

CONNECTION/WIRING DIAGRAM

TAB	208 V 1 Phase			240 V 1 Phase		
	Model	Amperage Amps	Output kW	Wire Size AWG	Amps/ Breaker	Output kW
Sense -U 5	17	3.5	10	20/30	4.6	10
Sense -U 7	26	5.3	10	30/40	7.0	8
Sense -U 8	30	6.3	8	35/50	8.3	8

Note: Heating elements do not change for voltage changes. The heater output will change based on the voltage applied to heater. Most North American homes are 240v.

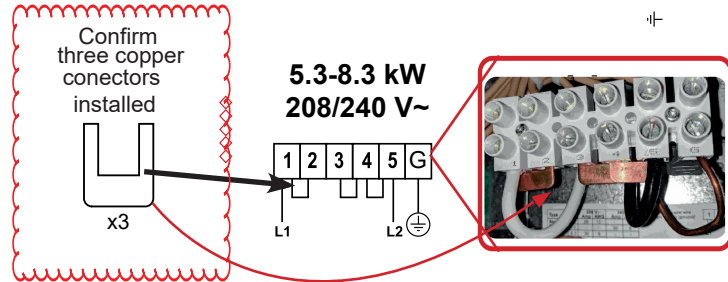
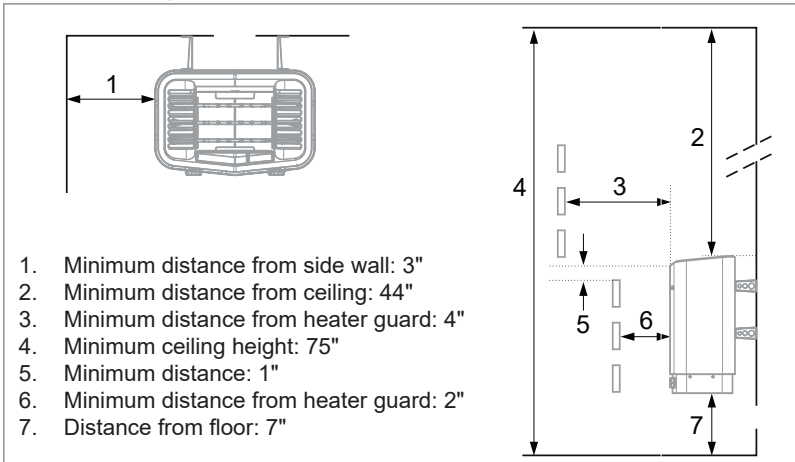


Figure 11: Attaching the brackets to the heater

Unscrew the first two screws on the back of the heater and screw one of the four brackets into place. Repeat the procedure until all of the brackets are fitted see Fig. 11.

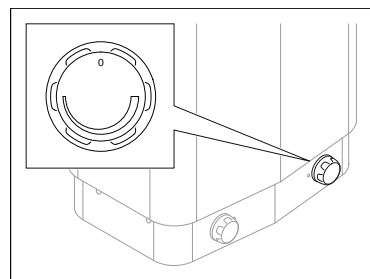
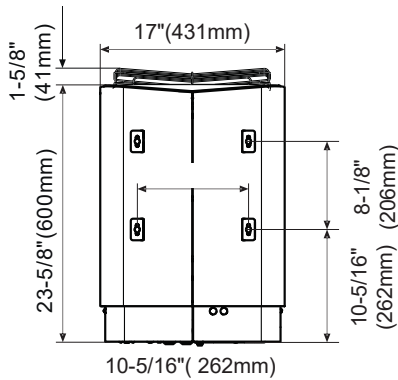


Figure 2: Thermostat for setting temperature

NB: If all the screws on the back are unscrewed simultaneously, the back plate may come loose. For this reason, attach the four brackets to the heater one at a time.

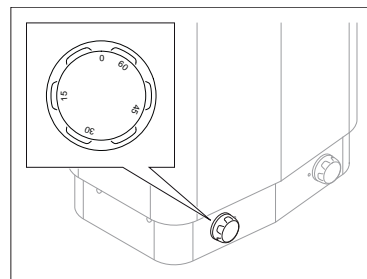


Figure 3: Timer for setting time duration

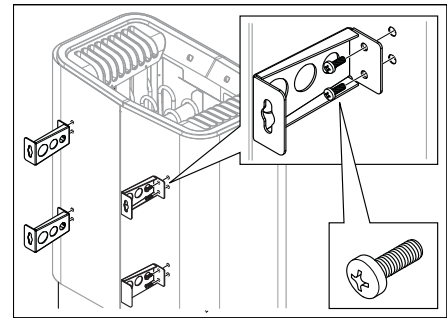


Figure 9: Resetting the temperature cut-out

CAUTION:

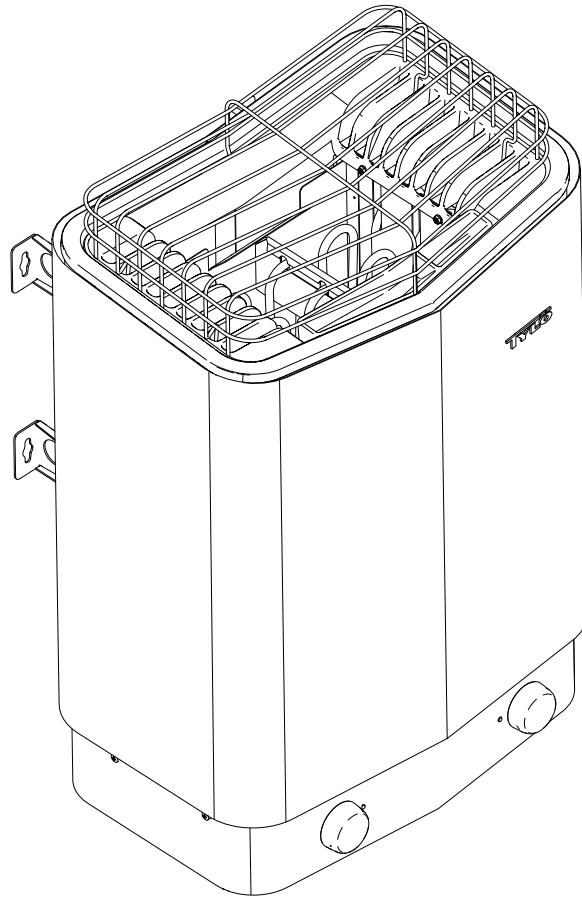
Heater junction box can be a tight fit. Make sure no bare wires come in to contact with circuit board, on/off switch or any other heater components. Extra care should be taken when closing junction box cover to ensure wires are not being pushed out of position.

Some prefer or are required to make a weather-proof connection. If so, you may use Liquid tight conduit for the wire exposed within the sauna. For more flexibility, you can install weather proof junction box inside sauna below heater and use flexible SOOW wire to connect to heater

SENSE SPORT USA

INSTALLATION / USER GUIDE

150408



2900 5240

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for the senses

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WARNING!

* **Hyperthermia** occurs when the internal temperature of the body reaches a level several degrees above the normal temperature of 98.6° F. The symptoms of hypothermia include an increase in the internal temperature of the body, dizziness, lethargy, drowsiness and fainting. The effect of hyperthermia include:

- Failure to perceive heat;
 - Failure to recognize the need of exit the room;
 - Unawareness of impending hazard;
 - Fatal damage of pregnant women;
 - Physical inability to exit the room; and
 - Unconsciousness
- Do not take a sauna if using alcohol, drugs or medications.
 - Pregnant women or persons with poor health should consult their physician before using any sauna.
 - Caution fire hazard: Do not use the sauna room for drying clothes, bathing suits, etc. Do not hang towels above heater or place any object other than the rocks supplied on the heater. If any darkening of the wall around the heater is noticed discontinue sauna use immediately.
 - Inspect sauna regularly for required maintenance to heater, control and benches. Replace wood surfaces which show any signs of deterioration.
 - The heater gets extremely hot during operation and should not be touched or burns may result.
 - Minors should be adequately supervised whenever near a hot or warming sauna.
 - Fire sprinkler systems used inside any sauna room should be properly rated for sauna room temperatures.
 - Do not pour chlorinated pool or spa water on heater. Excessive water use on heater may cause damage and void warranty.
 - Electric Shock Hazard - High voltage exists within this equipment. There are no user serviceable parts in this equipment. All installation and service to this equipment should be performed by qualified licensed personnel in accordance with local and national codes.
 - Do not construct sauna room so as to restrict air flow through the bottom of the heater.

- Packing the rocks too tightly may cause the heater high limit switch to trip.
- Maintain minimum clearance from heater to wooden surfaces (benches, side walls, heater fence etc.). Mounting brackets supplied. Provides proper clearance from wall behind heater.
- Use only copper wire of the size and type indicated in the Heater Specification Chart and the temperature rating indicated on the heater junction box.
- A guardrail or fence is required around the heater to prevent burns from accidental contact.
- All heaters and controls must be grounded per NEC to prevent electrical shock in case of unit failure.
- Electrical outlets or receptacle must not be installed in a sauna room.
- Do not locate benches over heater.



Keep this user guide!

In the event of any problems, please contact the retailer where you purchased the equipment.

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INSTALLATION GUIDE

BEFORE INSTALLATION

Parts

Check that the following parts are included in the packaging:

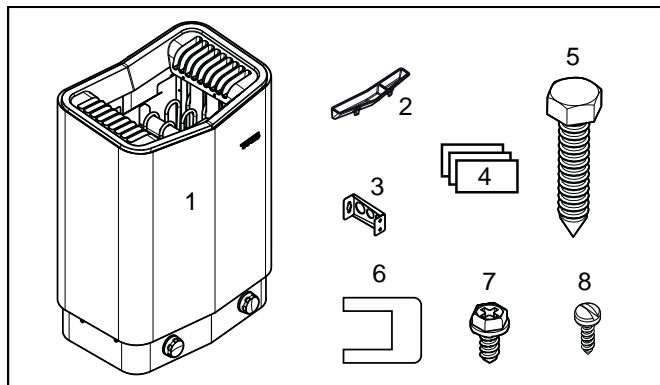


Figure 1: Sauna heater parts

1. Sauna heater
2. Herb bowl / air humidifier
3. Heater Mounting Brackets x 4
4. Warning and Caution plates for the room in multiple languages
5. Bracket screws x 4
6. Connectors x 3
7. Lock screw B 8 x 9.5 x 1
8. Screws B 4 x 6.5 x 6 for Warning and Caution plates

Contact your dealer if anything is missing.

Installation requirements

To ensure safe use of the heater, check that the following criteria are met:

- Electrical wiring should be installed in accordance with NEC and all state and local codes.
- Fuse size (A) and power cable size (AWG) must be suitable for the heater (see The section called Connection/wiring diagram, Page 4).
- The sauna ventilation must comply with the instructions in this manual (see The section called Positioning the inlet vent, Page 2, The section called Positioning the outlet vent, Page 2).
- The position of the sauna heater must comply with the instructions in this manual.
- The heater output (kW) must be suitable for the sauna volume (cu.ft.) (See Table 1, Page 1). The minimum and maximum volumes must not be exceeded.

Table 1: Output and sauna volume

Output kW	Sauna volume min./max. cu.ft.
3.5 - 4.7	100 - 210
5.3 - 7.0	140 - 280
6.3 - 8.3	210 - 420

Installation tools

The following tools and materials are needed for installation and connection:

- level,
- adjustable spanner wrench,
- electric drill,
- screwdriver.

Planning heater and room installation

Before starting to install your sauna heater:

- Plan where to position the sauna heater (see The section called Positioning the heater - normal installation, Page 1).
- Position the inlet vent (see The section called Positioning the inlet vent, Page 2).
- Position the outlet vent (see The section called Positioning the outlet vent, Page 2).
- Plan the electrical installation (see The section called Connection/wiring diagram, Page 3).

Positioning the heater in a sauna room

Position the sauna heater:

- On the same wall as the door (or the side wall if very close to the door wall).
- At a safe distance from the floor, side walls and interior fittings (see Figure 2, Page 1).

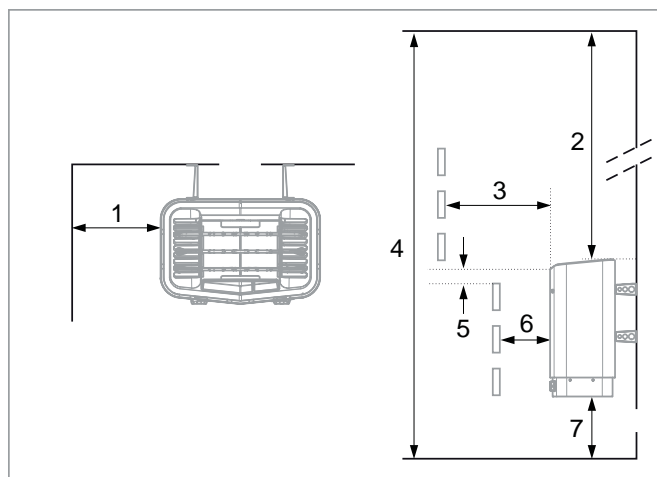


Figure 2: Positioning the heater - normal installation

1. Minimum distance from side wall: 3.0 in
2. Minimum distance from ceiling: 44.0 in
3. Minimum distance from interior fittings: 4.0 in
4. Minimum ceiling height: 75.0 in
5. Minimum distance: 1.0 in
6. Minimum distance from interior fittings: 2 in
7. Distance from floor: 7 in

Sauna room ventilation

In a sauna, the air should be changed about 6 times an hour. This can be achieved by making a vent opening (fresh air inlet) in the sauna wall directly below the heater. The air outlet must be lower than the upper benches, as far as possible from the heater and about two feet higher than the fresh air inlet vent, See Figure 3.

It is recommended that ventilation openings meet the requirements of UL Specification 875. The minimum opening should be determined using one of the following formulas:

For $R < 31$, $V \geq 9.3$
 For $R \geq 31$, $V \geq 0.3 \cdot R$

where R = the floor area of the room in square feet and V = the minimum vent size in square inches

Positioning the inlet vent

Install the inlet vent straight through the wall under the centerline of the heater.

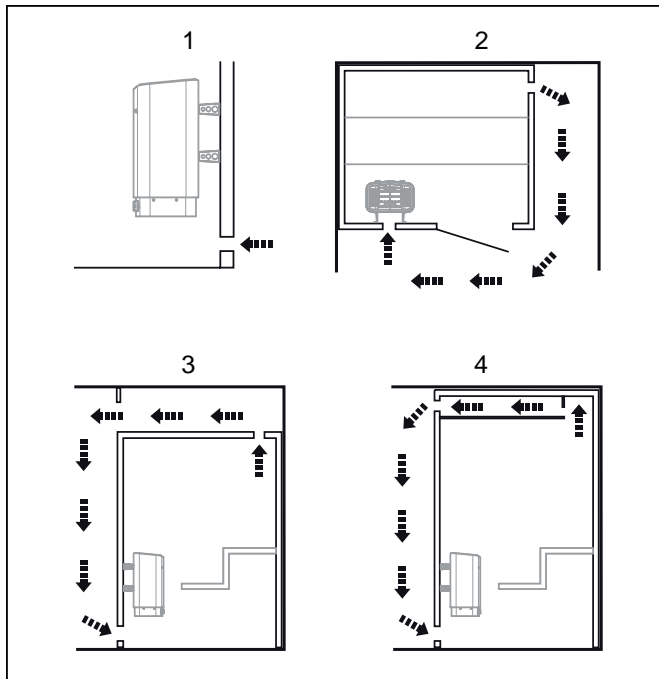


Figure 3: Positioning the inlet and outlet vents

1. Inlet vent position.
2. Outlet vent position through the sauna wall.
3. Outlet vent position through the cavity.
4. Outlet vent position via duct.

Positioning the outlet vent

Position the outlet vent:

- at the maximum possible distance from the inlet vent, e.g. diagonally (see Figure 4, Page 2)
- high on the wall or in the ceiling (see Figure 4, Page 2).
- so that it vents into the space the door and inlet vent open into.

The outlet vent must have the same area as the inlet vent. Ensure that the outlet vent is open.

Mechanical ventilation is not recommended due to the risk of poor air exchange, which can negatively affect the heater temperature cut-out.

Room construction

For safety and reliability, the following rules must be addressed.

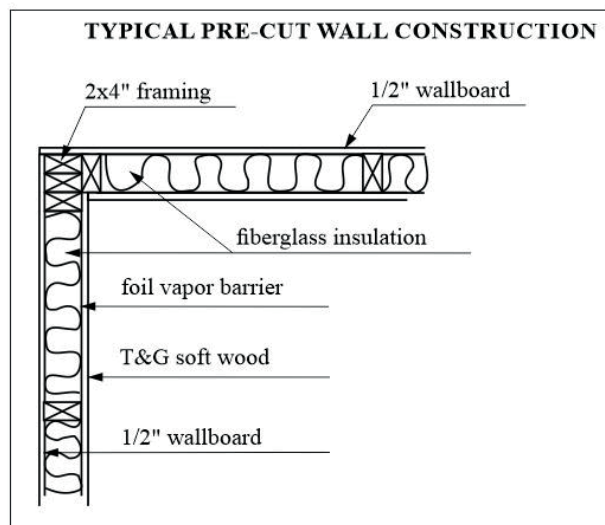
- The enclosed WARNING: Reduce the risk of overheating ... warning plate must be mounted on or alongside the door outside the sauna room at about eye level.
- The enclosed CAUTION: Reduce the risk of fire ... caution plate must be mounted on the interior wall above the heater. No permanent locking or latch system is to be used on the sauna door. • Acceptable door fittings are: magnetic catches, friction catches, spring or gravity loaded closures. The door must always open outwards.
- No shower may be installed in a sauna room.
- No electrical receptacle shall be installed inside the sauna room.
- The heater should not be operated without its container properly filled with rocks and the rock guard in place.
- If an intercom speaker is installed, it should be away from the heater and as close to the floor as possible.
- If a room light is installed, it should be a surface mounted bracket type. Wall mounted lights should be about 70" above the floor. Ceiling mounted lights should be of an approved type with a junction box that is remote to the fixture itself. Use only a fixture that uses A.F. or fixture type internal wiring. A 60 watt bulb should provide sufficient lighting.
- Fire sprinkler systems installed inside any sauna room should be properly rated for sauna room temperatures.
- Always mount the heater according to these installation instructions.

⚠ WARNING
 REDUCE THE RISK OF OVERHEATING

* Exit immediately if uncomfortable, dizzy, or sleepy. Staying too long in a sauna is capable of causing overheating.
 * Supervise children at all times.
 * Check with a doctor before use if pregnant, in poor health, or under medical care.
 * Breathing heated air in conjunction with consumption of alcohol, drugs, or medication is capable of causing unconsciousness.

⚠ CAUTION
 REDUCE THE RISK OF FIRE
Do Not Place Combustible Material On The Heater At Any Time.

Typical wall construction



ELECTRICAL INSTALLATION

- All heaters and controls must be grounded per NEC to prevent electrical shock in case of unit failure.
- Use only copper wire of the size and type indicated on the heater.
- Connect the heater using standard wiring NEC approved for fixed installation.
- Use only copper wire of the size and type according to the information on the heater and NEC.

Sauna heater installation

It is easiest to prepare for installation with the heater lying down. To install the heater:
 Lay the heater down front upwards.
 Remove the screws and open the cover (see Figure 4, Page 3).

Connect the electrical cable (1) to terminal block.

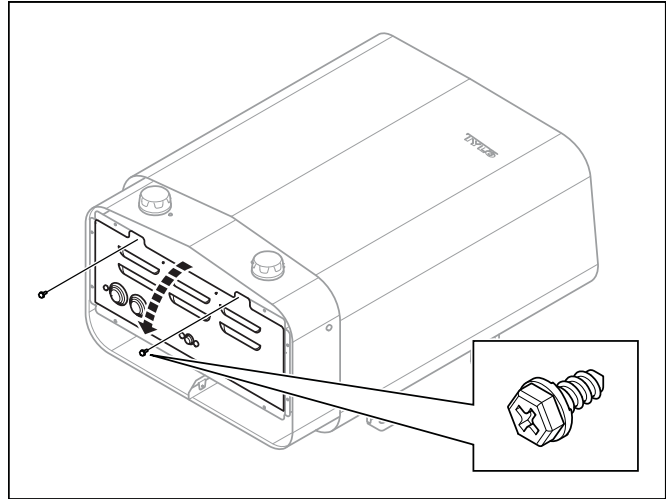


Figure 4: Opening/closing the cover

⚠ WARNING! Always check that the heater is connected to the correct main/phase voltage.

Electrical installation must be made by a licensed electrician in accordance with the National Electrical Code and local regulations.

Open the access cover from under the heater. Route the feed wires through the holes provided in the bottom of the heater and connect the wires to the terminal block. To determine the correct wire size, see chart below. Use copper supply wire only, suitable for minimum 90 degrees C. The heater must be grounded!

Connection/Wiring

Heater Wiring Size Chart

Model	Output kW	208 V 1 Phase		240 V 1 Phase	
		Amps	Wire Size AWG	Amps	Wire Size AWG
SSU 5	3.5	17	12		
SSU 5	4.6			20	10
SSU 7	5,3	26	10	-	-
SSU 7	7.0	-	-	30	8
SSU 8	6.3	30	8	-	-
SSU 8	8.3	-	-	35	8

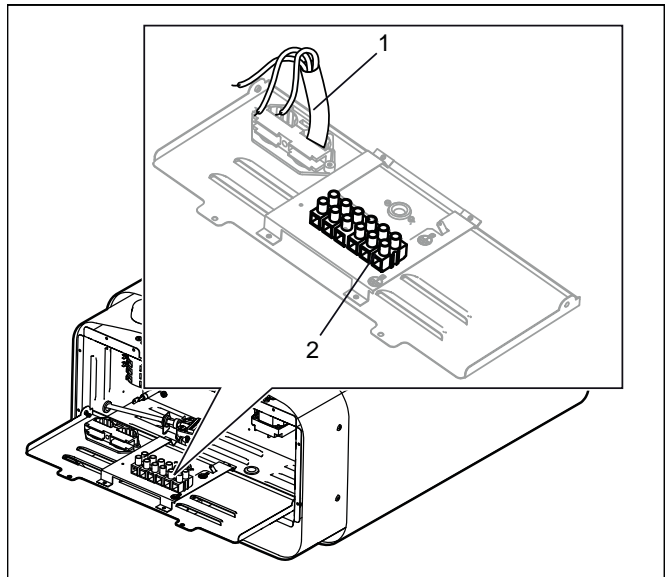
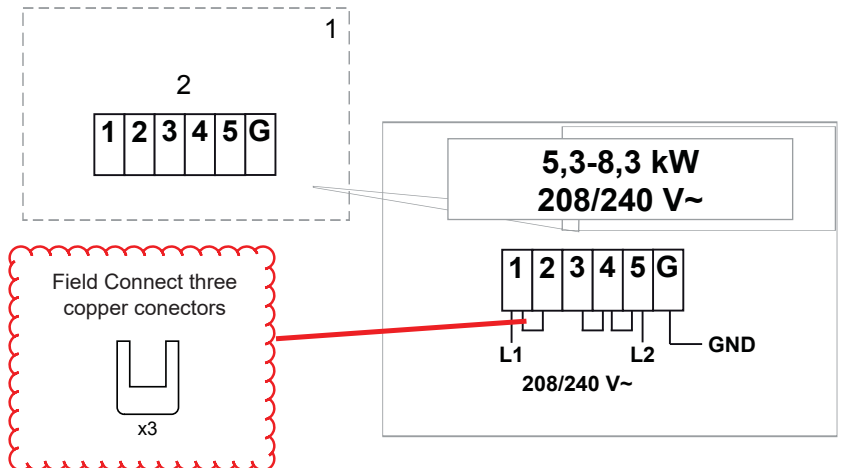


Figure 5: Terminal Block

- 1. Electrical cable
- 2. Terminal for connection of electrical cable

Close the cover and tighten the screws (see Figure 4, Page 3).

Terminal Block Connections



Removing the Rock Guard

Unscrew the two screws on the side of the heater and lift the rock guard upwards, see Figure 6, Page 4. (This is necessary when filling the stone compartment or cleaning the fragrance holder and air humidifier).

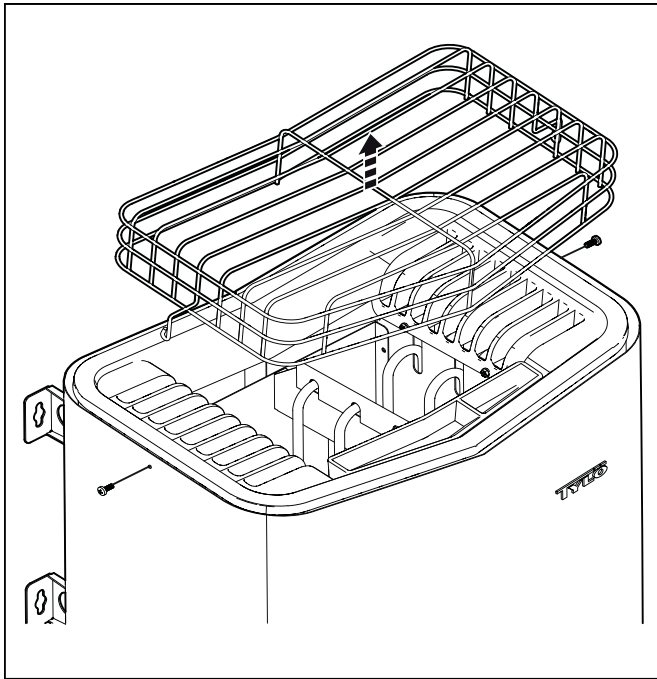


Figure 6: Removing the Rock Guard

Mounting heater

1. Unscrew the first two screws on the back of the heater and screw one of the four brackets into place. Repeat the procedure until all of the brackets are fitted see Figure 7, Page 4.

CAUTION! If all the screws on the back are unscrewed simultaneously, the back plate may come loose. For this reason, attach the four brackets to the heater one at a time.

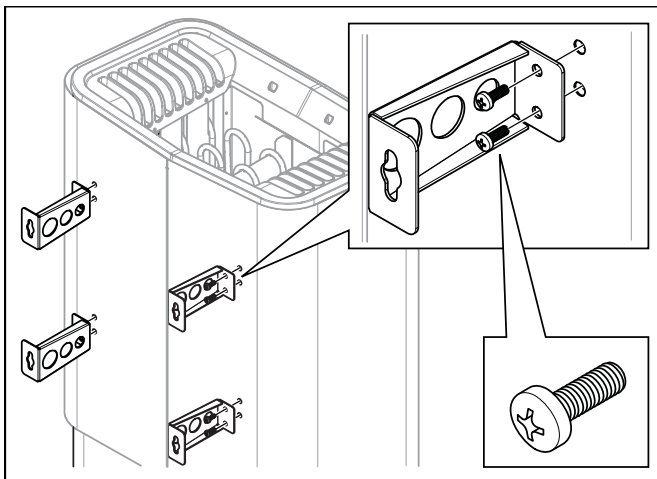


Figure 7: Attaching the brackets to the heater

2. Position the bracket screws according to the specified dimensioning see Figure 8, Page 4.

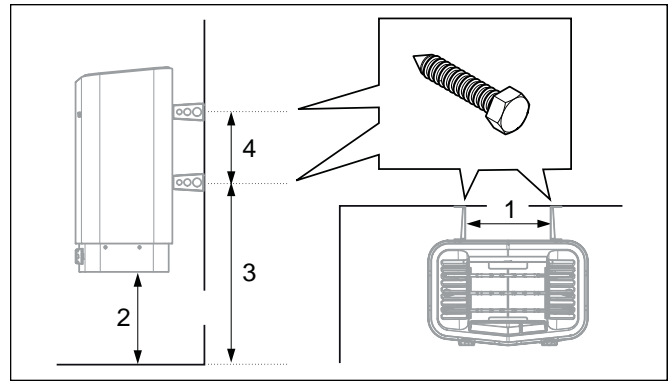


Figure 8: Dimensioning

1. 10.31 in
2. 7.0 in
3. 17.3 in
4. 8.11 in

3. Attach the herb bowl/air humidifier (see Figure 9, Page 4).

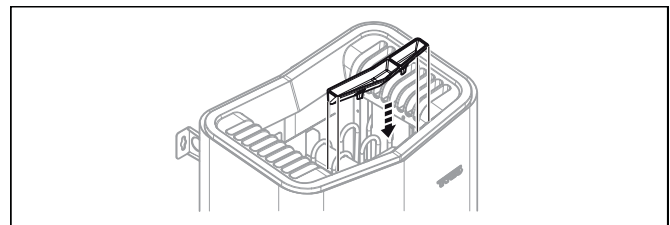


Figure 9: Fitting the fragrance holder/air humidifier

4. Hang the heater on the screws see Figure 10, Page 4.

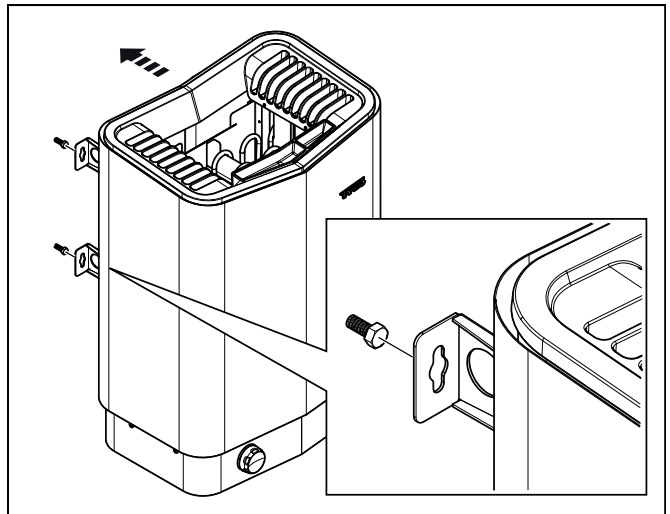


Figure 10: Hang the heater up.

5. Lock the heater into place with the lock screw see Figure 11, Page 4.

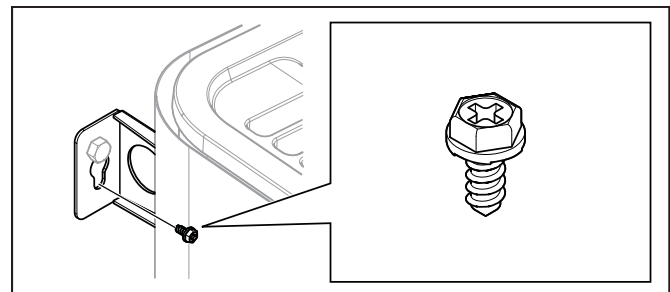


Figure 11: Lock screw for bracket

USER GUIDE

GENERAL INFORMATION

Congratulations on your new sauna heater! Follow this user guide to get the most from your purchase.

Wet and dry saunas are forms of bathing which originate way back in history. These hot sauna baths are best at temperatures between 145-190°F. The temperatures are measured 8-10 inches from the ceiling above the sauna heater.

BEFORE USE

The first time you use the heater



CAUTION! Always use dolerite stones (Tylö Sauna Stones). "Ordinary" stones can damage the heater. Do not use ceramic stones. Ceramic stones can damage the heater. The heater guarantee does not cover damage caused by ceramic stones.

Fill the stone compartment around the heating elements from the bottom to the top, to approx. 2" above the front top edge. Do not press the stones into place. Capacity: Approx. 25 lb of stones.

Place the stones loosely to allow optimum air circulation. The tubular heating elements must not be squeezed together or against the side.

Sauna stones must:

- tolerate extreme heat and fluctuations caused by water being poured on them.
- be cleaned before use.
- have an uneven surface, so that the water "clings" to the stone surface and evaporates efficiently.
- be between 1-1/2" to 2" in size to allow air circulation in the stone compartment. This will increase the life of the tubular elements.



CAUTION! Never place stones on top of the side air chambers. Covering the vents will obstruct air circulation, the unit will overheat and the temperature safety switch will activate.

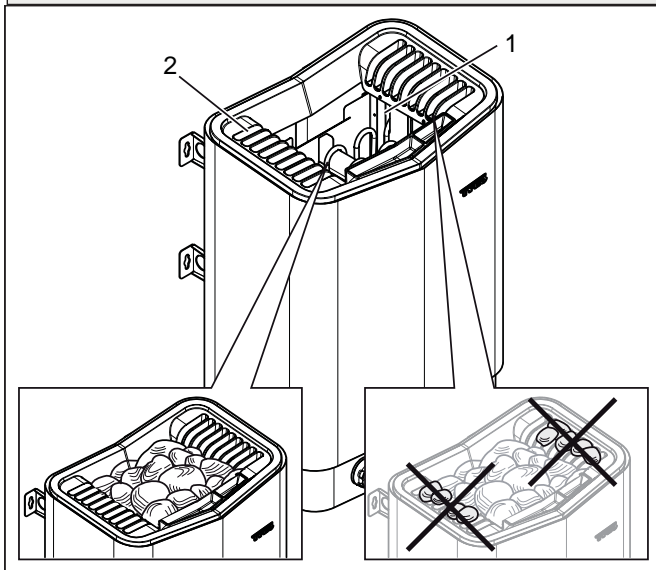


Figure 1: Filling the stone compartment

1. Stone compartment
2. Side chambers

Switch on the heater to remove any new paint odors

- To remove "new paint odor" from the heater:
- Turn the thermostat dial halfway through the heat scale and let the heater warm up for about one hour. A little smoke may appear.

Before each use

Check the following

Check that:

- there are no foreign objects in the sauna cabin, on or in the heater.
- the door and any windows to the sauna cabin are closed.
- that the sauna door opens outwards with a little pressure.

How to Sauna

- When taking a sauna, allow time to relax completely.
- Remove clothing and jewelry...if required, wear a towel loosely.
- After 10 minutes or when perspiration begins, leave sauna and relax in dressing area... follow with a cool shower.
- Cooling time should equal time spent in sauna. Enter sauna room again and stay 5 or 10 minutes.
- Repeat the cycle 2 or 3 times; end with a brisk shower...rinse in cool water.
- Dress when completely dry and perspiration has stopped.
- Some sauna bathers enjoy the soothing effect of steam by splashing water on the heated sauna rocks. Use only one dipper full (approx. 1/2 cup) at a time and take care to keep clear of the steam as it rises off the rocks.
- Do not smoke, exercise or drink alcoholic beverages in the sauna room.
- Do not pour chlorinated pool or spa water on the heater or corrosion damage may result.



NOTE! Do not use the sauna cabin for any purpose other than taking saunas.

Operation

Setting the temperature

The thermostat dial shows a rising heat scale. Find the sauna temperature which suits you best (usually 158-176°F). You can then leave the temperature setting at this level.

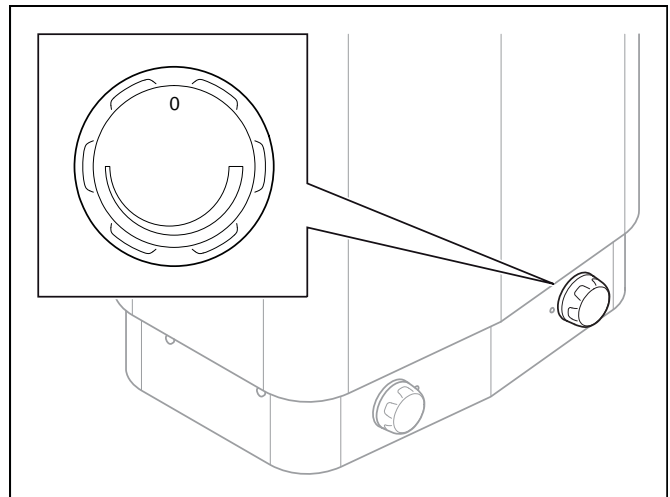


Figure 2: Thermostat for setting temperature

Setting time

To set the time for immediate start: Turn the timer knob full clockwise. The length of sauna is set for 60 minutes.

To manually stop heater turn the knob counter-clockwise.

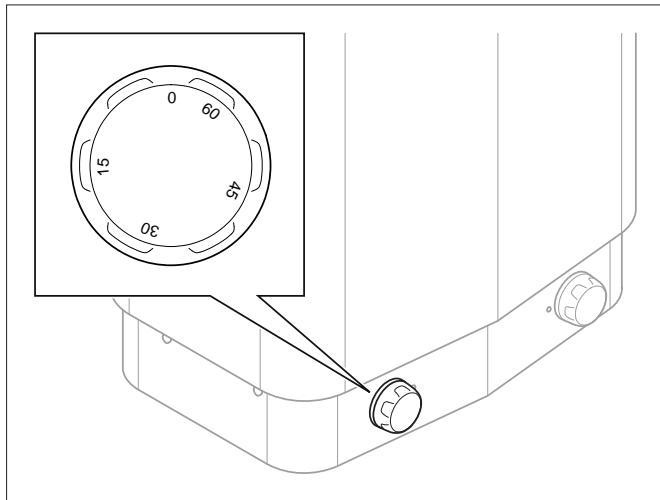


Figure 3: Time for setting time

Functions

Fragrance holder



DANGER! Fragrant essences etc. may ignite if poured directly onto the stones.

To create a pleasant fragrance in the sauna, pour a few drops of Tylö Sauna Fragrance into the water in the fragrance holder. You can also mix a few drops of the sauna fragrance with water in a sauna bucket and pour the water on fully heated stones. Use a sauna ladle for pouring water on the hot stones. Tylö Sauna Fragrance comes in six fragrances:

Tylö Sauna Fragrance comes in six fragrances:

- Eucalyptus
- Mint
- Menthol
- Pine
- Lemon
- Birch

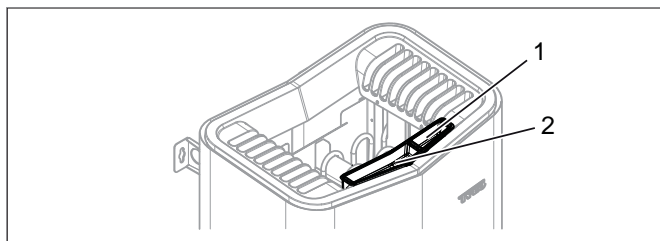


Figure 4: Other functions

1. Fragrance holder
2. Air humidifier

Air humidifier



DANGER! Do not pour water into the fragrance holder once it has been heated up, as this can cause boiling water to splash on the sauna occupants.

To maintain a pleasant basic humidity in the sauna, fill the built-in air humidifier (see Figure 4, Page 6) with water before switching on the sauna.



TIP! Pour a few drops of diluted sauna fragrance into the built-in air humidifier.

MAINTENANCE

Cleaning the fragrance holder and air humidifier

Clean the fragrance holder and air humidifier as required.

To clean the fragrance holder and air humidifier:

Remove the fragrance holder/air humidifier and rinse them under running water.

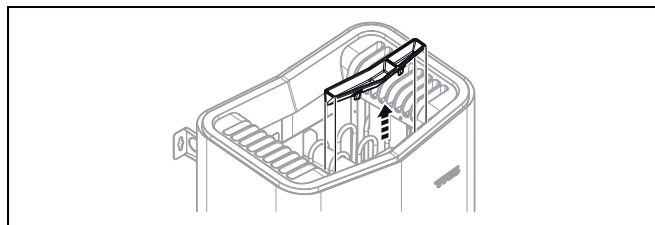


Figure 5: Cleaning the fragrance holder and air humidifier

Check the stone compartment

Check the stone compartment at least once annually or as many times per year as the heater is used per week.

Example: If the unit is used 3 times a week, check the stone compartment 3 times per year.

How to check the stone compartment:

Remove all stones from the compartment.

Remove any small stones, gravel and lime-scale from the compartment.

Put whole, undamaged stones back.

Replace damaged stones with new ones as required (see The section called Fill the stone compartment, Page 5).

Sauna Room

The sauna, like a bathroom, should be kept clean and odor free.

Towels or mats should always be used on benches and floor as perspiration otherwise penetrates the soft wood.

Air out the sauna often by keeping the door and vents open when the sauna is not in use. Saunas that are in daily use should be washed down at least once a week to keep them clean and the air fresh. Duckboard should be removed from the sauna, the sauna floor mopped and dried in a conventional manner, and the duckboard thoroughly scrubbed and dried before returning to the sauna room. The sauna heater should be wiped down occasionally with a damp cloth to remove lint and dust. The rocks should be removed once a year for cleaning and small or crumbled rocks replaced.

To clean and remove perspiration stains, use soap or detergent in warm water, best applied with a scrub brush. Badly soiled surfaces may require sanding. Sand paper wrapped around a wooden block works well.

Benches and supporting structure must be inspected annually for potential deterioration due to age, dry rot or abuse. Any boards with signs of deteriorations should be replaced immediately to avoid possible injury.

TROUBLESHOOTING

Troubleshooting the sauna heater

Table 1: Troubleshooting the sauna heater

Symptom	Possible cause	Remedy
Low Heat	Thermostat is not set high enough. Timer length is less than 60 minutes.	Raise the thermostat setting. Raise the time setting to full 60 minutes.
No Heat	Internal temperature safety switch activated. For more details, see The section called Temperature Safety Switch, Page 7.	Reset the temperature safety switch. There is a white button on the left side of heater which can be pressed in (see Figure 6, Page 7). Try to determine the cause of safety switch activation.
No Heat	Circuit Breaker / Fuses in the Breaker Panel.	Replace/reset the fuses in the breaker panel that have blown/tripped.
The fuses / circuit breaker in the distribution box trips as soon as the heater is turned on or during operation.	The heater has remained inactive for a long time, causing an insulation fault in the tubular elements.	Turn off the heater and do not use it. Contact an electrician to check the fault, or contact the dealer during the guarantee period.

Temperature Safety Switch

The temperature safety switch in the heater has the purpose of protecting the components, heating elements and woodwork in the sauna from overheating. If the safety switch is triggered, it must be reset before the heater can be turned on again. The cause of the overheating must be established before resetting the safety switch.

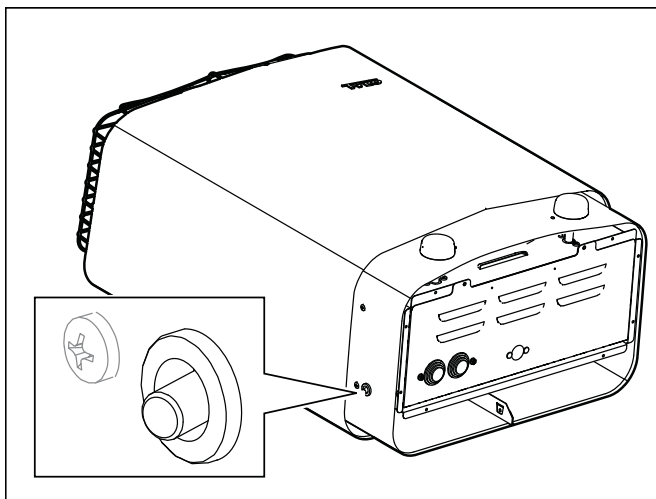


Figure 6: Resetting the temperature cut-out

SPARE PARTS LIST

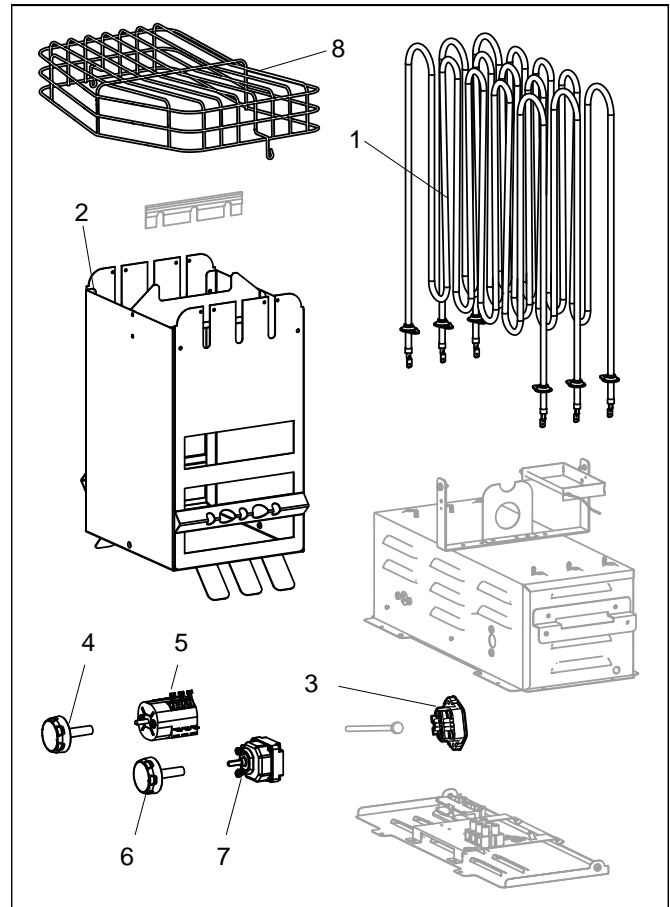


Figure 7: Spare parts

- | | |
|------------------------------|----------|
| 1. SSU 8 Tubular element | 3001-924 |
| SSU 5/7 Tubular element | 3001-920 |
| 2. Stone compartment | n/a |
| 3. Temperature Safety Switch | 3119-607 |
| 4. Timer Knob | 2140-708 |
| 5. Timer 60 minute | 3140-508 |
| 6. Thermostat Knob | 2140-710 |
| 7. Thermostat | 3155-642 |
| 8. Rock Guard | 8019-541 |

ROHS (RESTRICTION OF HAZARDOUS SUBSTANCES)

Instructions for environmental protection:

Do not dispose of this product with the domestic refuse when no longer in use. Take it to a recycling station for electrical and electronic equipment instead.

For further information, see the symbol on the product, manual or packaging.



Figure 8: Symbol

The different materials can be recycled as specified by their labeling.

You can help protect the environment by recycling or reusing the spent appliances or the materials in them. Take the product to a recycling center without the sauna stones or the soapstone jacket (if fitted).

Contact your local authorities for details of your nearest recycling center.

SSU 5, 7, and 8 Heater Wiring Diagram

