

NORDEX FLOOR HEATER

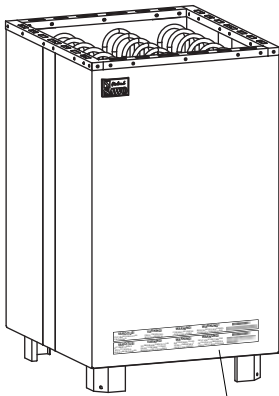
NRFS-90NS	NRFS-105NS	NRFS-120NS
	NRFS-150NS	NRFS-180NS
NRFS-180NS-V12	NRFS-210NS-V12	NRFS-240NS-V12

Onnittelut loistavasta kiuasvalinnastanne!
Tutustu käyttöohjeisiin huolellisesti ennen käyttöönottoa.

Congratulations on your purchase of SAWO sauna heater!
Please read the manual carefully before using the heater.

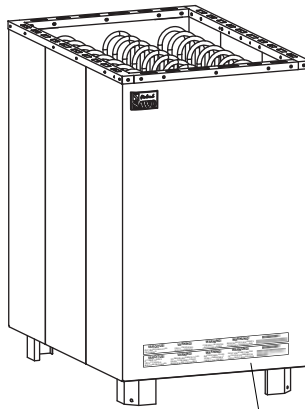
AVAILABLE AS:

- TRENDLINE



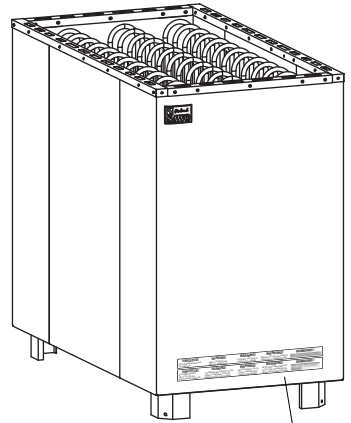
Sarjanumero
Serienumber

NORDEX FLOOR



Sarjanumero
Serienumber

SUPER NORDEX



Sarjanumero
Serienumber

SUPER NORDEX V12

SÄHKÖKIUAS | ELECTRIC SAUNA HEATER

Ei käytössä seuraavissa maissa: USA, Kanada ja Meksiko.
Not for use in the USA, Canada and Mexico.

TABLE OF CONTENTS

Safety instructions.....	5
For user:.....	5
For technicians:.....	7
Heater installation	9
Electrical diagram.....	10
Heater stones	13
Loading stones into the heater	13
Heating of the sauna room.....	15
Air ventilation.....	17
Insulation	17
Sauna maintenance	19
Diagnostic table	21
Nordex Floor, Super Nordex and Super Nordex V12 Heater Spare Parts..	22
Technical data	22

SAFETY INSTRUCTIONS

Please take note of these safety precautions before using the sauna or when installing the heater.

For user:

- This product is not designed to be used by persons (including children) with limited physical or mental abilities and limited experience and knowledge except under close supervision by a responsible person with knowledge and experience or having been advised by such person.
- Cleaning and user maintenance shall not be made by children without supervision.
- Under no circumstances should children be allowed to play with the device.
- Do not use the heater as a grill.
- Do not put wood of any kind on the electric heater.
- Do not cover the heater. It may cause a fire.
- Do not use the heater as clothes dryer. It may cause fire.
- Never sit on the heater. It is really hot and can cause serious burns.
- Do not use chlorinated water (e.g. From the swimming pool or jacuzzi) or seawater. It can destroy the heater.
- When installing a new heater, switch the heater on for 30mins. Do not stay inside the sauna room while performing the operation. See page 15.
- Make sure that no flammable objects have been placed on the heater before activating the preset time function or the stand-by mode for the remote operation.

For technicians:

- Wiring and repairs must be done by a certified electrician.
- Follow the Minimum Safety Distances when mounting the heater (See page 9).
- The electronic sensor and electronic heating system should be mounted in a way so that incoming air will not interfere with it. If using separate control, the control unit and control panel must be mounted outside the sauna cabin.
- If this sauna heater is used for public saunas or saunas that may be switched on by a separate remote-control system, the door of the sauna room must be fitted with an interlock such that the stand-by mode setting for remote operation is disabled if the sauna door is opened when the stand-by mode setting for remote operation is set.
- Observe the specifications on volumes of the sauna cabin (See page 22).
- Observe the specifications on ventilation of the sauna cabin (See page 17).

KIUKAAN ASENTAMINEN

Kiuas voidaan sijoittaa mihin vain saunaan, kuitenkin vähimmäisetäisyyksiä turvallisuussyistä noudattaen (Katso sivu 9). Noudata annettuja kuutiotilavuuksia (Katso sivu 22, tekniset tiedot). Kiuasta ei saa asentaa syvennykseen. Älä asenna saunaan enempää kuin yksi kiuas ellei sinulla ole erikoisohjeita kahden kiukaan asentamiseen. Useimmissa maissa, laki vaatii kiukaan kiinnittämisen lattiaan.

Kiuas on todella kuuma. Välttyäksesi mahdolliselta kosketukselta kiukaaseen, on suositeltavaa että asennat myös kiuassuojan.

Kiukaan kytkemisessä on käytettävä H07RN-F kaapelia tai vastaavaa. Kiukskytkennät saa tehdä ainoastaan valtuutettu sähköasentaja, turvallisuuden ja luotettavuuden varmistamiseksi. Väärät kytkennät voivat aiheuttaa oikosulkuja ja palovaaran (Katso sivu <OV>, kytkentäkaavio).

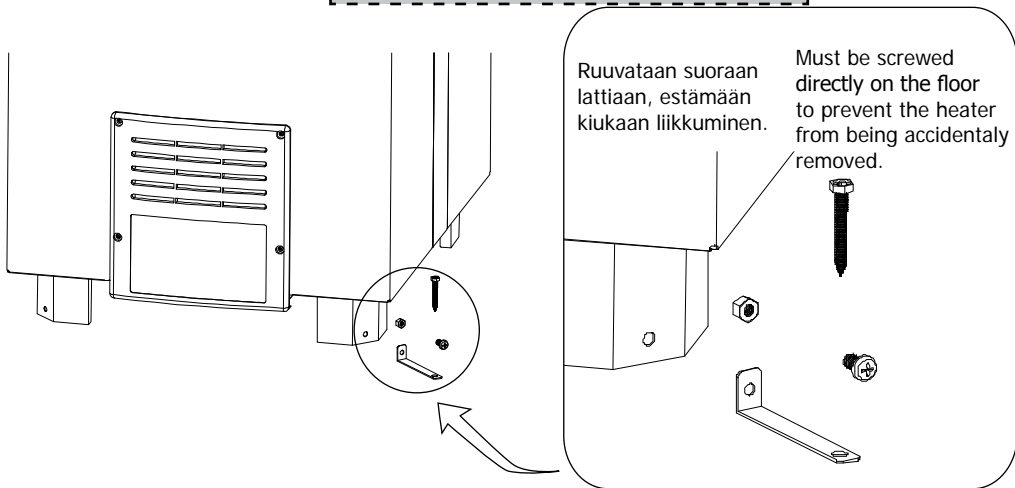
Kuva 1 | JALKA
Fig. 1 | STAND

HUOM!

Poista suojapahvi vastuksista ennen asentamista. Pahvi on tarkoitettu ainoastaan suojaamaan kuljetuksen ajaksi.

NOTE!

Remove the carton from the heating elements before installing the heater as it is only intended to protect them during shipment.



HUOM!

Tarkista ohjauskeskuksen tehonkesto ohjauskeskuksen käyttöohjeesta. Erillinen kontaktoriyksikkö tulee liittää kiukaisiin joiden teho on yli 15kW.

NOTE!

Please refer to the control unit manual for maximum power rating. Additional contactor unit is needed if heater is more than 15kW.

KIUASKIVET

Kivien tarkoitus kiukaassa on varastoida

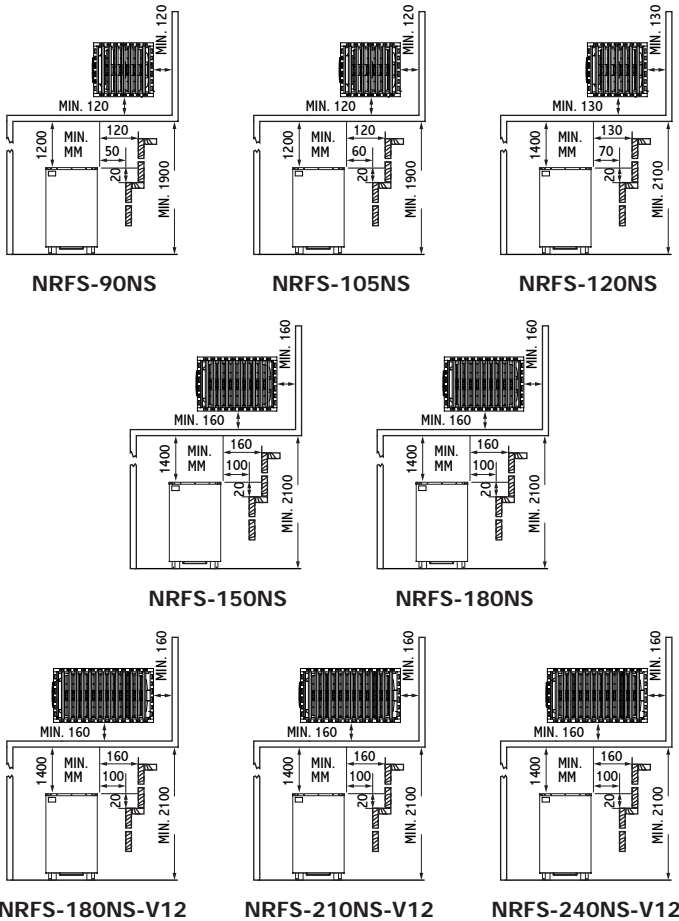
HEATER INSTALLATION

The heater can be placed wherever in the sauna, but for safety and convenience, follow the minimum safety distances as provided below (See page 9). Follow the cubic volumes given in the Technical Data (See page 22). Do not install the heater to the floor or wall niche. Do not install more than one heater in a sauna room unless you follow the special instructions for twin-heater installations. In most countries, there is a law that requires heaters to be screwed to the floor.

The heater gets very hot. To avoid the risk of accidental contact with the heater, it is recommended that a heater guard be provided.

The cable used for sauna wiring must be HO7RN-F type or its equivalent. A certified electrician must do the installation of the heater to ensure safety and reliability. Improper electrical connection can cause electric shock or fire. Refer to the electrical diagram (See page 10).

Kuva 2 | Vähimmäisetäisyydet (mm)
Fig. 2 | Minimum safety distances (mm)



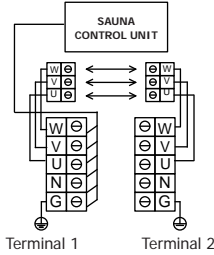
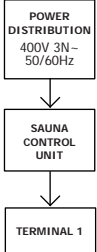
kuin tuloilmaventtiin.

ELECTRICAL DIAGRAM

Ohjaus- / Kontaktoriyksikön kytkentä
Control unit/ Contactor Unit Connection

HEATING SYSTEM

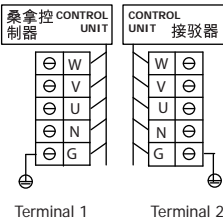
Control Unit



NRX-105NS	6 kW	4.5 kW
NRX-120NS	6 kW	6 kW
NRX-150NS	9 kW	6 kW

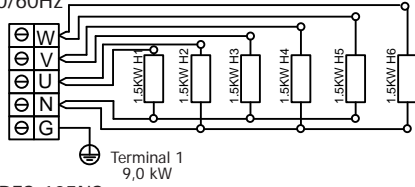
Lämmitysjärjestelmä
HEATING SYSTEM

Using Contactor Unit
18,0-24,0kW

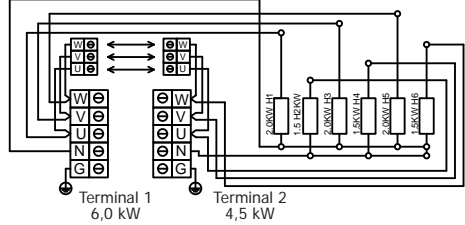


NRFS-90NS
9,0 kW
400V 3N~
50/60Hz

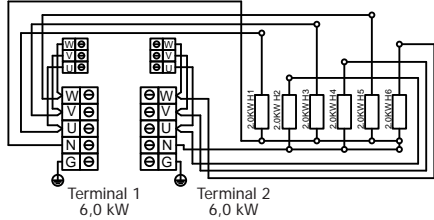
NORDEX FLOOR STANDING



NRFS-105NS
10,5 kW
400V 3N~
50/60Hz

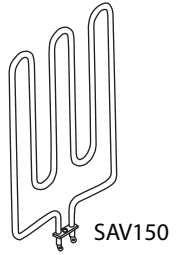
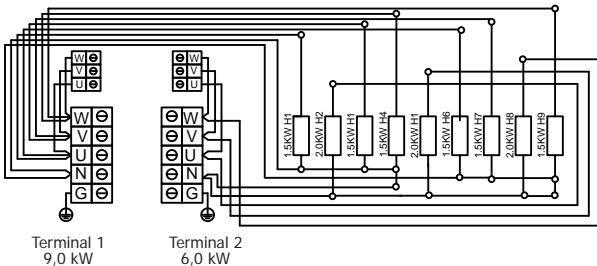


NRFS-120NS
12,0 kW
400V 3N~
50/60Hz



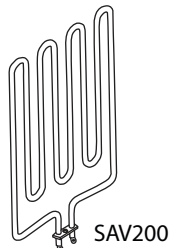
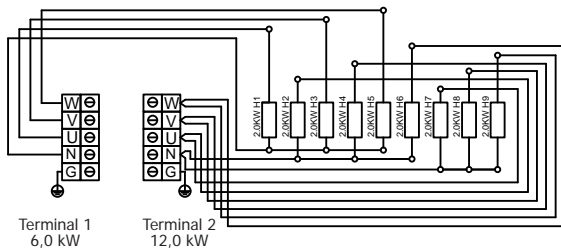
SUPER NORDEX

NRFS-150NS
15,0 kW
400V 3N~
50/60Hz



SAV150

NRFS-180NS
18,0 kW
400V 3N~
50/60Hz



SAV200

Kuva 4
Fig. 4

HUOM!

Jos johto on yli 2m pitkä, poikkipinta-alan on vastattava EVU:n määrittämää VDE 0100 standardia.

NOTE!

By cables longer than 2m, you have to assign the cable cross section to VDE 0100 respective to EVU.

MODEL	TERMINAL 1 (kW)	TERMINAL 2 (kW)	TERMINALS 1 & 2 (JUMPER)
NRFS-90NS	9	–	–
NRFS-105NS	6	4.5	10.5
NRFS-120NS	6	6	12
NRFS-150NS	9	6	15
NRFS-180NS	6	12	–
NRFS-180NS-V12	9	9	–
NRFS-210NS-V12	9	12	–
NRFS-240NS-V12	12	12	–

Ohjaimen-ja Kontaktoriyksikön tekniset tiedot
Control and Contactor Specification

Type	Power(max.)	Voltage	Current
Innova Control Unit 15kW	15 kilowatt	400 V	21.5 Amp.
Innova Contactor Unit 15kW	15 kilowatt	400 V	21.5 Amp.

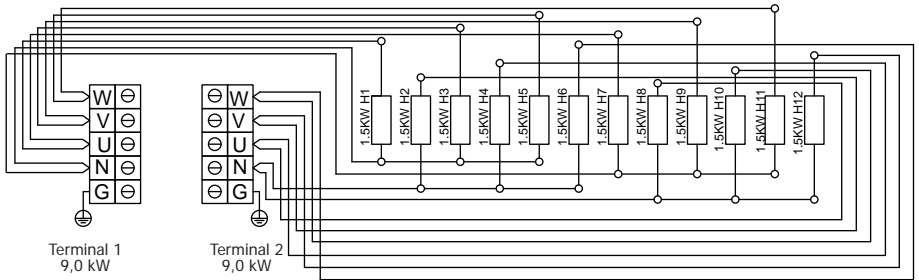
**HUOM!
NOTE!**

Katso lisää tietoja ohjauskeskuksen käyttöohjeista.

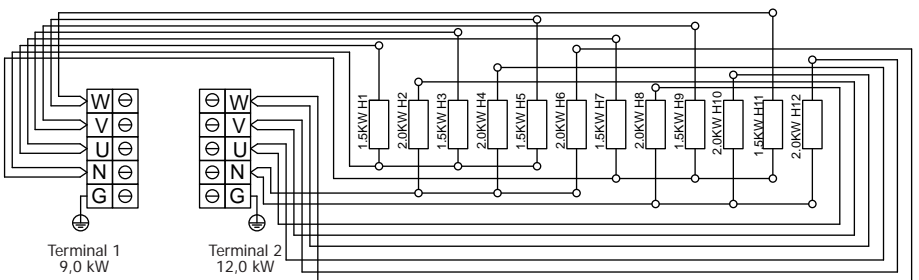
For more details please look your control unit or contactor unit manual.

SUPER NORDEX V12

NRFS-180NS-V12
18,0 kW
400V 3N~
50/60Hz



NRFS-210NS-V12
21,0 kW
400V 3N~
50/60Hz



HEATER STONES

The main purpose of the stones in the heater unit is to store enough energy to efficiently vaporize the water thrown on top of the stones to maintain correct humidity in the sauna room. The stones must be removed at least once a year or every 500 hours whichever ever occurs first. All stone crumbles must be removed from the heater unit and replaced with new ones as described in the heater manual. When placing the stones, recommended to use cut resistant gloves. The required amount of stones is listed in the manual provided (See page 22, Technical Data).

NOTE! Never use the heater without stones as it may cause fire. Use only manufacturer recommended SaWo-stones. Using unsuitable stones may lead to heating element damage and will void the warranty. Never use eramic stones or other artificial stones of any type!

LOADING STONES INTO THE HEATER

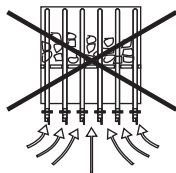
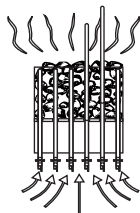
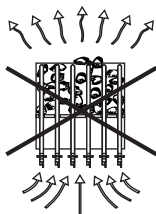
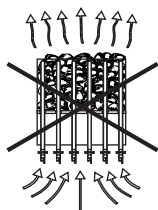
It is recommended that all stones should be rinsed to remove any stains or dust that can cause unpleasant odor during the first few times of using the heater. It is important that the stones are loaded carefully in a way that they do not block air circulation through the heater. Load the stones to the heater so that the heating elements are not visible from any angle. Larger stones that won't fit between the heating elements must not be forced in place instead they must be completely removed. Small crumble or stone pieces smaller than 35mm in diameter must not be loaded into the heater because they will block the air circulation and will cause overheating and possible heating element damage. Load the stones to the heater so that the heating elements are not visible from any angle. If heating elements touch each others, it will significantly reduce the life span of heating element.

NOTE! Heating element damage due to overheating caused by wrong kind of stones or stones which were wrongly loaded into the heater is not covered by the factory warranty.

Before the heater is filled with stones, electrician should test that the heater works. Testing can be done by turning on the heater for a short time without any stones and verifying that all heating elements are heating up.

Kuva 3
Fig. 3

HUOM!
Ei keraamisia kiviä!
NOTE!
No ceramic stones



HEATING OF THE SAUNA ROOM

CAUTION!

Smoke and odor formation when heating up for the first time. Work materials from the manufacturing process will be present on the new heating elements. These evaporate when the sauna heater is heated up for the first time. This produces smoke and an unpleasant odor. Breathing in the fumes or smoke can be harmful to your health.

Perform the following steps when operating the sauna heater for the first time and if the heating elements for the sauna heater have been changed. In this way you will prevent damage to health due to the fumes and smoke produced when heating up for the first time.

1. Select the highest possible temperature in the sauna control.
2. Heat up the sauna heater for half an hour. Do NOT stay in the sauna cabin during this period.
3. Allow the sauna cabin to ventilate thoroughly after heating up for the first time.
4. If no smoke or odor is produced the next time the sauna heater is heated up, you can start to use the sauna. If smoke or odor is produced again, leave the sauna cabin immediately and repeat the initial heating up process followed by ventilation.

Always check the sauna room before switching sauna heater on (to be sure that there is no combustible things within **the safety distances of the heater or on the heater**). Make sure that sauna room has been efficiently ventilated. If the output of the heater is proper it will take about an hour to reach suitable temperature (See page 22). The temperature in sauna room should be between +60 - +90 °C. Temperature is individual in every sauna room depending on e.g. heater model, size of heater room, air ventilation and bathers preference. Too powerful heater will heat sauna room too quickly and the stones won't have enough time to warm. The water poured on the stones will not evaporate, but flow into the stone holder. An underpowered heater, on the other hand, would lead to an undesirably long heating period.

AIR VENTILATION

To have a soothing sauna, there should be a proper mixing of hot and cold air inside the sauna room. Another reason for ventilation is to draw air around the heater and move the heat to the farthest part of the sauna. The positioning of the inlet and outlet vents may vary depending on the design of the sauna room or preference of the owner.

The inlet vent may be installed on the wall directly below the heater (Fig. A). When using the mechanical ventilation, the inlet vent may be placed at least 60 cm above the heater (Fig B) or on the ceiling above the heater (Fig. C). Through these positions, the heavy cold air that is blown into the sauna is mixed with the light hot air from the heater, bringing fresh air for the bathers to breathe. The inlet and the outlet vent must have a diameter of 10cm.

The outlet vent should be placed diagonally opposite to the inlet. It is recommended that the outlet vent be placed under the platform in a sauna as far as possible from the fresh air vent. It may be installed near the floor, or led outside through a pipe from the floor going to a vent to the sauna ceiling, or under the door (to the washroom). In this case, the sill slot must be at least 5 cm and it is recommended that there is mechanical ventilation in the washroom. The size of the exhaust should be twice that of the inlet.

INSULATION

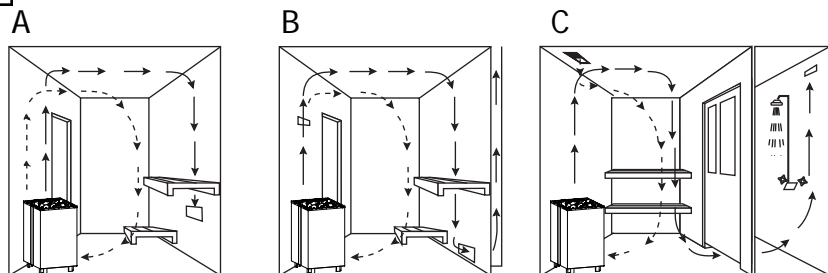
The sauna must have proper insulation on the walls, ceiling and door. One square meter (m²) of un-insulated surface increases the cubic volume by approximately 1,2m³ when determining the power requirement of the heater. See page 22 (Technical Data).

Ensure that moisture proofing is appropriate in the sauna room. The purpose of this is to prevent spreading of moisture to the other rooms or wall structure. Moisture proofing must be placed between heating insulation and panel.

Thermal and moisture proofing need to be installed according to the following order from outside to inside:

- The recommended minimum thickness of the thermal insulation in the walls is 50 mm and in the ceiling 100 mm.
- It is possible to use carton or aluminum foil laminate as a vapor barrier, which is affixed over the insulation aluminum foil inwards.
- Leave at least 20 mm air slot between vapor barrier and inside panel
- To prevent gathering of the moisture behind the panel, leave the slot between wall panel and ceiling.

Kuva 4
Fig. 4



SAUNA MAINTENANCE

AFTER EVERY SAUNA SESSION:

- ✓ It is recommended to use bench towels during sauna session to prevent sauna benches getting dirty.
- ✓ After sauna session, leave heater on for 30 minutes so sauna will dry faster. After that, open air vents or sauna door.
- ✓ Empty pail from water

AT LEAST 1 -4 TIMES PER YEAR:

- ✓ Remove heater stones. Clean stone dust and crumbs from bottom of the heater. Re-pile stones and replace disintegrated ones.
- ✓ Check heating elements. If there is any cracks or elements are bent, replace all elements. Do not replace only one.
- ✓ Wash sauna surfaces with warm water and multi-purpose detergent. Use soft brush. Wash sauna benches, ceiling, floor and walls. Do not use detergent which includes ammonia or chlorine. Rinse surfaces with cold water and ventilate sauna room well. If needed, protect wood surfaces with wood treatment oil. Read carefully the instructions of wood treatment oil from product packaging.
- ✓ If sauna benches are not getting clean after washing, sand the benches with sandpaper. Protect benches with wood oil. Do not heat the sauna room straight after treatment.
- ✓ If there is calcium stains or other dirt on the heater cover, clean it with mild soap water. You can also use SAWO Decalcifying solution for washing the stains. Dry after wash.
- ✓ Clean glass surfaces with window cleaning agent or dish soap. Rinse well and dry with a squeegee or a dry cloth.
- ✓ Check screws (door, sauna benches, railings). Tighten up if necessary.
- ✓ Clean the floor drain.

DIAGNOSTIC TABLE

If heater is not heating up or sauna room is heating up slowly:

NB-MODELS:

- Is timer set to the operating range?
- Is the timer On? Is timer knob stuck? (Suitable gap is 1 - 2mm between knob and heater body) If necessary, pull out the knob couple of millimeters.
- Is the thermostat set to higher than temperature inside the sauna room?
- Is the temperature fuse defective? Find out the reason before turning on your heater again.
- Are all heating elements glowing red when the heater is ON?
- Is the heater's heating power enough for the sauna room? (See page 22)
- Are the sauna stones laid properly? Is there enough space for air circulation and stones are in good condition? If stones are laid loosely, sauna will warm up faster.
- Is the air circulation enough in the sauna room? (See page 17)

NS- AND NI-MODELS:

- Is the control unit ON?
- Is the set temperature higher than the temperature inside the sauna room?
- Is the main switch ON? In Ni-models, main switch is located at the bottom of the heater, and in NS-models it is on the power control.
- Are the switchboard fuses ON and unbroken? If broken, find out the reason before turning ON your heater.
- Are all heating elements glowing red when the heater is ON?
- Is the heater's heating power enough for the sauna room? (See page 22)
- Are the sauna stones laid properly? Is there enough space for air circulation and stones are in good condition? ? If stones are laid loosely, sauna will warm up faster.
- Is the air circulation enough in the sauna room? (See page 17)

IF THE SURFACES DARKEN AROUND THE HEATER:

- Is the heater installed following the safety distances? (See page 9)
- Have you laid the sauna stones correctly and there is enough space between the stones for air circulation? If air circulation is blocked constructions around the heater might over heat.
- Are the heating elements visible behind the stones? Re-lay if necessary.
- If you cannot find the reason, contact your retailer

TEKNISET TIEDOT TECHNICAL DATA

KIUAS MALLI HEATER MODEL	VASTUS kW TYYPINUMERO			SAUNAN TILAVUUS		JÄNNITE SUPPLY VOLTAGE	KIUKAAN KOKO LEVEYS SYVYYS KORKEUS			JOHDON POIKKIPINTA			KIVET STONES kg	OHJAUS CONTROL	SULAKE FUSE (amp.)
	HEATING ELEMENTS kW TYPE NUMBER			SAUNA ROOM mm ³			SIZE OF HEATER WIDTH DEPTH HEIGHT mm			SIZE OF WIRE mm ²					
NRFS-90NS	9,0 kW	6 x 1.5 kW	SAV150	8	14	400V 3N~	450	400	670	6 5x2.5			45kg	erillinen separate	3 x 16
NRFS-105NS	10,5 kW	3 x 2.0 kW 3 x 1.5 kW	SAV200 SAV150	9	15	400V 3N~	450	400	670	3 3 6 5x2.5 5x1.5 5x2.5			45kg	erillinen separate	3 x 10 3 x 10 3 x 20
NRFS-120NS	12,0 kW	3 x 2.0 kW 3 x 2.0 kW	SAV200 SAV200	10	18	400V 3N~	450	400	670	5x2.5 5x2.5 5x2.5			45kg	erillinen separate	3 x 10 3 x 10 3 x 20
NRFS-150NS	15,0 kW	6 x 1.5 kW 3 x 2.0 kW	SAV150 SAV200	13	23	400V 3N~	595	400	670	6 3 9 5x2.5 5x2.5 5x4.0			55kg	erillinen separate	3 x 16 3 x 10 3 x 25
NRFS-180NS	18,0 kW	3 x 2.0 kW 6 x 2.0 kW	SAV200 SAV200	17	29	400V 3N~	595	400	670	3 6 5x2.5 5x4.0			55kg	erillinen separate	3 x 10 3 x 20
NRFS-180NS-V12	18,0 kW	6 x 1.5 kW 6 x 1.5 kW	SAV150 SAV150	18	30	400V 3N~	740	400	670	6 6 5x2.5 5x2.5			75kg	erillinen separate	3 x 16 3 x 16
NRFS-210NS-V12	21,0 kW	6 x 1.5 kW 6 x 2.0 kW	SAV150 SAV200	22	35	400V 3N~	740	400	670	5x2.5 5x4.0			75kg	erillinen separate	3 x 16 3 x 20
NRFS-240NS-V12	24,0 kW	3 x 2.0 kW 9 x 2.0 kW	SAV200	26	42	400V 3N~	740	400	670	3 9 5x2.5 5x4.0			75kg	erillinen separate	3 x 10 3 x 32

Nordex Kiukaan Varaosat

1. Etukaulus
2. Kulmakaulus
3. NRFS 90-120 sivukaulus
4. NRFS 150-180 sivukaulus
5. NRFS V12 sivukaulus
6. Vastus
7. Riviliitin
8. Vastuspidikkeet o-renkailla
9. Kaapelipidike
10. Nimikyltti (suuri)
11. Lattia Kiinnike
12. SAV 90 kaapelisarja
13. SAV 105-150 kaapelisarja
14. SAV 180-240 kaapelisarja

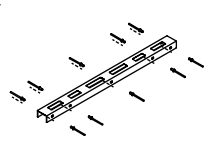
Nordex Heater Spare Parts

1. Front Frame
2. Support Frame
3. NRFS 90-120 Side Frame
4. NRFS 150-180 Side Frame
5. NRFS V12 Side Frame
6. Heating Element
7. Terminal Block
8. Heating Element Holder with o-rings
9. Cable Holder
10. Name Plate (Large)
11. Floor Mounting Bracket
12. SAV 90 Wire set
13. SAV 105-150 Wire set
14. SAV 180-240 Wire set

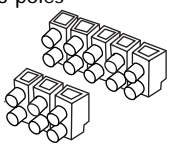
HP01-066, terminal block 5 poles
 HP01-009, terminal block 3 poles

HP95-001

1



7



HP95-002

2



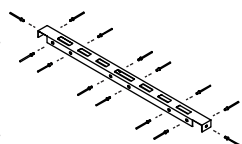
HP01-008

8



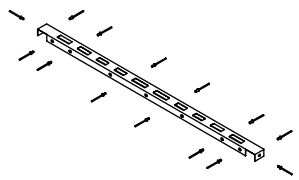
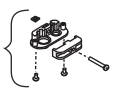
HP95-003

3



HP01-021

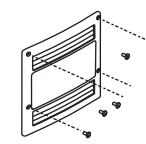
9



4 HP96-001

HP03-007

10

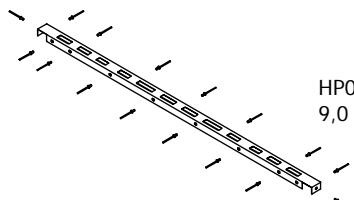


11



HP97-001

5



HP03-005
9,0 kW

12



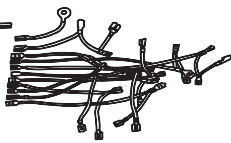
13

HP04-003
10,5-15kW



14

HP04-002
18-24kW



HP03-002
HP03-003

6

Kuva 5 Tyypinnumero
Refer Fig.5 for Type Number

CE IPX 4 ~~II~~

Pidätämme oikeuden muutoksiin.
Subject to change without notice.



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