

# RV Water Heater User Manual



Read Carefully Before Use  
Keep for Future Reference

# Disclaimer

Read this disclaimer completely and carefully before proceeding with the rest of the manual content.

## 1. Warranty

This JP Heater product is sold with all expressed or implied warranties, including but not limited to the implied warranties of merchantability and fitness for a particular purpose. Refer to the sales page for the warranty information regarding this product.

## 2. Product Modifications

Any modifications or alterations to JP Heater products void any warranties and may result in damage or injury. JP Heater shall not be liable for any damages resulting from such modifications or alterations.

## 3. Compliance with Laws

Customers shall be liable for ensuring that the use of JP Heater products complies with all applicable laws and regulations in their respective jurisdictions. JP Heater assumes no responsibility for any violations of laws or regulations resulting from the use of JP Heater products.

## 4. Correct Use

Always use JP Heater products only as directed in the accompanying manuals. Failure to follow instructions may result in injury or damage.

Always ensure the assembly, installation, operation, maintenance, or repair of JP Heater products is carried out by a competent person.

Always make maintenance regularly throughout JP Heater products' lifecycles; you have the liability to keep the products operating as intended.

Always wear appropriate protective gear.

## 5. Third-Party Products

JP Heater shall not be liable for any damages or losses resulting from the use of third-party products in conjunction with JP Heater products. Customers shall refer to the third-party's guidelines or/and warranties (if any) for any third-party products used.

## 6. Limitation of Liability

JP Heater shall not be liable for any direct, indirect, punitive, incidental, special, or consequential damages to property or life, whatsoever arising out of or connected with the use or misuse of JP Heater products. In no event shall JP Heater's liability exceed the value of the products sold.

This disclaimer states the entire obligation of JP Heater with respect to JP Heater products. If any part of this disclaimer is determined to be void, invalid, unenforceable, or illegal, including but not limited to the warranty disclaimers, liability disclaimers, and liability limitations set forth above, the invalid or unenforceable provision will be deemed superseded by a valid and enforceable provision that most closely matches the intent of the original provision and the remainder of the agreement shall remain in full force and effect.

# Content

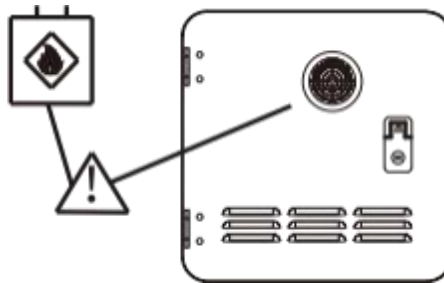
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# 1 Safety Information

## 1.1 General Safety



- The air rifle is not a toy and is intended for **ADULT USE ONLY**. Misuse or careless use may cause serious injury or death. Dangerous within 1000 yards (914.4 meters).
- Use **ONLY** compressed air in this air rifle. Use of any other gases, including oxygen, may result in fire or explosion, causing serious injury or death.
- **ONLY** use .22 caliber lead pellets in your air gun. Incorrect caliber pellets may damage the air gun and cause serious injury or death.
- **DO NOT** brandish or display this air rifle in public. It may confuse others, including law enforcement, who may mistake it for a firearm. Altering the color or markings to resemble a firearm may also be illegal and dangerous.



- **ONLY** use with qualified liquid propane gas (LPG) and 12 V DC power source. Never use any fuel or power source incompatible with this device.
- **ALWAYS** make sure your gas, water, and power supply to this device are turned off during installation, a prolonged idleness, and performance of cleaning, maintenance, inspection, or repair.

## Warning

- Contact customer service or a local contractor if any point is unclear or confusing, too difficult to achieve in your situation, or requires special modification for your RV.
- **ONLY** use this device for its intended purpose, supplying hot water for rinsing and showering. **DO NOT** use it for providing drinking water or water for medical purposes.
- For best results, prepare a fire extinguisher in case of accidents or emergencies.

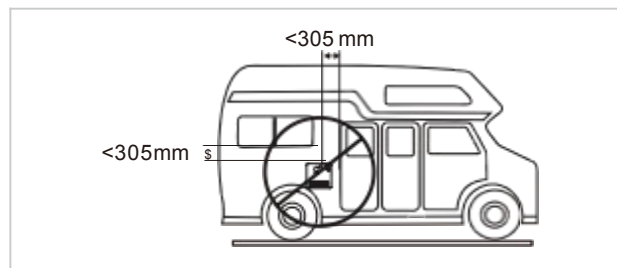
## 1.2 Installation Safety



- **ONLY** install this device in an **EXTERIOR** opening of an RV, ensuring that its exhaust port faces outward. **NEVER** install it indoors, especially in the RV's bathrooms, bedrooms, kitchens, or other similarly enclosed areas.

# 1 Safety Information

- **NEVER** install this device in an area where the air inlets or exhaust port can be obstructed by the RV's door when opened.
- **NEVER** place seating, picnic tables, awnings, or canopies directly in the path of the exhaust port.
- The water heater **MUST** be installed uprightly; otherwise, it will affect its normal operation.
- **DO NOT** install the device where the distance from the exhaust port to the RV's door or windows is less than 12 in. (305 mm).



- **ALWAYS** make sure the hose connections between this device and your gas and water lines are correct and secure. **NEVER** mix up the gas and water ports.
- **ALWAYS** ensure the **RED** wire of this device's power cord is connected to the **POSITIVE** terminal of the power source, while the **BLACK** wire is connected to the **NEGATIVE** terminal.

## ⚠Warning

- During installation, use proper personal protective equipment (PPE) suitable for your task. Keep bystanders, children, and pets away from your work area, restricting access as needed. Anyone who is allowed nearby should wear equivalent PPE.
- The water heater should be installed on a non-combustible frame.  
If the frame is constructed from combustible materials, use flame-retardant insulation such as insulating felt or boards to fully separate the water heater from any flammable surfaces. The insulation material should have a thickness greater than 0.8 inches (20 mm).
- **ALWAYS** ensure the bottom of the opening is flat and stable, and the opening is deep enough to accommodate gas, electrical, and water lines.
- **DO NOT** connect this device to the exhaust system of other appliances.

## 1.3 Operational Safety

### ⚠ Danger

- **ALWAYS** ensure all components and fasteners are intact and securely tightened before use.
- **DO NOT** operate this device if any part is damaged or shows signs of malfunction. Repair or replace problematic components before further use. Never replace any parts with nonidentical ones.

# 1 Safety Information

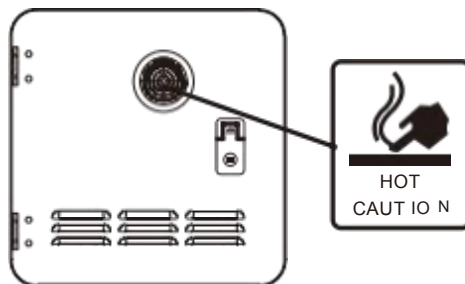
- **DO NOT** use this device while the vehicle is in motion or refueling.
- **ALWAYS** park the vehicle on a flat location before using this device.
- **DO NOT** get any electrical components wet or operate them with wet hands or in highly humid environments. If they become wet accidentally, disconnect the device from power and allow time for them to dry completely before further use.
- Watch out for gas smell at **ANY**time and check for any leaks using a gas leak detector or soapy water periodically.

If any leak is found, **IMMEDIATELY** turn off this device and your gas supply, evacuate all personnel from the vehicle, and have a qualified technician correct the problem. **NEVER** turn on any electrical devices or light a fire nearby. **DO NOT** restore your gas supply until the leak problem is completely solved and the gas remaining in the air has fully dissipated.

- Exhaust gases are hot and contain carbon monoxide. **DO NOT** breathe in or obstruct the exhaust gases. Failure to follow these instructions will lead to serious injury, property damage, or **EVEN** death.

## ⚠Warning

- **DO NOT** touch the hot vents with your bare skin during or immediately after use.



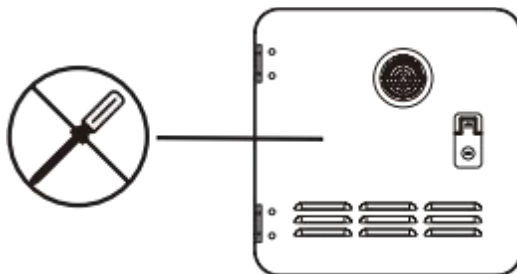
- Water that is either too cold or too hot will cause discomfort, can irritate your skin, and may even cause injury or illness. Before use, test the water temperature to make sure it is within the temperature range appropriate for you.

# 1 Safety Information

## 1.4 Maintenance Safety

### ADanger

- **DO NOT** modify the water heater in any way. Self-modification is dangerous and will void the warranty.



- If the power cord is damaged, the device should be scrapped or have the cord replaced by the manufacturer, its service agent, or similarly qualified persons in order to avoid a hazard.

### Δwarning

- To avoid damage arising from freezing, remember to drain the remaining water in this device as needed on cold days, especially when the outdoor temperature falls to 34 °F (1 °C) or less. For best results, equip your building's water lines with a thermometer and drain when it reads less than 39 °F (4 °C).

## 2 Specifications

<b>Input Voltage</b>		DC 12V	
<b>Input Current</b>		5 A	
<b>Max. Heat Output</b>		65,000 BTU/hr.	
<b>Timeout Protection*</b>		40 min.	
<b>Water</b>	<b>Pressure Range</b>	14.5–58 (psi)	0.1–0.4 (MPa)
	<b>Max. Heating Flow Rate</b>	3.9 gpm	12 L/min.
	<b>Max. Output Temp.</b>	124 °F	51 °C
	<b>Inlet &amp; Outlet OD</b>	1/2 in. NPT	
<b>Gas</b>	<b>Compatible Type</b>	LPG	
	<b>Pressure Range</b>	0.3–0.47 (psi)	2–3.3 (kPa)
	<b>Inlet OD</b>	1/2 in. NPT	
<b>Door Swing Angle</b>		0°–150°	
<b>Power Cord Length</b>		78.7 in.	2 m
<b>Control Panel Cord Length</b>		196.9 in.	5 m
<b>Shower Hose</b>	<b>Length</b>	59 in.	1.5 m
	<b>Connector I.D.</b>	G 1/2 in.	
<b>Dimensions (without Door)</b>		12.6×12.6×13.8 (in.)	320×320×350 (mm)
<b>Dimensions (with Door)</b>		15×15×14.2 (in.)	380×380×360 (mm)
<b>Net Weight</b>		29.8 lb.	13.5 kg

\* The timeout protection refers to a safety feature where the heater automatically shuts off after continuously running for 40 minutes.

When this protection is triggered, reset the system by turning off and then turn on your shower head or water faucet to resume normal operation.



### 3 Package List



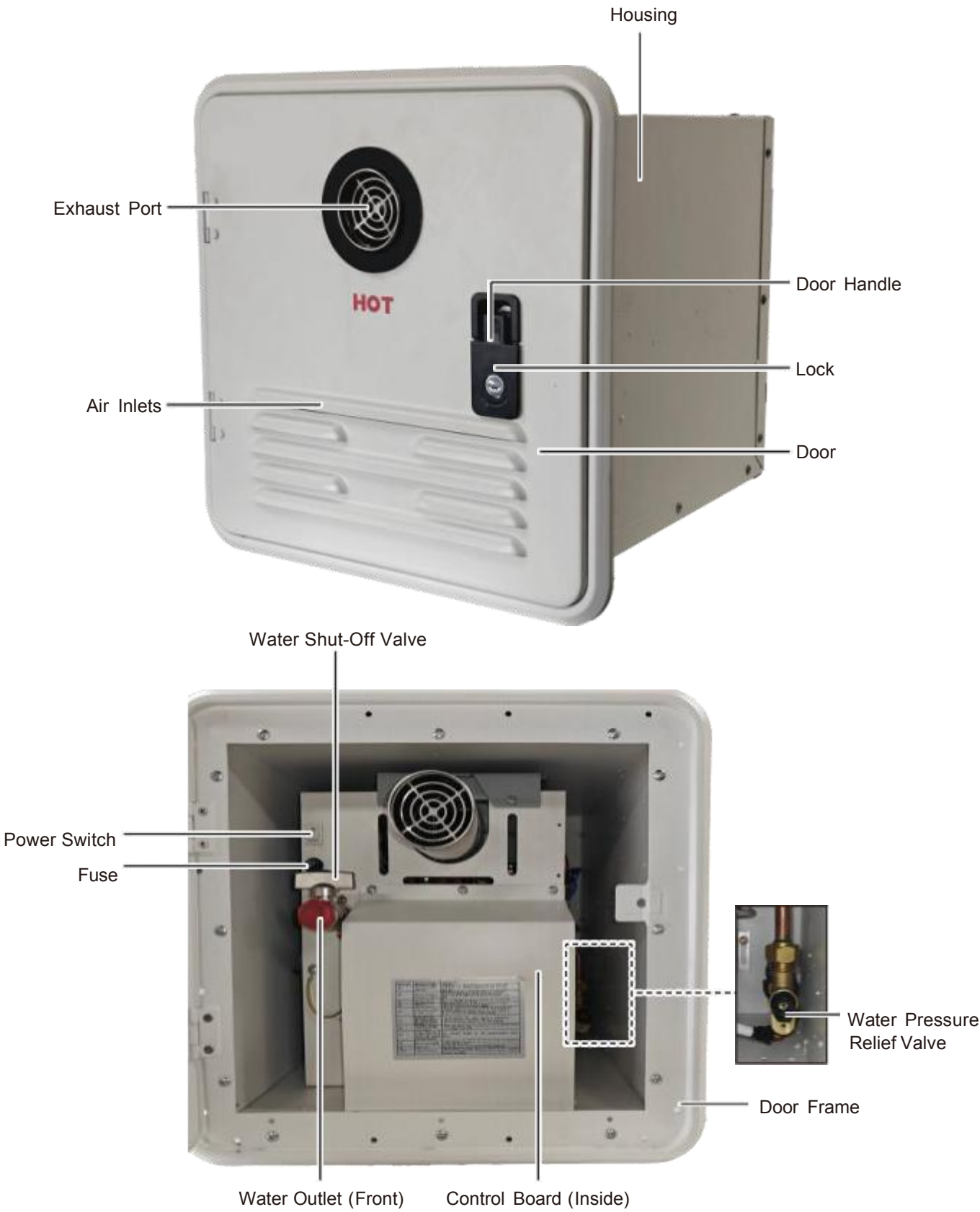
No.	Item	Qty.
A	Water Heater Main Body	1
B	Control Panel with Cord	1
C	Power Cord	1
D	Keys	2
E	Seal Rings	2
F	4×30 mm Screws	10
G	Valve Turning Tool	1

#### Not Included but Necessary or Helpful

- Butyl Tape
- Plumber's Tape
- Electric Drill
- Sealant
- Gas Regulator
- Hammer
- Nails (×2)
- Gas Hose with 1/2 in. NPT Connector
- Water Hoses with 1/2 in. NPT Connectors (×2)

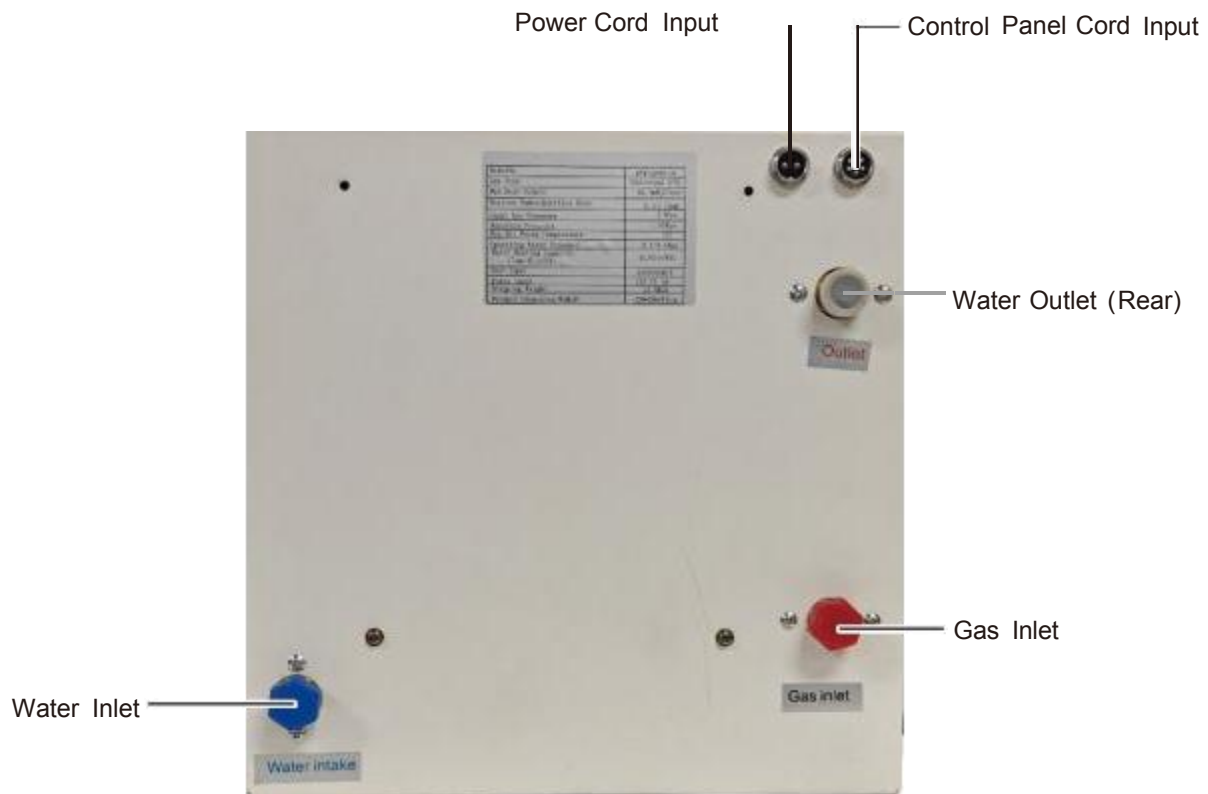
# 4 Product Diagram

## Front



## 4 Product Diagram

## Rear







# 5 Control Panel

Display Screen

Function Buttons



Display Screen		Displays the set water temperature value or the current water temperature value.
Function Buttons		Turns on or off the control panel.
		Toggles the temperature unit between Fahrenheit and Celsius degrees.
		Enters the temp. setting menu in main menu. Increases the temperature value when pressed or held in temp. setting menu.
		Enters the temp. setting menu in main menu. Decreases the temperature value when pressed or held in temp. setting menu.

## 6 Installation

### ADanger

- **ONLY** install the water heater **OUTDOORS**.  
**NEVER** install it in **ANY** indoor locations of your RV.
- Confirm that your gas supply is **LPG**.
- Turn off your gas, water, and power supply **BEFORE** starting work.
- Ensure that **ALL** connections **ARE** correct and secure.

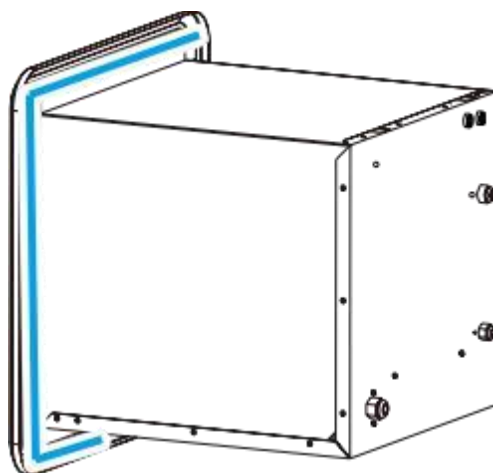
Failure to follow these **WILL** cause severe consequences and void **ALL** warranties stated or implied.

### 6.1 Mounting the Water Heater

1. Choose an appropriate exterior wall opening on your RV to install the water heater, based on the following conditions:
  - The size of the opening should be 13 inches×13 inches (330 mm×330 mm).
  - Sufficient space should be left inside the opening for gas, electrical, and water lines.
  - The bottom of the opening should be flat and stable to support the weight of the water heater when filled with water.
  - The distance from the opening to the RV's door or windows should be a minimum of 12 inches (305 mm).
  - The frame of the opening should be constructed from non-combustible materials.

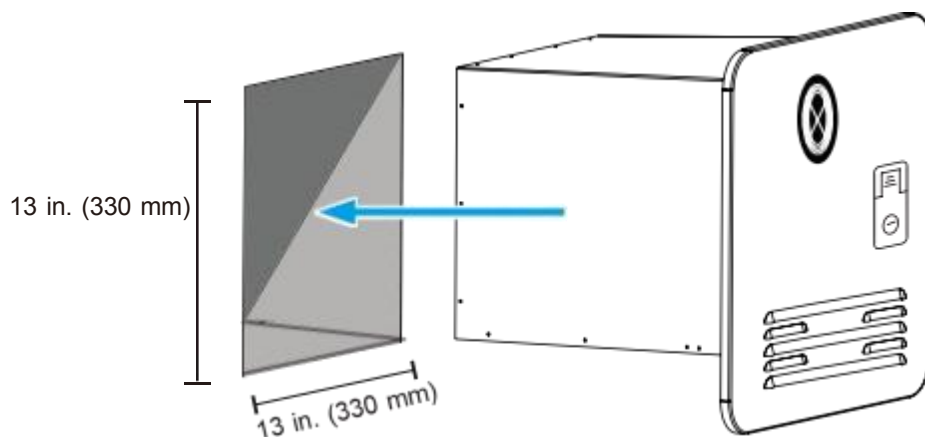
If the frame contains combustible materials, use flame-retardant insulation such as insulating felt or boards to fully separate the water heater from any flammable surfaces. The insulation material should have a thickness greater than 0.8 inches (20 mm).

2. Apply butyl tape (**not included**) to the back of the water heater's door frame.



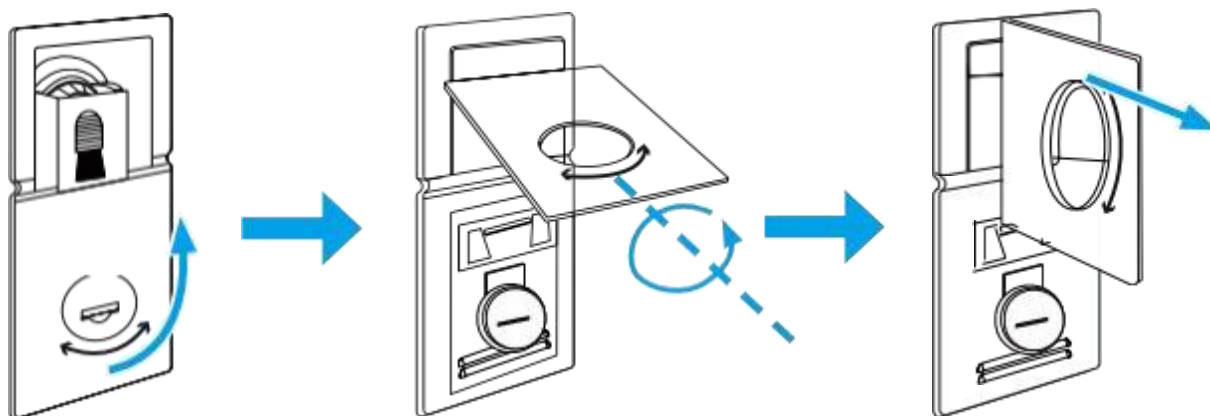
## 6 Installation

3. Insert the water heater into the opening, ensuring the butyl tape completes a tight seal between the RV siding and the door frame.



4. Lift the door handle, turn it counterclockwise, and pull it outward to open the door.

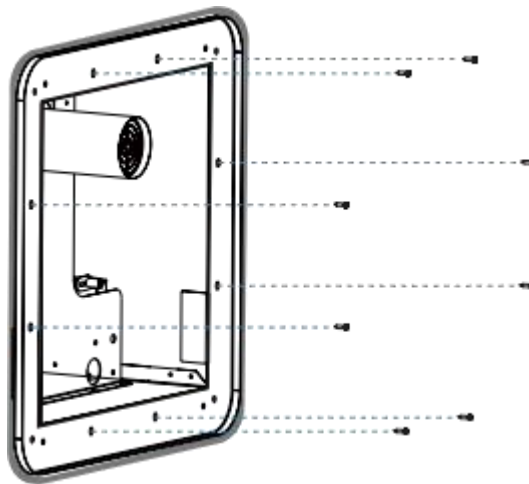
**Note:** If the door handle cannot be lifted, use the key (D) to unlock it first.



## 6 Installation

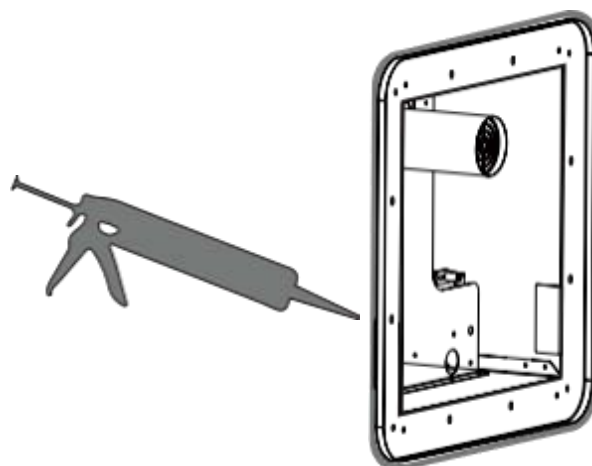
5. Insert 8 screws (I) into the holes on the door frame, then tighten them with an electric drill (not included) to secure the water heater.

**Note:** *It is recommended to insert the screws into the holes as shown. Adjustments can be made based on the actual screw hole positions on the RV.*



6. Apply sealant (**not included**) evenly around the door frame to fill any gaps with the RV's wall, then wipe off any excess sealant.

**Note:** *DO NOT close the door immediately after applying the sealant to allow it enough time to dry and cure.*



# 6 Installation

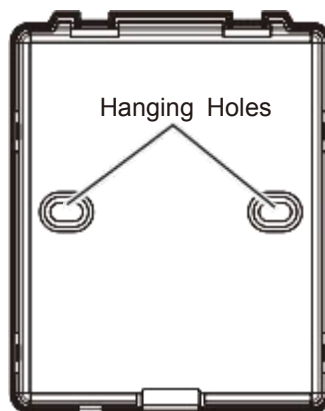
## 6.2 Mounting the Control Panel

1. Use a hammer (**not included**) to drive two nails (**not included**) into the designated spot on the RV's wall for mounting the control panel.

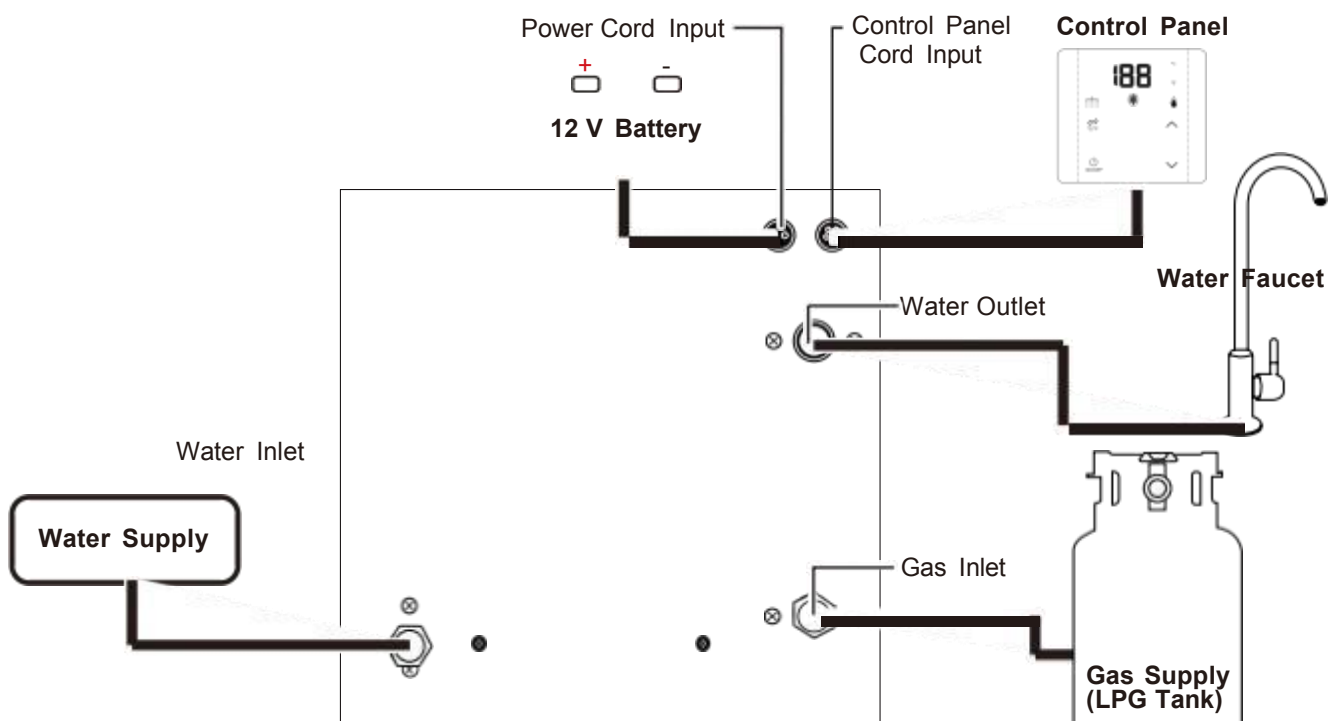
Ensure that the two nails are on the same horizontal line, the spacing between them matches the hanging holes on the back of the control panel, and they are not fully driven into the wall.

**Note:** The distance between the control panel and the water heater should be less than 196.9 inches (5 m).

2. Align the hanging holes on the control panel with the nails, then hang the panel on the wall.



## 6.3 Connecting to Gas, Water, & Power Supply





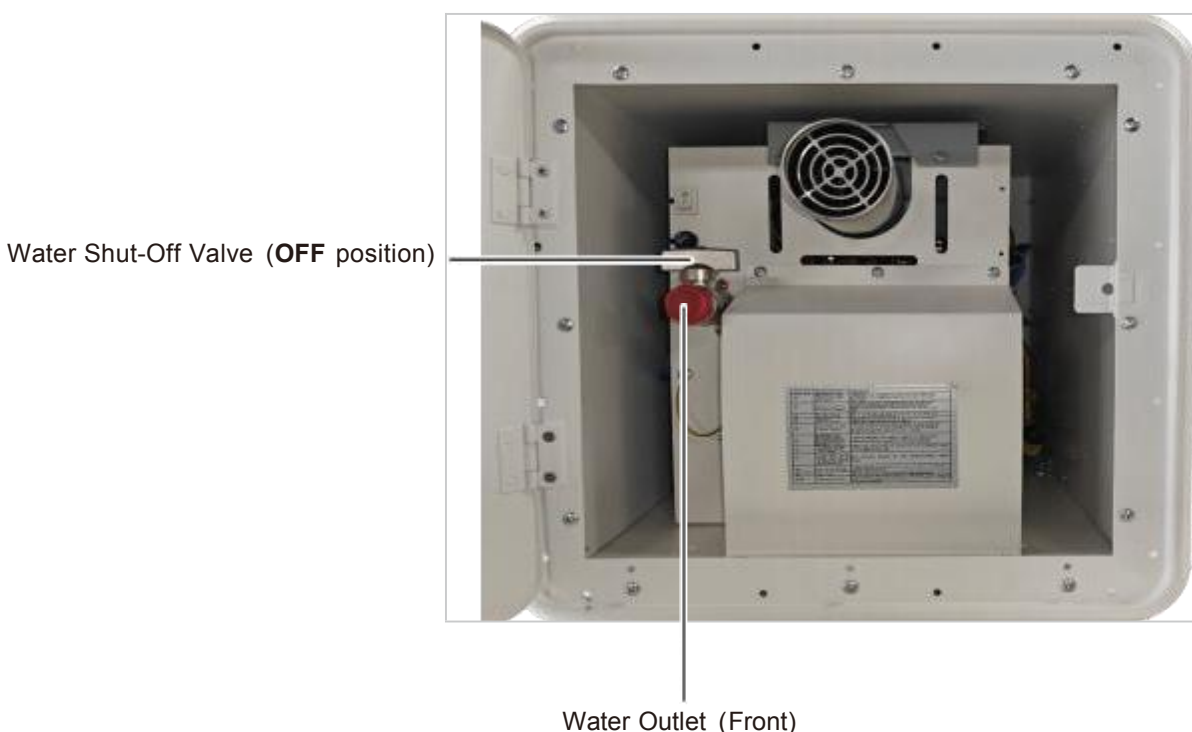
## 6 Installation

1. Locate **Gas Inlet** (red), **Water Inlet** (blue), and **Water Outlet** (white) on the rear of the water heater. Unscrew their caps and apply plumber's tape (not included) to their threads.
2. Securely connect **Gas Inlet** to your gas supply line using a purpose-built hose with an adapter or coupler matching the inlet's 1/2 in. NPT threads.  
If using a gas regulator (**not included**), make sure its outlet matches the intake in thread size and its pressure capacity does not exceed falls between 0.3 psi (2 kPa) and 0.4 psi (2.8 kPa).
3. Firmly connect Water Inlet to your water supply line and **Water Outlet** to your water faucet using dedicated hoses with adapters or couplers matching these ports' 1/2 in. NPT threads.
4. Insert the power cord (C) into the power cord input, then connect the **RED** wire of the power cord to the **POSITIVE** terminal of a DC 12 V power supply and the **BLACK** wire to the **NEGATIVE** terminal of the power supply.
5. Connect the control panel (B) to the control panel cord input using its cord.

### 6.4 Installing the Shower Head (Optional)

To use heated water outside the RV, install the shower head (E) as follows:

1. Locate the front water outlet. Ensure the water shut-off valve is in the **OFF** position, then unscrew the outlet's cap.



2. Apply plumber's tape to its threads.
3. Insert the seal rings (G) into the two ends of the shower hose (F).
4. Connect the shower head to the front water outlet using the shower hose with the provided adapter (H) matching this port's 1/2 in. NPT threads.

## 6 Installation

### 6.5 Checking for Gas & Water Leakage

#### ADanger

**ALWAYS** have a certified/licensed technician perform the checks.

- Check for water leakage.
  - a. Turn on your water supply and your water faucet.
  - b. Use a paper towel to check for any water leaking from all the connections.
  - c. If the paper towel becomes wet, turn off your water supply immediately, redo the connection where the leakage is, and repeat Steps a–b until there is no water leakage.
  - d. Reinstate everything.
- Check for gas leakage.
  - a. Prepare a basin of soapy water and apply droplets to each connection on the gas inlet pipe.
  - b. Turn on your gas supply.
  - c. Visually check that there is no bubble forming where the soapy water was applied.
  - d. If there are bulging bubbles, turn off your gas supply immediately, air the room, redo the connection where the leakage is, and repeat steps a–c until there is no gas leakage.
  - e. Reinstate everything.







# 7 Operation

## 7.1 General Instructions

1. Ensure your RV is parked on a flat location.

### **⚠Warning**

**DO NOT** use the water heater while the RV is in motion or refueling.

2. Turn on your gas, water, and power supply, being sure there is no gas or water leaks.  
For details on checking for leaks, refer to **Checking for Gas & Water Leakage** on Page 15.
3. Turn on the water heater by flipping its power switch to I.
4. Press  to turn on the control panel.  
The display screen should display the current water temperature.
5. Change the temperature unit between Fahrenheit and Celsius degrees as needed by pressing .
6. Set the water temperature as needed.
  - a. Press  or  to enter the temp. setting menu.
  - b. Use  or  to increase or decrease the temperature.
  - c. Wait for a few seconds and the system will automatically save the changes and return to the main menu.
7. To use the heated water inside the RV, follow **Method 1**; to use it outside the RV, follow **Method 2**.

### **Method 1: Inside the RV**

- a. Activate your water faucet.

It will take a few seconds for the water to heat up.

- b. Test the water temperature with your hand carefully, readjust the water temperature as above until you feel comfortable with the water, and memorize the setting value for future reference.

**Note:** The heater will automatically shut off after continuously running for 40 minutes. Turn off and then on your water faucet to resume normal operation.

- c. When finished, deactivate your water faucet and the water heater will stop heating the water.

# 7 Operation

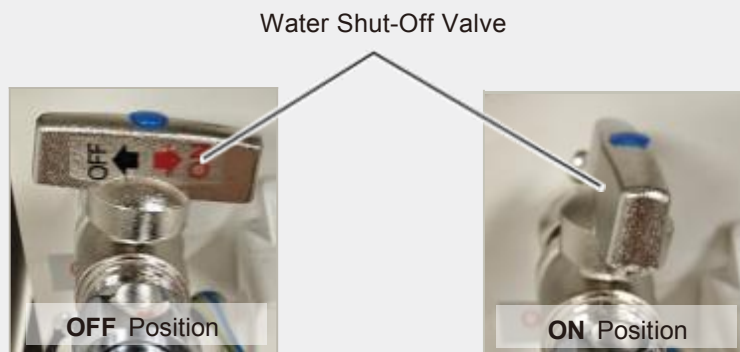
## Method 2: Outside the RV

- a. Ensure the shower head has been connected to the front water outlet using the shower hose.

For details, refer to **Installing the Shower Head** on Page 14.

- b. Turn the water shut-off valve counterclockwise to its **ON** position.

It will take a few seconds for the water to heat up.



- c. Test the water temperature with your hand carefully, readjust the water temperature as above until you feel comfortable with the water, and memorize the setting value for future reference.

**Note:** The heater will automatically shut off after continuously running for 40 minutes. Turn off and then turn on the water shut-off valve to resume normal operation.

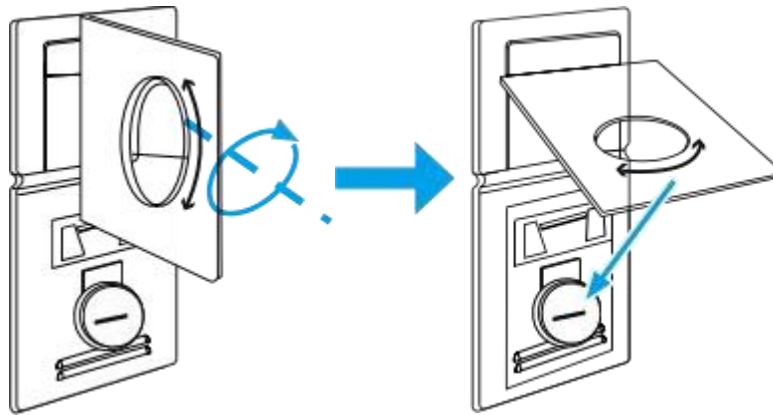
- d. When finished, turn the water shut-off valve clockwise to its **OFF** position and the water heater will stop heating the water.

8. Before a prolonged idleness, flip the power switch to **O** to turn off the water heater, then shut off the gas, water, and power supply.

# 7 Operation

## 7.2 Locking/Unlocking the Door

- To close and lock the door:
  - a. Push the door inward to close it completely.
  - b. Turn the door handle clockwise and press it down to lock the door.



- c. Insert the key (D) into the lock and turn it counterclockwise to further lock the door.
- To unlock and open the door, simply reverse the locking steps above.

# 8 Maintenance

## 8.1 General Instructions

### ADanger

- **ALWAYS** turn off the device and wait for the exhaust port to cool down to room temperature **BEFORE** performing any inspection, cleaning, maintenance, or repair.
  - **ALWAYS** turn off your gas, water, and power supply **BEFORE** performing any servicing.
  - When servicing the control board, mark all the wires **BEFORE** disconnecting any of them. Wiring errors can result in improper and dangerous operation.
  - Servicing, especially tasks related to the control board, **MUST** be performed by a licensed technician.
- 
- Regularly inspect the device and all lines connected to it for signs of wear, damage, and malfunction, such as corrosion on pipes or other fittings, and loose or damaged connections. In particular, use a gas leak detector or soapy water to check for gas leaks, retightening or repairing any loose joints, or replacing any problematic parts with identical ones as needed.
  - Periodically clean the external surfaces of the device with a soft damp brush or cloth, especially the vents. **DO NOT** use harsh abrasives or caustic chemicals.
  - Regularly have a trained technician inspect and clean off any dirt, dust, and mineral buildup from the burner and any other interior parts.
- Increase inspection and cleaning frequency when driving the RV on dusty roads.
- Regularly inspect the air inlets and exhaust port, cleaning off any dirt, dust, or debris to prevent obstruction of combustion and ventilation airflow.
  - When traveling on dusty roads, check and clean the interior of the water heater and blow excess dust away carefully using a compressed air gun.
  - If the device is not to be used for a prolonged period, turn it off, deactivate your gas, water, and power supply to the device, and drain the remaining water from the water heater.

For best results, restrict access to the device to avoid unauthorized operation.

## 8.2 Anti-freeze Water Draining

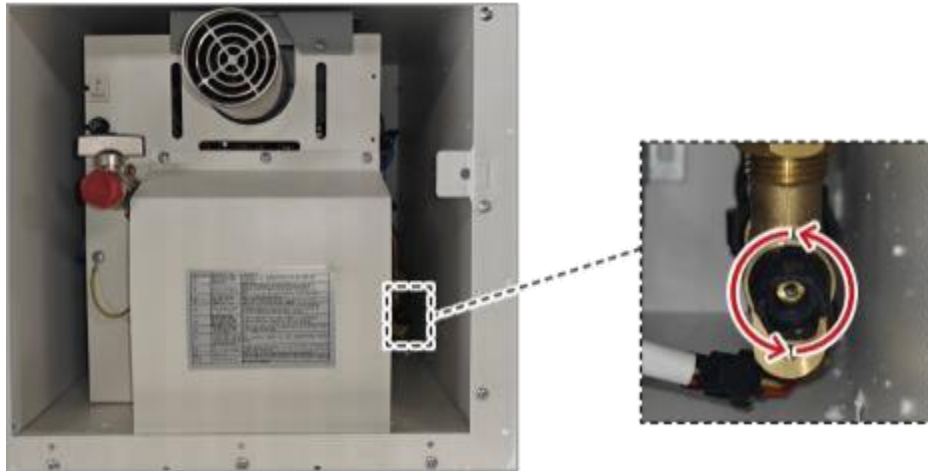
On cold days, especially when the outdoor temperature drops below 34 °F (1 °C), **ALWAYS** completely drain the water from the water heater after use to prevent freezing as follows:

1. Turn off the gas, water, and power supply.
2. Turn on your water faucet.

## 8 Maintenance

3. Turn the water pressure relief valve counterclockwise with the valve turning tool (J) to loosen and remove it.

The remaining water inside the water heater should flow out.



4. When the water is fully drained, replace and tighten the removed valve with the valve turning tool.
5. Turn off the water faucet.

# 9 Troubleshooting



Again, turn off the device and your gas, water, and power supply **BEFORE** undertaking troubleshooting tasks.

## 9.1 Common Problems

Problems	Causes	Solutions
After the water heater is powered on, the control board does not respond.	The power cord is worn out.	Replace it with an identical one.
	The connection between the water heater and the power supply is loose or in poor contact.	Check the connection between the water heater and the power supply for looseness or poor contact. Reconnect as needed.
	The power switch is not on.	Flip the power switch to I.
	The control board is short-circuited.	Have a professional repair or replace it.
	The fuse is blown out.	Have a professional replace the fuse with an identical one.
After the water heater is powered on, the control panel cannot be turned on.	The control panel cord is worn out.	Have a professional replace the cord with an identical one.
	The connection between the water heater and the control panel is loose or in poor contact.	Check the connection between the water heater and the control panel for looseness or poor contact. Reconnect as needed.
	The control panel is short-circuited.	Have a professional repair or replace it.
There is white smoke at the exhaust port.	It is normal. When the outdoor temperature is very low, the hot exhaust encounters the cold outdoor air, causing it to condense into white mist.	/
Water is not heated up.	The water flow rate is too low.	To maintain the water heater's stable operation, a minimum flow rate of 1 gallon per minute is necessary.
	The water supply pressure is inadequate.	Ensure the input water pressure falls between 14.5 psi (0.1 MPa) and 58 psi (0.4 MPa).
	The gas inlet or water outlet is blocked.	Inspect the device's gas inlet and water outlet, removing any blockage if needed.



## 9 Troubleshooting

Water is not hot enough.	The input water temperature is too low and the water flow exceeds the heating capacity of the water heater.	Reduce the flow rate of cold water.
Gas or water leaks.	The gas or water connections are loose.	Retighten the connections, replacing the old tape if needed.
	The gas or water hose is damaged.	Replace the problematic hose with an identical one.
After running continuously for 40 minutes, the water heater suddenly shuts off.	To prevent oxygen deprivation, this water heater includes a 40-minute timeout protection function.	Turn off and then on your hot water faucet to resume normal operation.
Hot water cannot flow out immediately after the hot water faucet is turned on.	<p>The distance between the water heater and the hot water valve causes a delay in hot water flow due to the presence of cold water in the hose.</p> <p>The longer the hose is, the longer the waiting time will be.</p>	/

# 9 Troubleshooting

## 9.2 Error Codes

If the control panel displays an error code, refer to the table below for its implications and possible solutions.

Error Codes	Implications	Solutions
E0	Water outlet probe showing open circuit or short circuit	Inspect the connections between the temperature sensor, water flow sensor, and the controller to ensure they are properly connected.
		Have a professional replace the temperature sensor and water flow sensor.
E1	Ignition failure or unexpected flameout	Ensure that your gas supply is turned on.
		Ensure that the gas input pressure falls within the range of 0.3 psi to 0.47 psi (2 kPa to 3.3 kPa).
		Ensure that the gas supply is LPG.
		Ensure that the ground wire on the controller is securely connected to the water heater's casing.
		Check if the wiring terminals of the controller and the proportional valve are reversed. Ensure that the red wire is connected to the "+" terminal and the black wire to the "-" terminal.
		Ensure good contact between the flame feedback wire on the controller and the wire on the flame feedback pin.
E2	Flame still presents after water shutdown and power off.	Have a professional replace the proportional valve assembly.
E3	Thermostat fault	Ensure that thermostat is well connected to the controller.
		Have a professional replace the thermostat.
E4	Water inlet probe showing open circuit or short circuit	Verify that the probe is in contact with the intended temperature point.
		Ensure secure connections between the probe's terminal and the PCB board, checking for any looseness.
		Confirm correct insertion of the inlet and outlet probes.

Error Codes	Implications	Solutions
<b>E5</b>	No speed signal is detected within 8 seconds of fan startup or the water heater's speed is continuously 500 RPM lower than the set minimum speed for 2 seconds.	Ensure that the power supply battery has adequate charge.
		Have a professional replace the fan.
<b>E6</b>	The water output temperature exceeds 185°F (85°C).	Increase the water flow.
		Clean any dirt or debris from the exhaust port.
<b>E7</b>	Circuit board or proportional valve fault	Have a professional replace the circuit board or proportional valve.
<b>E8</b>	Fan fault	Clean any dirt or debris from the exhaust port.
		Have a professional replace the fan.
<b>En</b>	Timeout protection	Turn off and then on your shower head or water faucet to resume normal operation.
<b>EC/Ec</b>	Interior communication fault	Ensure that the power supply battery has adequate charge.
		Ensure that the control panel is well-connected to the water heater.

## 10 Disposal



Electrical products should not be disposed of with household products. In the EU and UK, according to the European Directive 2012/19/EU for the disposal of electrical and electronic equipment and its implementation in national laws, used electrical products must be collected separately and disposed of at the collection points provided for this purpose. Locations in Australia, Canada, and the United States may have similar regulations. Contact your local authorities or dealer for disposal and recycling advice.