GENERAL MANUAL OF GAS WATER HEATER

OWNER'S MANUAL

AUTOMATIC INSTANT GAS WATER HEATER

IMPORTANT INFORMATION

- Read all instructions before using the heater
- As gas, propane (LPG) with 30 mbar pressure reducer and 2 kg / h of gas flow is used
- Place the supplied rubber seal between the brass connector and gas inlet on the stove
- Check that there are no gas leaks before the stove is used
- Atfreezing temperatures the stove should be disconnectedandstoredinawarmplaceto prevent freezing damage
- Also remember to empty the connection hoses
- Read information about insulation and how it makes use in winter easier
- Observe separate information on how the gas pressure affects the function

OPERATING INSTRUCTIONS

When operating the gas water heater always make sure that there is good ventilation. During operation the gaswater heater will produce carbonmonoxide which is harmful if inhaled in large quantities. It is therefore important that all users strictly observe the proper installation instructions and use as prescribed in this manual.. Unless otherwise authorized, refitting of this product by other than authorized and qualified personnel will render the warranty void and we shall hold ourselves free from any liabilities in case of accidents.

CONTENTS

Caution:

Read the technical instructions before installing the appliance

Read the user's instructions before lighting the appliance

This appliance shall only be installed outside or in a room separated from inhabited rooms, incorporating appropriate ventilation

This appliance may only be installed in a room if the room meets the appropriate ventilation requirement

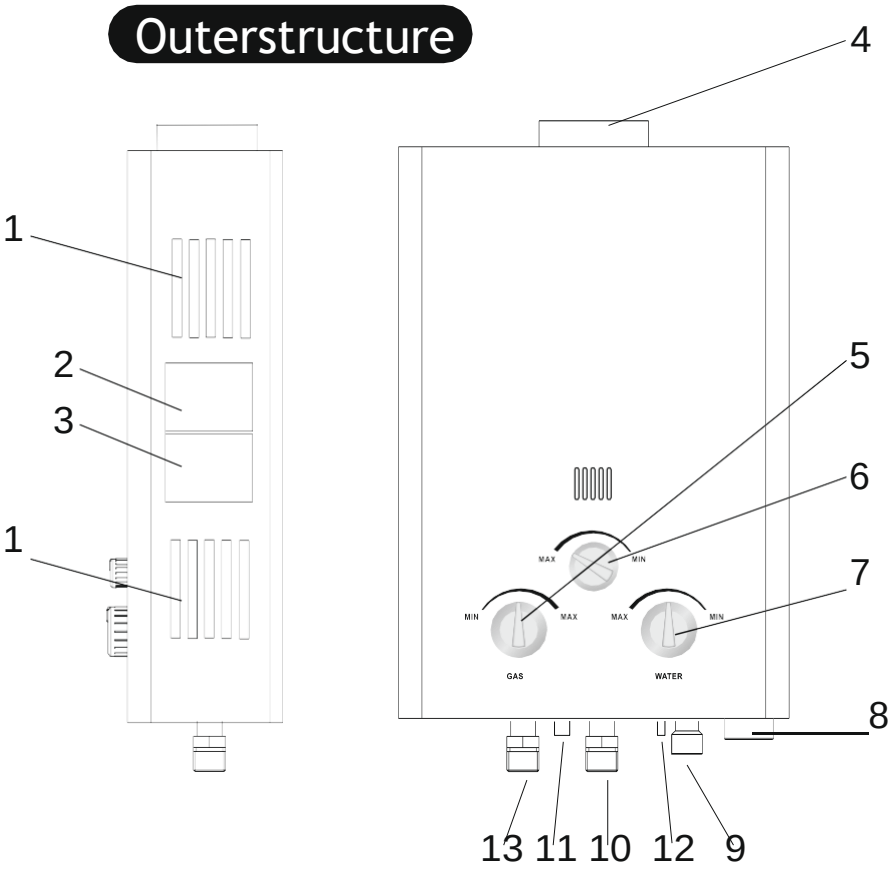
OW121201 CE HIT2188

Gas water heater	
Appliance type	B11BS
Model	JSD-12L
Type of gas	I3P: G31 – 30 mbar, 3000Pa 2E: G20 – 20mbar, 2000Pa
Applicable water pressure	0.25Bar- 10Bar, 0.025 – 10 MPa
Hot water supply capacity	12L/min △t=25℃
Minimum output	8KW
Nominal heat input	24KW
Voltage	DC 3V
Destination	Finland

FEATURES

1 Water controlled, fully automatic and easyto operate. Open the water valve, start pump to start ignition. The hot water will come out immediately.
2 Close the water valve, stop pump. The hot water stops and the flamegoes out immediately.
3 Ability to start at very low water pressure, applicable for many places.
4 If the flame goes out unexpectedly during use, the gas supply will shut off automatically to protect against gas leakage.
5 If the water pressure is too high, the water will come out from the security valve to release pressure, ensuring safety for the appliance and the user.
6 Equipped with a protection unit to prevent over-heating in the watertank and "dry-burn".
7 Inthe event of pressure fluctuations in the water supply, the water heater will maintain a relatively constant outlet water flow.

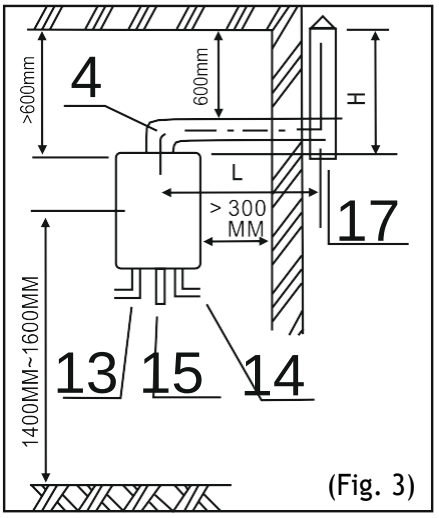
(This instruction is for the functions of the external housing only, and does not represent the external shape of other models.)



1. Air input
2. Warning stitch
3. Technical label
4. Smoke discharge joint
5. Gas flow
6. Burners
7. Water flow
8. Battery box
9. Water inlet (cold)
10. Water outlet(hot)
11. Ignition switch
12. Safety valve
13. Gas inlet

(Fig.1)

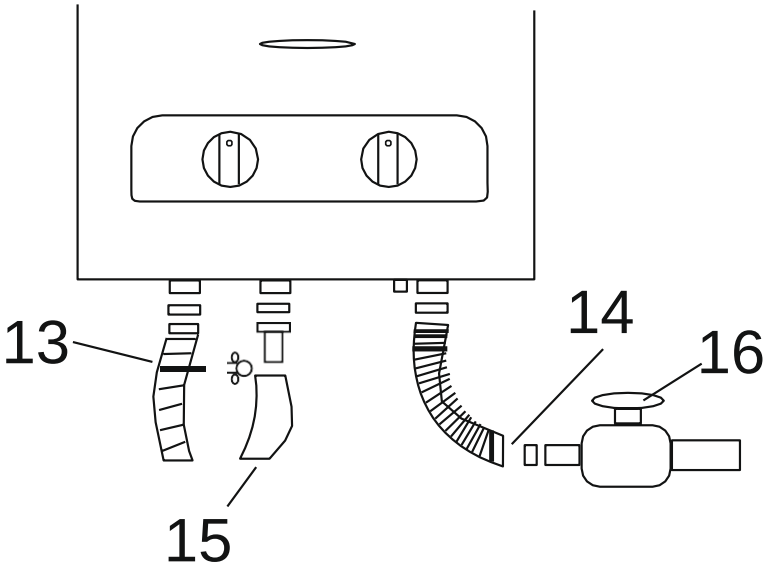
INSTALLATION REGULATIONS



(Fig. 3)

1. It is forbidden to install this water heater in a closed room. Itmustbeinstalledinawell-ventilatedarealargerthan 7.5㎡. Because the water heaterrequiresalarger quantity of oxygen when working, the area should have a minimum air-induction opening of 0.06㎡(20x30 cm).
2. Do not install the water heater in a location with strong wind(unless it is protected fromthe wind); otherwise, the flame may go out or cause incomplete burning.
3. It is forbidden to install the heater outside if it's not protected from wind and rain, because wind and rain may put out the flame; Moreover, the appliance might get frozen and damaged in a cold winter season.
4. A water supply with a minimum 0.02Mpa water pressure is required on the installation site to ensure the normal operation of the water heater.
5. We recommend a cold water valve be installed close to the water heater for maintenance convenience. See Fig 4.
6. Keep a minimum space from the wall orceiling on the installation site. Keep clear of stove, combustible and dangerous objects. See Fig 3.

13.Gas inlet
14.Water inlet (cold)
15. Water outlet (warm)
16. Water valve
17. Air hole



(Fig. 4)

7. If it's possible, install the water heater at the proper height for easy inspection of burning, about 1.5m.
8. Make sure a proper gas pipe are installed and make sure that the pipe remains airtight and the inlet gaspressureis30mbar,2h/kgfornormaloperationoftheappliance.Ifusingapipedgassupply, ask the gas supplier or the gas administration authority for pipe connecting.
9. See "OTHER IMPORTANT CAUTIONS" for other regulations.

INSTALLATION (PERMANENT WALL MOUNT)

Hanging and installing the water heater (for reference only)

Mark the holes on the wall, the position is subject to the actual model of your water heater, drill 4 holes of 8mm, put in the plastic dowels if needed.

1. Hang the water heater, tighten the screws.

LOADING THE BATTERY

The battery box is located under the water heater. Load the batteries in the following order: See Fig.1

1 Open the cover of the battery box.
2 Load two 1.5V batteries (D size) into the battery box, make sure of the proper polarity. Improper polarity will affect the performance of the water heater.
3 Close the cover on the battery box.

INSTALLATION OF GAS PIPE

Hose must be designed for LPG gas and a maximum of 1.2 m long and 10 mm internal diameter. Or according to other national standard. Attachment of the hose must be secured with a hose clamp at both ends. Use the included coupling with gasket so that the gasket sits against the gas inlet on the heater. If using a piped gas supply, ask the gas supplier to connect the pipe.

Use pressure reducer 30mbar, 2kg/h (not included)

EXAMPLE:

Installation of Hot and Cold Water Pipe

Use hoses that can withstand pressure to connect incoming and outgoing water connection. Note that the outgoing pipe also must withstand temperatures up to 70 °C

User Instructions

Before Start Ignition

Please check to make sure that the gas type is in accordance with the one stipulated on the name plate (see page 2). Before igniting, open the cold water valve. Open the master gas switch and check that there is no leakage (see further instructions on page 7).

Start ignition, Water Comes Out

Start ignition: Open the cold water valve, (or start the pump) the burner starts to ignite with a continuous "pa"sound, whichstop after burningstarts; hot water comes out immediately Note: When usingthis appliance for the first time, or after a long period between uses, repeat ignition is needed to discharge any existing air in the gas pipe. Use the knob "Gas", "Water" and "Power" to adjust the water temperature. With "Gas" and "Power" set to the Max position gives the maximum power. The knob "Water" adjust the waterflow sothattheMaxpositiongivesgreaterwater flowandthuslowertemperatureoutfromthe heater and vice versa.

For a temporary stop during use, close the hot water valve or stop the pump. The burner will stop burning automatically. Open the valve or start the pump for hot water again.

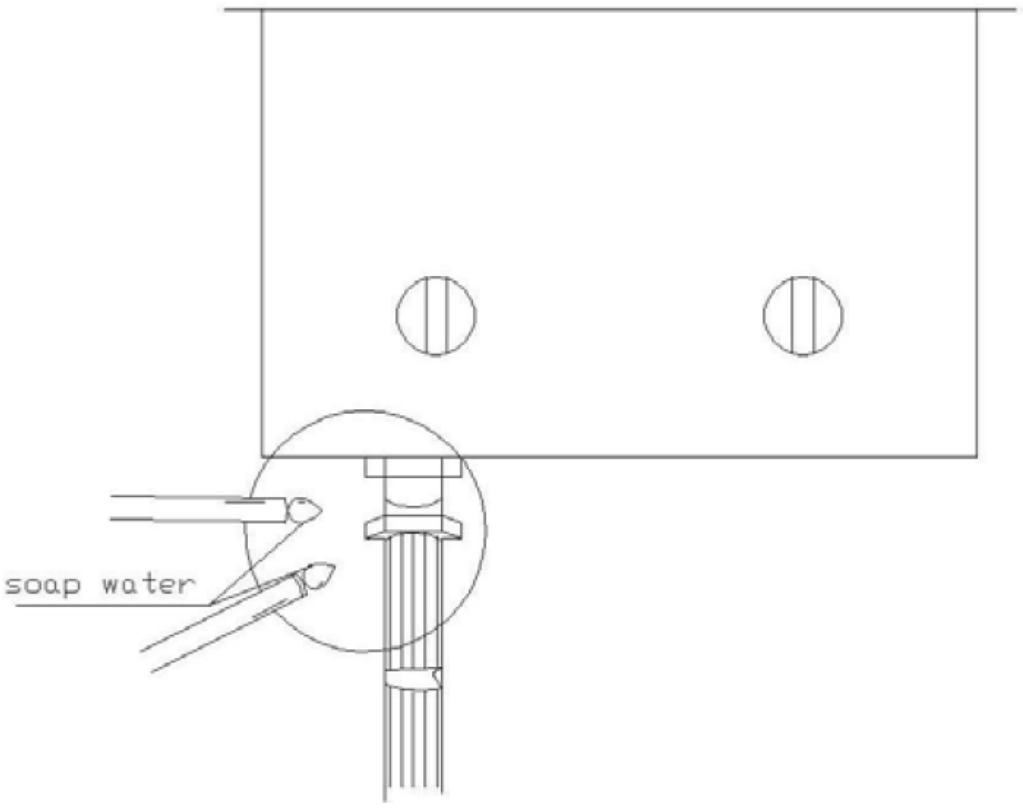
Note: Because the water will get very hot during a temporary stop, wait for a few seconds before coming into contact with the water

Stopping the heater (water stops coming out)

To stop the water heater after use, close the hot water valve or stop the pump, the flame of the burner will go out automatically, and the water heater stops working.

Close the cold water valve or pump. Close the master gas valve.

THE GAS PIPE MAY BECOME CRACKED AND LEAK GAS DUE TO LONG TIME USE. INSPECT IT REGULARLY.



(Fig. 6)

Check the connections of the gas pipe regularly with soapy water (Fig. 6) to make sure there is no gas leakage. Incase of gas leakage, never make fire or touch any electric-switches for the ventilation fan, etc. Do not connect or disconnect any power plugs; otherwise, a flame or spark could ignite the gas, causing a fire or explosion. Close the master gas valve, open all the doors and windows to exhaust the gas outside the house. Stop using the water heater and contact a service department or the gas supplier.

IN CASE OF GAS LEAKAGE, NEVER MAKE A FIRE OR TOUCH ANY ELECTRIC SWITCHES, NOT MAKE TELEPHONE CALL IN THE ROOM, OPEN ALL DOORS AND WINDOWS

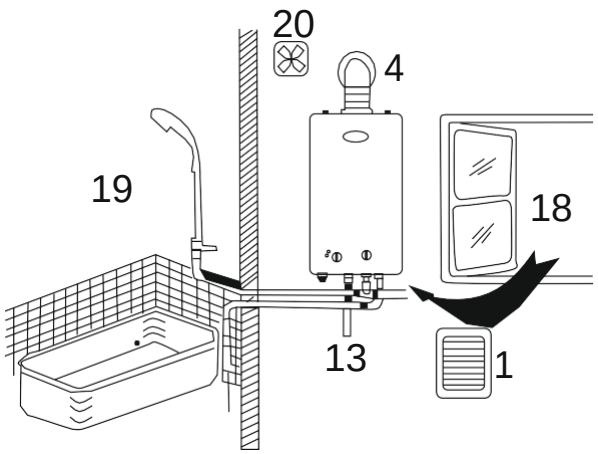
Regularly check the pipe to make sure of good air tightness. If cracked, replace the pipe at once. Under normal conditions, the gas pipe needs to be checked once a year.

- If the gas pipe is cracked, stop using it and replace it. For users of Propane: if the flame of the water heater is inconsistent, it may be due to a malfunction of the gas pressure reducer, Stop using the pressure reducer and replace it, or get it repaired and installed by a professional technician.
- For users of piped gas or natural gas: if the flame is abnormal, it is due to an unstable gas pressure. Stop using the water heater temporarily.
- Continued use will damage the water heater and possibly cause an accident.

PREVENT FIRE

It is absolutely forbidden to leave the burning water heater unattended. The water heater must be stopped before going to bed or going out.

It is forbidden to put combustible or explosive objects close to the water heater. Never put a towel or clothes on the exhaust vent. A gas leakage from the gas pipe can easily causes a fire.



1. Air intake
4. Smoke discharge joint
13. Gas inlet
18. Ventilation hatch
19. Hot water
20. Air extraction

(Fig.7)

PREVENT OXYGEN DEPLETION AND INCOMPLETE BURNING

- Because a large quantity of oxygen is used during burning, the installation site for the water heater must be well. During operation, the water heater will give off fumes; therefore, a chimney must be installed to the water heater to extract the fumes outside the house and keep fresh air in the house, to ensure complete burning.

- When in use with natural gas: in case of low gas pressure, it is highly possible that a "flame-retrace" will be created. This can cause a carbon build-up in the burner. Should this occur, the blue flame becomes yellow and the level of carbon monoxide notably rises. In such a case, stop using the heater and contact the gas supplier.

PREVENT BURNS ON EYES

- Upon ignition, never look at the flame with eyes close to the inspection hole. Keep your eyes a minimum of 300mm from the inspection hole. Wait 10-20 seconds before repeating ignition.

OTHER IMPORTANT CAUTIONS

- PREVENT BURNS FROM HOT TEMPERATURES: if there is a need to use hot water shortly after the hot water valve is closed, do not come into contact with the first- hot water coming, as it could cause burns due to a temporary high temperature.

- PREVENT THE HEATER FROM FREEZING: In very cold areas (with temperatures below 0℃), please remove the draining stopper after use to release access water. It's also recommended to disconnect the heater and move it to a storage place without risk for freezing.
- Some parts of the water heater may become loosedue during transportation. Incaseof damages to the external housing after opening the package, get a repairman tocheck before use.

REPLACE THE BATTERIES.

- Replace the batteries if you see the following situations upon ignition or as the water comes out.
- Longer interval of sounds of "Pa,Pa" during ignition (approx. 2 sounds a second)
- The flame goes out shortly after ignition.
- The voltage between the poles of the battery is lower than 2.9 V.

HOW TO REPLACE THE BATTERIES: SEE PARAGRAPH "LOADING THE BATTERY" FOR DETAIL

- Please use moisture proof batteries with a sealed metal shell. Under normal conditions, the batteries need replacing once a year.

ABNORMAL HANDLE

- Incaseofabnormalburning (flame-retrace separated flame, yellowflameordarksmokeetc.) unexpected smell, noise or emergency (earthquake or fire),remain calm to close the water heater to stop burning, close the gas valve afterwards and contact the service department or the gas supplier.

MAINTENANCE &SERVICES

- The water heater needs cleaning periodically (generally once every half year) to ensure its normal performance. Check the flame frequently, in case of a yellow flame with dark smoke, informtheservicedepartmentforcleaning. Tocleantheexternalhousing, pleasegentlymopit with a wet cloth followed with a dry cloth. If the water heater remains unused for a long time, coverthetoptopreventdust.Never usechemicaldetergents forcleaning; otherwise,the external housing would become faded and lose its gloss. Allabnormalities mustonly be handled by qualified personnel.
- **Note:** The room installed with the water heater must have a fixed open air-induction opening. Closed windows are ineffective.

TROUBLE & TROUBLESHOOTING

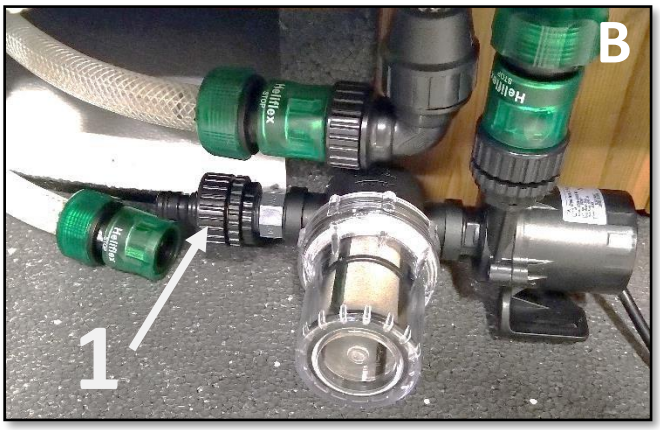
Troubles / Causes	Flame goes out during use	Open water valve, no flame	Explosion-like burning upon igniting	Yellow flame with dark smoke	Abnormal flame with unexpected smell	Abnormalnoisefromburning	No hotwater although set for large flame	No hot water when set for low temperature	Flame goesoutwhensetfor low	Remains burning after cold/hot water valve is closed	Troubleshooting
The master gas valve remains closed,or gas used up	•	•									Open the master gas valve or replace the gas bottle
Malfunction of pressure adjuster	•	•	•				•	•			Open the master gas valve or replace the gas bottle
Remaining air in the gas pipe		•									Repeat operating to open/close hot water valve until burning.(note: remember to keep an interval of minimum 5 seconds between)every open and close),get a repairman to repair the pressure adjuster.
Abnormal inlet gas pressure — High			•	•		•		•			
Abnormal inlet gas pressure — Low	•	•					•		•		
Coldwatervalve remains closed		•									Fully open thewater inlet valve
Blockinthefilter net	•	•							•		Clean the filter net
Frozen											Getunfrozen beforeuse
Low cold water pressure	•	•							•		Check the waterpressure
Incorrect way to adjust water temperature							•	•			Adjust temperature knob and water knob
Lack of fresh air supply	•			•	•						Improve air ventilation to supply enough fresh air
Action of security device	•	•									Restart water heater,if it fails to work send it to the service department for repair
Powerless batteries	•	•									Replace the battery
Block in the burner		•		•	•	•	•				Contact the service department
Block inthe heating coil				•	•	•			•		
Malfunction of the thermal pin	•	•	•							•	
Malfunction of the water control unit		•								•	
Malfunction of theon/offswitch		•								•	

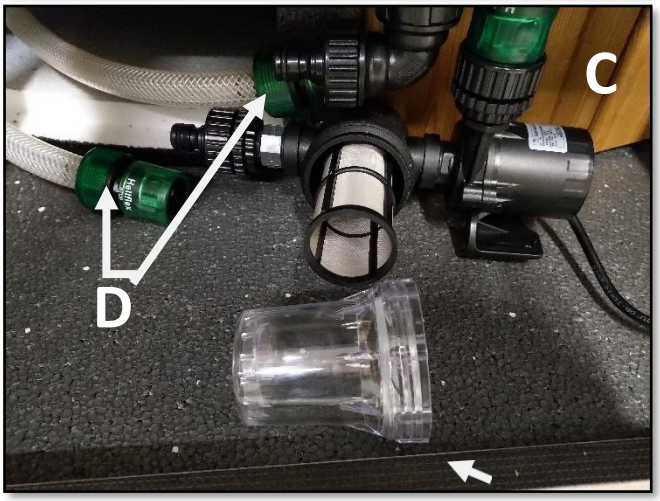
GAS HEATER PRO24 – FOR HEATING OF WATER IN HOT TUBS

Thank you for choosing a gas heater from SpaDealers. The heater is easy to use. When connecting to a hot tub, there's a connection kit **(A)** with pump incl. hoses accessories (included in complete hot tub packages). It is connected as shown below. For the heater to start it needs a water flow created by a pump. Connect the upper connection to the heater and wait until water starts seeping out in the lower black nut **(1).** *That means the air has been displaced and the pump can be started.* **Note *** The pump must not be run dry as this can cause damage to the rotor shaft. When the water starts flowing the ignition mechanism is activated automatically. If gas is connected and turned on the torch will ignite and start heating the water. <u>The three white knobs should all be adjusted to Max.</u>

TIP! When the gas is running out you can turn the knobs for Gas and Power set to Min. to take most advantage of the remaining gas.

Use pressure reducer 30mbar, 2kg/h





When draining and there is a risk of freezing, loosen the nuts **D** and pull the hoses out of the connection so that all water can run out.

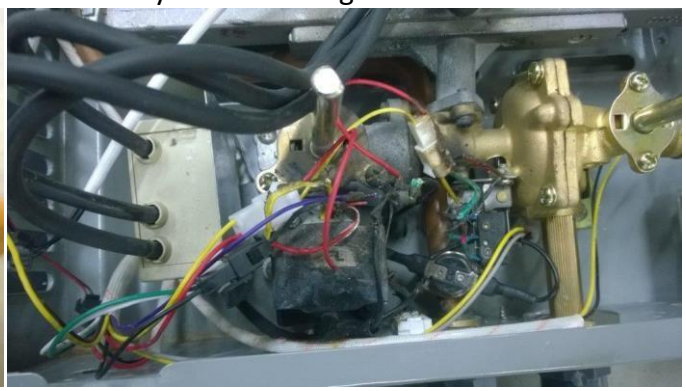
PROTECTIVE CASE FOR GAS HEATER (item DTHHG)

As an accessory there is this handy protective case for the gas heater that protects it from wind and rain. The front part is detachable and is removed during use. There is fireproof material behind the heater and on the sides. Above the heater an inclined fireproof part leads exhaust fumes away. We also have the blue print for DIY'ers.

Use your gas heater properly and you will avoid unnecessary problems **not covered by the warranty.**

Here follows the most common problems that can be effectively avoided with proper maintenance.

The most common problem that can occur is when contaminated water is used and the filter before the pump clogs up. This stops the water flow. The stove will then switch itself off. No temperature is displayed and there is no ignition spark. The problem is corrected by cleaning the filter. If there is also a strainer filter in the pipe "Water Inlet", it can be removed as the outer filter by itself is enough.



One problem that may occur and one that is serious in terms of safety, is a gas leakage. Use the supplied brass connector and seal. There are clear instructions on page 5 of the manual. Before the gas heater is taken into service, also test it for leaks. When gas leakage occurs, a fire results, but it can be prevented by following the simple advice given on page 7 of the manual.

In standard configuration the gas heater is not protected against rain and such if not placed under a roof. Water entering the heater leads to electrical failure and the material may start to rust. It's easy to make a protective shelf that covers the stove. You must then take into account the installation regulations with dimensions on page 4 of the main manual.

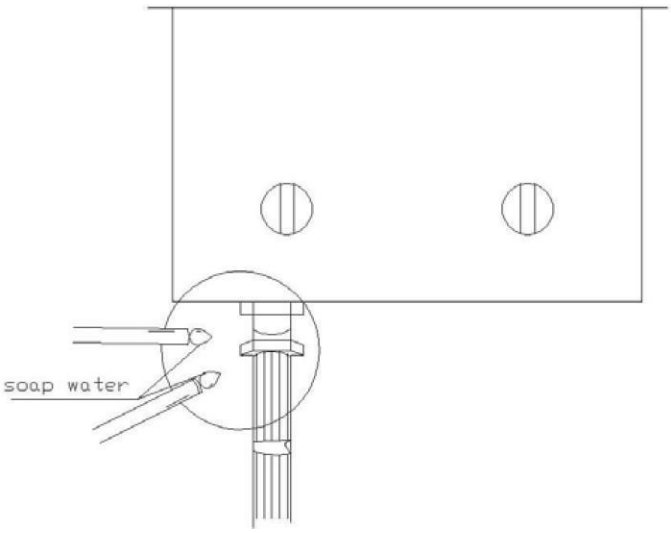
To reduce the minimum safe distance, a refractory material can used. On our website; www.spadealersuk.com, drawings can also be downloaded. The protective shelf is also available to order as an accessory.

If the stove is left outside in freezing temperatures, then the heat exchanger could freeze and be destroyed. If the stove is not protected so that water cannot freeze in the heater, it shall be disconnected and taken indoors where the risk of freezing exists.

THE GAS PIPE MAY BECOME CRACKED AND LEAK GAS DUE TO LONG TIME USE. INSPECT IT REGULARLY.

(Fig. 6)

Check the connections of the gas pipe regularly with soapy water (Fig. 6) to make sure there is no gas leakage. In case of gas leakage, never make fire or touch any electric-switches for the ventilation fan, etc. Do not connect or disconnect any power plugs; otherwise, a flame or spark could ignite the gas, causing a fire or explosion. Close the master gas valve, open all the doors and windows to exhaust the gas outside the house. Stop using the water heater and contact a service department or the gas supplier.



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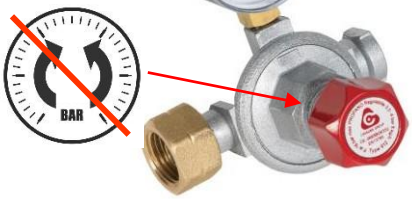
USE THE RIGHT LOW-PRESSURE REDUCER

The types of gas cylinders and connection methods of low-pressure reducers (30mbar, 2kg / h) can vary. It is important that the correct low-pressure regulator is used. Here are examples of the correct type and also incorrect types. **NEVER USE an adjustable controller.**

Examples of correct gas reducers and incorrect ones

~~50 mbar~~



Note that the amount of gas that the stove needs to give full power is 1.6 kg / h. With a flow of 1 kg / h, the power is 60% less. So the most optimal is 2 kg / h.