

Instructions for installation and use **FERRO**

ELECTRIC SAUNA HEATER:

1120-90-0405

1120-105-0405

1120-120-0405

CONTROL PANELS:

1601-12 (RA 12 Digi II)

1601-13 (RA 13 Digi I)

1601-16 (RA 16 Easy)

1601-18 (RA 18 Midi)



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1. Quick start guide for the sauna heater

1.1 Check before taking a sauna bath

- The sauna room is suitable for taking a sauna bath.
- The door and the window are closed.
- The sauna heater is topped with stones that comply with the manufacturer's recommendations, the heating elements are covered with stones, and the stones are piled sparsely.

NOTE: Structural clay tiles are not allowed.

1.2 Operation of the sauna heater controls

The control panel is installed outside the sauna room, with the exception of the Midi control, which is installed by the sauna heater as per the instructions.

Refer to the specific control panel operating instructions.

2. Information for users

Persons with reduced physical and mental capacity, sensory handicap, or little experience and knowledge about how the device is operated (e.g. children), should only operate the device while supervised or according to instructions given by the persons in charge of their safety.

Make sure that children are not playing with the sauna heater.

2.1 Sauna room

The walls and ceiling of a sauna room should be thermally well insulated. All surfaces that store heat, such as tile and stone surfaces must be insulated. It is recommended to use wooden panel cladding inside the sauna room. If there are heat storing elements in the sauna room, such as decorative stone, glass etc., note that these elements may extend the pre-heating period even though the sauna room is otherwise well insulated. (see page 5, section 3.1 Preparing for sauna heater installation)

2.2 Recommended sauna room ventilation

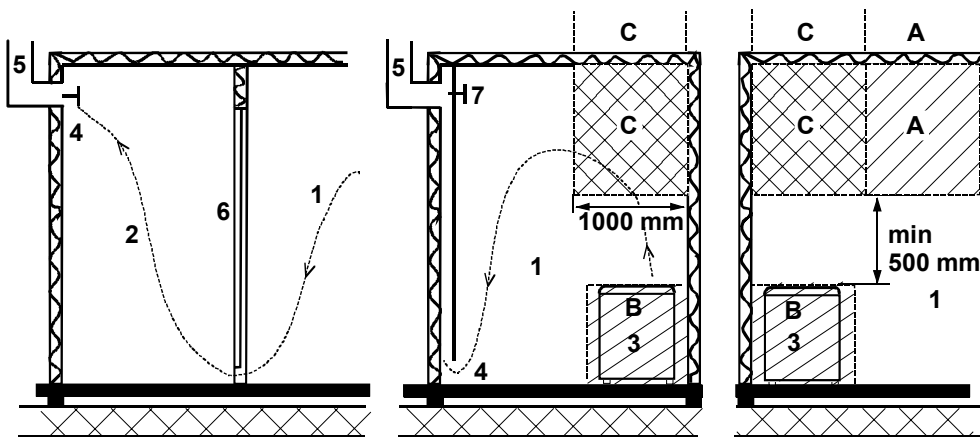


Image 1

- | | | |
|---|--------------------------|---------------------------|
| 1. Sauna room | 3. Electric sauna heater | 5. Exhaust flue |
| 2. Washroom | 4. Exhaust valve | 6. Door to the sauna room |
| 7. A ventilation valve can be installed here to be kept closed while the sauna is heated and during bathing. | | |
| A. Inlet vent can be positioned in the zone. Make sure the incoming fresh air will not interfere with (i.e. cool down) the sauna heater's thermostat near the ceiling. | | |
| B. The zone serves as the incoming air zone, if the sauna room is not fitted with forced ventilation. In this case, the exhaust valve is installed at least 1m higher than the inlet valve. | | |
| C. DO NOT INSTALL INLET VALVE WITHIN THE ZONE, IF THE SAUNA HEATER'S CONTROL THERMOSTAT IS LOCATED AT THE SAME ZONE. | | |

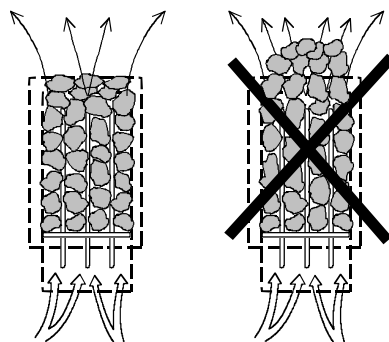
2.3 Sauna heater stones

Quality stones meet the following requirements:

1. Sauna stones should withstand heat and heat variation caused by vaporisation of the water thrown on the stones.
2. Stones should be rinsed before use in order to avoid odour and dust.
3. Sauna stones should have an uneven surface to supply a larger surface for the water to evaporate from.
4. Sauna stones should be large enough (intended for large sauna heaters, approx. 60 - 100 mm), to allow good ventilation between the stones. This extends the useful life of the heating elements.
5. Sauna stones should be piled sparsely in order to enhance ventilation between the stones. Do not bend the heating elements together or against the frame.
6. Rearrange the stones regularly (at least once a year) and replace small and broken stones with new, larger stones.
7. Stones should be piled so that they cover the heating elements. Do not, however, pile a large heap of stones on the heating elements. For sufficient amount of stones refer to **Table 2 on page 7**. Any small stones included in the stone delivery package should not be placed on the sauna heater, because they might fall through the heater's vertical beams.

The warranty does not cover defects resulting from poor ventilation caused by small and tightly packed stones.

Structural clay tiles are not allowed. They may cause damage to the sauna heater. Damages caused by using structural clay tiles will not be covered by the warranty.



2.4 Heating the sauna

Before turning the sauna heater on, make sure the sauna room is suitable for taking a sauna bath. When heated for the first time, the sauna heater may emit some odour. If you detect any odour while the sauna heater warms up, disconnect the sauna heater briefly, and air the room. Then turn the sauna heater back on.

The sauna heater is turned on from the control panel that has controls for the heating temperature and time.

You should turn the sauna heater on roughly an hour before you plan to take a sauna bath, so that the stones have time to heat up properly and the air warms up evenly in the sauna room.

Do not put any objects on the sauna heater. Do not dry clothes on the sauna heater or anywhere in its vicinity.

2.5 If the sauna heater will not heat up

If the sauna heater will not heat up, please check the following:

- The power is on.
- The fuses for the sauna heater are intact.
- Any error messages on the control panel. In case of an error message, please refer to the control panel operation instructions.

3. Instructions for the installer

THE PERSON INSTALLING THE SAUNA HEATER SHOULD LEAVE THESE INSTRUCTIONS TO THE PREMISES FOR THE FUTURE USER.

3.1 Preparing for sauna heater installation

Check the following before installing the sauna heater:

1. The ratio of the heater's input (kW) and the sauna room's volume (m³). Volume/input recommendations are presented in **Table 2 on page 7**. The minimum and maximum volumes must not be exceeded.
2. The sauna room ceiling must be at least 1900 mm high.
3. Glass and stone surfaces will extend the pre-heating period. Each square meter of glass or stone ceiling or wall adds 1.5 – 2m³ to the sauna room's volume in terms of needed heater input.
4. Check **Table 1 on page 6** for a suitable fuse size (A) and the correct diameter of the power supply cable (mm²) for the sauna heater in question.
5. Conform to the safety clearance around the sauna heater as specified in **Table 2 on page 7**. There should be enough room around the sauna heater for maintenance purposes, a doorway etc.
6. If the heater is integrated in the sauna benches, the bench model must allow lifting of the lower bench and its frame without tools. **The warranty will not cover dismantling and reassembly of sauna benches.**

3.2 Installing of the sauna heater

Follow the safety clearance specifications in **table 2 and images 4 and 5 on page 7 and 8** when installing the sauna heater.

The sauna heater is a free-standing model. The base must be solid, because the sauna heater with the stones weighs about 120 kg.

The sauna heater is levelled by the adjustable legs.

The sauna heater is fixed on the floor from its legs by the provided metal fasteners (2 pcs). This will keep the safety clearances intact during use.

Walls or ceilings must not be clad light-weight cladding, such as incombustible protecting board, because they may cause a fire hazard.

The main switch is located at the bottom of the heater, on the type plate side. Install the heater so that the type plate can be read and the main switch is freely accessible.

A single sauna heater is allowed per a sauna room.

3.3 Main connection

The sauna heater must be connected to the mains by a qualified electrician and in compliance with current regulations. Sauna heater is connected with a semi-permanent connection. Use H07RN-F (60245 IEC 66) cables or a corresponding type. (**See Table 1 on page 6**) Other output cables (signal lamp, electric heating toggle) must also adhere to these recommendations. Do not use PVC insulated cable as a connection cable for the sauna heater.

A multipolar (e.g. 7-pole) cable is allowed, if the voltage is the same. In the absence of a separate control current fuse, the diameter of all cables must be the same, i.e. in accordance with the front fuse. For example, in a 9 kW sauna heater the diameter of a separate cable to the signal lamp and the centralized telecontrol device has to be at least 2.5 mm².

The connecting box on the sauna wall should be located within the minimum safety clearance specified for the sauna heater. The maximum height for the connecting box is 500 mm from the floor, (**see Image 2 on page 6**) If the connecting box is located further than at 500 mm distance from the heater, the maximum height is 1000 mm from the floor.

The sauna heater's heating elements may absorb moisture from the air during storage etc. This may cause bleeder currents. The moisture will be gone after a few heating sessions. Do not connect the heater power supply through a ground fault interrupter.

Adhere to the effective electrical safety regulation when installing the sauna heater.

3.4 Electric heating toggle

Electric heating toggle applies to homes with an electric heating system.

Sauna heater has a connection (marked 55) for controlling the electric heating toggle.

Connector 55 and the heating elements are simultaneously live (230V).

Output kW	Heater Connection cable H07RN-F/ 60245 IEC 66 mm ² 400 - 415V 3N~	Fuse A	Heater Connection cable H07RN-F/ 60245 IEC 66 mm ² 230 V 3~	Fuse A	Heater Connection cable H07RN-F/ 60245 IEC 66 mm ² 230 - 240V 1N~ / 2~	Fuse A
9,0	5 x 2,5	3 x 16	4 x 6	3 x 25	-----	-----
10,5	5 x 2,5	3 x 16	4 x 6	3 x 25	-----	-----
12,0	5 x 6	3 x 25	4 x 6	3 x 35	-----	-----

Table 1

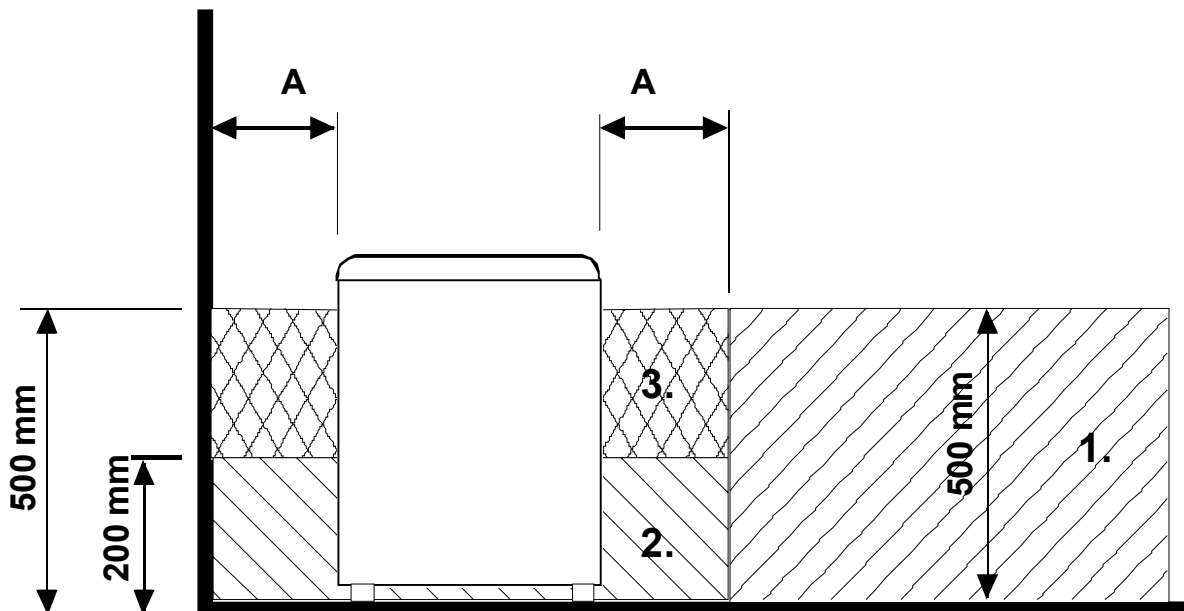


Image 2

3.5 Locating the connecting box for connection cable in the sauna room

A = Specified minimum clearance, refer to the table 2.

1. Recommended location for the connecting box.
2. Silumin box recommended in this area.
3. This area should be avoided. Always use a silumin box.

In other areas, use a heat-resisting box (T 125 °C) and heat-resisting cables (T 170 °C). The connection box must be clear of obstacles. When installing the connecting box in zones 2 or 3, refer to the instructions and regulations of the local energy supplier.

3.6 Sauna heater safety clearances

Output kW	Sauna room			Safety clearances min.			Adequate amount of stones n.kg
	minimi m ³	maximi m ³	Height minimum mm	At the sides A mm	At the front mm	To the ceiling mm	
9,0	8	13	1900	60	60	1140	50
10,5	9	15	1900	60	60	1140	50
12,0	10	18	1900	60	60	1140	50

Table 2

3.7 Switch diagram

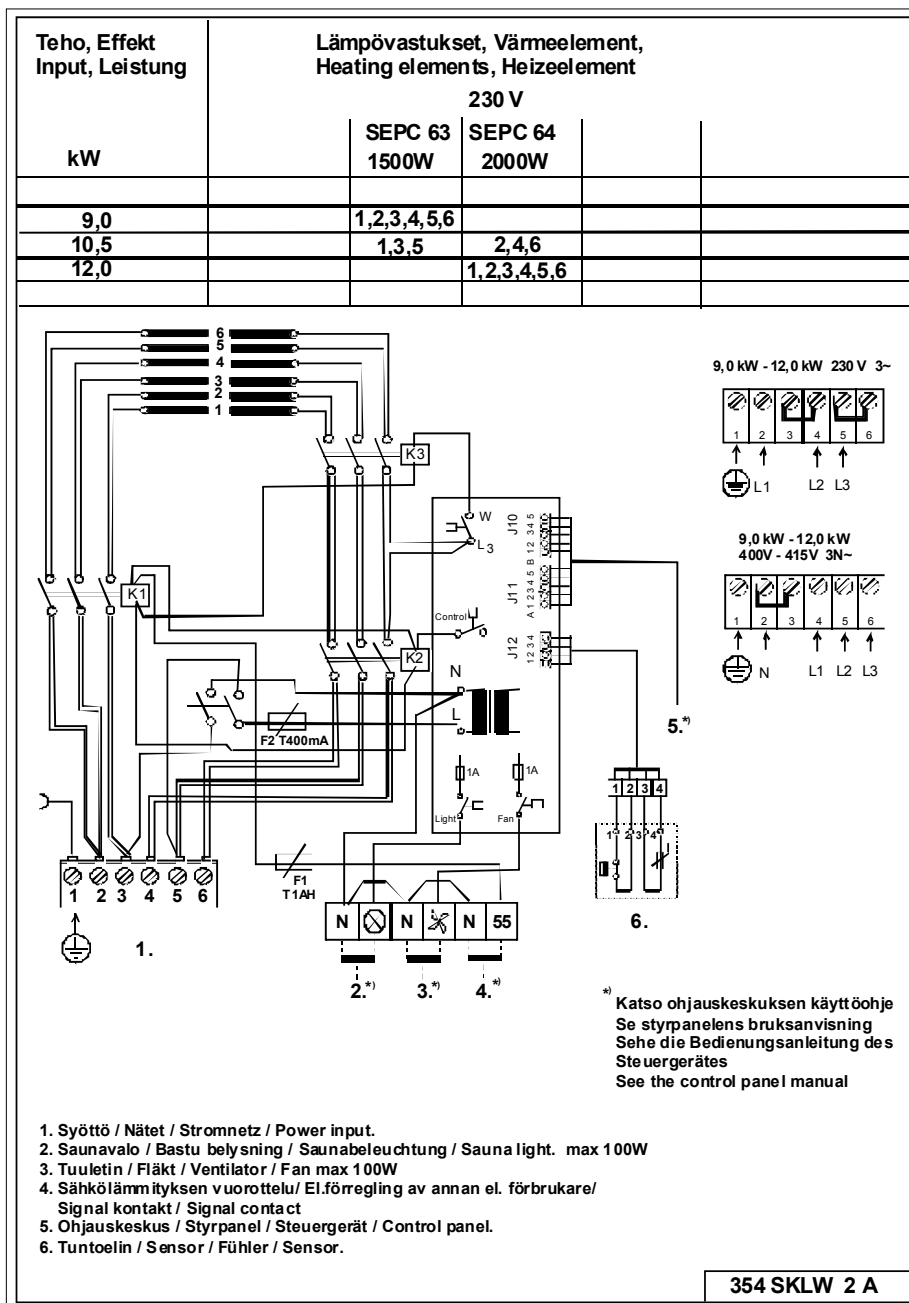


Image 3

Installation of the sauna heater and safety clearances:

Corner and wall installations

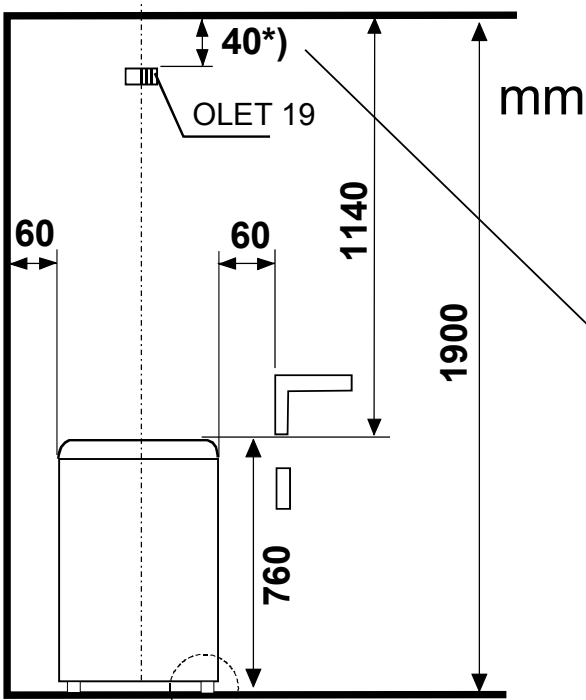
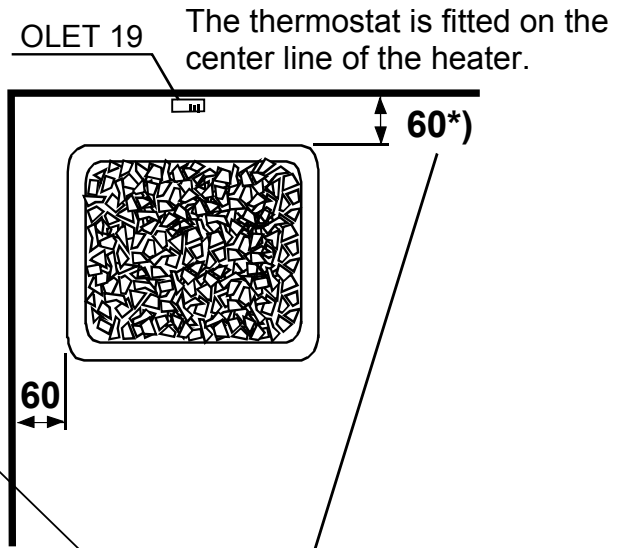


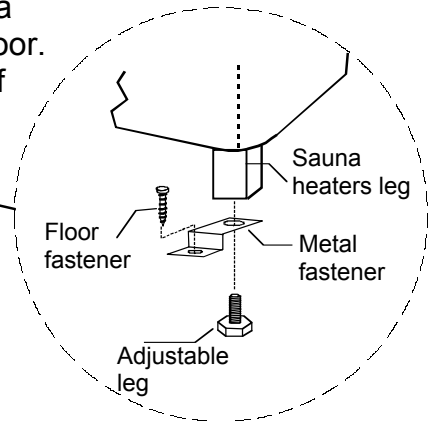
Image 4

Specified minimum clearances (in mm) unless otherwise stated.



NOTE: Absolute measurement

Fixing the sauna heater on the floor. **NOTE!** Fixing of two (2) legs



Middle installation

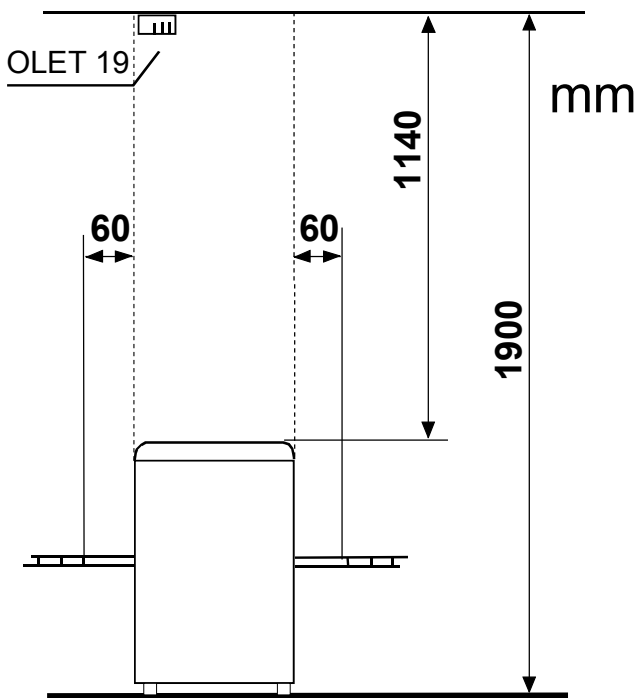


Image 5

The thermostat must be installed within the dashed area to the ceiling above the sauna heater.

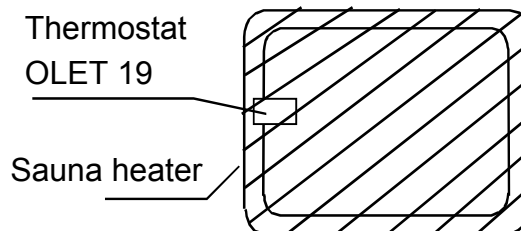
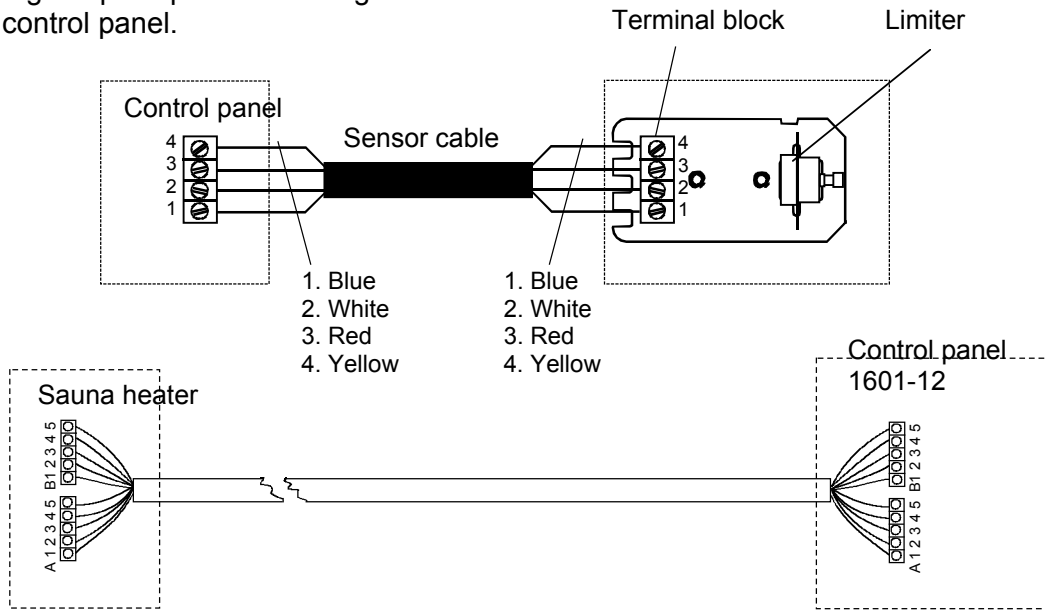


Image of principle with the Digi II control panel.



A1	Valk	Vit	White	Wiss	B1	Rosa	Ljusröd	Pink	Rose
A2	Ruskea	Brun	Brown	Braun	B2	Sin	Blå	Blue	Blav
A3	Vihreä	Grön	Green	Frün	B3	Pun	Röd	Red	Rot
A4	Kelt	Gul	Yellow	Gelb	B4	Musta	Svart	Black	Schwarz
A5	Harm	Grå	Grey	Grau	B5	Violetti	Violett	Violet	Violett

Image of principle

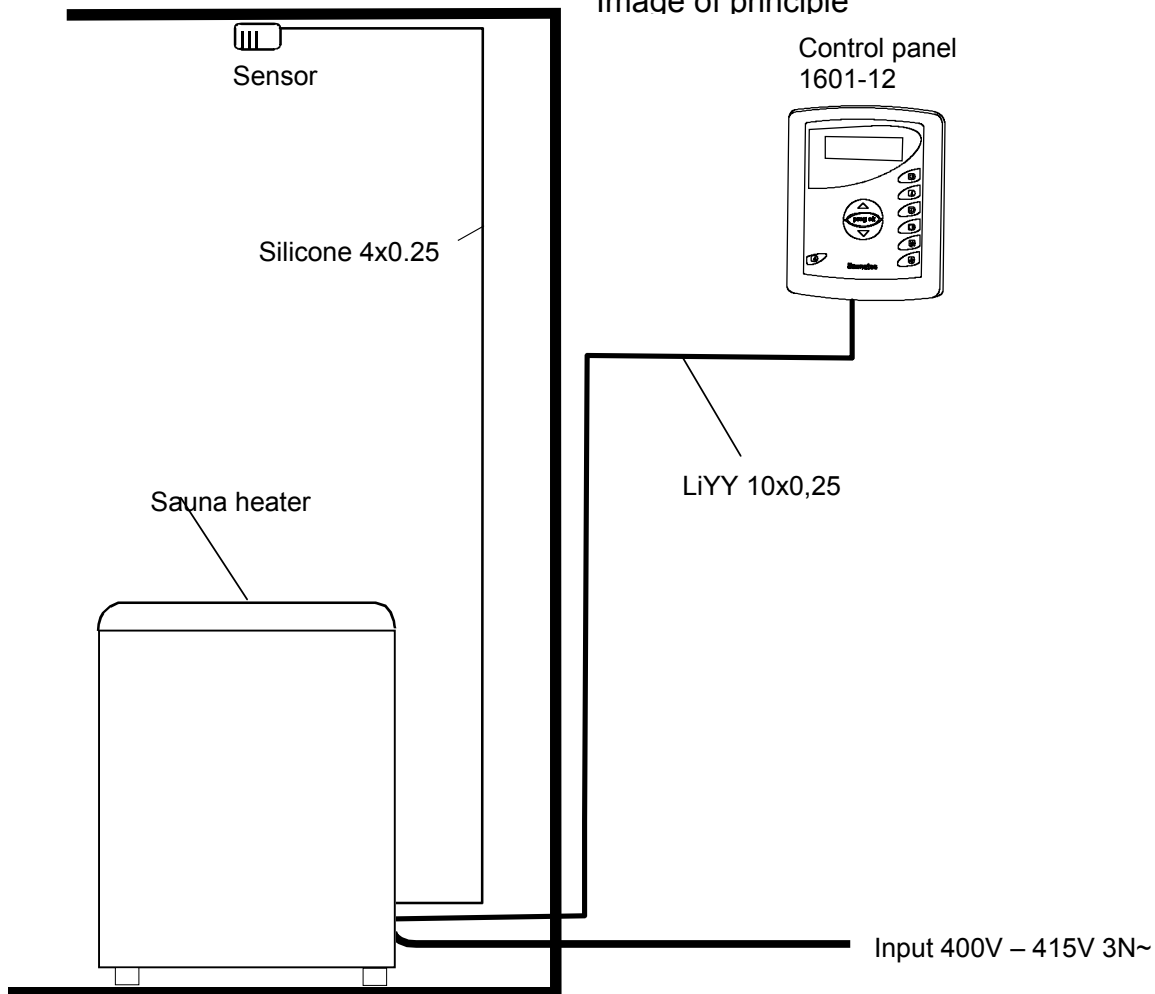


Image 6

3.8 Spare parts for the FERRO heater:

	Product number	Product title	Ferro 90	Ferro 105	Ferro 120
1	Circuit board OLEA 57	5916229	1	1	1
2	Thermostat OLET 19	6214032	1	1	1
3	Mains connector NLWD 1-1	7812550	1	1	1
4	Contacto OKTA 5-1	5320517	2	2	2
5	Switch	6119649	1	1	1
6	Rubber cover for a switch	7306611	1	1	1
7	Fuse F1 T1AH	7801711	1	1	1
8	Heating element SEPC 63 1500W / 230V	5207532	6	3	
9	Heating element SEPC 64 2000W / 230V	5207531		3	6
10	Circuit board OLEA 83 (Serial interface card for sauna heaters with Midi control panel)	6216410	1	1	1
11	Fuse F2 T400 mA	7801708	1	1	1

Table 3

3.9 ROHS:

Ympäristönsuojeluun liittyviä ohjeita

Tämän tuotteen käyttöön päätyttyä sitä ei saa hävittää normaalin talousjätteen mukana, vaan se on toimitettava sähkö- ja elektroniikkalaitteiden kierrätykseen tarkoitettuun keräyspisteeseen.

Symboli tuotteessa, käyttöohjeessa tai pakkauksessa tarkoittaa sitä.



Valmistusaineet ovat kierrätettävissä merkintänsä mukaan. Käytettyjen laitteiden uudelleenkäytöllä, materiaalien hyödyntämisellä tai muulla uudelleenkäytöllä teet arvokkaan teon ympäristömme hyväksi. Tuote palautetaan ilman kiuaskiviä ja verhoukiviä kierrätyskeskukseen.

Tietoa kierrätyspaikoista saat kuntasi palvelupisteestä.

Anvisningar för miljöskydd

Denna produkt får inte kastas med vanliga hushållsopor när den inte längre används. Istället ska den levereras till en återvinningsplats för elektriska och elektroniska apparater.

Symbolen på produkten, handboken eller förpackningen refererar till detta.



De olika materialen kan återvinnas enligt märkningen på dem. Genom att återanvända, nyttja materialen eller på annat sätt återanvända utsliten utrustning, bidrar du till att skydda vår miljö.

Produkten returneras till återvinningscentralen utan bastusten och eventuell täljstensmantel.

Vänligen kontakta de kommunala myndigheterna för att ta reda på var du hittar närmaste återvinningsplats.

Instructions for environmental protection

This product must not be disposed with normal household waste at the end of its life cycle. Instead, it should be delivered to a collecting place for the recycling of electrical and electronic devices.

The symbol on the product, the instruction manual or the package refers to this.



The materials can be recycled according to the markings on them. By reusing, utilising the materials or by otherwise reusing old equipment, you make an important contribution for the protection of our environment. Please note that the product is returned to the recycling centre without any sauna rocks and soapstone cover.

Please contact the municipal administration with enquiries concerning the recycling place.

Hinweise zum Umweltschutz

Dieses Produkt darf am Ende seiner Lebensdauer nicht über den normalen Haushaltsabfall entsorgt werden, sondern muss an einem Sammelpunkt für das Recycling von elektrischen und elektronischen Geräten abgegeben werden.

Das Symbol auf dem produkt, der Gebrauchsanleitung oder der Verpackung weist darauf hin.



Die Werkstoffe sind gemäß ihrer Kennzeichnung wiederverwertbar. Mit der Wiederverwendung der stofflichen Verwertung oder anderen Formen der Verwertung von Altgeräten leisten Sie einen wichtigen Beitrag zum Schutze unserer Umwelt. Dieses Produkt soll ohne Steine und Specksteinmantel an dem Sammelpunkt für Recycling zurückgebracht werden.

Bitte erfragen Sie bei der Gemeindeverwaltung die zuständige Entsorgungsstelle.