

## ***Steam Online***

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### **Installation and operating instructions with checklist for faults**

Read through these instructions carefully before installation, and follow them in every respect to ensure flawless operation every time. After installation, please give these instructions to the owner or the person who will operate the steam room.

**PLEASE KEEP THESE INSTRUCTIONS IN A SAFE PLACE - THEY CONTAIN IMPORTANT INFORMATION ABOUT SERVICE AND MAINTENANCE PROCEDURES**

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**IMPORTANT!**

- \* Do not make sharp bends or "elbows" along the steam pipe.
- \* Do not direct the steam jet at a wall, seating or any other object. There should be a free space of at least 70 cm (28") in front of the steam nozzle.
- \* Do not allow sags or "water pockets" along the steam pipe and/or the ventilation duct. **IMPORTANT!** There must not be any type of obstruction along the steam line, such as a stop-off valve or tap. The internal diameter of the steam pipe must not be reduced.
- \* Ensure that steam rooms that are used continuously for more than two hours at a time are ventilated by 10–20 cubic metres of air per person and hour.
- \* The power supply to the steam generator via the feeder cable must not be broken. For that reason, avoid switches, etc., along the feeder cable.
- \* Make sure that the drainage pipe slopes all the way down to the waste outlet.
- \* The ambient temperature outside the steam room and around the steam generator must not exceed 40°C. Do not install generator in overly humid space conditions.
- \* Place the thermostat sensor as far away from the steam jet as possible.
- \* De-scale the steam generator at regular intervals as instructed. (Please read the section 'De-scaling' for further details). In hard-water areas, where hardness exceeds 150 TDS we recommend the installation of a water softener or RO water supply.
- \* Clean the steam room regularly. See the section on "Cleaning the steam room" under Operating instructions.
- \* CAUTION! Stay at least 12" (30 cm) away from hot steam escaping from steam outlet.
- \* IMPORTANT. The steam generator's wastepipe must always discharge into a drain outside the steam room itself. The water is very hot.

in the ducting, where condensed steam may collect as water and cause a blockage. If a water pocket is inevitable, install a trap to drain the condensed water into the waste outlet. The air outlet vent must be of sufficient size to allow the evacuation of 10–20 cubic metres of air per person and hour.

Mechanical ventilation. If the unassisted through-flow of air is insufficient, due possibly to negative pressure in the room supplying air to the steam room, a mechanical exhaust fan must be installed and adjusted to extract a minimum of 10 and a maximum of 20 cubic metres of air per person and hour.

**Steam generator functions.**

All UW Steam Generators incorporate these features:

- z Stainless steel water reservoir
- z Tubular heating elements, resistant to rust and acid
- z Electronic water-level regulator
- z Electronic water level control
- z Continuous steam production
- z Always the right output, regardless of quantity and quality of water
- z Built-in safety valve
- z Built-in temperature cut-off
- z Equipped for corded control panel operation

**Manual draining.**

After every use of steam machine, we recommend manual draining of reservoir by turning the drain valve on the underside of the steam generator. This function considerably reduces the build-up of calcium carbonate and other deposits in the water reservoir.

**WARNING.** The water is very hot right after use of steam generator, so wait for at least 30 minutes before manual draining of reservoir water.

**De-scaling.**

Some of the limescale released from the water in the steam generator is flushed out in the manual draining and cleaning process; some, however, remains. For this reason it is essential that reservoir be emptied each time periodically.

To maximize serviceable life and reduce the need for the manual removal of limescale deposits, we recommend that steam generators for use in public facilities should be connected to a water softener which removes calcium from the water.

The water softener must not generate any froth on the water nor produce any harmful chemical reactions. If so, the generator may indicate the wrong water level and trigger the temperature cut-off. (Repeated activation may result in the failure of the elements.)

The manual removal of limescale must be carried out at regular intervals as specified in the table below.

For normal private use, there is little need for the manual removal of limescale, unless the water is very hard. Even so, it is advisable to de-scale the steam generator at least once per year. This removes calcium and other deposits that have become encrusted on the walls and elements of the water reservoir.

Instructions for de-scaling UW Steam Generator

- Switch on the steam generator and let it run until the water in the tank begins to boil.
- Switch the generator off and wait for approximately 5 minutes.
- Unscrew the capping nut from the 3-way connector on top of the steam generator.
- Use a funnel to pour the de-scaling agent into the tank via the 3-way connector.
- Screw the capping nut back in place on the 3-way connector and leave the de-scaling agent to work.
- After approximately 1 hour empty the generator and flush tank with water. After this the steam generator is once more ready for use.

Do not use the steam bath until after the de-scaling operation has taken place.

How often manual de-scaling needs to be done depends on the quality of the water, the output of the steam generator and the total operating time.

**GENERAL INFORMATION**

Fig. 1.

Examples of ventilation, electrical and plumbing installation.

A = feeder cable from mains to steam generator. There is no need to fit a switch along this cable.

B = control cable from mains supply via distribution box to steam generator.

C = temperature sensor cable.

D = cable to external on/off switch (if any).

E = steam pipe.

F = drainage pipe.

G = incoming water.

H = air inlet.

I = air outlet, leading out via a ventilation duct into the open air.

**The steam room.**

The steam room should not have any other source of heat than the steam generator. The ambient temperature around the steam room and the steam generator should not exceed 40°C. If there is a sauna next to the steam room, the sauna must be well insulated, and placed so as to give at least 10 cm (4") free space between the outside walls of the sauna and the steam room.

**Location of the steam generator.**

The steam generator must be installed by an authorized electrician/plumber. The steam generator must be permanently installed and secured against existing wall. It is to be located outside the steam room itself, but as close to it as possible – no more than 15 m (50 ft) away. Efficiency of steam generator falls drastically if steam pipe line is more than 4m away from steam room and needs proper insulation for efficiency.

The steam generator must be placed in a dry and ventilated space with a waste outlet, above, below or on the same floor as the steam room, and concealed in a cupboard, wardrobe, etc. (Never directly above a waste outlet or in an aggressive environment).

The steam generator must be mounted perfectly horizontal, at a suitable height above the floor to permit the drainage pipe to slope towards the waste outlet. To achieve this, it is necessary to place the steam generator on wall brackets.

**Control panels.**

To be installed outside the steam room, at any distance from the steam room. Control panels are electronically operated and are available in the following models:

CP 1. Manual on/off. Maximum 30 minute auto cut off.

CP 2. Manual on/off, Temperature linked automatic on/off and Manual light on/off. Maximum 30 minute auto cut off.

**Floors and drainage.**

There must be a drain in the steam room, and the steam room floor must slope towards the drain. The floor may be covered with seamless vinyl flooring, quarry tiles, etc. The requirements for sub-floor work, joining, etc., are the same as for an ordinary shower.

PLEASE NOTE. Contact with steam and hot water may cause plastic wallcovering/flooring close to the steam head to become slightly discoloured.

**Ventilation.**

As a general rule, steam rooms which are in use for less than two hours at a time require no special ventilation. In order to ensure proper hygiene and trouble-free operation, steam rooms which are in continuous use for more than two hours at a time should be ventilated with 10–20 cubic metres of air per person and hour.

If there is a gap above the steam room, do not seal it. To ventilate a cavity above the sauna, drill or cut at least one ventilation hole (1000mm<sup>2</sup>) into the cavity through the wall on which the sauna door is located.

The air inlet may be an opening placed low down on the same wall as the door, or it may be a gap under the door. The air outlet should be located high up on a wall or in the ceiling, and as far away from the air inlet as possible. However, the air outlet must not be located above the door or directly above any of the seats. Connect the outlet to a ventilation duct discharging into the open air. Use existing ducting, if possible. The ventilation ducting must be 100% steamtight and watertight, and made of materials which will not deteriorate or corrode in the high humidity. Do not allow the formation of "water pockets", caused by sags

**Operating time before de-scaling**

(To reduce the need for manual removal of limescale we recommend the use of softened water in public)

Steam generator output kW	Amount of de-scaling agent (1pack 80g)	Operating time for different water hardnesses (in mins)			
		Softened Under 90 TDS	Soft TDS 90-100	Hard TDS 100-150	Very hard Over 150
3.5-4	2 pack	3800	1300	500	190
4-6	2 pack	2600	900	300	130
6-9	2 pack	1700	600	200	90
9-12	2 pack	1300	400	160	70

## HOW TO MAKE THE MOST OF A STEAM BATH.

- \* Shower and wash before starting your steam bath.
- \* Take a towel to sit on in the steam room.
- \* Relax and enjoy the soothing clouds of steam. You can even listen to your favourite music while you do so.
- \* Cool down now and again with a refreshing shower. Alternate between the steam bath and the shower for as long as you feel it is comfortable.
- \* After your last spell amongst the clouds of steam, you'll find a long, cool shower a real delight.
- \* If you have option of chilled shower, use that for contrast-thermo-therapy to get a sense of heaven.
- \* Let your body dry off naturally before putting your clothes on. Relax, treat yourself to a cold drink and enjoy a sensation of true well-being. Don't get dressed until your body has cooled down and your pores have closed once again.

### Cleaning the steam room.

Rinse seats and flooring with warm water (do not use a high-pressure hose) each time the steam room has been used. Wash the seats regularly with a mild soapy solution. Stubborn stains can be removed with ethanol or petroleum (mineral) spirits. Never use scouring powder, strong alkaline cleaners or aggressive solvents on the seats and walls in the steam room. It is important that the steam room floor is cleaned thoroughly – right into the corners. Scrub clean with hot water and a floor cleaner, which will remove grease and grime.

### Shower in the steam room.

We always recommend installing a shower in domestic steam rooms. After all, a steam room also makes the best shower room imaginable. And it is so pleasant to cool off with an invigorating shower now and again during a steam bath.

**Fig. 2.**

Measurements in millimetres: UW Model LXV & C Steam Generators.

**Fig. 3.**

Measurements in millimetres: UW Model CL & CCC Steam Generators.

### Required output in relation to cabin size:

kW	Min/Max volume of the steam room in cubic feet		Steam prod. kg/h
	Material		
	Fibre, Corean, Acrylic, Glass, Aluminum Composite Panel	Tile, Stone, Concrete	
4.0	Up to 100	Up to 65	5
6.0	100-140	65-100	8
9.0	140-200	100-150	12
12.0	200-400	150-300	15

## PLUMBING INSTALLATION

To be carried out only by a qualified plumber.

**Fig. 4.**

Steam Generator Inlet / Outlet Piping Diameter specifications

A = steam outlet.

B = drainage connection. (manual valve)

C = water connection with internal filter

Water connection: connect hot or cold water to pipe joint

1 on the steam generator. Hot water allows faster heating. A flexible reinforced rubber hose (approx. 2 metre [6'6"] long) is used to connect the water piping (internal  $\varnothing$  at least 12 mm [ $\frac{1}{2}$ "]) and the steam generator to prevent noises in the system.

**IMPORTANT!** Flush the pipes thoroughly before connecting the incoming water supply to the steam generator.

Flushing the pipes prevents any metal filings or other foreign bodies from getting into the steam generator's system.

### Note:

In hard-water areas, where TDS levels exceed 150PPM, we recommend the installation of a water softener to remove calcium from the water. The water softener must not generate any froth on the surface of the water or produce harmful chemicals. This is especially advisable for public installations.

**Steam pipe:** Connect the pipe joint to the steam outlet on the generator, with the capping nut upwards. Connect a length of GI/Copper piping (internal diameter at least 12 mm [ $\frac{1}{2}$ "]) to the steam outlet on the pipe joint. The steam pipe must slope down towards the steam room and/or the steam generator – or towards both.

**Fig. 5.**

**IMPORTANT!** There must be no "water pockets" or sags where steam may condense and collect as water along the piping between the steam generator and the steam room.

**Fig. 6.**

Plan for as few bends as possible in the steam pipe. Such bends are to be gently curved, with a minimum radius of 5 cm (2"). Avoid any sharp "elbows" in the pipes.

**IMPORTANT!** There must not be any type of obstruction along the steam line, such as a stop-off valve or tap. The internal diameter of the steam pipe must not be reduced. If the steam pipe is more than 3 metres (9'9") long, it should be insulated along its full length. The distance between any combustible material (e.g. wood) and an uninsulated steam pipe must not be less than 10 mm (0.4").

### Drainage

Drainage from the steam generator. Fit the drainage pipe (copper piping with minimum 6 mm internal diameter) to manual drain valve on the steam generator. The

pipe must lead directly to the nearest drain outside the steam room itself. The temperature of the water that is drained off is approximately 95°C/200°F.

**IMPORTANT!** There must be no blockage of any type (tap, faucet, etc.) along the drainage pipe. Regardless of where the drainage head is located, it must slope all the way from the steam generator to the waste outlet. Under certain conditions, it may be necessary to place the steam generator on wall brackets or a stand to achieve the right angle.

## ELECTRICAL INSTALLATION

To be carried out only by a qualified electrician.

The power feed to the steam generator is taken directly from the mains fuse box. There must be no switches, etc. along this feed line. Don't forget to earth the unit!

### Fig. 1 – steam bath.

- 1 = steam generator.
- 2 = thermistor (sensor).
- 3 = control panel.
- 4 = external on/off-switch (if any).
- 5 = mains fuse box.

### Lighting.

Can be regulated by our control panel.

Maximum lighting voltage: 24 volts. Carefully seal all holes made for wiring.

Connect the lighting according to the wiring diagram.

### Placement of the temperature sensor.

Place the sensor 150–170 cm above floor level inside the steam room.

**Important:** Place the sensor as far from the steam jet as possible. It must not be hit by the jet directly or indirectly. The thermistor wire can be extended outside of the steam room with a shielded low-voltage cable (2-core).

### Shielded low-voltage cable.

The control cable between the CP1, CP2 or on/off switch and steam generator must be a shielded low-voltage cable (LiYCY, 6-core). Connections to be made are mentioned on the underside of steam generator.

**WARNING! SEVERAL SUPPLY CIRCUITS. CHECK THAT THERE IS NO CHARGE IN THE MACHINE BEFORE DOING ANY MAINTENANCE WORK!**

### Checking and fault-finding.

In the event of faulty operation, first check the following:

- \* Are the control panel and steam generator wired up in accordance with the wiring diagram?
- \* Is the steam generator correctly installed in accordance with these instructions?
- \* Does the drainage pipe slope down properly towards the waste outlet?
- \* Is the filter clogged? The filter is located at the point where incoming water is fed into the generator. To clean the filter, disconnect the feed pipe, remove the filter and rinse it free from particles of calcium carbonate and other deposits.
- \* Are there any sags along the steam pipe or along the ventilation duct leading from the steam room?
- \* Are there any sharp bends in the steam pipe? (the minimum permitted radius of bends is 50 mm, 2")
- \* If there is a tap on the water supply to the steam generator, make sure this is not closed.
- \* Does the construction and ventilation of the steam room comply with UW's instructions?

### Checklist

with alternative causes of problems and suggested actions.

#### The steam room maintains the desired temperature (40-50 degrees Celsius) but no steam is produced.

*Cause: Insufficient ventilation in the steam room.*

*Solution: Increase ventilation.*

*Cause: ambient temperature of steam room is already high.*

*Solution: make sure steam room is not next to sauna room and hot air causes steam room temperature to heat up. Ensure this is not the case.*

*Cause: Thermometer is faulty / wrongly placed.*

*Solution: Replace thermometer / change location of thermometer. It should at least be 5-6 ft in height and placed on a wall further away from the steam outlet.*

#### Steam room takes abnormally long to heat up.

*Cause: The generator is not powered correctly according to room size and material of construction. See table.*

*Solution: Replace the steam generator with that of appropriate wattage.*

*Cause: Excessive ventilation in the steam room.*

*Solution: Reduce ventilation of the room.*

#### Neither steam nor heat is generated in the steam room.

*Cause: Blown fuse in the mains fuse box.*

*Solution: Replace fuse.*

*Cause: Blown fuse in the steam generator.*

*Solution: Replace fuse.*

*Cause: Water not reaching steam generator.*

*Solution: Open the tap connected to the inlet pipe to allow incoming water to flow into steam generator.*

*Cause: The control panel is incorrectly set*

*Solution: Check the temperature setting on the control panel.*

*Cause: The solenoid valve for water supply has stuck.*

*Solution: Remove the solenoid valve and clean off any metal filings or other foreign bodies.*

*Cause: Excessive calcium carbonate deposits in the steam generator's water reserve.*

*See test 1*

*Solution: Replace heater / level sensors / reservoir.*

*Cause: Thermal safety cut has been activated. See test 4.*

*Solution: Check and remedy faults of steam pipe / water inlet / water reservoir. The steam pipe might have too many bends hampering the smooth flow of steam causing thermal safety cut. Water might not be reaching in desired pressure of 4Kg/sq.cm. Reservoir maybe clogged with limescale.*

*Cause: Circuit board or control panel malfunction.*

*Solution: Replace faulty component.*

#### Hot water runs from the steam head, no steam produced in steam room.

*Cause: The solenoid valve for incoming water has stuck, due to accumulated deposits of foreign bodies or an electrical malfunction. See test 3.*

*Solution: Remove the valve and clean it or rectify the electrical malfunction.*

*Cause: The solenoid valve is broken.*

*Solution: Replace the valve.*

*Cause: Malfunction in the circuit board.*

*Solution: Replace the circuit board.*

#### Hot water runs in spurts or in a slight, even flow mixed with steam.

*Cause: Small water pocket along the steam outlet.*

*Solution: Eliminate water pocket.*

*Cause: Steam pipe is uninsulated along too great a portion of its length.*

*Solution: Insulate the steam pipe.*

#### Continuous hot water leak from steam generator drain

*Cause: Drain valve malfunction.*

*Solution: Test the valve manually. If faulty, replace the valve.*

#### Thermal safety cut-offs activated

*Cause: Steam pipe is blocked. See test 4*

*Solution: Remove blockage.*

*Cause: Internal diameter of steam outlet pipe is smaller than optimal. See test 4.*

*Solution: Steam outlet pipe to be at least 12mm, 0.5" internal diameter.*

*Cause: There are bends in steam pipe.*

*Solution: There should be no bends along the steam outlet pipe. If there is a bend, use rounded elbows only with minimum radius of 40mm, 2".*

*Cause: Large water pocket somewhere along the steam pipe. See test 4.*

*Solution: Eliminate water pocket.*

*Cause: Excessive calcium carbonate deposits in the steam generators heater/ reservoir / level sensors. See test 1.*

*Solution: Replace the heater / reservoir / level sensor.*

#### Erratic steam production right from the start.

*Cause: Thermostatic sensor is wrongly placed. See test 2.*

*Solution: Move sensor or alter the direction of the steam jet.*

*Cause: Calcium carbonate or other foreign bodies stuck in solenoid valve.*

*Solution: Remove filter from solenoid valve and clean.*

*Cause: Calcium carbonate layer stuck on level sensors*

*Solution: Remove level sensors and service with descalent before replacing. Else, replace component.*

### Test 1

#### Test for calcium deposits in the reservoir.

Remove the heater and examine tank with the help of a flash light. If there is a layer of calcium carbonate extending more than 2 centimeters above the bottom of the tank, the reservoir has not been serviced well. Try servicing the reservoir or replace faulty parts like heating element / level sensor / reservoir.

### Test 2

#### Temperature sensor test.

Soak a small towel in cold water. Hang the wet towel over the thermostat sensor. If within 20 minutes, the steam generator has started to produce steam continuously, the equipment is not defective, but the temperature sensor is located in unsuitable position, or the temperature set on control panel is too low. If steam production does not begin, use the checklist to find out the cause.

### Test 3

#### Solenoid valve check.

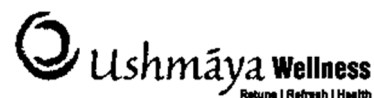
Use the control panel to switch off the steam generator. If water continues to trickle out of the steam head more than 10 minutes after the control panel has been switched off, the cause is dirt in the solenoid valve. Remove and clean the valve.

If the problem persists, the cause is an electric fault (incorrect connection or circuit board fault). Or alternatively, excessive calcium carbonate has accumulated in the reservoir/ See test 1.

### Test 4

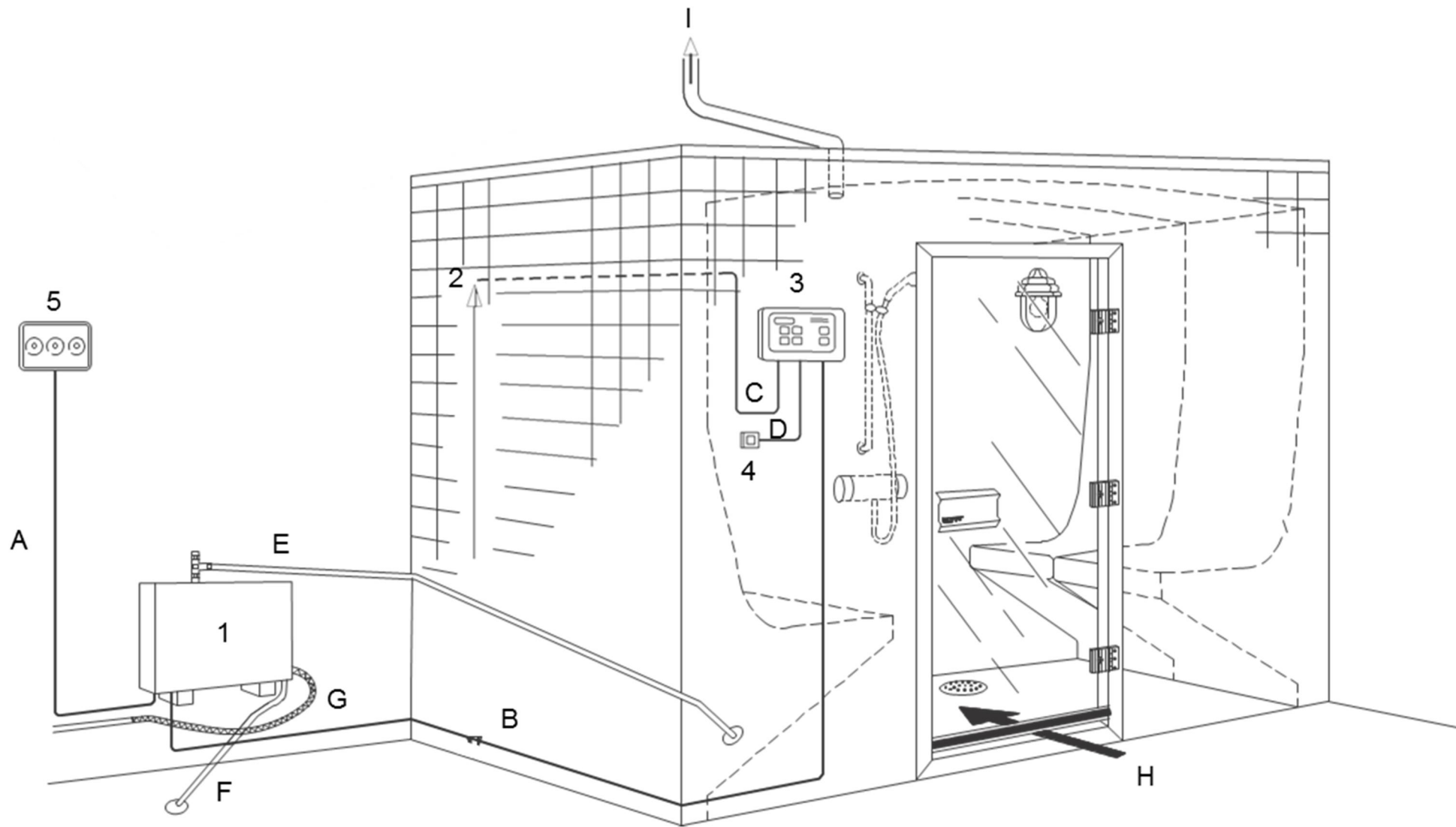
#### Steam pipe test if the safety valve or the temperature cut off is activated.

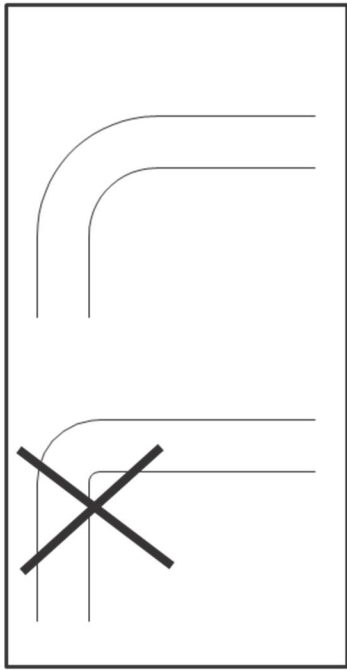
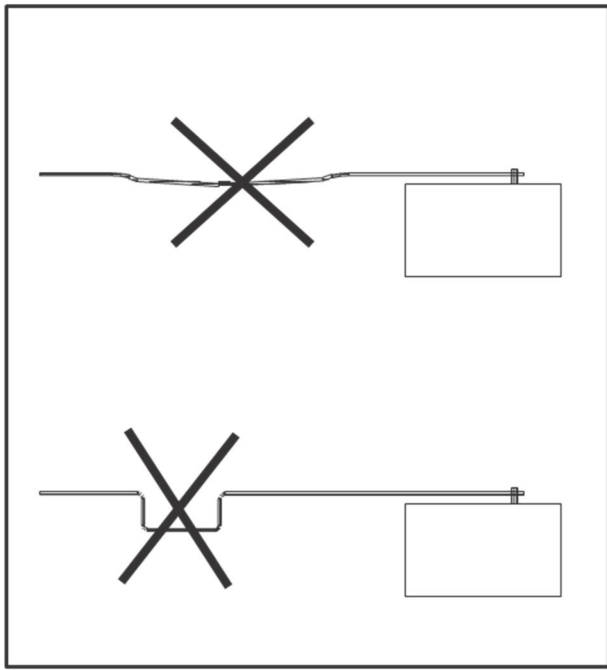
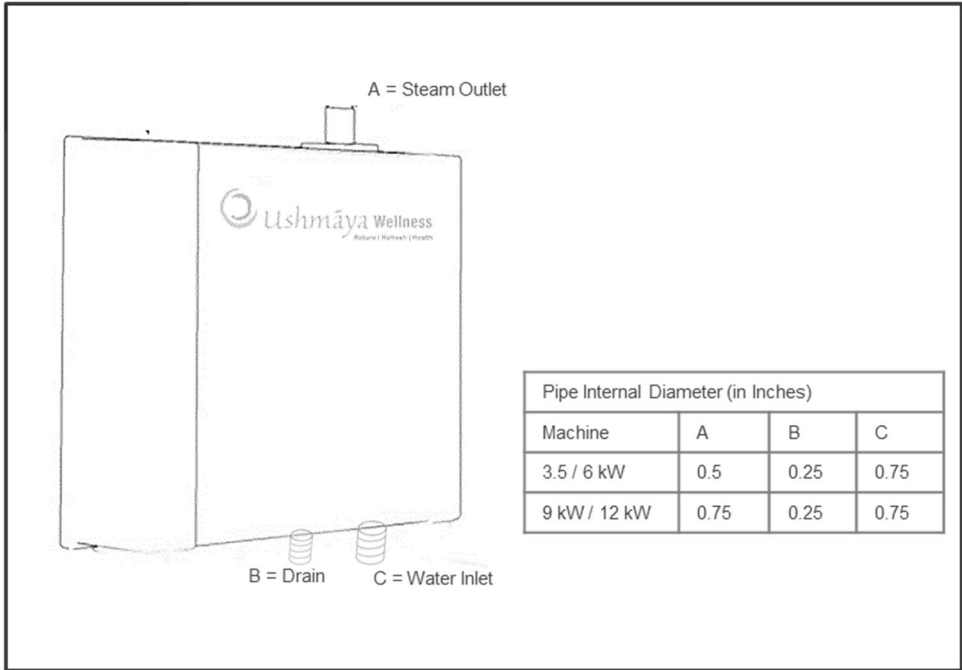
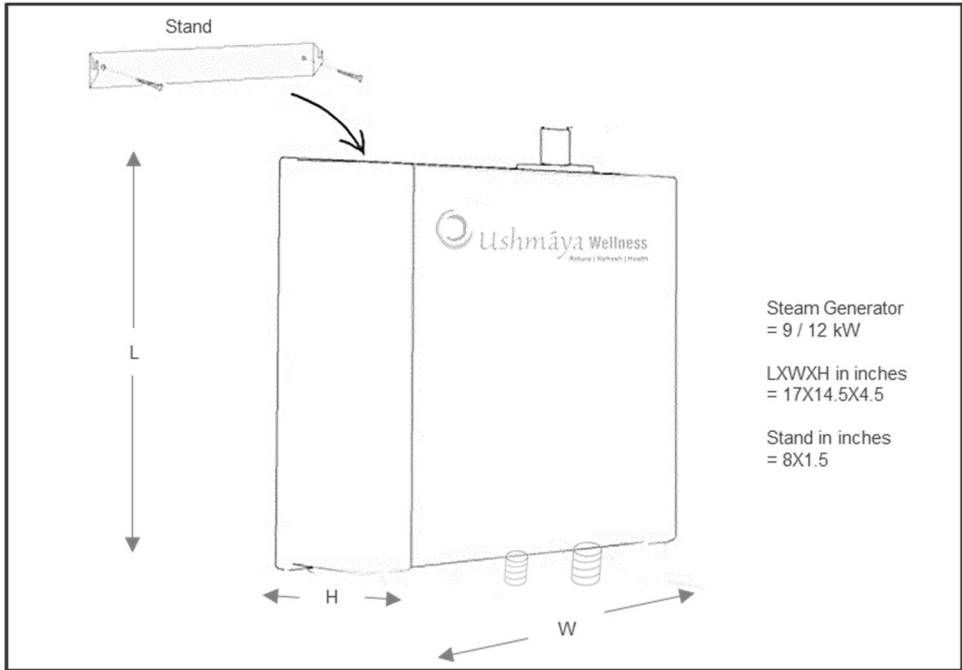
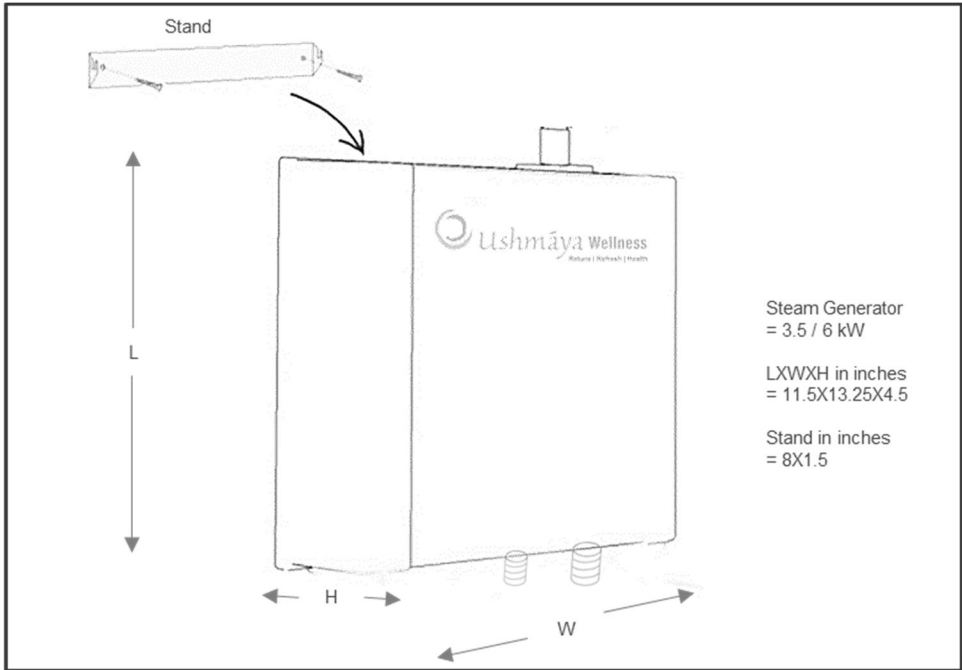
Disconnect the steam pipe from the steam generator. Start the generator and let it remain on for about 1 hour. If the safety valve or the temperature cut-off is not activated during this test, there is a blockage along the steam pipe which is preventing the passage of steam. Take the necessary steps according to the information checklist.

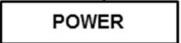
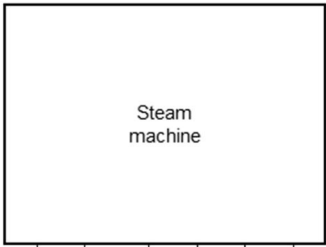


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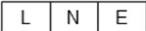
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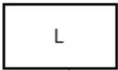
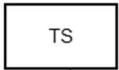
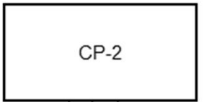
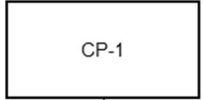
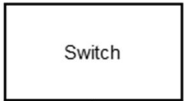
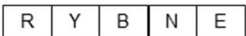




Single Phase



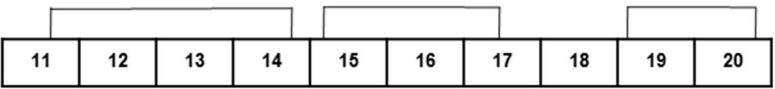
Three Phase



CP-1 = control panel-1  
 CP-2 = control panel-2 (remote)  
 S = switch  
 TS = temperature sensor  
 L = light (not more than 12V, inside enclosure)  
 L = line  
 N = neutral  
 E = earth

A = Power Connection  
 B = in case of CP2  
 C = in case of CP1  
 D = in case of switch

Connections



CP-2

CP-1

SWITCH

NOTE: short connection (13,14), (16,17) &(19,20) if CP-2,CP-1, & Switch are not use.

kW	Voltage (Volts)	Phase	Wire(m m sq)	MCB (amp)	Pole
4	230	1	4	20	2
6	230	1	6	32	2
6	440	3	2.5	10	4
9	440	3	4	16	4
12	440	3	4	20	4

Service History / Notes / Comments



