



Residential Electric Water Heater Installation Instructions and Use & Care Guide

To obtain technical, warranty or service assistance during or after the installation of this water heater, call toll free 1-877-817-6750

When calling for assistance, please have the following information ready:

1. Model number
2. 7 Digit product number
3. Serial number
4. Date of installation
5. Place of Purchase

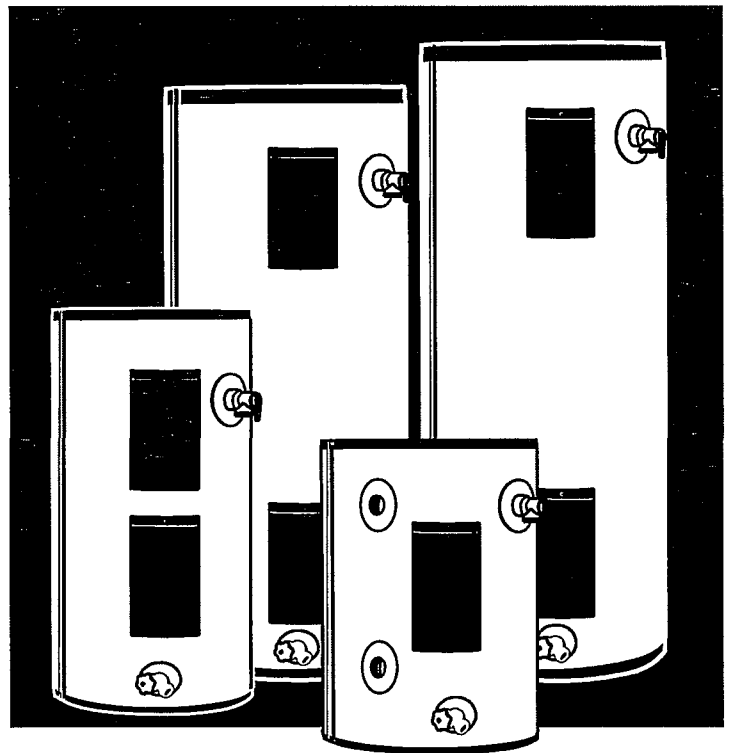


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WATER HEATER SAFETY

Your safety and the safety of others are very important.

We have provided many important safety messages in this manual and on your appliance. Always read and obey all safety messages.



This is the safety alert symbol.

This symbol alerts you to potential hazards that can kill or hurt you and others.

All safety messages will follow the safety alert symbol and either the word "DANGER" or "WARNING." These words mean:

⚠ DANGER

You can be killed or seriously injured if you don't immediately follow instructions.

⚠ WARNING

You can be killed or seriously injured if you don't follow instructions.

All safety messages will tell you what the potential hazard is, tell you how to reduce the chance of injury, and tell you what can happen if the instructions are not followed.

Important Safety Instructions

CAUTION: Hydrogen gas is produced in a hot water system served by this heater that has not been used for a long period of time (2 weeks or more). Hydrogen gas is extremely flammable. To reduce the risk of injury under these conditions, it is recommended that the hot water faucet be opened for several minutes at the kitchen sink before using any electrical appliance connected to the hot water system. When hydrogen is present, there will probably be an unusual sound such as air escaping through the pipe as the water begins to flow. There should be no smoking or open flame near the faucet at the time it is open.

The California Safe Drinking Water and Toxic Enforcement Act requires the Governor of California to publish a list of substances known to the State of California to cause cancer, birth defects, or other reproductive harm, and requires businesses to warn of potential exposure to such substances.

WARNING: This product contains a chemical known to the State of California to cause cancer, birth defects, or other reproductive harm.

This appliance can cause low-level exposure to some of the substances included in the Act.

OPERATING YOUR WATER HEATER

Before Using

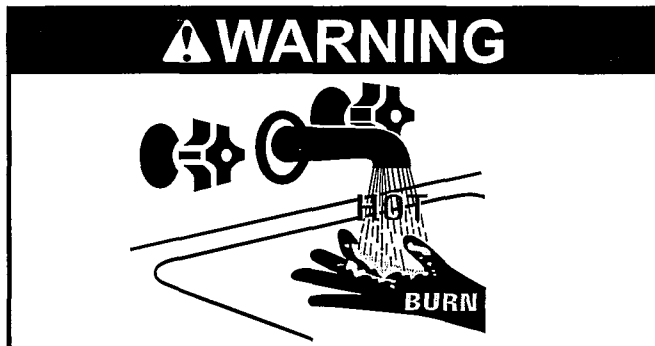
1. Make sure the water heater has been properly installed. See "Installing Your Water Heater" section.
2. Completely fill the tank with water. (See Figure 2)
3. After the water heater tank is completely filled with water, connect electrical power to the water heater.
4. Read the "Water Temperature Regulation" section of this manual. If the instructions are not clear, contact a qualified person.
5. Adjust the thermostat to the desired temperature setting as described under "Adjusting the Thermostat/High Limit Control" section.

IMPORTANT: Do not attempt to operate this water heater if the thermostat(s), or surrounding insulation has been exposed to water in any way. Immediately call a qualified person to inspect the water heater and replace any thermostat or insulation that has been exposed to water. Do not attempt to repair these parts. Water heaters subjected to flood conditions or any time the thermostat(s) have been submerged in water require replacement of the entire water heater.

Safety Shut-off

This water heater is designed to automatically shut-off in the event that the water temperature exceeds 170°F or 77°C. A high limit control switch is used to shut off the power to the elements if the water temperature exceeds 170°F or 77°C. The high limit control switch can be reset by firmly pushing in the red reset button located on the thermostat. Follow the instructions under "Adjusting the Thermostat/High Limit Control", section to properly reset the high limit control. If the high limit control switch continues to shut-off the water heater contact a qualified person for service.

Water Temperature Regulation



Water temperature over 125°F can cause severe burns instantly or death from scalds.

Children, disabled and elderly are at highest risk of being scalded.

Feel water before bathing or showering.

Temperature limiting valves are available.

The thermostat is adjusted to a temperature setting of 120°F or lower when it is shipped from the factory. Water temperature can be regulated by adjusting the thermostat to the preferred setting as shown in "Adjusting the Thermostat/High Limit Control." The preferred starting point is 120°F. There is a hot water scald potential if the thermostat is set too high.

IMPORTANT: Adjusting the thermostat past 120°F on the thermostat will increase the risk of scald injury in the times shown below.

Water Temperature °F	Time for 1st Degree Burn (Less Severe Burns)	Time for Permanent Burns 2nd & 3rd Degree (Most Severe Burns)
110	(normal shower temp.)	
116	(pain threshold)	
116	35 minutes	45 minutes
122	1 minute	5 minutes
131	5 seconds	25 seconds
140	2 seconds	5 seconds
149	1 second	2 seconds
154	instantaneous	1 seconds

(U.S. Government Memorandum, C.P.S.C., Peter L. Armstrong, Sept. 15, 1978)

NOTE: During low demand periods when hot water is not being used, a lower thermostat setting will reduce energy losses and may satisfy your normal hot water needs. If hot water use is expected to be more than normal, a higher thermostat setting may be required to meet the increased demand.

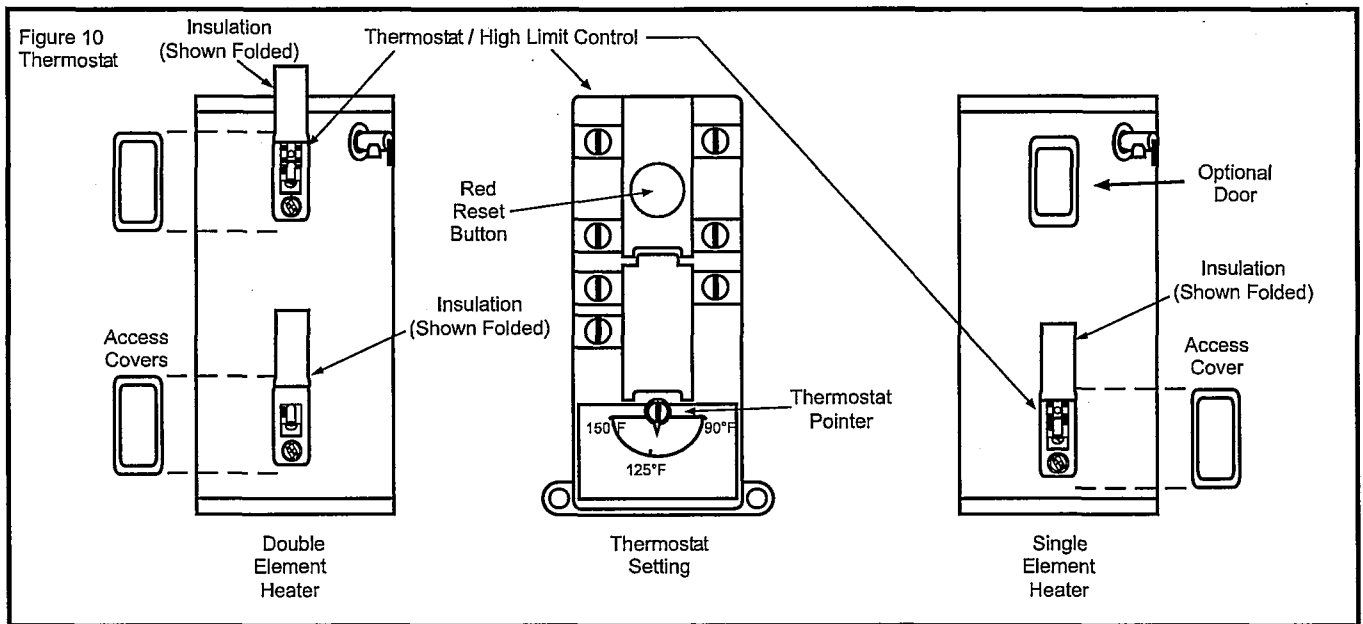
When leaving your home for extended periods (vacations, etc.) turn the thermostat to its lowest setting. This will maintain the water at low temperatures with minimum energy losses and prevent the tank from freezing during cold weather.

Adjusting the Thermostat/High Limit Control

This water heater is equipped with one or more adjustable temperature regulating thermostats and a manual reset high limit control. The following procedures must be performed when changing the temperature of the stored water or resetting the high limit control. Upper and lower thermostats must be adjusted to the same temperature.

IMPORTANT: Before attempting to adjust the thermostat, make sure you read the section of "Water Temperature Regulation" section. If the instructions are not clear, contact a qualified person.

1. Disconnect the electric power.
2. Remove the access cover(s) and fold up the insulation from the thermostat(s). Do not remove the plastic cover.
3. Using a screwdriver to adjust the thermostat pointer, set the thermostat(s) to the desired water temperature. Be sure the RED reset button (High Limit Control) is pushed in. If needed, push in firmly to reset.
4. Fold the insulation down, making sure the thermostat(s) are well covered. Replace the access cover(s).
5. Reconnect power.



Operational Conditions

Anode Rod/Water Odor

Each water heater contains at least one anode rod, which will slowly deplete while protecting the glass-lined tank from corrosion and prolonging the life of the water heater. Once the anode is depleted, the tank will start to corrode, eventually developing a leak. Certain water conditions will cause a reaction between this rod and the water. The most common complaint associated with the anode rod is a "rotten egg smell" produced from the presence of hydrogen sulfide gas dissolved in the water.

IMPORTANT: Do not remove this rod permanently as it will void any warranties. The parts list includes a special anode that can be ordered if water odor or discoloration occurs.

NOTE: This rod may reduce but not eliminate water odor problems. The water supply system may require special filtration equipment from a water conditioning company to successfully eliminate all water odor problems.

Artificially softened water is exceedingly corrosive because the process substitutes sodium ions for magnesium and calcium ions. The use of a water softener may decrease the life of the water heater tank.

The anode rod should be removed from the water heater tank every 3 years for inspection. The following are typical (but not all) signs of a depleted anode rod:

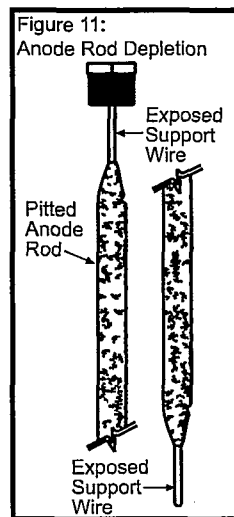
- The majority of the rods diameter is less than 3/8".
- Significant sections of the support wire (approx. 1/3 or more of the anode rod's length) are visible.

If the anode rod show signs of either or both it should be replaced.

NOTE: Whether reinstalling or replacing the anode rod, check for any leaks and immediately correct if found.

In replacing the anode:

1. Turn off power to the water heater.
2. Shut off the water supply and open a nearby hot water faucet to depressurize the water tank.
3. Drain approximately 5 gallons of water from tank (Refer to the "Draining and Flushing" section for proper procedures). Close drain valve.
4. Remove old anode rod.
5. Use Teflon® tape or approved pipe sealant on threads and install new anode rod.
6. Turn on water supply and open nearby hot water faucet to purge air from water system. Check for any leaks and immediately correct any if found.
7. Restart the water heater as directed under the "Operating Your Water Heater" section. See the "Repair Parts Illustration" section for anode rod location.



Water Heater Sounds

During the normal operation of the water heater, sounds or noises may be heard. These noises are common and may result from the following:

1. Normal expansion and contraction of metal parts during periods of heat-up and cool-down.
2. Sediment buildup in the tank bottom will create varying amounts of noise and may cause premature tank failure. Drain and flush the tank as directed under the "Draining and Flushing" section.

Stacking

Stacking occurs when a series of short draws of hot water (3 gallons or less) are taken from the water heater tank. This causes increased cycling of the heater elements and can result in increased water temperatures at the hot water outlet. An anti-scald device is recommended in the hot water supply line to reduce the risk of scald injury.

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MAINTENANCE OF YOUR WATER HEATER

Temperature and Pressure Relief Valve

⚠ WARNING



Explosion Hazard

If the temperature and pressure relief valve is dripping or leaking, have a qualified person replace it.

Examples of a qualified person include: licensed plumbers, authorized gas company personnel, and authorized service personnel.

Do not plug valve.

Do not remove valve.

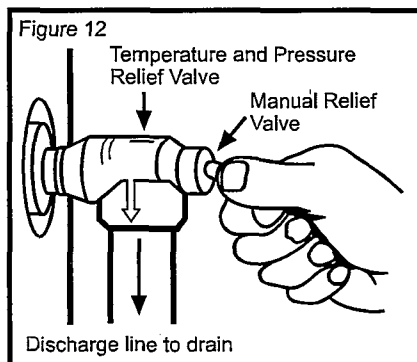
Failure to follow these instructions can result in death or explosion.

Manually operate the temperature and pressure relief valve at least once a year to make sure it is working properly.

To prevent water damage, the valve must be properly connected to a discharge line which terminates at an adequate drain.

Standing clear of the outlet (discharged water may be hot), slowly lift and release the lever handle on the

temperature and pressure relief valve to allow the valve to operate freely and return to its closed position. If the valve fails to completely reset and continues to release water, immediately disconnect the electrical power, close the cold water inlet valve and call a qualified person.



Draining and Flushing

The water heater should be drained if being shut down during freezing temperatures. It is recommended that the tank be drained, and flushed every 6 months to remove sediment which may buildup during operation. To drain the tank perform the following steps:

1. Disconnect the electrical power to the water heater.
2. Open a hot water faucet until water is no longer hot.
3. Close the cold water inlet valve and open a hot water faucet.
4. Connect a hose to the drain valve and terminate it to an adequate drain.
5. Open the water heater drain valve and the nearest hot water faucet. Allow all the water to drain from the tank. Flush the tank with water as needed to remove sediment.
6. Close the drain valve and completely refill the water heater tank.
7. Reconnect electrical power to the water heater.

If the water heater is going to be shut down for an extended period, the drain valve should be left open.

Heating Element Replacement

⚠ WARNING

Electric Shock Hazard



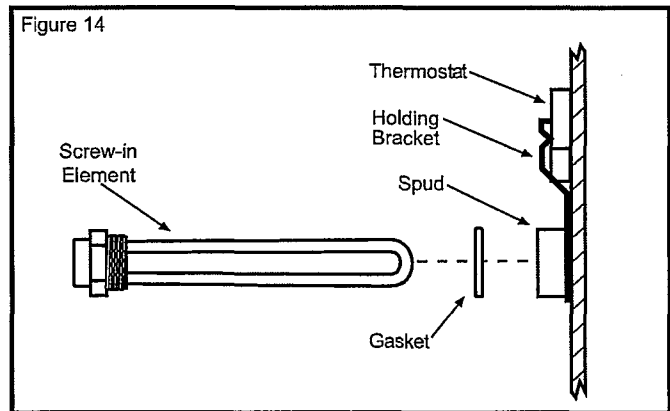
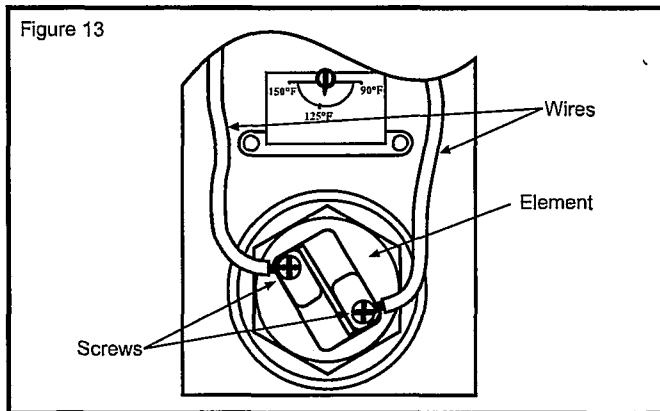
Disconnect power before servicing.

Replace all parts and panels before operating.

Failure to do so can result in death or electrical shock.

Replacement heating elements must be of the same style and voltage/wattage rating as the ones presently in the water heater. This information can be found on the flange or terminal block of the element or on the water heater data plate.

1. Disconnect the electrical power to the water heater.
2. Drain the water heater as directed in the "Draining and Flushing" section.
3. Remove the access cover(s). Fold up the insulation from the heater element(s). Remove the plastic thermostat cover from the thermostat(s) making sure to disengage the attachment point from the thermostat.
4. Disconnect the electrical wires from the heating element(s) by loosening the screws (Figure 13). Remove the screw-in element(s) by turning the element(s) counterclockwise with a 1-1/2 inch socket wrench. Remove the existing gasket(s).

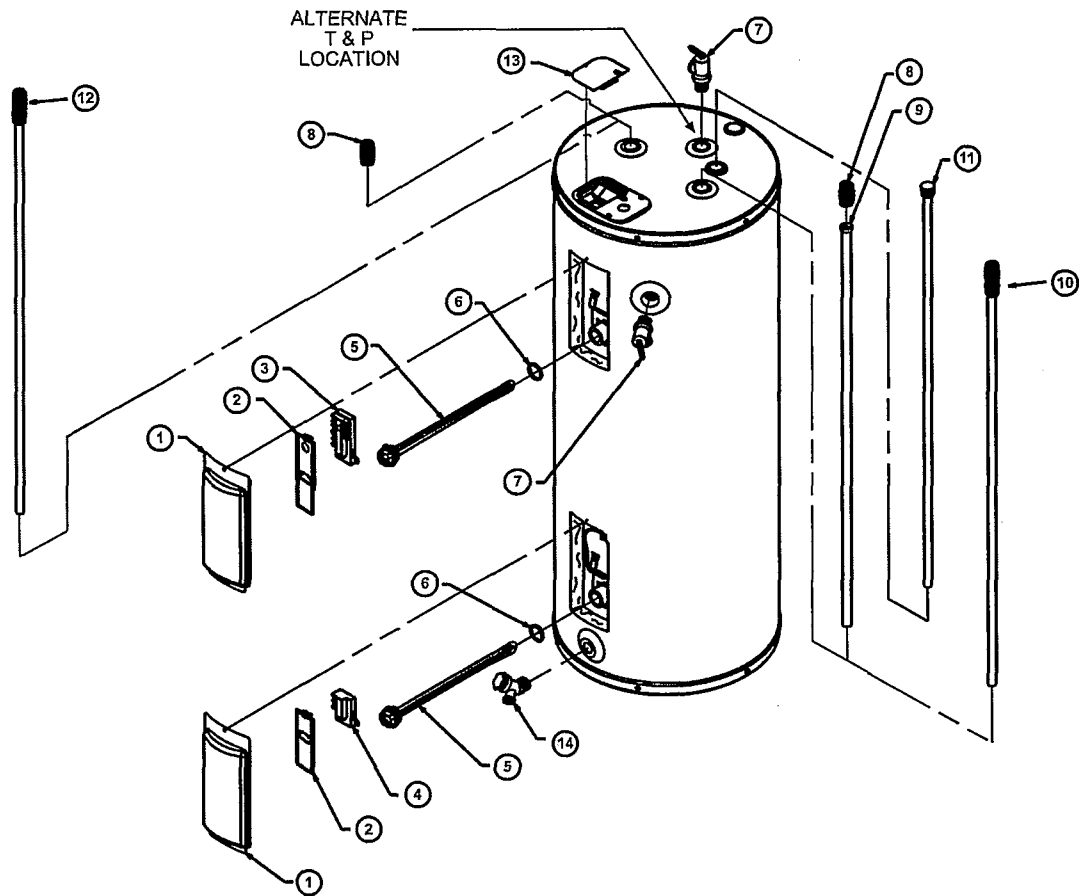


5. Clean the area where the gasket(s) fits to the tank. If you are replacing the bottom element, remove the accumulated sediment on the bottom of the tank.
6. Make sure the replacement element(s) has the correct voltage and wattage rating by matching it to the rating plate on the water heater. Position the new gasket(s) on the element and insert it into the water heater tank (Figure 14). Tighten the element by turning it clockwise until secure.
7. Close the drain valve. Open the nearest hot water faucet and allow the tank to fill completely with water.
8. Check for leaks around the element(s).
9. Reconnect the electrical wires to the element and securely tighten the screws. Replace the plastic thermostat cover making sure the attachment points are engaged on the thermostat.
10. Replace the access cover(s).
11. Make certain the tank is filled with water. Applying electric current to heater elements not submerged in water will destroy them.
12. Reconnect electrical power to the water heater.

TROUBLESHOOTING CHART

PROBLEM	POSSIBLE CAUSE(S)	CORRECTIVE ACTION
NO HOT WATER	<ol style="list-style-type: none"> 1. No power to heater 2. High Temperature Limit Switch open 3. Non-Functioning upper thermostat 	<ol style="list-style-type: none"> 1. Turn on electrical switch. Check for blown fuses or tripped breaker 2. Reset. Check for source of trouble and correct 3. Replace thermostat
INSUFFICIENT HOT WATER	<ol style="list-style-type: none"> 1. Non-Functioning thermostats 2. Non-Functioning lower element 3. Improper calibration 4. Thermostats set too low 5. Sediment or lime in tank 6. Heater too small for job 7. Wrong piping connections 8. Leaking faucets 9. Wasted hot water 10. Long runs of exposed pipe 11. Hot water piping on outside wall 	<ol style="list-style-type: none"> 1. Replace thermostats 2. Replace element 3. Replace thermostats 4. Set thermostats to desired temperature 5. Drain. Determine if water treatment is needed 6. Install adequate water heater 7. Correct piping 8. Repair faucets 9. Advise customer 10. Insulate piping 11. Insulate piping
HIGH OPERATION COSTS	<ol style="list-style-type: none"> 1. Improper Calibration 2. Thermostats set too high 3. Sediment or lime in tank 4. Heater too small for job 5. Wrong piping connections 6. Leaking faucets 7. Wasted hot water 8. Long runs of exposed piping 9. Hot water piping in exposed wall 	<ol style="list-style-type: none"> 1. Replace thermostats 2. Set thermostat to desired setting 3. Drain. Flush-Provide water treatment if needed 4. Install adequate heater 5. Correct piping 6. Repair faucets 7. Advise customer 8. Insulate piping 9. Insulate piping
SLOW HOT WATER RECOVERY	<ol style="list-style-type: none"> 1. Non-Functioning upper element 2. Non-Functioning lower element 	<ol style="list-style-type: none"> 1. Replace element 2. Replace element
DRIP FROM RELIEF VALVE	<ol style="list-style-type: none"> 1. Excessive water pressure 2. Closed system 	<ol style="list-style-type: none"> 1. Use Pressure Reducing Valve and Pressure Relief Valve 2. See "Closed System/Thermal Expansion" section
THERMOSTAT DOES NOT SHUT OFF	<ol style="list-style-type: none"> 1. Non-Functioning thermostats 2. Improper calibration 	<ol style="list-style-type: none"> 1. Replace thermostats 2. Replace thermostats
WATER ODOR	<ol style="list-style-type: none"> 1. Sulfides in the water 	<ol style="list-style-type: none"> 1. See "Anode Rod/Water Odor" section

REPAIR PART ILLUSTRATION



REPAIR PARTS

Repair parts may be ordered through your plumber, local distributor, home improvement center, or by calling 1-877-817-6750. When ordering repair parts always give the following information:

1. Model, serial and product number
2. Item number
3. Parts description

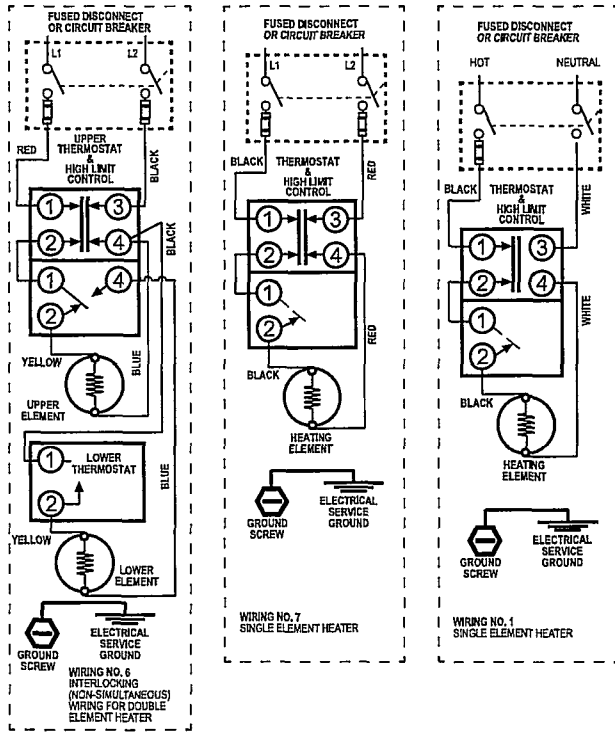
REPAIR PARTS LIST

ITEM NO.	PARTS DESCRIPTION
1	ACCESS DOORS
2	THERMOSTAT COVERS (UPPER & LOWER)
3	UPPER THERMOSTAT ▲
4	LOWER THERMOSTAT ▲
5	ELEMENT
6	ELEMENT GASKET
7	TEMPERATURE AND PRESSURE RELIEF VALVES ■
8	HEAT TRAPS
9	DIP TUBE
10	HEAT TRAP/DIP TUBE COMBINATION
11	ANODE ROD ◆
12	HEAT TRAP/ANODE ROD COMBINATION ◆
13	JUNCTION BOX COVER
14	DRAIN VALVE

LEGEND

- ◆ Special anode rod (See "Anode Rod/Water Odor" section)
- Temperature and Pressure Relief Valve is required, but may not be factory installed.
- ▲ Specify thermostat type when ordering

THERMOSTAT WIRING DIAGRAM



BRANCH CIRCUIT SIZING GUIDE						
Based on N.E.C. NFPA NO. 70 - 1999						
WATT LOAD	Recommend Over Current Protection Rating			Copper Wire Size AWG Based on N.E.C. Table 310-16 (60°C)		
	120 V	208 V	240 V	120 V	208 V	240 V
1500*	15	15	15	12	14	14
2000	20	15	15	10	14	14
2500	30	15	15	10	14	14
3000	30	20	15	8	12	12
3500	-	20	20	-	10	12
4000	-	25	20	-	10	10
4500	-	30	25	-	10	10
5000	-	30	30	-	10	10
5500	-	35	30	-	8	10
6000	-	35	30	-	8	8
9000	-	50	45	-	6	6
12000	-	70	60	-	3	4

* Wattages less than 1500 may be wired 14 gauge with 15 amp protection