

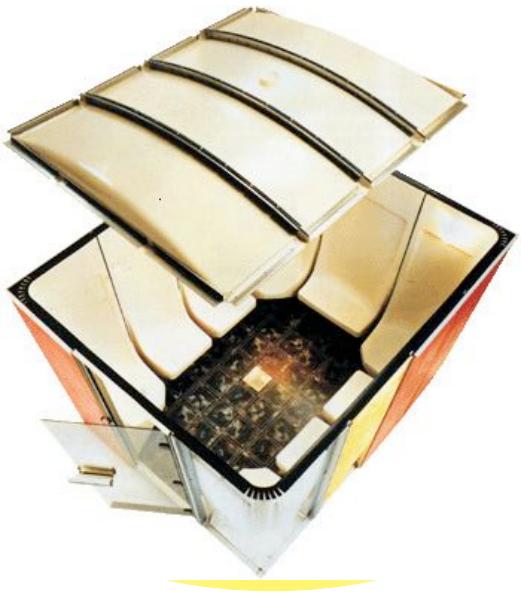


# STEAM GENERATOR

## Hidro-ST Series



## INSTRUCTION MANUAL



## Specifications of steam Equipment

Model No.	Max. space for heating (m³)	Power (KW)	Voltage (V)	Phase	Current (A)	Copper wire number (mm²)
Hidro-ST30	2	3	220V	1	14	4
Hidro-ST45	2.8	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.

# Section 1: Operations of Hidrotermal Steam Generator

## I. Installation

1. Horizontally fasten the steam generator to the location for installation.
2. Fix the controller to the inside or outside of steam bath room. Connect the connection port of controller to the port of controller in steam generator. Temperature sensor must be fastened onto the top or a higher position inside sauna room.
3. Connect water inlet, install rinse valve and drainage tube. Refer to A. Connection Scheme
4. 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.
5. 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.

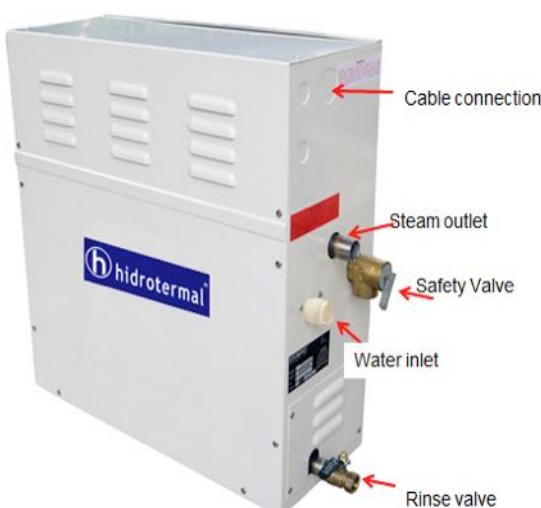
### A. Connection Scheme



Hidro-ST30  
Hidro-ST45  
Hidro-ST60



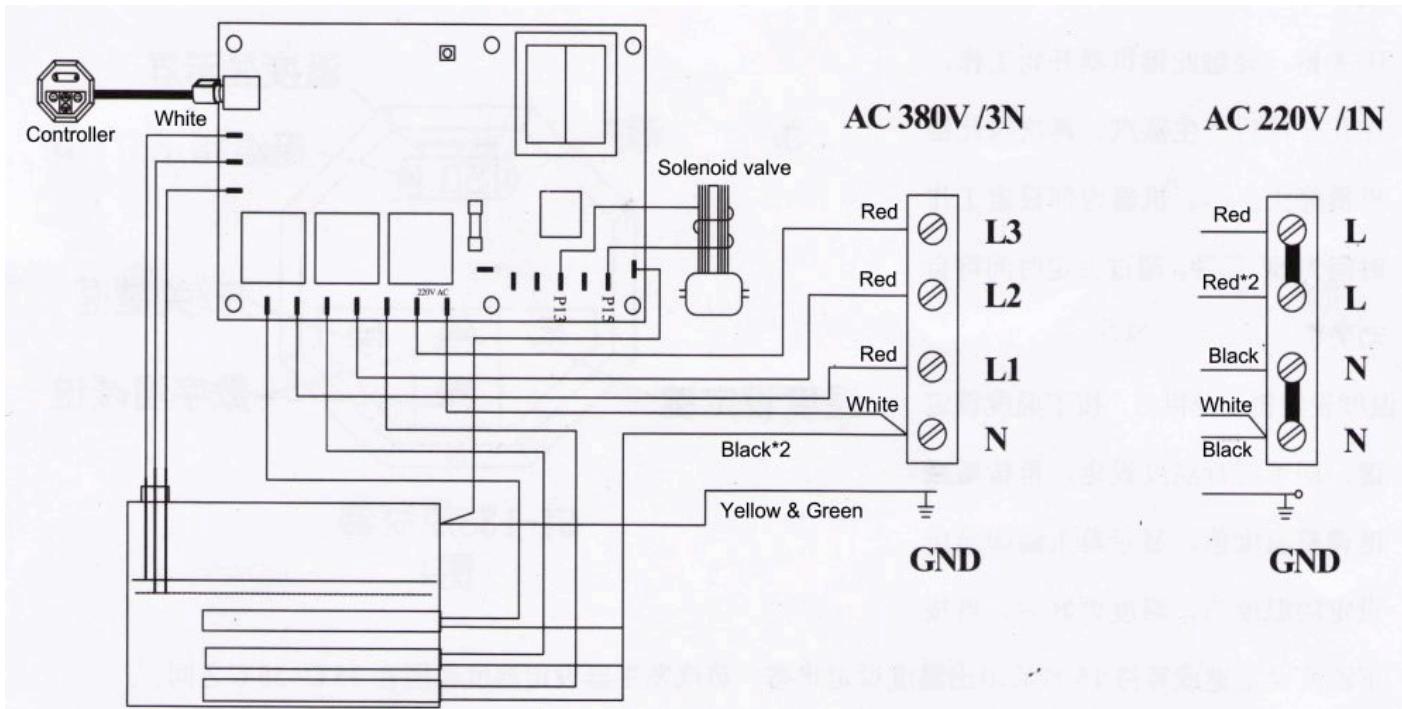
Hidro-ST60B  
Hidro-ST80  
Hidro-ST90



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



## B. Power Connection



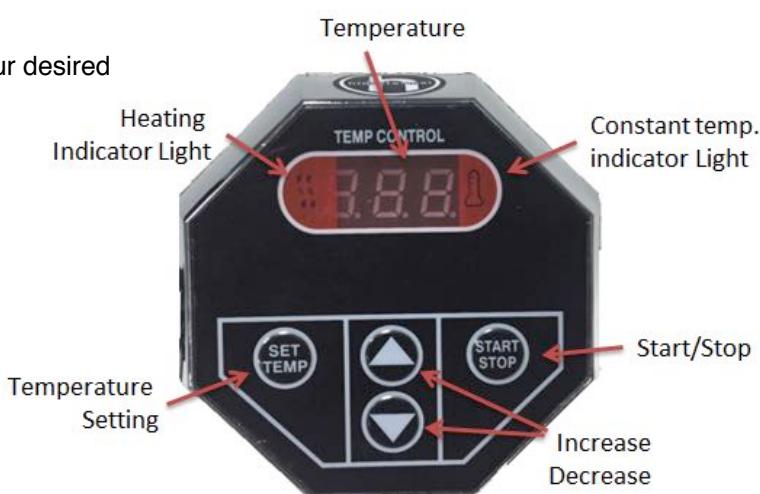
### ATTENTION:

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 6 m. 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.

## II. Usage

1. Be sure that the power supply switch and water supply valve of the steam generator are on the "ON" position. The controller is now on, it is indicating the room temperature.
2. Press "SET TEMP", then press  $\Delta$  or  $\nabla$  to indicate your desired temperature. Then press "SET TEMP" again to input. Steam generator will then automatically control the temperature in steam bath room.
3. Press "START" on the controller, the steam generator will give out steam after few minutes.  
If need to stop, press this button again.
4. The machine pre-set working time is 60min, The machine will stop if over working 60min.
5. "Heating Indicator Light" it is on when the machine is heating.
6. "Constant Temp. Indicator Light" it is on when the room temperature achieve the setting one. The machine automatically control the temperature in steam bath room.



## **WARNING**

- 1.Electrical shock hazard -----there are no owner serviceable parts in the generator. To avoid electrical shock hazard, all installations and relevant services shall be performed by qualified personnel.
- 2.Steam bathing time shall 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.
- 3.Steam bath may cause tension to the bather. Thus, one who is one of the followings should be directed by physician:

A. Being pregnant	E. After drinking
B. Having heart disease	F. After taking medicine
C. Having high blood pressure	G. Diabetes
D. Having circulation system disease	H. Not feeling well
- 4.Children must be under the company of adult in taking sauna bath.
5. Risk of scald: Must not touch the steam head or trim during operation, as it is hot. Stay at least 30 cm away from the hot steam escaping from the steam 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.

## **Section 2: Maintenance of Steam Generator Series**

The steam head, pressure relief valve, accessories and the connections of hermetic parts of steam generator must be checked regularly to avoid water leaking and being damaged.

Take the following cleaning steps according to the water quality in owner's area and the frequency of usage:

- 1.Rinse once for a day, for 8 hours, for 4 hours, for 2 hours or after every steam bathing depending on different situations.
- 2.Open the rinse valve and water supply valve.
- 3.Connect the electricity power.
- 4.To rinse for 10 minutes.
- 5.Switch off the electricity power, shut off the water supply valve and the rinse valve.

## **Section 3 : Trouble Shooting Guide**

There are no user serviceable parts in the generator. All repairs should be performed by a qualified service person. The Trouble Shooting Guide below is meant as a general aid only.

SYMPTOMS	PROBABLE CAUSES	ACTION TO BE TAKEN
No steam shile controller has been turned to the "ON" position	1. Steam generator hasn't been connected to the water supply	1. At least 10 minutes wait after the controller opened.
	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. Please closed the circuit protector and call our maintenance service center of the above four steps failed.
Still produces steam when the controller has been turned to the "OFF" position	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 flows 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.



## Section 4: 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 the 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:  $\text{length} \times \text{width} \times \text{height} = \text{volume}$ . If there are outshoot surfaces need heating, their volumes shall be added:  $\text{length} \times \text{width} \times \text{height} = \text{volume}$
- 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 following and choose models according to the above calculating results.

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## **Section 5: How to build a steam bath room and choose a right steam generator**

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. Please take a contact with your architect, manufacturers or professional engineer. See the last section of "Statement"

### **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 waterproof 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 2.4 m or below. Heights over 2.4 m 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 6 m. 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.

