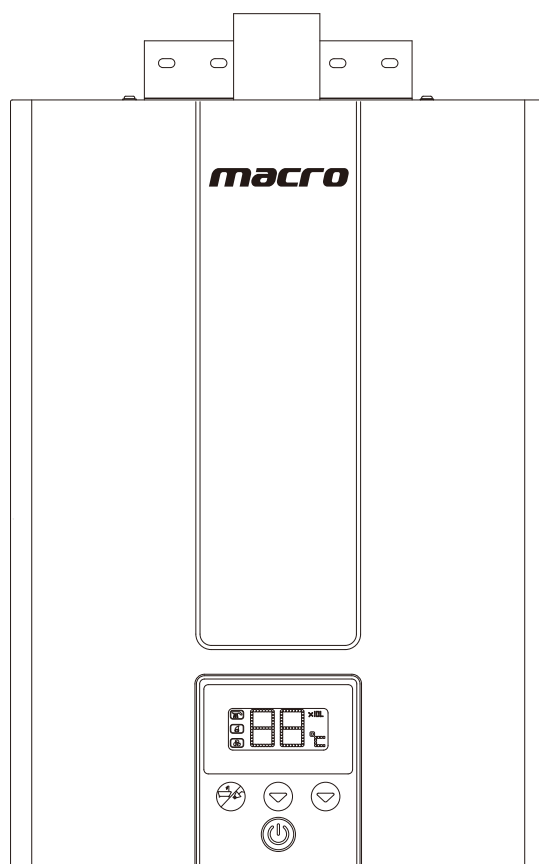


# USER GUIDE AND INSTALLATION INSTRUCTION

FOR FORCED EXHAUST TYPE USE ONLY



## K3S Series



# Catalog

## Respected user:

Sincerely thanks for purchasing Macro gas water heater. In order to better understand the use of this water heater, we recommend that you read this manual carefully before using it. And please keep this manual in a safe place for you and installation or maintenance personnel to refer to.

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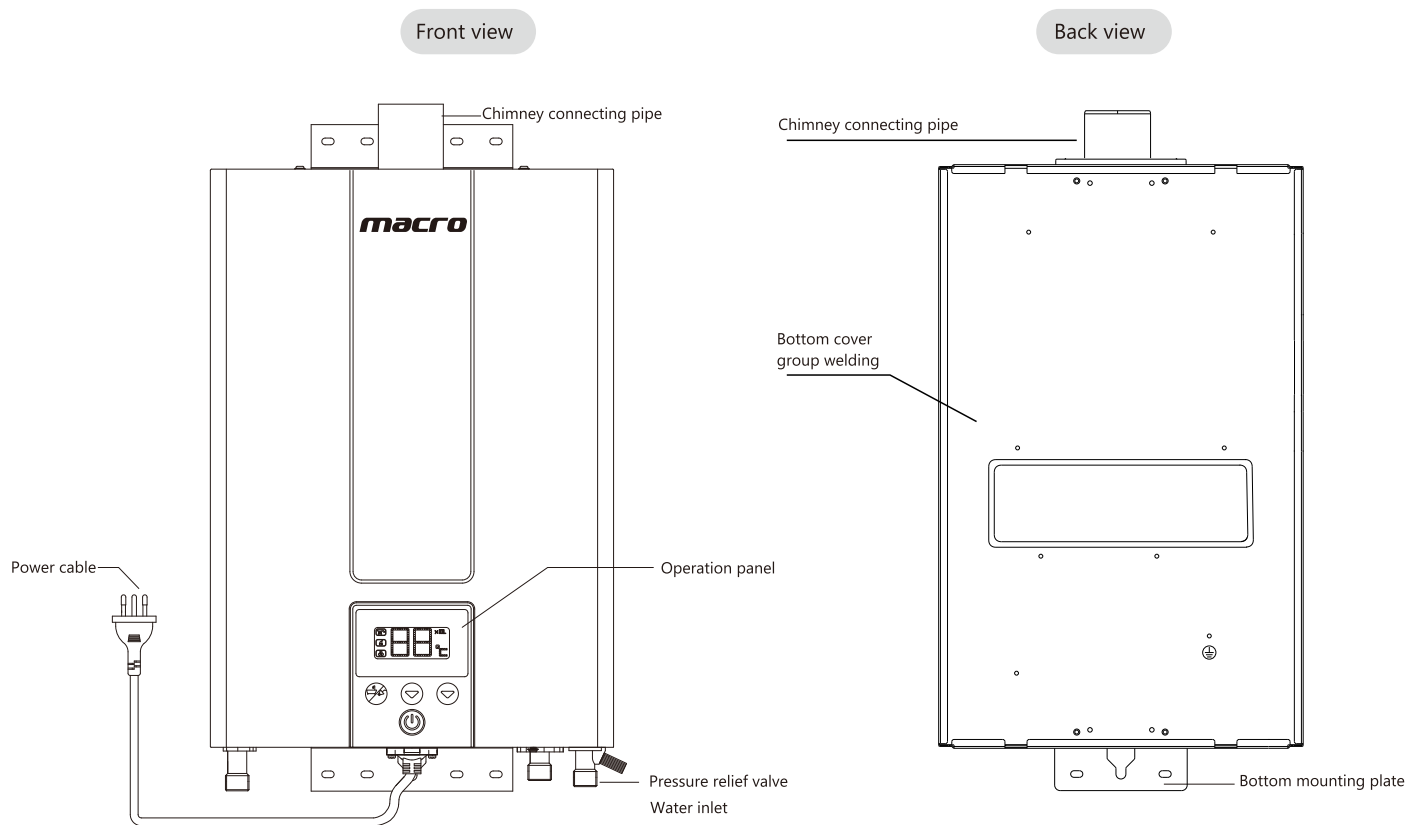


## Specifications

Model	JSQ24-12K3S
Gas Type	NG/LPG
Rated Gas Pressure	2000Pa/2800Pa
Operation	Touch Operation
Exhaust Type	Forced Exhaust
Ignition Mode	Automatic Electrical Ignition
Electric Power	40W
Nominal Heat Input	24kW
Water Pressure	0.2~8bar
Power Supply	DC220V~50Hz
Hot Water Capacity ( $\Delta T=25K$ )	12L/min
Water Inlet Joint	G1/2
Water Outlet Joint	G1/2
Gas Inlet Joint	G1/2
Product Dimension	525*340*155
Package Dimension	717*270*472



## Name of each part

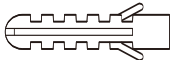
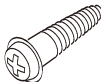
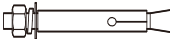






### ! Note

Macro products must be installed and maintained by our authorized installation and maintenance service providers, otherwise Macro will not bear any responsibility for accidents caused by installation and maintenance.

The following accessories are included with the water heater. Please check them before installation.

Accessories name	SHAPE	Quantity	Accessories name	SHAPE	Quantity
Nylon expansion tube		2	Mounting screw		2
Expansion bolt		1	Sealed o-ring (for gas connector)		1
User's manual		1			

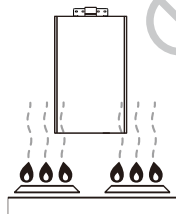
## ! Installation precautions

Before installing the water heater, please make sure that there is a floor drain with sufficient displacement near the installation location of the water heater, so as not to drain

Sewers



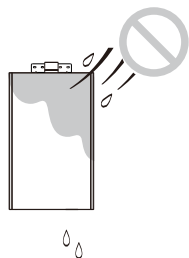
Never install on a gas stove or other heat source



It is forbidden to install near electrical equipment or flammable materials (such as gasoline, organic solvents) and corrosive chemicals (such as alcohol, hydrochloric acid, etc.) to avoid fire or corrosion of the machine.



Do not install the water heater outdoors to avoid wind, rain and frost damage.



If the mounting wall is a flammable material, it is necessary to install additional flame retardant board isolation appliances, and the thickness of the flame retardant board should be greater than 10mm

Do not install on vehicles or ships.

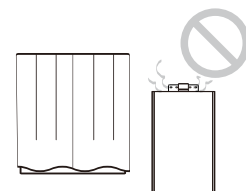
Make sure the power outlet is reliably grounded

Prohibition of use of well water or hot spring water

The water heater should be installed in a place with good ventilation. The flue pipe must be installed with an exhaust pipe, and the exhaust pipe's outlet must be placed outdoors.

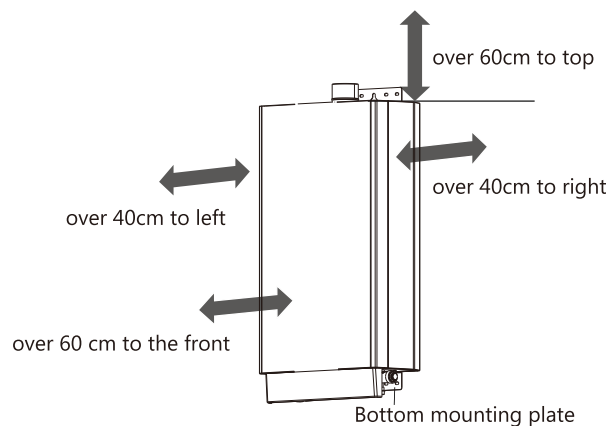


Never install in closet or near flammable materials such as curtains.

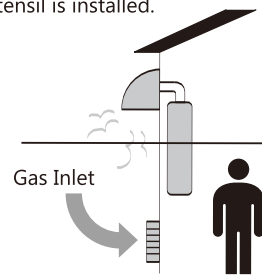


The gas water heater should be installed away from flammable materials at least 2m.

The main body, walls and ceilings should be provided with effective space.



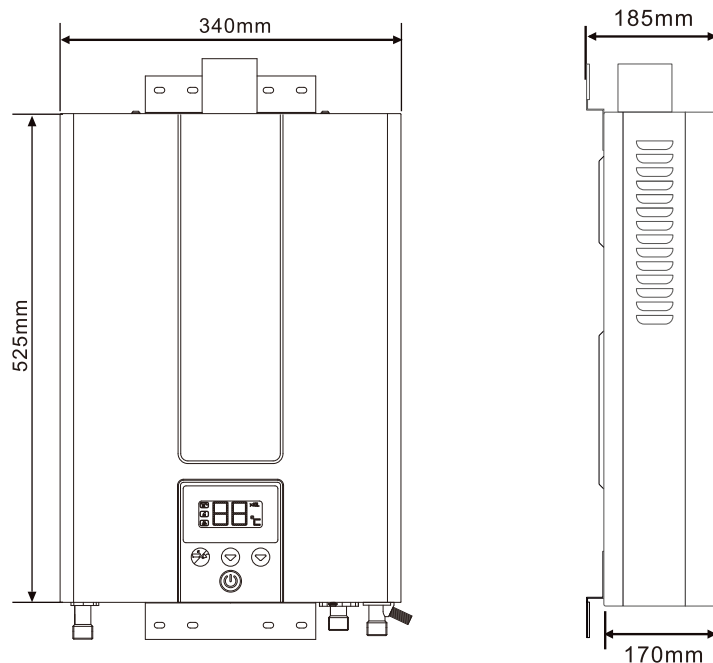
Please make sure that the installation place has an inlet and exhaust window with an area larger than 130cm<sup>2</sup>. The air inlet and exhaust are respectively located near the ground and the ceiling, and can communicate directly with the outdoors. The air inlet should be as far away from the exhaust pipe of the appliance as possible to prevent the smoke from flowing back into the room where the utensil is installed.





## Dimension drawing

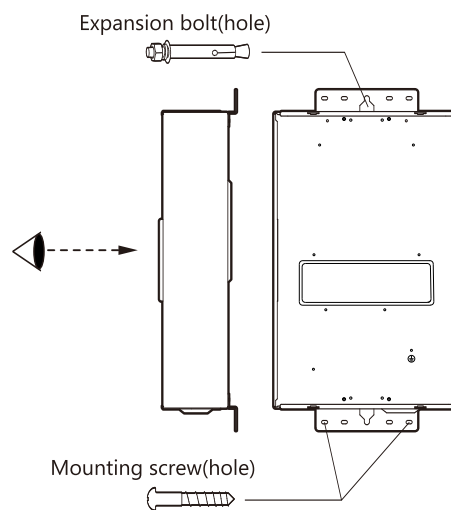
The follow table shows dimension drawing of water heater(unit:mm)



## Installation method

### ■ Water heater installation

- ① Determine the installation position (see installation precautions for details) and installation height. It is advisable to level the human eye.
- ② Determine the installation position of the expansion bolt and wood screw according to the installation position and height.
- ③ Make holes in the installation position determined above.
- ④ Place the water heater in the installation position and fasten it with the expansion bolts and wood screws provided.



### ■ Location of Heater

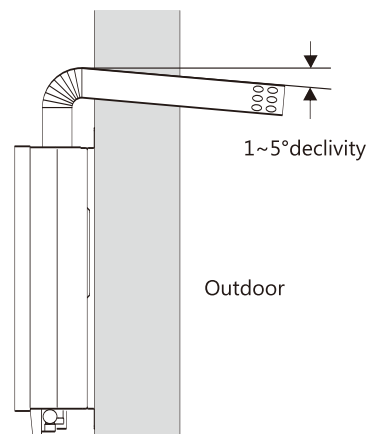
The installation of heater must be on a suitable non-combustible load bearing wall which will provide an adequate fixing for the heater mounting bracket assembly. The location should be in an area where the water pipes will not be subjected to frost conditions. The place where heater be installed should be away from flammable materials and have sufficient space for air drawn in and ventilation. Where a room sealed appliance is installed in a room containing a bath or shower any electrical switch or appliance control utilising mains electricity must be situated so that it cannot be touched by a person using the bath or shower. The Installable environment temperature is from 0°C~60°C.



## ■ Installation of flue

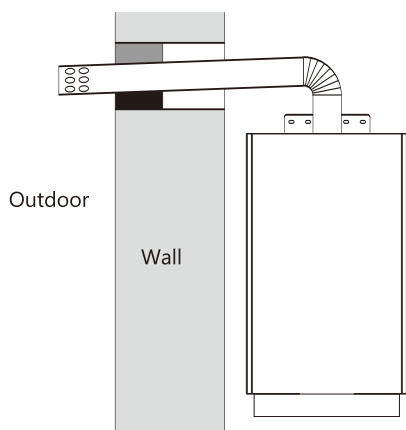
### ⓘ Note

- ① The exhaust pipe must use the special smoke exhaust pipe and its accessories.
- ② The smoke exhaust port shall not be installed on the ventilation duct or public flue of the building.
- ③ When the smoke exhaust pipe passes through the combustible wall, it shall be divided and covered with an insulation material with a thickness of  $\geq 20\text{mm}$ .
- ④ The distance between the exhaust pipe and the combustible items such as ceiling eaves or furniture is greater than 55cm.
- ⑤ The smoke exhaust pipe should not be buried in the ceiling as much as possible. In the case of choiceless, it is necessary to cover with a roll of flame-retardant material of which thickness more than 20mm .
- ⑥ The length of the pipe should not be over than 3m, and the number of elbows on the pipe should not be more than 3.

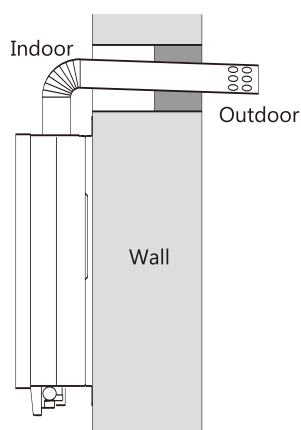


### Installation Method

Side installation method of exhaust pipe to the side



Installation method of smoke exhaust pipe to the back

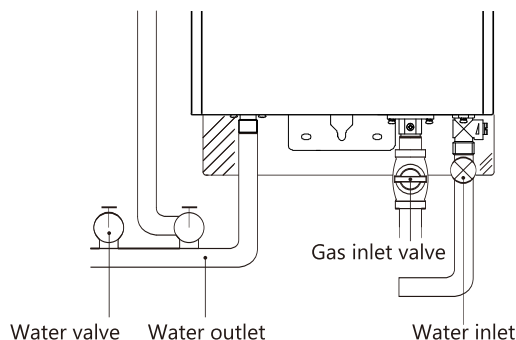






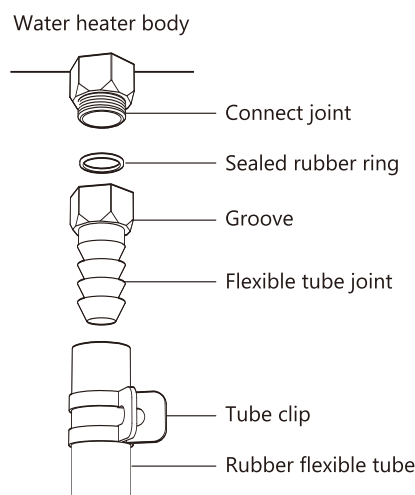
## ■ Installation of water pipe

- Refer to the product specification table for the cold water inlet and hot water outlet joint pipe threads.
- The cold water pipe should be passed through to clear the dirt in the pipe, and then connected to the water heater to prevent the water heater from being blocked.
- For repair and maintenance needs, please set the water inlet valve near the water inlet joint
- Please use metal hoses and gaskets to connect to appliances and pipelines. It can be tightened to avoid rupture of the water pipe caused by vigorous rotation.
- The water inlet pipe should be directly connected to the water pipe to avoid being too long, too thin, excessively bent, and reducing the pressure loss of the pipeline.
- If long-distance water supply is needed, it is better to install a control valve on the water supply pipe.
- If the installation position of the hot water supply valve is higher than the appliance, a drain valve should also be installed at a position lower than the appliance, in order to remove the accumulated water in the hot water supply pipe to prevent freezing.
- The hot water supply pipe should be able to withstand high temperature to prevent hot water pipes from rupture due to heat and pressure.
- The hot water supply pipe is as short as possible to reduce heat loss. Try to use a shower with a small pressure loss.
- In order to ensure that the appliance can be used normally, the pressure of the inlet water must be greater than (the starting water pressure of the machine) + (the lost water pressure of the pipeline)



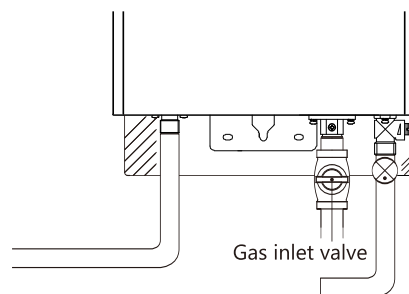
## ■ Gas pipe installation

- The gas supply pipe joint of the water heater is a pipe thread
- Users using liquefied gas should use a 9.5mm inner diameter hose to connect to the liquefied gas pressure regulating valve, and then fasten it with a pipe clamp; connect the hose connector attached to the machine with the gas connector (note that a rubber seal is required) then connect the rubber hose and hose connector to the red line and fasten it with a pipe clamp.
- Users who use the gas pipeline, remember to install the seal ring.
- For repair and maintenance needs, please set a gas valve near the gas connector, the diameter of the gas valve is 9.5mm.
- LPG users are prohibited from using medium and high pressure gas pressure regulators, and regulators capable of adjusting to the prescribed gas pressure should be used.



## ■ Electricity installation

- The power supply of this water heater is AC230/50Hz.
- Power plug should be installed around where is dry and hard to get wet.
- Make sure that the three holes socket is equipped with an effective and reliable ground wire.





This appliance is intended to be permanently connected to the water mains and not connected by a hose-set.

This appliance can be used by children aged from 8 years and above and persons with reduced physical, sensory or mental capabilities or lack of experience and knowledge if they have been given supervision or instruction concerning use of the appliance in a safe way and understand the hazards involved. Children shall not play with the appliance. Cleaning and user maintenance shall not be made by children without supervision.

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.

## Check and confirm after installation

- ① If have kept a certain distance from combustibles?
- ② If the installation place and environment suitable?
- ③ If there is space left for checking and maintenance.
- ④ If meet with the installation condition of water line, gasline and electric circuit.
- ⑤ If there exists leaking problem? Please turn on the water tap for both cold and heat water, and then turn it off after confirming there is water outflowing, check the leaking after standing for a while, as this time remember do not insert the power plug into the socket.
- ⑥ If there exists gas leaking problem? Please turn on the gas valve, apply soapy water on each connection to check if there is gas leaking.

**Only meet all above requirement, can confirm the heater have been installed correctly.**

## Checks and controls after first start-up

- Check there are no leaks in the gas and water circuits.
- Check the integrity of the air-flue pipes during heater operation.
- Check that the gas consumption indicated on the meter corresponds to that given in the table (page 3).
- Check that water is circulating correctly. Balance the radiators to ensure that the flow and return differential does not exceed 25°C.
- Check that the domestic hot water flow rate drop in the range of 2.5L/min~12L/min.
- Check that the gas valve modulates correctly both during the different heating phase.
- Check the combustion efficiency correspond to that given in the table (page 3)
- If any of the above are not correct, the heater is not operating correctly.

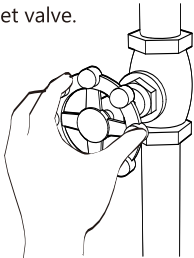


## ! Preparation before use

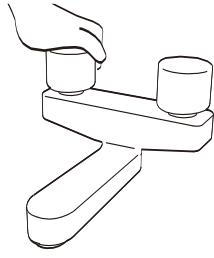
When using for the first time, please make sure that the water heater is intact and carefully check whether the connections are correct and there are no leaks. After confirming it, please follow the steps below:

- 1**

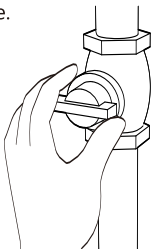
Completely turn on the water inlet valve.


- 2**

After turning on the heat water valve, make sure there is water outflowing, and then turn it off.


- 3**

Completely turn on the gas valve.

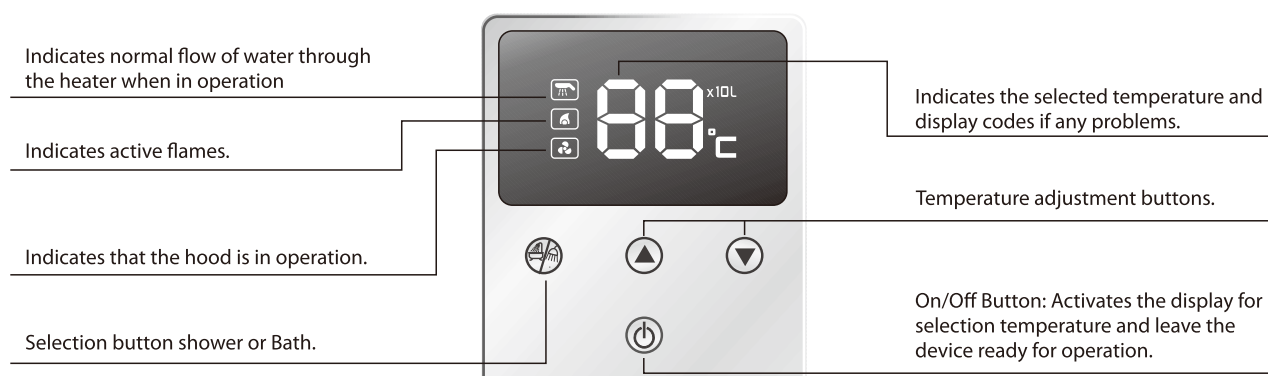

- 4**

Please plug in the power plug, or turn on the power switch.

## Method of use

### ■ Getting to know the indications panel:

- 1 - Connect the heater plug to the power outlet.
- 2 - When pressing the On/Off button, note the lighting of the display.
- 3 - The heater is ready for use.





### How to determine the temperature in the shower / faucet:

The digitally controlled heater adjusts the water temperature electronically. Selecting average temperatures for bathing, for example in the range of 42°C, the use of a mixer is avoided, this promotes water and gas savings.

1-Touch the selection buttons ▲ ▼ to increase or decrease the temperature. THE Selection can be carried out from 36° to 60° C.

Attention: If the appliance is in operation, with water passing through, it will only be possible to select temperatures up to 48°C, if necessary larger, close the valve, stopping the flow of water and select the temperature desired.

2-After selecting the desired temperature, it will be memorized.

3-Open the water flow in a shower / faucet and the heater will start automatically.

### Standby function:

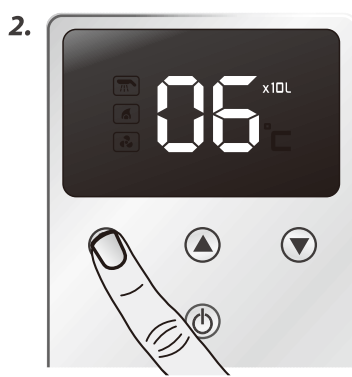
If the heater remains idle for more than 5 minutes, the stand-by function will be activated automatically in order to save energy . For use the heater just open the water register at the point of consumption and the device will enter in operation usually.

### How to program a bathtub filling:

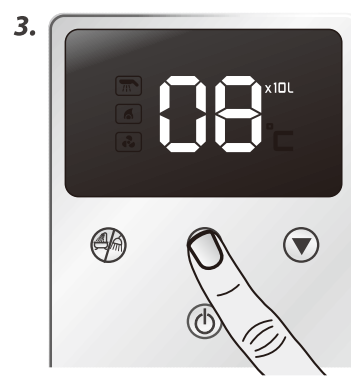
Check the volume of your bathtub in liters, with this information, follow the steps:



Turn on the heater display.



Tap the function button bath/shower changing so for the bathtub function. Note that the indication in display has changed, starts with 06x10=60 liters



Tap the selection buttons "increase" or "decrease" to choose the volume in liters of water that fit in your bathtub, wait to stop flash, then it should be set the temperature.



while the value temperature is flashing, tap the selection buttons "increase" or "decrease" to choose the temperature desired.



When opening the water tap hot tub, the heater will turn on automatically and keep the hot water temperature at the value selected in display; at the same moment will start the countdown (liters) from the volume of previously selected water on the display.



When to pass the last liter of hot water and counting reach zero, automatically the heater will stop heating the water and will emit a beep to remember that the water register hot from the bathtub be closed, avoiding the overflow. After closing the registry, the heater will go off automatically from this occupation.



## ⚠ Precautions of user

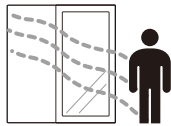
It is strictly forbidden to switch on the appliance when gas being smelled or other way that gas leak is discovered. You should immediately close the gas valve, open the doors and windows, drain the gas, and contact the local maintenance and gas supply department.



Do not use water heater when lighting or fire.



Please keep indoor ventilation



Do not let children play or leave them alone in the bathroom.

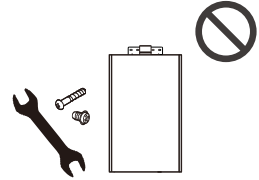


Do not open the water tap of the water heater directly on the body or head, you should first confirm the water temperature with your hand before using.

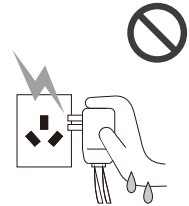


Do not change the temperature of the hot water at any time other than the user. Sudden changes in the water temperature will be uncomfortable.

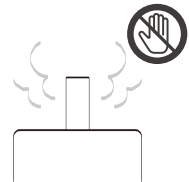
Never modify the water heater by yourself  
Never open the back cover of the water heater without authorization.



It's forbidden to pull the power plug with hands wet.



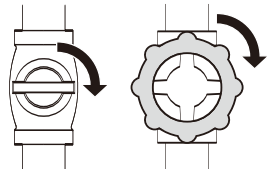
Do not touch exhaust pipe and other fittings around to prevent from scald.



Do not drink or similarly drink the water from water heater.



If the water heater is not used for a long time, please close the water inlet valve

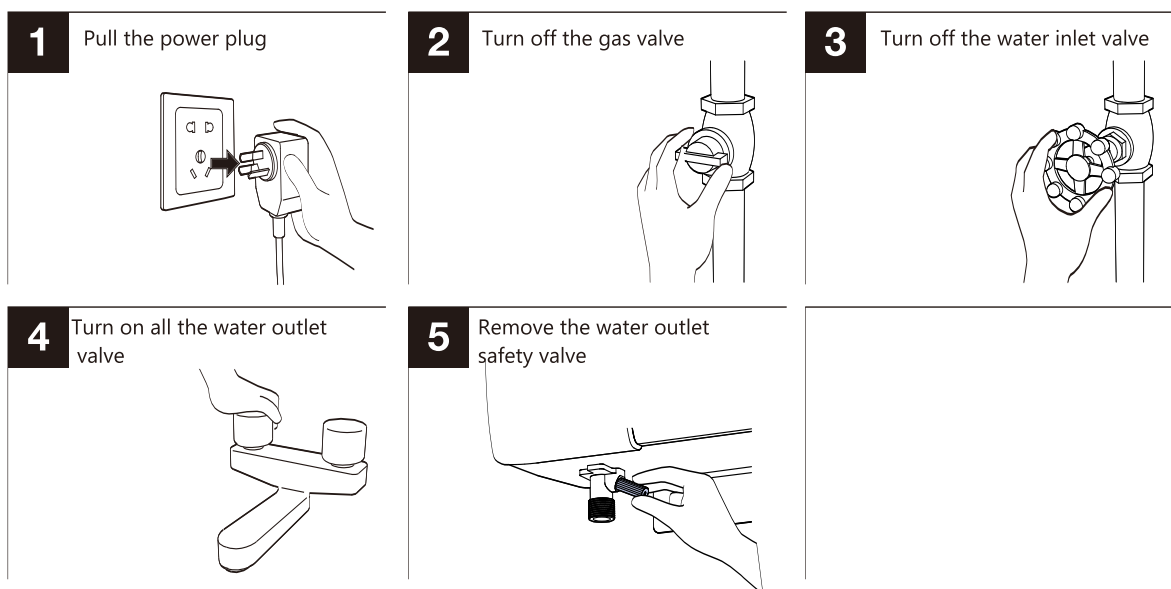




## Antifreeze measure

### ■ Precautions of antifreeze

- ① Even in warm areas in winter, the water inside the supply pipe, outlet pipe, or appliances may freeze.
- ② Appliance frozen may cause the damage of the machine and water pipe inside, which also may lead to leaks.
- ③ Repairs due to frozen need to be paid even during the warranty period.
- ④ Please drain the water inside the water heater as following instruction to prevent from freezing when not use the water heater in a long time.



### ■ Preparation steps before the machine reused after antifreeze draining.

1. Please install water inlet cleaning plug and water outlet safety valve.
2. Operate according to the instruction of first using steps.

### ■ Automatically antifreeze

When the temperature is lower than  $5 - 3^{\circ}\text{C}$ , the electric heating device starts, and once the temperature recover to  $15 \pm 3^{\circ}\text{C}$ , this device stops working. And this electric heating device is assembled inner the gas water heater when product is out of the manufacturer.

### ⚠ Attention

The electric heating device will not be able to operate if the power is off.



## Precautions of maintenance

- ① Whether the appearance of the water heater is abnormal?
- ② Check whether abnormal flame or abnormal sound during usage?
- ③ Are there any flammable materials around the water heater, near the smoke exhaust and the exhaust pipe?
- ④ Is there good ventilation around the water heater?
- ⑤ If pipeline exists water or gas leaking?
- ⑥ Please arrange the security check every year to make sure the safety.
- ⑦ forbid any interference with a sealed component

## Method of maintenance

- ① When the water heater is dirty, wipe it with a cloth or sponge which wet with neutral cleaner.  
Do not wipe with banana oil, alcohol, etc.
- ② Leak detection of the gas line: Use a brush to stain hot soapy water to each connection of the gas pipeline. If bubbles are found, it is a leak.
- ③ Please turn off the water inlet valve, remove the cleaning plug, and load it after finishing the cleaning, to keep the water way clear.
- ④ Please turn off the gas inlet valve, remove the filter of gas inlet, and load it after finishing cleaning and drying, to ensure gas flow smoothly.
- ⑤ Appliances should be checked and maintained periodically by a competent person.

## Non-fault condition

The condition below are normal phenomenon, not fault

Phenomenon	Reason
White smoke from exhaust	For large amount of steam in the smoke, which turn white while meet cold air outside.
Turn off the hot water tap, the fan does not stop immediately	In order to cool the inside of the appliance and completely discharge the waste smoke, the fan has a delayed shutdown function.
The heat water doesn't come immediately when open the tap.	When the water heater starts working, first it will take few seconds to drain out cold water left in the pipe, and heat water comes out then.
Heat turbid water.	Once the water dissolved air is heated, the air pressure drops rapidly when the water is discharged, and small bubbles in the water overflow, that seems turbid.
Water leaking from pressure relief valve	It's a normal phenomenon to relief the pressure.
Heat water turn cold if the tap open too small	The flame may be out if the tap opened too small.



### The following faults caused by improper operation

Phenomenon	Reason
Burning indicator off	<ul style="list-style-type: none"> <li>• Power cut</li> <li>• Power plug not in socket</li> <li>• Running out of gas</li> <li>• Flue blocked</li> <li>• Air left in the pipe</li> <li>• Internal fault</li> </ul>
No hot water even if the hot water switch is turned on	<ul style="list-style-type: none"> <li>• The water inlet valve is not large enough</li> <li>• The hot water outlet valve is too small</li> <li>• First time use</li> <li>• Frozen</li> <li>• Water or power cut</li> <li>• Long distance from water heater to water tap</li> <li>• Running out of gas</li> </ul>
The water temperature is too low ,and hard to adjust	<ul style="list-style-type: none"> <li>• Improper operation</li> <li>• The inlet or outlet valve is too large, and the water flow is too large</li> <li>• The valve opening is too small or the intake pipe passage is too small</li> </ul>
The outlet temperature is too high to be adjusted	<ul style="list-style-type: none"> <li>• Water supply switch is not large enough, too little water</li> <li>• Improper adjustment of hot water temperature</li> </ul>
Water turns cold when using	<ul style="list-style-type: none"> <li>• The air valve is not fully open</li> <li>• Water volume is too small</li> <li>• water heater turns off automatically</li> <li>• Power cut</li> <li>• Running out of gas</li> </ul>

**When fault occurs,the display window will show the fault code and tell fault reason, meanwhile buzzer makes continuous alarm sounds "Bi~". Please deal the problem follow the steps below.**

**Note:E0 is dangerous fault,buzzer will continuously alarm when there occurs a E0 fault,and please cut off the power to ensure the safety.**

Fault code	Fault types	Confirmation and solution of faulty
<b>E0</b>	After fire	Ensure the gas valve turned on, turn off the water tap and then restart the equipment.
<b>E1</b>	Fail to ignite	Ensure the gas valve turned on. Check if gas remaining in the tank. turn off the water tap and then restart the equipment.
<b>E2</b>	Fan motor fault	Turn off the water tap and restart the equipment. If fault still occurs, call the service center.
<b>E3</b>	Dry burning or overheating in the heat exchanger	Turn off the tap and restart the equipment.
<b>E4</b>	Temperature sensor fault	Call the service center.
<b>E5</b>	Temperature of hot water flow out is too high	Turn off the water tap and restart the equipment.
<b>E6</b>	Improper combustion	Turn off the water tap and restart the equipment.
<b>E8</b>	Abnormal air pressure	Turn off the water tap and turn on again.





## Warming tips

- For your safety, please do not place flammable liquid and gas around the gas water heater.
- After installation, checking with leaks of gas way and water way system is necessary.
- The gas type used in gas water heater must be as same as indicated on the rating label.
- Please read the manual carefully before ignition, and check with around, it's forbidden to switch on the appliance and ignite once gas smelled, and open the window and door to drain the gas out, and also find out reasons of leaks, contact with the local service and gas supply department.
- If there exists difference of content and parameter between manual and actual product, please regard practical product as a standard.
- This kind of balance type is secondary energy efficiency.

## After service

If an abnormal situation occurs, please check with faulty solution content in the manual. If the problem still remains or some confusion left, please leave it to the local after-service department. You can also feed back this problem to our company, and offer the details information follow:

