

Oceanic

Sauna & Steam

APOLLO SAUNA HEATER

Assembly and operating manual



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1. Introduction

Thank you for choosing to buy our Apollo Series Sauna heater, please take the time to read these instructions before you begin as they contain important information about the installation and maintenance requirements. Apollo Series Sauna heaters are available from 3kw to 9kw and are equipped as standard with our OCSB digital controller .

The Apollo heater is available with the optional steam generator which mounts onto the side of the heater, this version will be controlled via the OCST combined Sauna+Steam controller which has a separate manual 'Apollo Sauna Heater and Steam Unit with Saunarium Controls Manual.

2. Important Notes

- Read the manual before installation and operation and then keep it for reference
- This equipment must be installed by competent person
- This equipment must be connected to an all pole isolator of the correct rating
- Disconnect the power supply before exposing electrical connections
- The sauna heater should not be used for any other purpose
- Do not cover the sauna heater or allow contact with flammable materials such as toweling – Risk of fire.
- Do not operate sauna heater without sauna rocks
- Do not touch the heater when operational as it is very hot
- When this heater is used in an unsupervised and/or public location with the advanced timer setting an interlock must be provided for the door

3. Safety Precautions

- Elderly persons, pregnant women, or those suffering heart disease, high blood pressure, diabetes or not in good health are advised to seek medical opinion before using a sauna room;
- Do not smoke in the sauna room;
- Avoid using the sauna room immediately after strenuous exercise;
- Do not use the sauna room when under the influence of alcohol;
- Leave the sauna room at once if you feel sleepy, sick or uncomfortable;
- Ensure there is good ventilation for the sauna room
- We do not recommend this product is used by children under 16 years old unless they are supervised by an adult
- This appliance is not intended for use by persons including children with reduced physical, sensory or mental capabilities or lack of experience unless they have been given supervision or instruction concerning the use by a person responsible for their safety
- Commercial operators should post a notice of these precautions in a prominent position

4. Electrical connection

A qualified electrician will have no problem installing this system with the provided wiring schematic and with the help of the circuit diagram mounted inside the respective control unit. According to the valid regulations, the electrical connection of the sauna heater and the control box has to be carried out by an authorised electrician. In case of a warranty claim, you are kindly requested to present a copy of the invoice from the electrician.

5. Specification

5.1. Sauna Heater Parameters. Chart 1

Heater Model	Input KW	Heating element n×kW	Sauna room volume min-max m ³	Voltage VAC	Phase P	Connecting cable n×mm ²	Stones kg	Size mm
OCAP30	3	3×1kW (H1-H3)	2-4	230 or 400	1N or 3N	Terminal1: 5×2.5mm	40~50	Without Steam Unit L:405 W:380 H:740 With Steam Unit L:495 W:380 H:740
OCAP45	4.5	3×1.5kW (H1-H3)	4-6	230 or 400	1N or 3N	Terminal1: 5×2.5mm		
OCAP60	6	6×1kW (H1-H6)	6-8	230 or 400	1N or 3N	Terminal1: 5×4mm		
OCAP75	7.5	3×1.5kW (H1,H2,H4) 3 x 1kW (H3,H5,H6)	7-10	230 or 400	1N or 3N	Terminal1: 5×6mm		
OCAP90	9	6×1.5kW (H1-H6)	9-12	230 or 400	1N or 3N	Terminal1: 5×6mm		

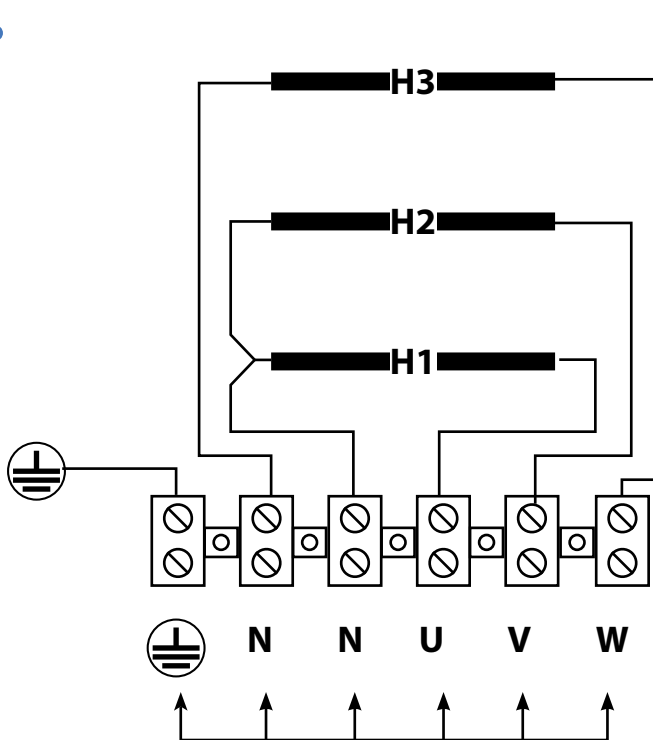
5.2. 2.OCSB Controller and OCST Control Box Parameters. Chart 2

Model	Input	Output	Load power (Kw)	Size (mm)		
	1N~/3N~	1N~/3N~		L	W	H
OCSB	230/400v	230/400v	4.5~12	310	260	70

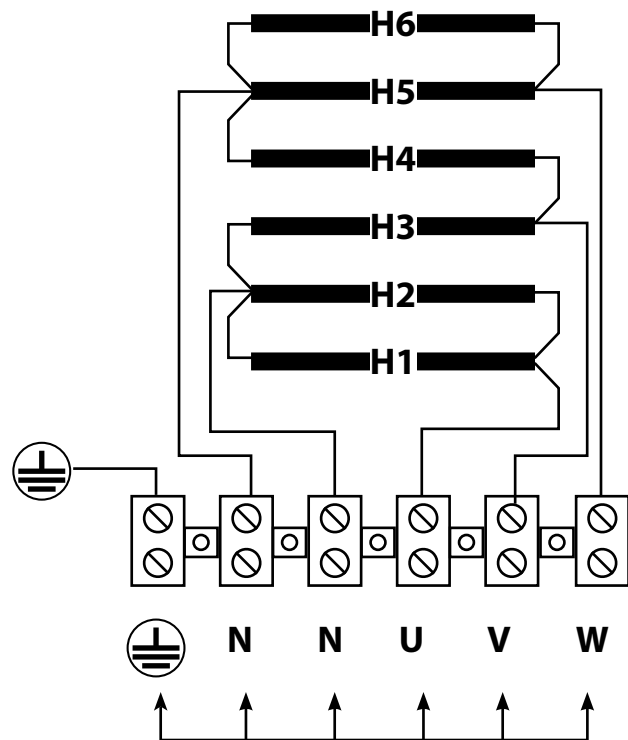
5.3. Temperature sensor parameters. Chart 3

Model	Detected scope		Cut off on high temperature		Size (mm)		
	°C	°F	°C	°F	L	W	H
OC-S	0~110	32~230	120	248	76	42	27

6. Sauna Heater and Control Box Circuit Diagrams



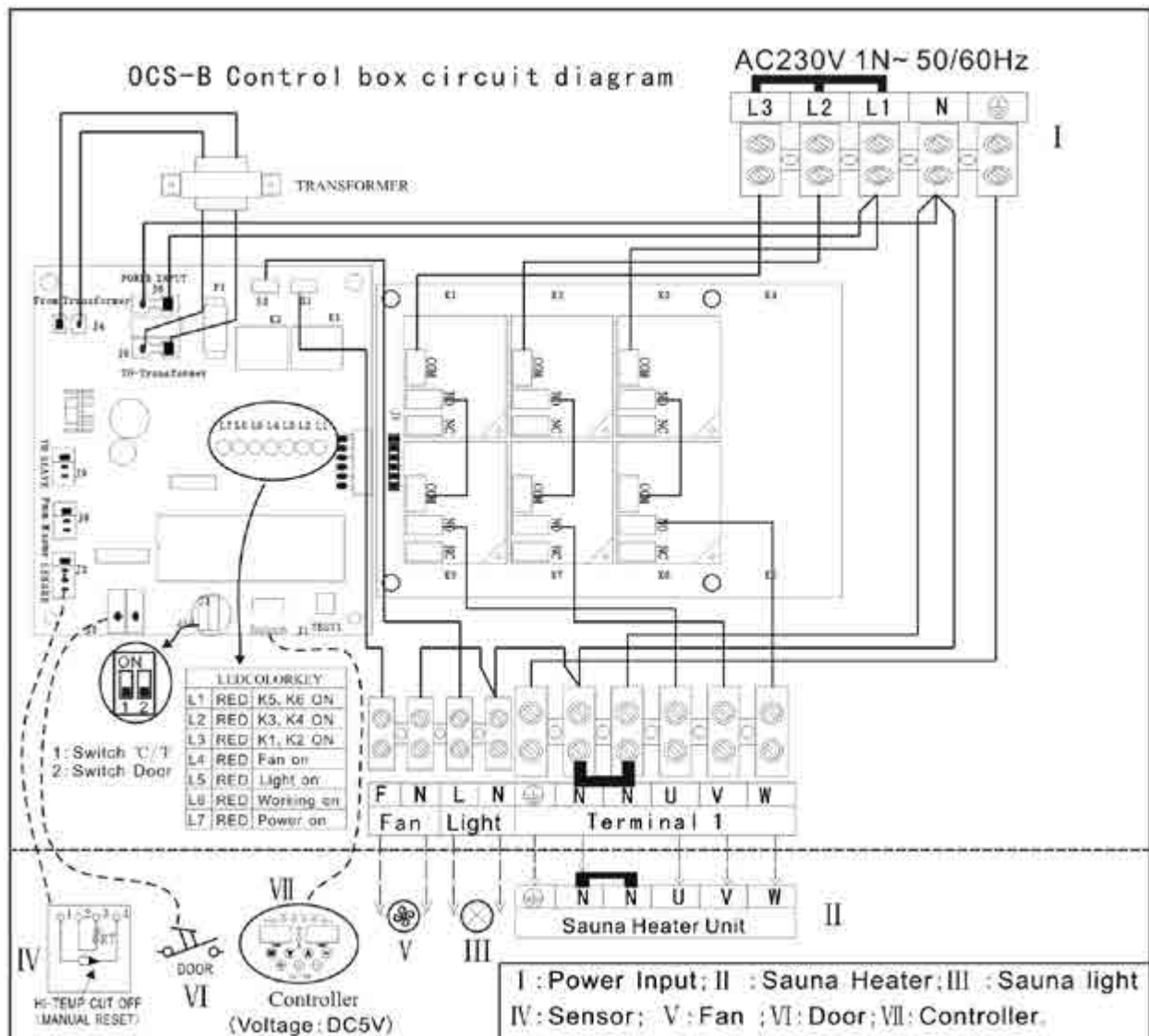
AC 230V 1N or 400V 3N
From control box Terminal
Fig 1.a OCAP 45, 4.5kw



AC 230V 1N or 400V 3N
From control box Terminal
Fig 1.b OCAP60, OCA75, OCA90

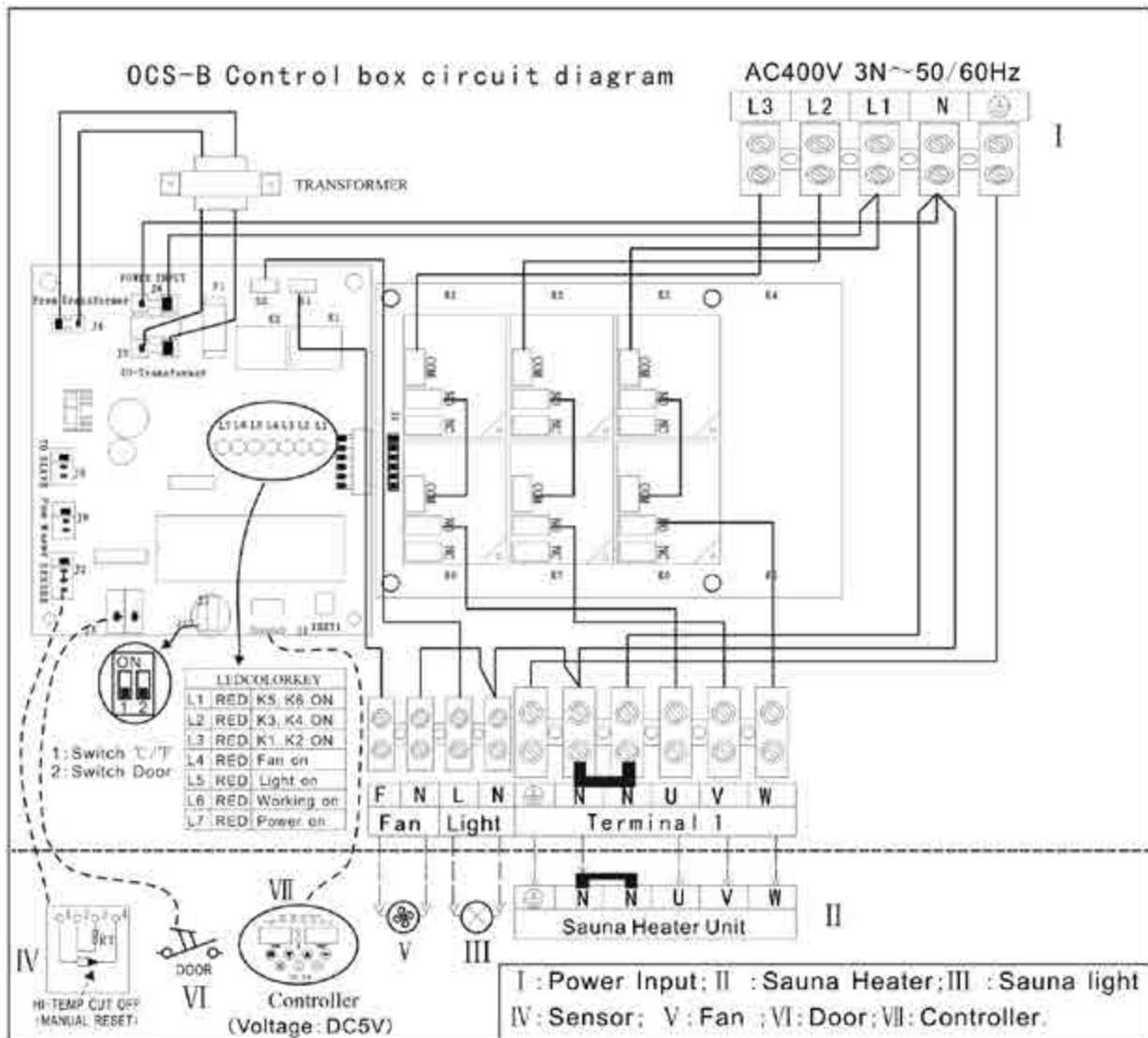
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- i. Fig 2a. Circuit Diagram for OCSB control box wired with Single Phase 230V connection



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ii. Fig 2b OCSB control box circuit diagram with wired with Three Phase 400V connection



7. Sauna Heater Frame and Parts

Fig 3 Frame Dimensions

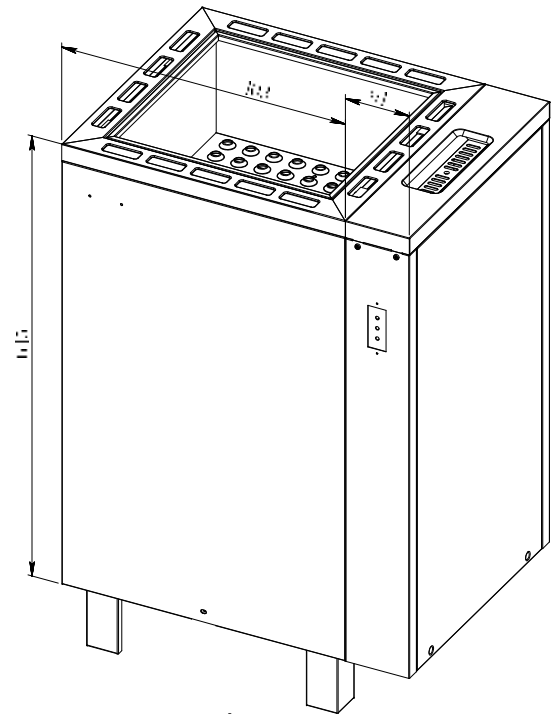
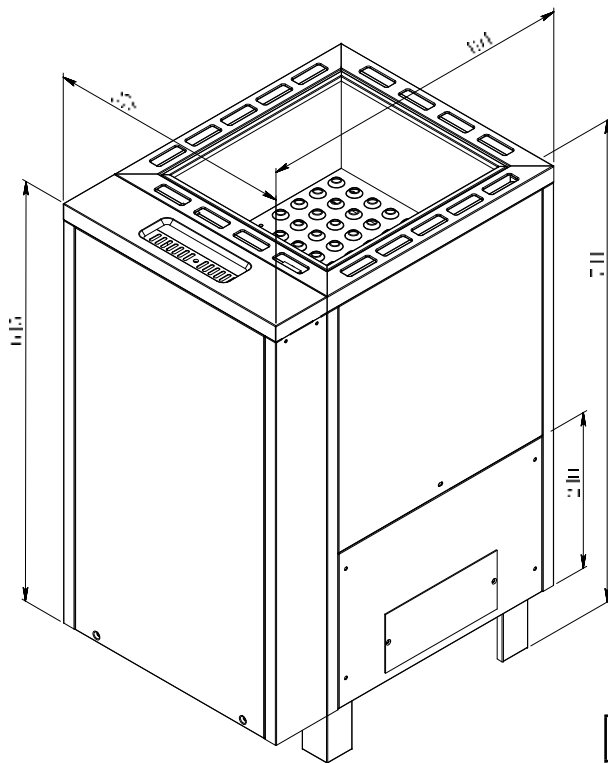


Chart 4. Sauna Heater Part list

No.	parts	description
1	Cover Trim	Shield top edge of shell and rock basket
2	Rock Basket	Holds sauna rocks
3	Central Body	Contains Elements
4	Shell	Insulate the inner shell to prevent from scalding
5	Terminal	Connect the power supply
6	Power entry	The route of power wires
7	Cover Panel	Protects the electrical connections
8	Terminal plate	Access to terminals
9	Mounting bracket	To fix steam generator to heater central body
10	Feet	Raise heater off ground
11	Under tray	Collect excess water

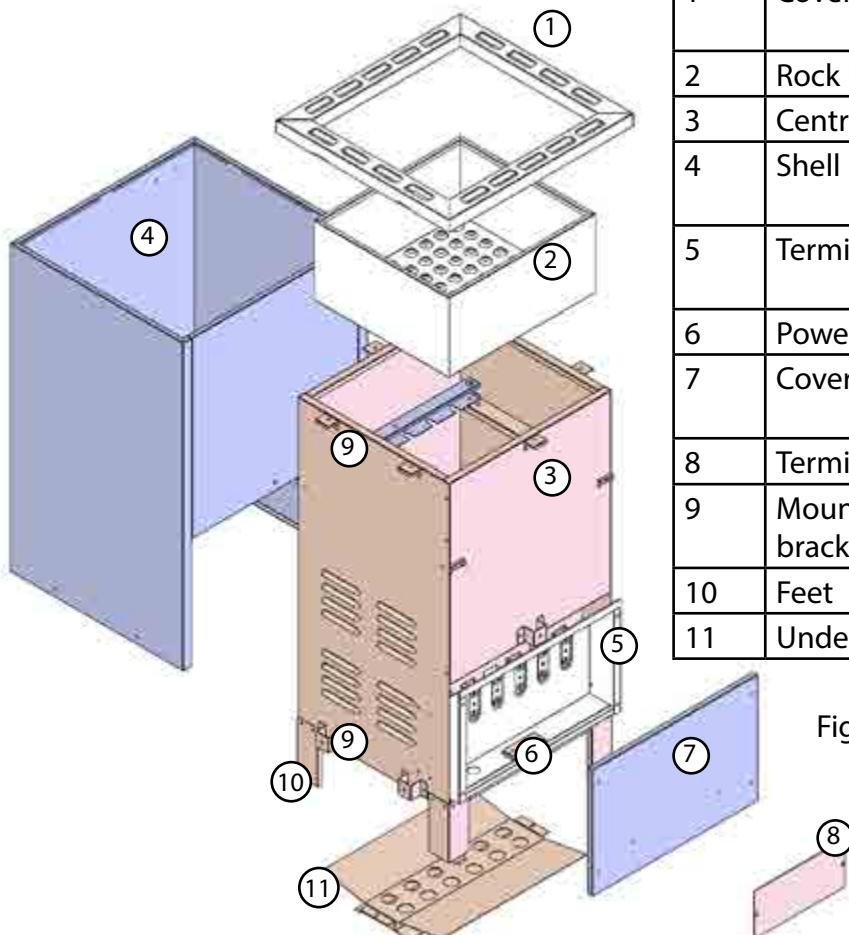


Fig 3b Sauna Heater Part diagram

7.1. Steam Generator Diagram and Parts

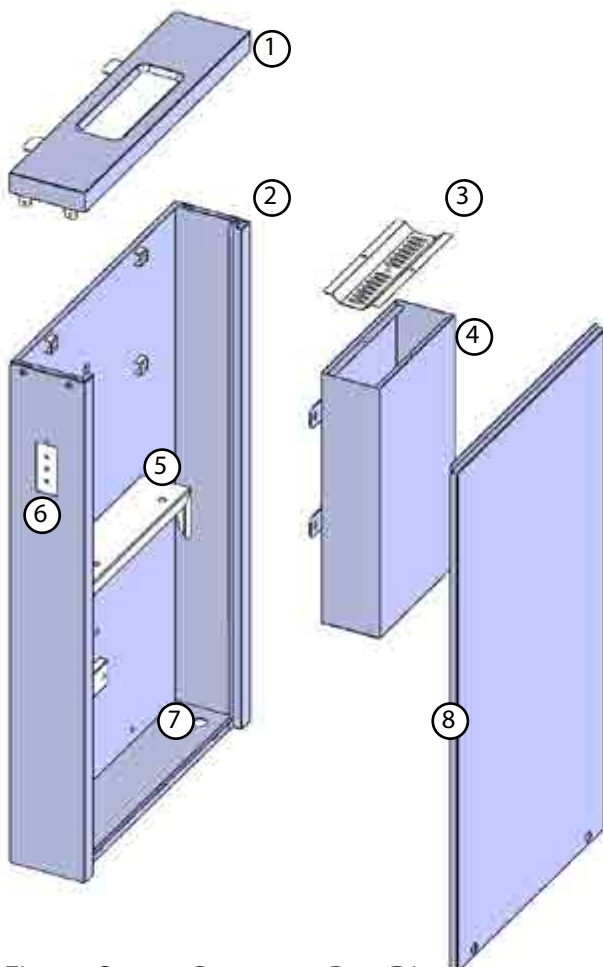


Chart 5. Steam Generator Part List

No.	parts	description
1	Cover Trim	Cover top of generator
2	Main Housing	Contains generator unit and wiring terminal
3	Water tray	Water inlet and steam outlet
4	Steam tank	Steam unit contains water tank, elements, water level probe
5	Mounting plate	Fixed generator to housing
6	LED display	Displays water level
7	Cable Entry	For power and control cable entry
8	Cover Plate	Remove to access wiring terminal
9	Mounting bracket	To fix steam generator to sauna heater

Fig 4a. Steam Generator Part Diagram

7.2. Fixing Steam Generator to Sauna Heater

Note: Steam Generator is an optional item and is not supplied with all Apollo Sauna Heaters. For Apollo Heaters with Steam Unit please refer to the 'Apollo Heater With Steam Unit and Saunarium Control manual'

To fix the steam unit to the sauna heater the line the mounting tabs on the steamer with the mounting tabs on the heater. Slide steamer into position and fix to tabs using the screws provided.

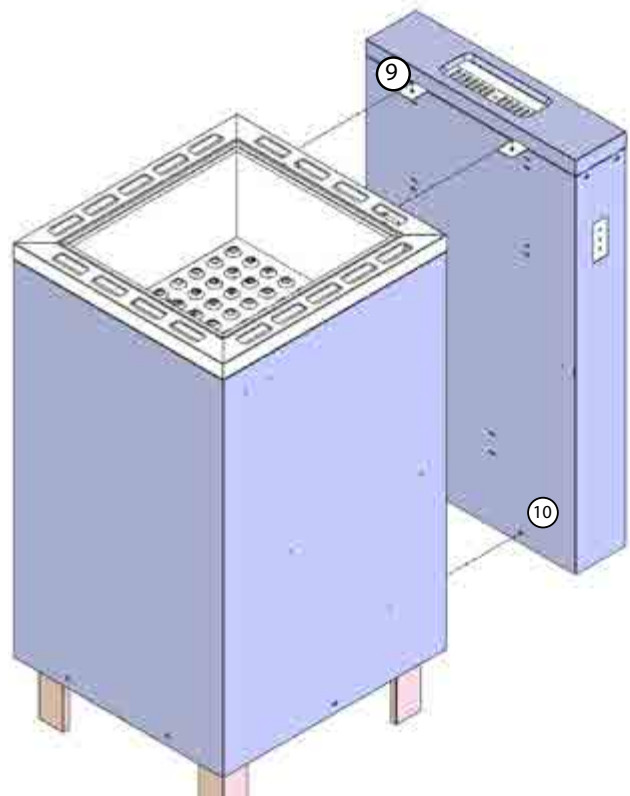


Fig 4b. Steam Generator Attachment

8. OC-SB Controller

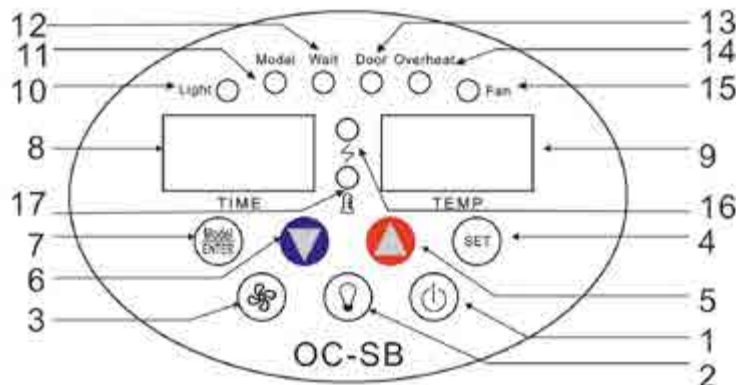


Fig 4. Controller frame

Chart 6. Keys and LED instruction

No.	Description	Function instruction
1	On/off button	Push to operate
2	Light button	Push to operate for sauna room light
3	Fan button	Push to operate for control box fan
4	Setting button	Preset time and temperature and the setting confirmation
5	Increase button	Press to increase
6	Increase button	Press to decrease
7	Mode button	Change working mode
8	Time display	Display working time or waiting time to work
9	Temp. display	Display temperature
10	Light LED	Indicator Led for sauna room lamp
11	Model LED	Indicator LED for working mode. If LED is heater is in Mode A / heating mode
12	Wait LED	Indicator LED for waiting mode, If LED is on heater is in Mode B / waiting mode
13	Sauna room Door(interlock) indicator LED	Indicator LED is on: Sauna Heater will not operate. i.e. the door has been opened and the sauna must be checked for safe operation (no towel over heater etc) and door interlock reset before countdown timer can continue. For commercial use only where a door interlock switch has been installed.
14	High temperature LED	indicator LED is on The sauna has overheated, the room temperature has reached higher then 120 centigrade . High temperature cut off switch has been tripped, when the temperature in sauna room falls below 100 centigrade investigate what has caused the problem then manually reset the switch by inside the temperature sensor housing.
15	Fan LED	Press to operate for fan
16	Heating LED	LED On means the heat element is working
17	Stop working LED	indicator LED to show Sauna temperature has been reached and the heater is not receiving any power until the temperature drops below preset level.

8.1. OC-SB Controller frame and parts

Fig 5. Control box frame

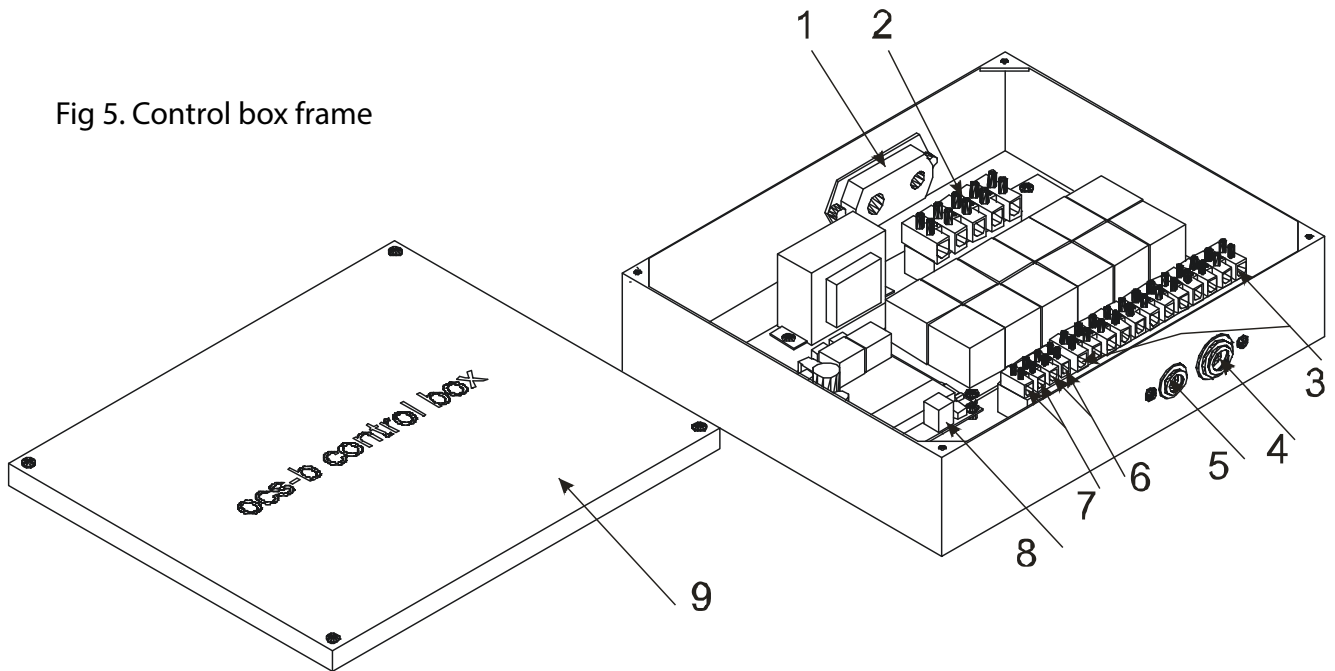


Chart 7. Control box instruction

No.	Description	Function instruction
1	Wire anchorage	Route of wire entry and fasten wires
2	Terminal block	Connect to the mains power supply (via isolator switch)
3	Terminal block	Connect to heater
4	Heater ,light and fan output	Outlet to heater ,light and fan
5	Control cable entry	The entry of control cable
6	Light terminal	Connect to light wire
7	Fan terminal	Connect to fan wire
8	Control panel terminal	Connect to control cable
9	Cover	Cover

9. Temperature sensor frame and parts

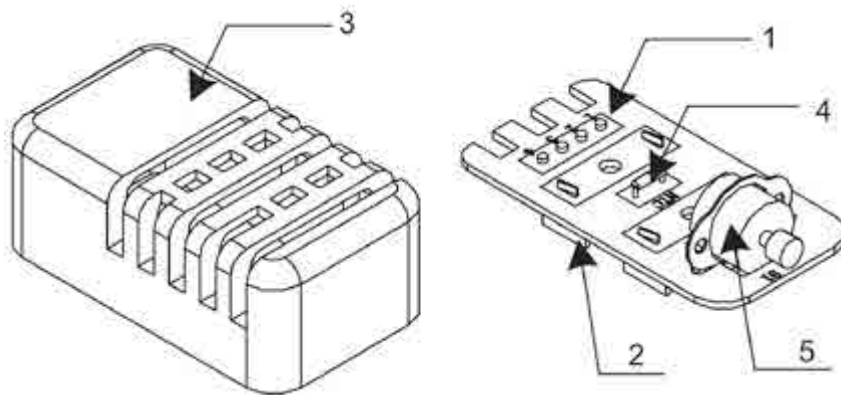


Chart 8

No.	Parts	Description
1	Circuit board	Circuit board
2	Bracket	Bracket
3	Cover	Protects the electronics
4	Heat resistance	Detects temperature
5	High Temp cut of switch	When temperature in sauna room exceed 120 oC

10. Installation

Important

Prior to installing sauna heater, please refer to Installation handbook and check it as following points:

- Is the output power and type of the heater suitable for the Sauna Room? See parameter table 1. (Technical parameter).
- Is the supply voltage suitable for the rated voltage of sauna heater.
- The location of the heater fulfils the minimum requirements concerning the distances given in Fig 7 and chart 8 .and allow for safety and convenience.
- Is the controller box suitable for the heater power and control requirements?
- Choose the cable wire according to table 1 and the cable wire can bear high temperature 170 oC (it is recommended to use silikon rubber cable wire).
- Do not install more than one heater in a sauna room.

The heater gets very hot when working. To avoid the risk of accidental contact with the heater, it is recommended that a heater guard be provided. The guard is made into many kinds of patterns in accordance with the location places, but some size must be made as the Fig 7 and chart 8. A qualified electrician must do the installation of the heater to ensure safety and reliability. Improper electrical connection can cause fire or electric shock. Refer to fig 1a or fig 1b (Electrical connection chart).and fig 2

10.1. Safety Clearance Distances

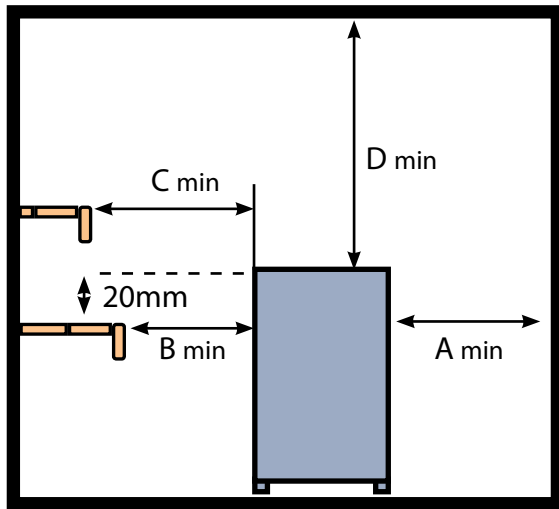
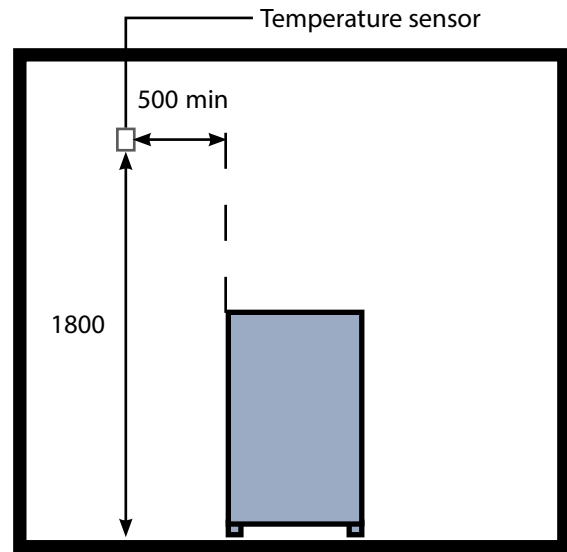


Fig 7a.



All dimensions in mm

Fig 7b.

Chart 9

Model	Minimum Distance (mm)			
	A	B	C	D
OCAP30	50	50	100	1100
OCAP45	80	50	100	1100
OCAP60	100	50	150	1100
OCAP75	130	50	200	1100
OCSAP90	130	50	200	1100

10.2. Installing the Sauna Heater

- i. Confirm the model you have selected is suitable for your sauna room, please refer to the table above.
- ii. Ensure the power supply is suitable for the sauna heater, refer to the table above.
- iii. The installation position must comply with the minimum distance in the table above and in the diagrams above
- iv. The minimum height of your sauna room must be 1900mm, please refer fig 7a
- v. The sauna heater is to stand on the level ground, not on slatted floor mat.
- vi. Do not cover the sauna heater back with asbestos cement or similar material
- vii. The wires which enter the sauna room must be rated to 150°C- type 60245 IEC 66 HO7RN-F (BSEN 6141) please refer to chart 1.
- viii. Do not install two or more sauna heaters in one sauna room.
- ix. The sauna heater becomes very hot when operating and must be guarded to protect in case of accidental contact, please see the sizes in fig 5.4d and also refer to charts below.
- x. Temperature sensor should be installed in sauna room but not directly above sauna heater, the height should be a minimum of 1800mm from floor. The horizontal distance to sauna heater should exceed 500mm.
- xi. Wash the rocks thoroughly before filling the basket. Discard any with veins running through or any rocks smaller than 50x50mm.

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- xii. Fill the rocks loosely around the elements, try to use the larger rocks between the elements and use the smaller ones for the top.
- xiii. To prolong the life of your sauna you can use a heatproof board behind and above the heater to prevent charring, for commercial cases this should be more seriously considered.

10.3. Wiring of sauna heater and components

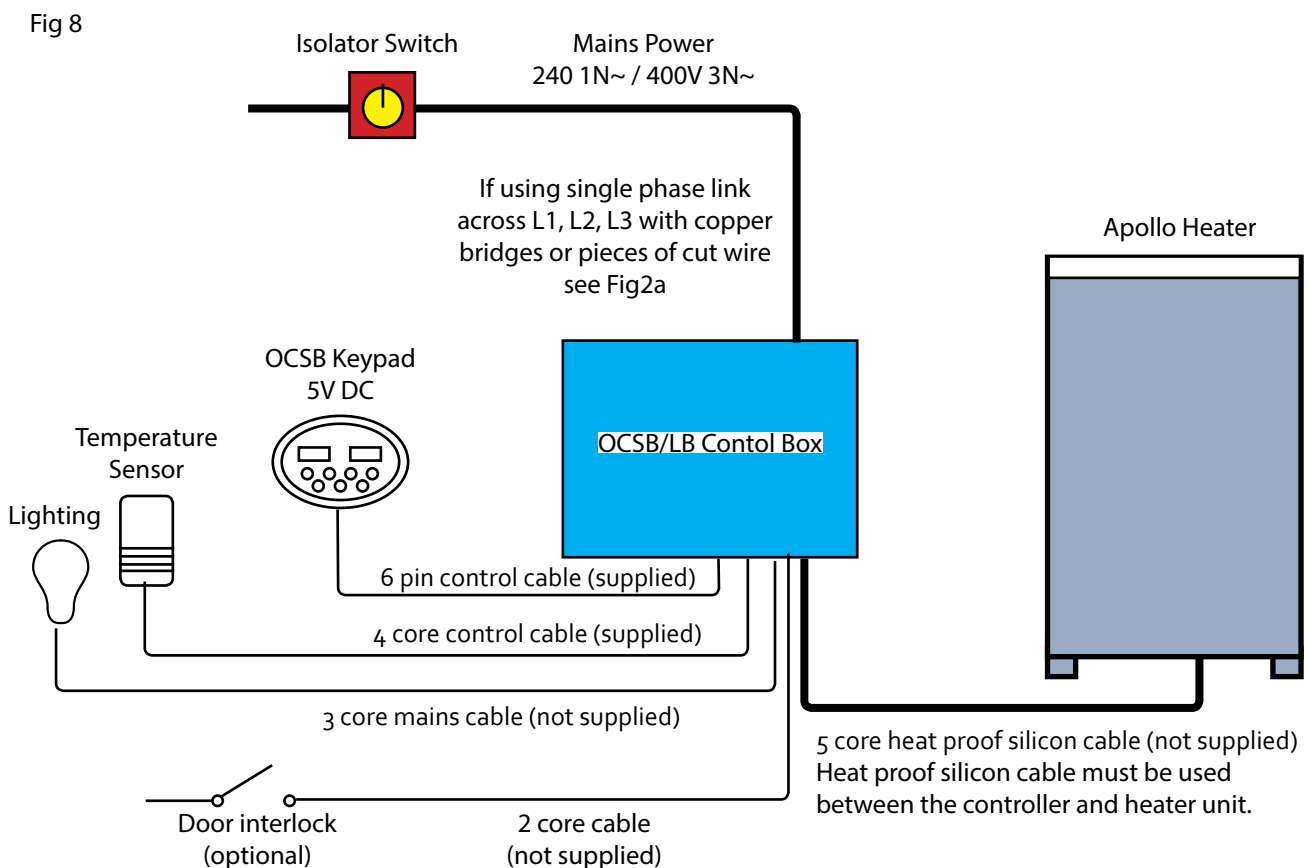
Remove the cover panel and connect power supply wire and control cable through the wire anchorage to the Terminal as per fig 8 and replace the cover panel.

If wiring single phase, it is only the input connections into the OCSB control box L1, L2, L3 that need to be linked (see fig2a). Do not short circuit output from the control box to sauna heater or across the live terminals of on the heater.

The correct size heat proof cable is required to the heater from the control box. This is not supplied as standard but can be bought at the required length from Oceanic Saunas Ltd or a local electrical wholesaler.

Sauna heater, Control box ,light ,fan and temperature sensor connection drawing.

Optional Door interlock (commercial use), install the switch following the manufacturers instructions and connect the wires back to the control box as shown below.



10.4. Installing the controller

Control pad must be installed outside the sauna cabin. Ideally the control box should be installed at a height of approximately 1200mm for ease of use.

Installation method:

- Drill a 40mm diameter hole through the wall.
- Pull the front off the keypad, you may find it easier with a small flat electrical screw driver.
- Pin the control cable (6 cores) to the relevant ports.
- Install the control so it sits flat on the wall. Fix using the screw holes 118mm apart.
- Put the keypad cover back on, check the cover is completely on so that all the buttons click when pushed.

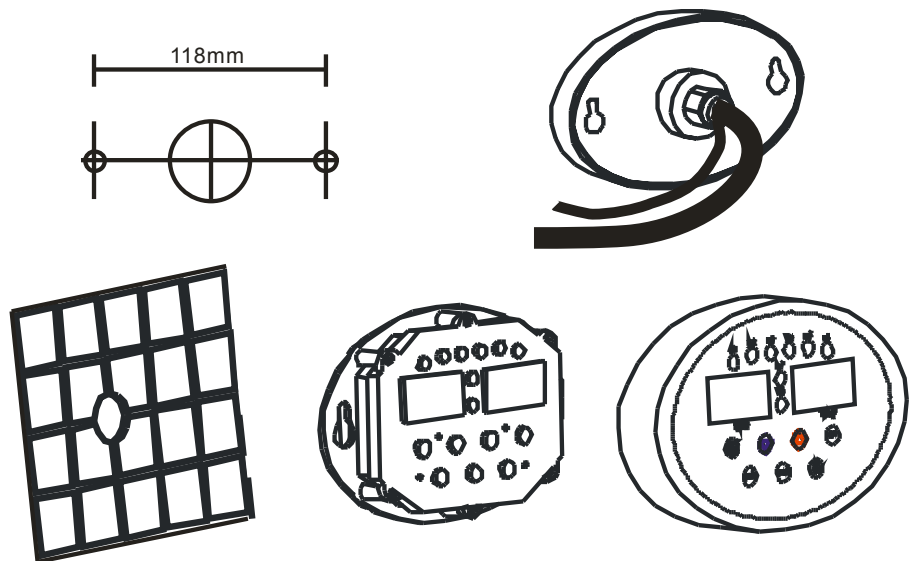


Fig 9

10.5. Installing the temperature sensor

- Install the temperature sensor as in the diagram opposite
- Open the cover with a screwdriver
- Fix the bottom of the temperature sensor on to wall with screw
- Replace the cover.

Fig 10

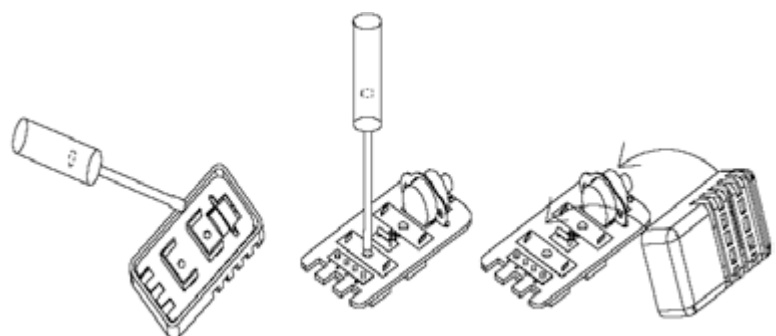
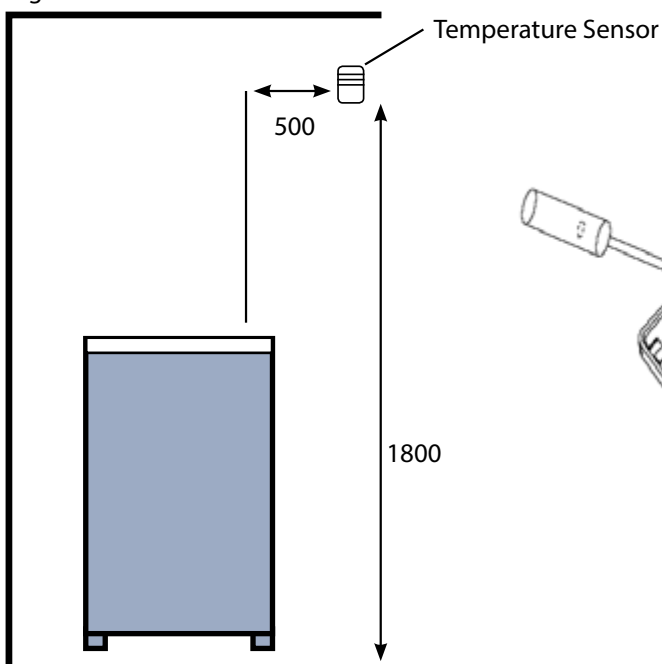


Fig 11

10.6. Heater Guard (not supplied)

The heater should be guarded against accidental contact with a wooden guard similar to the one shown below – according to the position of the heater within the cabin it may need to be guarded on 2 or 3 sides.

Fix the guard in place around the heater by drilling screwing accordingly.

Note: It is important that the top rail of the guard is set at least 30 mm below the rim of the heater such that it does not receive heat radiation directly from the heater rocks.

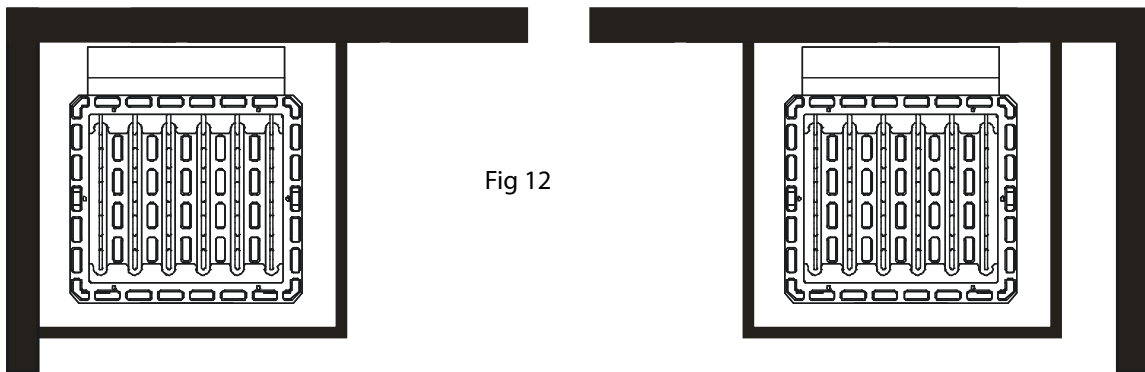


Fig 12

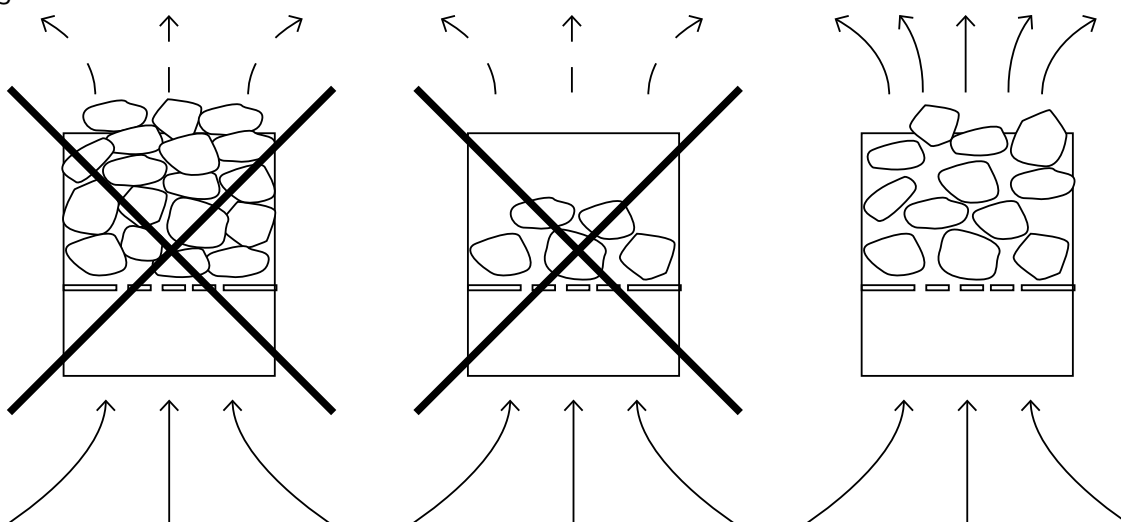
10.7. Sauna stones

Do not use the heater without stones, otherwise it may cause a fire. Only use the original Sauna stone or the stone for use in heater. Do not use ordinary stones, which may emit harmful substances, easily break and do not possess good heating capacity. Wash the stones to clear the dust before putting them into the heater. Stones of unspecified sizes should not be used.

Put the larger stones at the bottom of stove compartment and the smaller ones on top. Do not pile them tightly so that air can flow freely. NOTE: Too tightly placed stones decrease working time of the heater element, the stones should plainly cover the heater element (refer to Pile stones fig8). The diameter of stone is about 3-8cm.

Rearrange the stones in the heater at least once a year or twice if it is in frequent use (maximum 500 hrs). To decide the correct volume of stones in heater, refer to table 1 (Technical parameter) provided.

Fig 13



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10.8. Insulation

The door, ceiling and walls of sauna room must be insulated. For every square meter of wall panel that is not insulated the size of cabin should decrease by 1.3 cubic meters in relation to the model of heater. Refer to table 1.

It is recommended to use a vapour barrier between timber panel and heating insulation.

Moisture and thermal proofing should be installed from outside to inside, such as:

- i. Recommend that the MIN thickness of the thermal insulation in the walls in 50mm and in the ceiling.
- ii. Aluminum foil laminate is affixed over the heating insulation as a moisture-proof.
- iii. Leave at least 25mm air gap around the outside of the sauna cabin
- iv. Leave a 25mm gap between wall panel and ceiling to prevent gathering vapor.

10.9. Air ventilation of sauna room

- Mix the cold air with hot air to relieve mugginess when bathing.
- Draw the fresh air around the heater to ventilate the sauna room.
- Move the warm air to the farthest part of sauna room using air vent at high level in the opposing corner to the heater
-

The inlet vent may be installed on the wall below the heater. (fig 15a).when using mechanical ventilation ,inlet vent is placed 50cm above the heater (fig 15b) or on the ceiling above the heater (fig 15c).the heavy cold air that blown into sauna room is mixed with the light not air from the heater ,bringing fresh air for bathers. The recommended inlet should have a diameter of 5—10cm. The outlet vent should be placed diagonally opposite to the inlet. It is advised the outlet vent is placed under the platform in sauna room as far as possible from the inlet vent. It can be installed near the floor, or lead outside through a pipe from the floor going to a vent to the sauna ceiling, or under the door (to the wash room). In this case, the sill slot must be at least 5cm and it is recommended there is mechanical ventilation in washroom the size of the outlet should be twice of the inlet.

Warning:

- 1. Switch off power during any maintenance, or fitting electrical units.**
- 2. Do not hang clothes to dry in the heater, for this may cause a risk of fire.**
- 3. Do not bake food in heater.**
- 4. When it is hot, the outer surface of the heater may burn your skin.**

1. Air supply vent
2. Optional air supply vent if mechanical exhaust ventilation is used, the opening is located 50cm

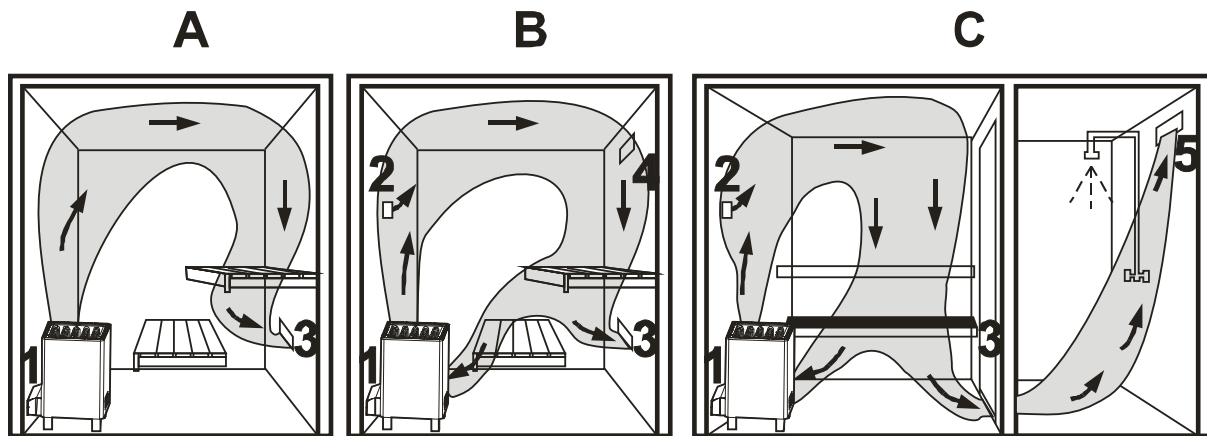


Fig 14

above the heater

3. Exhaust air vent
4. Drying vent, which is closed during heating and bathing, the sauna room can also be dried by leaving the door open after bathing
5. If there is only an exhaust vent in washing room, leave an opening (MIN 1CM). Under the sauna door (Mechanical ventilation is recommended in the outside room)

11. Testing and Operation

11.1. Testing

- Before connecting to the power supply check the sauna heater and make sure there are no flammable items on or around the heater, please note that on the first use the elements and stones may smoke slightly and give off a smell – please ensure the sauna cabin is well ventilated.
- Connect to power supply, press " "key, temp and time windows will display data, LED shows the sauna's heating status when the light is on, the temperature of sauna room will rise and will achieve the preset temperature (the default settings are 70 °C/158°F, work time is 2 hours)

Chart 10

11.2. Setting time and temperature:

- The default settings for temperature are: 75°C/167°F. For preset operation time: 2 hours.

Model	Default Mode	Default Temp °C/°F		Temperature adjust scope °C		
		°C	°F	°C	°F	
OC-SB	A	75 °C	187 °F	50-110 °C	122-230 °F	
	Default Time		Time adjust scope			
	Working time	Waiting		Work time	Wait time	
	2hrs	4hrs		10mins - 8hrs	0-12 hrs	
	Time adjustment per button press			Temperature adjustment per button press		
	10 mins			1°C / 2 °F		

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These can be adjusted easily, if the electricity supply is lost the controller will return to default settings.

- When the sauna is turned on the time settings will work under A model (A model LED is on), the time window will display the last time that was set. Press "SET" key the time display window will flash. press "▲" or "▼" to adjust the time, every press the time will increase or reduce 10 minutes. once the desired setting is reached press "MENU/ENTER" the window will stop flashing. You can adjust from the time from 10 minutes to 8 hours. Note the controller has a memory function, if the power supply is not cut off the next time you turn on steam generator the time you selected will be the default time.
- To set your heater to come on at a certain time (for example: if you plan to watch a film and want the sauna to start heating up half way through so its ready at the end of the film) you can use the B model setting which can be set if you press the "MENU/ENTER" and the time window will display 4:00, now Press "SET" key the time display window will flash. press "▲" or "▼" to adjust the time, every press the time will increase or reduce 10 minutes. once the desired setting is reached press "MENU/ENTER" the window will stop flashing., when it reaches "0" it will switch over to A Model and the heater will turn on. (Remember to set the time you want the heater on for on A Model before setting B Model)
- For quick time adjustment: hold the "▲" or "▼" and it will count continuously up or down, when it reaches the time you want release and it will stop.
- Temperature: switch button you can switch between centigrade and Fahrenheit.
- To adjust temperature: Press "SET" once after you finish setting the time or otherwise twice the temperature window will flash, enter the required temperature by pressing "▲" or "▼" to adjust - every press will increase or reduce 1°C or 2°F. you can adjust from 50°C-110°C 122°F-230°F once the required temperature has been set press "MENU/ENTER" key the window will stop flashing.

11.3. Door Interlock

When used in commercial situations such as public buildings where the countdown timer is set to come on in advance the door interlock switch must be connected as described in Fig 2 – before the timer is set to come on in advance the sauna room must be checked by the responsible person to ensure there is no hazard such as combustible material left over the sauna stove etc – then the sauna cabin door must be closed before the setting can be made – once the advance timer begins the countdown sequence if the door is opened the timing will stop and will not restart again until it is reset.

12. Trouble shooting Guide

Please Note that we recommend a suitably qualified person carries out all repairs.

Chart 12

Trouble description	Cause	Solutions
There is no display on the control panel when the on/off switch is pressed	There is a problem with; 1.Power supply or 2. Circuit board transformer or 3. Fuse	1. Chck the power supply. If the power supply indicator LED L1 (red) is on check the wire. 2. Change the controller
The controller is on but the sauna heater doesn't work	1 .The sauna heater hasn't been connected 2. There is a problem with the controller	1. Check the connection, refer to page 6, 7 and 14. 2. Change the controller
OverHeat LED is on	1. The temperature sensor hasn't been connected correctly 2. The high tempeature cut off switch is turned off	1. Check the connection to the temperature sensor. 2. Check if the high temperature cut off switch is turned off, i yes, reset by hand
Door LED is on	During the advance timer countdown sequence ,the sauna room door has been opened , the timing stopped and will not restart again until it is reset.	Reset counter down timer
Wait LED is on red	Sauna heater is under B mode	Press the Mode button to change to A mode (heating Mode)
Temperature windows display -- L° or -H°	1. Thermometer isn't connected or cable is broken 2. The temperature is lower than 0°C . 3. The temperature is higher than 115°C	1. -- L°C means temperature sensor hasn't connected or the temperature is lower than 0°C check the connection, cable or change sensor 2. --H°C means there is a short circuit in the temperature sensor or the temperature is higher than 115°C check the connection,cable or change sensor. 3.Change controller.

13. Maintenance

We recommend that you inspect the sauna heater on a regular basis for any signs of deterioration of the condition, pay particular attention to both the fastenings, the condition of the wiring and the electrical elements.

Note if the rocks have started to crumble this can cause the elements to overheat and they should be changed for new rocks. We recommend commercial operators to change the rocks at least once every 12 months.

13.1. Sauna Heaters & Sauna Cabins Maintenance

All Sauna products supplied by Direct Saunas Limited and Oceanic Saunas are for use in an indoor environment such as a domestic house or a club building and should not be used in any other circumstances.

13.2. Sauna Maintenance

Dependant upon how regularly the sauna cabin is being used a series of maintenance checks should be performed on the sauna cabin and sauna heater to ensure that they are kept in a good state of repair.

For commercial users we recommend these inspections be conducted on a monthly basis by a member of the maintenance staff and detailed records kept.

For domestic use these checks should be carried out every 6 months.

Any obvious deterioration should be noted immediately if noticed in between maintenance checks and should be resolved before continuing use of the products.

Under no circumstances do we recommend operating the sauna cabin if any electrical wiring is considered to be hazardous, please contact your electrician or our technical department for assistance.

13.3. Maintenance Checks

Please note all maintenance checks should be performed whilst the sauna cabin and sauna heater are cold.

13.4. Sauna Heater:

Ensure the heater has been correctly disconnected from the mains electricity before these checks are conducted

- 1) Check sauna elements for signs of deterioration. Report any signs of deterioration to the supplier
- 2) Make sure all rocks are placed correctly onto the heater elements to ensure an adequate airflow around the elements. Note that the rocks will gradually crumble and settle around the elements which can then cause overheating, this may lead to early failure or even melting of the elements.

For commercial operators an electrician must periodically inspect and ensure all the wiring is in a good condition and all connections are good and tight – a good idea would be to have this carried out annually as for PAT testing.

13.5. Sauna Cabin

- i. Ensure all signage (safety and usage) is in place and in a readable condition.
- ii. Check the benches are secure and have no signs of deterioration, if benches have become loose ensure they are tightened correctly.
- iii. If there are any splinters on the bench sand over lightly until they have been removed.
- iv. Any major damage to the benches should be reported to the supplier and further advice will be given.
- v. Ensure the timbers surrounding the heater have not become charred. Any offending timber slats should be replaced in a reasonable time period.
- vi. Ensure that the heater guard is in place and conforms to the clearance distances stated in the sauna heater manual. Check for any signs of charring and replace the heater guard if it is showing signs of disrepair.
- vii. The sauna cabin should be kept in a clean and hygienic state at all times. It is recommended that the benches in the sauna are wiped down with a weak solution of disinfectant and water after each use we especially recommend this in commercial divisions. The floor in the sauna should be mopped regularly.

14. Warranty & After Sales

- All Oceanic Sauna Heaters are guaranteed for 12 months from the date of purchase against faulty materials or workmanship. The guarantee excludes consumable items such as the electrical elements and faults arising from misuse or abuse of the appliance.
- Elements last for 2500 hours, after this time has passed you should be expecting to buy new ones, premature failure can be caused by:
 - A half filled rock basket.
 - Rocks forced against elements from bad filling
 - Customers throwing large amounts of water over the rocks, for heavy duty places we recommend screwing the bucket to the bench this prevents this from happening.
 - Incorrectly wired heater.

For warranty claims and after sales service outside of the guarantee please contact your local Oceanic dealer.

If you encounter any difficulty with this assembly procedure or think we could have explained anything more clearly we would welcome your comments, please call 01902 450550 or 01902 871127 technical help line.