

TYLÖ MEGA-LINE SUPER 10

- Electrical Sauna Heater Manual -

1. INTRODUCTION

We thank you for your confidence in this Tylö product. Tylö heaters are known to be long lived and of high quality. We recommend that you – and the person installing this heater – read these instructions carefully. This manual should be always close at hand when needed. Once the installation is completed, this manual should be handed to the sauna's owner or the person responsible for operating it. Before you do anything, **you should read this manual and pay special attention to the "WARNINGS" part on page 3.**

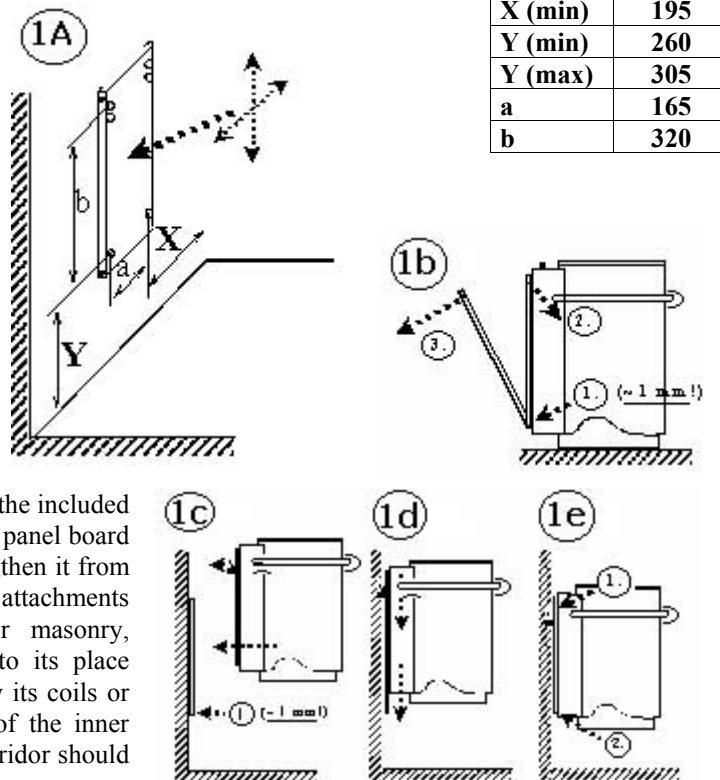
2. INSTALLATION

2.1. The Heater's Installation Location

The manufacturer's safe installation distances (**table 3, page 5**) must be adhered to. These distances are also given on the heater's data plate. The attachment sizes for the wall mountings are shown in picture **1a**. The walls next to the heater and the roof above it must not be protected with additional paneling, as the temperature in the wall material may rise to dangerous levels. This heater is not designed to be embedded or installed in an alcove.

2.2. Attaching The Heater to The Wall

For easier installation the heater is equipped with a detachable wall mounting (**picture 1b**) that can be attached to the wall beforehand (**picture 1a**). You may use the included attachment screws for installation in a wooden wall. A thin panel board is not sturdy enough for the attachment. You should strengthen it from the backside using board or plywood. Use heat resistant attachments (wedge or hammer-set anchors, no plastic plugs) for masonry, brickwork or other stone walls. The heater is lifted into its place according to **pictures 1c, 1d, 1e**. Do not lift the heater by its coils or the upper plate of the back casing. Use the lower rim of the inner casing with support from the upper part instead. A free corridor should be left at one side of the heater for maintenance work.



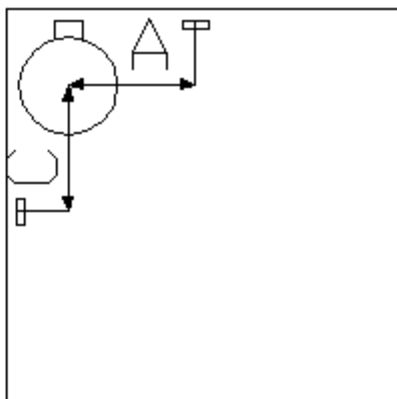
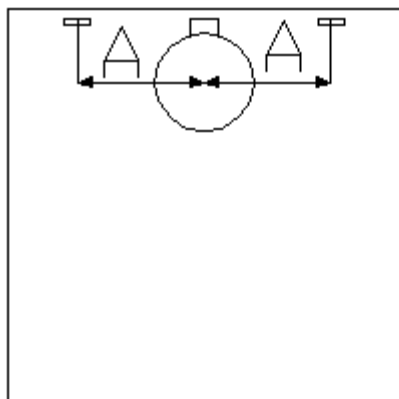
2.3. Connection to The Power Grid

The heater's electrical installation must be performed by a certified electrician. Check the heater's technical data prior to connection. The connection to the power grid may only be performed by a professional electrician who is certified according to present regulations. The heater is connected semi-permanently to a connection box on the sauna wall. The connection cord should be a H07RN-F (VSN, VSB) rubber cable or equivalent. Do not use cords with PVC insulation. The connection diagram is attached to this manual (picture 7) and to the heater's connection box. Do not attach the heater's power feed to the error current connector.

The connection is performed in the following manner before the heater is lifted into its place: 1. Remove the wall mounting in the back of the heater, open the upper attachment screws at the sides and loosen the lower ones. 2. Attach the throughput rubbers and cable grip. 3. Pass the cable through the throughput rubber to the connection box. 4. Attach the cable to the cable grip and connector according to the connection diagram. 5. Provide sufficient cable length to ensure that the cable does not run underneath the stone enclosure nor too close to the heater's base plate. The heater's connector also provides for control of the electric heating (or the heater's signal lamp). The package holds a second throughput rubber and cable grip with screws for this purpose. The control cable's conducting material and diameter must be equal to the connection cable. The relay used in controlling the electric heating gets a control voltage of 230 VAC from the heater. The conductors' diameters and numbers and fuse values are given in the technical data table. The spray water tight connection box must not be attached more than 50 cm above the ground.

2.4. Installation of The Sensor And Its Location on The Wall

The sensor is attached to the sauna wall on the heater's center line. If you wish to heat the sauna to higher temperatures than usual, the sensor may be moved to the side according to **table 1 and picture 2**. Deviations from the given measurements will cause fire hazards.



HEATER MODEL	FROM HEATER CENTER		ABOVE FLOOR cm
	C =cm	A =cm	
Super DI 10K 10kW	Min. 80	Min. 80	150

Picture 2

There are two alternatives for attaching the sensor to the wall. For surface attachment, the sensor's protective cover is attached to the sauna wall (**picture 3A**). Attach the sensor to the cover and raise the cable grip strips at the lower part of the cover. Bend the cable grip strips around the cable and bend the wings of the cover over the sensor (**picture 3B**). For embedded installation, the sensor is attached directly to the wall (**picture 3C**).



A



B



C

Picture 3

2.5. Changing The Location of The Control Panel

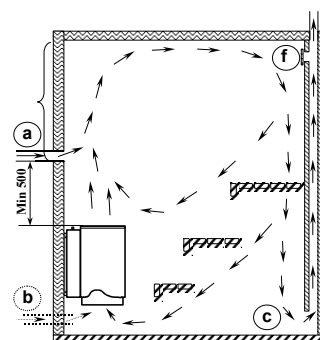
The heater control panel's location may only be switched by a professional with sufficient training. The control panel has been factory installed to be used from the front of the heater. It may be turned to point to the side of the heater in the following manner: 1) Release the attachment screw underneath the control panel. 2) Move the rubber gaskets on the decorative piping further away from the control panel. 3) Remove the control panel by pulling it outwards from the piping (the plastic material used tolerates bending well). 4) The keyboard connector cable in the connection room has some slack to allow pulling the control panel further from the piping. 5) Detach the cable at the keyboard's row connector. 6) Move the cable to the required side and pull it through. 7) Assemble in reverse order.

3 SAUNA ROOM INSTRUCTIONS

3.1. The Sauna Room

The heat insulation of walls and ceiling must be sufficient, to avoid losing too much heat to the outside. Wood is the most suitable surface material. A wooden surface warms up quickly and radiates a pleasantly even heat to the bather's skin. You should avoid masonry and other stone surfaces in the walls, as stone takes in too much heat and would require a significantly more powerful heater than a wooden room of the same size. One square meter of stone surface on the wall or ceiling above the heater's level is equal to 2-3 cubic meters of additional volume in the room. A glass door and windows have similar effects on the sizing. Log walls require an additional 25% of added power to the volume calculated in this manner.

Excessive height also adds unnecessary volume to the room. The distance between the highest bench and the ceiling should not be too high, as the temperature decreases towards the floor.



Picture 4

A sufficient distance from bench to ceiling is about 110-120 cm. We recommend locating the heater as low as possible (within safety limits). The sizes of sauna rooms are given in **table 2**.

3.2. Correct Air Circulation

Sufficient air exchange in the sauna is very important. A suitable amount for a family sauna would be about 6 times the sauna's volume per hour. Air removal happens either through gravity (= traditional, "natural circulation") or mechanically, through an air removal fan.

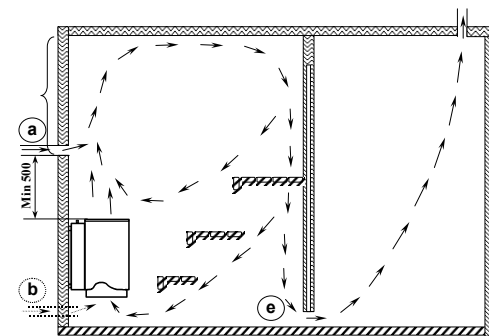
Mechanical air circulation (pictures 4 and 5):

Fresh air is taken in (preferably from outside the house) through a 100 mm diameter pipe that is at least 500 mm above the heater (**a**). The fresh air may also be piped in below the heater, close to the floor (**b**), as long as you make sure that the cool air flow does not go straight along the floor to the exit air vent. The most important aspect in air circulation is to ensure an efficient mixing of fresh air with heated air and the vapor from the thrown water. The exit air vent should be preferably placed below the benches (**c**), as far from the air intake as possible.

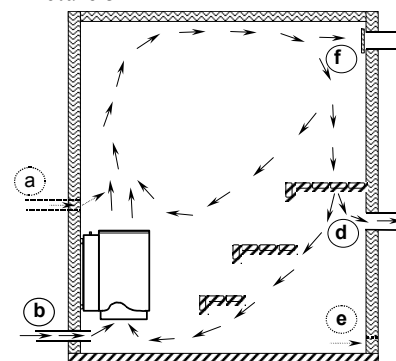
The exit air may also be fed through the washing room, e.g. underneath the door (**e**). The sauna should also have a drying valve (**f**) behind the benches, near the ceiling. The drying valve is closed during the heating and bathing phases and opened for the final drying out. The circulation fan is kept running throughout the bathing and afterwards. It may be stopped for the preheating phase.

Gravity circulation – i.e. natural circulation (picture 6):

Fresh air is taken in (preferably from outside the house) through a 100 mm diameter pipe, preferably from underneath the heater or its immediate vicinity close to the floor (**b**) or, alternatively, above the heater (**a**). The most important aspect in air circulation is to ensure an efficient mixing of fresh air with heated air and the vapor from the thrown water. **The exit air** is fed out preferably from underneath the benches (**d**). Drying valve near the ceiling (**f**). The exit air vent should be placed as far from the fresh air intake as possible. The exit air may also be fed through the washing room, e.g. underneath the door (**e**). The exit air vent may be closed during preheating. The exit air vent must be larger than the intake and be located higher up.



Picture 5



Picture 6

4. USE AND MAINTENANCE OF THE HEATER

WARNINGS: The Tylö heater is intended for heating a family sauna to normal sauna temperatures, and it must not be used for any other purpose. The sauna room must be checked before the heater is switched on. Beware the hot heater, as its stones and metal parts may scald your skin at operating temperatures. Care is mandated in the heater's vicinity as well – particularly due to the danger of slipping. During water throwing, you should watch the hot drops spraying from the stones and the hot steam. Parents must watch small children in the sauna and make sure instructions are heeded. The heater's controls must not be touched immediately after water throwing (because of the hot steam rising from it). You must not throw too much water on the heater at a single throw to prevent dangers from excessive amounts of steam. The heater must not be covered and it must not be used without stones. Unhindered air flow must be ensured particularly behind the heater. You may not hang inflammable objects such as clothes or carpets above or near the heater, as that is a fire hazard. This heater has not been designed for use with sea water. Only one heater may be installed in any single sauna room. Check that the heater is attached properly before heating it. After the heating period, make sure that the heater's timer has turned off the electricity at the set time. If you have any problems or questions during the warranty period, please contact the manufacturer before performing any repairs. Use gloves during maintenance and cleaning work to protect your hands. *Remove any unnecessary stickers and plastic packaging prior to first use!*

4.1. The Heater Stones

The heater must not be used without heater stones. We recommend the use of traditional quarried heater stones (e.g. peridotite or olivine). A suitable stone size for electric sauna heaters is 5-10 cm. If you want moist and long lasting results from a water throw, you may use a few soap stones in the mix. These go to the bottom of the stone basket. The stones must be washed with a brush before they are put into place. You should check the condition of the stones at least twice a year. Gravel dropping from the stone basket is a sign of abrading stones.

The heater is not a fire hazard if used without stones or insufficiently filled, but it has not been designed to run continuously like that.

4.2. Filling The Stone Basket

The innermost part of the stone basket should be filled with bigger stones, right up to the surface layer. Use smaller stones at the upper part, going towards the edges.

Take care that no stones fall through the supports onto the heating coils, as the impact may destroy the coils before their time. The stones must not rise more than 1 cm above the edge of the heater. If the upper stones remain often wet, you have too many stones or they are too small.

4.3. First Heating

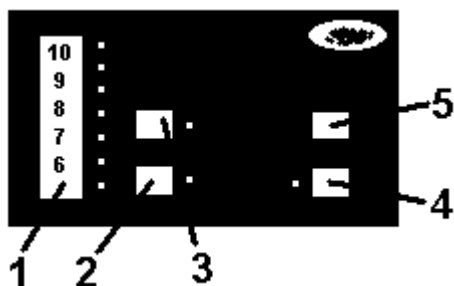
The first heating is performed at maximum temperature with good ventilation. This burns any contaminations off the stones and the coils, which may produce some smoke.

4.4. The Sauna's Preheating Phase

The preheating phase means the time needed for heating the sauna room to the desired bathing temperature. The time required depends on the desired temperature (position of temperature switch), the amount of stones in the heater, the room's volume and surface material. The fewer stones you use, the quicker the room heats up, but a smaller amount of stones gives a less satisfying steam output. The preheating phase lasts usually between 40 and 70 minutes.

4.5. Using The Heater

The heater is used from its control panel.



Functions

1 = indicators, 2 = preset timer setting, 3 = temperature setting, 4 = electricity switch, 5 = electricity cut-off.

4.5.1 Temperature Setting (Perform at ON Setting)

Press TEMP – the previous temperature setting is shown. The numbers describe a rising temperature scale. Try by yourself which temperature setting suits you best. You might start out with a setting of 4, for instance.

Afterwards you can raise or lower it until you find your own ideal bathing temperature.

4.5.2. Manual Start/Stop

Press ON to cut in electricity (the signal light turns on). Press OFF to cut off electricity (the signal lamp turns off). The heater's memory chooses automatically the previously used temperature setting.

Press TEMP, if you want to alter the temperature setting. The timer will automatically turn off the electricity to the heater after three hours. Press OFF to switch it off before that, and ON to continue bathing past these three hours.

4.5.3. Setting The Preset Timer (Use in OFF Position)

In this case, the numbers show the preset time (= in how many hours from now the heater will start heating up). Set the preset timer in the following manner:

Press TIME – Type in your desired preset time (1-10 hours).

Press ON – The preset time is activated and the signal light blinks at the chosen hour setting. Once the heating current has engaged after the preset time has run out, the heater will run for three hours and then cut off automatically.

You may also turn off the heat prior to that by pressing OFF. If you want to continue bathing past those three hours, press ON.

4.5.4. Main Switch

Beneath the connection box, next to the throughput of the connection cable, is the main switch. The main switch is only used when the sauna is not expected to be in use for a long time. The control panel memory is cleared when the current is cut off at the main switch.

4.5.3. Overheating Protector

The heater is equipped with an overheating protector (THERM). It prevents overheating in cases where the temperature regulator malfunctions. The overheating protector's reset switch is behind the heater. Use a long screwdriver or similar for resetting this switch. Prior to resetting, you must investigate the reason for the malfunction.

4.6. Maintenance

The electrical systems of the heater may only be maintained by a professional electrician! When parts are replaced, only authorized components defined by the manufacturer may be used. If you have any problems or questions during the warranty period, please contact the manufacturer before performing repairs. You may change the stones and clean the heater's exterior by yourself. The heater's cover is cleaned using mild dish washing liquid and soft cleaning implements – dry after cleaning. Use gloves to protect your hands during maintenance and cleaning work.

5. OPTIONAL EQUIPMENT (Only implemented by the installer!)

5.1. Electric Heating by Turns

At the heater's connection element, connectors 5 and 6 are reserved for controlling electric heating. Connector 6 gives off a steering voltage of 230 VAC whenever the coils are engaged. The heater's turnwise heating control permits the other heaters in the house to engage when the timer is at zero, on preset time or when the temperature control turns off the heating coils.

5.2. External Signal Light

The signal light may be connected to connectors 5 and 6. It must be noted that the light does not indicate the state of the timer switch, but only whether the heating coils are active.

6. TECHNICAL DATA (table 2)

Heater Model	Heater output	Sauna room volume		Weight without stones	Amount of stones (Max)	Heater size		
		Min	Max			width	depth	height
SUPER 10	kW	m³	m³	kg	kg	Mm	mm	mm
DI 10 K	10,00	8,0	15,0	16	22	Ø 370	450	590

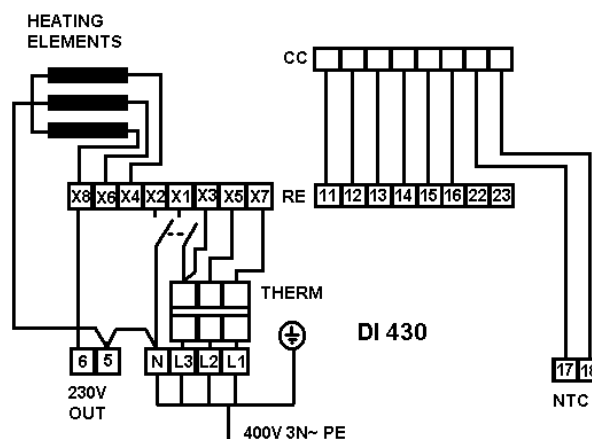
7. FUSES, RESISTANCE COILS AND CABLES (table 3)

Heater Model	Heater output	Fuse size	Installation size	Voltage	Number of heating coils								
					1600W Group			1700W Group			2000W Group		
SUPER 10	kW	A	400 V 3N~	V	1	2	3	1	2	3	1	2	3
DI 10 K	10,00	3x16	5x2,5	400V 3N~			2	2	2				

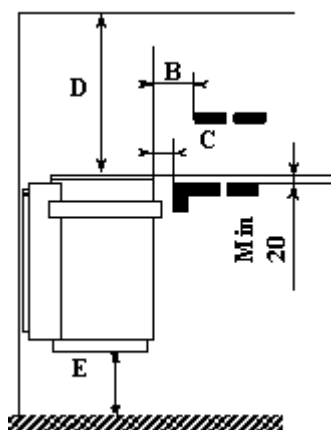
8. SAFE DISTANCES (table 4)

Heater Model	Sauna height (Min)	Safe distances for heater (Min)				
		From side to wall	From front to upper bench	From front to lower bench	to ceiling	to floor
SUPER 10	mm	mm	B	C	D	E
DI 10 K	2100	100	70	30	1350	110

9. CIRCUIT DIAGRAM (picture 7)



SAFE DISTANCES (picture 6)



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