



Ranein

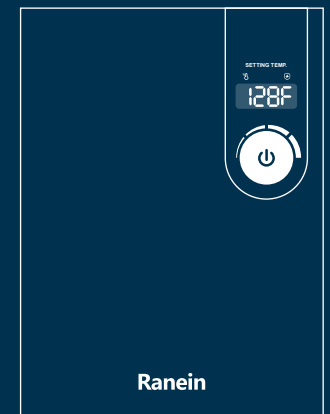
Tankless Electric Water Heaters Instruction For Installation And Use Model:RE18K / RE27K



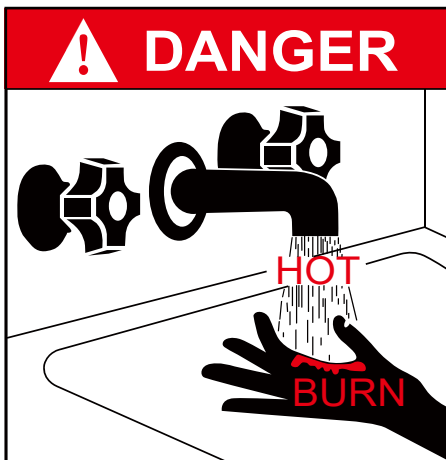
Contact Service

www.raneinrv.com

service@raneinrv.com



IMPORTANT SAFETY INFORMATION. READ ALL INSTRUCTIONS BEFORE USING



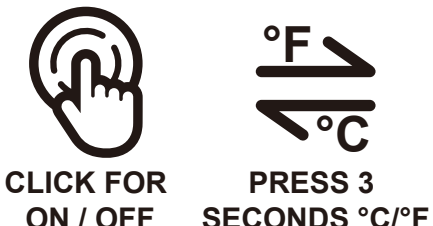
! DANGER

Water temperature over 125°F (52°C) can cause severe burns instantly or death from scalds.

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

See instruction manual before setting temperature at water heater.

Feel water before bathing or showering.



CLICK FOR ON / OFF **PRESS 3 SECONDS °C/°F**

Rotate right for higher temperature (up to 131°F (55°C)) or rotate left for cooler temperature (as low as 86°F (30°C)) will be displayed on the screen above the knob.

Notice: Mixing valves are recommended for reducing point of use water temperature by mixing hot and cold water in branch water lines. It is recommended that a mixing valve complying with the Standard for Temperature Actuated Mixing Valves for Hot Water Distribution Systems, ASSE 1017 be installed.

Read and Save These Instructions

Installer: leave this manual with the homeowner.

Before installing, debugging, using, maintaining and repairing this tankless electric water heater, please take the time to read and understand the installation and safety manual thoroughly and carefully. This manual contains important safety tips and instructions.

Important Information

- ▲ This water heater must be grounded.
- ▲ This unit should be installed by a qualified electrician or plumber in accordance with Federal, State and local electrical and plumbing codes.
- ▲ This water heater is used to provide domestic hot water for household use and can provide multiple outputs.
- ▲ Cut off the connection with power supply when the water heater is not used in order to avoid a hazard.
- ▲ If it is not used for a long time in winter, drain the water from the the water heater to avoid water frozen which would damage the container. Cut off the power supply before emptying.
- ▲ Keep this instructions after installation. You may need it later to get more information and support.
- ▲ The thermomate and/or distributor is not responsible for any losses resulted from failure to comply with the requirements of this manual and faulty operation, including but not limited to electric leakage, water leakage and other consequences.

Note: This unit has multiple power inputs. Shut off all breakers before Installation and maintenance.

Contents

Important Information 01

User Instructions

Warning 03-04

Technical Specification 04

Operation Instructions 04-05

Installation Instructions

Warning 06

Product Dimensions 07

Mounting Your Water Heater 08-09

Installation Instructions 10-11

Plumbing Installation 11-12

Electrical Installation 13-16

Product Inner Structure 17

Maintenance Instructions

Troubleshooting 18

Product Warranty 19

User Instructions

Warning

- ▲ To ensure your own safety and that of others you need to read the installation and user instruction carefully before using the unit for the first time. Failure to comply with the instruction may cause property damage, serious injury or death.
- ▲ DO NOT install this unit in a location where it may be subject to freezing temperatures. If the water inside your tankless water heater freezes, it can cause severe and permanent damage that is not covered under the warranty.
- ▲ Water temperature over 125°F (52°C) can cause severe scalding. If the set temperature of the unit is too high, there is the possibility of hot water scalding. Children, disabled persons or the elderly in small households may need to set the temperature of the product below 113°F (45°C) in order to prevent possible harm caused by hot water or use after mixing hot and cold water.
- ▲ Where children or persons with limited physical, sensory or mental capabilities are to be allowed to control this appliance, ensure that this will only happen under supervision or after appropriate instructions by a person responsible for their safety. Children should be supervised to ensure that they never play with the appliance.
- ▲ This unit has more than one power-supply connection point. Disconnect all power supplies before servicing.
- ▲ To avoid damage, the unit needs to be kept dry. Keep unit away from direct sunlight, moisture, dust, steam, and other liquids. Do not install this unit in places with water leaks (such as under air conditioning lines that might leak or condense moisture or water pipes).
- ▲ The outlet water pipe can get very hot. Make sure that the outlet water pipe is out of the reach of children and insulated.
- ▲ This product can only be used to heat water. Do not use it to heat any other liquids.
- ▲ Damage caused by water quality is not covered by the warranty.
- ▲ Make sure all circuit breakers and disconnect switches are off before installation and maintenance.
- ▲ Do not store inflammables and explosives near the water heater.
- ▲ The water heater will produce steam or high temperature water and cause severe burns if dry burning without water. Make sure to fill water in water heater. If dry burning happen, disconnect power and water immediately, stop using, and call the service hotline for repair.
- ▲ After the water heater installation and using, the user should check and maintain it regularly. If there is any abnormality, the user should stop using it immediately and call the service hotline for repair.
- ▲ If any part is soaked in water, it should be inspected or repaired by professionals before use.

- ▲ Please do not use damaged wires, aging, loose or non fixed power socket, otherwise will cause electric shock, short circuit, fire and other accidents.
- ▲ In case of any abnormal situation of grounding system outside of the product, stop water heater immediately, unplug or disconnect all power supply circuit and call the service hotline for repair.

Technical Specification

Model	RE18K		RE27K		
	Voltage	208V	240V	208V	240V
Watts	13.5kW	18.0kW	20.3kW	27.0kW	
Amperage Draw	2x33A	2x38A	3x33A	3x38A	
Circuit Breaker(Amps)	2x40	2x40	3x40	3x40	
Temp Rise	@1.5GPM	61°F	82°F	92°F	102°F
	@2.25GPM	41°F	54°F	61°F	82°F
	@3.0GPM	31°F	41°F	46°F	61°F
Min. Wire Size (copper)	2x8AWG		3x8AWG		
Min. Water Flow	0.66GPM / 2.5L/min		0.79GPM / 3.0L/min		
Water Connection	3/4"NPT				
Phase	Single 60 Hz				
Working Pressure	130PSI				

Note: The temperature rise data is measured under the conditions of inlet water temperature of 3°C (37°F)

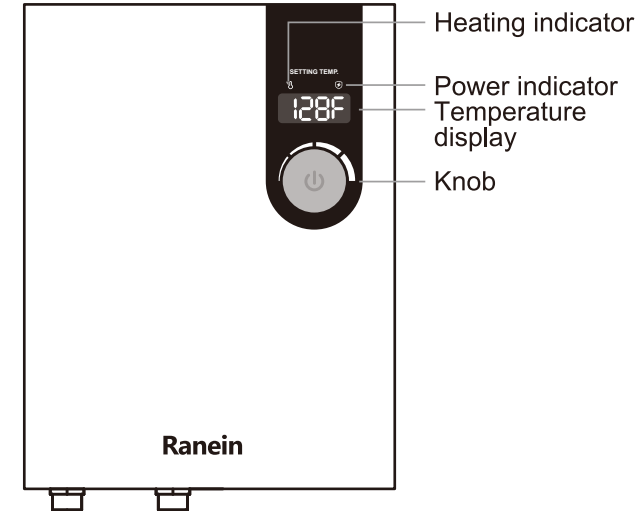
Operation Instructions

Power on

When the mains power supply is switched on, the buzzer beeps once and all the indicators light up for three seconds and then go out except power indicator. Power indicator is on green, heating indicator and display screen are not on.

Operation

1. Press the knob (a beep can be heard) to turn on the water heater power, the LED display will turn on showing the actual outlet water temperature. Heating indicator is on red in the state of heating.
Note: The unit will not work and the heating indicator is not on if there is no water flow, or the water flow does not meet the start-up requirements (0.4GPM / 1.5L/min - 0.79GPM / 3.0L/min).
2. If the unit is frequently used and the intermediate interval is short, initially a short burst of very hot water from the unit will flow out. Wait a few seconds for the water to cool down to the set temperature before using.
Caution: Regularly clean the inlet filter and the shower head to get enough flow.



Temperature control

In the state of heating, the outlet water temperature can be adjusted by turning the knob. Turn the knob clockwise to increase the outlet temperature, and turn the knob counterclockwise to decrease the outlet temperature between 86°F-131°F (30°C-55°C).

When the setting temperature is turned to the maximum or minimum, it will not be changed and two beeps will be heard at the same time.

Fahrenheit / celsius switch

- The factory set temperature of the unit is in Fahrenheit.
- In the state of heating, press the knob for 3 seconds, the display will switch between Fahrenheit and Celsius.
- When Fahrenheit is displayed, the last text shows F.
- When Celsius is displayed, the last text shows C.

Note: When the outlet water temperature reaches 167°F (75°C) the unit will stop heating.



Fahrenheit display



Celsius display

Installation Instructions

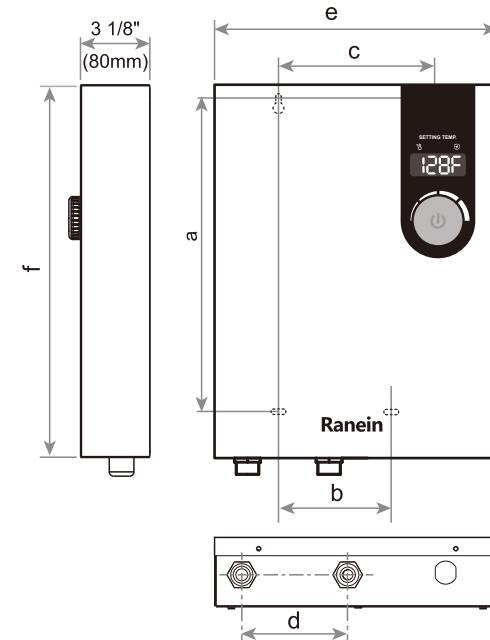
Warning

- ▲ To ensure your own safety and that of others you need to read the installation and user instruction carefully before using the unit for the first time. Failure to comply with the instruction may cause property damage, serious injury or death.
- ▲ This unit should be installed by a qualified electrician or plumber in accordance with Federal, State and local electrical and plumbing codes.
- ▲ When installing or using any high voltage electrical appliance, basic safety precautions should always be followed.
- ▲ DO NOT install this unit in a location where it may be subject to freezing temperatures. If the water inside the tankless water heater freezes, it can cause severe and permanent damage that is not covered under the warranty.
- ▲ This unit has more than one power-supply connection point. Disconnect all power supplies before servicing.
- ▲ To avoid damage, the unit needs to be kept dry. Keep unit away from direct sunlight, moisture, dust, steam, and other liquids. Do not install this unit in places with water leaks (such as under air conditioning lines that might leak or condense moisture or water pipes) or space with water spray.
- ▲ Be sure that the water heater are out of the reach of children so that they cannot adjust the temperature knob at will.
- ▲ The outlet water pipe can get very hot. Make sure that the outlet water pipe is out of the reach of children and insulated.
- ▲ Damage caused by water quality is not covered by the warranty.
- ▲ Make sure all circuit breakers and disconnect switches are off before installation and maintenance.
- ▲ Piping that has been treated with boiler seal, chromates, or other chemicals is not allowed to use.
- ▲ Special branch circuit shall be used for circuit connection of water heater. Check whether the voltage, circuit breaker, wire diameter, electrical switch, etc. meet the parameter requirements of the water heater, and the connection is reliable
- ▲ If the pressure of the inlet water supply system exceeds 150 PSI, a pressure relief valve should be installed between the valve and the water heater. The pressure relief valve must be equipped with a diversion pipe which must be continuously downward. The water overflowing from the drain pipe should be discharged into the floor drain.
- ▲ There must be a well drained floor drain near the water heater, and the installation area of the water heater should be able to ensure that the leakage of the water heater or joint will not cause damage to the articles in the adjacent area or the lower layer of the building.

- ▲ If installation personnel find that the power supply in the user's home is not standardized, a leakage protector should be installed in the circuit of the water heater.

Attention: This water heater must be connected to a reliable earth connection at all times, and ground wire and neutral line should be strictly separated.

Product Dimensions



Model	RE18K RE27K
a	14.76"(375mm)
b	4.92"(125mm)
c	7.87"(200mm)
d	4.65"(118mm)
e	13.8"(350mm)
f	18.7"(475mm)

Mounting Your Water Heater

Before mounting

* THE UNIT MUST BE INSTALLED BY QUALIFIED ELECTRIC ENGINEER

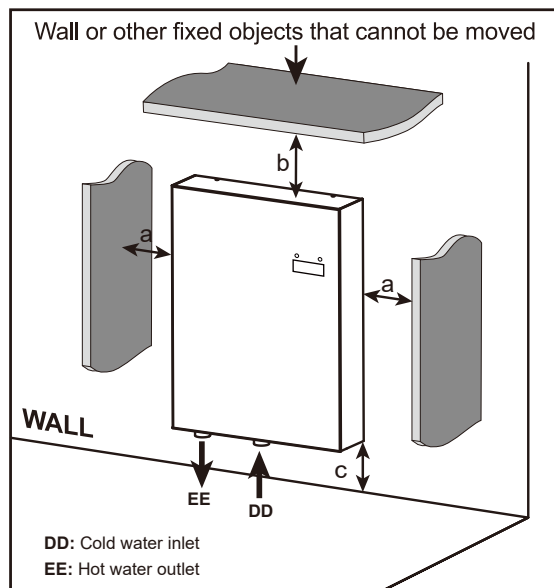
1. The wall for installation of the water heater must be firm and solid and can bear four times the weight of the water heater.
2. Indoor installation only. Do not install this water heater near flammable, volatile substances or strong magnetic fields. The unit must be installed in vertical position with water pipe ports downwards.
3. Be sure that the external power harness and air-opening meet the standard requirements.
4. Gloves are required during installation.

Installation location

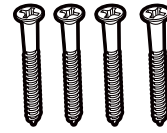
There should be a certain space around the machine for installation and future maintenance.

Suggestion: a (side gap): minimum 12" (305mm)
b (top gap): minimum 15" (381mm)

Warning: c (bottom gap): keep a distance out of the reach of children



Accessories contents



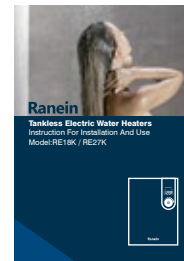
4 screws st 4.2x30



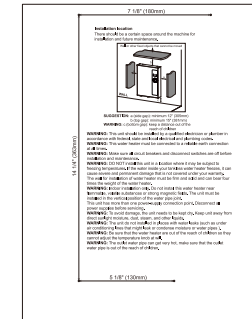
4 expansion bolts



2 gaskets

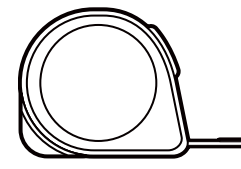


1 user manual



1 installation template

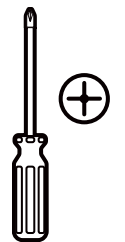
Tools/materials required (not included)



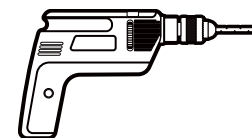
Measuring tape



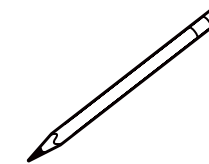
Safety gloves



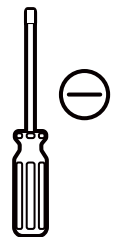
Phillips screwdriver



Electric drill



Pencil



Slotted screwdriver

Installation Instructions

1. Mark the positions of mounting holes on the wall as the installation template shows (Fig. 1).

Note: For ease of installation and servicing, we recommend that this unit be installed in an upright position with the inlet and outlet water connections at the bottom.

2. Drill 4 mounting holes (Ø6x32mm) at the marked position (Fig. 2).

3. Put expansion boltes into the holes (Fig. 2).

4. Put two screws into the upper two holes (Fig. 3).

5. Remove the knob on front cover and 4 screws on the top and bottom edges of the unit, and then dismantle the front cover (Fig.4).

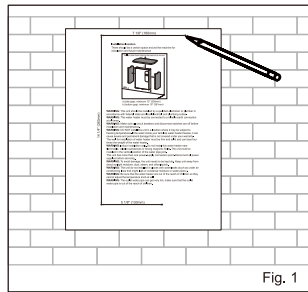


Fig. 1

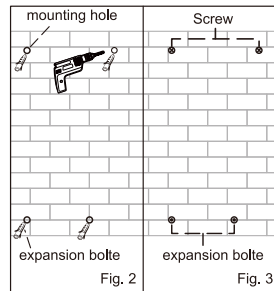


Fig. 2

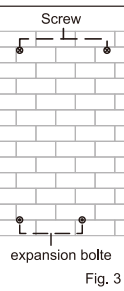


Fig. 3

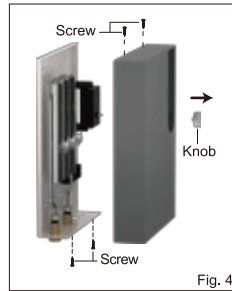


Fig. 4

6. Hang the body on the two installed screws, then fix the other two screws. Tighten all 4 screws to secure the body.

Note: Make sure that the mounting surface is solid and firm, and ensure that the unit is level before tightening the screws (Fig. 5).

7. Reinstall the front cover after finish "PLUMBING INSTALLATION" and "ELECTRICAL INSTALLATION". Fasten the front cover only after confirming that the mounting screws are firm and reliable. The front cover mounting shown as below (Fig. 6).

Warning: The electrical components inside the water heater may cause serious personal injury or electric shock death. Make sure that the front cover is installed correctly and firmly. Do not remove the front cover unless installation or maintenance.

8. Screw the front cover to body. Reinstall the knob (Fig. 7).

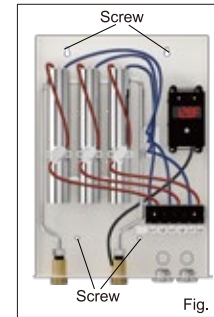


Fig. 5

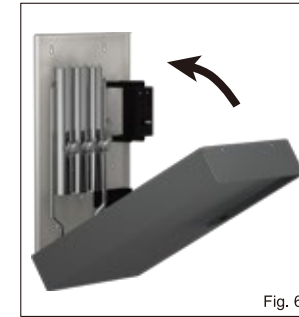


Fig. 6

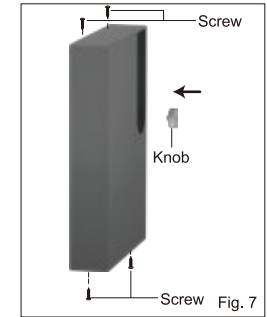


Fig. 7

Plumbing Installation

Caution: The plumbing installation must be completed before the electrical installation.

Warning: It is the responsibility of the Service Person to ensure that the water supply to the equipment is provided with protection against backflow by an air gap as defined in ANSI/ASME A112. 1.2-1979; or an approved vacuum breaker or other such method as proved effective by test.

Warning: Pipe dope or PVC/CPVC primer and glue is not allowed to use on the threads of the outlet and inlet fittings. These chemicals can damage the nipples and cause leaks. Only thread sealing tape can be used.

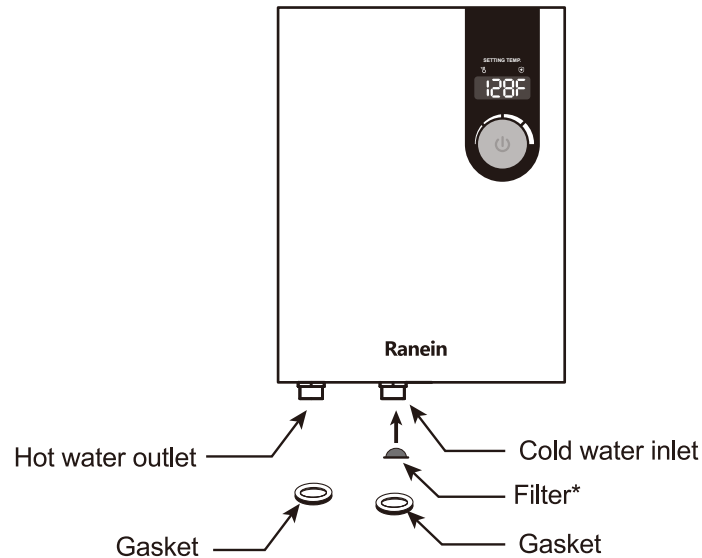
Suggestion: To avoid the property damage caused by leakage (small probability event), the machine needs to be installed in place with floor drain.

Suggestion: Install a valve (not included) at the inlet pipe for future maintenance.

Warning: Install a pressure relief valve between valve and unit if the inlet water supply pressure exceeds 130 PSI.

Installation instructions

1. Put one gasket to outlet, and another one to inlet. Connect the hot water outlet pipe to the outlet nipple on the left side of the unit and the cold water inlet pipe to the inlet nipple on the right side of the unit.



- * The filter is to be installed in the cold water inlet
2. After tightening both fittings at the unit, open the hot water tap to allow water run through the unit for about 2 to 3 minutes to make sure all the air is discharged from the water lines.

Above steps must be performed before power on.

NOT FOLLOWING ABOVE STEPS CAN CAUSE PERMANENT DAMAGE TO THE HEATING ELEMENTS.

3. Close outlet first and open inlet to check all connections for water leaks.

Electrical Installation

Caution: Ensure that you have made the correct connections. You must follow the wire connection as shown below to ensure proper operation of the unit.

Warning: For supply connections use 8 AWG (RE18K and RE27K) or larger wires suitable for at least 167°F (75°C).

Warning: This product has more than one power-supply connection point. Disconnect all power supplies before servicing.

Warning: The overcurrent protective devices are provided as a separate assembly. The water heater shall be used only with this separate assembly.

Warning: Firstly turn on the water and let it to run through the water heater for several minutes, and exhaust all the air in the plumbing. At the same time, check whether there is water leakage at the internal and external water connections of the water heater.

Warning: To avoid a short circuit and damage to the circuit board, make sure all strands are secured inside the terminal block.

Before installing the water heater, make sure that your home has enough power to handle the maximum current available for this product.

As with all high-power electrical products, make sure to turn off all power to the product directly at the fuse or breaker box before installing, repairing or disassembling this water heater.

All circuit protection (breakers) and wiring (wire gauge) must conform to the US National Electrical Code (NEC) in USA or Canadian Electrical Code (CEC) in Canada.

Failure to comply with these warnings can lead to risks including fire, electrical shock and/or death and void your warranty.

Before starting electrical installation, make sure that all water pipelines have been installed and the main circuit breaker and power switch have been closed to prevent electric shock.

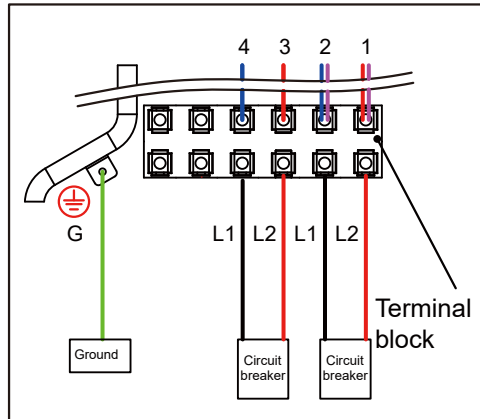
Circuit connection

1. Connect each group of power wires to a circuit breaker in pairs (shown as below). Make sure that each circuit breaker is connected with one group of L1 and L2.

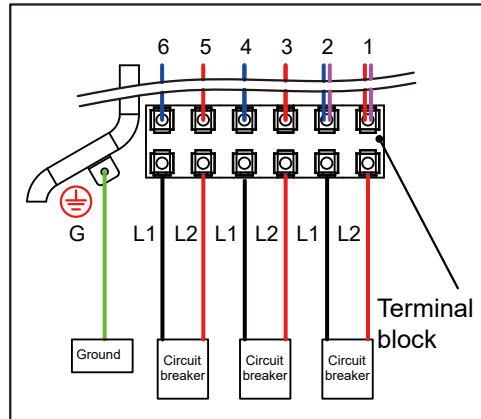
RE18K need two circuit breakers.

RE27K need three circuit breakers.

RE18K



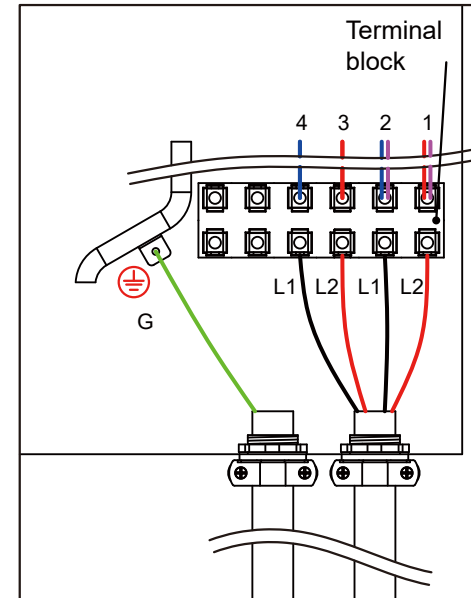
RE27K



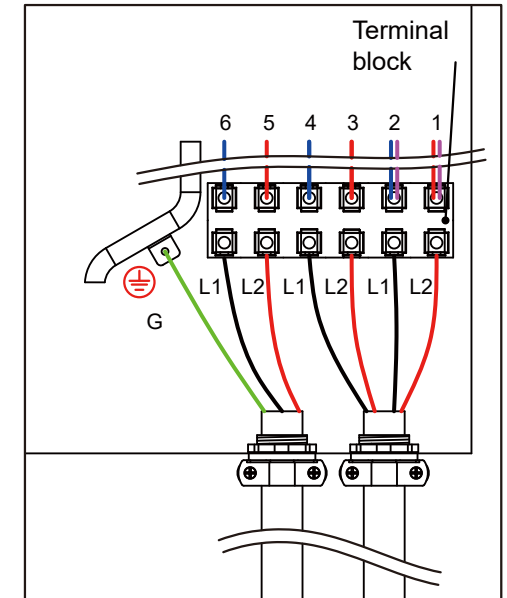
2. When connecting the power cords to the terminal block, make sure that the wire and the electric conductor inside the terminal block are in full contact. Then tighten the screws. If loose, it may cause electrical short circuit and/or the terminal block burn out.
3. Again make sure that the wiring from the main circuit breaker to the water heater is correct. If the wrong wires is connected, the product will not work normally and may cause unexpected danger.
4. Check earth resistance and make sure there is a proper earth continuity.
5. Confirm that all the air has been purged from the water lines prior to turning on power to the unit.

Wiring diagram

RE18K



RE27K

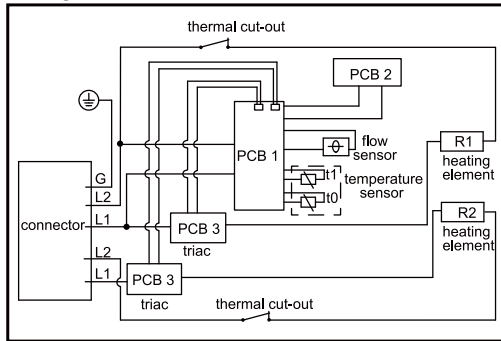


Electrical Specifications by Heater Input

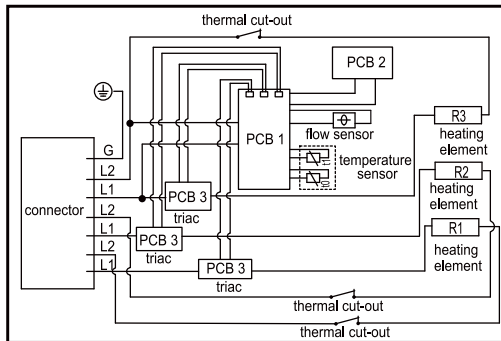
HEATER INPUT	18kW	27kW
ELEMENTS	2	3
VOLTAGE	240 V	240 V
MAX kW	18 kW	27 kW
KW PER ELEMENT	9 kW	9 kW
MAX AMPERAGE DRAW	75 AMPS	112.5 AMPS
REQUIRED BREAKERS	2 X 40 AMP	3 X 40 AMP
REQUIRED WIRE GAUGE	2 X 8 AWG	3 X 8 AWG

Circuit Diagram

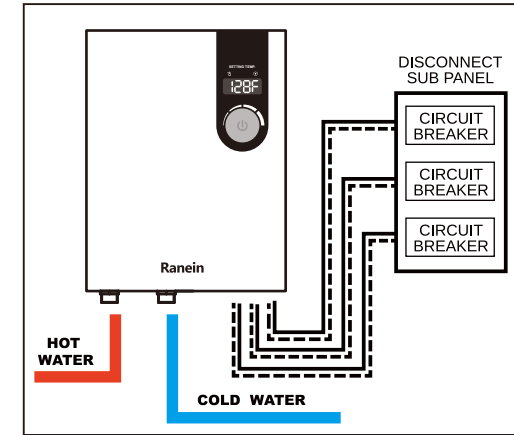
RE18K



RE27K

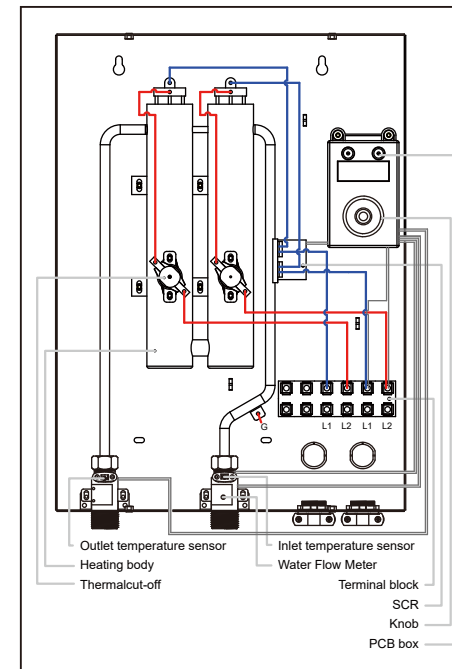


RE27K

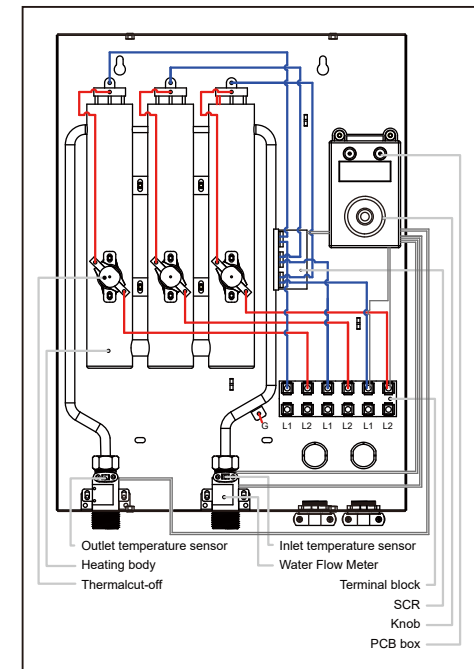


Product inner structure

RE18K

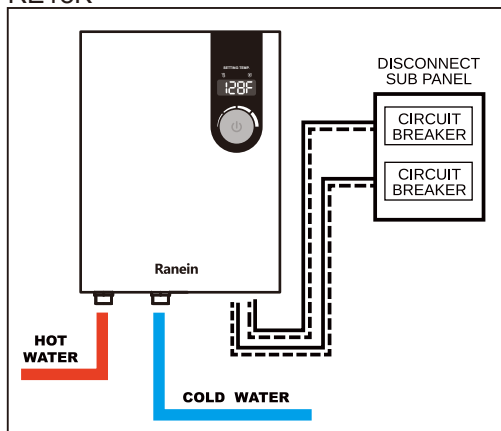


RE27K



Installation diagram

RE18K



Maintenance Instructions

Troubleshooting

PROBLEM ISSUE	POSSIBLE CAUSE	SOLUTION
Display E1	It means the product is overheated.	Please check if the the inlet and outlet pipes are
Display E2	It means there is leakage of electricity.	Please check if the the inlet and outlet pipes are
Display E3	It means the inlet temperature measurer is broken.	Please check if the the inlet and outlet pipes are
Display E4	It means the outlet temperature measurer is broken.	Please check if the the inlet and outlet pipes are
Water leakage at the inlet and outlet connector.	<ol style="list-style-type: none"> 1. The connector is not installed in place. 2. Seal damage. 	<ol style="list-style-type: none"> 1. Tighten the connector. 2. Replace the seal.
The unit does not work (Power indicator is NOT on)	Incorrect power wiring connection or no power.	<ol style="list-style-type: none"> 1. Make sure that the main circuit breakers that supply the water heater is on. 2. The unit may be wired error. 3. There may be a problem with the circuit breaker. 4. Contact local dealer.
Water heater is not heating at all (Power indicator is on)	<ol style="list-style-type: none"> 1. No water flow. 2. The flow too small to start up the unit. 3. Control board failure. 	<ol style="list-style-type: none"> 1a. Check the water supply channel; 1b. Clean filter at unit; 1c. Clean faucet aerator or shower head. 2. Increase water flow. 3. Cut off the power and contact local dealer.
Water heater is working but the outlet temperature is not hot enough.	<ol style="list-style-type: none"> 1. Low setting temperature 2. Excessive water flow 3. Faulty wiring 4. Voltage too low. 5. Temperature sensor failure. 6. Heating element damaged. 	<ol style="list-style-type: none"> 1. Turn up the setting temperature. 2. Reduce water flow. 3. If occurs in the first installation, please let the electrician check the wiring carefully. The wiring may be incorrect. Otherwise contact local dealer. 4. Check the power supply. 5. Replace temperature sensor. 6. Replace heating element.
Water heater is heating but the outlet temperature is too hot.	<ol style="list-style-type: none"> 1. Temperature set too high. 2. Low water flow 3. PCB failure 	<ol style="list-style-type: none"> 1. Turn down the setting temperature 2. Increase water flow 3. Cut off the power and contact local dealer.
The outlet flow is reduced.	Inlet filter, shower or faucet clogged.	Clean them

Product Warranty

Ranein warranties this water heater to be free of defects in material and/or workmanship for a period of two (2) years commencing on the day on which the product is purchased. During this 2-year warranty period, we will at our option, at no charge to the customer, repair or replace this product if found defective, with a new or reconditioned product, but not to include costs of removal or installation. Warranty services provided shall neither prolong the warranty period nor initiate a new warranty period. All return goods must be shipped with transportation charges prepaid.

This warranty shall not cover errors due to improper installation or incorrect usage, incorrect operating conditions or defective maintenance or repair work. Normal wear and tear such as lime scaling shall also be excluded under this warranty. The warranty will not be valid if the problem is caused by extreme values of drinking water.

This warranty shall not include compensation, withdrawal from the agreement, reduction in price or any reimbursement for consequential loss due to defects.

The owner and not the thermomate nor his agent/representative shall be liable for and shall pay for all field charges for labor or other expenses incurred in the removal and/or repair of the water heater or any expense incurred by the Owner in order to repair the water heater.