

Saunum

Instruction for use and installation for the Saunum Primary Set
heater with a steam room indoor climate device



EC declaration of conformity
Manufacturer: Saunum Saunas OÜ
Address: Läike tee 2-4
75312 Peetri, Estonia

certifies that the product:

Saunum Primary Set

complies with the requirements of the following directives of the Council of Europe, provided that the installation has been performed in accordance with the installation instructions issued by the device manufacturer and the instructions EN 60 204-1 "Safety of the machinery. Electrical equipment for the machinery – Part 1: General requirements":

Machinery Directive 2006/42/EC
Low Voltage Directive 2014/35/EU
Electromagnetic Compatibility Directive 2014/30/EU
Signed by: Andrus Vare
Position: Board Member
City: Tallinn
Date: 12 January 2020



Saunum Saunas OÜ congratulates you on choosing a
heater with an innovative steam room
indoor climate device!

SAFETY INFORMATION

These instructions for installation and use are intended for the sauna owner or maintenance provider, as well as the electrician responsible for installing the heater with a steam room indoor climate device. After installing the heater with an indoor climate device, the instructions must be handed over to the owner or maintenance provider. Before using the Saunum Primary Set heater with an indoor climate device (hereinafter 'sauna climate device'), read the installation and safety instructions. The sauna climate device is intended for heating the steam room at 60–95 °C and for levelling the steam room climate during steaming.

NB! Do not use the sauna climate device for any other purposes!

NB! To connect the sauna climate device to the power network, a control device for

the control of electric heaters is required. The control device must correspond to the power of the heater used according to Table 1.

The control device must have the ability to control the fan of the sauna climate device, and the function of simultaneously switching off the heater and the fan of the sauna climate device is recommended.

To ensure the longevity of the device, make sure that the temperature of the steam room at the height of the lower part of the device does not exceed 80 °C. If it is exceeded, the thermal protection will be applied and the fan will stop; the fan will start running again if the temperature drops below the fuse limit of application.

The manufacturer is not responsible for any malfunction caused by an overrun of the authorised operating temperature.

Device	Power	3 phase protection	Power cable mm2 3 phase	Power cable mm2 1 phase/fan	Safety distance from the heater	Cubic size of the sauna room m2
Saunum Primary Set	4,5kW	3x10A	5x1,5	3x1,5	Front 150mm, Sides 150mm	3 - 6
Saunum Primary Set	6kW	3x10A	5x2,5	3x1,5	Front 150mm, Sides 150mm	5 - 9
Saunum Primary Set	9kW	3x16A	5x2,5	3x1,5	Front 150mm, Sides 150mm	8 - 15
Saunum Primary Set	12kW	3x20A	5x4	3x1,5	Front 150mm, Sides 150mm	10 - 15
Saunum Primary Set KK	4,5kW	3x10A	5x1,5	3x1,5	Front 50mm, Sides 50mm	3 - 6
Saunum Primary Set KK	6kW	3x10A	5x2,5	3x1,5	Front 50mm, Sides 50mm	5 - 9
Saunum Primary Set KK	9kW	3x16A	5x2,5	3x1,5	Front 50mm, Sides 50mm	8 - 15

Table 1.

1. DIRECTION FOR USE

1.1 Heating the steam room

Before using the sauna climate device for the first time, make sure that:

- the electrical connections meet the requirements;
- the supply voltage corresponds to the nominal ratings allowed for the sauna climate device;
- the protective earth (PE) is in working order;
- the attachments of the sauna climate device housing are in order;
- the sauna climate device is properly attached to the wall;
- the over-current fuses are in working order;
- the fan rotor rotates smoothly;
- there are no tools or material left after mounting the device in the housing.

When switching the sauna climate device on, check:

- the direction of the air flow – the air intake from the upper and the output from the lower opening;
- that there is no vibration or excessive noise when the fan is running.

When the sauna climate device is switched on for the first time, the heaters and the stones will emit an odour. The steam room must be properly ventilated to remove the odour. If the power of the heater is suitable for the steam room, it takes 45–90 minutes to reach the desired temperature in a properly insulated steam room.

The stones are usually heated to the steam temperature at the same time as the steam room. Only switch the device fan on just before entering the steam room – this will help to prevent the sauna bench from overheating and an excessive energy consumption.

Saunum's recommended temperature for sauna procedures is 65 ° to 80 °C.

1.2. Using the sauna climate device

NB! Before switching the sauna climate device on, always make sure that nothing is above or near it.

The operating time of the sauna climate device model Sauna Primary Set may be adjusted by a separate control device.

- Do not connect the device directly to the mains!
- The sauna climate device must not be used if the components of its housing have been removed and/or the wiring diagram has been changed.
- Children should not be allowed to access or play with the sauna climate device.
- When switching the sauna climate device on and off, refer to the instructions for use of the control device you are using.

NB! After using the sauna, make sure that all parts of the sauna climate device are switched off (the heating and the fan have stopped).

1.2.1. Adjusting the temperature

NB! It is recommended to keep the air circulation fan of the sauna climate device switched off during the heating of the steam room!

In this case, the steam room heats up faster and the sauna bench does not get too hot during the heating.

To find the right setting, start testing at the lowest temperature and lowest airflow rate.

If the temperature becomes too high while in the steam room, reduce the maximum temperature in the steam room or the fan speed of the sauna climate device.

1.2.2. Regulation of the sauna climate

The amount of air circulation generated by the device is regulated by a rotary switch located on the front of the device, in the middle of the lower part. The switch has four positions and may be turned both clockwise and anticlockwise. When the line on the switch button points to the left, the fan of the sauna climate device is switched off. The airflow speed increases by turning the switch clockwise, you may choose between three different speeds.

To regulate the air temperature in the steam room, there is a steam air cooling damper on the left side of the heater housing, lower than the device stone area (Figure 1). The recommended setting is to keep the cooling damper 1/3 open. To cool the steam, try to open the damper little by little.

1.2.3. Use of Himalayan salt balls

The sauna climate device comes with Himalayan salt balls. The use of salt balls in the device is optional and does not affect the main function of the device. To use the salt balls, they must be installed in the sockets between the air outlet grille and the fan. Make sure that the salt balls are installed correctly and do not impede the fan rotation. To install or remove the salt balls, remove the front panel (Figure 3.3) and place the salt balls in their sockets. After installing or removing the salt balls, reposition the front panel.

The sauna climate device may only be used with the front panel!
Do not use/start the device if the salt balls get into the fan housing!

NB! The use of third-party salt balls is not covered by the device warranty.

1.3. Throwing water on the heater

The air in the sauna becomes dry as it heats up. Therefore, it is necessary to create steam to achieve a suitable level of humidity. The effects of heat and steam on people are different. When testing the different settings of the sauna climate device, you will find the most suitable combination of temperature and humidity.

The effects of heat and steam on people are different. When testing the different settings of the SAUNUM climate device, you will find the most suitable combination of temperature and humidity.

The volume of the sauna ladle should not exceed 0.2 litres. When throwing water, the amount of water should not exceed 0.2 litres, because by pouring pour too much water on the stones at once, some of it may be sprayed in splashes of boiling water.

Make sure that people are at a safe distance from the heater when creating steam! Hot steam and water splashes cause skin burns. The water to be thrown onto the heater must meet the requirements for clean domestic water. Only fragrances specially designed for sauna may be used in the water.

Follow the instructions on the package.

NB! Do not pour water into the ventilation openings of the sauna climate device!

1.4. Warnings

- Staying in the steam room for a long time raises your body temperature, which may be dangerous to your health!
- Do not touch the hot heater – the stones and the outside of the heater may burn you!
- Do not allow children, disabled or sick people into the steam room without supervision!
- Consult a doctor about medical contraindications to steam!
- Consult a doctor about medical contraindications to salt treatment!
- Make sure you are not allergic to salt treatment. Saunum is not responsible for the side effects of salt treatment!
- Consult a paediatrician (family doctor) about the presence of children in the steam room!
- Be careful when moving in the sauna and steam room, as the bench and the floor may be slippery!
- Do not go to the sauna under the influence of alcohol, drugs, or narcotics!
- Do not sleep in the hot steam room!
- Sea air and humid climates may cause an oxide layer (rust) on the metal surfaces of the heater!
- Make sure you have proper ventilation in the steam room. Saunum is not responsible for possible salt corrosion of equipment and machinery. If necessary, consult a specialist!
- Do not hang towels and clothes to dry in the steam room – this may cause a fire hazard!
- Excessive moisture may damage the electrical equipment!

NB! Do not leave the fan of the sauna climate device running when you are not in the steam room – this will cause an excessive energy consumption, and the sauna bench will become too hot!

1.5. Solving problems

NB! Contact a qualified service specialist to perform maintenance. In case of any disturbances in the operation of the sauna climate device, the use of the device must be stopped immediately and the device must be inspected by a person authorised by Saunum.

The sauna climate device does not heat or blow air.

- Make sure that the heater fuses are in working order.
- Make sure the connection cable is connected.
- Make sure that the sauna climate device is switched on.
- Increase the maximum temperature in the steam room.

The steam room heats up slowly. The water thrown on the stones cools them down quickly.

- Make sure that the air circulation fan of the sauna climate device is switched off during the heating.
- Make sure that the fuses of the sauna climate device are in working order.
- Make sure that all heating elements are hot (smouldering) when the sauna climate device is operating.
- Increase the selected temperature on the control device.
- Make sure that the power of the heater is sufficient.
- Check the stones. Stones that are placed too tightly, falling down/sinking closer over time, or the wrong type of stone may interfere with the air flow through the heater and therefore reduce the heating speed.
- Make sure that the ventilation of the steam room is correct.

The steam room heats up quickly, but the temperature of the stones is insufficient. The water thrown on the stones flows down.

- Make sure that the power of the heater is not too high. If the power of the heater is suitable for the steam room, it takes 45–90 minutes to reach the desired temperature in a properly insulated steam room.
- Make sure that the ventilation of the steam room is correct.

- Reduce the speed of the sauna climate device fan.

The wall covering or other material near the heater becomes dirty quickly.

- Observe the safety distance requirements.
- Check the stones. Stones that are placed too tightly, stones falling down/sinking closer over time, or the wrong type of stone may interfere with the air flow through the heater and cause the surrounding materials to overheat.
- Make sure that no heating elements are visible between the stones. If the heating elements are visible, lift the stones so that the heating elements are completely covered.

NB! Too sparsely placed stones allow the heating elements to overheat and worsen the indoor climate of the steam room. It may cause a fire hazard!

The wooden surfaces of the steam room become dirty over time.

This process may be accelerated by:

- sunlight;
- heat from the heater;
- wall protectors (protection equipment has poor heat resistance);
- fine particles from the stones.

The heater smells.

- See section 1.1.
- A hot heater may amplify odours mixed with air, but this, however, is not caused by the sauna nor the heater. Causes include paint, glue, oil, spices, etc.

The sauna climate device is making noise.

- There is always a certain noise when the fan is running. If it is not uniform and/or accompanied by a metallic sound, the fan is likely to need maintenance or repair. Check that there are no foreign objects in the fan air vents.

- Try switching the fan to a lower speed.
- Loud sounds are likely to be caused by stones cracking due to heat.
- Thermal expansion of the heater parts may cause noise when the heater warms up.

1.6. Loading the stones

Stacking stones has a great effect on the operation of the heater.

Important to know:

- The diameter of the stones must be 5–8 cm.
- Only stones sold for saunas are intended for use in the heaters.
- **Do not use light, porous ceramic “stones”, or soft tiles in the heater. They do not store enough heat when heated and can result in damage to the heating elements.**
- Wash dust off the stones before placing them in the heater.

NB! When using Saunum equipment, we always recommend doing so with high-quality polished sauna stones!

When loading the stones, note:

- Do not allow the stones to fall into the heater.
- Do not force the stones between the heating elements.
- Do not allow the stones to rest on the heating elements with their own weight, but load the stones so that they support each other.
- Do not stack the stones on the heater.
- Do not place objects in the vicinity of the stone area or the fan of the sauna climate device that may change the amount or direction of the air flowing through the sauna climate device.

1.7. Maintenance

Due to large temperature fluctuations, stones tend to break down. Stones must be restacked at least once a year and even more frequently when using the sauna often. When restacking the stones, remove stone fragments from the bottom of the heater and replace the broken stones with new ones. By monitoring this, the heating capacity of the heater remains optimal and the risk of overheating is avoided. If you use Himalayan salt balls with the sauna climate device, it is recom-

mended to inspect the salt balls once a year and, if necessary, replace worn and broken balls with new ones.

Make sure that there are no foreign objects in the fan air vents of the sauna climate device.

CAUTION! Before maintaining and cleaning the sauna climate device, the device power supply must be disconnected from the mains, and the moving parts of the unit must completely stop.

Before servicing and cleaning the sauna climate device, make sure that:

- the sauna climate device is disconnected from the mains (in addition to the device’s power switch, also by means of over-current fuses);
- the device fan has stopped completely;
- the prescribed occupational safety and personal protective equipment is used when performing the work;
- the connection cables are undamaged. In the event of damage to the connection cables, have the cables replaced by a qualified electrician in accordance with the applicable standards and requirements before continuing maintenance and cleaning work.

The device housing can be cleaned with a cloth dampened with water. Do not use pressure washers, running water, chemical cleaners, or solvents to clean the housing!

Use a 10% citric acid solution to remove scale and rinse with water.

Excessive dirt can prevent the fan rotor from operating correctly, causing an increase in noise when operating the sauna climate device. Noise may also increase due to damage/bending of the fan blades.

Make sure that there are no foreign objects or salt balls in the working area of the fan rotor.

Generally, the fan does not need to be cleaned more than once a year. The fan may only be cleaned by a person authorised by Saunum.

Using compressed air to clean the fan can permanently damage the fan rotor!

The fan bearings are maintenance-free and must be replaced if problems occur.

It is recommended to check all electrical connections of the sauna climate device at least once a year. This can be done by a suitably qualified person.

2. Steam room

A prerequisite for the installation of the sauna climate device is a properly prepared steam room. The thermal insulation of walls and ceilings must be good, otherwise it will take too much time and energy to heat the room. The power supply cables for the heater and the fan must be indicated on the electrical connection board in accordance with Table 1.

2.1. Steam room ventilation

The air in the steam room must be changed at least six times an hour. When using mechanical air extraction, place the air supply above the sauna climate device. When using natural air extraction, place the air supply under or next to the sauna climate device. The air supply pipe must have a diameter of 80 to 100 mm.

Install the air outlet near the floor, as far as possible from the sauna climate device. The diameter of the air extraction pipe must be twice the diameter of the air supply pipe. If the air outlet is in the washroom, there must be a gap of at least 100 mm under the steam room door. Exhaust ventilation in the sauna room is mandatory.

The venting hole for drying (optional) must be installed in the ceiling near the wall opposite to the sauna climate device (closed during heating and sauna). The sauna can also be dried by leaving the door open after using the sauna.

The sauna ventilation system should preferably prevent the sauna exhaust air from entering other rooms, especially when using the sauna climate device with salt balls.

2.2. Power of the heater

If there is sufficient insulation behind the wall and ceiling covering, the power of the heater is determined by the volume of the steam room. Non-insulated walls (brick, glass block, glass, concrete, floor tiles, etc.) need a more powerful heater. Add 1.2 m³ to the volume of the steam room for each square meter of uninsulated wall.

For example, a 10 m³ steam room with a glass door corresponds to the capacity requirement of a 12 m³ steam room. If the steam room has log walls, multiply the volume by 1.5. The optimal steam room sizes for the sauna climate device Saunum Primary Set are given in Table 1. The height of the steam room is usually

2,100 to 2,300 mm.

The minimum height when installing the sauna climate device Saunum Primary Set is 1,800 mm.

3. INSTALLATION INSTRUCTIONS

3.1. Before the installation

The installation of the sauna climate device must be performed by a qualified electrician. The connection of the device must be performed in a stable location with a cable that meets the temperature conditions. Protective earthing (PE) must be connected to the connection terminal of the device, with the cross-sectional area of the cable being at least 2.5 mm². The device must be powered from the control device's supply circuit, which is protected by over-current fuses. The required over-current fuses sizes and the connection cables dimensions are given in Table 1.

All the certified sauna control devices with the operating capacity corresponding to the capacity of the Saunum Primary Set model used in accordance with Table 1 may be used to control the sauna climate control device.

Before starting the installation work, read the installation instructions and observe the following:

- The power and type of the heater are suitable for the given steam room. The recommended steam room volume is given in Table 1.
- The supply voltage is suitable for the sauna climate device.
- At the installation site of the sauna climate device, the minimum safety distances given in Table 1, measured from the heater housing, are guaranteed.
- The dimensions of the device are shown in Figures 3.5 and 3.6.
- It must also be ensured that the upper edge of the fan outlet of the sauna climate device is lower than the lower edge of the bench. There must be no obstructions in front of the air outlet from the device, the exhaust air flow must be able to flow freely across the steam room.

The device works most efficiently when its flue cap is installed against the ceiling of the steam room and the exhaust air is blown under the bench.

Safety distances must be complied with unconditionally, as failure to do so may result in a fire hazard. Only one sauna climate device may be installed in the steam room.

3.2. Installing the sauna climate device

See Figure 3.1 to Figure 4.

- 3.2.1. Install the flue cap and centre the heater housing against the cap. Figure 3.1.
- 3.2.2. Hang the telescopic flue on the cap. Figure 3.1.
- 3.2.3. Place the lower part of the flue at the top of the flue base.
- 3.2.4. Adjust the heater legs and check the flue and housing so that the device is level. Move the heater housing as required.
- 3.2.5. Install the stone baskets with the hooks in the holes behind the flue. Figure 3.2.
- 3.2.8. Install the salt balls as per Figure 3.3.
- 3.2.9. Connect the sauna climate device to the control device (section 3.3)
- 3.2.10. Fill the stone area of the sauna climate device with the stones (section 1.6).

3.3. Electrical connection

The electrical connection of the device must be performed by a qualified person in accordance with the applicable standards and requirements.

The sauna climate device must be connected in a half stationary position to the junction box on the wall of the steam room. The junction box must be splash-proof and its maximum height from the floor can be up to 500 mm. The connection cable must be a rubber insulated type H07RN-F cable or equivalent. To access the device electrical connections, it is necessary to open the bottom panel. To open the panel, completely loosen the two bolts under the device (Figure 4). NB! Due to thermal embrittlement, it is forbidden to use of a PVC-insulated cable as the connection cable for the sauna climate device.

- The internal connections of the device are made by means of screw terminals according to Figure 2 and Table 1 in this manual.
- Protective earthing (PE) must be connected to the connection terminal of the device, with the cross-sectional area of the cable being at least 2.5 mm².
- The heater must be powered from the 380VAC (3-phase) or 230VAC (1-phase) 50/60 Hz supply circuit through a control device protected by an over-current fuse of the size shown in Table 1.
- If you want to connect the air circulation fan of the device separately from the heater control device, the fan must be connected via a residual-current device. In this case, the protective earthing (PE) of the fan supply input terminal of the sauna climate device must not be brought into contact with the protective

earthing of the heater supply input terminal. In this case, use earthed cables of at least 1.5 mm² to power the fan.

- The power cable must enter the housing of the sauna climate device so that the water does not flow along the cable into the electrical connection box of the housing of the sauna climate device. The outer insulation of the cable can only be peeled off only from the part that is in the device housing.
 - If the connection and installation cables are higher than 1,000 mm from the floor of the steam room or inside the walls of the steam room, they must be able to withstand at least 170 °C (e.g. SSJ).
- Electrical equipment installed higher than 1,000 mm above the floor must be permitted for use at 125 °C (marking T125).
- The recommended cross-section of the connection cable grooves is given in Table 1.

NB! The sauna climate device may only be connected by a professional electrician in accordance with the applicable regulations!

3.3.1. Electric heater insulation resistance

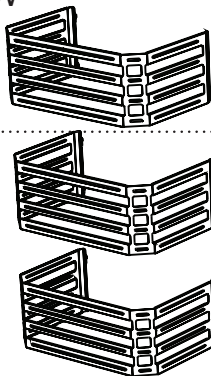
During the final inspection of the electrical installation, a leakage may be detected when measuring the insulation resistance of the sauna climate device, and which has occurred due to the insulation material of the heating elements absorbing moisture from the air (storage, transport). After a few uses of the sauna climate device, this moisture will disappear.

Do not connect the heater to the mains via a residual-current device!

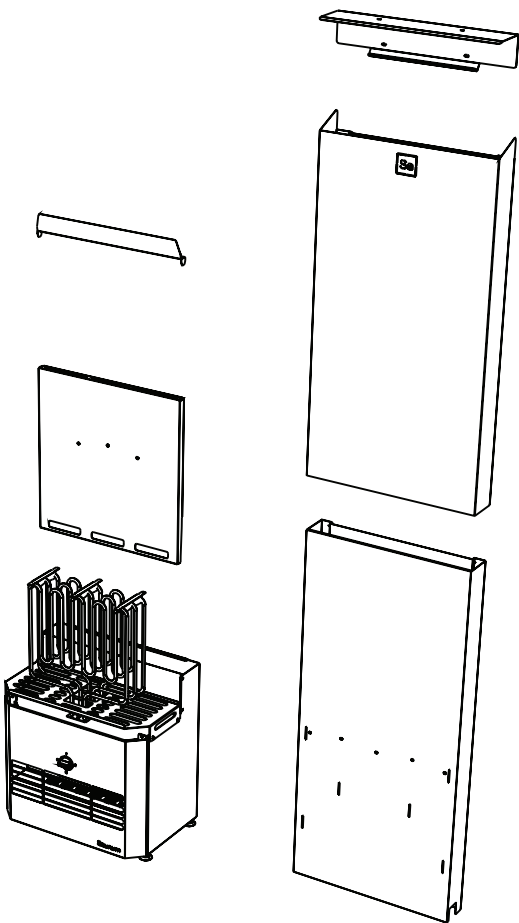
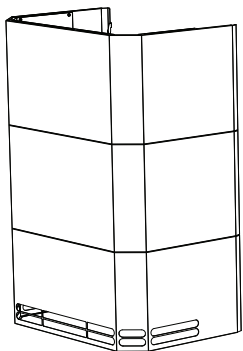
PRODUCT COMPLETENESS

PARTS OF THE PRODUCT INCLUDED IN THE PACKAGING.

9kW und 12kW



Closed stone basket



ELEMENTS REQUIRED FOR OPERATION WHICH ARE NOT PART OF THE PRIMARY COMPOSITION

Automatics, power supply cables, and stones

DRAWINGS

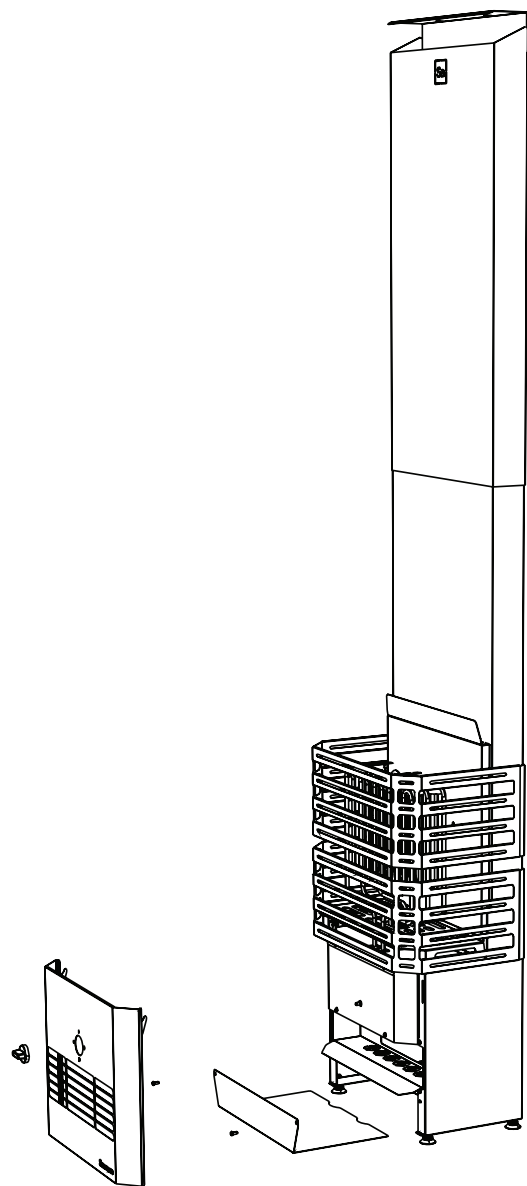


Figure 4: Access to the electrical part

- A. Flue cap/
- B. Telescopic flue/
- C. Stone basket/
- D. Front panel/
- E. Steam air cooling damper

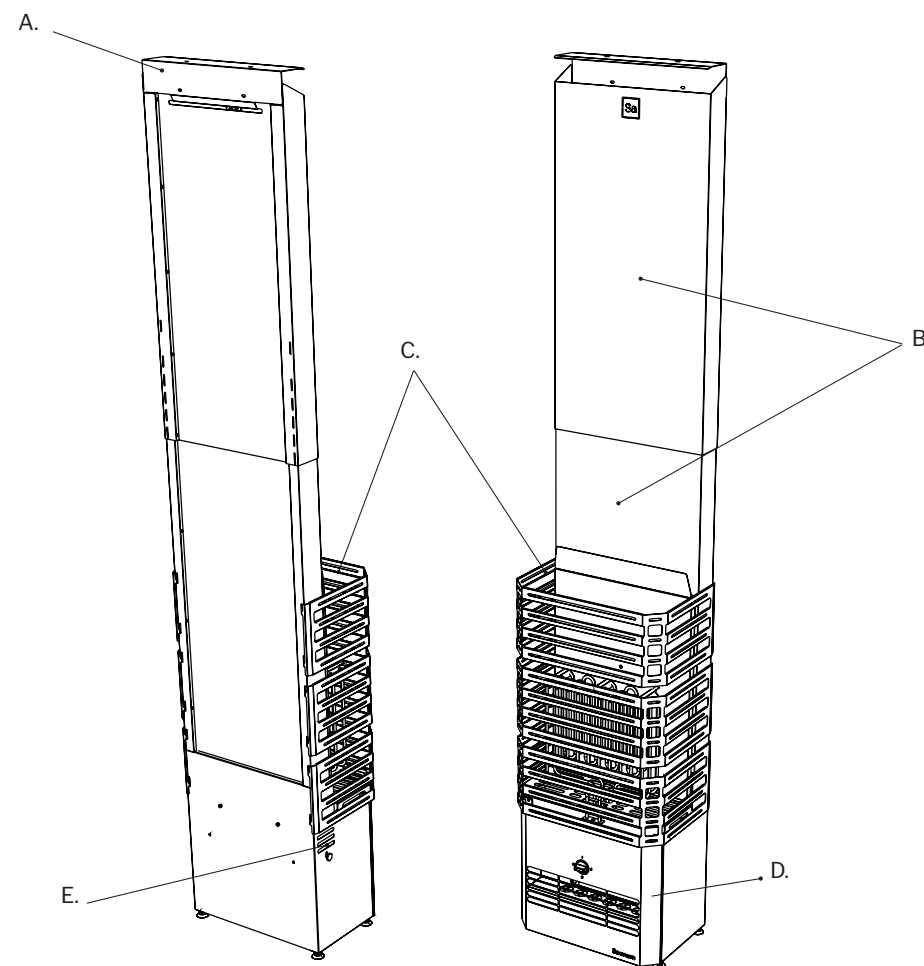


Figure 1: Parts of the sauna climate device

DRAWINGS

Steam room capacity

3-6 m³
5-9 m³
8-15 m³
10-15 m³

Recommended device

Saunum Primary Set 4,5kW (A) min. 150mm
Saunum Primary Set 6kW
Saunum Primary Set 9kW (B) min. 150mm
Saunum Primary Set 12kW

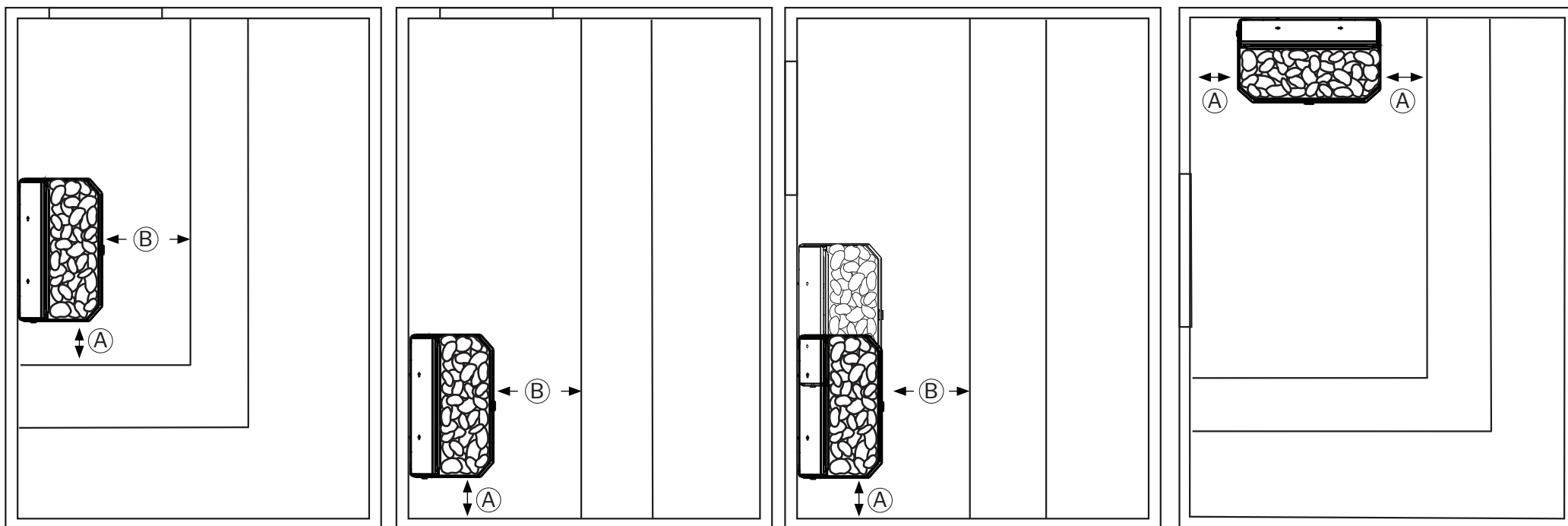
Steam room capacity

3-6 m³
5-9 m³
8-15 m³

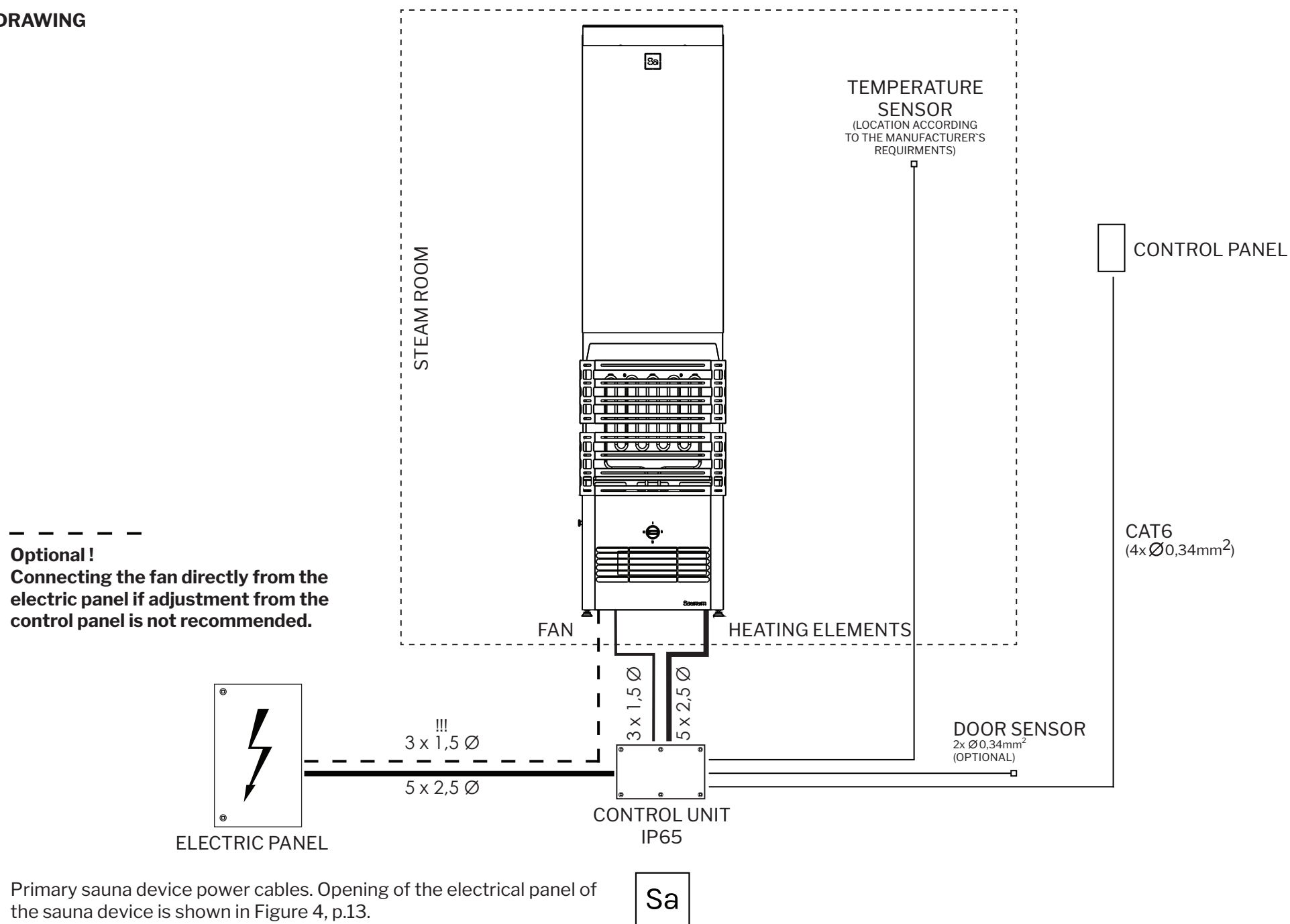
Recommended device

Saunum Primary Set CB 4,5kW (A) min. 50mm
Saunum Primary Set CB 6kW
Saunum Primary Set CB 9kW (B) min. 50mm

**The device can be placed with its
backside against the steam room
cladding or panels!**



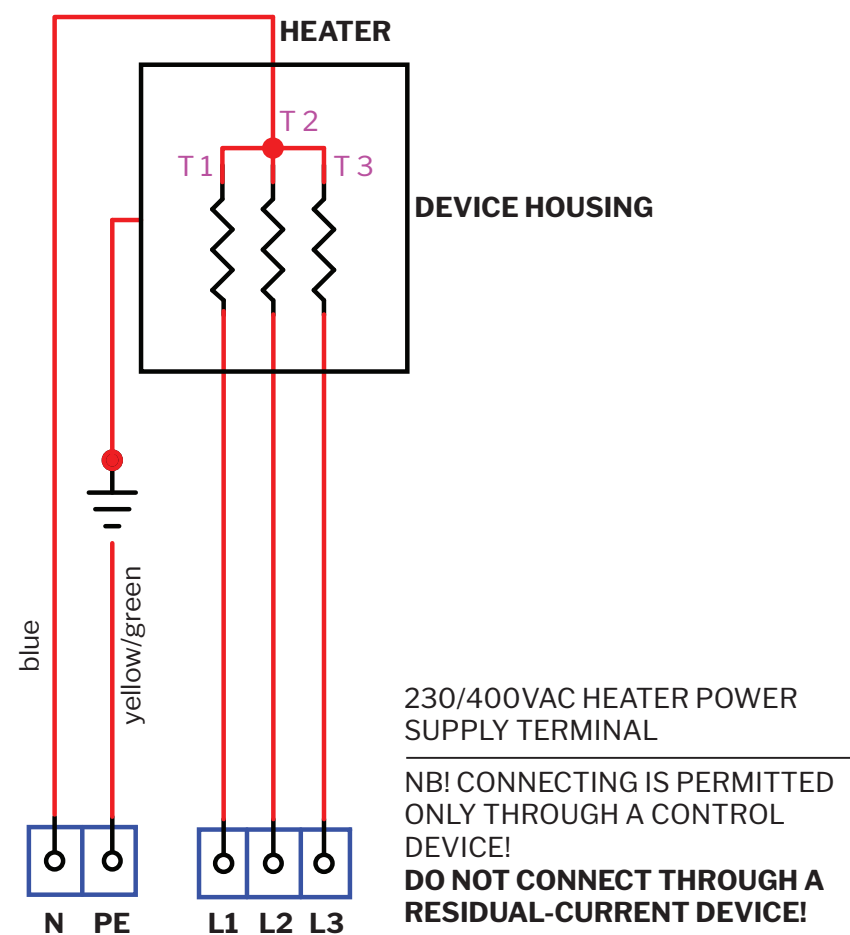
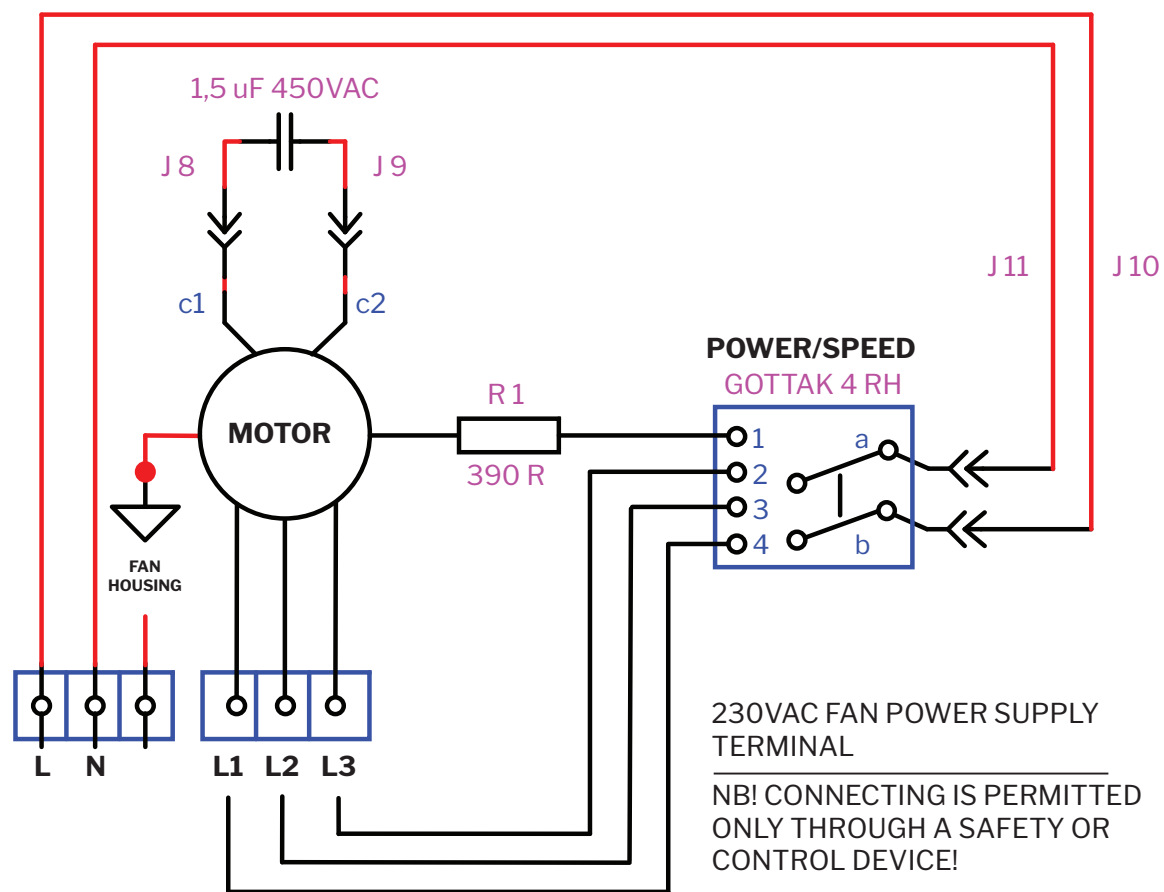
DRAWING



Primary sauna device power cables. Opening of the electrical panel of the sauna device is shown in Figure 4, p.13.

DRAWING

ELECTRIC CIRCUIT DIAGRAM



Drawing 2: Electrical circuit diagram of the sauna climate device

DRAWING

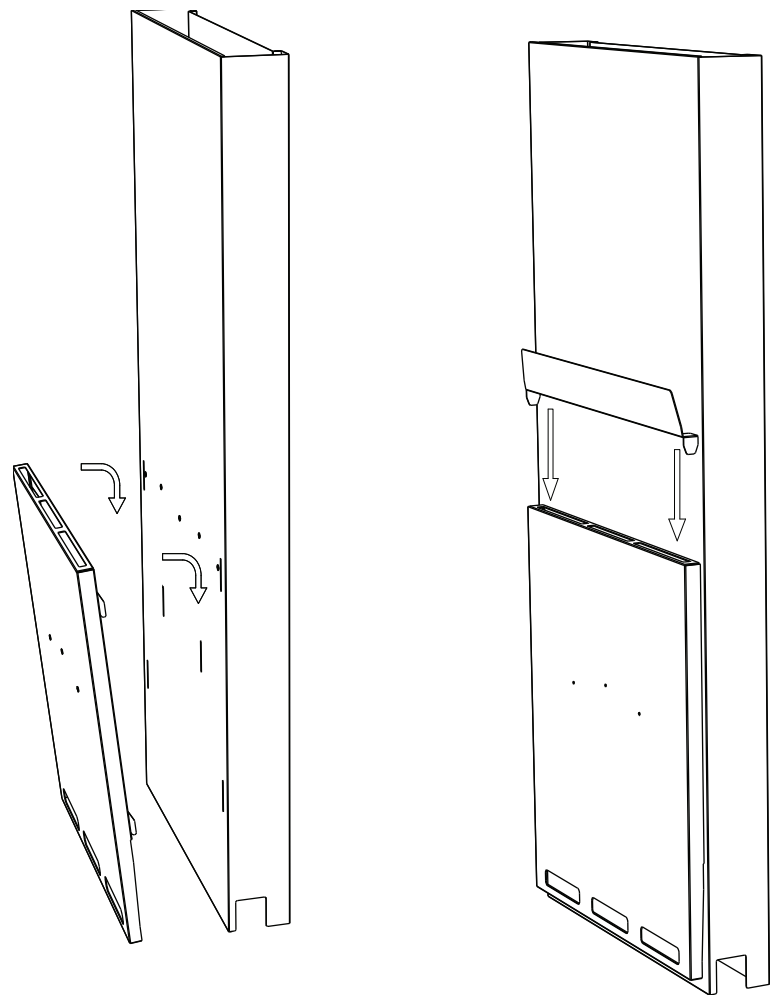
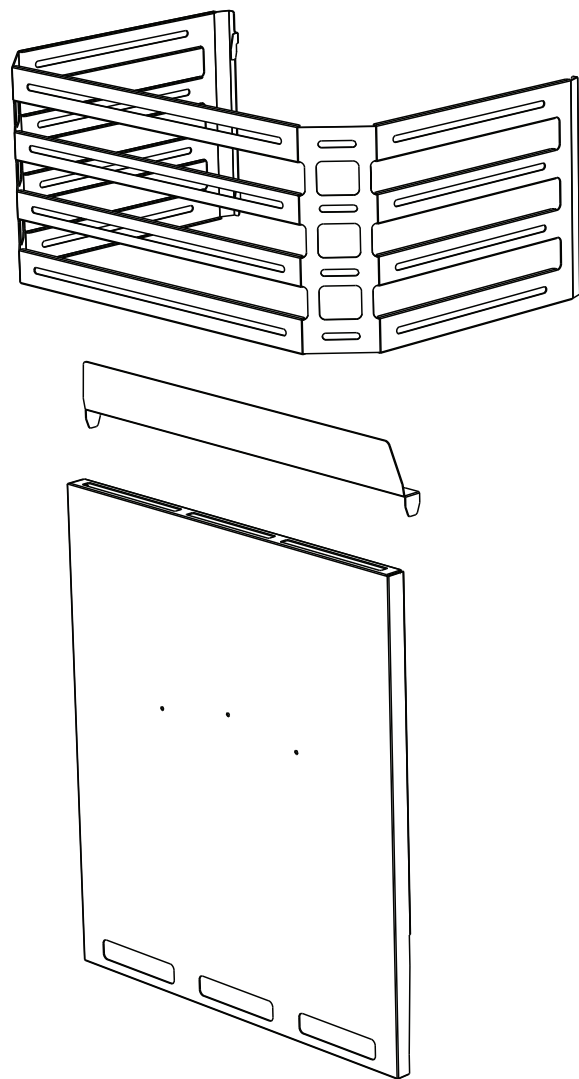


Figure 3.7: Installation of the radiation plate

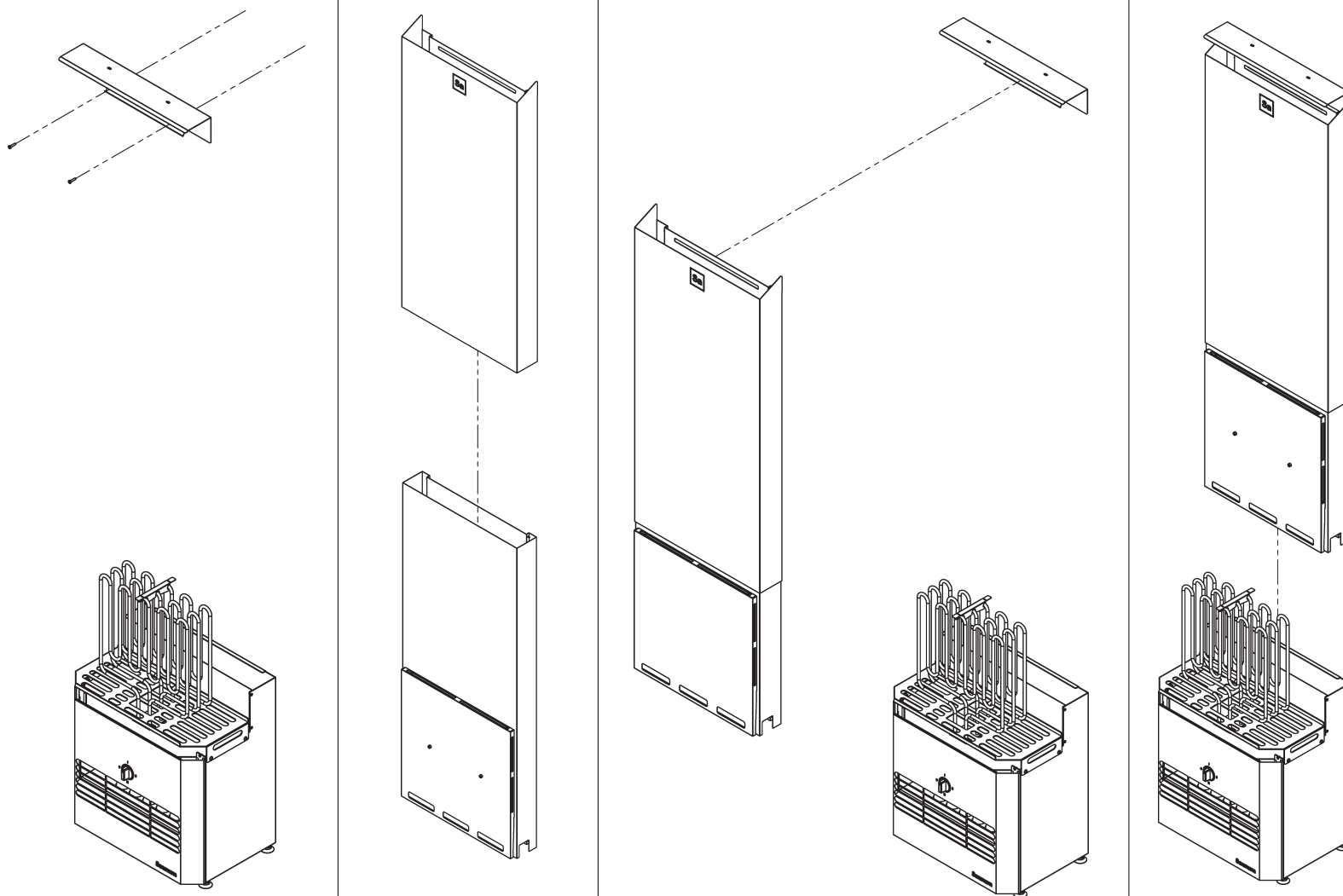
REMOVE THE PROTECTIVE FILM BEFORE ASSEMBLING THE HEATER!



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Figure 3.8: Details with protective film

DRAWING



1. Place the flue cap on the point of connection between the wall and the ceiling and fasten with a suitable mounting according to the base material. It can be attached to the wall and/or the ceiling. Centre the heater under the cap and adjust the feet so that the device is level.

2. Place the parts of the telescopic flue inside each other.

3. Supporting the lower edge of the telescopic flue, hang the flue on the hanging edge of the cap.

4. Carefully lower the flues inside each other into the flue socket on the top of the heater

Figure 3.1: Installing the heater and fixing the flue

DRAWING

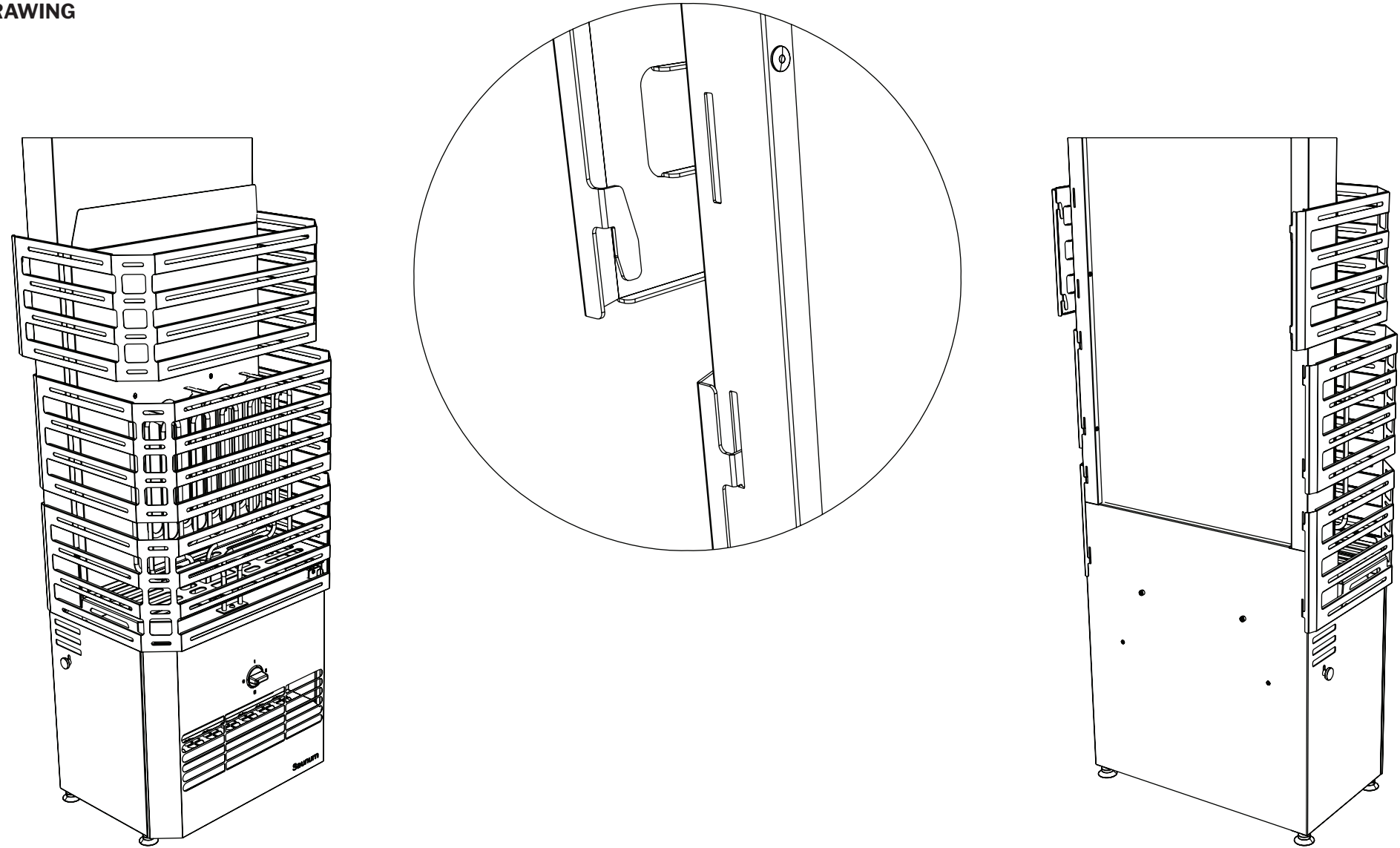
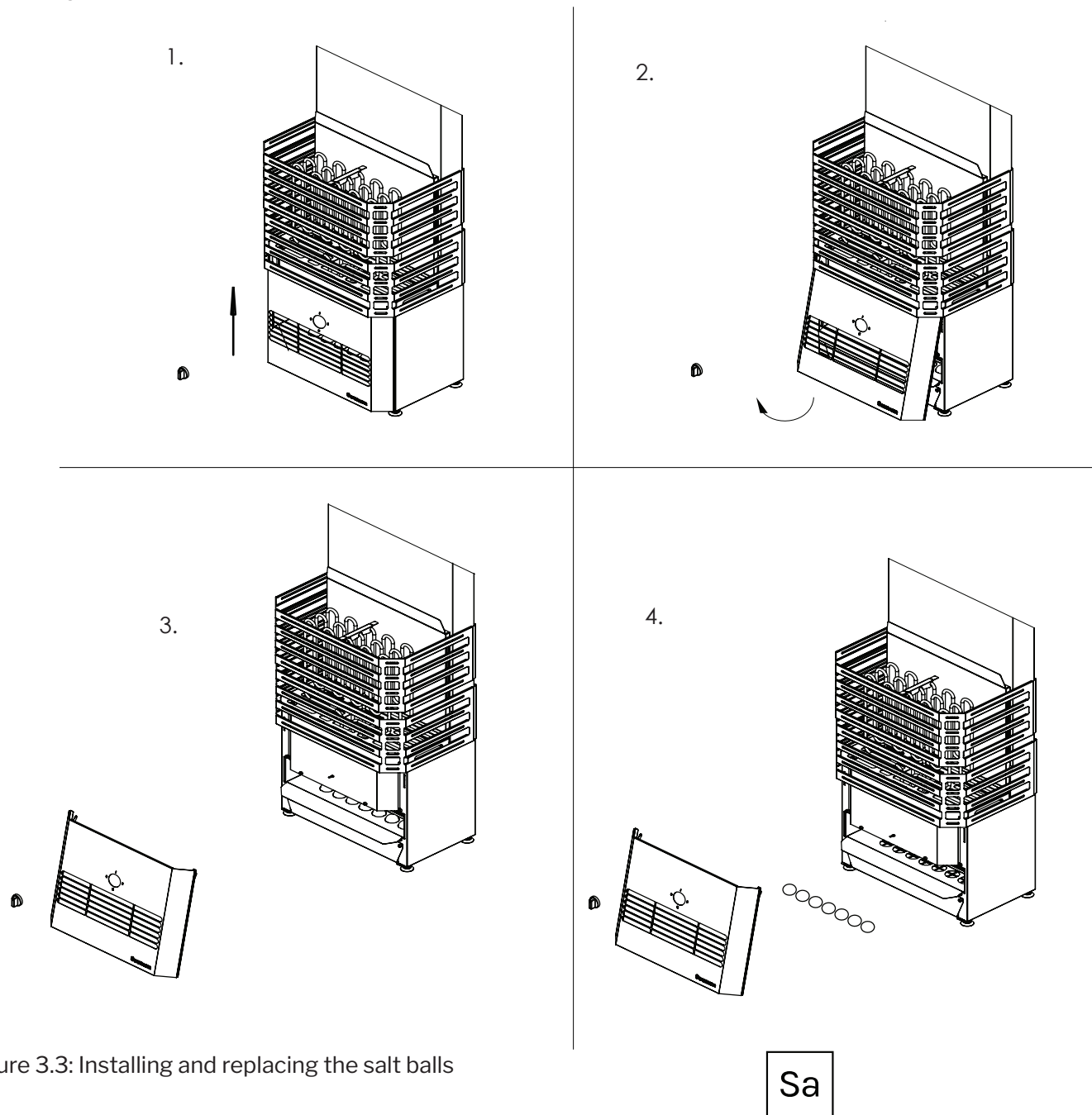


Figure 3.4: Installation of the stone basket

DRAWING



1. Remove the switch button.

Push the front panel up as far as it will go.

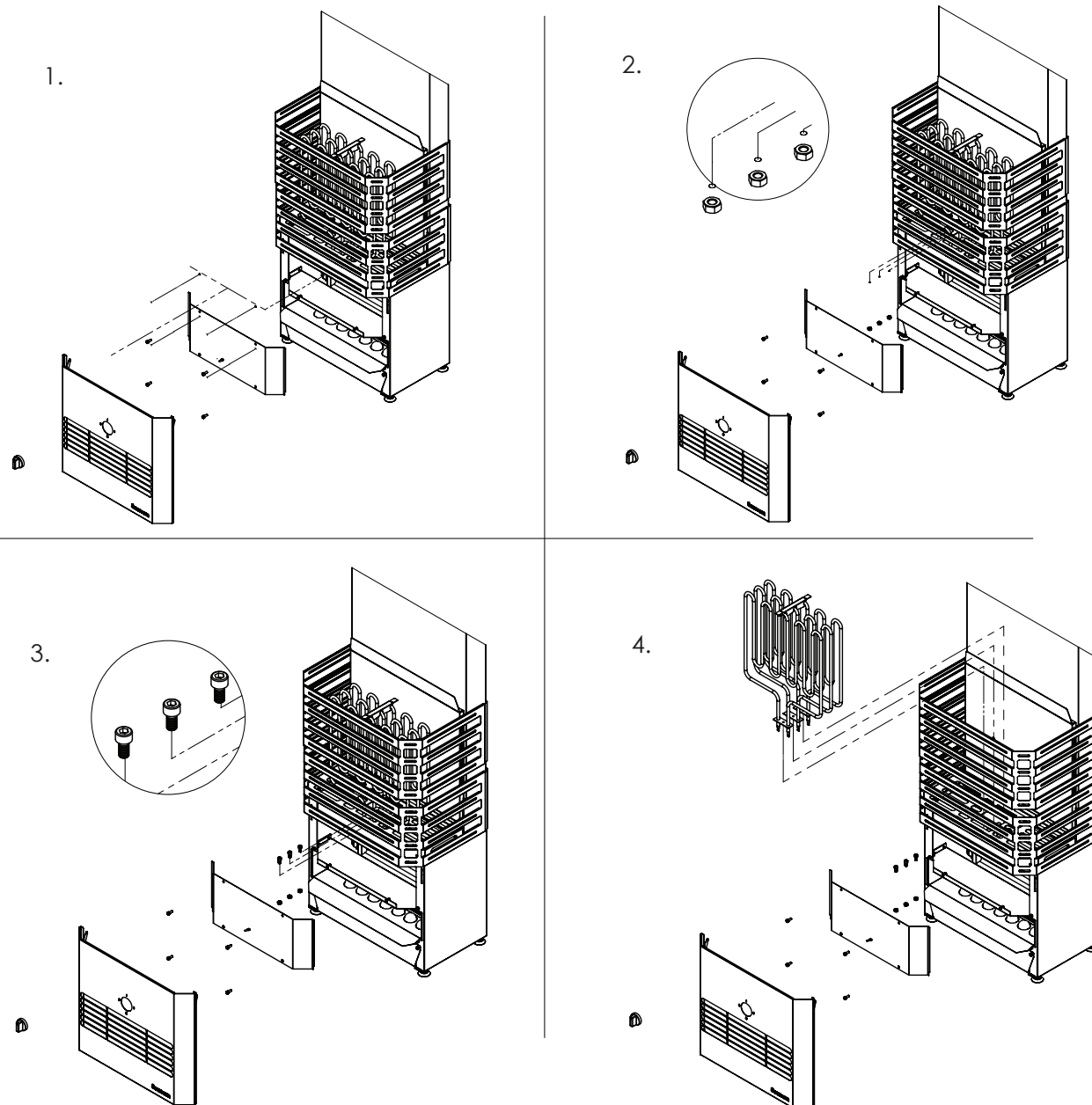
2. Pull from under the panel edge outwards.

3. Remove the panel by holding it slightly tilted and pulling it downwards.

4. Place the salt balls in the sockets. To simplify the operation, the ball rack can be removed.

Figure 3.3: Installing and replacing the salt balls

DRAWING



1. Remove the switch button.

Remove the front panel (Figure 3.3)

2. Open the base chamber cover of the stone box by removing the four bolts.

3. The bottom plate of the stone box there provides access to the nuts and bolts of the stone box, which fasten the heating elements.

4. The heating elements are connected to the device via screw terminals. It is necessary to disconnect the screw terminals before removing the heating elements.

Figure 3.4: Installing and replacing the heating elements

DRAWING

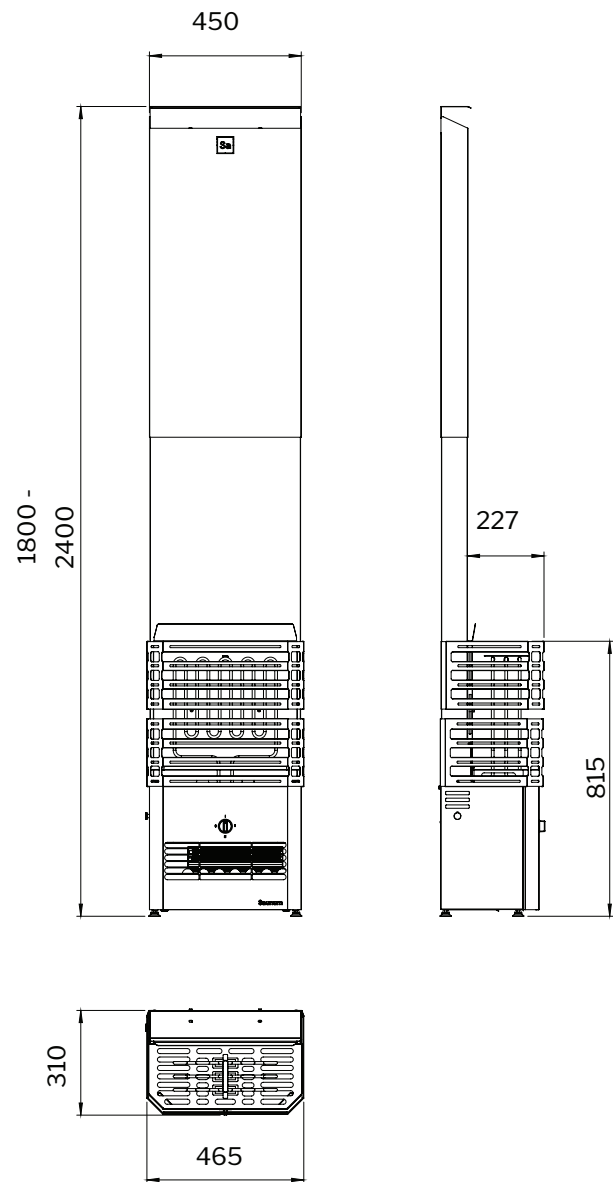


Figure 3.5 : Saunum Primary set 4,5kw ja 6kw

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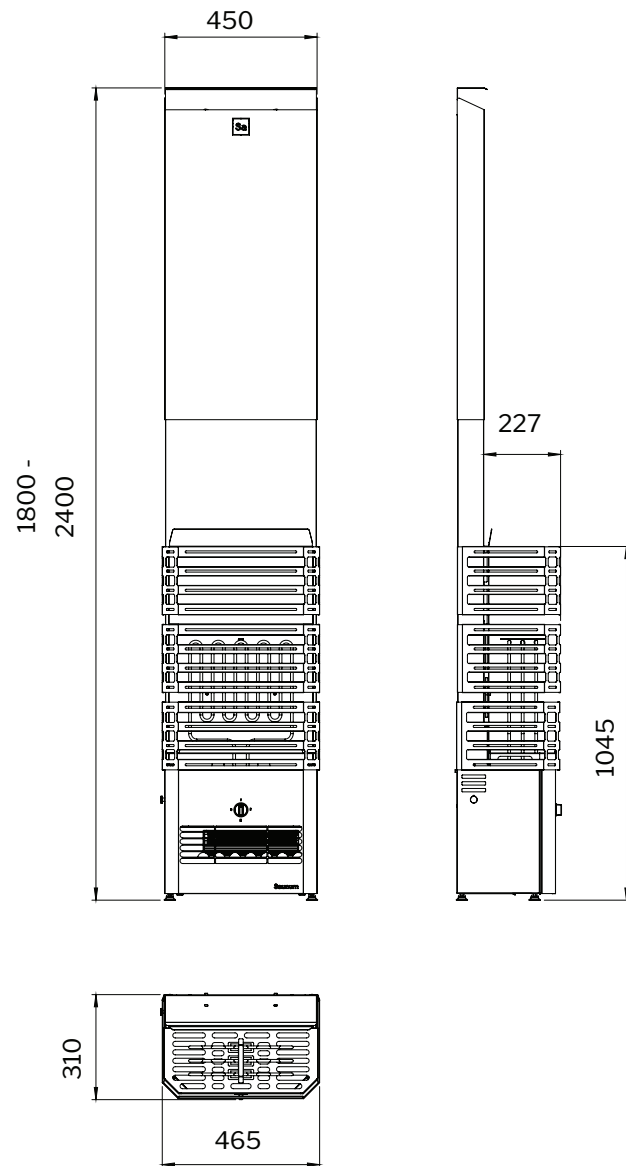


Figure 3.6 : Saunum Primary set 9kw ja 12kw

Warranty

- The warranty period of the sauna climate device when used in a private sauna is two (2) years.
- The warranty period of the sauna climate device when used in a public sauna is one (1) year.
- The warranty does not cover malfunctions caused by failure to follow installation, operation, or maintenance instructions.
- The warranty does not cover malfunctions caused by the use of stones and salt balls not recommended by the manufacturer.
- The warranty does not cover heating elements and salt balls.

NB! The sauna climate device may only be connected by a professional electrician in accordance with the applicable regulations! It is also necessary to install automation and stones on the sauna climate device!

Read the entire instructions for use thoroughly and carefully before using the device and keep it in a safe and easily accessible place for future reference.

INSTALLATION PROTOCOL	
Date of purchase	
Heater type	
Sticker/serial number	
Place of installation	
Date of installation	
Installer	
Checked	
Date, signature	
TO BE COMPLETED BY THE CUSTOMER	
Customer contact (name, e-mail)	
Received work	
Warranty start date	