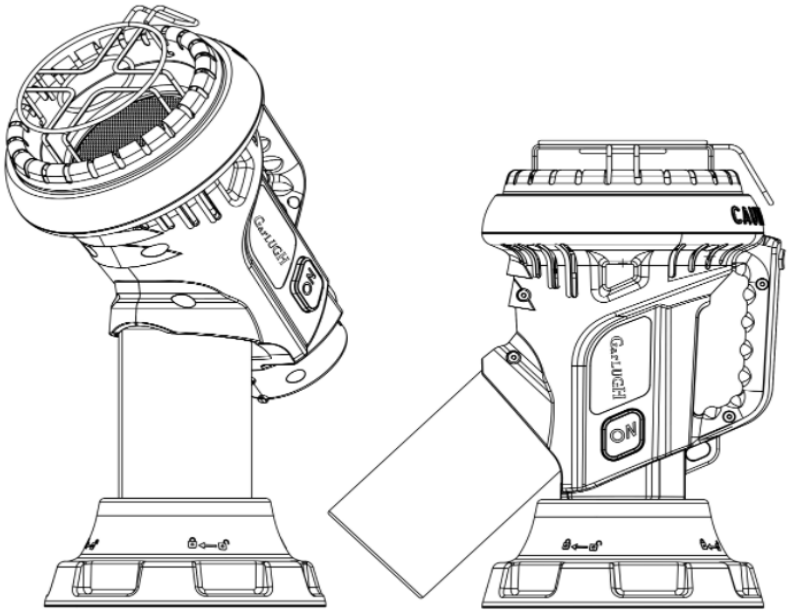
OPERATING INSTRUCTIONS AND OWNERS MANUAL

READ INSTRUCTIONS CAREFULLY: YOUR SAFETY IS IMPORTANT TO YOU AND TO OTHERS. Read and follow all instructions. Place instructions in a safe place for future reference. Do not allow anyone who has not read these instructions to assemble, light,adjust or operate the heater.

GarLUGH

PORTABLE RADIANT HEATER



MODEL#:ZB-GB4

WARNING	READ INSTRUCTIONS CAREFULLY:	FOR YOUR SAFETY
If the information in this manual is not followed exactly, a fire or explosion may result causing property damage, personal injury or loss of life.	Read and follow all instructions. Place instructions in a safe place for future reference. Do not allow anyone who has not read these instructions to assemble, light,adjust or operate the heater.	If you smell gas: 1. Do not attempt to light appliance. 2.Extinguish any open flames. 3.Disconnect from fuel supply.
		FOR YOUR SAFETY Do not store or use gasoline or other flammable vapors and liquids in the vicinity of this or any other appliance.

NEVER LEAVE THE HEATER UNATTENDED WHILE BURNING!

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PRODUCT INTRODUCTION

Thank you for choosing GarLUGH device. With years of experience, comprehensive product development and innovation,GarLUGH has become one of the mostreliable partners for professional heating appliance users. ZB-GB4 portable radiation heater is a newly designed heater that combines more angle heating, based on market research and customer needs, abbreviated as mobile kitchen.This heater is a safe, light weight,and practical mobile heating and heating gas appliance. It can be used anytime and anywhere without relying on auxiliary equipment such as power sources and generators,and will definitely be recognized and praised by outdoor camping users.By using heating functions such as mobile heating, we aim to provide users with a heartwarming experience. This multifunctional heater uses a small liquefied gas tank as the combustion medium.The liquefied gas is mixed with oxygen in the air through a pressure reducing valve, gas switch,and injection pipe.The mixed gas is ignited by the ODS ignition system through the furnace head and porousceramicplate,there by generating combustion heating purposes.

Manufacturer: Jinhua Firelife Hardware Product Co.,Ltd
E-mail Address: info@sunlulu.com.cn

⚠WARNING:

Early signs of carbon monoxide poisoning resemble the flu, with headache, dizziness and/ or nausea. If you have these signs, heater may not be working properly. Get fresh air at once! Have heater serviced.

⚠WARNING:

Every time hose or tank is connected to unit, connection must be checked for leaks in one or more ways: Apply soapy water to connection, look for bubbles, listen for hiss of escaping gas, feel for extreme cold, smell for rotten egg odor. Do not use if leaking!

CAUTION:

When operating the heater at altitudes over 7,000 FT above sea level the heater may shut off. (Please read the GENERAL INFORMATION).

⚠WARNING:

If the recreational enclosure does not have a window or roof vent, DO NOT USE THIS HEATER INSIDE.

⚠WARNING:

Fuels used in liquefied propane gas appliances, and the products of combustion of such fuel, can expose you to chemicals including benzene, which is known to the state of California to cause cancer and cause birth defects or other reproductive harm, for more information go to www.P65Warnings.ca.gov

⚠WARNING:

Any changes to this heater or its controls can be dangerous.

⚠WARNING:

CARBON MONOXIDE POISONING MAY CAUSE DEATH OR INJURY

When used without adequate combustion and ventilation air, heater may give off excessive CARBON MONOXIDE, an odorless, poisonous gas.

This is an unvented gas-fired heater. The heater uses air (oxygen) from the area in which the heater is used. Adequate combustion and ventilation air must be provided. Refer to GENERAL SAFETY INSTRUCTIONS for more specific requirements regarding adequate combustion and ventilation air (page 3).

⚠WARNING:

FIRE OR EXPLOSION HAZARD

If you smell gas:

1. **Do not attempt to light appliance.**
2. **Extinguish any open flame.**
3. **Disconnect fuel supply.**
4. **Leave the area immediately.**
5. **Allow gas to dissipate 5 minutes before relighting the appliance.**

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

Failure to follow these instructions could result in fire or explosion, which could cause property damage, personal injury, or death.

⚠WARNING:

FIRE OR EXPLOSION HAZARD

If you smell gas:

1. **Do not attempt to light appliance and make sure appliance is in the "OFF" position.**
2. **Extinguish any nearby flames.**
3. **Shut off the cylinder fule supply valve,if so equipped.**
4. **Disconnect the disposable fuel cylinder, if so equipped.**
5. **Leave the area immediately.**
6. **Allow gas to dissipate for 5 minutes.**
7. **If gas smell has dissipated from the area,the appliance, and fuel supply, follow gas connection procedures. if you smell gas again, follow step 1-6 and have appliance serviced.**

Failure to follow these instructions may result in fire or explosion which could cause property damage, personal injury or death.

WARNING: Improper installation,adjustment,alteration, service or maintenance can casuse injury or property damage, Refer to this manual. For assistance or additional information,consult a qualified installer.service agency or the gas supplier .

This heater is equipped with a SAFETY SYSTEM designed to turn off the heater if not enough fresh air is available.

⚠WARNING:

DO NOT TAMPER WITH THE SAFETY SYSTEM!

If heater shuts off, do not relight until you provide fresh air. If heater keeps shutting off, have the heater serviced. Keep burner and control compartment clean.

NEVER LEAVE THE HEATER UNATTENDED WHILE BURNING!

GENERAL SAFETY INSTRUCTIONS

DO NOT OPERATE THIS APPLIANCE WITHOUT THE FRONT GRILL INSTALLED.

⚠WARNINGS:If the appliance is shaking or unstable, please do not cook it!

• Do not use non-approved attachments on this heater.

• Due to high temperatures, the appliance should be located out of traffic and away from combustible materials.

• Children and adults should be alerted to the hazard of high surface temperatures and should stay away to avoid burns or clothing ignition.

• Do not leave this heater unattended while it is in operation. Keep children and pets away from the heater at all time.

• Do not place clothing or other flammable material on or near the appliance.

• Do not operate heater in any moving vehicle.

• Only disposable cylinders marked with the proper fuel type approved for the appliance, can be used.

• This heater can be used in a recreational enclosure only if the enclosure has a window or roof vent. It may also be used outdoors.

• This heater requires a minimum vent area of 4 square inches, (example 2” x 2” opening) at the ceiling and at floor level for adequate ventilation during operation. Do not use other fuel burning appliances inside.

• GAS PRESSURE AT HEATER IS REGULATED AND FIXED AT 11” W.C.

• REGULATOR IN HEATER MUST ALWAYS BE IN PLACE DURING OPERATION OR USE A GROUNDING DEVICE .

• Any safety screen or guard removed for servicing the appliance must be replaced prior to operating the heater.

• The appliance should be inspected before each use. Frequent cleaning may be required. The control compartments, burner and circulating air passageways of the appliance must be kept clean, see MAINTENANCE.

• DO NOT use this heater if any part has been under water. Immediately call a qualified service technician to inspect the heater and to replace any part of the control system and any gas control, which has been under water.

• When used without adequate combustion and ventilation air, this heater may give off excessive CARBON MONOXIDE, an odorless, poisonous gas.

WARNING: Early signs of carbon monoxide poisoning resemble the flu, with headache, dizziness, and/or nausea. If you have these signs, the heater may not be working properly. Get fresh air at once! Have heater serviced.

Some people - pregnant women, persons with heart or lung disease, anemia, those under the influence of alcohol, those at high altitudes - are more affected by carbon monoxide than others.

• When heater is placed on the ground, make sure the ground is level and keep any objects at least 24 inches from the front of the heater. If the ground is uneven and the ground is soft, a grounding device can be used. When using a grounding device, ensure that the grounding is vertical and firm (grounding devices can be optional). THIS HEATER IS EQUIPPED WITH A TIP OVER SWITCH THAT WILL SHUT THE HEATER OFF IF THE HEATER TIPS OVER HOWEVER, DO NOT LEAVE HEATER UNATTENDED OR WHERE CHILDREN MAY CAUSE THE HEATER TO TIP OVER. NEVER OPERATE THE HEATER WHILE SLEEPING!

GENERAL INFORMATION

• This heater is safe for indoor use in small recreational enclosures, having means for providing combustion air and ventilation, such as enclosed porches, cabins, fishing huts, trailers, tent trailers, tents, truck caps and vans. It may be used for emergency indoor heating when connected to a disposable 1 lb. propane cylinder.

Note: The heater can be used outdoors, but may experience nuisance shutoffs due to certain wind conditions.

• When the heater is cold or at room temperature, it will take a few minutes for the burner tile to turn bright orange. This is normal and the heater is working properly. If burner tile is visibly flaming, turn heater off and call a qualified service technician.

• When the unit is lit, there should be about a quarter inch (1/4”) border around the tile that will not turn bright orange. This is normal.

• When operating the heater for the first time, the top area of the reflector may discolor. This is also normal and is no reason for concern.

NEVER LEAVE THE HEATER UNATTENDED WHILE BURNING!

• When operating the heater at altitudes over 7,000 FT. above sea level, the unit may not burn as bright as in lower altitudes. This is normal. At higher altitudes, the heater may shut-off. If this happens, provide fresh air, wait 5 minutes and re-light. Due to local atmospheric conditions heater may not re-light.

• Operating time will be approximately 5 hours on a one 1lb. cylinder. Due to the properties of LP gas, run times can be significantly reduced when operating continuously at temperatures below 20˚F .

• This heater is equipped with a tip-over safety switch. Nuisance shut-downs may be experienced if the unit is bumped or moved. if this occurs simply relight the heater.

• Due to natural operation of small tanks, condensation may build up on tank and drip on surface under heater. Sometimes this condensation may freeze due to the extreme cold caused when propane vaporizes. This is normal and no reason for alarm.

Specifications		**Clearance To Combustibles**			
		Tilted radiation states		Vertical radiation states	
Model No.	ZB-GB4	Top	30”	Top	36”
Input (Btu/h)	4000	Front	24”	Front	20”
Gas Type	Propane (LP)	Side	6”	Side	20”
Min Ambient Temp	-18℃/0˚F	Rear	0”	Rear	20”

OPERATION

Product View:

A. Tilted radiation state:

1.Align the **H1/H2** port of the liquefied LP-gas cylinders with the air inlet **H**, and tighten it clockwise to ensure that the liquefied gas does not leak.

2.Align the bottom of the liquefied LP-gas cylinders **H1/H2** with the seat **V/X** on the **G** port of the base and insert it. Secure the liquefied LP-gas cylinders with the **U/W** buckle. See Figure 1 .2 .7

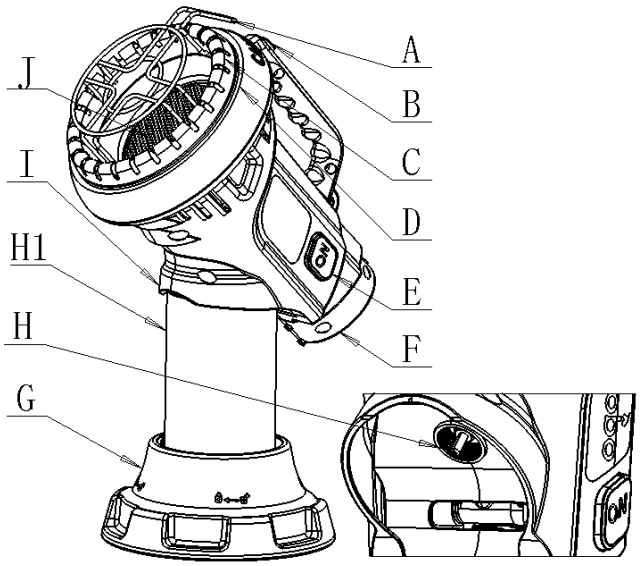


Figure 1

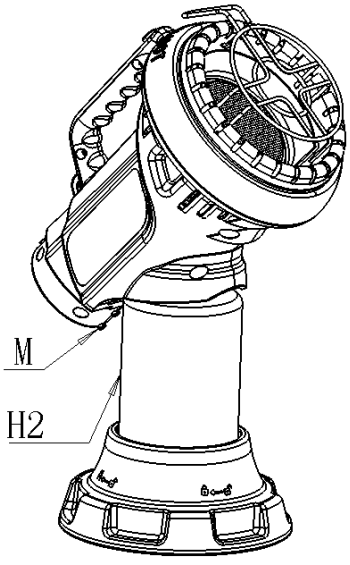


Figure 2

B.Vertical radiation state:

Align the locking buckle **M on the real** of the host body with the groove of the buckle **W** on the **G** port of the base, insert it, and rotate it in the direction indicated by the unlocking label **P** to lock it. see Figure 3.4.7 .

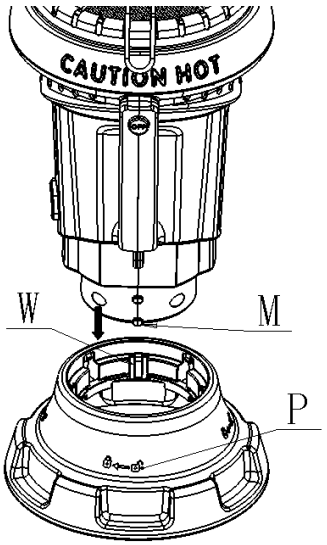


Figure 3

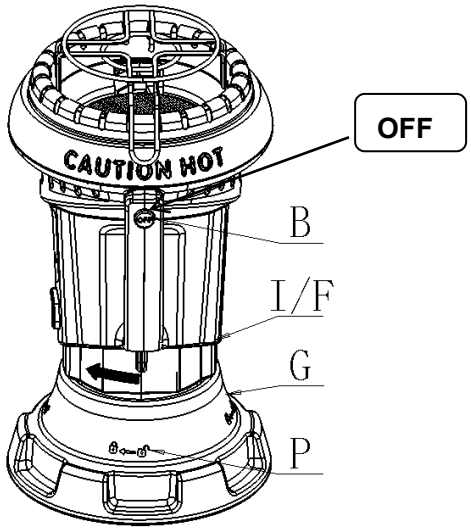


Figure 4

C.Base storage state:

Align the locking buckle **M on the tail of** the host body with the groove of the buckle **W** on the **G** port of the base, insert it, and rotate it in the direction indicated by the unlocking label **P** to lock it. see Figure 5.6.8 .

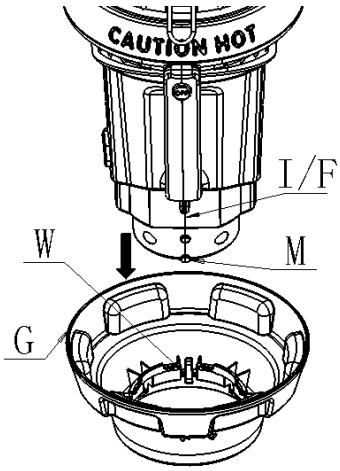


Figure 5

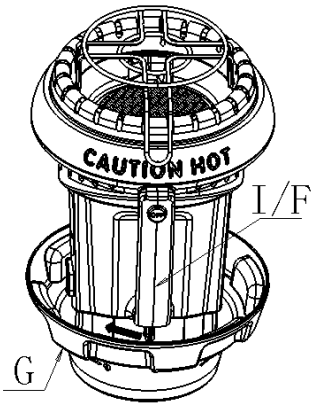


Figure 6

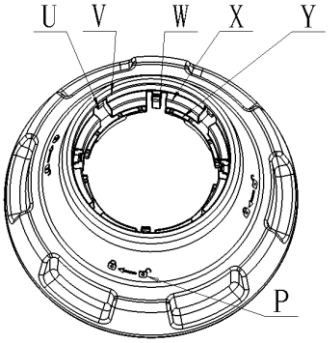


Figure 7

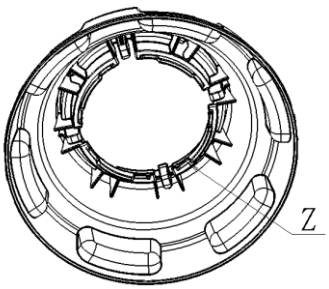


Figure 8

D.Placement status:

1.When the host body and base are in storage state, the **S** surface can be placed horizontally with the plane.see Figure 9.

2.When the host body and base are in storage state, they can be placed vertically on the **T** surface and plane.see Figure 10.

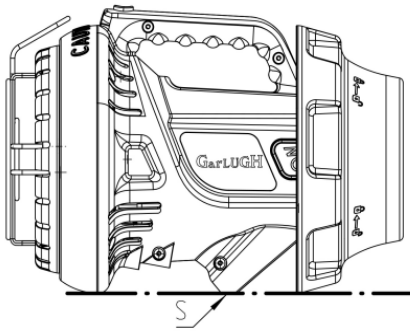


Figure 9

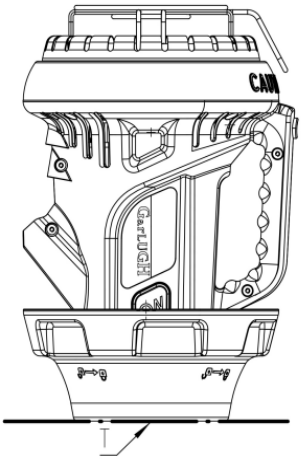


Figure 10

NO#	Part Name
A	Stainless steel protective cover
B	Off button
C	Enamel protective cover
D	Anti scalding outer ring
E	On button
F	Left side plastic service panel
G	Base
H	Inlet
H1	LP-gas cylinder **(Φ96mm Guest self supply)**
H2	LP-gas cylinder **(Φ110mm Guest self supply)**
I	Right side plastic service panel
J	Ceramic tile
K	Ground tray (**Optional)**
L	Pin assembly (**Optional)**

NO#	Structure Name
M	Locking buckle
N	Too hot warning label
O	Hanging hole lever
P	Unlocking-lock label
Q	Base groove
R	Cooking utensils **(Guest self supply)**
S	Horizontal placement of support feet
T	Vertical placement of support surface
U	H2 Buckle
V	H2 Seat
W	H1 Buckle
X	H1 Seat
Y	Base storage status locking track
Z	Vertical body locking track

NEVER LEAVE THE HEATER UNATTENDED WHILE BURNING!

Lighting Instructions

ALWAYS ATTACH OR DETACH CYLINDER OUTDOORS AWAY FROM FLAMES, OTHER IGNITION SOURCES, AND ONLY WHEN HEATER IS COOL TO TOUCH. NEVER SMOKE WHEN ATTACHING OR REMOVING PROPANE CYLINDER OR MAKING REMOTE CONNECTIONS!

- The LP-gas cylinder(s) used must be constructed and marked in accordance with the specifications for LP-gas cylinders of the U.S. Department of Transportation (DOT).
- Use only VAPOR WITHDRAWAL propane supply. If there is any question about vapor withdrawal, ask your propane dealer.
- Use only 16.4 oz. (1 lb.) disposable cylinders that mate with No. 600 valve connection.
- This heater consumes oxygen from the room in which it is installed. To assure complete combustion, an adequate fresh air supply to the room, See **General Safety Instructions**, Page 4.
- Heater and attached cylinder must be in an upright position during operation.

IMPORTANT: The heater must not be exposed to flammable vapors or liquids during lighting.

1. Screw 1 lb. disposable LP-gas supply cylinder clockwise (from bottom) into portable heater until hand-tight and fit cylinder into stand. Do not use thread sealant on this connection.
   IMPORTANT: Check cylinder connection for leaks with soapy water at the threaded connection under the domed plastic cover where the cylinder screws into the regulator. DO NOT USE ANY EXPOSED FLAME TO CHECK FOR LEAKS. DO NOT OVERTIGHTEN. SEE WARNING! ON PLASTIC COVER.
2. Depress “ON” button to light pilot flame (repeat until pilot lights) and continue to hold for 30-60 seconds. See Figure 11.
3. After lighting pilot, release “ON” button to light heater.

⚠WARNINGS：Always inspect propane cylinder and heater propane connections for damage, dirt, and debris before attaching propane cylinder. Do not use if head of cylinder is damaged, punctured or deteriorated.

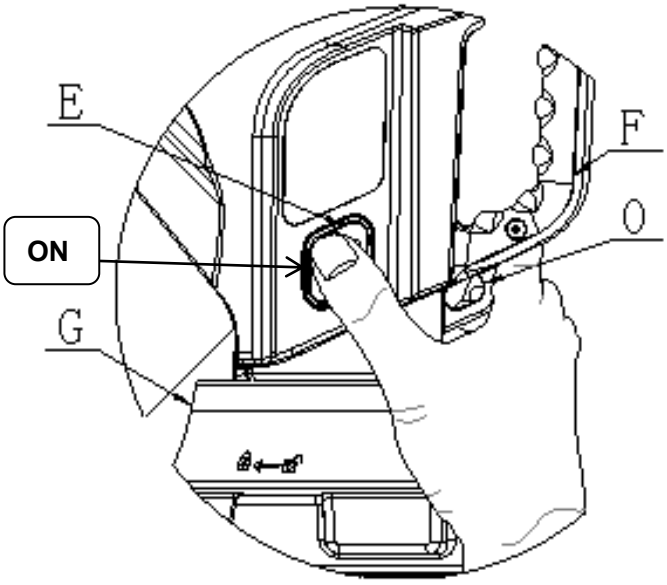


Figure 11

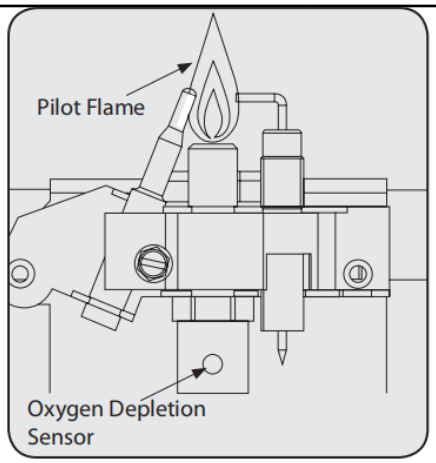


Figure 12

Shutdown Instructions

1. To shut off heater, press the “OFF” button. See Figure 4 .

- Do not operate, store or remove cylinder near flammable items or ignition sources.
- LP GAS CYLINDERS MUST BE DISCONNECTED FROM HEATER WHEN NOT IN USE!

⚠WARNINGS：After turning heater off, wire guard will remain hot. Allow to thoroughly cool before storing.

NEVER LEAVE THE HEATER UNATTENDED WHILE BURNING!

Maintenance

- Always keep the heater area clear and free from combustible materials, gasoline and other flammable vapors and liquids.
- Keep the vent areas (slots in the bottom and top of the heater) clear at all times.
  IMPORTANT: The heater and its surroundings should be kept clean and free of dust.
- Visually inspect the pilot flame and burner periodically during use. The pilot flame should be blue in color (not yellow) and will extend to the thermocouple. The flame will surround the thermocouple just below the tip, see Figure 12.
- A slight yellow flame may occur where the pilot flame and main burner flame meet. The burner should be bright orange (with a slight blue color around the border, a red-orange haze that is visible on the J ceramic tile is acceptable) and without a noticeable flame.
- A blue flame that rolls out at the top of the ceramic tile indicates an accumulation of dust, lint or spider webs inside the housing assembly and main burner assembly. If the pilot is yellow or the burner has a noticeable flame, cleaning may be required. Use the following procedure to inspect the casing assembly and main burner assembly. It is necessary to periodically check the burner orifice and burner venturi to make sure that they are clear of things such as insect nests and spider webs that may accumulate over time. A clogged tube can lead to a fire.

OFFSEASON

- If the heater is to left “OFF” for a considerable period of time, the propane (LP) gas supply to the heater should be turned off as close to the gas source as possible. In the case of portable use, the gas should be turned off at the propane (LP) gas supply cylinder.
- If the heater is put into storage, make sure to disconnect the propane (LP) gas cylinder.
- When the LP-gas cylinder is not disconnected from the heater, the heater and cylinder must be located outdoors, in a well-ventilated space, out of the reach of children, and must not be stored in a building, garage, or any other enclosed area.
- Storage of the heater indoors is permissible only if the cylinder is disconnected and removed from the heater. Cylinders must be stored outdoors, in a well-ventilated space, out of the reach of children, and must not be stored in a building, garage, or any other enclosed area.

8. The exterior of the heater can be cleaned with a damp cloth. Avoid the direct use of any aerosol or spray-on cleaners. Do not use abrasive materials or cleaners on the decals or control knob.

TROUBLE SHOOTING

• For additional assistance or information, please call Technical services.

SYMPTOM	CAUSE	REMEDY
• Heater keeps shutting "OFF" during normal operation.	1. Pilot is blocked. 2.Inadequate fresh air opening. 3.Tip over switch activated from bumping heater.	1. Clean pilot. See MAINTENANCE section. 2.Provide minimum fresh airo pening of 4 square inches (example 2" x 2" opening). 3.Re-light.
• Spark electrode produces spark but pilot does not light.	1. No gas to heater.	1. Connect hose to heater and turn on valve at remote cylinder.
	2.Pilot is blocked with foreign debris.	2.Clean pilot. See MAINTENANCE section.
• Pilot flame does not stay lit when knob is released.	1. Improper pilot lighting.	1. Make sure that the control knob is completely depressed in the "PILOT" position and held long enough to purge air from lines and to heat up thermocouple once the pilot flame appears.
	2.Pilot flame not surrounding thermocouple.	2.Clean pilot, see MAINTENANCE.
	3.Pilot Assembly is defective.	3.Replace Pilot Assembly.
	4.Tip switch wires are disconnected.	4.Connect tip switch wires. (check off switch and off switch wiring).
• Main burner does not ignite.	1. Main burner orfice is blocked.	1. Clean burner - see Maintenance.

NEVER LEAVE THE HEATER UNATTENDED WHILE BURNING!

WARRANTY

READ INSTRUCTIONS CAREFULLY: Read and follow all instructions. Place instructions in a safe place for future reference. Do not allow anyone who has not read these instructions to assemble, light, adjust or operate the heater.

WARNING:Always inspect propane cylinder and heater propane connections for damage, dirt, and debris before attaching propane cylinder. Do not use if head of cylinder is damaged, punctured or deteriorated.

WARNING: Do not operate heater unless control knob is locked in a position marked "hi", "lo" or "pilot". Never set control knob between locked positions. Poor combustion and higher levels of carbon monoxide may result.

CAUTION: Do not try to adjust heating levles by using the propane tank shut off valve.

⚠WARNING:

THIS PRODUCT IS A HEATER. IT IS CERTIFIED TO ANSI INTERNATIONAL REQUIREMENT SECTION Z21.103-2017, “UNVENTED PORTABLE TYPE GAS CAMP HEATERS FOR INDOOR AND OUTDOOR USE”. THIS PRODUCT IS NEVER TO BE USED FOR THE COOKING OR WARMING OF FOODS AS DOING SO CAN INTERFERE WITH THE SAFETY SYSTEMS OF THE HEATER, WHICH MAY RESULT IN A FIRE, EXPLOSION, THE PRODUCTION OF DEADLY CARBON MONOXIDE, AND PERSONAL INJURY OR DEATH TO YOU OR OTHERS. NEVER USE HAND-MADE OR THIRD PARTY ACCESSORIES OR ATTACHMENTS WITH THIS HEATER; THIS IS EXTREMELY DANGEROUS AND MAY RESULT IN PERSONAL INJURY OR DEATH TO YOU OR OTHERS.

GarLUGH warrants its heaters and accessories to be free from defects in material and workmanship for a period of 1 year from date of purchase. GarLUGH will repair or replace this product free of charge if it has been proven to be defective within the 1-year period, and is returned at customer expense with proof of purchase to GarLUGH within the warranty period.
DISCLAIMER: This warranty does not cover any product that:
a) has been subject to misuse orneglect;
b) has been used in a manner inconsistent with the warnings and instructions contained in the owner’s manual, including but not limited to using a heater for the cooking or warming of foods; or c) has been used with hand-made or third party accessories orattachments.

This warranty gives you specific legal rights, and you may also have other rights which vary from state to state.

GarLUGH reserves the right to make changes at any time, without notice or obligation, in colors, specifications, accessories, materials and models.

PARTS ORDERING INFORMATION PURCHASING:

Accessories may be purchased at any local dealer or direct from the factory

FOR INFORMATION REGARDING SERVICE

Please call 0086-579 83204243 or email info@sunlulu.com.cn

Please include the model number,date of purchase,and description of problem in all communication.