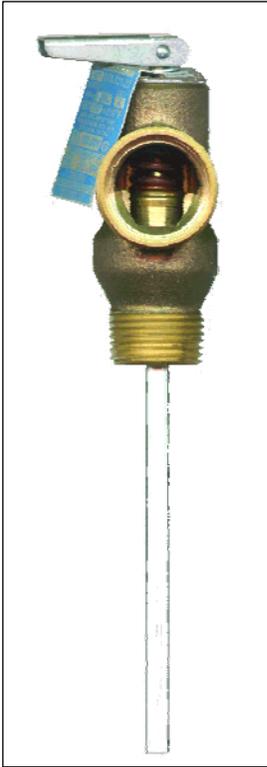




Temperature And Pressure Relief Valves

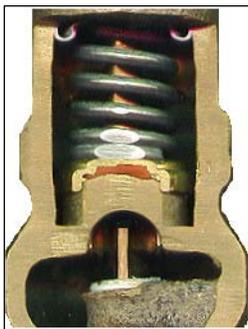
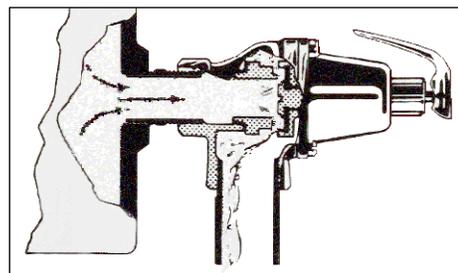
**Discharge of the T&P valve may indicate that an unsafe temperature or pressure condition exists.
Contact a licensed plumber immediately!**



Temperature and Pressure Relief Valves, also called T&P valves, are emergency safety limit devices that will prevent or relieve overheated water and pressure. Without a relief valve during an unsafe condition, the pressure inside the tank would rise to the point the tank may rupture or explode. This would cause potential damage to both people and property. Rheem water heaters are pressure tested to 300 pounds per square inch (PSI) and have a working pressure of 150 PSI. The T&P valve is designed to open when the pressure inside the tank exceeds 150 PSI, allowing pressure to vent safely. The T&P valve will also open if the water temperature reaches 210⁰ F. The valve will remain open allowing cold water into the tank until the unsafe condition is over.

Why is hot water over 212° F dangerous? The containment vessel or storage tank used to store the hot water causes the danger. This tank is under pressure – the normal working pressure caused by the cold water supply. As water is heated under pressure, the boiling point rises. For example, with a nominal incoming supply pressure of 50 PSI, water will not boil under pressure until the temperature reaches approximately 297° F. The energy potential in the superheated water is called latent heat energy and will flash to steam when exposed to normal atmospheric pressure. This flash to steam has the explosive potential of over two million foot-pounds of energy.

The Temperature and Pressure Relief Valve is the safety device that prevents these conditions from happening. It is a 2-in-1 device that responds to both pressure increases and temperature increases. When actuating by pressure, the T&P valve will open and allow the tanks internal pressure to drop below 150PSI. Generally, when you see a T&P valve weeping or



dribbling, it is due to pressure (thermal expansion) or foreign material such as calcium buildup in the valve seat. This material on the valve seat will prevent the valve from closing tightly. If the valve is discharging large quantities of water, then the release is due to temperature. Recall the T&P is installed in the top six inches of the tank. If the temperature probe on the T&P senses water temperatures of 210° F, it will open the valve. The valve will stay open until the temperature probe cools. With cold water entering the bottom area of the tank, you can see a large volume of water (gallons) will be discharged before the temperature probe cools.

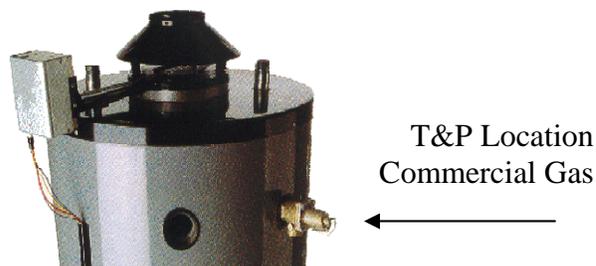


Temperature And Pressure Relief Valves

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T&P valves should be inspected and tested on every service call. When checking the valve, also check the rating plate on the valve. Many changes may take place in a plumbing system after the original installation. Through a systemic reinspection program, we can insure that the safety device is working properly. The T&P Valve must be capable of discharging more BTUs than the heater is capable of putting into the water.

Installation of a temperature and pressure relief valve is critical to the safe operation of a water heater. The basic rule is that the T&P valve must be installed so that the temperature-sensing probe is immersed in the hottest water in the top six inches of the tank. All water heaters manufactured by Rheem – Ruud have a separate and special connection designed for the T&P valve.



Here are some common T&P valve errors:

- No T&P installed or pressure only relief valve installed
- Non-code or insufficient rating T&P valve installed
- T&P installed in the cold water line
- T&P installed a distance from the tank, such as in the hot outlet line
- T&P has been altered or repaired
- T&P valve drain line is plugged or restricted

Tips for the Temperature and Pressure Relief drain line:

- Run to a safe place of disposal (floor drain or outside)
- Drain piping should be the same size as the valve discharge through its entire length
- Pitch downward from the valve
- Terminate 6 inches above the floor drain
- No longer than 30 feet
- Not use more than four elbows
- Do not install a shut off valve in the drain line
- Terminate unthreaded



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How to replace the Temperature and Pressure Relief Valve

***CAUTION: Draining your water heater for this procedure may put you at risk of being scalded by hot water.
Please be careful when working on your water heater.***

1. Turn the power OFF to the water heater at the circuit breaker (electric heater) or main gas line (gas heater).
2. Fasten a length of garden hose to the drain valve at the bottom of the heater. Put the other end of the garden hose in the nearest floor drain or snake it outside the home.
3. Close the shut off valve at the cold water inlet line.
4. Open the temperature and pressure relief valve at the top of the heater. Now open the drain valve and allow the water to drain.

***CAUTION: THE WATER WILL BE HOT.....BE SURE
NO ONE IS NEAR THE DRAIN HOSE OR THEY COULD
BE SCALDED.***

5. When the water stops, close the drain valve and remove the hose.
6. Remove the old temperature and pressure relief valve. You will need to remove the drain tube apparatus that carries the discharge water to the drain pan or outside your home. You may get some additional water draining from the spud. Have some rags handy. Replace with a new temperature and pressure relief valve. It is a 3/4 inch National Pipe Thread (NPT) valve. You may find one at any plumbing house or home store. Use pipe sealer or Teflon tape to seal the threads. Make sure the new temperature and pressure relief valve is in the OPEN position.
7. Open a hot water faucet somewhere in the home. Open the shut off valve at the cold water inlet line. You will hear the heater start to fill.
8. When you have a steady stream of water from the temperature and pressure valve tube, close the valve; when you have a steady stream of water from the hot water faucet, turn the faucet off.
9. Turn the power ON to the water heater at the circuit breaker (electric heater) or main gas line (gas heater; relight pilot if required). Allow the water heater to recover. Check the temperature and pressure relief valve one more time to make sure it is tight.

