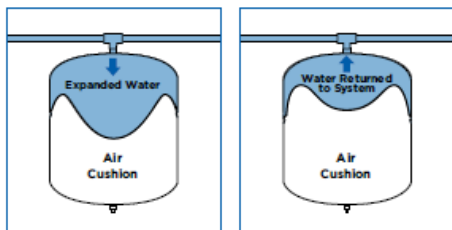


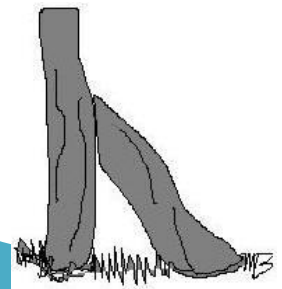
## How Does an Expansion Tank Work?

The thermal expansion tank is attached to the water supply pipe from which the water tank's overflow travels through. Because water is non-compressible, the pressure builds as it expands. This means that the pressure could damage the water supply pipes, valves and water heater itself if an overflow outlet is not available. Thus, the thermal expansion tank, which is filled with compressible air, is used as an overflow tank to relieve the pressure when the water volume increases past the volume of the water tank. This allows for the water pressure of the system to remain fairly steady.

In the case that the pressure increases too much, the water system is equipped with check valves on the water service pipe, which help to reduce pressure to avoid water flowing back into the home. If the check valves or expansion tank are not functioning properly, a plumber should be called to check the system and prevent potentially serious damage to the water heater.



## Thermal Expansion



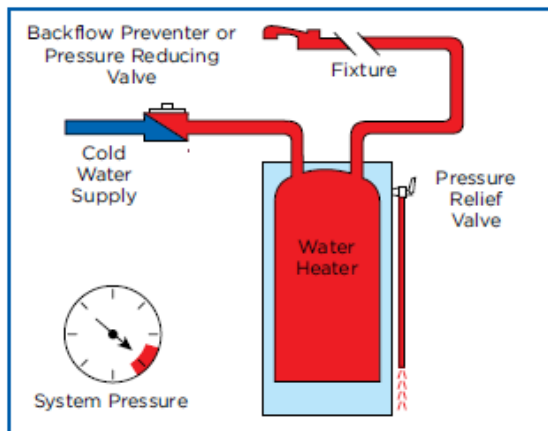
**Rural Water  
District No. 1,  
Ellsworth County,  
Kansas**

**785-472-4486**

# Heated Water Expands

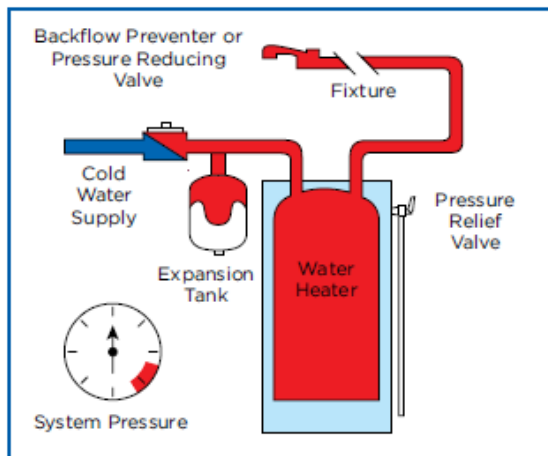
## Without an Expansion Tank

Heated water can cause the pressure relief valve to open, discharge water and damage the water heater.



## With an Expansion Tank

Heated water expands into the expansion tank eliminating water discharge.



## Helps Prevent

- Dripping faucets.
- Puddles of water at base of water heater from pressure relief valve discharge.
- Water heater damage from frequent water pressure build-up.
- Dishwasher and washing machine solenoid damage.
- Toilet running randomly.

## Why Do I Need a Water Heater Expansion Tank?

As water is heated, it expands. This is called *thermal expansion* and it occurs every time the water heater operates.

Most plumbing codes now require homes to have a Backflow Preventer or Pressure Reducing Valve on the incoming water supply. These one-way devices create a closed piping system so the expanded water has nowhere to go.

## What Happens Without an Expansion Tank?

All water heaters have a temperature and pressure relief valve which allows expanded water to escape before it damages the system. Most systems discharge this water onto the floor, wasting water or creating a mess.