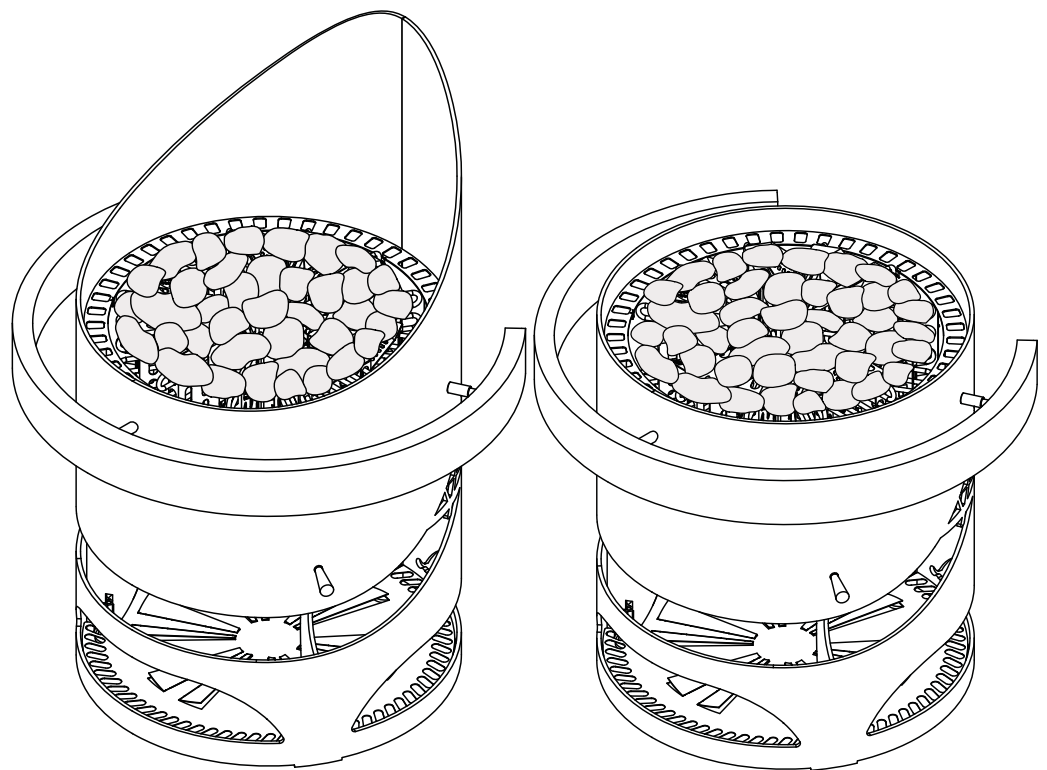


# EOS Zeus / Zeus L

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

## Revision history

Date	Version	Description
1 March 2021	01.00	First version

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# 1

## General safety instructions

### 1.1 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.

## General safety instructions

### 1.2 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 also applies following 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 disconnected and removed entirely 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 the air inlet and outlet 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.

**Sauna cabin and heater**

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

- ▶ Sauna heaters and control units may only be used in sauna cabins made of suitable, low-resin and untreated material (e.g. Nordic spruce).
- ▶ 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: 2.5 Technical data, [EN-14](#), 3.1.2 Air inlets and outlets, [EN-17](#).
- ▶ The exhaust openings are always installed in the lower part of the wall diagonal to the sauna heater. The supply and exhaust openings 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 sensor housings 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.

## General safety instructions

### 1.3 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 also applies 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 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 a remote control, attach a protective cover to 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.



- 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.

- Operating the unit** 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.

## 1.4 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](http://www.eos-sauna.com).

## 2

## Identification

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

- Zeus L is designed for installation in the middle of the cabin.
- Zeus 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 Requirements for operation

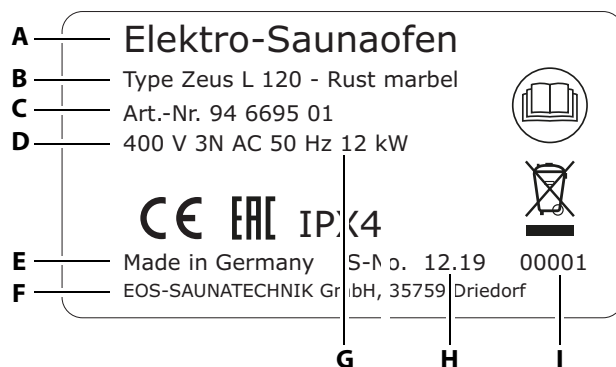
The heater must be operated with one of the following control units:

- Econ series
- EmoTec series
- EmoStyle series
- EmoTouch series
- Compact series

The control unit is not included in the scope of delivery.

Depending on the output capacity of the heater, either output controller L09 R or LSG 36 is required. See 2.5 Technical data, [EN-14](#)

### 2.2 Nameplate

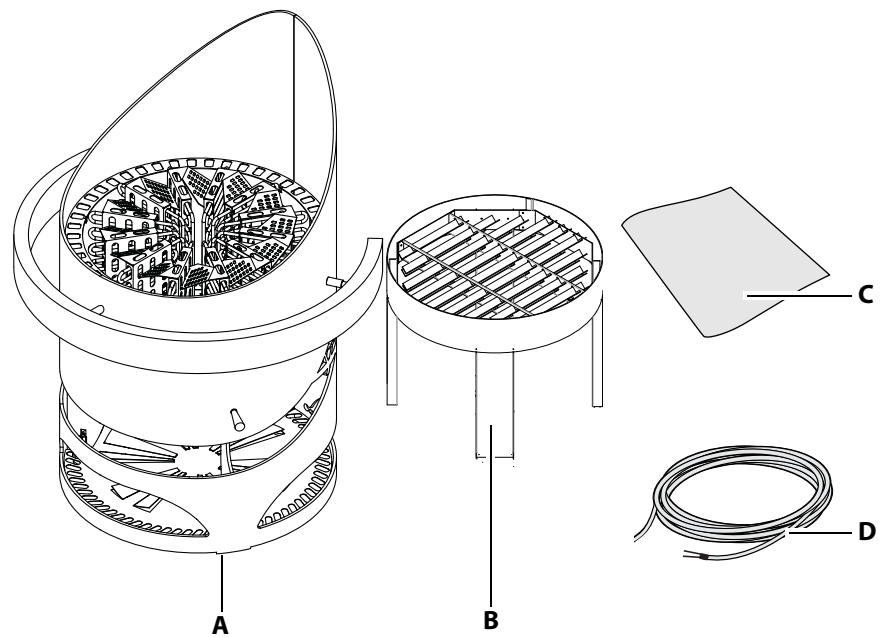


- |                                |                             |
|--------------------------------|-----------------------------|
| <b>A</b> Name                  | <b>F</b> Manufacturer       |
| <b>B</b> Model                 | <b>G</b> Heater output      |
| <b>C</b> Item number           | <b>H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

## 2.3 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 \*

**B** Stone attachment frame;  
only for 30 kW and 36 kW

**C** Installation instructions

**D** Connection cable with special  
connectors

 Scope of delivery – Zeus as example

\* The supporting slots on the tubular heating elements are included in the scope of delivery only for heaters with output capacities of 12–24 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.

## Identification

### Heater guard rail (optional)

A heater guard rail may be placed 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
Installation kit		94.6761
Sauna stones, grain size 100–150 mm, total volume approx. 100 kg		94.6227

## 2.4 Intended use

The EOS Zeus/Zeus L sauna heater is designed solely to heat sauna cabins with a suitable control unit and an output controller.

EOS Zeus/Zeus L 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 unit is operated without knowledge of or compliance with the safety instructions.
- Operating, service and maintenance requirements are not observed.
- The unit is operated by children or persons with reduced mental capacity or by persons 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.

## 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 for the control units.
- 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.

# Identification

## 2.5 Technical data

### Electrical connection – lines

Heater output	Electrical connection	Connection mains – control unit	Connection mains – output controller	Connection control unit – heater	Connection output controller – heater	Connection control unit – output controller
12 kW	400 V 3N AC 50 Hz	5 x 2.5 mm <sup>2</sup>	5 x 2.5 mm <sup>2</sup>	5 x 1.5 mm <sup>2</sup>	5 x 1.5 mm <sup>2</sup>	4 x 1.5 mm <sup>2</sup>
16 kW			5 x 4 mm <sup>2</sup>		5 x 1.5 mm <sup>2</sup>	
20 kW					5 x 4 mm <sup>2</sup>	
24 kW			5 x 4 mm <sup>2</sup>			
30 kW		3 x 1.5 mm <sup>2</sup>	5 x 10 mm <sup>2</sup>	-	2 x (5 x 6 mm <sup>2</sup> )	
36 kW		3 x 1.5 mm <sup>2</sup>	5 x 16 mm <sup>2</sup>	-	2 x (5 x 6 mm <sup>2</sup> )	

### Electrical connection – fuse protection

Heater output	Fuse protection for control unit	Fuse Output controller (LSG)
12 kW	3 x 16 A	3 x 16 A
16 kW		3 x 16 A
20 kW		3 x 25 A
24 kW		3 x 35 A
30 kW	1 x 16 A	3 x 50 A
36 kW	1 x 16 A	3 x 63 A

### Heater

Heater output	Unit dimensions Ø x H in cm	Cabin volume	Minimum size of air inlet and outlet	Weight without rocks	Stone filling	Output controller (LSG)	Control system
12 kW	Zeus ~ Ø 70 x 125 cm	14–18 m <sup>3</sup>	50 x 6 cm	Zeus approx. 145 kg	~ 100 kg	EmoTec L09 R	Econ series EmoTec series EmoStyle series EmoTouch series Compact series
16 kW		18–25 m <sup>3</sup>	~ Ø 25 cm				
20 kW		24–30 m <sup>3</sup>	50 x 8 cm				
24 kW		35–40 m <sup>3</sup>	~ Ø 25–30 cm				
30 kW	Zeus L ~ Ø 70 x 79 cm	50–65 m <sup>3</sup>	50 x 10 cm	Zeus L approx. 128 kg		LSG 36	
36 kW		65–70 m <sup>3</sup>	~ Ø 25–30 cm				

# 3

## Installation

This chapter describes how to install Zeus. 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.

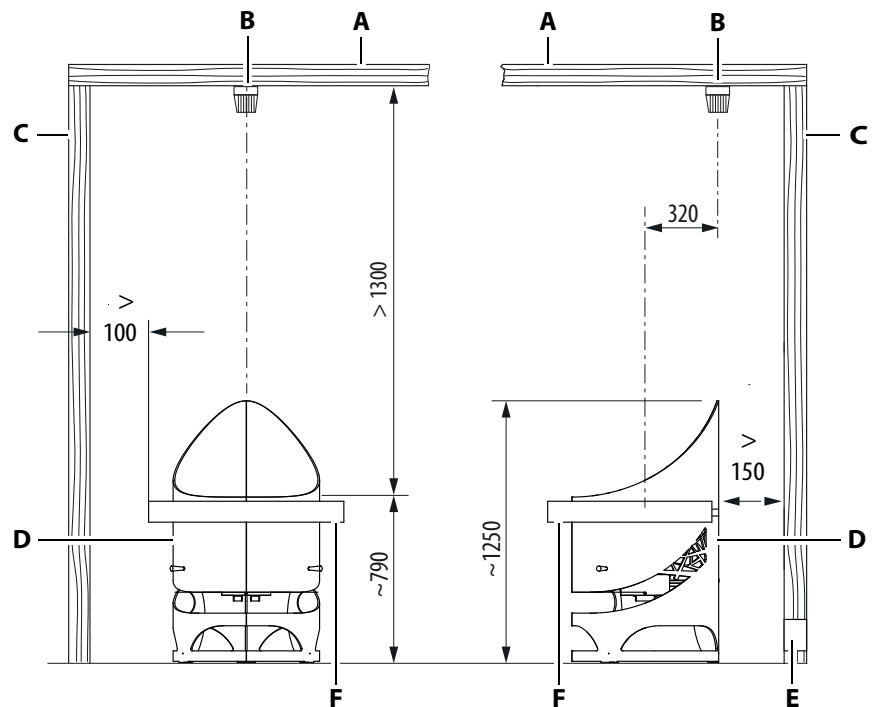
EOS recommends laying all connecting cables through a bendable metal tube connected to the protective conductor.

### 3.1.1 Installation site

The required cabin volume depends on the heater output. See 2.5 Technical data, [EN-14](#).

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



- |   |                            |
|---|----------------------------|
| <b>A</b> Cabin ceiling                                      | <b>D</b> Heater            |
| <b>B</b> Temperature sensor with safety temperature limiter | <b>E</b> Air inlet         |
| <b>C</b> Cabin wall   | <b>F</b> 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. The required size of the air inlets and outlets depends on the heater output; see 2.5 Technical data, [EN-14](#).

#### **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.
- ▶ Commission the cabin only after all air inlets and outlets have been opened.

If the heating process takes a long time, the underlying reason is that the heater receives insufficient air. 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:

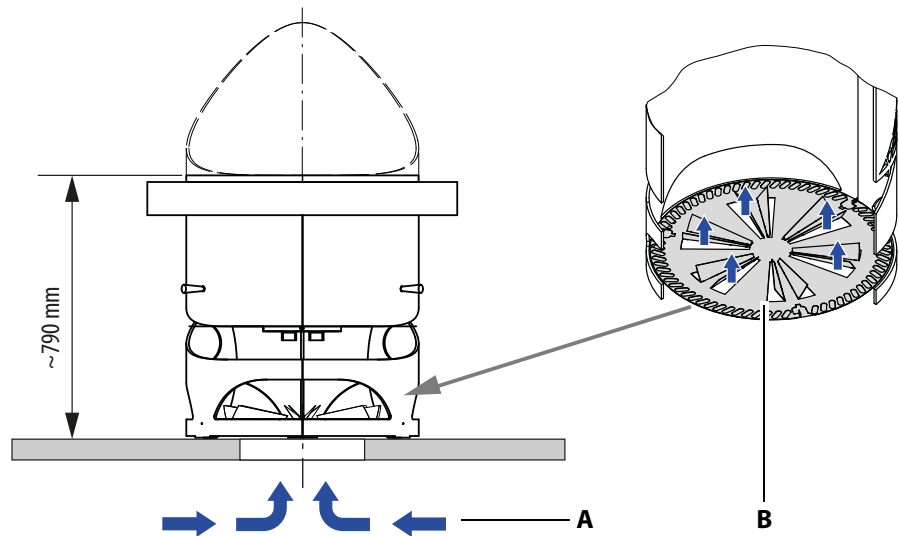
- Location: Across from the heater
- Height: 30–50 cm above the cabin floor

For more specifications, see 2.5 Technical data, [EN-14](#).


### Air supply from below

The air inlet must meet the following criteria:

- Location: centred below the heater.
- Dimensions:  $\varnothing$  depending on heater output 250–300 mm, see 2.5 Technical data, [EN-14](#).



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

 Installing the air inlet in the cabin floor

This form of air supply requires that the slats on the bottom of the heater are bent upward. See ► [Setting up the heater](#), [EN-22](#).

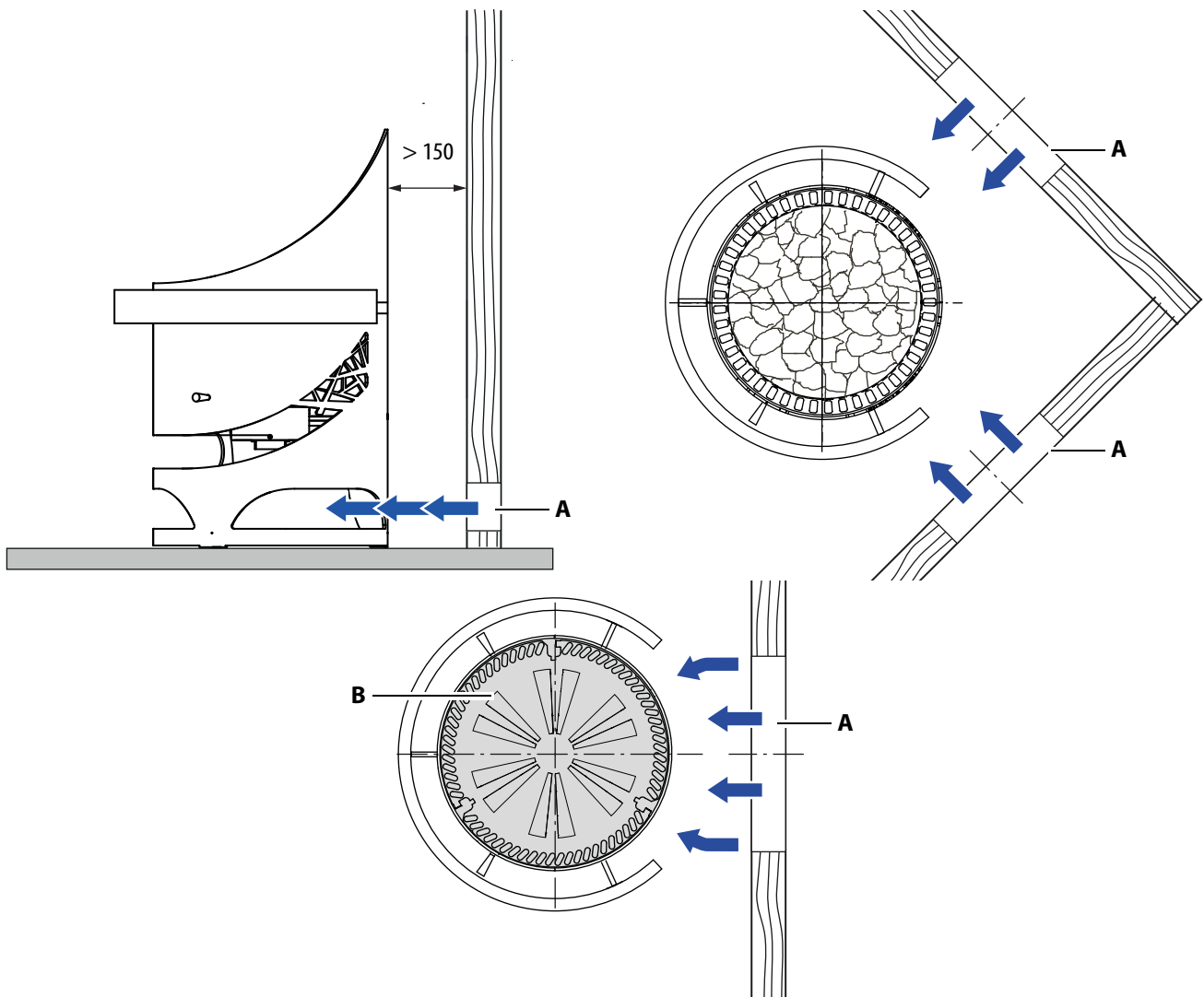
The slats are bent upward during heater manufacturing. They must be checked before commissioning.

## 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 closed

 Installing the air inlet in the cabin wall



### 3.1.3 Connection cable

The heater is connected to the sauna control unit and to the output controller via a connection cable. These temperature-resistant silicone cables are very pressure-sensitive and must be protected from damage during installation. To do this, route a cable duct or empty pipes from the installation site of the heater up to the relay box. The radius for laying the cable around a corner must equal a minimum of 100 mm (R100).

For more information, see the connection diagram  Connections,  EN-28.

## 3.2 Installing the temperature sensor

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

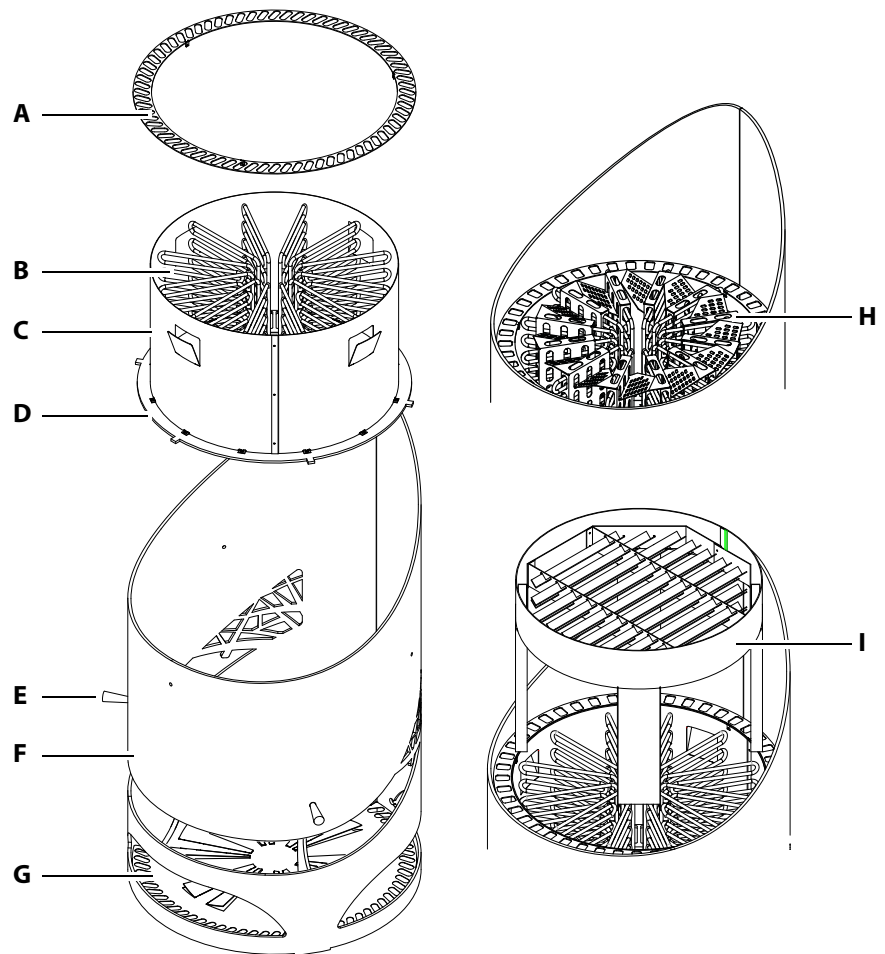
See  Dimensions in the cabin (in mm),  EN-16.

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.

## 3.3 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 installation site.

Four people should always transport the heater and use a lifting device if needed.



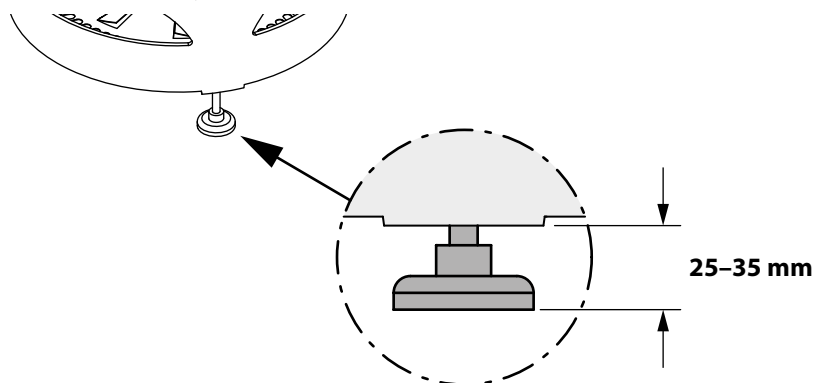
- |   |  |
|---|--|
| <b>A</b> Decoration ring                | <b>F</b> Outer casing                        |
| <b>B</b> Tubular heating element        | <b>G</b> Drip pan                            |
| <b>C</b> Inner casing (heating element) | <b>H</b> Safety slots, only 12–24 kW         |
| <b>D</b> Grate                          | <b>I</b> Stone attachment, only for 30/36 kW |
| <b>E</b> Safety pin for heating unit    |  |

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

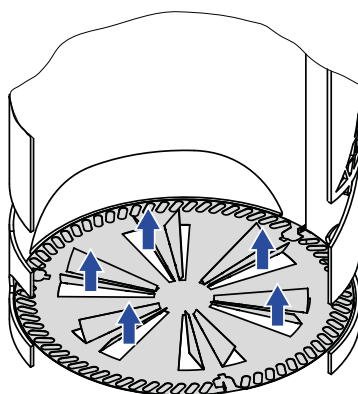
# Installation

## ► 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 12, 16, 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 Remove the decoration ring, stone grate and, if necessary, stone attachment.
    - ① Reattach these parts once electrical installation is complete.
  - 5 If air is supplied from below, check that the slots are in the correct position.



- ① The slots are bent upward approx. 45° during heater manufacturing.

## 3.4 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.

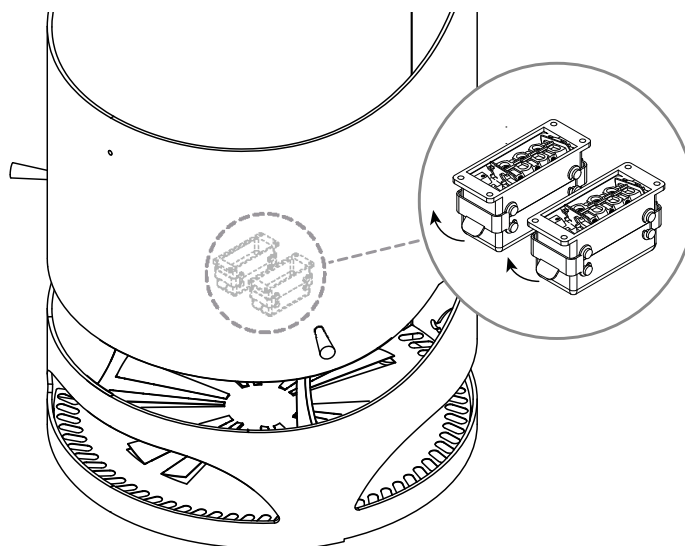
Hardware and tools

- Heater guard rail: heater rail and mounting kit
- Hex key

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

### ► Preparing for installation

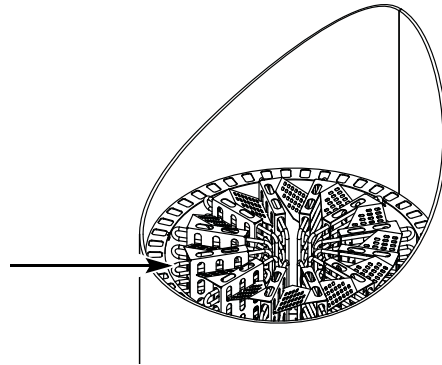
- 1 **WARNING!** Ensure that the heater has been disconnected from all power supply lines. Allow the heater to cool down. Remove the stones.
- 2 Loosen the clamping yokes on the bottom of the heater at the terminal box and remove the red connector plugs.



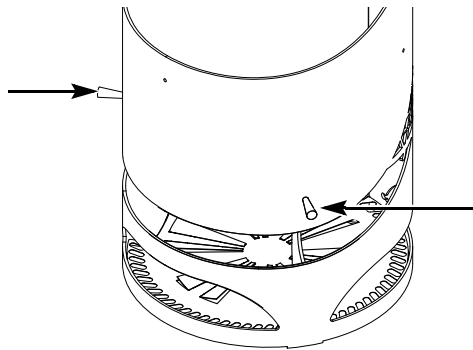
- ① The connections are accessible from below through the side opening in the housing.

# Installation

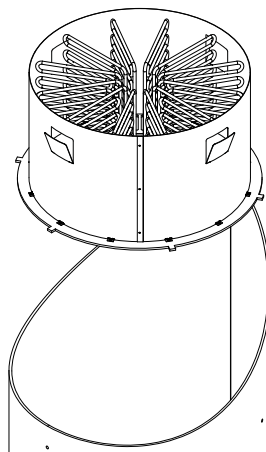
- 3** Remove the decoration ring, stone grate and, if necessary, stone attachment.



- 4** Unscrew the 2 safety pins for the heating element.



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

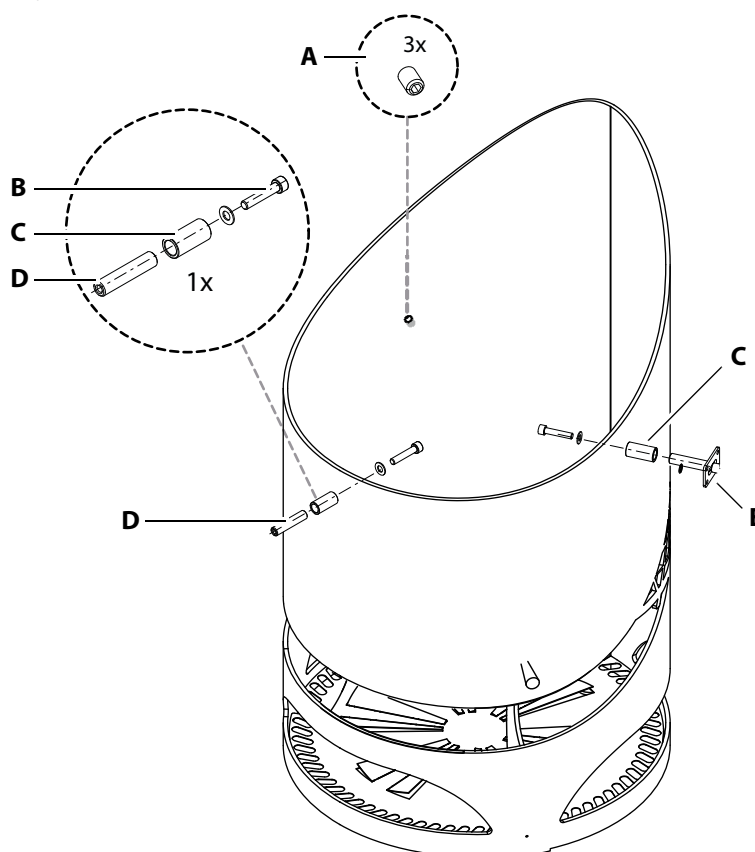


- ⓘ The heating element consists of the inner casing, the heating coil and the terminal box. These are firmly attached to each other on the lower stone grate.



## ► Installing the heater guard rail

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

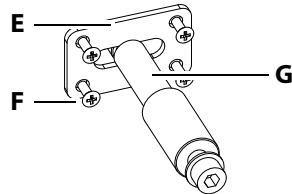


- |                                     |                                  |
|-------------------------------------|----------------------------------|
| <b>A</b> Cap set screws             | <b>D</b> Retaining sleeve        |
| <b>B</b> Hex screws M8 x 40 mm      | <b>E</b> Pre-mounted small plate |
| <b>C</b> Screw bushing Ø 20 x 40 mm |                                  |

- ① The set screws (**A**, hex M10) plug the openings for the heater guard rail brackets.
- 2 Insert the 3 hex 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.

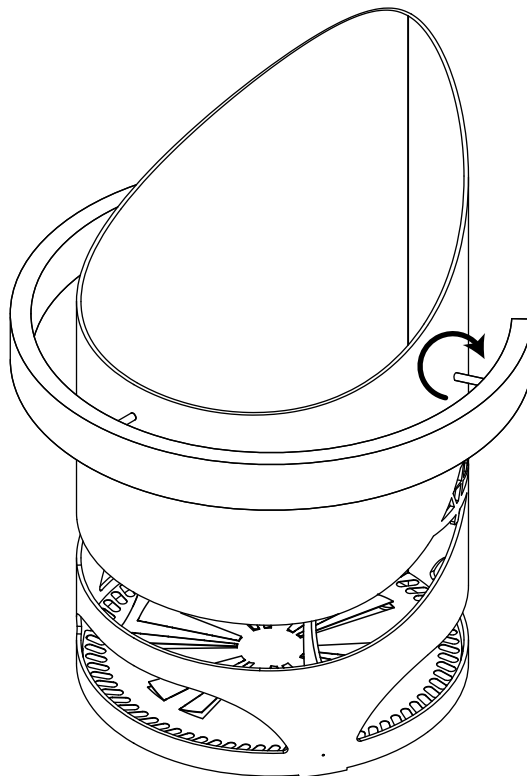
# Installation

- 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 hex 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 ( $\varnothing$  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)** Plug the cable into the terminal box and lock into place.
- 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 Do not lay stones on the decoration ring.  
Only use stones with a grain size of 100–150 mm.  
See 5.1 Filling stones, [EN-35](#).

**10** Start the heater.

- ① 4.2.4 Establishing an electrical connection, [EN-32](#).
- ① 5.2 Starting the heater, [EN-36](#)

# 4

## Connections

### 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.

If a residual current device (RCD) is installed, ensure that no other electrical consumers 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.

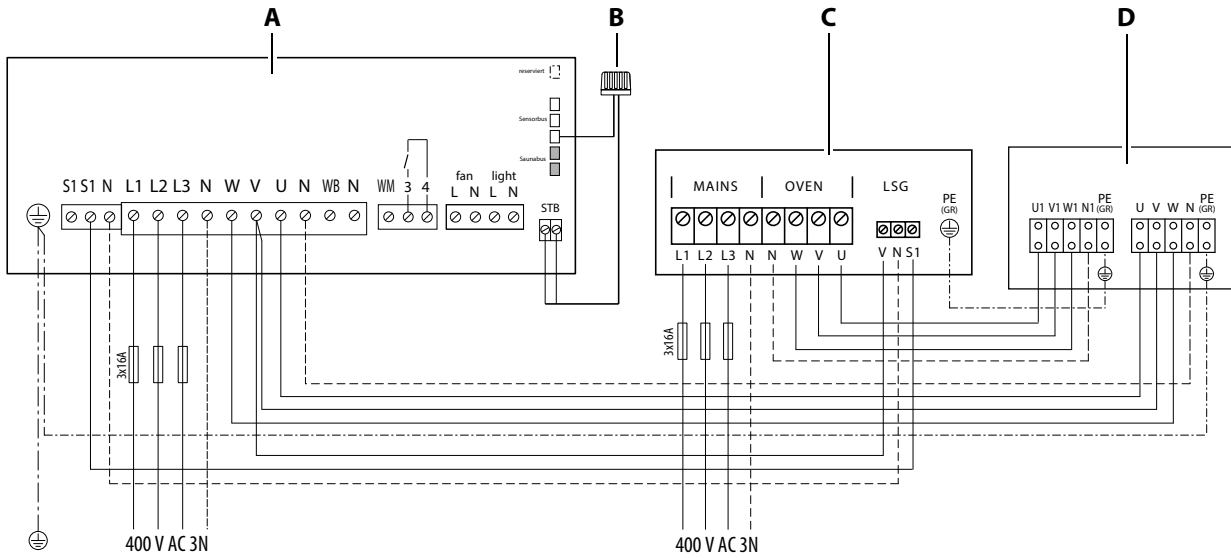
The electrician is responsible for properly connecting the heaters; thus, the manufacturer does not assume liability.

### 4.2 Connections

The sauna control unit, the output controllers, and the EOS Zeus heater must be connected as shown in the circuit diagrams. The heater is connected to one or two output controllers (LSGs), depending on the output capacity. The internal wiring differs depending on the heater output.

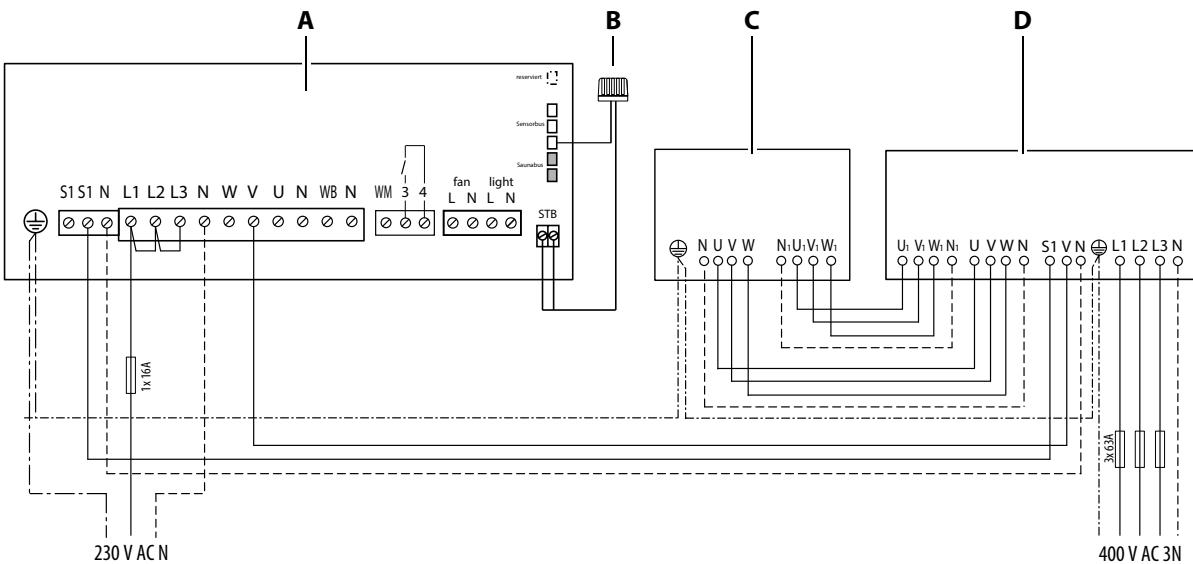
Please observe the installation and operating instructions for the control units and output controllers.

### 4.2.1 Terminal diagram 12 kW/16 kW



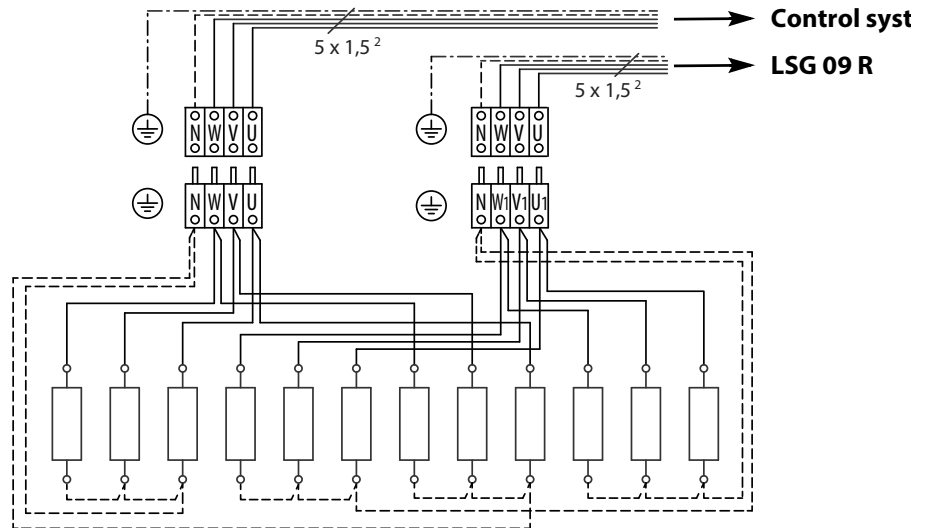
**A** Sauna control unit      **B** Heater sensor with safety temperature limiter      **C** Output controller 9 kW switching output      **D** Sauna heater

### 4.2.2 Terminal diagram 20 kW–36 kW



**A** Sauna control unit      **B** Heater sensor with safety temperature limiter      **C** Sauna heater      **D** Output controller 36 kW switching output

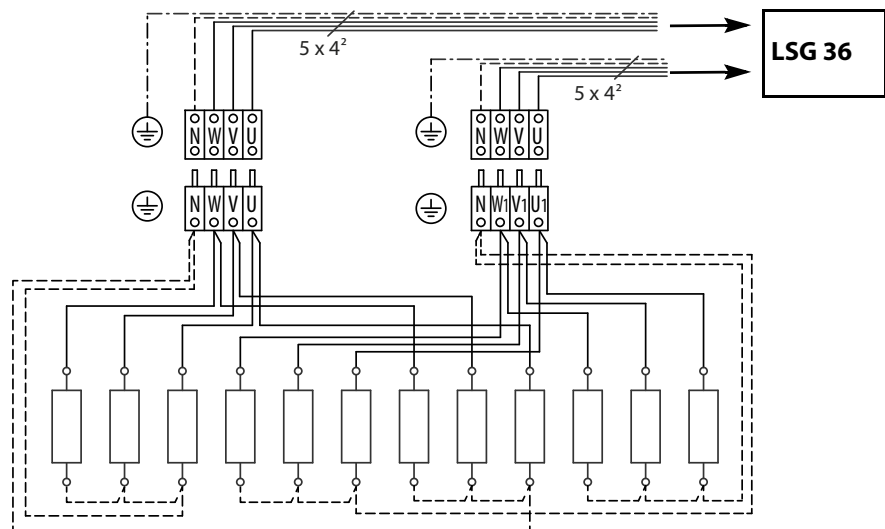
### 4.2.3 Internal wiring 12 kW–36 kW



☒ Internal wiring 12/16 kW

12 kW = 12 x 1.0 kW

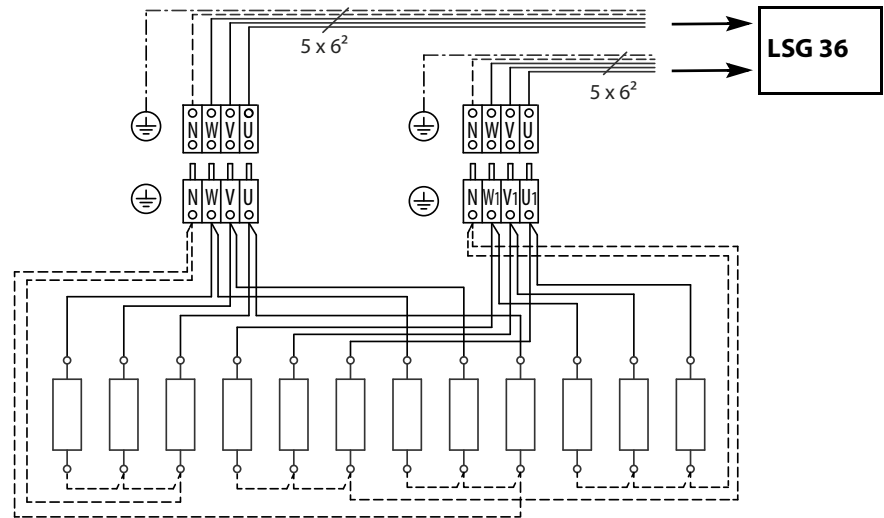
16 kW = 12 x 1.33 kW



☒ Internal wiring 20/24 kW

20 kW = 12 x 1.66 kW

24 kW = 12 x 2.0 kW



☒ Internal wiring 20/36 kW

30 kW = 12 x 2.5 kW

36 kW = 12 x 3.0 kW

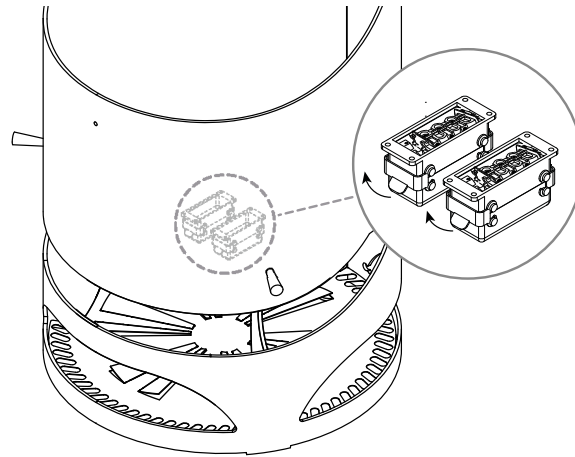
#### 4.2.4 Establishing an electrical connection

The connections for the heating coils are attached to the bottom of the heater. The lines are pre-mounted with industrial connectors and must be connected to the power supply.

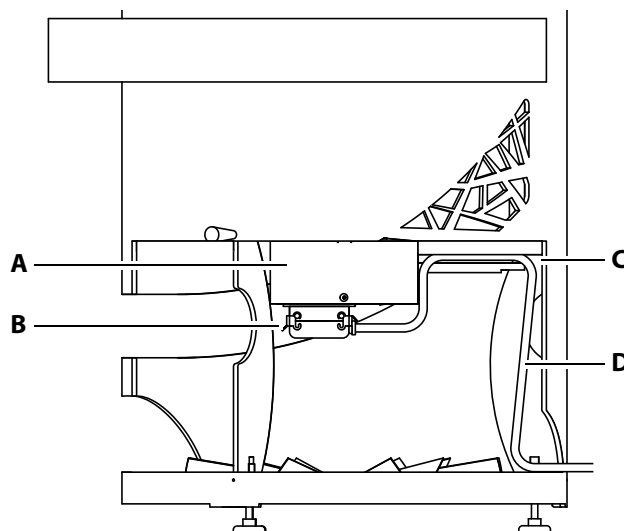
The 2 x 6 m-long silicone lines with connected industrial connectors are supplied with the heater.

##### ► Connecting the connection cable to the sauna relay box

- 1 Plug the connection cable into the terminal box and lock into place.



- 2 Insert the cable into the metal duct and route it to the back of the heater.





- |                         |                           |
|-------------------------|---------------------------|
| <b>A</b> Terminal box   | <b>C</b> Metal duct       |
| <b>B</b> Plug with lock | <b>D</b> Connection cable |

ⓘ The metal duct protects the cable from the heat radiating from above.

- 3 Route the cable along the internal side of the heater wall downward.



- 4 Route the cable outward.
  - ① The following alternatives are available depending on how the cable duct is prepared:
    - a) Guide the cable through the circular protrusions at the end of the air inlets.
    - b) Pull the cable through the openings in the drip pan and under the heater.
- 5 Guide the cable from the cabin to the relay box and output controller.
- 6 CAUTION! Ensure that the units have no power. Connect the cable, see:
  - a) 4.2.1 Terminal diagram 12 kW/16 kW,  EN-29
  - b) 4.2.2 Terminal diagram 20 kW–36 kW,  EN-29

### 4.3 Heating time limitation

The heating time limitation is set either on the control panel or the relay box circuit board, depending on the control unit used.

The settings are described in the installation and operating instructions for the control units.

#### Heating time limitation functions

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. This timer fully disconnects the sauna heater from the power supply for safety reasons. It is typically integrated in the 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.
- Units used in private saunas must be limited to an operating time of 6 hours, and an automatic restart is not permitted.

In accordance with UL875 (USA), this timer must fully disconnect the sauna heater from the power supply after one hour and must not switch on again automatically.

# 5

## Commissioning

Before the heater can be commissioned, it must be filled with the sauna stones.

The heater is switched on via the control unit. 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.
  - ▶ Commission the cabin only after all air inlets and outlets have been opened.
-

## 5.1 Filling 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

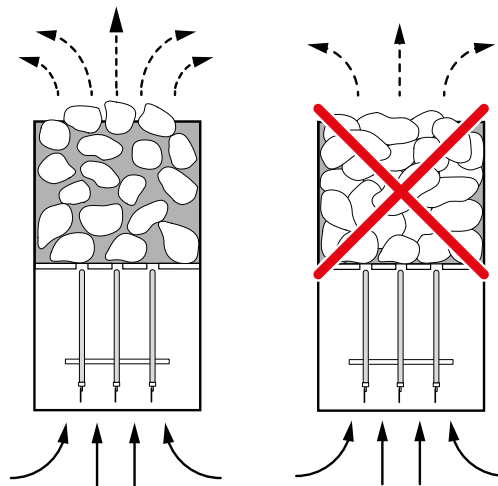
#### Fire hazard from overheating

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.
- ▶ Place the stones loosely on the stone grate.

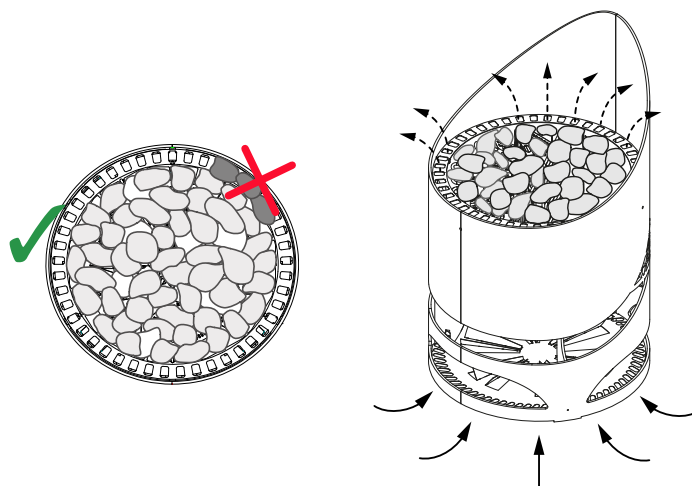
#### ▶ Filling stones

- 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.  
Place the stones loosely on the stone grate.



## Commissioning

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



- ⓘ Do not place the stones on the decoration ring. The air must flow freely.
- ⓘ 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

- Switch the sauna control unit on.
  - ⓘ The heater is switched on via the control unit.
- Use the control unit to select a suitable program.

### 5.3 Commissioning by remote control

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 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 m<sup>3</sup> 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 heater

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

- Clean the heater only with household cleaners.
- Check the sauna stones and replace as needed.

#### ► Cleaning

- 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 Replacing 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 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 be added or repositioned at least once a year. If used daily, the stones should be checked and replaced every 2–3 months.

Use only natural sauna stones when you replace the old stones with new ones. Due to their roughness, they produce a better water splash effect than ceramic sauna stones. The stones should have a grain size of approx. 100–150 mm.

### ► Reshuffling the sauna stones

- 1 CAUTION! Caution: stones may be hot. Allow the stones to cool before you remove the old stones.  
Remove each stone individually.
- 2 Check each stone for damage. Sort out any stones with severe damage.
- 3 Rinse all stones with cold water.
- 4 Stack the stones loosely leaving sufficient space between them.  
① ► Filling stones, □ EN-35

## 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 coil, □ EN-40
- Replacing the tubular heating elements, □ EN-42
- Inserting the heating coil, □ EN-43

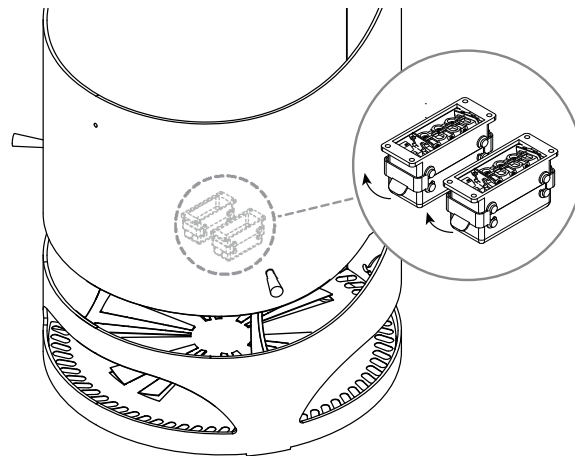
## Maintenance

Hardware + tools:

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

### ► Removing the heating coil

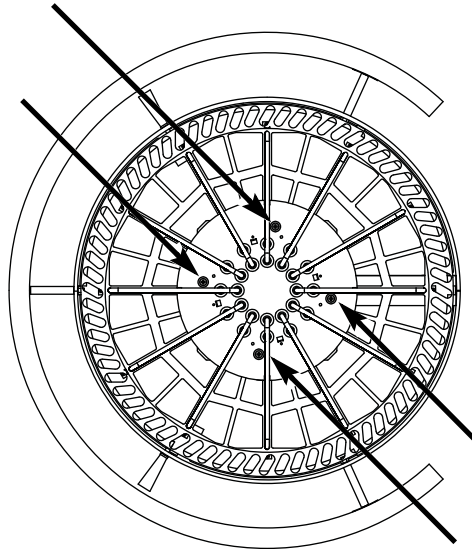
- 1 **WARNING!** Ensure that the heater has been disconnected from all power supply lines. Allow the heater to cool down.  
Remove the stones.  
① The connections are accessible from below through the side opening in the housing.
- 2 Loosen the clamping yokes on the bottom of the heater at the terminal box and remove the red connector plugs.



- 3 Remove the decoration ring and safety slots or stone attachment.



- 4 Loosen the 4 crosshead screws on the stone grate.



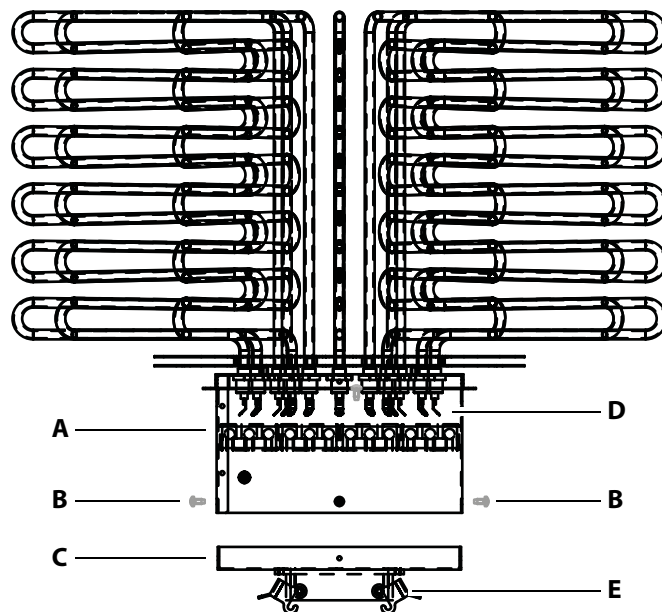
- ① You can reach through the tubular heating elements from above.

- 5 Remove the heating coil with terminal box.

- ① Replace the defective tubular heating element.  
See ► Replacing the tubular heating elements, [EN-42](#)
- ① Insert the new heating coil.  
See ► Inserting the heating coil, [EN-43](#)

### ► Replacing the tubular heating elements

- 1 Remove the heating coil.  
See ► Removing the heating coil, □ EN-40
- 2 Identify the defective tubular heating element by taking measurements.
- 3 Loosen the 2 screws (B) on the cover of the terminal box.



- |                             |                                       |
|-----------------------------|---------------------------------------|
| <b>A</b> Terminal box       | <b>C</b> Floor                        |
| <b>B</b> 2 crosshead screws | <b>D</b> Flat pins                    |
|                             | <b>E</b> Clamping yoke for connection |

- 4 In the terminal box, remove the flat plug (D) from the defective tubular heating element.
- 5 Loosen the nuts from the defective tubular heating element at the terminal box.
  - ⓘ The tubular heating elements are mounted on the base plate and fixed from below with nuts and serrated washers.
- 6 Remove the tubular heating elements.
- 7 Insert the new tubular heating elements and screw on the nuts.
- 8 Tighten the nuts with a torque wrench (159 Nm).
  - ⓘ Ensure that no water can seep into the terminal box. Use an SW 19 spanner to counter the hexagon socket screw on the tubular heating element when tightening the nut.

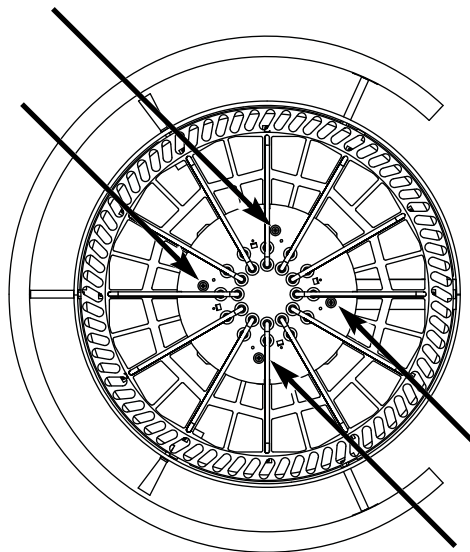
- 9** Insert the flat plugs onto the new tubular heating element.  
① The flat plugs must sit tightly at the tubular heating element and the wire-end ferrule must sit tightly in the plug fittings. Tighten as needed.

- 10** Place the cover on the terminal box and tighten the screws.

- 11** Insert the heating coil.  
See ► Inserting the heating coil, □ EN-43

### ► Inserting the heating coil

- 1** Insert the heating coil from above and rotate until all screw holes are visible.  
**2** Screw in the 4 crosshead screws and tighten them.



- 3** Plug in the connections again and close the safety clip.  
① 4.2.4 Establishing an electrical connection, □ EN-32
- 4** Position the decoration ring and safety slots or stone attachment.
- 5** Arrange the stones in place so there is ample space between them.  
① See ► Reshuffling the sauna stones, □ EN-39
- 6** Reconnect the power supply.

# Maintenance

## 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, <a href="#">EN-39</a>
	There is not enough space between the stones.	Reshuffle the stones. See <a href="#">▶ Reshuffling the sauna stones, EN-39</a>
	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, <a href="#">EN-17</a>
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 <a href="#">▶ Reshuffling the sauna stones, EN-39</a>
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 3.2 Installing the temperature sensor, <a href="#">EN-20</a> .

# 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.

## General terms and conditions of service

### 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.

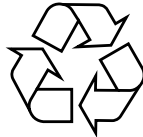
- The warranty period shall commence from the date on which proof of purchase is provided and shall be limited, in all cases, to 24 months.
- Warranty services shall be performed only if proof of purchase of the equipment can be presented.
- Any and all warranty claims shall become void if modifications 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.

The manufacturer's General Terms and Conditions of Business, in the version available at [www.eos-sauna.com/agb](http://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 Zeus 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.

**Service address**

EOS Saunatechnik GmbH

Schneiderstriesch 1

35759 Driedorf, Germany

Tel. +49 2775 82-0

Fax +49 2775 82-431

Web [www.eos-sauna.com](http://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:**