

## **THERMAL EXPANSION CAUSES/POSSIBLE SOLUTIONS**

In our efforts to assure safe drinking water, King County Water District # 90 is installing a check valve on residential water services. The check valve will help to assure the safety of our drinking water, but it may also affect the operation of your plumbing system.

The water within your plumbing system expands every time the water heater begins its heating cycle. When no check valve is present, this expanded volume flows backward, through the water meter, and into the public water supply. A check valve does just what the name implies--it checks or prevents a backward flow of water. When the backward flow is stopped, water pressure may build up when the water heater begins its heating cycle.

If the pressure gets higher than normal, you may expect to see faucets begin to leak; you may experience brief bursts of excess water pressure when you open a water faucet, or you may notice that the pressure relief valve on your water heater begins to spit water.

If excess pressure remains uncorrected, it could lead to leaks or other damage to your plumbing system, or, in some cases, it could lead to damage to your water heater.

For some homeowners, merely lowering the temperature setting on the water heater will eliminate the potential for plumbing problems. A temperature setting between 130° and 145° is considered appropriate for most household uses. Other homeowners may find that lowering the temperature will not solve the problem. In this case, a device to deal with thermal expansion may be required. These devices may include a thermal expansion tank or a toilet tank stop and relief valve.\* It is recommended that you call your plumber or a plumbing supply house for guidance.

We hope that you are not inconvenienced by the installation of the check valve. We are installing these devices in the best interest of all of our customers, and to further assure that the District meets its goal of providing the safest possible drinking water.

If you have any questions about the installation of the backflow prevention device or about its effects on your plumbing system, please do not hesitate to call our office (425-255-9600).

\*See detailed explanation of these two devices on the reverse side of this notice.

## WHAT IS A THERMAL EXPANSION TANK?

A thermal expansion tank is a can about twice the size of a three-pound coffee can with a rubber bladder inside. When the pressure in your waterline increases, the rubber bladder is squeezed into a smaller space. When a faucet is opened and the pressure is released, the rubber bladder re-expands to its former size inside the can. The only moving part is the rubber bladder that is squeezed and released by the water pressure. Expansion tanks are installed on a cold water line, and require inserting a fitting to accommodate the expansion tank. It is not a complicated job. Expect to pay about \$75 for the expansion tank, depending upon the size of your water heater.

## WHAT IS A TOILET TANK STOP AND RELIEF VALVE?

A toilet tank stop and relief valve replaces the mechanism inside your toilet tank that regulates the water coming into the tank. It is a pressure relief valve that allows the excess water pressure to be relieved inside the toilet tank instead of out a dripping faucet, or instead of activating the water heater pop-off valve. It requires replacing the current valve in the toilet tank with the new valve. Stop and relief valves will not work if the line pressure exceeds 80 pounds per square inch (psi) unless you also install a pressure reducing valve near your water meter. If your line pressure exceeds 80 psi and you do not install a pressure reducing valve, your toilet stop and relief valve will run constantly, wasting water and resulting in higher water bills. Expect to pay about \$60.00 for a stop and relief valve. *Note: these valves are noisy and are known to awaken people in the middle of the night when they are activated.*

[Note: The prices listed above are for your general information only. We suggest that you get at least three quotes before you buy any product or service.]