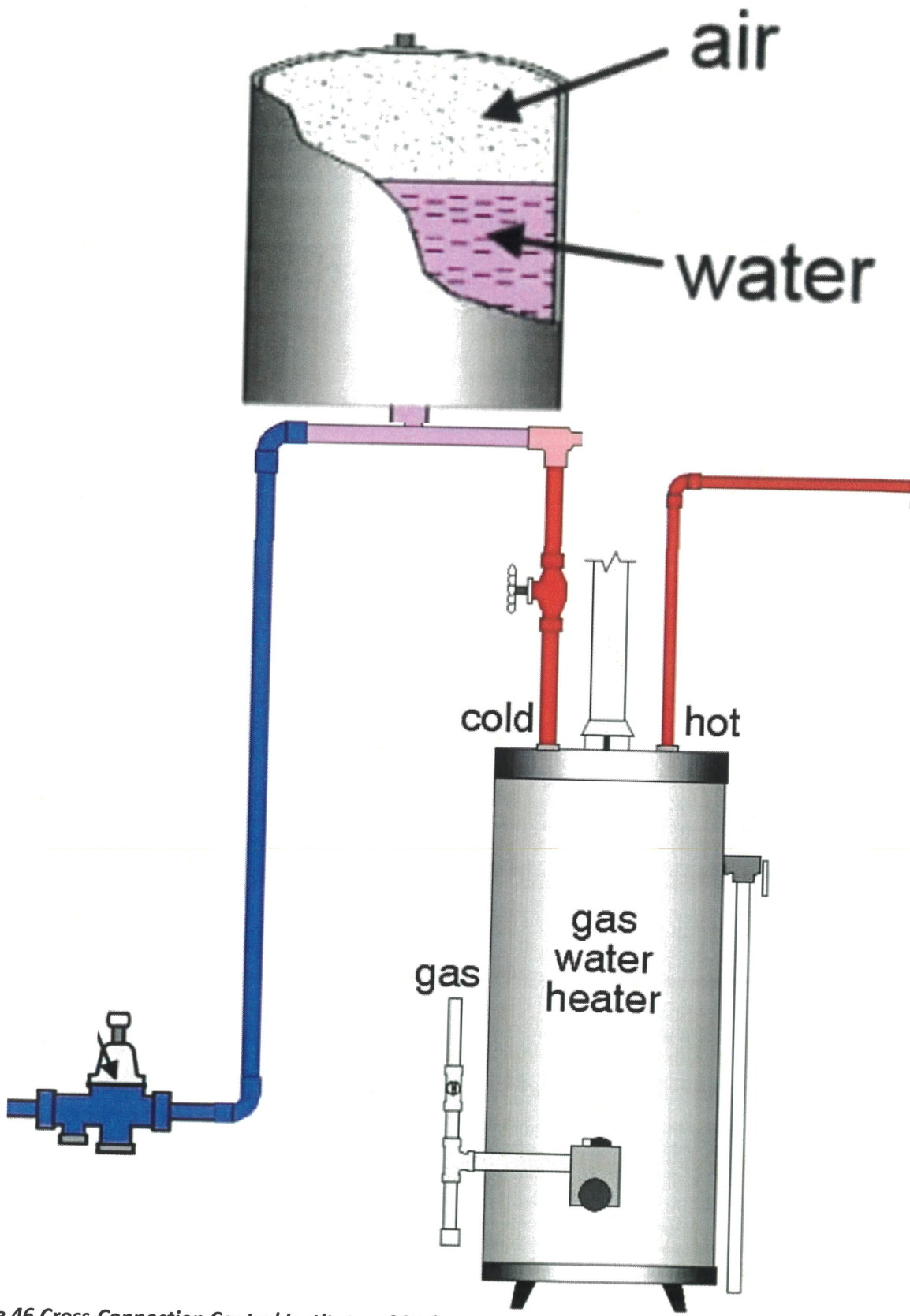
Pressure Relief Valves may be installed in the water system to provide relief from thermal expansion. As the water expands the pressure increases. When the pressure reaches 80 psi the Pressure Relief Valve opens and allows the expanded water to escape. However, the water would need to discharge to a sanitary drain system. The Pressure Relief valve could develop a leak that may go unnoticed also, this method wastes water.

Use of the **Thermal Expansion Tank** is the preferred method for most plumbers. The Thermal Expansion Tank provides an area for the water to expand. The Thermal Expansion Tank comes from the manufacturer with an air charge. The air charge should be adjusted by the installer to match the incoming water pressure. When the water expands the expanded water enters the Thermal Expansion Tank which keeps the additional pressure of the distribution piping

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TITLE 30 TAC CHAPTER 291 SUBCHAPTER E

§291.81. Customer Relations. (2)
The utility shall notify each service applicant or customer who is required to have a customer service inspection performed. This notification must b in writing and include the applicant's or customer's right to get a second customer service inspection performed y a qualified inspector at their expense and their right to use the least expensive backflow prevention assembly acceptable under §290.44(h) of this title (relating to Water Distribution) if such is required. The utility will ensure that the customer or service applicant receives a copy of the completed and signed customer service inspection form and information related to thermal expansion problems which may be created if a backflow prevention assembly or device is installed.



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