

# INSTALLATION AND OPERATION MANUAL



## DIRECT VENT GAS WATER HEATER DIRECT SPARK IGNITION (DSI)



### MODELS

SW10D • SW10DM • SW10DE • SW10DEM

### FOR INSTALLATION IN RECREATIONAL VEHICLES AND MOBILE HOUSING

#### FOR YOUR SAFETY WHAT TO DO IF YOU SMELL GAS

- DO NOT TRY TO LIGHT ANY APPLIANCE.
- DO NOT TOUCH ANY ELECTRIC SWITCH: DO NOT USE ANY PHONE IN YOUR VEHICLE.
- IMMEDIATELY CALL YOUR GAS SUPPLIER FROM A NEIGHBOR'S PHONE. FOLLOW THE GAS SUPPLIER'S INSTRUCTIONS.
- IF YOU CANNOT REACH YOUR GAS SUPPLIER, CALL THE FIRE DEPARTMENT.

#### FREEZE WARNING

DRAIN HEATER IF SUBJECT TO FREEZING TEMPERATURES.

**WARNING:** IMPROPER INSTALLATION, ADJUSTMENT, ALTERATION, SERVICE OR MAINTENANCE CAN CAUSE INJURY OR PROPERTY DAMAGE. REFER TO THIS MANUAL FOR ASSISTANCE OR ADDITIONAL INFORMATION, CONSULT A QUALIFIED INSTALLER, SERVICE AGENCY OR THE GAS SUPPLIER.

#### FOR YOUR SAFETY

DO NOT STORE OR USE GASOLINE OR OTHER COMBUSTIBLE MATERIALS OR LIQUIDS NEAR OR ADJACENT TO THIS HEATER OR ANY OTHER APPLIANCE. THIS APPLIANCE SHALL NOT BE INSTALLED IN ANY LOCATION WHERE FLAMMABLE LIQUIDS OR VAPORS ARE LIKELY TO BE PRESENT.

AN ODORANT IS ADDED TO THE GAS USED BY THIS WATER HEATER.

INSTALLER: AFFIX THESE INSTRUCTIONS TO OR ADJACENT TO WATER HEATER.  
OWNER: RETAIN THESE INSTRUCTIONS AND WARRANTY FOR FUTURE REFERENCE.

ALL TECHNICAL AND WARRANTY QUESTIONS SHOULD BE DIRECTED TO THE COMPANY LISTED ON THE WARRANTY, OR RATING PLATE WHICH CAME WITH YOUR WATER HEATER.

For future reference, you should record the following information:

MODEL NUMBER \_\_\_\_\_

SERIAL NUMBER \_\_\_\_\_

STOCK NUMBER \_\_\_\_\_

DATE OF PURCHASE \_\_\_\_\_



SUBURBAN MANUFACTURING COMPANY  
Post Office Box 399  
Dayton, Tennessee 37321  
423-775-2131  
Fax: 423-775-7015

## INSTALLATION REQUIREMENTS

**WARNING!** Installation of this appliance must be made in accordance with the written instructions provided in this manual. No agent, representative or employee of Suburban or other person has the authority to change, modify or waive any provision of the instructions contained in this manual.

**CAUTION:** If possible, do not install the water heater to where the vent can be covered or obstructed when any door on the trailer is opened. If this is not possible, then the travel of the door must be restricted in order to provide a 6" minimum clearance between the water heater vent and any door whenever the door is opened.

**CAUTION:** Due to the differences in vinyl siding, this appliance should not be installed on vinyl siding without first consulting with the manufacturer of the siding or cutting the siding away from the area around the appliance vent.

**CAUTION:** In any installation in which the vent of this appliance can be covered due to the construction of the RV or some special feature of the RV such as slide out, pop-up etc., always insure that the appliance cannot be operated by setting the thermostat to the positive "OFF" position and shutting off all electrical and gas supply to the appliance.

**CAUTION:** Do not install this appliance to where the vent terminates below a slide-out. This appliance is not to be installed under any overhang. It must be free and clear of any type overhang.

This installation must conform with the requirements of the authority having jurisdiction or in the absence of such requirements with the latest edition of the National Fuel Gas Code ANSI Z223.1; and the latest edition of the American National Standard for Recreational Vehicles-501C. In Canada the installation should conform with the following standards.

### A. For installation in Recreational Vehicle

1. Gas - CSA standard CSA Z240.4.2 Installation Requirements for Propane Appliances and Equipment in Recreations Vehicles.
2. Electrical - CSA standard C22.2 No. 148/Z240.6.2 Electrical Requirements for Recreational Vehicles.
3. Plumbing - CSA standard CSA Z240.3.2 Plumbing Requirements for Recreational Vehicles.

### B. For installation in Mobile Housing

1. Gas - CSA standard CSA Z240.4.1 Installation Requirements for Gas Burning Appliances and Equipment in Mobile Homes.
2. Electrical - CSA standard CSA C22.1 Canadian Electrical Code Part 1.
3. Plumbing - CSA standard CSA Z240.3.1 Plumbing Requirements for Mobile Homes.

The appliance shall be disconnected from the gas supply piping system during any pressure testing of the system.

The appliance and its gas connections shall be leak tested before placing the appliance in operation.

All air for combustion must be supplied from outside the structure. Air for combustion must not be supplied from occupied spaces.

## INSTALLATION INSTRUCTIONS

Minimum clearance from combustible construction on sides, top, floor and rear = 0 inches. Provide room for access to rear of heater for servicing.

Provide an opening flush with floor in outer wall of coach as shown. Wall of coach should be framed as shown in Figure 1. Maintain inside dimensions listed below. Do not install on carpet unless the carpet is covered by a metal or wood shield covering the entire area underneath the water heater. If you prefer, you may cut away the carpet from this area.

### INSTALLATION USING FLUSH MOUNT FRAME & DOOR

(See Figure 2 for illustration)

A. Position heater into framed opening as illustrated. Slide unit into opening until the front of the control housing is flush with the exterior coach skin.

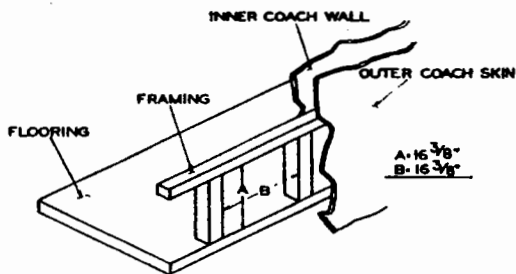


Figure 1

B. Secure the control housing to the coach wall (framed opening) at the top and sides of control housing compartment using screws or other suitable fasteners. Recess the screws or fasteners back far enough from the front edge of control housing (approximately 1 1/2") in order to clear the flange on door frame. The door frame, when installed, must not overlap onto screw or other fastener head. NOTE: Caulk around screw or fastener heads to assure water tight seal.

C. Install chocks, one on each side of water heater, as illustrated in Figure 1A.

D. On mesa or yoder type sidewalls, flatten the wall area around the opening.

E. Caulk around framed opening (trailer skin) as illustrated.

F. Caulk around door frame using 2 beads of silicone caulking (or suitable caulking) - one on flange to seal to control housing and one around back side of frame to seal to coach skin. (See detail A in illustration.)

G. Insert door frame into control housing and secure with four (4) No. 8-15 x 3 1/2" screws provided.

H. To install door, place the two holes in the bottom of the door over the door pins on the frame. Close the door so that the latch protrudes through the slot in the door. Turn latch 90 degrees to fasten door.

I. The module board on models SW10D and SW10DE is not secured to the water heater. It is to be permanently mounted by the installer.

The module board must be mounted to where it is accessible for service yet out of way of children. It should be located in a place where it cannot be subjected to moisture, cleaning chemicals, flammable vapors and liquids, etc.

The board and all wiring to the board must be protected in order to prevent damages and accidental contact with these parts. The module board may be mounted with two (2) No. 6 x 5/8 screws or other suitable hardware.

## MAKING WATER CONNECTIONS

A. Water connections are made at the rear of the water heater. Refer to Figure 3 for all models except SW10DM and SW10DEM. For SW10DM and SW10DEM, refer to Figure 4 or 5. Connect the hot and cold water lines to the 1/2" female pipe fitting provided on rear of tank. These fittings are marked "HOT" and "COLD". NOTE: Inside each fitting is a plastic fill tube. Its purpose is to enhance water circulation. **DO NOT REMOVE PLASTIC FILL TUBE.**

**IMPORTANT:** Use a pipe thread compound suitable for potable water or pipe thread tape on all connections to assure they will not leak.

B. For ease of removal, it is suggested that a pipe union be installed in each water line.

C. Fill tank with water. Open both hot and cold water faucets to expel air from tank. When tank is filled and water flows from faucets, close both faucets and check all connections for leaks.

**CAUTION:** If you use air pressure to check for leaks, the pressure must not exceed 30 PSI (in accordance with 4-9.1.1 of ANSI A119.2).

NOTE: After leak testing, drain water from tank.

## MAKING GAS CONNECTIONS

A. Connect a 3/8" gas supply line to the 3/8 flare fitting at gas valve located in the control housing. When making the gas connection, hold the gas fitting on the valve with a wrench when tightening the flare nut. Failure to hold fitting secure could result in a gas leak due to fitting being damaged. NOTE: It will be necessary to remove the grommet from the control housing, make the gas connection at the valve, then reinstall grommet.

**WARNING!** It is imperative that grommet and gas line through grommet be caulked air tight. If not tightly sealed, moisture and potential harmful fume products could vent through opening and into living area of trailer. (See Figure 6.)

B. Turn on gas and check all fittings and connections for leaks, using a soap and water solution. Correct even the slightest leak immediately.

**WARNING!** Do not use an open flame to check for leaks

## WATER HEATER AS VIEWED FROM INSIDE R. V.

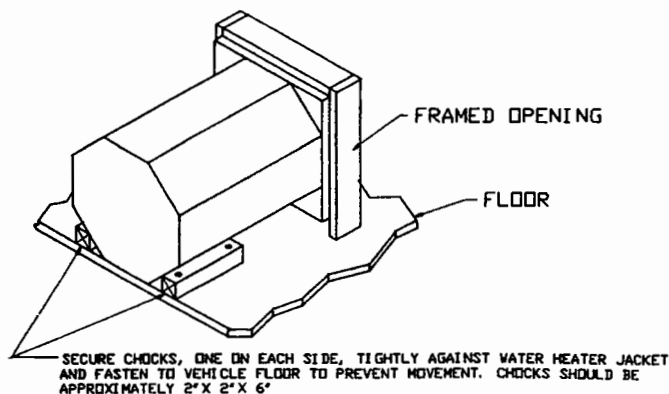


Figure 1A

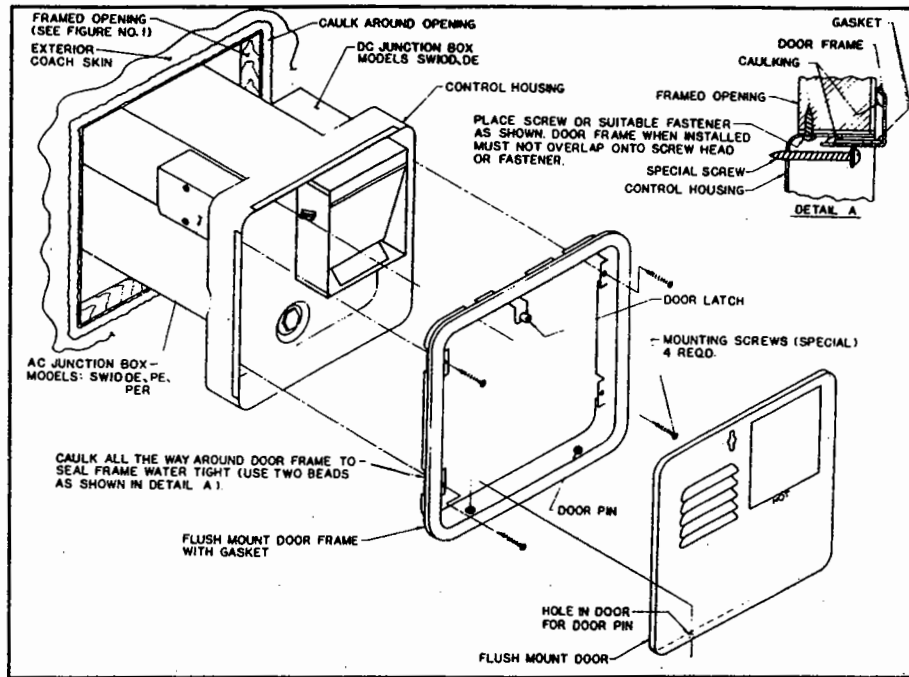


Figure 2

MODELS  
SW10D  
SW10DE

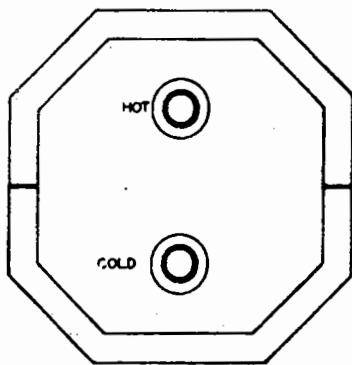
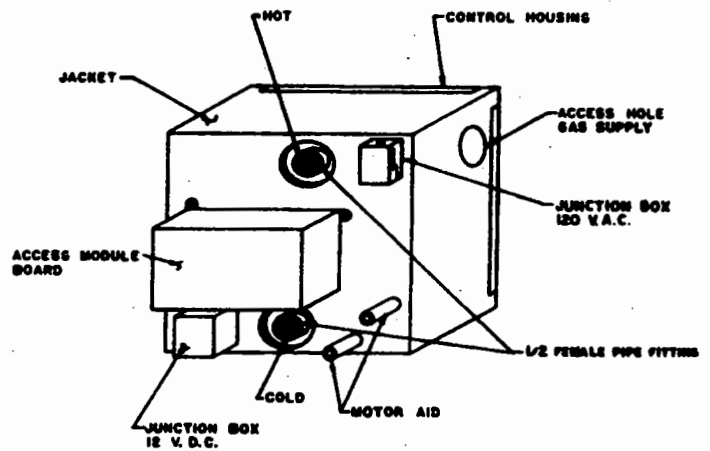
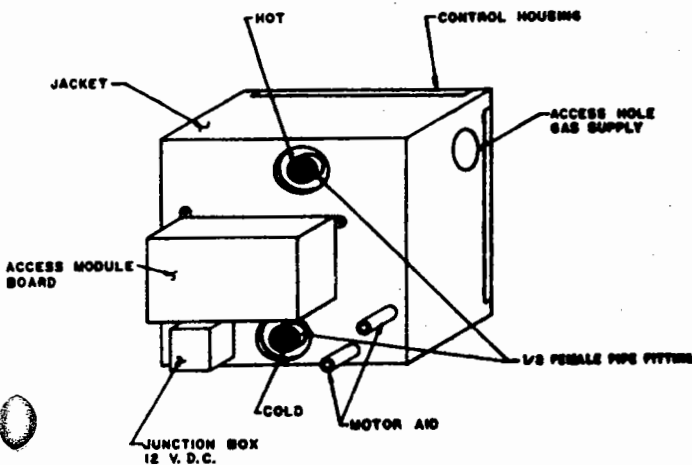


Figure 3



MODEL SW10DEM  
Figure 5



MODEL SW10DM  
Figure 4

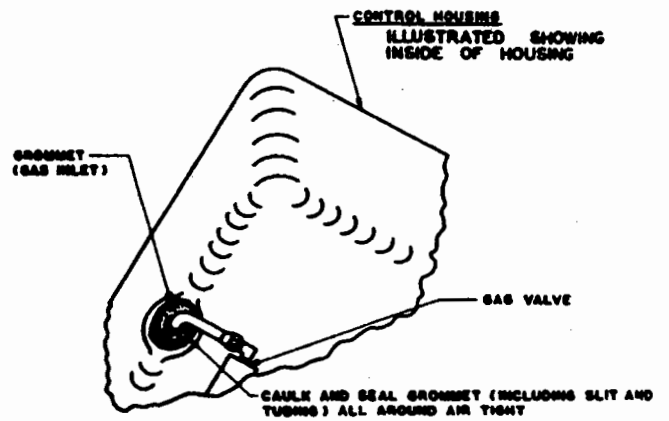


Figure 6

## MAKING ELECTRICAL CONNECTIONS 12 VOLTS D.C.

- A. Applicable to following models: SW10D, SW10DE, SW10DM, and SW10DEM.
- B. Refer to Figure 2 for location of D.C. junction box on models SW10D and SW10DE. Refer to Figure 4 and 5 for location of D.C. junction box on models SW10DM and SW10DEM.
- C. The electrical connections must be made in accordance with local codes and regulations. In the absence of local codes and regulations, refer to the latest edition of the National Electrical Code ANSI/NFPA No. 70.
- In Canada, the electrical installation should conform with CSA standard CSA C22.2 No. 148/Z240.6.2 Electrical Requirements for Recreational Vehicles and CSA C22.1 Canadian Electrical Code Part 1 when installing the unit in recreational vehicles and mobile homes respectively.
- D. Make sure the water heater is filled with water before making the electrical connections.
- E. Make the 12 Volt D.C. electrical connections following the wiring diagram illustrated in Figure 7.

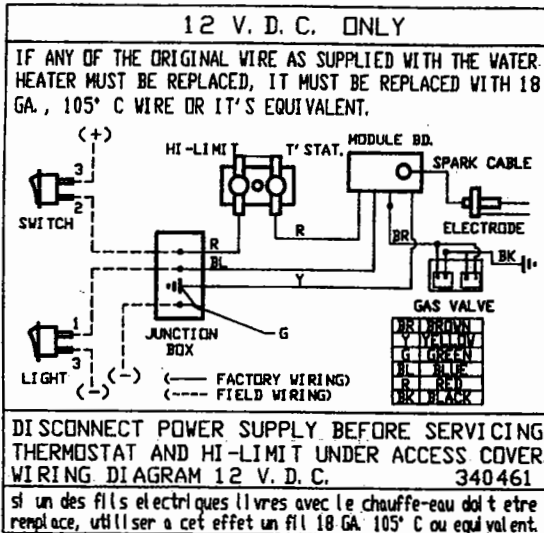
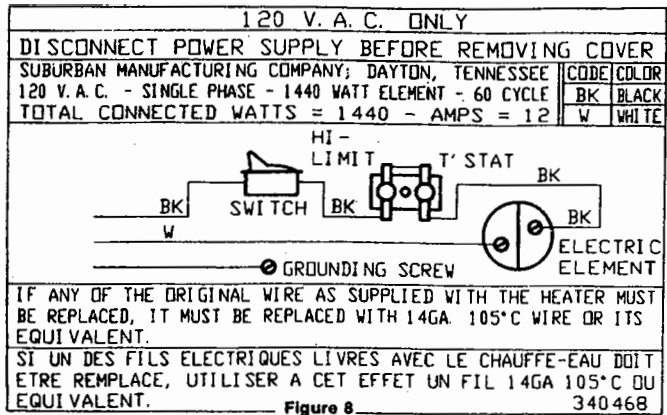


Figure 7

## MAKING ELECTRICAL CONNECTIONS 120 VOLTS A.C.

- A. Applicable to following models SW10DE and SW10DEM.
- B. Refer to Figure 2 for location of A.C. junction box on model SW10DE. Refer to Figure 5 for A.C. junction box on model SW10DEM.
- C. The electrical connections must be made in accordance with local codes and regulations. In the absence of local codes and regulations, refer to the latest edition of the National Electrical Code ANSI/NFPA No. 70.
- In Canada, the electrical installation should conform with CSA standard CSA C22.2 No. 148/Z240.6.2. Electrical requirements for Recreational Vehicles and CSA C22.1 Canadian Electrical Code Part 1 when installing the unit in recreational vehicles and mobile homes respectively.
- D. Be sure the switch for the electrical element is "OFF" and that the water heater is filled with water before making electrical connections. Failure to do so will result in burn-out of the electrical element.
- E. Check rating plate and wiring diagram (Figure 8) before proceeding. Install a fused safety switch or circuit breaker of adequate capacity between heater and electrical power source. Attach the black and white wires from the fused switch or breaker to corresponding colored wires in heater junction box. A green wire from a well grounded source must be attached to the green nut in the junction box.



## INSTALLATION OF MOTOR AID HEAT EXCHANGER

- Place copper "Y"s in heater as shown in Figure 9.
  - Secure hoses to "Y"s with hose clamps.
  - Attach hose from motor-aid heat exchanger to "Y"s.
  - Secure hoses to motor-aid and "Y"s with clamps.
  - Check all connections for water leaks and proper water circulation through motor-aid heat exchanger, with engine running.
- The system should be checked annually for deterioration of heater hose and hose connections. Replace as needed.

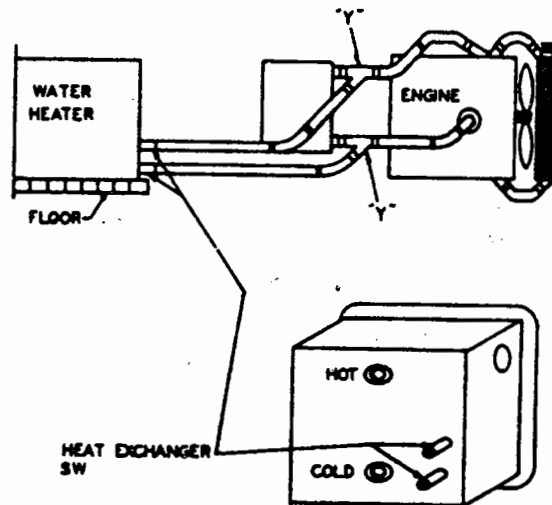


Figure 9

## MAINTENANCE

**WARNING!** If the user of this appliance fails to maintain it in the condition in which it was shipped from the factory or if the appliance is not used solely for its intended purpose or if appliance is not maintained in accordance with the instructions in this manual, then the risk of a fire and/or the production of carbon monoxide exists which can cause personal injury, property damage or loss of life.

**WARNING:** For your safety, all repairs should be performed by your dealer or a qualified service person.

- A. Main Burner: Do not allow the burner to burn with a yellow flame, because sooting will occur. (See Safety Warnings).
- If the burner flame is yellow and has an erratic pattern, shut unit down and contact a qualified service agency. Do not continue operating unit with improper burner flame. (See Figure 10 for correct and incorrect burner flame appearance.)

B. Periodically inspect unit for soot. If soot is present anywhere on water heater, immediately shut unit down and contact your dealer or a qualified service person. Soot is a sign of incomplete combustion and must be corrected before operating water heater. Areas to check would include:

1. Check for an obstruction in burner or the flue box.
2. Check the screen in the door to see that no foreign material has accumulated to prevent flow of combustion and ventilating air.
3. Check to be sure there is no flame present at burner orifice or burner whenever main gas valve is closed. This can be checked by turning the OFF/ON switch to the "OFF" position.

C. Frequent checks should be made of the grommet on the gas inlet to assure tight seal. (See "Making Gas Connections").

D. Periodically check wiring and wire connection to be sure wiring is not damaged/frayed and that all terminals and connections are tight and in compliance with codes (See "Making Wire Connections").

### SAFETY WARNINGS

**WARNING!** Hydrogen gas may result if you have not used this heater for two weeks or more. **HYDROGEN GAS IS EXTREMELY FLAMMABLE.** To reduce the risk of injury under these conditions, open the hot water faucet for several minutes at the kitchen sink before you use any electrical appliance connected to the hot water system. If hydrogen is present, you probably will hear an unusual sound such as air escaping through the pipe as the water begins to flow.

Hydrogen gas may be present even after water has been drained from the tank. Open faucet at sink and allow system to vent for several minutes (5-10 minutes).

Do not smoke or have any open flame near the open faucet. Do not attempt to light pilot or main burner. On DSI models, be sure the switch is "OFF".

Should overheating occur, or the gas supply fail to shut off, shut off the manual gas valve to the appliance before shutting off the electrical supply. Do not use this appliance if any part has been submerged under water. Immediately call a qualified service technician to inspect the appliance and to replace any part of the control system and any gas control that has been submerged under water.

Do not alter the operation of your water heater nor change the design/construction of your water heater. Accessories are being marketed for RV products which we do not recommend. For your safety, only factory authorized parts are to be used on your water heater.

Periodically inspect the vent for obstructions or presence of soot. Soot is formed whenever combustion is incomplete. This is your visual warning that the water heater is operating in an unsafe manner. If soot is present, immediately shut the water heater down and contact your dealer or a qualified service person.

When considering add-on rooms, porch or patio, attention must be given to the venting of your water heater. For your safety, do not terminate the vent on your water heater inside add-on rooms, screen porch or onto patios. Doing so will result in products of combustion being vented into the rooms or occupied areas.

Never operate the heater if you smell gas. Do not assume that the smell of gas in your RV is normal. Any time you detect the odor of gas, it is to be considered life threatening and corrected immediately. Extinguish any open flames including cigarettes and evacuate all persons from the vehicle. Shut off gas supply at LP gas bottle. (See Safety notice on front cover of this manual.)

**WARNING!** Make sure water heater is filled with water before power is turned on. Even momentary operation of heater without water in it will burn out the element.

**NOTE:** Always open both the cold and hot water faucets when filling vehicle water tank to allow air pockets to be forced out of the water heater. When water flows from the heater faucets, close both faucets.

**WARNING!** Do not store or use combustible materials or liquids near or adjacent to this heater. The appliance shall not be installed in any location where flammable liquids or vapors are likely to be present.

Be sure the water heater pilot and all ignition systems are "OFF" during any type of refueling and while vehicle is in motion or being towed.

The thermostat on your water heater is not adjustable. It is a temperature sensing limit designed to maintain a water temperature of 120°F (49°C). Water temperatures over 125°F (49°C) can cause severe burns instantly or death from scalds; therefore, be careful when using hot water. Children, disabled and elderly are at highest risk of being scalded. Always feel water before bathing or showering.

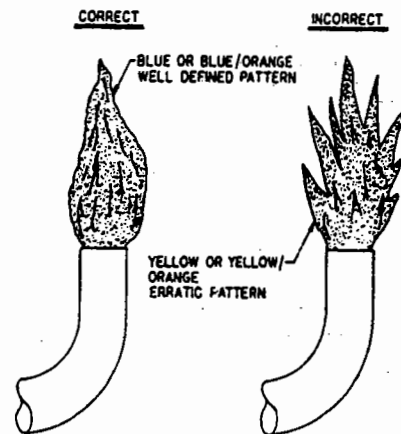


Figure 10

### HIGH ALTITUDE DERATION

Suburban's water heaters are certified by nationally recognized testing laboratories for operation without modifications at altitudes up to 4,500 feet. Operation above this elevation may require derating by 4 percent for every 1,000 feet above sea level. As an example, at 8,000 feet, the water heater should be derated approximately 32 percent.

If the unit is not properly derated, lack of sufficient oxygen for combustion may produce improper burner operation. Pilot outage caused by burner lift-off or sooting from a yellow burner may occur indicating the possibility of carbon monoxide. You may also notice a lack of efficiency in heating the water because of incomplete combustion of the burner at these higher altitudes.

Consult with the local gas company, your dealer, an RV service agency or Suburban Manufacturing Company for proper derating of the unit. Change-out of the orifice (derating) should be done by the dealer or a qualified service agency.

**NOTE:** It is important that once the unit has returned to lower elevation (below 4,500 feet) this high altitude derating and pilot adjustments (if equipped) be reversed for proper operation of the unit.

### ANODE PROTECTION

The tank in this water heater is protected by a magnesium or aluminum anode to prolong the life of the tank. Under normal use, the anode rod will deteriorate and because of this, we recommend it be replaced yearly. **NOTE:** Water with high levels of iron and/or sulfate will increase the rate of deterioration; therefore, more frequent replacement may be required.

Operating the water heater without proper anode protection will decrease tank life and will void your warranty on the tank. **NOTE:** Tank is drained by removing anode rod (See "Drain and Storage" instructions).

To extend anode life, drain water from tank whenever RV is not being used. Avoid any extended time of non use with water in tank.

**WARNING!** Do not replace the anode rod with any non-Suburban accessory part, such as an "add-on" electric heating element. Items such as these are not approved to be installed in Suburban products. They could create an unsafe condition and will also void all warranties.

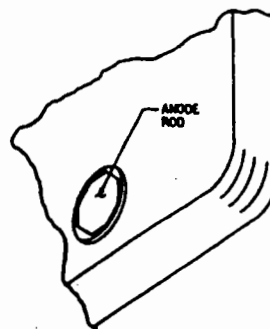


Figure 11

## PRESSURE RELIEF VALVE

The temperature and pressure relief valve is designed to open if the temperature of the water within the heater reaches 210°F, or if the water pressure in the heater reaches 150 pounds. Recreational vehicle water systems are closed systems and during the water heating cycle the pressure build-up in the water system will reach 150 pounds. When this pressure is reached, the pressure relief valve will open and water will drip from the valve. This dripping will continue until the pressure is reduced to below 150 pounds, and the valve closes. This condition is normal and does not indicate a defective relief valve.

**WARNING! Do not place a valve between the relief valve and the tank. Do not plug the relief valve under any circumstances.**

## WATER WEeping OR DRIPPING FROM PRESSURE RELIEF VALVE

You may experience water weeping or dripping from your water heater's Pressure and Temperature (P & T) Relief Valve when your water heater is operating. Water weeping or dripping from the P & T Valve does not always mean the P & T Valve is defective. As water is heated, it expands. The water system in a recreational vehicle is a closed system and does not allow for the expansion of heated water. When the pressure of the water system exceeds the relieving point of the P & T Valve, the valve will relieve the excess pressure.

One way to reduce the frequency of this occurrence is to maintain an air pocket at the top of the water heater tank. This air pocket will form in the tank by design. However, it will be reduced over time by the everyday use of your water heater.

To replenish this air pocket:

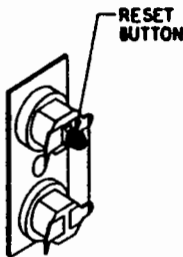
1. Turn off water heater.
2. Turn off cold water supply line.
3. Open a faucet in the RV.
4. Pull out on the handle of the Pressure Relief (P & T) Valve and allow water to flow from the valve until it stops.
5. Release handle on P & T Valve - it should snap closed.
6. Close faucet and turn on cold water supply; as the tank fills, the air pocket will develop.

Repeat this procedure as often as needed to reduce the frequency of the weeping of the P & T Valve. If the weeping persists after following this procedure, you may elect to install an expansion or accumulator tank in the cold water line between the tank and check valve to relieve the pressure caused by thermal expansion. Contact your local dealer for assistance.

## THERMOSTAT AND MANUAL RESET MODELS: SW10D, SW10DE, SW10DM and SW10DEM

The model water heaters listed above are equipped with a high temperature limit as a cut-off device. Temperature above 180°F will cause manual reset button to trip shutting down main burner.

To activate burner, the water temperature must be below 100°F, push reset button to re-activate burner.



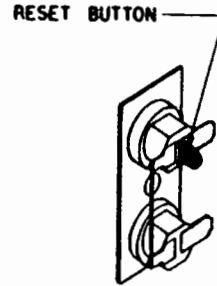
12 VDC. T-STAT  
HI-LIMIT

Figure 12

## THERMOSTAT AND MANUAL RESET MODELS SW10DE and SW10DEM

The model water heaters listed above are equipped with a high temperature limit as a cut-off device. Temperature above 180°F will cause manual reset button to trip shutting down the electric element.

To activate element, the water temperature must be below 100°F, push reset button to re-activate the electric element.



120 VAC. T-STAT  
HI-LIMIT

Figure 13

## DRAINING AND STORAGE INSTRUCTIONS

If RV is to be stored during winter months, the water heater must be drained to prevent damage from freezing.

1. Turn off electrical power to water heater either at the switch from the electrical element or a breaker.
2. Shut off gas supply to water heater.
3. Turn off pressure pump on water system.
4. Open both hot and cold water faucets.
5. Remove anode rod from tank.
6. Follow RV manufacturer's instructions for draining entire water system.

**NOTE:** Be certain to refill water heater with water and remove all air from tank and lines before re-lighting or before turning on electrical power.

## ODOR FROM HOT WATER SYSTEM

Odor from the hot water system is not a service problem and many water supplies contain sufficient amounts of sulphur to produce an odor. The odor is similar to rotten eggs and is often referred to as "sulphur water". Sulphur water is not harmful - only unpleasant to smell. Sulphur water can be caused by a chemical action or by bacteria. The solution to eliminate is heavy chlorination of the water system. Add about six (6) ounces of chlorine (common household liquid bleach) to each 10 gallons in the water tank. Then run the heavily chlorinated water throughout the system, opening each faucet one at a time until you smell the chlorine. Let the RV sit for a few days and the chlorine should take care of the problem. Then you will need to take care of the chlorine. If you don't have a water filtration system that removes chlorine, you will have a problem getting rid of the chlorine taste. You might consider adding such a system because it allows you to keep the water chlorinated and this prevents several problems, including sulphur water. Chlorination also takes care of other types of bacteria and viruses.

## REMOVING WATER HEATER

1. Shut off gas supply and disconnect gas supply line from water heater.
2. On all Electric Models, disconnect 120 V.A.C. supply at junction box mounted on heater.
3. On all DSI Models, disconnect 12 V.D.C. power supply at junction box on heater.
4. On Models SW10D and SW10DE disconnect all wires at module board.
5. Shut off water supply. Drain water from tank following instructions under "Draining and Storage".
6. Disconnect hot and cold water lines from water heater.
7. Remove screws or nails securing control housing to framed opening.
8. Slide heater out. To reinstall, follow instructions in manual under "Installation Instructions".

**FOR YOUR SAFETY READ BEFORE LIGHTING**

**WARNING! If you do not follow these instructions exactly, a fire or explosion may result causing property damage, personal injury or loss of life.**

A. This appliance does not have a pilot. It is equipped with an ignition device which automatically lights the burner. Do not try to light the burner by hand.

B. BEFORE LIGHTING smell all around the appliance area for gas. Be sure to smell next to the floor because some gas is heavier than air and will settle on the floor.

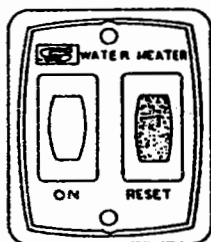
**WHAT TO DO IF YOU SMELL GAS**

- Do not try to light any appliance.
- Do not touch any electric switch.
- Do not use any phone in your building.
- Immediately call your gas supplier from a neighbor's phone. Follow the gas supplier's instructions.
- If you cannot reach your gas supplier, call the fire department.

C. This is an automatic gas valve, no adjustments are necessary. Do not attempt to repair the gas valve. This may result in a fire or explosion.

D. Do not use this appliance if any part has been under water. Immediately call a qualified service technician to inspect the appliance and to replace any part of the control system and any gas control which has been under water.

E. Before operating water heater, check the location of the vent to make sure it will not be blocked by the opening of any door on the trailer. If it can be blocked, do not operate the water heater with the door open.



**OPERATING INSTRUCTIONS**

1. STOP! Read the safety information provided.
2. Turn off all electric power to the appliance.
3. Turn "OFF" gas supply.
4. Wait five minutes for gas to clear the area. If you smell gas then STOP! Follow instructions in item B of the safety information. If you don't smell gas, go to next step.
5. Turn "ON" gas supply.
6. Turn on electrical power to the appliance.
7. Turn switch to "ON" position. If burner does not light on first try, the system will lockout.
8. If lockout occurs before main burner lights, turn switch to "OFF", wait five seconds and turn switch to "ON" position. This will restart the ignition cycle. The first start-up of the heater may require several ignition cycles before all air is purged from the gas lines.

If the burner will not come on, the following items should be checked before calling a service person.

1. Switch turned off.
2. Gas supply to heater is empty or turned off.
3. Reset button on ECO is tripped.

**TO TURN OFF WATER HEATER**

1. Turn switch to "OFF" position.
2. Turn off electrical power to the appliance.
3. Turn off gas supply.
4. If vehicle is to be stored or heater is going to be turned off while subject to freezing temperature, drain water heater. (See "Draining and Storage Instructions.")