



INSTALLATION AND SERVICE MANUAL
MANUAL 6500015

FEBRUARY, 1983



**FOR INSTALLATION IN RECREATIONAL
VEHICLES AND MOBILE HOUSING
GAS AND ELECTRIC WATER HEATER**

FOR YOUR SAFETY IF YOU SMELL GAS

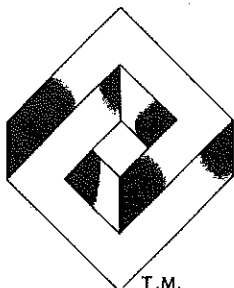
1. OPEN WINDOWS.
2. DON'T TOUCH ELECTRICAL SWITCHES.
3. EXTINGUISH ANY OPEN FLAMES.
4. IMMEDIATELY SHUT OFF GAS SUPPLY TO HEATER.

WARNING

DRAIN HEATER IF SUBJECT TO FREEZING TEMPERATURE. 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.

INSTALLER: AFFIX THESE INSTRUCTIONS TO
OR ADJACENT TO WATER HEATER.

OWNER: RETAIN THESE INSTRUCTIONS AND
WARRANTY FOR FUTURE REFERENCE.



**MOR-FLO[®]/AMERICAN
Water Heaters**

**MOR-FLO[®]
INDUSTRIES, INC.**

18450 SOUTH MILES ROAD
CLEVELAND, OHIO 44128
(216) 663-7300 • TELEX: 985-496

**AMERICAN
APPLIANCE MFG. CORP.**

2341 MICHIGAN AVENUE
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INSTALLATION REQUIREMENTS

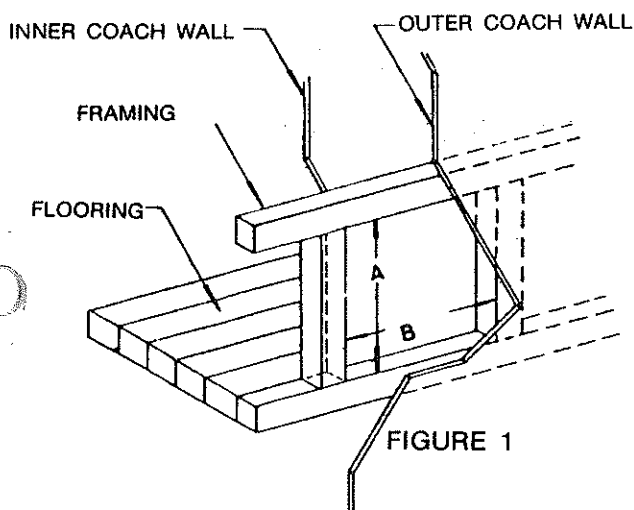
This installation must conform with the requirements of the authority having jurisdiction or, in the absence of such requirements, with the latest National Fuel Gas Code, ANSI Z223.

- (1) The appliance shall be disconnected from the gas supply piping system during any pressure testing of that system.
- (2) The appliance and its gas connection shall be leak tested before placing the appliance in operation.

This installation must also conform with the American National Standard for Recreational Vehicles 501C-1977. In Canada, C.S.A. Z240.4.

INSTALLATION INSTRUCTIONS

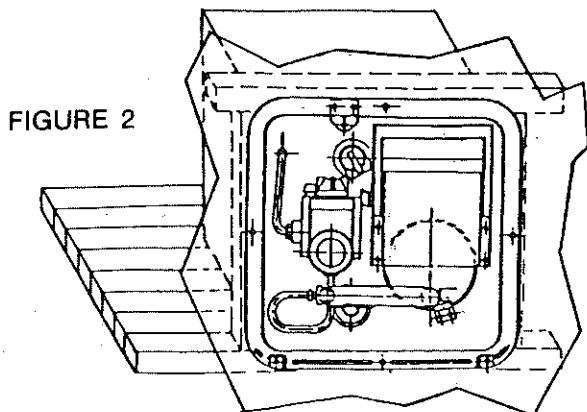
Minimum clearance from combustible materials on sides, top, floor, and rear = 0". Provide room for access to rear of heater for servicing.



1. Provide an opening flush with floor in outer wall of coach as shown. Wall of coach should be framed as shown in Figure 1.

2. Maintain inside dimensions listed below.

Model	A	B
6 gal.	12 3/4	12 3/4
10 gal.	16 1/4	16 1/4



3. Insert heater into the framed opening. Front of housing should be flush with outside wall. Secure to coach with nails at bottom and sides of control housing compartment. Place caulking to inside of housing frame. Insert frame into housing compartment and secure with three #10-24 x 3 1/2" screws.
4. To install door, locate holes in bottom of door over pins on the lower control housing frame. Close door so that the latch protrudes through the slot in the door. Turn latch 90 degrees to fasten the door.

STANDARD MODEL HINGED DOOR

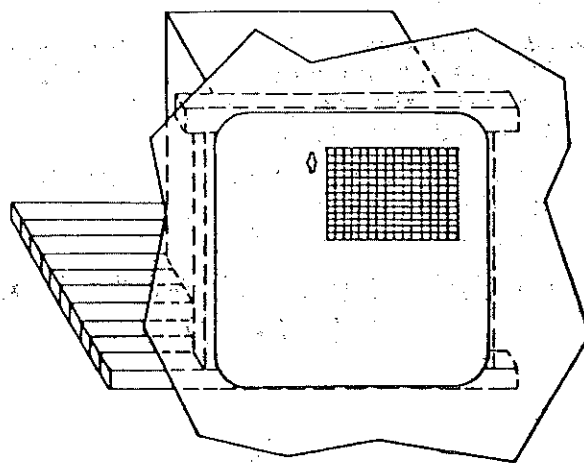
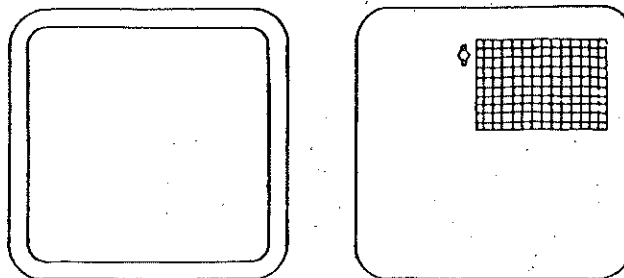


FIGURE 3

1. Insert heater into framed opening. Place caulking sealant between heater flange and outer wall of the coach to insure a water-tight bond. Secure heater to wall using #8 x 3/4" wood screws, screwed through holes in front mounting panel of heater.
2. To install door, slip one hinge pin into slot on each side of door, then insert other end of hinge pins behind spring brackets on heater frame. Close door so that latch protrudes through slot in door. Turn latch 90 degrees to fasten the door.

FLUSH MOUNT MODEL (SEPARATE DOOR FRAME)



REAR CONNECTIONS

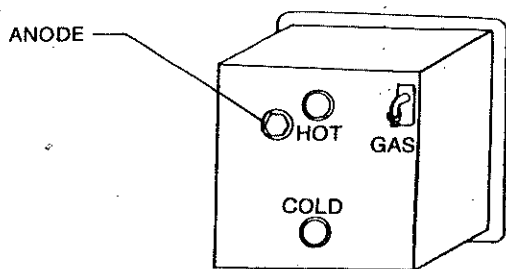


FIGURE 4

1. Connect water lines to fittings provided, 1/2" NPT female pipe threads.
2. Connect 3/8" NPT gas supply piping to gas connection supplied with heater. Turn on gas and check system for leaks, using soap and water solution. Be sure there are no leaks.
3. Fill tank with water. Open hot water faucet to expel air from tank. When tank is filled, turn off faucet and check for leaks at connections.

INSTALLATION OF MOTOR AID EXCHANGER

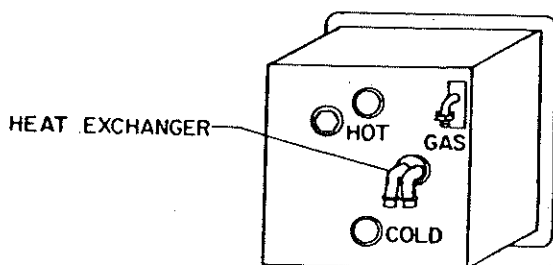


FIGURE 5

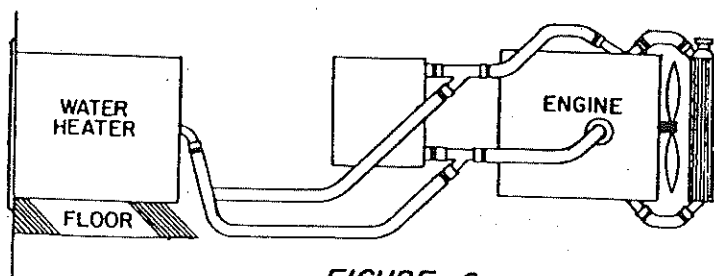


FIGURE 6

Connect heat exchanger to engine heater system using the "Y" hose fittings provided, connect two 5/8" heater hoses to heater lines of engine and copper tube outlets on exchanger. Clamp the hoses to exchanger tubes and "Y"s with hose clamps. Be sure water circulates with the engine running.

ELECTRICAL CONNECTIONS

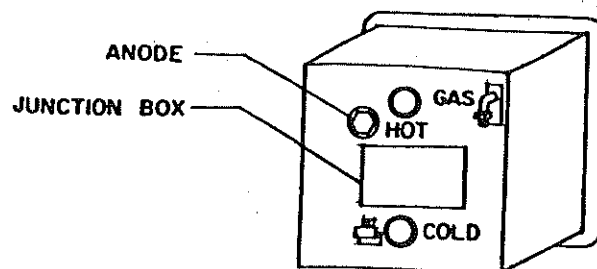
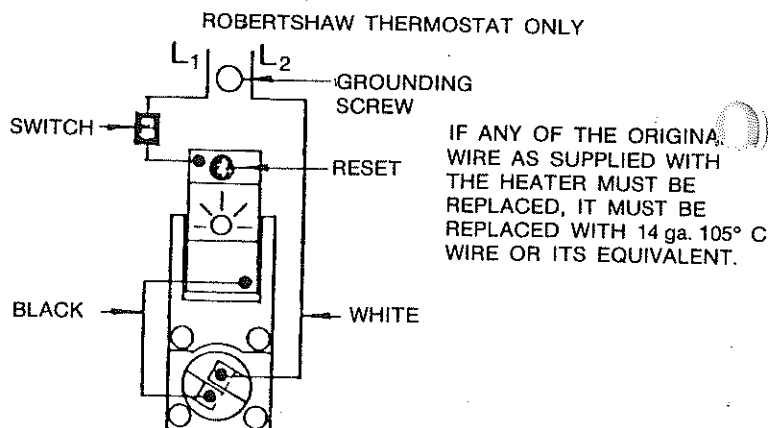


FIGURE 7

Make sure water heater is filled with water before making electrical connections. Check rating plate and wiring diagram 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 is attached to the green screw in the junction box.

WIRING DIAGRAM 120V



IMPORTANT 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.

DRAINING AND STORAGE INSTRUCTION

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

1. Turn off power & gas to water heater.
2. Turn off pressure pump on water system.
3. Open both hot & cold water faucets.
4. Open drain on water heater.
5. Follow RV manufacturer's instructions for draining entire water system.

NOTE: Be certain to refill water heater with water before re-lighting.

LIGHTING INSTRUCTION

1. Turn gas cock to off position, wait five minutes.
2. Turn to pilot position, press reset button and light pilot, hold down until pilot remains lit. Turn to on position.
3. Set temperature indicator to desired temperature.
4. If pilot goes out, repeat steps 1, 2, and 3.
5. To shut down heater, turn to off position.

AIR SHUTTER ADJUSTMENT INSTRUCTIONS-LARGE BURNER

- A. Burner Tube
- B. Air Shutter
- C. Gas Cock
- D. Reset Button
- E. Pilot Adjustment
- F. Temperature Indicator

Turn Air Shutter (B) to obtain proper blue flame

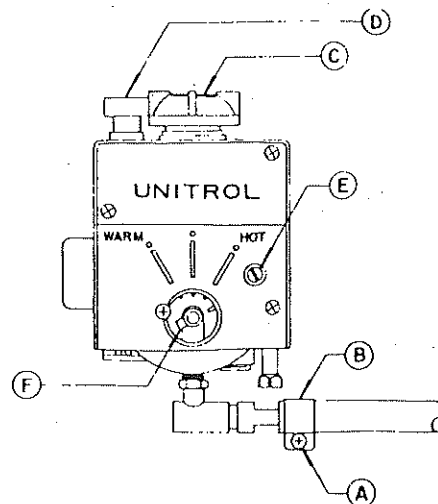
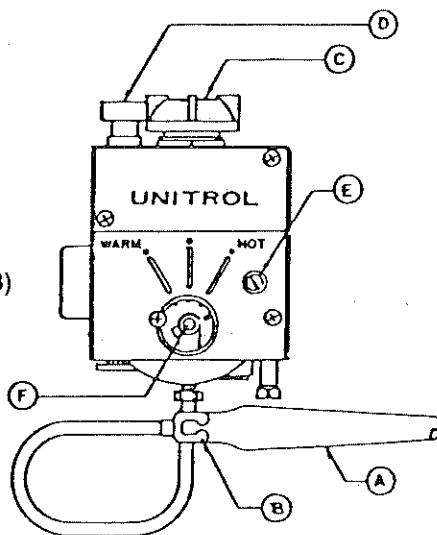


Figure 8

PROPER BURNER AND PILOT FLAME

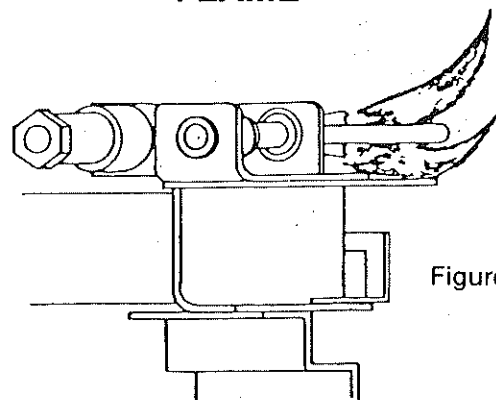


Figure 9

PILOT FLAME

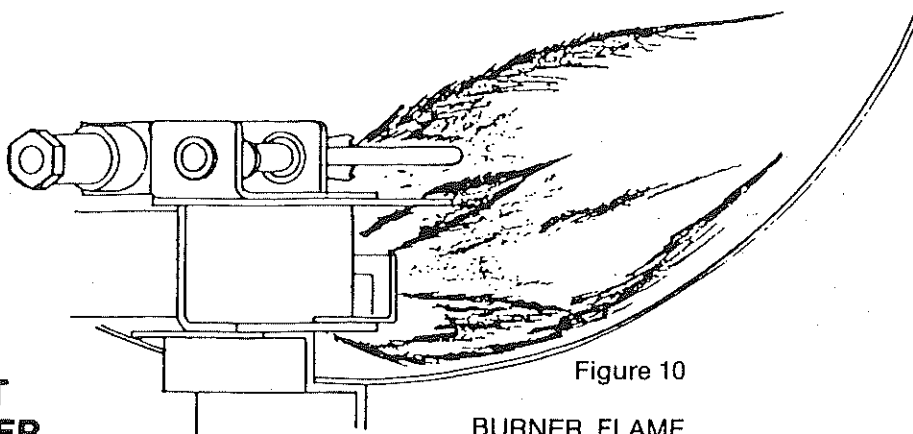


Figure 10

BURNER FLAME

AIR SHUTTER ADJUSTMENT INSTRUCTIONS-SMALL BURNER

Figure 8

1. Loosen nut and bolt (A). Slide air shutter (B) to right or left to obtain proper blue flame.
3. Secure nut and bolt.
4. Parts:
(C) = Gas Cock, (D) = Reset Button,
(E) = Pilot adjustment, (F) = Temperature-indicator

All air shutters are preset at the factory to obtain a blue or orange-blue flame. If necessary to adjust your air shutter, be sure to keep this color and do not allow burner to burn yellow or sooting will occur.

In cases where sooting has occurred, there is a possibility that this condition may be corrected by making the correct air shutter adjustment. If the burner flame continues to burn yellow after adjusting the air shutter, check for an obstruction in the burner or the flue box. A stiff brush is recommended for the removal of soot deposits. If the water heater pilot and burner are both burning properly (orange-blue flame) check to make sure the thermostat is shutting off clean. This can be done by turning the temperature dial all the way to the left (counter-clockwise). When this is done, the gas should shut off completely.

GAS MAINTENANCE AND WATER HEATER SERVICE ANALYSIS CHART

This chart can be used as a guide that will enable you to solve most of the problems that the customer could have with his water heater.

SOOTING	PILOT WILL NOT COME ON	NO HOT WATER PILOT WILL NOT STAY ON	NOT ENOUGH HOT WATER	WATER TOO HOT	POSSIBLE CAUSE
	X				Possible malfunction of the Bottled gas regulator
	X	X			Lint in Pilot Air Opening
		X			Loose or inoperative thermocouple
	X	X			Clogged Pilot Orifice
		X			Improper Pilot Flame
			X		Thermostat setting too low
			X		Main burner orifice too small or clogged
				X	Thermostat setting too high
				X	Pilot flame adjustment too high
X					Thermostat not shutting off completely
X					Yellow pilot due to improper setting
X					Yellow flame due to improper Air shutter adjustment
X					Lint or dirt in pilot or pilot orifice
X					Lint or dirt in burner tube
X					Leaves or other obstructions in Flue Box

Since the cost including installation of a thermocouple is relatively small, it is a good practice to replace it in cases where the pilot does not stay lit. If the pilot fails to stay lit after the thermocouple has been replaced, the chances are high that the electromagnet in the control, or in the built in E.C.O. (energy cut-off device) is defective. In such cases the easiest solution is to replace the control. If desired, the control components, either the magnet or the ECO, may be checked before replacing the control.

This water heater will operate with a minimum of attention. Should occasion arise that the water be drained, be certain to turn off the gas and power to the water heater, close the valve on the cold water inlet supply and open the hot water faucet to allow air to enter system.

Periodically check burner flames visually, compare with sketch under the burner adjustment section. **Note:** be certain to refill heater with water before re-lighting. **Do not store combustible material or liquid near or adjacent to this water heater.** Periodically check control compartment and screen in door to see that no foreign material has accumulated to prevent flow of combustion and ventilating air.

ELECTRICAL MAINTENANCE AND SERVICE ANALYSIS GUIDE

Electric water heaters are designed to operate with a minimum amount of service problems and with proper operation and care can be expected to outlast other types of water heaters similar in size.

The most common trouble with electric water heaters results from energizing the heater before it is filled with water. Even momentary operation of the heater without water in it will burn out the heating element and render the heater inoperative.

Caution: Power must be turned off before draining tank.

If the heater is full of water (check this by running water from the hot water faucet) and the water fails to heat, always check the following items before requesting service or parts:

1. Check incoming power to make sure 110 volt electricity is available.
2. Check the circuit breaker in the coach to make sure it has not kicked out.
3. Then remove the water heater door cover and press the red reset button on the heater. (Note: power should be turned off when removing the door cover).
4. If, after pressing the reset button and turning the power back on, the heater still fails to operate, the power should be turned off and all wires and connections should be checked to make sure they have not come loose.
5. After the first four steps have been followed, the heating element should be checked for continuity with an amprobe or other testing device. If the element is defective it can be replaced with any other 110 volt element of the same or lower wattage as shown on the water heater instruction decal, provided of course, its mounting holes and gasket will adapt to the element mounting bracket on the water heater.

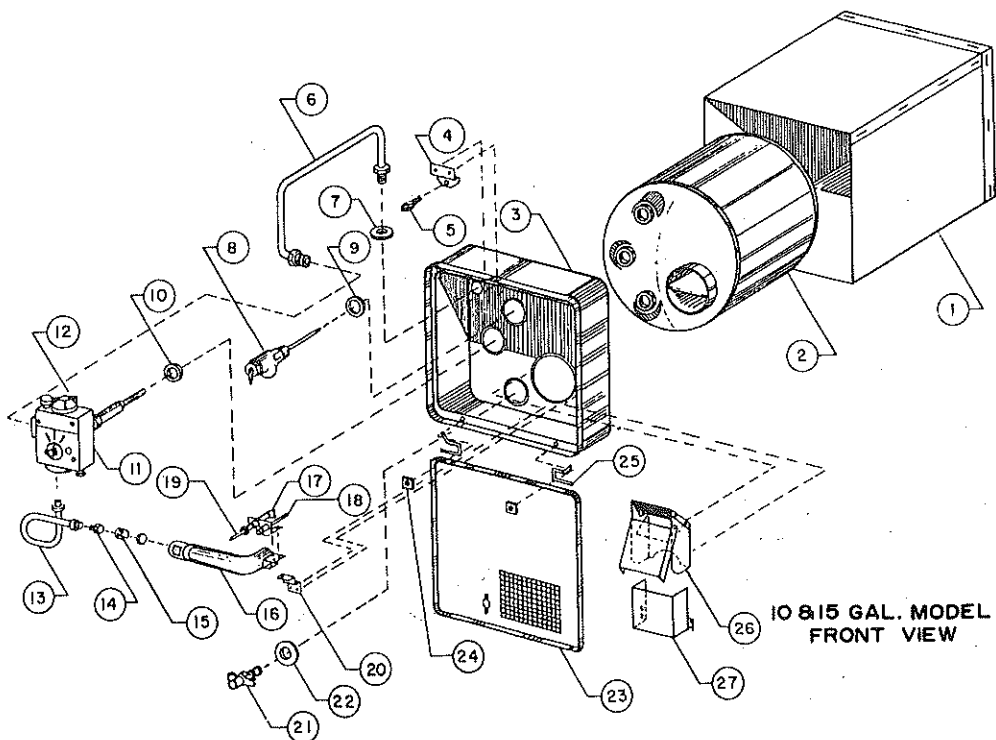
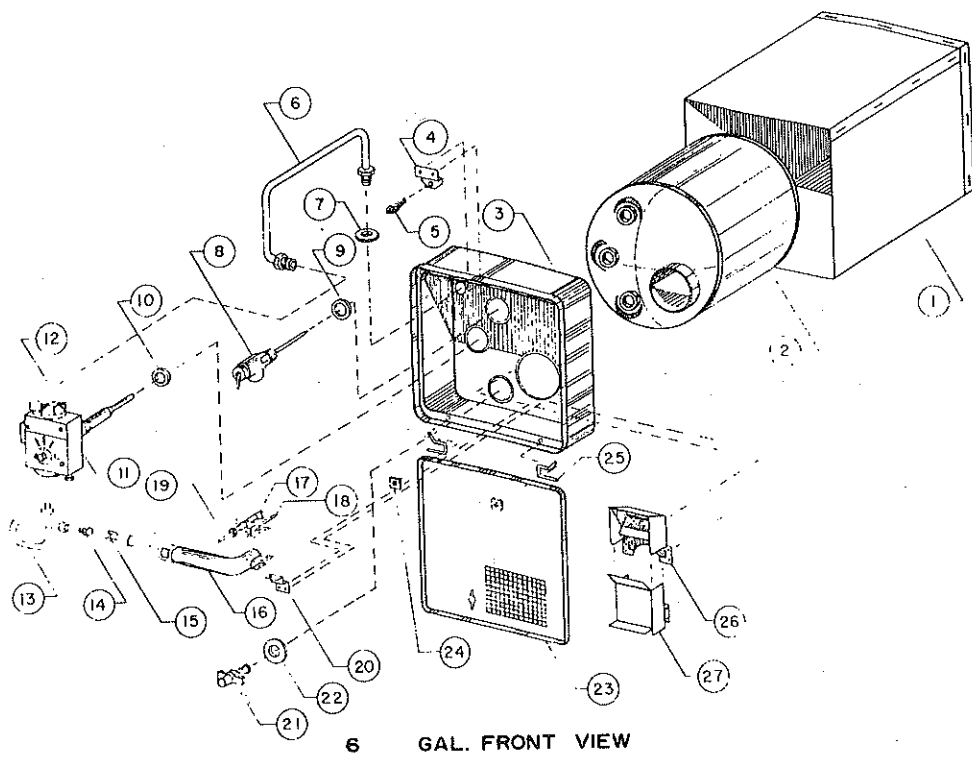
Secondary problems with electric water heaters are rare; however they can often be corrected by minor thermostat adjustments. Thermostats are set at 140 degrees at the factory. If the water heater becomes too hot and kicks off the reset control, reset by pressing the red reset button.

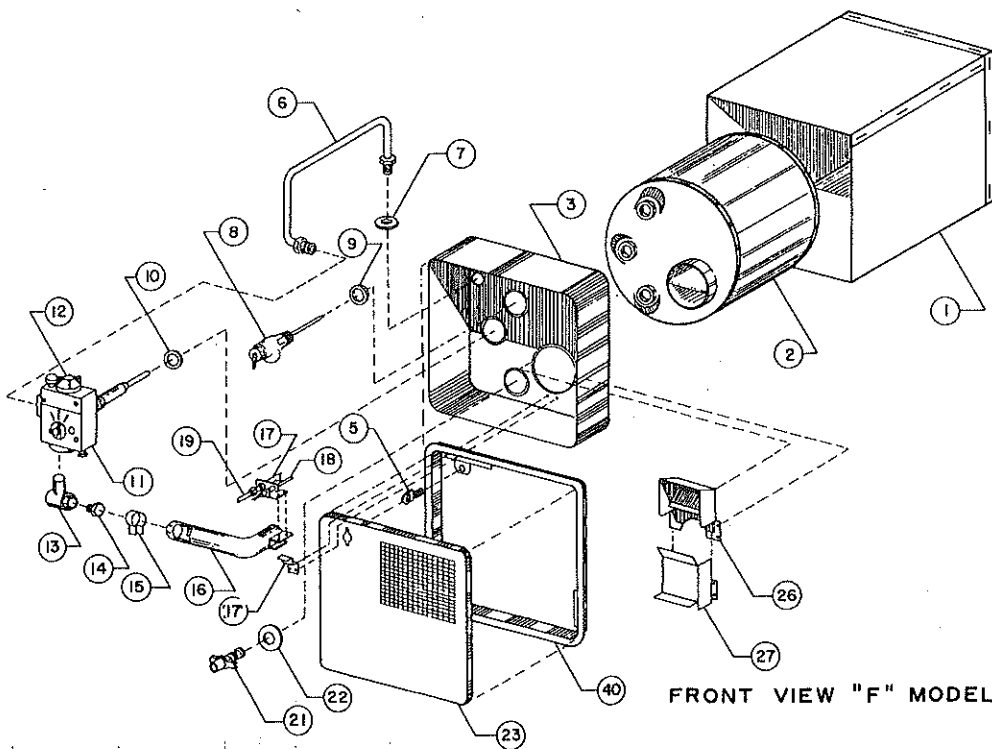
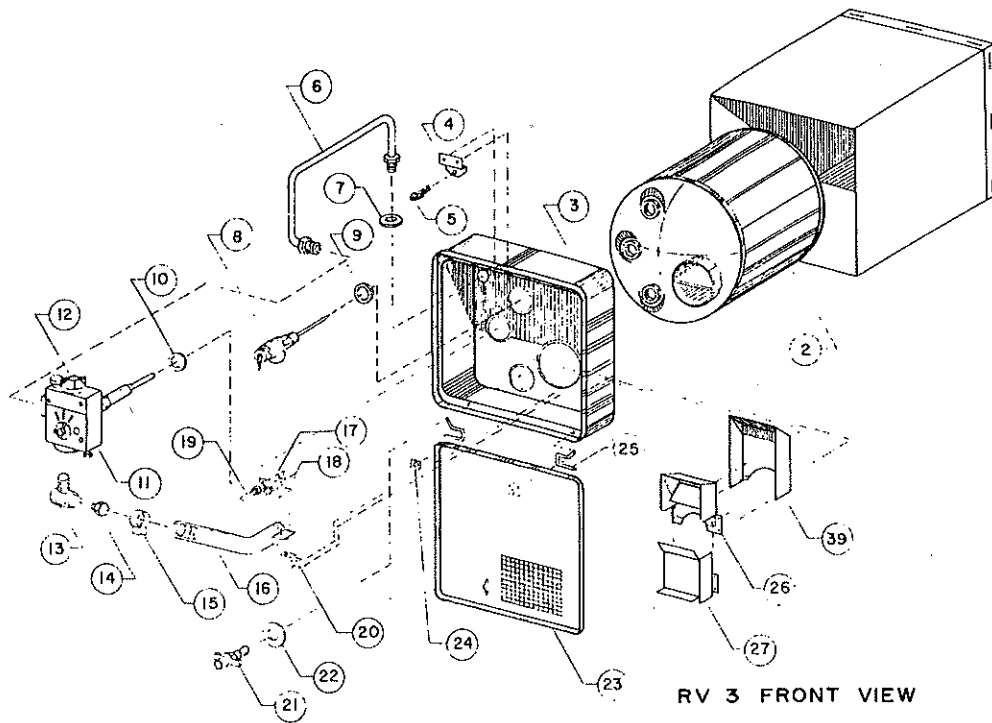
In cases where the water is too hot and the high limit control is not shutting off the heater, it is possible that the thermostat is loose from the holding bracket and it is not being held tightly against the tank. This condition can be detected and corrected by applying slight hand pressure to the thermostat.

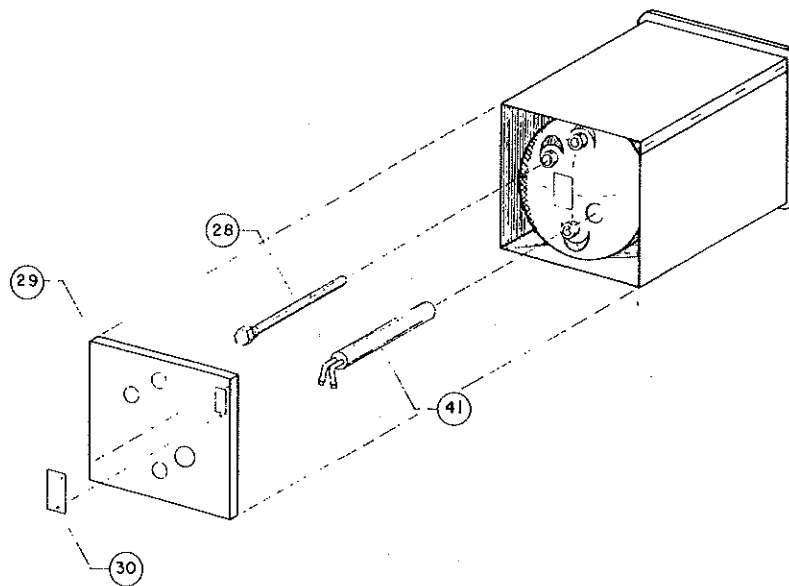
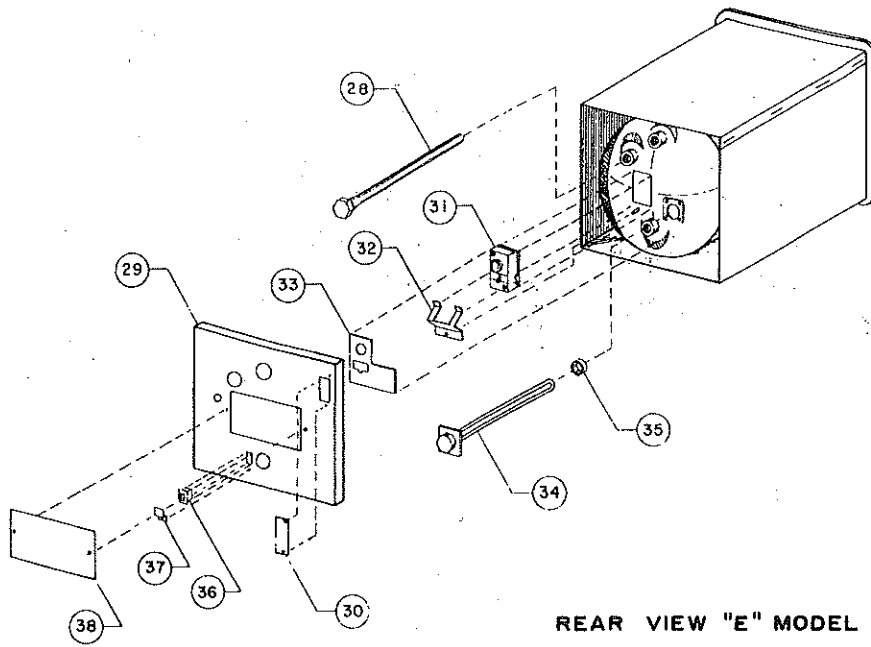
If the foregoing procedures are followed carefully it should rarely be necessary to seek outside service or parts. If service or parts are required, contact American Appliance Mfg. Corp. or any of the factory representatives listed in the manual, or return the defective parts to the factory for replacements.

TEMPERATURE AND PRESSURE RELIEF VALVE

The temperature and pressure relief valve is designed to open if the temperature of the water within the heater reaches 210 degrees 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. Do not plug, cap or reduce the outlet of the pressure and temperature relief valve.



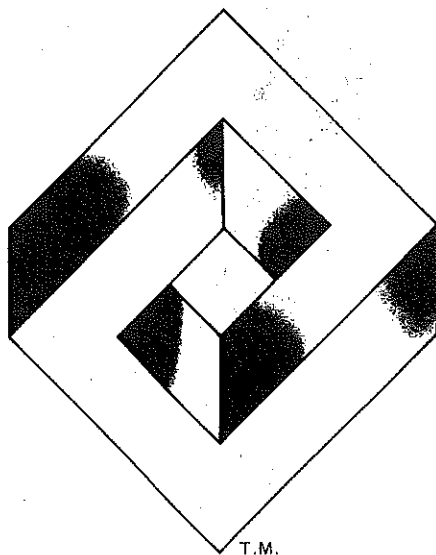




Part No.	DRWG. No.	Description	Models
	1	Jacket (Not a replacement part)	
	2	Tank (Not a replacement part)	
	3	Control Housing (Not a repl. part)	
2600033	4	Door latch bracket	All models except F6-X
2600031	5	Door latch assembly	All models
3700058	6	Gas supply manifold (inlet)	F6-X, RV6-X, SSRV6-X, SSRV6M-X, USSRV6-X, USSRV6M-X
3700065	"	"	SSRV10 & SSRV10M
3700066	"	"	ESSRV6
3700067	"	"	ESSRV10
3700073	"	"	RV3
3700078	"	"	ESSRV15
4400031	7	Front gas supply manifold grommet	All models
4300024	8	PTR valve	All models except RV3
4300052	"	"	RV3
4400013	9	PTR Flange	All models except RV3
4400029	"	"	RV3
4400013	10	Thermostat Flange	All models
3200289	11	Thermostat	All models
4900001	12	Thermostat on-off knob	All models
3700041	13	Burner Manifold (outlet)	SSRV10 & 10M ESSRV10 & 15
3700057	"	"	ESSRV6 & 8, SSRV6-X, SSRV6M-X, USSRV6-X, USSRV6M-X
3700060	"	"	RV3, F6-X, RV6-X
3600042	14	Burner orifice	All models except RV3, RV6-X, & F6-X
3600039	"	"	RV3, RV6-X, & F6-X
3100069	15	Burner air shutter	RV3, RV6-X & F6-X
3100039	"	"	All models except RV3, RV6-X, & F6-X
3000003	16	Burner Assembly	All models except RV3, RV6-X, & F6-X
3000011	"	"	RV3, RV6-X & F6-X
3200070	17	Pilot Assembly	All models
3200202	18	Thermocouple	All models
3700001	19	Pilot Tube	All Models
3100040	20	Burner Support Bracket	All models
4300034	21	Drain Valve	All models
4400022	22	Drain Valve Flange	All models except RV3
4400029	"	"	RV3
2000458	23	Door Assembly	All models except ESSRV10 & 15, F6-X
2000064	"	"	SSRV10 & 10M
2000153	"	"	ESSRV10 & 15
2000151	"	"	F6-X only
2600030	24	Door Hinge Fastener	All models except F6-X
2600107	25	Door Hinge Pin	All models except F6-X
2000084	26	Flue Collector Back Assembly	All models except SSRV10 & 10M, ESSRV 10 & 15
2000093	"	"	SSRV10 & 10M, ESSRV10 & 15
2700074	27	Flue Collector Front	All models except SSRV10 & 10M, ESSRV10 & 15
2700112	"	"	SSRV10 & 10M, ESSRV10 & 15
4700336	28	Anode Rod	All models except ESSRV15
4700347	"	"	ESSRV15
2000088	29	Rear Cover Assy.	ESSRV6 & 8
2100035	"	"	SSRV10M
2100043	"	"	SSRV10
2000089	"	"	ESSRV10 & 15
2300248	"	"	F6-X, RV6-X, SSRV6-X, USSRV6-X, & USSRV6M-X
4400015	30	Rear gas supply manifold grommet	All models except RV3, F6-X, SSRV6M-X, RV6-X, USSRV6M-X
3200113	31	Thermostat, Electric	ESSRV6, 10 & 15
3900033	32	Thermostat, Bracket	ESSRV6, 10 & 15
4800025	33	Thermostat Cover	ESSRV6, 10 & 15
3400003	34	Element	ESSRV6, 10 & 15
4400014	35	Element Gasket	ESSRV6, 10 & 15
4200001	36	Toggle Switch	ESSRV6, 10 & 15
2800009	37	Toggle Switch Stop Bracket	ESSRV6, 10 & 15
2600122	38	Electrical Access Door	ESSRV6, 10 & 15
2000475	39	Outer Flue Collector Back Assy.	RV3
2000150	40	Control Housing Frame Assembly	F6-X
3000041	41	Heat Exchanger Assembly	SSRV6M-X, SSRV10M, USSRV6M-X

NOTE:

All screws in assembly are standard hardware items. When ordering parts, be certain to specify the exact model number of your heater, complete serial number, part number, and the name of the part from this list. All parts not covered by warranty will be shipped C.O.D. (Note: Warranty covers prices available from factory or your dealer).



T.M.

MOR-FLO[®]/AMERICAN
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