

Portable Tankless Gas Water Heater

USE & CARE Manual



READ THIS MANUAL

Inside you will find many helpful hints on how to use and maintain your water heater properly. A little preventive care on your part can save you time and money over the life of your water heater. You'll find many answers to common problems in the Troubleshooting Guide. If you review the chart of Troubleshooting Tips first you may not need to call for service.



READ THE SAFETY INFORMATION

To Ensure your safety and the safety of others, we have included important safety warnings throughout this manual.

All safety messages will follow the safety alert symbol and the words: **"CAUTION"**, **"DANGER"** **"WARNING"** or **"NOTICE"**.

These words mean:



CAUTION - A potentially hazardous situation that may result in minor or moderate injury.



DANGER - An imminently hazardous situation that will result in death or serious injury.



WARNING - A potentially hazardous situation that could result in death or serious injury and/or damage to property.



NOTICE - Attention is called to observe a specified procedure or maintain a specific condition.

General Safety	2-4
Product Breakdown & Features	4-5
Product Diagrams	6
Getting Started	7-10
Operation	10-12
Maintenance	13
Troubleshooting	14-15
Warranty	16
Product Comparison	18

Safety Warnings

Please be sure to read through this portable tankless water heater manual in its entirety before attempting to setup, install or operate your water heater.

Please note: Failure to abide by this warning can result in serious bodily injury or death.

If at any point you need clarification or assistance with the instructions.



DANGER!

NATURAL GAS AND LIQUEFIED PETROLEUM MODELS

Both liquid propane and natural gas have an odorant added to aid in detecting a gas leak. Some people may not physically be able to smell or recognize this odorant. If you are unsure or unfamiliar with the smell of liquid propane or natural gas, ask the gas supplier. Other conditions, such as "odorant fade", which causes the odorant to diminish in intensity, can also hide or camouflage a gas leak. Always check with commercial leak detector or soapy water.

- Gas detectors are recommended in liquid propane and natural gas applications and their installation should be in accordance with the detector manufacturer's recommendations and/or local laws, rules, regulations or customs.
- Water heaters utilizing liquid propane gas are different from natural gas models. A natural gas water heater will not function safely on liquid propane gas and vice versa.
- No attempt should ever be made to convert the water heater from natural gas to liquid propane gas. To avoid possible equipment damage, personal injury or fire, do not connect the water heater to a fuel type not in accordance with the portable tankless water heater data plate; propane for propane portable tankless water heaters and natural gas for natural gas portable tankless water heaters. These portable tankless water heaters are not certified for any other fuel type.
- Liquid propane appliances should not be installed below grade (for example, in a basement) if such installation is prohibited by federal, state and/or local laws, rules, regulations or customs.
- Propane or liquid propane gas must be used with great caution. It is heavier than air and will collect first in lower areas making it hard to detect at nose level.
- Before attempting to light the water heater, make sure to look and smell for gas leaks. Use a soapy solution to check all gas fittings and connections. Bubbling at a connection indicates a leak that must be corrected. When smelling to detect a gas leak, be sure to sniff near the floor also.
- It is recommended that more than one method, such as soapy solution, gas detectors, etc., be used to detect leaks in gas applications.

Notice: If a gas leak is present or suspected:

- **DO NOT attempt to find the cause yourself.**
- **DO NOT try to light the water heater.**
- **DO NOT touch any electrical switch.**



DANGER!

PROPERLY INSTALL WATER HEATER

Failure to properly install the water heater outdoors as outlined in the Installation Instructions in this manual can result in unsafe operation of the water heater. To avoid the risk of fire, explosion, or asphyxiation from carbon monoxide, never operate this water heater unless it is installed properly and has an adequate air supply for proper operation. Be sure to inspect the flue terminal for proper installation at initial start-up; and at least annually thereafter. Refer to the Care and Cleaning section of this manual for more information regarding flue terminal inspection.



WARNING!

CALIFORNIA PROPOSITION 65

This appliance contains chemicals known to the State of California to cause cancer, birth defects, or other reproductive harm. If the information in these instructions is not followed exactly, a fire or explosion may result causing property damage, personal injury or death.

Continued Safety Warnings

- 1. Not for use in high wind conditions.**
- 2. ONLY use with Liquid Propane = LP**
- 3. ONLY for OUTDOOR USE**
- 4. NEVER leave this product unattended.**
- 5. In case of GAS smell or leak. immediately turn off the gas from your gas source. Perform gas leak test. Recheck for proper sealed connection.**
- 6. PLEASE NOTE: the top portion of the portable tankless water heater is HOT during and immediately after operation. Ensure there is NEVER any contact with any item and the top of the heater during this time.**

Product Safety Features

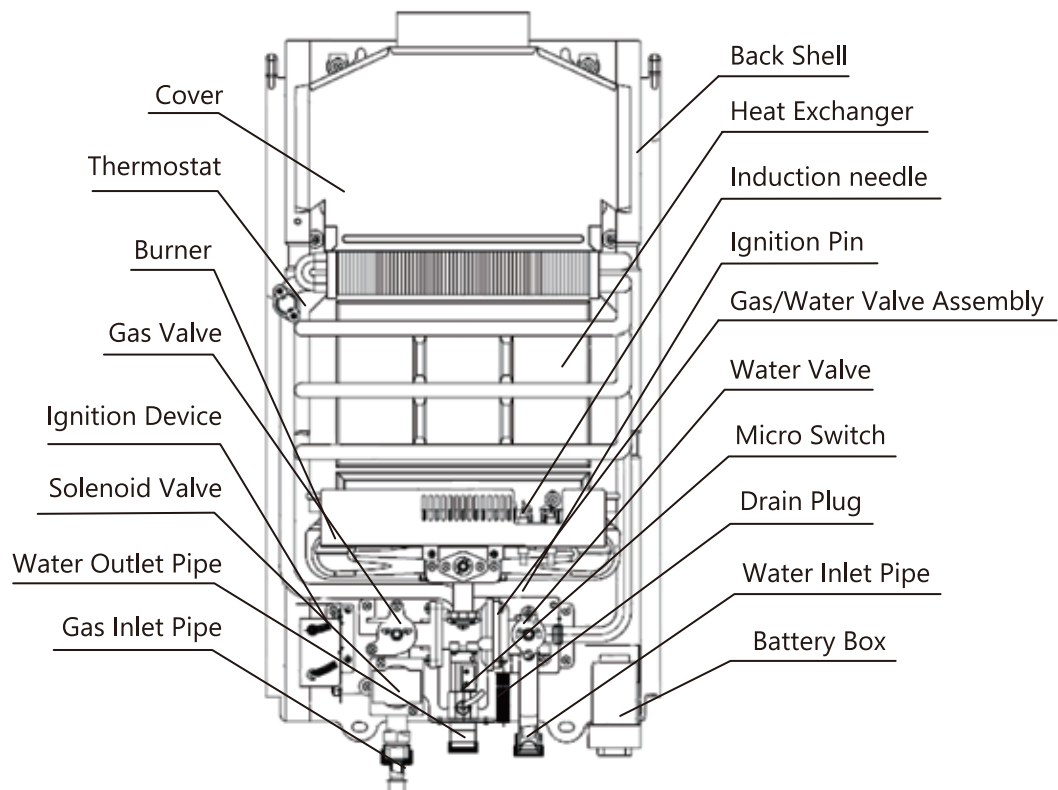
- Features low pressure activation allowing for as low as 3.6 up to 110 PSI and 0.62 - 2.64 gallons per minute to start the heater.
 - Includes removable drain plug to assist with complete drainage of the access water after use and allow for pressure buildup to escape. Helping to avoid freeze damage during winter months.
 - Features anti-dry combustion protection, ensuring that in case of no water flows through your system for whatever reason, the heater will immediately shut off the gas supply for your safety.
 - Includes an Auto-Shut off protection sensor, enabling the heater to shut off the gas supply automatically in a situation where the burner's flame goes out.
- *Please note: To ensure the best possibility of avoiding freeze damage to the heater, refer to the product maintenance section located on page 13.**

Technical Specifications - 10L Portable	
Fuel Type	Propane Gas
Model	YSNBM264
Btu/hr	68,000
Max Water Pressure	110.0PSI / 760kPa
Inlet Gas Pressure	11" w.c.(2.75kPa)
Ignition	Electric pulse, size D battery powered (No electrical connection required)
Protections	Auto-cut off water control, automatic ignition, anti-dry combustion protection, over-pressure overheating and flameout protection
Dimensions	21.7"x 13.0"x7.1"
Pipe Fittings	5/8-18UNF for gas inlet, G 1/2" for water inlet and water outlet

Product Dimensions



Product Diagram And Components



Getting Started

1. Please check carton box and inter contents for any type of damage. All damages caused in shipment or transit MUST be reported to the manufacturer immediately.
2. Please reference the below list to ensure no parts or accessories are missing.
(Please refer the alphabetical letter below to its visual description on page 7, ensuring all items are included.)

A. 10L Outdoor Portable Gas Tankless Water Heater

B. ON/OFF switch shower head

C. CSA Certified gas regulator

D. Gas inlet fitting *fixed to the unit already

E. Garden hose adapter *1/2" BSP female X 3/4" GHT female

F. Hardware Pack

G. Wrench Set

3. For Standard Garden Hose Use, please refer to page 8 "How To Use Garden Hose Adapters" section.
4. Install gas supply line and regulator to the portable tankless water heater with included wrench set. DO NOT OVER TIGHTEN. OVER TIGHTING MAY CRACK THE GAS REGULATOR CAUSING A GAS LEAK! Check for any gas smell before ignition! Make sure it is tightened all the way on.
5. Attach shower hose to the fitting marked 'Water Outlet.' Do not over tighten.
6. Install 2 size D cell batteries in the compartment on the bottom left of the heater. Check that batteries are facing the correct direction.
7. Use the top tab on the portable tankless water heater to suspend from a mounted screw capable of holding 30 pounds. Place at a comfortable height without putting stress on the gas hose.
8. Attach gas regulator with hose to the LP cylinder. Use hand pressure only on the plastic connector.

LEAVE GAS CYLINDER VALVE IN THE "OFF" POSITION.

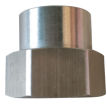
WARNING!

GAS HOSE ADAPTER

THE 10L PORTABLE TANKLESS WATER HEATERS HAVE 5/8" -18UNF ADAPTER
ALREADY ATTACHED TO THE GAS INLET ON THE WATER HEATER.

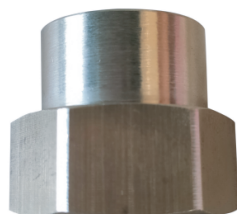
ALWAYS CHECK FOR GAS LEAKS BEFORE USING HEATER.

In The Box

Item	Description	Identification	Quantity
A	10L outdoor portable gas tankless water heater		1 piece
B	ON/OFF switch shower head with 5 feet hose		1 set
C	CSA certified gas regulator with 5 feet hose		1 set
D	Gas inlet fitting *fixed to the unit already G 1/2" to 5/8-18UNF		1 piece
E	Garden hose adapter 1/2" BSP female x 3/4" GHT female		1 piece
F	Hardware pack		1 set
G	Wrench set		2 pieces

How To Use Garden Hose Adapters

1. Garden Hose



GARDEN HOSE FEMALE
1/2" BSP female X 3/4" GHT female

NOTICE: MAKE SURE PUT THE RUBBER GASKET IN ALL FITTINGS BEFORE CONNECTION



Final Preparation

ONLY USE IN OUTDOOR AREAS. CARBON MOXOXIDE HAZARD-USING THIS APPLIANCE IN AN ENCLOSED SPACE WILL CAUSE DEATH-DO NOT USE IN CARAVANS, TENTS, MARINE CRAFT, CARS, MOBILE HOMES OR SIMILAR LOCATIONS.

- Use appliance only with LP (propane) gas and the regulator valve assembly supplied.
- Installation must conform with local codes, or in their absence with National Fuel Gas Code NFPA 54/ANSI Z223.1. Handling and storage of LP cylinder must conform to LP Gas Code NFPA/ANSI 58.
- Install 2 size D cell batteries (NOT included) in the battery box on the bottom of the appliance. Check the batteries are facing the correct direction



- Use shifting spanner to attach supplied gas regulator (with brass connector already) to the appliance. And connect to the bottom of the appliance marked "Gas inlet". **Do not over tighten. Over tighten may causing a gas leak!** Ensure that you use supplied washers and "Teflon" tape on all connectors and check for any gas smell

before ignition as instruction. Make sure the gas inlet connector and water inlet connector are screwed all the way on.

Tighten the fittings with use wrenches on both the brass adapter fitting on the appliance and the brass connector on the end of the hose.



*already attached to the gas inlet

- Attach the water output apparatus (shower head) to the fitting marked "Water outlet". DO NOT OVER TIGHTEN! Make sure to insert the supplied rubber gasket at the connections. Tighten by hand only.
- Only use the pressure regulator & hose supplied with this appliance.
- Place at a comfortable height without putting stress on the gas hose. If the unit is to be permanently mounted, use screws to attach the bottom tab firmly.
- Before opening LP cylinder valve, check the coupling nut for tightness. When appliance is not in use, turn off LP cylinder valve on supply cylinder.
- Never use LP cylinder if visibly rusted, damaged or out of date.
- Clean and inspect the hose before each use of the appliance. If there is evidence of abrasion, wear, cuts or leaks, the hose must be replaced prior to the appliance being put into operation.

Please Check Prior To Continuing

Check around area for flammables, especially gasoline or other vapors which may ignite. The exhaust and top of the portable tankless water heater will get HOT! Make sure there are no foreign objects around the portable tankless water heater or have fallen into the top.

Operation Instructions

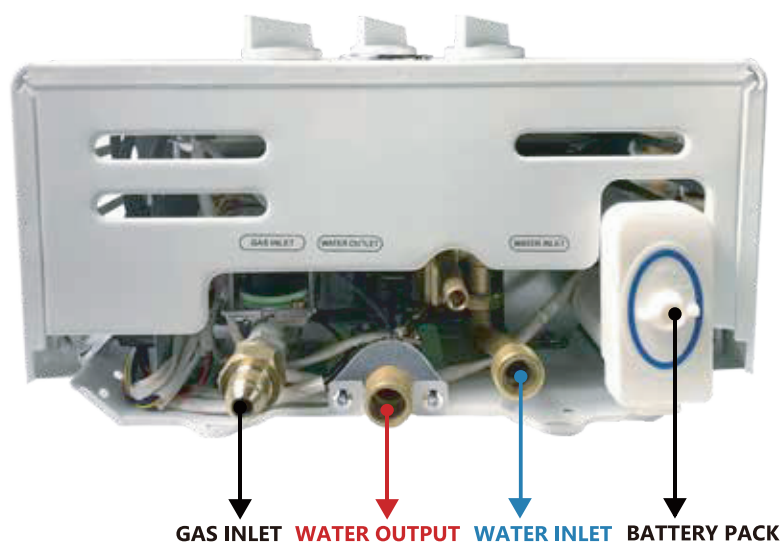


WARNING: This model is intended for recreational & portable use only. This model CANNOT be permanently mounted or plumbed in any way.

1. Turn on incoming water supply. Ensure that you have adequate water pressure of between 3.6-110 PSI.
2. Turn your water output device to its "off" position.
3. Turn the gas valve on the cylinder all the way open.
4. IF THE SMELL OF GAS IS DETECTED, TURN OFF THE GAS VALVE IMMEDIATELY!!
5. Set the water regulator knob on the face of the portable tankless water heater to its highest setting.
6. Set the gas regulator knob on the face of the portable tankless water heater to its minimum setting.

7. Turn on your water output device to the "on" position and adjust to the desired water flow.
8. There will be a series of audible clicks and the burner will ignite. Should the burner not ignite after 5 seconds, shut off and go to the "Troubleshooting" section.
9. Upon completion of use or storage, open the drain valve (ribbed cylindrical stem next to the water input valve) to ensure draining of water.
10. Turn off your gas supply.

⚠ 11. WARNING: If the outside temperature is around or below freezing (32 °F, 0°C), ensure that the drain plug is opened and water drained from the portable tankless water heater after each use to avoid internal damage to the heat exchanger. You will also need to unhook the outgoing water line to ensure that any water in the heat exchanger is drained. Failure to properly drain your portable tankless water heater will cause water damage which may or may not be reparable.



Before Operating The Drain Plug, Must Be

1. Ensure that the water heater is disconnected from the gas supply.
2. Ensure that the water heater is disconnected from the water supply(turn off cold water inlet switch).
3. Turn the shower switch to "ON".
4. Ensure that the shower hose is disconnected from the water heater.

Water Temperature Adjustment

The temperature of the outgoing water is dependent on the temperature of the incoming water balanced with the amount of heat applied. Use extreme caution in setting the outlet water temperature.

1. With the water knob set to high, and the gas knob set to low, feel the outgoing water. This is the lowest setting available.
2. To initially raise the outgoing temperature, slowly turn the gas valve towards maximum. Adjust slowly and check the temperature often. There will be a slight delay between increasing the gas supply and the increase in water temperature.



WARNING: THE PORTABLE TANKLESS WATER HEATER IS CAPABLE OF PRODUCING SCALDING WATER TEMPERATURES!

Common Issues With Resolutions

Issue	Indication	Solution
Water pressure too high	If water pressure is over 110 PSI, the water-out valve will release water and lower the pressure	Increase the valve pressure limit according to local water supply pressure
Water pressure too low	If water pressure is below 3.6 PSI, the water heater cannot be ignited	Use the water heater later when pressure becomes higher
Low battery	The power of battery will become less after use for some time, thus the water heater cannot be ignited.	Change Batteries
Display failure	If there is any water mist at the connection of the display screen.	Clean it up and reconnect it and then restart. Replace the display if it still fails.

Error Codes Information

Error Code	Diagnostic	Solution
E2	Temperature sensor problem, it can be the result of loose wiring, or physical damage to wire or sensor.	First make sure the water heater is off and not connected to any power supply and then; 1) Ensure the temperature sensor's electrical fittings are tight and snug. 2) Make sure the Temperature sensor electrical wires are not damaged. 3) Visually examine the sensor for any physical damage. In case it's not the electrical fitting, please contact Flame King customer support.
E3	Overheating protection when the water's temperature over 185°F.	1) Turn off the water heater until the water cools down. 2) Lower the propane flow and increase the water flow until achieving the desired temperature.

Please Protect Your Water Heater From Freeze Damage!

During the stage of no using, the temperature is same between the inside and outside of water, the water will expand when temperature reach 32°F (0°C) even broken the water pipe. This is normal phenomenon and not is the quality problem.

Open the drain plug to drain off the residual water in the water heater and then screw it tightly if the environment where the water heater is installed drops below 32°F (0°C). This can prevent the cold from damaging the water heater.

Maintaining Your Product

Properly maintained, your water heater will provide years of dependable trouble-free service. It is recommended that a periodic inspection of the burner, water filter and top exhaust should be made by service personnel qualified in gas appliance repair.

It is suggested that a routine preventive maintenance program be established and followed by the user.

Inspect the area around the water heater to ensure a safe operating environment. Keep water heater area clear and free from combustible materials, gasoline, and other flammable vapors and liquids. Ensure the unit has not been damaged. If damage or denting is present, contact a service personnel to verify proper operation.

Check for any abnormal sounds during normal operation of the water heater.

All piping should be checked for gas and/or water leaks. Refer to page 4 of this manual for instructions on leak testing.

The air intake and cold water supply filters should be cleaned monthly.

DO NOT operate the water heater if you feel something is wrong with the unit.

DO NOT allow children to operate or otherwise handle the unit.

 **DANGER:** Before disconnecting the water supply, make certain no one will be exposed to the danger of the hot water released by disconnecting. The water may be hot enough to create a scald hazard. The water should be released into a suitable drain to prevent injury or property damage.

 **DANGER:** Hotter water increases the potential for hot water scalds.

 **DANGER:** Failure to perform the recommended routine preventative maintenance can harm the proper operation of this water heater, which can cause carbon monoxide dangers, excessive hot water temperatures and other potentially hazardous conditions.

Troubleshooting Steps

Portable tankless water heater will not start- there are no audible clicks at startup:

- a. The first thing to check is to ensure that the incoming water on the "right" side of the portable tankless water heater. If the incoming and outgoing are reversed, the portable tankless water heater will not work. The incoming is on the far right and the outgoing is in the middle.
- b. Check to make sure you have fresh batteries and they are installed in the correct position.
- c. The top reason that the portable tankless water heater does not ignite is that there is not enough water pressure. You need a minimum of 3.6 PSI, sustained. Municipal water should supply enough water pressure.

ADJUSTMENT:

- d. It is possible that some debris or epoxy might have entered the water inlet pipe. Check to see if the filter screen on the water inlet is clear of debris. You can also reverse the hookup by taking your water source and hooking it up to the water outlet side and back flushing the system.
 - e. Propane gas cylinders sometimes are contaminated with air, especially new cylinders upon their first filling. Cycle the portable tankless water heater turning off and on your output flow or similar.
- Should a portable tankless water heater fail to light or stat lit after 10 cycles, please contact us.

Portable tankless water heater starts, then shuts off:

- a. The portable tankless water heater requires a minimum if about 0.44 gallons per minute (1.5 liters) and a minimum of about 3.6 PSI / 0.25 bar.
 Note: Water pressure is at the lower end of operating parameters. You will need a sustained water pressure of approximately 35-65 PSI / 2.4-4.5 bar for adequate use if you are using a 12/18/120 volt pump.
- b. Out of, or low on gas. Propane gas sometimes are contaminated with air, especially new tanks upon their first filling. Cycle the portable tankless water heater on and off by using the shower head switch several times to purge the air from the gas. If this doesn't clear the air then the tank must be purged.
- c. One of the ignition sensors is bent and/ or too close to the burner. Look to ensure that the ignition pins and the heat sensor are completely vertical and they do a 90 degree to the back of the box. If they are not straight (i.e. a 45 degree angle) then you can straighten them with pliers.

d. The thermocouple is either too high or too low to complete the circuit. Check to ensure that the thermocouple is flush with the hold in the heat exchanger.

e. The gas sensor wire (looks like a black ground wire on the gas regulator) flange might have come loose or is no longer connected.

f. There is a faulty heat sensor. This is usually diagnosed by taking the front case off of the portable tankless water heater and let it run. If it continues to operate, then one of the sensors and/or the wire harness needs to be replaced. This may also be caused by insufficient clearance on the back of the portable tankless water heater where the majority of air intake is.

g. The valve on the propane tank should be all the way "Open".

h. Fresh batteries are required for ignition spark. Make sure batteries are aligned in the proper polarity (+/-).

The water does not get hot enough:

a. You are operating the portable tankless water heater above 6,000 feet / 2,000 meters. We only recommend using it below elevations of 6,000 feet.

b. Look into the viewer panes (middle horizontal windows on the front cover) to see if there is a blue flame. If the flame is yellow there could be a cracked gas regulator. Do Not Attempt to use the portable tankless water heater.

Water is flowing, but there is no hot water coming out:

a. Ensure that you have the incoming water supply and the outgoing water supply hooked up properly. Your water supply should be attached to your incoming connection (located on the far right) and the shower head should be attached to the outgoing water (located as the middle connection).

b. Ensure that you have adequate water pressure of at least 3.6 PSI / 0.25 bar, sustained.

c. Ensure that you have adequate gas in your propane bottle and that the LP regulator is threaded all of the way on to the portable tankless water heater.

d. Fresh batteries are required for ignition spark. Make sure batteries are aligned in the proper polarity (+/-).

The portable tankless water heater does nothing:

a. Ensure that you have your water source hooked up to the water inlet side (far right connection) and the shower handle is hooked up on the water outlet side (middle connection).

b. Ensure that you have an adequate supply of propane.

c. Ensure that you have fresh batteries.

