MIZUDO
Comfort with Innovation

**MODEL:**
FDG-CS120S


# Outdoor Tankless Water Heater

## Installation and Operation Manual

CSA/ANSI Z21.10.3:19·CSA4.3:19

| ⚠ WARNING | If the information in these instructions is not followed exactly, a fire or explosion may result causing property damage, personal injury or death. |
|---|---|

— Do not store or use gasoline or other flammable vapors and liquids in the vicinity of this or any other appliance.
— WHAT TO DO IF YOU SMELL GAS
• Do not try to light any appliance.
• Do not touch any electrical switch; do not use any phone in your building.
• Immediately call your gas supplier from a neighbor's phone. Follow the gas supplier's instructions.
• If you cannot reach your gas supplier, call the fire department.
— Installation and service must be performed by a licensed professional.

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• Do not touch any electrical switch; do not use any phone in your building.

• Immediately call your gas supplier from a neighbor's phone. Follow the gas supplier's Installation.

• If you cannot reach your gas supplier, call the fire department.

- Installation and service must be performed by a qualified installer, service agency or the gas supplier.

Please read these instructions carefully and follow all instructions, guidelines, and warnings included in this product manual in order to ensure that you install, use, and maintain the product properly at all times. These instructions MUST stay with this product. By using the product, you hereby confirm that you have read all instructions, guidelines, and warnings carefully and that you understand and agree to abide by the terms and conditions as set forth herein. You agree to use this product only for the intended purpose and application and in accordance with the instructions, guidelines, and warnings as set forth in this product manual as well as in accordance with all applicable laws and regulations. A failure to read and follow the instructions and warnings set forth herein may result in an injury to yourself and others, damage to your product, or damage to other property in the vicinity. This product manual, including the instructions, guidelines, warnings, and related documentation, may be subject to changes and updates.

# CONTENTS

# 1 Safety Information

## 1.1 Safety Definitions

This manual has safety information and instructions to help you eliminate or reduce the risk of accidents and injuries.

**DANGER**
Indicates an imminently hazardous situation which, if not avoided, will result in death or serious injury.

**WARNING**
Indicates a hazardous situation that, if not avoided, could result in death or serious injury.

**CAUTION**
Indicates a hazardous situation which, if not avoided, could result in property damage and minor or moderate injury.

**NOTICE**
This symbol indicates important information where there is no risk to people or property.

## 1.2 Safety Warnings and Operation Safety Guidelines

Please read this manual carefully before using your product, and keep it for future reference.

**Installation Notes:**

The installation must be done in accordance with the information supplied in this manual. All other relevant national, state and local regulations must also be adhered to including (but are not limited to):

- National Fuel Gas Code:
  American Standard ANSI Z223.1/NFPA 54.
  Canadian Standard CSA B149.
- National Electrical Code:
  American Standard ANSI/NFPA 70.
  Canadian Standard CSA C22.
- American National Standard/ Canadian Standards Association Standard for Gas Water Heaters:
  ANSI Z21.10.3 • CSA4.3.
- Local Water, Gas & Electrical Authority Regulations.
- Municipal Building Codes including local OH&S requirements.

**Service Notes:**

Maintenance and fault-finding must be done in accordance with these instructions and the applicable regulations listed above.

**Gas Water Heater Maintenance:**

It is recommended to maintain the gas water heater for ≥1 times a year. Please contact your local dealer for maintenance. Do not disassemble the gas water heater without permission.

**WARNING**
Service shall be carried out only by authorized personnel and the appliance shall not be modified (for example, a licensed plumber or gas fitter).

**WARNING**
This product can expose you to lead, which is known to the state of California to cause cancer and birth defects or other reproductive harm. For more information, go to www.P65warnings.ca.gov.

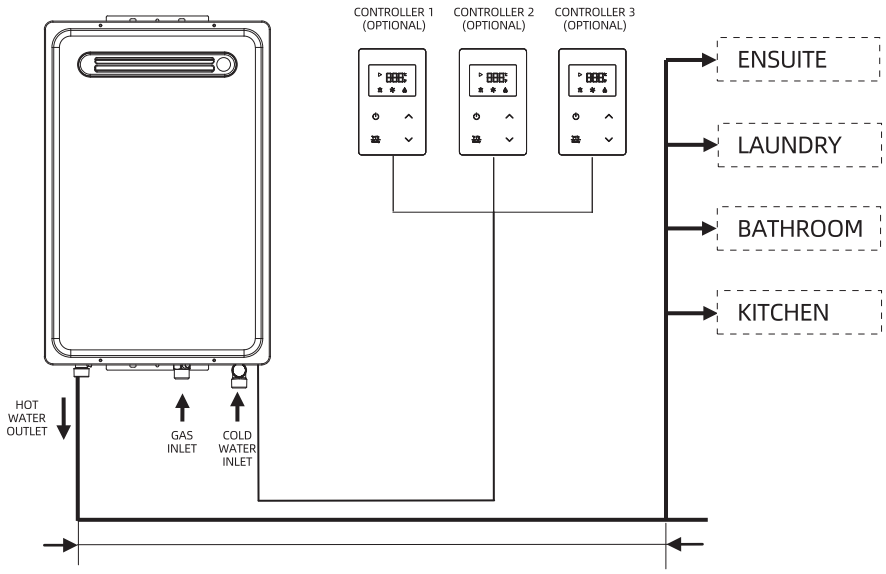
**Plumbing Notes:**

PLEASE NOTE FDG-CS120S model is supplied factory pre-set at Nominal 158 °F (70 °C) maximum outlet water temperature to comply.

The FDG-CS120S model needs to be equipped with hot and cold water mixing valve.

Please follow all the instructions in the Installation Guide and the following additional instructions for the water heater outlet connection:

1. When connecting the hot water supply to the fixtures of the property a minimum of two (2) metres of pipe work must be used between the outlet of the water heater and the first tap/outlet. (As shown in the picture below).
2. The hot water line should be insulated with Armaflex or similar pipe insulation.
3. When the installation is completed the temperature is to be tested at the taps to confirm the water temperature does not exceed the required 122 °F (50 °C) setting.
4. Water pipe size is nominal 15mm from hot water outlet to the first tap/ outlet.
5. Gas pipe size is nominal 20mm.




MIN.2 METRES
(FROM HOT OUTLET TO NEAREST HOT WATER TAP/OUTLET)

# 2 Performance Feature

- This product is a forced type gas water heater. When power on the gas water heater, the waste gas will be forced to exhaust to outside under the help of draught fan.
- **Rain-proof outdoor gas water heater:** when the gas water heater is installed outside, its rain-proof design helps to stop the rain dropping into the gas water heater. The gas water heater inhales air from outside to burn and exhaust the gas waste to outside, user can operate the gas water heater through a remote control device, it is safe and reliable.
- **Digital constant temperature system:** microcomputer control system is a "computer" of the gas water heater to control and coordinate the water, electricity, and gas of the gas water heater to make sure that the outlet water temperature is stable and meets shower requirements.
- **Low start up water pressure:** low water pressure to start up and suitable to use widely.
- **Flame-out protection:** during working, if the gas water heater is flameout suddenly, it will cut off the gas automatically to make sure no gas leakage occurs.
- **Continuously variable wind resistance feature:** when the chimney or the gas exhaustion is blocked, the built-in microcomputer system will detect and enhance the revolving speed of the fan to eliminate the noxious gas. When the revolving speed is up to the limited speed, the microcomputer system will send out an order to cut off gas and flame so as to protect the gas water heater.
- **Water-gas valve control:** when the city water supply is cut off or the water outlet valve is shut down, the gas water heater will stop working and power off.
- **Over-pressure protection:** when the water pressure supply is too high, the safety valve in the gas water heater will release water pressure automatically to protect the gas water heater from damage.

**WARNING**

The water heater has an automatic drainage function. When the water inlet pressure of the water heater exceeds 1.0 Mpa ~ 1.2 MPa, the water heater will automatically drain. Please do not place objects around the water heater to avoid damage caused by water immersion of the water heater. When the water heater automatically drains the water, it indicates that the water system pressure is too high. After the pressure is reduced or the water valve is closed, confirm that the pressure meets the requirements for using the water heater.

**NOTICE**

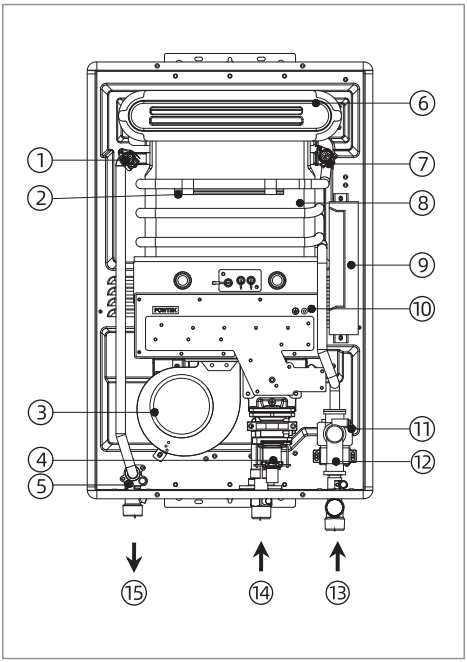
- The appliance will operate at reduced performance below 340 kPa water pressure.
- For information relating to overall dimensions and connection points refer to diagrams. (Please refer to 3.2 Dimensions and Connection Points)
- For information relating to burner test point pressures and injector sizes refer to the name plate located on the side of the case for each model. (Please refer to 3.3 Model and Specification)
- Installing in areas over 1500 m above sea level will reduce performance.

# 3 General Information

## 3.1 Function Introduction and Explanation

- This manual provides information necessary for the installation, operation, and maintenance of the water heater.
- The model description is listed on the name plate which is attached to the side of the case of the water heater. (Please refer to 4.5 Confirm the Appliance Suitability)
- Please read all installation instructions completely before installing this product.
- The Water Heater is an instantaneous water heater designed to efficiently supply endless hot water on demand.

**The principle of the water heater is shown below:**

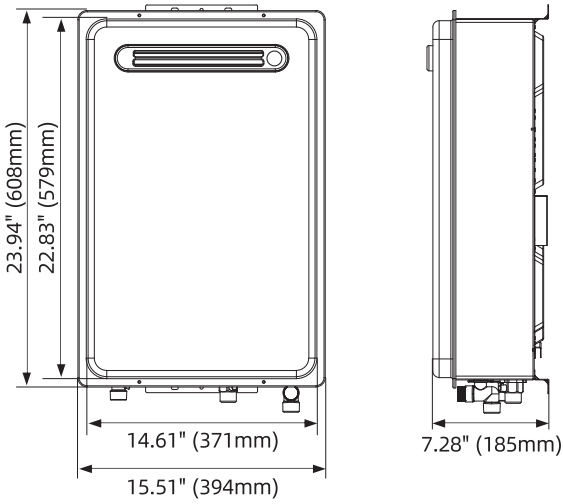


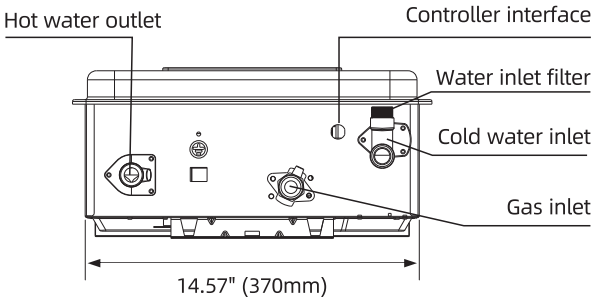

① Over temperature protection thermostat
② Heating device
③ Fan
④ Gas proportion valve
⑤ Water outlet temperature sensor
⑥ Exhaust
⑦ Anti-freezing Thermostat
⑧ Heat exchanger
⑨ Computer boarde
⑩ Bumer
⑪ Inlet temperature prode
⑫ Water control valve flow sensor
⑬ Cold Water Inlet
⑭ Gas Inlet
⑮ Hot Water Outlet

**Operation process of gas water heater:**

1. A hot water tap is turned on.
2. Water enters the water heater via the cold water inlet.
3. The water flow sensor detects the water flow.
4. The computer automatically ignites the burner.
5. Water circulates through the heat exchanger and is heated.
6. The computer will modulate the gas supply valve and water flow to produce the right amount of hot water at the correct temperature.
7. When the tap is turned off, the unit shuts down.

## 3.2 Dimensions and Connection Points



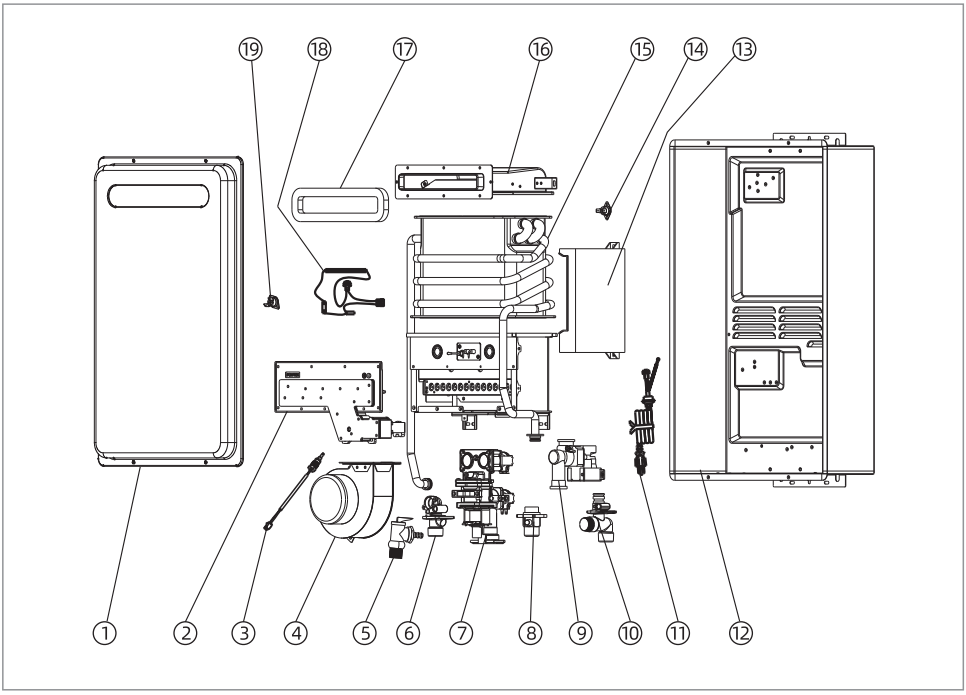



## 3.3 Model and Specification

| Model | FDG-CS120S | |
|---|---|---|
| Part No. | FDG-CS120SBW-NG | FDG-CS120SBW-LP |
| Gas category | NATURAL GAS | PROPANE |
| Nominal Gas Consumption (Btu/hr) | 120,000 | |
| Nominal minimum gas consumption (Btu/hr) | 16,500 | |
| Nominal Test Point Pressure | 6.99" W.C. (1.74 kPa) | 11" W.C. (2.74 kPa) |
| Nominal Manifold Pressure | 3.65" W.C. (0.91 kPa) | 4.58" W.C. (1.14 kPa) |
| Water Pressure Maximum | 150 psi (1.0 MPa) | |
| Water Pressure Minimum | 15 psi (0.1 MPa) | |
| Number of Injectors | 15 Pcs | |
| Injector Diameter | 57.1 mil (1.45mm) | 43.4 mil (1.1mm) |
| Burner Control Segment | 15 Pcs | |
| Electrical rating | 42 W | |
| Water heating capacity | 4.23 GPM | |
| Dimensions (Cosing. H × W × D) | 23.94" × 15.51" × 7.28" (608 mm × 394 mm × 185mm) | |
| Net Weight | 30.84 lbs (13.99 kg) | |
| Overheating Cut-off | 176 °F (80 °C) | |
| Electricity supply | 120 VAC 60 Hz | |
| Ignition | Direct without pilot | |
| Gas inlet connection | NPT 3/4 | |
| Water connection | NPT 3/4 | |

We reserve the right to amend the product without prior notice.

## 3.4 Component Diagram




① Front panel
② Manifold
③ Water outlet temperature sensor
④ Fan
⑤ Pressure relief valves(For Canada)
⑥ Water outlet connector
⑦ Proportional valve
⑧ Intake connector
⑨ Water proportional valve
⑩ Water inlet connector
⑪ Power line
⑫ Back panel
⑬ Controller
⑭ Anti-freezing Thermostat
⑮ Heat exchanger
⑯ Exhaust
⑰ Sealing cotton
⑱ Heating device
⑲ Over temperature protection therm

# 4 Installation

## 4.1 Safety Guidelines

The water heater requires careful and correct installation to ensure safety and efficient operation. This manual must be followed. Please read the "Safety Guidelines" and the "Safety Warnings and Operation Safety Guidelines" sections at the beginning of this manual.

Ensure the following warnings and instructions are read and understood before commencing installation.

**WARNING**

- Installation and service must be performed by a licensed professional (for example, a licensed plumber or gas fitter).
- The licensed professional is responsible for the correct installation of the water heater and for compliance with all relevant national, state and local regulations.
- The installation must conform with local codes or, in the absence of local codes, the National Fuel Gas Code, ANSI Z223.1/NFPA 54, and/or CSA B149.1, Natural Gas and Propane Installation Code.
- The appliance, when installed, must be electrically grounded in accordance with local codes or, in the absence of local codes, with the National Electrical Code, ANSI/NFPA 70, and/or the CSA C22.1, Canadian Electrical Code, Part I.
- The water heater must be installed outdoors only. Do not install water heater indoors.
- Not to be used as a pool heater.

## 4.2 General Guidelines

The water heater is intended to be installed. Please ensure that:

- The water heater has enough natural ventilation space.
- Location of water leaks that will not damage the surrounding area.
- Whether all transport protection/packaging has been removed.
- Check the nameplate and Gas type label to determine the correct gas type, gas pressure , water pressure and electrical characteristics; If the equipment does not meet the operating conditions, do not install it or consult your supplier.
- If you have any questions, please close the gasoline valve and all hot water valves and call the professional.

**WARNING**

- Water temperatures above122 °F (50 °C) can cause severe burns or death from scalding.
- Children, the disabled and the elderly are at a high risk of being injured. Feel the water temperature before bathing or showering. Do not leave children , disabled persons, or the elderly unsupervised.
- This appliance is not intended for use by persons (including children) with reduced physical, sensory or mental capabilities, or lack of experience and knowledge, unless they have been given supervision or instruction concerning use of the appliance by a person responsible for their safety.
- Children should be supervised to ensure that they do not play with the appliance.
- If the supply cord is damaged, it must be replaced by the manufacturer, its service agent or similarly qualified persons in order to avoid a hazard.

**DANGER**

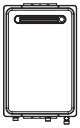
- Do not store or use gasoline or other flammables, vapors, or liquids in the vicinity of this appliance. Vapors from flammable liquids will explode and catch fire causing death or severe burns.
- Do not reverse the water and/or gas connections as this will damage the gas valves and can cause severe injury or death. Follow the diagram when installing your water heater (Please refer to 3.1 Function Introduction and Explanation).
- Do not use this appliance if any part has been in contact with or been immersed in water.
- Immediately call a licensed professional to inspect and/or service the unit if necessary.
- Do not disconnect the electrical supply if the ambient temperature will drop below freezing.
- The Freeze Prevention System only works if the unit has electrical power. The warranty will not be covered if the heat exchanger is damaged due to freezing (Please refer to 6.6 Freeze Prevention).

## 4.3 water heater installation check List

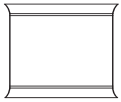
- ☐ Unbox and check whether the water heater, installation manual and owner's guide, parts and accessories bag, wired digital controller (outdoor gas water heater models only) are coming in the box.
- ☐ Check to ensure there are no corrosive chemicals in the air intake.
- ☐ Water supply should be free of chemicals, and water hardness that higher than allowed level may damage the water heater.
- ☐ Ensure there is enough space required for installation.
- ☐ Ensure there is enough distance required between the exhaust vent and air inlet of houses.
- ☐ Ensure you are using the right exhaust vent products, and follow the installation manual from the suppliers.
- ☐ Turn off hot water switch, turn on cold water switch and the drain screw, flush the debris and air out of the water pipes. Debris inside the water my damage the water heater. Please use buckets or extra water pipes if needed.
- ☐ Ensure no water leakages.
- ☐ Turn off cold and hot water switches before cleaning up water inlet filter. Put a bucket under the water heater's filter to catch any water out of the water heater. Screw out the water inlet filter, wash off debris and dusts, and then hand screw the filter back in. When it's done, turn on the cold and hot water switches.
- ☐ Ensure the pressure relieve valve's relieving capacity exceeds that of the water heater BTU input rating. Please refer to the specifications on the side of machine for BTU input ratings. Install a manual gas shut-off valve between the water heater and your gas supply line.
- ☐ Check to confirm there is no gas leakage in piping and fittings.
- ☐ Confirm the gas inlet pressure in the min-max range as required.
- ☐ Confirm you are using the gas type as required by the water heater.
- ☐ Confirm the power supply is 120 V/60 Hz, and properly grounded.
- ☐ Confirm the thermostat works normally.
- ☐ Connect a gas manometer to the pressure port to verify the system is working normally. Turn on appliances that use high flow rate hot water and set the water heater to its maximum operation capacity, the inlet gas pressure must be higher than the minimum pressure on the specification label.
- ☐ Do not induct poisonous chemicals into drinking water, like the chemicals used to process broiler water.
- ☐ Drain the water out of the water heater if you are not using the water heater for a significant time period.
- ☐ For outdoor Tankless Water Heater models, confirm the wired digital controller is installed correctly.

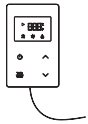
## 4.4 Prepare for installation

### ■ Parts included


Tankless Water Heater


User Manual


Assembly Kit

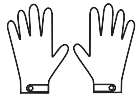

Wired Controller

### ■ Tools and Materials needed (Not included)


Screw Driver

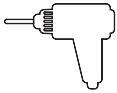

Pipe Wrench


Wrench


Gloves


Safety Glasses


Levelling instrument

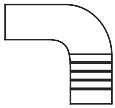

Hammer Drill with Concrete Bits


Soapy Water


Gas Leak Detector

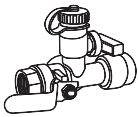

Ruler

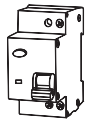

Teflon Tape


Approved Venting


Pressure Relief Valve

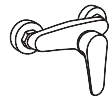
### ■ Materials that may be needed (Not included)


Cold Water Isolation Valve

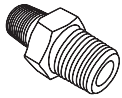

Single gang electrical box

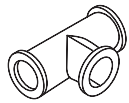

Electrical Adhesive Tape


Pipe Wrap Insulation


Thermostatic Mixing Valve


NPT3/4-in x 1/2-in dia Threaded Male Adapter

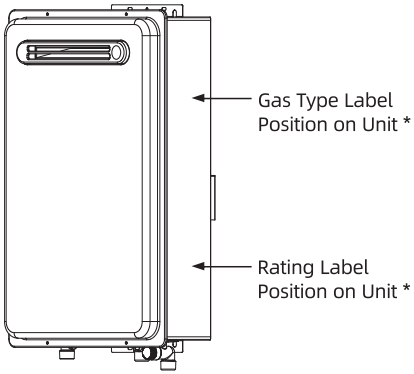

1/2"Hex Nipple


Threaded Tee Fitting (Middle 3/4")


Hot Water Isolation Valve

## 4.5 Confirm the Appliance Suitability

Check the gas type label and the name plate for the correct gas type, gas pressure, water pressure and electrical rating for your application. Do not install the unit if these requirements are not met.




* Not limited to the left and right sides of the machine.

**WARNING**

- This equipment is not suitable for pool or spa heating.
- Water hardness may affect the water heater performance. It is important that the water heater is in stalled in water conditions that are suitable for long term operation.
- This is a water heating apparatus only and the delivered water quality is dependent upon the quality of water supplied to this system.
- The connection, attachment , integration or general association of other equipment or parts not specified by the water heater which either directly or indirectly affect the operation or performance of this equipment could void the warranty.
- The manifold pressure is preset at the factory. It is computer controlled and should not need adjustment.
- It should be as close as practical to the hot water outlet s to minimise heat loss and cost.
- The water heater does not require a fireproof back plate if installed on a timber wall.
- Special conditions which shall be avoid, e.g. marine environment, high humidity conditions (more than 95% RH), necessary to ensure optimum performance.

## 4.6 Installation Position

Carefully read this section before installation, and selecting the location for installing the water heater.

The following precautions should be considered.

**WARNING**

- This is a water heating apparatus only and the delivered water quality is dependent upon the quality of water supplied to this system.
- Although the water heater is designed to operate with minimal noise level, you should not install the unit on a wall adjacent to a bedroom, or a room that is intended for quiet study or meditation, etc.
- Locate your heater close to a drain where leakage will not do damage to surrounding areas .
- As with any water heating appliance, the potential for leakage at some time in the life of the product does exist.

**WARNING**

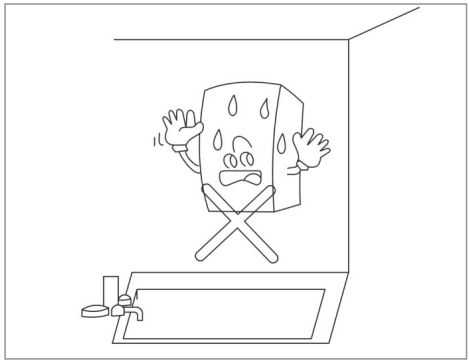
- Every care is taken to warn occupants of the building and the public of any injury that may occur from falling tools, open trenches, water connections or any other general hazard.
- Make sure the water heater will have sufficient room to expel combustion air and operate with natural ventilation.
- Keep the area around the water heater clean. Particles may clog the air vent, reduce fan function, or cause improper combustion.
- Locate the unit for easy access and maintain clearance for service and maintenance. Install the unit so that it can be connected or removed easily.

- The water heater must be installed outdoors only. Do not install the water heater indoors.
- Not to be used as a swimming pool heater.
- Do not locate your water heater in a pit or any location where gas and water can accumulate.
- Please check the proximity of gas & electrical connections so as not to create a hazard and avoid access problems for other services.
- It must be located in accordance with the requirements clearances from eaves, windows, vents etc. And see the diagram on the "4.6 Installation Position". For more surrounding construction material requirement.
- Do not place flammable or explosive materials within one meter of the water heater to avoid fires.
- This relates to the physical separation distance specification where multiple appliances are employed. That equates to a minimum 150 mm horizontal flue separation distance allowing appliances to be placed side by side in the same vertical plane
- Most load bearing walls such as brick, brick/veneer, weatherboard and stud-frames are suitable locations.
- Securely fasten the unit to the wall with screws or bolts in the top and bottom brackets.

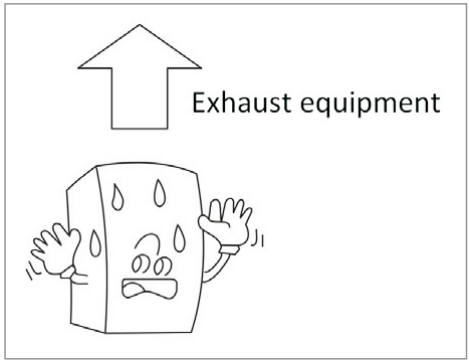
## 4.6.1 Clearances for Outdoor Heater Locations

- Clearance in accordance with local installation codes and the requirements of the gas supplier.
- A vent shall not terminate directly above a sidewalk or paved driveway that is located between two single family dwellings and serves both dwellings.
- Permitted only if veranda, porch, deck, or balcony is fully open on a minimum of two sides beneath the floor.

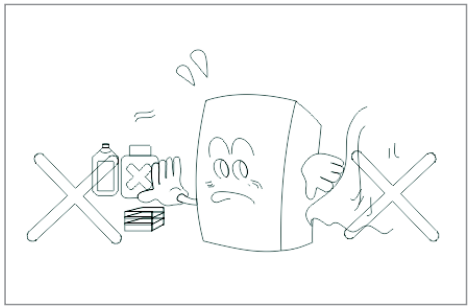
- **This water heater is strictly forbidden to be installed indoors and in the bathroom.**



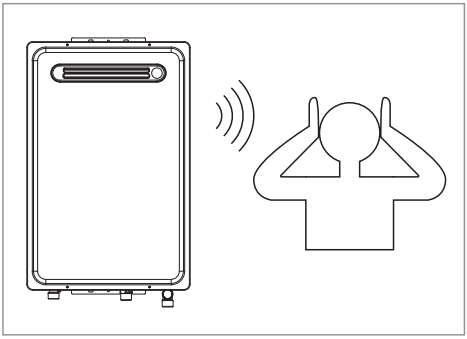
- **The water heater shall not be installed under the exhaust fan of the exhaust fan or the range hood.**



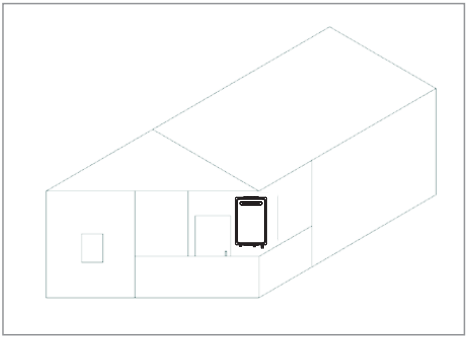

- **There shall be no other gas appliances near the installation of the water heater, and there shall be no flammable gases, liquids, etc. around it.**



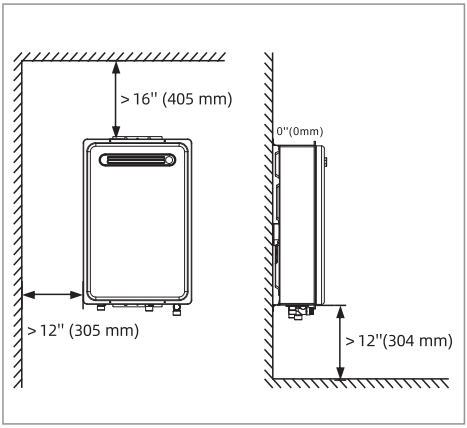
- **Installation of outdoor water heaters should avoid the impact of other people's lives due to exhaust and noise.**

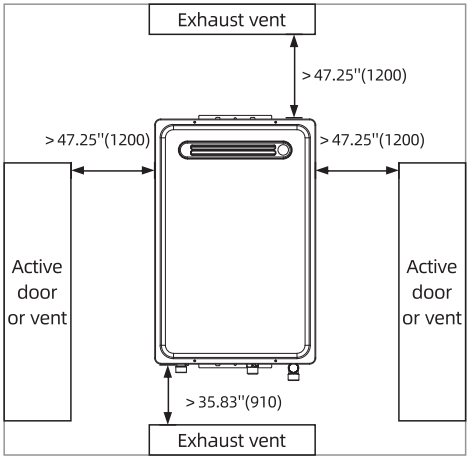


- **The water heater must be installed in a well ventilated area (eg open balcony, patio)**



- **The distance between the water heater and the surrounding wall, unit: inch (mm)**

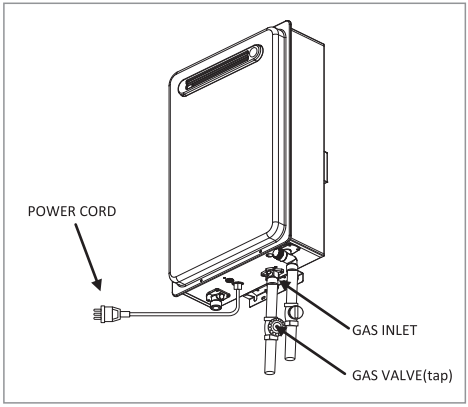



## 4.7 Water Heater Installation

1. According to the requirements of the figure and the size of the water heater, mark the wall with a dash mark, then drill three holes with a diameter of Φ8mm and a depth of 60mm, respectively insert three M6×50 mm expansion screws into the hole and tight the expansion screws with a wrench.
2. Hang up the water heater, screw on the M6nut, and fix the water heater to the wall.
3. The installation of the water heater must be correct, otherwise it will affect the normal use of the water heater.

## 4.8 Gas Connection



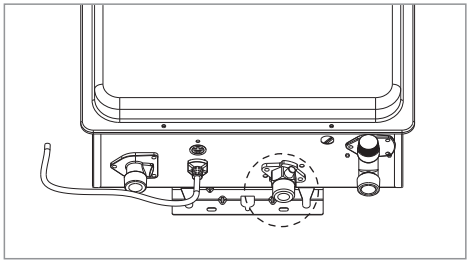
**WARNING**
- Turn off the electric power to the water heat er and manual gas valve located on the outside of the unit before beginning gas connection.
- Confirm the position of the gas inlet. Do not connect water line to gas inlet.

**WARNING**
Conversion of this unit from natural gas to propane (LPG) or propane (LPG) to natural gas cannot be done in the field. Contact your supplier to get th e correct unit for your gas type.

## 4.8.1 Sizing and Connection Suitability

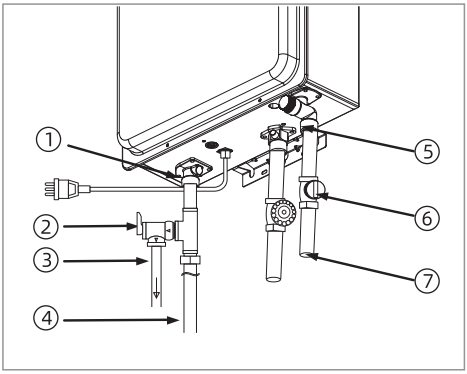
- Check the gas type label to make sure that the unit was built for the type of gas you will be using, and that the gas inlet pressure is within the appropriate range. (Please refer to 4.5 Confirm the Appliance Suitability)
- The appliance and its individual shutoff valve must be disconnected from the gas supply piping system during any pressure testing of that system at test pressures in excess of 1/2 psi (3.5 kPa).
- Gas pressure below this specified range for the water heater and/or insufficient gas volume will adversely affect performance.
- Inlet gas pressure must not exceed the maximum values, gas pressure above the specified range will cause dangerous operating conditions and damage to the unit.
- Until testing of the main gas line supply pressure is completed, ensure the gas line to the water heater is disconnected to avoid any damage to the water heater.
- Always use approved connectors to connect the unit to the gas line. Always purge the gas line of any debris before connecting to the water heater.
- Install a manual gas shut-off valve between the water heater and the gas supply line.
- The regulator is preset at the factory. It is computer controlled and is not to be adjusted by any person other than a licensed professional.
- When the gas connections are completed, perform a gas leak test either by applying soapy water to all gas fittings and observing for bubbles or by using a gas leak detection device.

## 4.8.2 Measuring Inlet Gas Pressure and Testing Gas Leakage



1. Shut off the manual gas valve on the supply gas line.
2. Open a tap/outlet . The unit should turn on and the gas in the gas pipeline should be purged.
3. Leave the tap/outlet running until the unit shuts down due to lack of gas supply. Then turn off the tap/outlet.
4. Remove the screw on the pressure port located on the gas inlet of the water heater shown in the diagram to the above.
5. Connect the manometer to the pressure port.
6. Re-open the manual gas valve. Check to see that there are no gas leaks.
7. Open some of the fixtures that use a high flow rate to turn on the water heater.
8. Check the inlet gas pressure in the position showed in the red circle above when the water heater is at a maximum operation capacity, the inlet gas pressure point must be within the appropriate range. (Please refer to p.15).

## 4.9 Water Connections

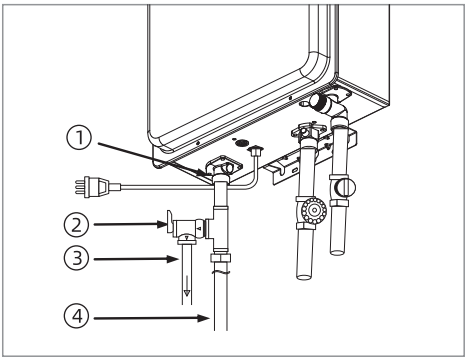



① Water outlet
② Pressure relief valve
③ Drain pipe
④ Hot water outlet
⑤ Filter and drain plug
⑥ Gate or ball valve on inlet
⑦ Cold water inlet

- All pipes, pipe fittings, valves and other components, including soldering materials, must be suitable for potable water systems.
- A manual shut off valve must be installed on the cold water inlet to the water heater between the main water supply line and the water heater.
- Only a gate valve or a ball valve is to be used on the cold water supply.
- Check the cold water pressure. If above 1000 kPa an approved limiting valve must be fitted. Before installing the water heater, flush the water line to remove all debris, and after installation complete, purge the air from the line. Failure to do so may cause damage to the heater.
- To prevent water heater water system damage caused by excessive pressure. At the water outlet of the water heater, it is necessary to install an appropriate pressure relief valve to protect the water system and user safety. The pressure relief valve complies with ANSI Z21.22 • CSA 4.4.
- In the hot water system, the temperature rises continuously, and the volume of water expands.
- If the system is equipped with an expansion tank or a flexible connection bellows can absorb a part of the expansion amount, the expansion tank or the soft connection bellows cannot absorb the pressure relief valve needed to protect the pressure relief valve to protect the entire system prevents breakage of pipes and other components, so the relief valve pressure setting is generally selected to be slightly less than the maximum pressure (Pmax) that the entire system can withstand.
- In addition, the pressure can not be the same as the normal operating pressure, too close to the normal operation of the pressure relief valve will frequently pressure relief, lower temperature and pressure relief valve service life.
- In order to prevent the damage of the temperature probe or control system and cause the continuous heating of hot water to reach 212 °F (100 °C) vaporization, it is necessary to install a temperature and pressure safety valve, and the temperature and pressure valve temperature reaches 210 °F (99 °C) to relieve the pressure, thereby protecting the entire system. So the safety valve temperature is generally set to 210 °F (99 °C).
- There is a wire mesh filter to discourage debris from entering your heater. Clean filter after initial installation to ensure no debris from the pipe work has clogged it.

## 4.10 Pressure Relieve Valve Installation and Attentions

| Model | Recommended pressure relief value temperature |
|---|---|
| FDG-CS120S | 150psi / 210 °F (99 °C) |




① Water outlet
② Pressure relief valve
③ Drain pipe
④ Hot water outlet

- Please use Teflon tape or sealant to seal the thread of pressure relief valve, then install it into Tee valve NPT 3/4 outlet (as shown above).
- Please use Teflon tape or sealant to seal the thread of water outlet, then install pressure relief valve, tee valve and water outlet together. Please select a suitable position to install (as shown above).
- Please note that the outlet of pressure relief valve can not face upward, otherwise it will always leave some water inside.
- Anti-fouling and anti-scaling, dirt will directly affect the normal function of the safety valve function. The drain pipe must match the drain port to ensure that the valve does not interfere with the normal operation of the valve.
- The pressure relief valve outlet can be installed horizontally or vertically, but it cannot make pressure outlet facing upwards, otherwise it can not work normally. It is forbidden to block its outlet.
- The dirt will directly affect the normal function of the safety valve function. It requires hot water system maintenance of anti-fouling and anti-scaling cleaning.
- The user must check the relief valve at least once a year. When checking, turn off the water heater's power supply and gas. Turn on the water inlet switch to create pressure in the water system. Then gently open relief valve handle until there is water out and then gently close, if there is no water out, indicating that the valve is invalid, this time should immediately turn off the water heater water switch and ask the service personnel to deal with.
- Before operating the handle, check the discharge line connecting the valve to ensure that the water drained from the valve can be drained to a suitable place.

**WARNING**

- Do not check the safety valve when the water heater is in normal operation to avoid hot water burns.
- When the set temperature exceeds 122 °F (50 °C), the flick mixer must be installed to mix the cold water and hot water before the temperature does not exceed 122 °F (50 °C), otherwise it will burn the skin. Please refer to the method of using the flick mixer (Please refer to 5.4 How to Set the Temperature).

## 4.11 Electrical Connection

- The water heater must be electrically grounded. Do not attach the ground wire to either the gas or water piping.
- The water heater requires an AC 120 V  60 Hz.
- The weather-proof power point should be no more than 1 meter from the base of the water heater for easy access.
- Install a power switch so that the electrical power can be switched off if necessary.
- If the cord supplied with this appliance must be replaced, it must be replaced with the correct appliance wiring material supplied by the Manufacturer.

- When servicing or replacing parts within the water heater, label all wires prior to disconnection to facilitate an easy and error free reconnection. Verify proper operation after servicing.

## 4.12 Wired Controller

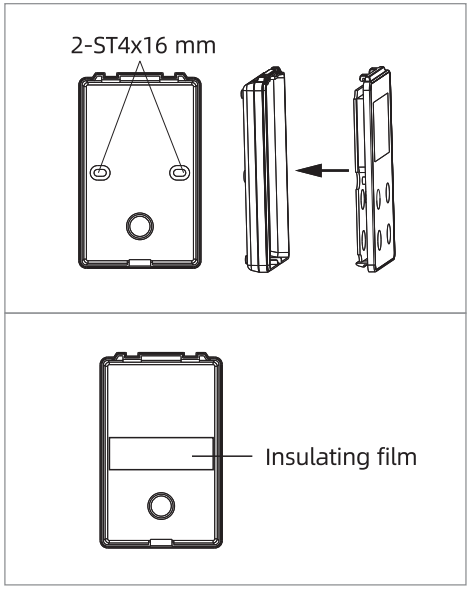
- The water heater can be installed with up to three wired controllers. Each wired controller has two functions which can adjust the set temperature and indicate the error code.
- PRIORITY function: The controller that is activated first (i.e. button is pressed) is given PRIORITY function, and can freely adjust the temperature. Remaining controllers will display the set temperature however will not be able to make any adjustments. After a 15 minute period of inactivity the priority on the first remote will cease and priority can then be assigned to another remote by activating it (i.e. a button is pressed). Then the new controller has priority and the cycle repeats.
- Default setting temperature: At the initial power on, the setting temperature will be the same as the value set on DIP switch. After the initial use, it will remember the former setting temperature.
- All water heater models have self diagnostic function for safety and convenience when troubleshooting. If there is a problem with the installation or the unit, it will display a numerical error code on the wired controller (or the LED of the computer board will be blink.)

**Wired controller installation requirements**

- The wired controllers are splash resistant, however should not be positioned where it can be splashed directly & should be appropriately sealed between the surface of the wall & controller.
- The wired controller can be installed in the bathroom provided it is correctly installed.

### 4.12.1 Wired Controller Installation

- The wired controller comes with a 315.7" (8 m) cable. If a longer cable is needed, please purchase a shielding line. Cut the original line and rewire according to the polarity to avoid short circuit whilst adhering to the requirements below: Minimum 18 AWG wire.
- Attach the wired control to the wall with screws supplied. After fixing the screws, please use the insulation film inside the installation kit to wrap the screw head in case of damaging the wire controller which can cause a short circuit.



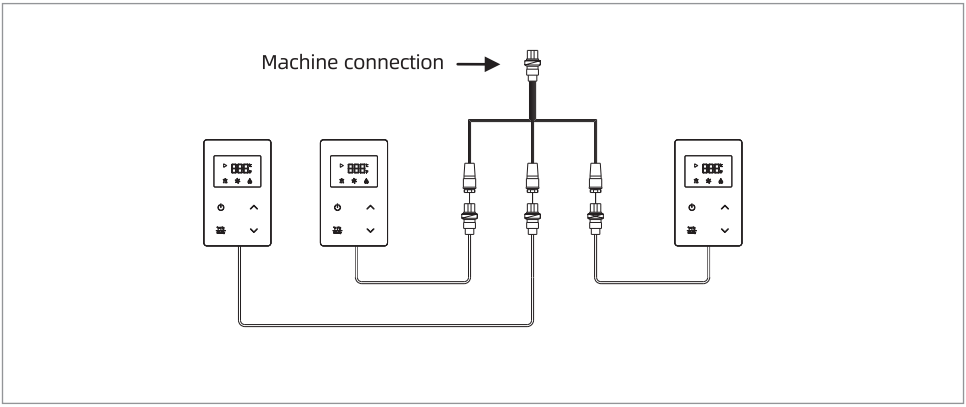

**WARNING**

- DO NOT locate the remote controls where they may come into contact with water.
- DO NOT position the remote controls in the vicinity of chemicals.
- DO NOT position the remote controls over a heat generating appliance (i.e. cooker, toaster).
- DO NOT position the remote controls where materials may spill onto them.
- Please note if the controls are to be fitted to a metal surface an insulation plate should be provided behind the mounting position.

## 4.12.2 Connection of Wired Controller Wiring to the Water Heater

1. Turn off the power supply to the water heater.
2. Connect the first controller only and turn on the power supply to the water heater.
3. Turn off the first controller by pressing the " ⏻ " button (LED light will turn off).
4. Continue to connect any additional wired control wires to the remote terminals directly.
5. DO NOT jump or short-circuit wires otherwise the PCB may become damaged.
6. Return the front cover.

   DO NOT turn on the remote until instructed.
7. Activate the first remote by pressing & holding the " ﹀ " button for 5 seconds until a single beep sounds. Then press & hold the " ﹀ " button for 5 seconds until the LED screen lights up.
8. Adjust the on screen value to set the ID (available ID's include -0, -1, -2). Press the " ⏻ " button to confirm (The ID of the wired control cannot be repeated).
9. Repeat for all additional controllers.
10. Controllers can now be turned on and will operate as per the PRIORITY function (refer to 5.4 How to Set the Temperature).




## 4.13 Check the Water Heater

After the installation of the water heater is completed, it is necessary to check that the water heater has no air leakage and water leakage, and the ignition operation is normal, and there is no fault alarm.

# 5 Operation

## 5.1 Safe Operation

**FOR YOUR SAFETY READ BEFORE OPERATING**

**WARNING: If you do not follow these instructions exactly, a fire or explosion may result causing property damage, personal injury or loss of life.**

A. This appliance does not have a pilot. It is equipped with an ignition device which automatically lights the burner. Do not try to light the burner by hand.

B. **BEFORE** OPERATING smell all around the appliance area for gas. Be sure to smell next to the floor because some gas is heavier than air and will settle on the floor.

**WHAT TO DO IF YOU SMELL GAS**

- •Do not try to light any appliance.
- •Do not touch any electric switch; do not use any phone in your building.
- •Immediately call your gas supplier from a neighbor's phone. Follow the gas supplier's instructions.
- •If you cannot reach your gas supplier, call the fire department.

C. Use only your hand to turn the gas shutoff valve. Never use tools. If the valve will not turn by hand, don't try to repair it, call a qualified service technician. Force or attempted repair may result in a fire or explosion.

D. Do not use this appliance if any part has been under water. Immediately contact a qualified installer or service agency to replace a flooded water heater. Do not attempt to repair the unit! It must be replaced!

**OPERATING INSTRUCTIONS**

1. **STOP!** Read the safety information above on this label.
2. Set the thermostat to lowest setting.
3. Turn off all electric power to the appliance.
4. Do not attempt to light the burner by hand.
5. Turn the gas shutoff valve located on the outside of the unit to the closed position.
6. Wait five (5) minutes to clear out any gas. If you then smell gas, STOP! Follow "B" in the safety information above on this label. If you don't smell gas, go to the next step.
7. Turn the gas shutoff valve located on the outside of the unit to the open position.
8. Turn on all electrical power to the appliance.
9. Set thermostat to desired setting.
10. If the appliance will not operate, follow the instructions in "To Turn Off Gas to Appliance" and call your service technician or gas supplier.

**TO TURN OFF GAS TO APPLIANCE**

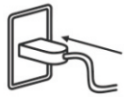
1. Set the thermostat to lowest setting.
2. Turn off all electric power to the appliance if service is to be performed.
3. Turn the gas shutoff valve located on the outside of the unit to the closed position.

## 5.2 Initial Operation

**WARNING**

- Before operating, smell all around the appliance area for gas. Be sure to smell next to the floor because some gas is heavier than air and will settle on the floor.
- Keep the area around the appliance clear and free from combustible materials, gasoline, and other flammable vapors and liquids.
- Always check the water temperature before entering a shower or bath.
- Do not use this appliance if any part has been under water. Immediately call a licensed professional to inspect the appliance and to replace any part of the control system and any gas control which has been under water.
- Should overheating occur or the gas supply fail to shut off, turn off the manual gas control valve to the appliance.
- Do not use an extension cord or an adapter plug with this appliance.
- Any alteration to the appliance or its controls can be dangerous and will void the warranty.
- If you install this water heater in an area that is known to have hard water or that causes scale build-up the water must be treated and/or the heat exchanger flushed regularly. Damage and repair due to scale in the heat exchanger is not covered by warranty.
- Keep the air intake location free of chemicals such as chlorine or bleach that produce fumes. These fumes can damage components and reduce the life of your appliance. Damage and repair due to corrosive compounds in the air is not covered by warranty.

| | |
|---|---|
| 1. Once the above checks have been completed, please clean filter of any debris.  | 2. Fully open the manual water control valve on the water supply line.  |

| | |
|---|---|
| 3. Open a hot water tap to verify that water is flowing to that tap.  | 4. Fully open the manual gas control valve installed.  |
| 5. Turn on the 120 V 60 Hz power supply to the water heater.  | 6. Now you are ready to enjoy hours of endless hot water.  |

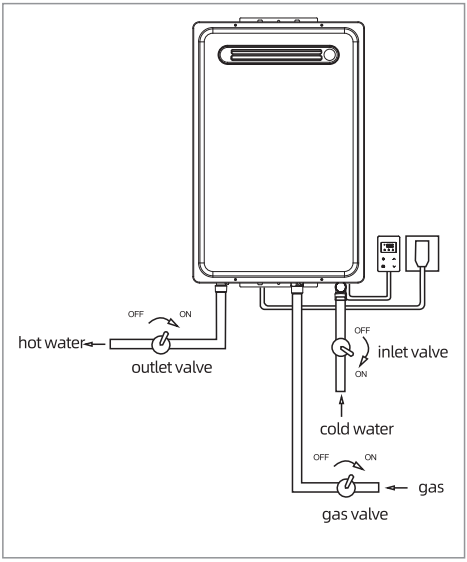
**WARNING**

- Do not spray in the vicinity of this appliance while it is in operation.
- Do not use or store flammable materials in or near this appliance.
- Do not place articles on or against this appliance.
- Do not modify this appliance.

## 5.3 Normal Operation

**Starting steps:**

1. Turn on the power switch.
2. After confirming power is on, press the remote control power button "⏻ ".
3. Open the inlet water valve and gas valves.
4. Open the water valve (hot water tap), the water heater will ignite and work, and hot water will flow out.
5. During the operation of the water heater, if the power supply suddenly stops, the water heater will stop working and close the gas valve. When the power is reset, the water heater with the remote control can be started by the remote control, and the water heater without the remote control can be started after re- opening the water.
6. Power failure before operation, the water heater can not start to provide hot water service.




## 5.4 How to Set the Temperature

This water heater requires a minimum flow rate to operate. This rate can be found on the specification page in this manual. In some cases when you are not getting hot water or if the water alternates between hot and cold, it is due to the water flow being below or close to the minimum flow rate. Increasing the flow rate should resolve these problems in these cases.

If you are experiencing issues with higher temperature settings, then reduce the temperature setting. Selecting a temperature closer to that which is actually used at the faucet will increase the amount of hot water being delivered to the faucet, due to less cold water mixing at the fixture.

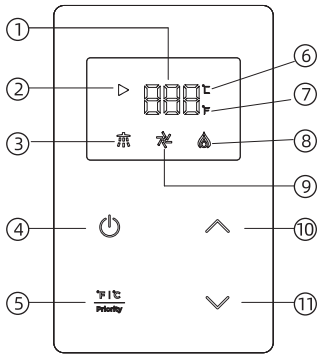
**WARNING**

- Heated water can be dangerous, especially for young children and the infirm.
- Water temperatures above 122 °F (50 °C) can cause severe burns instantly and may even result in death.
- Those most at risk are children, the disabled, the elderly and the infirm.

**WARNING**

- Hot water at 149 °F (65 °C) can severely burn a child in less than half a second. At 122 °F (50 °C) it takes five minutes.
- Test the temperature of the water with your elbow before placing your child in the bath, also carefully feel water before bathing or showering yourself.
- Supervise children whenever they are in the bathroom.
- Make sure that the hot water tap is turned off tightly.
- Installing child proof tap covers or child resistant taps (both approaches will prevent a small hand being able to turn on the tap).
- Setting your appliance at a maximum temperature of 122 °F (50 °C).
- Leave a toddler in the care of another child. They may not understand the need to have the water temperature set at a safe level.


The wired controller is able to adjust the output temperature in the range of 95 °F (35 °C) to 158 °F (70 °C) in one degree increments.



① Display setting temperature
Display fault code
Display water temperature
② Priority icon
③ Shower signal
④ Switch button
⑤ Fahrenheit/Celsius Priority
⑥ Celsius display
⑦ Fahrenheit display
⑧ Flame
⑨ Blower
⑩ Heat up button
⑪ Heat down button

**ON/OFF button:**

switch between on and off status.

**Heat up button:**

Each time you press the heat up button key, the temperature will increase by 1 ℃.

**Heat down button:**

Each time you press the heat down button key, the temperature will reduce by 1 ℃.

**°F|℃ Priority Fahrenheit/Celsius Priority button:**

1. Press toggle degrees Celsius Fahrenheit.
2. Long-press operation to enable or disable priority permission.

**WARNING**

There is a hot water scald potential if the thermostat is set too high. Should overheating occur or the gas supply fails to shut off, turn off the manual gas control valve to the appliance.

**CAUTION**

- While any hot water is being provided, the temperature setting can only be adjusted between 95 °F (35 °C) and 158 °F (70 °C).
- There may be a variation between the temperature displayed on the temperature controller and the temperature at the tap due to weather conditions or the length of pipe to the water heater.

# 6 Maintenance

The water heater should be checked at least once a year or as necessary by a licensed technician. If repairs are needed, any repairs should be done by a licensed technician. The water heater's lifetime may be extended by regular maintenance.

**WARNING**

- Turn off the electrical power supply and close the manual gas control valve and the manual water control valve before servicing.
- Label all wires prior to disconnection when servicing controls. Wiring errors can cause improper and dangerous operation.
- Verify proper operation after servicing.
- Should overheating occur or the gas supply fails to shut off, turn off the manual gas control valve to the appliance.

## 6.1 Vent System

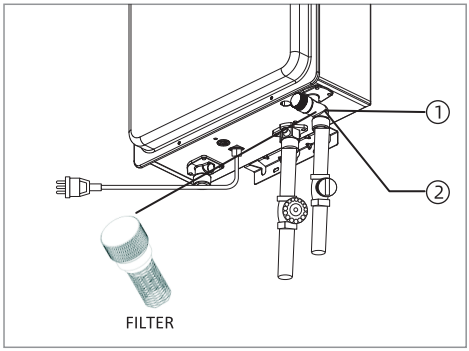
- Be sure that all openings for combustion air are not blocked. If blocked, remove obstruction.
- Check that the opening for exhaust is not blocked. If blocked, shutoff the water heater's combustion. And then after a while, remove obstruction.
- DO NOT touch while unit operating, otherwise you might get burnt due to high temperature.
- Check the gas pressure.
- Keep the area around the water heater clear. Remove any combustible materials, gasoline or any flammable vapors and liquids.
- Not obstructing the flow of combustion and ventilation air.

## 6.2 Unit Draining and Filter Cleaning

- Close the manual gas shut off valve.
- Turn off the power supply to the water heater.
- Close the manual water shut off valve.
- Open all hot water taps in the house (Bathroom, kitchen, laundry, etc.). When the residual water flow has ceased, close all hot water taps.
- Have a bucket or container to catch the water from the unit's drain plugs. Unscrew the drain plugs to drain all the water out of the unit.
- Wait a few minutes to ensure all water has completely drained from unit.

**Clean the filter:**

- Check the water filter located within the cold inlet. With a tiny brush, clean the water filter of any debris which may have accumulated and reinsert the filter back into the cold water inlet.
- Securely screw the drain plugs back into place. Hand-tighten only.




① Remove by turning counter clockwise and then clean and replace.

② 1. Turn off the water inlet supply valve.
2. Open a hot water tap to release the line pressure.

## 6.3 Clean Burners

It is imperative that control compartments, burners, and circulating air passageways of the appliance be kept clean.

Clean as follows:

1. Turn off and disconnect electrical power. Allow to cool.
2. Close the water shut off valves. Remove and clean the water inlet filter.
3. Remove the front panel by removing 4 screws.
4. Use pressurized air to remove dust from the main burner, heat exchanger, and fan blades. Do not use a wet cloth or spray cleaners on the burner.

   Do not use volatile substances such as benzene and thinners. They may ignite or fade the paint.
5. Use soft dry cloth to wipe cabinet.

## 6.4 Pressure Relief Valve

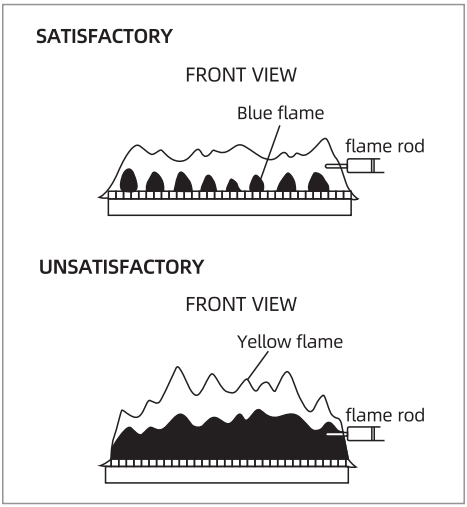
**WARNING**
Testing the pressure relief valve should only be performed by a licensed professional. Water discharged from the pressure relief valve could cause severe burns instantly or death from scalds.

- Operate the valve manually once a year. In doing so, it will be necessary to take precautions with regard to the discharge of potentially scalding hot water under pressure. Ensure discharge has a place to flow.
- Contact with your body or other property may cause damage or harm.
- If a relief valve discharges periodically, this may be due to thermal expansion in a closed water supply system. Contact the water supplier or local plumbing inspector on how to correct this situation. Do not plug the relief valve.

## 6.5 Visual Inspection of Flame

Verify proper operation after servicing.

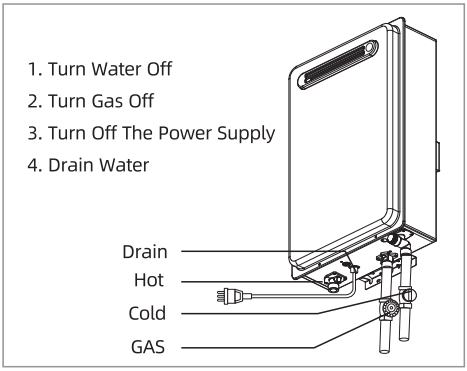
The burner must flame evenly over the entire surface when operating correctly. The flame must burn with a clear, blue, stable flame. See the parts breakdown of the burner for the location of the view ports. The flame pattern should be as shown in the figures below.




## 6.6 Freeze Prevention

**WARNING**
If freezing conditions are expected, turn off water and gas and drain all water from the appliance. If power and the automatic frost protection are connected freezing will be prevented.

- Only the pipes and heat exchanger inside the water heater will be protected.
- Any hot or cold water pipes located outside of the unit will not be protected.
- Proper protection and insulation of these pipes will be required to ensure these are protected from freezing.




**Antifreeze Tips**

- When the temperature is below 46.4 °F (8 °C)while above 37.4 °F (3 °C), keep your water heater staying plugged in a 120V 60HZ power supply, the anti-freeze system will automatically heat up to prevent the water heater from damages. No manual work is needed.
- If the machine is not used for a long time, or if the ambient temperature is below 32 °F (0 °C) and the machine cannot be kept powered with electricity and gas, it is necessary to drain the water from the water heater to prevent damage due to freezing. And here is the process:

1. Turn off the gas shut-off valve.
2. Power off the water heater and unplug the power supply to the machine.
3. Turn off the water supply shut-off valve.
4. Turn on hot water taps in the house, to release the water and pressure in the pipes.
5. Screw out the drain screw on the hot water outlet.
6. Remove the inlet water filter from the cold water inlet and it's valve by turning counterclockwise.
7. Use a bucket to collect the residual water while draining. It may take more than 10 minutes to drain out the water thoroughly.
8. Securely screw the drain screw back in place; and screw the inlet water filter back in place.
9. Before you use the water heater next time, plug it into a 120 V 60 Hz power supply, and power on the water heater, and then open the water supply valve, hot water outlet valve, and the gas valve.

**CAUTION**
- Please note damages caused by freezing are NOT covered under the thankless water heater warranty as an industry standard.
- Please make sure to take all the measures to protect your water heater.

# 7 Troubleshooting

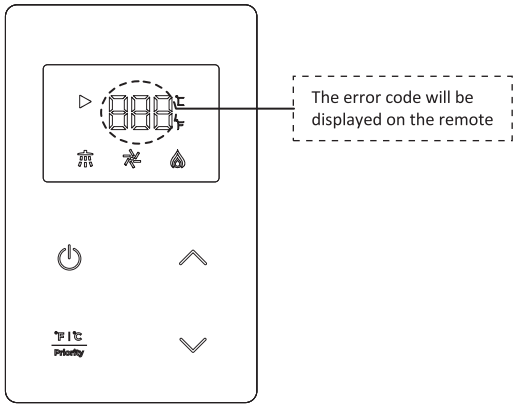
## 7.1 General Troubleshooting

| Temperature and Amount of Hot Water | |
|---|---|
| Problem | Possible solutions |
| The water is not hot enough. | 1. Check cross plumbing between cold water lines and hot water lines.<br>2. Is the gas supply valve fully open? (4.8 Gas Connection)<br>3. Is the gas line sized properly? (3.3 Model and Specification)<br>4. Is the gas supply pressure enough? (3.3 Model and Specification)<br>5. Is the temperature set too low? (5.4 How to Set the Temperature) |
| The water is too hot. | Is the temperature set too high? (5.4 How to Set the Temperature) |
| The hot water is not available when a fixture is opened. | 1. Make sure the unit has 120 V 60 Hz power supply.<br>2. If you are using the remote controller, is the power button turned on? (5.4 How to Set the Temperature)<br>3. Is the gas supply valve fully open? (4.8 Gas Connection)<br>4. Is the water supply valve fully open? (4.9 Water Connections)<br>5. Is the filter on cold water inlet clean? (6.2 Unit Draining and Filter Cleaning)<br>6.Is there enough LPG in the bottle? (for propane) |
| The hot water gets cold and stays cold. | 1. Is the flow rate enough to keep the water heater running?<br>2. Is the gas supply valve fully open? (4.8 Gas Connection)<br>3. Is the filter on cold water inlet clean? (6.2 Unit Draining and Filter Cleaning)<br>4. Are the fixtures clean of debris and obstructions? |
| Fluctuation in hot water temperature. | 1. Is the filter on cold water inlet clean? (6.2 Unit Draining and Filter Cleaning)<br>2. Is the gas line sized properly? (3.3 Model and Specification)<br>3. Is the supply gas pressure enough? (3.3 Model and Specification)<br>4. Check for cross connection between cold water lines and hot water lines. |
| It takes long time to get hot water at the fixtures. | The time it takes to deliver hot water from the water heater to your fixtures depends on the length of piping between the two. The longer the distance or the larger the pipes, the longer it will take to get hot water. |
| The Unit does not ignite when water goes through the unit. | 1. Check for the filter on cold water inlet. (6.2 Unit Draining and Filter Cleaning)<br>2. Check for reverse connection and cross connection.<br>3. If you use the remote controller, is the power button turned on? (5.3 Normal Operation) |
| The fan motor is still spinning after operation has stopped. | This is normal. After operation has stopped, the fan motor keeps running for 15~75 seconds in order to re-ignite quickly, as well as push all exhaust gas out of the flue. |
| **Wired Controller** | |
| Problem | Possible solutions |
| Wired controller does not display anything when the power button is turned on. | Press the ON/OFF button.<br>If the light does not light up?<br>1. Make sure the unit has power supply.<br>2. Make sure the connection to the unit is correct. (5.2 Initial Operation) |
| An ERROR code is displayed. | Please see the (7.2 PCB Error Codes) |
| Remote controller can not change the set temperature. | Is power light flashing?<br>If it is not, locate priority controller and turn off, or wait for 15 mins on inactivity. |

## 7.2 PCB Error Codes

Troubleshooting :

When the water heater fails, the display will display the fault code, while the buzzer will issue continuously "Beep" alarm sound, please follow the table to deal with accordingly.




| Error code | Fault description and handling method |
|---|---|
| E0 | Water temperature probe fault |
| E1 | Flame fault, Please check whether the gas supply is normal or not, confirm the gas is correctly connect and then use |
| E2 | False fire fault |
| E3 | Thermostat protection |
| E4 | Water temperature probe fault |
| E5 | Fan fault, before the ignition, fan speed is detected for 8s less than 1000 r/min or when burning fan speed for 6s less than 600 r/min continuously. |
| E6 | Over-heating protection. Please check whether the water pressure is too low, confirm the water pressure is over starting pressure and then use |
| E7 | Solenoid valve fault |
| E8 | Flue jam fault |
| EN | The set shutdown time has been reached |

If a code as above displays, you check that everything is normal and restart the water heater, but it still doesn't work, please inform the after-sales service for maintenance.

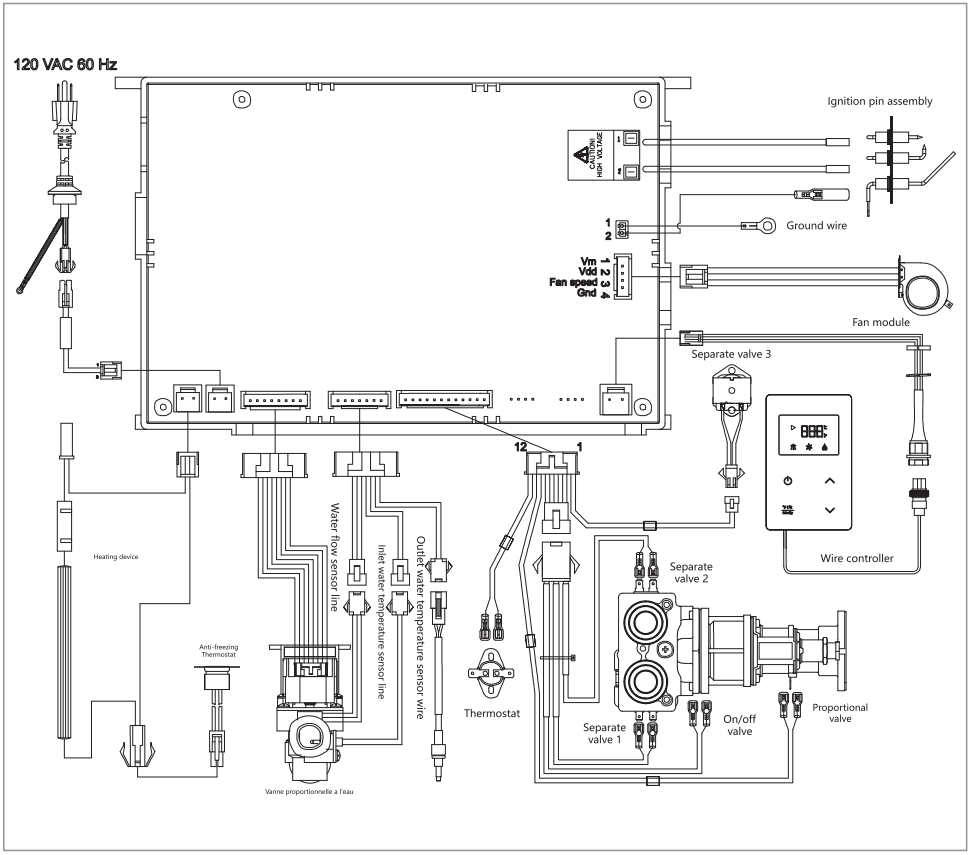
## 7.3 The following conditions are not a fault

| Phenomenon | Reason and handling method |
|---|---|
| Exhaust white smoke | Outdoor temperature is too low, the exhausted smoke encountered in the cold air and then condensing into a white mist. |
| Flow rate of generated hot water is too small to achieve expected water temperature | Hot water is too small to ignite the water heater, the water heater will turn off in the situation, then water will become cold. So please do not turn the hot water to be too small. |
| Can't supply high temperature hot water in winter | The supply water temperature is very low and the water adjustment knob is already turned to be maximum, the setting temperature may be more than the heating capacity, then please adjust water supply to be smaller. |
| Summer failed to supply low temperature hot water | Supply water temperature is too high, and the set temperature is low but the inlet water is too small, it may cause the hot water temperature to be too high, then please adjust the amount of water properly more. |
| After using 40 minutes the water heater suddenly flameouts | In order to prevent hypoxia, some models have 40 minutes timer protection function, when you continuously use after 40 minutes will automatically turn off. Please turn off the tap after a while and then restart. |
| Close the hot water valve, but the fan does not stop immediately | The fan has a delay in the shutdown function in order to completely clean the water heater exhaust to ensure the safety of users. |
| Open the hot water valve, can't flow out hot water immediately | It has a distance from the water heater to the hot water valve, because there is some cold water in the water pipe. It takes some time for the cold water to flow out and then comes the hot water. The farther the distance from the pipeline, the more time it takes to flow out hot water. |
| It always has some water out from drain valve | This is because the inlet water pressure is too high, drain valve will work to release the high pressure (4.10 Pressure Relieve Valve Installation and Attentions).<br>Try to reduce the inlet water pressure by turning down the gate valve or the ball valve (refer to 4.9 Water Connections) until water leakage stop. |

**WARNING**

1. Service shall be carried out only by authorized personnel and the appliance shall not be modified.
2. The appliance must be installed, commissioned and serviced by an authorized person in accordance with the requirements.
3. Warning: For continued safety of this appliance it must be installed, operated and maintained in accordance with the manufacturer's instructions.

# 8 Wiring Diagram




**CAUTION**

Label all wires prior to disconnection when servicing controls. Wiring errors can cause improper and dangerous operation. Verify proper operation after servicing.

# 9 Packing List

| Order | Description | Quantity |
|---|---|---|
| 1 | Gas water heater | 1 piece |
| 2 | Installation and Operation Manual (including warranty card) | 1 piece |
| 3 | Wired controller | 1 piece |
| 4 | Expansion screw | 2 pieces |
| 5 | Expansion rubber plug | 4 pieces |
| 6 | Installing screws | 2 pieces |
| 7 | Wooden screws | 2 pieces |
| 8 | Warranty | 1 piece |
| 9 | Service Card | 1 piece |
| 10 | Perforated Paper | 1 piece |
| 11 | Accessories Package | 1 piece |

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