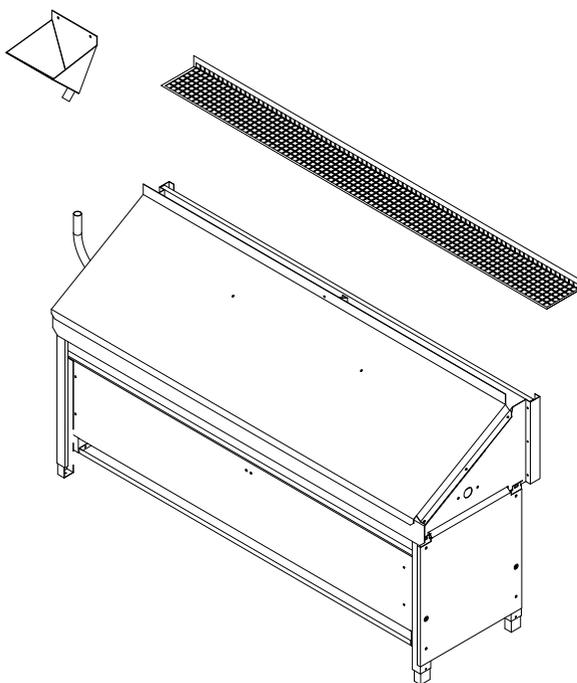


EOS Invisio Midi

Heater for Sauna Cabins



Installation and Operating Instructions

Made in Germany

Documentation

Manufacturer

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

Original installation instructions EN

Copyright for these installation instructions remains with EOS Saunatechnik GmbH.

The copying and distribution of this document, as well as the use and communication of its contents without express authorisation, are not permitted. Compensation will be claimed in the event of infringements.

All rights reserved with regard to patent claims or submission of design or utility patent.

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
13 Nov. 2023	01.20	Switch to DIN A5, edits
26 Jan. 2022	01.10	UKCA added, edits
27 April 2020	01.00	First version

Contents

Documentation	EN-2
1 General safety instructions	EN-5
1.1 Mounting and electrical installation	EN-5
1.2 Operator instruction.....	EN-8
1.3 Safety levels.....	EN-11
1.4 Standards and regulations.....	EN-11
2 Identification	EN-12
2.1 Requirements for operation	EN-12
2.2 Nameplate	EN-12
2.3 Scope of delivery	EN-13
2.4 Technical data.....	EN-14
2.5 Intended use	EN-15
3 Installation	EN-18
3.1 Specifications for the cabin	EN-19
3.1.1 Installation site	EN-19
3.1.2 Air inlets and outlets	EN-21
3.1.3 Connecting cable	EN-21
3.1.4 Temperature sensor	EN-22
3.2 Installing the heater	EN-23
3.3 Dividing wall and protective grill	EN-29
3.4 Affix warning plates in the cabin	EN-30
4 Electrical installation	EN-31
4.1 General instructions for electrical installation	EN-31
4.2 Connection diagram	EN-32
4.2.1 Connecting to 400 V 3N ~	EN-32
4.2.2 Connecting to 230 V 1N ~	EN-33
4.3 Internal wiring	EN-34
4.4 Establishing an electrical connection	EN-36
4.5 Heating period limitation.....	EN-36

5	Commissioning	EN-37
5.1	Starting the heater	EN-37
5.2	Water splash	EN-38
6	Service and maintenance	EN-39
6.1	Cleaning	EN-39
6.2	Sauna stones.....	EN-40
6.3	Replacing the tubular heating elements.....	EN-41
6.4	Troubleshooting.....	EN-44
7	General terms and conditions of service	EN-46
8	Disposal	EN-49

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.

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 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.
- ▶ Receptacles may not be installed inside the sauna cabin.

- ▶ Each sauna cabin must have air inlets and outlets. The air inlets and outlets may be installed from below or from behind the heater. The minimum dimensions of the air inlets and outlets can be found here: 2.4 Technical data, ☐ EN-14, 3.1.1 Installation site, ☐ EN-19
- ▶ 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 specified below for control of the sauna heater. This control unit should be mounted in a suitable location on the sauna's outside wall, and the corresponding temperature sensors inside the sauna as per the installation instructions for the control unit.
- ▶ 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.

The operator must make the end user aware of safety instructions that are relevant to the end user.

The operator must be familiar with the settings for the heating period and understand how it is controlled.

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 rock store as directed.
- ▶ Inspect the sauna cabin prior to each switching.
- ▶ 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.

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

- ▶ Children and persons with reduced physical, mental or sensory abilities must be supervised to ensure that they do not play with the unit.
- ▶ Children under 8 years of age should not operate the sauna cabin.
- ▶ The settings for the heating period must only be changed by children under 8 years of age if they are supervised by an adult.
- ▶ The sauna cabin must only be used by persons with reduced mental capacity, or limited physical or sensory abilities under supervision or if they have been previously instructed in its use and understand the risks.
- ▶ 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 according to ANSI Z535.6.

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. Local regulations also apply to the installation and operation of heating, sauna, and steam room systems.

2 Identification

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

2.1 Requirements for operation

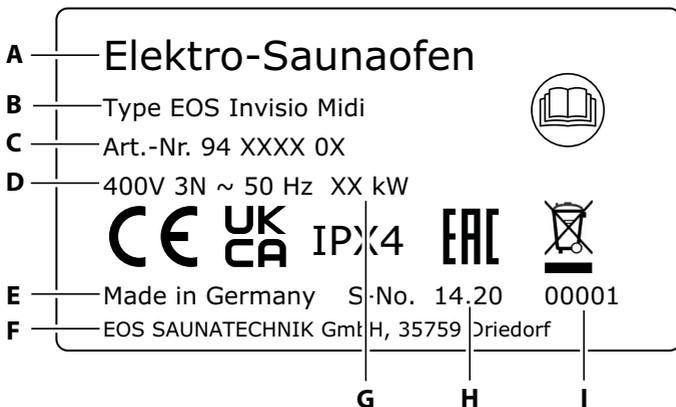
The heater must be operated with one of the following control units:

- Econ D series (Econ D1 – up to 9 kW only)
- Compact D series (Compact D18/H18 – no LSG required for 12 kW)
- EmoTec D/H
- EmoStyle D/H
- EmoTouch 3

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

A power extension unit (PEB 10) is also required for the output capacity 12 kW.

2.2 Nameplate

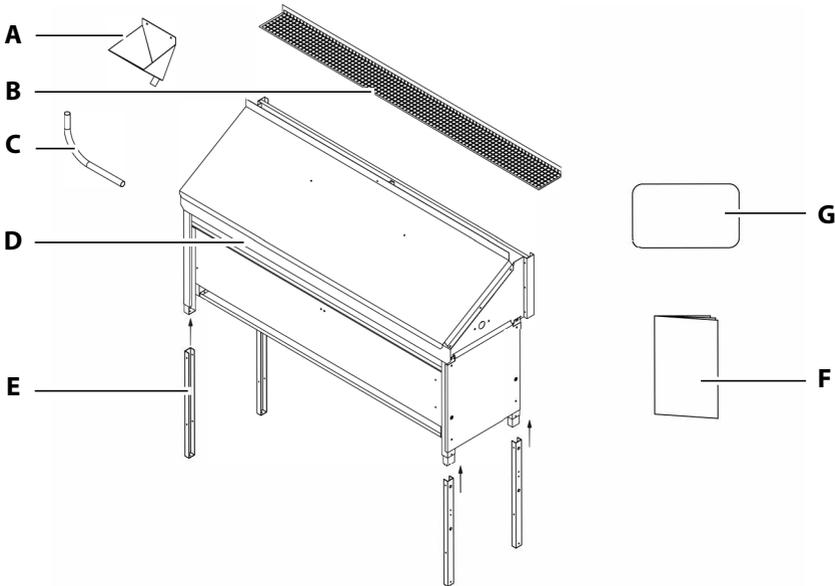


- | | |
|--------------------------------|-----------------------------|
| A Name | F Manufacturer |
| B Model | G Heater output |
| C Item number | H Manufacturing date |
| D Electrical connection | I Serial number |
| E Country of origin | |

2.3 Scope of delivery

Check the unit upon delivery to ensure that all components were delivered and that it 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** Trough with connection hose
- B** Protective grill
- C** Angled tube of stainless steel
- D** Sauna heater
- E** 4 adjustable legs
- F** Installation and Operating Instructions
- G** Mounting material and warning sign

Accessories (optional)

Accessories (optional)	Item no.
Distributor for 1-phase connection	94.2689
Sauna stones, caliber 50–100 mm	94.7336

2.4 Technical data

Heater output per DIN	6 kW	9 kW	12 kW
Unit dimensions HxWxD in cm	Height-adjustable 65/71/77 x 116 x 33		
for cabin volumes	6–8 m ³	9–14 m ³	14–18 m ³
Minimum size Air inlets and outlets	35 x 4 cm	35 x 6 cm	35 x 7 cm
Weight without rocks	24 kg	25 kg	27 kg
Stone filling	~20 kg, caliber 50–100 mm		
Power extension units	No	No	PEB 10*
Electrical connection	400 V 3N ~ 50 Hz		
Connection mains – control unit	5 x 2.5mm ²		
Connection LSG – heater	5 x 1.5mm ²		
Connection control unit – LSG	4 x 1.5mm ²		
Connection mains – LSG	5 x 2.5mm ²		
Fuse protection for control unit	3 x 16 A		
LSG fuse	3 x 16 A		

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

*) Not required for Compact D18/H18 control units.

2.5 Intended use

This heater is intended solely for the purpose of heating sauna cabins, together with a suitable control unit. A power extension unit (PEB 10) is also required for the output capacity 12 kW.

Invisio Midi is a heater that is installed concealed, e.g. partially under a bench, and is suitable for cabins used in commercial and private settings.



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.

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 under 8 years of age.
- The unit is operated by children 8 years of age or older, or persons with reduced mental capacity who have not been thoroughly instructed in its use.
- The unit is operated without sauna stones or with a rock store that is not filled as directed.
- The heater power does not match the sauna volume.
- The unit is operated with insufficient air supply or exhaust air.
- There is no protective grill above the sauna heater in the cabin.
See 3.3 Dividing wall and protective grill,  EN-29
- The temperature sensor with safety temperature limiter is installed in the wrong place. See 3.1.4 Temperature sensor,  EN-22

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.

General instructions

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

3 Installation

This chapter describes how to install the sauna heater. Place the heater under a recliner bench. Prior to installing the heater, 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.

3.1 Specifications for the cabin

The cabin must be planned and installed according to specifications before the heater is installed. It must be ensured that the heater can be removed from the cabin even after the cabin has been installed.

All electrical installations laid inside the cabin must be suitable for a temperature of at least 170°C.

All lines must be routed in such a way that they are well-protected, e.g. in a cable duct.

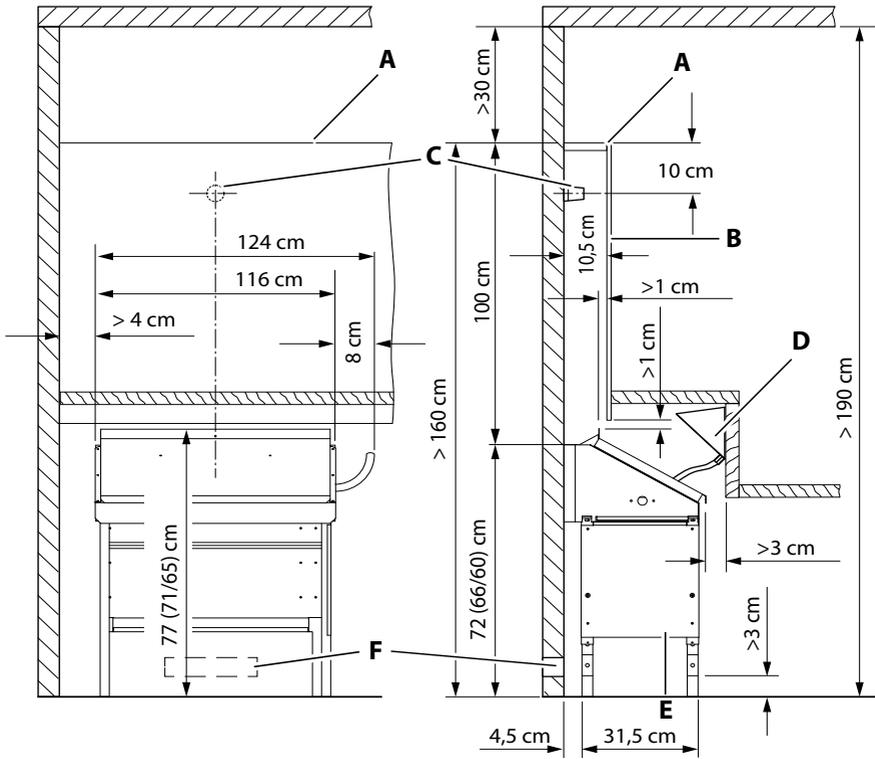
If single-core lines are used as connecting cables, they must be protected by a flexible metal hose that is connected to the protective conductor.

The floor on which the heater stands 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. Floor heating in the sauna cabin increases the temperature of the floor's surface temperature.

3.1.1 Installation site

- Ceiling height of at least 190 cm
- Distance heater – cabin wall min. 4 cm
- Distance heater – top edge of dividing wall min. 100 cm
- The clearance distance between the heater and flammable material (wood wall, sauna bench, etc.) must be observed as shown below.
- The supplied protective grill must be mounted above the heater on the top edge of the dividing wall facing the sauna's rear wall. This prevents objects from falling onto the heater.
- The required heater power depends on the cabin volume.
See 2.4 Technical data,  EN-14.



- | | |
|--|--------------------|
| A Protective grill | D Trough |
| B Dividing wall | E Heater |
| C Temperature sensor/safety temperature limiter | F Air inlet |

☒ Dimensions in the cabin

3.1.2 Air inlets and outlets

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.

NOTICE

Heating process takes too long

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.

At least one air inlet 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 inlet depends on the heater output; see 2.4 Technical data,  EN-14.

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.

3.1.3 Connecting cable

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

See the connection diagram  Connection diagram,  EN-32

3.1.4 Temperature sensor

WARNING

Fire hazard from overheating

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

- ▶ Install the sensor as shown in the figure;
see  Dimensions in the cabin,  EN-20.
 - ▶ Ignore any contradictory information found in the instructions for the sauna control unit.
-

The temperature sensor with safety temperature limiter should be mounted in the middle and flush with the long side of the heater.

See  Dimensions in the cabin,  EN-20.

Connect the sensor as shown in the circuit diagram for the respective control unit.

NOTICE

Malfunction due to damaged sensor

The temperature sensor is protected by its housing.

- ▶ Ensure that the housing and the temperature sensor are not damaged during operation.
-

3.2 Installing the heater

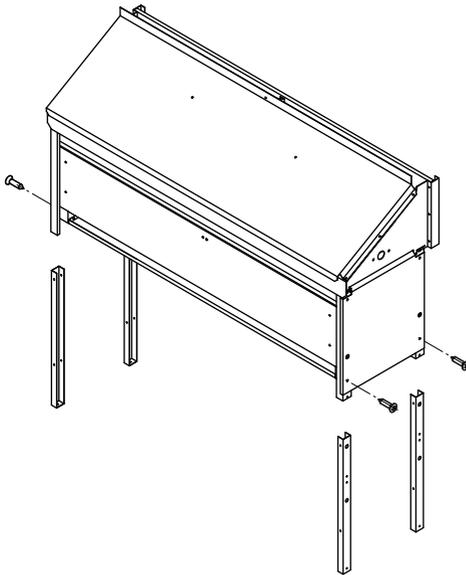
The heater is supplied pre-mounted and packaged. Once the cabin is prepared, the heater is placed on a pre-defined position. The heater can be positioned so that the terminal box is on the left or right side.

Required tool:

- Screwdriver

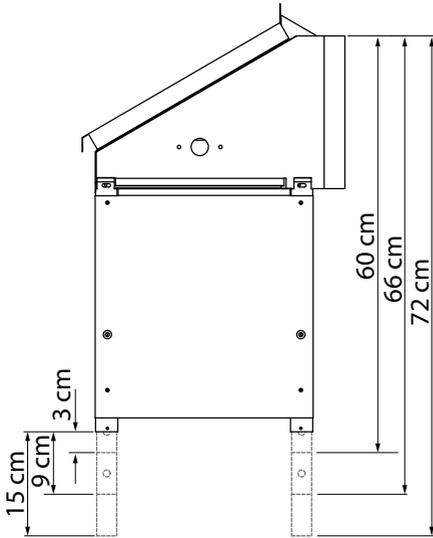
► Mounting the legs

- 1 **CAUTION!** The heater weighs a min. of 24 kg. Two people should always move the heater.
Unpack the heater from the box and remove all transportation locks and protective film.
- 2 Tilt the heater onto its back.
① Use an underlay to protect the heater from scratches.
- 3 Remove the bottom two screws on the side panels.



- ① The legs are also fixed by screws on the side panels.

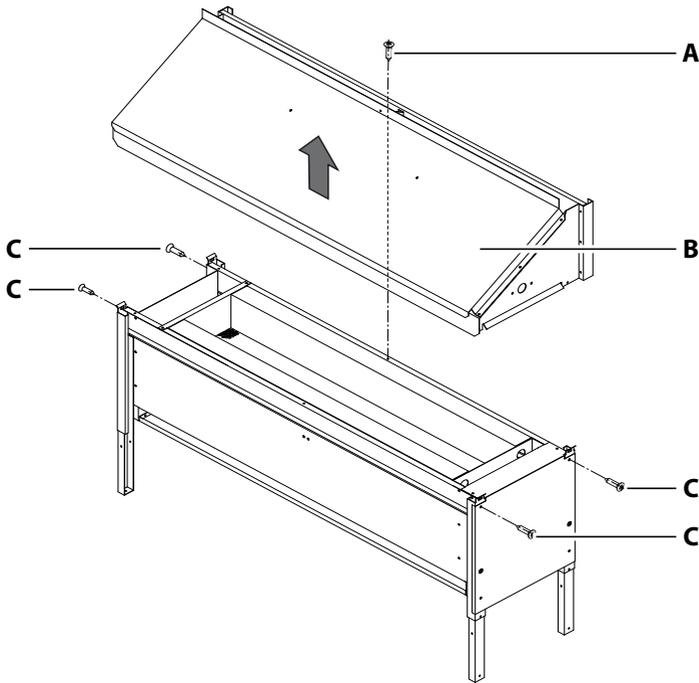
- 4 Insert the heater legs with the open side up into the guides located on the side of the heater.
 - ❶ The heater legs are delivered loose.
- 5 Fix each leg at the desired height with the screw in the side panel (4.2 mm x 9.5 mm)
 - ❶ Adjust all legs so they are the same height. There are 3 available heights: 3 cm, 9 cm and 15 cm.



- Once all four legs have been attached, attach the side panels as well.
- 6 Set the heater upright again.

► Dismantling the hood

- 1 Remove the top 4 screws (**C**) in the side panels and the screw (**A**) in the middle of the hood (**B**).



A Middle retaining screw

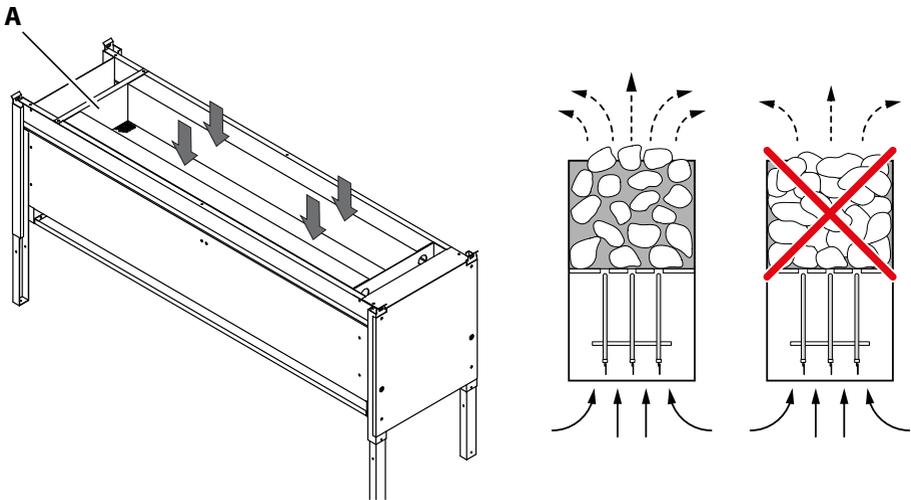
C Top side panel retaining screw

B Hood

- 2 Remove the hood (**B**) upward.

► Positioning the heater and fill the rock store

- 1 Wash the stones under running water.
- 2 Place the heater in its final position and push it up to the rear wall.
 - ① Position the heater so that the mains connection is on the desired side. If necessary, turn the heater 180°.
 - ① The spacers on the back of the hood ensure proper distancing.
- 3 **WARNING!** Stones that are stacked too closely prevent the hot air from rising properly, thus causing the unit to overheat. The result is a risk of fire.
Stack each stone loosely leaving sufficient space between them.

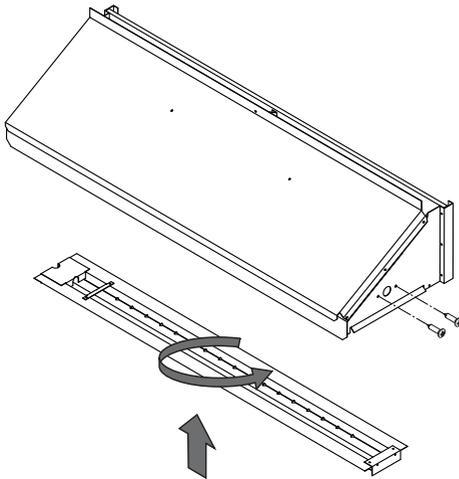


A Rock store

- ① When filling, observe the permitted weight and caliber of the stones
 📄 Technical data, 📄 EN-14.
- ① There must be enough space between the stones so that convection air can circulate sufficiently between them.
- ① Fill the store with stones only to the upper edge.
- ① Do not place the stones on the edge. The air must flow freely.

► Installing the water channel

- 1 Determine the side for the water splash connection.
 - ⓘ The water splash connection can be determined in different ways so that filling through the trough is possible from the right or left sides.
- 2 Depending on the position of the water splash connection insert the water channel into the hood from below.
 - ⓘ The water channel's incline must be directed away from the water splash connection.



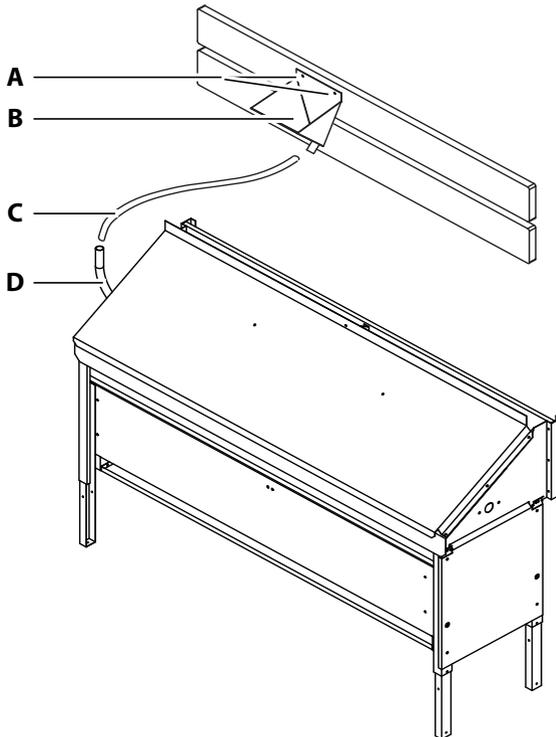
- 3 Attach the water channel on the sides of the hood.
 - ⓘ Use 2 screws 4.2 mm x 9.5 mm on each side.

► Mounting the hood

- 1 Place the hood with the mounted water channel on the heater.
- 2 Mount the hood with 5 retaining screws.
- 3 Completely remove the protective film from the hood (if present).

► Installing the trough

- 1 Insert the supplied angled tube (**D**) in the side opening of the heater above the water channel.



A Fixing screws
B Trough

C Silicone hose
D Angled tube

- 2 **CAUTION!** The trough becomes hot during operation. Select an installation site that prevents accidental contact with the trough. Mount the trough (**B**) in a suitable position with 2 retaining screws (**A**) (particle board screws – 5 mm x 16 mm).
 - ⓘ Mount the trough above the level of the water channel.
- 3 Connect the trough (**B**) and angled tube (**D**) to the heater using the silicone hose (**C**) supplied.
 - ⓘ Ensure that the tube has no kinks.
 - ⓘ The tube must slope down to the angled tube.

3.3 Dividing wall and protective grill

A dividing wall is used to guide the heated air in a shaft through the protective grill into the cabin. The dividing wall is not supplied with the heater; it must be made by the cabin manufacturer.

⚠ WARNING

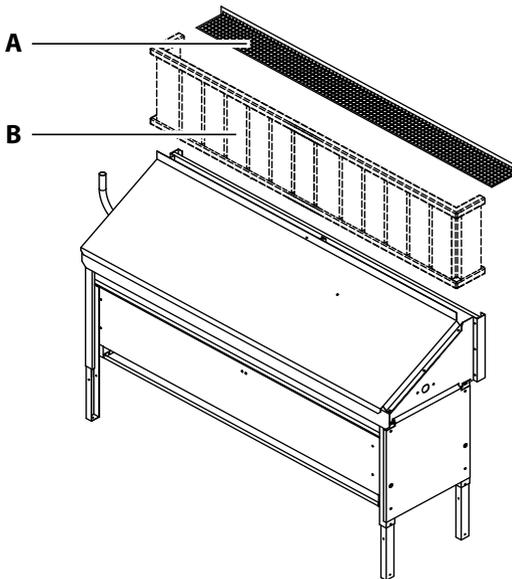
Fire hazard

The protective grill prevents objects from falling into the heater and catching fire.

- ▶ Always install the supplied protective grill.
- ▶ Ensure the correct distance from the heater.

▶ Installing the dividing wall and protective grill

- 1 Install the dividing wall so that the specified minimum clearance distances are observed.
① See  Dimensions in the cabin,  EN-20.



A Protective grill

B Dividing wall (example)

- 2 Check that the dividing wall is securely in place.
- 3 Fix the supplied protective grill between the cabin wall and the upper edge of the dividing wall with 2 retaining screws (particle board screws – 5 mm x 16 mm).
 - ① The protective grill prevents objects from falling onto the heater.

3.4 Affix warning plates in the cabin

The warning signs must be clearly visible at eye level.

► Attaching the warning sign

- 1 Attach the warning sign with 4 screws near the shaft on the inside wall of the cabin so it is clearly visible at eye level.

4 Electrical installation

This chapter describes how to connect the sauna heater.

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 tubular 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 tubular heating elements do not accumulate moisture. If, during switching, the RCD is triggered, the electrical installation must be checked again.

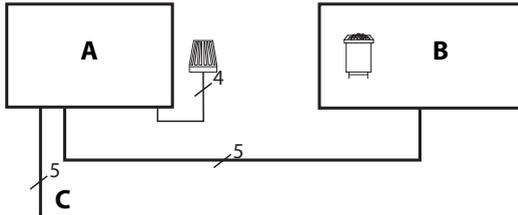
The electrician is responsible for properly connecting the heaters; thus, the manufacturer does not assume liability.

4.2 Connection diagram

The sauna control unit, the relay box, and the heater must be connected as shown in the circuit diagrams. Please observe the installation and operating instructions for the control unit and relay boxes.

4.2.1 Connecting to 400 V 3N ~

6, 9 and 12* kW heater output



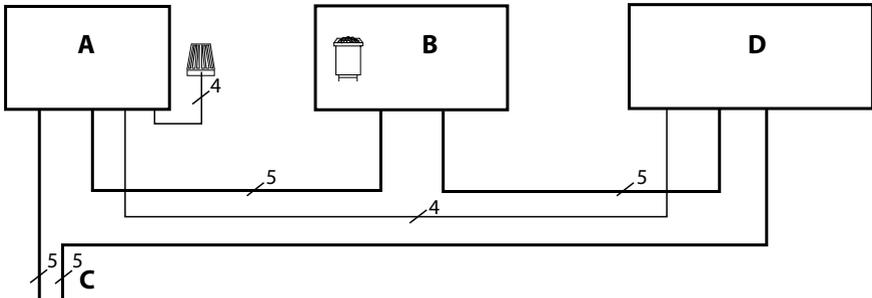
A Sauna control unit

C Mains

B Sauna heater

*) Only for connecting to Compact D18/H18 control units.

12* kW heater output



A Sauna control unit

C Mains

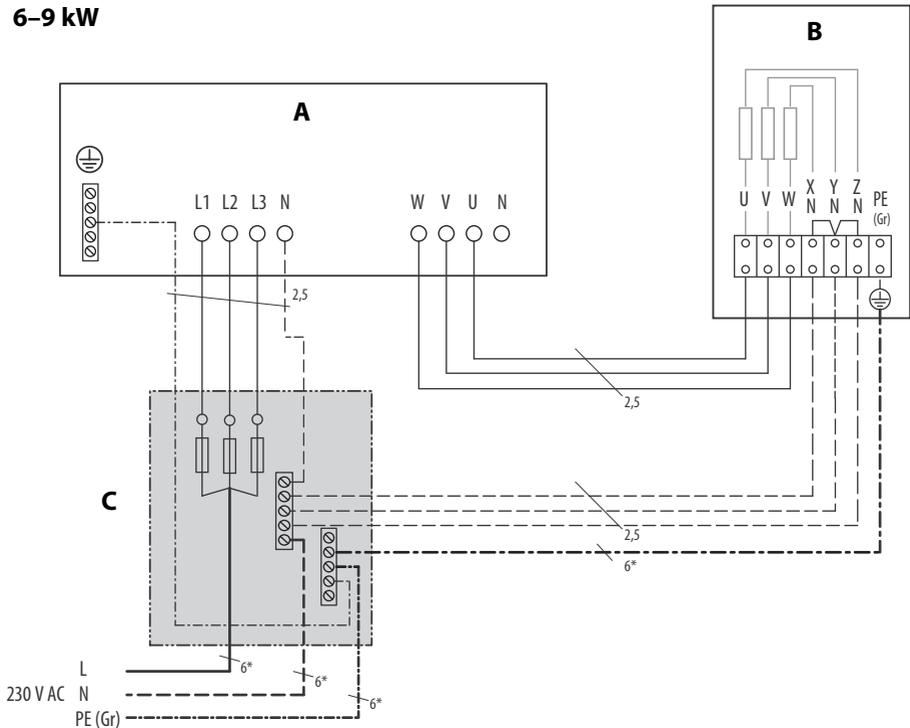
B Sauna heater

D Power extension unit

*) Not for connecting to Compact D18/H18 control units.

NOTICE**Damage to device from surges**

- ▶ Always connect neutral conductor N.

4.2.2 Connecting to 230 V 1N ~**6–9 kW****A** Sauna control unit**C** Distributor for 1-phase connection**B** Sauna heater

☒ Connection example for 230V 1N ~

* Cable cross-sections must correspond to the sauna heater output:

- 6.0 kW – 4 mm²
- 9.0 kW – 6 mm²

A distributor for the 1-phase: connection can be purchased separately:
Item no. 94.2689

⚠ WARNING

Risk of fire due to improper mounting

The control unit and the sauna heater must be suitable for connection to 400V 3N ~.

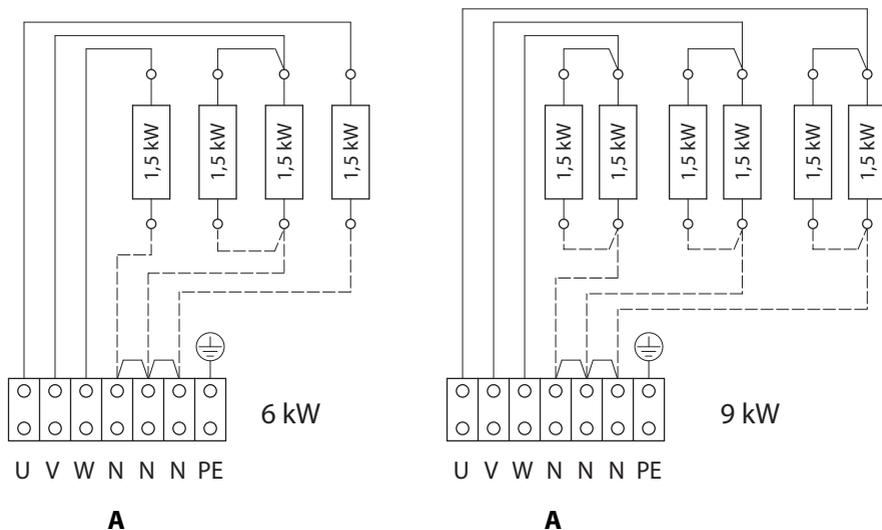
► Use suitable fuses and cable lines.

Rated output per DIN:	6 kW	9 kW
Fuse protection – control unit	3 x 16 A	
Connection mains	3 x 4 mm ²	3 x 6 mm ²
Connection control unit – heater	3 x 1.5 mm ²	
Connection N terminal for heater – mains	3 x 2.5 mm ²	
Connection PE terminal for heater – mains	4 mm ²	6 mm ²

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

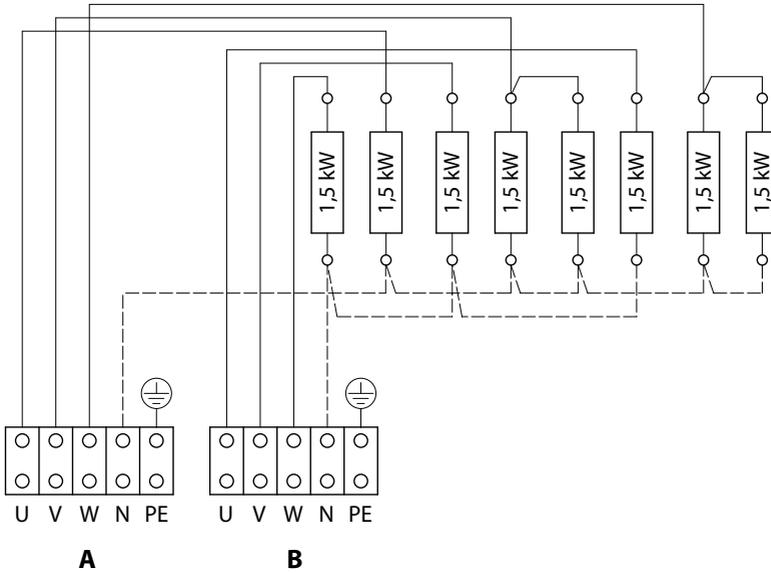
4.3 Internal wiring

6 and 9 kW heater output



A To sauna control unit

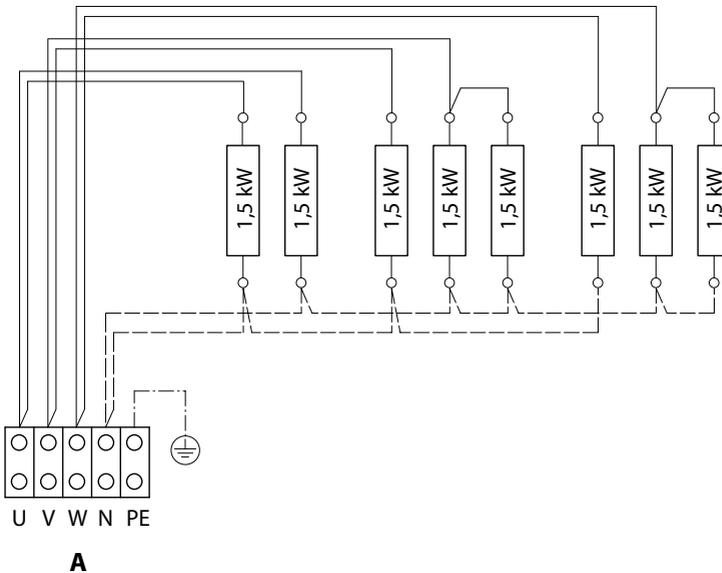
12 kW heater output



A To sauna control unit

B To power extension unit

12 kW heater output – connection to Compact D18/H18



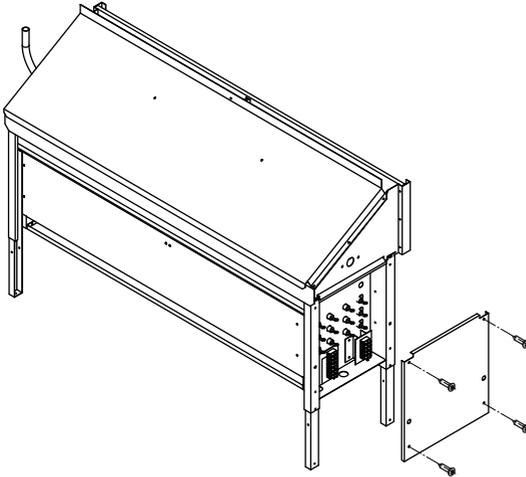
A To sauna control unit

4.4 Establishing an electrical connection

A heating coil, to which two connection cables must be connected, is attached to one side (right or left) of the heater.

► Establishing an electrical connection

- 1 Remove the 4 screws from the side panel (terminal box cover).



- 2 Connect the connecting cable as shown in the circuit diagram.
ⓘ Observe the labelling on the terminal base.
- 3 Tighten the side panel in place again with the 4 screws.

4.5 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 tubular 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 sauna 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 control unit. It is operated via the control panel.

WARNING



Risk of fire due to objects on the heater

Objects placed on the sauna heater could catch fire. Herbs 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 and ensure that no objects are placed on the heater.
- ▶ Start the sauna only after all air inlets and outlets have been opened.

5.1 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.

5.2 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

Risk of fire due to sauna essences

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

- ▶ Never add more sauna essence or essential oils to the water than the amount indicated on the container.
- ▶ Do not add herbs to the water or the stones.
- ▶ Do not use pure sauna essences for water splashes.
- ▶ Do not use alcohol for water splashes.
- ▶ Pour the water over the stones only.

Pour water slowly over the stones so it is evenly distributed.

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.

Recommendation: During a water splash, no more than approx. 10 cL of water per m³ cabin volume should be vaporised. After each water splash, wait approx. 10 minutes before starting the next one. This time is needed for the sauna stones to reheat.

6 Service and maintenance

This sauna heater is made of low-corrosion material. To ensure a long service life, take care of and perform regular maintenance on your sauna heater. Ensure that openings in the intake area and heat reflectors are never blocked. These can easily become blocked with lint and dust as fresh air is drawn in. This limits the air convection ability of the sauna heater and could lead to impermissible temperatures.

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

If you do not use your sauna for a longer period of time, ensure that at the time of switching no towels, cleaners or other objects are lying on the sauna heater.

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

6.1 Cleaning

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 has cooled completely.
- 2 Clean the exterior and the accessible interior parts of the heater with a household cleaning agent.
- 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. 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 or replace them as needed. Observe the following periods 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 **CAUTION!** Caution: stones may be hot. Allow the stones to cool for at least 45 minutes before you remove the old stones.
Remove each stone individually.
- 2 Check each stone for damage.
 - ① Remove the stone if damaged and replace it with a new one.
- 3 Rinse all stones with cold water.

- 4 Stack the stones loosely in the rock store so that there is enough space between them for air to circulate sufficiently.
 - ⓘ The stones must not exert excessive pressure on the tubular heating elements.

6.3 Replacing the tubular heating elements

Individual tubular heating elements can be replaced. To remove the tubular heating elements, the terminal box must be accessible. Furthermore, the hood and the sauna stones must be removed.

Necessary steps:

- ▶ Preparing the heater, [EN-41](#)
- ▶ Replacing the tubular heating elements, [EN-43](#)
- ▶ Reassembling the heater, [EN-43](#)

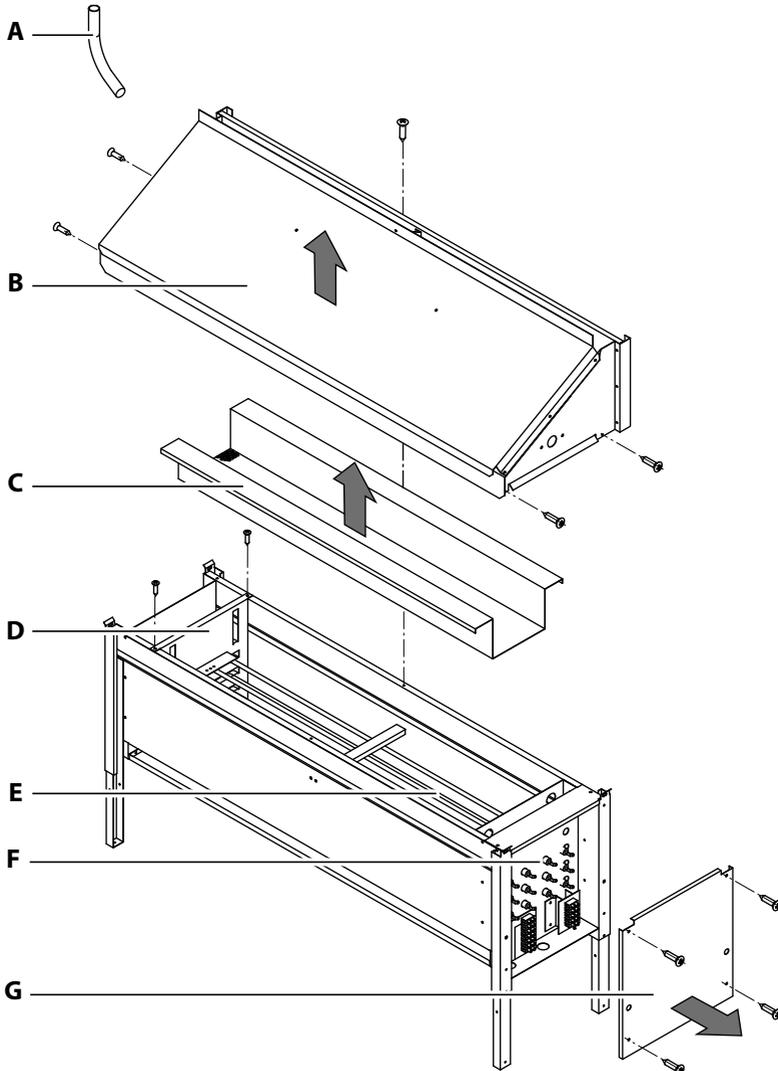
Hardware and tools:

- Tubular heating element and/or heating coil
- Screwdriver
- Hex key
- Ring or socket spanner

▶ Preparing the heater

- 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!** Allow the heater to cool for at least 45 minutes before it is serviced.
Provide access to the heater.

3 Remove the angled tube (A) with the water connection.



A Angled tube

B Hood

C Rock store

D Support plate

E Tubular heating element

F Nut

G Terminal box cover

 Replacing the tubular heating elements

4 Remove the 5 screws from the hood (B).

① 2 screws on each side, one screw in the lower middle.

- 5 Remove the stones.
- 6 Remove the rock store (C).
- 7 Unscrew the 4 screws on the terminal box cover (G) and remove the cover.
- 8 Unscrew the 2 screws in the support plate (D) and push the support plate outward.

► Replacing the tubular heating elements

- 1 Disconnect the connections from the tubular heating element.
 - ① Replace the affected tubular heating element. You can replace tubular heating elements that are located farther below individually.
- 2 Remove the nuts (F) on the tubular heating element.
- 3 Remove the tubular heating element by pulling it inward.
- 4 Insert the new tubular heating element in the provided opening.
- 5 Fix the tubular heating element with the nut.

► Reassembling the heater

- 1 Push the support plate into the correct position and fix it with 2 screws.
- 2 Place the rock store back in position.
- 3 Place the stones in the rock store.
- 4 Tighten the hood in place again with the 5 screws.
 - ① 2 screws on each side, one screw in the lower middle.
- 5 Reconnect the connections to the tubular heating elements.
- 6 Tighten the terminal box cover in place with the 4 screws.
- 7 Firmly insert the angled tube with water connection in the side opening again.
- 8 Place the heater in the correct installation position again, if necessary.
 - ① Observe the minimum clearance distances; see  Dimensions in the cabin,  EN-20.
- 9 Switch on the fuses of the heater.

6.4 Troubleshooting

Error	Reason	Solution
It takes the heater a long time to heat up the cabin.	One or more than one tubular heating element is defective.	Have a technician replace the tubular heating element.
	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 3.2 Installing the heater, ☞ EN-23
	The electrical connection is defective.	Check the installation fuses.
		Have the control unit's outputs checked by a technician.
The position of the temperature sensor is not optimal.	Check the position of the temperature sensor and adjust as needed. See 3.1.4 Temperature sensor, ☞ EN-22	
The heater is very hot but cannot distribute the heat throughout the cabin.	There is not enough space between the stones.	Reshuffle the stones.

Error	Reason	Solution
The safety temperature sensor was triggered and the heater no longer heats.	The safety temperature sensor 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 safety temperature sensor is not optimal.	Check the position of the safety temperature sensor and adjust as needed. See 3.1.4 Temperature sensor, EN-22 .

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.

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.



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: