



INSTALLATION AND OPERATION
MANUAL FOR HIVE
ELECTRIC SAUNA HEATER



Table of Contents

1. THINGS TO CHECK BEFORE INSTALLATION.....	2
2. INSTALLATION.....	2
3. CONTROLLING THE HEATER.....	4
4. GUARD RAILS.....	4
5. SAUNA ROOM.....	4

The HUUM HIVE electric sauna heater delivery set contains:

- electric heater
- installation and operation manual for the electric heater

NB! The electric heater also requires a control panel and stones.

1. THINGS TO CHECK BEFORE INSTALLATION

- Does the output (kW) match the volume (m³) of the sauna room? See Table 1.

In case there are any uninsulated brick, tile or glass walls in the sauna room, an additional volume of 1.5 m³ should be added to the sauna room for each such square meter of the wall.

The suitable output of the heater will be determined based on that volume according to Table 1.

The producer's warranty guarantee is invalid if the heater and sauna room have been dimensioned incorrectly!

Minimal safe distances between the sauna room's ceiling and walls to consider in installing the electric heater are listed in Table 1.

2. INSTALLATION

2.1 Positioning the heater

- The heater must be positioned in such a way that there is a safe distance between flammable materials and the heater.
- The heater must be installed in a way that prevents people from having physical contact with the heater or that dangerous situations could emerge during the heating process.
- The heater holds approximately 250 kg of stones.
- The inputs of the power cable are on the bottom cover of the heater.

<i>Table 1</i>	Output	Room	A	B	C	H
	kW	m ³	Mm	mm	mm	mm
HIVE 9	9	9–15	90	730	1,100	1,900
HIVE 12	12	12–25	120	790	1,300	2,100
HIVE 15	15	15–30	150	850	1,400	2,200
HIVE 18	18	18–35	180	910	1,500	2,300



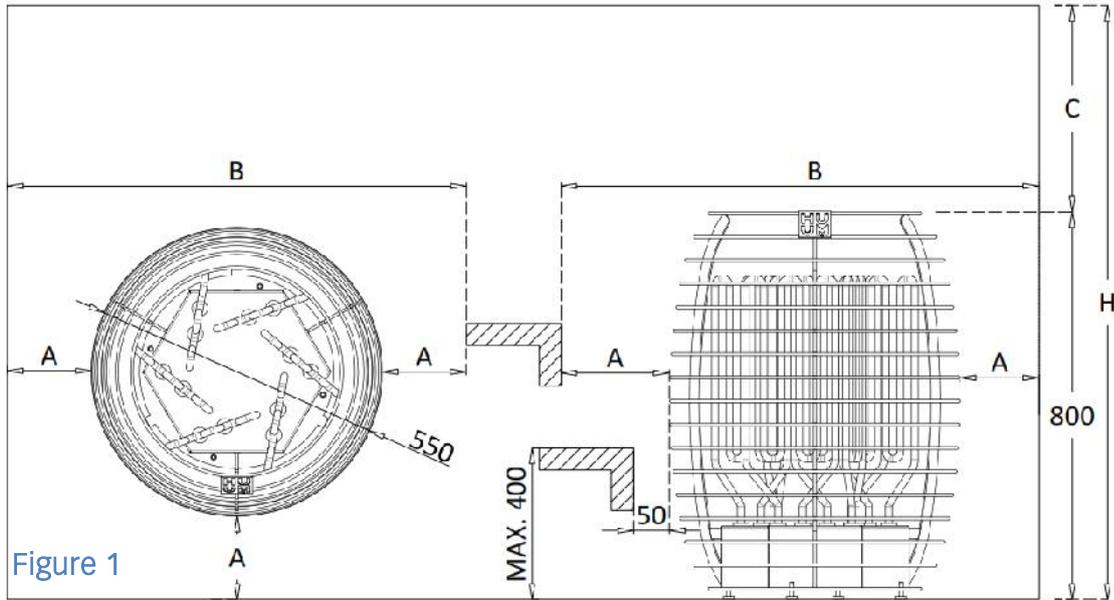


Figure 1

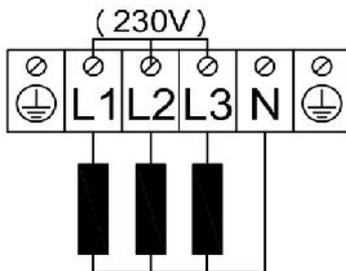


Figure 2

2.2 Connecting the heater to the power supply

- Only a certified electrician is allowed to connect the heater to the power supply.
- A rubber insulated HO7RN-F cable or an equivalent cable must be used as the connection cable
- The maximum current intensity in the cross-sectional area of the cable and circuit breaker are listed in Table 2.

Table 2	Output	Heat elements	Circuit breaker	Power cable
	kW	kW	A	mm ²
HIVE 9	9	3 x 3	3x16 / 1x50	5x2,5 / 3x10
HIVE 12	12	6 x 2	3x10+3x10 / 3x20	5x1,5+5x1,5 / 5x4
HIVE 15	15	3x2 + 3x3	3x10 + 3x16	5x1,5 + 5x2,5
HIVE 18	18	6 x 3	3x10 + 3x16	5x2,5 + 5x2,5

ATTENTION! It is forbidden to use a non-heat-resistant cable with PVC isolation as the power cable. The joint box must be waterproof and it must be located up to 50 cm from the floor.

- Open the cover of the heater's electrical box.
- Attach the power cable on the terminal block according to the circuit diagram.
- Close the cover.
- Fix the cable on the output with a cable strap.
- Install the heater on the wall frame.



2.3 Fitting the stones

- Make sure that the heating elements are not bent.
- There must be sufficient air circulation around the heater elements.
- Stack the stones sparsely between the heating elements. If the stones have been stacked too close to each other, the heating elements may overheat (= shorter useful life) and slow the heating of the sauna.
- Stones with a diameter of 8–16 cm are suitable for the heater.
- The stones on the external surface of the heater must be stacked close to one another. The heating elements must not be visible.
- Using ceramic stones in the HIVE heater is allowed at the user's responsibility

IF THE STONE CONTAINER IS FILLED TOO SPARSELY, IT POSES A FIRE HAZARD!

Before switching the heater on, the insulation resistance might prove to be lower than the standard.

The reason for that is the moisture that seeped into the insulating layer during storage in the warehouse and transportation.

The moisture evaporates after the electric heater has been heated for 1–2 hours.

3. CONTROLLING THE HEATER

All certified control panels may be used in controlling the heater.

The output of the heater must remain in the interval determined by the control panel's producer.

4. GUARD RAILS

- It is recommended to construct a guard rail around the heater. We recommend using materials with low heat capacity and bad thermal conductivity for the guard rail.
- Upon using flammable materials, it is necessary to leave the specified minimal safety clearances between the heater and flammable constructions.

IF THE HEATER IS INSTALLED CLOSER TO FLAMMABLE CONSTRUCTIONS THAN AT THE DISTANCE OF THE MINIMAL REQUIRED PROTECTION BELT IT MAY CAUSE A FIRE HAZARD!

5. SAUNA ROOM

5.1 Wall materials and insulating the sauna room

In a sauna with electric heating, all massive heat accumulating wall surfaces (brick, glass brick, rendering etc.) must be insulated to use the electric heater with a regular output.

The following sauna wall and ceiling construction is considered to be sufficiently insulated:

- a carefully installed insulation wool layer of 100 mm (min. 50 mm)
- the construction is damp proofed with taped aluminium paper or other reflective material
- there is a 10 mm air gap between the damp protection and boarding
- light wooden boards with about a 12–16 mm thickness have been used for interior finishing
- there is an air gap of at least 5 mm on the edge of the ceiling panels at the upper part of the wall panelling.



In order to optimise the use of the heater, it would be practical to bring the ceiling of the sauna room lower (regular 2,100–2,300, min. height of sauna room 1,900 mm) so that the volume of the sauna room diminishes. The ceiling should be insulated with an insulation layer at least 100 mm thick and boarded according to the method described above. Wood should be used to cover internal surfaces; an exception may be made for heat resistant walls in the vicinity of the heater.

ATTENTION! Insulating the warm masonry wall has to be approved by a fire inspector. It is prohibited to insulate flues that are in use!

ATTENTION! Covering the walls or floor with light protective material, for example, mineral tiles that are installed directly on the surface of the walls or ceiling might cause the dangerous overheating of the wall or ceiling material.

5.2 Darkening of the sauna room walls

Due to heat, the wood in the sauna room darkens in time. If you use wood protection products, you may notice that the wall above the heater darkens before long. The darkening process is also caused by the fine stone dust breaking away from the heater stones and lifted up by the airflow. If you follow the producer's instructions upon installing the heater, the flammable materials in the sauna room will not heat to a dangerous level. The highest allowed temperature for the wall and ceiling surfaces is 140 °C.

5.3 Floor of the sauna room

The heater stones in use crumble due to temperature changes. The pieces breaking away from the heater stones and pebbles are washed on the sauna floor with the steam-making water. Pieces of hot stone may damage plastic flooring under and near the heater. Heater stone particles and spray from the steam-making water (e.g., with iron content) may absorb into the light joints of a tile floor. In order to avoid aesthetic damage (caused by the reasons mentioned above), ceramic tiles and dark joint filler should be used under and around the heater.

5.4 Ventilation of the sauna

- In order to guarantee a sufficient supply of oxygen and fresh air, the sauna's ventilation must be as efficient as possible. It is advisable to direct the fresh air into the sauna room from above the heater stones.

As an alternative, the fresh air may be directed in from under the heater.

- The air inlet must be equipped with an adjustable valve.

- The exhaust valve must be installed in the opposite wall from the inlet valve at least 20 cm above the height of the inlet valve.

- It is advised to install a ventilation valve at the upper part of the sauna room for the final ventilation.

**WARNING!**

- Only one heater may be installed to the sauna room.
- Before turning on the electric heater, always check the sauna room and heater.
- The heater may be used only when it has been correctly filled with stones.
- Do not cover the heater—this causes fire hazard.
- Do not touch a working heater, it causes burns.
- Incorrect ventilation of the sauna room may dry the wood too much and cause a fire hazard in the sauna.
- Only tap water may be used for making steam.
- Never make steam by using a water hose.
- There must always be at least 5 cm of fireproof heat insulation under the boarding.
- Sauna doors must always open outwards.
- Do not use the sauna for a purpose it is not intended for.
- Do not install more than one heater into the sauna room.
- Undiluted sauna essences etc. may ignite when poured directly onto the stones.
- Do not leave small children unattended in the sauna.
- Sudden cooling after staying in the steam room is not recommended for people with poor health. Consult a doctor.
- Enjoy the sauna as long as it is comfortable for you.
- Keep this information at a safe place.
- The product's warranty guarantee does not extend to heating elements.