

## **RV Water Heater Information**

RV water heaters range in capacity from six to ten gallons. The majority of standard water heater systems use LP-gas to heat the water stored in the tank. Gas and electric water heaters are designed to use LP-gas or a heating element powered by 120-Volt AC. Some water heaters have a thermostat to allow operation of the gas and electric heating element at the same time. This feature permits faster heat recovery than either option used separately. Heating with the electric element will usually take longer than heating the system with gas.

The electric heating element may be built into the unit or screwed into the drain hole. Early model water heaters with 120-Volt AC heating capacity utilized a bolt-in heating element along with a single piece thermostat energy cut off. This 110-Volt AC system has an adjustable rectangular thermostat that is surface mounted to the inner tank and retained by a steel clip. The thermostat is generally pre-set to a specific water temperature. The typical amount of time required to heat the hot water tank to this preset temperature is approximately 20-30 minutes. Once the temperature is reached, the system will cycle off and then cycle back on when the water temperature falls below the reset lower limit, around 115 degrees.

During the heating cycle, it is not uncommon for the pressure-temperature relief valve to weep due to normal expansion of water being heated within a closed system. Dripping of the pressure-temperature relief valve during operation of the water heater is not an indication that the valve is defective. Most tanks are designed with an internal air gap at the top of the tank to reduce dripping. In order to keep the pressure relief valve operating properly, it is good practice to lift the relief valve tab occasionally to make sure the seal is properly seated. Do this only when the water heater is cool.

A water source may contain minerals or salts that will work to corrode the interior of the water heater tank. To guard against the pollutants found in a water source, the water heater is generally constructed with a core of high strength aluminum. Even with the protective materials used in construction, minerals contained in a water source may create an undue burden on the tank system. A white scaly material referred to as aluminum oxide will often appear in the tank. Heat works to accelerate the oxidation process. Severity of this problem will vary due to the mineral content of the water source. The tanks usually have an Anode rod that is inserted into the water drain to minimize mineral build up. The anode rod will erode over time and will protect the tank from corrosion. The anode rod should be replaced annually. It is also a good idea to drain and flush the water heater tank during the operating season on a regular interval.

To flush the system, turn off the electric water pump and let the tank cool. Disconnect the main water supply. Remove the drain plug and anode rod, if present, to drain the water tank. If water flows sporadically or trickles during the draining procedure, open the pressure-temperature relief valve to allow air into the tank. If the drain hole is clogged, use a small screw driver or wire rod to dislodge the debris. Due to the location of the drain plug, approximately two quarts of water may remain in the bottom of the tank.

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Allow ample flushing time to remove the remaining water and deposits. Use a high pressure nozzle on a water hose and place the hose into the drain to flush out as much debris as possible. Do not block the drain during this process. Let the water drain out of the tank with the remaining debris.

To fill the water heater, purge the plumbing system of air by turning on each faucet, inside and outside the motor home, until water flows without air. Take the time to carefully inspect all locations for signs of leaks once the water system is fully pressurized. In the event that air may still be present within the lines, use caution by carefully engaging the hot water faucets during initial operation. Fill the tank from a good water source. If the water smells, don't use it.

When heating the water tank, it is important to have water in the water heater tank. Operation of the hot water heater on an empty tank may cause the tank or heating element to be damaged. If the heating element is engaged on an empty water heater tank, turn off the heating source and allow the water heater tank ample time to cool down (2-3 hours) before adding water. Adding water to a tank that has not been properly cooled may result in a damaged water heater tank.

The best practice to conserve energy is to leave the hot water heater off until approximately 30 minutes before hot water is needed. The heat recovery time is very short, so a little planning will save propane and electricity, in addition to water heater components.