

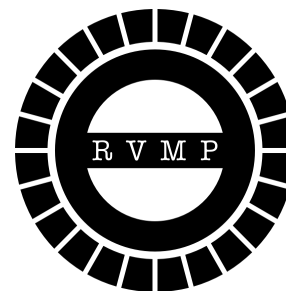
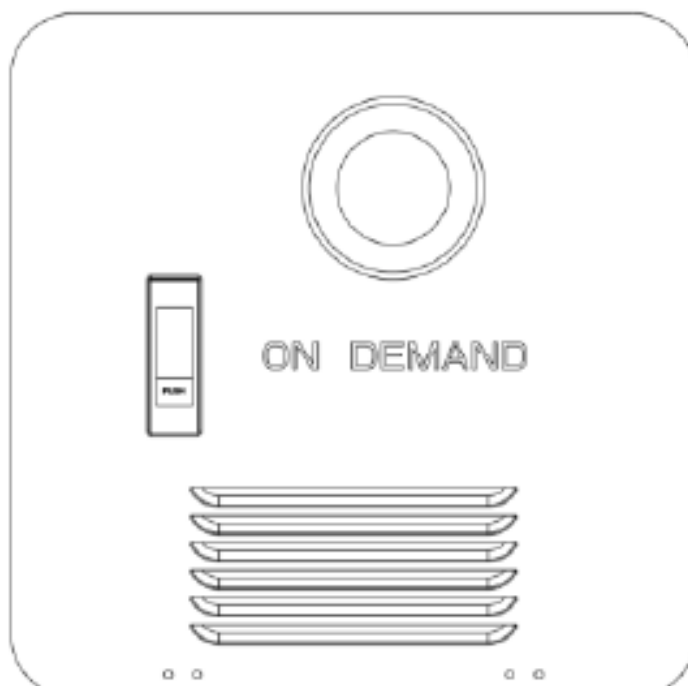


ORIGINAL INSTRUCTIONS

*RVMP<sup>®</sup> FlexTemp<sup>™</sup>*  
*On-Demand Gas Water Heater*

Product Model No: FG-SBMC-11

**USER MANUAL**



(Picture shown here is for reference only)



Read this manual carefully before operation.  
This manual includes important guidance for safety operation.

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# Welcome to the FLEXTEMP™ Family!

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Thank you for choosing the Flex Temp™ On-Demand Gas Water Heater from RVMP®. This appliance is a direct vent tankless water heater for installation in recreational vehicles only and for use with liquified petroleum gas only. Before installing or operating your new appliance, please read this manual carefully and carefully follow all instructions and safety precautions. The manufacturer, seller, distributor, wholesaler, re-seller, and/or servicer do not accept responsibility for any damages due to the failure of anyone to observe and carefully follow the instructions and warnings in this manual and the failure to do so will void portions of the warranty.

**PATENT PROTECTED** – This product is protected by one or more United States Patents, please see [www.rvmp.co/patents](http://www.rvmp.co/patents) for more information on patents covering this product.

## **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.

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

## **CAUTION**

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 vehicle.
- Shut off gas supply at gas container or source.
- DO NOT touch any electrical switch, or use any phone or radio in vehicle.
- DO NOT start vehicle's engine or electric generator.
- Contact nearest gas supplier or qualified service technician for repairs.
- If you cannot reach a gas supplier or qualified service technician, contact the nearest fire department.
- DO NOT turn on gas supply until gas leak(s) has been repaired.

## SAFE OPERATION ENVIRONMENT

Gas combustion consumes a large amount of air and generates hot exhaust gases including carbon monoxide as the appliance works. Harm or even death may be caused by inhalation of excessive carbon monoxide. Therefore, the product must be installed and used in strict accordance with the requirements of this manual in order to achieve a safe environment. Flex Temp™ and RVMP® will not be held liable for any consequences of USER's failure to install and use the appliance in accordance with the requirements of this manual.

- **NEVER** use this appliance in enclosed spaces or tents.
- **ALWAYS** turn the appliance off, and shut off fuel supply while parking the RV in an enclosed space, such as a garage or repair shop.
- **NEVER** place seating or picnic tables in a direct path of the exhaust outlet.
- **DO NOT** use this water heater without a working carbon monoxide detector installed in the RV. Follow the manufacturer's instructions and guidelines for its installation.
- **ALWAYS** keep the air inlet and exhaust outlet free of obstructions in order to ensure clean combustion.
- **DO NOT** place articles on or against the appliance.
- **DO NOT** lean any objects against the water heater's access door or place any foreign objects within 24" (610 mm) of the access door.
- **DO NOT** use or store flammable materials near the appliance.
- **DO NOT** spray aerosols in the vicinity of the appliance while it is in operation.
- **DO NOT** modify the appliance.

## SAFE OPERATING GUIDELINES

- The operator is responsible for their own health and safety, persons with pacemakers should discuss with their doctor before opening the access door, or performing any service repairs.
- The operator is responsible for the water quality used in the appliance.
- The operator is responsible for all routine inspections found in the Cleaning and Maintenance section of this manual.
- The operator is responsible for using and maintaining gas cylinders properly and/or as specified by the RV manufacturer.
- The operator is responsible for ensuring no spray water enters the appliance when cleaning the RV.

- The operator is responsible for using the appliance for potable water only. They are responsible for ensuring non-potable water sources, components, or heating systems, new or old, are not connected in any means to the appliance.

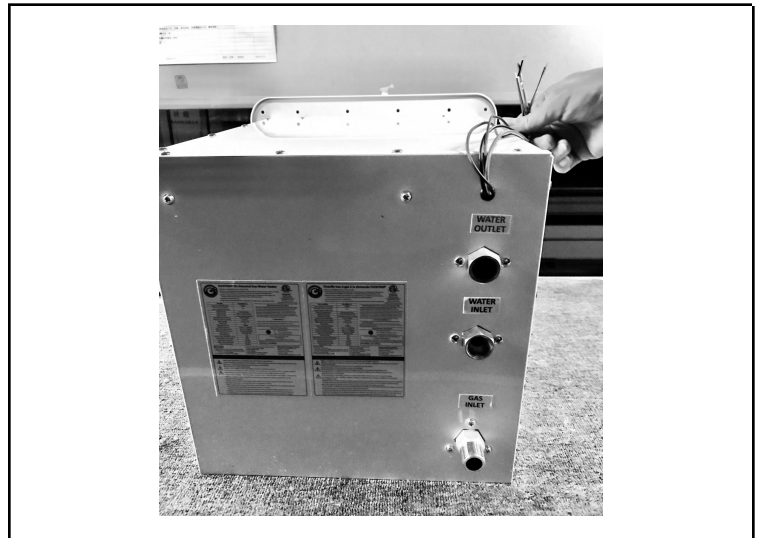
## DRIVING GUIDELINES

- The operator is responsible for ensuring all components are seated and locked in place before moving the RV, check the following: (1) Access door is flush with the mounting plate. AND (2) Door locker is engaged
- The operator is responsible for ensuring the gas system is turned off at the gas cylinders before transit. Turn off all necessary valves as indicated by the RV manufacturer.
- The operator is responsible for making sure the appliance is off when refueling, traveling through tunnels, parking in garages or car ports, or on ferries.

## PRODUCT DETAILS



*Front View*



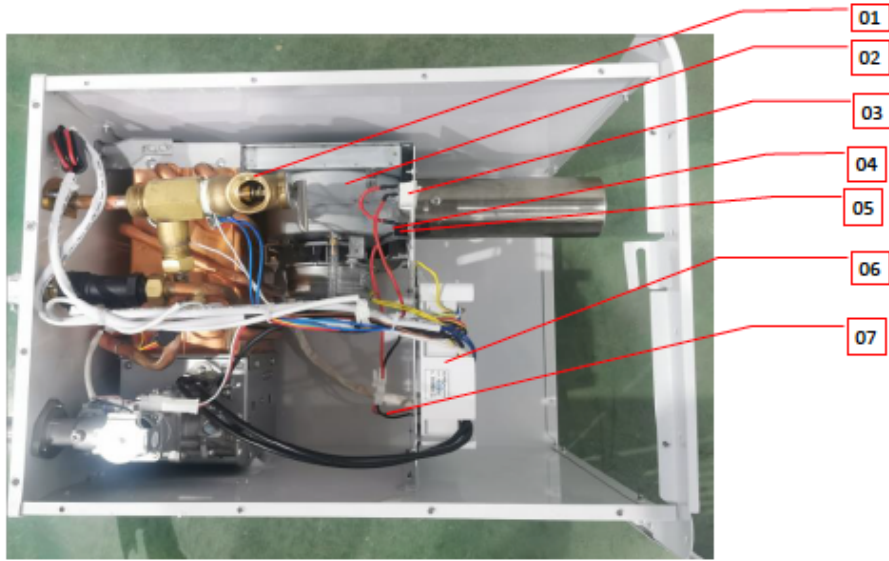
*Rear View*



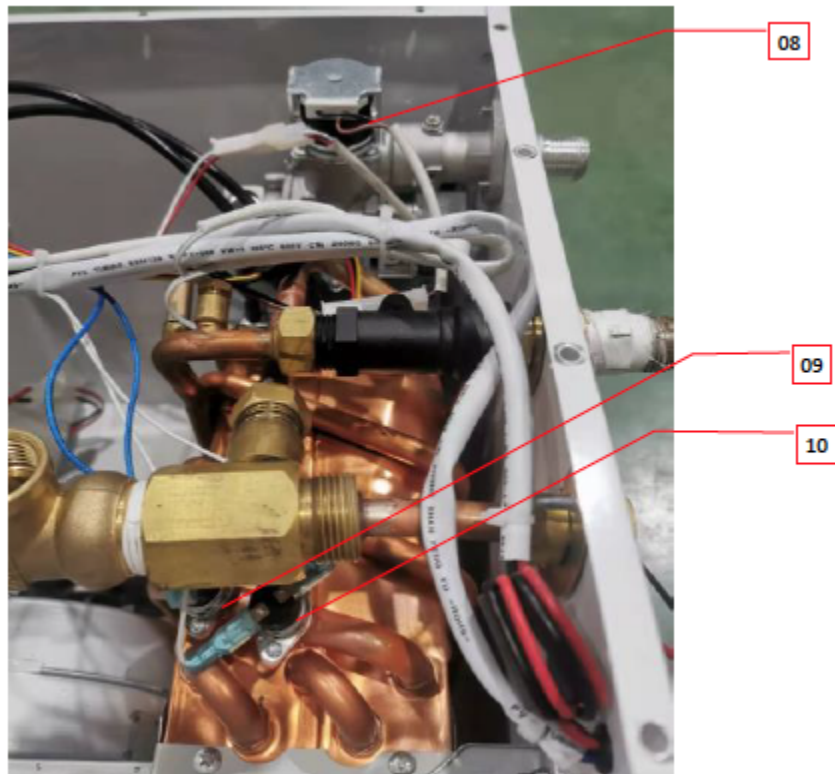
*Front View with Door Opened*



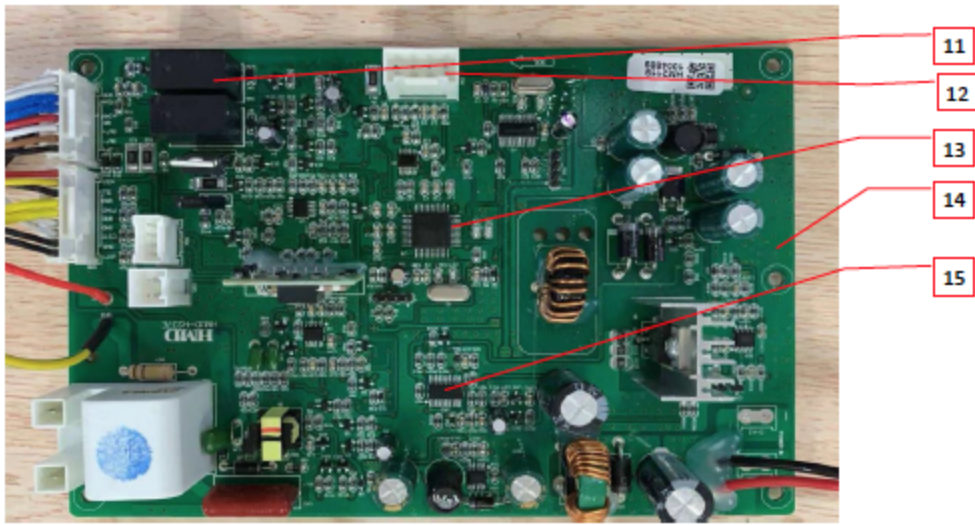
*Remote Display*



*General Internal Components View*



*Detailed Internal View*



Control Board Layout

Name		Type / Model	Technical data
1	Pressure relief valve	J416	3/4" NPT (M) x 3/4" NPT (F)
2	Motor	KDBF105	DC 24V, R 3000r/min
3	Power Switch	KCD1	125VAC, T=125°C
4	Fuse holder	H3	250V, 10A
5	Fuse(not show)	521	0.315-10.0A
6	Burner control unit	HMJD-H237	12Vd.c, Operation temperature -10°C to 65°C
7	Wire	1007	80°C, 300V

8	Combination gas control	PCV-10-02FD	Operation temperature -25°C to 80°C
9	Temperature limiting thermostat	KSD301	53°C Operate
10	Anti-freezing thermostat	H31	250V, 10A, 5°C operate. 15°C cutoff
11	KJ1/KJ2 (relay)	SJ-S-112DM	AC250V, 5A, T105
12	Connector on PCB	XHB-4BH	CN4, 3A
		XHB-8BH	CN7, 3A
		XHB-9BH	CN6, 3A
		VH-4BH(HX39600-4A)	CN1, 7.5A
		VH-2BH(HX39600-2A)	CN5, 7.5A
13	U4 (main MCU)	MC96F6432Q	44 MQFP
14	PCB	KB-6160A	130°C, V-0
		ILM-R1	130°C, V-0
15	U3 (monitor MCU)	MC96F8204M	16 SOPN



## PERFORMANCE CHARACTERISTICS

- **Microcomputer intelligent control**

The CPU chip of the system automatically sets the optimal operation parameters for the appliance according to the bathing environment data such as water volume, ambient water temperature, gas pressure, and the desired hot water temperature.
- **Variable hot water temperature**

The water temperature ranges between 95°F and 123°F(35°C and 51°C), which can be adjusted automatically with ease.
- **Digital temperature control**

The temperature can be adjusted automatically. The control system automatically adjusts the proportional valve and keeps the water temperature constant via the water temperature sensor. The microcomputer will automatically memorize the water temperature setting. There is no need to reset when the machine is restarted. The USER interface is simple and intuitive for the USER.
- **LCD display**

All units utilize an easy to operate by Remote control, making the efficient operation simpler and more reliable. Allows for in-coach adjustment of water temperature by USER
- **Low-water pressure for starting**

Minimum working water pressure: 0.01MPa (water flow 2.8L/min)
- **Dynamic display**

The appliance can display the temperature, the combustion state, the spray state, the running state of fan, the set temperature, the 20-minute countdown, the code of fault and the alarm function
- **Over Pressure System**

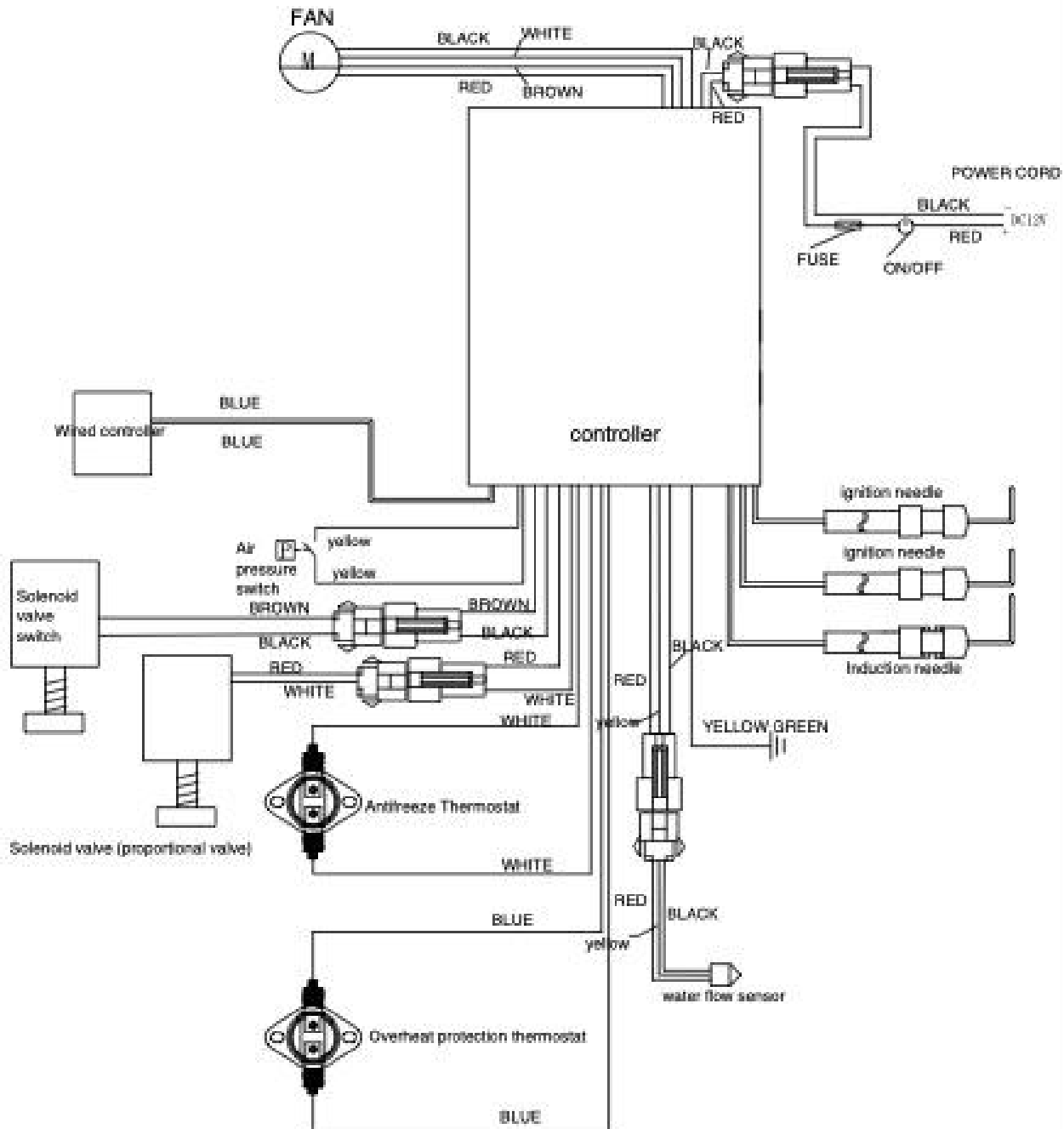
The appliance can release pressure automatically when the water pressure exceeds the set value (0.75MPa), the safety valve will open releasing the pressure.
- **Multiple protections**

The appliance has multiple protections, which include boil-dry protection, self-diagnosis of fault, safety protection device for extinguishing flame, overheating safety protection device, safety protection device for fan fault, electric leakage safety protection device, protection device for excessive air pressure, automatic pressure relief valve for excessive water pressure, anti-freeze device, protection device for gas leakage.

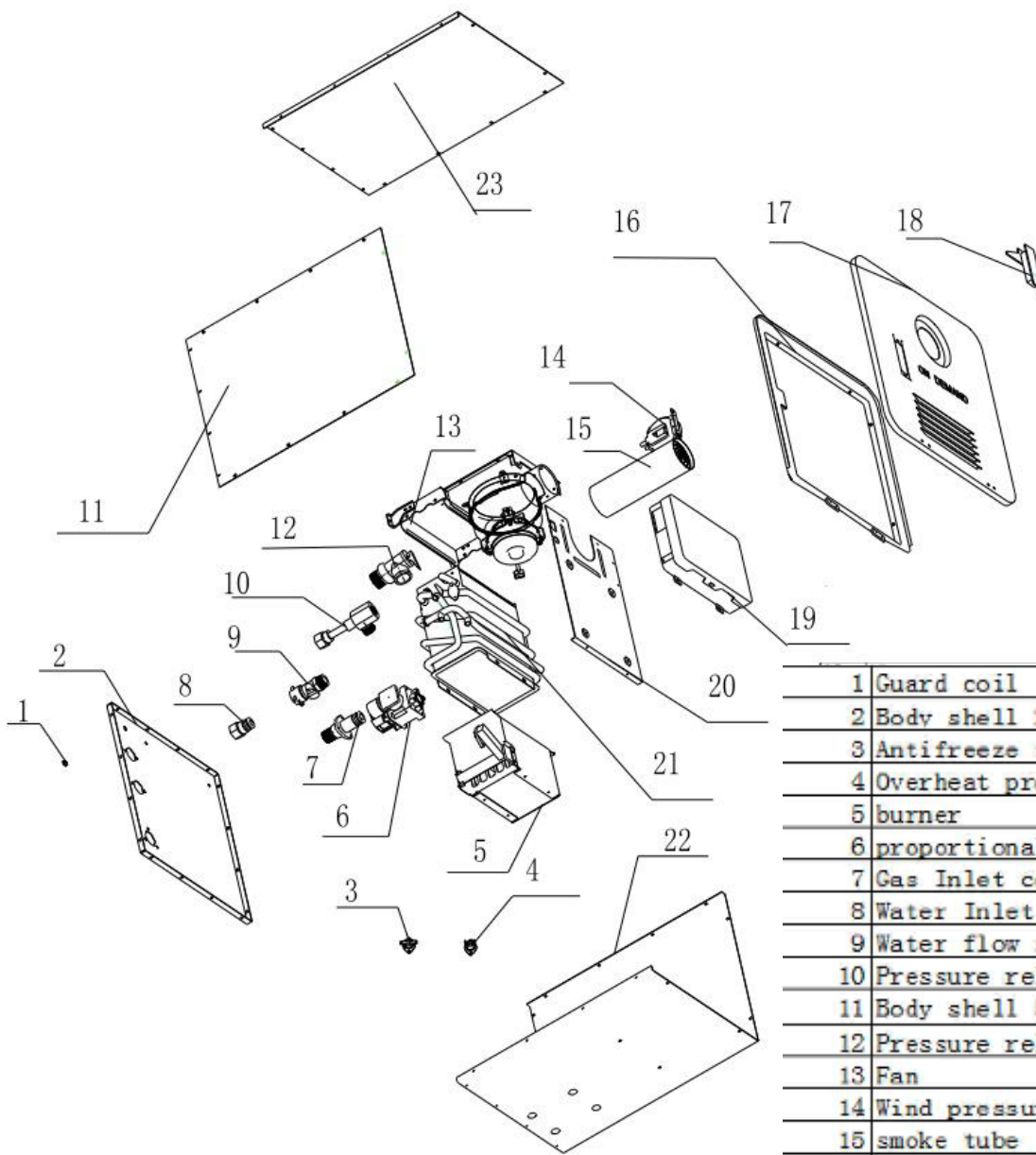
## TECHNICAL SPECIFICATIONS

Models		FG-SBMC-11	
Rated heat load (Btu/h)		55000	
Rated water production capacity		8	
Exhaust mode		Forced exhaust	
Control mode		Water control system	
Ignition mode		Pulse electronic ignition	
Applicable water pressure		0.01-0.75MPa	
Minimum flow for starting		2.8L/min	
Rated voltage		DC 12V	
Rated gas pressure	Liquefied petroleum gas	2.80kPa	
Unit size (mm)		430*320*320	
Net weight (kg)		10.9	
Exhaust pipe specification		60	
Rated power consumption		36W	
Specification of joints	Water inlet joint specification		1/2 NPT
	Water outlet joint specification		1/2 NPT
	Gas joint specification	Liquefied gas	5/8 NPT

# WIRING DIAGRAM



# EXPLODED VIEW



1	Guard coil
2	Body shell 2
3	Antifreeze thermostat
4	Overheat protection thermostat
5	burner
6	proportional valve
7	Gas Inlet connector
8	Water Inlet connector
9	Water flow sensor
10	Pressure relief valve adapter set
11	Body shell 5
12	Pressure relief valve
13	Fan
14	Wind pressure switch
15	smoke tube
16	door frame
17	door
18	door lock
19	Controller
20	Bracket
21	Heat exchanger
22	Body shell 1
23	Body shell 4

### **DANGER**

**WARNING:** Suffocation and/or Fire Hazard

Observe all installation material in accordance with governing codes and ordinances.

Failure to follow all instructions will result in serious injury, property damage, or death.

The installation of this appliance, along with all subsequent components to support installation and operation of the appliance, must conform with country, state and local codes. In the absence of such codes, refer to the latest editions of:

- **USA:**
  - NFPA 1192 – Recreational Vehicles (RV) – ANSI A119.5 – Park Model RV
  - ANSI/RVIA LV – Low Voltage Standard – NFPA 70 – National Electric Code
- **Canada:**
  - CSA Z240 RV Series – Recreational Vehicles – CSA Z241 Park Model RV
  - CSA C22.1 – Canadian Electric Code

### **CAUTION**

**CAUTION:** Always wear protective gear such as gloves, eyewear and clothing to avoid injuries during installation and servicing of the product.

- **For Recreational Vehicle (RV) installation only!**

**NOTE:** This water heater is certified ANSI Z 21.10.3 /CSA4.3-2017 for installation in Recreational Vehicles (RV) and is not for use in Marine or Space Heating Applications. RV's are recreation vehicles, having their own power or towed by another vehicle, designed as temporary living quarters for recreation, camping, or travel use.

- Any Installation must be performed by a qualified person, in accordance with this instruction manual.
- **DO NOT** use test pressures higher than 40in-wc (1.45PSI) to test the gas leaks.
- **DO NOT** attempt to modify the appliance.
- **DO NOT** alter the appliance for a positive grounding battery system.
- **DO NOT** move the appliance by grabbing the interior components.
- Make sure all exhaust gases are directed outside the RV.
- Protect all combustible material from the exhaust gases.
- **DO NOT** draw air for combustion from occupied spaces.
- Always disconnect the 12V appliance (to protect the control from surges that may occur) when performing Dielectric (hi-pot) testing, welding, electrical, etc... work on the coach.
- Only use with a proven 12V power source such as battery or approved converter.
- **DO NOT** vent the water heater using a venting system serving another appliance.
- **DO NOT** install directly into a shower, or near direct heat.

## Prepare Opening

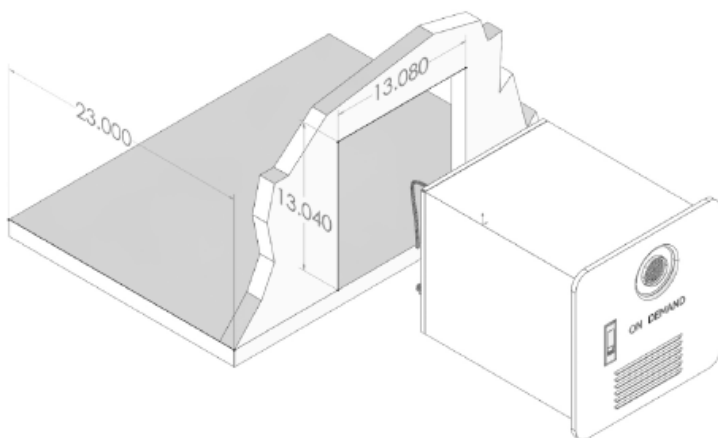
1. **Choose a location to place the appliance, based on the following criteria:**
  - a. **DO NOT** install on the rear or front of the RV to minimize contamination from road grime, debris and wet roads when traveling.
  - b. **DO NOT** install the appliance in an outdoor enclosed area.
  - c. **DO NOT** install the appliance in any location where the exhaust vent may be covered or obstructed when a swing door, bag door, slide out, pop up, etc. is partially or fully extended.
  - d. **DO NOT** install this appliance on any door or slide out area.
  - e. **DO NOT** install the appliance where the access door is less than:
    - i. 9" (229mm) from any opening into the vehicle
    - ii. 36" (914) from any motor driven air intake
    - iii. 36" (914mm) from the any gas tank connection or ventilation.

**NOTE:** These are guidelines, refer to NFP1192, Z240 RV edition for specific requirements.

- f. Choose a convenient location where supply water, LP gas, and 12V DC is accessible to the back side of the appliance for installation and servicing.
- g. The water heater is designed to be installed on a flat floor (made of Wood or Linoleum) or a fixed platform.
- h. It is recommended that the appliance be located in a central location to the hot water loads.
- i. Choose a location where clearances to combustible surfaces and the appliance are:
  - i. 1" to top surface.
  - ii. 0" to all other surfaces.

**NOTE:** To install on a carpeted area, a metal or wood panel that extends at least 3 inches beyond the width and depth of the water heater is required to install under the unit.

2. **Create a cutout with the dimensions (shown in inches) below, preferably with square corners.**



- a. Ensure that the front edge of the opening is surrounded by a solid frame which can accept anchors for securing the appliance. If necessary, reinforce the opening with 1.5" x 1.5" framing.
- b. Ensure that the appliance is supported by a solid floor or platform with enough weight bearing capacity. If necessary, construct a platform or base to support the appliance.

## Prepare Gas Supply Lines

### DANGER

#### **WARNING:** Fire or Explosion Hazard

Follow all applicable codes, regulations and instruction material when performing any install or service work.

Failure to follow instruction will result in product damage, serious injury or death.

Fuel entering the appliance must be in gas phase, liquid phase must not be used and will result in damage to the product.

- This appliance is rated for 60,000 BTU/HR, 11~14in-wc. (27.4~34.9mbar). Follow NFPA1192 and Z240 RV series for proper pipe sizing based on additional gas burning appliance loads.
- Use with LP gas (propane) only. Butane or any mixtures containing more than 10% butane must not be used.
- The gas line must terminate with a 3/8" flared female compression fitting to connect with the rear gas connector of the appliance.
- A non Metallic Flexible gas hose must be rated for 149oF (65oC). 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 11~14in-wc (27.4~34.9mbar).

1. Locate entry point for the plumbing to service the rear of the appliance. Ensure entry point is not in the footprint space of the appliance.
2. Feed gas line into proximity, leave enough length to flex into position so that when connected no kinks are created.  
**NOTE:** An approved semi-flexible metallic pipe is acceptable to connect as an extension from the gas line to the appliance.
3. Terminate gas supply line with proper fittings to connect to the gas inlet on the appliance.

## Prepare Water Plumbing Lines

- The plumbing must be rated to supply between 35–70PSI nominal.
  - Connections can be made using PEX swivel nut adapters with NPT straight threads and a cone seal or with a standard 1/2" NPT fittings.
  - For proper operation this water heater requires a minimum water flow of 0.32 Gallon per Minute (gpm).
1. Locate entry point for the plumbing to service the rear of the appliance. Ensure entry point is not in the footprint space of the appliance.

2. Create a piping layout to supply the appliance and all faucets.

**NOTE:** Dry fit tubing and fittings before clamping together. Adjust sections to avoid excessive stress on the fittings when assembled to the appliance. It may be helpful to fit the appliance into position to determine the appropriate piping layout.

3. Clamp and seal all fittings together. Terminate piping with the appropriate fittings to connect to the hot water outlet and cold water inlet on the rear of the appliance (see Figure).

## Prepare Electrical Wiring

### **WARNING**

**WARNING:** Electrical Shock Hazard

- Disconnect all power before performing any work.
- Always use a certified and proven 12V isolated power supply, that is properly grounded to the RV.
- Follow all applicable codes, regulations and instruction material when performing service work.

Failure to follow instruction could result in serious injury or death.

1. Disconnect all power before performing any work.

- Wiring connected to or in proximity of the appliance must be rated for 140°F (60°C) minimum.
- Use only insulated terminals for all electrical connections. The appliance requires a power source that can adequately provide 10~17V DC to function properly. Contact furion for available Power centers, converters and distribution panels.
- Select a distribution branch greater than 3A, preferably 15 amp, to provide nominal 12V to the appliance from the distribution panel.

**NOTE:** The appliance has a built in 10A fuse, serviceable from the front of the product. The appliance can be on a dedicated or shared branch circuit with the same or higher rating.

Optional: A power switch can be placed in the living quarters for convenience, but not required as a switch is located externally on the appliance. If the switch is fused, make sure it is rated for at least 3amps.

2. Locate an entry point for the wiring to service the rear of the appliance. Ensure entry point is not in the footprint space of the appliance. Make sure any housing or encasement edges are protected to prevent wire abrasion from occurring.



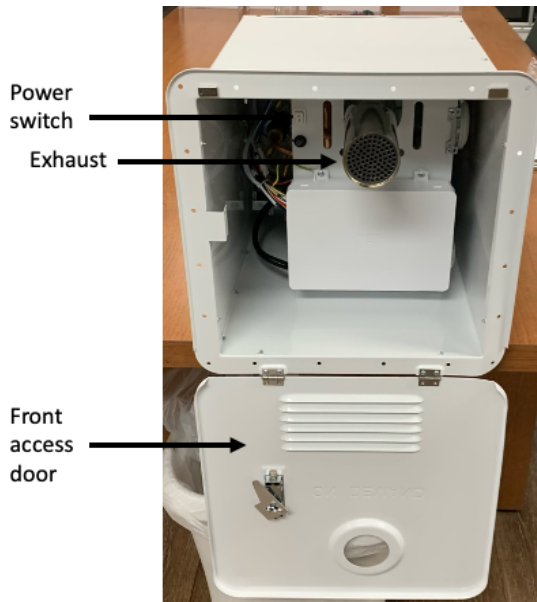
3. Determine the appropriate wire gauge (AWG) for the 12V power supply length. Ensure enough wire is available to make adequate connection.
  - 16AWG max. 40 feet (12m)
  - 14AWG max. 66 feet (20m)
4. Feed wire from power source to the entry point. Make a suitable connection to the power source.

### Prepare Remote Control

1. Determine a location to install the wall remote control within the interior of the RV.
2. Drill a 3/4" hole and clean the edges.
3. If necessary, run two electrical wires that extend the wall control connections (blue wires) to the appliance connections (blue wires) using the appropriate wire size. 16AWG max. 65ft (20m).

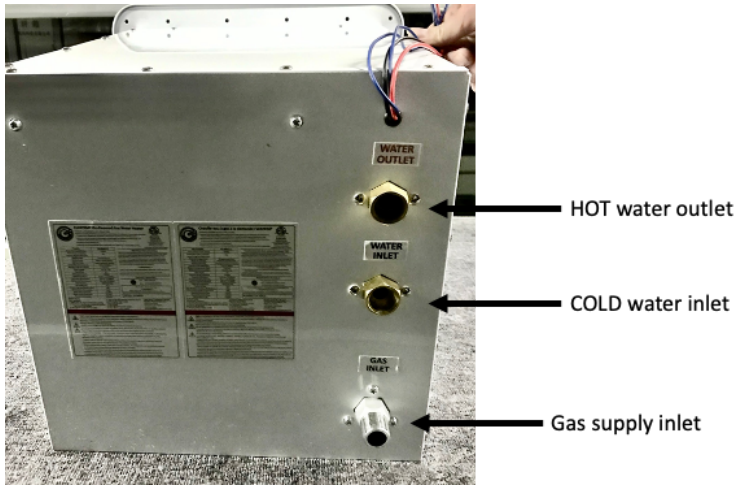
### Install Appliance

1. Remove appliance from its packaging.
2. Remove protective caps for COLD (blue) and HOT (red) water along with any caps for the gas inlet.
3. Open the front access door.



4. Position the appliance into the frame opening.

5. Ensure that the electrical power switch on the front of the appliance is set to the OFF position.
6. Ensure that the gas supply is turned OFF.
7. Connect the gas service line to the gas inlet on the back of the appliance. **DO NOT** overtighten.



8. Connect the power supply wires (red and black wires on rear of water heater) to the appropriate nominal 12V DC power source connection.

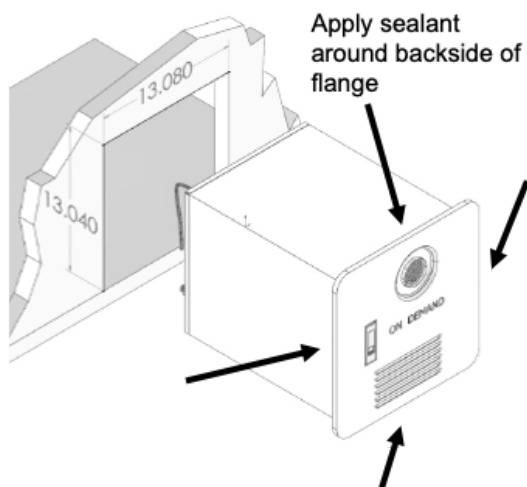
**NOTE:** The red wire is positive (+) and the black wire is negative (-).

9. Connect the wall controller wires (2 blue wires on the appliance).

**NOTE:** Polarity does not matter, the wires can be connected to either blue wires.

10. Connect the HOT and COLD water lines to the appropriate connections on the back of the appliance using ½” NPT connections. **DO NOT** overtighten.

11. Apply adequate amounts of water sealing material (ex. butyl tape 1 inch wide, not included) around the entire backside of the front flange and any holes. **DO NOT** use adhesive sealing material (ex. silicone) for the watertight seal.



12. Slide appliance through the cutout fully until the front flange is contacting the RV sidewall.
13. Secure the flange to the sidewall using fasteners, preferably stainless steel or corrosion resistant.
14. Apply any additional amount of water sealant around the flange and perimeter of the front of the appliance. Close the front access door.

### Check for Possible Gas Leak

#### **WARNING**

##### **WARNING:** Fire and Explosion Hazard

- Ensure test pressures are below 40in-wc (100mbar).
- DO NOT use matches, candles or other sources of ignition when checking for gas leaks.
- Use a gas leak detection liquid or equivalent.
- Make certain to re-test all fittings after making adjustments to loose connections.

Failure to follow instruction may lead to serious injury, property damage or death.

1. Verify the electric power switch on the water heater is in the “OFF” position.
2. Turn on the gas supply or alternative pressure supply.
3. Check the appliance and all gas connections for gas leaks with leak detection liquid (not provided) or an equivalent gas leak detection method. Bubbles indicate a gas leak that must be repaired.
4. Repair gas leaks as needed.
5. Repeat gas leak check after any adjustments to loose connections.  
**NOTE:** After leak checking, make sure the gas supply pressure corresponds to the operating pressure of the appliance 11~14in-wc (27.4~34.9mbar).

### Check for Possible Water Leak

1. Verify the electric power switch on the water heater is in the “OFF” position.
2. Turn on the water supply to the unit
3. Open water faucets to fill the system with water.

4. Close the faucets when the water is flowing smoothly and all air is removed from the lines.
5. Check all connections for water leaks by eye and touch.
6. Repair any leaks as needed.

## Initial Startup

### **WARNING**

Ensure all necessary system leak tests are complete before performing any functional test.  
Failure to follow instructions could lead to serious injury, property damage or death.

1. Verify the power switch is in the “OFF” position.
2. Confirm that there is a “steady” water flow (not pulsating) and no air in the system. If supply is pulsating, adjust water pump settings.
3. Ensure that all valves which mix cold and hot water are shut. NOTE: Outside faucets with detachable spigots and shower heads with flow interrupters can bleed hot water into the cold side if the valves are not closed properly. This will hinder the performance of the water heater.
4. Turn the electric power switch on the front of the appliance to the ON position and verify that the remote control unit illuminates. If the remote control unit does not illuminate, press the Power button on the remote control unit. The display will now accept a desired hot water temperature setting.
5. Turn on the gas supply.
6. Open a hot water faucet and verify that you can hear ignition from the burner and that hot water is supplied at the faucet.

### **CAUTION**

**CAUTION:** Exhaust gases will be hot, always avoid the area around the exhaust when running the appliance.



**NOTE FOR SCALD:** When taking a shower or using hot water, please test the water temperature before use to avoid being scalded.

## STORING RECREATIONAL VEHICLE

Anytime the RV is not intended to be used, it is considered to be in storage or transit.

To prepare the water heater, follow the below steps:

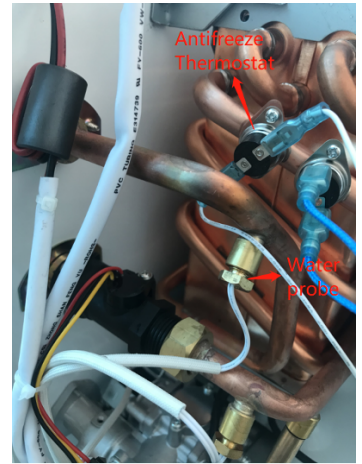
1. Turn off gas supply.

2. Turn off electric power switch.
3. Drain water out of the system and water heater by removing the drain plug.
4. If freezing conditions will occur, winterize according to instructions below.

### Winter Use Device

This water heater is equipped with an anti-freeze or winter use system. The purpose of this system is to keep the water heater from freezing when the RV is used in freezing conditions. There is a bi-metallic thermostat located on the hot water line. This WUD thermostat is designed to turn on at 35 degrees Fahrenheit and turn off at 48 degrees Fahrenheit. When the WUD thermostat turns on the water heater will begin to operate and heat. The board will keep the fire on until the thermostat turns off at 48 degrees. At this point the flame should turn off immediately and the fan will turn off 30 seconds later. When the system operates with the winter use device an “Fd” code will show on the UCP.

- **Fd:** Winter Use Device thermostat has engaged turning on the water heater



### Winterizing The Appliance

#### **⚠ CAUTION**

**CAUTION:** Product damage due to frost condition

In frost conditions, ambient temperatures below 39°F (4°C), there is a risk that water in pipes, faucets and the appliance could freeze. This can cause considerable damage.

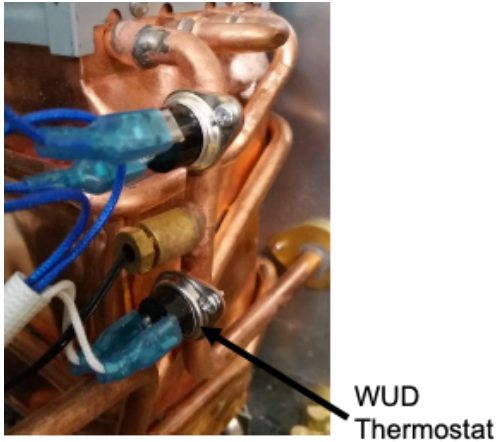
Follow the instructions provided by the RV coach manufacturer for winterizing your water system. Supplement the following important water heater instructions when completing any winterizing steps:

- **Drain the Appliance of Excess Water by Removing the Drain/Safety Valve (see below)**



- **Compressed Air:**

- **DO NOT** exceed 30PSI into the water heater
- While completing the blow out process for the entire water system, take time to isolate the water heater by closing all drain plugs and faucets and only open the water heater drain plug and filter cover.  
This ensures maximum pressure and flow is isolated through the water heater for complete evacuation.
- **Anti-Freeze:**
  - Use a non-toxic antifreeze recommended by the RV coach manufacturer.
  - Anti-freeze can be used directly in the water heater, plan for an additional 1L to fill the system.  
Optional: A bypass valve can be installed/used to bypass filling the water heater with antifreeze. The water heater **MUST** be evacuated with compressed air (see steps above) before bypassing.



- **Next Season:**  
Thoroughly flush the water heater and system with clean drinking water through the hot and cold side before using. Drain water several times out of the water heater drain plug. Sanitize the water system per the recommendations of your coach manufacturer.

## Regular Inspection

Regular inspection is critical for maintaining proper operation of your appliance. Unless specified, review the following items yearly or before each season:

1. Inspect the gas system and installation every two years, or otherwise specified by your RV coach manufacturer, by a qualified personnel. Inspect for cracks, separation, peeling of seals to the RV wall. Remove and re-seal as necessary (caulking or tape) between the side wall and the door of the water heater and ensure that the unit is solidly mounted to the vehicle.
2. Verify that the air inlet openings (louvers) are completely open and clear of any debris including mud, leaves, twigs, insects, etc... Remove all obstructions to allow full air flow.
3. Insects, including wasps and spiders, can build nests in the exhaust tube outlet which will affect the performance of the unit. Inspect the flue outlet tube to make sure that it is unobstructed and that the screen is clean. If debris or insects are present, clean and vacuum to remove any remaining debris. The use of any type of after-market screen to cover the vent is

not permitted and will void the warranty.

4. Open the door and verify that no debris or extraneous or combustible materials are present anywhere near the burner. Remove any item that is present and wipe clean the bottom of the housing.
5. Inspect the interior surface of the housing for any cracks or corroded areas that could allow penetration of gases into or out of the interior of the vehicle. Check especially around the hot water, cold water, gas and electrical connections. If any damage is found, please contact a technician to schedule a repair or contact FLEXTEMP customer service.
6. Check that all wire connections are firmly in place and there are no signs of chafing or cracks on the insulation. Verify that the spark ignition cable between the control board and the igniter is securely in place and not shorted to any metal component.
7. Inspect the pressure safety valve to ensure it has not been leaking (no water residue).
8. Inspect/clean/replace water inlet filter as necessary.

## Hard Water Treatment

Prolonged usage with hard inlet water can result in buildup in the appliance and eventual damage or failure.

When exposed to higher water hardness concentrations, it is advised to provide a proper water treatment device for the incoming water to the coach. Hard water may lead to performance reduction of your appliance overtime.

Contact FLEXTEMP for decalcification instructions.

## Error Codes

If the appliance malfunctions, a beep alarm will sound and an error code will display on the remote controller. Write down the error code, then try resolving by stopping and restarting the water flow, or resetting the appliance as follows:

- Switch the electric power switch on the front of the water heater to the “OFF” position.
- Wait 5 seconds.
- Switch the appliance ON again. Determine if error code is removed.

Continue to use the appliance normally. If error fault codes continues to display, review the following table for potential causes.

Display	Cause	Solution
E0	Error of water temperature sensor 1. Connect or is loose or of poor contact 2. Open circuit or short circuit of sensors or the sensors touch the housing 3. Circuit board malfunction of main controller	1. Secure connection, or replace the poor connector. 2. Replace the temperature sensor. 3. Replace the main circuit board (repair the relative circuit)
E1	Ignition failure, flameout failure 1. Lines for ignition and flame detection fall off or contact poorly 2. Ignition is unsuccessful	1. Connect the relevant components well and exclude the defective components. 2. Check if the gas pressure is too high or too small, or no gas supply, make sure the gas supply is normal.
E2	Falsefire failure Flame signal detected before ignition 1. flame sensor failure 2. Controller failure	1. Replace the sensor pin 2. Replace the controller
E3	thermostat failure 1. Water heater works in high load state for longer, and produced water supply pressure is too low, supply gas pressure is too high abnormal state, appear overheat	1. Test whether the air supply circuit is normal, troubleshoot and restore the normal pressure; increase the water supply pressure. If the water supply pressure cannot be increased, you can set a slightly lower hot water temperature.
E4	Failure of water inlet probe 1. Loose connectors or poor contact 2. Sensor open/short circuit 3. The main controller is faulty	1. Insert the connector, or replace the bad connector 2. Replace the sensor 3. Replace the main control board (repair the related circuit)
E5	Fan, wind pressure failure 1. With debris in the fan, making it block and stop running 2. Fan is damaged 3. Power supply control module of fan is damaged 4. Connector is loose or of poor contact 5. Air pressure nozzle is blocked 6. Air pressure switch	1. Remove debris, and eliminate the blockage failure 2. Replace the fan 3. Replace the burnt-out components (power board, main control panel) 4. Insert the connector well, or replace the poor connector 5. Replace or dredge the nozzle 6. Replace the air pressure switch
E6	Overheating protection	Normal protection function
E7	valve failure 1. Connecting wires are loose, damaged or of poor contact 2. With damaged components found in the control lines	1. Insert the connecting wires well and replace the poor components 2. Repair and replace the damaged components
E8	fan speed is over limit 1. The flue is blocking	Remove debris, and eliminate the blockage failure
En	Timing Shut down	Normal safety protection function, restart the APPLIANCE



## Troubleshooting Chart

There is still no hot water flowing out after the hot water faucet is turned on	The gas valve and the water inlet valve are not opened	Open the gas valve and the water inlet valve
	Water supply stops	Reuse after the water supply is normal
	Hot water faucet has not turned on correctly	Turn on the hot water faucet correctly
	Is APPLIANCE frozen?	Reuse after resolution of freezing
	Does the microcomputer-controlled gas meter function safely?	Reuse after eliminating the fault
	The liquefied gas has been depleted	Replace the liquefied gas cylinder
Does not produce hotter water when raising temperature setting.	The gas valve and the inlet valve are not opened completely	Open gas valve and the inlet valve completely
	The set temperature exceeds capabilities	Reset to operational temperature
	Water demand is too large	Reduce the demand or turn down the water valve
Cold water will be dispensed when the hot water faucet has not operated correctly	The APPLIANCE will turn off automatically when the water flow of the hot water faucet is less than 2.5L/min.	Increase the water-dispensing amount of hot water faucet to make the temperature of hot water stable.
No hot water flow out immediately after turning on the hot water faucet	It will take a moment to dispense hot water as there is distance between APPLIANCE and hot water faucet	Wait for the hot water to dispense automatically
The hot water dispensed is white and muddy	This is due to the tiny bubbles produced when the dissolved air in the water is heated rapidly to the atmospheric pressure.	It is normal
White smoke is exhausted from the vent in cold weather	In winter, white smoke can be seen as the gas exhausted contains a certain amount of water vapor.	It is normal
The fan still keeps running for a certain time after the APPLIANCE stops running.	The fan will further run for about 10-20 seconds to make the APPLIANCE be cut off as soon as possible when being used again.	It is normal



## FLEXTEMP On-Demand Gas Water Heater

- Conforms to CSA/ANSI Z21.10.3 • CSA 4.3 -2019
- Appliance must be installed in accordance to local codes, or in absence of local codes, according to ANSI Z223.1/NFPA54 or CSA B149.1, Natural Gas and Propane Installation Code
- Appliance must be installed in accordance to local codes, or in absence of local codes, the standard on Recreational Vehicles, NFPA1192 or CAN/CSA Z240 RV
- Suitable for water heating only
- Install only on noncombustible floor and greater than 250mm to a combustibile surface.

Models	FG-SBMC-11
Rated BTU load (BTU/hr)	55000
Rated water production capacity (kg/min @Δt=25K)	8.0
Exhaust mode	Forced exhaust
Control mode	Water control system
Ignition mode	Pulse electronic ignition
Applicable water pressure	0.01-0.75MPa
Minimum flow for starting	2.8L/min
Rated voltage	12V DC, <3A
Type of Gas	LP
Rated gas pressure	2.80kPa
Manifold pressure	8.2in w.c. (2.05kPa)
Minimum inlet pressure	8in w.c. (1.99kPa)
Maximum inlet pressure	13in w.c. (3.23kPa)
Unit size (mm)	430*320*320
Net weight (kg)	10.9
Exhaust pipe specification (mm)	φ60
Rated power consumption	36W
Water inlet connection	1/2 NPT
Water outlet connection	1/2 NPT
Gas joint connection	3/8 NPT

### INSTRUCTIONS

#### Start operation:

1. Make sure the unit is connected to 12VDC
2. Turn on the liquefied gas supply and confirm that there is no leakage
3. Turn on the 12VDC power supply

4. Turn on the wire remote controller switch
5. Turn on the water supply

#### To turn off the unit:

1. Turn off gas
2. Turn off 12VDC power supply
3. Turn off the water supply

### T&P Drain Valve Operation

User must check relief valve once and year, with the power and gas supply turned off. To check the valve, follow the subsequent procedure. Turn on water inlet switch, creating pressure in system. Check discharge line for obstructions and drainage to suitable location. Open relief handle slowly until water is released and then close handle. If no water is released, the valve is not operational. If not operational, close handle, turn off water inlet, and contact qualified service personnel for assistance.

### !! WARNING !!

- DO NOT CHECK RELIEF VALVE UNDER NORMAL OPERATION - WATER WILL BE HOT
- Temperature -pressure relief valve must not be removed from designed point or plugged to allow safe operation. Valve is certified to STD ANSI Z1.11-CSA4.4 and shall be installed on water outlet.

### Electrical Connection



- BLUE - REMOTE CONNECTION
- RED - +12V DC BY BATTERY CONNECTION
- BLACK - -12V DC BY BATTERY CONNECTION

·12V DC ONLY - USE 12V DEEP CYCLE

### !! WARNING !!

· DIRECT CURRENT ONLY - DO NOT CONNECT TO 120V AC or 240V AC.

### SERIAL NUMBER

### Flex Temp™ Customer Service

Sandbar Technologies, LLC.  
4000 Lyon Drive  
Columbus, OH 43220  
574.971.4490  
FLEXTEMP@rvmobilepower.com

## WARNINGS



· Adjust water temperature to acceptable temperature before using appliance.



· Caution: Hot Water increases the risk of scald injury. Before changing temperature setting, see instruction manual

· Operation at outlet water temperature(s) not in excess of 120°F (49°C)



· DO NOT TOUCH FLUE PIPE WHEN IN USE.

· DO NOT PLUG OR UNPLUG WITH WET HANDS OR ELECTRIC SHOCK MAY OCCUR.

· Do not store or use gasoline or other flammable vapors and liquids in the vicinity of this or any other appliance.

· If gas leakage has occurred, operation shall not be performed until leakage has been corrected.

· IF GAS LEAKAGE OCCURS - STOP APPLIANCE, CLOSE GAS VALVE, OPEN WINDOWS AND DOORS TO RELEASE GAS.

· Appliance must be installed, maintained and operated according to manufacturers instructions for safe operation of this appliance.

· Children shall not operate water heater without guidance from parent or guardian and all parts removed from water heater shall be kept where they are in accessible to children.

· Before installing water heater, mixing valve must be installed. The mixing valve must be adjusted to provide comfortable shower temperature and eliminate occurrence of scalding.

· The temperature and pressure relief valve provided by the manufacturer shall be installed at the time of installation of the heater in the location specified by the manufacturer. Local codes shall govern installation of relief devices. For safe operation of the water heater, the relief valve must not be removed or plugged.

## FLEX TEMP AFTERMARKET LIMITED WARRANTY (NORTH AMERICAN CONSUMER SALES)

This Limited Warranty ("Warranty") outlines applicable coverage and claims procedures for Products, as defined herein, sold as Flex Temp™ Aftermarket Division which is referenced herein as "Warrantor", "we", "us" or "our".

**Coverage.** Subject to the following terms and conditions, we warrant ONLY to you as the original consumer ("you" or "your") who purchases the product directly from Flex Temp™ Facility or authorized Flex Temp™ Dealer, that the products that we manufacture, distribute and/or sell to you that are not already covered by a separate written warranty from another manufacturer (the "Product(s)") will be free from defects in materials and workmanship at the time of retail sale. We will honor this Warranty for a period of one (1) year from the date of retail purchase, and only for Products sold and used in the United States and Canada.

**Service.** For Products having a covered defect within the Warranty period, we will, in our sole and absolute discretion, repair or replace the Product or related component with a new or refurbished component or provide a pro rata refund of that portion of the Product. Labor will be allowed if a designated flat rate time is outlined by us and will be limited to the published flat rate amount. There is no other warranty.

**Notice.** Proof of purchase must be provided to us to be eligible for coverage. No remedy will be required or offered unless we receive written notice of a claimed defect. You must make any claim of defect, including without limitation under this Warranty, in writing, with full particulars, promptly after the defect was or reasonably should have been discovered, and in any event no later than thirty (30) days of its discovery. Your written notice must describe the defect, provide your name and address, and state the location of the Product. As a condition of coverage, we must be provided access to the original Product for inspection, testing, or other work at our discretion. The Product must remain unmodified. We will not consider any claims for Products (or any components thereof) that are not in their original form. Failure to give us proper notice of a claimed defect, or performing any modification, replacement, attempted repair, self-help, or alteration of the Product or other product into which our Product has been incorporated without our prior written approval and before we inspect or test the Product, will constitute an absolute waiver and release of all claims under this Warranty.

**Transferability.** THIS WARRANTY IS NOT ASSIGNABLE OR TRANSFERABLE. THIS WARRANTY EXTENDS ONLY TO YOU, THE ORIGINAL CONSUMER PURCHASING A PRODUCT DIRECTLY FROM WARRANTOR'S FACILITIES AND WILL NOT BE CONSTRUED TO EXTEND TO ANY THIRD-PARTY. THERE ARE NO THIRD-PARTY BENEFICIARIES TO THE WARRANTY'S TERMS.

**Limitations.** ANY IMPLIED WARRANTY THAT MAY ARISE BY LAW IS LIMITED IN DURATION TO THE TERM HEREIN AND TO THE COVERED PRODUCTS. THE REPAIR, REPLACEMENT, OR REFUND PROVIDED HEREIN IS EXCLUSIVE AND IN LIEU OF ALL OTHER REMEDIES. EXCEPT AS PROVIDED IN THIS WARRANTY, ALL PRODUCTS ARE BEING SOLD "AS IS" AND "WITH ALL FAULTS." ALL RISKS AS TO PRODUCT QUALITY OR PERFORMANCE NOT CONTEMPLATED BY THIS WARRANTY WILL BE BORNE EXCLUSIVELY BY YOU, THE PURCHASER. IF A PRODUCT PROVES DEFECTIVE AFTER ITS PURCHASE, YOU, NOT US, ASSUME THE ENTIRE COST OF ALL NECESSARY SERVICING OR REPAIR THAT IS NOT COVERED UNDER THIS WARRANTY. IN NO EVENT WILL WE BE LIABLE FOR COSTS OF REMOVAL OR REINSTALLATION OF THE PRODUCTS, OR ANY EXPENSE RELATED TO REINSTALLATION. WE WILL HAVE NO LIABILITY TO ANYONE FOR CONSEQUENTIAL, SPECIAL, INCIDENTAL, INDIRECT, EXEMPLARY, OR PUNITIVE DAMAGES OF ANY KIND WHATSOEVER, INCLUDING WITHOUT LIMITATION PROPERTY DAMAGE, LOST PROFITS, LABOR COSTS, OR ANY OTHER PECUNIARY DAMAGE, WHETHER DUE TO ANY DEFECT IN THE PRODUCTS, BREACH, DELAY, NON-DELIVERY, NON-PERFORMANCE, RECALL, OR ANY OTHER REASON. ALL CLAIMS FOR

NEGLIGENCE AND FOR FAILURE OF ESSENTIAL PURPOSE ARE EXPRESSLY WAIVED AND RELEASED. UNDER NO CIRCUMSTANCES WILL OUR LIABILITY FOR ANY DEFECT IN THE GOODS, WHETHER BASED ON CONTRACT, TORT, WARRANTY, OR ANY OTHER THEORY, EXCEED THE PURCHASE PRICE OF THE PRODUCTS. YOU ACKNOWLEDGE AND DECLARE THAT THESE LIMITATIONS AND WAIVERS HAVE BEEN BROUGHT TO YOUR ATTENTION AND EXPLAINED, THAT YOU HAVE READ AND UNDERSTAND ALL TERMS AND AGREE TO BE SO BOUND, AND THAT YOUR RECEIPT OF THE WARRANTY AND PRODUCT, AND ANY PAYMENT FOR THESE, SIGNIFIES THAT YOU HAVE VOLUNTARILY AND KNOWINGLY CONSENTED TO ALL TERMS, INCLUDING THE WAIVERS AND LIMITATIONS CONTAINED HEREIN.

**Specific Rights.** This warranty gives you specific legal rights, and you may also have other rights that vary from state to state. Some states do not allow limitations on how long an implied warranty lasts, so that limitation may not apply to you.

Some states do not allow the exclusion or limitation of incidental or consequential damages, so that limitation or exclusion may not apply to you.

**Exclusions.** This Warranty only covers the Products. Due to the intended use of our Products, any and all items and components not sold by us but attached to, incorporated into, or using our Products carry NO WARRANTY WHATSOEVER from us regardless of circumstance. We will not be liable for any defects, whether due to workmanship, materials or any other reason whatsoever, for those items and components not sold by us. This Warranty also does not cover customer instruction, installation and labor (except as provided herein), parts supplied by others, abuse, misuse, neglect, improper installation or improper repair by anyone other than us, improper usage, overloading, accidents, unreasonable use, improper loading, improper operation, improper repair, improper maintenance, normal wear and tear, color fade, mold, mildew, corrosion, rust formation, modifications, or attempted repair by anyone other than a qualified repair facility. This Warranty does not cover chemical damage caused by acids, fuel, oil, or other chemicals. Use of our Products in or as part of a unit in a rental fleet, or for a commercial purpose, voids your rights under this Warranty.

**Third-Party Events.** In the event of any accident, injury to person, damage to property, loss, or other occurrence involving a Product, you must notify us in writing of the circumstances within thirty (30) days of the event or within ten (10) days of notification to you, whichever is earlier. Notwithstanding this, you must notify us immediately if a survey, test, or inspection is to be conducted on a Product, and provide us with the opportunity to participate in any such survey, test or inspection, or to permit us to conduct our own survey, test or inspection in advance. Your failure to comply with this paragraph will constitute a waiver and release of all rights under this Warranty.

**Statute of Limitations.** Any action, lawsuit or other proceeding, under this Warranty or otherwise, related to the Product must be commenced within one (1) year after the earlier of (a) the expiration of the Warranty coverage period, (b) our alleged failure to repair the defect at issue; or (c) the date on which your claim accrues under applicable law. Unless prohibited by law, the performance of repairs will not prevent the limitations period from expiring, nor will any tolling or estoppel doctrine apply. This Warranty does not extend to future performance. Some states do not allow a reduction in the statute of limitations, so that reduction may not apply to you.

**Applicable Law & Venue.** This Warranty will be governed by and construed in accordance with the laws of the State of Indiana without regard to principles of conflicts of law. To the full extent permitted by law, any disagreement, dispute, controversy, or claim arising out of or relating to this Warranty or Product must be brought, if at all, only in a state court in Elkhart, Indiana, or a federal court in the Northern District of Indiana, having jurisdiction over the subject matter. You irrevocably consent that such court will have personal jurisdiction over you and waive any objection that the court is an inconvenient forum. YOU WAIVE ANY

RIGHT TO A JURY TRIAL AND CLASS ACTION RELATING TO THIS WARRANTY, AND MAY NOT JOIN OR CONSOLIDATE CLAIMS AS A REPRESENTATIVE OF A CLASS ACTION OR IN A PRIVATE ATTORNEY

**GENERAL CAPACITY.** In the event you bring any claim against us in violation of this Warranty or for claims waived or released under this Warranty, you agree to pay our attorney and paralegal fees and costs to defend such suit.

**Modifications.** We will not be liable for commitments, promises, or agreements made by any employee, agent, or dealer that is not in accordance with this Warranty. The current WARRANTIES and terms outlined on the Warrantor's website applicable on the date of purchase take precedence over any other WARRANTIES, whether oral or written. We reserve the right to alter our WARRANTIES from time to time, as the laws and our business needs and industry change. Any conditions or exceptions that may be stated in any communication or document to us from any entity or individual, including but not limited to you, shall be of no effect unless specifically agreed to in writing and hand-signed by our authorized representative.

**Miscellaneous.** Any legally or otherwise invalid provision hereof will be considered severable, with all remaining provisions enforceable. We have all rights and remedies given to sellers by applicable law, and our rights and remedies are cumulative and may be exercised from time to time. No waiver by us of any provision of this Warranty will be effective unless in writing, nor will it operate as a novation or waiver of any other provision or affect our right to exercise thereafter any right or remedy. We will not lose any right because we have not exercised that right in the past.



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**RV Mobile Power, LLC**

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[www.rvmp.co](http://www.rvmp.co)

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