KROWNE®

INSTALLATION GUIDE AND OWNER'S MANUAL
Electric Mini Tank Water Heaters

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Please read and follow the installation and operation instructions carefully to ensure the long life and reliable operation of the electric mini tank water heater.

CONTENTS

IMPORTANT SAFETY INSTRUCTIONS

WARNING: When using electrical appliances, safety precautions to reduce the risk of fire, electric shock or injury to persons should be followed, including: **READ ALL INSTRUCTIONS BEFORE USING THIS WATER HEATER. SAVE THESE INSTRUCTIONS.**

This electric mini tank must be grounded. Connect only to properly grounded power supply. See "Electrical Connections" for more information. Install or locate this mini tank water heater only in accordance with the provided installation instructions. Use this water heater only for its intended use as described in this manual. Do not use an extension cord set with this water heater. If no receptacle is available adjacent to the water heater, contact a qualified electrician to have one properly installed.

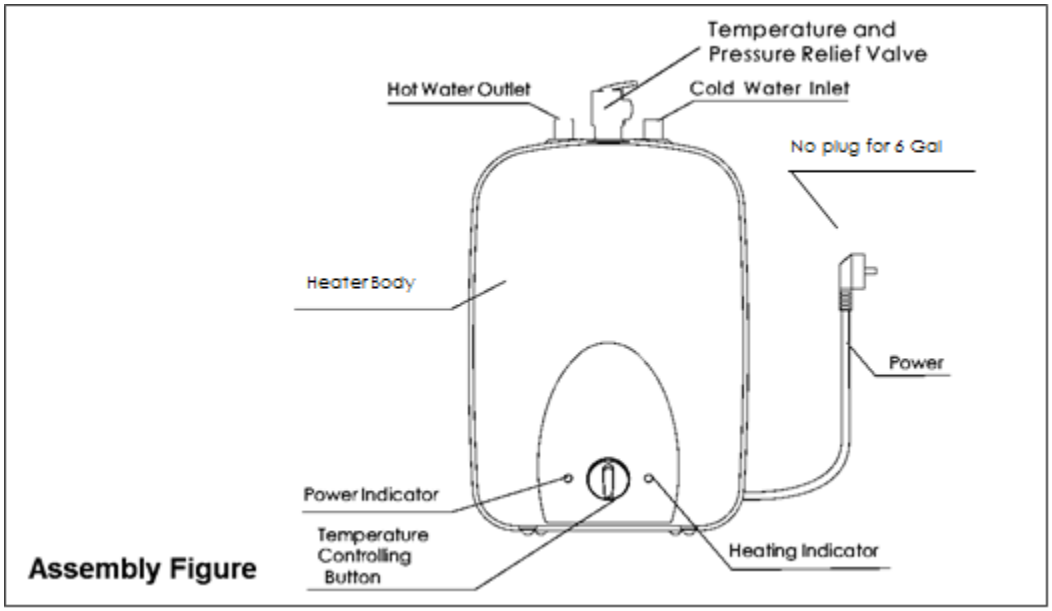
As with any appliance, close supervision is necessary when used by children. Do not operate this mini tank water heater if it has damaged electrical connections, if it is not working properly, or if it has been damaged or dropped. This water heater should be serviced only by qualified service personnel. Contact nearest authorized service facility for examination, repair, or adjustment.

The manufacturer and/or distributor is not responsible for damages caused by improper installation, or by non-observance of the instructions in this manual. A qualified, licensed technician must always install the mini tank water heater and conduct all subsequent service work and/or maintenance.

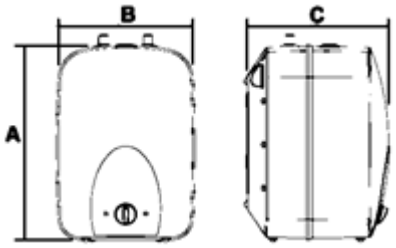
IMPORTANT: Never turn the water heater power on until the tank is completely full and water is flowing out of the hot water faucet.

TECHNICAL DATA

Capacity (gal)	1.5	2.5	4.0	6.0
Rated power at 120 Vac (W)	1440	1440	1440	1440
Rated voltage (V)	110-120	110-120	110-120	110-120
Max water pressure (psi)	150	150	150	150
Weight while empty (lbs)	11.68	15.48	19.29	24.91
Amperage (A)	12	12	12	12
Phases	1	1	1	1



Assembly Figure



Dimensions

Capacity (gal)	1.5	2.5	4.0	6.0
A (in)	14.19	15.98	17.41	19.81
B (in)	9.71	10.89	12.27	13.85
C (in)	9.95	11.23	12.88	14.36

GENERAL INFORMATION

Electric mini tank water heaters can be used in most under-the-counter, point-of-use applications. The models are designed to supply hot water for all handwashing and kitchen sinks. The units can replace traditional central hot water heaters thereby, conserving water and reducing energy waste.

Electric mini tank water heaters are lightweight, compact and manufactured for easy installation. The models are designed to be mounted on the wall. Units operate at 150 psi maximum water pressure.

CAUTION: The manufacturer cannot be responsible for damage caused by improper installation or by failure to follow instructions in this manual. Comply with "Installation Instructions" before connecting to electrical supply.

CAUTION: The thermostat has been pre-set by the manufacturer between 50°F (10°C) and 140°F (60°C).

CAUTION: 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 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 nearest and most distant sink being served by this water heater before using any electrical appliance connected to the hot water system i.e. Dishwasher. If hydrogen gas is present, there will probably be an unusual sound such as air escaping through the faucet as the water begins to flow. There should be no smoking or open flame near the faucet at this time.

WARNING: Installer should review the contents of this manual with the owner upon installation. The manual should remain with the owner and placed in a location close to the water heater.

INSTALLATION INSTRUCTIONS

All state and local codes must be adhered to. The manufacturer will not be liable for any damages because of failure to comply with these installation instructions or because of improper installation performed by an unqualified installer.

Choose a location that allows ease of access for maintenance or servicing, ideally installed at least 8" to 9" from the ceiling (inside top of cabinet) or any adjacent walls. Fasten the supplied mounting bracket to the wall. Use screws that are suitable for the wall material and the weight of the water heater filled to capacity (1.5 gal capacity = 25 lbs., 2.5 gal capacity = 37 lbs., 4.0 gal capacity = 52 lbs., 6.0 gal capacity= 80 lbs.). Hang the water heater on the bracket and pull downwards on the water heater to insure that both "fingers" of the bracket are seated in the mounting slots. Confirm your water piping orientation (hot and cold) before wall mounting. **ONLY INSTALL IN VERTICAL POSITION.**

Heater can sit on the floor. Some units may be installed under the sink. Confirm water piping orientation before finalizing on floor. **ONLY INSTALL IN VERTICAL POSITION**.

PLUMBING CONNECTIONS

Connect the cold water inlet pipe to the inlet nipple (marked with a blue ring) and the hot water outlet pipe to the outlet nipple (marked with a red ring).

IMPORTANT: If Water pipes are copper or bronze, use dielectric connections to prevent corrosion. Failure to provide dielectric insulation may result in premature tank or nipple failure and may void your warranty. Insure that the water heater is installed in a level position. Install a shut off valve on the cold water side of the water heater. The valve is for servicing and the valve should be in the open position when the water heater is in operation. In order to protect the water heater from heat damage due to soldering, solder a piece of tubing to a threaded UNION fitting before screwing the UNION to the tank. **DO NOT APPLY HEAT DIRECTLY TO INLET OR OUTLET CONNECTIONS.**

TEMPERATURE AND PRESSURE RELIEF VALVE

CAUTION: To reduce the risk of excessive pressures and temperatures in this electric mini tank water heater, install temperature and pressure protective equipment required by local codes, but no less than a combination temperature and pressure relief valve certified as meeting the requirements for Relief Valves and Automatic Gas Shutoff Devices for Hot Water Supply Systems, ANSI Z21.22, by a nationally recognized testing laboratory that maintains periodic inspection of production of listed equipment or materials. The valve must be oriented, provided with tubing, or otherwise installed so that discharge can exit only within 6 inches above, or at any distance below, the structural floor and cannot contact any live electrical part.

Install a discharge pipe from the temperature/pressure relief valve terminating at a sink or drain. **DO NOT CAP OR PLUG THE END OF THE DISCHARGE PIPE. THE DISCHARGE PIPE MUST BE UNOBSTRUCTED AND FULL SIZED.**

The T/P valve is certified by a nationally recognized test lab that maintains periodic inspections of the listed equipment and meets the requirements for relief valves and automatic shut off devices for hot water supply systems ANSI Z21.22.

The T/P valve is marked with a maximum pressure, which does not exceed the maximum working pressure of the water heater (150 PSI).

Install the T/P valve into the threaded opening at the top of the water heater and orient the discharge tubing so that any discharge from the valve will exit within 6 inches above, or at any distance below the structural floor, and cannot contact any live electrical part.

T/P VALVE DISCHARGE PIPE

1. Must **NOT** be smaller in diameter than the outlet diameter of the valve, or have any reducing couplings.
2. Must **NOT** be plugged or blocked.
3. Must be made of suitable material for hot water.
4. Must **NOT** be over 15' in length.
5. Must **NOT** have more than two elbows.
6. Must terminate at an adequate drain.
7. Must **NOT** have a shut off valve between relief valve and tank or relief valve and termination of discharge.

CLOSED SYSTEM THERMAL EXPANSION

Periodic discharge of the T/P relief valve or failure of the element gasket may be due to thermal expansion in a closed water supply system. The water utility supply meter may contain a check valve, backflow preventer or water pressure reducing valve which will create a closed water system. During the heating cycle of the water heater, the heated water expands causing pressure inside the water heater to increase. The T/P relief valve may discharge hot water under these conditions which results in a loss of energy and a buildup of lime on the relief valve seat. To prevent this from happening, there are two recommendations:

1. Install a diaphragm-type domestic hot water expansion tank (suitable for potable water) on the cold water supply line. The expansion tank must have a minimum capacity of 1.5 U.S. gallons for every 50 gallons of stored water.
2. Install a 125 PSI pressure relief valve in the cold water supply line. Make sure the discharge of this valve is directed to an open drain and protected from freezing. Contact your local water utility or plumbing inspector for information on how to control this situation. Never plug the outlet of the relief valve.

FILLING THE WATER HEATER

CAUTION: Before connecting the power, fill the tank and system with water and check for leaks. **BE SURE ALL AIR IS REMOVED.**

To be sure that all air is out of the water system, open the hot water faucets on your fixtures until constant water flows from them. Otherwise, any air remaining in the tank will cause the water heater element to self-destruct.

FILLING THE WATER HEATER

1. Open the hot water faucet.
2. Open the cold water supply valve.
3. When continuous water flows out of the faucet, the tank is filled.
4. Close the hot water faucet.
5. Check entire system for leaks.

USING AN AERATOR

It is highly recommended that an aerator be used together with models of 1.5 gallon capacity. The purpose of the aerator is to restrict the amount of water flow exiting the unit which allows the water heater to produce hot water for a longer duration. If an aerator is not used the 1.5 gallon capacity will be depleted quickly.

ELECTRICAL CONNECTIONS

To be certain that all of the air is out of the water heater, open the hot water faucet on your fixtures until constant water flows from them. If air remains in the tank, the element will be damaged when connected to power.

Connect the water heater to a **GROUNDED POWER SUPPLY**.

The mini tank water heater is fitted with an electrical connection that is intended to connect to a grounded 110-120 V/AC supply. Adhere to all pertinent state and local codes. Install the correct size circuit breaker into the master panel. The mini tank water heater was manufactured and wired in accordance with UL requirements.

The water heater is equipped with an overheat-limiting device with a manual reset. Also known as the temperature high limit, this device has been factory installed to interrupt the power supply in the event of a thermostat failure.

THIS WATER HEATER IS DESIGNED FOR ONLY 110-120V ELECTRICAL SERVICE. DO NOT CONNECT TO HIGHER OR LOWER VOLTAGE.

Failure to use proper voltage may result in personal injury and/or property damage. If the supplied electrical connection is either damaged or not long enough, do NOT use an extension cord. Have a licensed electrician replace the power cord.

INSTRUCTIONS FOR USE

CONGRATULATIONS: You are now ready to use your water heater. Run the hot water at a nearby sink and evaluate the hot water temperature. Make any temperature adjustment using the section below.

SETTING THE THERMOSTAT

The mini tank water heater is equipped with an adjustable thermostat that once set will automatically control water temperature. The red indicator lamp remains illuminated while the water is being heated. If the water in the tank is at the desired temperature the lamp will **NOT** be illuminated.

The temperature adjusting knob will increase the temperature by turning the knob clockwise and decrease the water temperature by turning the knob counter clockwise.

When not being used for a lengthy period of time, you can conserve energy by reducing the water temperature setting.

FREEZE PROTECTION

When the water heater is not being used for an extended period of time and there is a risk of freezing, disconnect power and drain the water heater.

MAINTENANCE INSTRUCTIONS

Always disconnect power when the water is turned off or when servicing or draining the water heater. Before calling for service, first confirm that the water heater is properly filled and that 110VAC power has not been interrupted.

WARNING: Before servicing or cleaning the water heater, turn off the POWER switch and disconnect power.

NOTE: For most maintenance operations, the water heater will be drained. In all cases before draining first turn off the POWER switch and then disconnect power.

DRAINING AND REMOVING THE WATER HEATER

1. Disconnect power from the water heater.
2. Open a hot water faucet to let hot water run out. Allow water to flow until water is no longer hot.
3. Turn off the cold water supply to the water heater.
4. Close the hot water faucet.
5. Disconnect the water heater from both the hot and cold water connections.
6. If possible siphon out remaining water.
7. Carefully detach the water heater from the wall.
8. Tilt the water heater to drain remaining water out of the heater.

REMOVING THE HEATING ELEMENT

1. Turn off power supply, disconnect water heater from power and drain (see above).
2. Remove cover.
3. Remove all the line wires from the heating element.
4. Unscrew the heating element retaining nuts.
5. Remove the element.

DESCALING THE HEATING ELEMENT

Scale deposits can affect the heating capability of the element. Heavy scale can even cause the element to burn out. The element can be descaled chemically or manually.

1. Remove the heating element (see above).
2. To descale chemically, soak the heating element in white vinegar or other descaling solution and then rinse well with fresh water.
3. To descale manually, let element dry and then using a non-metallic brush similar to a tooth brush; brush the residue from the element. Avoid damaging the surface of the element.
4. Reinstall the element and gasket.
5. Refill tank with water before turning on the power to the water heater.

REPLACING THE HEATING ELEMENT

1. Disconnect power and drain the water heater (see prior instructions).
2. Remove heating element noting original positions of all connections.
3. Install new element with gasket making sure the new element and gasket are positioned correctly.
4. Tighten retaining nuts and make the wire connections to their original locations.

CHANGING THE THERMOSTAT

1. Turn off the power switch and disconnect the water heater from the power supply.
2. Drain and remove the water heater. (see page 12)
3. Remove the bottom panel of the water heater.
4. Remove thermostat knob and unscrew two retaining screws. It may be necessary to pry the knob off of the thermostat spindle. Now remove front panel.
5. Disconnect the push-pull wire connectors on the thermostat noting which connector goes to which terminal. Terminals are marked.
6. Remove the thermostat probe from the well.
7. Install new thermostat, attach wires and tighten screws.

RESETTING THE HIGH LIMIT SWITCH

For various reasons the high limit safety shut off switch will occasionally shut the water heater down. This shut down will occur when water temperatures exceed 190F. Power is automatically turned off to the heating element. The shut off device may activate as a result of a power outage or an electrical storm.
NOTE: Do not attempt to reset the high limit switch without first allowing the water heater to cool down the high temperature water inside the heater.

WARNING: Do not tamper with the reset button to override overheating shut down.

1. Turn off the power switch and disconnect the water heater from the power supply.
2. Drain and remove the water heater. (see page 12)
3. Remove the bottom panel of the water heater.
4. Locate the high limit reset button.
5. Depress the small red button in the center of the junction box, replace the bottom panel and place the water heater back into service.

NOTE: A lower temperature setting saves energy and reduces the risk of scalding.

CAUTION: Call a technician if the high limit needs to be reset frequently.

TROUBLESHOOTING

In the event any of the following conditions occur, follow troubleshooting instructions noted below to resolve.

WATER DOES NOT GET HOT

1. Make sure the power supply is on and working.
2. If light does not come on, check that the reset button is pushed in; follow steps from previous section.
3. If the indicator light is illuminated, but water temperature does not get hot at the sink, test for a plumbing crossover as follows; shut off cold water supply to water heater and open hot water tap. There should be no water flowing. Any continuous flow indicates a cross over which will affect the temperature and will need to be corrected.
4. If there is no crossover, then replace the heating element (see previous sections).

INDICATOR LIGHT NOT ON

1. If the light does not come on, but water gets hot, check for faulty bulb.
2. Check reset button; follow steps from previous section.

BROWN WATER

1. Brown or rusty water indicates a “spent” anode rod. Replace anode rod.

ODOR IN WATER

1. Odor in water could be due to an unusual reaction between local water and the heater’s anode rod. Check anode rod.

WATER IS TOO HOT

1. Turn the temperature knob counter clockwise to a lower temperature setting. If temperature does not lower within 60 minutes, then replace thermostat.

WATER IS NOT HOT ENOUGH

1. Under Instructions for Use, see “Setting the thermostat”.

WATER IS LEAKING

1. Turn off power switch and disconnect water heater from 110 VAC power supply.
2. Check water fittings and T&P fitting in the top of the tank.
3. Remove cover and inspect heating element gasket.

ABOUT YOUR ELECTRIC MINI TANK WATER HEATER

Congratulations on the purchase of your electric mini tank water heater! To get the best performance and energy savings from your electric mini tank water heater, it is important that it be installed in accordance with our instructions and the electrical and plumbing codes applicable to your area, and that you read this manual thoroughly for important operating instructions and tips.