Expression

130404

Art.nr 2900 6110

TYLÖ®
for the senses

WARNING!

- Check before each use of the sauna that there are no foreign objects in the sauna cabin, on or in the heater.
- Covering the heater can cause fire.
- Do not touch the upper parts of the heater - risk of burns!
- Incorrect ventilation or heater positioning can lead to the wooden panelling drying out, causing a risk of fire under certain circumstances.
- The flooring in the sauna should be made of non-slip material.
- Never use a hose in the sauna.
- There should always be at least 50 mm of insulation directly behind the wooden panelling in the sauna (no other materials such as chipboard, plasterboard etc. may be used).
- The sauna door should open outwards, and should open easily with a little light pressure.
- Do not use the sauna cabin for any purpose other than taking saunas.
- Do not install more than one sauna heater in a sauna cabin, unless you follow special instructions for twin-heater installations.
- Fragrant essences and similar products can ignite if poured directly onto the stones.
- Never leave small children unattended in the sauna.
- Saunas are not recommended for people in poor health. Please consult a doctor.
- Please keep these instructions.

INSTALLATION

Fig. 1
Tylö Expression sauna heater with separate h1 control panel (CC10, CC50, CC300, EC50, TS). Expression is designed for floor installation.

Assembly and installation of the sauna heater.

Fig. 2 - removing the outer casing
Push the front plate upwards. Lift off the outer casing to expose the electrical wiring.

Fig. 3 - mounting the feet
Put the heater back in the lower part of the packaging. Attach the four adjustable feet to the base.

Figs. 4, 5 - electrical wiring
Leave the heater in its packaging with the front facing upwards to facilitate installation of electric cables. The packaging also protects the back of the heater from scratching.

Undo the screws and open the cover.

After completing the electrical installation, replace the outer casing, fig. 7.

Position the heater on the same wall as the inlet vent, fig. 16. Minimum distance from side wall: see table.

Volume and minimum distance:

Output	Sauna volume	Min. distance from side wall (mm)		Min. distance from back wall (mm)	Min. ceiling height in sauna (mm)
kW	min./max. m³	normal installation "X"	recess installation "Y"		
10	10 - 18	200	200	100	1900

The Tylö sauna heater should be connected using standard wiring (Fk or EKK), approved for fixed installation. Cables (EKK) or electrical ducting must be run on the outside of the heat insulation, see figs. 12, 13, 14. Any single wires (Fk) must be protected by electrical ducting (VP) up to the heater, or by internally insulated flexible metal tubing.

Fig. 6 - silicone
To ensure that the heater is firmly installed, silicone should be applied on the indicated installation surface (fig. 6) under the feet.

Fig. 8 - safety distance
A = normal installation. **B =** recess installation. Minimum distance from side wall (X, Y): see table. Minimum distance from rear wall: 100 mm.

When the Expression sauna heater is installed in a recess, the sensor (C) should be positioned 250 mm from the rear wall and 300 mm from the ceiling.

Fig. 9 - safety distance
Minimum distance between sauna fittings and the front of the sauna heater.

Fig. 10 - sauna
(Expression sauna heater and CC/h1/EC50 control panel)
1 = sauna heater. **2 =** thermistor (sensor). **3 =** control panel CC 10/CC 50/CC 300/h1/EC50. **4 =** external on/off switch (option). **5 =** distribution board. **6 =** relay box RB30.

Wiring diagram, fig. 24

Fig. 11 - sauna
(Expression sauna heater and h1 control panel)
1 = sauna heater. **2 =** thermistor (sensor). **3 =** h1 control panel. **4 =** external on/off switch (option). **5 =** distribution board. **6 =** relay box RB30.

Wiring diagram, fig. 24.

Figs. 12, 13 - Expression + h1
A = electrical conduit. **B =** wooden panelling. **C =** insulation behind control panel.
D = sensor. **E =** capillary tube/ thermistor wire. **F =** separate h1 control panel. **G =** valve.

Figs. 13, 14 - Expression + CC/h1/EC50/TS
A = electrical conduit. **B =** wooden panelling. **C =** insulation behind control panel.
D = sensor. **E =** capillary tube/ thermistor wire. **F =** separate control panel CC/h1/EC50/TS. **G =** valve.

Amperage and conductor area:

Output kW	Voltage V	Amperage amp	Conductor area mm² mm²
10	400V 3~	16	2,5

h1 control panel
User guide: supplied with control panel.

Manual and automatic on/off. Max. 24 hours connection time, 24 hours preselected time.

The h1 control panel is controlled electronically with the option of remote control from one or more locations. The wires between the sauna heater and the control panel must be shielded (LiYCY). Connect the shielding to terminal 12 in the control panel, see wiring diagram.

Alternative positions
Fig. 11. On the wall in the sauna cabin, max. 760 mm from the floor.

Fig. 10. Anywhere outside the sauna cabin.

EC50 control panels
User guide: supplied with control panel.

Installed at any distance from the sauna cabin.
EC50 panels are electronically controlled and available in the following models:

EC 50-3. Manual and automatic on/off. Max. 3 hours connection time, 10 hours preselected time.

EC 50-12. Manual and automatic on/off. Max. 12 hours connection time, 10 hours preselected time.

CC control panels
User guide: supplied with control panel.

Installed at any distance from the sauna cabin.
CC 50 panels are electronically controlled. Available in the following models:

CC 10-3. Manual and automatic on/off. Max. 3 hours connection time, 10 hours preselected time.

CC 10-10. Manual and automatic on/off. Max. 10 hours connection time, 10 hours preselected time.

CC 50-3. Manual and automatic on/off. Max. 3 hours connection time, 10 hours preselected time.

CC 50-12. Manual and automatic on/off. Max. 12 hours connection time, 10 hours preselected time.

CC 300. Built-in weekly time switch. Manual and automatic on/off. Max. 24 hours connection time, 24 hours preselected time.

Fig. 24 - wiring diagram

1 = sauna heater. **2 =** thermistor (sensor). **3 =** control panel.
4 = external on/off switch (option). **5 =** RB 30

Check the heater's data plate to ensure it is connected to the correct voltage.

Don't forget - the installation must be earthed!

TS control panels
TS panels are thermally operated and have a patented divided output. They should be mounted outside or inserted into the wall (fig. 14). When inserted into the wall, there must always be insulation behind the control panel. Capillary tube length 1850 mm. Also available with capillary tube length 5000 mm.

Installation of sensor for TS control panel (fig. 17). **A =** capillary tube. **B =** sensor holder. **C =** plastic capillary tube holder.
D = sensor for installation 300 mm from ceiling (fig. 14, not above the sauna heater).

Extra equipment for TS control panel

Locking cover in transparent plastic to fit over the control panel. Available with a design that prevents unauthorised changes being made to the set time and/or temperature.

Fig. 27-29 - wiring diagrams

1 = sauna heater. **2 =** control panel.

Check the heater's data plate to ensure it is connected to the correct voltage.

Don't forget - the installation must be earthed!

Remote control

TS control panels use contactors for remote control operation.

Unusual voltages or numbers of phases

Before connecting to voltages or numbers of phases not listed in the above wiring diagram, contact Tylö Customer Service.

Positioning of thermistor (sensor)

The thermistor should be positioned 300 mm from the ceiling on the wall between the inlet and outlet vents (not above the sauna heater).

The thermistor wire can be extended beyond the sauna with a shielded low voltage wire (2-core).

Tip: The thermometer should be placed at a height where the temperature coincides with the exact numbers displayed on the h1.

NB: Seal any holes in the wall behind the thermistor.

Relay box (RB)

Installed outside and at any distance from the sauna. The relay box must be positioned at a minimum distance of 1 metre from the h1.

Shielded low voltage wire (6-core).

The control cable from CC/h1/EC50 to the relay box must be a shielded low voltage wire (6-core). Connect the shielding to terminal 12 in the control panel.

Lighting

Connect the lighting according to the wiring diagram.

Option: external switch
An external switch (optional) can be connected to the control panel. See wiring diagram supplied with external switch (Item No. 9090 8045).

Impulse deactivation: The switch has an on/off function each time it is pressed.
Constant deactivation: The panel continues running until switched off, but never longer than the set running time.
When the heater is on, the indicator light in the external switch is illuminated. If the panel is programmed for a later start, the indicator light flashes.

BUILDING INSTRUCTIONS

It is important to install correct sauna ventilation.

Incorrect sauna ventilation can result in hot floors and benches and scorched walls and ceiling (the temperature cut-out switch will be triggered). Carefully follow the sauna ventilation instructions.

Set the adjustable outlet vent to evacuate 6-8 m³ of air per person per hour when the sauna is heated.

Mechanical sauna ventilation can cause the wooden panelling to dry out, resulting in a fire risk.

Fig. 15, 16 - the inlet vent should always be installed directly underneath the sauna heater.

Position the inlet vent straight through the wall under the centreline of the heater. Vent size for family sauna approx. 125 cm², for larger sauna
approx. 300 cm².

Fig. 18 - the outlet vent must never lead outdoors

The inlet and outlet vents must be the maximum possible distance apart, e.g. positioned diagonally. The outlet vent must be positioned high up on the wall or on the ceiling, and must have the same area as the inlet vent.
The outlet vent should always vent into the space where the door and inlet vent are positioned. It must never vent directly outdoors. The outlet air from the sauna is constantly renewed in the room outside. This thermal ventilation system works independently of any negative or positive pressure in adjacent rooms.
Any cavity above the sauna ceiling should not be completely sealed. Leave at least one vent hole on the same wall as the sauna door.

Option A: Outlet vent through sauna wall (seen from above). Position the vent high up, near the ceiling.

Option B: Outlet vent through cavity above sauna ceiling (seen from side).

Option C: Outlet vent via duct under ceiling inside sauna (seen from side). Position the outlet air duct in the angle between the ceiling and wall. The duct can be built out of wooden panels, and should have the same area as the outlet vent.

Special information for steam sauna (Tylarium)

Do not position the outlet vent so that it leads to a part of the building that is kept cold. This eliminates the risk of condensation.

Fig. 19 - recommendations for sauna construction

A. Floor frame, corner posts, vertical studs, ceiling frame.
B. Horizontal studs, ceiling studs, vents.
C. 50 mm mineral wool as heat insulation, approx. 20 mm air gap between insulation and outer wall (if applicable).
D. 12 mm wooden panelling for walls and ceiling. There should always be at least 50 mm of insulation directly behind the wooden panelling in the sauna. No other materials such as chipboard, plasterboard etc. may be used)
E. Bonded, non-slip plastic floor covering extending approx. 50 mm up the walls behind the wooden panelling.
F. Inlet vents that should always be fully open may be fitted with a slatted grille on the outside.
G. Outlet vent, can be fitted with a sliding hatch to adjust through-flow.
H. Benches, minimum 22 mm in knot-free pine (alternatively aspen, lime or obeche).
I. Drainage channel (should always be installed in public saunas). Never position a drainage channel or drain beneath the sauna heater.

Fig. 20 - heater guard

The stones and upper part of sauna heater are very hot! To avoid risk of accidental contact, Tylö recommends that a heater guard always be installed around the heater as shown in the drawings.

Tip:

- There should never be a drain in a sauna. However, all public saunas should have a drainage channel (I, fig. 19) connected to a drain outside the sauna (private saunas do not need a drainage channel).
- If the sauna has a window in the door or wall, treat the whole lower moulding with spar varnish and seal the joint between the glass and moulding with wet room silicone to prevent condensation on the glass surfaces from leaking into the joint.
- Varnish the threshold and door handles with two coats of spar varnish to maintain the wood's finish and make it easier to clean the sauna. Sauna benches, decorative screens and back rests should be oiled on both sides with Tylö sauna oil (this is particularly important in the Tylarium).
  NB: All other wood in the sauna should be untreated.
- Install floor decking only if the floor is slippery. Floor decking is impractical and prolongs the drying time for any water spilt on the floor.
- Coat the bucket and ladle with spar varnish, or oil them with Tylö sauna oil. This will keep the bucket watertight and keep the wood beautifully preserved. Never leave the wooden bucket in the sauna after taking a sauna.
- Before using the sauna for the first time, heat the sauna cabin up to approx. 90°C and leave the heater running for about 1 hour. This will clear the "new" smell out of the sauna.
- Clean the sauna regularly. Scrub the benches and floor with soft soap detergent, which is gentle and leaves a pleasant fragrance.

GENERAL INFORMATION

Fig. 21 - filling the stone compartment

Only use dolerite stones (Tylö sauna stones), as "ordinary" stones can damage the unit. Fill the stone compartment around the heating elements from the bottom to the top and approx. 50 mm above the front top edge, without pressing the stones into place.

Fig. 22

Never place stones on top of the side air chambers. Covering the vents will obstruct air circulation, the unit will overheat and the cut-out switch will activate.

Check the stone compartment at least once a year.

This is especially important for public saunas and saunas in frequent use. Instructions: Remove all the stones from the compartment. Clean any small stones, gravel and limescale deposits from the bottom of the stone compartment. Only replace whole, undamaged stones. Replace damaged stones with new dolerite stones as required.

Temperature cut-out

Tylö sauna heaters have a built-in temperature cut-out device in the terminal box at the bottom of the heater. It activates automatically if there is any risk of overheating. If the cut-out has activated, it is usually because of poor ventilation, incorrect heater location or an incorrectly filled stone compartment. Contact an electrician to reset the cut-out device.

Fig. 23

The ladle should always be used to sprinkle water on the stones, never a hose or bucket. **NB:** The stones must be very hot.
A pleasant fragrance can be created by using fragrance essences. Pour a few drops of the essence into the fragrance holder.
To maintain a comfortable basic level of humidity in the sauna, fill the built-in air humidifier with water before switching on the sauna.

A. Fragrance holder
B. Air humidifier

Clean the fragrance holder and air humidifier as required. Remove them and rinse them under running water.

USER GUIDE Expression and TS

Setting the temperature

The digits indicate a rising temperature scale. Find the sauna temperature that suits you best. Begin, for example, by turning the dial to position 4. If you want the sauna to be hotter or cooler, adjust the dial up or down until you find your ideal temperature (usually 70-80°C). After this, you can always leave the temperature setting at this level.

Time setting on control panel TS 16-3(B), TS 30-03 and Expression sauna heater.

The first digits 1-2-3 indicate the connection time. The subsequent 9 digits indicate the preselected time.

For direct connection: Turn the dial past the first 3 and then back to the required connection time (1, 2 or 3 hours).
The timer will stop automatically when it reaches 0.

Automatic connection: Turn the dial to 9, and then back to the required preselected time (= the time the heater is to automatically come on). The timer will stop automatically when it reaches 0.

You can turn the dial forwards or backwards at any time, e.g. to manually stop the heater (turn to 0) or to change a previous setting.

Time setting on control panel TS 30-012

The digits 1-12 on the timer indicate the connection time. The sauna heater is connected for the number of hours that the dial is set at, and automatically switches off when it reaches 0.

You can change the time setting at any time, and you can manually switch off the heater by turning the dial to 0.

GUIDELINES FOR USING THE SAUNA

- Always have a shower before entering the sauna.
- Take a towel in with you to sit on. Stay inside the sauna only as long as it feels pleasant. Go out now and then to cool off with a refreshing shower.
- Show consideration for other sauna users. Don't set the temperature higher than is pleasant for everyone using the sauna.
- Young children love saunas. Let them splash around in a tub of water on the floor or on the lower bench, where it is cooler. But remember to keep an eye on them at all times.
- Round off your sauna with a long, cool shower.
- Never get dressed right after your sauna, or you will start perspiring again. Relax without your clothes on outside the sauna. Have a cold drink and enjoy the sensation of true well-being. Don't get dressed until your body has cooled down and your pores have closed.

You can enjoy traditional dry and wet saunas with all Tylö sauna heaters.

Dry and wet saunas have long historic traditions. A sauna is best enjoyed at temperatures between 70-90°C.

In dry saunas, where the stones are not sprinkled with water, the relative humidity (RH) is only 5–10%.

In wet saunas, where water is ladled onto the hot stones, the relative humidity rises steeply to RH 10-25%, and you can feel the heat waves vibrating in the air and massaging your skin. A few drops of Tylö Sauna Fragrance added to the water poured over the stones bring a pleasant, invigorating sensation to the nose and airways. Try rounding off your sauna by pouring a little extra water over the stones, to produce a pleasant tingling sensation on your skin. Wet saunas are the most popular way of taking a sauna, and are generally considered the most traditional method.

Important! Use ordinary drinking water. Salt water or brackish water will damage the heating elements. Never use a hose to spray water onto or into the heater. Always use the ladle to sprinkle water onto the stones. Devices that provide continuous water sprinkling may not be used in the sauna.

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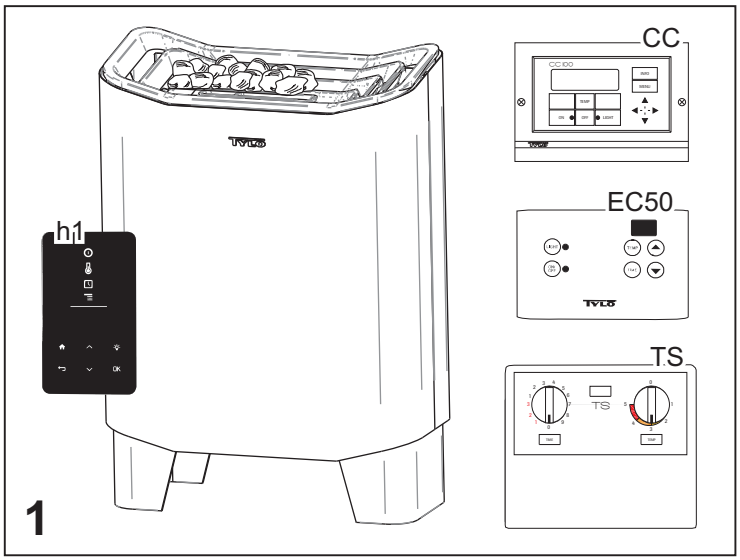
In the event of problems, please contact the retailer where you purchased the equipment.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EC50
TS
h1
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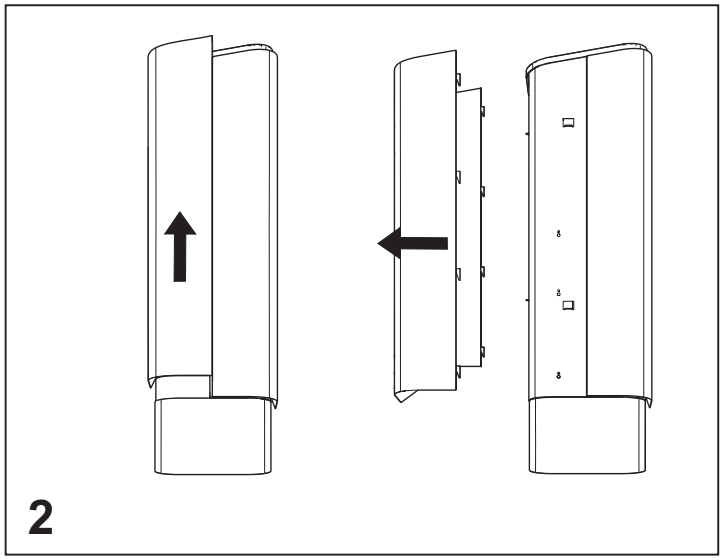
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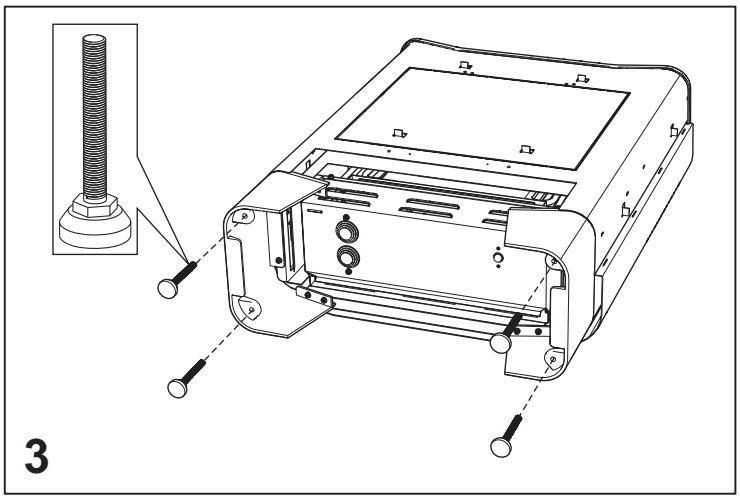
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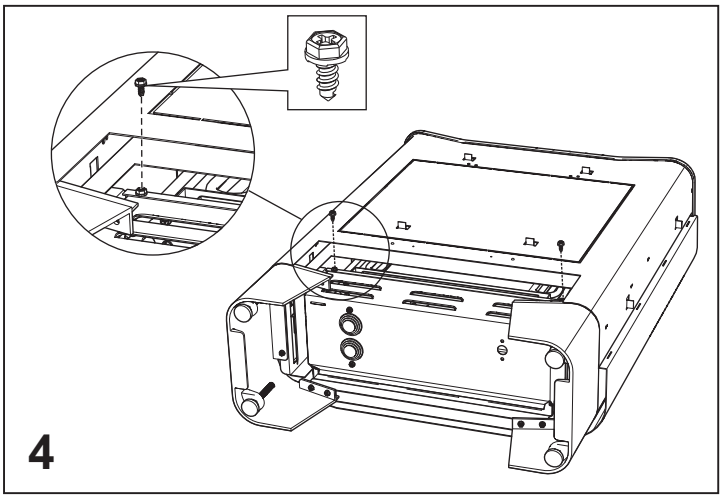
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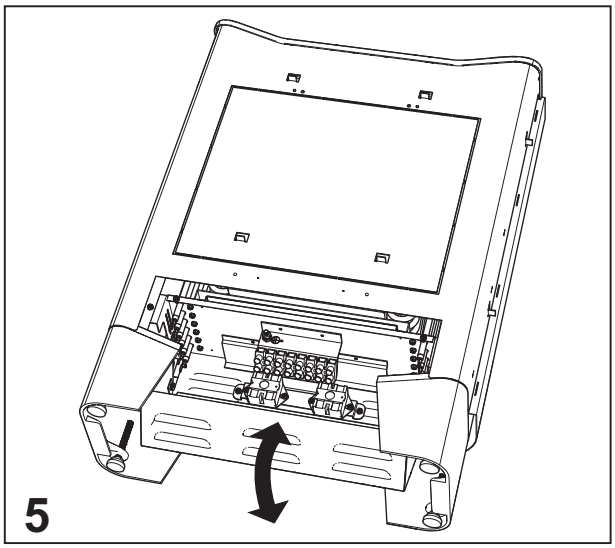
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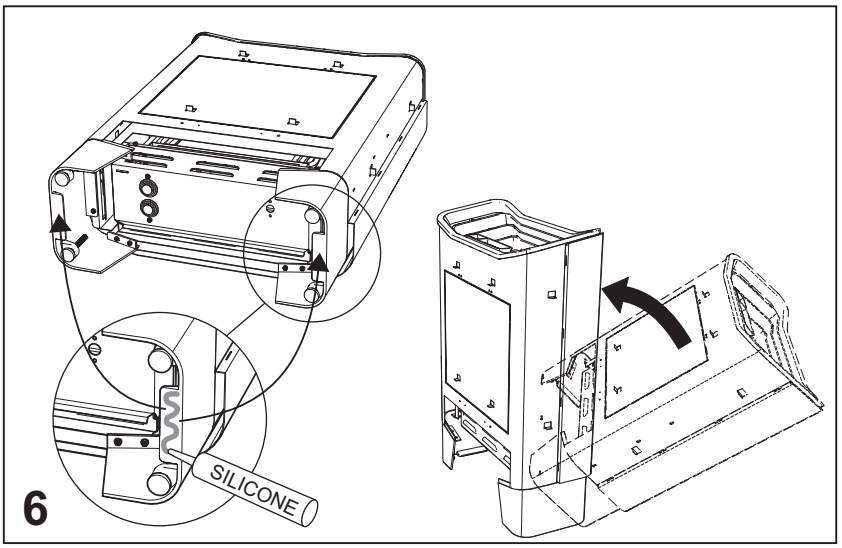
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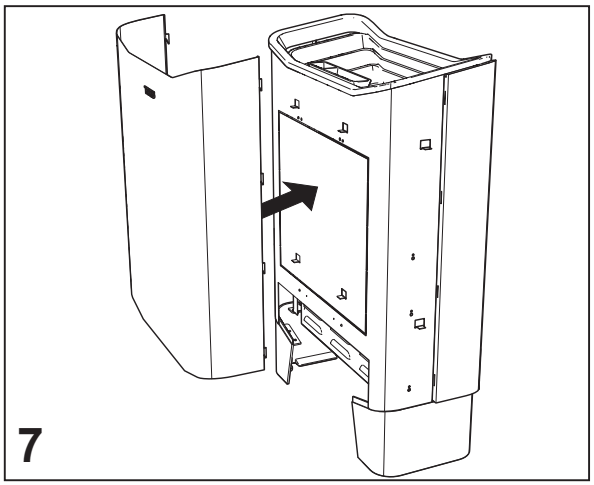
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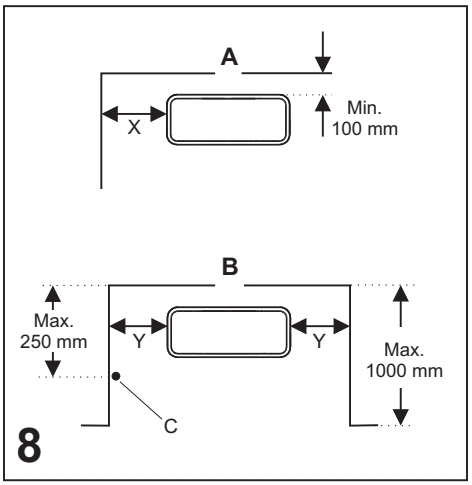
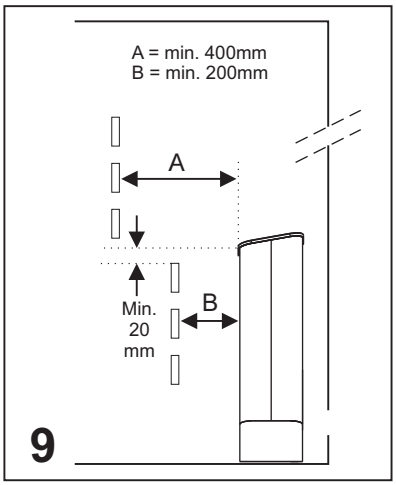

A
X
Min.
100 mm
B
Max.
250 mm
Y
Y
Max.
1000 mm
C
8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B = min. 200mm
A
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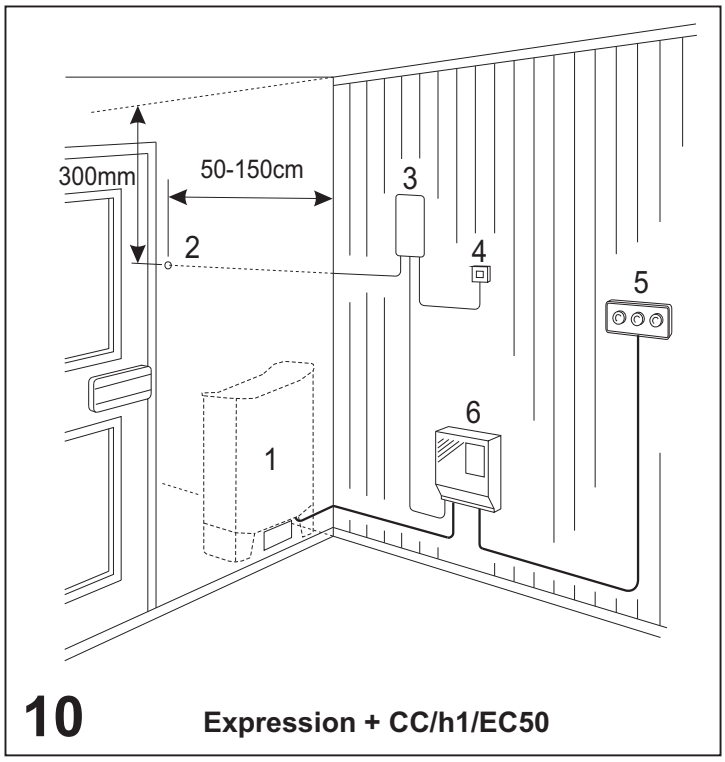
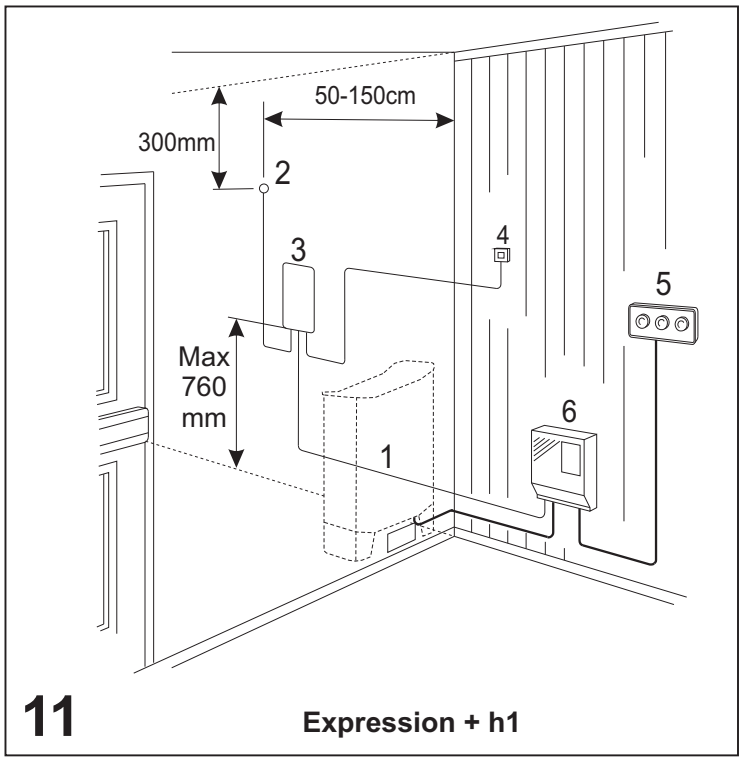
9



10 **Expression + CC/h1/EC50**



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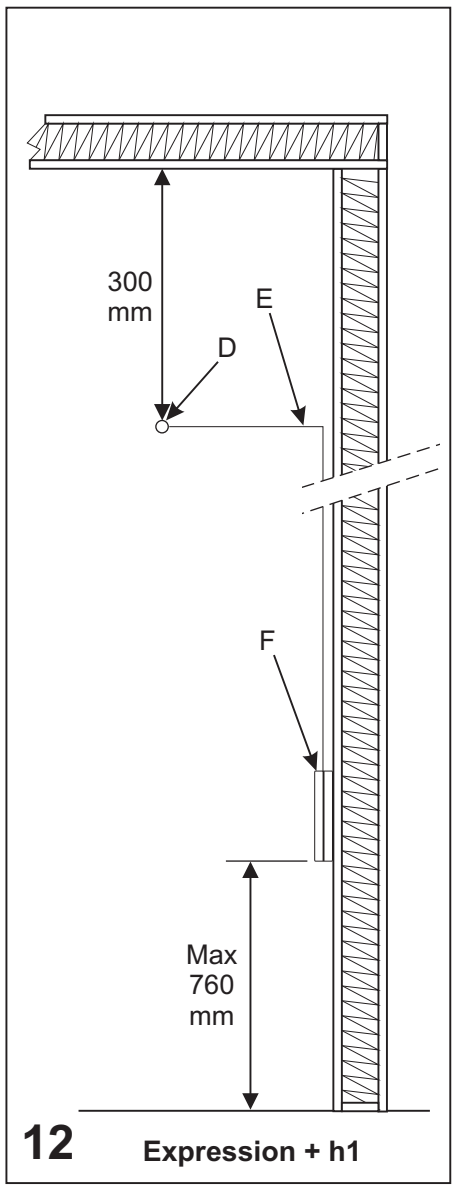

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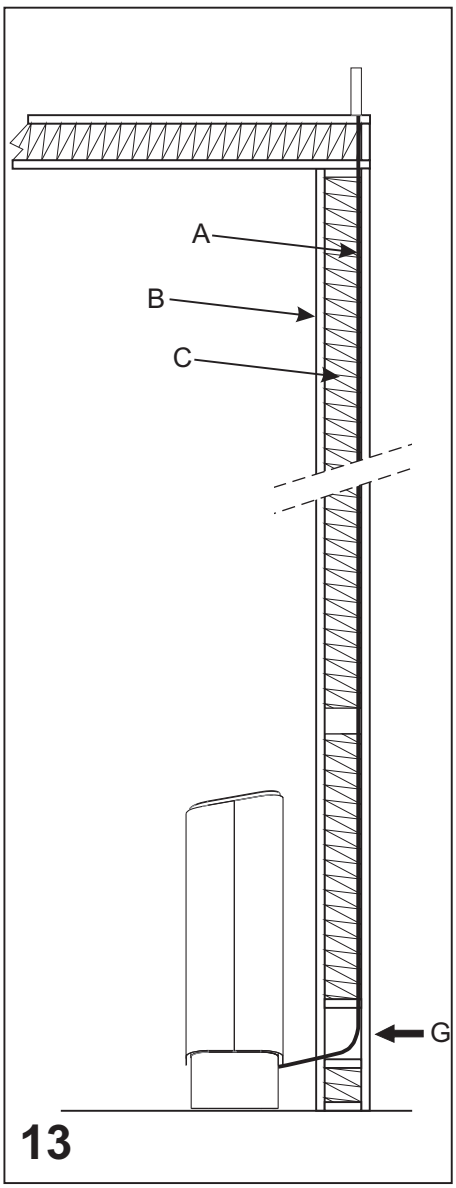

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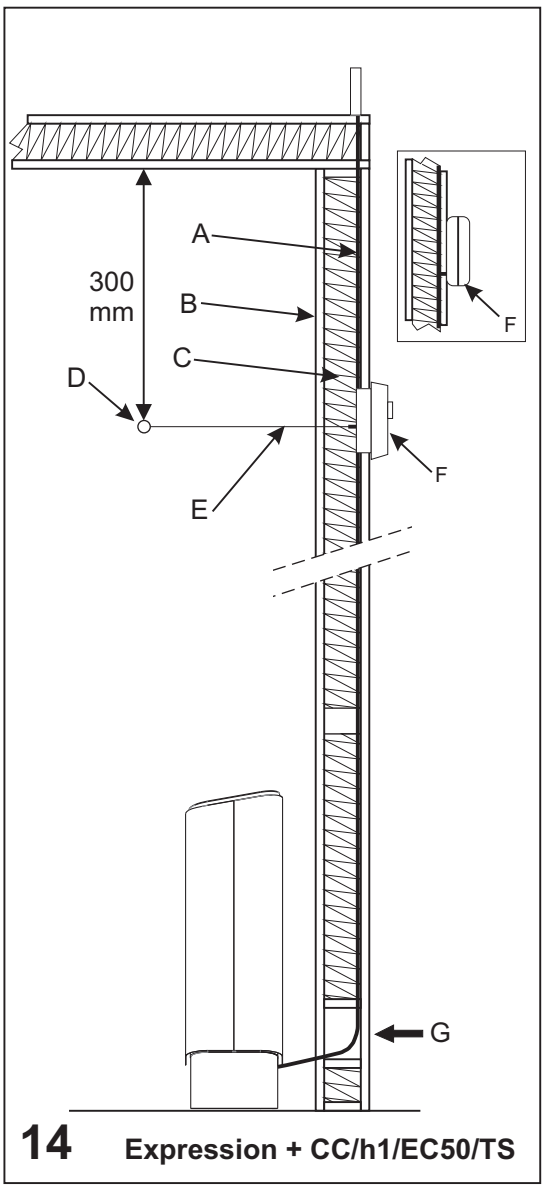

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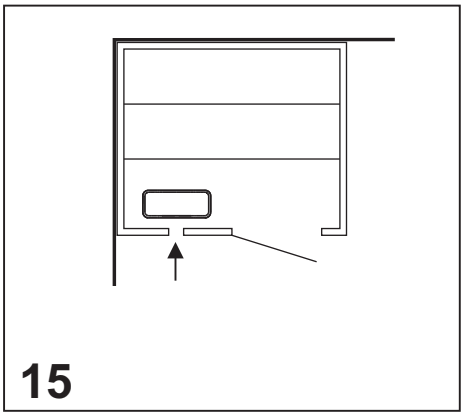

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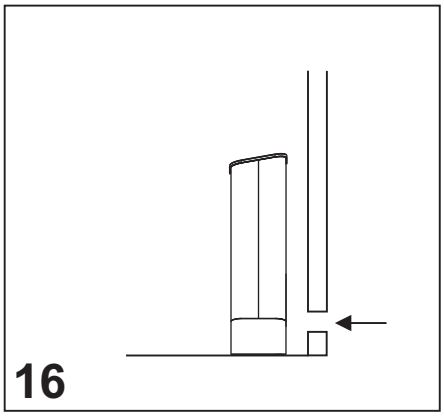

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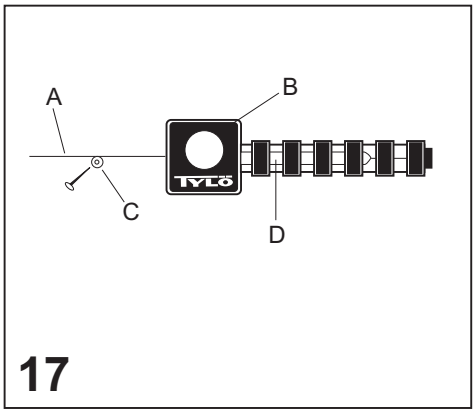

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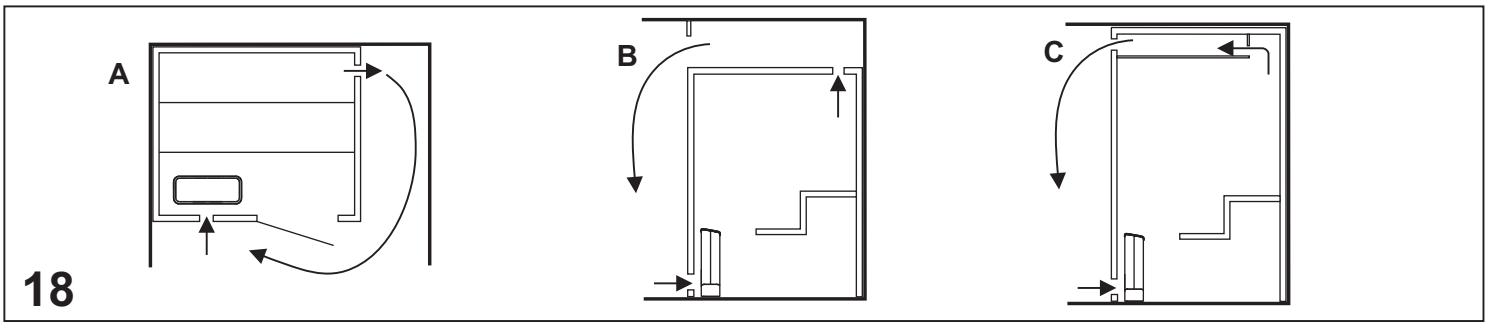

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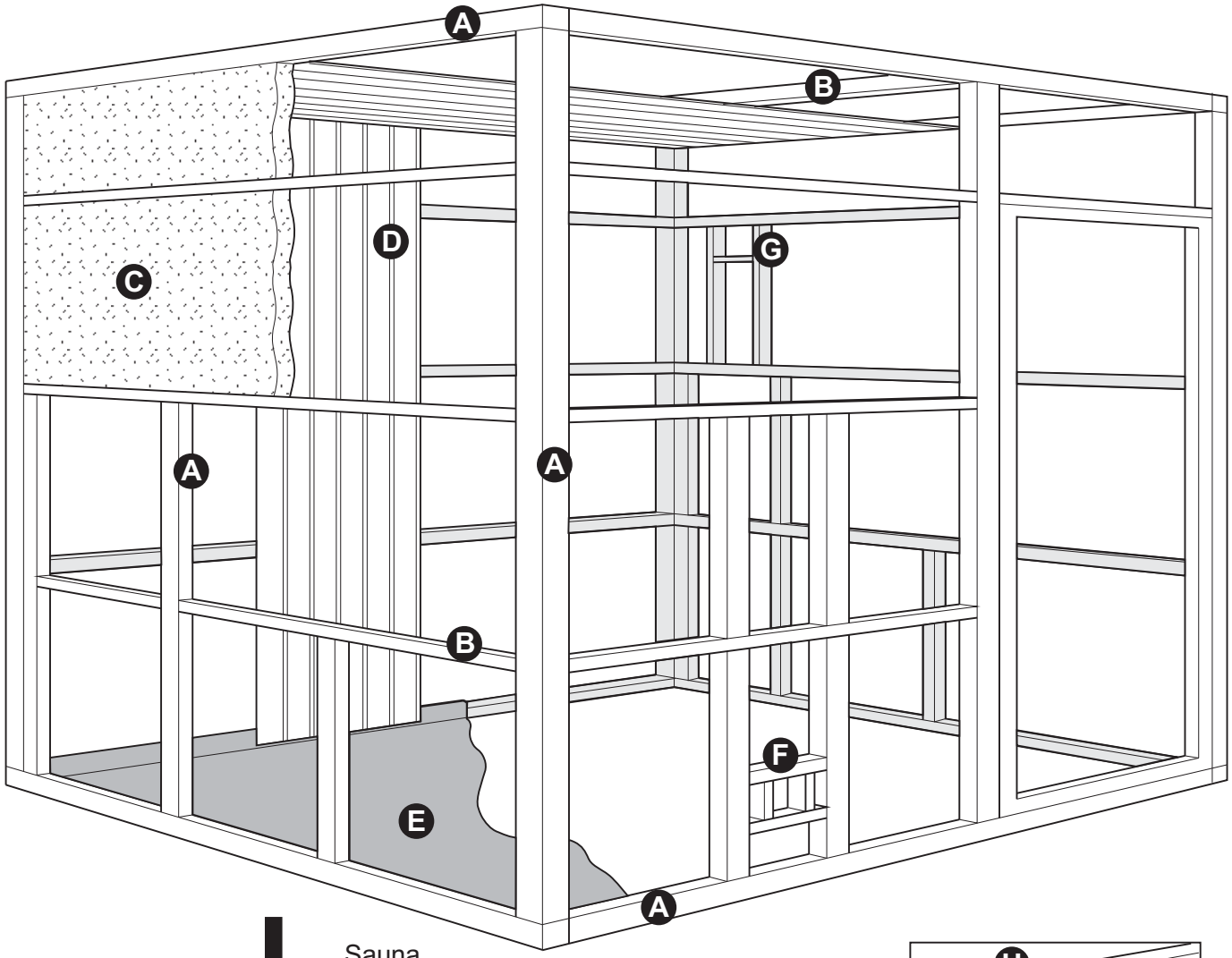

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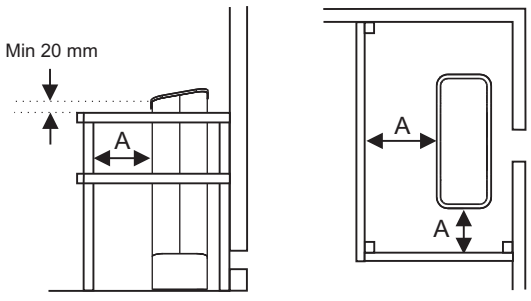
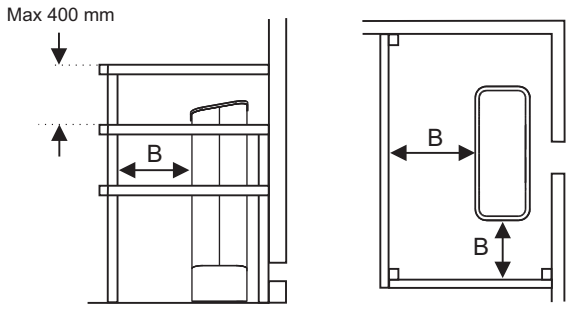
Alt A A = min. 200 mm



Alt B B = min. 400 mm



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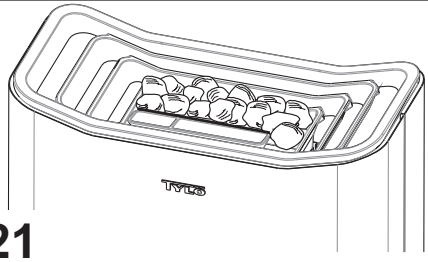

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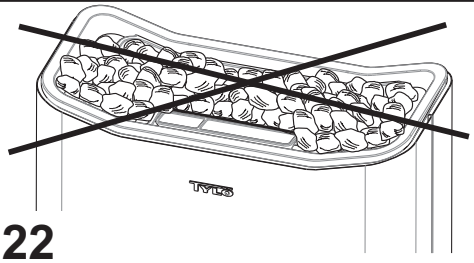

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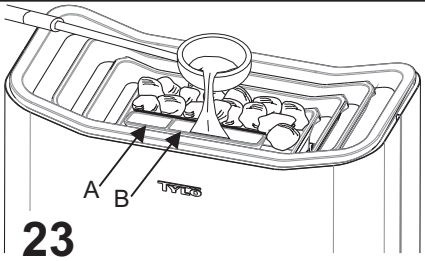

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400 - 415 - 440 V 3N~

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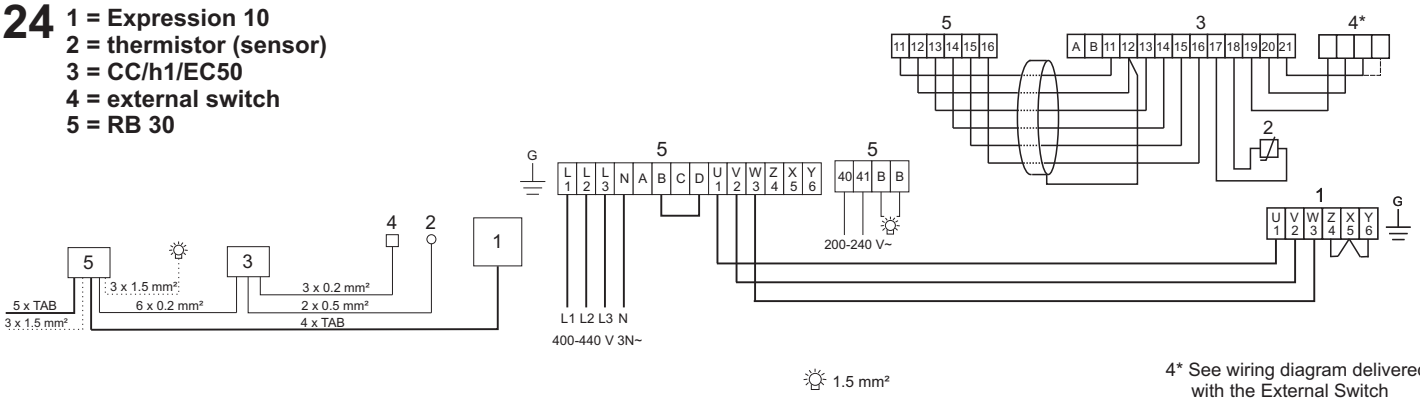
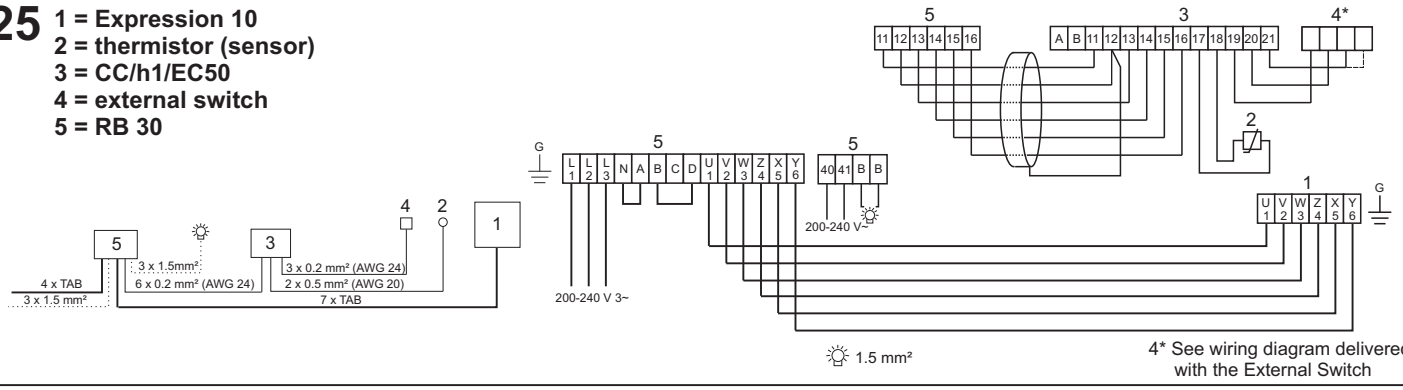
1 = Expression 10
2 = thermistor (sensor)
3 = CC/h1/EC50
4 = external switch
5 = RB 30



WARNING! THIS APPLIANCE MUST BE EARTHED!

200 - 208 - 230 - 240 V 3~

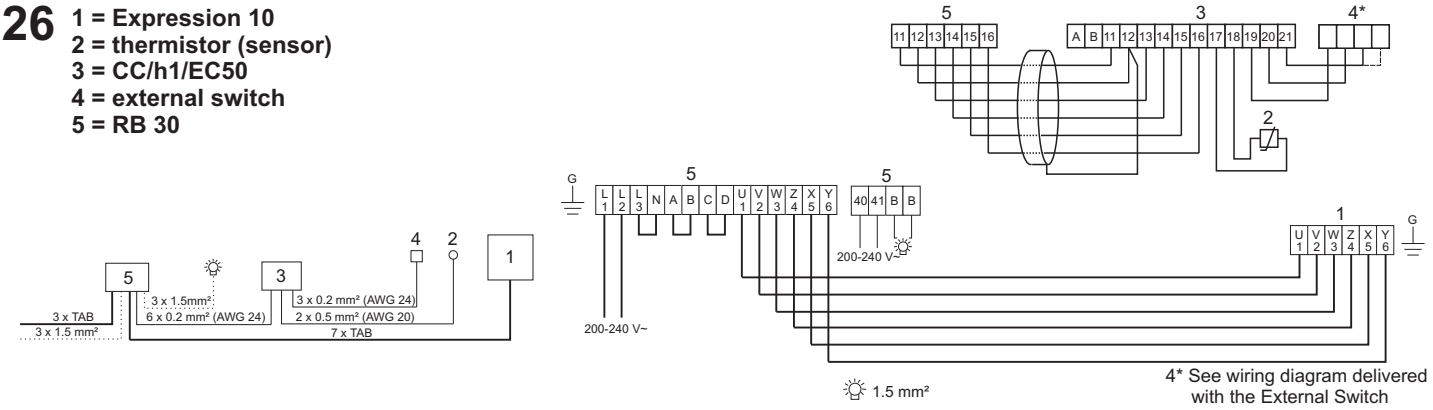
25
1 = Expression 10
2 = thermistor (sensor)
3 = CC/h1/EC50
4 = external switch
5 = RB 30



WARNING! THIS APPLIANCE MUST BE EARTHED!

200 - 208 - 230 - 240 V~

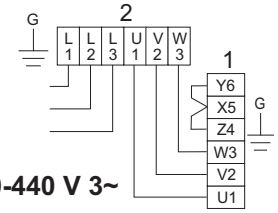
26
1 = Expression 10
2 = thermistor (sensor)
3 = CC/h1/EC50
4 = external switch
5 = RB 30



WARNING! THIS APPLIANCE MUST BE EARTHED!

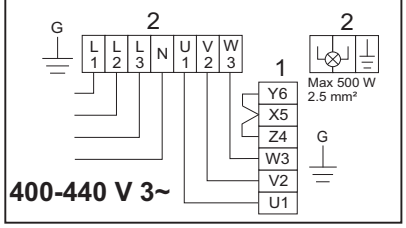
400 - 415 - 440 V 3~

27
1 = Expression 10
2 = TS 16-3



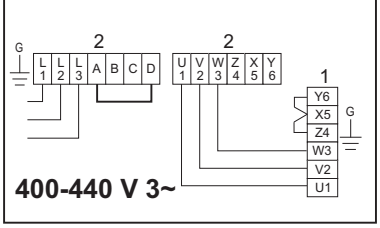
WARNING! THIS APPLIANCE MUST BE EARTHED!

28
1 = Expression 10
2 = TS 16-3 B



WARNING! THIS APPLIANCE MUST BE EARTHED!

29
1 = Expression 10
2 = TS 30-03, TS 30-012



WARNING! THIS APPLIANCE MUST BE EARTHED!