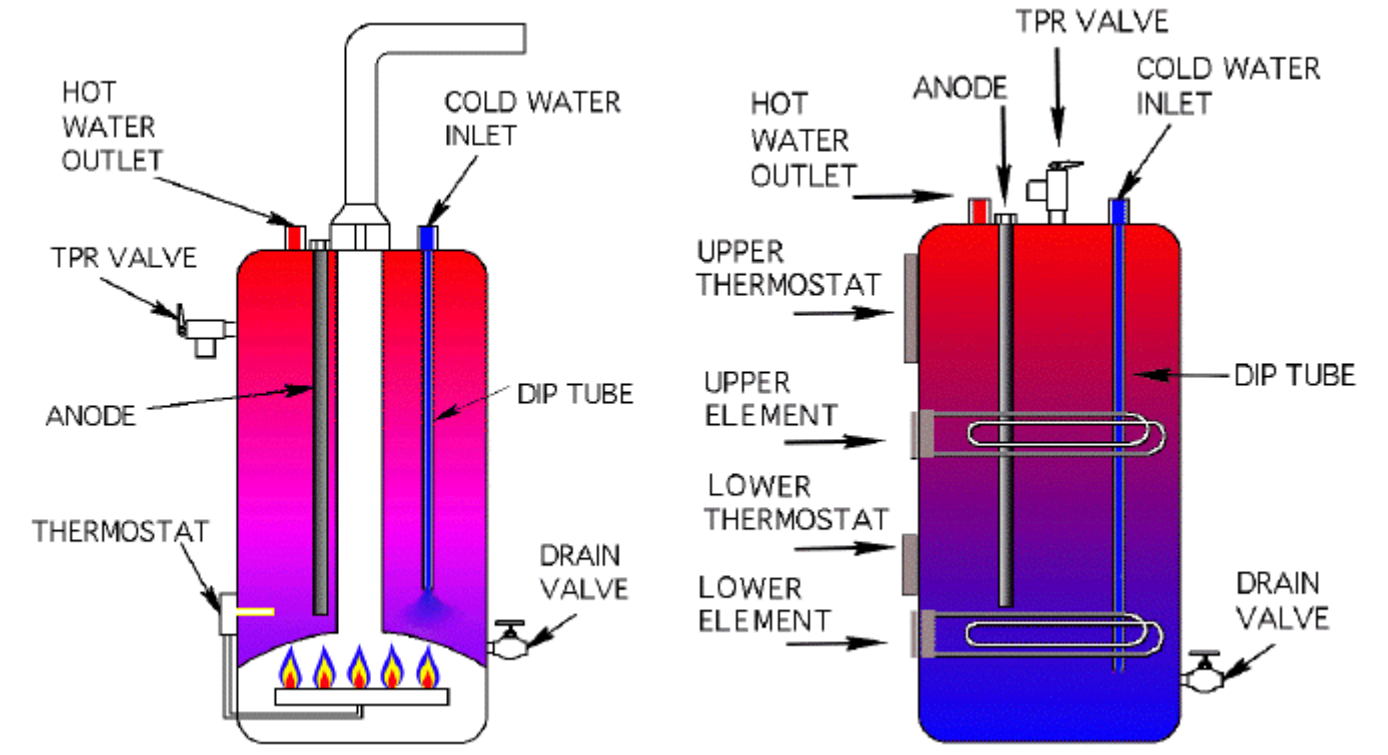


# Hot Water Heater Information



Typical Gas Hot Water Heater

Typical Electric Hot Water Heater

## Sediment buildup

Water heaters heating of water causes calcium carbonate to precipitate out and settle to the bottom of the tank. Steam bubbles form under the sediment when the burners come on causing popping and other noises.

Regular flushing helps prevent sediment build up.

## **Not producing enough hot water**

Check for a broken dip tube, wrong setting on a thermostat, a defective thermostat, burned out heating elements (electric), or a heavy build up of sediment.

### **Dip tube**

The dip tube is a long slender tube that fits down into the water heaters inlet, and usually has a small hole about 6 inches from the top. The dip tube directs the incoming cold liquid down to the bottom of the tank. If the dip tube is broken, the incoming cold liquid can mix with the out going hot liquid and cause it to seem as though you are running out.

### **Noisy tank**

Noise coming from gas models can often be caused by the sediment build up in the bottom of the tank. Steam bubbles form under the sediment. The thumping and popping noises are created by the bubbles escaping from under the sediment.

Sizzling noises can be caused by condensation dripping onto the hot burner.

### **Thermal expansion**

When water is heated it expands. If the inlet is not blocked by a check valve, pressure reducing valve, or other device, the increase in volume simply travels back into the source. If the inlet is blocked, this increase in volume will cause an increase in pressure, sometimes to dangerous levels.

The T&P (Temperature-pressure) valve relieves this pressure by discharging some liquid. A thermal expansion tank can be installed in the line that will absorb the increase in volume, preventing the relief valve from discharging unnecessarily.

T&P valves are strictly an emergency measure and should be replaced every 2 years. At 180 psi, the temperature that the T&P valve opens, damage can occur to your system and you may have voided the warranty on your water heater.

The improper installation of backflow preventers can block the thermal expansion leading to operation of the T&P Valve.

## Water Hammer

When liquid is traveling in the pipes it has kinetic energy (energy of motion). When a valve shuts off suddenly a shock wave results.

Hammer most often occurs when a valve shuts off suddenly. Commercial arrestors are available to combat this problem. They consist of a small air bladder within a cylinder plumbed to the piping system near the valve causing the problem. Some hardware stores carry them.

Sometimes if the piping is sagging then supporting the pipe solves the problem.

## Milky color

Water contains dissolved oxygen and other gases. When it's heated it has less ability to hold these gases and when the pressure is lowered as the liquid comes out of the tap these gasses can form tiny bubbles giving the liquid a milky appearance. Letting it stand for a few minutes will allow these bubbles to rise out of the liquid and it resumes its clear appearance.

If you live in an earthquake prone area then be sure to strap the tank to the wall to prevent damage and possible injury during an earthquake.

## Maintenance For Good, Safe Service

Safety note: Electricity should be turned off at the circuit breaker before you do any work.

- Open the drain valve at the bottom about every 6 months, letting the water run into a bucket until it looks clear (usually about 5 gallons). This will prevent sediment accumulation. If there are bits of metal or rust in the water see Draining and Flushing section below and have the anode replaced.
- Annually test the temperature-pressure buildup by lifting or depressing the pressure release (TPR) valve's handle and draining water from the overflow pipe. If water doesn't drain out, shut off water to the heater, open a hot water faucet somewhere in the house, and replace the valve.

## Draining and Flushing the Tank

- Turn off the heat source (circuit breaker or gas) to the water heater.
- Close the cold water valve.
- Attach a hose to the drain valve, to route water into a floor drain or outdoors.
- Open the drain valve and open one hot water faucet somewhere in the house to let in air.
- When all water has drained, turn the cold water valve on and off until the water from the drain looks clear.
- Close the drain valve and the hot water faucet, open the cold water valve and restore heat source.