

hidrotermal[®]

STEAM GENERATOR

Hidro-ST Series



USER MANUAL

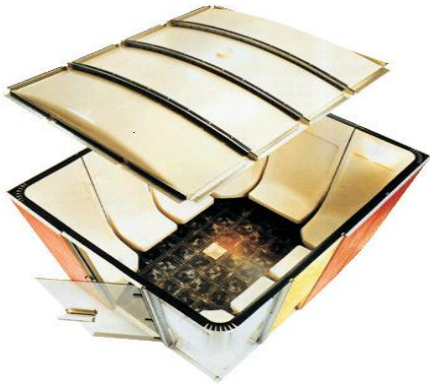
BEFORE YOU BEGIN

CHECK ALL ELECTRICAL CONNECTIONS TO ALL COMPONENTS WITHIN THE HEATER FOR TIGHTNESS. CONNECTIONS CAN BECOME LOOSE DURING SHIPMENT AND HANDLING.

WARNING

Only qualified personnel should install and maintain this equipment. Unauthorized alteration or improper maintenance of this unit may release the manufacturer from any warranty claims. The installation must be in accordance with the instructions in this manual and applicable local plumbing and electrical codes.





Steam Generator Specifications

Model No.	Room (CBM)	Power (KW)	Voltage (V)	Phase	Current (A)	Copper wire number (mm ²)
Hidro-ST30	2	3	220V	1	14	4
Hidro-ST45	3.5	4.5	220V	1	19	4
Hidro-ST60	4.2	6	220V	1	28	6
Hidro-ST60B	4.2	6	380V	3	9	4
Hidro-ST80	6.2	8	380V	3	12	4
Hidro-ST90	8.5	9	380V	3	14	4
Hidro-ST105	9.3	10.5	380V	3	16	6
Hidro-ST120	10	12	380V	3	19	6
Hidro-ST150	12	15	380V	3	23	6
Hidro-ST180	15	18	380V	3	28	6

All specifications are subject to the latest one; changes without prior notice.



1. Installation and Procedure

1-1. Installation Place

- A. The steam generator should be installed in a dry, well ventilated location, and provided adequate drainage. You can install the steam generator under a closet, attic, shelf, or basement. And it must be locked without movement. Please See Figure1.
- B. This series steam generator can be installed on the wall or on the floor, but the unit must be level precisely. There are two mounting holes on the back of the generator, the screws must set in with strong expansion bolts or equivalent supports.
- C. The steam pipe should enter into the steam room and total length less than 6meter. and set it at least 300mm above the floor or 150mm far away from the seat.
- D. The generator should be mounted in a minimum 0.25m³ space.
- E. The mounting location should minimize the number of bends and elbows in the steam lines.
- F. Should not be install in the cold area or the place easy to ice up.
- G. The steam spout, water inlet, and the drainer are installed on left, it can exchange the position depend on the locale.

Please select the best mounting location under being satisfied to the above requirement.

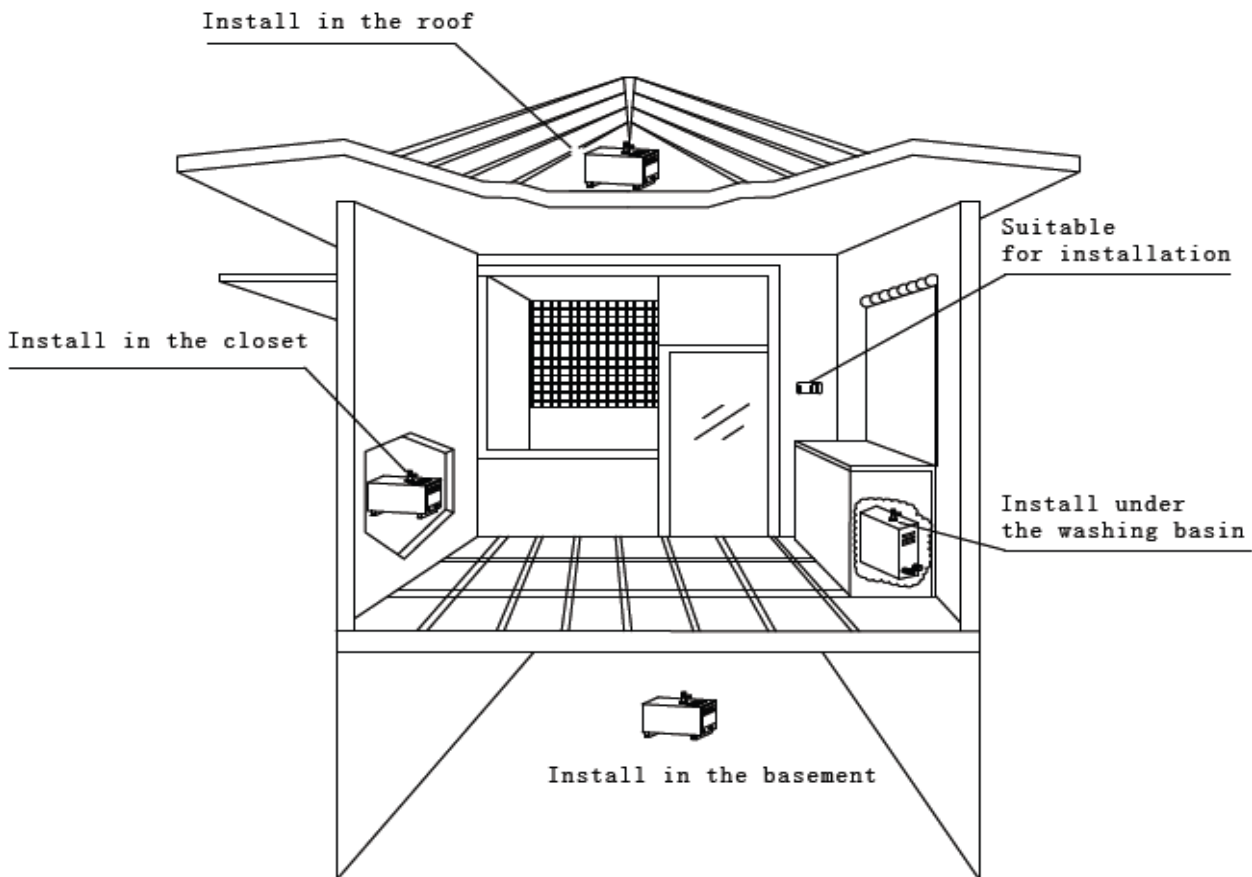


Figure 1: Location of Installation



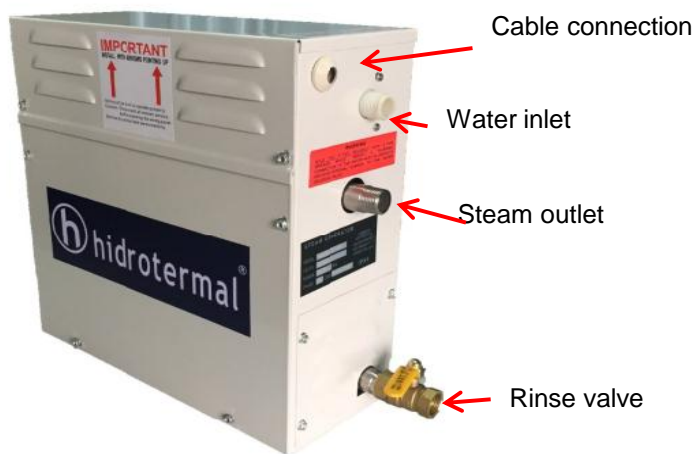
1-2. Installation and Wire connection

A. Connect the water inlet, install rinse valve and drainage pipe. Refer to A-Connection Scheme.

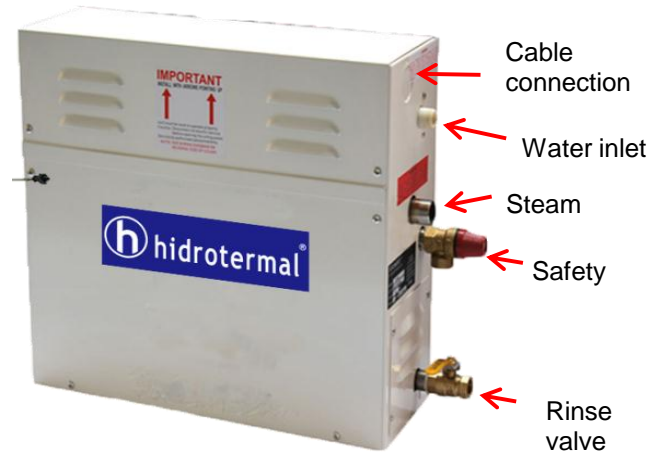
B. Connect the power supply wires respectively to L1, L2, and L3 on the junction box. Neuter wire must be connected to N and electrical grounding must be connected to earth. Refer to B-Power Connection.

C. Be sure the above-mentioned installation instructions have been correctly followed, and then the generator is ready for a trial operation in accordance with operating instructions.

1)-Connection Scheme



Hidro-ST30
Hidro-ST45
Hidro-ST60



Hidro-ST60B
Hidro-ST80
Hidro-ST90



Hidro-ST105
Hidro-ST120
Hidro-ST150
Hidro-ST180



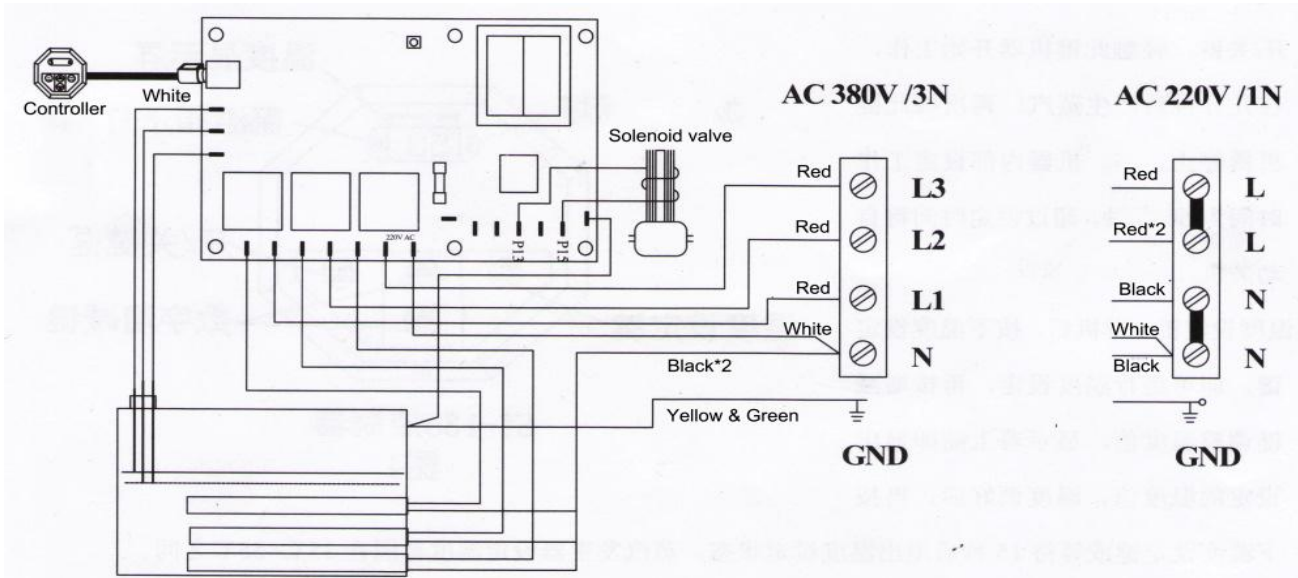
Set up the cover and nozzle to the sauna room pipe which connected from the steam outlet pipe.



Connect the controller's wire to the mainboard



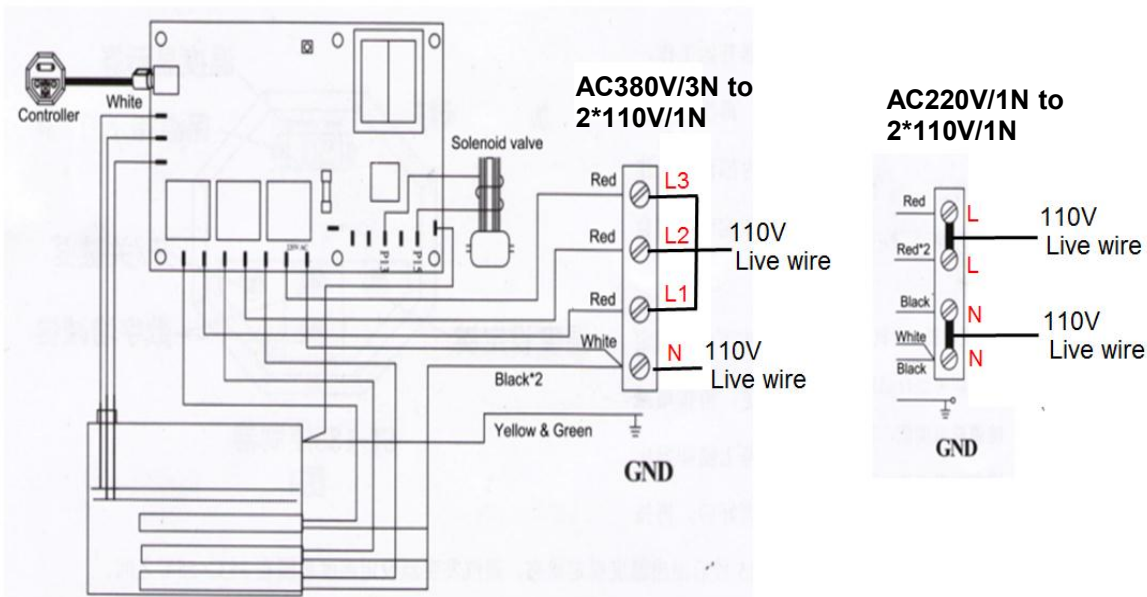
2)-Power Connection



ATTENTION:

The place for installation of the steam generator should match following conditions:

- Position the steam generator so that the piping connections, controller, cables are convenient and accessible for operations and service
- The steam generator could not be frozen or moistened, and the temperature should not exceed 40 °C (Never install the generator inside the steam bathroom or outdoors.)
- The length of steam pipe from steamer bathroom to generator should be less than 6m. The steam pipe shall slope to the steam bathroom and higher than the position of the steam head, so that condensation could drain into the steam room and will not gather in the tube. Furthermore, the steam pipe should be insulated properly.
- Install the steam head complying with the instructions. The user shall not touch the steam head.
- The water drainage channel must be opened when installing the steam generator.



ATTENTION:

Wire connection option for 4-10KW steam generator, connect the conventional power supply (AC380V/3N or AC220V/1N) to 2*110V/1N, so must match this condition:

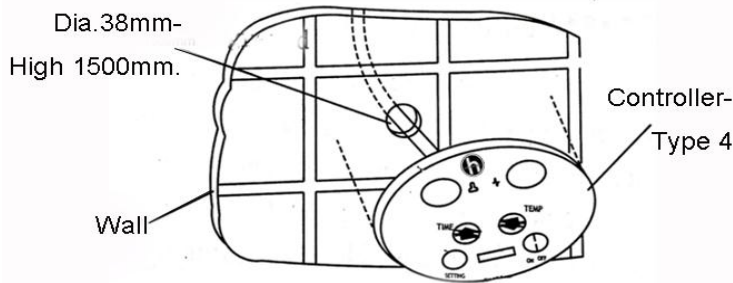
The voltage tolerance between two Live wire is 220V!



2. Operational Setting

2-1. Controller installation

- A. The controller should be installed outside of the steam room with convenience access for operations. Please install it as near as possible to the room's door. The recommended height is 1.5meter above from the ground.
- B. Dig a hole with diameter 30mm before installation, tear off the adhesive's paper behind the controller, fix the controller and then seal the sides with sealant or silicone.



2-2. Controller Operation-Type 4

A. On / off button: start or stop steam generator. This button is used to turn on or shut off the power.

1) the Timer display window. It shows the remaining time, the machine will turn off when the display reaches "0".

2) Temperature display shows the steam room inside temperature.

B. Light control button: To turn on or turn off the cabin's light.

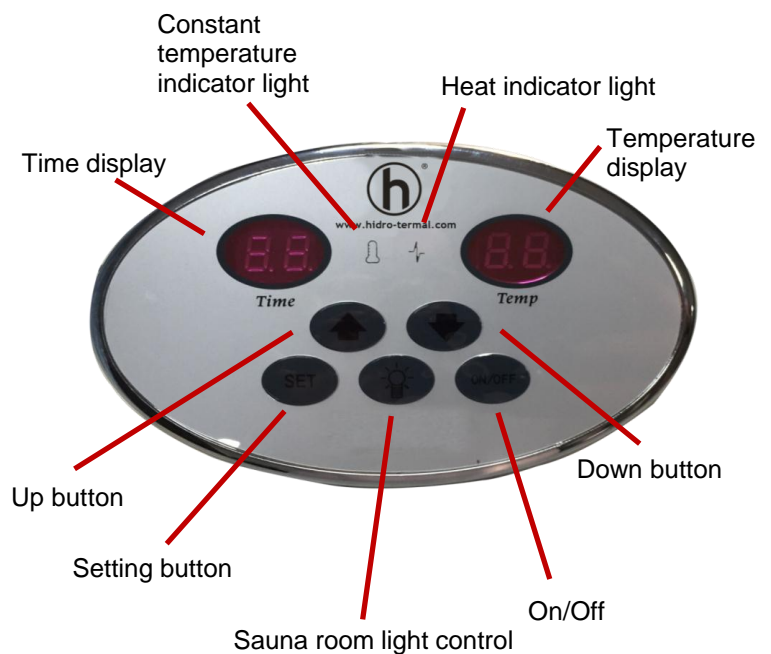
C. Setup button: Set the temperature and time.

1) Press "SET" gently and the timer display show two figures of time, press "UP" and "Down" to set your desired period, the machine will turn off when the counter precipitation "0". The Time setting range is 1 -60 minutes. Machine default time is 45 minutes.

2) Press "SET" key again, the temperature display show two figures of temperature, press "UP" and "Down" to set your desired temperature. The temperature setting range is 35-55 °C, Machine default temperature is 40 °C.

3) Press "SET" key once more to save the above setting. And the setting state will return after 15s without operation.

D. The the temperature is inside the steam room is higher than the target, the machine will stop generating steam. The constant temperature indicator light is on and the heat indicator light is off. When the temperature lower the desired temperature, the machine will continue to heat water untill arrive the temperature reach target again. The heat indicator light is on and the constant temperature indicator light is off. The steam generator will automatic control the steam room temperature within the range of +/- 2degree.



Controller- Type



WARNING

A. Electrical shock hazard-----there are no user serviceable parts in the generator. All installations and relevant services shall be performed by qualified personnel to avoid electrical shock hazard,.

B. Steam bathing time should be less than half an hour. Bathing too long may cause heart beating too fast, light heartache, feeling weak or dizzy. Should the bather stop bathing immediately as soon as the above symptoms occur.

C. Steam bath may cause tension to the bather. Thus, one who is one of the followings should be directed by physician:

- 1). Being pregnant
- 2). Having heart disease
- 3). Having high blood pressure
- 4). Having circulation system disease
- 5). After drinking
- 6). After taking medicine
- 7). Diabetes
- 8). Not feeling well

D. Children must be accompany of adult in taking sauna bath.

E. Risk of scald: Must not touch the steam head or trim during operation , Stay at least 30cm away from the hot steam escaping head. It is recommended that one should not use the generator continuously for a long time, because:

- 1). The building materials may get damaged under an overheated environment.
- 2). Overheating will present a scald hazard. Must be careful while entering the steam bathroom. If the steam room is overheated, the bather shall get out of the room immediately.

3. Maintenance

Regular checking is requested to avoid the leakage or parts damage for the steam head, pressure relief valve, accessories, connections of hermetic parts

Clean the steam generator regularly according user's water quality and using frequency:

3-1. Water rinse

Rinse once for each few hours or after every steam bathing, depends on different situations.

- A. Disconnect the electricity power.
- B. Open the rinse valve and water supply valve.
- C. Connect the electricity power.
- D. Rinse for 10 minutes.
- E. Switch off the electricity power, close the water supply valve and the rinse valve.

3-2. Citric acid cleansing

- A. Mix 50-80 grams of citric acid with one liter water.
- B. Put the steamer upside down with the pipe up, then take off the Rinse valve.
- C. Inject the blend citric acid into the steam tank through a funnel, as figure 2.
- D. Set up the rinse valve and turn it off, then put the steamer on a flat ground for motionless for 20 minutes. As figure 3.
- E. After 20 minutes, turn on the rinse valve and let the citric acid flowing out.
- F. Open the water supply valve.
- G. Connect the electricity power.
- H. Rinse for 5 minutes.
- I. Switch off the electricity power, shut off the water supply valve and the rinse valve.

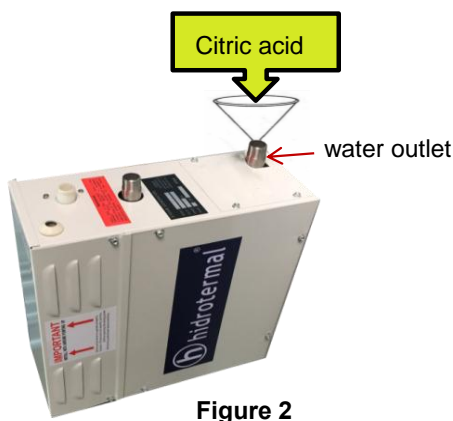


Figure 2



Figure 3



4. Trouble Shooting Guide

There are user serviceable parts in the generator. All repairs should be performed by a qualified service person. The Trouble Shooting Guide below is for general reference only.

SYMPTOMS	PROBABLE CAUSES	ACTION TO BE TAKEN
No steam while controller has been turned ON.	1. Steam generator hasn't been connected with the water supply	1. At least wait 10 minutes after the opened the controller.
	2. The controller fails to function	2. Check if the circle protector is on the "ON" position.
	3. The steam generator fails to function.	3. Check if the power is on and the water supply valve is open.
	4. Rinse valve hasn't been shut off	4. Check if the rinse valve of generator is closed. Close the circuit protector and call our maintenance service center of the above four steps failed.
Steam not stop after turn off the controller	1. The controller fails to function	1. Switch off circuit protector.
	2. The steam generator fails to function.	2. Call our maintenance service center.
Water leak out from the steam head	The steam generator fails to function.	1. Switch off circuit protector.
		2. Shut off water supply valve.
		3. Call our maintenance service center.



5. Choose a Right Steam Generator

For comfort and leisure, to choose a correct steam generator is same important as to design the steam room.

A. Considerations in Choosing a Model

1. Water Quality

More impurities or minerals in water, should the steam generator be rinsed more often. Automatic cleaning should be taken into consideration so as to save manual labors if the water quality is poor.

2. Heat Control

A model, which has a temperature control, will be the best choice if steam generator is used frequently, or if you want to keep a comfortable temperature constantly in steam room for a longer time.

3. Digital Indicate

Steam bather can choose a simple operation way or a complex feedback control to set the temperature, steam bathing time and procedures.

4. Lamps

lamps in sauna-bath room must be of safe low voltage type

B. Considerations in Choosing Power Ratio and Voltage of the Steam Generator

1. The volumes and the surface of the steam bath room.

2. The quality and heat transmitting of the materials of all surfaces in sauna bath room.

3. The height of the ceiling and the benches.

4. If the outer wall of the steam room can be able to withstand the great temperature changes.

5. Voltage of electric source and phase electricity(220V, 380V, a single phase electricity or three phases electricity). Lower voltage causes less steam.

6. When installing the steam generator, we recommend using a larger size cable than normally used.

C. Announcement

The above messages are recommendations only. These recommendations may not be suitable as the conditions of installation and areas are different. The effect of the steam generator can not get guaranteed if one chooses the building materials and builds rooms only depending on the above information.

D. Preparations

1. To calculate the volumes of a closed steam bathroom: length X width X height=volume. If there are outshoot surfaces need heating, their volumes shall be added: length X width X height=volume

2. The above calculations should take the following factors into consideration:

a). Tiles, polypropylene or fiber glass steel

b). The mortar bed for tiles or concrete foundation

c). Cast-iron pipe

d). If temperature declining is possible, to add 10% to 100% to each glass or glass wall and to the outer wall

e). Natural stones e.g. marble.

Totals=1 + 2 a+2 b+2c+2d+2e

3. Compare the size chart of first page and choose models according to the above calculating results.



6. How to build a steam bath room

Generally, steam rooms are built with glass steels or acrylic materials and building materials. Easy installation and good insulation characterize both the glass steels and acrylic materials. However, they are sufficiently poor heat resistant, especially easily break and get damaged, while the cost is high. They are only suitable for temporary entertainment centers. For the steam room built with building materials, the only need is to take some measures to keep insulated. They are not only low in cost with excellent heat resistance and long service life, but also can be made according to your needs with no building space limits. In such case, a safe, comfortable and low cost steam bath room with long service life will be a real thing for you. Steam bath room in most of counties and regions are made in the way.

Chief Instruction

The following messages are aimed to help the person who install steam generator or build steam bath room only. Subject to the complexity of the building and the climate varies etc., this chief instruction is a recommendation only.

Aims

When you plan to build a steam room, keep comfort and leisure as an aim in your mind. A room with correct designs and structures should be installed comfortable seats and in which the temperature can be reached to 30-40°C in 15 to 20 minutes. If the space allows, it will be better to install seats with backrest or reclining benches, these sorts of seats will make more comforts.

Considerations in Designing a Steam Room

1. Avoid using decay building materials because the steam room is highly humid and wet.
2. All surfaces in steam bathroom must be protected with water proof materials, e.g. tiles.
3. Both seats and ceiling should have a certain slope, 15cm for each meter. Such kind of design reduces the space of the steam bathroom.
4. Easy cleaning and drainage must be taken into consideration when designing the floor drainage. For the consideration of safety, the floor must be slipping proof.
5. The heights of steam bathroom must be limited to 2.4m or below. Heights over 2.4m will cause a high or adequate temperature around the ceiling, while the temperature around the floor is low.
6. The place for installation of the steam generator should satisfy the following conditions:
 - a) Have enough space for sufficient operation and for being in the situation that the steam generator needs maintenance or fails to function and needs spare parts replacements.
 - b) The steam generator must not be frozen or moistened, and the temperature must not exceed 40°C (Never install the generator inside the steam bathroom or outdoors.)
 - c) The steam pipe from steam bathroom to generator should be less than 6m. The steam pipe shall slope to the steam bathroom and be higher than the position of the steam head, so that condensation shall drain into the steam room and will not gather in the tube. Furthermore, the steam pipe should be well insulated.
 - d) To install the steam head complying with the instructions. The owner shall not touch the steam head.
 - e) The water drainage channel must be unblocked when you are installing the steam generator.
7. When you decide to use a certain materials for the inner walls of your steam bathroom, please take a contact with the manufacturer to make sure that this material is of heat resistant and anti-humidity type.
8. Steam bathroom must be completely closed.
9. Situating a window at the ceiling is not recommended. If do so, the materials must be of waterproof type and the window shall be tightly closed when in use.
10. Window and natural lights are not recommended either. If do so, must be sure the height and size of the window in the steam bathroom will not affect keeping a comfortable temperature in a long period of time.

