Fitting Instructions

The 1 - 11 stages for the fitting of a steam / shower room.

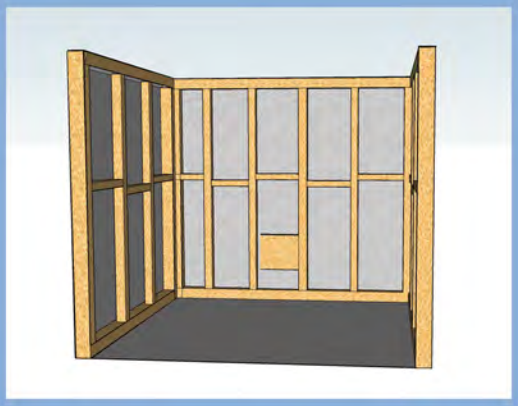


Fig .1

1 - Construct any timber / metal studwork / masonry wall that may be required.

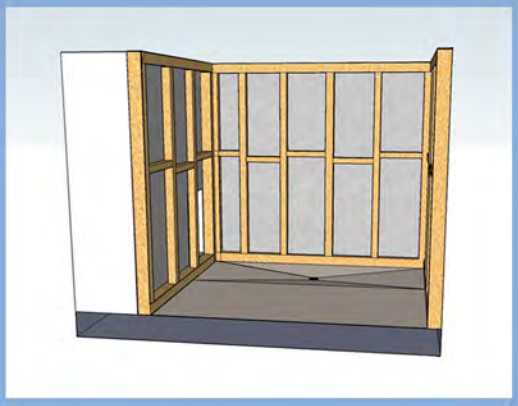


Fig .2

2 - Install and plumb shower tray or wet room tanked floor.
(A wet room situation is shown for the sake of illustration).

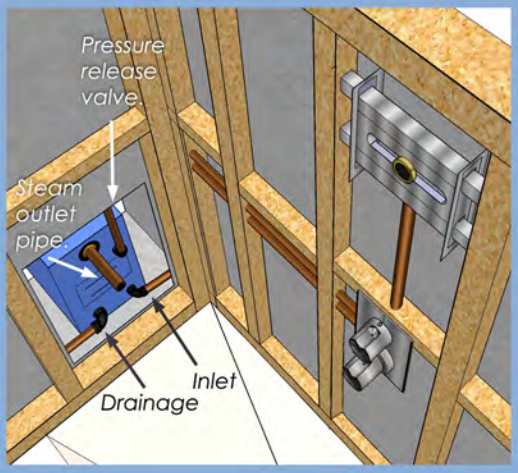


Fig .3

3 - Plumb in shower controls, shower head and water supply to steam generator.

Please see fig.3 and fig.4

(Please note that the generator is shown in this position, but may also be placed anywhere within 3 metres of the steam outlet.

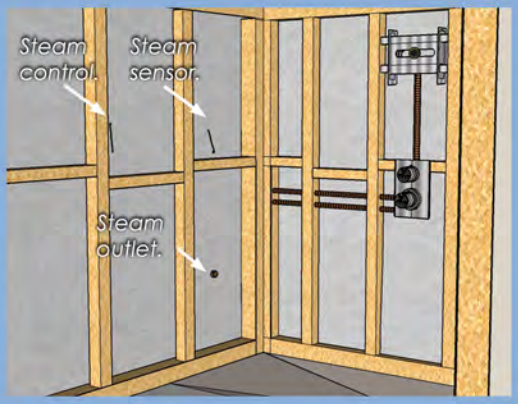


Fig .4

4 - Position wiring for steam temperature sensor ,lighting and steam room digital control (which is to be outside of steam shower area).

- Steam sensor to be installed approx 1.2m to 1.5m high.
- Steam control wire is to be installed aprox 1.2m high.

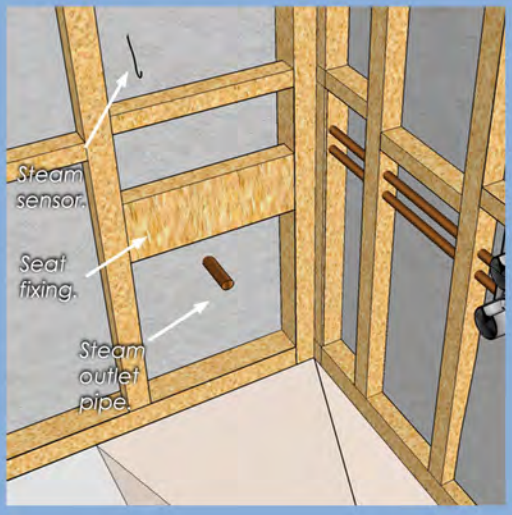


Fig .4

5 - Construct secure fixing for steam room seat (if required).

It is recommended that this seat is sighted above the steam outlet.

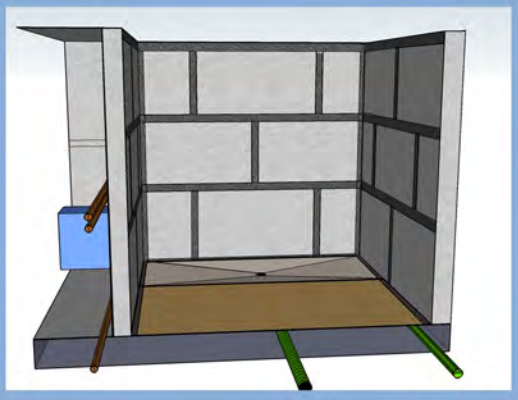
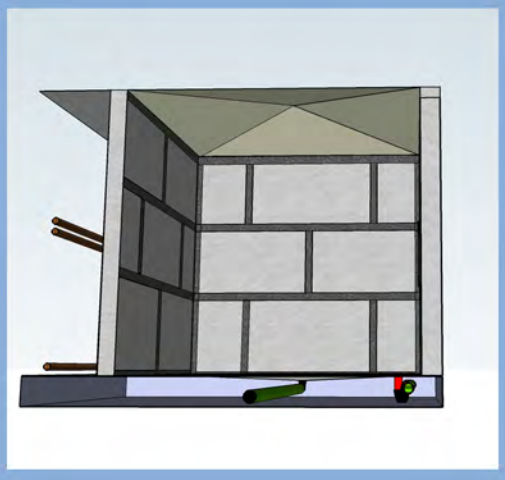


Fig .6

6.
- Install insulated tanking boards to wall area.
-Screw tanking boards to any timber or metal studwork.
- Apply supplied primer to all joints.
- Allow 3 hours to dry.
- Overlap joints with supplied tanking tape.

(Please note masonry walls do not necessarily require tanking boards).

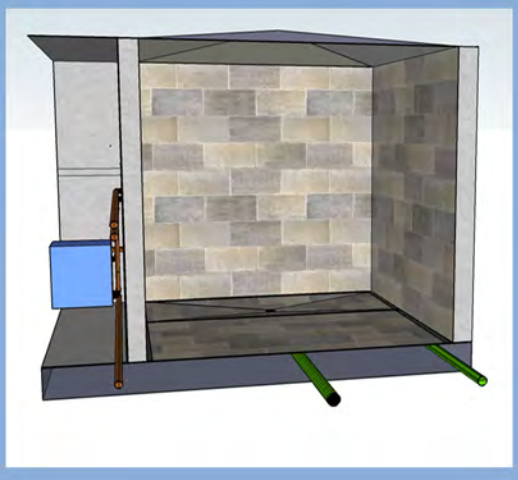


7 - Construct sloping ceiling.

A Sloping ceiling is required to stop dripping condensation.

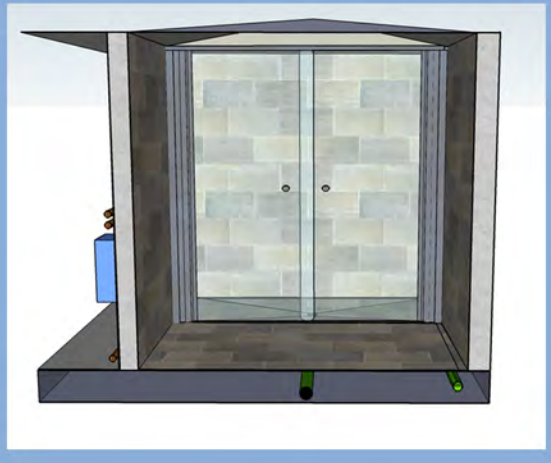
The ceiling can be constructed sloping in al 4 directions (as shown), or in a “^” , 2 direction slope.

These slopes must be constructed from a waterproof material e.g. solid surface or tanking boards.



8 - Install chosen wall tile or wall covering.

Fitted to manufacturers recommendations.



9 - Install cubicle or shower door.

Install to manufacturers specification.

10 - Fix shower control, steam outlet, steam sensor, shower head, digital control and shower seat (if required).

11 - Get in and enjoy!

LIVINGHOUSE.CO.UK

Aqua Shower Steam Room Generator

Instruction Manual

Introduction

Thank you for choosing a Livinghouse Aqua Shower Steam Room Generator.
The generator is well manufactured and supplies a very good performance.
Aqua shower generator is specially designed to remove tiredness, relax muscles and stimulate blood circulation

For proper installation, operation, maintenance, and the safety of our customers, please read all instructions carefully and keep this manual for further reference.

ATTENTION: This appliance is not intended for use by person with reduced physical, sensory or mental capabilities, unless they have been given supervision or instruction concerning use of the appliance by a person responsible for their safety.

ATTENTION: Children should be supervised to ensure that they do not play with the appliance.

ATTENTION: Check steam room before restart the controller.

ATTENTION: No smoking or alcohol is allowed inside the steam room

ATTENTION: Leave the steam room immediately when feels uncomfortable

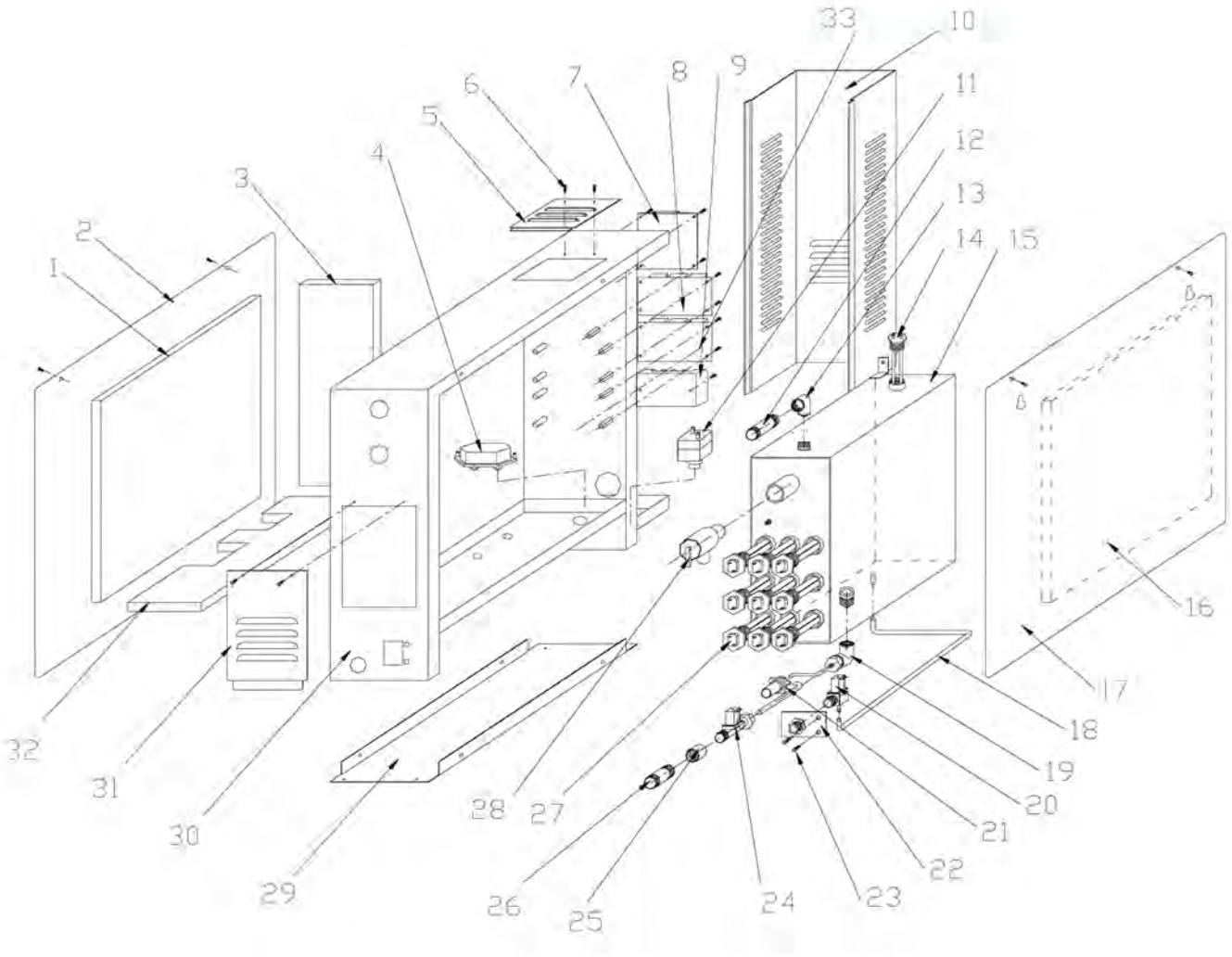
ATTENTION: A ventilation fan is required outside the steam room.

Parameters.

Kit	Power KW	Heating Element N * kW	Voltage (V) Current (A)	Dimensions L x W x H (mm)
1	5.0	2*1.5+1*2	220 / 22.7	460 x 165 x 325
2	7.0	2*2+2*1.5	220 / 31.8	510 x 190 x 460
3	8.0	4*2	220 / 36.4	510 x 190 x 460

Table.1

Steam Generator Construction



1 panel
2 Insulation
3 Insulation (side)
4 Wire entry hole
5 Small cover
6 Screw
7 Main-board
8 Sub-board
9 Wire Terminal
10 U shape cover
11 Temp Switch
12 Steam outlet
13 Steam outlet elbow
14 Water level sensor
15 Inner tank
16 Insulation

17 Cover
18 Water inlet hose
19 Draining pipe elbow
20 Electromagnetic water inlet valve
21 Drain pump (Only for KSA Series)
22 Electromagnetic valve clamp
23 Screw
24 Electromagnetic drain valve
25 Draining pipe
26 Draining pipe
27 Heating element
28 Water pressure relieving valve
29 Base plate
30 Frame
31 Element access cover
32 Insulation
33 Screw

Choosing the Correct Kit

Cautions:

- If the generator is installed at a place where difficult for customer access, the water supply valve must be easy to access for emergencies.

- The electromagnetic valve can endure maximum 0.2MPa (2kg/cm2) water pressure. To protect the electromagnetic valve from extremely high water pressure, please turn down the inlet slightly or install water pressure relieving valve.

- Do not install saddle-backed or needle valves on the inlet. Please dredge and clean the pipe before installation.

- No block valve should be installed in the steam pipelines. Strictly no blocked or too many pipe bends should be in stalled, otherwise negative affects on the flow of steam and condensate can occur. The steam pipelines should be installed with a slight angle so that the condensate can flow back to the generator or the jets.

- Steam generator should be installed indoor to avoid freezing. The generator should be installed and leveled with the arrow pointing upwards, at an easy-access point, otherwise do not switch on.

- The steam pipeline must be copper pipes, all other materials such as plastic, acrylic should not be used as they cannot endure temperatures of 150oC or higher.

- All inlet and apertures should be sealed to prevent any leakage of steam to protect the generator and customers.

- The Steam generator draining system should not be drained to the steam room as this may cause serious scald and damage to the steam room.

Selecting the Correct Steam Generator:

In order to achieve comfort and relaxation, as well as energy efficiency, the selection of the correct steam generator and size is as critical as the design of the steam room itself.

The power supply and the circuit protector should be carefully checked to match the parameters of the generator.

Kit	Power (KW)	Room Size M3	Voltage V / Current A	Fuse (A)	Power Line size (MM).
1	5.0	2 - 4	220 / 22.7	32	3 x 4
2	7.0	4 - 6	220 / 31.8	40	3 x 6
3	8.0	5.5 - 8.5	220 / 36.4	60	3 x 6

Table.2

Installation

Installation of the Steam Generator:

1 - Switch off all power supply before installation and check whether you have the correct model for your steam room according to page 5.

2 - Do not install the generator outdoors, in wet / moist, freezing or corrosive conditions. Do not install the generator near to flammables such as oil paint, diluents and fuel. Be alert to the steam pipeline and safety valve because high temperature steam is dangerous to customers.

3 - Generator must be installed level.

4 - The generator should be installed in a dry and well-ventilated place. It can be installed either on the wall or on the ground, but must be well fixed. Install the generator as close to steam room as possible, such as in the closet, under the wash basin in the basement or in the roof space. Please see Fig.1.

i. Install the generator on the wall: drill two small holes with diameter of 8mm on the wall, insert the expansion screws and then hang the generator on those screws.
ii. Install the generator on the ground or deck: Install the frame on the site and then screw the generator into the frame.
iii. For better service and maintenance, please install the generator with the nameplate facing to the front and leave more than 250mm space around the generator.

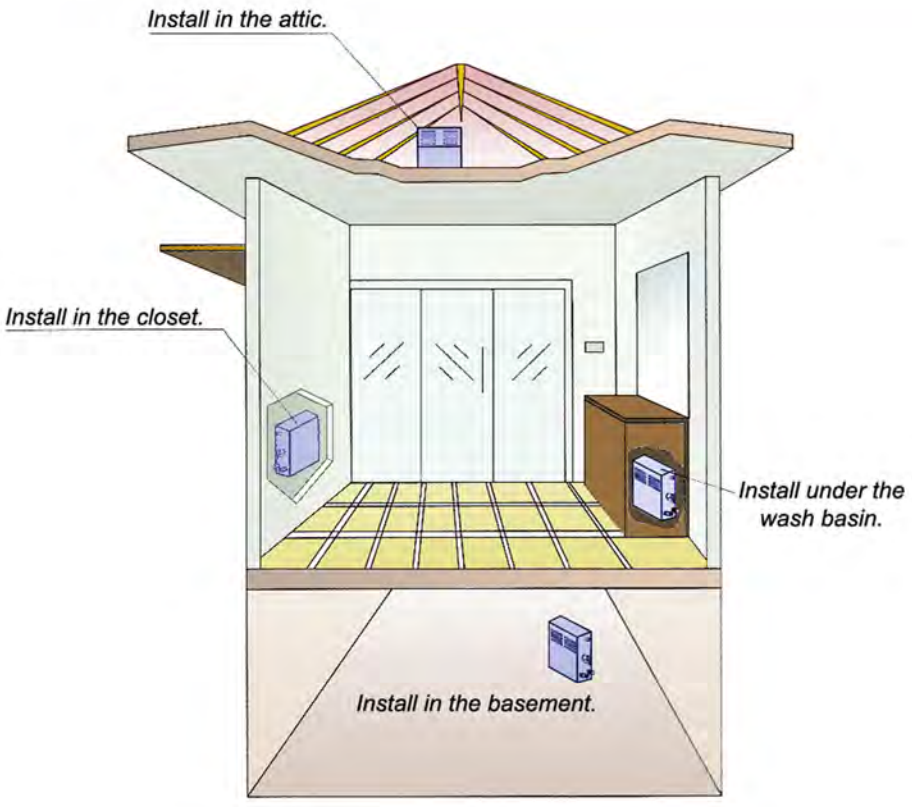


Fig .1

Installation of control and temperature sensor.

- The controller should be installed at a height of 1.2 m outside of the steam room, but also nearby for ease of operation.

- Firstly embed the installation box of the controller in the wall.

- Pull the control wire and temperature sensor wire through the conduit into the box, then connect the control wire to the black ROUND connector, then connect the temperature sensor wire to the black SQUARE connector inside it. Finally using sealing glue to seal around the box and wire entry holes, and then push the controller panel onto the base box.
  Please see Fig.2.

- The temperature sensor is used to measure the temperature inside the steam room, so that the generator can work automatically according to the pre-set temperature and maintain the room temperature constant.

- The installation height of the sensor should be about 1.2 –1.5 m from ground.

- Secure the sensor in the steam room. Please see Fig.3.

- Pull the sensor wire through the conduit then connect to the black SQUARE connector of the controller.

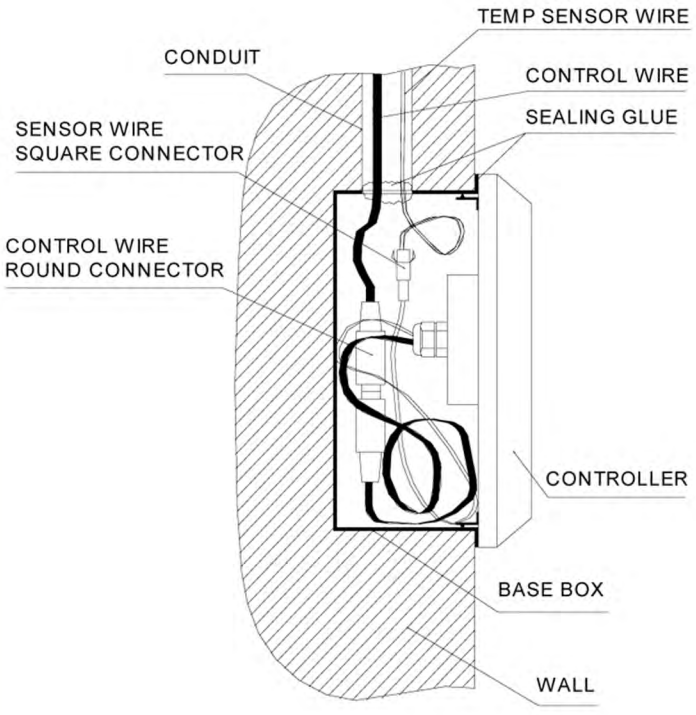


FIG .2

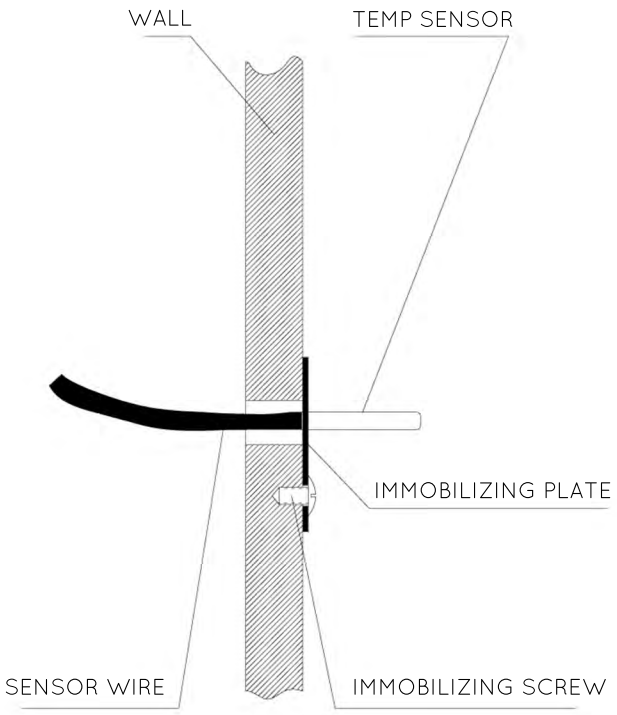


FIG .3

CAUTION: The control and temperature cable should not be parallel to, or intersect with the power cable.

The temperature sensor should not be installed on the side of the wall which is behind the door when the door is opened.

The controller should not be installed in any moist place.

Installation of pipeline.

Caution:
- If the generator is installed in a place where it is difficult for the customer to access, the water inlet valve must be easy to access in case of emergencies.

- The electromagnetic valve can endure maximum 0.2MPa water pressure.
To protect the electromagnetic valve from extremely high water pressure, please turn down the inlet slightly or install a water pressure reducer valve.

- Do not install saddle-backed or needle valves on the inlet. Please dredge and clean the pipe before installation.

- No block valve should be installed in the steam pipelines. Strictly no blocked or bent pipes, otherwise it will have a negative affect on the flow of steam and condensate.
The steam pipelines should be installed with a slight angle so that the condensation can flow back to the generator or the outlet jets.

- Steam generators should not be installed outdoors to prevent freezing. The generator should be installed and levelled with the arrow pointing upwards at an easy access place, otherwise do not switch on.

- The steam pipeline must be in copper pipes, all other material such as plastic, acrylic should not be used since they cannot endure 150 or higher temperature.

- All inlet and apertures should be sealed to prevent any leakage of steam and to protect the generator and customers.

- Draining water to the steam room from the generators water tank may cause serious scald and damage the steam room.
A separate draining pipe is required to drain water to the drainage.

All inlet water pipes and steam pipelines should be built according to the National Standard (please see Fig. 4) and this should be done before sealing the wall.

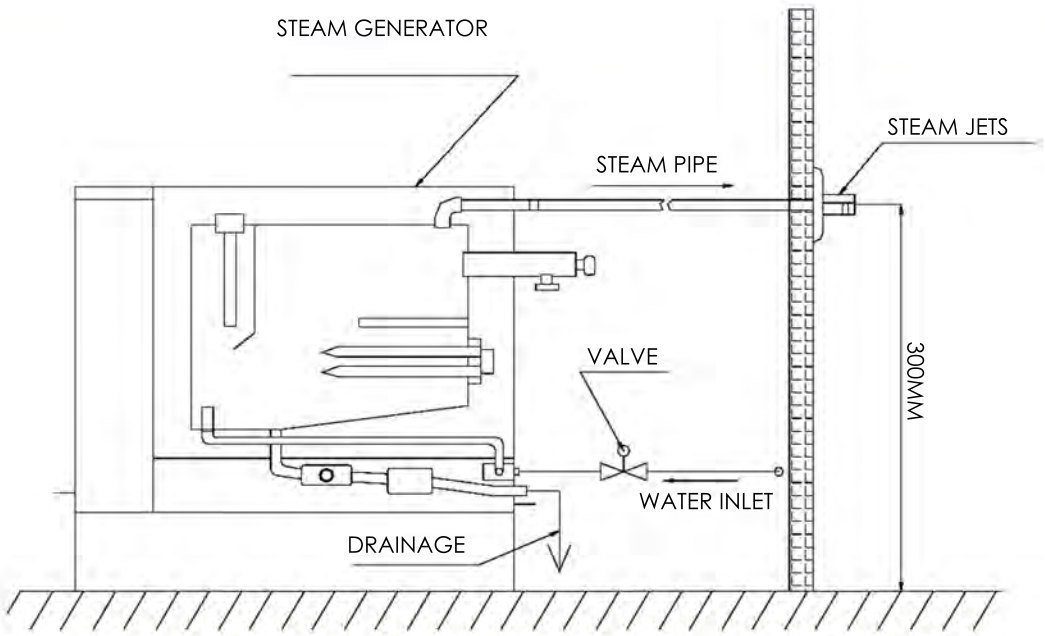


Fig.4

Water inlet: Use 1/2" copper pipe to connect the water inlet pipe of the generator to the water supply.

Steam outlet: Use no less than 1/2" copper pipe to connect the steam jet and the steam outlet pipe of the generator.
The pipe should be less than 3 meters long and minimize the number of elbows otherwise heat isolating methods should be implemented.

Steam jets: The steam jets should be about 300mm from the ground and at least 150mm from shower seats.
All jets should face downwards.
Put the chrome outlet jet onto the outlet pipe and firmly seal with glue then screw on the jets.
Do not screw too hard and break the cover and jets.

Electrical Installation.

Caution:

- All circuits should be installed by fully qualified electricians and conform to local and national codes.

- Power supply must be cut off before installation, maintenance and repair. The on/off button on the generator cannot cut power from the supply.

- No additional power supply or wire is allowed to connect to the generator.
  Do not connect the ground wire to the neutral wire.

- Only the original parts and elements from the manufacturer are allowed to be used in installation, operation, maintenance and repair.

- After the installation of the pipeline and electrical circuits, careful checking must be performed before switching on the generator.

- The generator has been carefully installed, checked and tested in factory, therefore the customer only needs to install the power wire and control cables.

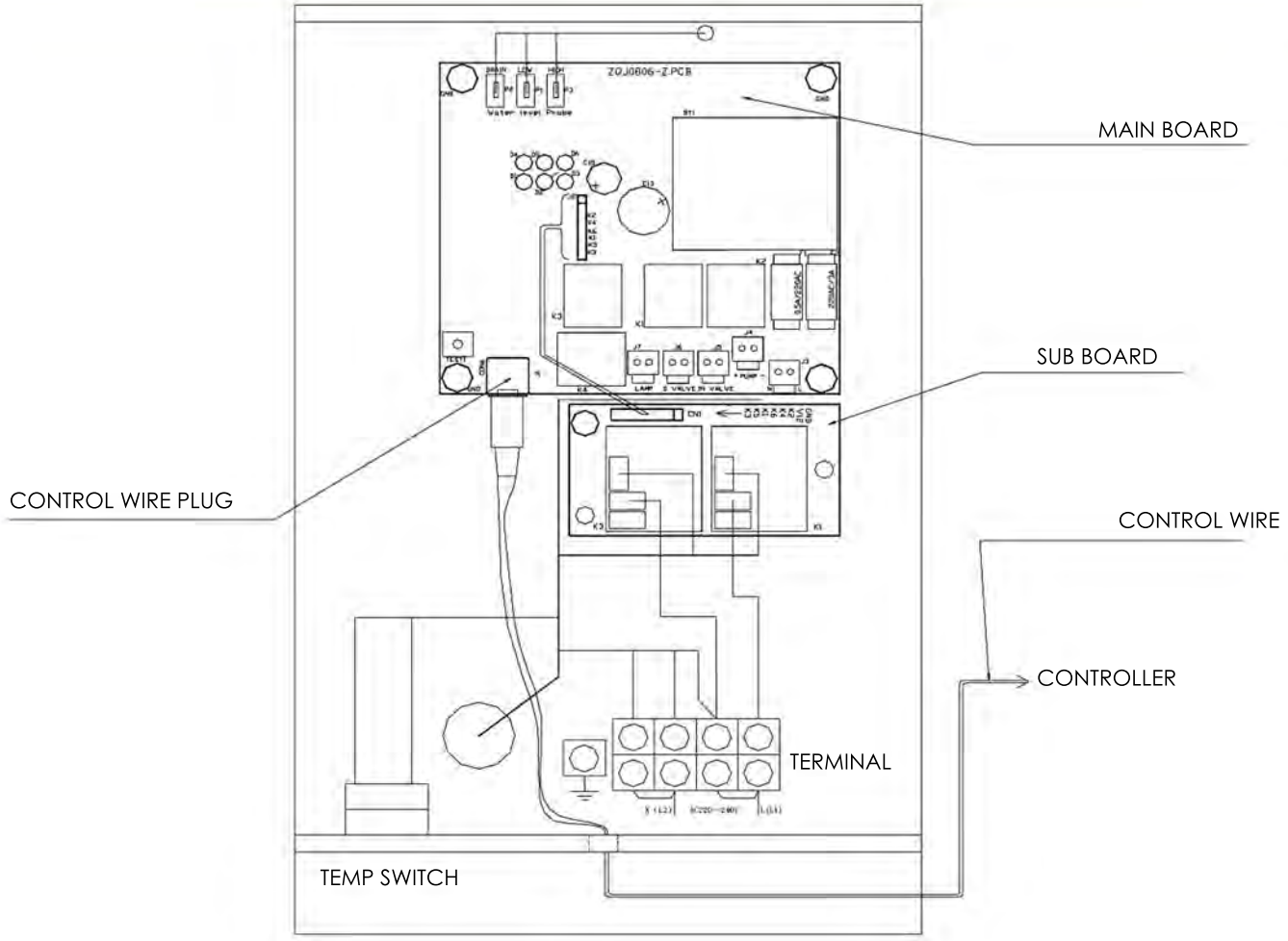


Fig.5

Installation of the control wire.

Take off the back cover of the generator, pull the control wire at the back of the controller through a conduit and then insert it into the hole at the back of the generator case and connect to the plug on the circuit board. (Please see Fig.5).

Installation of the Power Wire.

Caution:

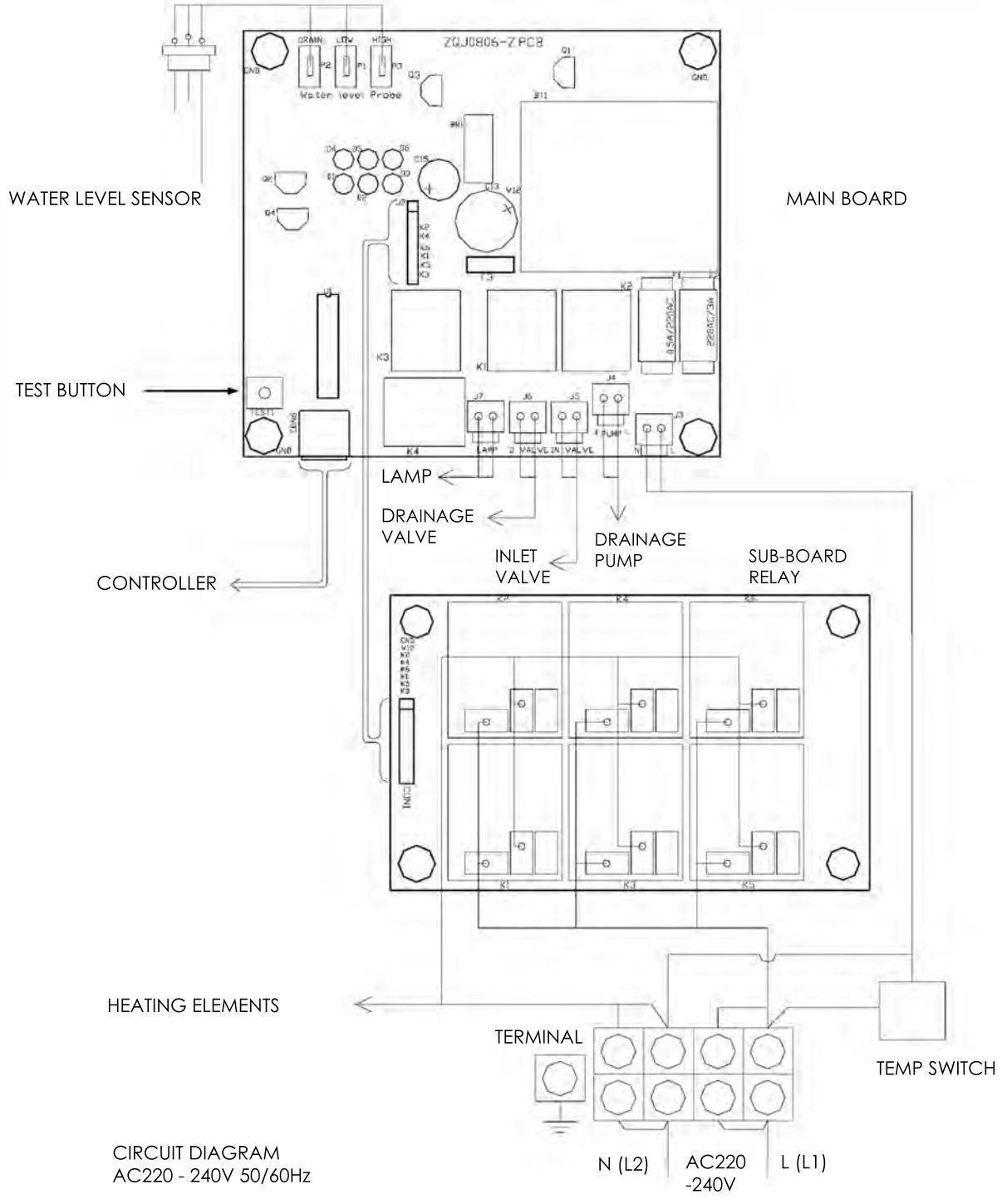
- The power supply should be 220—240V, 50/60Hz, please refer to Table 2 on page 5 of this manual

- The selection of fuse and breaker must strictly follow the data in Table 2.

- Choose the suitable power wire according to Table 2 and national guidelines.

- Take off the back cover of the generator and insert the 3-core power wire (single phase, 220～240V, 50/60Hz) into the hole at the back of the generator case and connect to the correct terminal. (Please see Fig.6).

Single phase, 220～240V, 50/60Hz power supply: connect the live wire to the terminal labelled as "L(L1)" ; connect the neutral wire to the terminal labelled as "N (L2)" ; and connect the ground wire to the terminal labelled as "



CIRCUIT DIAGRAM
AC220 - 240V 50/60Hz

Control Display Panel

Temperature.

The LCD will display the temperature measured by the temperature sensor in the range of 6oC-60oC (43oF-140oF).

Set temperature: The temperature setting range is 35oC-55oC (95oF-131oF) and indicated by the 5 red LED's next to the LCD.

The bottom LED is on when temperature is 35oC (95oF).

The bottom 2 LED's are on when the temperature is within the range of 36oC-40oC (97oF-104oF).

3 LED's are on when temperature is within the range of 41oC-45oC(106oF-113oF);

4 LED's are on when temperature is within the range of 46oC-50oC(115oF-122oF).

All LED's are on when temperature is within the range of 51oC-55oC (124oF-131oF).

The default setting temperature is 43oC (109oF). 3 LED's.

Set Time.

The maximum setting time is 60 minutes and the remaining time is indicated by the 5 red LED's next to the LCD.

The bottom LED is on when the remaining working time is 20 minutes or below;

The bottom 2 LED's are on when the remaining working time is within range of 20~30 minutes.

3 LED's are on when the remaining working time is within range of 30~40 minutes.

4 LED's are on when the remaining working time is within range of 40～50 minutes.

All LED's are on when the remaining working time is within range of 50~60 minutes.

The default working time is 45 minutes.

If the system is in long-term working mode, the top LED blinks.

Temperature.

Hint message:
1) Temperature is lower than 6oC(43oF): The LCD displays “-L”,
Detected by the temperature sensor.

2) Temperature is higher than 60oC(140oF):The LCD displays “-H”,
Detected by the temperature sensor, all heating elements stop working.

3) Water supply fault: The LCD displays “- E”.
This message appears when the water level is lower than the minimum water level 10 minutes after the system is started and the water inlet valve is opened, or the water level is lower than the desired level 3 minute after the water supplementing order is given. It indicates faults of the water supply system, all heating elements stop working.

4) Drainage: The LCD displays “-d”,
Indicating automatic draining after the pre-set job is done (ON/OFF button is pressed or setting time is up), then the whole system will shut down automatically.

5) Connection error: The LCD displays “EE” showing any connection error between the controller and the main PCB.

6) Heating up: indicated by the three-color LED on the left of the panel with label “ “ ”

a) There are two groups of heating elements (1~6 elements): if the indicator is red or green, then the actual temperature is below the setting value and both groups of heating elements are working; if the indicator is blue, then the actual temperature is 2oC(4oF) higher than the setting value so only one group of the heating elements is working.

7) Insulation: indicated by the LED on the right of the panel with label “  ”. If the current temperature is more than 2oC(4oF) above the setting temperature, all heating elements stop working and the system is under insulation function

Function Buttons and Operation

ON/OFF

To switch on and off of the whole system.
Pressing this button can switch on the generator and open the water inlet electromagnetic valve to fill generator with water.

When the water level reaches the required minimum water level, system begins to heat up (if current temperature is lower than setting temperature).

Once the water level reaches its maximum level, inlet valve closes and the system enter the automatic working process.
If the system is then shut off by pressing ON/OFF button, the system will adapt the default temperature and time setting; otherwise if the system is shut off automatically when setting time is up, system will adapt the previous temperature and time setting.

The system then begins to heat up and produce steam after several minutes. Press the ON/OFF button again will shut down the system manually and the system will drain automatically.

Setting Temperature.

Press once to adjust the temperature. The LCD and the red LED on the left will blink and display the previous setting temperature.

If the system has been turned off and restarted, the LCD displays the default temperature 43oC (109oF), then press the "▲" or "▼" button to adjust and then press "SET" again to confirm your setting.

Now the LCD and LED's on the right blink and display the previous setting time or the default setting time of 45 minutes if the system has been turned off and restarted, or the remaining working time(during working time),
You can now set the working time.

Press"▲" or "▼" button to adjust the working time to the value you want and press set or press "▲"button until the LCD displays "CH"and then press "SET" to confirm, after that the system automatically enters long-term working mode.

The available temperature range is 35oC-55oC(95oF-131oF)and the default temperature is 43oC(109oF).

When the system is in long-term mode, five red LED's on the right side of the LCD are on and the top one blinks.

When the working time is set, the maximum working time is 60 minutes and the default working time is 45 minutes.

PAUSE: Press this button to pause the system.

The heating indicator is off, the insulation indicator blinks, and all function buttons will not function except "ON/OFF" button and "LAMP" button. If is not in long-term mode, system will automatically drain and switch off once the working time is over. Press this button again to stop.

LAMP: Switch for the external light.
The button can be used as the switch for the external light as long as the system is connected to power supply. The LED is on when the light is turned on.
▲ Increase the temperature or time.
▼ Decrease the temperature or time.

Auto Functions.

Auto filling:
Inlet valve will open automatically once the system has started and will fill with water until the water level reaches maximum level. If water level is still lower than the minimum water level 10 minutes after, it indicates faults of the water supply system, so all heating elements will stop working and LCD will display “-E”.

Auto heating up by sections:
Generator will compare the measured room temperature with the setting temperature and then decides the number of working heating elements.

Auto water supplementing:
If the water level is lower than the desired level when operating, auto water supplementing function will be on and open the inlet valve. Once the water level reaches the desired level, auto water supplementing function turns off. If water level is lower than the desired level 3 minute after the water supplementing order is given, it indicates faults of the water supply system, so all heating elements stop working and LCD displays “-E”.

Auto drainage:
When setting time is over or ON/OFF button is pressed, system will drain automatically and displays ‘-d” on the LCD. The drainage valve and the drainage pump will be turned on to drain. After a while the system will open the inlet valve to fill in water in order to wash and cool down the inner tank and heating elements.

The whole process takes about 3 minutes, and the system will be shut off automatically after drainage.

Maintenance (only by qualified person).

1. As leakage of the steam will damage the equipment. To prevent any hazard, steam generators, steam jet, parts and pipe line connections should be checked regularly.

2. Clean the electromagnetic valve, magnetizer and all the other sets in the pipe line regularly according to the local water quality and usage of the steam generator.

3. When operating, check the equipment to see whether it's over heated, check the stability and corrosion of all the wire plugs.

4. Replace the heating elements: switch off the steam generator at the mains and remove the element access.
Label the wires connected to the heating elements which need to be replaced and plug out the wires. Screw the heating elements out.
Clear the scale in the water tank and screw in the heating elements after putting the rubber rings on them (air proof gasket should be pressed firmly without reversion).
Plug in the wires, make sure the heating elements are properly connected before putting the element access cover.

5. Replace the main board:
Switch off the steam generator at the mains and remove the U shape cover when the generator has completely cooled down. Label the three wires which connect the upper part of the main board to the water level sensor and the source, drain pump, electromagnetic drain valve and water inlet electromagnetic valve in the bottom part of the main board.
Unplug these wires and remove the main board (be careful with yellow-green earth wire under the screws of the circuit board).
Install the main board back carefully.

6. Replace the sub-board:
Switch off the steam generator at the mains and remove the U shape cover when the generator has completely cooled down.
Unplug all the wires on the sub-board. Label all the wires on the relay and remove the sub-board. Install the sub-board back carefully.

7. Replace the electromagnetic valve and drain pump:
Switch off the steam generator at the mains and disconnect the power and water supply. Remove the water inlet pipe, drain pipe and steam outlet pipe when the generator has completely cooled down. Tilt the equipment to take off the bottom board, and finally remove all pipes, wires and screws.

8. Replace the water level sensor:
Switch off the steam generator at the mains and remove the small cover on the equipment when the generator has completely cooled down.
Special care should be taken to the plugs of the water level sensor corresponding to the blue wire and the two white wires respectively.
Take off all the wires, screw out the water level sensor, and screw in the new water level sensor until the bottom of the plastic nut reaches the same height as the old one. Finally reconnect the blue wire and the two white wires (the blue wire must be plugged back to the right place).

Cut off the power supply before any maintenance.
Test the equipment after maintenance.

CUT OFF THE POWER SUPPLY BEFORE ANY MAINTENANCE.

TEST THE EQUIPMENT AFTER MAINTENANCE.

Trouble Shooting

Repair can only be performed by qualified professionals, for more services or technical helps please contact the dealer.
Aqua Shower Steam Generator has a self-diagnose function, and some common faults will be displayed on the LCD should they occur.

Code	Meaning	Diagnosis and Solution
-L	Temperature measured by temperature sensor is below 6oC.	Check whether the room temperature is below 6oC. The code should disappear after the room temperature reaches 6oC. Otherwise check the connection of the sensor.
-H	Temperature measured by temperature sensor is higher than 60oC.	Check whether the room temperature is above 60oC. The code should disappear after the room temperature drops below 60oC. Otherwise check the connection of the sensor.
-E	Fault on the water supply, heating elements stop working.	Check the connection and the status of the electromagnetic valve, water supply, magnetizer and water level sensor. After cleaning or replacement, restart the system and you should feel the flow of incoming water.
EE	Connection error between control panel and the main board.	Check the connection wire and connectors between the control panel and main board.

Diagnosing the Procedure.

1. Take off the U shape cover at the back of the generator and plug out the connection wire for controller, then press the "TEST" button.
If the generator can fill with water -> heat up -> produce steam, then press "TEST" button again to stop.
This means that the main circuit board is working properly and the faults should be on the controller part (including temperature sensor), please replace the faulty parts.

Otherwise the faults are in the main board, sub-board, water level sensor, inlet electromagnetic valve or inlet pipelines, please carefully test each part and replace the faulty ones.

2. If the generator can fill and drain out water properly but does not heat up, please check the connection wire between main circuit board and the sub-board, the relays on sub-board and heating elements.

3. If water comes out from the steam outlet pipe seriously, please clean or change the outlet electromagnetic valve.

4. If the system keeps on heating up even when the current temperature is more than 2 above the setting value with the indicator on, carefully test the relays on the sub-board and change the faulty ones, or change the whole sub-board.

Please refer to the circuit and connection diagrams for diagnosing and repair.
Do cut off the power supply before repair.

If problems still cannot be solved by the procedures listed above, please contact the dealer.

Warranty and Services.

- All Aqua Shower Steam Generators are guaranteed for 1 year parts and repair. And 3 years for parts only from the purchasing date.
  Damaged accessories, parts and knobs are not under warranty.

- Livinghouse has the right to decide whether to repair or exchange.
- Warranty claim approval must be obtained from livinghouse prior to shipping back the product.

- It is the responsibility of the customer to return the any faulty item.

- This warranty does not cover any defect, malfunction or failure cased by, or resulting from unauthorized installation, maintenance and repair; improper power supply; and any action which violates the manual.

- Damage caused by accident, misusing of chemistry products, or any other reason which are beyond our company's responsibilities will not be covered.

- Any product whose label, nameplate have been removed, altered or damaged is not covered either.

- Using in a salty environment or any other extreme corrosive condition is not covered by the warranty.

- After the free warranty period, repair services are still available but will be charged for.

- Our company is not responsible for any direct or indirect damage caused by the generator.

Please contact our company for further information and more details.

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