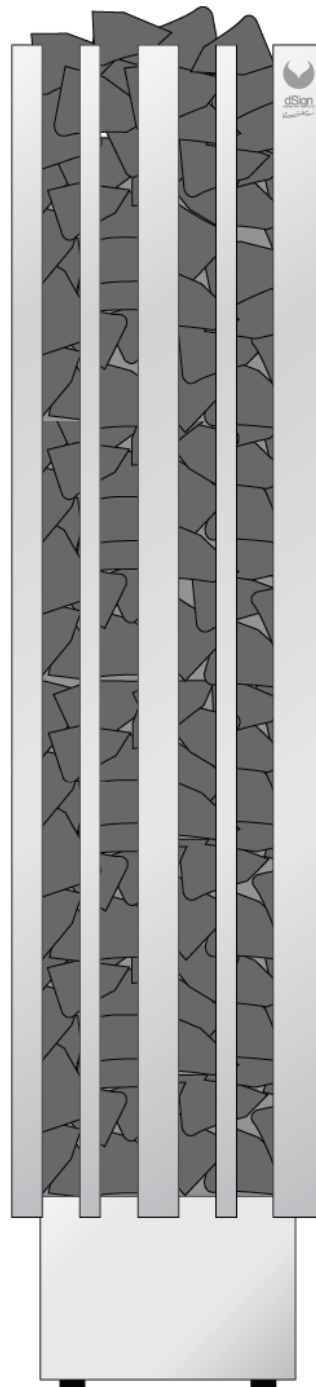




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Monolith electric heater
6,9, 9, 13,8, 15,9 and 18 kW

Installation and user manual

V.1.0

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Installation instructions

- Read through these instructions with care before you begin the installation process.
 - The electrical installation must be performed by a qualified electrician.
 - Separate instructions for electrical connections come with the control unit and/or the circuit diagrams of these instructions.
 - Beware of sharp edges and use a long-sleeved shirt and protective gloves during the installation and while piling the stones.
1. Remove the protective plastic covering from the heater.
 2. Choose the place for the heater according to the required safety distances. The minimum safety distances to inflammable surfaces for Monolith electric heater, measured from the heater's frame outwards, are 100 mm on the sides and the back of the heater and 800 mm to the ceiling (Page 9).
 3. Pay attention to the ventilation of the sauna room, the ideal placement for the thermostat's sensor and the control unit. (PAGE 7-8)
 4. Lift the steel frame from the resistor casing/stand.
 5. Open the element box located at the underneath the heater and connect the five-pole electric cable through the socket seal to the terminal block inside the box. (PAGE 6)
 6. Attach the other end of the cable to the control unit and connect it according to the specified instructions inside the control unit (controller).
 7. Take the cable from the control unit (controller) either to the socket or electrical main center.
 8. Test that all the heating elements function properly by switching the heater on. If all the heating elements heat up, you can close the element box panel. (If one or more of the heating elements fails to heat up or another problem occurs such as a fuse blowing out, contact the manufacturer's technical support.
 9. Place the heater in its place. Check the safety distances to flammable materials before piling on the stones.
 10. Lift the steel frame on top of the resistor casing/ stand and straighten the heater by adjusting the adjustable legs.
 11. **PILING OF THE STONES:** Read separate instructions (PAGE 10). In communally or publicly used saunas we recommend the use of ceramic Kerkes stones around the heating elements (www.kerkes.fi). Kerkes stones support and help preserve the heating elements and they do not disintegrate prematurely due to high temperature changes. Note that the use of soapstone and natural stones is allowed only on the outer edges and on the top of the heater.

12. IKI-Kiuas Ltd. recommends the use of safety railings around the heater. However, the stainless steel frame does not over-heat the way ordinary steel-cased heaters do.

13. The surface of the stones sinks in a little after the heater has been in use for a while. Frequently check that the heating elements do not become exposed. If this should happen, pile in more stones. The disintegration of the stones depends on the type of stones and the frequency of use. The condition of the stones should be checked yearly and broken stones should be replaced by new ones.

Connecting the electric heater to electrical network

The heater is connected to the electrical network semi-stationarily with a H07RN-F rubber cable or its equivalent. The use of PVC-insulated cable as a connecting cable is prohibited due to thermal embrittlement. The electric installation may only be administered by a qualified electrician adhering to current regulations. The maximum distance of the junction box from the floor is 400 mm, measured from the upper corner of the box. Make sure that the connecting cable will not be exposed to thermal radiation or mechanical strain. If the rubber cable running inside the wall of the sauna is above 1000 mm from the floor, it needs to endure temperatures up to 170 degrees Celsius (for example SSJ).

Control unit

The control cable for electrical heating is brought directly into the junction box of the heater, and from there to the terminal block of the heater. The power and control unit should be installed in to a dry place between the heater and the electrical center, either in the sauna or outside the sauna (depending on the model). The thermostat is installed into the wall/or roof of the sauna according to instructions and is connected with SSJ or similar silicone cable to the power unit. **See the more detailed instructions provided by the control unit's manufacturer.**

Temperature restrictor (overheat protector)

The temperature restrictor switches off the power if the temperature in the saunaroom climbs dangerously high. If the restrictor goes off, the cause is not a temporary malfunction. In this case consult the manufacturers technical support.

See the more detailed instructions provided by the control unit's manufacturer.

Using the thermostat and adjusting the temperature

In various control unit models the selected bathing temperature is shown on the screen of the control panel. The thermostat sensor must not be installed less than 1000 mm from an undirected incoming air valve or less than 500 mm away from an incoming air valve which has been directed away from the control unit.

See the more detailed instructions provided by the control unit's manufacturer.

Timer functions

Various control unit models have many various timer options. Attn. more than 4 hr operational time is prohibited in private use and should be consulted by qualified electrician.

See the more detailed instructions provided by the control unit's manufacturer and local laws.

Instructions for bathing

Before bathing for the first time, heat up the heater once to burn off the protective oil solvents.

Note that you need to ventilate the sauna room efficiently before you begin bathing.

The heating time for the stones and the sauna room is about 60 minutes depending on the size of the room and its ventilation. Throwing water on the heater increases temperature and humidity. The top of the pillar creates more heat, while the sides create a gentler steam.

The temperature should be set by the temperature control in the control unit. A recommended temperature for the bathing with this heater is 55–70 degrees.

Maintenance:

Due to large variation in temperature, the sauna stones disintegrate in use. Pay attention especially to the gradual settling of the stones. Be sure that the heating elements do not appear with time. The stones settle most rapidly within two months of piling. Rearrange the stones at least once a year or even more often if the sauna is in frequent use. At the same time, remove any pieces of stones from the bottom of the heater and replace any disintegrated stones with new ones. By also leaving free airflow and spacing between the saunastones, the heating capability of the heater stays optimal, is faster and the risk of overheating is avoided.

NOTE! The maximum volume of the ladle is 0.5 litres. If an excessive amount of water is poured on the stones, only part of it will evaporate and the rest may splash as boiling hot water on the bathers. Never throw water on the stones when there are people near the heater, because hot steam may burn their skin.

Requirements for water quality

Water property	Effects	Recommendation
Humus concentration	Color, taste, precipitates	<12 mg/l
Iron concentration	Color, smell, taste, precipitates	<0,2 mg/l
Hardness: most important substances are manganese (Mn) and lime, i.e. calcium (Ca)	Precipitates	Mn: <0,05 mg/l Ca: <100 mg/l
Chlorinated water	Risk to health	Use is completely forbidden
Seawater	Fast corrosion	Use is completely forbidden

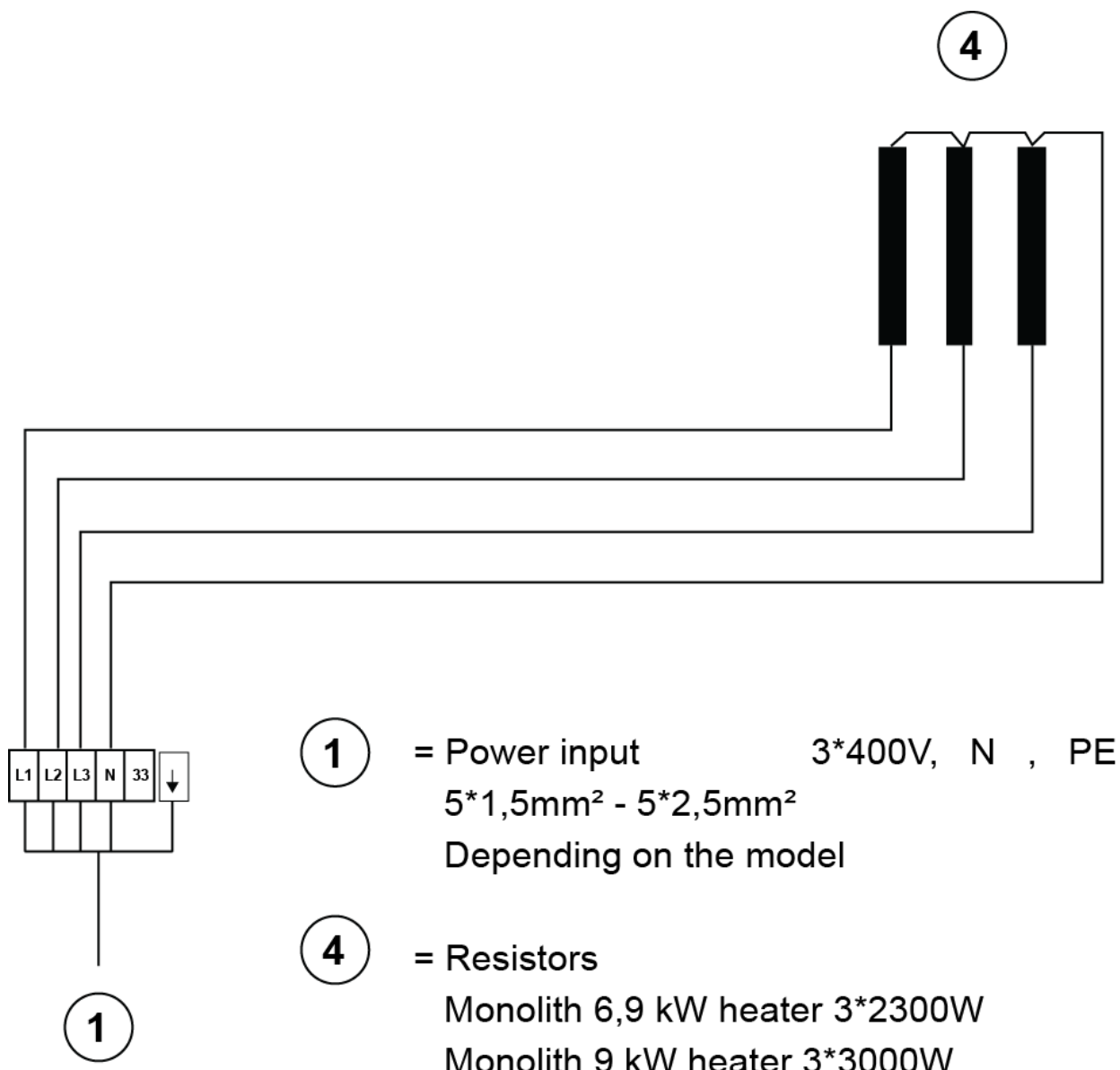
Trouble shooting

If the heater or sauna room does not heat up, check that:

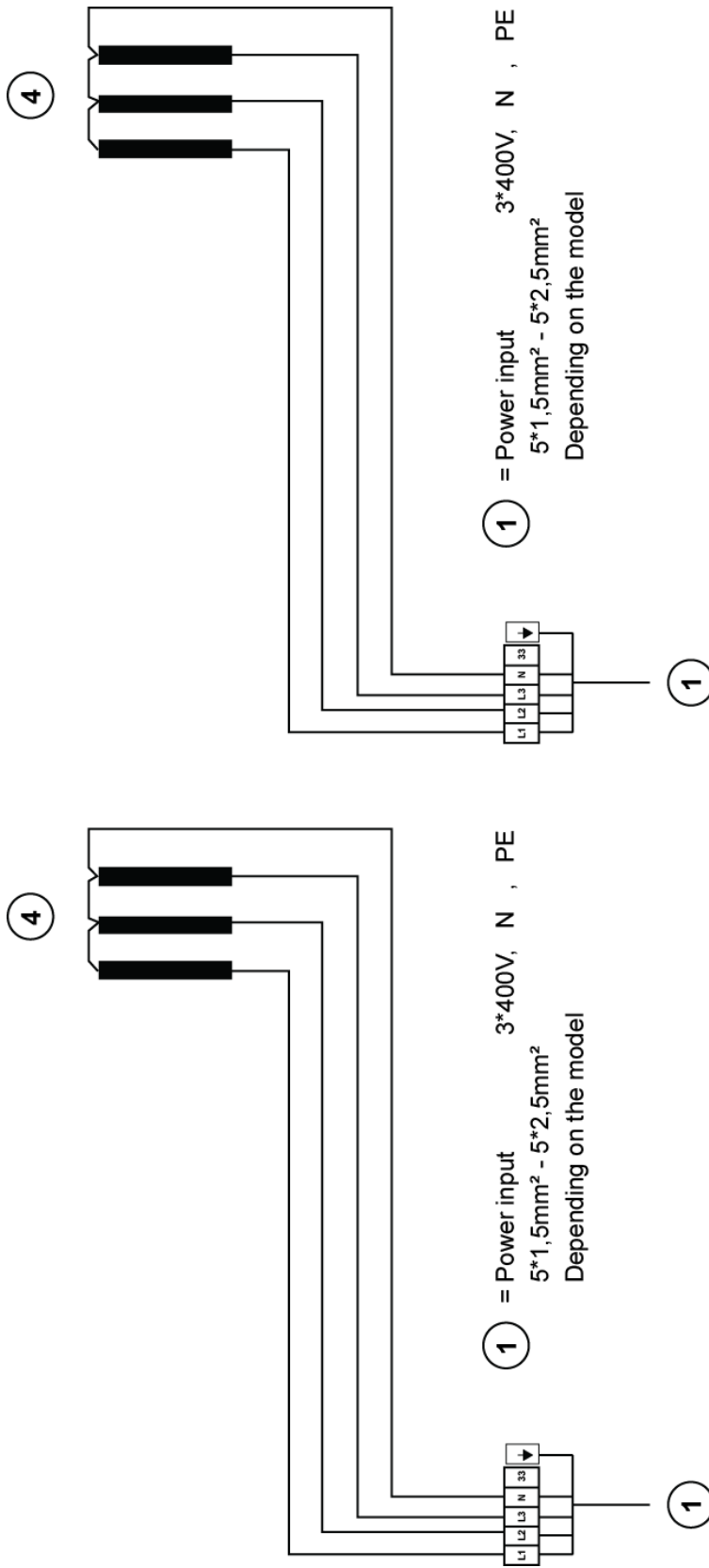
1. The power is on.
2. The power switch (start button on the control panel) is on.
3. The temperature knob is set to a higher temperature than the temperature in the sauna room.
4. The fuses are intact.
5. The temperature restrictor (overheat protector) has not switched off. If temperature restrictor has gone off, the reason must be solved before using heater again
6. Check the error message "E-number" from the control panel. The cause of the defect can be checked from the control unit manufacturer's instructions.
7. The stones are piled correctly.

This installation and operation manual is given to the owner/user of the heater after the installation.

Circuit connector diagram Monolith 6,9 and 9 kW

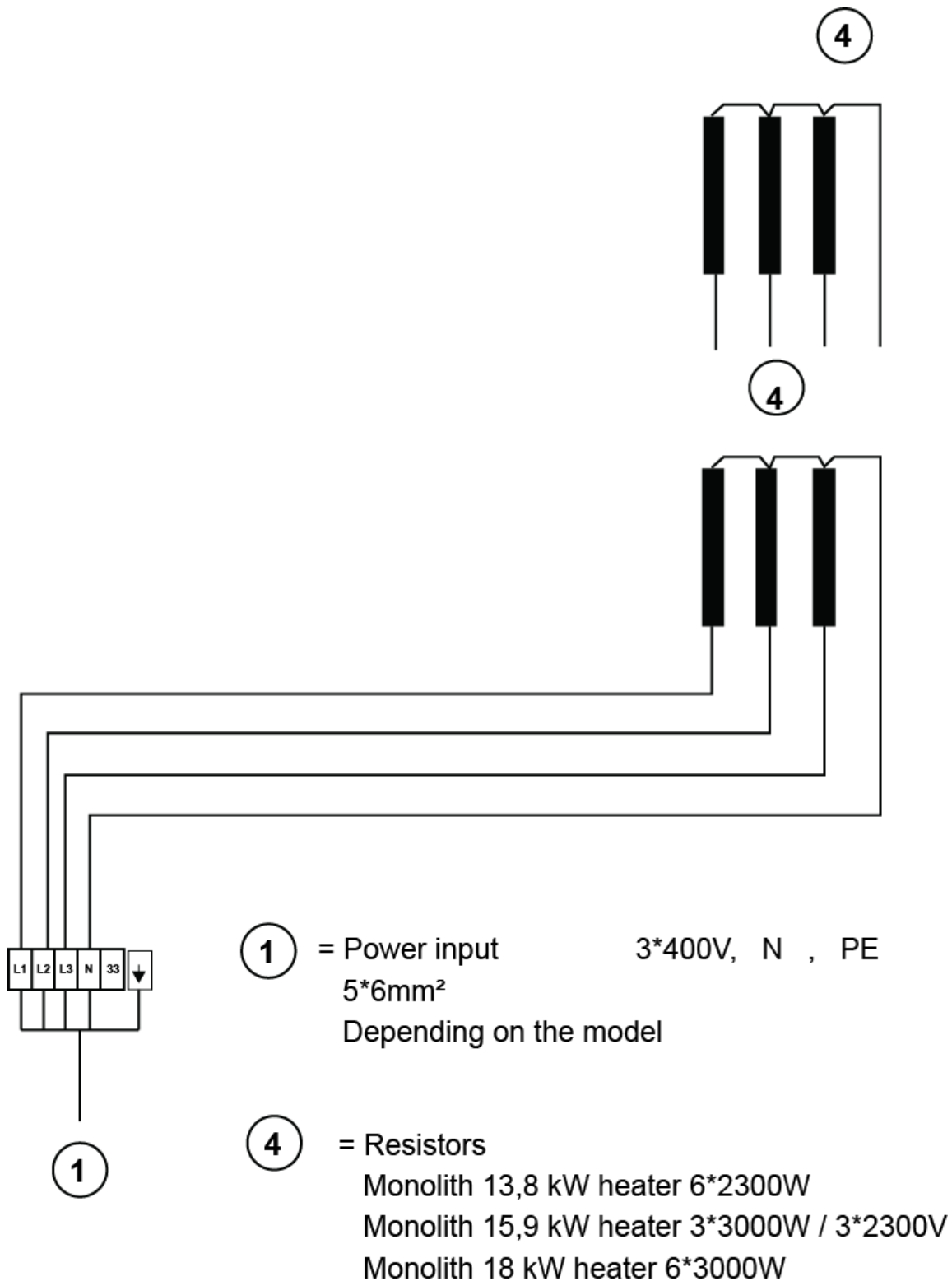


Circuit connector diagram Monolith 13,8, 15,9 and 18 kW with two circuits



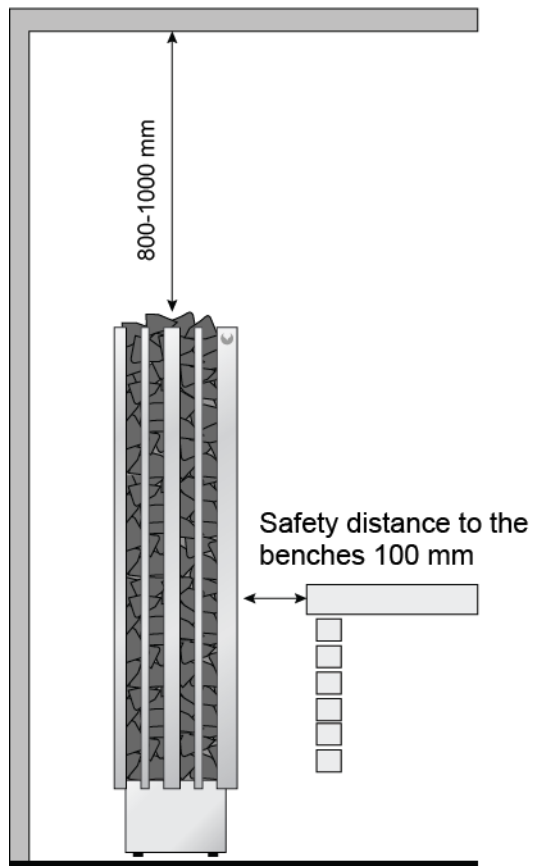
- 4** = Resistors
 - Monolith 13,8 kW heater 6*2300W
 - Monolith 15,9 kW heater 3*3000W / 3*2300V
 - Monolith 18 kW heater 6*3000W

Circuit connector diagram Monolith 13,8, 15,9 and 18 kW with one circuit

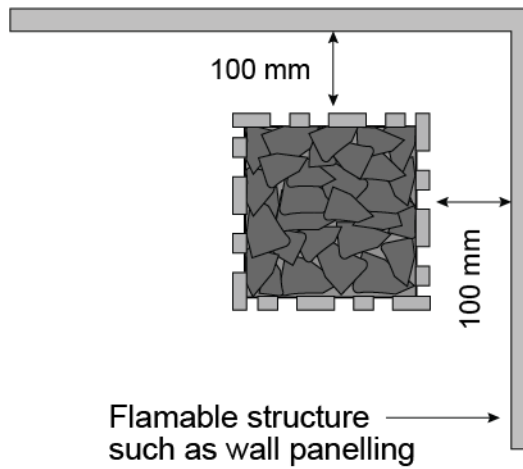


Safety distances from the heater

Safety distance to the ceiling:



Safety distances to the sides (flamable structures)



Safety distances to flammable structures:

	Back	Front	Side	Up
Monolith 6,9 kW	100 mm	100 mm	100 mm	800 mm
Monolith 9 kW	100 mm	100 mm	100 mm	800 mm
Monolith 13,8 kW	100 mm	100 mm	100 mm	1000 mm
Monolith 15,9 kW	100 mm	100 mm	100 mm	1000 mm
Monolith 18 kW	100 mm	100 mm	100 mm	1000 mm

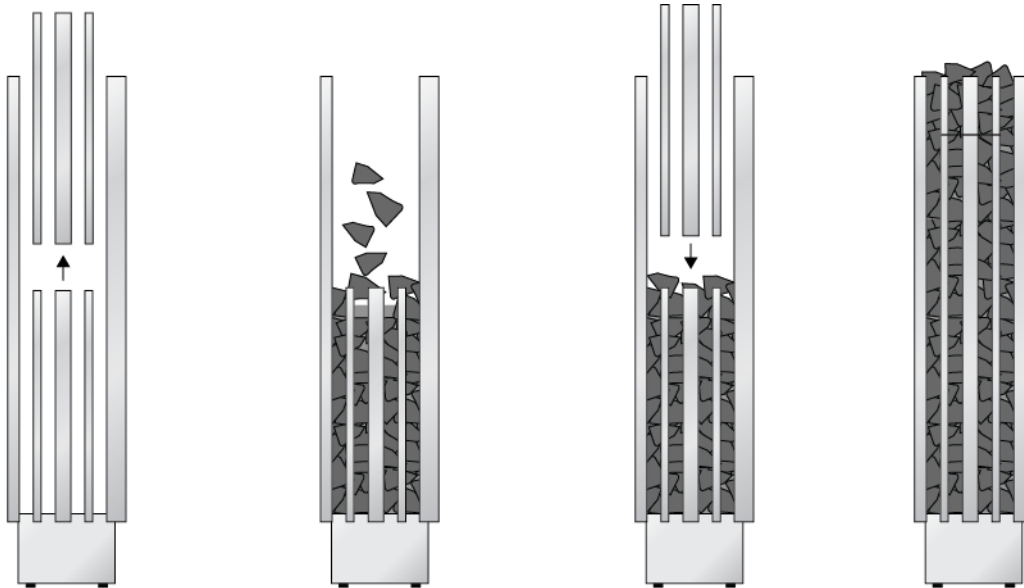
Piling of the stones

Use protective gloves when piling the stones to the heater because there may be sharp edges in the heater.

If needed wash the stones before you pile them. You can fit about 120 kg of stones to the heater.

Piling the stones should be done with care. The stones should be placed so that the gap between the heating elements and the frame of the heater is completely filled with stones for the whole height of the heater. The stones should not be placed too tightly together; instead there should be enough space between the stones to allow air to flow freely. Please make sure that elements make **NOT** contact with each other or with the heater frame.

In private use, we recommend olivine, olivine-dolerite and peridotite stones. The stones should be smaller than 10 cm in diameter, so that they are easy to pile in between the heating elements and the mesh frame. In ordinary use the stones should be changed every 2 to 5 years, depending on how frequently the sauna is used.



One of the sides of the heater opens up. Lift the side away.

Pile the stones halfway up.

Lift the piece back.

Pile rest of the stones.

Warranty

IKI-Kiuas Ltd. (the manufacturer) grants its products warranty according to the following conditions. The manufacturer guarantees the quality and functionality of its products for the duration of the warranty period. The warranty applies to products sold and in use in EU region. The warranty requires that the buyer of the product follows the manufacturer's instructions regarding the placement of the heater, its installation, use and maintenance as well as those regarding the qualities of the stones used in the heater. The length of the warranty in private use is 24 months from the day of purchase. The warranty period for spa saunas and other public use saunas is 6 months, or determined according to the frequency/level of use. Contact the manufacturers for more details.

The warranty for electric heaters requires that:

1. In case of defect or malfunction, the buyer must always contact the manufacturer or sales agent first before searching for the cause or attempting to repair it.
2. In private apartment use, the heater's stone space needs to be re-piled at least once a year and weathered stones need to be replaced with new ones.
3. In institutional or professional use, the heater's stones must be re-piled at least three times a year during the warranty period. In addition, the stones must be changed to new ones at least once a year. Proof of the operation must be presented at request. The product's purchase receipt or build site's acceptance certificate or similar report functions as the warranty certificate. The use of ceramic heater stones (other than Kerkes ceramic heater stones) is prohibited. In case of use of ceramic stones, the manufacturer's warranty does not apply.
4. The warranty does not cover dismantlement or reinstallation on sauna benches, removal of sauna stones nor re-piling them. IKI-Kiuas Ltd. recommends using for the lower levels sauna benches that can be moved without using tools to dismantle structures.
5. The warranty for replacement parts is 12 months from the day of purchase. The replacement for a damaged part will be delivered to the reseller cost free. The use of an authorized mechanic is required for installation of the replacement part. The manufacturer is not liable to reimburse any costs occurred during the removal of the faulty part or the installation of the replacement. The faulty part must be returned to the manufacturer at request and at the expense of the owner. The manufacturer will issue its freight contacts number before return of the part. Receipt from the reseller or certificate from a manufacturer's authorized mechanic will function as a warranty certificate.
6. Limitations to warranty: The product owner must take good care of the product. On receiving the product, the owner is expected to check that it does not show signs of damage caused during shipping or storage. In case of such damage, they must contact the sales agent or transport company immediately, maximum 7 days after receiving the product. The manufacturer is not liable for any damages caused during shipping, or by inappropriate storage, installation or use against manufacturer's instructions, neglect of maintenance, or damage caused by placement of the heater in a place which does not meet the recommendations made by the manufacturer.
7. Damage notifications: The owner is responsible for notifying the manufacturer, the sales agent, or manufacturer's authorized mechanic of any damage or malfunction as soon as it

appears and within 14 days. Any warranty related claims must be submitted within 14 days from the closing date of the product's warranty period.

8. Manufacturer's actions regarding warranty, continuation of warranty: In receipt of a substantiated warranty claim, the manufacturer will repair or change the product. This is done in the manufacturer's expense, and the manufacturer is free to select the most cost-effective alternative. The warranty for replacement parts is outlined above in section 5. The replacement part is granted warranty according to specifications in section 5. The warranty for a repaired part continues as before.
The manufacturer is not liable for reimbursing any expenses, business loss or other direct or indirect harm occurred to the buyer from damages or malfunction.

Quality Guarantee

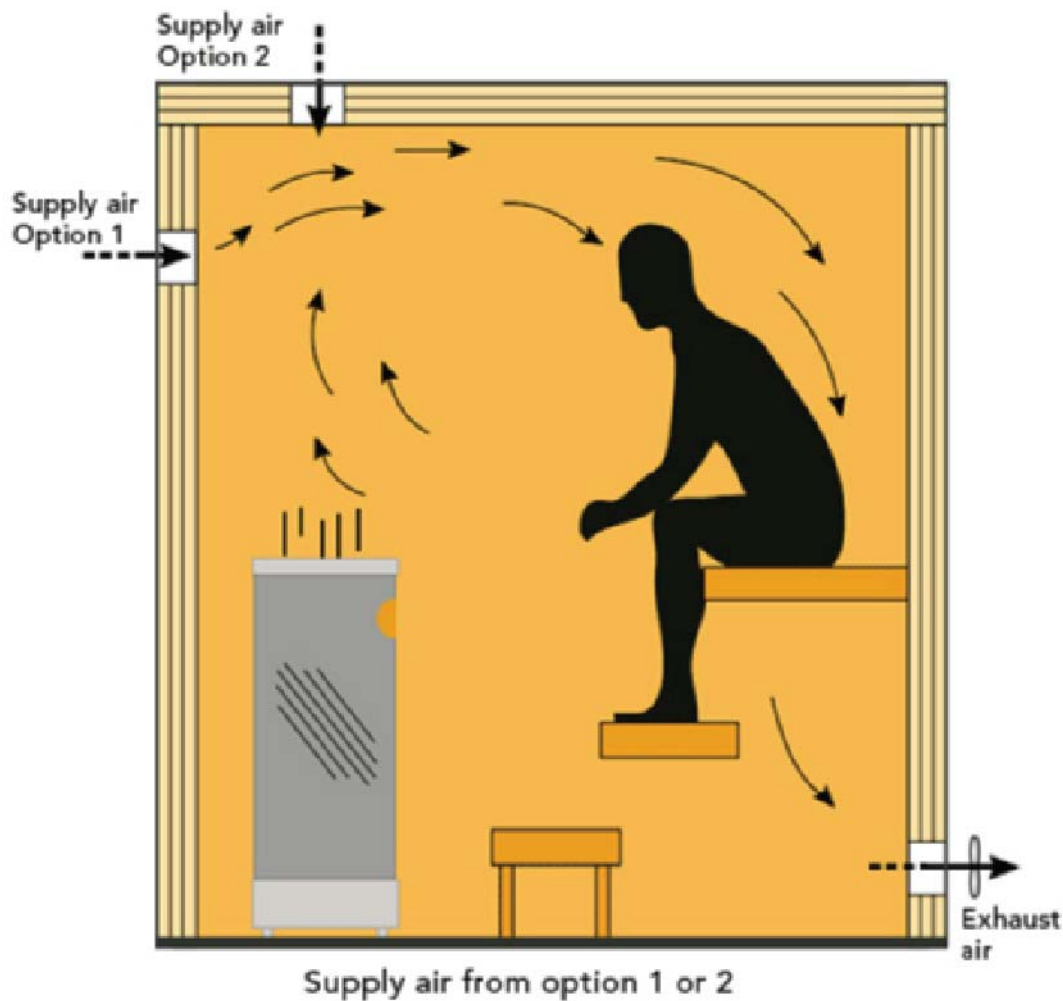
Guarantee of materials. The manufacturer guarantees the durability of the stainless steel parts (resistor platform and frame) in private home use for 10 years. During the warranty period any defects that appear in the heater's raw materials or are production-based will be repaired free of charge. For example, the use of sea water on the heater is forbidden. Read through the requirements for water quality in the installations instructions. The warranty does not cover color changes, slipping or hair-line fractures, characteristic to natural stones, which do not affect the use or the safety of the heater.

Freight warranty

Damages occurred while shipping must to be recorded in the waybill when the product is received or within 7 days of delivery. Shipping damage must also always be reported to the shipping company's last contact. The damaged part needs to be stored for inspection. Insurance compensates for the new part, which will be delivered by a public transporter. In all issues concerning warranty contact the store the product was bought from.

Mechanical ventilation in a sauna with an electric heater

Attention should be paid to the ventilation in the sauna room. Due to proper ventilation, the sauna-goers can enjoy clean and fresh, oxygen-rich air. The air in the sauna should change six times in one hour. The fresh air pipe should be located on top of the heater either in the wall or the ceiling, at approximately 500 mm from the heater and the diameter of the pipe should be 50–100 mm. The exhaust air pipe should be as far away from the heater as possible, yet close to the floor. The exhaust air pipe should be twice the size of the supply air pipe.



Warnings

1. Staying in the hot sauna for long periods makes the body temperature rise, which can be dangerous.
2. Keep away from the heater when it's hot. The stones and outer surface of the heater may burn.
3. Consult your doctor about any health-related limitations to bathing.
4. Consult your child welfare clinic about taking little babies to the sauna.
5. Always move carefully in the sauna, as the platform and floors may be slippery.
6. Never go to a hot sauna if you have taken alcohol, strong medicines or narcotics.
7. Never sleep in a hot sauna.
8. Sea air and a humid climate may corrode the metal surfaces of the heater.
9. Do not hang clothes to dry in the sauna, as this may cause a risk of fire. Excessive moisture content may also cause damage to the electrical equipment.
10. Keep children away from the heater.
11. Do not let young, handicapped or ill people bathe in the sauna by themselves.

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