

EOS Shark

Heater for Sauna Cabins



Installation and Operating Instructions

Documentation

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Original installation instructions EN

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Target group

These instructions are directed at all persons who are assigned to assemble, install, commission and operate, clean and service, maintain, troubleshoot, de-commission and dispose of the product and its components.

The „Electrical installation“ and „Maintenance by a trained electrician“ chapters are only directed at trained skilled personnel, who are familiar with the laws and regulations for electrical installations in the installation site (electrically skilled personnel).

Characters, symbols and illustrations

④ Additional information about an operating step

📄 Cross-reference to a page

📖 Read instructions

☑ Result of a step

📊 Table title

📐 Title of figure

≤ ≥ Less than or equal to, greater than or equal to

Revision history

Date	Version	Description
27.07.2021	01.00	First version, A5 Format
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General safety instructions

1. General safety instructions

Safety levels

Safety instructions and important operating instructions are classified. Please familiarise yourself with the following terms and symbols:

WARNING

Warning

Indicates a hazardous situation which, if not avoided, could result in death or serious injury.

CAUTION

Caution

Indicates a hazardous situation which, if not avoided, could result in minor or moderate injury.

NOTICE

Notice

Indicates a hazardous situation which, if not avoided, will result in damage to the unit.



1.1 Mounting and electrical installation

These installation instructions are intended for qualified personnel familiar with the laws and regulations applicable to electrical installations at the installation site. Observe the following general safety instructions during mounting, configuration and commissioning of the product.

► Risk to life and limb and risk of fire

Risk to life and limb from electric shock and fire in the event of improper or faulty electrical connection. This risk remains also after completion of the installation work.

- The electrical installation of the heater, relay boxes and other electrical systems or equipment with a fixed mains connection must only be performed by a trained electrician from an authorised electrical company.
- Ensure compliance with the applicable standards and regulations for electrical installation.
- The system must be completely disconnected from the mains supply before commencing installation and repair work.
- The housing cover must only be removed by a specialist.

► Fire hazard from overheating

Insufficient ventilation can lead to device overheating and fire.

- Install air inlets and outlets in the cabin.
- Observe the cabin manufacturer's safety and installation instructions.

► Risk of fire due to sauna stones

It is possible for hot stones or stone pieces to fall out of the rock store.

- The sauna heater may not be placed on a floor made of easily flammable material (e.g. laminate or synthetic flooring). Ceramic tiles are recommended as a flooring option.

► Risk of burns from hot glass

Glass surfaces in the cabin become hot while the sauna is in operation.

- When installing the cabin, ensure that the touchable glass surfaces on the outside of the cabin may reach a maximum temperature of 76°C. Appropriate protection may need to be installed if required.

► Risk of burns from hot unit

During operation, the sauna heater may become hot and, if touched, could cause burns.

- Maintain a safe distance.

General safety instructions

► Sauna cabin and sauna heater

The sauna cabin must be constructed with proper material and built in a professional manner, and the output of the sauna heater must be suited for the cabin.

- The sauna heater may only be used in sauna cabins made of suitable, low-resin and untreated material (e.g. Nordic spruce). The control unit must not be used in the cabin.
- Multiple heaters may be installed in one sauna if the heater output can properly supply the cabin volume. In this case, depending on the position, an additional safety temperature limiter must be installed for each additional heater.
- The sauna heater is not designed to be installed or set up in an alcove or under a bench or sloping roof unless the sauna heater is specifically designed and approved for this type of installation.
- Receptacles may not be installed inside the sauna cabin.
- Each sauna cabin must have air inlets and outlets. The air inlets and outlets may be installed from below or from behind the heater. The minimum dimensions of the air inlets and outlets can be found here: Technical data, Air inlets and outlets,
- The air outlet is always installed in the lower part of the wall, diagonal to the sauna heater. The air inlets and outlets must not be closed. Please observe the instructions provided by your sauna cabin manufacturer.
- Use one of the control units listed below to check and control the sauna heater. This control unit is fixed to a suitable location on the cabin's external wall, and the corresponding temperature sensor according to the installation instructions that accompany the control units inside the sauna cabin.
- The cabin lighting must be safe for sauna cabin use and installed in such a way that it can be used safely in a sauna cabin. Ensure that the heater is installed in compliance with the standards and legal norms valid in your country.
- The cabin door must open outward and must not have a lock that cannot be opened in the case of failure. We recommend magnetic or spring locks.
- The door opening should be > 80 cm.

1.2 Operator instruction

The operator of the sauna cabin must be instructed in the general safety instructions during commissioning. The operator must be given a copy of the operating instructions.

► Risk of electric shock

A risk to life and limb from electric shock and fire arises in the event of improper repair work. This risk remains also after work is completed.

- The housing cover must only be removed by a specialist.
- Repairs and installations must only be performed by a trained specialist.
- The system must be disconnected and removed entirely from the mains supply before commencing repair work.
- Use only original spare parts from the manufacturer.

► Fire hazard



Objects placed on the heater or protective guards can easily be ignited and cause fires.

- Attach the heater guard rail.
- Do not place objects on the heater.
- Fill the rock store as directed.
- Inspect the sauna cabin prior to each switching on
- if you switch on the sauna heater using a pre-set timer or a remote control, use a cover protection system for the heater or install a suitable safety device

► Health risks

Spending time in a sauna cabin can lead to serious health risks or even death for persons with health impairments.

- Persons with health impairments who spend time in a sauna must consult a doctor before entering a sauna cabin.

► Equipment damage due to overuse

If the cabin is used commercially, the heating time must be set so that the heater switches off automatically after a specific period of time.

- If the heating does not switch off automatically after a defined heating period, cabin use must be supervised at all times.
- Inspect the cabin before each use.

► Damage to health

Excessive time spent in a heated sauna cabin can lead to overheating of the body (hyperthermia), which may cause serious health problems and even death. Hyperthermia occurs

General safety instructions

when the core temperature of the body exceeds the norm by a few degrees.

Symptoms of hyperthermia include fever, dizziness, lethargy, sleepiness, and fainting. Side effects of hyperthermia include perception disorders, inability to recognize the need to leave the room, inability to identify imminent danger, harm to the foetus in the case of pregnant women, inability to physically leave the room and unconsciousness.

Alcohol, drugs, and medications increase the risk of hyperthermia.

- Do not exceed the maximum recommended time in the sauna.
- Leave the sauna cabin if your body responds abnormally to the heat or if you do not feel well.
- Avoid alcohol, drugs, and medications when you are using the sauna.

► Operation by children or persons with reduced mental capacity

This unit should not be used by children or persons with reduced mental capacity or limited physical or sensory abilities. Children must not play with the unit.

- Cleaning and user maintenance must not be performed by children.
- Children must be supervised to ensure they do not play with the unit.

1.3 Standards and regulations

For an overview of the standards that were observed during design and construction of the sauna heaters, please refer to the individual product's technical data sheet that can be downloaded from www.eos-sauna.com.

2. Identification

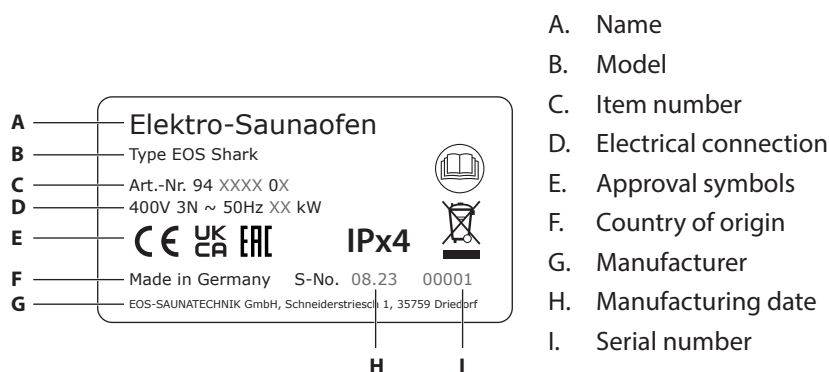
EOS Shark is an electrically heated sauna heater for Finnish mode available in a variety of output capacities.

2.1 Requirements for operation

The heater must be operated together with an EOS control unit that is specified in the technical data of these instructions. The control unit is not included in the scope of delivery.

2.2 Nameplate

The nameplate is supplied separately and must be attached to the unit during installation so that it can be reliably identified later.



Structure of the nameplate

2.3 Intended use

The EOS Shark sauna heater is designed solely to heat sauna cabins with a suitable control unit and a power extension unit.

EOS Shark is suitable for commercial and private use.



The heater is not suitable for outdoor use.

It must be operated only inside buildings and may not be exposed to environmental conditions such as extreme humidity and moisture or the possible formation of condensation or corrosive substances in the ambient air, as well as other weather conditions.

Any use beyond this is considered improper use. Proper use also includes compliance with operating, maintenance and servicing requirements.

The manufacturer is not responsible for unauthorised modifications and damages resulting from these modifications; the person modifying the equipment alone shall bear the associated risk.

Identification

2.4 Foreseeable misuse

The following are considered instances of foreseeable misuse:

- The unit is operated without knowledge of or compliance with the safety instructions.
- The requirements for operation, servicing and maintenance are not met.
- The unit is operated by children under 8 years of age.
- The unit is operated by children 8 years of age or older, or persons with reduced mental capacity who have not been thoroughly instructed in its use.
- The unit is operated without sauna stones or with a rock store that is not filled as directed.
- The heater power does not match the sauna volume.
- The unit is operated with insufficient air supply or exhaust air.

2.5 General instructions

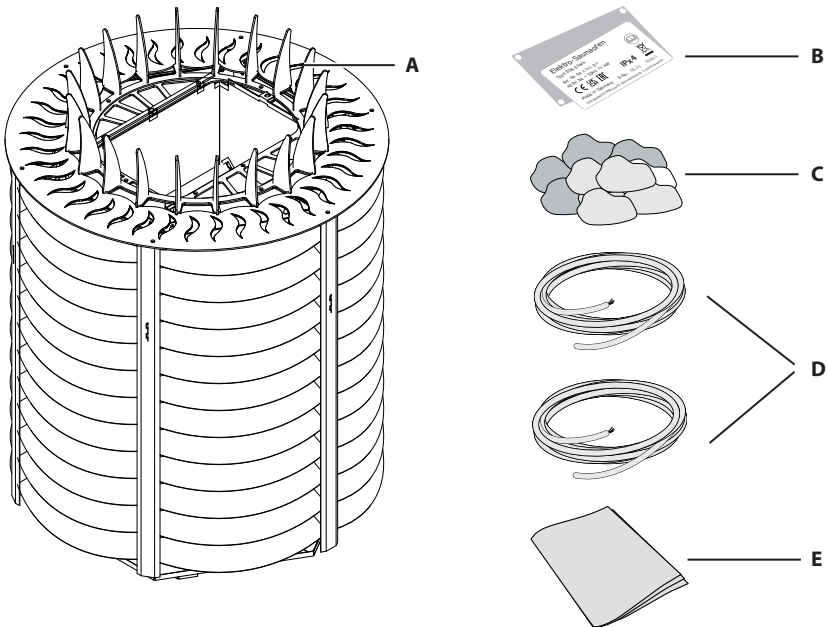
- Please note that an optimal sauna climate can be achieved only if the cabin with its air inlets and outlets, the sauna heater, and the control unit are synchronized.
- Observe the specifications and information provided by your sauna retailer.
- The sauna heaters heat the sauna cabin with heated convection air. Fresh air is drawn in through the air inlet. It is warmed and rises (convection) and is then circulated in the cabin. Some of the used air is pushed out of the cabin through the cabin's air outlet. This creates a typical sauna climate in which temperatures of approx. 110°C are achieved directly below the ceiling. These temperatures drop to approx. 30–40°C in the cabin along the floor. Therefore, it is not unusual that if the temperature sensor above the heater reads 110°C, the thermometer that is mounted approx. 20–25 cm below the cabin ceiling on the sauna wall reads only 85°C. When the max. temperature is set for the area around the upper sauna bench, the bathing temperature is typically between 80°C and 90°C.
- Please note that the highest temperatures in the cabin are always above the sauna heater and that is where the temperature sensor and safety temperature limiter should be mounted according to the installation instructions.
- The first time the cabin is heated, you may notice a slight odour resulting from the evaporation of consumables used in the manufacturing processes. Air out your cabin once it has been heated and before using the sauna.


2.6 Scope of delivery

Please verify upon delivery that all components included in the standard scope of delivery are available. Missing parts shall be reported to your local dealer (supplier).

Standard delivery includes:

- A. Sauna heater
- B. Warning sign for wall mounting and nameplate to attach on the sauna heater
- C. Sauna stones, 50 kg, Calibre 50–100 mm
- D. 2 x Connecting cable, 8 m, pre-mounted
- E. Installation instructions



 General view of the sauna heater and the scope of delivery

Accessories (optional)

Heater guard rail	Item no.
360° Abachi	94 6896
270° Abachi	94 6890
360° Walnut	94 6900
270° Walnut	94 6894

Identification

2.7 Technical data

Heater power as per DIN	12 kW	15 kW	18 kW	21 kW	24 kW
Electrical connection	400 V 3N ~ 50 Hz				
For sauna volume	14 - 18 m ³	18 - 25 m ³	24 - 35 m ³	30 - 34 m ³	35 - 45 m ³
Minimum size of air inlet and outlet	50 x 6 cm ¹	50 x 6 cm ¹	50 x 8 cm ¹	50 x 8 cm ¹	50 x 10 cm ¹
Weight, w/out stones and packaging	~ 110 kg				
Heater dimensions, H x W x D	Ø 74 x 99 cm (without railing)				
Stone volume	~ 50 kg, calibre 50-100 mm (not included)				
Power extension (LSG unit)	LSG 10 ²			LSG 18	
For use with the sauna control units	EOS Econ-Serie, Compact-Serie, EmoTec-Serie, EmoStyle-Serie, EmoTouch-Serie				
Leakage current	max. 0,75 mA per kW heater output				
Intended use / area of application	Use in private and commercial sauna cabins				
Fuse protection for control unit	3 x 16 A				
Fuse protection for LSG unit	3 x 16 A			3 x 35 A	
Connection mains – control unit	5 x 2.5 mm ²				
Connection mains – LSG unit	5 x 2.5 mm ²			5 x 6 mm ²	
Connection control unit – heater	5 x 1.5 mm ²				
Connection LSG unit – heater	5 x 1.5 mm ²			5 x 6 mm ²	
Connection control unit – LSG unit	4 x 1.5 mm ²				

All line cross-section specifications are the minimum cross-sections for the copper line.

¹ Depending on the installation location and structural conditions, forced ventilation must be provided!

² With EOS Compact D18, no LSG 10 power extension unit is required.

3. Installation

This chapter describes how to install the EOS Shark sauna heater. Prior to installing the heater, air inlets and outlets must be installed in the cabin.

It may be necessary to install additional fans in the inlets/outlets.

All protective films must be removed.

NOTICE

Damage due to incorrect mounting location

- ▶ The heater is not suitable for outdoor use. The heater must be operated only inside sauna cabins and may not be exposed to environmental conditions such as extreme humidity and moisture or the possible formation of condensation or corrosive substances in the ambient air, as well as other weather conditions.
- ▶ The heater is not designed to be installed or set up in an alcove or under a bench or sloping roof.

3.1 Specifications for the cabin

The cabin must be planned and installed according to specifications before the heater is installed.

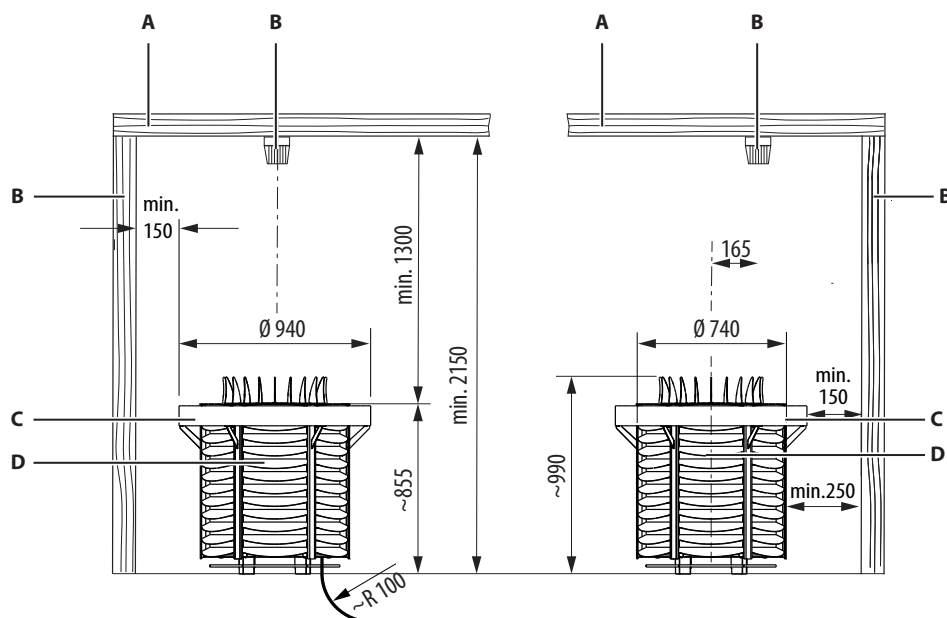
It must be ensured that the heater can be removed from the cabin even after the cabin has been installed. All electrical installations laid inside the cabin must be suitable for a temperature of at least 170°C. All lines must be routed in such a way that they are well protected, e.g. in a cable duct. If single-core lines are used as connecting cables, they must be protected by a flexible metal hose that is connected to the protective conductor. The minimum cross-section of the connecting cable and the recommended heater power in kW in relation to the cabin volume can be found in the Technical Data section.

In general, it should be noted that the sauna heater must not be placed on flooring made of highly flammable material such as laminate, plastic etc. Ceramic tiles are recommended as a flooring option. Floor heating in the sauna cabin increases the temperature of the floor's surface temperature.

▶ Installation site

- Ceiling height minimum **2.15 m**
- Distance between the upper edge of the sauna heater (body) and the sauna ceiling at least **130 cm**.
- Distance between heater and cabin wall at least **15 cm**
- Distance between heater and bench or other combustible materials at least **15 cm**.
- Without heater protection (EOS guard rail), a distance of at least **25 cm** must be maintained.
- If the heater guard rail is self-built, its height must be the same as the front of the heater.
- Required heater capacity depends on the cabin volume. For this, see Technical Data section.

Installation



 Minimum distances and dimensions

- A. Cabin ceiling
- B. Temperature sensor
- C. Heater guard
- D. Shark heater

3.2 Unpacking and setting up the sauna heater

1. Remove the transport packaging.
2. Remove the transport locks and protective foils from the product.
3. Separate the transport packaging, transport locks and protective films and dispose of them properly.

CAUTION! Heavy load! Always use four people to lift the oven.

Lift the sauna heater off the pallet and set it down at the installation site.

3.3 Air inlets and outlets

Air inlets and outlets must be installed in the cabin to ensure sufficient airflow in the cabin and to prevent the heater from overheating. To support ventilation, additional fans can be installed, preferably on the side of the exhaust air. The required size of the air inlets and outlets depends on the heater output: see Technical Data section.

⚠ WARNING

Risk of fire due to insufficient ventilation

The sauna heater may overheat if the air supply is insufficient. There is a risk of death due to fire.

- ▶ Ensure that the air inlets and outlets provide sufficient ventilation. Install a fan if necessary.
- ▶ Only switch the sauna on after all air inlets and outlets have been opened.

If the heating process takes a long time, the heater will receive insufficient air. At least 5 times the cabin volume of air must be exchanged per hour.

If too little fresh air reaches the heater despite adhering to the dimensions, a fan must be fitted outside the cabin at the air intake.

Air intake

Depending on the location of the heater, the air intake must be placed under or behind the heater.

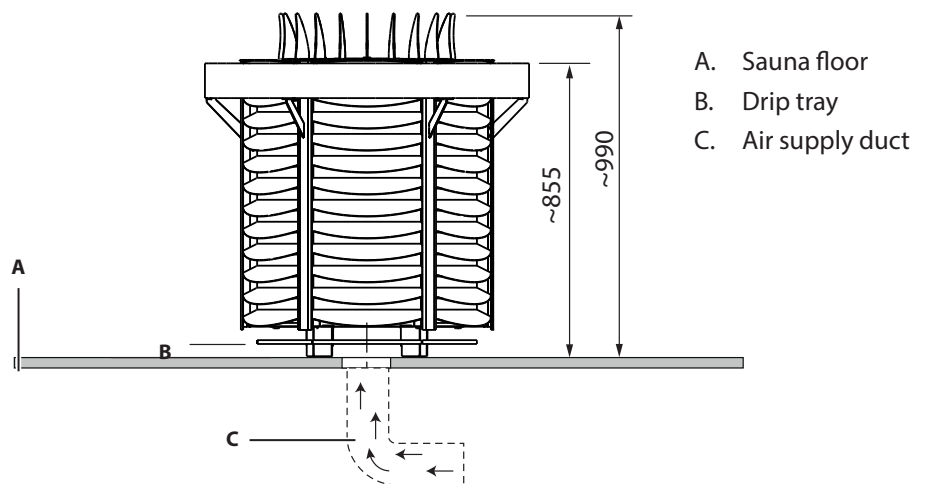
- Heater is positioned in the centre of the cabin: Air intake from underneath
- Heater is in front of the cabin wall: Air intake from the side

Exhaust vent

The exhaust vent must fulfil the following criteria:

- Position: Opposite heater
- Height: 30 - 50 cm above the cabin floor

▶ Air supply from below



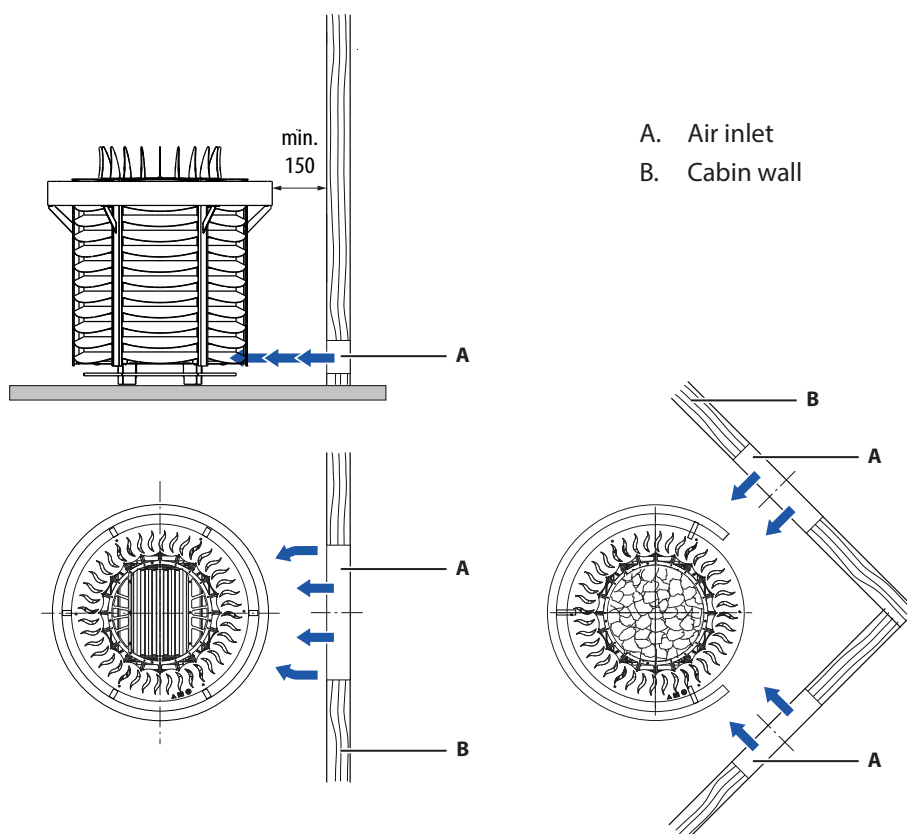
 Possible positions of the air intake

If the air supply is from below and installation is on a fire-resistant surface, the drip tray is not necessary. If the air supply is through an installation provided via an air duct in the sauna centre, mechanical ventilation may be needed. An air supply via a duct must have the same cross-section as a square opening, e.g. $50 \times 8 \text{ cm} = 400 \text{ cm}^2$.

Installation

► Air supply at the side /at the rear

When installing near the cabin wall, the air intake must be located as shown. Please note the minimum dimensions (see Technical Data section).



 Possible positions of the air intake

3.4 Temperature sensor

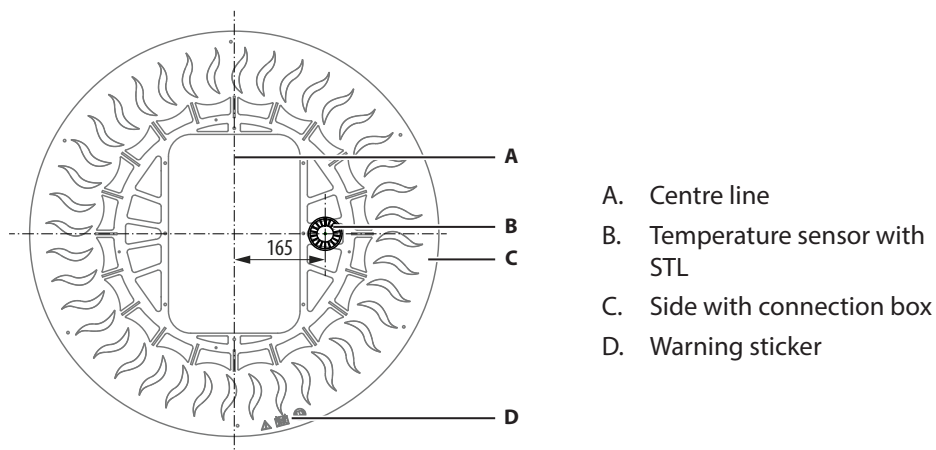
The installation of the temperature sensor with the safety temperature limiter (STL) is mandatory.

Install the temperature sensor with safety temperature limiter on the ceiling as shown below and as indicated on the "Minimum distances" illustration in Section 3.1.

Make sure that the sensor (B) is installed above the heater on the side of the connection box in the heater. Ex works, the cover is fitted so that the warning signs (D) are on the front right and the connection box side (C) is always on the right.

This must be maintained during disassembly and reassembly.

The temperature sensor with the STL is not included in the delivery. The connection of the temperature sensor is described in the instructions for the control unit.



Temperature sensor installation - view from above

WARNING

Risk of fire due to incorrect temperature sensor position

Overheating can occur if the temperature sensor with the safety temperature limiter is installed in the incorrect position; in this case, the sensor may detect a lower temperature than actually exists in the cabin. This would trigger the sauna heater to continue to heat, even though the desired temperature has already been reached.

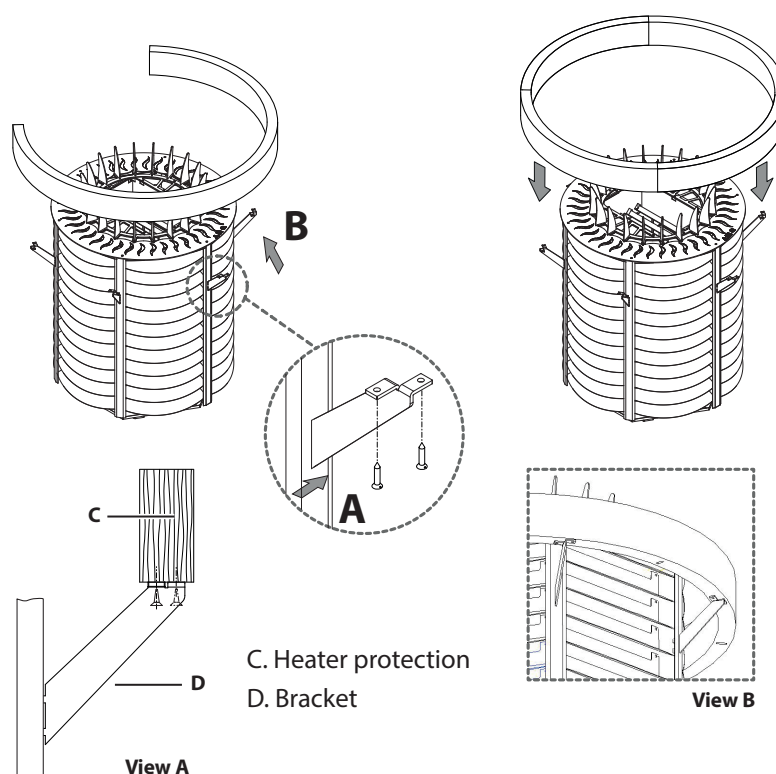
► Install the sensor as indicated in these instructions: 3.1 Specifications.

Installation

3.5 Heater guard rail installation (optional)

The heater guard rail must be mounted at least around the upper edge of the heater. It prevents accidental contact with hot parts of the heater.

A suitable heater guard rail for the Shark heater is available as an optional accessory. See 2.6 Scope of Delivery, Optional Accessories



 Guard rail mounting

3.6 Connecting cable

The heater is connected to the control unit or to the power extension unit and the control unit via a connecting cable. Observe the regulations of the local power supply company (EVU) and the Association for Electrical, Electronic & Information Technologies (VDE). Install the cable in such a way that it is protected from damage. This means that the cable must be routed under a suitable protective cover (e.g. in a cable duct or empty conduits).

See the connection diagram: chapter Electric Connections

The connecting cable can be also laid to the heater in a concealed way underneath the cabin floor with a suitable cover. To conceal the connection of the connecting cable, route the cable through an appropriate cable duct under the floor surface.

4. Electrical installation

4.1 General instructions for electrical installation

Ensure that electrical installation is performed in compliance with the standards and legal norms valid in your country.

Observe the following regulations when installing sauna heaters: IEC 60364-7-703 and/or DIN VDE 0100 part 703:

This most recent version of the standard under amendment of paragraph 703.412.05, states the following: "The additional protection must be provided for all of the sauna's electric circuits by one or more residual current devices (RCDs) with a rated differential current no greater than 30 mA, with the exception of sauna heaters."

If a residual current device (RCD) is installed, ensure that there are no other electrical consumers not belonging to the sauna system which are fused via this RCD.

If the sauna heater has not been used for an extended period of time, the heater may draw moisture from the ambient air, which, in rare cases, could lead to the RCD to be tripped. This is a physical process and not a fault on the part of the manufacturer.

In this case, the heater must be heated by a technician under supervision which will bypass the RCD function. Once the moisture has escaped from the heating elements after approx. 10 minutes, the RCD can be integrated again in the electric circuit.

If the sauna heater will not be used for an extended period of time, we recommend that you switch on the heater every 6 weeks so that the heating elements do not accumulate moisture. If, during commissioning, the RCD is triggered, the electrical installation must be checked again.

The electrician is responsible for properly connecting the heater; thus, the manufacturer does not assume liability.

4.2 Heating period limitation

All sauna heaters, except for those installed in public saunas, and which must be operated under the supervision of personnel, must be equipped with a timer that complies with IEC and EN standards. For safety reasons, this timer limits the operation time. This timer is typically integrated in all EOS sauna control units.

- The operation time of a public sauna must be limited so that the heating elements are without power for a minimum of 6 consecutive hours within a 24-hour period before an independent restart can take place.
- Units used in private saunas must be limited to an operating time of 6 hours, and an automatic restart is not permitted.

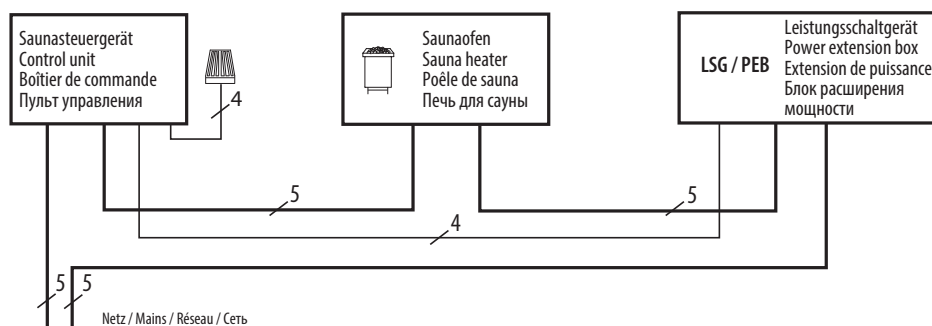
4.3 Inner wiring diagrams

The sauna control unit and the heater must be connected as shown in the circuit diagrams.

Please observe the installation and operating instructions for the sauna control unit. See also 2.7 Technical data

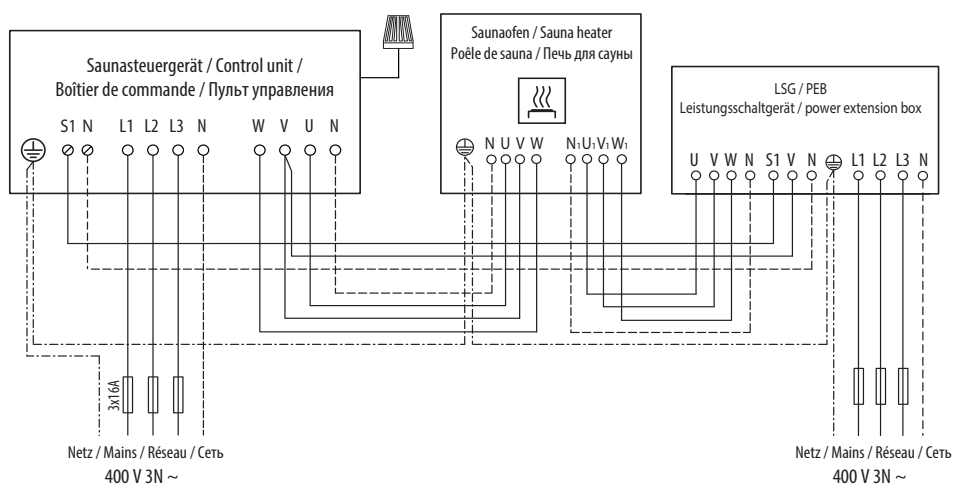
Electrical installation

► Connection overview



Terminal diagram

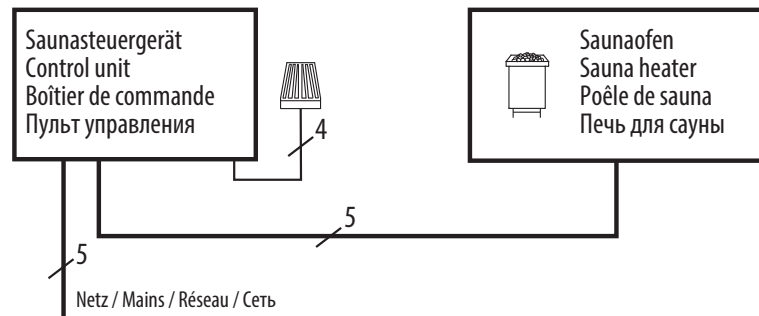
► Connection diagram



Connection diagram

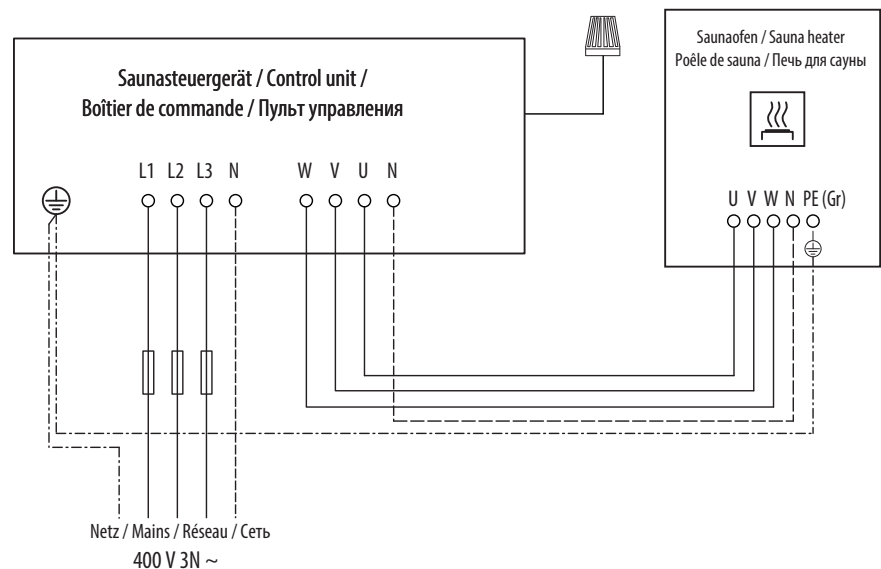
- 12-18 kW – for all control units except Compact D18, 21-24 kW - also for Compact D18.
- LSG power extension unit:
LSG 10 for 12-18 kW
LSG 18 for 21-24 kW

► Connection overview 12 - 18 kW to Compact D18



Terminal diagram to Compact D18

► Connection diagram 12 - 18 kW to Compact D18

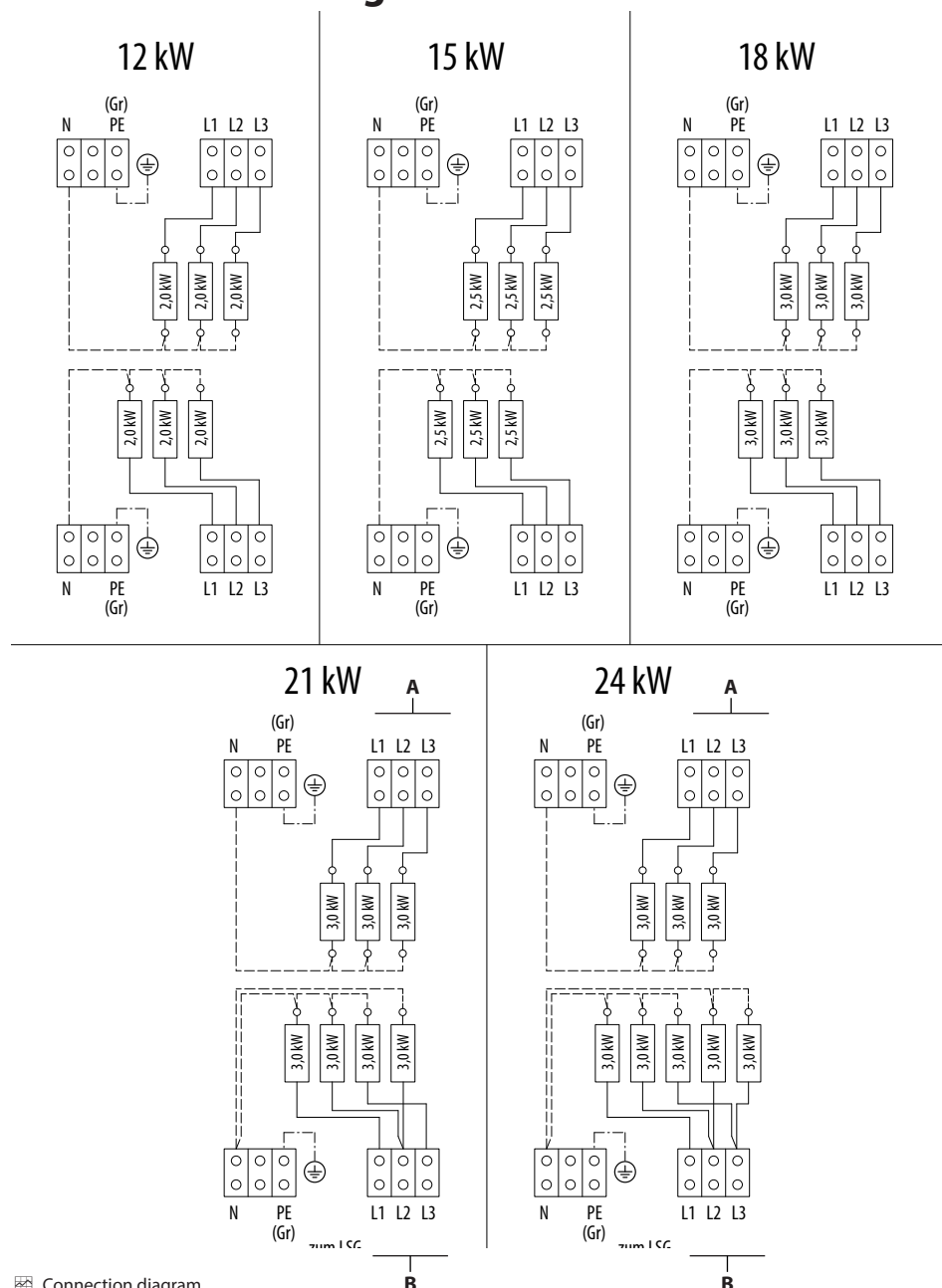


Connection diagram to Compact D18

Caution! Sauna heater must be wired in a single circuit (optionally possible).

Electrical installation

4.4 Internal wiring



Connection diagram

- A. To the sauna control unit
- B. To the power extension unit LSG

4.5 Establishing an electrical connection

The connecting cable is pre-mounted on the sauna heater.

The heater is connected to the control unit or to the power extension unit and the control unit via a connecting cable. Observe the regulations of the local power supply company (EVU) and the Association for Electrical, Electronic & Information Technologies (VDE).

Connect the connecting cable to the control unit or to the power extension unit and control unit according to the connection diagrams.

5. Commissioning

Before the heater can be commissioned (switched on), it must be filled with sauna stones, which are available as optional accessories.

The heater is switched and controlled via the control unit. A power extension unit (LSG), if available, will be switched together with the sauna control unit.

WARNING

Fire hazard



Objects placed on the heater could catch fire. Herbs or similar substances used for aroma infusion purposes, which are located near the heater, could catch fire.

- Inspect the cabin prior to each use.
- Commission the cabin only after all air inlets and outlets have been opened.

5.1 Filling rock store with stones

The heater is intended for use with natural stones. Use only classic sauna stones in the prescribed size (see Technical Data) into the rock store.

WARNING

Fire hazard from overheating

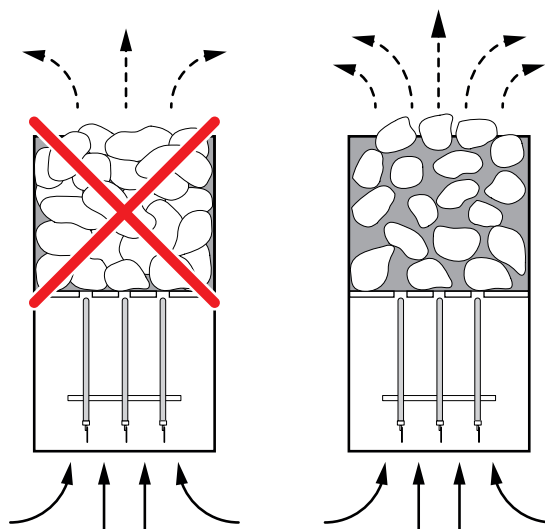
Operating the heater without stones could cause fire or damage to the heater. Stones that are positioned too close together in the heater prevent hot air from being exhausted. This leads to overheating of the heater.

- Start the heater only if it has been filled with stones.
- Pay attention to the correct calibre of the stones, 50-100 mm.
- Place the stones loosely.

Commissioning

► Filling the rock store

1. Wash the stones under running water.
2. **WARNING!** Sauna stones that are stacked too tightly obstruct the flow of air. The heater could overheat. Place the stones loosely.
3. Fill the stones into the rock store up to the top edge. Leave sufficient space between stones.



5.2 Starting the heater

A slight odour may be produced the first time the cabin is heated because the heater is being heated for the first time. The odour ceases upon continued operation of the heater.

► Switching the sauna heater

1. Switch the heater on or off through the sauna control unit.
2. Use the control unit to select a suitable program (before or after switching the heater).

5.3 Remote switching

If you switch on the heater using the remote control, ensure that no objects are placed on the heater. A suitable safety system, for example EOSafe D/L, can be used to prevent this.

5.4 Water splash

Before the first water splash can begin, the cabin must be sufficiently heated. The temperature in the cabin is controlled from the control unit via the temperature sensor. The control panel indicates when the desired temperature has been reached.

WARNING

Fire hazard from overheating

Incorrectly diluted sauna essences, essential oils or herbs can catch fire.

- When preparing the water for a splash, follow the instructions regarding quantity as specified on the sauna essence packaging.
- Never add more sauna essence or essential oils to the infusion water than the amount indicated by the manufacturer.
- Never use alcohol or pure concentrate.
- Do not add herbs to the water or on the stones.
- Do not use pure sauna essences for water splashes.
- Do not use alcohol as a water splash.
- Pour the water over the stones only.

Pour the water slowly and evenly over the stones.

As the hot air rises, steam is distributed evenly in the cabin to create a pleasant infusion experience. Please note that the sauna stones must be reheated after each water splash to generate an intense burst of steam.

After each water splash, wait approx. 10 minutes before starting the next one. This time is needed for the sauna stones to reheat.

Recommendation: During a water splash, no more than approx. 10 cL of water per m³ cabin volume should be vaporised.

Service

6. Service

This sauna heater is made of low-corrosion material. To ensure a long service life, take care of and perform regular maintenance on your sauna heater.

Ensure that openings in the intake area and heat reflectors are never blocked. These can easily become blocked with lint and dust as fresh air is drawn in. This limits the air convection ability of the sauna heater and could lead to impermissible temperatures. Clean and/or descale the units as needed.

If you do not use your sauna for a longer period of time, ensure that at the time of recommissioning no towels, cleaners or other objects are lying on the sauna heater. Contact your sauna retailer or the manufacturer directly if you notice malfunctions or signs of wear and tear.

6.1 Cleaning

WARNING

Risk of injury from sharp edges

- Use suitable personal protective equipment, e.g. gloves, when cleaning parts with sharp edges.

Interval:	According to the intensity of use
Personnel requirement:	Instructed person
Personal protective equipment:	Protective gloves
Resources:	Common household cleaning product

► Cleaning the heater

1. Switch off the sauna heater at the control unit.
2. **CAUTION!** Risk of burns! The sauna heater can be hot. Wait until the sauna heater has completely cooled.
3. Clean the outside of the sauna heater.
4. Remove lint and dust from openings and heat reflectors.

6.2 Checking and replacing the sauna stones

Heating and cooling can cause the sauna stones to become brittle, or aggressive infusions can corrode them and cause them to disintegrate over time. This causes small particles to break free from the stones making the gaps between the stones smaller. This means that hot air can no longer rise between the stones. Depending on the frequency of use, sauna stones must therefore be checked, replaced or completely renewed.

Only use natural sauna stones. Due to their roughness, they produce a better water splash effect than ceramic sauna stones.

When to check and replace the sauna stones:	every 2 – 3 months if used daily
When to completely replace the sauna stones:	at least once a year
Personnel requirement:	Instructed person
Resources:	Sauna stones

1. Switch off the sauna heater at the control unit.
2. **CAUTION! Risk of burns! The sauna stones can be hot. Leave the sauna heater to cool before changing the stones.**

Remove all the sauna stones individually.

3. Check each sauna stone for damage.
4. If a sauna stone is severely damaged:
Remove the damaged sauna stone and replace it with a new sauna stone.
5. Rinse all sauna stones in cold water.
6. Remove any splinters and broken off stone fragments from the bottom of the rock store.
7. Place the stones individually and loosely so that there is enough space between them for air to circulate properly,

Maintenance

7. Maintenance

7.1 Replacing the heating elements

The following description explains how to replace a heating element. The connection terminals for the connection cable are located in the middle on the detachable sides of the sauna heater.

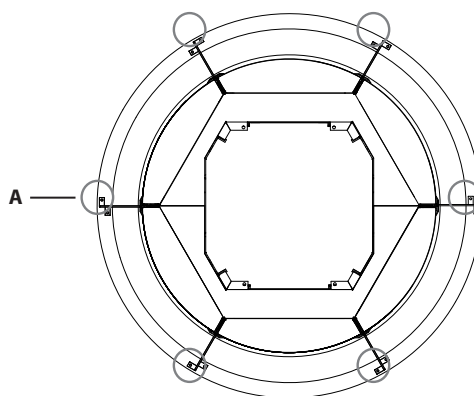
Staffing required:	Qualified electrician
Personal protective equipment:	Safety gloves
Tools and equipment:	Heating element or heating coil Screwdriver Allen key Ring or socket spanner

► Preparing the sauna heater

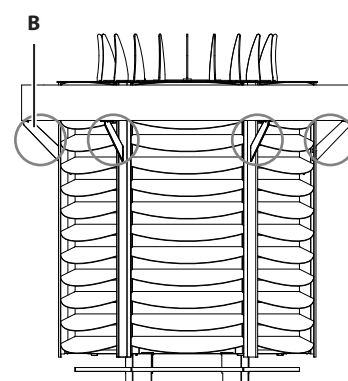
1. Switch off the sauna heater on the control unit.
2. **CAUTION! Risk of burns! The sauna heater may be hot.** Wait until the sauna heater has cooled down completely.
3. **WARNING! Electric shock!**
Switch off the fuses to disconnect the sauna heater from the mains.
4. Make sure that the sauna heater with all its supply lines is de-energised.
5. Remove the sauna stones from the stone cage.
6. If the connection box side of the sauna heater is not accessible: Carefully lift and move the sauna heater.

► Removing the guard rail

1. If your heater is fitted with a guard rail, you must remove this guard rail before changing the heating elements.
2. To do this, loosen the 12 screws **(A)** underneath the guard rail.
3. Then remove the guard rail upwards. The guard rail brackets remain firmly attached to the heater **(B)**.

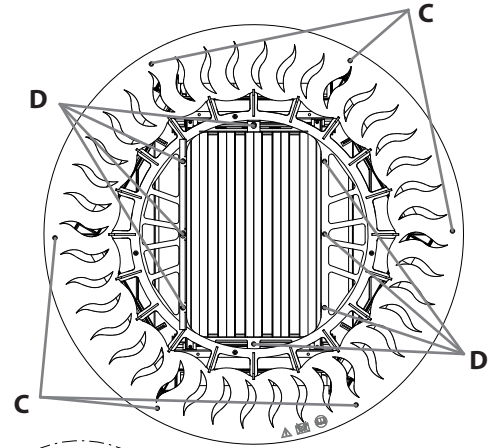


View from below

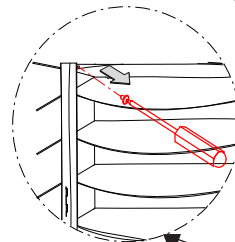


Side view

4. Loosen the six screws (C) of the cover and the eight screws (D) of the stone cage.



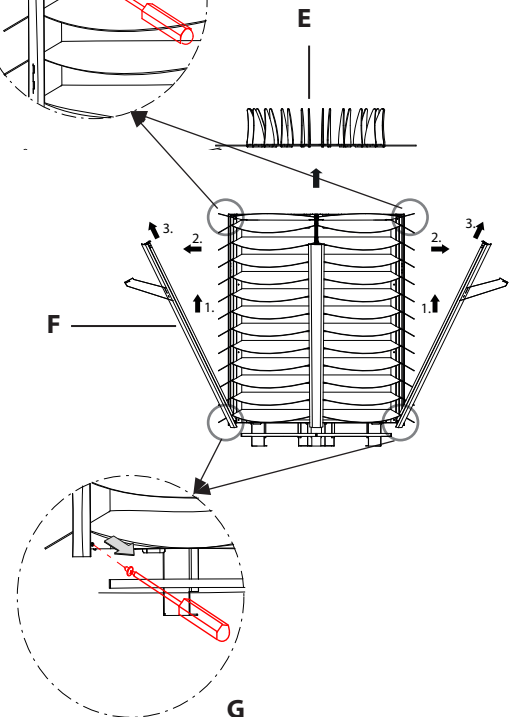
(F2)



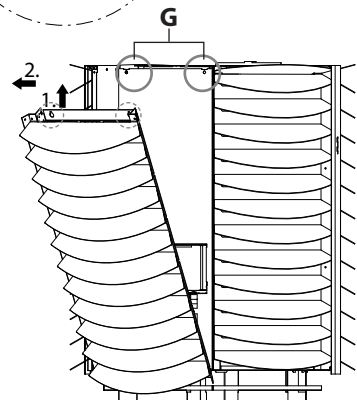
► Opening the connection box

5. Remove the complete cover (E).
6. Now loosen the screws (F1) at the bottom side of the bar (F), and remove the screws (F2) at the top from the side.
7. NOTE! Remove both sides of the slats in front of the connection boxes to gain access to all heating elements.

(F1)



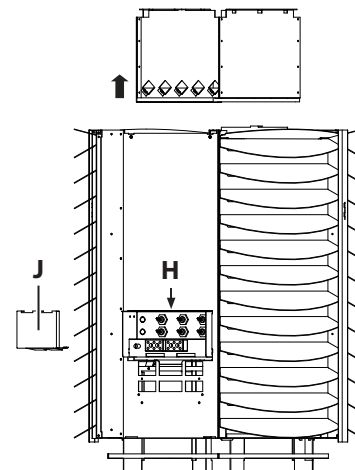
8. Release the screw (H) of the connection box from above and remove the cover (J) forwards. Then remove the stone cage to access the heating elements.



Maintenance

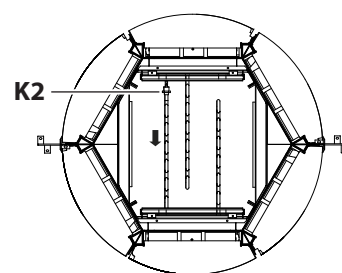
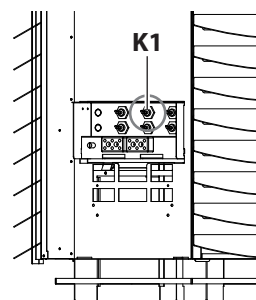
► Replacing heating elements

9. Identify the defective heating element by measurement.
10. Disconnect both flat plugs from the defective heating element.
11. Loosen the two fastening nuts (K1)



and the serrated washers of the defective heating element (K2).

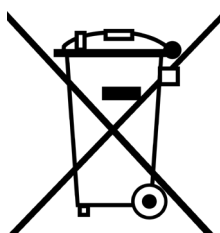
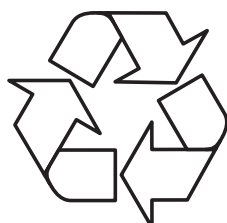
12. Push the heating element slightly backwards and remove it upwards.
13. Insert the new heating element.
14. Fasten the heating element with a serrated washer and fastening nut.
15. Plug in the flat plug.
16. Check the wiring of all heating elements.



8. Troubleshooting

Error	Reason	Solution
It takes the heater a long time to heat up the cabin.	One or more than one heating element is defective.	Have a technician replace the tubular heating element.
	There is not enough space between the stones.	Reshuffle the stones.
	There is insufficient ventilation.	Install the air inlets. If these are insufficient, add a fan to the openings.
	The electrical connection is defective	Check the installation fuses.
		Have the control unit's outputs checked by a technician.
	The position of the temperature sensor is not optimal.	Check the position of the temperature sensor and adjust as needed.
The heater is very hot but cannot distribute the heat throughout the cabin.	There is not enough space between the stones.	Reshuffle the stones.
The safety temperature limiter was triggered and the heater no longer heats.	The STL was triggered by heat accumulation.	Check the inlets, outlets, and the fan and ensure that the heater has access to a sufficient amount of air. Replace the safety temperature limiter.
	The position of the temperature sensor in the cabin is not optimal.	Check the position of the temperature sensor and adjust as needed.

Disposal



9. Disposal

The sauna heater may only be deinstalled by trained electricians.

Electrical devices that are no longer needed must be recycled at a recycling station as per EU guideline 2012/19/EU or as per the Electrical and Electronic Equipment Act (ElektroG).

Observe local provisions, laws, regulations, standards and directives when disposing of the unit.

Do not dispose of the unit with household waste

► Packaging

The packaging of the unit can be completely separated for disposal and recycled. The following materials are used in the packaging:

- Used paper/cardboard/wood
- Plastic foil

► Electronic waste

Electronic waste must be disposed of at the designated local collection point for electronic waste.

Additional disposal instructions for commercial users (DE only)

You can find further disposal instructions under

www.eos-sauna.com/recycling

10. General Terms and Conditions of Service

(T&C, Dated 08-2018)

10.1 Scope

Unless otherwise agreed in writing for specific instances, these terms and conditions of service apply to service operations, including checking and remedying complaints. All our existing or future legal relationships shall be governed solely by the following terms and conditions of service. We do not recognise any of the customer's conflicting terms and conditions unless we have given our express written consent to their applicability.

We hereby expressly object to any of the customer's terms and conditions included in the customer's General Terms and Conditions of Business or order confirmation. Unconditional acceptance of order acknowledgements or deliveries shall not be construed as any form of acknowledgement of such terms and conditions. Ancillary agreements or amendments must be confirmed in writing.

10.2 Costs

The customer bears the following costs in connection with services rendered:

- Mounting/dismantling and electrical (de-)installation
- Transportation, postage and packaging
- Function testing and troubleshooting, including inspection and repair costs

There shall be no third-party billing.

10.3 Performance and cooperation obligations

The customer shall provide assistance free of charge to the manufacturer in rendering services. In the case of a warranty claim, the manufacturer provides spare parts necessary for servicing free of charge.

10.4 Service visit by the manufacturer

Services rendered on site by an employee of the manufacturer must be agreed in advance.

If the main reason for the service visit is not the fault of the manufacturer, any costs incurred will be charged to the customer after the service visit and must be paid by the customer in full within the agreed payment term.

10.5 Liability

The manufacturer shall assume liability in accordance with the currently applicable statutory regulations. All our products are packaged in such a way that the individually packed goods (pallets) can be shipped. We wish to point out that our packaging is not suitable for individual shipments via parcel post. The manufacturer shall accept no liability for damages incurred as a result of improper packaging in an individual shipment.

General Terms and Conditions of Service

10.6 Manufacturer's warranty

The manufacturer's warranty applies only if installation, operation and maintenance have been carried out in full accordance with the manufacturer's specifications in the installation and operating instructions.

- The warranty period shall commence from the date on which proof of purchase is provided and shall be limited, in all cases, to 24 months.
- Warranty services shall be performed only if proof of purchase of the equipment can be presented.
- Any and all warranty claims shall become void if modifications are made to the equipment without the manufacturer's express consent.
- Any warranty claim shall likewise become void in the case of defects that arise due to repairs or interventions made by unauthorised persons or due to improper use.
- In the case of warranty claims, the serial and article numbers must be provided, together with the unit designation and a meaningful description of the error.
- This warranty covers defective equipment parts, with the exception of normal wear parts. Wearing parts include lamps, glass parts and sauna stones.
- Only original spare parts may be used within the warranty period.
- Service visits made by third parties shall require a written order issued by our service department.
- The equipment in question is to be sent to our service department by the customer at the customer's own expense.
- Electrical assembly and installation work, including service visits and parts replacements, shall be carried out at the customer's expense; costs shall not be borne by the manufacturer.

Complaints in respect of our products shall be reported to the responsible distributor and shall be handled exclusively by said distributor. The manufacturer's General Terms and Conditions of Business, in the version available at www.eos-sauna.com/agb, shall apply in addition to the foregoing terms and conditions of service.

made in Germany

CE UK EAC IPx4

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