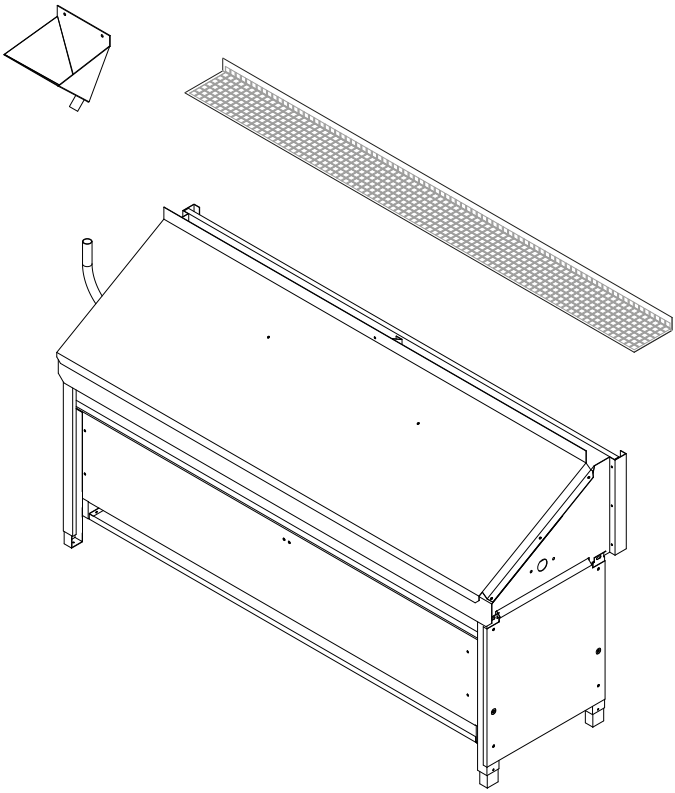
EN

EOS

FINEST SAUNA ENGINEERING

EOS Invisio Midi NA

Heater for Sauna Cabins



Installation and Operating Instructions

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Documentation

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Original installation instructions EN

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

Revision history

Date	Version	Description
15 May 2022	01.00	First version

Contents

1 General safety instructions

1.1 Mounting and electrical installation

The 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 authorized 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 qualified electrician.

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/168.8 °F. 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. 5–10 cm/2–4 inches above the floor. The minimum dimensions of the air inlets and outlets can be found here: 2.4 Technical data, 🗋 EN-17, 3.1.2 Installation site, 🗋 EN-21.
- 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.

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

Fire hazard

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

- ▶ Do not place objects on the heater.
- ▶ Fill rock stores with stones 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 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 fetus 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

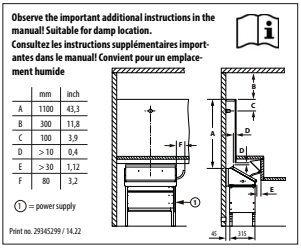
Children and persons with reduced mental capacity can put themselves at risk.

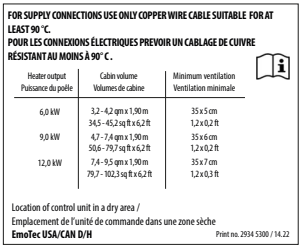
- ▶ Children must be supervised to ensure they do not play with the unit.
- ▶ Children under 8 years of age should not operate the sauna cabin.
- ▶ The settings for the heating time must only be changed by children under 8 years of age if they are supervised by an adult.
- ▶ The sauna cabin must only 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.

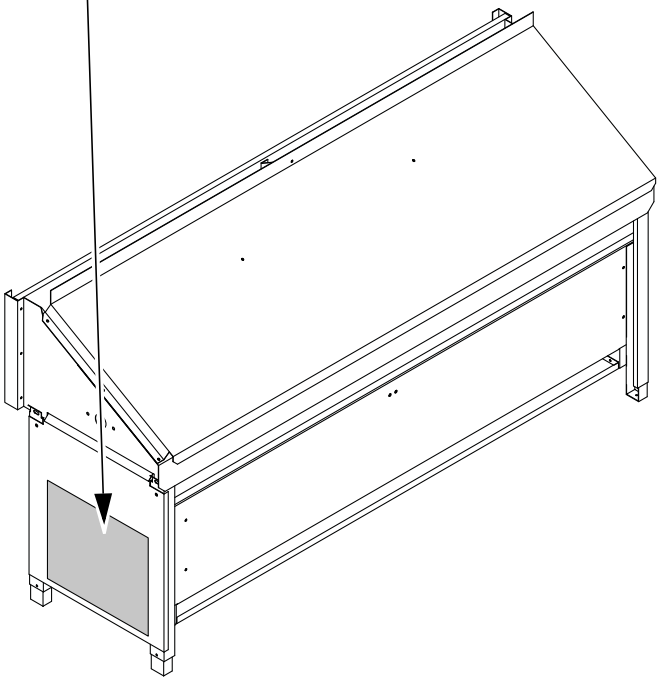
1.3 Heater and cabin labels

The following labels must be attached in accordance with UL 875 – Electric Dry-Bath Heaters.

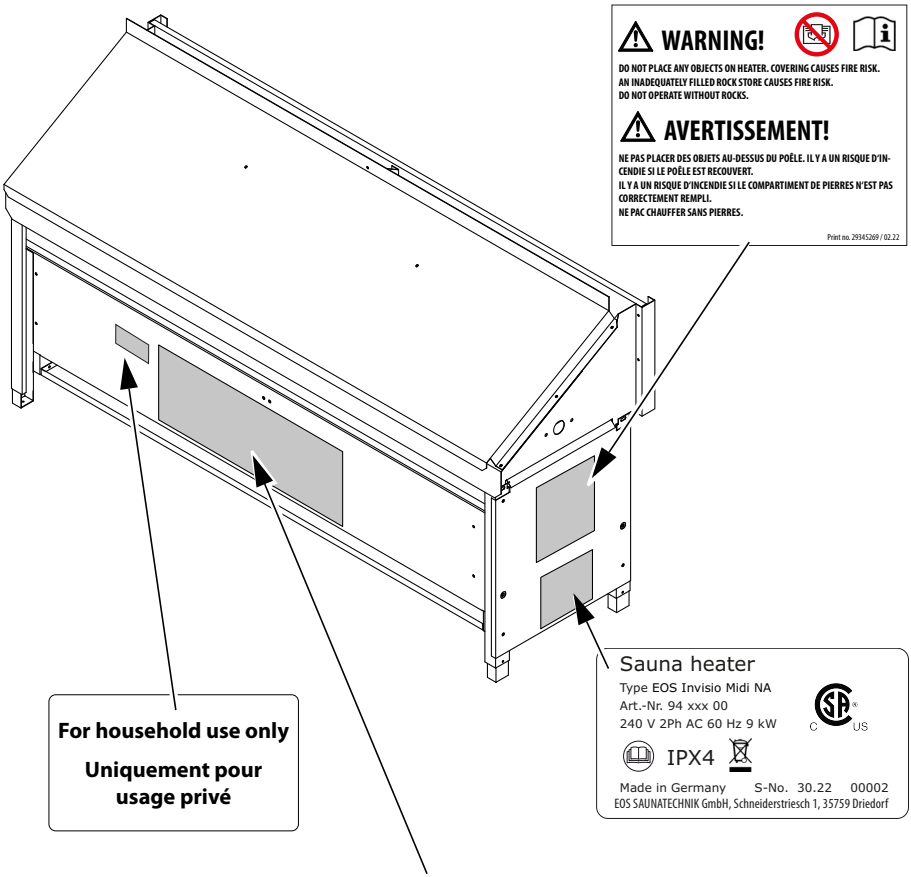
Heater – left side







Heater – front and right side



Cabin

The warnings for sauna users must be affixed outside the cabin so they are clearly visible at eye level.

⚠ CAUTION

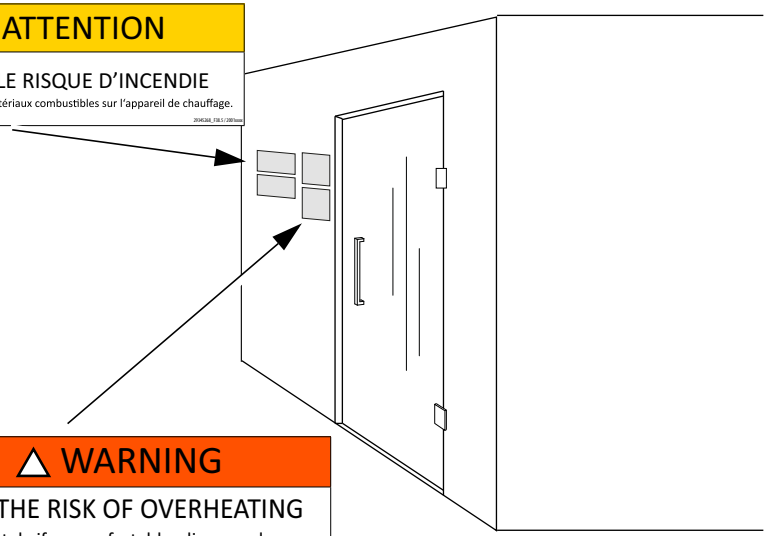
REDUCE THE RISK OF FIRE

Do Not Place Combustible Material On Heater At Any Time.

⚠ ATTENTION

RÉDUIRE LE RISQUE D'INCENDIE

Ne placez jamais de matériaux combustibles sur l'appareil de chauffage.



⚠ WARNING

REDUCE THE RISK OF OVERHEATING

1. Exit immediately if uncomfortable, dizzy, or sleepy. Staying too long in a heated area is capable of causing overheating.
2. Supervise children at all times.
3. Check with a doctor before use if pregnant, in poor health, or under medical care.
4. Breathing heated air in conjunction with consumption of alcohol, drugs, or medication is capable of causing unconsciousness.

⚠ AVERTISSEMENT

RÉDUIRE LE RISQUE DE SURCHAUFFE

1. Sortez immédiatement si vous êtes mal à l'aise, étourdi ou somnolent. Séjourner trop longtemps dans une zone chauffée peut provoquer une surchauffe.
2. Surveillez les enfants à tout moment.
3. Consultez un médecin avant utilisation si vous êtes enceinte, en mauvaise santé ou sous traitement médical.
4. Respiration de l'air chaud en conjonction avec la consommation, des drogues ou des médicaments peut entraîner une perte de conscience.

1.4 Safety levels

Safety instructions and important operating instructions are classified according to ANSI Z535.6. Please familiarize 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.

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

2 Identification

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

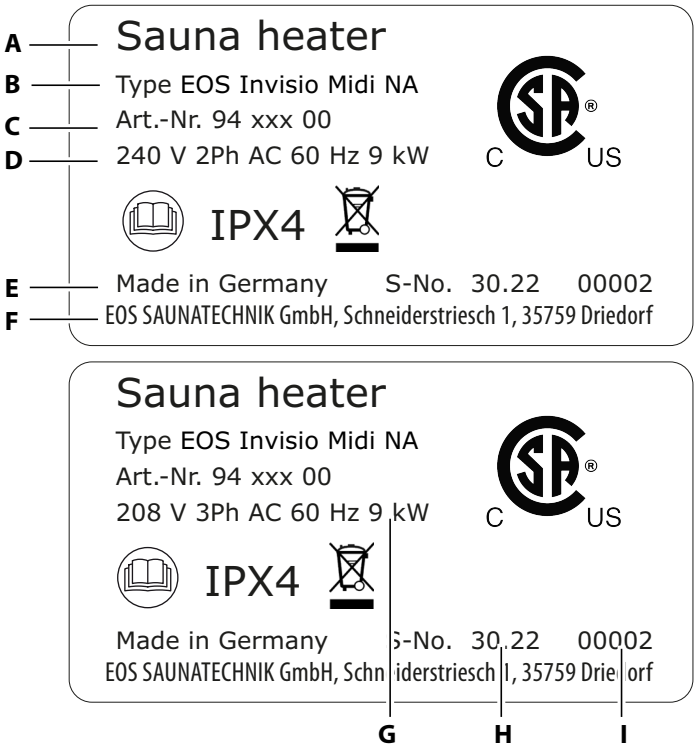
2.1 Requirements for operation

The heater can be operated with the following control unit:

- EOS EmoTec D/H USA/CAN

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

2.2 Nameplate

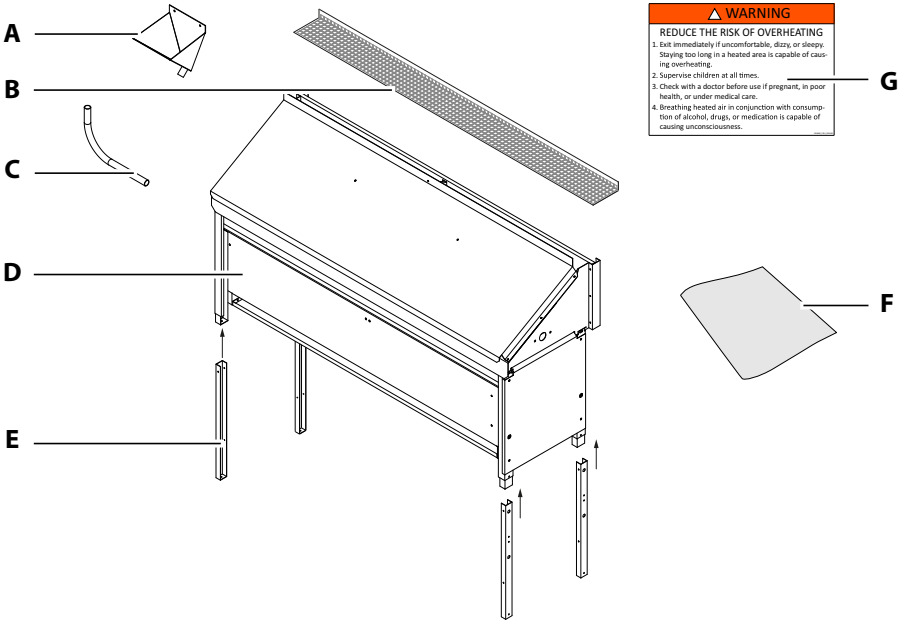


A Name
B Model
C Item number
D Electrical connection
E Country of origin
F Manufacturer
G Heater output
H Manufacturing date
I Serial number

2.3 Scope of delivery

Check the delivery to ensure that all components were delivered and that they are 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 with hood and water channel (completely installed)
E 4 adjustable legs
F Installation instructions
G Mounting material and warning plate

Scope of delivery

Accessories (optional)

Accessories (optional)	Item number
Stones – grain size 50–100 mm/2–4 in.	94.7336
Temperature limiter 160 °C/320 °F Use only original replacement parts.	Model: see component mounted in the device

2.4 Technical data

Electrical connection data

Heater type	Heater output	Connection voltage	Connecting cable control system	Connecting cable	Fuse
Invisio Midi	6,0 kW	1 x 208 V; 3 (L1, L2, L3)	1 x AWG 10	AWG 12	30* (25) A
Invisio Midi	6,0 kW	3 x 240 V ; 2 (L1, L2)	3 x AWG 12	AWG 12	20* (15) A
Invisio Midi	9,0 kW	1 x 208 V; 3 (L1, L2, L3)	1 x AWG 8	AWG 12	40* (35) A
Invisio Midi	9,0 kW	3 x 240 V ; 2 (L1, L2)	6 x AWG 12	AWG 12	20 A
Invisio Midi	12 kW	2 x 208 V; 3 (L1, L2, L3)	1 x AWG 8 1 x AWG 10	AWG 12	40* (35) A 30* (25) A

Only use copper lines that are approved for temperatures of min. 90 °C/ 194 °F.
When using 4 to 6-core cables, the type of AWG cable specified in the table increases by one unit.
Example: AWG 12 > AWG 10.
All line cross-section specifications are the minimum cross-sections for the copper line.
* Maximum dimensioning of the final fuses can be adjusted on site depending on the current load.
The following fuses are permitted:

- Class G, H, J, K
- Type S plug-in fuse
- Edison base

Heater

Heater output	Unit dimensions HxWxD	Weight without stones	Stone filling
6 kW	Height-adjustable 71/77 x 116 x 38 cm 2,3/2,5 x 3,8 x 1,4 ft	24 kg 53 lbs.	A20.5 kg 44 lbs.
9 kW		25 kg 55 lbs.	
12 kW		27 kg 60 lbs.	

Cabin

Heater output	Cabin volume	Minimum size – ventilations
6 kW	3.2–4.2 sq. m x 1.90 m 34.5–45.2 sq. ft. x 6.2 ft.	35 x 5 cm 1.2 x 0.2 ft
9 kW	4.7–7.4 sq. m x 1.90 m 50.6–79.7 sq. ft. x 6.2 ft.	35 x 6 cm 1.2 x 0.2 ft
12 kW	7.4–9.5 sq. m x 1.90 m 79.7–102.3 sq. ft. x 6.2 ft.	35 x 7 cm 1.2 x 0.3 ft

2.5 Intended use

This heater is intended solely for the purpose of heating sauna cabins and together with a suitable control unit.

Invisio Midi should be operated inside buildings only. It must 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 can be installed so it is concealed, e.g. partially under a bench, and is suitable for cabins used in commercial and private settings.
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 unauthorized 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 device does not contain a time-controlled circuit breaker. The control unit, which ensures an all-pole disconnection of the device, must control the heating period limitation according to the standard specification. It must not be possible to override this time limit.
- The cabin volume does not match the heater output.
- There is no protective grill mounted above the sauna heater in the cabin. See 3.3 Dividing wall and protective grill, 🗋 EN-39.
- 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.

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 climate in your sauna.
  All temperatures that can be set via the control unit are tested according to UL875 or CSA C22.2#60335-1:2016Ed.2 and CAN/CSA E60335-2-53*AEI.
  Note that there is a drop in temperature from the ceiling to the floor of the sauna cabin. Temperatures are measured and regulated based on the ceiling values. Thermometers placed below the ceiling will therefore display lower temperatures. When the max. temperature is set for the area around the upper sauna bench, the bathing temperature is typically between 80 °C/176 °F and 90 °C/194 °F.
- The first time the cabin is heated, you may notice a slight odor 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 the recliner bench. The sauna heater is not designed to be installed or set up in an alcove or under a sloping roof, unless the sauna heater is specifically designed and approved for this type of installation. Prior to installation, air inlets and outlets must be installed in the cabin.

3.1 Specifications for the cabin

The cabin must be planned and installed according to specifications before the heater is installed. The minimum internal height of the sauna cabin is 1.90 m/78.8 in.
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 (laminate, flooring made of plastic material, etc.). Ceramic tiles are recommended as a flooring option.

3.1.1 Electrical lines

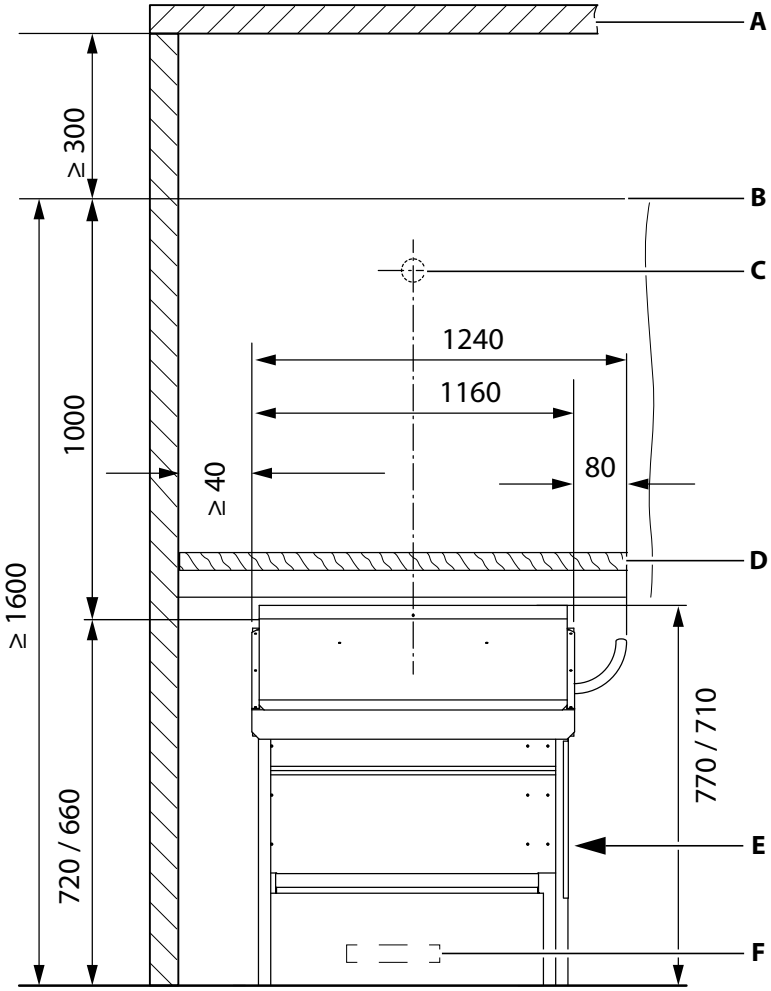
All electrical installations laid inside the cabin must be suitable for silicone cables and a temperature of at least 170 °C/338 °F. All lines must be routed in such a way that they are well-protected, e.g., in a cable duct.
If single-core lines are used as connecting cables, they must be protected by a flexible metal hose that is connected to the protective conductor.

3.1.2 Installation site

The required cabin volume depends on the heater output. See 2.4 Technical data, 🗋 EN-17.
The clearance distances between the heater and flammable material (wood wall, sauna bench, etc.) must be observed as shown below.
Observe the requirements and instructions of the cabin manufacturer as well.

- Front view (mm), 🗋 EN-22
- Side view (mm), 🗋 EN-23
- Front view (inches), 🗋 EN-24
- Side view (inches), 🗋 EN-25

Installation dimensions in mm

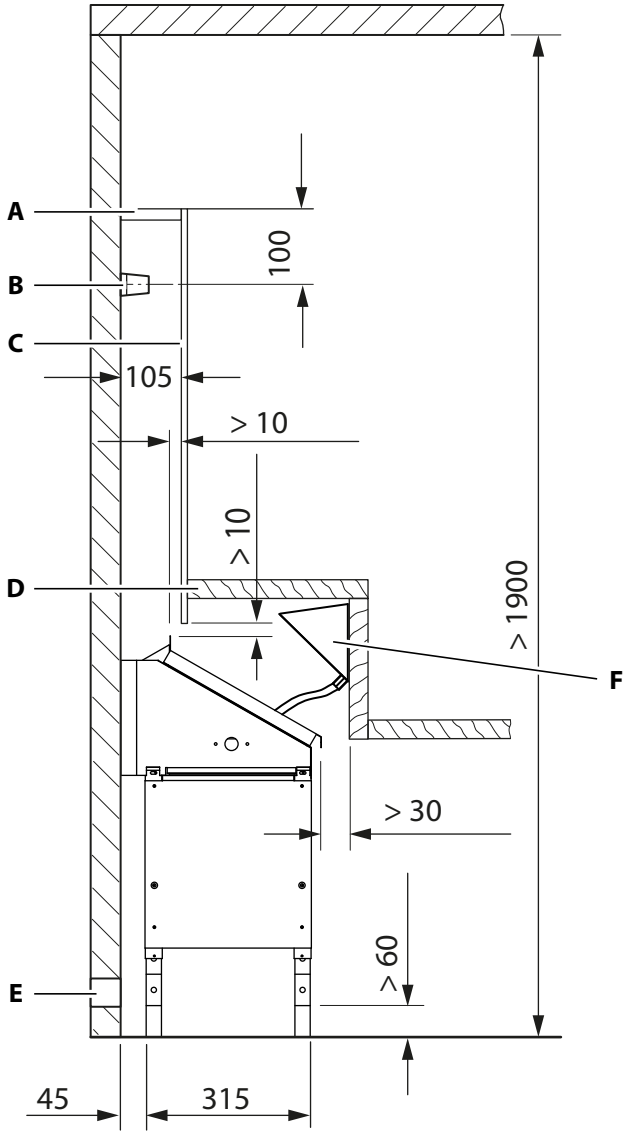


A Cabin ceiling
B Protective grill
C Temperature sensor/safety temperature limiter
D Sauna bench
E Mains connection (terminal box)
F Air inlet

Front view (mm)

The heater can also be set up so that the connections for water and the mains supply are on the left side.

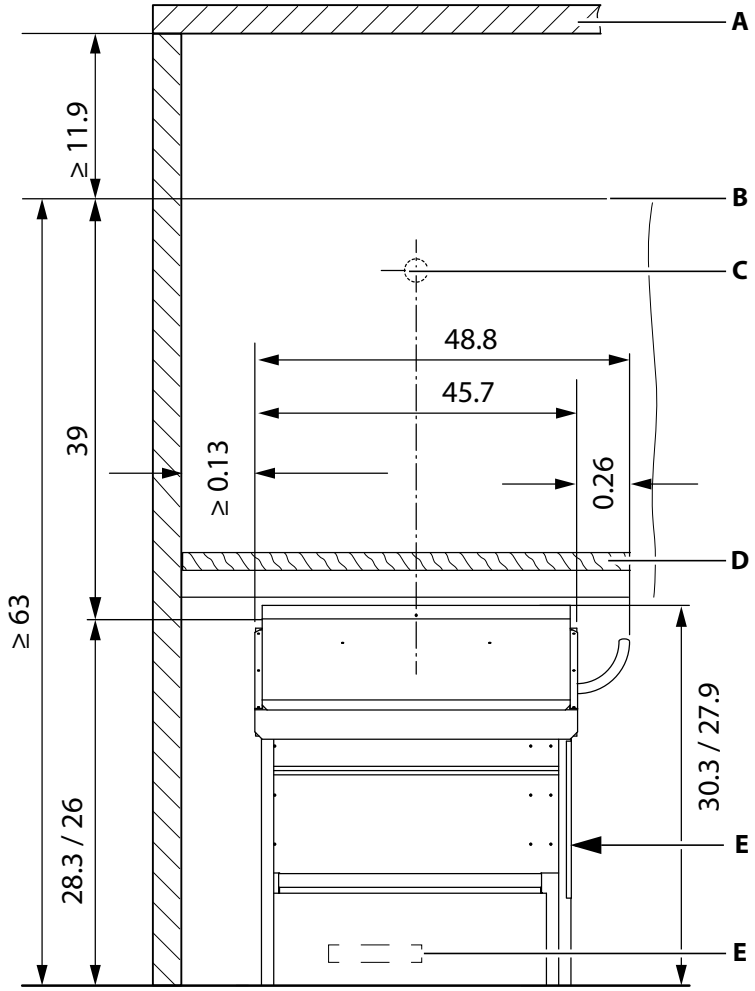
Installation dimensions in mm



A Protective grill
B Temperature sensor/safety temperature limiter
C Dividing wall
D Sauna bench
E Air inlet
F Trough

Side view (mm)

Installation dimensions in inches

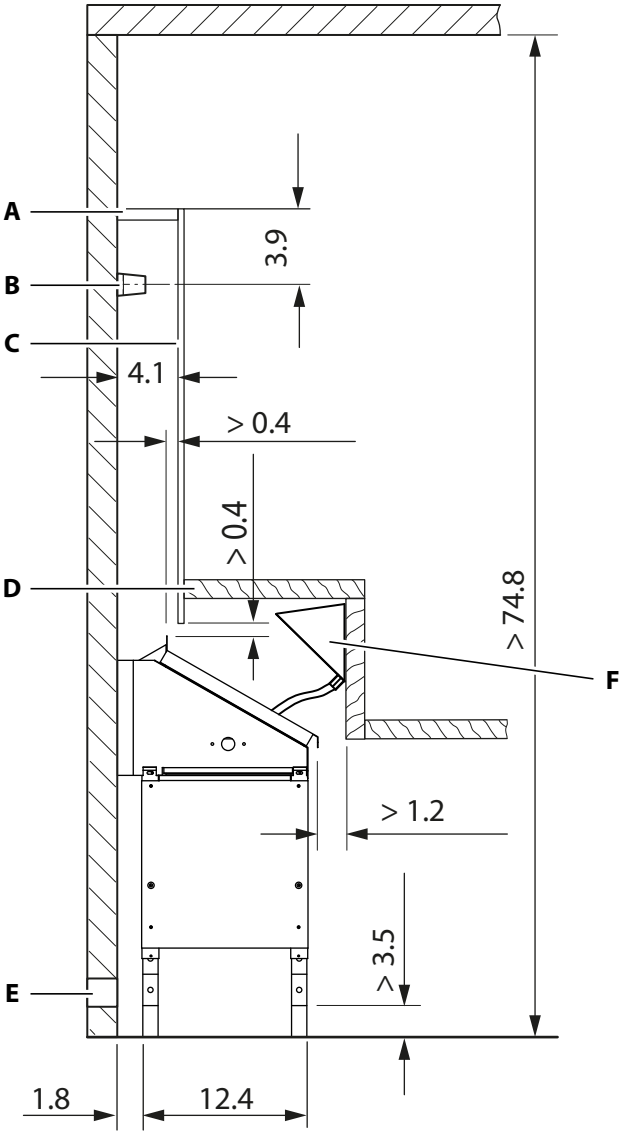


A Cabin ceiling
B Protective grill
C Temperature sensor/safety temperature limiter
D Sauna bench
E Mains connection (terminal box)
F Air inlet

Front view (inches)

The heater can also be set up so that the connections for water and the mains supply are on the left side.

Installation dimensions in inches



A Protective grill
B Temperature sensor/safety temperature limiter
C Dividing wall
D Sauna bench
E Air inlet
F Trough

Side view (inches)

3.1.3 Temperature sensor

It is essential that the temperature sensor with the safety temperature limiter (STB) is installed.
Contrary to the information found in the instructions for the control unit, this temperature sensor (safety temperature limiter) must be installed 10 cm/3.9 in. below the protective grill and centrally above the heater on the cabin wall. See:

- Side view (mm), EN-23
- Side view (inches), EN-25

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 sensor are not damaged during operation.

3.1.4 Air inlets and outlets

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-17.

⚠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.

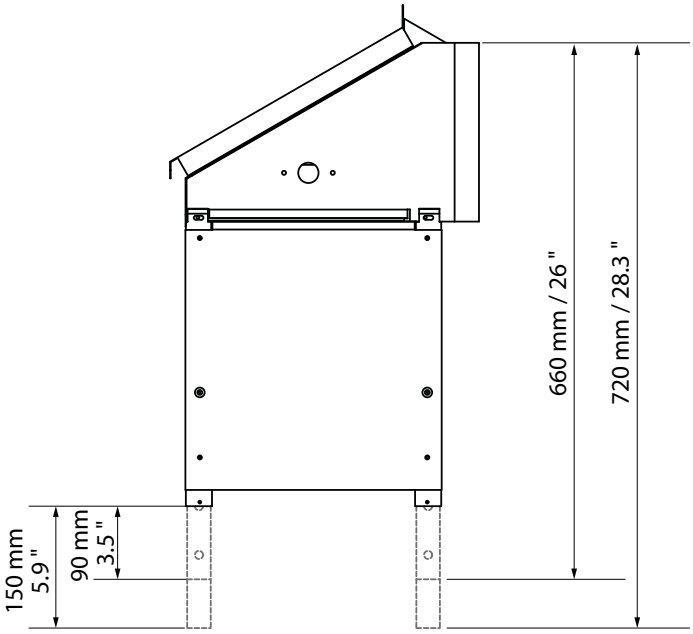
If the heating process takes a long time, the underlying reason is that the heater receives insufficient air. A minimum of 5 times the cabin volume of air per hour must be exchanged.
If, despite compliance with dimensions, there is still not enough fresh air to reach the heater, a fan must be installed at the opening outside of the cabin.

3.1.5 Connecting cables

The heater is connected to the sauna control unit via connecting cables. 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 cables around a corner must equal a minimum of 100 mm/4 in. (R100).
See the connection diagrams in 4.2 Connections, 🗋 EN-42.

3.2 Installing the heater

Once the cabin is prepared, the heater is placed on a pre-defined installation site. Keep in mind that the heater must be accessible for maintenance and repair without the need to dismantle all the cabin equipment.
The water channel can be used in different ways, which means filling through the trough is possible from the right or left sides. The trough used for water splashes becomes hot during operation. Select an installation site that prevents accidental contact with the trough.
The supplied protective grill is 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.
Two people should always transport the heater.



Assemble the heater as follows:

▶ Setting up the heater, 🗋 EN-28
▶ Removing the hood (air deflection hood), 🗋 EN-30
▶ Connecting the connecting cables to the heater, 🗋 EN-32
▶ Filling the rock store, 🗋 EN-34
▶ Mounting the safety temperature limiter sensor, 🗋 EN-35
▶ Installing the water channel, 🗋 EN-36
▶ Mounting the hood (air deflection hood), 🗋 EN-37
▶ Installing the trough, 🗋 EN-38

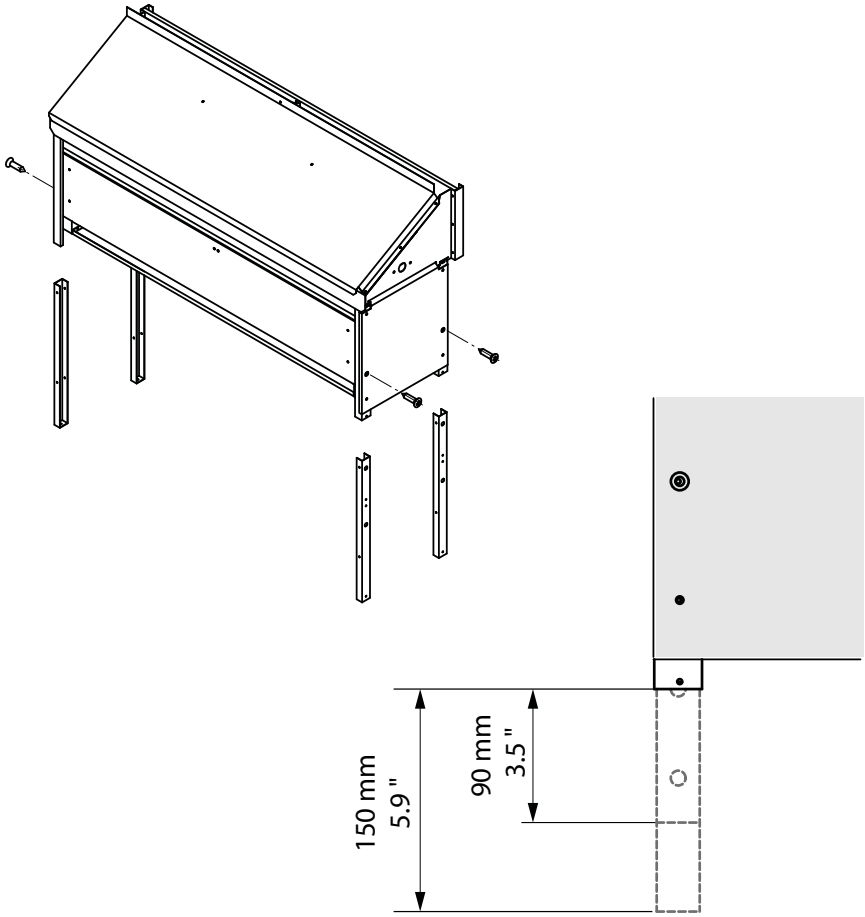
The heater can be positioned so that the terminal box is on the left or right side.

▶ Setting up the heater

1 CAUTION! The heater weighs a min. of 24 kg/53 lbs. Two people should always move the heater.
Unpack the heater from the cardboard box and remove all transport locks and protective films.
ⓘ The heater must be lying down on its rear side to install the enclosed legs.

2 Tip the heater onto its rear side.
ⓘ Use an underlay to protect the heater from scratches.

3 Insert the heater legs with the open side facing inward into the guides located on the side of the heater.



ⓘ Adjust all legs so they are the same height.

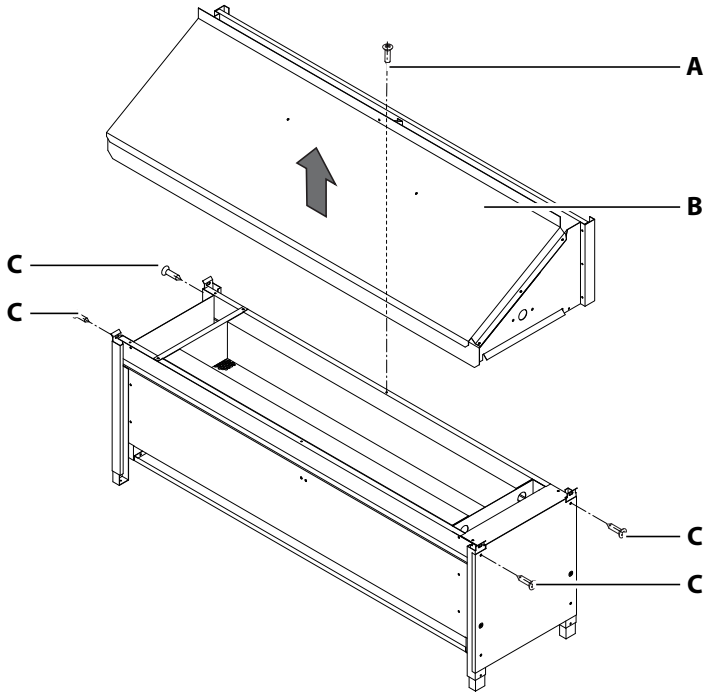
4 Fix each leg at the selected height using one of the supplied self-tapping screws (4.2 x 9.5).

5 Set the heater upright again.

▶ Removing the hood (air deflection hood)

1 Remove the 5 screws from the hood.

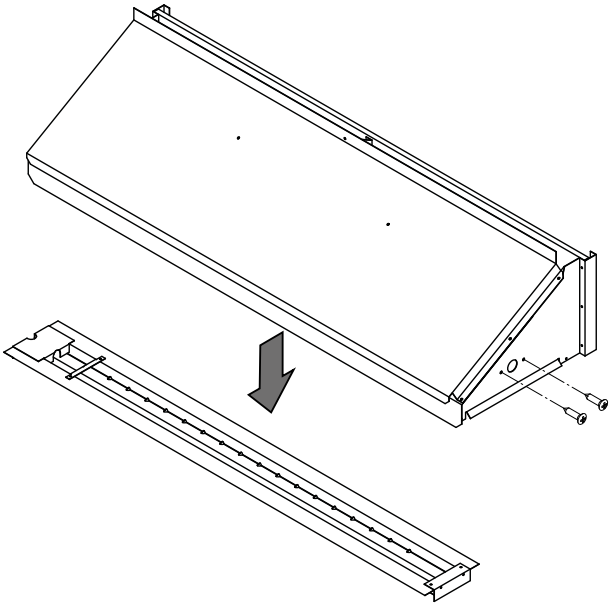
ⓘ There are 2 screws on each side (**C**), one screw in the lower middle at the rear (**A**).



A Middle retaining screw
B Hood
C 4 retaining screws for top side panels

2 Remove the hood (**B**) by lifting it up.

3 Remove 2 screws on each side and remove the water channel.



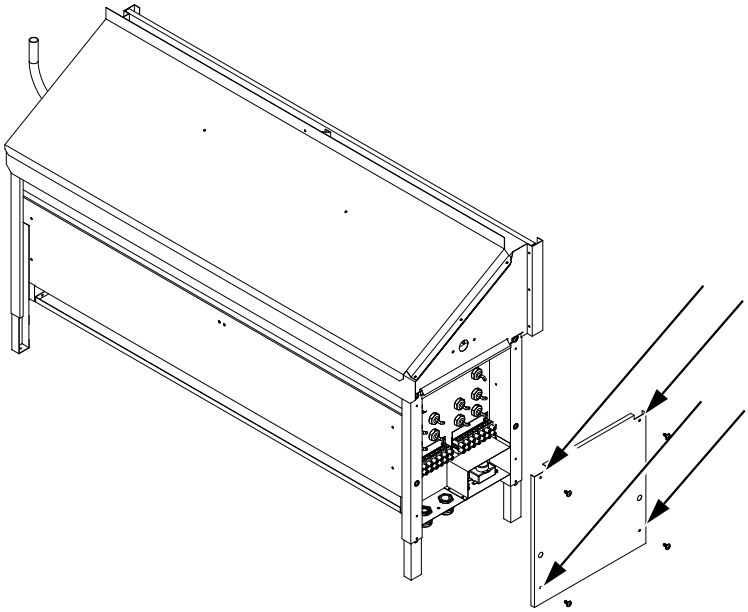
4 Pull the sensor out of the bracket and place it in the heater.

5 Remove the hood completely.

6 Set up the heater so that the mains connection is on the desired side.

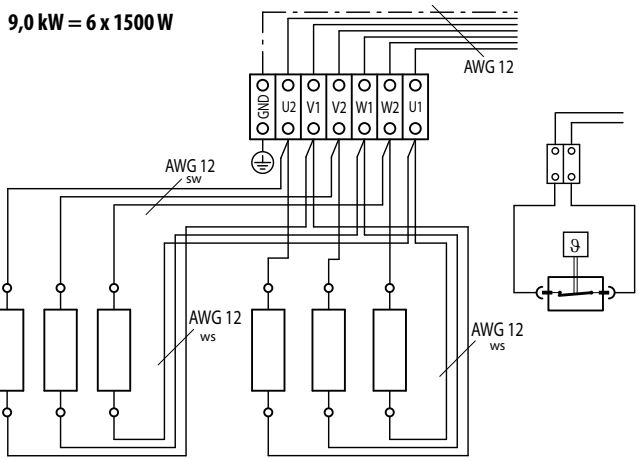
▶ Connecting the connecting cables to the heater

1 Remove the 4 screws from the cover of the terminal box.



2 Connect the connecting lines for the heater according to the circuit diagram.

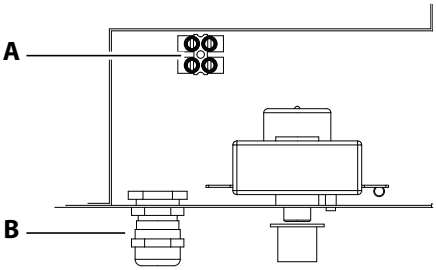
ⓘ A circuit diagram has been affixed and is visible near the connection terminal. See also 4.2 Connections, 🗋 EN-42.



Example: 9 kW

3 Tighten the terminal clamps properly.

4 Pull core line for the safety temperature limiter through cable feed opening (**B**) from below.



A Safety temperature limiter connection

B Cable feed opening

5 Attach the 2-core line to both terminals (**A**).
ⓘ On the control unit, this safety temperature limiter (on the heater) must be switched on in sequence with the safety temperature limiter on the cabin ceiling. For more information, see the installation instructions for the control unit.

6 Replace the cover of the terminal box and screw in the 4 self-tapping screws.

7 Place the heater in its final position and push it up to the rear wall.
ⓘ The spacers on the back ensure proper distancing.

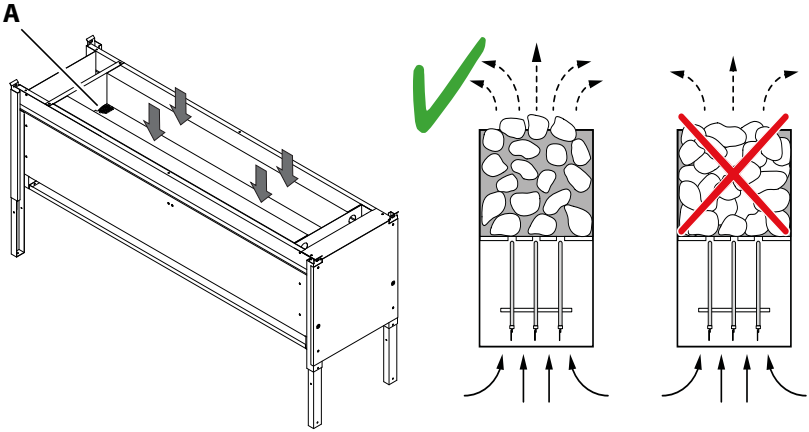
8 Guide the cable from the cabin to the control unit.
ⓘ Leave enough cable in the sauna so that the heater can be moved from its spot for maintenance.

▶ Filling the rock store

1 Wash the sauna stones under running water.

ⓘ The heater is intended for use with natural stones. Use only natural sauna stones of the prescribed grain size of approx. 100–150 mm/2–4 in.

2 WARNING! Stones stacked too densely will impede air flow. The heater may overheat.
Distribute the stones in the rock store evenly to ensure sufficient spacing for air circulation.

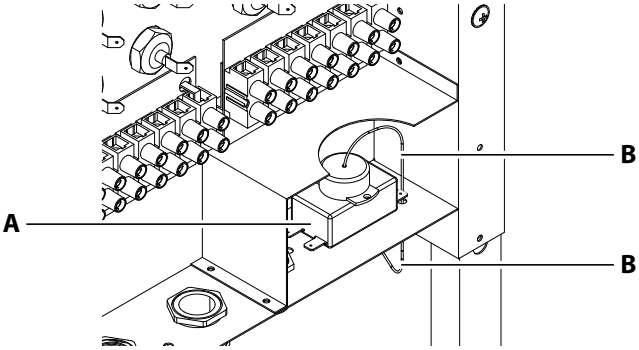


A Rock store

ⓘ Place layers of natural stones in small piles around the rock store. Do not place the stones on the edge. The air must flow freely.

▶ Mounting the safety temperature limiter sensor

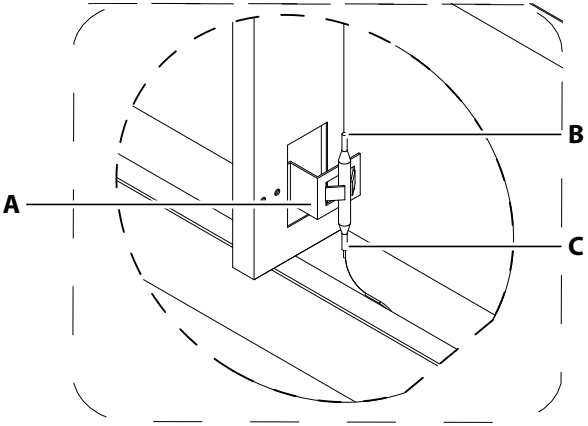
1 Guide the sensor from the bottom behind the heater to the hood.



A Heater safety temperature limiter
B Capillary tube pipe

ⓘ The capillary tube pipe may not be kinked or squashed by the heater legs.

2 Insert the sensor into the hood's bracket.

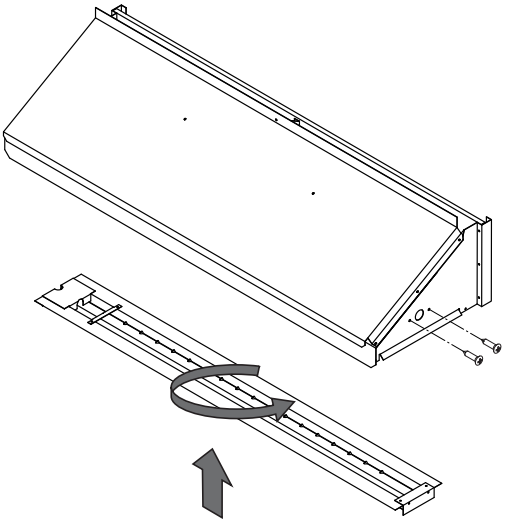


A Carrier plate with bracket for the sensor
B Sensor
C Capillary tube pipe

▶ Installing the water channel

1 Chose a side from which the water will exit.

2 Place the water channel in the hood from below in the desired direction.
ⓘ The water channel's incline must be directed away from the water splash connection.

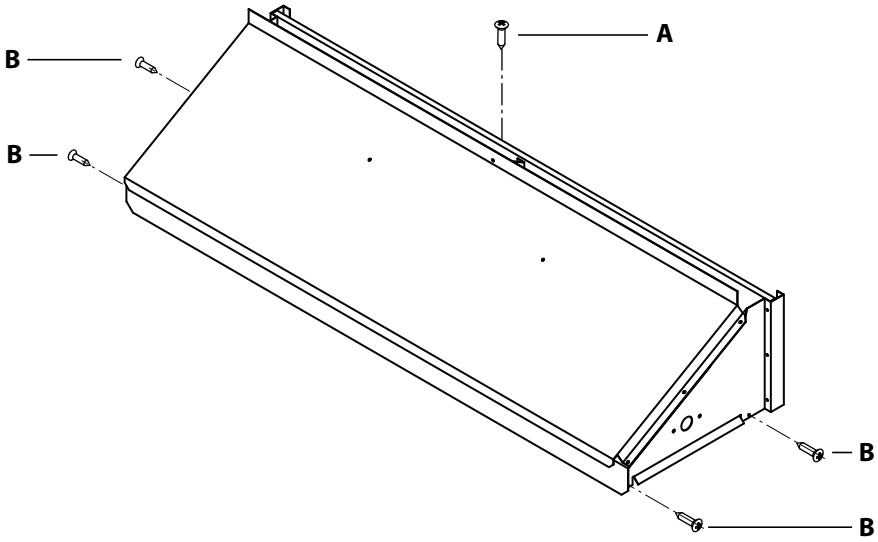


3 Attach the water channel on the side of the hood.

▶ Mounting the hood (air deflection hood)

1 Carefully place the hood with the mounted water channel on the heater.
ⓘ The capillary tube pipe may not be kinked or squashed.

2 Screw in the top 4 screws in the side panels and the retaining screw in the middle again.



A Middle retaining screw **B** 4 retaining screws

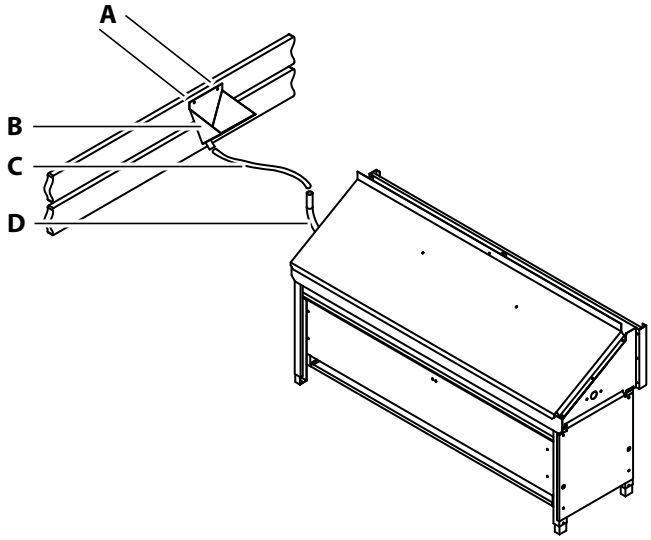
3 Remove the protective film on the hood completely, if necessary.

▶ Installing the trough

1 Insert the supplied angled tube in the side opening of the heater above the water channel.

ⓘ The trough must be mounted above the level of the water channel. Choose a place that is easily accessible for the water splash and that does not obstruct sauna users, e.g. a dividing wall.

ⓘ In addition, you can cover the trough with a water splash flap so that it is not accessible to sauna users.



A Retaining screws
B Trough
C Silicone hose
D Angled tube

2 Attach the silicone hose to the trough and the angled tube.

ⓘ The hose must lead down to the angled tube. Ensure that the tube has no kinks.

3.3 Dividing wall and protective grill

With a dividing wall, a shaft can be used to conduct the heated air through the protective grill into the cabin. The dividing wall is not included in the heater's scope of delivery. It must be made by the cabin builder.
See Installation dimensions in mm, 🗋 EN-22 and Installation dimensions in inches, 🗋 EN-24

⚠WARNING

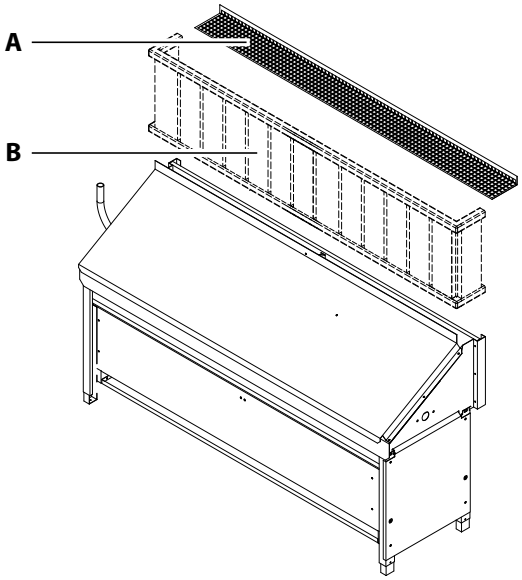
Fire hazard

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

▶ A protective grill must be installed.

▶ **Installing the dividing wall and protective grill**

1 Install the dividing wall so that the specified minimum clearance distances are observed.
ⓘ See 3.1.2 Installation site, 🗋 EN-21.



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 particle board screws.
ⓘ The protective grill prevents objects from falling onto the heater.

3.4 Attaching warning plates inside the cabin

The warning plates must be clearly visible and placed at eye level. See 1.3 Heater and cabin labels, 🗋 EN-11.

▶ Attaching the warning plate

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

4 Connections

4.1 General instructions for electrical installation

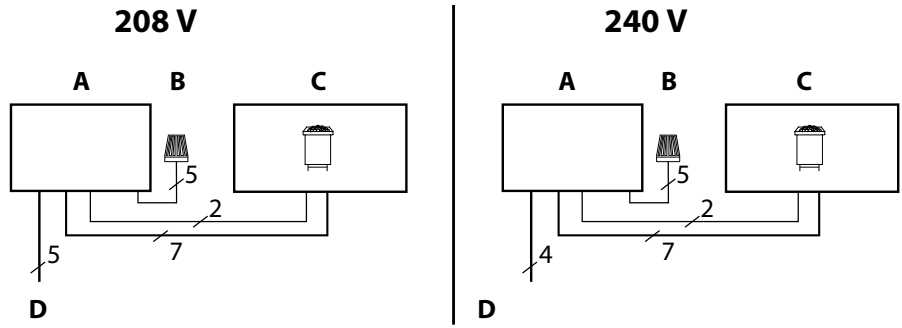
Ensure that electrical installation is performed in compliance with the standards and legal norms valid in your country.
If a residual current device (RCD) is installed, ensure that devices that do not belong to the sauna system are not fused via this RCD.
If the sauna heater has not been used for an 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

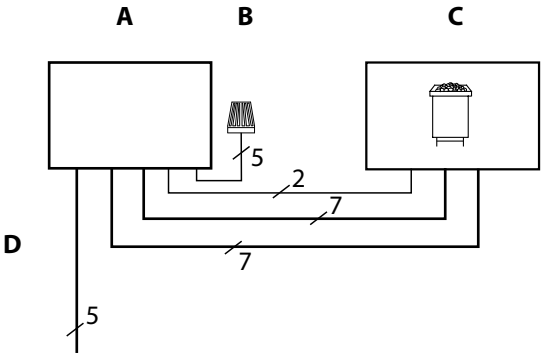
The sauna control unit and the heater must be connected as shown in the circuit diagrams. Observe the relevant installation and operating instructions and the stickers on connecting the heater.
See also 2.4 Technical data, 🗋 EN-17.

Connection diagrams

6–9 kW



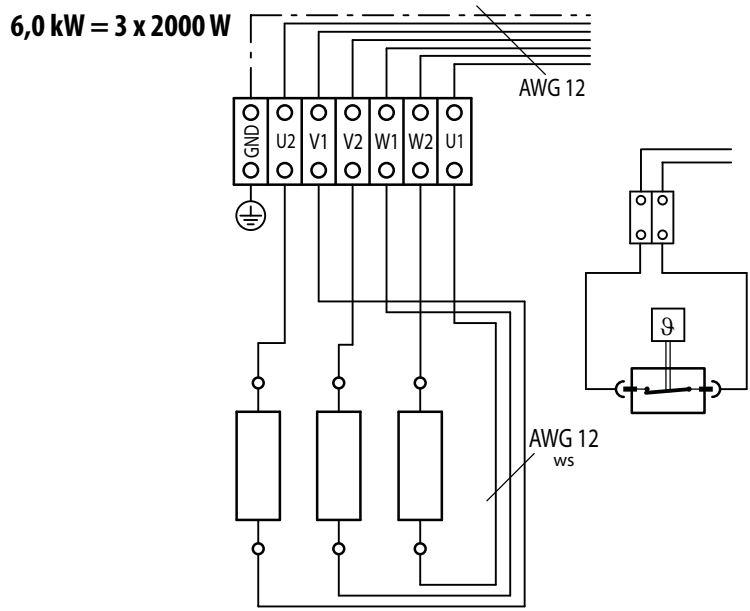
12 kW



A Control unit
B Safety temperature limiter
C Heater
D Power supply for control unit

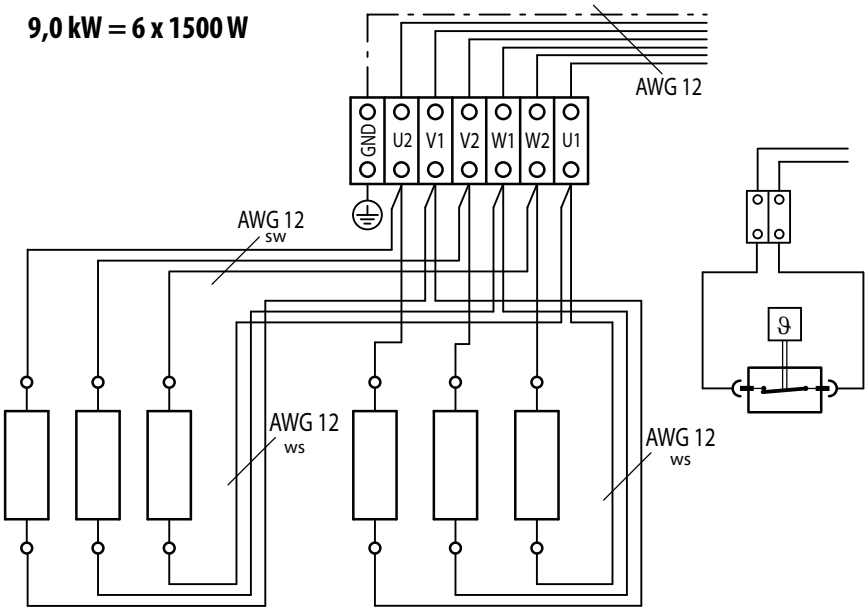
Connection diagram

4.3 Internal wiring



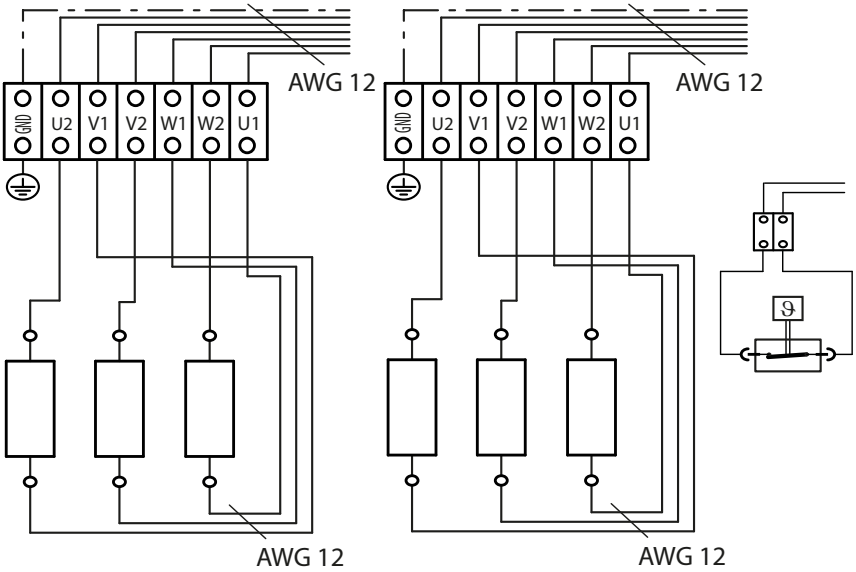
Internal wiring 6 kW

9,0 kW = 6 x 1500 W



Internal wiring 9 kW

12,0 kW = 6x 2000 W



Internal wiring 12 kW

4.4 Establishing an electrical connection

The description below assumes all connection work on the heater have been completed.
See ▶ Connecting the connecting cables to the heater, 🗋 EN-32.

▶ Connecting the connecting cable to the control unit

1 Guide the cable from the heater to the control unit.
ⓘ Do not completely pull the connecting cable out of the cabin to allow removal of the terminal box for maintenance.

2 CAUTION! Ensure that the control unit has no power.
Connect the cable as described in the installation instructions for the relay box.

4.5 Heating time limitation

The heating time limitation is implemented by the control system. Refer to the installation and operating instructions of the control unit.

5 Commissioning

The heater is switched on via the control unit. It is operated via the control panel.

⚠WARNING

Risk of fire due to objects on the heater

Objects placed on the heater or protective grill could catch fire.

▶ Inspect the cabin prior to each use and ensure that no objects are placed on the protective grill or heater.

⚠WARNING

Risk of fire due to heating without stones

If the heater is operated without stones, there is a risk of flammable parts becoming overheated. There is a risk of death due to fire.

▶ Start the heater only if it has been filled with stones.
See ▶ Filling the rock store, 🗋 EN-34.

5.1 Starting the heater

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

▶ **Switching the system on**

1 Switch the sauna control unit on.
ⓘ The heater is switched on via the control unit.

2 Use the control unit to select a suitable program.

5.2 Water splash

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

⚠WARNING

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.

The water splash occurs with delay. Empty the ladle into the trough in the cabin. The water then flows through the silicone connecting hose over the sauna rocks in the heater and is distributed evenly over the stones in the pan.
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 m^3 cabin volume should be vaporized.
After each water splash, wait approx. 10 minutes before starting the next one.
This time is needed for the sauna stones to reheat.

6 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 and/or descale 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 recommissioning no towels, cleaners or other objects are lying on the sauna heater or vaporizer.

6.1 Cleaning

The 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.

Clean the heater only with household cleaners.

6.2 Sauna stones

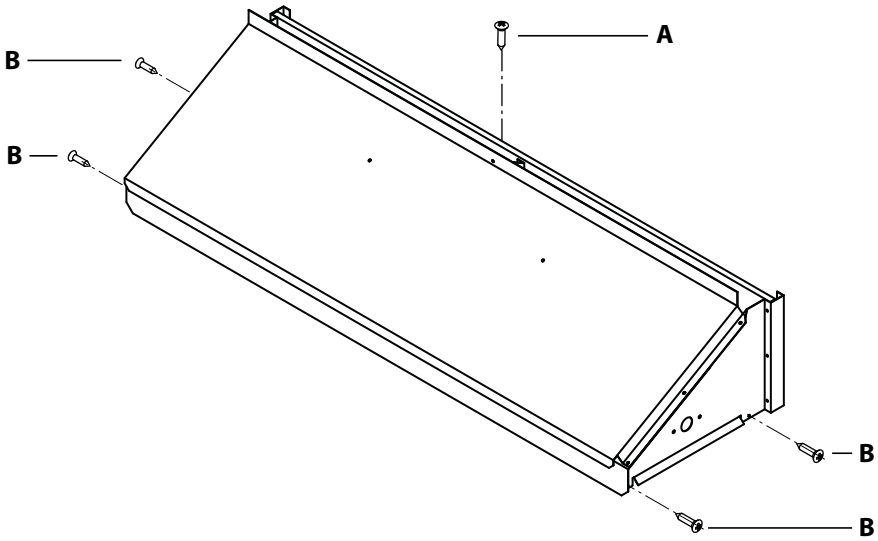
Sauna stones are a product of nature. Sauna stones must be replenished or reshuffled depending on the intensity of use. The process of heating and cooling can make the stones brittle and small particles can break free from the stones. The gaps between the stones also become smaller which means that hot air can no longer rise between the stones.
Check the sauna stones at least once per year and replace any defective stones.
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! The heater and stones may be hot. Allow the heater to cool sufficiently before starting work.
Provide access to the heater.
ⓘ Depending on the design of the cabin, you can, for example, remove the upper sauna bench.

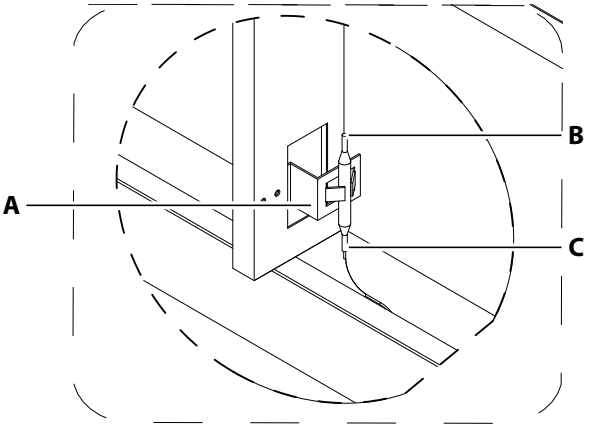
2 Remove the angled tube with the water connection.

3 Remove the 5 screws from the hood.
ⓘ There are 2 screws on each side (**B**) and one screw in the lower middle at the rear (**A**).



A Middle retaining screw **B** 4 retaining screws

4 Carefully swing the hood upwards.



A Carrier plate with bracket for the sensor
B Sensor
C Capillary tube pipe

ⓘ The capillary tube pipe may not be kinked or squashed.
ⓘ The water channel does not have to be removed.

5 If necessary, remove the sensor from the bracket and put the hood and sensor aside separately.

6 Remove each stone individually.

7 Check each stone for damage.
ⓘ Remove the stone if damaged and replace it with a new one.

8 Rinse all stones with cold water.

9 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 heating elements.

10 Insert the sensor in the bracket again.
ⓘ See ▶ Mounting the safety temperature limiter sensor, 🗋 EN-35

11 Replace the hood and screw in the 5 screws.
ⓘ The capillary tube pipe may not be kinked or pinched off in the process.

6.3 Replacing the heating elements

The individual heating elements can be replaced. To remove the heating elements, the terminal box must be accessible. Furthermore, the cover and the stones must be removed.

Hardware and tools:

- Tubular heating element 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.

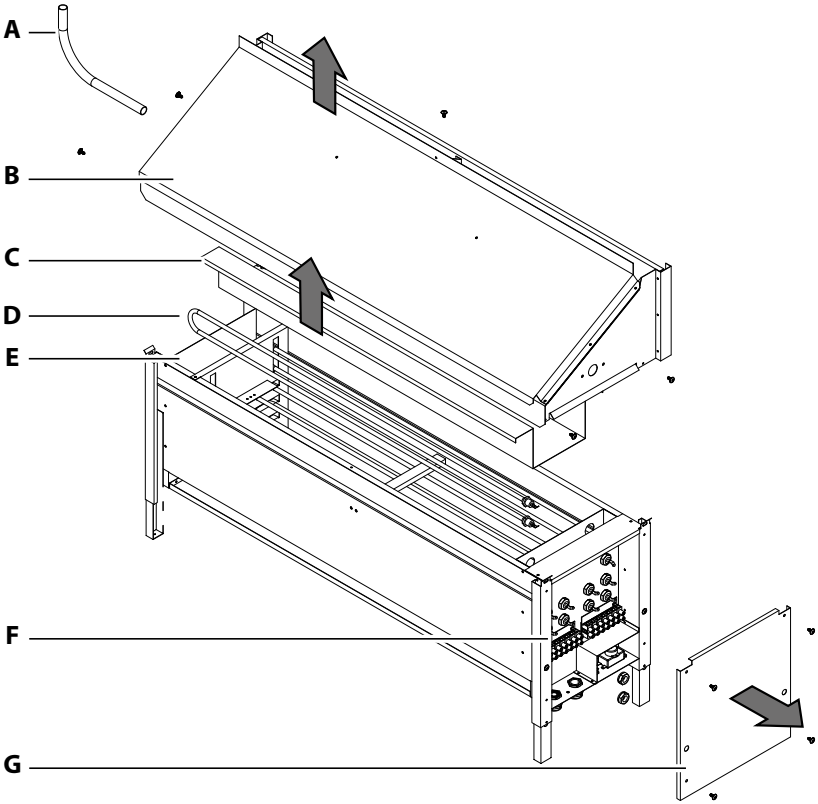
a) Switch off the heater.

b) Switch off the fuses to disconnect the heater from the mains supply.

2 CAUTION! Allow the heater to cool before starting work.
Provide access to the heater.

ⓘ Depending on the design of the cabin, you can, for example, remove the upper sauna bench.

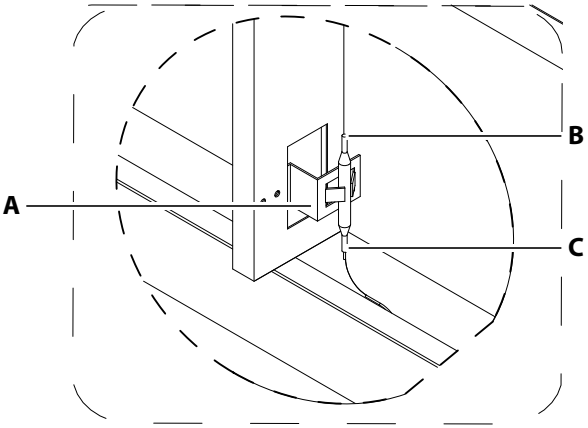
3 Remove the angled tube (**A**) with the water connection.



A Angled tube
B Hood with water channel
C Rock store
D Heating element
E Support plate
F Terminal box
G Terminal box cover

4 Remove the 5 screws from the hood (**B**).
ⓘ There are 2 screws on each side and one screw in the lower middle at the rear.

5 Carefully swing the hood upwards.
ⓘ The capillary tube pipe may not be kinked or squashed.



A Carrier plate with bracket for the sensor
B Sensor
C Capillary tube pipe

6 If necessary, remove the sensor from the bracket and put the hood and sensor aside separately.

7 Remove the stones.

8 Remove the rock store (**C**).

9 Loosen the 4 screws on the cover (**G**) of the terminal box (**F**) and remove the cover.

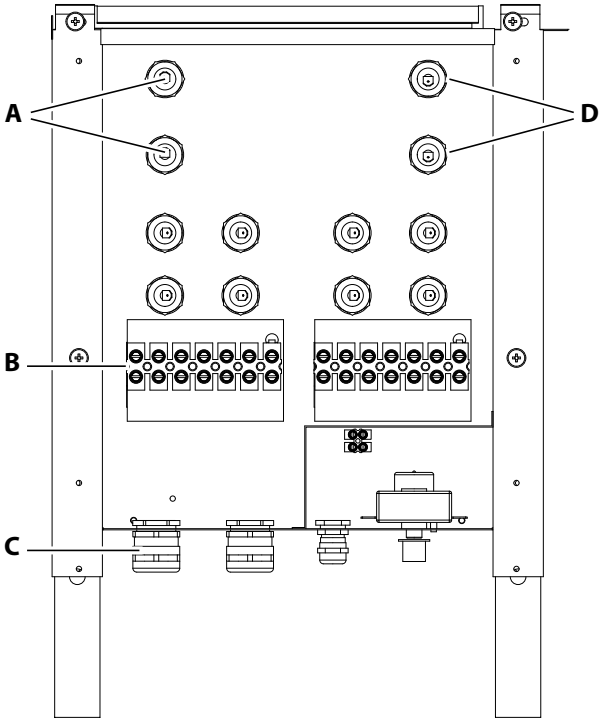
10 Secure the heating elements with a safety mechanism so they do not sink.

11 Unscrew the 2 screws in the support plate (**D**) and push the support plate outward.
ⓘ Carefully lower the heating elements onto the wood underneath.
ⓘ The capillary tube pipe may not be kinked or squashed.

▶ Replacing the heating element

1 Identify the defective heating element by taking measurements.
ⓘ You can replace heating elements that are located farther below individually.

2 Remove both flat plugs (**A**) from the defective heating element.



A Flat pins for flat plug
B Connection terminals
C Cable feed openings
D Fixing nuts

3 Loosen the 2 fixing nuts (**D**) and lock washers of the heating element.

4 Press the heating element slightly inwards and lift it out upwards.
ⓘ The capillary tube pipe may not be kinked or squashed.

5 Insert the new heating element.

6 Fix the heating element with the lock washer and nut.

7 Plug in the flat plug.
ⓘ Check the wiring on all heating elements before reclosing the terminal box.

8 Push the support plate into the correct position and fix it with 2 screws.

9 Remove the safety mechanism from the heating elements.

▶ Reassembling the heater

1 Fix the terminal box cover in place and fix with 4 screws.

2 Place the rock store back in position.

3 Push the heater in the correct installation position again, if necessary.
ⓘ Observe the minimum clearance distances; see Installation site, EN-21.

4 Place the stones in the rock store.

5 Insert the sensor in the bracket again.
ⓘ See ▶ Mounting the safety temperature limiter sensor, EN-35

6 Replace the hood and screw in the 5 screws.
ⓘ The capillary tube pipe may not be kinked or squashed.

7 Firmly insert the angled tube with water connection in the side opening again.

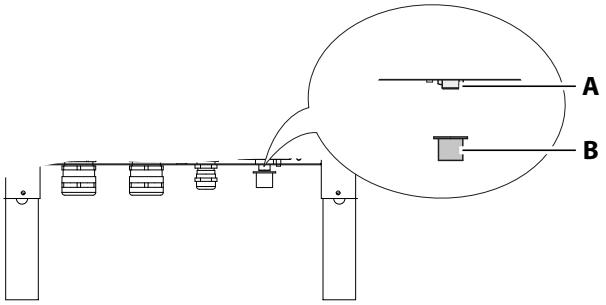
8 Restart the heater.

6.4 Resetting the safety temperature limiter

The heater has a dedicated safety temperature limiter to prevent the heater from overheating.
It monitors only the temperature of the heater. The safety temperature limiter in the temperature sensor monitors if the cabin has overheated.

▶ **Resetting the heater safety temperature limiter**

1 CAUTION! Allow the heater to cool sufficiently before starting work.
Unscrew the protective cap (**B**) with a screwdriver or coin.
ⓘ The safety temperature limiter is located at the bottom of the terminal box. It can be reset from the outside.



A Reset pin **B** Protective cap

2 Press in the pin (**A**) of the safety temperature limiter until it audibly engages.
ⓘ If the pin does not click into place, the heater has not cooled down fully.

3 Replace the black cap and tighten it.

4 Switch on the heater via the control unit.

6.5 Troubleshooting

Error	Reason	Solution
It takes the heater a long time to heat up the cabin.	One or more than one heating element is defective.	Have a technician replace the tubular heating element.
	There is not enough space between the stones.	Reshuffle the stones. ▶ Reshuffling the sauna stones, 🗋 EN-49
	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-27
	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 3.1.3 Temperature sensor, 🗋 EN-26
The heater is very hot but cannot distribute the heat throughout the cabin.	There is not enough space between the stones.	Reshuffle the stones.
The heater no longer heats.	The safety temperature limiter has tripped.	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 limiter is not optimal.	Check the position of the safety temperature limiter and adjust as needed. See 3.1.3 Temperature sensor, 🗋 EN-26.

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 recognize 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 postal service. 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 unauthorized 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

Observe the national and local regulations for the disposal of recyclable materials.

Packaging

The packaging of the sauna heater 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 should be disposed of at a designated local collection point for electronic waste.

EOS

FINEST SAUNA ENGINEERING

Service address

EOS Saunatechnik GmbH

Schneiderstriesch 1

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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

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