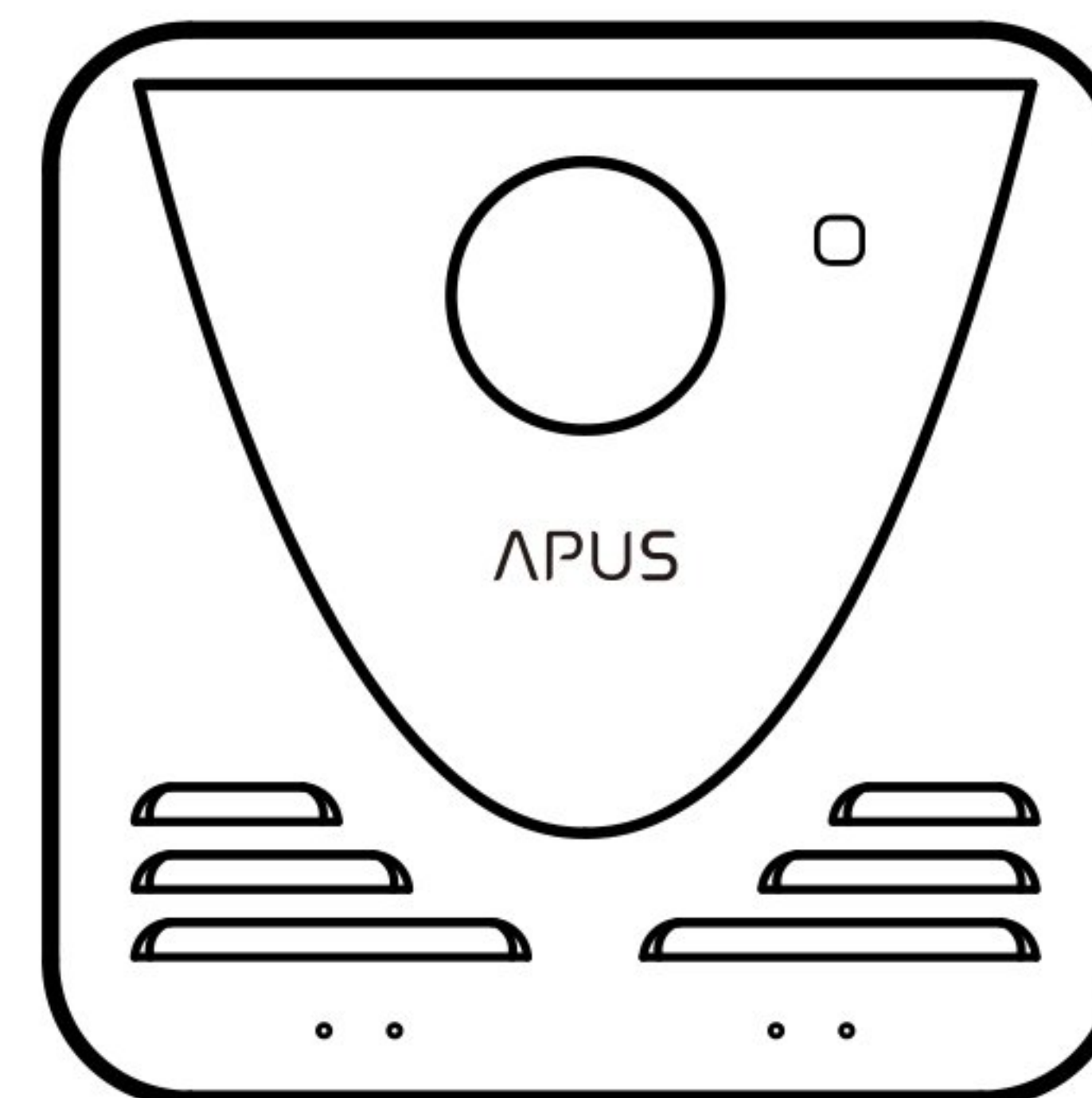




# INSTRUCTION MANUAL OF RV INSTANT GAS WATER HEATER



JSQ10RV-A11

## WARNING

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

- Evacuate all persons from the vehicle.
  - Shut off the gas supply at the gas container or source immediately.
  - DO NOT try to turn on the water heater.
  - DO NOT try to light any appliance.
  - DO NOT touch any electrical switch, or use any phone or radio within the vicinity of the water heater or near or in the vehicle.
  - DO NOT start the vehicle's engine or electric generator.
  - At a safe distance from the water heater, immediately contact the nearest gas supplier or qualified service technician for advice, inspection, service and repairs and follow their instructions.
  - If you cannot reach a gas supplier or qualified service technician, contact the nearest fire department.
  - DO NOT turn on the gas supply until the gas leak(s) has been repaired.
  - DO NOT return to the vehicle and turn on gas supply until being authorized to do so by the qualified service technician or gas supplier.
- Installation and service must be performed by a qualified installer, service agency or the gas supplier.

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## OWNER'S MANUAL

### 1.1 Safety Information

Dear Customer,

Thank you for choosing our product. Please read this manual carefully before attempting to install or operate it. You will find the correct method of installation, tips for usage and maintenance of the product.


This water heater must be installed, serviced and removed only by an authorized and qualified technician. For continued safety of this appliance, it must be installed and maintained in accordance with the manufacturer's instructions.

This manual includes a lot of safety information which follows the safety alert symbol, or word **WARNING** or **CAUTION**. Please pay particular attention to such safety information to avoid serious injury, or even death.

**WARNING** means a dangerously hazardous situation that will result in property damage, serious personal injury or death.

**CAUTION** means a potentially hazardous situation that will result in product damage or minor injury.

Should you have any problem in understanding this manual, or have any questions, please stop using the product and contact a qualified service technician to check.

 **WARNING:** Please follow all safety precautions and instructions in this manual to avoid danger and to ensure the products optimum performance. NEVER operate the appliance unless it is professionally installed. Failure to do so can result in product malfunction, property damage, personal injury and/or death. If there is any difficulty in understanding these instructions, or if you have any questions about the product usage, operation, installation, etc., please contact the authorized service agents or qualified technicians.

- This water heater is designed and intended for use in a recreational vehicle ( hereinafter referred to as "RV") and MUST only be installed in RV. RV is a tourist caravan, or motor home with its own power, gas and water supply. An RV can be self-propelled or towed.
- This water heater MUST NOT be used as a domestic spa or swimming pool heater. It MUST NOT be used for indoor heating.
- This water heater MUST NOT be used in food trucks, roadside food carts and construction trailers, etc..
- This water heater must be installed, serviced and removed only by an authorized and qualified person. Detailed installation instructions with relevant precautions is given in section titled "Installation Instructions" from page 15 to 27.
- FOR CONTINUED SAFETY OF THE WATER HEATER IT MUST BE INSTALLED, OPERATED AND MAINTAINED IN ACCORDANCE WITH THE MANUFACTURER'S INSTRUCTIONS.
- HOT WATER ABOVE 50°C CAN CAUSE SERIOUS SCALDING WITHIN SECONDS. ALWAYS CHECK OUTLET WATER TEMPERATURE BY HAND OR BY THERMOMETER EVERYTIME BEFORE USE, SUCH AS WHEN FILLING A BATH OR BASIN OR ENTERING A SHOWER, TO ENSURE IT IS SUITABLE FOR THE APPLICATION AND WILL NOT CAUSE SCALD INJURY.
- THIS WATER HEATER 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 THIS WATER HEATER. WHENEVER CHILDREN ARE IN THE BATHROOM OR NEAR ANY SOURCE OF THE HOT WATER, ENSURE TO SUPERVISE THEM AND TURN OFF THE HOT WATER TAPS TIGHTLY AFTER USE.
- DO NOT turn on the water heater unless water, gas and power supplies are correctly connected.
- DO NOT turn on or operate the water heater when the vehicle is running or being refueled. Ensure power supply to the water heater is turned off under these circumstances.
- DO NOT touch the unit cover or the flue outlet during or immediately after operation to avoid scalding, because temperature of the cover and flue is high during the water heater operation.
- DO NOT insert any object into the flue outlet.
- DO NOT spray aerosols in the vicinity of this appliance while it is in operation.
- DO NOT use or store flammable materials in or near this water heater.
- DO NOT place articles on or against this water heater.
- DO NOT hang washing or other materials adjacent to the unit.
- DO NOT disassemble or modify this water heater. Disassembly and repair of this water heater can ONLY be done by authorized person.
- DO NOT use solvents to clean the water heater.
- DO NOT touch power plug with wet hands to avoid electric shock.
- DO NOT seal or block the relief valve outlet as it is a protection device of the water heater to avoid excessive pressure.
- DO NOT vent water heater to an outside enclosed porch area.
- ALWAYS keep trees, shrubs, etc. well clear of the flue outlet.
- Regularly check and clean if there is any blockage of insects, dirt, leaves, snow, ice, etc. in the air intake or flue outlet. Make sure there is no blockage in the air intake and flue outlet for the product correct performance under a safe condition.
- Follow the manufacturer's instructions and all local regulations for clearances required from appliance to combustible constructions / materials.
- This appliance has a main burner flame which can come on at any time. Ensure the area is clear of flammable vapours to avoid unexpected fire or explosions.

- If you can smell any gas, STOP using the water heater immediately and follow instructions outlined on Page 8.
- Ensure the water heater is installed with the bottom is in parallel with the horizontal ground surface. Before using the water heater, choose a flat area to park.
- When water flow is low, the hot water may be cut off without warning. Increase the hot water flow to restart the water heater.
- It's strongly recommended to do cleaning and maintenance of the product according to section Cleaning and Maintenance on Page 11 to 14. It is helpful for product safety and long lifespan.
- If a power failure occurs, any connected wire controller will not function and the unit will not supply hot water until power is resumed. Once power is resumed, wire controller will be restarted by remembering the last set temperature. In such case, it is strongly recommended to check the set temperature and hot water outlet temperature again before use to avoid scalding in case the previous set temperature is too high but forgotten.
- Please turn off the main power during electrical storms to avoid damage to the components.
- This appliance must be connected in accordance with current water, gas, and electrical regulations. A fixed wiring installation is to be done only by an authorized electrician. Improper installation, adjustment, service, or maintenance can cause death, personal injury, or property damage.
- Prior to connecting the appliance, please ensure that the rating label data corresponds to the water, gas, and electrical mains rating as described in "Specification" on Page 6.
- Authorized personnel must perform all subsequent adjustments or repairs that may be necessary after installation with appropriate level of care and attention.
- Failure to install and vent the hot water heater properly will result in fire, explosion, or carbon monoxide poisoning. NEVER operate the appliance unless it is properly vented.
- For any repairs, ALWAYS contact the authorized customer service center and insist on original spare parts. Repairs by unauthorized person may lead to damage and void the warranty.

## 1.2 Product Information - Features

- Continuous Flow -- The water heaters use gas as fuel, and can supply continuous flow of hot water for shower, washing, kitchen etc.
- Easy Operation -- The operations are intelligent and automatically controlled with the advanced microcomputer chips controlling proportional valve, infinite speed, exhaust fan speed, and heavy load combustion device.
- Rainproof Installation -- The water heater itself is with special rainproof structures.
- Automatic Error Detection -- When the hot water heater is in operation, the control board will monitor the working state of control circuits, safety units, fan, proportional valve etc. If there is problem, the water heater will stop working, and an error code will be displayed on the wired controller.
- Microcomputer Smart Control -- The microcomputer in the water heater will work out the perfect working parameters to ensure constant hot water temperature delivery based on input data such as inlet water temperature, preset temperature etc. It could also ensure the water heater works at high energy efficiency.
- Digital Control Temperature -- Real time temperature is monitored by a sensor probe and provides feedback data to microcomputer. An automatic adjustment of gas and air supply is maintained according to feedback data to ensure a constant temperature of the water delivery.
- Low Start-up Water Pressure -- The minimum working water pressure can be as low as 3PSI (0.02MPa) which is ideal for low water pressure application.
- Power-off Memory Function -- When the water heater is restarted, the last temperature setting will be recalled.
- Multiple Safety Protections -- Automatic error detector, flame failure device, strong wind pressure protection, incomplete combustion detection, delay ignition cleaning system, over heat protection, anti-frost protection, etc.

## 1.3 Product Information - Specification

Product name	RV Tankless Water Heater	
Installation	Suitable for installation in RVs	
Model	JSQ10RV-A11U001-1	JSQ10RV-A11U001-2
ITEM NO.	AP-AWH-RV10B	AP-AWH-RV10W
Min./Max. Gas Consumption	15000~68000 BTU	
Capacity (temperature rise 25°C)	2.5GPM (10L/min)	
Main Injector	1.20 mm	
Gas Type	Propane ( LPGas)	
Maximum Inlet Gas Pressure	13"W.C ( 3.23kPa)	
Rated Inlet Gas Pressure	11"W.C ( 2.74kPa)	
Minimum Inlet Gas Pressure	8"W.C ( 1.99kPa)	
Manifold Pressure	1.0~4.4"W.C (0.25~1.1 kPa)	
Min./Max. Temperature Setting	95 ~ 124°F ( 35 ~ 51°C)	
Water Outlet Connection	NPT 1/2	
Water Inlet Connection	NPT 1/2	
Gas Inlet Connection	5/8-18UNF	
Min./Max. Water Supply Pressure	3 ~ 150PSI	
Ignition method	Automatic ignition	
Power Supply	12VDC , < 10amp	
Rated power	21W	

Manufacturer reserves the right to amend the product without prior notice.

## 1.4 Product Information - Dimensions

For models: JSQ10RV-A11

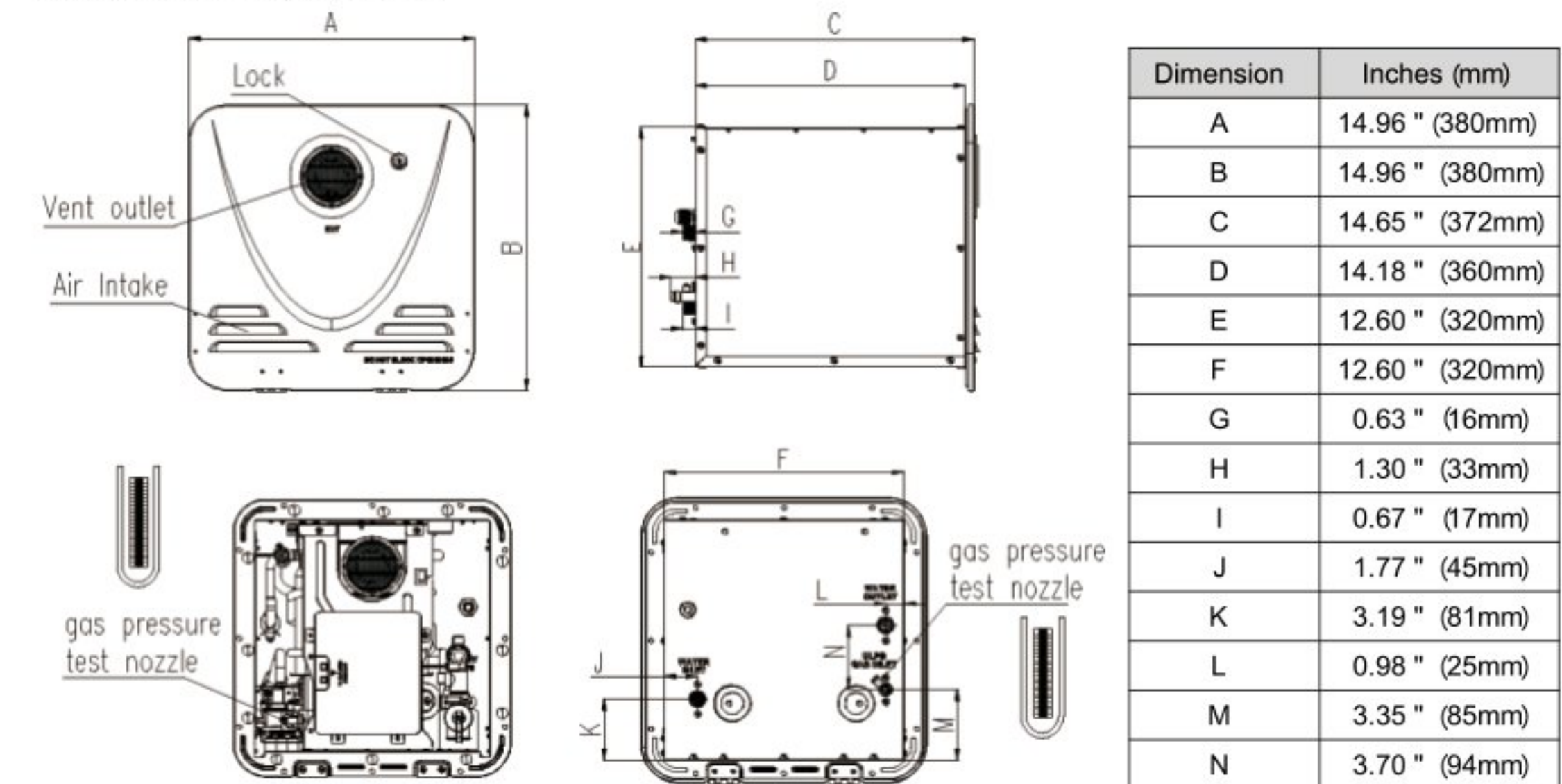


Figure 1

### Wired Controller:

Each water heater is with a wired controller. The controller is as below.

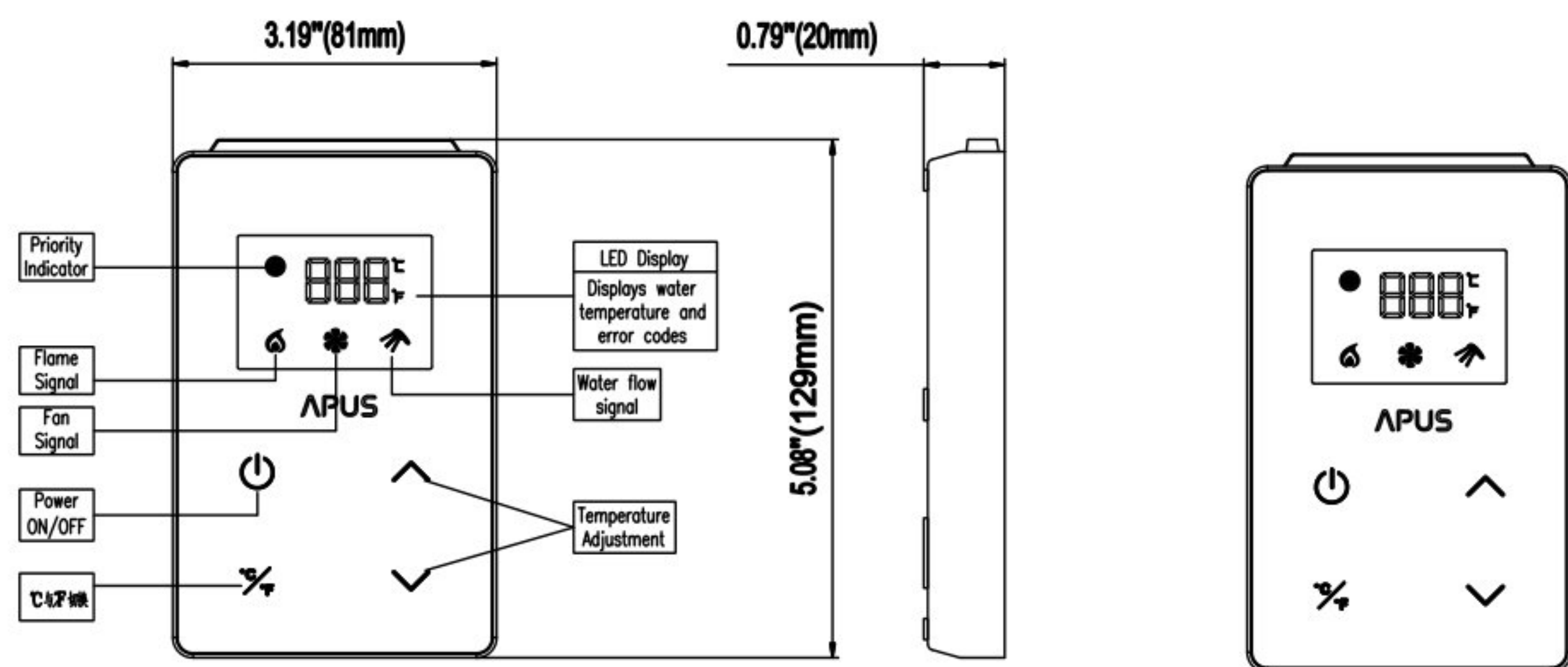


Figure 2

### 1.5 Product Information - Accessory

The hot water heater comes with the accessories listed below. Please verify the accessories have been supplied before installation.

Parts	Quantity	Remark
Installation&Operating manual	1	Keep it properly for future reference
Wall anchor	2	For water heater installation
Mounting screw	12	For water heater installation
Remote Control	1	Wired controller
Water outlet hose	1	For Water Outlet Installation Uses
Water connector	1	For Water Outlet Installation Uses
Shower head assy	1	For Water Pipeline Installation Uses
Screw	2	For wired controller installation
Closed Circuit Terminal	4	For wired controller installation

### 1.6 Product Operation Instruction - How to Turn on the Water Heater

**WARNING:** BEFORE OPERATING THE WATER HEATER, MAKE SURE TO READ AND FOLLOW THE BELOW INSTRUCTIONS, ALL LABELS ON THE WATER HEATER, AND EVERY DETAIL OF "SAFETY INFORMATION" MENTIONED IN PAGE 4 TO 5. FAILURE TO DO SO CAN RESULT IN UNSAFE OPERATING CONDITIONS WHICH CAN RESULT IN PRODUCT AND PROPERTY DAMAGE, PERSONAL INJURY, OR EVEN DEATH.

- This gas water heater does not have a pilot. The hot water heater is equipped with an ignition device which automatically lights up the burner once water tap is turned on. DO NOT try to light the burner by hand. Before operating, smell around the appliance to confirm if there is a gas leak. Be sure to also note any smell coming from ground level because some gases are heavier than air and will settle on the ground. IF YOU SMELL GAS:
  - Evacuate all persons from the vehicle.
  - Shut off the gas supply at the gas container or source immediately.
  - DO NOT try to turn on the water heater.
  - DO NOT try to light any appliance.
  - DO NOT touch any electrical switch, or use any phone or radio within the vicinity of the water heater or near or in the vehicle.
  - DO NOT start the vehicle's engine or electric generator.
  - At a safe distance from the water heater, immediately contact the nearest gas supplier or qualified service technician for advice, inspection, service and repairs and follow their instructions.
  - If you cannot reach a gas supplier or qualified service technician, contact the nearest fire department.
  - DO NOT turn on the gas supply until the gas leak (s) has been repaired.
  - DO NOT return to the vehicle and turn on gas supply until being authorized to do so by the qualified service technician or gas supplier.

#### NORMAL STEPS TO TURN ON THE WATER HEATER:

- Turn on the power switch for power supply.
- There is an ON/OFF switch in the water heater controlling the cold and hot water switch. Please ensure it's on ON position.
- This water heater is with a wire controller, please also press the ON button for power supply.

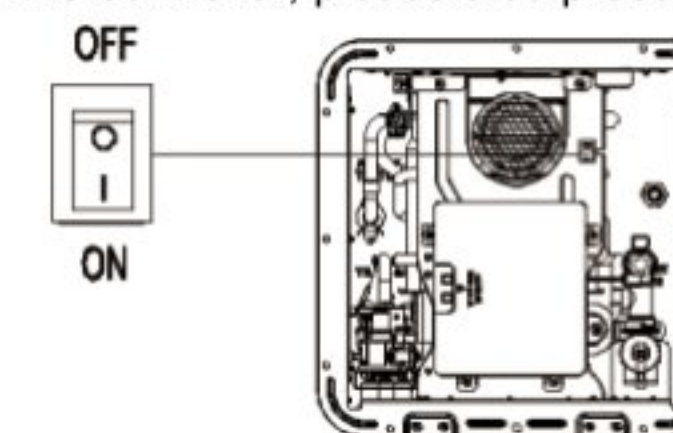


Figure 3

- To turn on the water heater, make sure the gas and water isolating valves are on ON position for gas and water supply.
- When operating the water heater upon completion of installation, or after changing a gas cylinder, or operation after a period without usage, there may be air inside the gas pipe which causes fluctuations with hot water delivery. Please turn on hot water taps to start the water heater a few more times until the air in the gas line is fully purged.
- When gas, water and power supply are ready, turn on the hot water tap and the water heater will start up automatically. Hot water will be delivered continuously to the water outlet.

**WARNING:** According to Safety Information on Page 4 to 5, please always check outlet water temperature by hand or by thermometer (refer to Figure 4) every time before using the hot water for sanitary purposes to avoid scalding and injury.

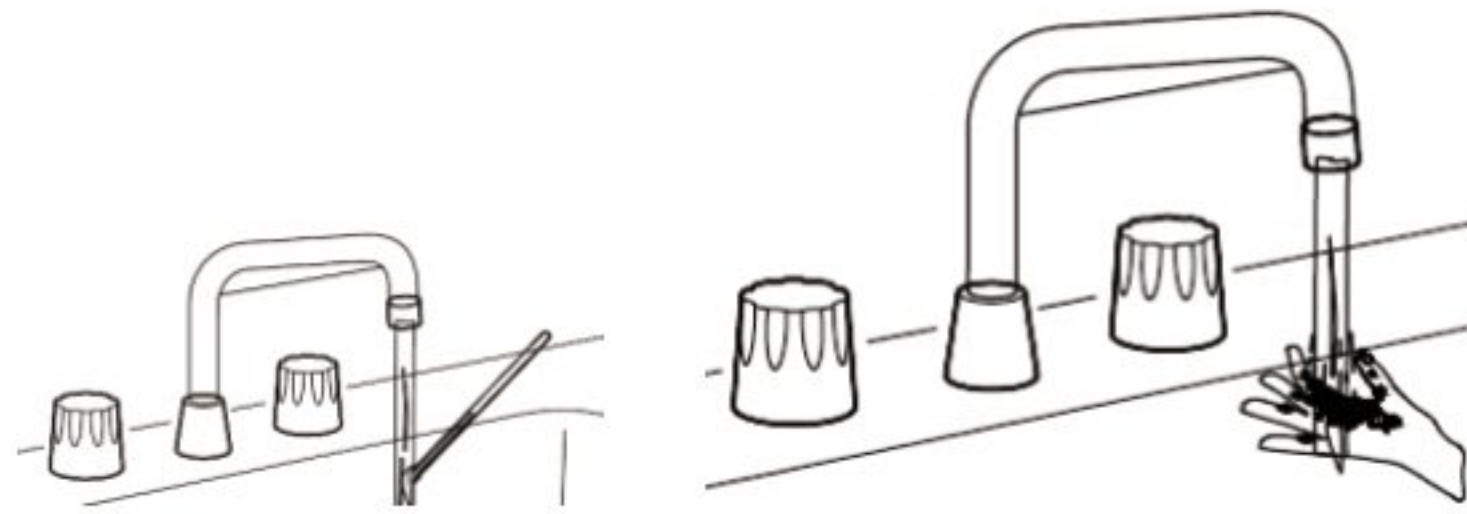


Figure 4

- For comfortable shower or washing, the outlet water temperature could be adjusted through the controller mentioned on Page 10. Or it could also be adjusted through the hot water and cold water taps inside the RV to increase or decrease the outlet water temperature.
  - Reduce hot water or mix more cold water when seeking a lower water temperature.
  - Increase hot water or mix less cold water when seeking a warmer water temperature.
- The flow rate of hot water may vary when there is more than one water outlet being used at the same time.
- When mixing cold water, hot water flow will be reduced. If the hot water flow is reduced to lower than 1.6L/min, the water heater will stop working. Reduce the cold water flow or increase the hot water flow to reach 2.0L/min to re-start the water heater.
- Outlet water temperature setting and inlet water temperature also impact the startup and shutdown of the water heater.
- The temperature setting and the delivered water temperature could be different due to the heat dissipation through pipes and / or seasonal change.
- If any water outlet is turned on before the hot water heater is powered on, the hot water heater will not function, and it will be in safety protection mode. Please turn off the water outlet and power on the water heater again.
- DO NOT use this appliance if the internals have been wet or submerged in water. Call a qualified service technician to inspect the appliance for damage.
- DO NOT turn on the water heater unless the water heater has uninterrupted gas and water supply.
- DO NOT turn on the water heater when the front cover, safety device or any component is removed from the product. The front cover MUST always keep closed when the water heater is in operation.

### 1.7 Product Operation Instruction - How to Turn off the Water Heater

- To turn off the water heater, just turn off the water taps.
- Turn off the controller and gas shut-off valve if there will be a period without usage. And if freezing conditions are expected during the long period without usage, turn off water and gas and power supply, and drain all water from the water heater. Water draining is mentioned on Page 13.
- This water heater comes with a built-in freeze protection device. The water heater automatically prevents freezing in temperatures as low as  $\geq 2^{\circ}\text{C}$ . This freeze protection function prevents ice forming in the waterways of the water heater in the event of freezing conditions. This function protects the heat exchanger.
 

**CAUTION:** The freeze protection function will be rendered inoperable if electrical power and gas supply is not available at the water heater. DO NOT disconnect the power and gas supply. Damage caused by freezing due to the unavailability of power at the water heater is not covered by the warranty. If it's necessary to switch the power off to the water heater and there is a risk of freezing, then water MUST BE DRAINED from the water heater as mentioned on Page 13. Pipe work to and from the water heater MUST be adequately insulated to prevent freezing.

### 1.8 Product Operation Instruction - Wired Controller

The water heater is supplied with a wired controller.

**⚠ WARNING:**

- CHILDREN SHOULD BE SUPERVISED TO ENSURE THAT THEY DO NOT PLAY WITH ANY WIRED CONTROLLER.
- DO NOT TRY TO DISASSEMBLE THE CONTROLLER. ALL CONTROLLERS ARE SEALED AND CALIBRATED FOR ACCURATE CONTROL AND OPERATION.
- WATER TEMPERATURE MAY BE ADJUSTED THROUGH CONTROLLER. MAKE SURE TO TEST THE WATER TEMPERATURE BY HAND OR BY THERMOMETER EVERY TIME BEFORE USE TO AVOID SCALDING OR INJURY.
- SAFETY MUST BE CONSIDERED WHILE SETTING THE HOT WATER DELIVERY TEMPERATURE. TABLE 1 SHOWS THAT A PERSON WILL RECEIVE A SECOND DEGREE BURN IN 3 SECONDS OF EXPOSURE AND A THIRD DEGREE BURN IN 5 SECONDS OF EXPOSURE TO WATER OF  $60^{\circ}\text{C}$ .

Table 1

Water Temperature ( $^{\circ}\text{C}$ )	2nd DEGREE BURN	3rd DEGREE BURN
	No Irreversible Damage	Full Thickness Injury
45	2 hours	3 hours
47	20 minutes	45 minutes
48	15 minutes	20 minutes
50	8 minutes	10 minutes
55	17 seconds	30 seconds
60	3 seconds	5 seconds

**Controller Operations are as below:**

- 1) Press the power ON/OFF button once, the digital display will light up by displaying the outlet temperature setting. It will automatically recall the previous setting for temperature output. When water tap is turned on and water heater starts to operate correctly, related signals or indicator will be displayed.
- 2) Adjust the desired water temperature by using temperature adjustment buttons UP and DOWN. Every press, the buzzer sounds once. Temperature setting range is as mentioned above. Variation of the temperature adjustments per press is from  $95^{\circ}\text{F}$  ( $35^{\circ}\text{C}$ ) to  $123^{\circ}\text{F}$  ( $51^{\circ}\text{C}$ ).

Celsius Degree and Fahrenheit Degree Comparison

$^{\circ}\text{F}$	95	97	99	100	102	104	106	108	109	111	113	115	117	118	120	122	123
$^{\circ}\text{C}$	35	36	37	38	39	40	41	42	43	44	45	46	47	48	49	50	51

- 3) The temperature of the hot water cannot be adjusted higher than  $48^{\circ}\text{C}$  while hot water is running. This is a safety setting. To adjust the temperature higher than  $48^{\circ}\text{C}$ , all hot water outlets must be shut off then press the UP button.
- 4) It's not necessary to turn off the controller after the shower every time. During extended periods without using the water heater, it's suggested to turn off the controller by pressing the OFF button.
- 5) In the event of a fault alarm, the display will show the error code, a buzzer emits a sound "Beep, Beep, Beep" continuously for 10 times, with an interval of one second between each beep.

### 1.9 Product Operation Instruction - High Altitude Use

For Canada: 0~4500 ft above sea level.

For Us: 0~5000 ft above sea level.

If it exceeds 5000 ft, it shall comply with the requirements of Canadian installation regulations CSA

B149.1 and American installation regulations ANSI Z223.1/NFPA54, and the input rate will decrease by 4% for every 1000 ft increase in altitude.

### 1.10 Product Operation Instruction - Cleaning, Draining and Maintenance

Regular cleaning, draining and maintenance will help to make sure the water heater is always in good condition and will prolong the working-life of the water heater. If there is any doubt about how to perform these operations, please contact an authorized technician for instructions. It's also recommended that a periodic inspection is done by a qualified technician to ensure proper operation of the water heater.

**⚠ WARNING:** PRIOR TO PERFORMING CLEANING AND MAINTENANCE SUMMARIZED BELOW, ALWAYS TURN OFF THE WATER HEATER. TURN OFF GAS, WATER AND POWER SUPPLY TO AVOID HAZARDS. DO NOT PERFORM CLEANING OR MAINTENANCE IMMEDIATELY AFTER THE WATER HEATER STOPPING OPERATION BECAUSE THE WATER REMAINING INSIDE THE PIPEWORK AND WATER HEATER CASES ARE STILL HOT. PLEASE WAIT AT LEAST ONE HOUR AFTER THE WATER HEATER STOPS OPERATION BEFORE CLEANING AND MAINTENANCE.

#### 1) Cleaning of Water Heater Front Cover

- a) Use a vacuum cleaner to clean the area around the water heater, vent outlet, air intake and insect-proof net behind the air intake to remove any dust, dirt and/or lint buildup, especially to ensure that they are free of any debris or blockages (leaves, insect nests, cobwebs, etc.) - refer to Figure 5.

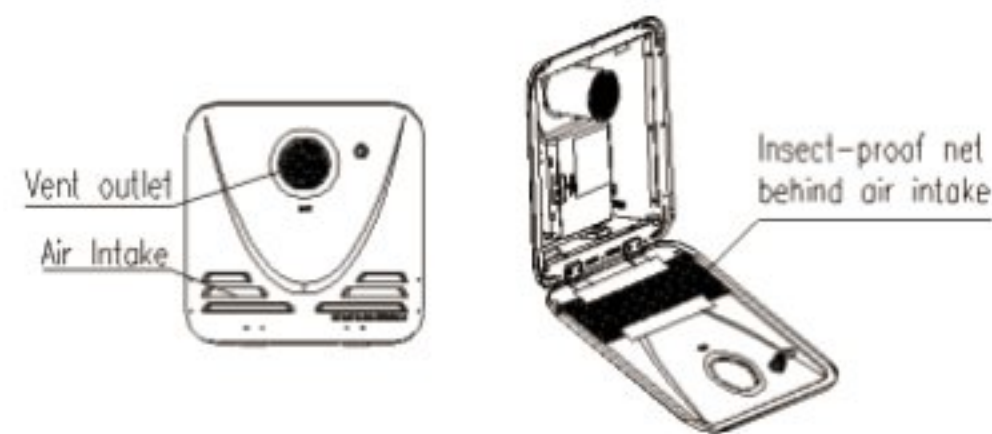


Figure 5

- b) Use a damp cloth to clean the hot water heater casing. Dry the surface afterwards. Never use gritty or abrasive sponges. Acidic materials like vinegar and citric juices etc. can damage the most resistant surfaces.
- c) If the blockage on the air intake and the insect-proof net could not be cleaned as mentioned above, please clean it in following ways:
  - Open the water heater front door, tear off the aluminum foil on the insect-proof net and take it out. Clean the air intake and the insect-proof net with tap water and a soft brush. **CAUTION:** Do not use excessive force during cleaning to avoid damaging the insect-proof net - refer to Figure 6.
  - After cleaning, reinstall the insect-proof net and slide it back on the original location with aluminum foil pasted on the front door. **CAUTION:** Do not paste the aluminum foil on the air intake. When it's cleaned, please remember to close the front door.



Figure 6

#### 2) Cleaning of Strainer

If the strainer is blocked, clean it to prevent a restriction to hot water flow. Turn off the water heater, gas and power supply. Close the cold water service valve to terminate the water supply to the water heater - refer to Figure 7.

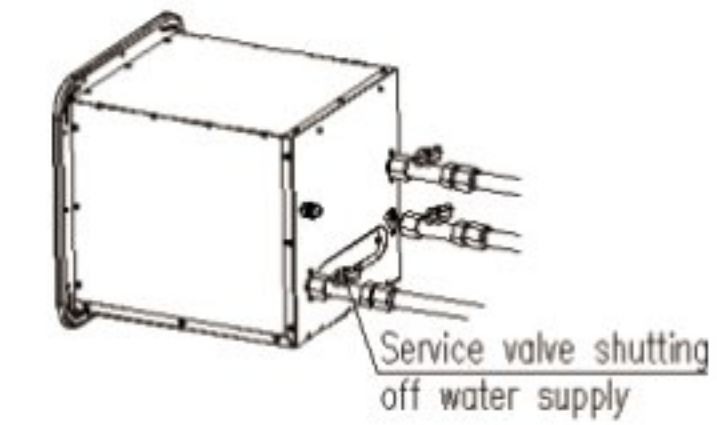


Figure 7

Remove the cold water inlet pipe to take out the strainer. Do not use excessive force while removing it to avoid deformation and/or damage to the strainer. Clean the strainer under running water. Use a soft brush to remove sediment and grit - refer to Figure 8. It's highly recommended that all water pipes **MUST** be cleaned before the water heater installation and storage water supply should be clean to avoid filter blockage and cleaning.

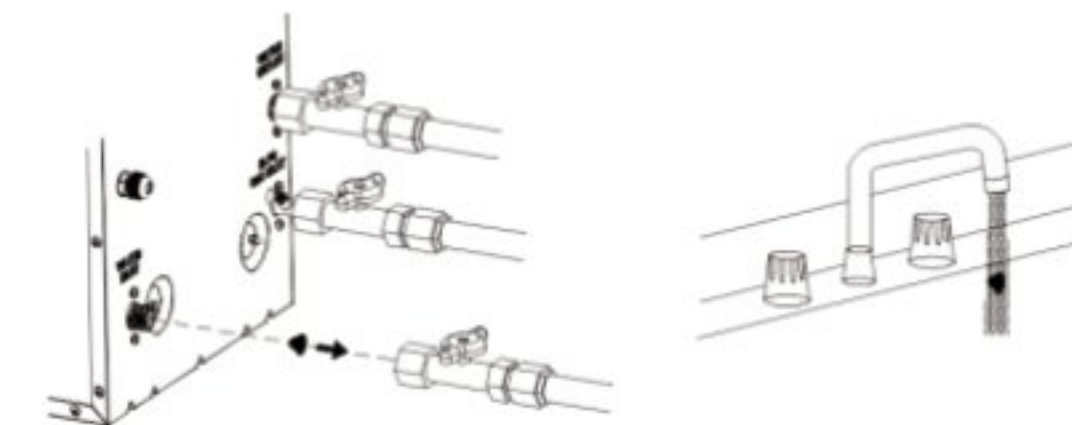


Figure 8

Reassemble the strainer in the water inlet then reconnect the cold water inlet pipe carefully to avoid deformation and/or damage. Turn on the water supply by opening the cold water service valve. Reconnect the gas and power supply and turn the water heater on. This must be done by an authorized person.

#### 3) Draining the Water Heater

- i. Turn off the water heater. Close the gas service valve. Disconnect the power supply. Open all hot water taps in the RV. Run the water until the water cool down. Close all hot water taps.
- ii. Close the cold water service valve, open the water heater front cover, remove the safety valve and turn on the hot water tap. Water will flow out from the safety valve installation hole - see Figure 9
- iii. After the water is drained from the water heater, there will be some water left in the water drainage groove under the safety valve and it need to be cleaned manually from the drainage holes on the water heater bottom. Then the safety valve could be reassembled, but there is a small amount of water left in the water heater.
- iv. In cold weather, the remaining water in the water heater can freeze. It could be drained as below:
  - Cut off the power supply before draining. Remove the safety valve and turn on a hot water tap. Connect the compressed air through a hose to the hot water tap or safety valve.
  - Turn on the compressed air valve then water remained in the water heater will be blown out through the hot water tap. Pressure of the compressed air should be no less than 300kPa.



Figure 9

- When there is no water drained from the hot water outlet and or safety valve, turn off the compressing air valve. (**WARNING:** Compressed air valve should be turned on for 5 seconds then turned off for 3 seconds for 3-5 times. Do not use compressed air to blow water for a long time.

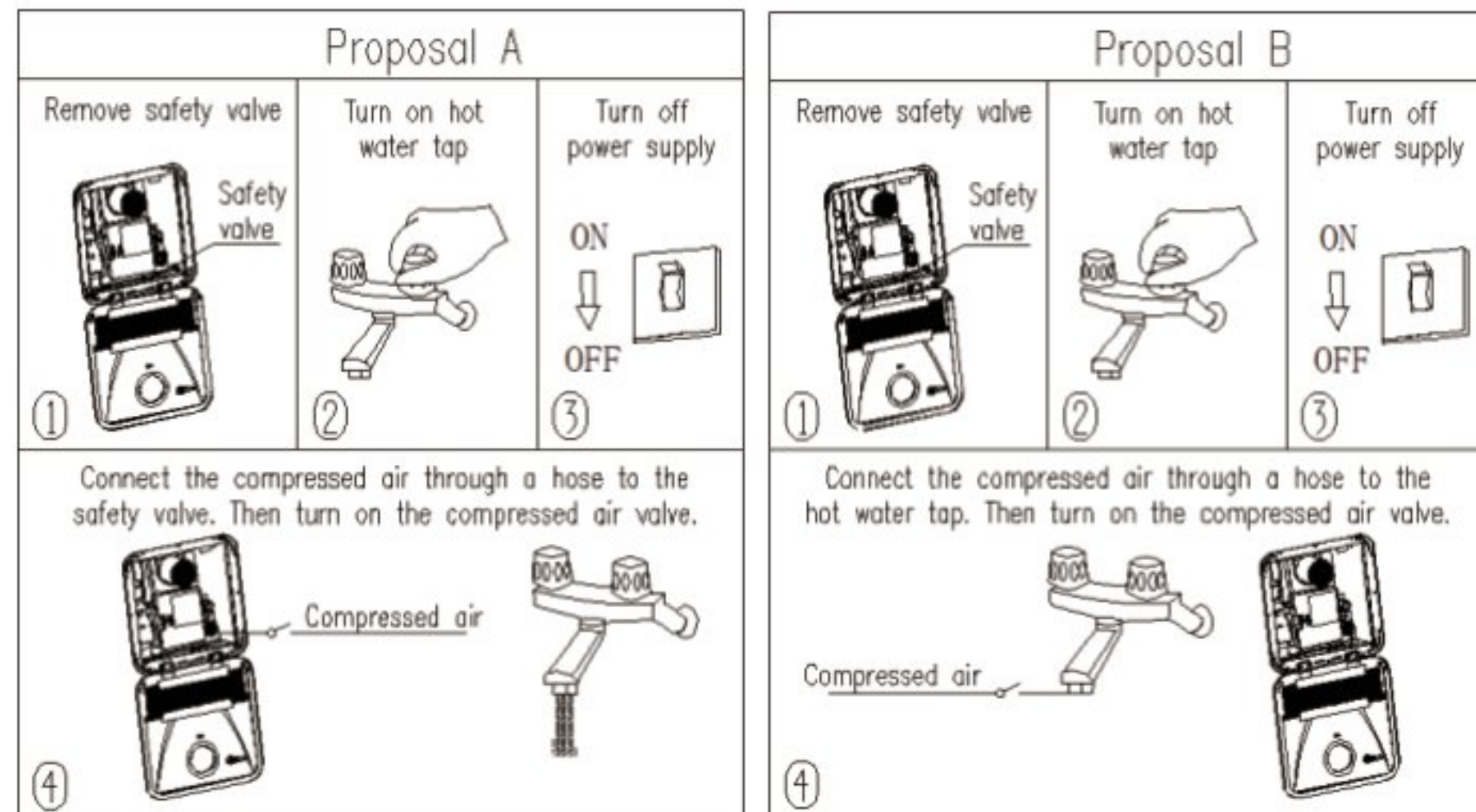


Figure 10

- v. Please follow below steps before restarting the water heater:
- Check whether the components inside the water heater are properly installed;
  - Turn on the cold water service valve and check whether there is leakage in the waterway;
  - Turn on the gas valve and check whether there is gas leakage in the gas pipeline;
  - Turn on all hot water taps and let water flow from them water heater till the air is expelled from the waterway;
  - Connect the power supply and restart the water heater ( Note:When the water heater is not used for a long time, there will be air in the gas pipeline. If it is not ignited at one time, please start the water heater several times until the gas water heater is successfully ignited) .

#### 4) Regular Visual Check

Check and keep the hot water heater installation area clean and free from flammable materials. Visually inspect the water heater for damage and / or denting. Check for abnormal noise during operation of water heater, e.g. hissing or banging noise. Check if there is any leakage of the water or gas lines. Contact a qualified plumber to check if any of the above mentioned are present.

#### 5) Anti-freeze Protection

This water heater is designed with anti-freeze protection. It could prevent the water inside the water heater to freeze when freezing condition occurs so as to avoid components being damaged.

- If the water heater detects the temperature of heat exchanger is lower than 2°C and water flow is smaller than startup value after it's powered on for 1 min., ignition will start and water heater will work under min. heat input for 10s then stop automatically. 3 mins later, the anti-freeze protection setting will take effect again with the same operation. This function will keep working until the heat exchanger temperature rise to 20°C or the water heater detects there is water flow higher than the startup value. During this function is taking effect, code "AF" will be displayed on the controller.
- When the water heater is in standby mode, it will keep detecting the heat exchanger temperature and water flow. Once the startup condition of anti-freeze protection is reached again, it will take effect automatically.
- If any error occurs during the anti-freeze protection operation, this function will be stopped working. The related error code and anti-freeze code AF will be flashed alternately on the display and "B", "B", "B" will be emitted till the error is solved and anti-freeze protection is restored.

#### ⚠ WARNING:

- The freeze protection function will be rendered inoperable if electrical power is not available at the water heater. Damage caused by freezing due to the unavailability of power at the water heater is not covered by the warranty.

- If it is necessary to switch the power off to the water heater and there is a risk of freezing, then it is necessary to drain the water heater. Refer to instructions of draining the water heater on Page 13.
- Pipe work to and from the water heater MUST be adequately insulated to prevent freezing.
- Water heater is not suitable for in areas where the ambient temperature falls below -14°C (including wind chill factor). Drive the RV away from the area where the ambient temperatures below -14°C before using the water heater.

#### 6) Vacation and Extended Shutdown

If the water heaters were to remain idle for an extended period of time, the power, gas, and water supply should be turned off. The water heater and piping should be drained if they might be subjected to freezing temperatures. After an extended shutdown, the water heater operation and controls should be checked by a qualified plumber.

#### 7) Pressure Relief Valve

When the water pressure is too high, the relief valve (also called safety valve) will take effect and water will drip from the relief valve so as to reduce the pressure to protect the heater. If the pressure relief valve discharges periodically, this may indicate a problem in the water system. Contact water supplier or plumbing contractor to check and correct the problem.

#### 8) It is recommended that the water heater be inspected by a qualified technician or an authorized person at least once a year. The followings should be inspected.

- Ensure the air intake and flue (including the net) is free of any debris or obstructions (leaves, insect nests, spider webs, etc.)
- Check if the water heater is firmly installed on the RV and there is any potential leakage areas (whether the cold water supply and hot water pipelines are securely connected to the water heater and whether there is any risk of leakage).
- Check whether the gas pipe is securely connected to the water heater, and whether the internal gas circuit is securely connected without the risk of gas leakage.
- Check whether there are debris or obstacles under the burner, around the fan or in the venting system of the water heater.
- Visually inspect the connection cables to ensure that the insulation materials are not scratched, and double check the connection cables are firmly connected without loosening.
- Inspect if any cracks or corroded areas on the water heater covers which may cause exhaustion to seep into or escape from the interior of the vehicle, especially check around the hot water, cold water, gas, and electrical connections.
- Check if any soot around the flue. Soot is a sign of incomplete combustion. Please call a qualified technician to check and fix if needed.
- Check whether the safety valve is tightly connected under normal conditions.
- Turn on the power supply to the water heater, turn on the hot water tap, and check the flame of the burner. The blue flame indicates normal combustion. Observation of the flame should be through the front row of holes of the burner. **WARNING:** DO NOT remove the pressure relief valve during the water heater operation.

## INSTALLATION INSTRUCTION

### ⚠ WARNING:

- This product is not suitable for DIY installation.
- This appliance MUST be installed only by authorised personnel in accordance to this installation instruction and all below current local electrical, gas, and water regulations. Before installation, please also read all Safety Information on Page 4 to 5. Failure to do so can result in product malfunction, property damage, personal injury and/or death.
- The manufacture shall not be liable for any direct or indirect damage caused by faulty installation. The installer must ensure that the product installation and connections comply with all regulations.

The installation must conform to one or more of the followings, as applicable.

- 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;
- Local codes or, in the absence of local codes, Recreational Vehicles, NFPA 1192, and/or CAN/CSA-Z240 RV Series.
- 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 appliance must be isolated from the gas supply piping system by closing its individual manual shutoff valve during any pressure testing of the gas supply piping system at test pressures equal to or less than 1/2 psi (3.5kPa)

Provisions for adequate combustion and ventilation air in accordance with one of the following:

- a) the National Fuel Gas Code, ANSI Z223.1/NFPA 54;
- b) CSA B149.1, Natural Gas and Propane Installation Code;
- c) applicable provisions of the local building code.

### ⚠ WARNING:

- Please keep any parts removed from this model inaccessible to children to avoid injury.
- Sharp edges can cause cuts and injury! Always wear protective gloves to avoid injuries from sharp edges during installation work and while handling the appliance.

### 2.1 Installation Environment

#### 1) Location

- This water heater is designed and intended for use in a recreational vehicle (hereinafter referred to as "RV") and MUST only be installed in RV. RV is a tourist caravan, or motor home with its own power, gas and water supply. An RV can be self-propelled or towed.
- DO NOT install in the front facing portion of the RV to minimize damaging contamination from road grime, debris and wet roads when traveling.
- The unit must be mounted vertically.
- The appliance should be installed close to the most frequently used hot water outlet to minimise delay time for hot water delivery.
- The unit must be installed adjacent to a 12VDC power point. This power point must not be in the way of flue exhaust, water pressure relief valve, or gas & water connections to the appliance.
- DO NOT install this appliance under any overhanging structure such as awnings.
- DO NOT install the water heater with the exhaust port facing an area covered with awning, canopy or any other enclosure.
- DO NOT install this appliance within 36" (914mm) from the fuel filler cap or tank vent.
- DO NOT install this appliance at the position where the appliance venting outlet is less than 12" (305mm) from the door and window - refer to Figure 11.

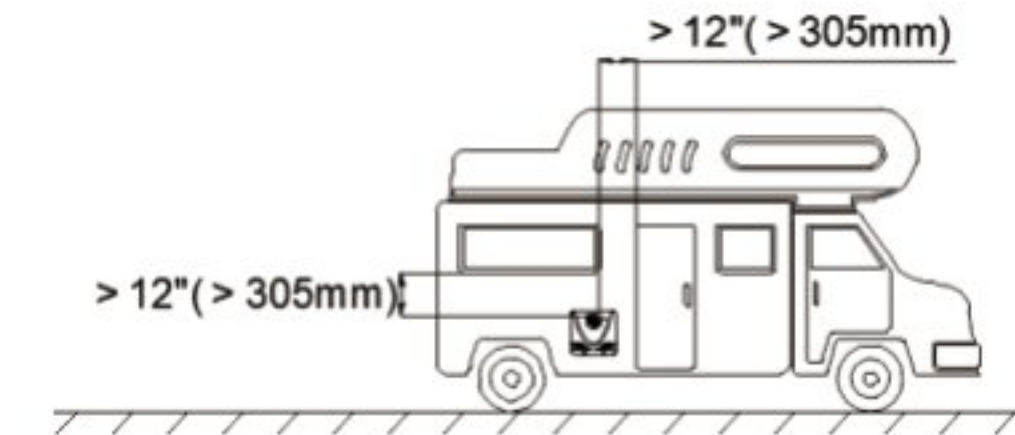


Figure 11

- DO NOT install the appliance in an outdoor enclosed area.
- This appliance should be installed in a place where the appliance front cover will not be covered or blocked by the RV door. If the condition is limited, the distance between the appliance installation area and RV door must be restricted to provide at least 6" (152 mm) between the venting and air inlet holes of water heater and the RV door when the door is opened - refer to Figure 12

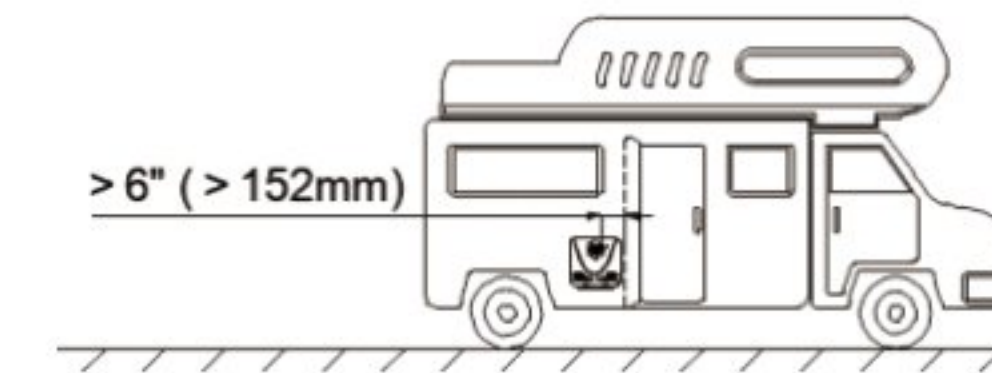


Figure 12

- Gas appliances shall be installed so as not to cause a hazard to caravans, persons, nearby surfaces, furniture or opened doors, and not obstruct the free movement of persons.
- The water heater can be installed in the trailer or under the retractable awning, but the awning MUST be well ventilated.
- The explosive and volatile flammables, such as gasoline, diesel, alcohol etc. must be kept far away from the water heater.
- The installation area is recommended to be made of non-flammable materials.
- Choose a location where clearances to combustible surfaces and the appliance are:
  - 1" to top surface.
  - 0" to all other surfaces.
- Cables and electric appliances cannot be installed on top of the water heater. The distance between the heater and the appliance should be more than 13" (330 mm horizontally and vertically).
- The normal operation gas pressure range of the water heater is maximum inlet pressure cannot exceed 13"w.c. (3.3kPa) and the minimum pressure cannot be lower than 8"w.c.(1.99kPa).

### ⚠ WARNING:

- This water heater is for outdoor installation only. Installation structure of water heater cavity is built-in and water heater cavity within the RV is intended to be fully sealed to prevent communication between the water heater and the inside of the RV, so that the air for product combustion is supplied from outside through the air inlet holes and the exhaust air is vented to outdoors through the flue venting hole on the door. The flue venting hole and air inlet holes on the front cover of the water heater MUST be installed facing outside the RV.
- This water heater is NOT used for indoor heating or as a pool heater.
- This water heater must NOT be installed in floating restaurants, catering vehicles or construction trailers.
- DO NOT install the water heater in a mobile home, boat or other watercraft.
- DO NOT install the water heater near vents for heating and cooling without a minimum clearance of 1.2m.

#### 2) Water Supply

To reach an optimal water flow of the water heater, water pressure supplied to this water heater must meet the specification listed on Page 6. If pressure is out of the required range, it will cause the product malfunction. Please call the authorized person to rectify it.

The water heater MUST ONLY be used in the following water supply conditions to prevent product damage and operation failure.

- Clean, potable water free from corrosive chemicals, sand, grit, and other contaminants.

- Inlet water temperature above 1°C, but not exceeding 40°C.

**NOTE:** If sludge or foreign matter is present in the water supply, it's highly recommended to install a suitable a filter on the cold water pipe before the water heater where it's easy accessible for cleaning.

### 3) Gas Supply

- This water heater ONLY use Propane (LPGas) as the fuel for operation. Gas pressure supplied to this water heater MUST meet the specification listed on Page6.
- Fuel entering the appliance must be in gas phase, liquid phase must not be used and will result in damage to the product.
- The gas line must terminate with a 5/8" flared female compression fitting to connect with the rear gas connector of the appliance.
- A non-metallic flexible gas hose must be rated for 149 °F (65°C), Anchor appropriately to prevent fatigue and failure from wear edges.
- Make sure that the operating pressure of the gas supply corresponds to the operating pressure of the appliance 11~14 in-wc (27.4~34.9mbar).
- Feed gas line into proximity, leave enough length to flex into position so that when connected no kinks are created.

**⚠ WARNING:** If gas type and gas pressure is out of the required range, it can result in product malfunction, property damage, personal injury and/or death. Please call the authorized person to rectify it.

**⚠ DANGER:** Follow all applicable codes, regulations and instruction material when performing service work. Failure to follow instructions will result in product damage, serious injury or death.

## 2.2 Water Heater Installation

- 1) Cut a hole of 13" x 13" (330 x 330mm) on the suitable location on the RV - refer to Figure 13

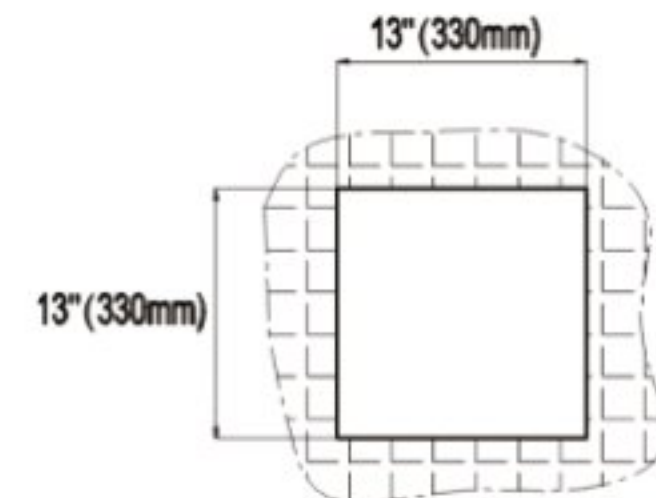


Figure 13

#### NOTE:

- DO NOT install the water heater in the RV aisle. It Must be installed on the exterior wall of the RV with the flue venting hole and air inlet holes on the front cover facing outside the RV.
- The water heater MUST be installed in a firm and non-flammable frame. Ensure the area where the hole is cut is firm enough to hold the water heater. Adding a supportive rack at the bottom of the water heater could reinforce the hole to ensure that the weight of the water heater does not cause any damage to the RV wall.  
If the opening is surrounded by combustible material, completely separate the built-in surface of the water heater from the combustible material by using a flame retardant insulating material, such as heat insulating blanket or heat shield (Note: The minimum thickness of the filling material must be greater than 20mm).
- The built-in space of the hole shall be reserved large enough to accommodate not only the water heater, but also the controller wire, cold and hot water pipes, gas pipe, and a power cord all of which is with a length 1.5 times greater than the opening depth, for easy handling of the future maintenance and testing.
- The opening for the water heater should be right angle corners.
- The exterior wall opening must be the same dimensions with no radius corners.

### 2) Controller Installation:

The water heater is allocated with a controller and connecting cable. DO NOT install other brand's

controller with this water heater.

- Controllers MUST be installed in shaded and clean locations.
- Controller should be installed out of children's reach but in an easily accessible location, e.g. kitchen, laundry room.
- The wire controller shall be installed as close to the water heater as possible. Controller is with a 2m long cable. When the cable on the wire controller passes through the drilling hole to reach the water heater installation hole, the cable left in the water heater installation hole shall be long enough to pull the water heater out of the installation hole for future maintenance and testing.

The maximum distance between water heater and a controller is 10 meters. DO NOT install controller in the following locations:

- Outdoors. Waterproof protection MUST be applied to avoid excessive exposure to water and sunlight.
- Area which it may in contact with water
- Area exposed to heat, steam, oil or direct sunlight
- Area where flammable products are stored or used

Controller cable can be any Type 22 AWG wire similar to a thermostat wire but not sensitive to polarity. Wiring MUST NOT be exposed. Do NOT apply sealant to remote control cable. Do NOT use network cable, telephone wire, or any twisted pair cable.

Install the controller as follow steps:

- Remove the frame of controller. Drill a hole with diameter 25mm at the predetermined wired controller installation location. Run the controller cable through the hole - refer to Figure 14

NOTE: Double check the cable left in the water heater installation hole shall be long enough to pull the water heater out of the installation hole for future maintenance and testing.

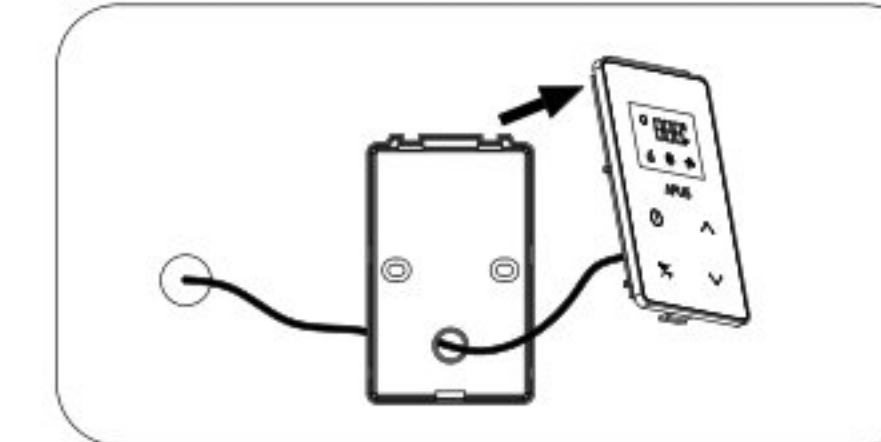


Figure 14

- Fix the wired controller to the wall with screws. If unable to fix it directly with screws, please drill two holes with diameter 6mm and depth 35mm, then install wall anchors and screws as Figure 15

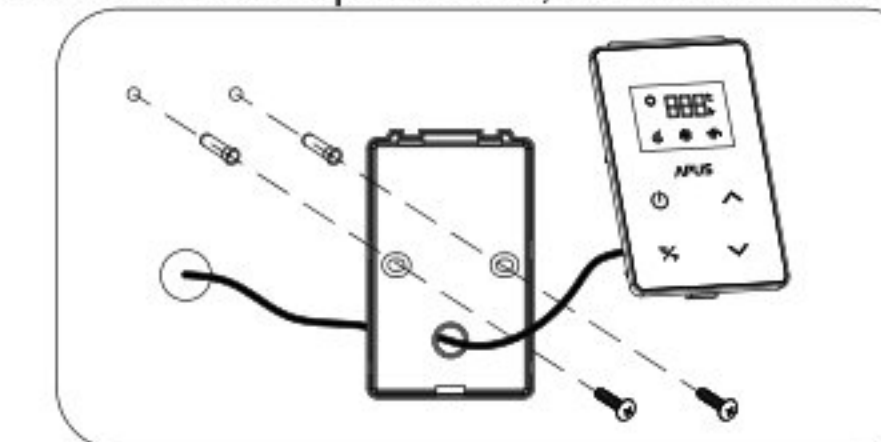


Figure 15

- Re-assemble the controller cover as Figure 16

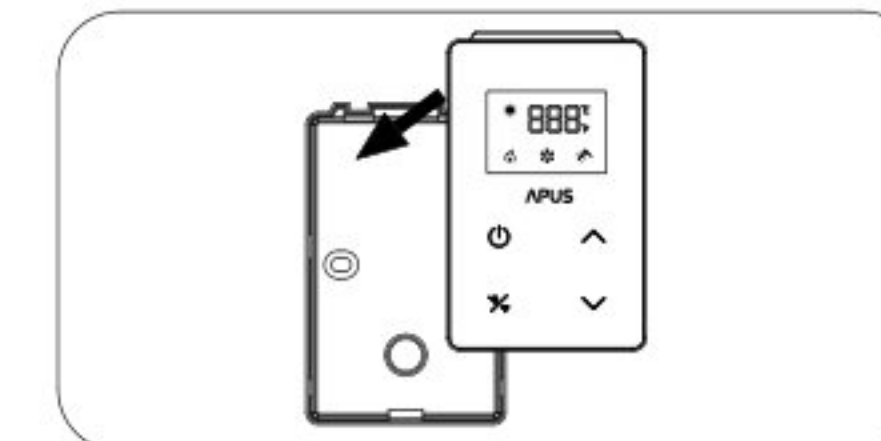


Figure 16

**3) Installing a water heater:**

- a) Clean any dirt in the supply pipes before they are connected to the heater. Remove every packaging and transit protection in- and outside of the water heater.
- b) The water heater flange is glued with 18mm wide single-sided adhesive anti-flaming EVA. The paste should be flat and connected seamlessly. NOTE: Not to be too thick. (3mm) Then press the water heater into the opened hole. In such way, the water heater is isolated from the RV interior when it's installed to ensure that the air for product combustion comes from the outside of the RV and exhaust air is emitted outdoors.
- c) Install a service valve before the water inlet, or on the cold water pipe to the water heater. Refer to the specification of water inlet and outlet on Page 6. Correctly connect the cold and hot water pipes to water inlet and outlet at the back of the water heater.

**CAUTION:**

- i. Check whether Washers/Teflon Tapes are correctly used in the water pipe fittings, and make sure there are no water leaks.
- ii. If the cold water and hot water are connected in reverse, the water heater will not start and cannot produce hot water, which may damage the equipment -- see Figure 18.

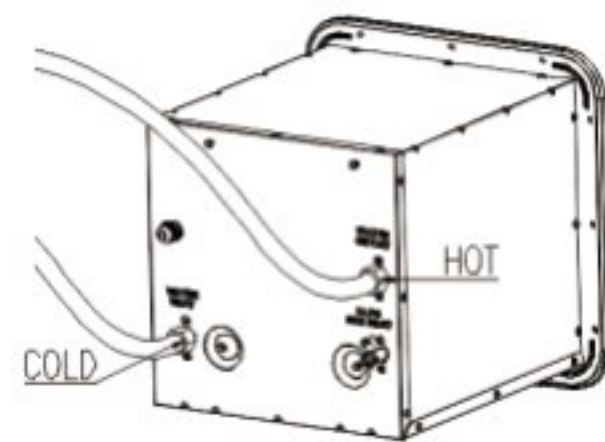


Figure 18

- iii. Service valve before the water inlet is used for maintenance and water draining.
  - iv. If the water in the pipes freezes, the water heater will fail. It is recommended to use appropriate thermal insulations to wrap the hot and cold water pipes to prevent the freezing water in the pipe.
  - v. The cold and hot water pipes must be long enough to pull the water heater out of the installation hole for future maintenance and testing.
  - vi. A filter is highly recommended to be installed for easy accessible to clean the water supply pipes after the pump and before the heater.
  - vii. DO NOT over tighten connection.
- d) Refer to the specification of gas inlet on Page 6. Install a gas service valve on the gas inlet pipe. Correctly connect the gas pipe to gas inlet at the back of the water heater -- see Figure 19.
- NOTE:** The gas pipe must be long enough to pull the water heater out of the installation hole for future maintenance and testing.

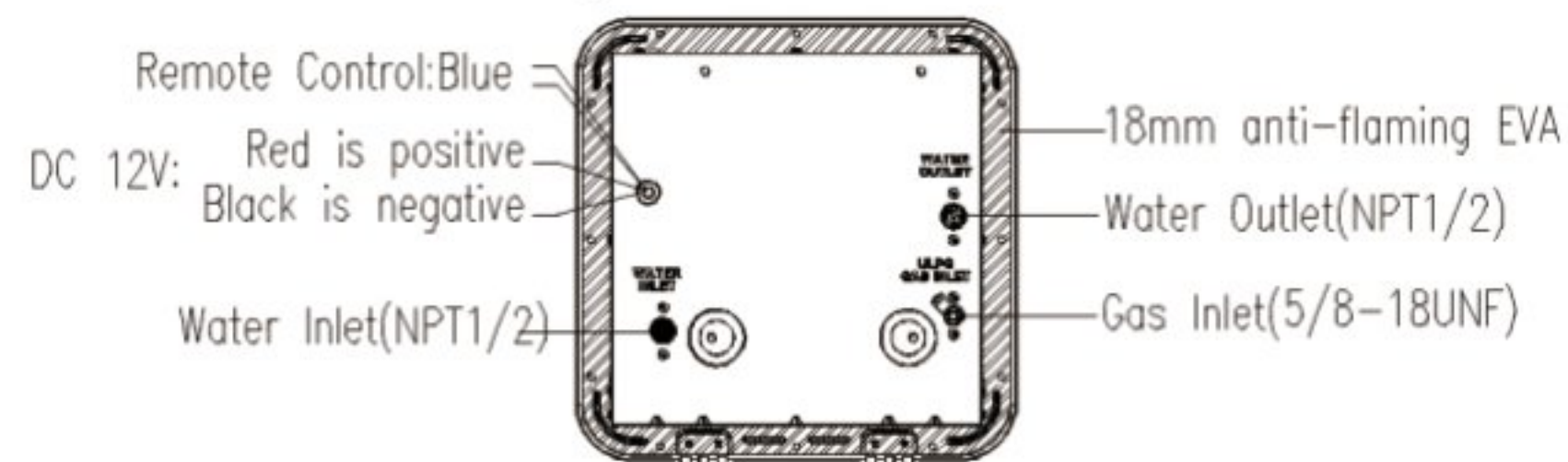


Figure 19

**WARNING:** In the case that the water piping is accidentally connected to gas inlet, all parts of gas circuit MUST be replaced. Failure to do so may cause gas leakage, explosion, or fire.

- e) After the gas inlet, cold water inlet and hot water outlet pipes are finished installation, the connection of cold water, hot water and gas pipes must be tested for leakage under normal working pressure. Please refer to below steps:
  - i. Gas leakage test - Use soapy water to test for leakage at all gas connections and fittings. If

bubbles are seen, it indicates there is a leak and MUST be rectified.

After gas is correctly connected to the water heater and ensure no leakage occur, turn off the gas service valve for next step.

**WARNING:** NEVER USE AN OPEN FLAME TO TEST FOR A GAS LEAK!

- ii. Water leakage test - Turn on cold water service valve and hot water service valve. When water flows out of the water heater outlet, leave it flowing for about 15 seconds to remove sand, debris and air. Then check if any water leaks from the water pipe connection. If no, turn off the hot water service valve and check again if any water leaks from the water pipe connection. If there is any water leakage found, it MUST be rectified. After the leakage test, take out the filter at the water inlet and clean to avoid the blockage due to the remaining debris in the water pipes. After water pipes are correctly connected and ensure no leakage occur, turn off the cold water service valve for next step.
- f) Before connecting the wired controller to the water heater, ensure that the water heater is not connected to the power supply and the water and gas service valves should be turned off. The controller is then connected to two blue cables on the back of the water heater, and it's not necessary to distinguish the positive and negative terminals. Controller cable must be long enough to pull the water heater out of the installation hole for future maintenance and testing.
- g) The power supply used for the water heater is 12VDC. Correctly connect the power supply to the cables at the back of the water heater with positive pole in red and negative pole in black. DC12V power cable must be long enough to pull the water heater out of the installation hole for future maintenance and testing.

**WARNING:**

- The electrical connection MUST comply with the installation instruction, all local codes and authority regulations. Ensure electrical wiring is installed properly. Improper installation may cause malfunction, fire, or electric shock.
- DO NOT use battery charger to supply power to water heater even when testing.
- DO NOT connect the power supply to the water heater before gas and water leakage testing is finished. Water and gas service valve should be turned off before the power supply is correctly connected.
- Before connecting the power supply to water heater, the power supply on the RV must be disconnected to ensure the RV DC12V output power socket is powered off.
- The water heater MUST always be disconnected from the power supply before any maintenance is carried out.
- Area with wiring for the water heater must be waterproof or free of rain splash.

- h) After confirming that there is no leakage on gas and water pipes connection and electric wiring and controller are properly installed, installation personnel should start the water heater and check its operation.

- i) After the water heater is confirmed to work properly, push the water heater into the opening and secure it with 12 screws (St5x22mm) supplied with the water heater on the RV-- see Figure 20

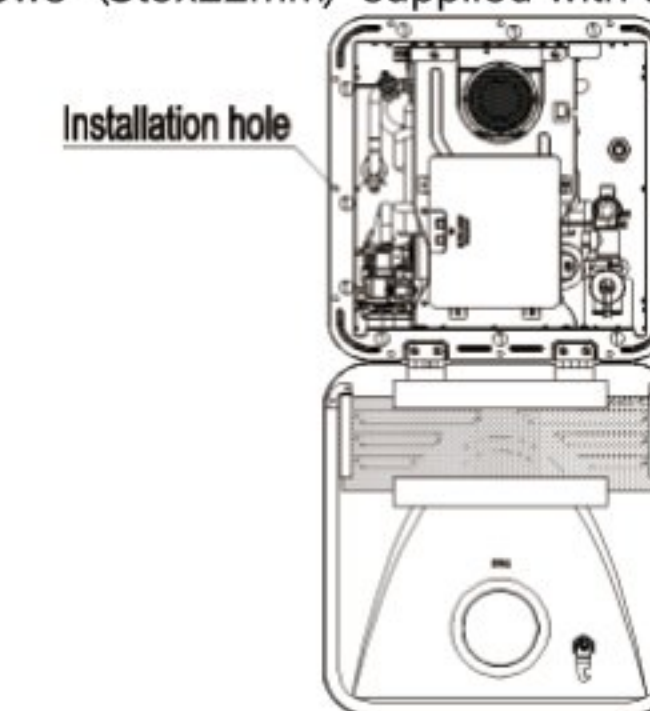


Figure 20

**⚠ WARNING:**

- This water heater is designed and intended for use in a RV. The operating voltage is 12VDC and gas type of the product is Propane (LPGas).
- DO NOT reverse HOT and COLD water connections. Water heater will not operate with reversed water connections
- DO NOT over tighten the cold water inlet, hot water outlet and gas inlet to avoid damaging the water heater.
- Installation and testing of this water heater MUST be only done by authorized professional technicians.

### 2.3 Installation Checklist

- Follow all installation instructions covered in this manual.
- Check the gas supply pressure to make sure it is within the range as stated in data label.
- Make sure the water heater is installed on the exterior wall of the RV with the flue venting hole and air inlet holes on the front cover facing outside the RV. There is adequate air for combustion and ventilation.
- Make sure there is no blockage on venting flue and the air inlet openings on the front door.
- Maintain proper clearances to combustibles and non-combustibles as specified.
- Make sure venting system complies with local codes.
- Combustible materials are not to be kept near the heater and vent.
- Make sure the wire controller is properly connected to the water heater in accordance with the instructions, all wiring codes and regulations without any exposed connections.
- DO NOT block or restrict any outside air intake openings.
- DO NOT open or remove the water heater front door unless absolutely necessary. This should only be done by qualified personnel.
- Air supply is free from corrosive elements and flammable vapours.
- Sufficient room to service the water heater.
- Water heater is properly secured to the RV.
- Air has been purged from water heater and piping.
- Water supply has sufficient pressure.
- Water connections are correct, tight and leak free.
- Water filter is clean and in place.
- Water pipes are insulated and protected from freezing.
- Gas type matches the water heater data label.
- Gas supply pressure is sufficient and within the range as stated in the water heater data label.
- Gas line equipped with a service valve as described in the installation instructions.
- Approved pipe joint compound has been used on all gas pipe connections.
- All gas connections and fittings have been checked for leaks with soapy water.
- Wiring meet all local codes, and electrical code.
- Voltage supply matches the listing in data label.

### 2.4 Test Water Heater

- Purge air and foreign objects in the gas & water supply lines before connecting the supply lines to water heater.
- Test water and gas leakage as stated on Page 20.
- Isolate the gas supply. Remove test point screw located at the gas inlet connection and attach pressure gauge - see Figure 21
- Turn on water supply, gas supply and power supply.
- Turn on the wired controller and select the maximum delivery temperature. Open ALL available hot water outlets in the RV including the shower. (CAUTION: Ensure occupants do not have access to hot water outlets during the test)
- Operate all other gas appliances at their maximum gas rate, in according to the appliances

manufacturers, instructions.

- With all gas appliances & hot water heater operated at their maximum gas rate, the gas pressure gauge should read between 2.74 - 3.23kPa.
- If pressure reads lower, the gas supply is inadequate and the appliances will not perform to specification. It is the installer's responsibility to check the gas meter, service regulator and pipe work for correct operation and rectify as required. The gas regulator in the water heater is electronically controlled and factory preset. Under normal circumstances, no need to adjust during installation.
- Close all hot water outlets including the shower.
- Inspect and clean the strainer located at the water heater cold water inlet connection.
- Test the all functions and operations of the controller.
- Confirm the hot water heater delivery temperature by using a thermometer.
- After all tests are completed, installer must inform the inhabitants of the RV clear about the functions and operations of this water heater and controller.
- Ensure the Product Record on Page 28 is filled in and this booklet is handed to the inhabitants.

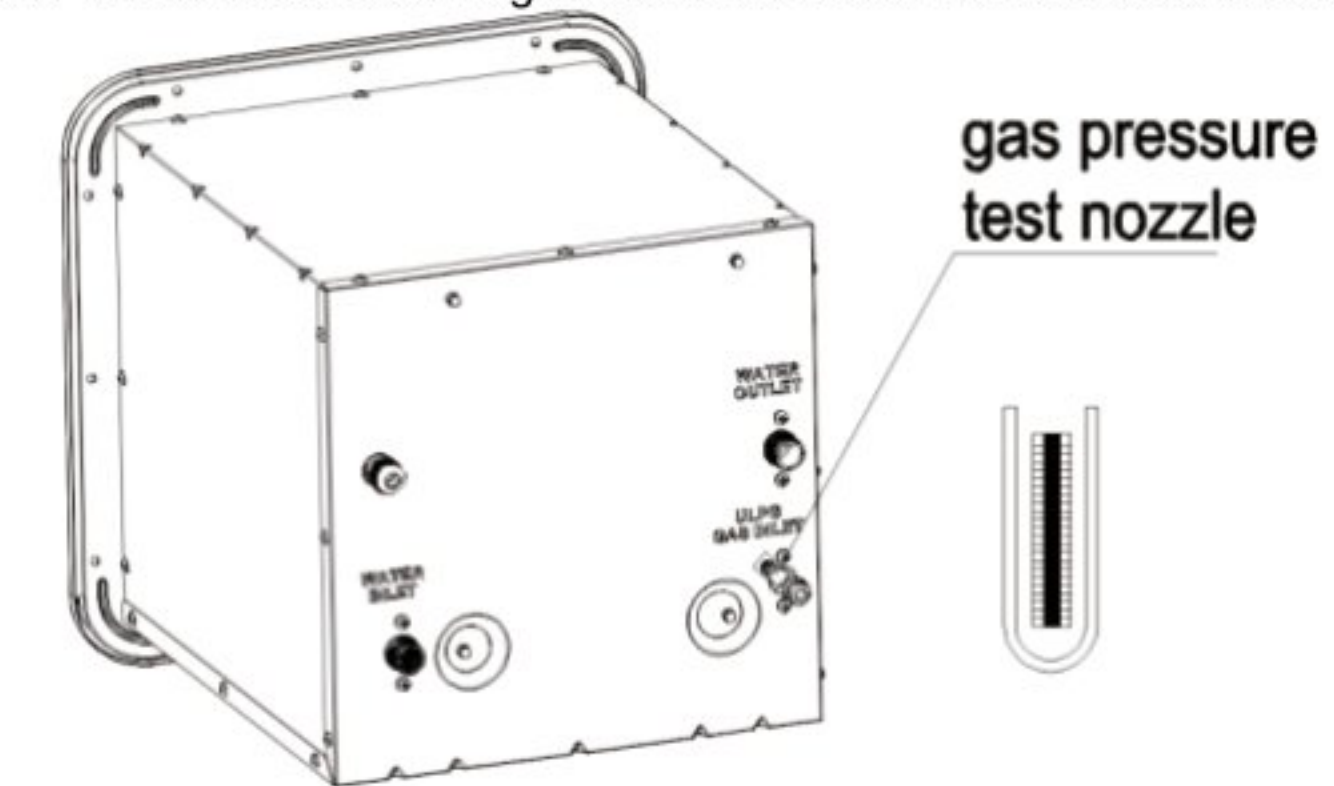


Figure 21

### 2.5 Temperature Setting

Maximum water delivery temperature occurs while the water heater burner is ON. To determine the water temperature, turn on the water outlet and place a thermometer to measure the water stream. Note: water temperature at the outlet may vary depending on the weather and season and the length of pipe from the water heater.

The water heater temperature range is from 95°F (35°C) to 123°F (51°C). To adjust the water temperature, refer to the controller instructions on Page 10.

## 2.6 Trouble Shooting

**⚠ WARNING:**  
For your own safety, do NOT try to repair the electrical wiring, gas and water piping, controller, burners, vent connectors, or other safety devices. Always contact a qualified service technician if you have any queries.

Problem	Possible Causes	Solution
Hot water flow is low or no hot water delivery.	1. Hot water heater is not powered ON.	1. Power ON the hot water unit.
	2. Water service valve not completely opened.	2. Check the service valve and open it completely.
	3. Water outlet temperature is not HOT or flow is low.	3. Increase the flow at the hot water outlet. Inadequate flow will cause the hot water heater burner to turn off automatically.
	4. Water piping is frozen.	4. Allow piping to thaw.
	5. Power is disconnected or water supply is shut off.	5. a) Reconnect the power plug or check the circuit breaker. b) Open the water service valve.
	6. Temperature setting of water heater is low.	6. Increase the water heater temperature setting.
	7. Water outlet mixing valve malfunction.	7. Check and replace the mixing valve.
	8. Error code display on the remote control.	8. Refer to "Error Code" section. If required, contact a qualified service plumber.
	9. Water heater built in strainer is clogged or dirty.	9. Contact the authorised technician for strainer cleaning.
	10. Water outlet aerator is clogged or dirty.	10. Clean the aerator.
	11. Scale build up at the heat exchanger.	11. Refer to "Error Code" section. If required, contact a qualified service plumber.
	12. Hot and Cold water lines connections are reversed.	12. Correct the water line connections.
Water is not hot enough.	1. Water heater temperature setting maybe too low.	1. Increase the water heater temperature setting.
	2. Gas service valve not completely opened.	2. Check and open the gas service valve completely.
	3. Gas supply pressure is low.	3. Contact gas supplier or contractor to check gas regulator and gas pressure.
Water temperature is too hot.	1. Water heater temperature setting is too high.	1. Lower the water heater temperature setting.
	2. Water service valve is not completely opened.	2. Check and open completely the water service valve.
	3. Water outlet flow is too low.	3. Increase the water outlet flow rate.
	4. Strainer is blocked.	4. Clean strainer.
Fan continues to operate after water outlet is off.	The post purge cycle is clearing flue gas.	Normal operation.

Water heater has a built-in electronic diagnostic system. When an error occurs, the controller will show the error code. Refer to the error codes found below and possible faults for further information.

When an error code is shown, turn OFF all hot water outlets. Turn OFF the water heater by pressing Power ON/OFF on the controller. Wait for about 5 minutes, then restart the water heater again by pressing Power ON/OFF on the controller. Turn on a hot water outlet and recheck the display to determine if there is still an error.

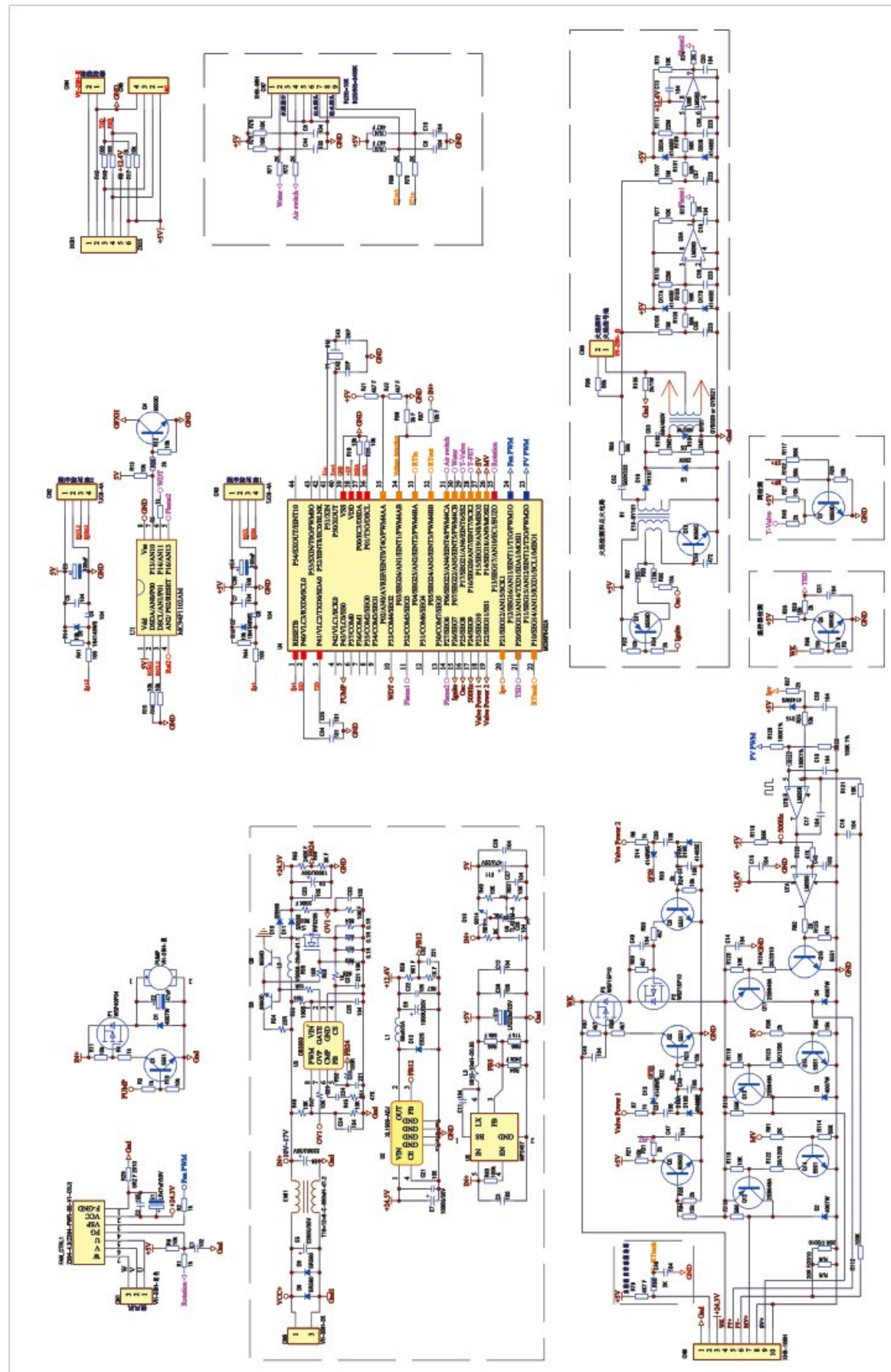
If error still exists, turn off the hot water outlet and water heater. Disconnect the power supply, wait for 30 seconds and reconnect it. Restart the hot water heater and turn on a hot water outlet to check again.

If there is still error shown in the display, take a note of the displayed error and turn OFF the water heater. Contact authorised service centre for servicing.

Error Code	Possible Error
1	Protection of inlet water temperature circuit error
10	Protection of flame detection malfunction
11	Protection of ignition failure
12	Protection of unexpected flameout
13	Protection of thermostat circuit error
30	Protection of flue blockage error before ignition
31	Protection of flue blockage error during ignition
32	Protection of flue blockage error during operation
40	Protection of fan failure
42	Protection of fan self-rotation error
50	Protection of over-heated outlet water temperature
51	Protection of over-high inlet water temperature
52	Protection of heat exchanger thermostat error
60	Protection of outlet water temperature circuit error
61	Protection of heat exchanger thermostat circuit error
70	Program setting error
80	Timer setting protection
EE	Solar boosted program operation
AF	Anti-freeze protection

Note: if the displayed error is not listed above, immediately turn off the water heater can contact authorised service centre.

## 2.7 Electrical Schematics



## 2.8 Product wiring Diagram

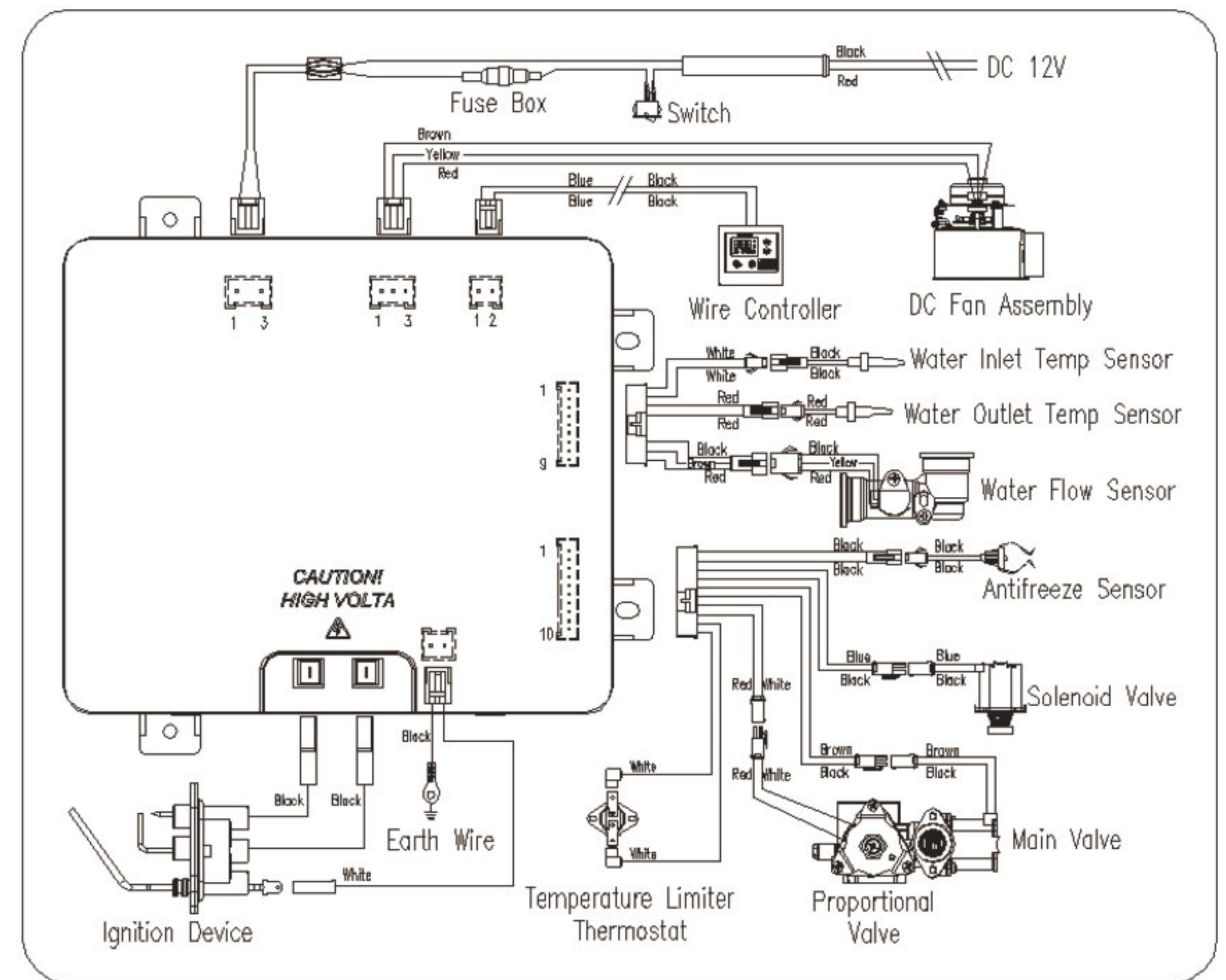


Figure 22

### ⚠ CAUTION

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

## 2.9 Replacement Parts

### ⚠ WARNING:

Always contact a qualified plumber or repairer for any servicing and repairing job. Always purchase original parts from authorised service centre by stating the model number and serial number, specify gas type (LPG or NG), part description and number of parts desired.

For model: JSQ10RV-A11

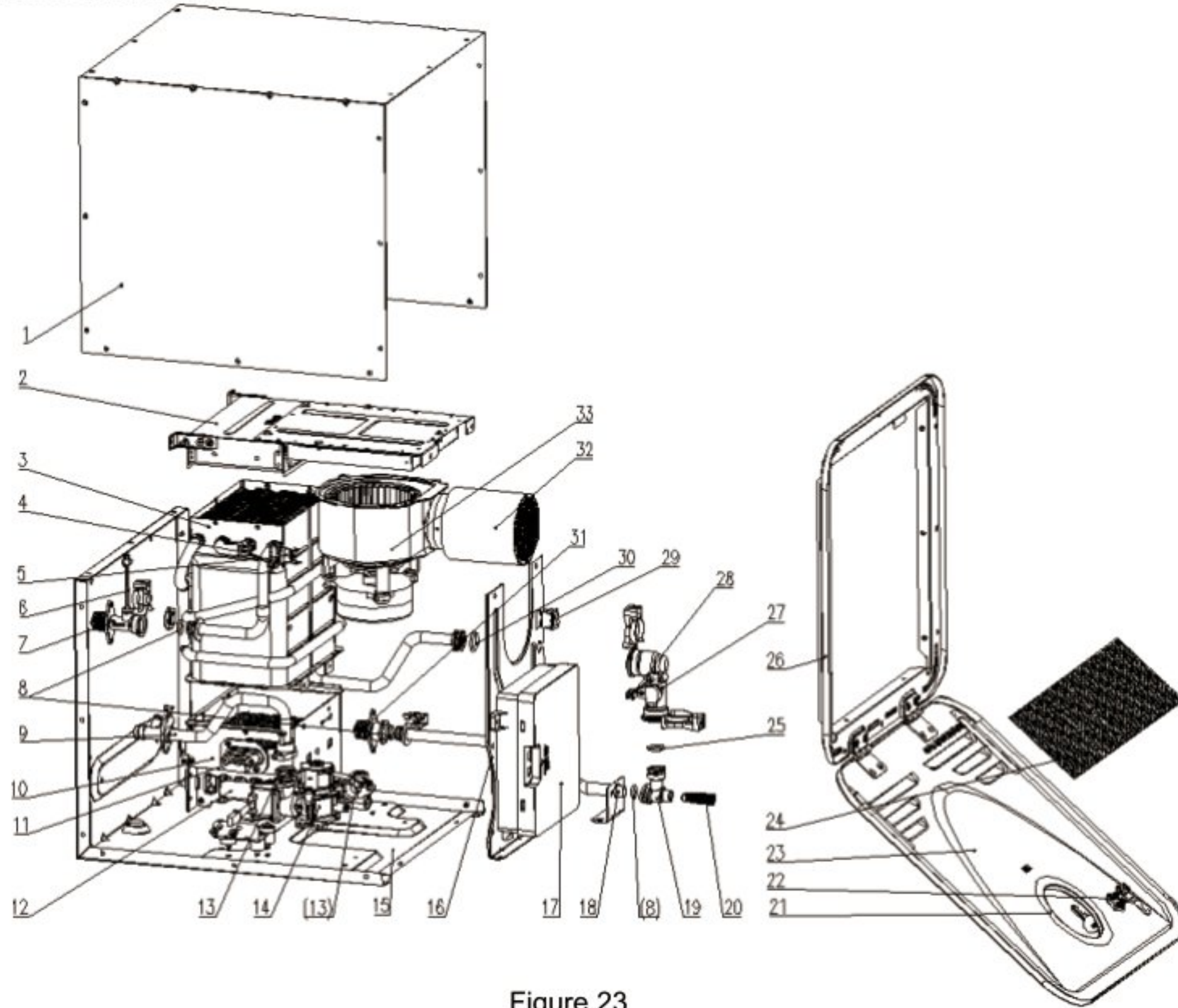


Figure 23

NO.	Part Name	NO.	Part Name	NO.	Part Name
1	back cover	12	gas distributor	23	front door assembly
2	draught diverter	13	gas inlet seal ring	24	insect-proof net
3	heat exchanger	14	gas valve assembly	25	O-shape seal ring 2
4	anti-freeze temperature sensor	15	bottom cover	26	door frame
5	thermostat	16	PCB holder	27	water flow sensor
6	outlet water temperature sensor	17	PCB	28	water inlet sensor
7	water outlet	18	water inlet tube	29	ON/OFF switch
8	O-shape seal ring 1	19	water inlet adaptor	30	O-shape seal ring 2
9	gas inlet tube	20	safety valve	31	water inlet
10	burner assembly	21	venting hole sealing	32	anti-wind back device
11	ignition electrode	22	lock assembly	33	fan assembly

## 2.10 Warranty Card

Simply fill in the fields below, then scan or take a picture and send it to us  
Email Address: apus\_services@hotmail.com

PLEASE READ AGREEMENT BEFORE SIGNING [Click Here](#)

Product No.	Date of Purchase
Name	Where Purchased
Address	
Email	

Date

My signature above acknowledges that I have read, fully understand, and accept this limited warranty agreement. Must return within 14 days of purchase with copy of dated register receipt. If you have any questions, please contact the brand service: apus\_services@hotmail.com