

OPERATING, INSTALLATION AND SERVICE MANUAL

65000

COMMERCIAL ELECTRIC WATER HEATER

IMPORTANT SAFETY INSTRUCTIONS

- Read all instructions before using this water heater. Install or locate this water heater only in accordance with the installation instructions. Use this water heater only for its intended use as described in this manual.
- Check the data plate on the water heater before installation to make certain the voltage shown is the same as the electric supply to the water heater.
- This water heater must be connected only to a properly grounded electrical supply. Do not fail to properly ground this water heater (see "Electrical Connections", Page 6).
- Turn off the electrical supply before servicing this water heater.
- Hotter water increases the risk of scald injury. Hot water can produce 3rd degree burns in 6 seconds at 140°F and in 30 seconds at 130°F.
- As with any appliance, close supervision is necessary when used by children.
- This water heater should be serviced only by qualified service personnel.
- Do not use this water heater if it has damaged wiring, is not working properly, or had been damaged or dropped.

▲ WARNING ▲

This information in these instructions must be followed exactly. Improper installation, adjustment, service or maintenance can cause property damage, personal injury or death.

INSTALLER:

- Affix these instructions to or adjacent to the water heater.
- Before leaving the premises, review this operation and service manual to be sure the heater has been installed correctly. Start and operate the unit for one complete cycle and make sure the water temperature is acceptable to the consumer at the fixtures.

OWNER:

- Retain these instructions and warranty for future reference. Retain the original receipt as proof of purchase.

▲ WARNING ▲

This appliance shall not be installed in any location where flammable liquids are stored or vapors are likely to be present. Flammable vapors may be drawn to this water heater from other areas of the structure by air currents.

**INSTALLATION AND SERVICE MUST BE PERFORMED BY
A QUALIFIED INSTALLER OR SERVICE AGENCY.**

All technical and warranty questions should be directed to the local dealer from whom the water heater was purchased. If you are unsuccessful, please write to the company listed on the warranty or data plate which came with your water heater.

CALL THIS TOLL FREE NUMBER 1-800-900-9063 WITH ANY QUESTIONS DURING OR AFTER INSTALLATION.

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WARNING: IMPROPER INSTALLATION, ADJUSTMENT, ALTERATION, SERVICE OR MAINTENANCE CAN CAUSE INJURY, DEATH, OR PROPERTY DAMAGE. READ AND REFER TO THIS MANUAL.

OWNER: *READ AND RETAIN THESE INSTRUCTIONS AND WARRANTY FOR FUTURE REFERENCE.*

INSTALLER: Please complete the following information at the time of installation, retain, and present along with the warranty in the event a claim is necessary.

MODEL NUMBER: _____ TYPE: _____
 SERIAL NUMBER: _____

THIS WATER HEATER HAS BEEN INSTALLED IN ACCORDANCE WITH THESE INSTALLATION INSTRUCTIONS AND LOCAL CODE REQUIREMENTS ON _____
Date

INSTALLER: _____

⚠ DANGER

There is a Water Heater SCALD Potential if the thermostat is set too high.

NOTE: When this water heater is supplying general purpose hot water requirements for use by individuals, a thermostatically controlled mixing valve for reducing point-of-use water temperature is recommended to reduce the risk of scald injury. Contact a licensed plumber or the local plumbing authority for further information.

⚠ DANGER



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, contact a licensed plumber.

THE WARRANTY ON THIS WATER HEATER IS IN EFFECT ONLY WHEN THE HEATER IS INSTALLED, ADJUSTED, AND OPERATED IN ACCORDANCE WITH THESE INSTRUCTIONS. THE MANUFACTURER OF THIS HEATER WILL NOT BE LIABLE FOR ANY DAMAGE RESULTING FROM FAILURE TO COMPLY WITH THESE INSTRUCTIONS. READ THESE INSTRUCTIONS THOROUGHLY BEFORE PROCEEDING.

SAFETY INFORMATION

Water piping, fittings, and valves must be properly installed for the correct and safe operation of this water heater. Please note the following:

DO NOT install this water heater with iron piping. The system should be installed only with new piping that is suitable for potable (drink-able) water such as copper, CPVC, or polybutylene. **DO NOT** use PVC water piping.

DO NOT use any pumps, valves, or fittings that are not compatible with potable water.

DO NOT use valves that may cause excessive restriction to water flow. Use full flow ball or gate valves only.

DO NOT use 50/50 tin-lead solder (or any lead based solder) in potable water lines. Use 95/5 tin/antimony or other equivalent material.

DO NOT tamper with thermostat, heater elements, electrical connections, or temperature and pressure relief valve. Tampering with any of the components is **DANGEROUS** and can result in property damage, severe injury or death. Tampering voids all warranties. Only qualified technicians should service these components.

DO NOT use with piping that has been treated with chromates, boiler seal, or other chemicals.

DO NOT add any chemicals to the system piping which will contaminate the potable water supply.

DO NOT install check valves in the cold water supply line to the water heater.

COMMERCIAL ELECTRIC WATER HEATER INSTRUCTIONS

GENERAL INFORMATION

▲ WARNING ▲

The manufacturer's warranty does not cover any damage or defect caused by installation, or attachment or use of any special attachment such as energy saving devices (other than those authorized by the manufacturer) into, onto, or in conjunction with the water heater. The use of such unauthorized devices may shorten the life of the water heater and may endanger life and property. The manufacturer disclaims any responsibility for such loss or injury resulting from the use of such unauthorized devices.

INSPECT SHIPMENT - for possible damage. The manufacturer's responsibility ceases upon delivery of goods to the carrier in good condition. Any claims for damage, shortage in shipments, or nondelivery must be filed immediately against carrier by consignee.

▲ CAUTION

BEFORE INSTALLATION, CHECK RATING PLATE ON HEATER TO MAKE SURE VOLTAGE AND PHASE SHOWN IS THE SAME AS THE ELECTRIC SUPPLY TO WHICH THE HEATER IS GOING TO BE CONNECTED.

▲ CAUTION

DO NOT TURN ON ELECTRICAL CURRENT TO WATER HEATER ELEMENTS UNTIL TANK HAS BEEN COMPLETELY FILLED WITH WATER. OPEN SEVERAL HOT WATER FAUCETS TO ALLOW AIR TO ESCAPE FROM THE SYSTEM WHILE TANK IS FILLING. THE HEATING ELEMENTS WILL BE DAMAGED IF NOT COMPLETELY IMMERSSED IN WATER, IF ENERGIZED FOR EVEN A SHORT TIME.

▲ WARNING ▲

HAZARD OF ELECTRICAL SHOCK! Before removing any access panels or servicing the water heater, make sure the electrical supply to the water heater is turned "OFF". Failure to do this could result in DEATH, SERIOUS BODILY INJURY, OR PROPERTY DAMAGE.

▲ DANGER

▲ WARNING

DO NOT INSTALL OUTDOORS. This water heater is certified for indoor installation only. Failure to follow these instructions could result in FIRE, PROPERTY DAMAGE, PERSONAL INJURY OR DEATH.

▲ DANGER

Area where flammable liquids (gasoline, solvents, liquid propane, butane, etc.) or other substances which emit flammable vapors are stored may not be suitable for water heater installation. Natural air movements can carry flammable vapors some distance from where they are stored or used. The water heater thermostat contacts can arc and ignite these vapors causing property damage, serious burns or death. Never store or use flammable substances in the same room or area containing an electric water heater. Gasoline or other flammable substances must never be used in the same room or area containing a water heater or other spark-producing device.

IMPORTANT: LOCAL CODES AND REQUIREMENTS IN YOUR AREA MAY REQUIRE THE INSTALLATION OF YOUR WATER HEATER BE ACCOMPLISHED IN A WAY THAT THE BOTTOM THERMOSTAT IS ELEVATED FROM THE FLOOR AT LEAST 18 INCHES.

INSULATION BLANKET

Some governing bodies may require the use of external insulation blankets when water heaters are installed in newly constructed homes and additions. If an insulation blanket is applied to this water heater **CAUTION** must be exercised so as to not restrict its proper function and operation. Please note the following:

- Do not cover the temperature and pressure relief valve or any labels or instruction materials applied to the water heater. These labels must remain visible for reference by the user.
- Do not remove these labels as they are a permanent part of the water heater as required by the certification agencies and/or the Federal Government.
- Do not cover any access panels leading to element compartments.
- Do not cover or obstruct ventilation openings in electrical compartment or place insulation in contact with electrical compartment panel door.

1. LOCATION AND INSTALLATION

This commercial water heater should be installed in a clean, dry location, close to where a good electrical connection can be made and as close to the major usage of hot water as possible. The unit can be installed on a combustible floor with 0 inches minimum clearance to combustible walls. The heater should be located so that all electrical controls, heating elements, drain valve and water connections are accessible. Adequate clearance, a minimum of 18", must be provided for the access panel.

▲ CAUTION

THE HEATER MUST BE LOCATED IN AN AREA WHERE LEAKAGE OF THE TANK OR CONNECTIONS WILL NOT RESULT IN DAMAGE TO THE AREA ADJACENT TO THE HEATER OR TO LOWER FLOORS OF THE STRUCTURE. WHEN SUCH LOCATIONS CANNOT BE AVOIDED, A SUITABLE DRAIN PAN MUST BE INSTALLED UNDER THE HEATER. SUCH PANS MUST BE AT LEAST 2 INCHES DEEP, HAVE A MINIMUM LENGTH AND WIDTH AT LEAST 2 INCHES GREATER THAN THE DIAMETER OF THE HEATER AND SHOULD BE PIPED TO AN ADEQUATE DRAIN.

THIS COMMERCIAL ELECTRIC WATER HEATER IS NOT INTENDED FOR SPACE HEATING APPLICATIONS.

The heater should be installed in accordance with all national, state and local codes and ordinances. If additional information is desired, the latest edition of the National Electric Code NFPA 70 is recommended.

This is available from the following:

National Fire Protection Agency
1 Batterymarch Park
Quincy, MA 02269

American National Standards Institute
1430 Broadway
New York, NY 10018

Check your phone listings for the local authorities having jurisdiction over your installation.

NOTE: BEFORE PROCEEDING WITH THE INSTALLATION, CLOSE THE MAIN WATER SUPPLY VALVE, OPEN A WATER FAUCET TO RELIEVE THE WATER PRESSURE, AND THEN CLOSE THE FAUCET.

2. WATER LINES AND CONNECTIONS

The hook-up connections will be determined by the need for hot water. The cold water line connects to the inlet nipple at the base of the heater. The hot water line connects to the outlet nipple on top of the heater. Provide unions on the water connections and a shutoff valve in the cold water line so the heater may be disconnected for servicing when necessary. Two temperatures of hot water can be achieved by a mixing valve as shown in Figure 1A. If using a storage tank with single hook-up, see Figure 1B: The storage tank must have a minimum diameter of 18 inches. Installation of a horizontal storage tank must be 12 inches minimum height above the hot water outlet to insure full capacity and tank temperatures. Multiple installations, shown in Figure 1C, must be balanced exactly for proper operation. All water heaters must be the same in tank capacity, input, and recovery for proper parallel hook-up. The valves, piping, and pipe connections should be of the same type and manufacture. The pipe lengths from center line of inlet and outlet to the heater must be exactly equal. All hook-ups must comply with all local codes. Install a vacuum relief anti-siphon device in the cold water inlet line. Do not install a check valve or other devices that would prevent reverse flow of water unless required by local codes because a closed system will result and frequent operation of the relief valve will occur.

3. RELIEF VALVES

▲ WARNING ▲

FAILURE TO INSTALL A LISTED, ADEQUATELY SIZED TEMPERATURE & PRESSURE RELIEF VALVE WILL RELEASE THE MANUFACTURER FROM ANY CLAIM WHICH MIGHT RESULT FROM EXCESSIVE TEMPERATURES AND PRESSURES.

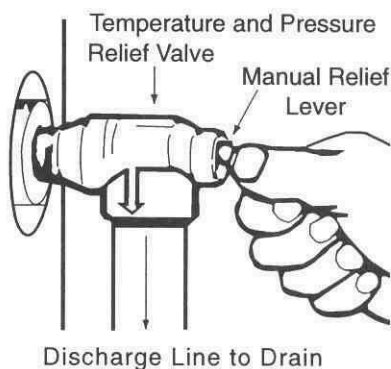
The pressure rating of the relief valve must not exceed the working pressure of the tank as marked on the rating plate of the water heater. If other components in the system have a lower working pressure, the relief pressure rating should be selected accordingly. The BTU rating of the valve must not be less than the input rating of the heater.

Only a new temperature and pressure relief valve should be used with this water heater. Do not use an old or existing valve as it may not be adequate for the working pressure of the new water heater.

THE TEMPERATURE & PRESSURE RELIEF VALVE:

- Must not be in contact with any electrical part.
- Must be connected to a proper discharge line which terminates at an adequate drain.
- Must not exceed the working pressure shown on the data plate of the water heater.

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 shut off the electrical power and the cold water inlet valve and call a qualified service technician.

▲ DANGER

DISCHARGING WATER MAY BE HOT AND CAN CAUSE SCALD INJURIES AND PROPERTY DAMAGE. DISCHARGE LINES MUST BE PROPERLY INSTALLED AND PIPED TO AN ADEQUATE DRAIN.

THE DISCHARGE LINE:

- Must not be smaller than the pipe size of the relief valve.
- Must not be capped, blocked, plugged or contain any valve between the relief valve and the end of the discharge line.
- Must terminate 6 inches above a floor drain or external to the building.
- Must be capable of withstanding 250°F (121°C) without distortion.
- Must be installed to allow complete drainage of both the temperature and pressure relief valve and discharge line.

4. RECIRCULATING LINES

In some installations a return circulation line may be installed. The recirculating line can be connected to the drain valve or hot inlet water connection using a tee.

5. TURNING ON WATER TO HEATER

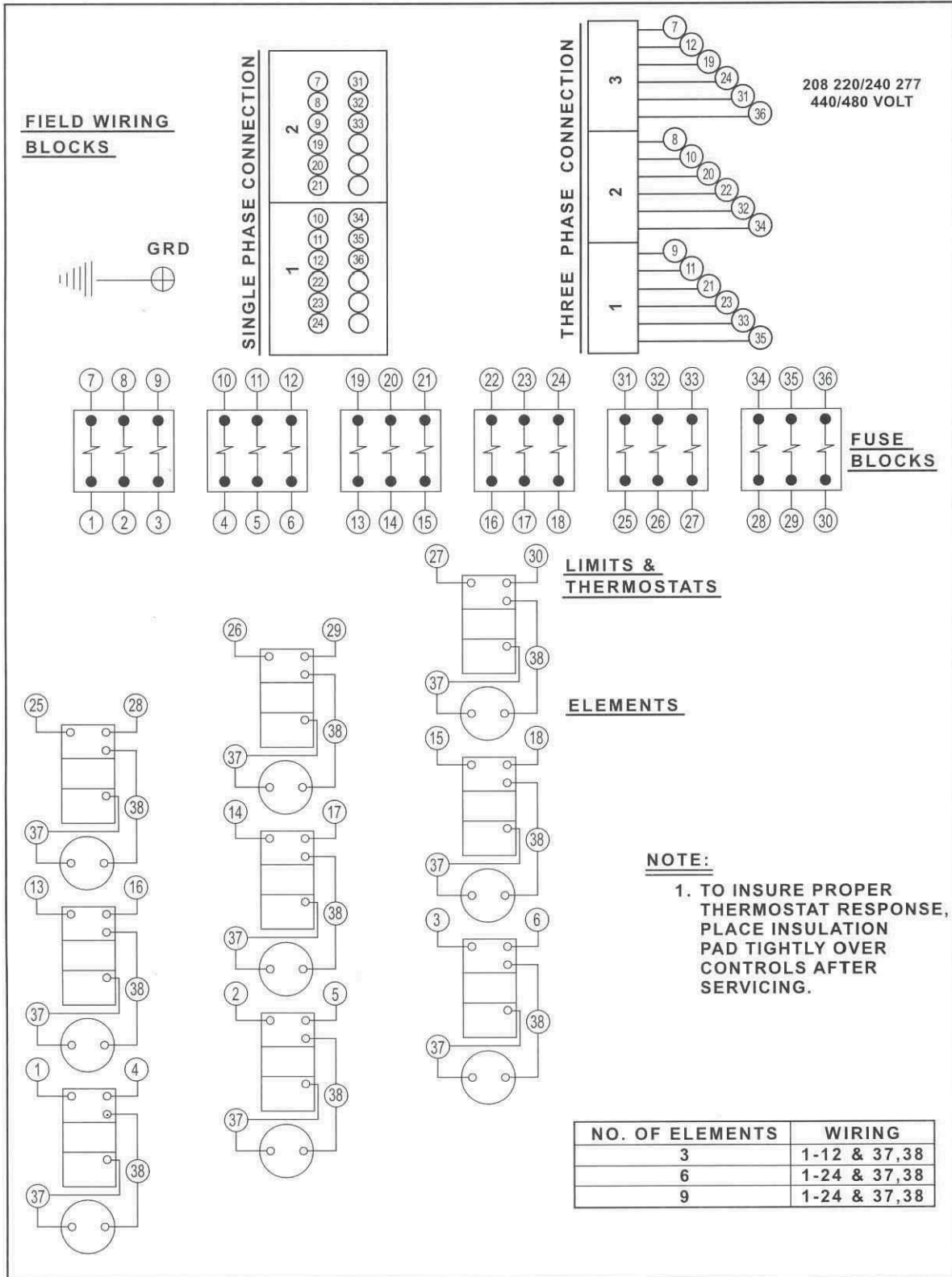
After piping and hook-ups are completed, open all hot water outlets. Open cold water inlet valve to fill tank. As each hot water outlet delivers water free from air, it can be shut off. Check the system for leaks.

6. ELECTRICAL CONNECTIONS

▲ DANGER

DO NOT USE THIS WATER HEATER WITH ANY ELECTRICAL SUPPLY VOLTAGE OTHER THAN THE ONE LISTED ON THE DATA PLATE. THIS WATER HEATER IS EQUIPPED FOR USE WITH ONE VOLTAGE RATING ONLY. CHECK THE DATA PLATE ON THE FRONT OF THE WATER HEATER FOR THE CORRECT VOLTAGE RATING. FAILURE TO USE THE CORRECT VOLTAGE CAN CAUSE PROBLEMS WHICH CAN RESULT IN DEATH, SERIOUS BODILY INJURY OR PROPERTY DAMAGE. IF YOU HAVE ANY QUESTIONS OR DOUBTS CONSULT YOUR ELECTRIC UTILITY COMPANY BEFORE INSTALLING THIS WATER HEATER.

ELECTRICAL DIAGRAM



When making the electrical connections, always make sure:

- The electrical supply has the proper overload fuse or breaker protection.
- Wire sizes and connections comply with all applicable codes.
- Wiring is enclosed in approved conduit (if required by local codes).
- The water heater and electrical supply are properly grounded.

If you lack the necessary skills required to properly install the electrical wiring to this water heater, **DO NOT PROCEED**, but have a qualified electrician perform the installation.

SHUT-OFF THE POWER TO THE UNIT BEFORE INSTALLING ELECTRICAL WIRING TO THE WATER HEATER

NOTE: Before closing the switch to allow electric current to flow to the heater, make certain that the heater is completely full of water and that the cold water inlet valve is open. If the heating elements are not completely immersed in water at all times, they will be damaged if energized for even a short time. When the switch is closed the operation of the water heater is automatic. This commercial electric water heater is designed for operation as specified on the rating plate. All electrical connections to elements, thermostats and contactors (certain models) have been made at the factory. **DO NOT ALTER** any of the internal wiring. Wiring connections may loosen in shipment. Check all connections for tightness.

- A. Provide a separate fused disconnect switch for each water heater.
- B. Open cover door of the control box.
- C. Bring the power leads from an adequately fused disconnect switch (not furnished with the heater due to varying state and local codes) and connect to the terminal block. Where long runs, local ordinances or utility company necessitates, an increase in size may be required.

D. This heater must be properly grounded. A ground lug is provided within the electrical control box for connection of a properly sized ground.

E. Close the cover door of the control box.

▲ CAUTION

The presence of water in the piping and water heater does not provide sufficient conduction for a ground. Non-metallic piping, dielectric unions, flexible connectors, etc., can cause the water heater to be electrically isolated.

The electrical diagram for this water heater is on the door inside the control box. Refer to this diagram when servicing.

7. THERMOSTATS AND CONTROLS

All commercial electric water heaters feature automatic controls to regulate heating elements. Surface mounted thermostats are used on this water heater. The thermostats are pre-set to provide a water temperature of 130°F to reduce the risk of scald injury. **CAUTION: SCALDING MAY OCCUR WITHIN (5) SECONDS AT A TEMPERATURE SETTING OF 135°F.**

Care must be taken when using hot water to avoid scalding injury. Certain appliances require high temperature hot water (such as dishwashers and automatic clothes washers). In order to prevent potential scald injury, install an antiscald tempering valve in the water system. (optional low temperature surface thermostats are available with temperature ranges from 90°F to 140°F). If hotter water is required, adjustment of the thermostat(s) will be necessary. To adjust the thermostats, **TURN OFF** all electrical power to the water heater. Open the control box panel cover and adjust each surface thermostat to the desired temperature.

CAUTION: INCREASING THE THERMOSTAT SETTING ABOVE THE PRE-SET TEMPERATURE MAY CAUSE SEVERE BURNS AND CONSUME EXCESSIVE ENERGY. HOTTER WATER INCREASES THE RISK OF SCALD INJURY.

Each heater has built in Energy Cut Off device(s). If for any reason the water temperature becomes excessively high, the high limit switch breaks the circuit to the heating elements. Once the switch opens, it must be manually reset, however, the cause of the over temperature condition must be corrected. To reset thermostats, TURN OFF all electrical power to the water heater. Open the control box panel cover and reset each red button on the combination thermostat high limit controls.

WATER TEMPERATURE REGULATION

The thermostat is adjusted to a temperature setting of 130°F or lower when it is shipped from the factory. Water temperature can be regulated by adjusting the thermostat to the preferred settings. **The preferred starting point is 130°F. There is a hot water scald potential if the thermostat is set too high.**

▲ DANGER

ADJUSTING THE THERMOSTAT PAST THE 130°F BAR ON THE TEMPERATURE DIAL WILL INCREASE THE RISK OF SCALD INJURY.

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 the premises for extended periods, turn the thermostats to their lowest setting. This will maintain the water at low temperatures with minimum energy losses and prevent the tank from freezing during cold weather.

▲ DANGER

HOT WATER CAN PRODUCE FIRST DEGREE BURNS WITHIN:
3 SECONDS AT 140°F (60°C)
20 SECONDS AT 130°F (54°C)
8 MINUTES AT 120°F (49°C)

▲ WARNING

HOUSEHOLDS WITH SMALL CHILDREN, ELDERLY, IMPAIRED OR DISABLED MEMBERS AND ANYONE WITH TEMPERATURE SENSITIVE SKIN MAY REQUIRE A LOWER TEMPERATURE SETTING TO REDUCE THE RISK OF SCALD INJURY.

8. HEATING ELEMENTS

The electric elements are mounted inside the tank to transfer heat directly into the water. To replace an element DISCONNECT POWER to the heater, drain tank and replace element. 1 1/2" screw-type element wrenches are available from most supply houses. Do not overtighten new element, as this will cause distortion of the new element gasket. Fill tank with water, opening hot water faucet(s) to allow air to escape from the system while tank is filling. The heating elements will burn out if not immersed in water. Check for leaks before closing door panel or turning on power.

▲ WARNING

REMOVAL AND REPLACEMENT OF THE HEATING ELEMENTS INVOLVES THE DISCONNECTION OF ELECTRICAL WIRING. THE FOLLOWING PROCEDURES MUST ONLY BE PERFORMED BY QUALIFIED SERVICE TECHNICIAN.

9. MAINTENANCE OF WATER HEATER SYSTEM

Good maintenance practice requires that the tank be frequently drained, inspected and cleaned of deposits. Foreign material can wash in and, unless the water supply is naturally soft (0 to 5 grains hardness), scale or lime deposits will accumulate in the tank. Hard water scale precipitates at an increasingly high rate in proportion to an increase in water temperature. *Breakdown of the tank or heating elements due to accumulated deposits does not come within the scope of the warranty.*

WATER HEATER SOUNDS

1. Possible noises due to expansion and contraction of some metal parts during periods of heat-up and cool-down do not represent harmful or dangerous conditions.
2. Sediment build-up in the tank bottom will create varying amounts of noise, and may cause premature tank failure. Tank bottom may need cleaning. (See instructions for “DRAINING HEATER” and “CLEANING TANK”)

DRAINING HEATER

▲ CAUTION

When draining the water heater, make sure that the power to the water heater is shut off before draining water.

▲ WARNING ▲

The water drained from the tank may be hot enough to present a SCALD HAZARD and should be directed to a suitable drain to prevent injury or damage.

In order to drain water heater, turn off cold water supply, then open a hot water faucet or lift the handle on the relief valve to admit air to the tank. Attach one end of a garden hose to the drain valve on the water heater and direct the stream of water, coming from the other end of the hose, to a drain where it will do no damage.

INSTRUCTIONS FOR CLEANING TANK

A clean-out opening is provided for periodic cleaning of the tank. Be sure that you have a new hand hole gasket before proceeding. Part Number 44002.

- A. Shut off electric supply.
- B. Shut off water supply to water heater.
- C. Open the nearest hot water faucet.
- D. Attach hose to drain valve, and open drain valve so water can drain from water heater.
- E. Remove jacket clean-out cover from jacket (4 screws).

▲ WARNING ▲

THIS WATER CAN BE HOT!

- F. After the water heater has been drained, remove the hex head bolts and the plate will come loose. If necessary, tap lightly on the outside edge.
- G. After tank has cooled, remove loose scale and lime deposits from inside tank, being careful not to break glass lining.
- H. Make sure water heater is completely filled with water before re-energizing.

HYDROGEN GAS

▲ WARNING ▲

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

WATER HEATER MODIFICATION/ TAMPERING

▲ DANGER

TAMPERING WITH THE THERMOSTAT, HEATER ELEMENTS, ELECTRICAL CONNECTIONS OR TEMPERATURE AND PRESSURE RELIEF VALVE IS DANGEROUS AND MAY RESULT IN SERIOUS INJURY OR DEATH. TAMPERING VOIDS ALL WARRANTIES. ONLY PROPERLY TRAINED, QUALIFIED SERVICE PERSONNEL SHOULD SERVICE THESE COMPONENTS. DO NOT ATTEMPT TO MODIFY OR CHANGE THIS WATER HEATER IN ANY WAY.

SEASONAL OPERATION

VACATION/FREEZING TEMPERATURES - If the water heater is to remain idle for 30 days or more, or is subject to freezing temperatures while shut off, the water heater and piping should be drained (refer to Page 10), and the drain valve should be left open. Refer to Hydrogen Gas Warning.

▲ CAUTION

EXPOSURE TO WATER

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 which has been under water.

10. FUSES

All models are equipped with fuses. To replace fuse(s), first disconnect all power to the water heater. Open the control box door and replace fuses according to the size indicated on the label fixed to the inside of the door.

ANODE

In each water heater there is installed at least one anode rod (see Parts section) for protection of the tank. Certain water conditions will cause a reaction between this rod and the water. This is defined as smelly water and removal of the rod will void any warranties stated or implied. The parts list includes a special anode that can be ordered if odor and/or discoloration occur. However, this rod is only good to a certain point, after which, we can only suggest that a water conditioning company be contacted to supply filtration equipment.

CONVERSION OR REWIRING BY UNAUTHORIZED PERSONS WILL VOID THE WARRANTY, CAN NULLIFY THE UNDERWRITER'S LABORATORIES (UL) CERTIFICATION OF THE HEATER AND COULD RESULT IN PROPERTY DAMAGE OR PERSONAL INJURY FOR WHICH THE MANUFACTURER CANNOT BE RESPONSIBLE.

READ THE LIMITED WARRANTY INCLUDED WITH THIS WATER HEATER FOR A FULL EXPLANATION OF THE LENGTH OF TIME THAT THE PARTS AND TANK ARE WARRANTED.

The following documents can be obtained from the manufacturer by calling your installer or plumbing contractor or by calling 1-800-900-9063, extension 5.

Commercial Electric Limited Warranty
Commercial Electric Specification Sheet
Commercial Electric Heating Elements Parts List

HOW TO OBTAIN SERVICE ASSISTANCE

To obtain service on your water heater when adjustment, repair, or routine maintenance is required, it is suggested that you first contact your installer, plumbing contractor or previously agreed upon service agency. In the event that the firm is unavailable, refer to the telephone directory commercial listings or local utility for qualified service assistance.

**TO OBTAIN WARRANTY SERVICE
CALL 1-800-900-9063, EXTENSION 3.**

TROUBLESHOOTING CHART *Water heater service must only be performed by a qualified service technician*

PROBLEM	POSSIBLE CAUSE(S)	CORRECTIVE ACTION
No Hot Water	<ol style="list-style-type: none"> 1. No power to heater 2. High Temperature Limit Switches on 3. Defective thermostat(s) 	<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 defective thermostat(s)
Insufficient hot water	<ol style="list-style-type: none"> 1. Defective thermostat(s) 2. Defective element(s) 3. Improper calibration of thermostats 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 defective thermostat(s) 2. Replace element(s) 3. Replace defective thermostat(s) 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 users 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. Turn temperature dials to lower setting 3. Drain/flush - Provide water treatment if needed 4. Install adequate heater 5. Correct piping 6. Repair faucets 7. Advise users 8. Insulate piping 9. Insulate piping
Slow hot water recovery	<ol style="list-style-type: none"> 1. Defective elements 	<ol style="list-style-type: none"> 1. Replace element(s)
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 Page 5, "Closed System"
Thermostat fails to shut off	<ol style="list-style-type: none"> 1. Defective thermostat 2. Improper calibration 	<ol style="list-style-type: none"> 1. Replace thermostat(s) 2. Replace thermostat(s)
Water odor	<ol style="list-style-type: none"> 1. Sulfides in the water 	<ol style="list-style-type: none"> 1. See Page 10, "Anode"

PART REFERENCE NUMBER GUIDE

Ref. No.	American Standard Part No.	Vendor Part No.	Description	Where Used
#1	47003	11552	Nipple, 1 1/2" x 5" Hot Water Outlet	52, 80, 12
#2	47000	—————	Male T&P Extension	Some Models
#3	47101	—————	Female T&P Extension	Some Models
#4	43003	3/4L100XL-3	T&P Valve Rated to 100,000 BTUs	KW Less Than 30
#4a	43004	3/4L40XL-5	T&P Valve Rated to 200,000 BTUs	KW Over 30
#5	42110	16023-2	Terminal Block - 2 Terminals	Some Models
#5a	42112	16025-3	Terminal Block - 3 Terminals	Some Models
#6	42075	71005	Copper Grounding Lug - Regular	Some Models
#6a	42076	—————	Copper Grounding Lug - Large	Some Models
#7	42100	G30060-2CR	Fuse Holder Class G	Some Models
#7a	42103	G30060-3CR	Fuse Holder Class G	Some Models
#7b	42104	J60030-2CR	Fuse Holder Class J 30 Amp	Some Models
#7c	42105	J60030-3CR	Fuse Holder Class J 30 Amp	Some Models
#7d	42106	J60060-2CR	Fuse Holder Class J 60 Amp	Some Models
#7e	42107	J60060-3CR	Fuse Holder Class J 60 Amp	Some Models
#8	44000	168-05	Element Gasket & Element Plug Gasket	All Models
#9			Elements - specify wattage and voltage	See Detail Drawing
#10	32060	59T4200	Thermostat 120°-180°	All Models
#10a	32065	59T4090	Thermostat 90°-150°	Where Requested
#11	48001	—————	Thermostat Cover	All Models
#12	44002	—————	Hand Hole Gasket	All Models
#13	18002	—————	Hand Hole Plate	All Models
#14	26001	—————	Hand Hole Cover	All Models
#15	47003	11552	Nipple, 1 1/2" X 5" for cold water inlet	All Models
#16	47030	04604	Element Hole Plug	Some Models
#17	43002	31607	Drain Valve	All Models
#18	47501	—————	Anode	All Models
#19	49010	—————	Class J - 50 Amp Fuse	Some Models
#19	49017	—————	Class J - 40 Amp Fuse	Some Models
#19	49020	—————	Class J - 30 Amp Fuse	Some Models
#19	49135	—————	Class G - 30 Amp Fuse	Some Models
#19	49136	—————	Class G - 40 Amp Fuse	Some Models
#19	49137	—————	Class G - 50 Amp Fuse	Some Models
#20	48002	—————	Thermostat Bracket	All Models

PART REFERENCE ILLUSTRATION

