

## CARE & MAINTENANCE OF WATER HEATERS

This Tips article will help you understand the basic operation of your water heater. We will be discussing the 6-10 gallon Atwood water heaters that we use in the majority of our product lines. If you own an Ultimate Freedom with the hydronic heating system, please refer to the owner's manual for specific details regarding its operation. While some of the information may not pertain to your specific water heater, general operating procedures apply to most models. For specific information regarding your particular model, you may want to refer to the Atwood supplied operator's manual that was included in the Owner's Info Case when you purchased the motor home.

Some water heaters include a motor-aid feature, which utilizes a heat exchange tube on the back of the water heater to connect the water heater and the RV engine cooling system. The purpose of this optional feature is to allow the use of the engine heat to warm the water in the water heater tank while driving down the road. It generally takes 2-3 hours of driving to reach maximum heat in the water heater tank. The heat exchange tube is installed by Atwood and cannot be added aftermarket. You can upgrade by replacing the tank, however, there is the matter of routing engine coolant lines to and from the water heater and incorporating them into the existing engine coolant lines to make the system functional.

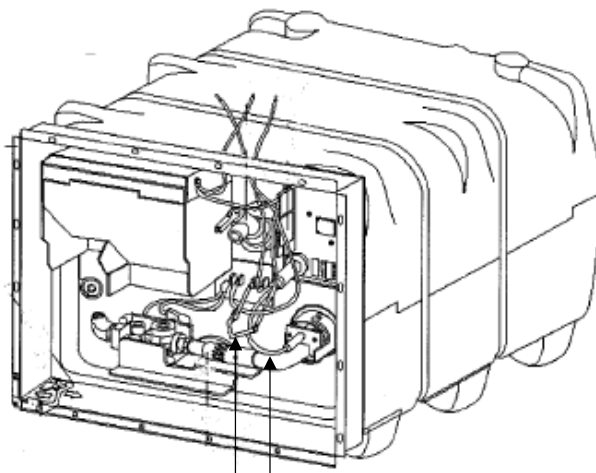
Most standard water heaters use a LP-gas supply to heat the water stored within the tank. Combination water heaters are designed to use LP-gas or a 110 Volt AC powered heating element. Generally the combination heaters are equipped

with two separate thermostats, which allow you to heat the water more quickly by using both gas and the electric element at the same time. It is recommended, and in some states the law, to shut off the LP while driving to limit risk of danger if an accident should occur. It is also important to remember not to supply power to the electric heating element unless there is water in the tank. If you should inadvertently power the element up when the tank is empty you should shut the power down and wait for at least two hours before adding water to the tank. This will limit the risk of damage to the tank and the element. **Note:** There is an E.C.O. (energy cut off), on the backside of the water heater that may need to be reset if the electric heating element is not functioning. Refer to your Atwood manual for details.

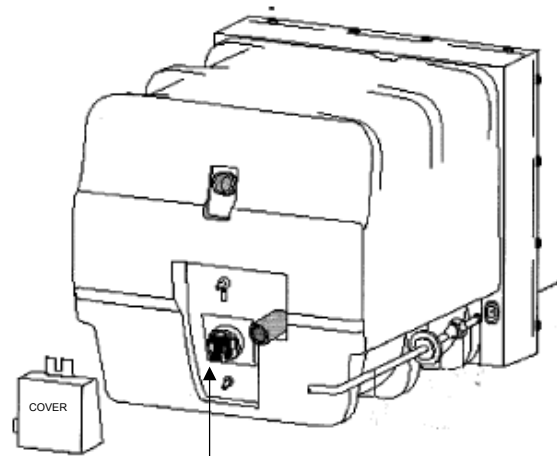
The thermostats used by Atwood over the years have varied in temperature from 120-160 degrees. They are not adjustable but can be replaced by a higher or lower limit thermostat. Rule of thumb: it will generally take 25-30 minutes to heat water to 140 degrees in the electric mode. Once the preset temperature is reached, the system will cycle off until the water temp drops approximately 25 degrees.

It is not uncommon for the pressure-temperature relief valve to weep as the water reaches its maximum temperature setting. This does not mean that the valve is defective; it may indicate the loss of the air gap in the tank.

Most tanks are designed with an internal air gap at the top of the tank to reduce dripping. It may be necessary to replenish the air from time to time.



**THERMAL CUT OFF  
BURNER TUBE**



**E.C.O. LOCATED UNDER COVER**

To replace the air start by turning off the water heater system, shut off the incoming water supply and open the closest hot water faucet. Pull the handle on the pressure-temperature relief valve straight out to allow the water to flow from the top part of the tank. Once the water has stopped flowing allow the handle on the valve to snap shut, close the faucet and re-engage the water supply.

Spiders, mud wasps and other insects can build nests in the burner tube. This will cause poor combustion, delayed ignition or ignition outside the burner tube. Listen for a change in burner sounds or in flame appearance, from a hard blue flame to a soft lazy flame or one that is very yellow. These are indications of an obstruction in the burner tube. This can also cause the thermal cut off to shut down power to the heater. To clean the burner tube simply remove the air shutter screw, slide the air shutter down the burner tube, then run a flexible wire brush down the burner tube until it is visible at the end of the tube. Return air shutter to original position and replace screw.

It is possible for your water system and specifically your water heater to become

contaminated by impurities in the water. The water heater should be periodically drained. At this time, you can inspect the tank for deposits.

It is not uncommon for minerals and impurities to settle to the bottom of the tank. When you flush the tank you should verify that the water source you are using is as pure as possible.

Begin the flushing process by disconnecting the main water supply, shut off the water pump, turn the water heater off and allow time for the water to cool. The relieve pressure by opening a hot water valve on a faucet. Remove the drain plug at the bottom of the tank; if the water flows slowly it may be necessary to open the temperature relief valve to allow air into the tank. Reconnect your water supply and flush water through the tank and out the drain until you are confident any sediment has been removed. You could also use air to flush the tank – see your Atwood operator's manual for more information regarding flushing with air. You will want to follow this same procedure while getting your coach ready for winter storage.