

Saunum

Steam room heater with air conditioner Professional
instructions for use and installation



EC Declaration of Conformity

Manufacturer: Saunum Saunas OÜ
Address: Järvevana tee 7b, 10138, Tallinn, Estonia

Certifies that the product Saunum Professional complies with the requirements of the following Council of Europe directives, provided that the installation has been carried out in accordance with the installation instructions issued by the equipment manufacturer and the instructions EN 60204-1 'Safety of machinery.

Electrical equipment of machines – 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: Member of the Board
City: Tallinn

Date: 27 March 2019

Saunum Saunas OÜ congratulates you on
choosing an innovative steam room heater
with air conditioner!

SAFETY INFORMATION

These installation and operating instructions are intended for the owner or maintainer of the sauna, as well as the electrician responsible for installing the heater with air conditioner in the steam room. After installing the heater, the instructions must be handed over to the owner or maintenance staff.

Before using the Professional heater with air conditioner (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 while in the steam room.

Please note! The use of the sauna climate device for other purposes is prohibited.

Please note! To connect the sauna climate device to the electrical network, a control device for controlling electric heaters is required. The control device must correspond to the power of the heater used in accordance with Table 1.

The control device must have the ability to control the fan of the sauna climate device. In addition, 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 in 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 trip and the fan will stop.

When the temperature drops below the tripping limit, the fan will start working again.

The manufacturer is not liable for equipment failures caused by exceeding the permitted operating temperature.

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 non-observance of the installation, operating, or maintenance instructions.
- The warranty does not cover defects caused by the use of stones and salt balls not recommended by the manufacturer.
- The warranty does not extend to heating elements and salt balls.

Device	Power	3-phase protection	Power cable mm ² 3 phases / fan	Safety distance from the heater mm	Sauna room volume m ³
Saunum Professional	12 kW	C 20A	4/1,5	250	10-15
Saunum Professional	15 kW	C 24A	4/1,5	250	13-18
Saunum Professional	18 kW	C 32A	6/1,5	250	16-22
Saunum Professional	23 kW	C 40A	10/1,5	250	20-32
Saunum Professional C ¹	12 kW	C 20A	4/1,5	250	10-15
Saunum Professional C	15 kW	C 24A	4/1,5	250	13-18
Saunum Professional C	18 kW	C 32A	6/1,5	250	16-22
Saunum Professional C	23 kW	C 40A	10/1,5	250	20-32

¹ Saunum Professional C – corner-mounted Professional heater

Table 1.

1. INSTRUCTIONS 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 housing of the sauna climate device are in order;
- the sauna climate device is properly attached to the wall;
- operational over-current protection devices are used;
- the fan rotor rotates smoothly;
- there are no tools or material left after mounting the device in the housing.

When turning on the sauna climate device, check:

- the direction of air flow – the intake of air from the upper and the outlet from the lower opening;
- that there is no vibration or loud noise from the fan.

When the sauna climate device is turned on for the first time, odours are emitted from the heaters and stones – the steam room must be properly ventilated to remove the odour. If the power of the heater is suitable for the steam room, it will take 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.

The fan of the device must be turned on only immediately before entering the steam room – this helps to prevent the sauna bench from overheating

and excessive energy consumption.

Saunum recommends the temperature range of 65...80 °C for sauna procedures.

1.2. Using the sauna climate device

Please note! Before turning on the sauna climate device, always make sure that nothing is above or near it.

The temperature and operating time of the sauna climate device

Professional are regulated by a separate control module.

- It is forbidden to 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.
- Keep away from children!
- When turning the sauna climate device on and off, follow the operating instructions for the control module.

Please note! After using the sauna, make sure that all parts of the sauna climate device are turned off (heating has stopped and the fan has stopped).

1.2.1. Adjusting the temperature

Please note! It is recommended to keep the air circulation fan of the sauna climate device turned off while heating the steam room!

This way, the sauna heats up faster and the sauna platform does not get too hot during heating.

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

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

1.2.2. Adjusting the sauna climate

The volume of air circulation generated by the device can be adjusted by changing the fan speed: the fan has 3 speeds (connect via control panel).

1.2.3. Using Himalayan salt balls

Himalayan salt balls are included with the sauna climate device. 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 slots behind the air outlet

grille. To install or remove the salt balls, loosen the screws holding the salt ball base and slide the base out between the grilles.

Please note! 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 steam room becomes dry when heated, so water must be thrown on the heater to achieve the appropriate humidity level. The effects of heat and steam on humans are different. When testing the different settings of the sauna 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. The amount of water should not exceed 0.2 litres, because by pouring too much water on the stones at once, some of it can be sprayed as splashes of boiling water. Make sure that people are at a safe distance from the heater when throwing water! Hot steam and water splashes cause skin burns. The water thrown into the heater must meet the requirements for clean domestic water. The water may only contain fragrances specially designed for sauna. Follow the instructions on the package.

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

Please note! Do not leave the fan of the sauna climate device running when you are not in the steam room as this will cause excessive energy consumption and the sauna platform will become too hot.

1.5. Solving problems

Please note! Contact qualified specialists for maintenance.

In the event of any malfunction of the sauna climate device, stop using the device immediately and have the device 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 turned on.
- Increase the maximum temperature of the steam room.

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

- Make sure that the air circulation fan of the sauna climate device is turned off during heating.
- Make sure that the sauna climate device fuses are in working order.
- Make sure that all heating elements are hot when the sauna climate device is working.
- Raise the sauna temperature using the control device.
- Make sure that the power of the heater is sufficient.

- Check the stones. Stones that are placed too tightly, sinking of stones over time, or the wrong type of stone can interfere with the air flow through the heater and therefore reduce the heating rate.
- Make sure that the ventilation of the sauna room is correct.

The steam room heats up quickly, but the temperature of the stones is insufficient. The water thrown at 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 will take 45–90 minutes to reach the desired temperature in a properly insulated steam room.
- Make sure that the ventilation of the sauna room is correct.
- Reduce the fan speed of the sauna climate device.

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

- Follow the safety distance requirements.
- Check the stones. Stones that are placed too tightly, sinking of stones over time, or the wrong type of stone can interfere with the air flow through the heater and cause 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.

Please note! Stones that are placed too sparingly allow the heating elements to overheat and worsen the indoor climate of the steam room. Risk of fire!

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

This process may be accelerated by:

- sunlight;
- heat from the heater;
- wall protectors (the protective devices have poor heat resistance);
- fine particles from the stones.

The heater smells.

- See section 1.1.
- A hot heater can amplify odours mixed with air, which, however, is not caused by the sauna or heater. The causes are, for example, paint, glue, oil, or spices.

The sauna climate device is making a sound.

- A certain sound can always be heard when the fan is running. If it is continuous and/or has a metallic sound,
- the fan likely needs service 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 can cause sounds when the heater heats up.

1.6. Loading stones

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

Important:

- The diameter of the stones must be 10–15 cm.
- Only heater stones are intended for use in heaters. Suitable rock types are peridotite, olivine-dolerite, and olivine.
- **Light, porous ceramic stones or soft tiles must not be used 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 stones in the heater.

When loading the stones, note:

- do not allow 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 air flowing through the sauna climate device.

1.7. Maintenance

Due to large temperature fluctuations, the stones tend to break down. The stones must be restacked at least once a year or even more frequently if you use the sauna often. When restacking the stones, remove stone fragments from the bottom of the heater and replace the broken stones

with new ones. This enables the heater to provide optimal heating and the risk of overheating is avoided.

If Himalayan salt balls are used with the sauna climate device, it is recommended to check the salt balls once a year and, if necessary, replace the balls with new ones.

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

Children must not clean the device!

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

Before maintaining and cleaning the sauna climate device, ensure that:

- the sauna climate device is disconnected from the power supply (in addition to the power switch of the device, also by means of over-current fuses);
- the fan of the device has stopped completely;
- required occupational safety and personal protective equipment is used during the work;
- the connection cables are undamaged. If the connection cables are damaged, have the cables replaced by a qualified electrician in accordance with the applicable standards and requirements before continuing maintenance and cleaning work.

The housing of the device can be cleaned with a cloth dampened with water. Do not use a pressure washer, running water, chemical cleaners, or solvents

to clean the housing!

Use 10% citric acid solution to remove limescale 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 as a result of damaging/bending the fan blades.

Make sure that there are no foreign objects 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 cause irreversible damage to the fan rotor!

The fan bearings 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 shown on the electrical connection board of the sauna 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.

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 bathing). The sauna can also be dried after leaving the door open after using the sauna.

The ventilation system of the sauna should preferably prevent the exhaust air of the sauna 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 sauna for each square meter of uninsulated wall.

For example, a 10 m³ sauna room with a glass door corresponds to the

capacity requirement of a 12 m³ sauna room. If the sauna room has log walls, multiply the volume of the sauna by 1.5. The optimal sauna sizes for the sauna climate device Saunum Professional are given in Table 1. The height of the sauna is usually 2,100...2,300 mm.

The minimum height for installing the sauna climate device Professional is 2,100 mm.

3. INSTALLATION INSTRUCTIONS

3.1. Before installation

The installation of the sauna climate device must be performed by a qualified electrician. The device must be permanently connected with a cable that is suited for the ambient temperature. Protective earthing 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 fuse sizes and connection cable dimensions are given in Table 1.

All certified sauna control devices with the operating capacity corresponding to the capacity of the Professional model used in accordance with Table 1 can be used to control the sauna climate device.

Before starting the installation work, read the installation instructions and pay attention to 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 1 and 3.
- 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 platform. 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 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

3.2.1. Connect the sauna climate device to the control device (clause 3.3).

3.2.2. Fill the stone area of the sauna climate device with stones (clause 1.6).

3.3. Electrical connections

The electrical connection of the device must be carried out 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 connecting cable must be a rubber insulated type H07RN-F cable or equivalent.

Please note! Due to thermal embrittlement, it is forbidden to use 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 or spring terminals in accordance with Figure 2 and Table 1 in this manual. Protective earthing 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 380 VAC (3-phase) supply circuit through a control device protected by an over-current protector 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 earth (PE) of the fan supply input terminal of the sauna climate device must not be connected to the protective earth 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 water does not flow into the housing of the sauna climate device and into the connection box on the wall along the cable. The outer insulation (sheath) of the cable can only be peeled off from the part of the cable that is in the housing.

If the connecting 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). A recommended cross-section of the connecting cable grooves is given in Table 1.

Please note! 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, 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!

Figures

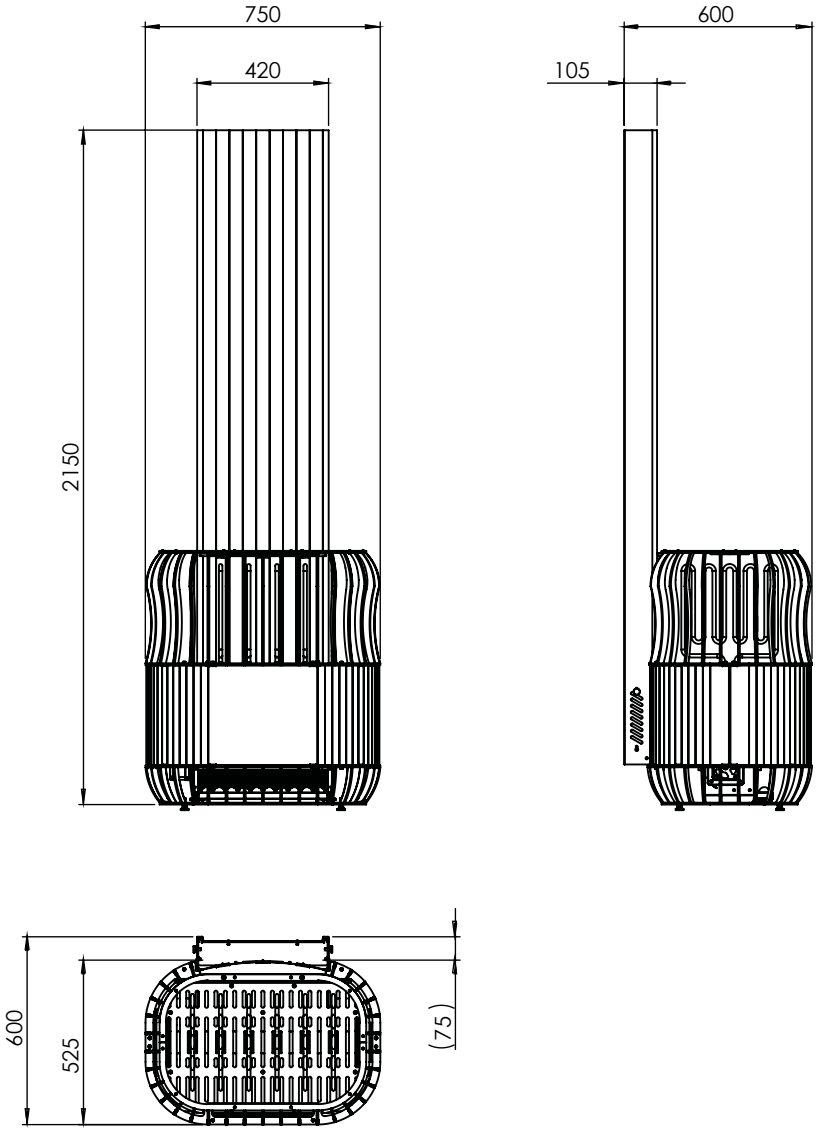


Figure 1. Sauna Professional dimensions

Figures

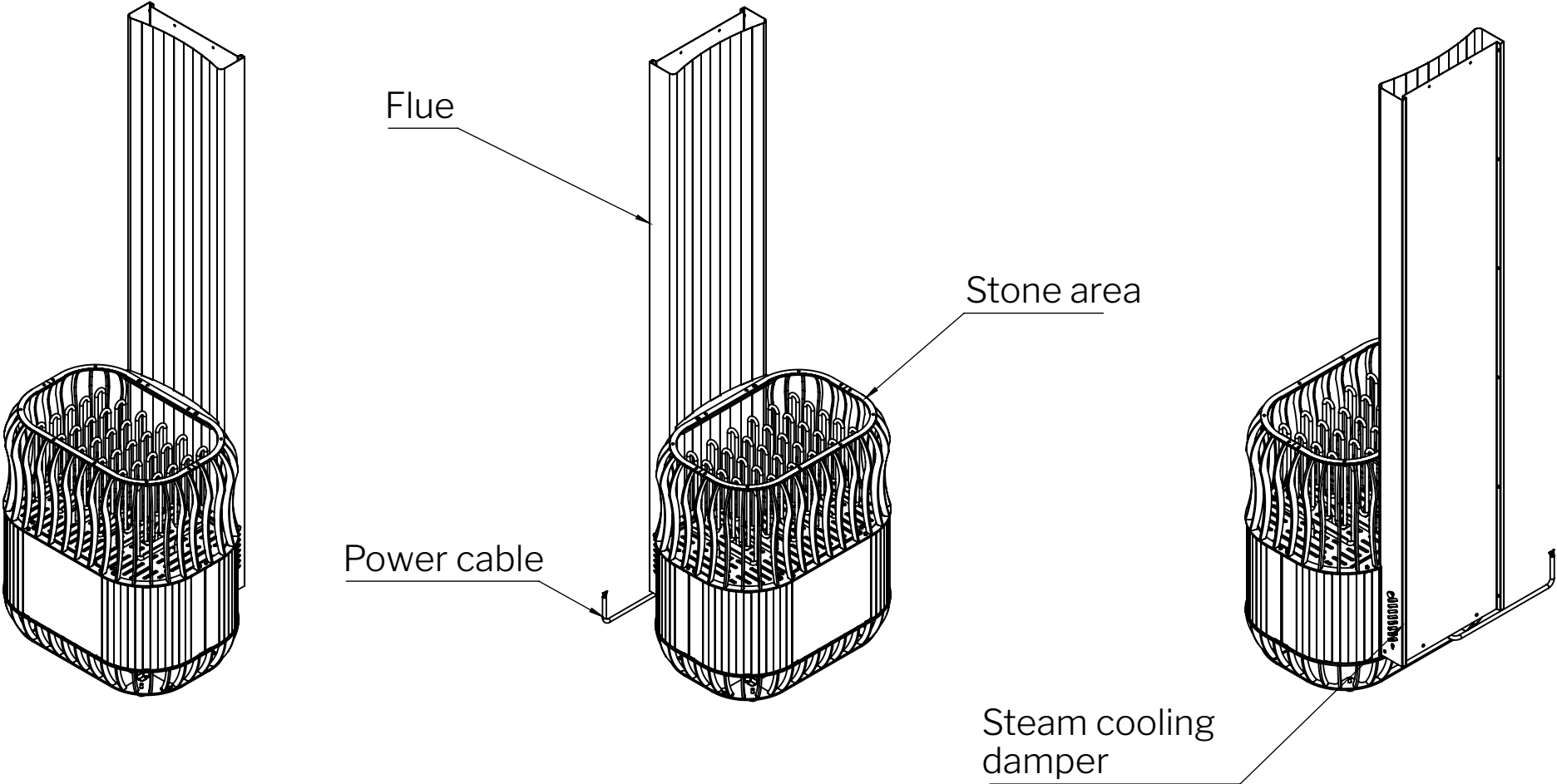


Figure 2. Sauna Professional device parts

Figures

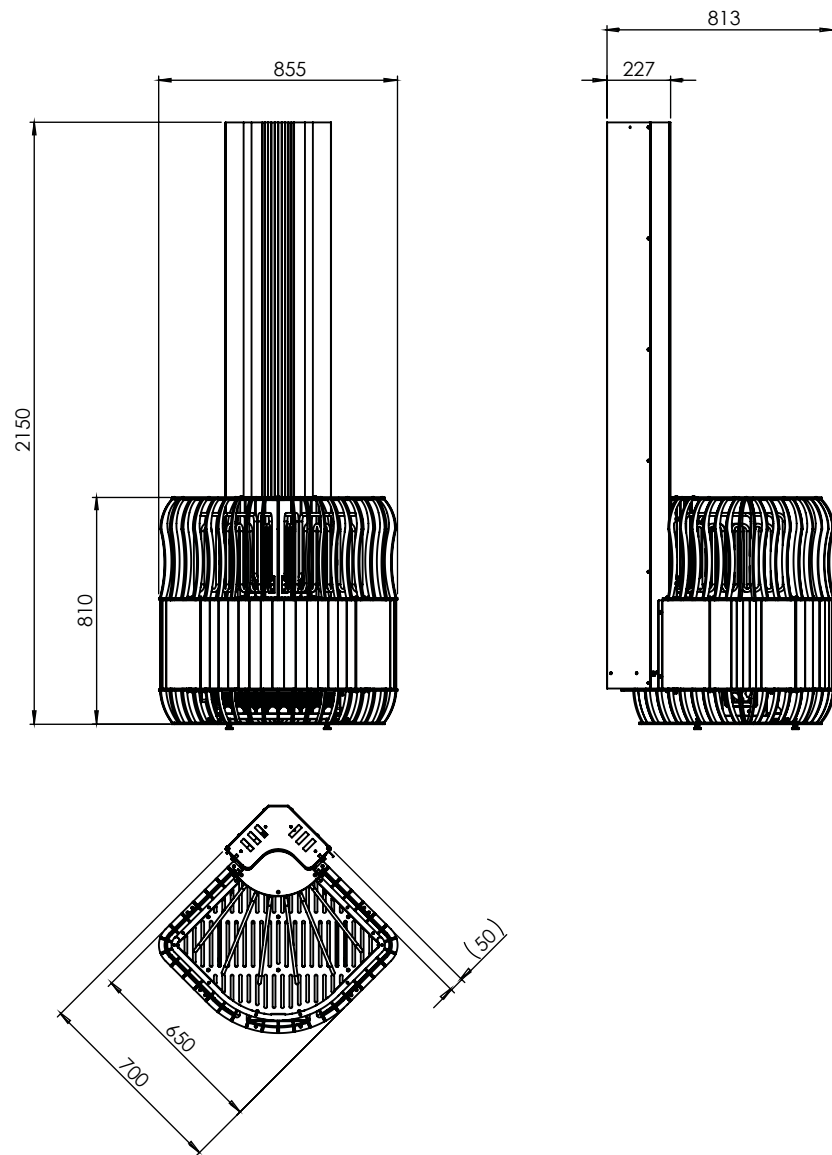


Figure 3. Sauna Professional C dimensions

Figures

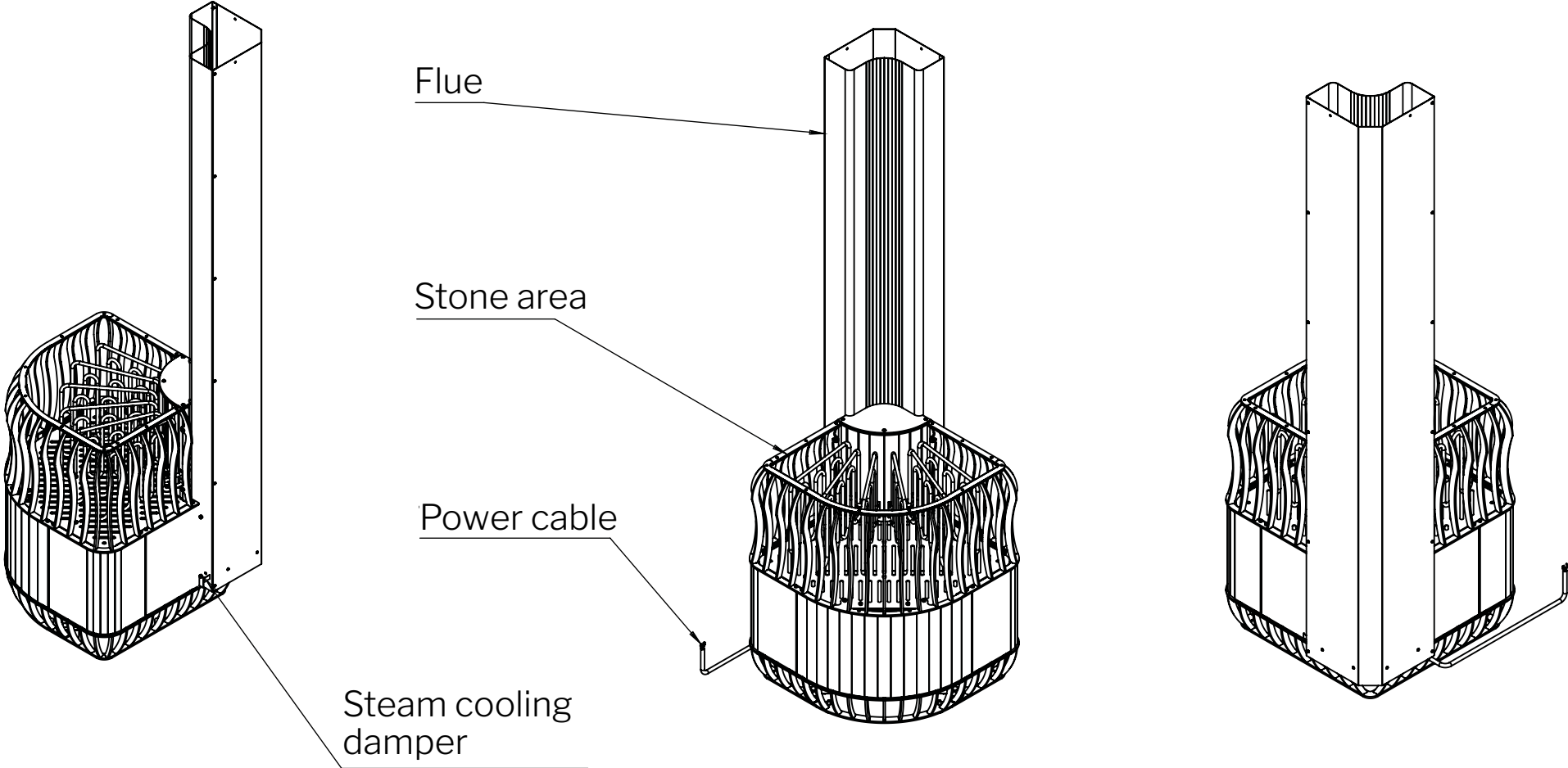
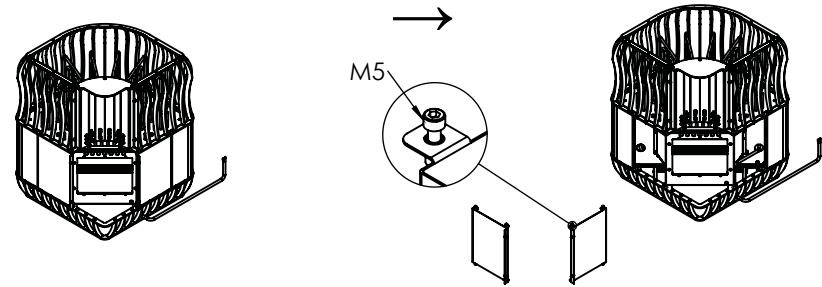


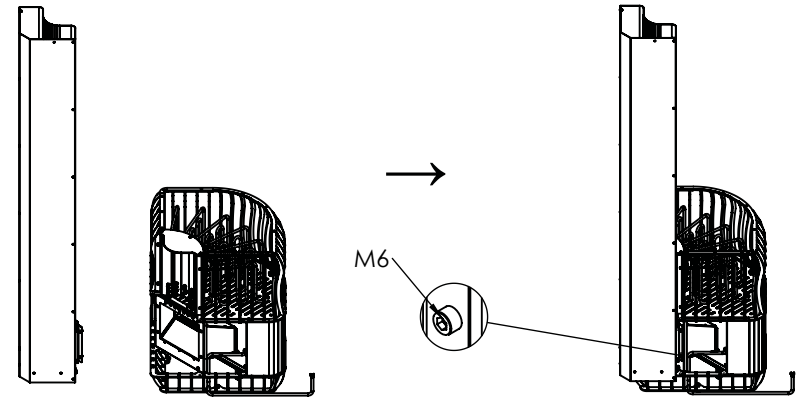
Figure 4. Sauna Professional C device parts

ASSEMBLING THE HEATER PROFESSIONAL C

1. Remove the rear cover plates. M5 bolts (4 pcs.) have been used to fasten both cover plates.

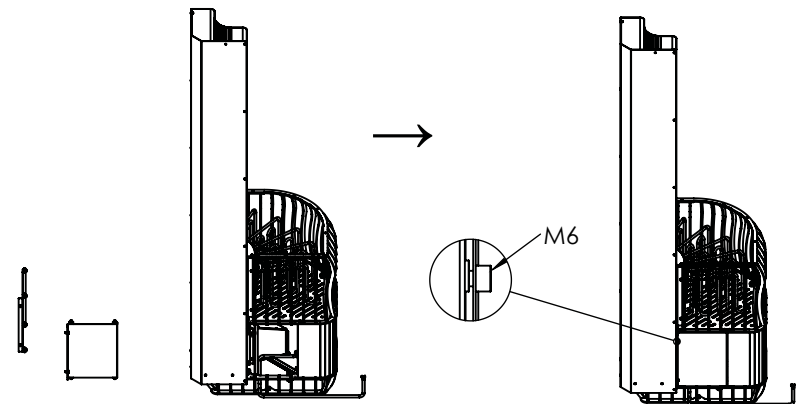


2. Install the flue. The flue is attached to the heater from the rear with M6 bolts (4 pcs.). The flue is fastened with two M6 bolts from the upper edge of the stone area.



3. Make sure that the flue is properly attached to the heater.

4. Reinstall the covers removed in the first step.



5. Place the device in the space to be installed in the room.

6. Check that the device is level. If necessary, adjust the height of the legs under the device to achieve the desired result.

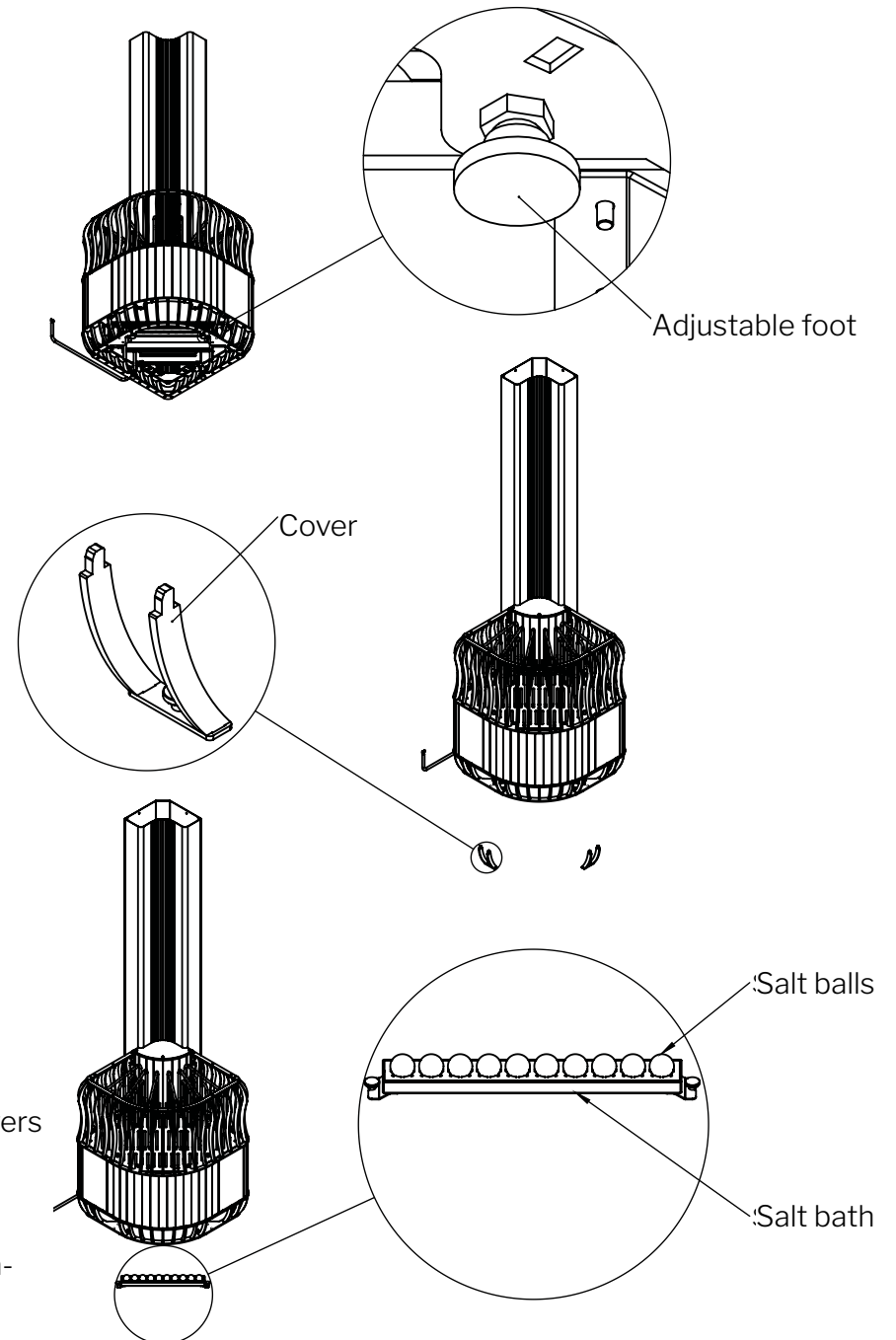
7. Place the salt balls on the appropriate base. To add the balls, remove the covers that are fastened with M6 finger-operated bolts.

8. The salt ball base is attached to the device with M6 finger-operated bolts. To remove the salt ball base, loosen the M6 bolts and carefully lift the base out of the device.

9. Place the salt balls in the recesses on the base (10 pcs.).

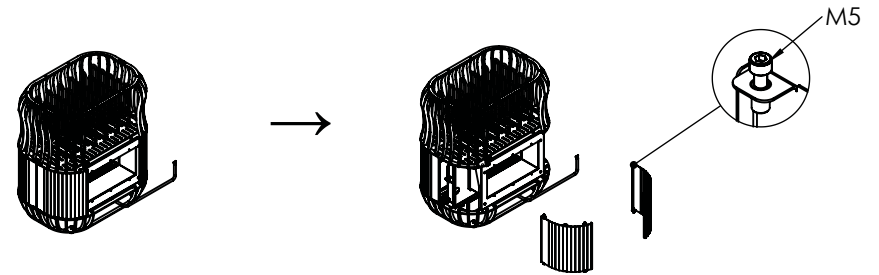
10. Put the salt ball base back in the device, fasten it with M6 bolts. Secure the covers in place.

11. Fill the stone area with the appropriate stones. Check the device for external damage. Read the electrical instructions to connect the device to the mains.

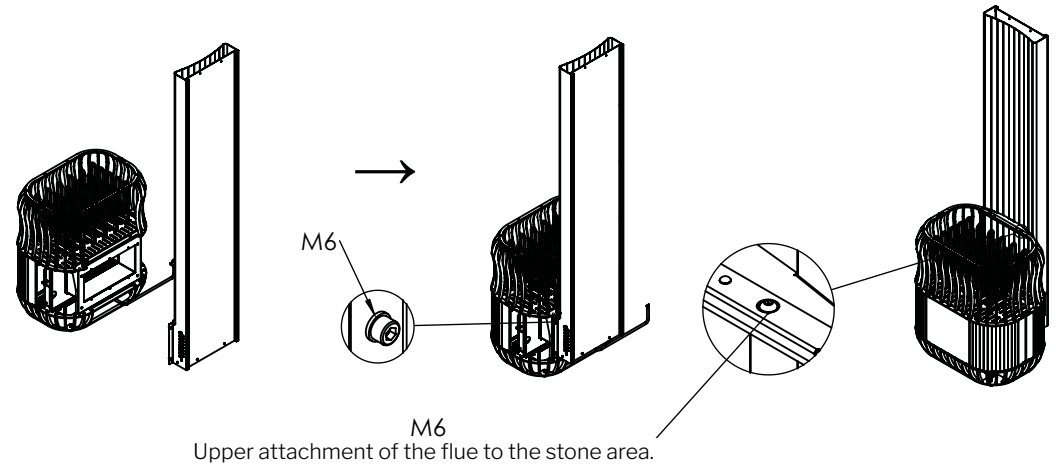


ASSEMBLING THE HEATER PROFESSIONAL

1. Remove the rear cover plates. M5 bolts (4 pcs.) have been used to fasten both cover plates.

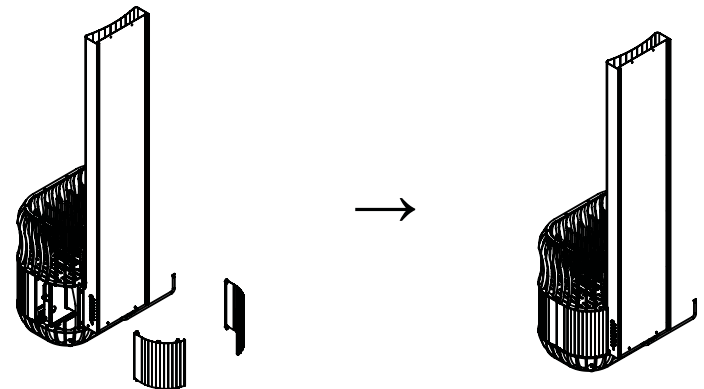


2. Install the flue. The flue is attached to the heater from the rear with M6 bolts (4 pcs.).



3. Make sure that the flue is properly attached to the heater.

4. Install the cover plates that were removed in the first step. When installing the cover plates, bolt the plates to the frame and flue.



5. Place the device in the space to be installed in the room.

6. Check that the device is level. If necessary, adjust the height of the legs under the device to achieve the desired result.

7. Place the salt balls on the appropriate base. To add the balls, remove the covers that are fastened with M6 finger-operated bolts.

8. The salt ball base is attached to the device with M6 finger-operated bolts. To remove the salt ball base, loosen the M6 bolts and carefully lift the base out of the device.

9. Place the salt balls in the recesses on the base (10 pcs.).

10. Put the salt ball base back in the device, fasten it with M6 bolts. Secure the covers in place.

11. Fill the stone area with the appropriate stones. Check the device for external damage. Read the electrical instructions to connect the device to the mains.

