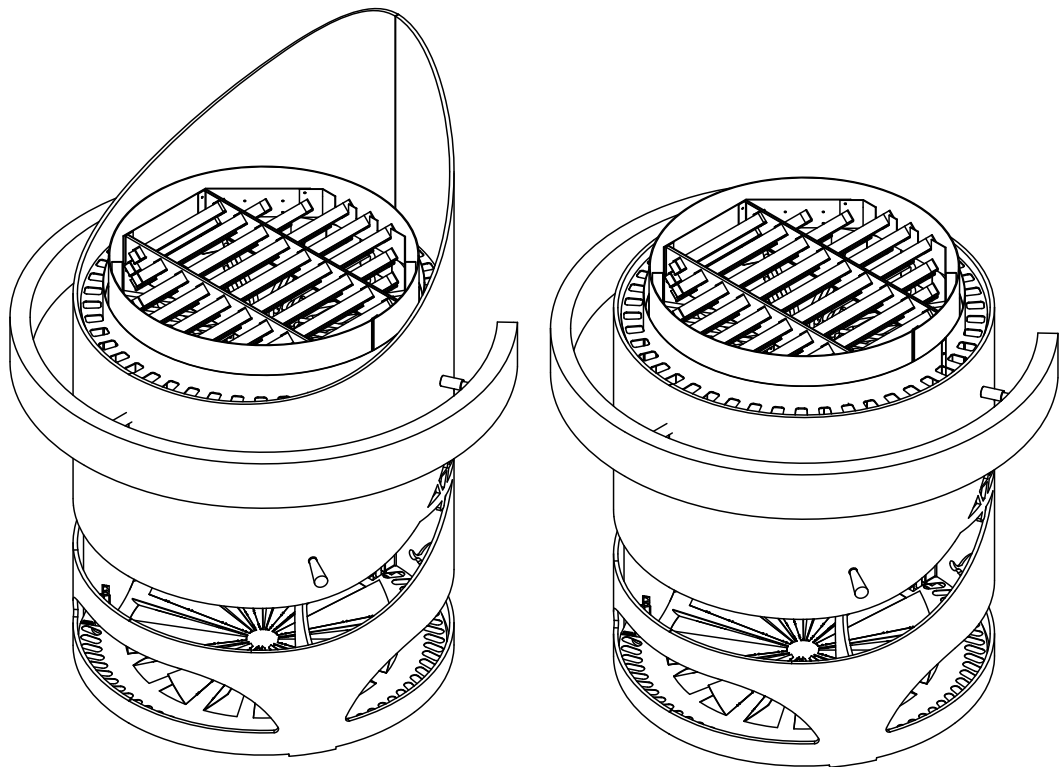


EOS Zeus HD / Zeus L HD

Heater for Sauna Cabins



Installation and Operating Instructions

Made in Germany



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Documentation

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Original installation instructions EN







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Characters, symbols and illustrations

-  Additional information about an operating step
-  Cross-reference to a page
-  Read instructions
-  Result of a step
-  Table title
-  Title of figure
- \leq \geq Less than or equal to, greater than or equal to

Revision history

Date	Version	Description
21 June 2023	02.10	Modification of the inner casing on the heating element
2 May 2022	02.00	Changes to product description, changes to electrical connection
1 March 2021	01.00	First version

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1

General safety instructions

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 trained 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.

General safety instructions

- 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.
- 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 below or behind the sauna heater, approx. 5 to 10 cm above the floor. The minimum dimensions of the air inlets and outlets can be found here: 2.3 Technical data, ☐ EN-12, 3.1.2 Air inlets and outlets, ☐ EN-17.
 - ▶ The air outlet is always installed in the lower part of the wall, diagonal to the heater. The air inlets and outlets must not be closed. 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 sensors according to the installation instructions that accompany the control units inside the sauna cabin.
 - ▶ Electrical installations and equipment in the sauna cabin must comply with IEC 60364-7-703 (DIN VDE 0100-703).

- ▶ 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.

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 trained 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 can easily be ignited and cause fires.

- ▶ Do not place objects on the heater.
- ▶ Fill the stone grate as directed.
- ▶ Inspect the sauna cabin prior to each commissioning.
- ▶ If you switch on the heater using pre-set timers or remotely, attach a protective cover to the heater or install a suitable safety system.

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.

General safety instructions

Equipment damage due to overuse

If the cabin is used commercially, the heating period 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 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, 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 be supervised to ensure they do not play with the unit.
- ▶ Children and persons who have not received proper instruction must not clean or service the system.

1.3 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.

1.4 Standards and regulations

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

2

Identification

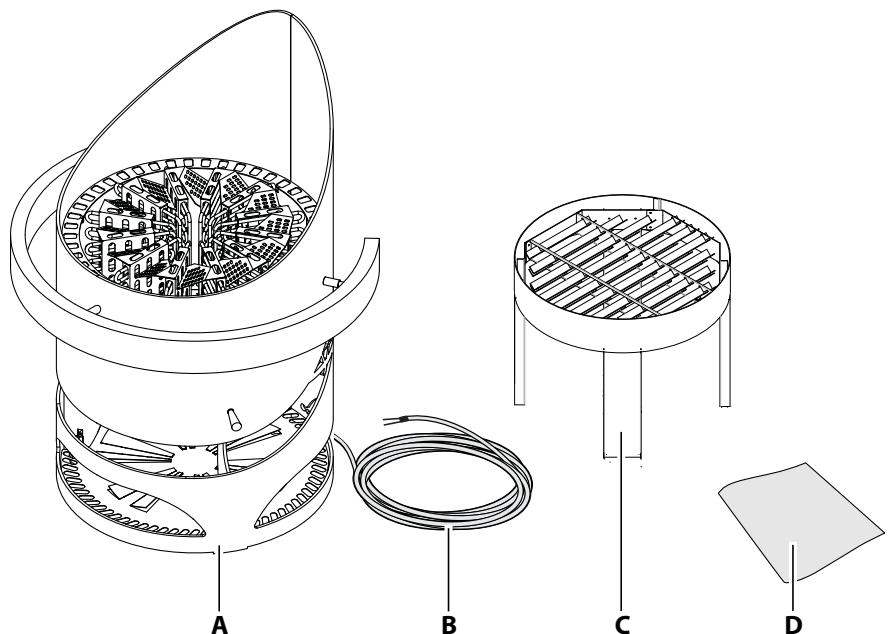
Zeus HD is an electrically heated sauna heater for Finnish mode available in a variety of output capacities.

- Zeus L HD is designed for installation in the middle of the cabin.
- Zeus HD is designed for installation in a cabin corner or in front of a wall. It is equipped with an asymmetrical, elevated outer casing (plate).


2.1 Scope of delivery

Check the delivery to ensure that all components were delivered and that the unit is in proper working order. Contact your distributor if components are missing or damaged. The unit must not be operated if components are missing or damaged.

The following parts are included in the scope of delivery:



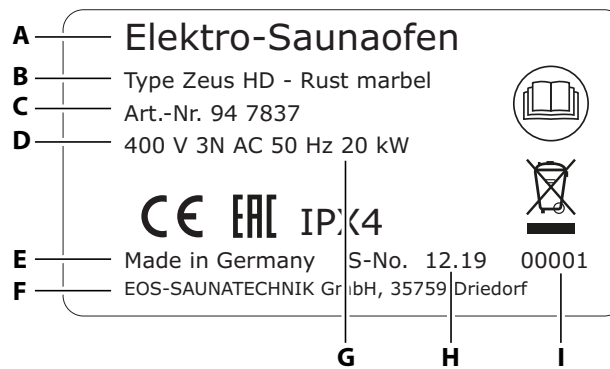
- | | |
|---|--|
| A Sauna heater * | C Stone attachment frame;
only for 30 kW and 36 kW |
| B Connecting cable 4 x 1 mm ² for thermo-fuses, 6 m pre-mounted | D Installation instructions |

 Scope of delivery – Zeus HD as example

* The supporting slots on the tubular heating elements are included in the scope of delivery only for heaters with output capacities of 20 and 24 kW. The stone attachment frame (**B**) is supplied for heaters with output capacities of 30 kW and 36 kW. The supporting slots and stone attachment frame

prevent stones from falling between the tubular heating elements. Otherwise, the heavy weight of large stones could cause deformation of and damage to the light-red (glowing) heating elements during operation. Not shown in the figure: 6 m fibreglass hose.

2.2 Nameplate



- | | |
|--------------------------------|-----------------------------|
| A Name | F Manufacturer |
| B Model | G Heater output |
| C Item number | H Manufacturing date |
| D Electrical connection | I Serial number |
| E Country of origin | |
| Nameplate (example) | |

Identification

2.3 Technical data

Heater output per DIN	20 kW	24 kW	30 kW	36 kW
Electrical connection	400 V 3N ~ 50 Hz			
for cabin volumes	24–30 m ³	35–40 m ³	50–65 m ³	65–70 m ³
Minimum dimensions of air inlets and outlets	50 x 8 cm, ~ Ø 25–30 cm		50 x 10 cm, ~ Ø 25–30 cm	
Weight without stones and packaging	Zeus HD: approx. 145 kg Zeus L HD: approx. 128 kg			
Unit dimensions Ø x H	Zeus HD: ~ Ø 70 x 125 cm Zeus L HD: ~ Ø 70 x 79 cm			
Stone filling	70–75 kg, caliber 100–150 mm (available as an option)			
Power extension unit (LSG) required *	LSG 36			
For use with the control units	Econ series, Compact series, EmoTec series, EmoStyle series, EmoTouch series			
Area of application	For commercial sauna cabins			
Leakage current	Max. 0.75 mA per kW heater output			
Fuse protection for control unit	3 x 16 A		1 x 16 A	
Fuse protection for LSG unit	3 x 25 A	3 x 35 A	3 x 50 A	3 x 63 A
Connection control unit – heater	5 x 1.5 mm ²		-	
Connection mains – control unit	5 x 2.5 mm ²		3 x 1.5 mm ²	
Connection mains – power extension unit	5 x 4 mm ²		5 x 10 mm ²	5 x 16 mm ²
Connection LSG – heater	5 x 4 mm ² + 4 x 1 mm ²		2 x (5 x 6 mm ²) + 4 x 1 mm ²	
Connection LSG – control unit	4 x 1.5 mm ²			

*LSG = power extension unit

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

2.4 Accessories

A heater guard rail may be mounted around the upper edge of the heater. It prevents accidental contact with the hot heater.

Accessories (optional)		Item no.
Heater guard rail 270°	Abachi	94.6605
	Walnut	94.6597
Heater guard rail 360°	Abachi	94.6606
	Walnut	94.6598

Accessories (optional)		Item no.
Installation kit for heater guard rail		94.6761
Sauna stones, caliber 100–150 mm, 20 kg per package		94.7340

2.5 Intended use

The EOS Zeus HD/Zeus L HD sauna heater is designed solely to heat sauna cabins with a suitable control unit and a power extension unit. EOS Zeus HD/Zeus L HD is a free-standing sauna heater that is suitable for commercially used cabins.



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.

Foreseeable misuse

The following are considered instances of foreseeable misuse:

- The heater power does not match the sauna volume.
- The control and sensor cable plugs are plugged in incorrectly.
- The unit is operated without knowledge of or compliance with the safety instructions.
- Operating, service and maintenance requirements are not observed.
- The unit is operated after technical or other modifications are made to the relay box.
- The unit is operated with insufficient air supply or exhaust air.
- The unit is operated without sauna stones or with a rock store that is not filled as directed.
- 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 manufacturer is not liable for unauthorised modifications made to the equipment and damages resulting from these modifications. The person modifying the equipment alone shall bear the associated risk.

Identification

General instructions

- Observe the specifications and information provided by your sauna retailer.
- 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.

3

Installation

This chapter describes how to install Zeus HD. Prior to installing the unit, air inlets and outlets must be installed in the cabin. It may be necessary to mount 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 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.
- ▶ 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. The width of the door must equal at least 72 cm.

The sauna heater must be level.

In general, it should be noted that the sauna heater must not be set on a floor made of highly flammable material such as laminate, flooring made of plastic material, etc. Ceramic tiles are recommended as a flooring option.


Electrical lines

All electrical installations laid inside the cabin must be suitable for silicone cables and 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.

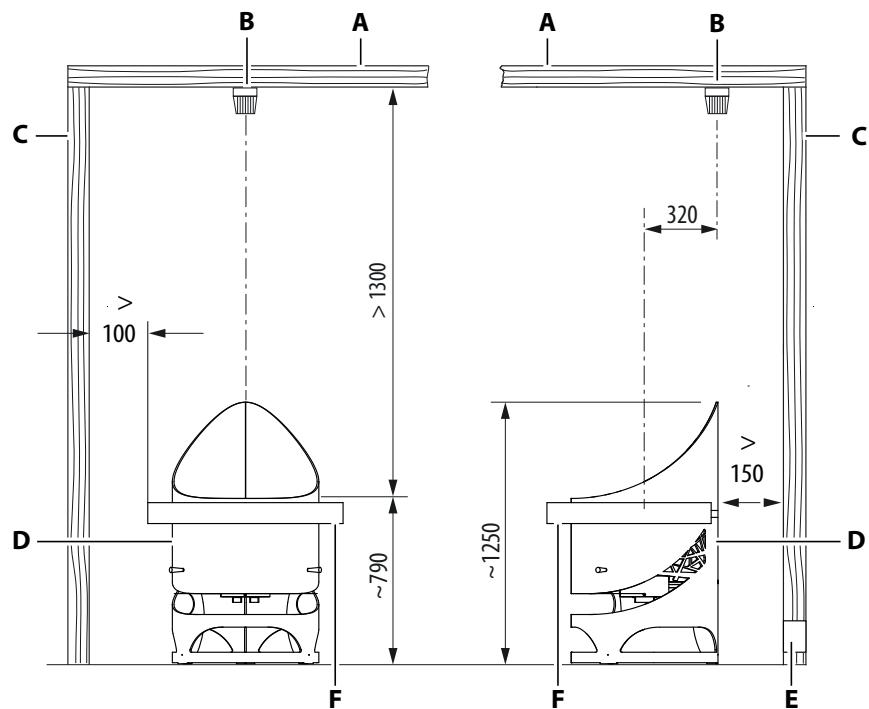
EOS recommends laying all connecting cables through a bendable metal tube connected to the protective conductor.


3.1.1 Installation site

The required cabin volume depends on the heater power. See 2.3 Technical data,  EN-12.

The following distances must be observed:

- Ceiling height min. 2100 mm
- Distance between heater and cabin ceiling at least 1300 mm
- Distance between heater and cabin wall at least 150 mm
- Distance between heater guard rail and bench at least 100 mm



- | | |
|---|----------------------------|
| A Cabin ceiling | D Heater |
| B Temperature sensor with safety temperature limiter | E Air inlet |
| C Cabin wall | F Heater guard rail |
|  Dimensions in the cabin (in mm) | |

3.1.2 Air inlets and outlets

Air inlets and outlets must be installed in the cabin to ensure a sufficient air flow in the cabin and to prevent the heater from overheating. To support ventilation, a fan can also be mounted, preferably on the side of the exhaust air.

The required size of the air inlets and outlets depends on the heater power; see 2.3 Technical data, □ EN-12.

WARNING

Fire hazard from overheating

The heater can 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.
- ▶ Start the sauna only after all air inlets and outlets have been opened.

If the heat-up process takes a long time, the underlying reason can be that the heater has an insufficient fresh air supply. A minimum of 5 times the cabin volume of air per hour must be exchanged.

If, despite compliance with dimensions, there is still not enough fresh air to reach the heater, a fan must be installed at the opening outside of the cabin.

Depending on the location of the heater, the air inlet must be installed behind or below the heater.

- Air supply from below, □ EN-18
- Air supply from the side, □ EN-19

Air outlet


The air outlet must meet the following criteria:

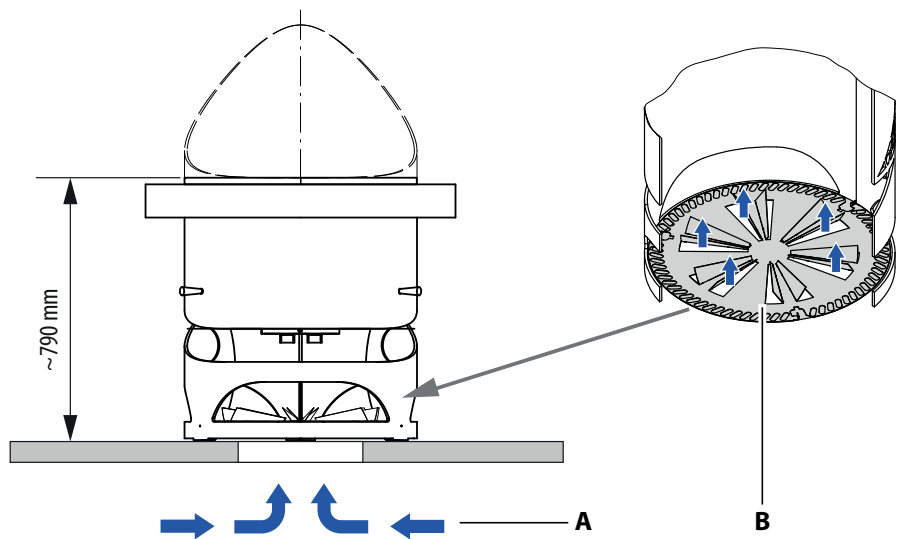
- Location: across from the heater
- Height: 30–50 cm above the cabin floor

For more specifications, see 2.3 Technical data, □ EN-12.


Air supply from below

The air inlet must meet the following criteria:

- Location: centred below the heater.
- Dimensions: \varnothing depending on heater power 250–300 mm, see 2.3 Technical data,  EN-12.
- The air supply volume per hour must equal 5 times the cabin volume.



A Air supply through cabin floor **B** Slats open

 Installing the air inlet in the cabin floor

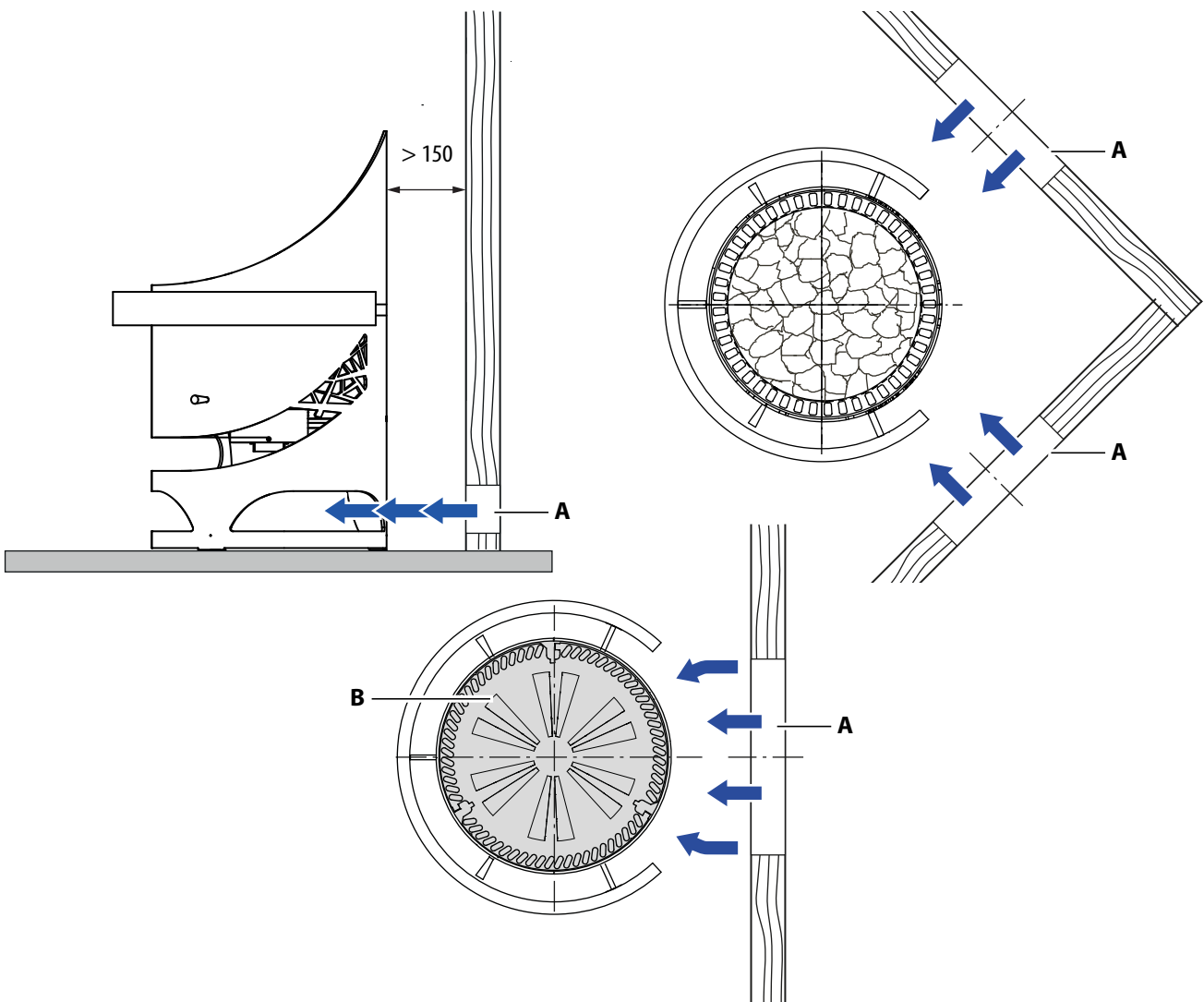
The slots are bent upward during heater manufacturing. They must be checked before commissioning.

Air supply from the side

The air inlet can be either a large opening or two small openings.

The air inlet must meet the following criteria:

- Location: From the side (in relation to the heater) at the height of the lower openings.
- A duct directs fresh air to the opening or openings.
- A fan must be mounted at the beginning of the duct outside of the cabin.



A Air inlet



B Slots (bent upward by the factory)

Installing the air inlet in the cabin wall

3.2 Connecting cables



All electrical installations laid inside the cabin must be suitable for silicone cables and 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.

To prevent damage, EOS recommends an additional sheath for the connecting cable.

For more information, see the connection diagram  Connections,  EN-29.

3.3 Temperature sensor

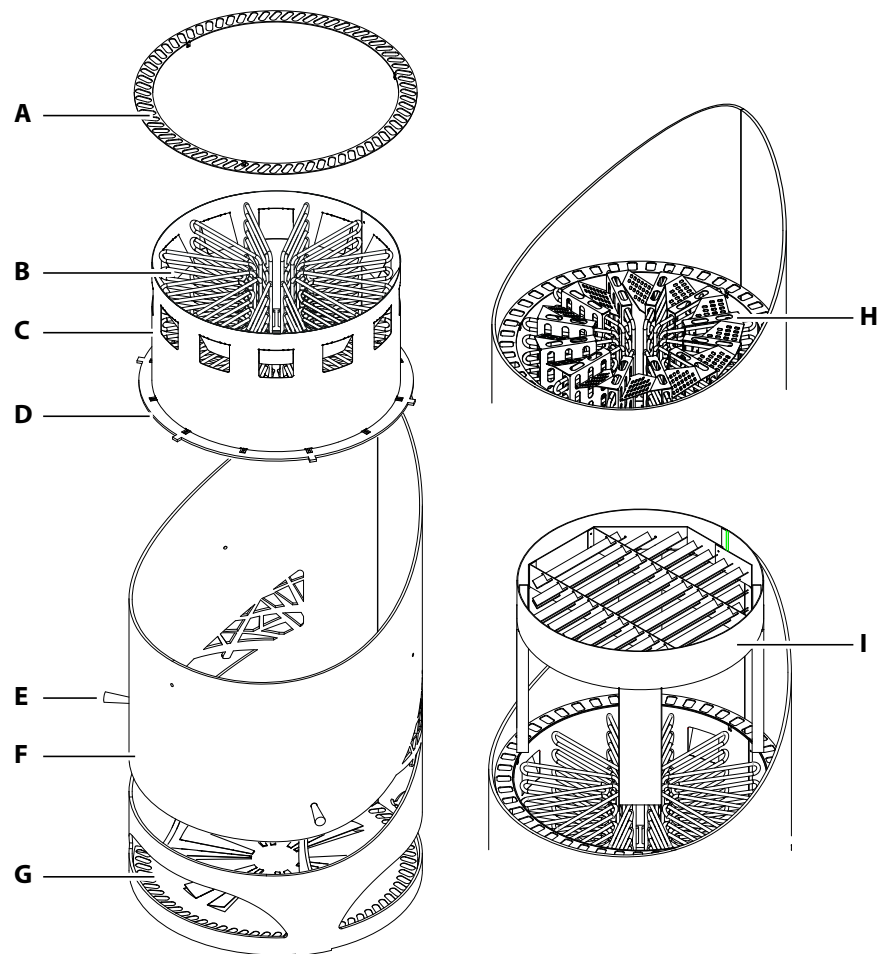
The heater sensor with the safety temperature limiter must be installed where expected temperatures are the highest, meaning directly above the heater.

See  Dimensions in the cabin (in mm),  EN-16.

The temperature sensor with the safety temperature limiter is not included in the scope of delivery. See the separate installation instructions for the control unit for information on installation.

3.4 Installing the heater

The heater is supplied mounted and packaged on a Euro pallet. Once the cabin is prepared, the heater is placed on a pre-defined position. Four people should always transport the heater and use a lifting device if needed.



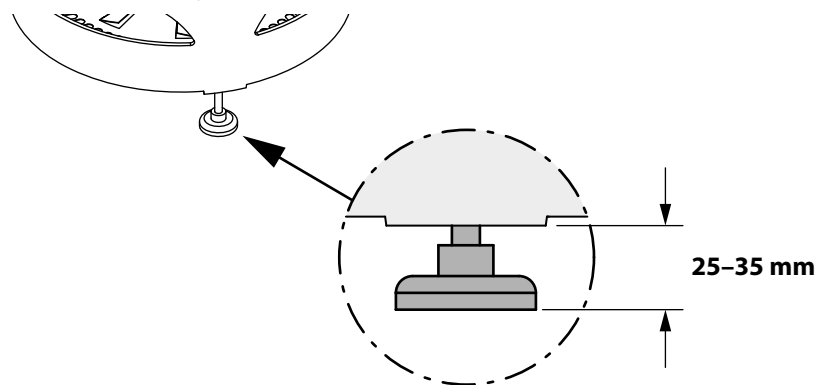
- A Decoration ring
- B Tubular heating element
- C Inner casing (heating element)
- D Support frame
- E Safety pin for heating unit
- F Outer casing
- G Drip pan
- H Safety slots, only for 20/24 kW
- I Stone attachment, only for 30/36 kW

A drip pan is mounted under the heating element. It collects residual water from a water splash, which then vaporizes.

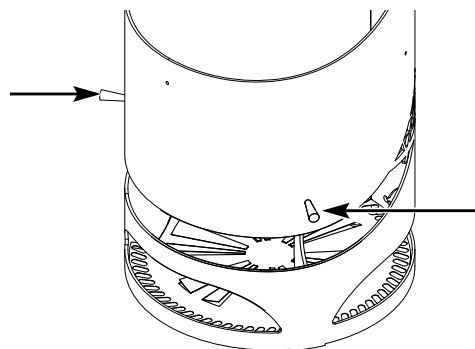
Installation

► Setting up the heater

- 1 **CAUTION!** The heater weighs between 128 and 145 kg, depending on the model. Four people should always move the heater, or a lifting device should be used.
Remove the transport protection and lift the heater from the pallet. Then move it to the pre-defined installation site.
- 2 Unscrew the 3 adjustable feet 25–35 mm until the heater is level.

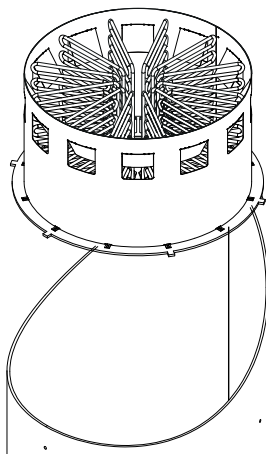


- ① Use a spirit level if needed to ensure that the heater is level.
- 3 Remove all transport locks and protective films in the heater.
 - ① The safety slots are fixed with cable ties on the 20 and 24 kW models.
 - ① For the 30 and 36 kW models, the stone attachment is set inside the heater and covered with protective film.
 - 4 Unscrew the 2 safety pins for the heating element.



- 5 Remove the heating element.
 - a) **20 and 24 kW:** Remove the decoration ring.
The safety slots do not need to be removed.
 - b) **30 and 36 kW:** Remove the stone attachment and decoration ring.

- 6 Hold the tubular heating elements and lift the heating element from the heater.



- ① The heating element consists of the inner casing, the heating coil and the terminal box. These are firmly attached to each other on the lower support frame.
- ① The heater is reassembled only after electrical installation.
 - ▶ Preparing the connection to the sauna heater, □ EN-31

3.5 Installing the heater guard rail (optional)

The heater guard rail is available in 270° and in 360° models. It is mounted on the heater by means of 3 brackets. The rail has a pin on the inside in the middle and two indentations for fixing on the sides.

The heater guard rail should always be attached in such a way that it protects sauna guests from making inadvertent contact with the heater.

During installation:

- Ensure that the heater has no power.
- Allow the heater to cool down.
- Remove all stones.

Hardware and tools

- Heater guard rail: heater rail and mounting kit
- Hexagon key (SW6)
- Crosshead screwdriver (size 2)

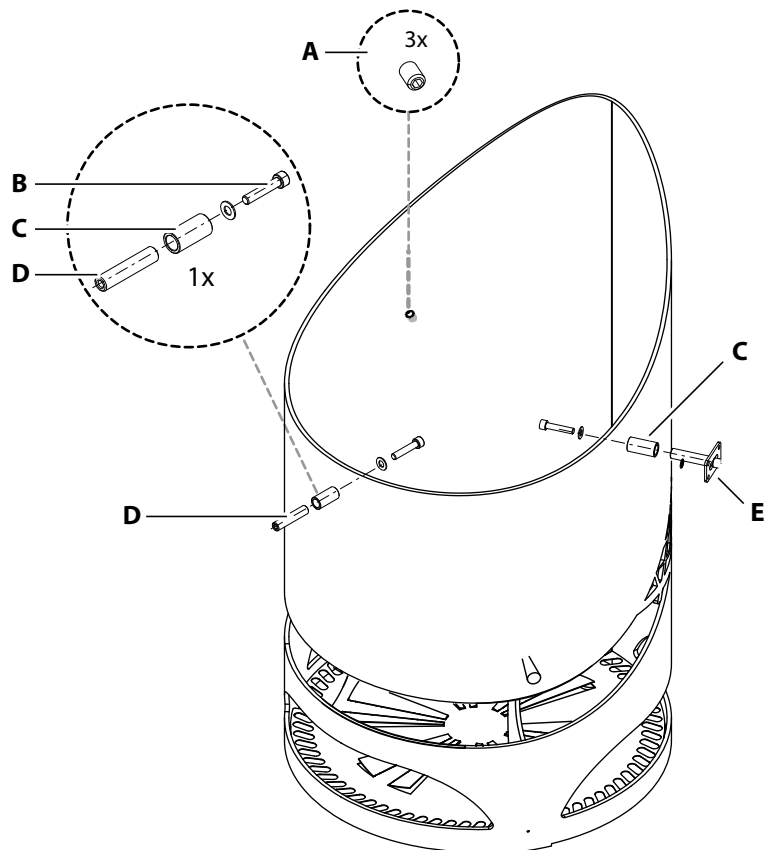
The guard rail is mounted on the outer casing by means of the 3 holes provided for this purpose.

► Preparing for installation

- 1 **WARNING!** Ensure that the heater has been disconnected from all power supply lines. Allow the heater to cool down.
Remove the stones.
- 2 Remove the heating element.
① See ► Setting up the heater, □ EN-22.

► Installing the heater guard rail

- 1 Unscrew the 3 cap set screws (**A**) from the fixing holes in the outer casing.



- | | |
|--|----------------------------------|
| A Cap set screws | D Retaining sleeve |
| B Hexagon socket screws
M8 x 40 mm | E Pre-mounted small plate |
| C Screw bushing $\varnothing 20 \times 40$ mm | |

- ① The set screws (**A**, hexagon socket M10) plug the openings for the heater guard rail brackets.

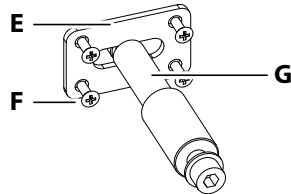
- 2 Insert the 3 hexagon socket screws (M8 x 40 mm) (**B**) from the inside into the holes. Screw on the screw bushings (**C**) from the outside and tighten.

- 3 In the middle of the front side, push on the retaining sleeve (**D**) until it stops.

- ① The sleeve's large hole must face outward.

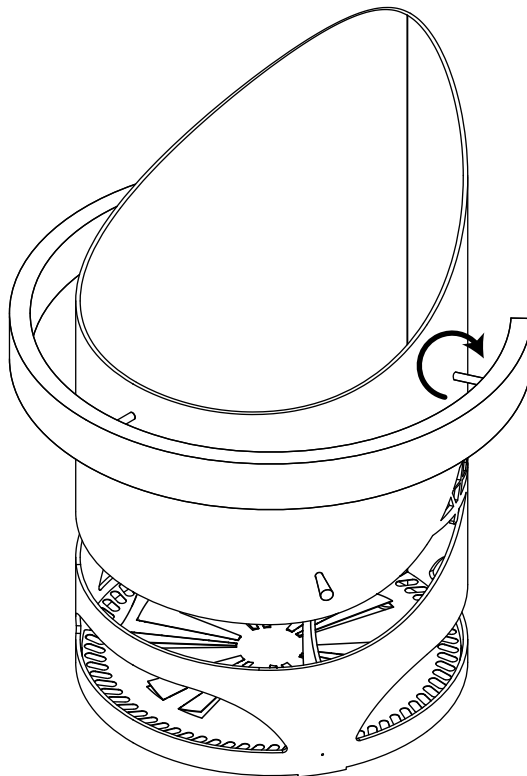
Installation

- 4** Mount the fixing inserts with the small plates on both sides:



- E** Pre-mounted small plate **F** Countersunk screw/crosshead screws
G Adjustment sleeve

- a)** Screw the adjustment sleeves (**G**) on to the hexagon socket screws until they stop.
- 5** Lift the heater rail over the outer casing and lower it onto the heater.
- 6** Insert the heater rail with the inner, centred pin (Ø 6 mm) in the bushing of the front bracket.
- 7** Insert the lateral fixing inserts in the pre-milled pockets of the heater rail and tighten them into the wood using the crosshead screws (**F**).
- 8** Rotate the adjustment sleeves (**G**) for the back brackets until the spacing is the same on all sides.



9 Reassemble the heater:

- a)** Place the heating element on the tubular heating elements in the heater.
- b)** Connect the cables in the terminal box according to the circuit diagram.
- c)** Screw in the safety pins and tighten them.
- d)** For 30 kW and 36 kW models: insert the stone attachment.
- e)** Set the decoration ring in place.
- f)** Place the stones in the rock store.
 - ① Ensure that the supply line is positioned in such a way that it can be easily tightened when lifted out of the heating element.
 - ① Do not lay stones on the decoration ring.
Only use stones with a grain size of 100–150 mm.
See 5.1 Filling rock stores with stones, [EN-36](#).

10 Start the heater.

- ① 4.2.4 Establishing an electrical connection, [EN-31](#).
- ① 5.2 Starting the heater, [EN-37](#)

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.

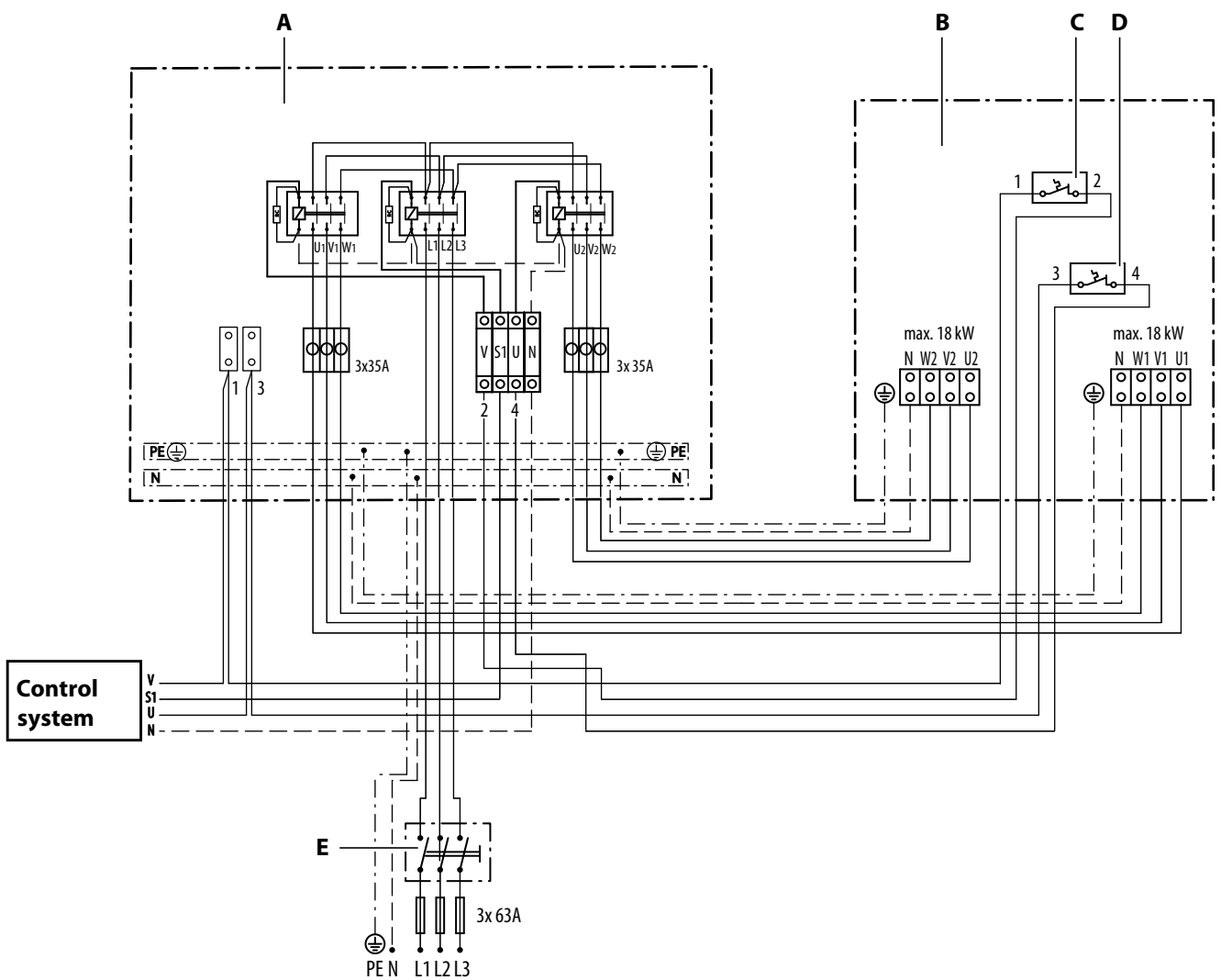
The electrician is responsible for properly connecting the heater; thus, the manufacturer does not assume liability.

4.2 Connections

The sauna control unit, the power extension unit, and the EOS Zeus HD heater must be connected as shown in the circuit diagrams. The internal wiring differs depending on the heater output.

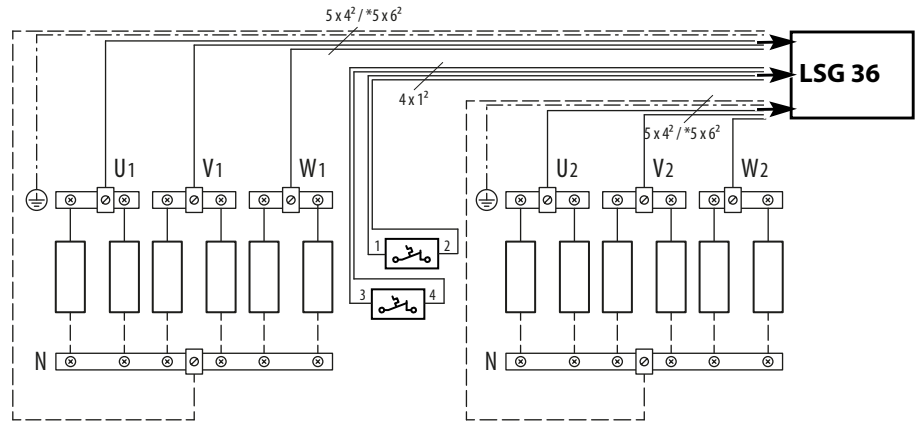
Please observe the installation and operating instructions for the control units and power extension units.

4.2.1 Terminal diagram 20 kW–36 kW



- A** Power extension unit, 36 kW switching output
- B** Sauna heater
- C** Thermo-fuse 2
- E** Mains switch
- 1** Thermo-fuse 1

4.2.2 Internal wiring 20 kW–36 kW



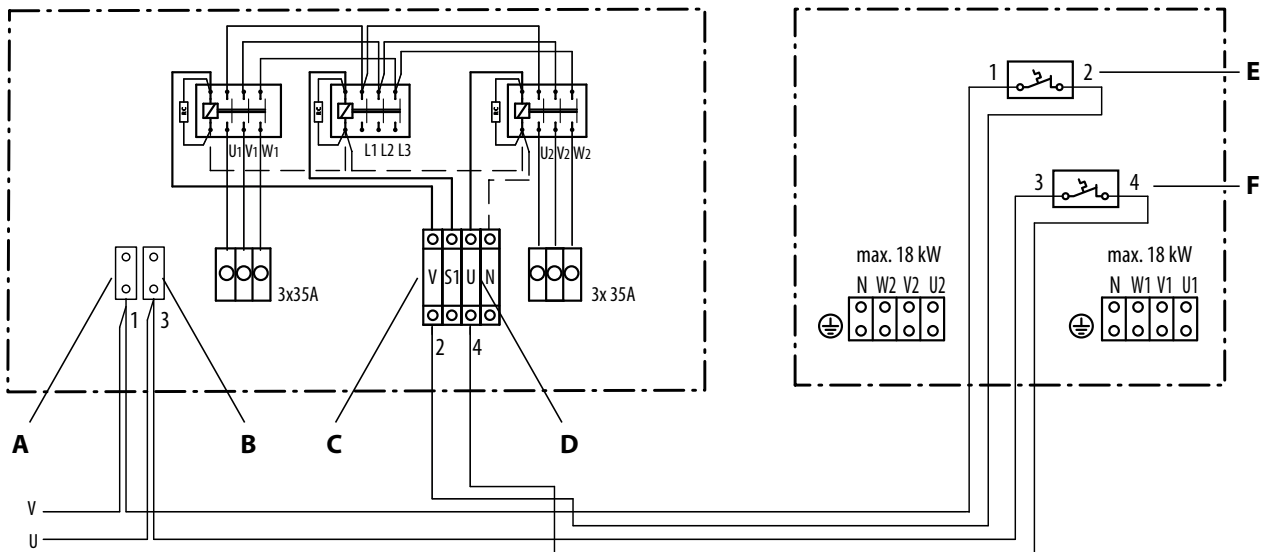
☒ Internal wiring 20 kW–36 kW

20 kW	24 kW	30 kW	36 kW
12 x 1.66 kW	12 x 2.0 kW	12 x 2.5 kW	12 x 3.0 kW

4.2.3 Connecting the thermo-fuses to the LSG

Thermo-fuses 1 and 2 in the terminal box temporarily switch off the heater (circuit 1 and/or 2) when the temperature is too high, preventing overheating and damage.

The thermo-fuses are required only for the 30 kW and 36 kW heaters. The cable is pre-mounted on the heater.



A Thermo-fuse 1, cable 1
B Thermo-fuse 2, cable 3

C Thermo-fuse 1, cable 2
D Thermo-fuse 2, cable 4

E Thermo-fuse 1
F Thermo-fuse 2

► **Connecting the thermo-fuse**

- 1 Guide the cables for the thermo-fuses to the LSG.
- 2 Connect the cables for thermo-fuse 1 (**E**) to terminals **A** and **C**.
- 3 Connect the cables for thermo-fuse 2 (**F**) to terminals **B** and **D**.

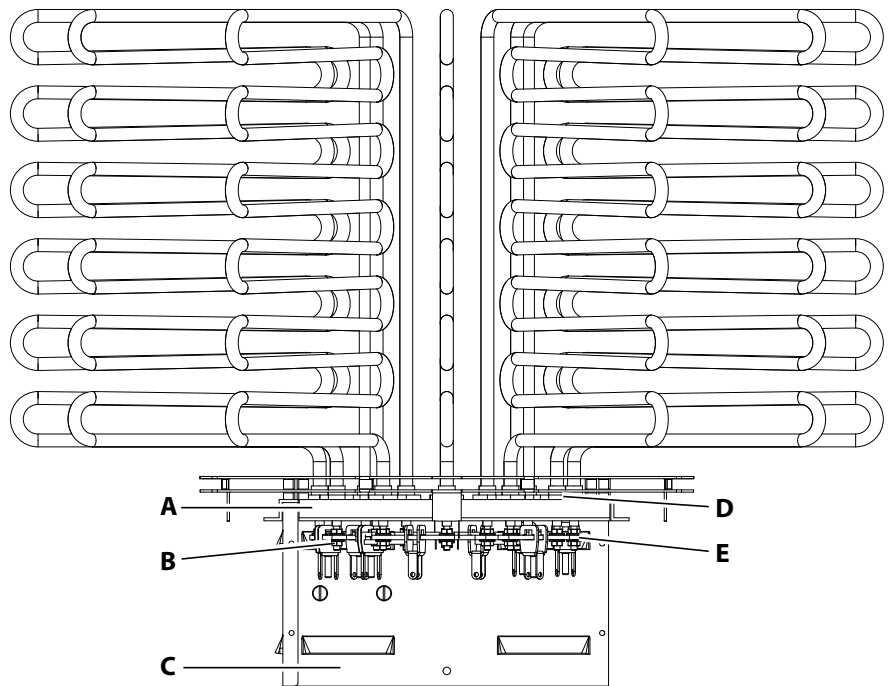
4.2.4 Establishing an electrical connection

The connections for the heating coils are attached to the bottom of the heater. The connecting cable is mounted on the terminal box with cable screw connections and must be connected to the power supply via the LSG. In order to be able to remove the heating coil later, the connecting cable must be long enough so that a loop can be made with it. The connecting cable is not included in the heater's scope of delivery.

► Preparing the connection to the sauna heater

1 Remove the heating element.

ⓘ See ► Setting up the heater, □ EN-22

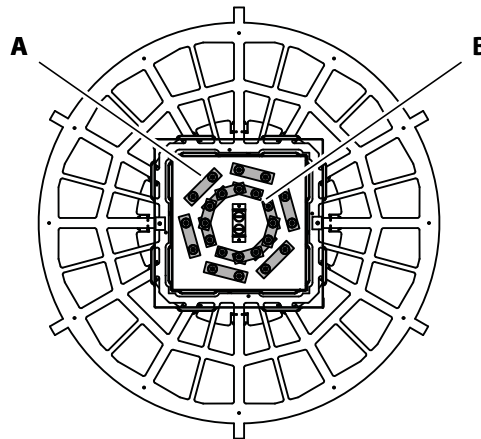


- | | |
|-------------------------------------|---|
| A Top panel of terminal box | D Nut (SW22) for tubular heating element |
| B Nut (M4) for copper strip | E Copper strip |
| C Side panel of terminal box | |

- 2 Loosen the 8 crosshead screws on the cover and side panel of the terminal box (C).
- 3 Remove the cover and side panel of the terminal box.
- 4 Feed the connecting cables through the cable screw connections on the terminal box.
- 5 Strip the cable to a sufficient length and remove the insulation from the ends of the individual cores.
- 6 Cut an appropriate piece of the fibreglass hose for each core and pull it over the core.
 - ⓘ This adds extra heat protection for the cores.
 - 2 m of fibreglass hose are included in the scope of delivery.

► **Connecting the connecting cable to the sauna heater**

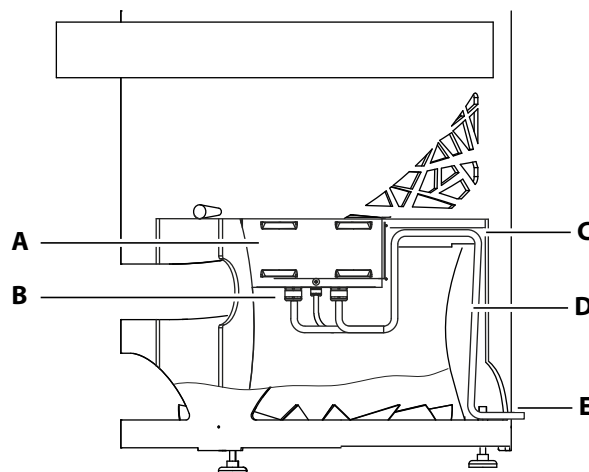
- 1 Connect the cores to the terminals on the copper strips as indicated in the terminal diagram.



A Outer ring: 2 x 3 phases **B** Inner ring: 2 x neutral conductors

① See 4.2.1 Terminal diagram 20 kW–36 kW, EN-29.


- 2 Assemble the terminal box and close it with 8 screws.
- 3 Insert the heating element and screw in 2 safety pins.
- 4 Insert the connecting cable (**D**) into the metal duct (**C**) and route it to the back of the heater.



A Terminal box for the heating coil **D** Connecting cable
B Cable screw connection **E** Rounded protrusions
C Metal duct

① The metal duct protects the connecting cable from the heat radiating from above.

Electrical installation

- 5 Feed the connecting cable through the rounded protrusions (**E**) at the end of the air inlets to the outside.
 - ① Lay a cable loop with sufficient cable length to ensure that sufficient cable can be fed during maintenance.
The cable loop can also be laid outside the cabin. Ensure that the cable can be pulled out if necessary.
- 6 Guide the connecting cable from the cabin to the relay box and LSG.
- 7 Connect the connecting cable to the sauna relay box
 - ① See the installation instructions for the relay box.
 - ① 4.2.1 Terminal diagram 20 kW–36 kW,  EN-29

4.3 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.

5

Commissioning

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

Before switching it on, ensure that the air inlets are free of lint. Remove any lint with a moist towel.

The heater is switched on via the control panel for the sauna control unit. In the process, the power extension units (LSG) switch on together with the heater. It is operated via the control panel.

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.
- ▶ Start the sauna only after all air inlets and outlets have been opened.

NOTICE

Damage to the unit due to incorrect stone type

Sauna stones that are too small or the incorrect type can hinder air convection and lead to overheating and/or compromise the water splash effect. The sauna heater can be damaged as a result.

- ▶ Only use original EOS stones with the prescribed caliber.
- ▶ Place the sauna stones in the rock store correctly, see ▶ Filling rock stores with stones,  EN-36.
- ▶ Regularly check and reshuffle the sauna stones, see
 - ▶ Reshuffling the sauna stones,  EN-40.
- ▶ Do not use ceramic stones.

The cabin must be sufficiently heated before making the first water splash. The control panel indicates when the desired temperature has been reached.

5.1 Filling rock stores with stones

Ceramic stones behave differently from natural stones when infused. Use only natural sauna stones of the prescribed grain size of approx. 100–150 mm.

⚠ WARNING

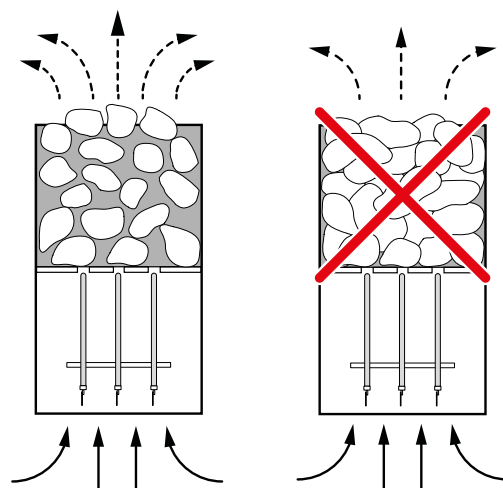
Fire hazard from overheating

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.

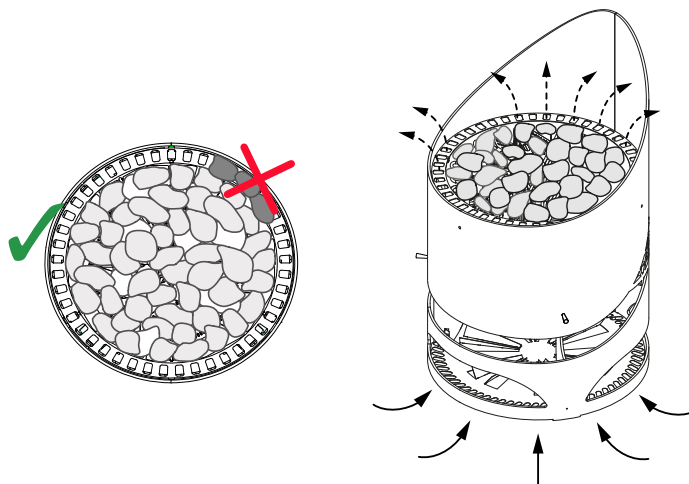
- ▶ Start the heater only if it has been filled with stones.
- ▶ Arrange the stones in place so there is ample space between them.

▶ Filling rock stores with stones

- 1 Thoroughly rinse the stones with running water.
- 2 **WARNING!** Stones that are positioned too close together in the heater prevent hot air from being exhausted. This leads to overheating of the heater.
Arrange the stones in place so there is ample space between them.



- 3 Place stones individually on the safety slots or in the stone attachment, ensuring there is plenty of space between the stones.



- ① Do not place the stones on the decoration ring. The air must flow freely.
- ① Do not place stones between the tubular heating elements.

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 system on

- 1 Switch on the sauna heater at the control unit.
- 2 Use the control unit to select a suitable program.

5.3 Switching the heater on remotely

If you switch on the heater remotely, 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 be carried out, the cabin must be sufficiently heated. The temperature sensor checks the temperature and, via the control panel, indicates when the desired temperature has been reached.

WARNING

Fire hazard

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

- ▶ When preparing the water, follow the instructions regarding quantity as specified on the sauna essence containers.
- ▶ Never add more sauna essence or essential oils to the water than the amount indicated on the container.
- ▶ 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.

6

Maintenance

This sauna heater is made of low-corrosion material. To ensure a long service life, perform regular maintenance and service on your 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 heater and could lead to impermissible temperatures. Clean the heater 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 heater.

Contact your sauna retailer or the manufacturer directly if you notice malfunctions or signs of wear and tear.

6.1 Cleaning

The sauna heater must be cleaned regularly. The cleaning frequency depends on how often it is used.

CAUTION

Risk of injury from sharp edges

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

▶ Cleaning the heater

- 1 Switch off the heater from the control unit.
 - ① Wait until the heater is completely cool, if necessary.
- 2 Clean the outside of the heater.
 - ① Use only household cleaning agents.
- 3 Remove lint and dust from openings and heat reflectors.
 - ① Openings 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.

6.2 Sauna stones

Sauna stones are a product of nature. Sauna stones must be replenished or reshuffled depending on the intensity of use.

The process of heating and cooling can make the stones brittle. Particular damage to the sauna stones can be caused by aggressive sauna essences, causing them to disintegrate over time. Small particles can break off from the stones. The gaps between the stones also become smaller which means that hot air can no longer rise between the stones.

Check the sauna stones regularly and reshuffle them. Replace damaged stones.

Please observe the following frequencies of time.

Commercial use	Private use
Every 2–3 months	Once per year

Use only natural sauna stones when you refill the rock store. Due to their roughness, they produce a better water splash effect than ceramic sauna stones.

► Reshuffling the sauna stones

- 1 Switch off the heater from the control unit.
- 2 CAUTION! Caution: stones may be hot. Allow the stones to cool before you remove the old stones.
Remove each stone individually.
- 3 Check each stone for damage.
 - ⓘ Remove the stone if damaged and replace it with a new one.
- 4 Rinse all stones with cold water.
- 5 Place the stones loosely so that there is enough space between them for air to circulate sufficiently.
 - ⓘ ► Filling rock stores with stones, [EN-36](#)

6.3 Replacing the tubular heating elements

You can replace individual tubular heating elements or the entire heating coil. A complete replacement heating coil with terminal box but without inner casing is supplied.

Necessary steps:

- ▶ Removing the heating element, [EN-41](#)
- ▶ Replacing a tubular heating element, [EN-43](#)
- ▶ Replacing the entire heating coil, [EN-44](#)
- ▶ Inserting the heating element, [EN-46](#)

Hardware + tools:

- Tubular heating element or heating coil
- Screwdriver
- Hexagon key
- Torque wrench
- Ring or socket spanner

CAUTION

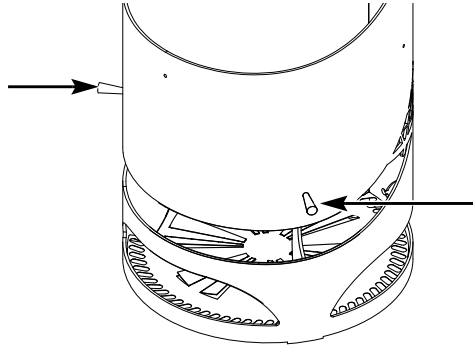
Risk of injury from sharp edges

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

▶ Removing the heating element

- 1** WARNING! Electric shock may occur if the heating coil is serviced while the heater is connected to the power supply.
Ensure that the heater has been disconnected from all power supply lines.
 - a)** Switch off the heater.
 - b)** Switch off the fuses to disconnect the heater from the mains supply.
- 2** CAUTION! Caution: stones may be hot. Allow the stones to cool before you remove the old stones.
Remove the stones.

- 3 Unscrew the 2 safety pins for the heating element.

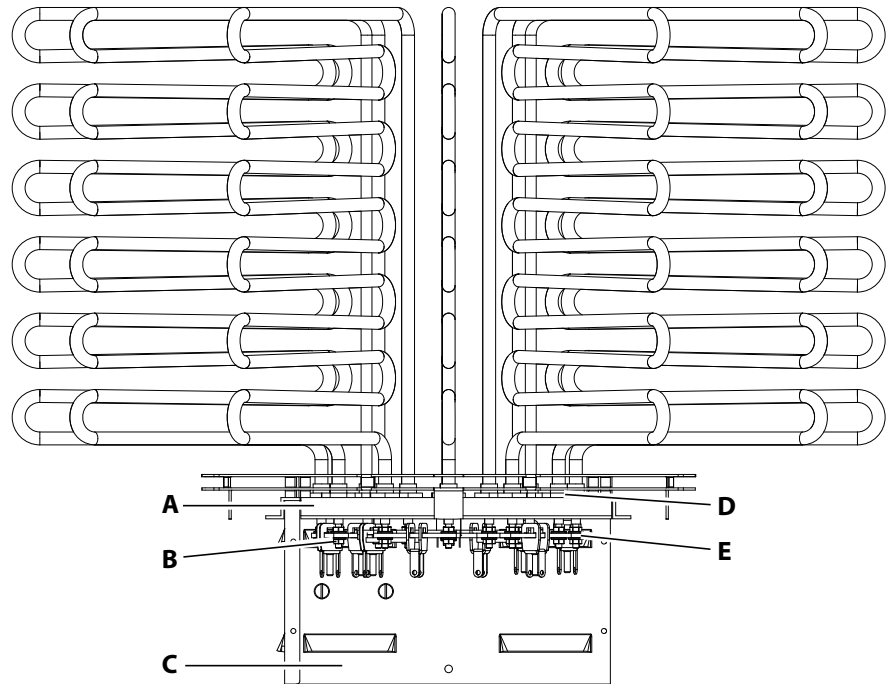


- 4 Remove the heating element.
- a) **20 and 24 kW:** Remove the decoration ring and if necessary, the safety slots.
 - b) **30 and 36 kW:** Remove the stone attachment and decoration ring.
- 5 Hold the tubular heating elements and lift the heating element from the heater.
- 6 Replace the defective part:
- ① Replace the defective tubular heating element.
See ► Replacing a tubular heating element, □ EN-43
 - ① Insert the new heating coil.
See ► Inserting the heating element, □ EN-46

► Replacing a tubular heating element

1 Remove the heating coil.

See ► Removing the heating element, EN-41



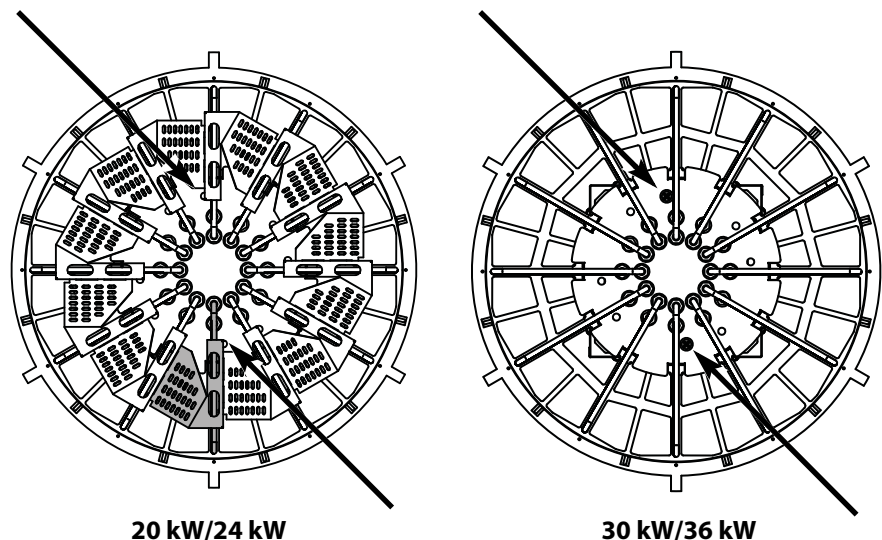
- | | |
|-------------------------------------|---|
| A Top panel of terminal box | D Nut (SW22) for tubular heating element |
| B Nut (M4) for copper strip | E Copper strip |
| C Side panel of terminal box | |

- 2 Loosen the 8 crosshead screws on the cover and side panel of the terminal box (C).
- 3 Remove the cover and side panel of the terminal box.
- 4 Unscrew the nuts (B) and remove the copper strip (E).
- 5 Identify the defective tubular heating element by taking measurements.
- 6 Loosen the nuts (D) from the defective tubular heating element on the top panel of the terminal box.
 - ① The tubular heating elements are mounted on the top panel of the terminal box and fixed from below with nuts and serrated washers.
- 7 Remove the tubular heating element.
 - ① For 20 and 24 kW heaters: the safety slots are attached to the tubular heating element and are taken out with it
- 8 **20 and 24 kW** only: Remove the safety slots from the old tubular heating element and place it on the new one.

- 9 Insert the new tubular heating elements and screw on the nuts.
- 10 Tighten the nuts (**D**) on the terminal box so that no water can enter the terminal box.
 - ⓘ To be on the safe side, check for tightness before connecting to the mains.
- 11 Tighten the nuts (**B**) on the copper strip using a ring or socket spanner (SW7).
 - ⓘ The nuts (**B**) must not be tightened too much, otherwise there is a risk that the ceramic insulation on the tubular heating element will break.
- 12 Place the cover and side panel on the terminal box and tighten the screws.
- 13 Insert the heating element again.
 - See ► Inserting the heating element, □ EN-46

► Replacing the entire heating coil

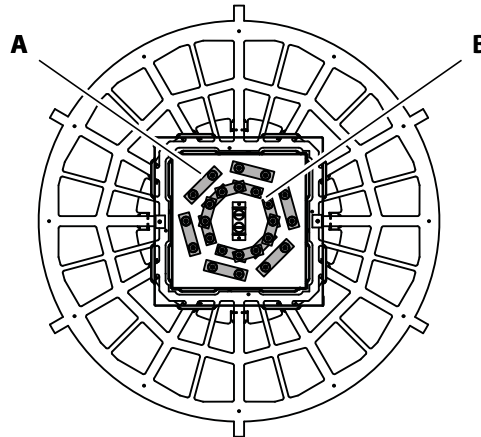
- 1 Remove the heating element.
 - See ► Removing the heating element, □ EN-41
- 2 Loosen the 2 crosshead screws on the base of the heating element.



- ⓘ To more easily reach the two screws on the 20 kW/24 kW model, the slots can be bent slightly to one side.

- 3 Pull the heating coil out of the heating element (inner casing).
- 4 **20 and 24 kW** only: Remove the safety slots from the old heating coil and place it on the new one.

- 5 Insert the heating coil into the heating element (inner casing) and turn until the two screw holes at the base are visible.
- 6 Screw in the 2 crosshead screws and tighten them.
- 7 Loosen the 8 crosshead screws on the cover and side panel of the terminal box.
- 8 Feed the connecting cables through the cable screw connections on the terminal box.
- 9 Connect the cores of the connecting cables to the copper strips as indicated in the terminal diagram.



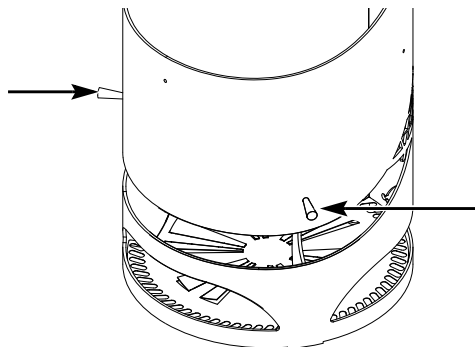
A Outer ring: 2 x 3 phases **B** Inner ring: 2 x neutral conductors

① See 4.2.1 Terminal diagram 20 kW–36 kW, [EN-29](#).

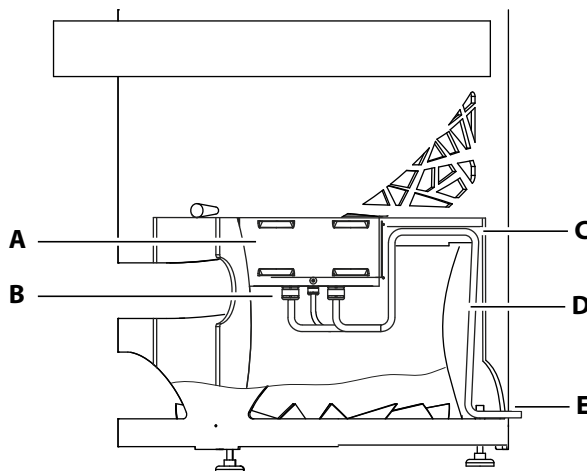
- 10 Assemble the terminal box and close it with 8 screws.
- 11 Insert the heating element again.
See ► Inserting the heating element, [EN-46](#)

► Inserting the heating element

- 1 Insert the heating element into the heater.
- 2 Screw in the 2 safety pins for the heating element.



- 3 Insert the connecting cable (D) into the metal duct (C) and route it to the back of the heater.



- | | |
|--|------------------------------|
| A Terminal box for the heating coil | D Connecting cable |
| B Cable screw connection | E Rounded protrusions |
| C Metal duct | |

- ⓘ The metal duct protects the connecting cable from the heat radiating from above.
- 4 Feed the connecting cable through the rounded protrusions (E) at the end of the air inlets to the outside.
 - ⓘ Lay a cable loop with sufficient cable length to ensure that sufficient cable can be fed during maintenance.

- 5 Put the stones back in place.
 - a) **20 and 24 kW:** Set the decoration ring in place.
 - b) **30 and 36 kW:** Put the stone attachment and decoration ring in place.

① See ► Reshuffling the sauna stones, □ EN-40
- 6 Reconnect the power supply.

6.4 Troubleshooting

Error	Reason	Solution
It takes the heater a long time to heat up the cabin.	Some tubular heating elements are defective.	Replace the tubular heating element or heating coil. See 6.3 Replacing the tubular heating elements, □ EN-41
	There is not enough space between the stones.	Reshuffle the stones. See ► Reshuffling the sauna stones, □ EN-40
	There is insufficient ventilation.	Install the air inlets. If these are insufficient, add a fan to the openings. See 3.1.2 Air inlets and outlets, □ EN-17
The heater is very hot but cannot distribute the heat throughout the cabin.	There is not enough space between the stones.	Reshuffle the stones. See ► Reshuffling the sauna stones, □ EN-40
The safety temperature limiter was triggered and the heater no longer heats. *	The safety temperature limiter 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. *
	The position of the temperature sensor with the safety temperature limiter is not optimal.	Check the position of the temperature sensor and adjust as needed.* See 3.1.1 Installation site, □ EN-16.

* The safety temperature limiter will be destroyed in case of overheating and must be replaced. See the installation instructions for the control unit.

7

General terms and conditions of service

(T&C, Dated 08-2018)

I. Scope

Unless otherwise agreed in writing for specific instances, these terms and conditions of service shall apply to service operations, including reviewing 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 acknowledgments or deliveries shall not be construed as any form of acknowledgment of such terms and conditions. Ancillary agreements or amendments must be confirmed in writing.

II. Costs

The customer shall bear 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.

III. 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 shall provide spare parts necessary for servicing free of charge.

IV. 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 shall be charged to the customer after the service visit and must be paid by the customer in full within the agreed payment term.

V. 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.

VI. Manufacturer's warranty

The manufacturer's warranty shall apply 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 shall cover defective equipment parts, with the exception of normal wear parts. Wear parts shall include, for example, light sources, glass elements, tubular heating elements and sauna heater 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 shall 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.

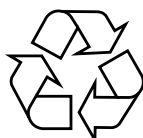
Complaints in respect of our products shall be reported to the responsible distributor and shall be handled exclusively by said distributor.

General terms and conditions of service

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.

8

Disposal



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
- Plastic foil

Electronic waste

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

Disposal instructions for commercial users (DE only)

You can find further disposal instructions under www.eos-sauna.com/recycling



Service address

EOS Saunatechnik GmbH

Schneiderstriesch 1

35759 Driedorf, Germany

Tel. +49 2775 82-514

Fax +49 2775 82-431

Email servicecenter@eos-sauna.com

Web www.eos-sauna.com

Store this address with the installation and operating instructions in a safe place.

Please always provide us with nameplate data, such as model, item number and serial number so we can provide fast and efficient support.

Date of sale

Stamp/retailer signature: