

RV HOT WATER HYBRID HEAT™ [Instructions]

Includes

Single element thermostat with mounting tape and terminal protector, 2 cable ties, power cord, 4 wire assemblies, ON/OFF switch with mounting bracket and hardware, Teflon tape, heater cartridge, small/large reducing bushings, ferrule, compression fitting and nut, grommet and detailed instructions.

Step 1: Perform Prior to Installation

Disconnect RV from all power supplies. Turn off water heater LP gas supply. Turn off water supply and pump. Open hot water faucets to relieve pressure in water heater tank. **Allow water heater to cool down – Failure to do so can result in injury.** With the tank cool, confirm water pressure in tank has been relieved by lifting lever on relief valve for a short time.

Step 2: Remove Drain Plug

Atwood Water Heaters

1977 and newer – Drain plugs are hex plastic or metal. Remove drain plug using a 7/8" socket or wrench.

American / More-Flo Water Heaters

1993 and earlier – Drain plugs are petcock style. Use a wrench or pliers to remove the petcock from the drain plug, then use a 9/16" socket or wrench to remove the drain plug.

Suburban Water Heaters

1995 and newer – Drain plugs have an anode rod attached. Use a 1-1/16" socket or wrench to remove plug.

Step 3: Installation of Heater Cartridge

Atwood Water Heaters

Apply 3 to 5 wraps of Teflon tape to Small reducing bushing. Thread reducing bushing into drain plug opening and tighten.

American / More-Flo / Suburban Water Heaters

Apply 3 to 5 wraps of Teflon tape to Large reducing bushing. Thread reducing bushing into drain plug opening and tighten.

Apply 3 to 5 wraps of Teflon tape to threads of the 1/4" NPT compression fitting as shown in FIGURE B. Thread compression fitting into reducing bushing and tighten.

Slide compression nut and ferrule onto heater cartridge. Insert heater cartridge into the compression fitting in the drain plug opening and position the end of the heater cartridge 1/4" to 1/2" from the back of the compression nut as shown in FIGURE B. Tighten compression nut.

Note: Teflon tape not required on compression nut threads.

Turn on water supply to RV and run hot water faucet until all air has escaped from the water heater tank. When a constant stream of water is achieved, turn off hot water faucet and check the heater cartridge and reducer fittings for leaks – tighten if necessary.

Caution - Do not over tighten!

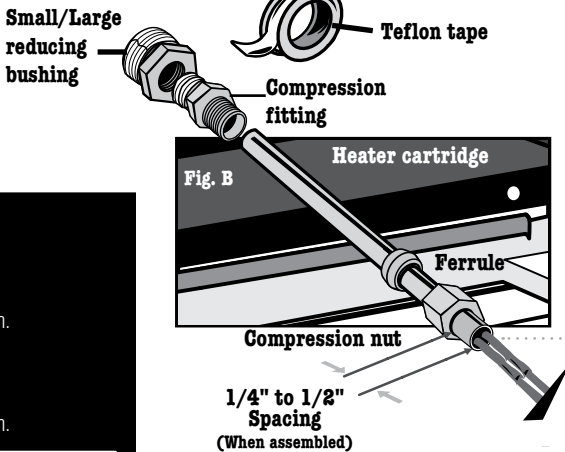
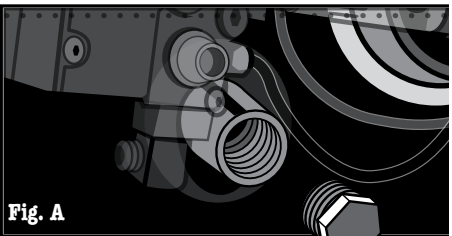
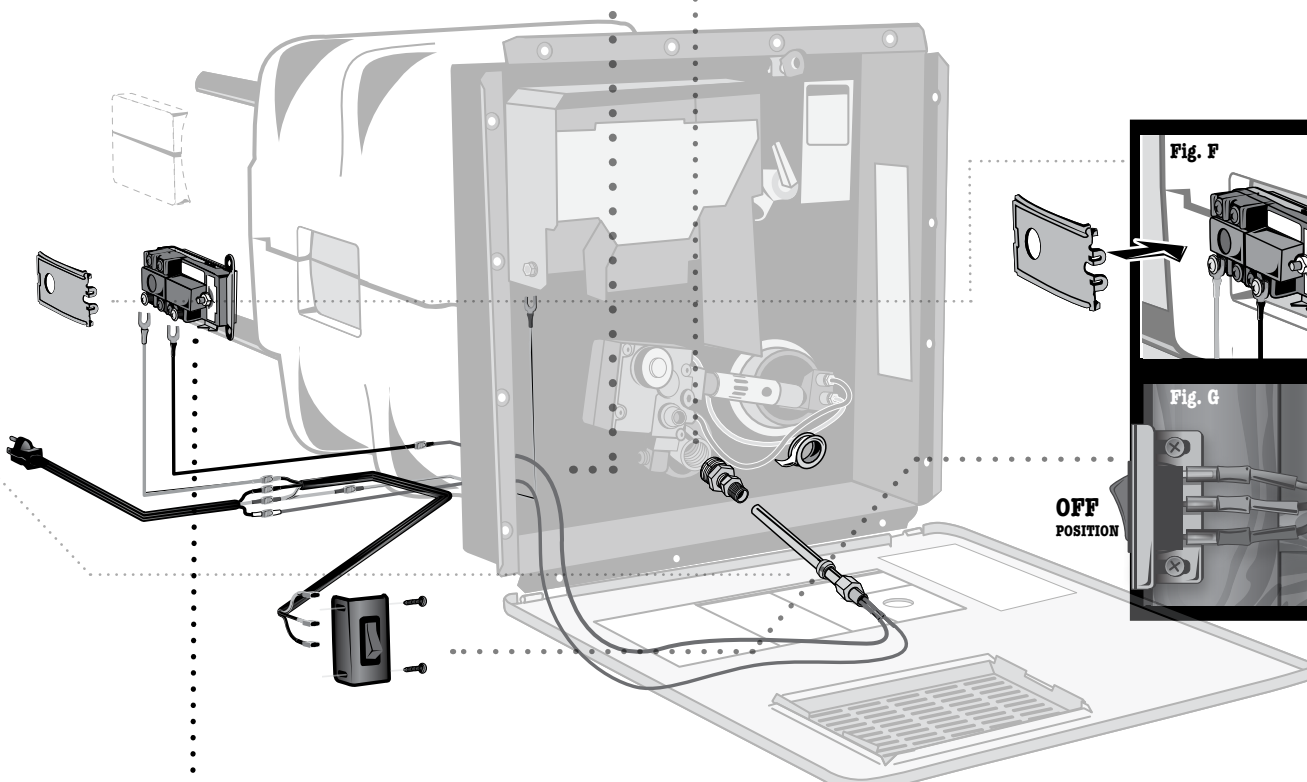
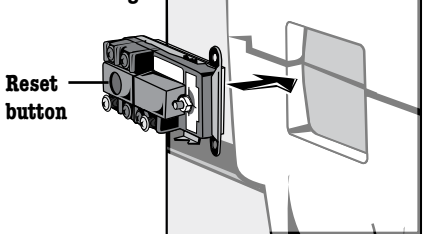


Fig. C



Step 4: Installation of Thermostat

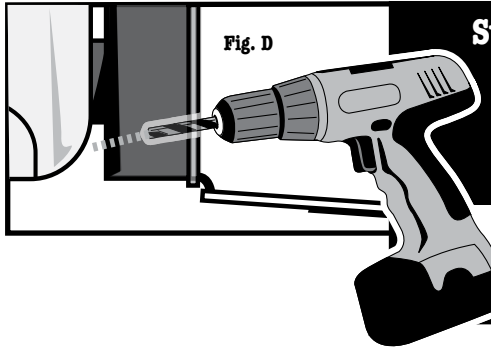
Gain access to the tank of the water heater and select a location to mount the thermostat. The thermostat must be mounted on a surface that is as flat as possible, therefore the end/side of the tank is recommended. Many tanks have a covering of cardboard, fiberglass, styrofoam or sheet metal. A 3" x 5" section for the thermostat must be cut out of the covering and any insulation underneath. **Important - The thermostat must be mounted directly to the metal tank.** Clean the tank surface to remove any dirt or grease. It is also recommended to swab the tank with rubbing alcohol to ensure that the surface is clean. Remove tape backing from thermostat and install the thermostat onto the cleaned tank surface making sure that it is seated well as shown in FIGURE C.

Caution – Do NOT install thermostat on pressure relief valve. Doing so may cause incorrect operation resulting in excessive water temperatures, product failure, injury or death.

Note - The thermostat is equipped with a safety device called a High Limit Control (HLC). A heat sensor will shut down power to the heater if the temperature of the tank exceeds safety limits. The manual reset button (red) must be depressed before operation can resume.

Caution – Do not reset the HLC until the problem causing the unit to trip is corrected.

Fig. D

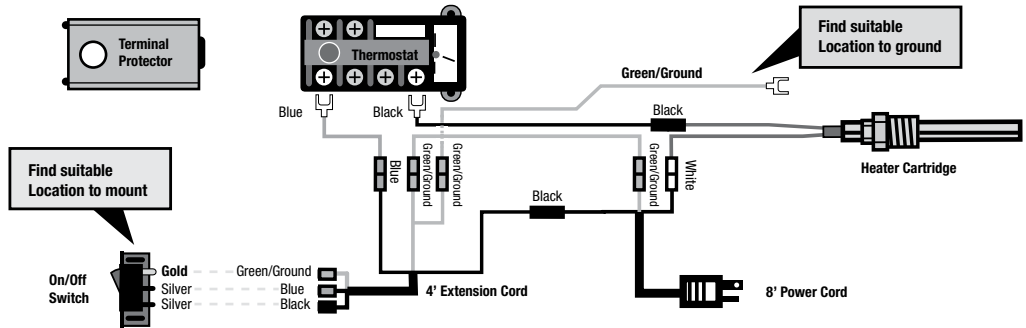


Step 5: Route Heater Cartridge Wires to Thermostat Location

Select a suitable hole inside the water heater compartment for feeding the heater cartridge wires to the thermostat area. If no existing hole is available, locate and drill a 1/2" hole after checking for clearance behind the compartment as shown in FIGURE D. Clean any sharp edges and burrs from drilled hole and feed both wires from the heater cartridge through the hole toward the thermostat (Take care to not cut wiring insulation on sharp edges).

Caution – Do not run wires through gas line inlet. It is suggested that the hole for the wires be no closer than 1-1/2" from the gas line inlet. Keep wiring away from all hot surfaces of heater.

WIRING DIAGRAM



Step 6: Connect Wiring for Power Cord, Thermostat, Heater Cartridge and Power Switch

Connect the wiring for the components as shown in FIGURE E above. All wire ends are color coded for ease of recognition. Install protective terminal cover onto thermostat when wiring is complete as shown in FIGURE F.

Find a suitable location for mounting the switch bracket. Next, drill two 1/8" holes, checking for clearance, and mount the switch bracket using the two provided screws. Route the free end of the 4' extension cord through the back of the switch bracket. Connect the wires from the 4' extension cord to the power switch as shown in FIGURE E. Insert the power switch into the mounting bracket and ensure that it is securely seated as shown in FIGURE G.

Confirm the water heater is grounded to the frame of the RV. This can be done by testing continuity between the water heater and the frame of the RV. If it is not grounded, connect a ground wire from the water heater to the frame of the RV (not included). Next, select a suitable location for attaching the ground wire connected to the 4' extension cord. It is suggested this be attached somewhere in the water heater case. Place the provided grommet around the heater cartridge wires and ground wire (if applicable) and install in the hole.

Caution - Keep wiring away from all hot surfaces of water heater.

Note - Plastic wire ties are provided for securing the wiring where needed.

Step 7: Connecting to a Power Source

The intention of this product is to have the 8' power cord connect to an 120V 15A outlet inside the coach and thus making it a permanent installation with the use of the power switch for turning power on or off. The 8' power cord can also be attached to an external power source where the power switch can be used for convenience.

Caution – Do not connect to power until installation is complete and tank is full of water.

To Drain Water Heater

Disconnect Hot Water Hybrid Heat™ power cord. Remove heater cartridge by loosening compression nut and slide heater cartridge out of drain plug opening. Do not reconnect power cord until heater is once again full of water.



Camco Manufacturing, Inc.
121 Landmark Dr. / Greensboro, NC 27409
1-800-334-2004 / www.camco.net