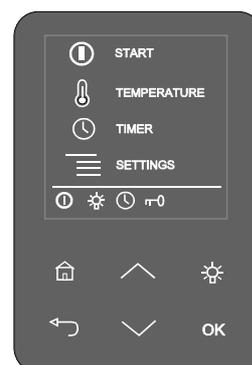


## User and installation manual **HNS T1**

STEAM GENERATOR -- CONTROL PANEL

1317 - ... - 13 - 1 (HNS) -- RA – 27 (T1)

For home and professional use



**Contents**

Specifications	3
Easy maintenance	3
Accessories	3
General	3
Image of principle of installation	4
Overheating protector	5
Main switch	5
Ventilation	5
Automatic flushing	5
Automatic flushing with the DIP switch	5
Decalcification	6
Cleaning the steam room	6
Steam generator	7
Electrical connections	9
Heating elements	9
Connection diagrams	9
Selecting the steam generator output for the steam room	11
Troubleshooting	12
Use and installation of the control panel	15
Installation and connection of the remote control On/Off push button	18

## Specifications

Operating voltage	230V – 240V 1N~ / 2~, 230V 3~, 400V – 415V 3N~	(3.4 kW – 7.7 kW) (3.4 kW – 14 kW) (3.4 kW – 14 kW)
Output options	3.4 / 4.7 / 6.0 / 7.7 / 9.5 / 12.0 / 14.0 kW	
Generator dimensions	520 x 380 x 160 mm	
Parallel coupling	See the connecting instructions for parallel coupling of several generators	
Enclosure class	IP 20	
Installation	Floor/wall	
Water tank material	Aisi 304, stainless steel	
Water tank pipes	Aisi 314, stainless acid-proof steel	
Weight when empty	about 11 kg	
Automatic flushing one hour after switching off	(optional, Automatic drain valve)	
Interim rinsing during use	(optional, Automatic drain valve)	
Electric water level adjustment		
Electric overflow protector		
Calcium repelling, self cleaning electrodes		
Overheating protector		
Safety valve		
Digital control panel, Helo T1		

## Easy maintenance

Replaceable heating elements (3 pcs)

The steam generator has an overheating protector equipped with a reset button.

Fill cap for deliming agent (citric acid) is located on the lid of the steamer.

Components easily replaceable, circuit board, heating elements, surface sensor.

## Accessories

- Scent pump, (Essence pump kit 0038130)
- Scent pump canister 20 l (0038132)
- Automatic flush and rinse cycle. (Automatic drain valve 4310130)
- Steam nozzles (3.4 – 6.0 kW 1 piece, 7.7 – 9.5 kW 2 pcs, 12 – 14 kW 3 pcs) (7819604)

## General

HNS-Touch steam generators are only intended for use in heating spa facilities. Using steam generators in other areas than steam rooms can damage the building's structure.

The manufacturer is not responsible for damages caused if the unit has been used incorrectly or in a manner for which the unit was not designed for.

Water and steam pipe connections must be made prior to connecting the unit into the mains.

Due care and attention must be taken when making the connections. Proper sealing must be ensured for all extensions. A good extension must have at least taped over threaded connections, but it is recommended that connections are soldered.

### Testing the water before using the steam generator.

The test packet that comes with the steamer includes test slips, which can be used for testing the water hardness number as follows:

Dip the test slip in water for about 1 second, take it out and shake off the excess water. After a minute, compare the colour code appearing on the test slip with the code key in the packet.

Test result:	< 3° dH,	Very soft water.
	> 4° dH,	Soft water. Installing the decalcification device recommended
	> 7° dH,	Medium-hard water. Installing the decalcification device recommended
	> 14° dH,	Hard water. Installing the decalcification device recommended
	> 21° dH,	Very hard water. Installing the decalcification device recommended

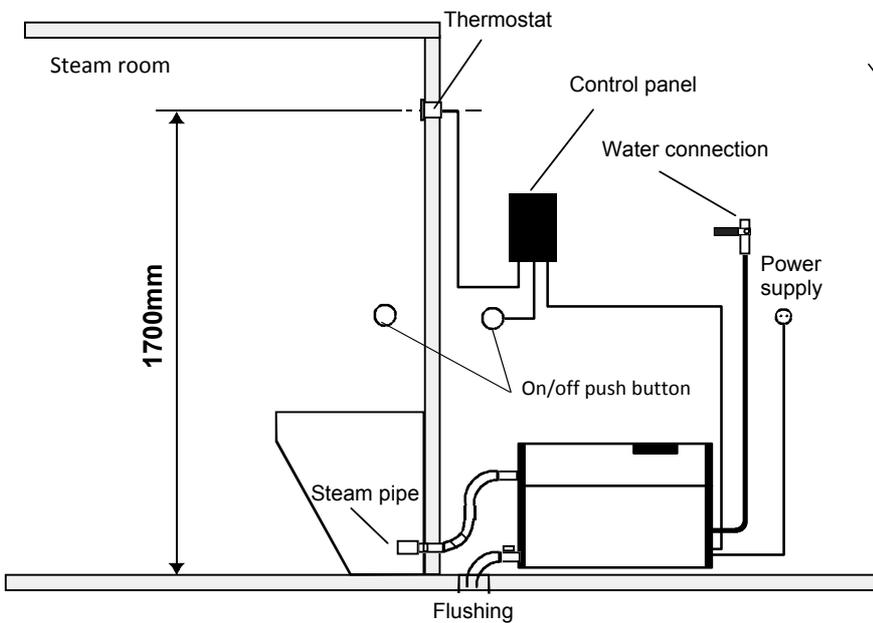
**See page 6 for steam generator's operation time in hours before decalcification**

The steam generator must be placed away from water and moisture (dry room). The room must be well ventilated as the unit also produces heat. The maximum temperature of the room must not exceed 35°C. Recommended minimum free space to sides and above the steamer is 30 cm. Adequate space for maintenance should also be planned for in the placement of the unit. There should be a drain nearby for draining the tank.

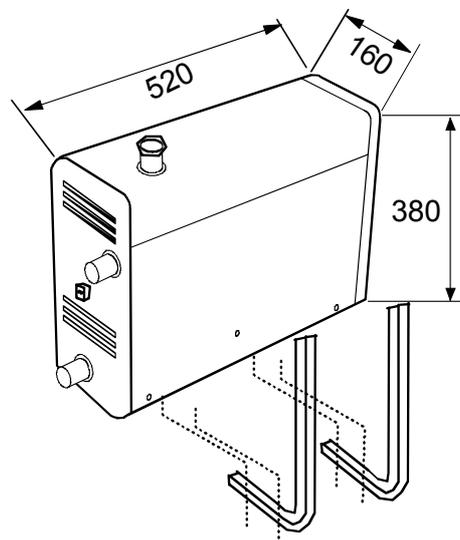
The steam generator can be installed freestanding on the floor or on the wall using wall fittings. When using wall fittings, ensure you use appropriate fittings and screws for the type of construction material of your walls. The steam generator weighs about 17 kg when filled with water.

When the automatic drain valve is used, it is recommended you use wall installation so an adequate angle can be ensured for draining of water.

**Image of principle of installation**



Locating the control panel



Generator wall mounting

HNS-T1 model, must be installed outside the steam room.

The thermostat cable is connected to the control panel. See the connection diagram for instructions.(see page 10)  
The control panel cable can be extended with similar screened cable, max 50m.

**Steam nozzle/nozzles** are fitted approximately 200 to 400 mm from the floor underneath a bench or a seat, or onto the wall so that the hot steam cannot burn anyone's feet. The steam nozzles are aimed towards the floor. When the nozzles are installed, you must ensure to place them somewhere where nobody can accidentally touch them. **The steam temperature is +100 °C** and it can cause injuries on contact.

If children or people with impaired reflexes use the steam room, the steam nozzle must be fitted with a protector that prevents people from being exposed to the hot steam shower.

**The thermostat** is installed at about 1,700 mm high, preferably on the wall opposite the door. It is recommended to seal the thermostat installation hole with appropriate sealing material, so that moisture cannot enter the wall structures.

The steam room thermometer is installed at such a height that it shows the same reading as the control panel.

**On / Off push button** can be used for remote starting, the push button can be placed in the steam room or outside it. For more detailed instructions see page 17.

### Overheating protector

The steam generator is equipped with an overheating protector. If the protector has tripped, find the reason for it using the troubleshooting guide in the instruction manual. The overheating protector is reset by pushing a button.  
 NOTE: The overheating protector is located under the upper lid of the steam generator. Only a qualified electrician is allowed to do this.

### Main switch

There is a main switch at the bottom of one end of the steam generator, which is used only when the steam room is not to be used for a long period of time.

The steam generator's automatic flushing and rinsing function will stop, if the power is switched off.  
 (Optional, Drain Kit)

### Ventilation

It is not normally necessary to arrange ventilation for steam saunas that are used for less than two hours. Steam rooms that are used for more than two hours at a time need ventilation for functional and hygienic reasons. The ventilation recommendation is 10 to 20 m<sup>3</sup> per person per hour.

If there is an empty space above the ceiling of the steam room, it must not be completely sealed off. Make at least one ventilation hole (100 mm x 100 mm) into the empty space, on the same wall with the door.

The **Supply air valve** may be a hole in the bottom part of the wall with the door or a gap under the door.

The **Exhaust valve** is placed in the ceiling or on a wall near the ceiling as far from the supply air valve as possible, however not above the door or the seats. The exhaust valve is connected to an air conditioning channel going outside

**Forced ventilation.** If natural ventilation is not adequate (e.g. negative pressure in the room where the fresh air is taken from), the steam room must be equipped with forced ventilation. Its output must be equivalent of 10 to 20 m<sup>3</sup> of ventilation per person per hour.

### Automatic flushing

The Automatic flushing valve (Drain Kit, optional) reduces significantly the accumulation of calcium and impurities in the water tank. For the flushing and rinsing Automatic drain valve to work, do not switch the power off from the switch that may be fitted between the electrical cabinet and steam generator or the main switch before 80 minutes has gone since the control panel's timer has switched the power off.

**WARNING!** The water is hot!

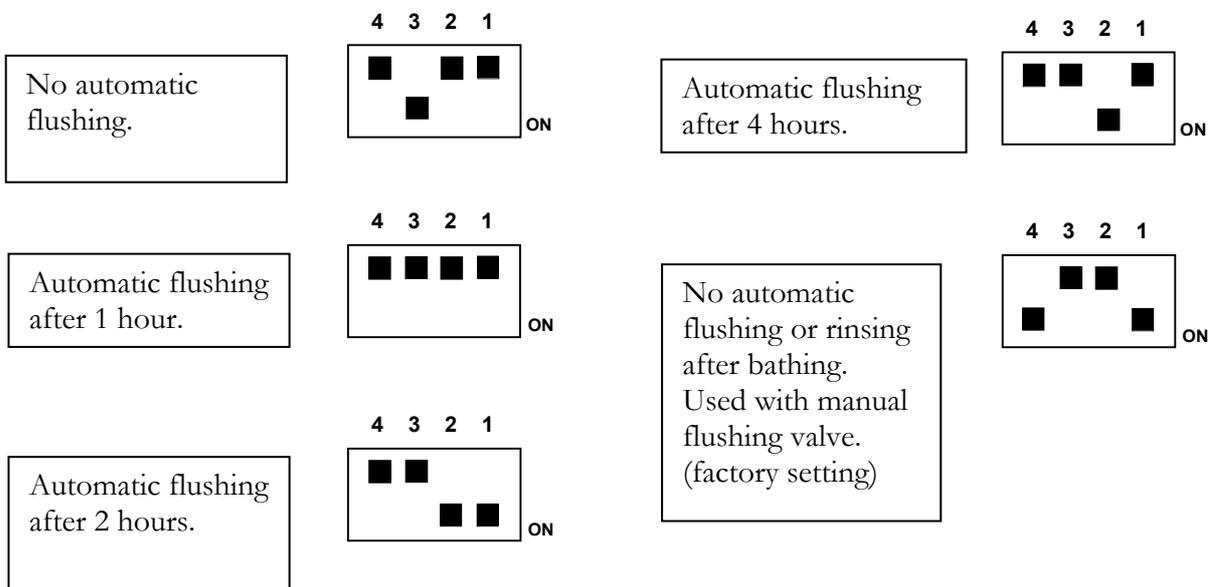
### Automatic flushing with the DIP switch

This feature requires optional electric Drain Kit flushing valve

If the local water hardness exceeds 5 dH° or if the steamer is used for more than 4 hours a day, the steamer must be drained regularly. Adjust the desired draining interval according to the connection diagram.

The DIP switches are found on the steam generator circuit board.

Factory setting: No automatic flushing or rinsing after bathing



## Decalcification

Part of the calcium accumulated in the steam generator is flushed away during the automatic flushing and rinsing cycle, but some of the calcium remains. Therefore it is important that the steam generator's automatic flushing function is not out of order due to a faulty electric connection. The tank must be flushed after every use.

To prolong its service life and to reduce the need for manual decalcification, we recommend that steam generators used in public facilities are connected to a water softening filter, which removes the calcium. This is especially important, if the water hardness exceeds 5° dH (German hardness).

A water softening filter must not generate foam or produce harmful chemicals, which may give incorrect view of the water level in the tank and cause the temperature switch to trip. (Heating elements will break down after some time.) Manual decalcification is performed according to the chart below.

In normal private use, the need for decalcification is minimal, as the water is not particularly hard. However, the steam generator must be decalcified at least once a year. This removes the calcium from the tank walls and heating elements.

### Steam generator decalcification

- Start the steam generator and let it run until the water in the tank boils.
- Stop the steam generator and wait for about 5 minutes.
- Remove the connecting piece's lid nut at the top of the steam generator.
- Pour the deliming agent (e.g. citric acid) into the tank via the connecting piece using a funnel.
- Replace the lid nut to the connecting piece and let the agent work.
- The steam generator flushes and rinses the tank automatically after about an hour and you can use the generator again.



Citric acid deliming agent is odourless and harmless and it does not harm the steam generator's components. If another type of deliming agent is used, bathing during decalcification is not allowed.

As can be seen from the adjoining chart, the need for manual decalcification depends on water quality, steam generator output and operation time.

<b>Operation time in hours before decalcification. We recommend using softened water in public facilities to reduce the need for manual decalcification.</b>					
		Hours of operation, different hardnesses			
Steam generator output kW	Amount of deliming agent. Citric acid (1 bag 50g)	Softened water 0.01 – 1° dH	Soft water 1 – 3° dH	Hard water 4 – 7° dH	Very hard water 8 – 20° dH
3.4 kW	2 bags	7,000	2,300	900	350
4.5 kW	2 bags	3,800	1,300	500	190
6.0 kW	2 bags	2,600	900	300	130
7.7 kW	2 bags	1,700	600	200	90
9.5 kW	2 bags	1,500	500	180	80
12 kW	2 bags	1,300	400	160	70
14 kW	2 bags	1,200	300	150	60

## Cleaning the steam room

Rinse the seats and the floor with warm water after every use (do not use a pressure washer). Clean the seats regularly with mild detergent. Use ethyl alcohol or dilutine. Never use abrasives, strongly alkaline detergents or solvents to clean the steam room seats and walls. Contact the manufacturer if necessary.

It is important to clean the floor carefully all the way to the corners. Use hot water, a brush and floor detergent that removes dirt and grease.

## Steame generator

### Safety valve installation

The safety valve is installed on the steam pipe with using the provided 1/2" T connector. A separate downpipe directly to a drain or to the floor is installed on the safety valve. NOTE: Safety valve's downpipe must not be connected to the steam generator's draining pipe or the steam pipe.. Use the provided sealing tape or similar sealing on the threads.

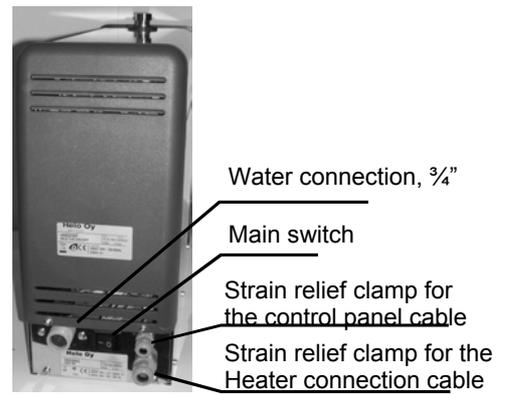
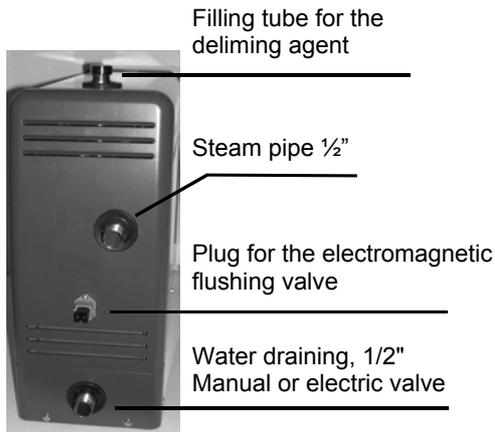


Image. Installation of the safety valve and the automatic drain valve

## Water and steam pipe connections

Connect the flexible 3/4" water connection tube in the packaging to the water connection in the installation panel of the unit and to **the cold water piping** of the building. The water pressure must be between 0.2 and 10 bars. The water supply pipe must have a manual stop valve for stopping water supply to the unit, if the unit is not used for a prolonged time.

### **Installation must follow local regulations**

It is recommended to use at least 18x16 mm (steam generator's size 3.4 kW-9.5 kW) and 22x20 mm (steam generator's size 12.0 kW- 14 kW) copper pipe or a silicone tube of similar type when connecting the steam pipe. The steam pipe diameter must be the same for the whole length.

The steam pipe must be tilted upwards or downwards from the steam generator to the steam room. There **MUST NOT** be any water seals or water pockets. The condensation water forming in the steam pipe must be allowed to drain freely to the steam room or back to the generator. If a fragrance pump is connected to the generator, the pipe must **ALWAYS** drain away from the steamer, so that the chemicals cannot get into the tank.

Recommended maximum length for the steam pipe is 5 metres.

It is recommended to always use additional insulation for the steam pipe, for both safety reasons and to prevent water condensation in the pipe.

Clearance from an uninsulated steam pipe to flammable material such as wood must be at least 10 mm.

### **WARNING: Hot steam can cause burn injuries.**

The electromagnetic valve for draining the steam generator's size tank is fitted into the draining pipe. Alternatively you may use a manual draining valve. Connect the downpipe (copper pipe with inner diameter of at least 16 mm) Steam generator water draining into the downpipe. The downpipe is led to the nearest drain outside the steam room. The temperature of the discharge water is 90 to 95° C.

**IMPORTANT!** No stoppers (valves, taps, etc.) may be fitted on the downpipe.

Regardless of where the downpipe is led, it must fall all the way from the steam generator to the drain. To ensure adequate fall, you may have to place the steam generator on a wall mount or on a stand.

**Steam generator's tank should be drained after each use. This will extend the unit's life and reduce chalk build-up.**

**The product's warranty will be void if the steam generator has been incorrectly installed or it has been used in a manner other than described in the user manual.**

**The warranty also expressly excludes operational faults if they are caused by hard water i.e. water with high levels of chalk, or otherwise impure water.**

**The steam generator must be maintained as described in the user manual.**

### Electrical connections

The sauna heater must be connected to the mains by a qualified electrician and in compliance with current regulations. The steam generator is connected with a semi-permanent connection. Use H07RN-F (60245 IEC 66) or a corresponding type cables

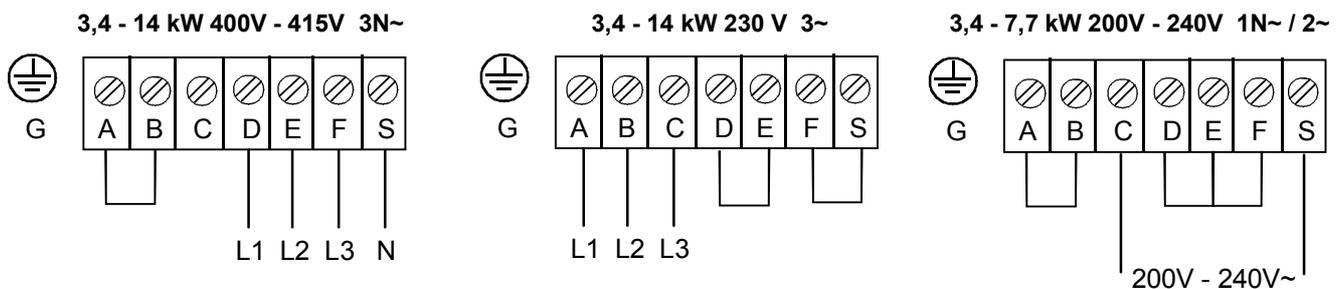
Output kW	Generator connection cable H07RN-F / 60245 IEC 66 mm <sup>2</sup> 400V-415V 3N~	Fuse A	Generator connection cable H07RN-F / 60245 IEC 66 mm <sup>2</sup> 230V 3~	Fuse A	Generator connection cable H07RN-F / 60245 IEC 66 mm <sup>2</sup> 230V-240V 1N~/2~	Fuse A
3.4	5 x 1.5	3 x 10	4 x 1.5	3 x 10	3 x 2.5	16
4.7	5 x 1.5	3 x 10	4 x 2.5	3 x 16	3 x 6.0	25
6.0	5 x 1.5	3 x 10	4 x 2.5	3 x 16	3 x 6.0	25
7.7	5 x 2.5	3 x 16	4 x 6	3 x 25	3 x 10	35
9.5	5 x 2.5	3 x 16	4 x 6	3 x 25	-----	-----
12.0	5 x 6	3 x 25	4 x 10	3 x 35	-----	-----
14.0	5 x 6	3 x 25	4 x 10	3 x 50	-----	-----

### Steam generator's heating elements

Teho Power Leistung	Vastus / Element / Heizstäbe 230V		
	1	2	3
3.0	1,000W / SEPD 131	1,000W / SEPD 131	1,000W / SEPD 131
3.4	1,150W / SEPD 97	1,150W / SEPD 97	1,150W / SEPD 97
4.7	1,567W / SEPD 98	1,567W / SEPD 98	1,567W / SEPD 98
6	2,000W / SEPD 99	2,000W / SEPD 99	2,000W / SEPD 99
7.7	2,567W / SEPD 100	2,567W / SEPD 100	2,567W / SEPD 100
9.5	5,250W / SEPD 116	3,500W / SEPD 115	5,250W / SEPD 116
12	4,250W / SEPD 119	3,500W / SEPD 115	4,250W / SEPD 119
14	5,250W / SEPD 116	3,500W / SEPD 115	5,250W / SEPD 116

### Connection diagrams

#### Electrical connections



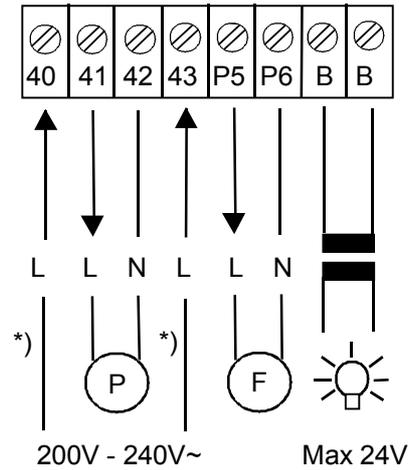
Optional equipment connections to the steam generator terminal block.

\*) 1.5 mm<sup>2</sup> external voltage supply 200V – 240V, fuse 10A

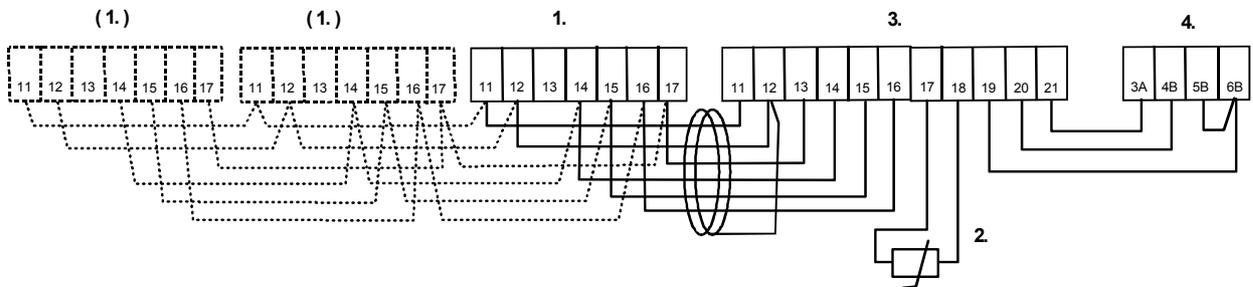
P = fragrance pump control output

F = Fan control output

There are 3 milled billets in the plastic end for strain relief nipples for separate control cables.

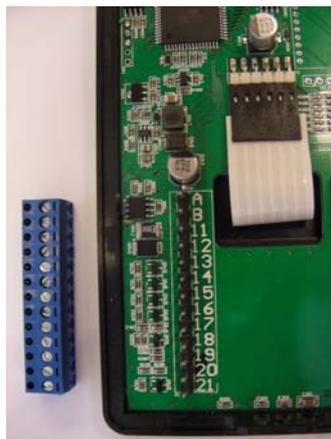


1. Steam generator/Parallel coupling of steam generators, Max 5 steamers.
2. Thermostat
3. Control panel HNS T1
4. Remote start On / Off push button. Connecting instructions for the electronic push button on page 18.

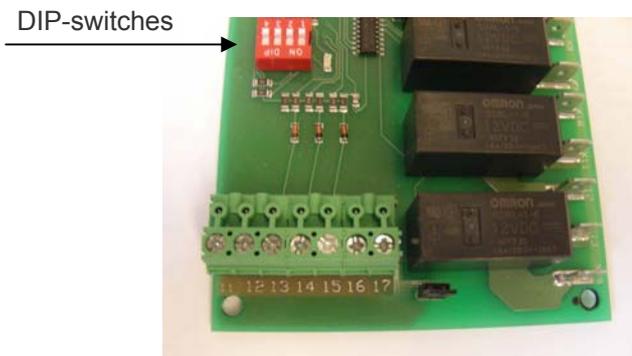


Connecting the control cables

NOTE: The cable between the steam generator and the control panel must be screened, e.g. LiYCY 6 x 0.25mm<sup>2</sup>. Maximum cable length 50 m



Control panel T1 connecting terminal markings



HNS T1 steamer's circuit board connecting terminal markings

### Selecting the steam generator output for the steam room

You can estimate the power requirement using the formula below.

$$\text{Volume (m}^3\text{)} \times K1 \times K2 = \text{Power requirement (kW)}$$

Forced ventilation	K1 = 0.75
No ventilation	K1 = 0.52
Acrylic wall	K2 = 1.00
Light wall: board + tile	K2 = 1.25
Heavy wall: stone, concrete + tile	K2 = 1.50
Very heavy wall: stone, concrete + tile	K2 = 2.00

In heavy built steam rooms, it is recommended to use e.g. electric heating cable for warming the seats, walls and floors.

Output	Light structure, acrylic, tempered glass		Light board wall + tile		Heavy wall, concrete, stone		Steam kg / h
kW	No A/C	Air conditioned	No A/C	Air conditioned	No A/C	Air conditioned	
3,4	2 – 7 m <sup>3</sup>	2 – 6 m <sup>3</sup>	2 – 6 m <sup>3</sup>	2 – 5 m <sup>3</sup>	2 – 5 m <sup>3</sup>	2 – 4 m <sup>3</sup>	5
4,7	3 – 8 m <sup>3</sup>	3 – 7 m <sup>3</sup>	3 – 7 m <sup>3</sup>	2 – 6 m <sup>3</sup>	2 – 6 m <sup>3</sup>	2 – 5 m <sup>3</sup>	6
6,0	4 – 13 m <sup>3</sup>	4 – 9 m <sup>3</sup>	4 – 8 m <sup>3</sup>	3 – 7 m <sup>3</sup>	3 – 7 m <sup>3</sup>	3 – 6 m <sup>3</sup>	8
7,7	6 – 15 m <sup>3</sup>	6 – 11 m <sup>3</sup>	6 – 10 m <sup>3</sup>	5 – 9 m <sup>3</sup>	5 – 9 m <sup>3</sup>	4 – 8 m <sup>3</sup>	10
9,5	9 – 17 m <sup>3</sup>	9 – 13 m <sup>3</sup>	9 – 14 m <sup>3</sup>	8 – 13 m <sup>3</sup>	7 – 11 m	6 – 9 m	13
12,0	12 – 24 m <sup>3</sup>	11 – 18 m <sup>3</sup>	11 – 20 m <sup>3</sup>	9 – 16 m <sup>3</sup>	9 – 16 m <sup>3</sup>	8 – 12 m <sup>3</sup>	16
14,0	18 – 30 m <sup>3</sup>	14 – 22 m <sup>3</sup>	14 – 24 m <sup>3</sup>	12 – 18 m <sup>3</sup>	11 – 17 m <sup>3</sup>	10 – 14 m <sup>3</sup>	19

Table for selecting a steam generator based on the steam room volume and wall materials.

## Troubleshooting

**WARNING!** Steam generators may have several electric circuits.  
Make sure that the device is completely dead before any troubleshooting operations.

### Checks and troubleshooting.

In case of malfunction check that:

- the control panel and the steam generator are installed according to the connection diagrams
- the steam generator is installed properly according to this instruction manual
- the downpipe has adequate fall towards the drain
- the dirt filter is clean. The filter is in the incoming water connector. Open the pipe connector for cleaning, remove the filter and remove all the chalk and dirt from it.
- there are no water pockets in the steam pipe or in the outgoing air conditioning pipe.
- there are no sharp bends in the steam pipe (bend radius must be at least 50 mm).
- any tap on the incoming water pipe to the steam generator is open.
- the steam room's structure and air conditioning match the installation and building instructions.

## Troubleshooting chart

Possible causes and suggestions for fixes

### Warming up takes abnormally long.

Cause: Inadequate power output of the steam generator. See output chart.

Action: *Replace with more powerful steam generator.*

Cause: Excessive ventilation of the steam room.

Action: *Reduce ventilation so that it is 10-20 m<sup>3</sup> per person per hour.*

Cause: Blown fuse in the electrical cabinet

Action: *Replace the fuse.*

Action: *Replace the heating element*

Cause: The sensor is too close to the steam shower. [See test 2.](#)

Action: *Move the sensor to another location or redirect the steam shower.*

### The steam room does not warm up or there is no steam.

Cause: Blown fuse in the electrical cabinet

Action: *Replace the fuse.*

Cause: No water is coming to the steam generator.

Action: *Open the incoming water tap.*

Cause: The control panel is not set up right.

Action: *Check the time and temperature settings.*

Cause: Dirt filter is blocked.

Action: *Remove the dirt filter from the incoming water connector and clean it.*

Cause: The electromagnetic valve for the incoming water is stuck.

Action: *Remove the electromagnetic valve and clean it.*

Cause: Too much chalk has accumulated in the steam generator's water tank. See test 1.

Action: *Clean the water tank and surface sensor's pin, and replace the heating elements, if necessary.*

Cause: The steam generator is connected for incorrect voltage.

Action: *Check the voltage and the steam generator's connections. See Connection diagram.*

Cause: The overheating protector has tripped. See test 4.

Action: *Check and fix possible faults in the steam pipe, e.g. blocks caused by several sharp bends, water pockets or significantly reduces inner diameter of the pipe. It is also possible that the tank has been filled with chalk accumulation or impurities. See the previous entry.*

Cause: Fault in the circuit board, control panel or electromagnetic valve.

Action: *Replace the faulty part.*

**Warm water comes out of the steam nozzle, and there is little or no steam in the steam room.**

Cause: The electromagnetic valve for the incoming water is stuck open because of dirt or electric fault. [See test 3.](#)

Action: *Remove the electromagnetic valve and clean it. Fix the electric fault.*

Cause: The electromagnetic valve is broken.

Action: *Replace the electromagnetic valve.*

Cause: Fault in circuit board.

Action: *Replace the circuit board.*

**Warm water comes out of the steam nozzles in pulses or as weak continuous stream with steam.**

Cause: Small water pocket in the steam pipe.

Action: *Remove the water pocket.*

Cause: Too much of the steam pipe is uninsulated.

Action: *Insulate the steam pipe.*

**Warm water comes out of the steam generator's downpipe all the time.**

Cause: Automatic electromagnetic flushing valve is stuck open.

Action: *Stop the steam generator. Try again after 80 minutes. If the fault remains, remove the automatic electromagnetic flushing valve and clean it.*

**Banging noise from the water pipes when the electromagnetic valve opens or closes.**

Cause: Inadequate connection in the water pipe coming into the steam generator.

Action: *Mount the water pipe securely on the wall.*

Cause: Recoil effect in the incoming water pipe.

Action: *Install about 1 metre of pressure-proof reinforced rubber hose into the steam generator end of the water pipe.*

**Safety valve opens or the overheating protector trips.**

Cause: Steam pipe is blocked. [See test 4.](#)

Action: *Remove the block.*

Cause: The inner diameter of the steam pipe is significantly reduced. [See test 4.](#)

Action: *Replace the pipe or the connection where the inner diameter is reduced (minimum inner diameter is 16 mm).*

Cause: Several sharp bends in the steam pipe. [See test 4.](#)

Action: *Make the bends less sharp.*

Cause: There is a large water pocket in the steam pipe. [See test 4.](#)

Action: *Install the steam pipe so that a water pocket does not form.*

**Steam generation is irregular from the beginning.**

Cause: The sensor is misplaced. [See test 2.](#)

Action: *Move the sensor or redirect the steam shower.*

Cause: Chalk or other impurities in the dirt filter.

Action: *Remove the dirt filter and clean it.*

**TEST 1.****Checking chalk deposits in the water tank.**

Open the top lock nut in the steam generator. Lower a torch bulb that is connected to a battery with wires into the opening and light up the water tank's inside. If there is more than 3 cm chalk on the bottom, the steam generator has not been serviced and the chalk has not been removed according to the instructions.

It is also possible that the flushing and rinsing automation is not working. Check that the steam generator power has not been switched off after bathing with a switch that may fitted in the supply line. You can switch the power off from this switch only 80 minutes after the control panel has switched the power off.

Check the automatic flushing function by setting a bucket with a volume of about 12 litres under the downpipe. Start the steam generator for about 15 minutes. Switch off the steam generator **exactly** the same way you normally do after bathing. Wait at least 80 minutes and check if the bucket is filled with water. If it is not filled, there is a problem with the steam generator's electric connections or the power supply has been switched off on the wire from electrical cabinet directly to steam generator. It is also possible that the exhaust valve is blocked or the circuit board is faulty.

**TEST 2.****Checking the thermostat sensor.**

Wet a small towel with water and hang it on the sensor. If the steam generator starts producing steam within 20 minutes, the sensor works. However, it is placed in a wrong place or the temperature setting is too low. If the steam production does not start, use the troubleshooting chart to find the fault.

**TEST 3.****Checking the electromagnetic valve.**

Stop the steam generator from the control panel. If water still flows from the steam nozzles 10 minutes after the power has been switched off from the control panel, there is dirt in the electromagnetic valve. Remove the electromagnetic valve and clean it.

If the water flow stops within 10 minutes after the power has been switched off from the control panel, the fault is in the electrics (faulty connection or circuit board). It is also possible that too much chalk has accumulated in the water tank. See test 1.

**TEST 4.****Checking the steam pipe using the safety valve or the overheating protector.**

Remove the steam pipe from the steam generator. Start the generator and let it run for about one hour. If the safety valve or the overheating protector does not trip during the test, there is a block in the steam pipe that prevents the steam flow. Follow the instructions in the troubleshooting chart.

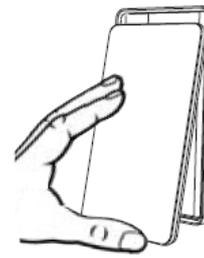
**The product's warranty will be void if the steam generator has been incorrectly installed or it has been used in a manner other than described in the user manual.**  
**The warranty also expressly excludes operational faults if they are caused by hard water i.e. water with high levels of chalk, or otherwise impure water.**  
**The steam generator must be maintained as described in the user manual.**

## Use and installation of the control panel for HNS – T1

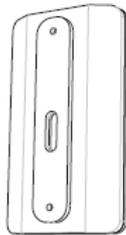
### Control panel RA27 (T1)



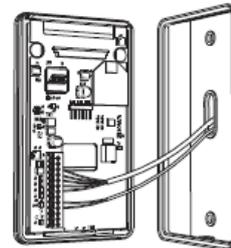
Loosen the screw at the bottom of the control panel.



Remove the control panel frame and lid.



Install the bottom piece for the control panel  
NOTE: If the control panel is installed in a humid place, use the provided seal.

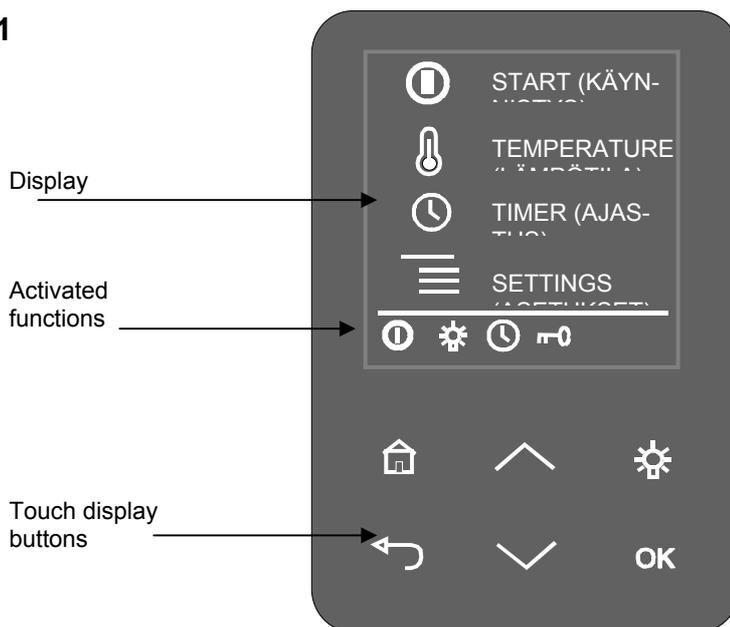


Install and connect the cable. For connecting instructions, see page 10.

Control panel dimensions:

- Height 140mm
- Width 80mm
- Depth 22 mm

### Control panel T1



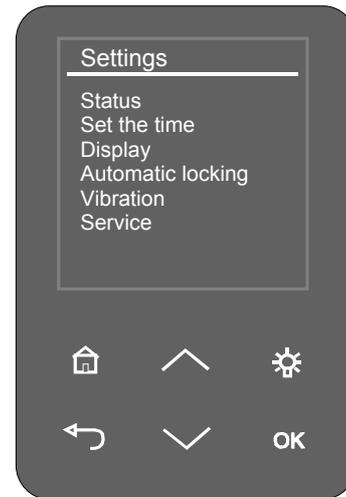
### Button functions:

-  Takes you from a submenu to the front page.
-  Step back. Shows the temperature and the time when pressed on the front page.
-  Lighting control on/off.
-  OK button accepts the modified setting or move forward on e.g. time settings.
-  Arrow button, moves upwards in the menus.
-  Arrow button, moves downwards in the menus.
-  Start and stop. Select with the arrow buttons and press OK.
-  Changing the temperature setting.
-  Pre-set time setting. You can set the pre-time setting between 0 and 23.59 hours.
-  Settings. Move to the next menu.
-  Automatic locking, time setting adjustment 15 - 60 s. Settings in the menu, on/off. The locking is opened from the settings menu or by pressing simultaneously for 2 seconds the   symbols.

## Settings

The following submenus are found under the menu

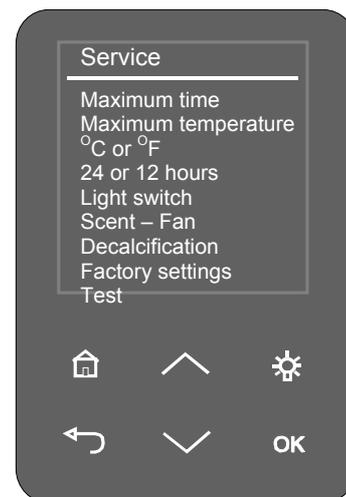
- **Status.** Shows the temperature and the time
- **Set the time.** Time setting.
- **Language.** You can select the language from a menu.
- **Display.** Setting the display to sleep, time setting 3–60 s.
- **Automatic locking.** Locks the buttons after 15– 60 seconds, on/off.
- **Vibration.** Vibration function of the controller on/off.
- **Service.** Enter the PIN code to access the service menu.  
The service PIN code is 124.



## Service

The following submenus are found under the menu

- **Maximum time.** In steam bathing use 0–24 hours.
- **Maximum temperature.** Temperature setting 20–55 °C.
- **°C or °F.** Alternative temperature display.
- **24 or 12 hours.** Alternative time display.
- **Light switch.** Lighting controls, continuous or momentary.  
Continuous, the lights are always on when the steam generator is on.  
Momentary, lights are only on when the light button is pressed.
- **Scent – Fan.**  
Scent pump control on/off.  
Fan, Air conditioning control after the steam generator has stopped.  
Automatic 30 minutes.  
Time with manual setting 20–60 minutes.  
Manual control on/off.
- **Decalcification.** Decalcification alarm limit setting 0–100 hours.  
Show an alarm on the display after the hour setting is up.  
Operation time. Steamer operation time counter.
- **Factory setting.** PIN code 421.
- **Test.** During service or in case of a fault you can test different relay outputs and check that they work.



## Factory setting

- Select the region where the controller is used
- Europe, time and temperature settings according to the European regulations.
- USA, settings according to the American regulations
- Other regions.
- **Select Europe.** Select the control panel language from the language menu, English, Swedish or Finnish.
- Select the control panel use, sauna or steam bathing.  
Select steam bathing and press OK.  
Set the maximum steam bathing time 0–24 hours.  
Set the time in the control panel.

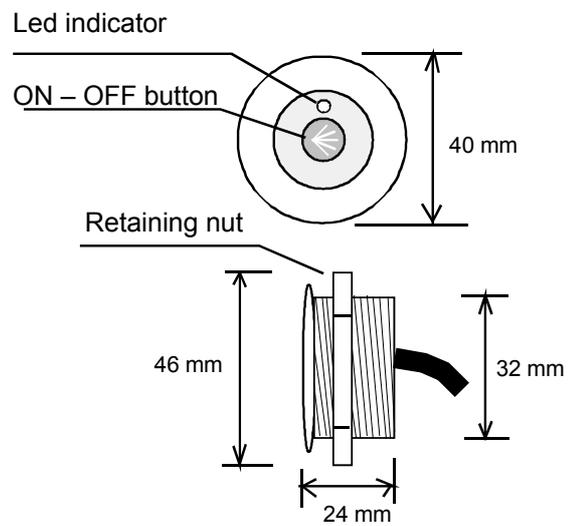


## Remote control On/Off push button

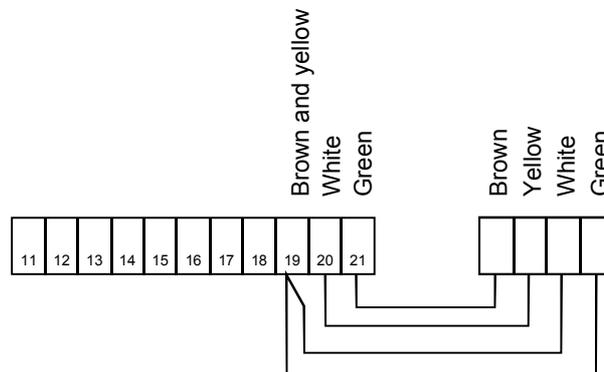
### Button function

The steam generator can be started remotely with the ON/OFF push button. The LED light on the push button lights up to show that the steam generator has started. The steam generator runs according to the maximum time and temperature set in the control panel T1. The steam generator can also be turned off with the push button. After the steam generator stops the flushing and rinsing functions activate. See page 5.

The push button is filled with sealant, therefore it may be installed in the steam room. The push button may be installed through a wall (acrylic walls) or by making a suitable hole, where the push button can be embedded and sealed with appropriate sealant. Surface installation boxes may also be used, if necessary, they do not need to be tight, because the actual push button is moisture resistant.



### Connection of the push button



Control panel T1 Multiway terminal block

On / Off push button

## ROHS

### Ympäristönsuojeluun liittyviä ohjeita

Tämän tuotteen käyttöiän 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 hushållssopor 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.