

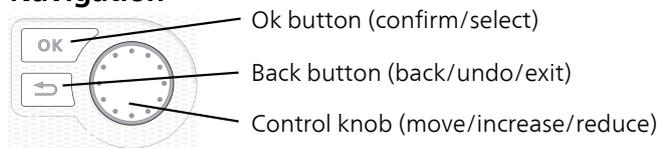


Installer manual  
**NIBE F750**  
Exhaust air heat pump

IHB GB 1723-1  
431408

## Quick guide

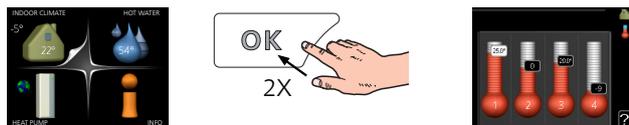
### Navigation



A detailed explanation of the button functions can be found on page 34.

How to scroll through menus and make different settings is described on page 36.

### Set the indoor climate



The mode for setting the indoor temperature is accessed by pressing the OK button twice, when in the start mode in the main menu.

### Increase hot water volume



To temporarily increase the amount of hot water, first turn the control knob to mark menu 2 (water droplet) and then press the OK button twice.

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# 1 Important information

## Safety information

This manual describes installation and service procedures for implementation by specialists.

The manual must be left with the customer.

This appliance can be used by children aged from 8 years and above and persons with reduced physical, sensory or mental capabilities or lack of experience and knowledge if they have been given supervision or instruction concerning use of the appliance in a safe way and understand the hazards involved. Children shall not play with the appliance. Cleaning and user maintenance shall not be made by children without supervision.

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## Symbols



### NOTE

This symbol indicates danger to person or machine.



### Caution

This symbol indicates important information about what you should observe when maintaining your installation.



### TIP

This symbol indicates tips on how to facilitate using the product.

## Marking

**CE** The CE mark is obligatory for most products sold in the EU, regardless of where they are made.

**IP21** Classification of enclosure of electro-technical equipment.



Read the User Manual.

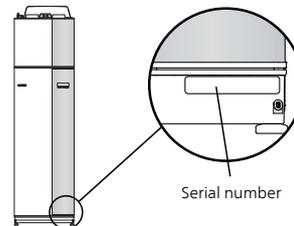


Read the Installer Manual.

## General

### Serial number

The serial number can be found at the bottom right of the front cover and in the info menu (menu 3.1).



### Caution

You need the product's (14 digit) serial number for servicing and support.

### Recovery



Leave the disposal of the packaging to the installer who installed the product or to special waste stations.

Do not dispose of used products with normal household waste. It must be disposed of at a special waste station or dealer who provides this type of service.

Improper disposal of the product by the user results in administrative penalties in accordance with current legislation.

### Environmental information

This unit contains a fluorinated greenhouse gas that is covered by the Kyoto agreement.

### **F-Gas Regulation (EU) No. 517/2014**

The equipment contains R407C, a fluorinated greenhouse gas with a GWP value (Global Warming Potential) of 1774. Do not release R407C into the atmosphere.

## Inspection of the installation

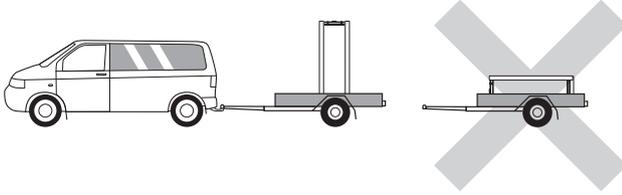
Current regulations require the heating installation to be inspected before it is commissioned. The inspection must be carried out by a suitably qualified person. In addition, fill in the page for the installation data in the User Manual.

✓	Description	Notes	Signature	Date
	Ventilation (page 18)			
	Setting the ventilation flow			
	Heating medium (page 15)			
	System flushed			
	System vented			
	Safety valve			
	Circulation pump setting			
	Setting heating medium flow			
	Boiler pressure			
	Hot water (page 15)			
	Mixing valve			
	Safety valve			
	Electricity (page 19)			
	Connections			
	Main voltage			
	Phase voltage			
	Fuses heat pump			
	Fuses property			
	Outside sensor			
	Room sensor			
	Current sensor			
	Safety breaker			
	Earth circuit-breaker			

## 2 Delivery and handling

### Transport

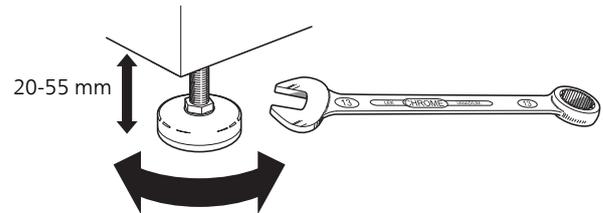
F750 should be transported and stored vertically in a dry place. However, the F750 may be carefully laid on its back when being moved into a building. The centre of gravity is in the upper part.



### Assembly

- Position F750 on a fixed foundation that can take the weight of the heat pump. Use the product's adjustable feet to obtain a horizontal and stable set-up.

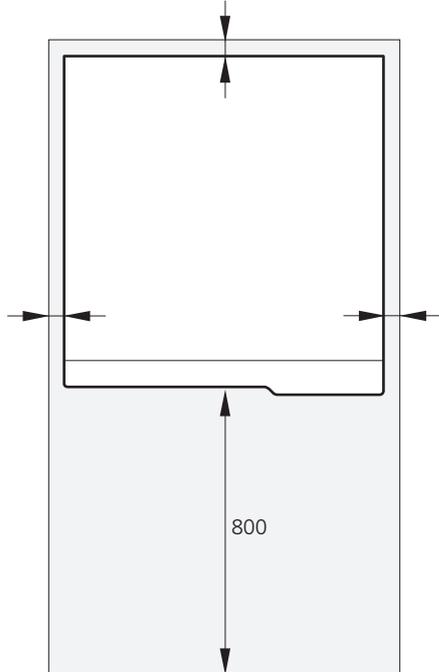
Because water comes from F750, the floor coating is important. A waterproof floor or floor membrane is recommended.



- Because water comes from F750, it is good if the area where the heating pump is located is provided with floor drainage.
- Install with its back to an outside wall, ideally in a room where noise does not matter, in order to eliminate noise problems. If this is not possible, avoid placing it against a wall behind a bedroom or other room where noise may be a problem.
- Wherever the unit is located, walls to sound sensitive rooms should be fitted with sound insulation.
- Route pipes so they are not fixed to an internal wall that backs on to a bedroom or living room.
- The heat pump's installation area should always have a temperature of at least 10 °C and max 30 °C.

## Installation area

Leave a free space of 800 mm in front of the product. Leave free space between F750 and wall/other machinery/fittings/cables/pipes etc. It is recommended that a space of at least 10 mm is left to reduce the risk of noise and of any vibrations being propagated.



### NOTE

Ensure that there is sufficient space (300 mm) above the heat pump for installing ventilation hoses.

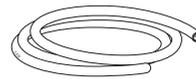
## Supplied components



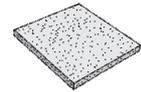
Outside sensor



Room sensor



Vent hose  
(length 4 m)



Extra air filter



DCO 10, vent socket (only  
F750 copper)



Current sensor



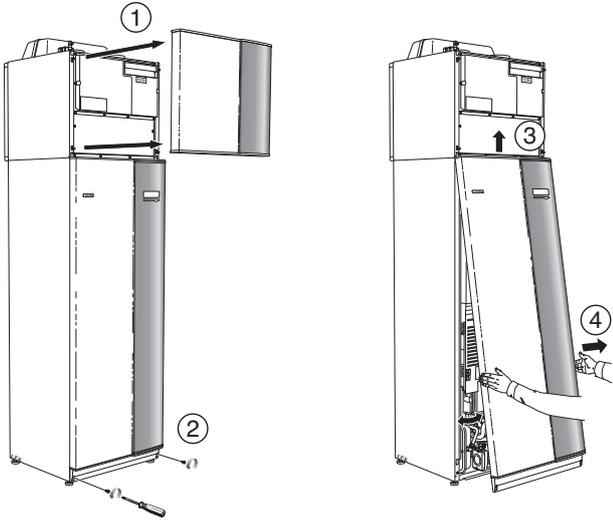
Filterball

## Location

The kit of supplied items is placed on top of the product.

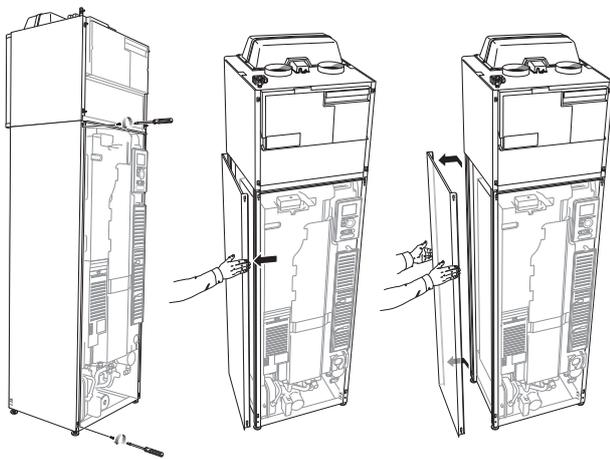
## Removing the covers

### Front cover



1. Remove the upper panel by pulling it straight out.
2. Remove the screws from the lower edge of the front panel.
3. Lift the panel out at the bottom edge and up.
4. Pull the panel towards yourself.

### Side covers



The side covers can be removed to facilitate the installation.

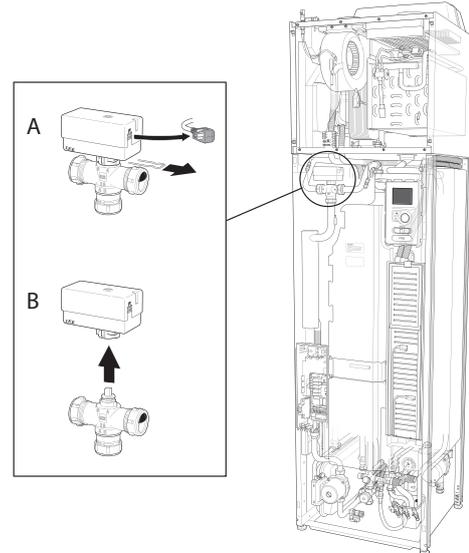
1. Remove the screws from the upper and lower edges.
2. Twist the cover slightly outward.
3. Move the hatch backwards and slightly to the side.
4. Pull the cover to one side.
5. Pull the hatch forwards.

## Removing parts of the insulation

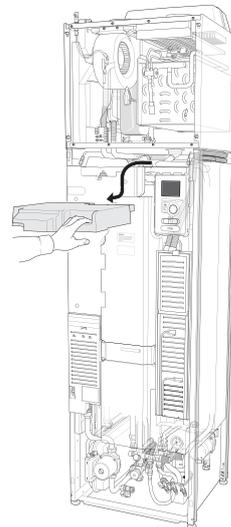
Parts of the insulation can be removed to facilitate the installation.

### Insulation, top

1. Disconnect the cable from the motor and remove the motor from the shuttle valve as illustrated.



2. Grip the handle and pull straight out as illustrated.



### Insulation, immersion heater

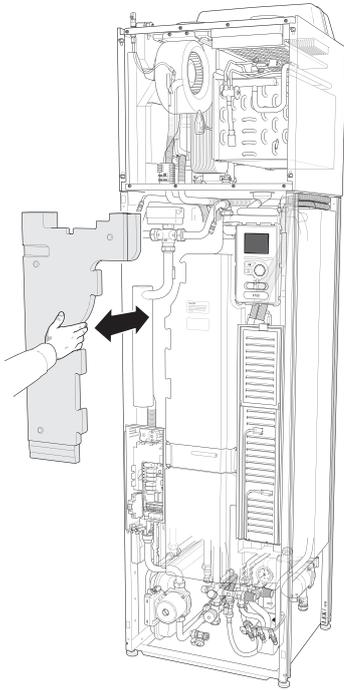


#### NOTE

Electrical installation and service must be carried out under the supervision of a qualified electrician. Electrical installation and wiring must be carried out in accordance with the stipulations in force.

1. Remove the cover for the junction box according to the description on page 20.

2. Grip the handle and pull the insulation carefully towards you as illustrated.

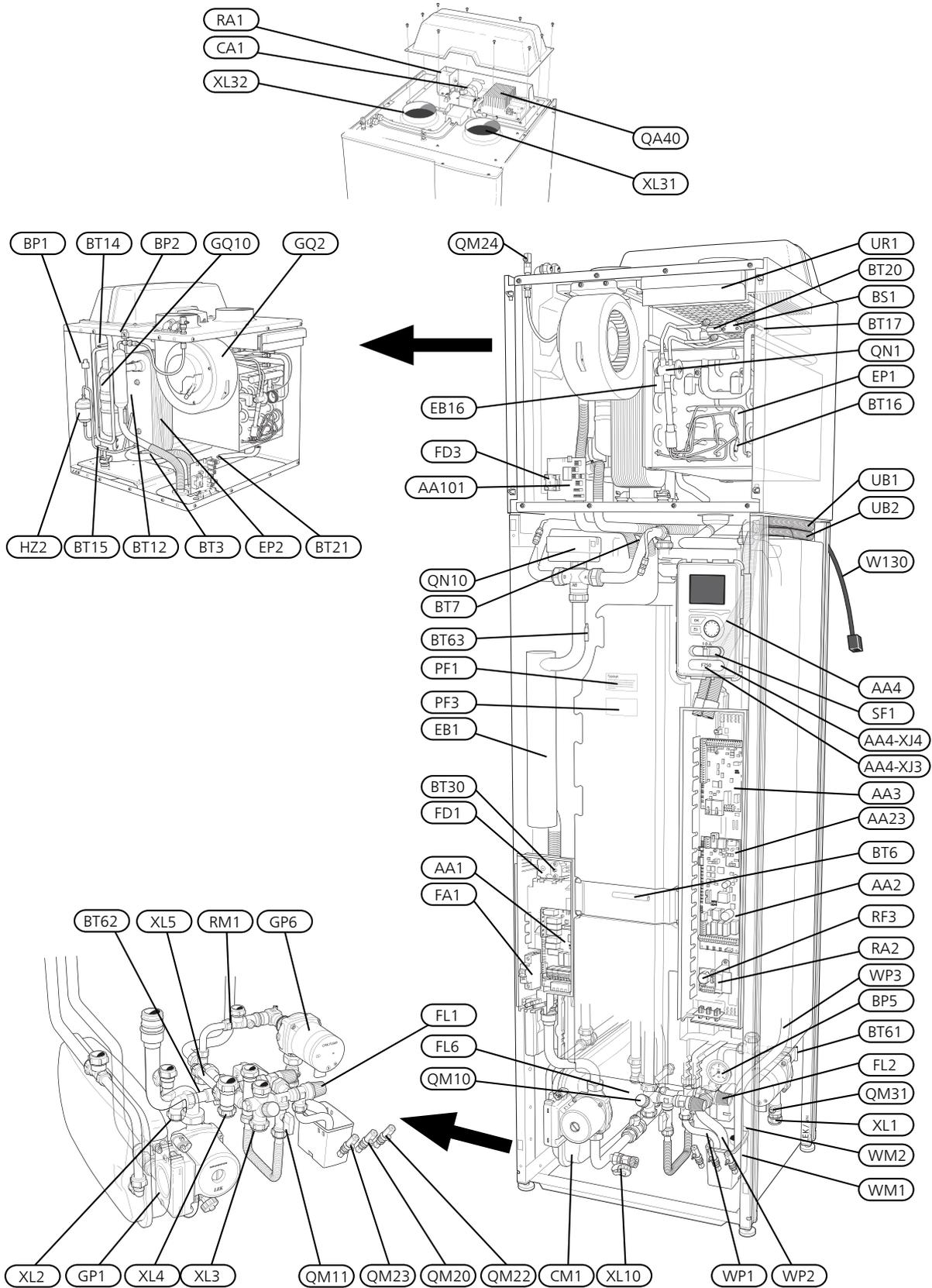


**TIP**

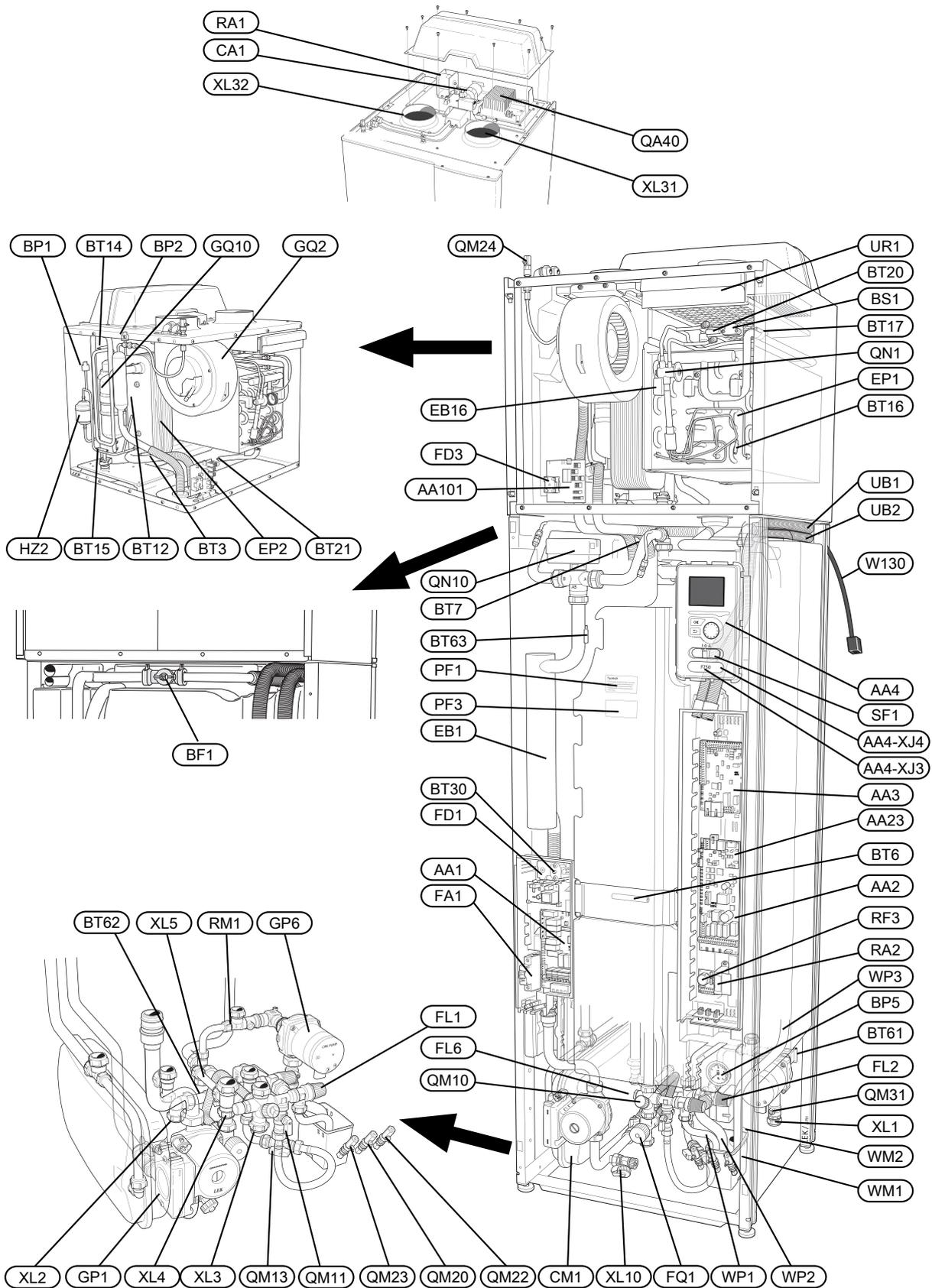
Remove the hatch for the immersion heater card so that it is easier to remove the insulation (see page 20).

# Component positions

## F750, copper



# F750, stainless steel



## Pipe connections

XL1	Connection, heating medium flow line
XL2	Connection, heating medium return line
XL3	Connection, cold water
XL4	Connection, hot water
XL5	Connection, hot water circulation
XL10	Connection, draining heating medium
XL31	Ventilation connection, exhaust air
XL32	Ventilation connection, extract air

## HVAC components

CM1	Expansion vessel
FL1	Safety valve, water heater
FL2	Safety valve, climate system
FL6	Vacuum valve <sup>2</sup>
FQ1	Mixer valve, hot water <sup>3</sup>
GP1	Circulation pump
GP6	Heating medium pump <sup>2</sup>
QM10	Filler valve, hot water heater
QM11	Filler valve, climate system
QM13	Filler valve 2, climate system <sup>3</sup>
QM20	Venting, heating medium
QM22	Venting, coil
QM23	Venting, buffer tank
QM24	Venting, heat exchanger
QM31	Shut-off valve, heating medium flow
QN10	Shuttle valve, climate system/water heater
QN27	Reversing valve, circulation climate system <sup>1</sup>
RM1	Non-return valve
WM1	Overflow cup
WM2	Overflow water discharge
WP1	Overflow pipe, safety valve hot water heater
WP2	Overflow pipe, safety valve climate system
WP3	Overflow pipe, condensation

## Sensors etc.

BF1	Flow sensor (located on the rear of the machine) <sup>3</sup>
BP1	High pressure pressostat
BP2	Low pressure pressostat
BP5	Pressure gauge, heating system
BS1	Air speed sensor
BT1	Outside sensor <sup>1</sup>
BT3	Temperature sensors, heating medium return
BT6	Temperature sensor, hot water, control
BT7	Temperature sensor, hot water, display
BT12	Temperature sensor, heating medium flow after condenser
BT14	Temperature sensor, hot gas
BT15	Temperature sensor, fluid pipe
BT16	Temperature sensor, evaporator <sup>1</sup>
BT17	Temperature sensor, suction gas
BT20	Temperature sensor, exhaust air

BT21	Temperature sensor, extract air
BT30	Thermostat, backup heating
BT50	Room sensor <sup>1</sup>
BT61	Temperature sensor, heating medium flow after buffer vessel
BT62	Temperature sensor, heating medium return after buffer vessel
BT63	Temperature sensor, heating medium supply after immersion heater

## Electrical components

AA1	Immersion heater card
AA2	Base card
AA3	Input circuit board
AA4	Display unit
	AA4-XJ3 USB socket
	AA4-XJ4 Service socket
AA23	Communication board
AA101	Connection card sensor
CA1	Capacitor
EB1	Immersion heater
EB16	Defrosting element
FA1	Miniature circuit-breaker
FD1	Temperature limiter
FD3	Temperature limiter, defrosting element
QA40	Inverter
RA1	Choke
RF3	EMC card
SF1	Switch
W130	Network cable for NIBE Uplink™

## Cooling components

EP1	Evaporator
EP2	Condenser
GQ10	Compressor
HZ2	Drying filter
QN1	Expansion valve

## Ventilation

GQ2	Exhaust air fan
HQ10	Exhaust air filter <sup>1</sup>
UR1	Filter cover, exhaust air

## Miscellaneous

PF1	Rating plate
PF3	Serial number plate
UB1-2	Cable gland

<sup>1</sup>Not visible in the image

<sup>2</sup>Only F750 copper. <sup>3</sup>Only F750 stainless steel.

Designations in component locations according to standard IEC 81346-1 and 81346-2.

# 4 Pipe and ventilation connections

## General pipe connections

Pipe installation must be carried out in accordance with current norms and directives.

The system requires the radiator circuit to be designed for a low temperature heating medium. At the lowest dimensioned outdoor temperature (DOT) the highest recommended temperatures are 55 °C on the supply line and 45 °C on the return line.

Overflow water from the evaporator collection tray and safety valves passes via a non-pressurised pipe to an overflow cup, and from there to a drain, so that hot water splashes cannot cause injury. The entire length of the overflow water pipe must be inclined to prevent water pockets and must also be frost-proof.



### NOTE

The pipe system needs to be flushed out before the heat pump is connected so that any debris cannot damage component parts.

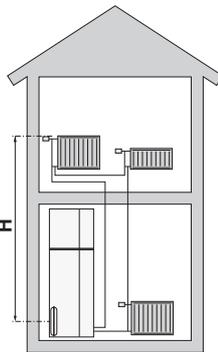


### Caution

Ensure that incoming water is clean. When using a private well, it may be necessary to supplement with an extra water filter.

## Maximum boiler and radiator volumes

The volume of the pressure expansion vessel (CM1) is 10 litres and it is pre-pressurised as standard to 0.5 bar (5 mvp). As a result, the maximum permitted height "H" between the vessel and the highest radiator is 5 m, see figure.



If the standard initial pressure in the pressure vessel is not high enough it can be increased by adding air via the valve in the expansion vessel. The initial pressure of the expansion vessel must be stated in the inspection document. Any change in the initial pressure affects the ability of the expansion vessel to handle the expansion of the water.

The maximum system volume excluding the boiler is 260 litres at the above pre-pressure.

## System diagram

F750 consists of a heat pump, water heater, buffer vessel, immersion heater, fan, circulation pump and control system. F750 is connected to the ventilation system and heating medium circuits.

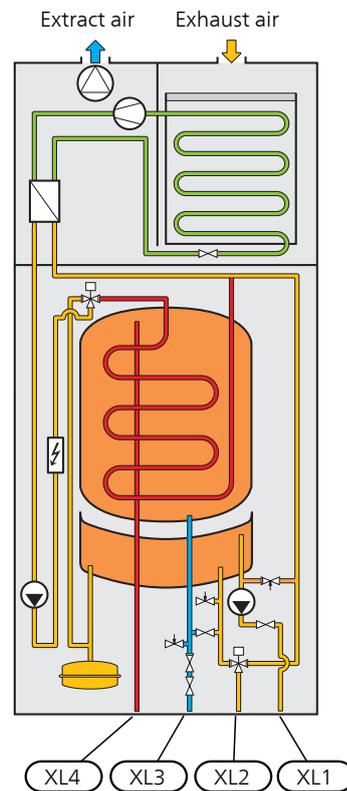
When the exhaust air at room temperature passes through the evaporator, the refrigerant evaporates because of its low boiling point. In this way the energy in the room air is transferred to the refrigerant.

The refrigerant is then compressed in a compressor, causing the temperature to rise considerably.

The warm refrigerant is led to the condenser. Here the refrigerant gives off its energy to the heating system water, whereupon the refrigerant changes state from gas to liquid.

The refrigerant then goes via filters to the expansion valve, where the pressure and temperature are reduced.

The refrigerant has now completed its circulation and returns to the evaporator.



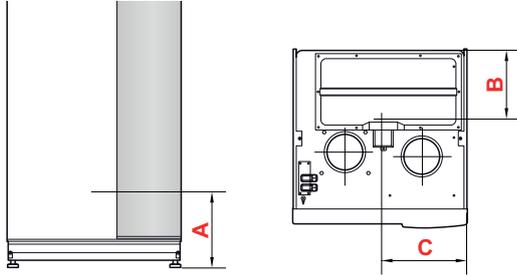
- XL1 Connection, heating medium flow
- XL2 Connection, heating medium return
- XL3 Connection, cold water
- XL4 Connection, hot water



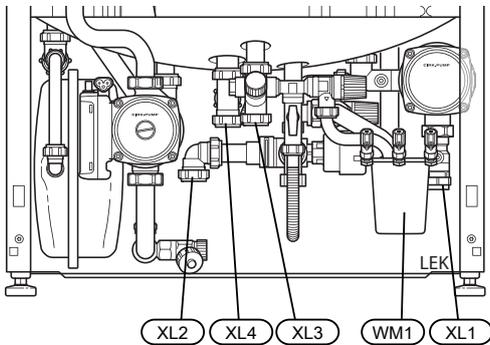
### Caution

This is an outline diagram, differences may occur in the actual installation.

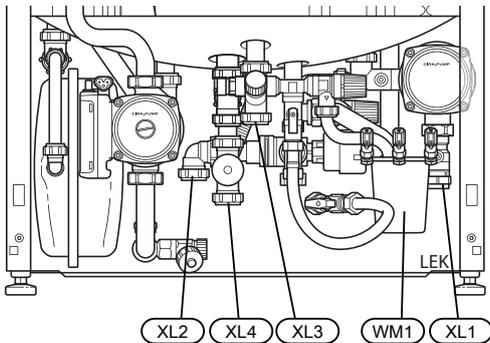
## Dimensions and pipe connections



### Copper



### Stainless



The overflow cup (WM1) can be turned, so that the pipe can be directed forwards or backwards to simplify connection of the hose to the drain.

### Setting out dimensions

#### Copper

Connection		A	B	C
XL1 Heating medium supply	(mm)	150	235	55
XL2 Heating medium return	(mm)	165	270	360
XL3 Cold water	(mm)	230	470	280
XL4 Hot water	(mm)	225	410	315
XL5 Hot water circulation	(mm)			
WM1 Overflow cup	(mm)	140	340	100

#### Stainless

Connection		A	B	C
XL1 Heating medium supply	(mm)	150	235	55
XL2 Heating medium return	(mm)	165	270	360
XL3 Cold water	(mm)	230	470	280
XL4 Hot water	(mm)	130	410	315
XL5 Hot water circulation	(mm)			
WM1 Overflow cup	(mm)	140	340	100

### Pipe dimensions

Connection		
XL1-XL2 Heating medium ext Ø	(mm)	22
XL3 Cold water ext Ø	(mm)	22
XL4 Hot water ext Ø	(mm)	22
XL5 Hot water circulation ext. Ø	(mm)	15
WM2 Overflow water discharge	(mm)	32

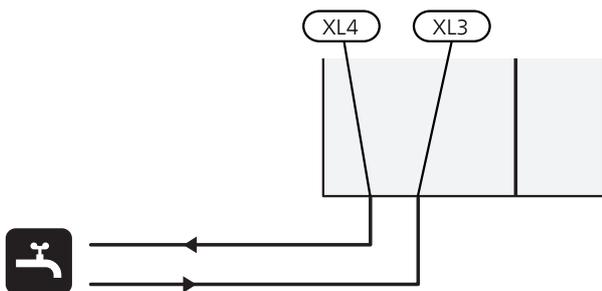
## Symbol key

Symbol	Meaning
	Shut-off valve
	Non-return valve
	Mixing valve
	Shunt / shuttle valve
	Safety valve
	Temperature sensor
	Circulation pump
	Particle filter
	Radiator system
	Domestic hot water
	Under floor heating systems

## Cold and hot water

### Connecting cold and hot water

- A mixer valve must also be installed, if the factory setting for hot water is changed. National regulations must be observed.
- The setting for hot water is made in menu 5.1.1 (page 41).

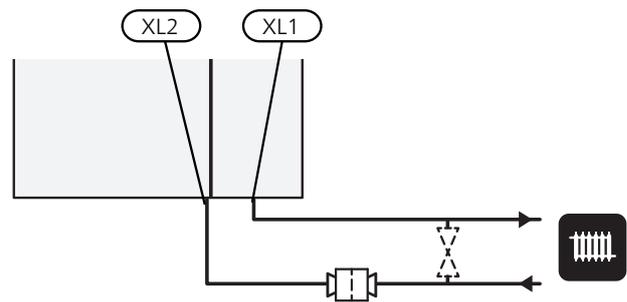


## Heating medium side

### Connecting the climate system

A climate system is a system that regulates indoor comfort with the help of the control system in F750 and for example radiators, under floor heating/cooling, fan coils etc.

- Install the enclosed filterballs as illustrated.
- When connecting to a system with thermostats on all radiators, a relief valve must be fitted, or some of the thermostats must be removed to ensure sufficient flow.



## Installation alternative

F750 can be installed in several different ways, some of which are shown below.

Further option information is available at [www.nibe.eu](http://www.nibe.eu) and in the respective assembly instructions for the accessories used. See page 52 for a list of the accessories that can be used with F750.

### Separated/one unit

F750 is delivered as one unit and can be installed as one unit or separated. For separate installation the accessory DKI 10 is required.

The images in this manual show F750 installed as one unit.



One unit



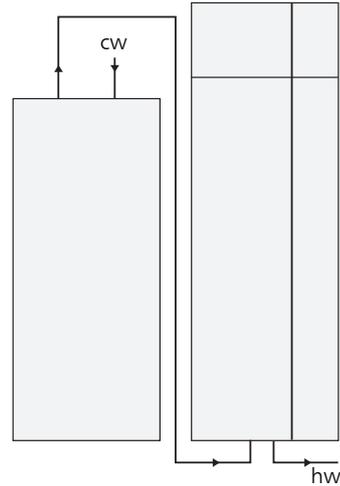
Separated installation

### Extra hot water heaters

The heat pump should be supplemented with an extra water heater, if a large bath tub or other significant consumer of hot water is installed.

#### Water heater without immersion heater

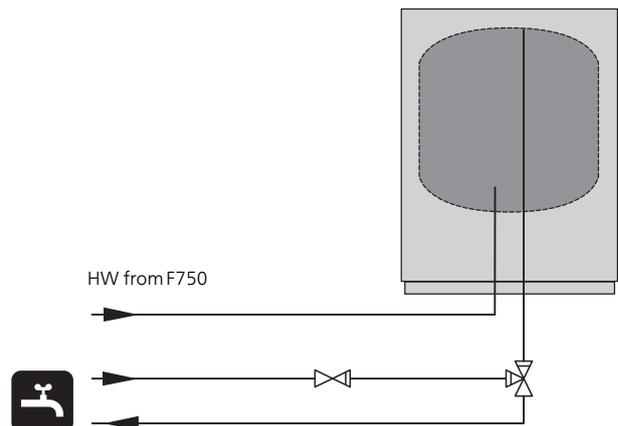
In water heaters without an immersion heater, the water is heated by the heat pump's compressor. The water heater is best positioned to the left of F750.



#### Water heater with immersion heater

If it is possible to use a water heater with an immersion heater, NIBE COMPACT or EMINENT type water heaters can be used.

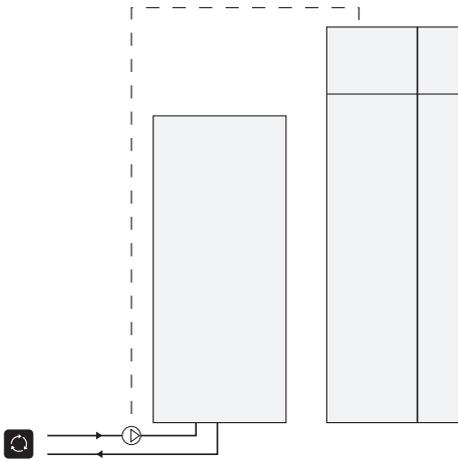
If the valve connector is to be installed externally, moved out or separated, it must be replaced with a separable connector  $\varnothing$  22 mm.



## Hot water circulation (VVC)

To reduce the risk of bacterial growth in systems with hot water circulation, the temperature of the circulating water should not fall below 50°C. Nor should there be any hot water pipes containing stationary water. Adjust the hot water system so that the temperature does not fall below 50°C at the extremities of the system.

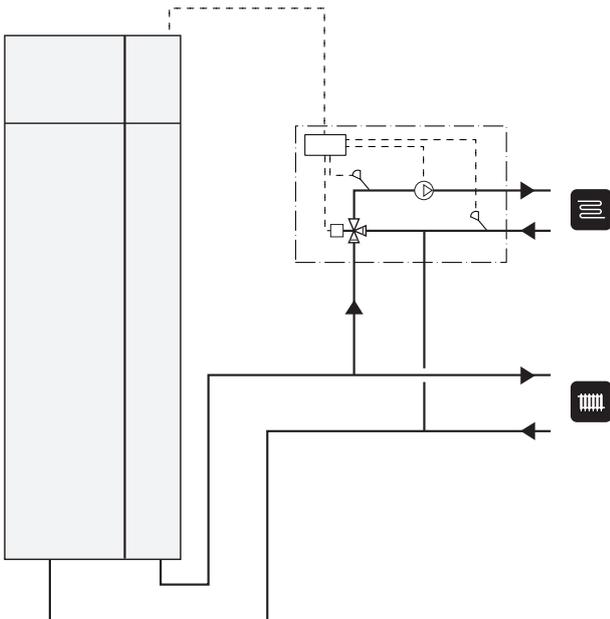
The circulation pump for hot water circulation can be controlled by the heat pump. The HWC return can be connected to XL5 or a freestanding water heater. If an electric water heater is connected after the heat pump, the HWC return must be connected to the water heater.



## Two or more climate systems

When more than one climate system is to be heated, the following connection can be used.

The ECS 40/ECS 41 accessory is required for this connection.



## General ventilation connection

Ventilation installation must be carried out in accordance with current norms and directives.

To prevent fan noise being transferred to the ventilation devices, silencers should be installed in the duct system. In the event of ventilation devices in noise-sensitive rooms, silencers must be installed.

Connections must be made via flexible hoses, which should be installed so that they are easy to replace. The extract air duct must be provided with diffusion-tight insulation (PE30) along its entire length. Ensure that the condensation insulation is fully sealed at any joints and/or at lead-in nipples, silencers, roof cowls or similar. Provision must be made for inspection and cleaning of the duct. Make sure that there are no reductions of cross-sectional area in the form of creases, tight bends, etc., since this will reduce the ventilation capacity. The duct system must be a minimum of air tightness class B. The ventilation ducts should be installed in such a way that it is easy to open the inverter box. The extract air duct should, if possible, be routed up through the roof. If the duct is to be routed out through an external wall, avoid having an immediate 90 degree bend backwards, as this can cause noise and reduced capacity.



### NOTE

F750 has a very low extract air temperature. To avoid damaging the product and/or the house, it is therefore important that the extract air ducts are insulated with diffusion-proof material (PE30) along their entire length.



### TIP

If additional condensation insulation (PE30) dimension  $\varnothing 200$  is installed on the outside of the existing exhaust line between the heat pump and the inner roof, the noise in the installation area is reduced by 1-2 dB(A).

## Exhaust air duct /kitchen fan

Exhaust air duct (kitchen fan) must not be connected to F750.

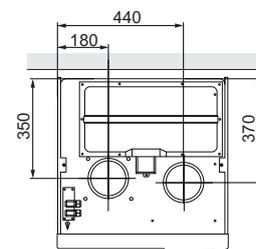
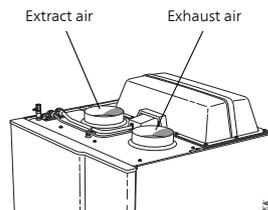
To prevent food vapour being transferred to F750 the distance between the kitchen fan and the exhaust air device must be considered. The distance should not be less than 1.5 m, but this can vary between different installations.

Always use a kitchen fan when cooking.



### NOTE

A duct in a masonry chimney stack must not be used for extract air.



## Ventilation flow

Connect F750 so that all of the exhaust air, except kitchen duct air (kitchen fan), passes the evaporator (EP1) in the heat pump. The lowest ventilation flow must comply with the applicable national standards. For optimum heat pump performance, the ventilation flow should not be less than 21 l/s (75 m<sup>3</sup>/h).

Ensure that the ventilation openings are not blocked. Set the ventilation capacity in the heat pump's menu system (menu 5.1.5).

(menu 5.1.5)

If the exhaust air temperature falls below 6 °C, the compressor is blocked and electric additional heat is permitted. Heat is not recovered from the exhaust air when the compressor is blocked.

## Adjusting ventilation

To obtain the necessary air exchange in every room of the house, the exhaust air devices must be correctly positioned and adjusted and the fan in the heat pump adjusted.

Immediately after installation adjust the ventilation so that it is set according to the projected value of the house.

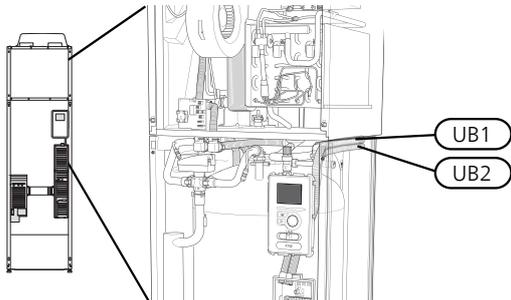
Incorrect ventilation adjustment may lead to reduced installation efficiency and thus poorer operating economy, and may result in moisture damage to the house.

# 5 Electrical connections

## General

All electrical equipment, except the outdoor sensors, room sensors and the current sensors are ready connected at the factory.

- Disconnect the heat pump before insulation testing the house wiring.
- F750 is not switchable between 3x230V and 3x400V.
- F750 must be equipped with a separate earth-fault breaker (30 mA).
- If a miniature circuit breaker is used, this should have at least motor characteristic "C". See page 56 for fuse size.
- For the heat pump wiring diagram, see page 62.
- Communication and sensor cables to external connections must not be laid close to high current cables.
- The minimum area of communication and sensor cables to external connections must be 0.5 mm<sup>2</sup> up to 50 m, for example EKKX or LiYY or equivalent.
- When cable routing in F750, cable grommets UB1 and UB2, (marked in image) must be used. In UB1 and UB2 the cables are inserted through the heat pump from the back to the front. For dimensions diagram see page 21.



### NOTE

Switch (SF1) must not be moved to "I" or "△" until F750 has been filled with water. Otherwise the temperature limiter, thermostat and the immersion heater may be damaged.



### NOTE

Check the connections, main voltage and phase voltage before the machine is started, to prevent damage to the heat pump electronics.



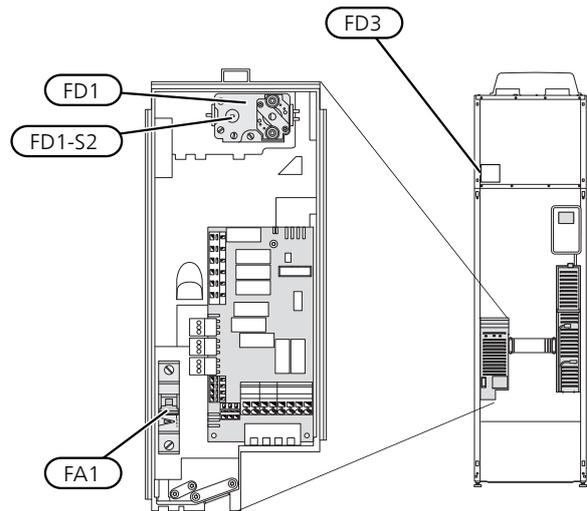
### NOTE

If the supply cable is damaged, only NIBE, its service representative or similar authorised person may replace it to prevent any danger and damage.



### NOTE

Electrical installation and service must be carried out under the supervision of a qualified electrician. Cut the current with the circuit breaker before carrying out any servicing. Electrical installation and wiring must be carried out in accordance with the stipulations in force.



### Miniature circuit breaker (FA1)

Operation (230V), fan, circulation pumps etc. are internally fused by a miniature circuit breaker (FA1).



### Caution

Check the miniature circuit-breaker (FA1). It may have tripped during transportation.

### Temperature limiter (FD1)

The temperature limiter (FD1) cuts the current supply to the electric additional heat if the temperature rises between 90 and 100°C and can be manually reset.

#### Resetting

The temperature limiter (FD1) is accessible behind the front cover. Reset the temperature limiter by carefully pressing the button (FD1-SF2) using a small screwdriver.

### Temperature limiter, defrosting element (FD3)

The temperature limiter for the defrosting element (FD3) cuts the current supply to the defrosting element if the temperature rises above 75 °C and is manually reset.

#### Resetting

The temperature limiter for the defrosting element (FD3) is accessible behind the air treatment cover. Remove the cover and then the panel secured with screws. Reset the temperature limiter by carefully pressing the button (FD3-SF2) using a small screwdriver.

## Accessibility, electrical connection

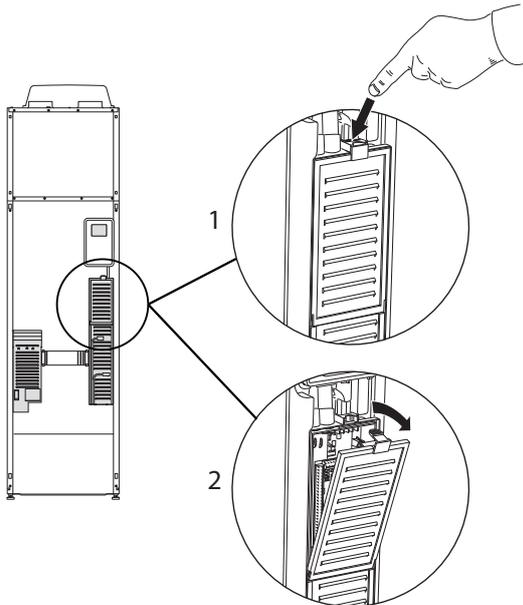
The plastic cap of the electrical boxes is opened using a screwdriver.



### NOTE

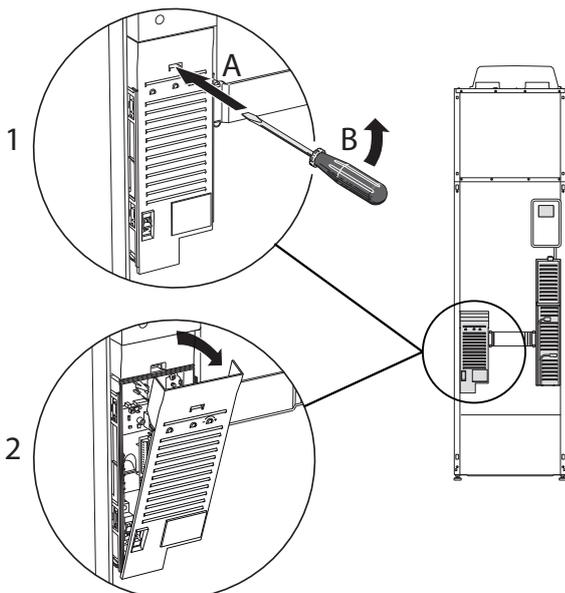
The cover for the input card is opened without a tool.

### Removing the cover, input board



1. Push the catch down.
2. Angle out the cover and remove it.

### Removing the cover, immersion heater board



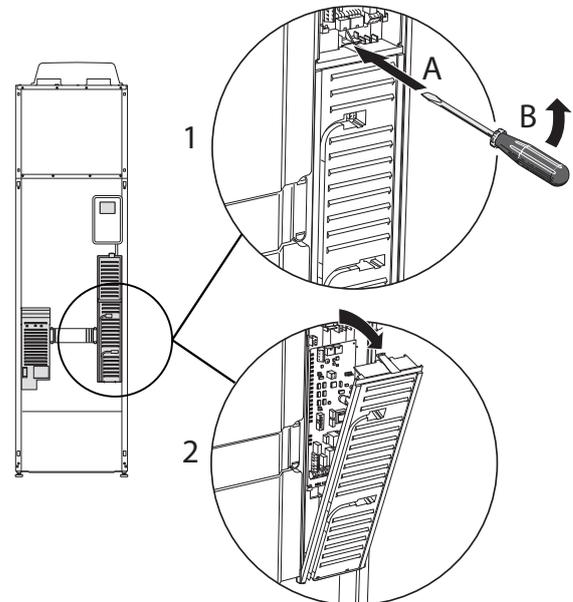
1. Insert the screwdriver (A) and pry the catch carefully downwards (B).
2. Angle out the cover and remove it.

### Removing the cover, base circuit board



### Caution

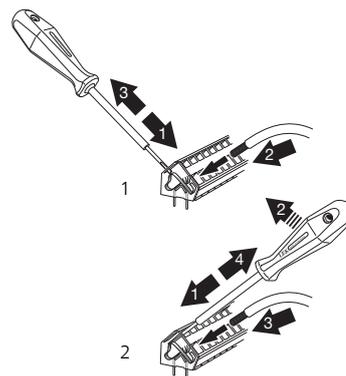
To remove the cover for the base board, the cover for the input circuit board must first be removed.



1. Insert the screwdriver (A) and pry the catch carefully downwards (B).
2. Angle out the cover and remove it.

### Cable lock

Use a suitable tool to release/lock cables in the heat pump terminal blocks.

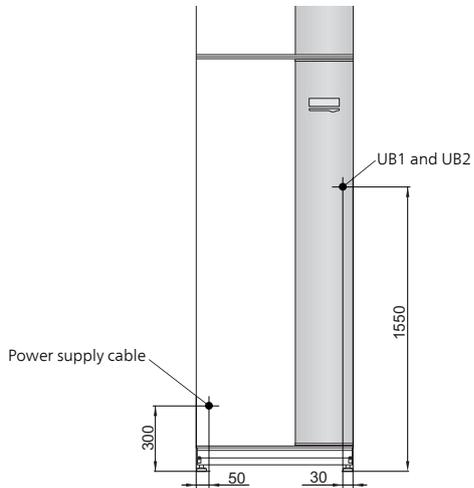


# Connections

**NOTE**  
 To prevent interference, unshielded communication and/or sensor cables to external connections must not be laid closer than 20 cm from high voltage cables.

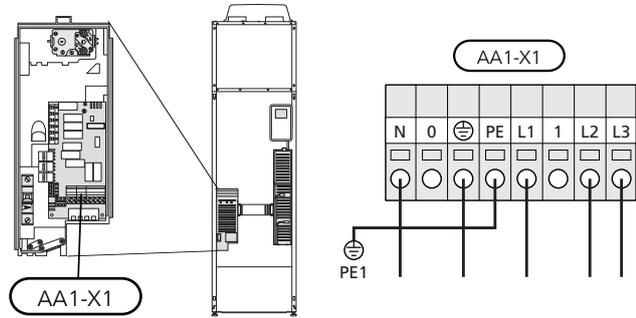
## Power connection

F750 must be installed via an isolator switch with a minimum breaking gap of 3mm. Minimum cable area must be sized according to the fuse rating used. Supplied cable (length approx. 2 m) for incoming supply electricity is connected to terminal block X1 on the immersion heater board (AA1). The connection cable can be found on the back of F750 (see dimensions diagram below).

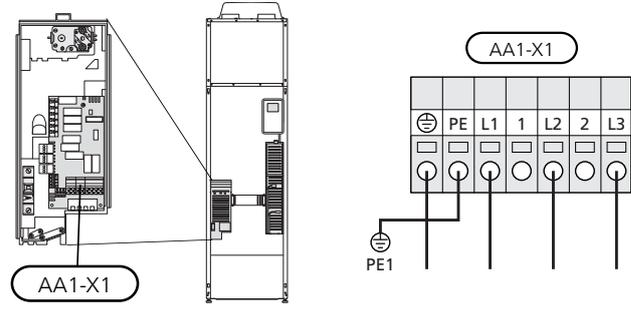


**NOTE**  
 F750 is not switchable between 3x230V and 3x400V.

## Connection 3x400V



## Connection 3x230V



## Tariff control

If the voltage to the immersion heater and/or the compressor disappears for a certain period, there must also be blocking via the AUX-input at the same time, see "Possible selection for AUX inputs".

## Connecting external operating voltage for the control system

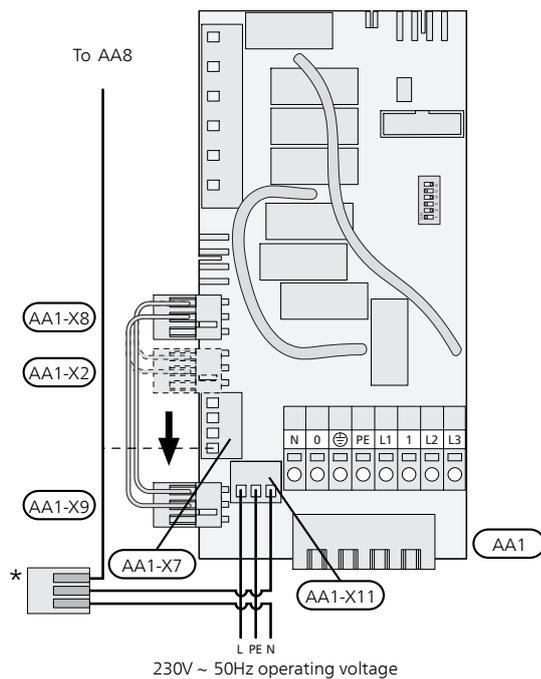
**NOTE**  
Only applies to power connection of 3x400V.

**NOTE**  
Mark up any junction boxes with warnings for external voltage.

If you wish to connect external operating voltage for the control system to F750 on the immersion heater circuit board (AA1) the edge connector at AA1:X2 must be moved to AA1:X9 (as illustrated).

When connecting external operating voltage for the control system with separate earth-fault breaker, disconnect the blue cable from terminal block X7:24 on the immersion heater circuit board (AA1) and connect in the enclosed top clamp together with the incoming operating zero. Connect a blue cable (min 0.75 mm<sup>2</sup>) between the top clamp and X11:N on the immersion heater circuit board (as illustrated).

Operating voltage (230VAC) is connected to AA1:X11 (as illustrated).



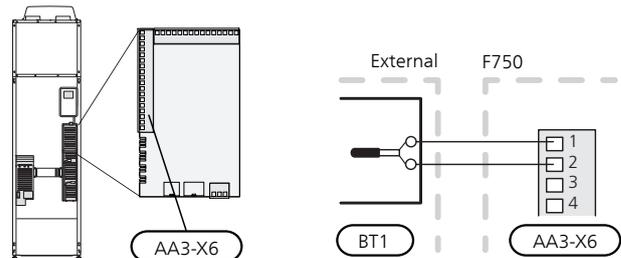
\* Only with separate earth-fault breaker.

## Outside sensor

Install the outdoor temperature sensor (BT1) in the shade on a wall facing north or north-west, so it is unaffected by the morning sun for example.

Connect the sensor to terminal block X6:1 and X6:2 on the input board (AA3). Use a twin core cable of at least 0.5 mm<sup>2</sup> cable area.

If a conduit is used it must be sealed to prevent condensation in the sensor capsule.



## Room sensor

F750 is supplied with a room sensor enclosed (BT50). The room sensor has up to three functions:

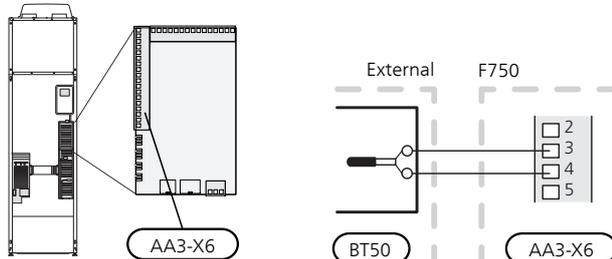
1. Show current room temperature in F750's display.
2. Option of changing the room temperature in °C.
3. Makes it possible to change/stabilise the room temperature.

Install the sensor in a neutral position where the set temperature is required. A suitable location is on a free inner wall in a hall approx. 1.5 m above the floor. It is important that the sensor is not obstructed from measuring the correct room temperature by being located, for example, in a recess, between shelves, behind a curtain, above or close to a heat source, in a draft from an external door or in direct sunlight. Closed radiator thermostats can also cause problems.

The heat pump operates without the sensor, but if one wishes to read off the accommodation's indoor temperature in F750's display, the sensor must be installed. Connect the room sensor to X6:3 and X6:4 on the input board (AA3).

If the sensor is to be used to change the room temperature in °C and/or to change/stabilise the room temperature, the sensor must be activated in menu 1.9.4.

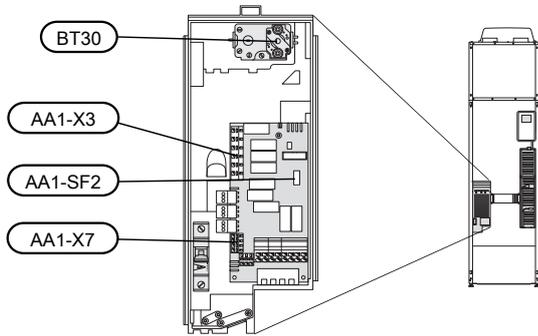
If the room sensor is used in a room with underfloor heating, it should only have an indicative function, not control of the room temperature.



### Caution

Changes of temperature in accommodation take time. For example, short time periods in combination with underfloor heating will not give a noticeable difference in room temperature.

## Settings



### Electrical addition - maximum output

The immersion heater can be set to a maximum of 6.5 kW (7 kW at 3x230V), which is also the delivery setting.

The immersion heater output is divided into steps, according to the table.

Setting maximum output in the electric additional heat is done in menu 5.1.12.

### Power steps of the immersion heater

#### 3x400V

Electrical addition (kW)	Max (A) (L1)	Max (A) L2	Max (A) L3
0.0	1.6	-	-
0.5	3.8	-	-
1.0	1.6	-	4.3
1.5	3.8	-	4.3
2.0	1.6	8.7	-
2.5	3.8	8.7	-
3.0	1.6	8.7	4.3
3.5	3.8	8.7	4.3
4.0	1.6	7.5	11.8
4.5	3.8	7.5	11.8
5.0	1.6	16.2	7.5
5.5	3.8	16.2	7.5
6.0	1.6	16.2	11.8
6.5*	3.8	16.2	11.8

\*Default value

The table displays the maximum phase current at each electrical step for the heat pump (without compressor operation).

In addition to this, there is the current for compressor operation, which, depending on the operating conditions, can amount to approx. 13A on L1.

The heat pump is fused to at least 16 A.

If the current sensors are connected, the heat pump monitors the phase currents and allocates the electrical steps automatically to the least loaded phase.

#### 3x230V

Electrical addition (kW)	Max (A) (L1)	Max (A) L2	Max (A) L3
0.0	1.0	1.0	-
1.0	1.0	4.9	4.3
2.0	9.2	1.0	8.7
3.0	9.2	4.9	11.5
4.0	9.2	9.2	15.1
5.0*	9.2	13.5	18.9
6.0	17.9	9.2	23.0
7.0	17.9	13.5	26.4

\*Default value

The table displays the maximum phase current at each electrical step for the heat pump (without compressor operation).

In addition to this, there is the current for compressor operation, which, depending on the operating conditions, can amount to approx. 13A on L1 and L2.

The heat pump is fused to at least 16 A.

If the current sensors are connected, the heat pump monitors the phase currents and allocates the electrical steps automatically to the least loaded phase.

## Emergency mode

When the heat pump is set to emergency mode (SF1 is set to  $\Delta$ ), only the most necessary functions are activated.

- The compressor is off and heating is managed by the immersion heater.
- Hot water is not produced.
- The load monitor is not connected.

### Power in emergency mode

The immersion heater's power in emergency mode is set with the dip switch (S2) on the immersion heater board (AA1) according to the table below. The factory setting is 4 kW (5 kW at 3x230V).

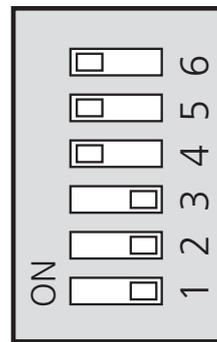
#### 3x400 V

kW	1	2	3	4	5	6
0.5	on	off	off	off	off	off
1.0	off	off	off	off	on	off
1.5	on	off	off	off	on	off
2.0	off	off	on	off	off	off
2.5	on	off	on	off	off	off
3.0	off	off	on	off	on	off
3.5	on	off	on	off	on	off
4.0	off	off	off	on	on	on
4.5	on	off	off	on	on	on
5.0	off	off	on	on	off	on
5.5	on	off	on	on	off	on
6.0	off	off	on	on	on	on
6.5	on	off	on	on	on	on

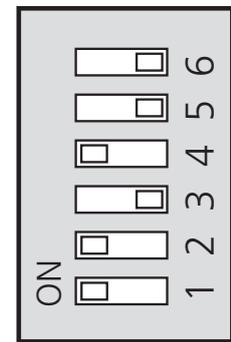
#### 3x230V

kW	1	2	3	4	5	6
1.0	off	on	off	off	off	off
2.0	off	off	off	on	off	off
3.0	off	on	off	on	off	off
4.0	off	off	off	on	on	off
5.0	on	on	off	on	off	off
6.0	on	off	off	on	on	off
7.0	on	on	off	on	on	off

3x400V



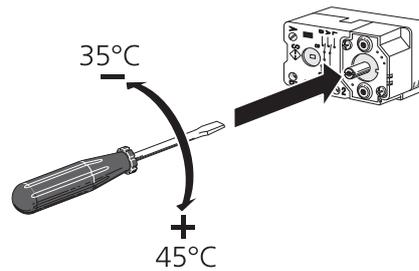
3x230V



The image shows the dip switch (AA1-S2) in the factory setting, that is 4 kW (5 kW at 3x230V).

### Emergency mode thermostat

The supply temperature is set in emergency mode using a thermostat (FD1-BT30). It can be set to 35 (pre-set, for example under floor heating) or 45 °C (for example radiators).



# Optional connections

## Load monitor

### Integrated load monitor

F750 is equipped with a simple form of integrated load monitor, which limits the power steps for the electric additional heat by calculating whether future power steps can be connected to the relevant phase without the specified main fuse being exceeded. In those cases where the current would exceed the specified main fuse, the power step is not permitted. The size of the property's main fuse is specified in menu 5.1.12.

### Load monitor with current sensor

When many power-consuming products are connected in the property at the same time as the electric additional heat is in operation, there is a risk of the property's main fuses tripping. F750 is equipped with a load monitor that, with the aid of current sensors, controls the power steps for the electric additional heat by redistributing the power between the different phases or disengaging the electric additional heat in event of an overload in a phase. If the overload remains despite the electric additional heat being disengaged, the compressor winds down. Reconnection occurs when other current consumption is reduced.

### Connecting current sensors

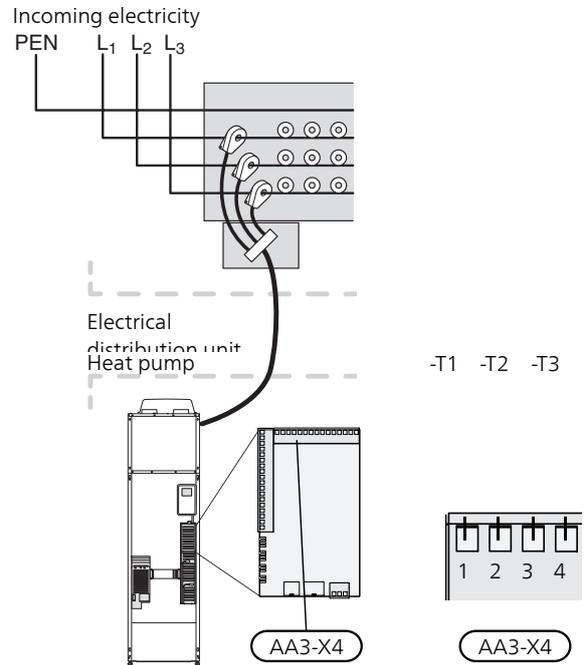
**NOTE**

The building's phases can have different loads. If the inverter is connected to a heavily loaded phase, there is a risk of the compressor shutting down and the electrical addition operating longer than expected. This means that savings will not be as expected.

A current sensor should be installed on each incoming phase conductor in to the distribution box to measure the current. The distribution box is an appropriate installation point.

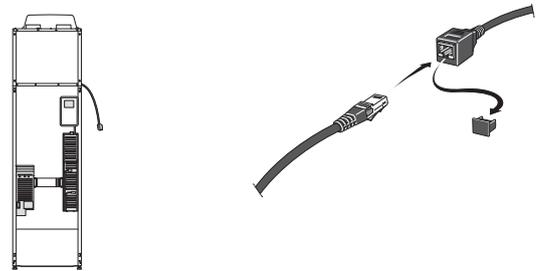
Connect the current sensors to a multi-core cable in an enclosure directly adjacent to the electrical distribution unit. The multi-core cable between the enclosure and F750 must have a cable area of at least 0.5 mm<sup>2</sup>.

Connect the cable to the input board (AA3) on terminal X4:1-4 block - where X4:1 is the common terminal block for the three current sensors.



### NIBE Uplink

Connect the network connected cable (straight, Cat.5e UTP) with RJ45-contact (male) to RJ45 contact (female) on the rear of the heat pump.



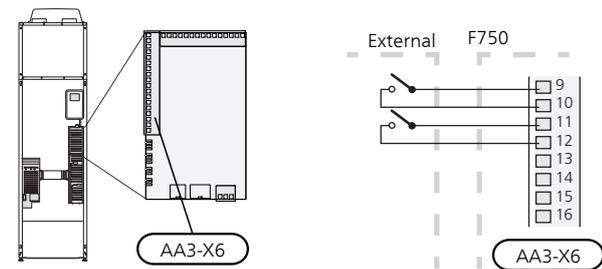
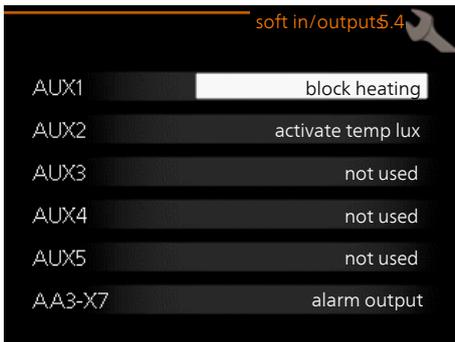
### External connection options

F750 has software controlled inputs and outputs on the input card (AA3), for connecting the external switch function or sensor. This means that when an external switch function or sensor is connected to one of six special connections, the correct function must be selected to the correct connection in the software in F750.

**Caution**

If an external switch function or sensor is connected to F750, the function to use input or output must be selected in menu 5.4, see page 44.

Selectable inputs on the input card for these functions are AUX1 (X6:9-10), AUX2 (X6:11-12), AUX3 (X6:13-14), AUX4 (X6:15-16) and AUX5 (X6:17-18). Selectable outputs are AA3:X7.



The example above uses the inputs AUX1 (X6:9-10) and AUX2 (X6:11-12) on the input circuit board (AA3).

**Caution**  
Some of the following functions can also be activated and scheduled via menu settings.

### Possible selection for AUX inputs

#### Switch for external blocking of addition and/or compressor

Blocking for addition heat and compressor is connected on two different AUX inputs.

If external blocking of additional heat and/or compressor is wanted, this can be connected to terminal block X6 on the input board (AA3), which is positioned behind the front cover.

The additional heat and/or the compressor are disconnected by connecting a potential-free switch function to the input selected in menu 5.4, see page 44.

External blocking of addition and compressor can be combined.

A closed contact results in the electrical output being disconnected.

Blocking via AUX input is required during tariff control

#### Contact for external tariff blocking

In those cases where external tariff blocking is used, it can be connected to terminal block X6 on the input board (AA3), which is positioned behind the front cover.

Tariff blocking means that the additional heat, the compressor, the heating and hot water are blocked by connecting a potential-free switch function to the input selected in menu 5.4, see page 44.

Closed switch means that tariff blocking is activated.

**NOTE**  
When tariff blocking is activated, the min. supply line does not apply.

#### Switch for "SG ready"

**NOTE**  
This function can only be used in mains networks that support the "SG Ready"-standard. "SG Ready" requires two AUX inputs.

In cases where this function is required, it must be connected to terminal block X6 on the input card (AA3).

"SG Ready" is a smart form of tariff control where your electricity supplier can affect the indoor and hot water temperatures or simply block the additional heat and/or the compressor in the heat pump at certain times of the day (can be selected in menu 4.1.5 after the function is activated). Activate the function by connecting potential-free switch functions to two inputs selected in menu 5.4 (SG Ready A and SG Ready B), see page 44.

Closed or open switch means one of the following:

- **Blocking (A: Closed, B: Open)**  
"SG Ready" is active. The compressor in the heat pump and additional heat is blocked like the day's tariff blocking.
- **Normal mode (A: Open, B: Open)**  
"SG Ready" is not active. No effect on the system.
- **Low price mode (A: Open, B: Closed)**  
"SG Ready" is active. The system focuses on costs savings and can for example exploit a low tariff from the electricity supplier or over-capacity from any own power source (effect on the system can be adjusted in the menu 4.1.5).
- **Overcapacity mode (A: Closed, B: Closed)**  
"SG Ready" is active. The system is permitted to run at full capacity at over capacity (very low price) with the electricity supplier (effect on the system is settable in menu 4.1.5).

(A = SG Ready A and B = SG Ready B)

### Switch for +Adjust

Using +Adjust, the installation communicates with the underfloor heating's control centre\* and adjusts the heat curve and calculated supply temperature according to the underfloor heating system's reconnection.

Activate the climate system you want +Adjust to affect by highlighting the function and pressing the OK button.

\*Support for +Adjust required



#### NOTE



+Adjust must first be selected in menu 5.4 "soft inputs/outputs".



#### NOTE



Circuit board AA3 in the installation must have at least "Input version" 34 and the software version must have "display version" 5539 or later for +Adjust to work. The version can be checked in menu 3.1 under "input version" respectively "display version". New software can be downloaded for free from [www.nibeuplink.com](http://www.nibeuplink.com).



#### NOTE



In systems with both under floor heating and radiators, NIBE ECS 40/41 should be used for optimum operation.

### Switch for external blocking of heating

In those cases where external blocking of heat is used, it can be connected to terminal block X6 on the input board (AA3), which is positioned behind the front cover.

Heating operation is disconnected by connecting a potential-free switch function to the input selected in menu 5.4, see page 44.

A closed switch results in blocked heating operation.



#### NOTE



When heat blocking is activated, the min. supply line does not apply.

### Switch for external blocking of hot water

In cases where external blocking of hot water is used, this can be connected to terminal block X6 on the input board (AA3), which is positioned behind the front cover.

Hot water operation is disconnected by connecting a potential-free switch function to the input selected in menu 5.4, see page 44.

A closed switch results in blocked hot water operation.

### Contact for activation of "temporary lux"

An external switch function can be connected to F750 for activation of the hot water function "temporary lux". The switch must be potential-free and connected to the selected input (menu 5.4, see page 44) on terminal block X6 on the input board (AA3).

"temporary lux" is activated for the time that the contact is connected.

### Contact for activation of "external adjustment"

An external contact function can be connected to F750 to change the supply temperature and the room temperature.

When the switch is closed the temperature changes in °C (if the room sensor is connected and activated). If a room sensor is not connected or activated, the desired change of "temperature" (heating curve offset) with the number of steps selected is set. The value is adjustable between -10 and +10.

#### ■ climate system 1

The switch must be potential-free and connected to the selected input (menu 5.4, see page 44) on terminal block X6 on the input board (AA3).

The value for the change is set in menu 1.9.2, "external adjustment".

#### ■ climate system 2 to 8

External adjustment for climate systems 2 to 8 requires accessories (ECS 40 or ECS 41).

See the accessory's installer handbook for installation instructions.

### Contact for activation of fan speed

An external contact function can be connected to F750 for activation of one of the four fan speeds. The switch must be potential free and connected to the selected input (menu 5.4, see page 44) on terminal block X6 on the input circuit board (AA3). When the switch closes, the selected fan speed is activated. Normal speed is resumed when the contact is opened again.

### Level monitor for the overflow cup

The level monitor for the overflow cup is connected to the selected input (menu 5.4, see page 44) on terminal block X6 on the input card (AA3).

The input must be closed during normal operation.

### Possible selection for AUX output (potential free variable relay)

It is possible to have an external connection through the relay function via a potential-free variable relay (max 2 A) on the input circuit board (AA3), terminal block X7.

Optional functions for external connection:

- Indication of buzzer alarm.
- Control of circulation pump for hot water circulation.
- External circulation pump, for example external pump and shunt group.
- External damper for anti-freeze.

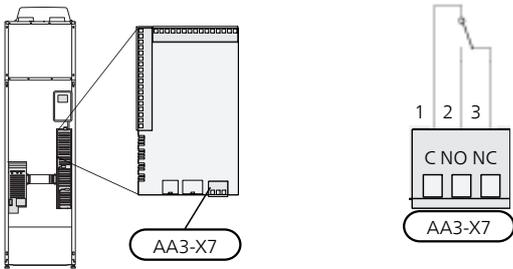
If any of the above is installed to terminal block X7 it must be selected in menu 5.4, see page 44.

The common alarm is preselected at the factory.



**NOTE**

An accessory board is required, if several functions are connected to terminal block X7 at the same time the common alarm is activated (see page 52).



The picture shows the relay in the alarm position.

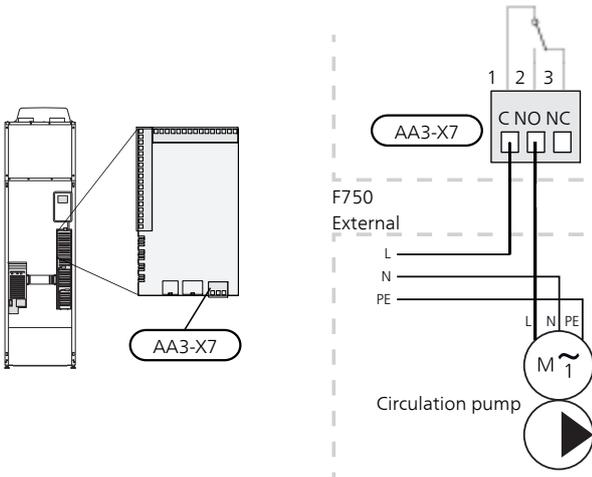
When switch (SF1) is in the "⏻" or "⚠" position the relay is in the alarm position.

External circulation pump or hot water circulation pump connected to the buzzer alarm relay as illustrated below.



**NOTE**

Mark up any junction boxes with warnings for external voltage.



## Connecting accessories

Instructions for connecting accessories are provided in the manual accompanying the accessory. See page 52 for the list of the accessories that can be used with F750.

# 6 Commissioning and adjusting

## Preparations

1. Check that the switch (SF1) is in position "⏻".
2. Check that the filling valves (QM10) and (QM11) are fully closed.



### Caution

Check the miniature circuit-breaker (FA1) in the heat pump. It may have tripped during transportation.

## Filling and venting

### Filling the hot water heater

1. Open a hot water tap in the house.
2. Open the filling valve (QM10). This valve should then be fully open during operations.
3. When water comes out of the hot water tap, the hot water heater is full and the tap can be closed.

### Filling the climate system

1. Check that the shut-off valve for the heating system (QM31) is open.
2. Open the vent valves (QM20), (QM22), (QM23) and (QM24).
3. For F750, stainless steel: Check that the supplied flexi hose is connected between connection (QM11) and connection (QM13). Connect the hose if this has not been done.
4. For F750, stainless steel: Open the filler valves (QM11), (QM13). The heating section and the rest of the climate system are filled with water.

For F750, copper: Open the filler valve (QM11). The heating section and the rest of the climate system are filled with water.

5. When the water exiting the vent valves (QM20), (QM22), (QM23) and (QM24) is no longer mixed with air, close the valves. After a while, the pressure rises on the pressure gauge (BP5). When the pressure reaches 2.5 bar (0.25 MPa), the safety valve (FL2) starts to release water. Close the filler valve (QM11).
6. Reduce the boiler pressure to the normal working range (approx. 1 bar) by opening the vent valves (QM20), (QM22), (QM23) and (QM24) or the safety valve (FL2).
7. Check that there is water in the overflow cup (WM1).
8. Start the heat pump and allow it to run in both heating and hot water modes.
9. Vent the climate system (see section "Venting the climate system").

If the overflow cup requires topping up:

1. Turn the safety valve for hot water (FL1) anticlockwise carefully.

### Venting the climate system

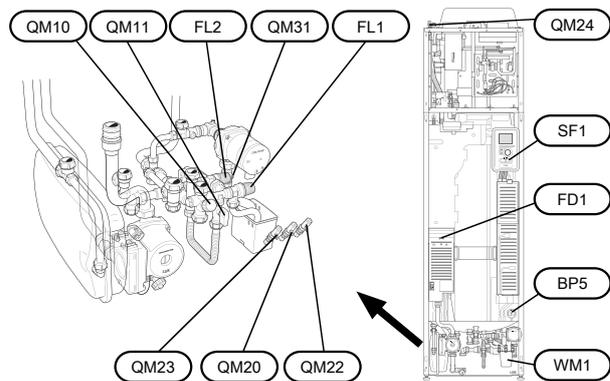
1. Set the switch (SF1) in ⏻ mode and wait approx. 30 seconds.
2. Turn off the power supply to the heat pump.
3. Vent the heat pump via the vent valves (QM20), (QM22), (QM23), (QM24) and the rest of the climate system via the relevant vent valves.
4. Keep topping up and venting until all air has been removed and the pressure is correct.



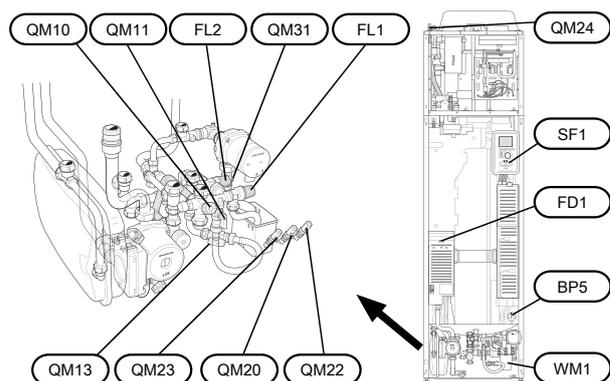
### NOTE

The vent hoses from the container must be drained of water before air can be released. This means that the system is not necessarily vented despite the flow of water when the vent valves (QM20), (QM22), (QM23), (QM24) are opened.

### F750, copper



### F750, stainless steel



## Start-up and inspection



### NOTE

Warning: Do not start the heat pump if there is a risk that the water in the system has frozen.

### Start guide



### NOTE

There must be water in the climate system before the switch is set to "I".

1. Set switch (SF1) on F750 to position "I".
2. Follow the instructions in the display's start guide. If the start guide does not start when you start the F750, start it manually in menu 5.7.



### TIP

See page 34 for a more in-depth introduction to the heat pump's control system (operation, menus etc.).

If the building is cooled when F750 starts, the compressor may not be able to meet the entire demand without having to use additional heating.

### Commissioning

The first time the heat pump is started a start guide is started. The start guide instructions state what needs to be carried out at the first start together with a run through of the heat pump's basic settings.

The start guide ensures that start-up is carried out correctly and cannot be bypassed. The start guide can be started later in menu 5.7.



### Caution

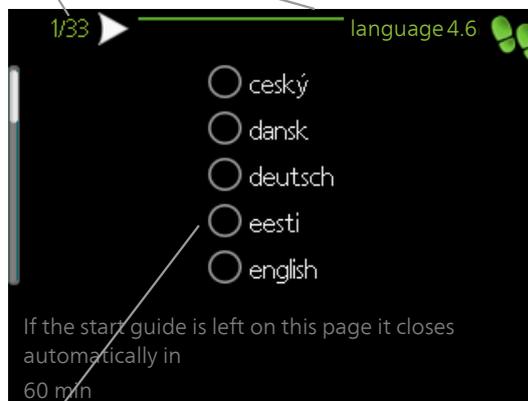
As long as the start guide is active, no function in the installation will start automatically.

The guide will appear at each installation restart until it is deselected on the last page.

### Operation in the start guide

A. Page

B. Name and menu number



C. Option / setting

#### A. Page

Here you can see how far you have come in the start guide.

Scroll between the pages of the start guide as follows:

1. Turn the control knob until one of the arrows in the top left corner (at the page number) has been marked.
2. Press the OK button to skip between the pages in the start guide.

#### B. Name and menu number

Read what menu in the control system this page of the start guide is based on. The digits in brackets refer to the menu number in the control system.

If you want to read more about affected menus either consult the help menu or read the user manual.

#### C. Option / setting

Make settings for the system here.

#### D. Help menu

 In many menus there is a symbol that indicates that extra help is available.

To access the help text:

1. Use the control knob to select the help symbol.
2. Press the OK button.

The help text often consists of several windows that you can scroll between using the control knob.

## Setting the ventilation

Ventilation must be set according to applicable standards. Set the fan speed in menu 5.1.5.

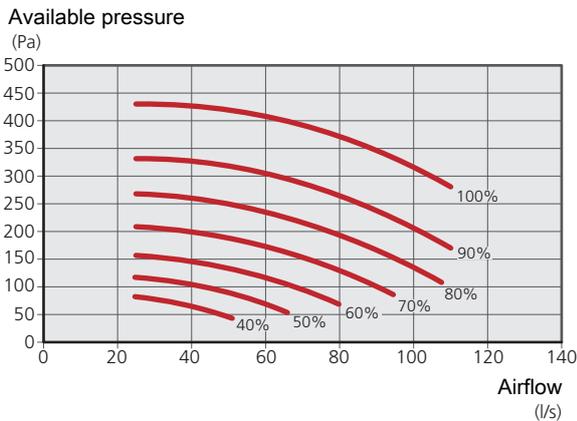
Even if ventilation is roughly set at installation it is important that a ventilation adjustment is ordered and permitted.



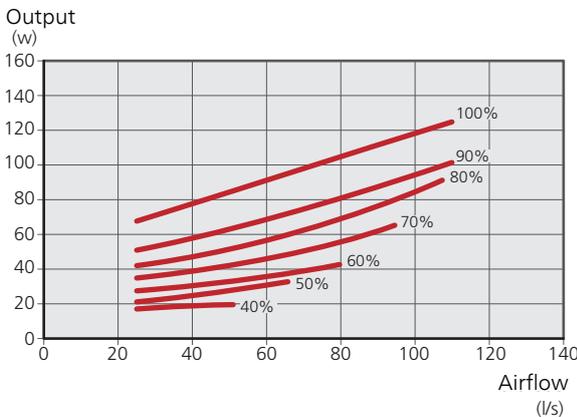
### NOTE

Order a ventilation adjustment to complete the setting.

### Ventilation capacity



### Fan rating



## Commissioning without fan

The heat pump can be run without recovery, as only an electric boiler, to produce heat and hot water, for example before the ventilation installation is complete.

Enter menu 4.2 - "op. mode" and select "add. heat only"

Enter menu 5.1.5 - "fan sp. exhaust air" and reduce the fan speed to 0%.



### NOTE

Select operating mode "auto" or "manual" when the heat pump is to run on recovery again.

## Setting pump speed

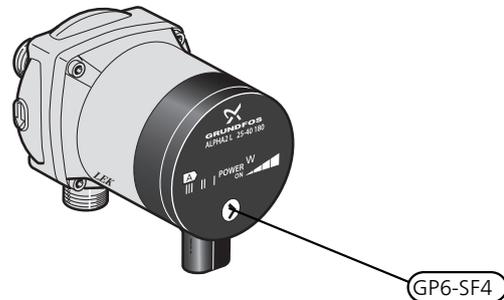
### Heating medium side

To set the correct flow in the climate system the correct speed must be set for the heating medium pump in the different operating conditions.

Compare the heating protection with the available capacity for heating medium pump 2 (GP6) and set the lowest possible pump speed.

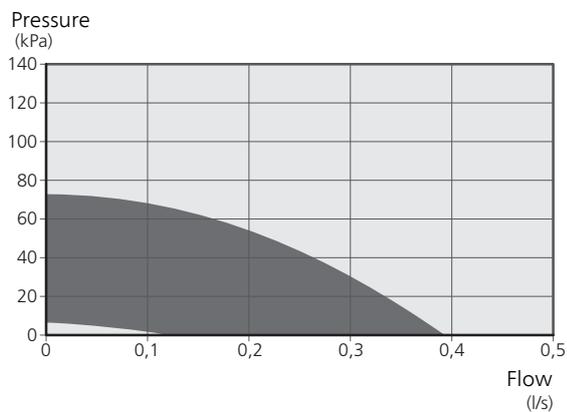
Set the speed on the heating medium pump 2 GP6 using the switch (GP6-SF4) on the pump. Select speed I, II or III. You see the speed selected on the left, above the switch. The display to the right, above the switch, must not be illuminated at all.

It is also important that you set the correct temperature difference on the heating medium pump (GP1). This is done in menu 5.1.14.

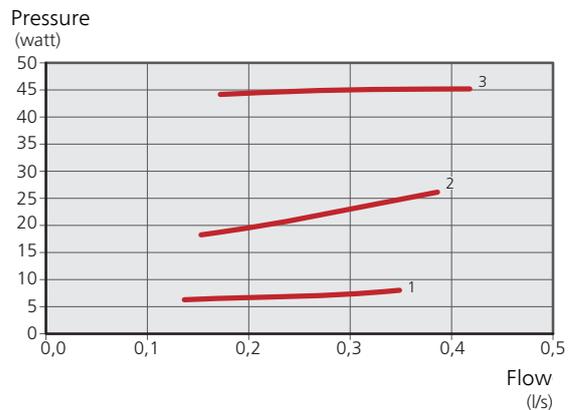


Heating medium pump (GP1) can adjust the total capacity for heating medium pump 2 (GP6) depending on the operation, which explains the large working range for each curve in the above diagram.

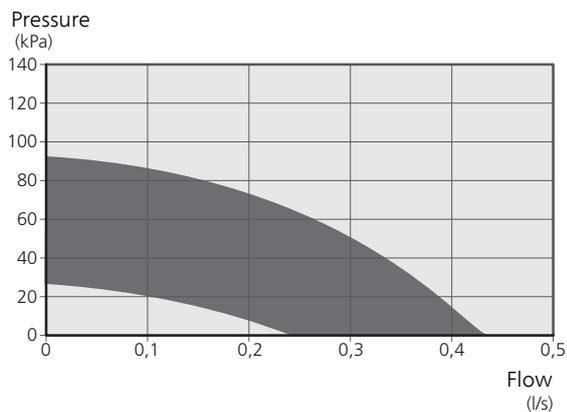
Capacity, heating medium pump 2 (GP6)  
Speed I



Output, heating medium pump 2 (GP6)



Capacity, heating medium pump 2 (GP6)  
Speed II

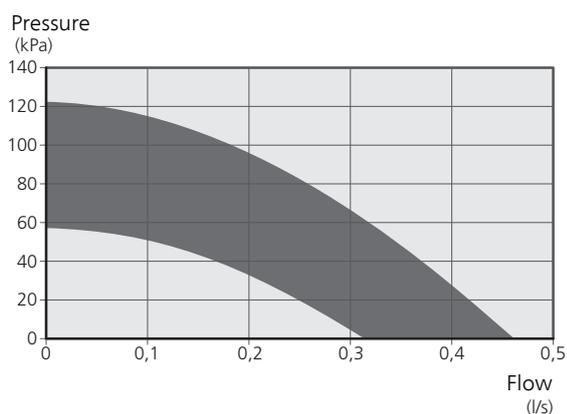


### Post-adjustment, venting

#### Post-adjustment, venting

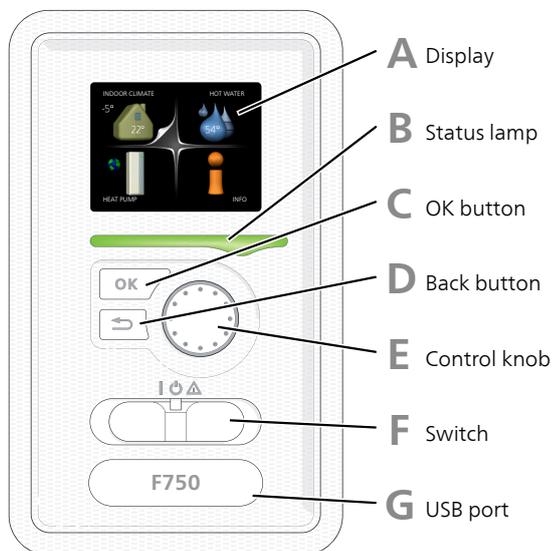
Air is initially released from the hot water and venting may be necessary. If gurgling sounds can be heard from the heat pump or climate system, the entire system requires additional venting. See section "Venting the climate system" on page 30 for information about venting the heat pump.

Capacity heating medium pump 2 (GP6)  
Speed III



# 7 Control - Introduction

## Display unit



### A Display

Instructions, settings and operational information are shown on the display. You can easily navigate between the different menus and options to set the comfort or obtain the information you require.

### B Status lamp

The status lamp indicates the status of the heat pump. It:

- lights green during normal operation.
- lights yellow in emergency mode.
- lights red in the event of a deployed alarm.

### C OK button

The OK button is used to:

- confirm selections of sub menus/options/set values/page in the start guide.

### D Back button

The back button is used to:

- go back to the previous menu.
- change a setting that has not been confirmed.

### E Control knob

The control knob can be turned to the right or left. You can:

- scroll in menus and between options.
- increase and decrease the values.
- change page in multiple page instructions (for example help text and service info).

### F Switch (SF1)

The switch assumes three positions:

- On (I)
- Standby (⏻)
- Emergency mode (⚠) (see page 46)

Emergency mode must only be used in the event of a fault on the heat pump. In this mode, the compressor switches off and the immersion heater engages. The heat pump display is not illuminated and the status lamp illuminates yellow.

### G USB port

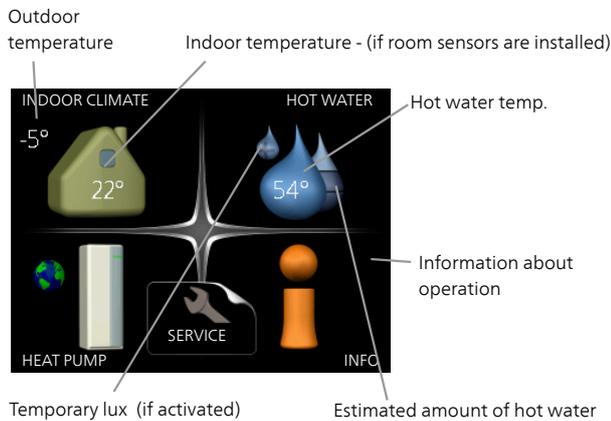
The USB port is hidden beneath the plastic badge with the product name on it.

The USB port is used to update the software.

Visit [www.nibeuplink.com](http://www.nibeuplink.com) and click the "Software" tab to download the latest software for your installation.

## Menu system

When the door to the heat pump is opened, the menu system's four main menus are shown in the display as well as certain basic information.



### Menu 1 - INDOOR CLIMATE

Setting and scheduling the indoor climate. See information in the help menu or user manual.

### Menu 2 - HOT WATER

Setting and scheduling hot water production. See information in the help menu or user manual.

### Menu 3 - INFO

Display of temperature and other operating information and access to the alarm log. See information in the help menu or user manual.

### Menu 4 - HEAT PUMP

Setting time, date, language, display, operating mode etc. See information in the help menu or user manual.

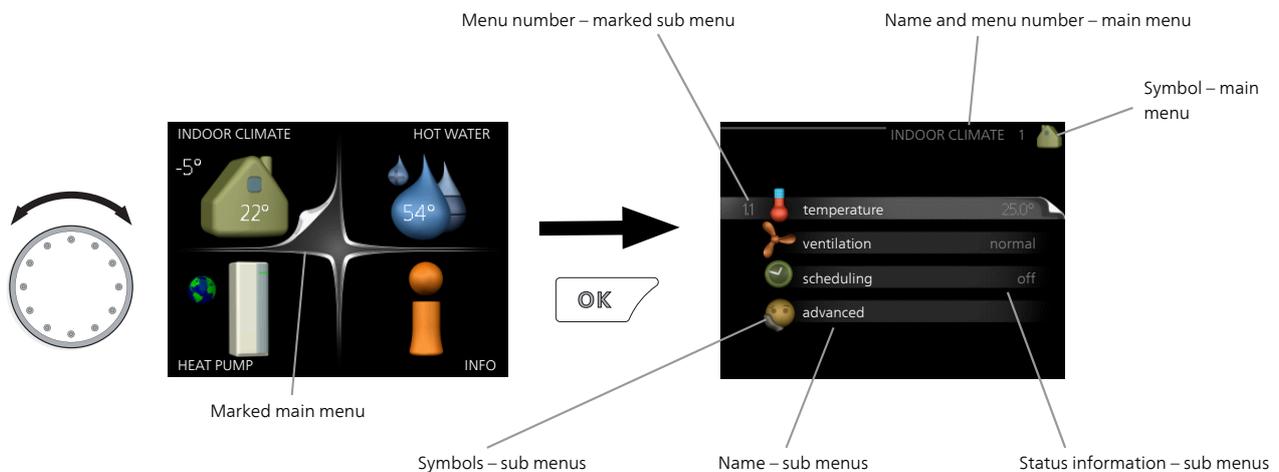
### Menu 5 - SERVICE

Advanced settings. These settings are not available to the end user. The menu is visible when the Back button is pressed for 7 seconds when you are in the start menu. See page 40.

## Symbols in the display

The following symbols can appear in the display during operation.

Symbol	Description
	This symbol appears by the information sign if there is information in menu 3.1 that you should note.
	These two symbols indicate whether the compressor or addition is blocked in F750. These can, for example, be blocked depending on which operating mode is selected in menu 4.2, if blocking is scheduled in menu 4.9.5 or if an alarm has occurred that blocks one of them. Blocking the compressor. Blocking additional heat.
	This symbol appears if periodic increase or lux mode for the hot water is activated.
	This symbol indicates whether "holiday setting" is active in 4.7.
	This symbol indicates whether F750 has contact with NIBE Uplink.
	This symbol indicates the actual speed of the fan if the speed has changed from the normal setting.
	This symbol indicates whether solar heating is active. Accessory needed.



## Operation

To move the cursor, turn the control knob to the left or the right. The marked position is white and/or has a turned up tab.



## Selecting menu

To advance in the menu system select a main menu by marking it and then pressing the OK button. A new window then opens with sub menus.

Select one of the sub menus by marking it and then pressing the OK button.

## Selecting options



Alternative

In an options menu the current selected option is indicated by a green tick. 

To select another option:

1. Mark the applicable option. One of the options is pre-selected (white). 
2. Press the OK button to confirm the selected option. The selected option has a green tick. 

## Setting a value

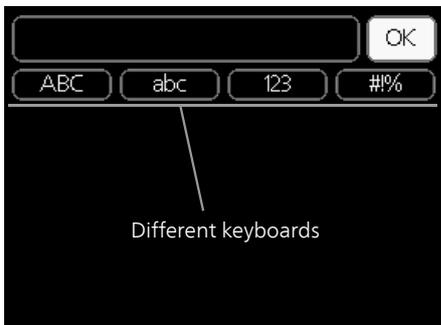


Values to be changed

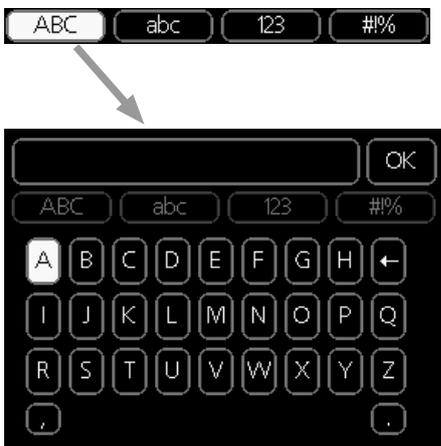
To set a value:

1. Mark the value you want to set using the control knob. 
2. Press the OK button. The background of the value becomes green, which means that you have accessed the setting mode. 
3. Turn the control knob to the right to increase the value and to the left to reduce the value. 
4. Press the OK button to confirm the value you have set. To change and return to the original value, press the Back button. 

## Use the virtual keyboard



In some menus where text may require entering, a virtual keyboard is available.



Depending on the menu, you can gain access to different character sets which you can select using the control knob. To change character table, press the Back button. If a menu only has one character set the keyboard is displayed directly.

When you have finished writing, mark "OK" and press the OK button.

## Scroll through the windows

A menu can consist of several windows. Turn the control knob to scroll between the windows.



Current menu window      Number of windows in the menu

## Scroll through the windows in the start guide



Arrows to scroll through window in start guide

1. Turn the control knob until one of the arrows in the top left corner (at the page number) has been marked.
2. Press the OK button to skip between the steps in the start guide.

## Help menu



In many menus there is a symbol that indicates that extra help is available.

To access the help text:

1. Use the control knob to select the help symbol.
2. Press the OK button.

The help text often consists of several windows that you can scroll between using the control knob.

# 8 Control - Menus

## Menu 1 - INDOOR CLIMATE

### Overview

1 - INDOOR CLIMATE	1.1 - temperature	
	1.2 - ventilation	
	1.3 - scheduling	1.3.1 - heating
		1.3.3 - ventilation
	1.9 - advanced	1.9.1.1 - heating curve
		1.9.2 - external adjustment
		1.9.3 - min. flow line temp.
		1.9.4 - room sensor settings
		1.9.6 - fan return time
		1.9.7 - own curve
	1.9.8 - point offset	
	1.9.9 - night cooling	

## Menu 2 - HOT WATER

### Overview

2 - HOT WATER	2.1 - temporary lux	
	2.2 - comfort mode	
	2.3 - scheduling	
	2.9 - advanced	2.9.1 - periodic increase
		2.9.2 - hot water recirc. *

\* Accessory needed.

## Menu 3 - INFO

### Overview

3 - INFO	3.1 - service info
	3.2 - compressor info
	3.3 - add. heat info
	3.4 - alarm log
	3.5 - indoor temp. log

## Menu 4 - HEAT PUMP

### Overview

4 - HEAT PUMP	4.1 - plus functions *	4.1.3 - internet	4.1.3.1 - NIBE Uplink
			4.1.3.8 - tcp/ip settings
			4.1.3.9 - proxy settings
		4.1.4 - sms *	
		4.1.5 - SG Ready	
		4.1.6 - smart price adaption™	
	4.2 - op. mode		
	4.3 - my icons		
	4.4 - time & date		
	4.6 - language		
	4.7 - holiday setting		
	4.9 - advanced	4.9.1 - op. prioritisation	
		4.9.2 - auto mode setting	
		4.9.3 - degree minute setting	
		4.9.4 - factory setting user	
		4.9.5 - schedule blocking	

\* Accessory needed.

## Menu 5 - SERVICE

### Overview

5 - SERVICE	5.1 - operating settings	5.1.1 - hot water settings
		5.1.2 - max flow line temperature
		5.1.3 - max diff flow line temp.
		5.1.4 - alarm actions
		5.1.5 - fan sp. exhaust air
		5.1.11 - charge pump speed
		5.1.12 - internal electrical addition
		5.1.14 - flow set. climate system
		5.1.24 - blockFreq
		5.1.99 - other settings
	5.2 - system settings	5.2.4 - accessories
	5.3 - accessory settings	5.3.3 - extra climate system *
	5.4 - soft in/outputs	
	5.5 - factory setting service	
	5.6 - forced control	
	5.7 - start guide	
	5.8 - quick start	
	5.9 - floor drying function	
	5.10 - change log	
	5.12 - country	

\* Accessory needed.

Go to the main menu and hold the Back button in for 7 seconds to access the Service menu.

### Sub-menus

Menu **SERVICE** has orange text and is intended for the advanced user. This menu has several sub-menus. Status information for the relevant menu can be found on the display to the right of the menus.

**operating settings** Operating settings for the heat pump.

**system settings** System settings for the heat pump, activating accessories etc.

**accessory settings** Operational settings for different accessories.

**soft in/outputs** Setting software controlled in and outputs on the input circuit board (AA3).

**factory setting service** Total reset of all settings (including settings available to the user) to default values.

**forced control** Forced control of the different components in the heat pump.

**start guide** Manual start of the start guide which is run the first time the heat pump is started.

**quick start** Quick starting the compressor.



#### NOTE

Incorrect settings in the service menus can damage the heat pump.

### Menu 5.1 - operating settings

Operating settings can be made for the heat pump in the sub menus.

## Menu 5.1.1 - hot water settings

### **economy**

Setting range start temp. economy: 15 - 52 °C

Factory setting start temp. economy: 40 °C

F750 copper: 43 °C

F750 stainless steel: 42 °C

Setting range stop temp. economy: 15 - 55 °C

Factory setting stop temp. economy: 45 °C

F750 copper: 47 °C

F750 stainless steel: 46 °C

### **normal**

Setting range start temp. normal: 15 - 52 °C

Factory setting start temp. normal: 45 °C

F750 copper: 47 °C

F750 stainless steel: 46 °C

Setting range stop temp. normal: 15 - 55 °C

Factory setting stop temp. normal: 50 °C

F750 copper: 51 °C

F750 stainless steel: 50 °C

### **luxury**

Setting range start temp. lux: 15 - 62 °C

Factory setting start temp. lux: 49 °C

F750 copper: 50 °C

F750 stainless steel: 49 °C

Setting range stop temp. lux: 15 - 65 °C

Factory setting stop temp. lux: 54 °C

F750 copper: 54 °C

F750 stainless steel: 53 °C

### **stop temp. per. increase**

Setting range: 55 – 70 °C

Factory setting: 55 °C

Here you set the start and stop temperature of the hot water for the different comfort options in menu 2.2 as well as the stop temperature for periodic increase in menu 2.9.1.

With "high power" activated, the hot water is charged with greater power than standard mode and therefore has a faster recharging time.

## Menu 5.1.2 - max flow line temperature

### **climate system**

Setting range: 20-70 °C

Default value: 60 °C

Set the maximum supply temperature for the climate system here. If the installation has more than one climate system, individual maximum supply temperatures can be set for each system. Climate systems 2 - 8 cannot be set to a higher max supply temperature than climate system 1.



#### **Caution**

Underfloor heating systems are normally **max flow line temperature** set between 35 and 45 °C.

Check the max floor temperature with your floor supplier.

## Menu 5.1.3 - max diff flow line temp.

### **max diff compressor**

Setting range: 1 – 25 °C

Default value: 10 °C

### **max diff addition**

Setting range: 1 – 24 °C

Default value: 7 °C

Here you set the maximum permitted difference between the calculated and actual supply temperature during compressor respectively add. heat mode. Max diff. additional heat can never exceed max diff. compressor

### **max diff compressor**

If the current supply temperature **exceeds** the calculated flow with set value, the degree minute value is set to 0. The compressor in the heat pump stops when there is only a heating demand.

### **max diff addition**

If "addition" is selected and activated in menu 4.2 and the present supply temp **exceeds** the calculated with set value, the additional heat is forced to stop.

## Menu 5.1.4 - alarm actions

Select how you want the heat pump to alert you that there is an alarm in the display here.

The different alternatives are that the heat pump stops producing hot water (default setting) and/or reduces the room temperature.



### Caution

If no alarm action is selected, it can result in higher energy consumption in the event of an alarm.

## Menu 5.1.5 - fan sp. exhaust air

### **normal and speed 1-4**

Setting range: 0 – 100 %

Set the speed for the five different selectable speeds for the fan here.



### Caution

An incorrectly set ventilation flow can damage the house and may also increase energy consumption.

## Menu 5.1.5.1 - adjusting ventilation

### **fan speed**

Setting range: 0-100 %

Factory setting: the value selected in "normal" in menu 5.1.5.

### **actual air flow**

Setting range: 1 – 400 m<sup>3</sup>/h

Factory setting: 0 m<sup>3</sup>/h

Here, you set the air flow and adjust the fan speed at ventilation adjustment.

**"adjusting ventilation"**: Activate this function while the ventilation is being adjusted.

**"fan speed"**: Here you can adjust the fan speed while "adjusting ventilation" is activated.



### NOTE

If the fan speed is too high during adjustment, information that it needs to be reduced is given at the bottom of the page.

**"actual air flow"**: Here, you set the actual air flow as measured during the ventilation adjustment.



### NOTE

When this setting is made, it is important that the ventilation flow is in a stable condition.

The function is deactivated when you exit the menu.

## Menu 5.1.11 - charge pump speed

### **Operating status**

Setting range: 1 - 100 %

Default values: 70 %

### **wait mode**

Setting range: 1 - 100 %

Default values: 30 %

### **max. allowed speed**

Setting range: 50 - 100 %

Default values: 100 %

Set the speed at which the charge pump is to operate in the present operating mode. Select "auto" if the speed of the charge pump is to be regulated automatically (factory setting) for optimal operation.

If "auto" is activated for heating operation, you can also make the setting "max. allowed speed" which restricts the charge pump and does not allow it to run at a speed higher than the set value.

**"heating"** means heating operating mode for the charge pump.

**"wait mode"** means operating mode heating for the charge pump, but when the charge pump neither has a need for compressor operation nor electric additional heat and slows down.

Set the speed at which the charge pump is to operate in the present operating mode.

**"hot water"** means operating mode hot water for the charge pump.

## Menu 5.1.12 - internal electrical addition

### **set max electrical add.**

Setting range 3x400 V: 0 - 6.5kW

Setting range 3x230 V: 0 - 7kW

Factory setting 3x400 V: 6.5 kW

Factory setting 3x230 V: 7 kW

### **max. set electrical output (SG Ready)**

Setting range 3x400 V: 0 - 6.5kW

Setting range 3x230 V: 0 - 7kW

Factory setting 3x400 V: 6.5 kW

Factory setting 3x230 V: 7 kW

### **fuse size**

Setting range: 1 - 200 A

Factory setting: 16 A

### **transformation ratio**

Setting range: 300 - 3000

Factory setting: 300

Here you set the max. electrical output of the internal electric additional heat in F750 during normal operation and overcapacity mode (SG Ready), as well as the fuse size and transformer ratio for the installation. The transformer ratio is the factor that is used to convert the metered voltage to current.

Here you can also check which current sensor is installed on which incoming phase to the property (this requires current sensors to be installed, see page 26). Check by marking "detect phase order" and pressing the OK button.

The results of these checks appear just below the menu selection "detect phase order".

### Menu 5.1.14 - flow set. climate system

#### **presettings**

Setting range: radiator, floor heat., rad. + floor heat., DOT °C

Default value: radiator

Setting range DOT: -40.0 – 20.0 °C

Factory setting DOT: -18.0 °C

#### **own setting**

Setting range dT at DOT: 0.0 – 25.0

Factory setting dT at DOT: 10.0

Setting range DOT: -40.0 – 20.0 °C

Factory setting DOT: -18.0 °C

The type of heating distribution system the heating medium pump (GP1) works towards is set here.

dT at DOT is the difference in degrees between flow and return temperatures at dimensioned outdoor temperature.

### Menu 5.1.24 - blockFreq

#### **from frequency**

Setting range: 20 - 115 Hz

Factory setting: 20 Hz

Maximum setting range: 50 Hz.

#### **to frequency**

Setting range: 25 - 120 Hz

Factory setting: 25 Hz

Maximum setting range: 50 Hz.

Here you can set frequencies that are not to be permitted for the compressor. It is possible to restrict two different frequencies. Each frequency is restricted to between 3 and 50 Hz.



#### **NOTE**

A large blocked frequency range can cause the compressor to run jerkily.



#### **NOTE**

Blocking peak output in F750 can lead to reduced savings.

## Menu 5.1.99 - other settings

### *months btwn filter alarms*

Setting range: 1 – 12

Default value: 3

Set months btwn filter alarms and fan synch. operation here.

### *months btwn filter alarms*

Here you set the number of months between alarms for a reminder to clean the filter in F750.

### *fan synch. operation*

Select whether the fan is to maintain the same speed, regardless of whether the compressor is operating or not, or alternatively run at different speeds. If the function is activated, fan speed 2 applies when the compressor is not in operation, and normal fan speed applies when the compressor is in operation.

## Menu 5.2 - system settings

Make different system settings for the heat pump here, e.g. which accessories are installed.

### Menu 5.2.4 - accessories

Inform the heat pump which accessories are installed here.

There are two ways of activating connected accessories. You can either mark the alternative in the list or use the automatic function "search installed acc."

#### *search installed acc.*

Mark "search installed acc." and press the OK button to automatically find connected accessories for F750.

## Menu 5.3 - accessory settings

The operating settings for accessories that are installed and activated are made in the sub-menus for this.

### Menu 5.3.3 - extra climate system

#### *mixing valve amplifier*

Setting range: 0.1 – 10.0

Default value: 1.0

#### *mixing valve step delay*

Setting range: 10 – 300 s

Default values: 30 s



#### Caution

This setting option only appears if "passive/active cooling 2-pipe" or "passive cooling 2-pipe" is activated in menu 5.2.4.

The shunt amplification and shunt waiting time for the different extra climate systems that are installed are also set here.

See the accessory installation instructions for function description.

## Menu 5.4 - soft in/outputs

Here you can select the in/output on the input circuit board (AA3) the external contact function (page 26) is to be connected to.

Selectable inputs on terminal block AUX1-5 (AA3-X6:9-18) and output AA3-X7 (on the input circuit board).

## Menu 5.5 - factory setting service

All settings can be reset (including settings available to the user) to default values here.

Also new parametrisation of the inverter can be done here.



#### NOTE

When resetting, the start guide is displayed the next time the heat pump is restarted.

## Menu 5.6 - forced control

You can force control the different components in the heat pump and any connected accessories here. The most important safety functions remain active however.

## Menu 5.7 - start guide

When the heat pump is started for the first time the start guide starts automatically. Start it manually here.

See page 31 for more information about the start guide.

## Menu 5.8 - quick start

It is possible to start the compressor from here.



#### Caution

There must be a heating or hot water demand to start the compressor.



#### Caution

Do not quick start the compressor too many times over a short period of time as this may damage the compressor and its surrounding equipment.

## Menu 5.9 - floor drying function

### **length of period 1 – 7**

Setting range: 0 – 30 days

Factory setting, period 1 – 3, 5 – 7: 2 days

Factory setting, period 4: 3 days

### **temp. period 1 – 7**

Setting range: 15 – 70 °C

Default value:

temp. period 1	20 °C
temp. period 2	30 °C
temp. period 3	40 °C
temp. period 4	45 C
temp. period 5	40 °C
temp. period 6	30 °C
temp. period 7	20 °C

Set the function for under floor drying here.

You can set up to seven period times with different calculated flow temperatures. If less than seven periods are to be used, set the remaining period times to 0 days.

Mark the active window to activate the underfloor drying function. A counter at the bottom shows the number of days the function has been active.



#### **TIP**

If operating mode "add. heat only" is to be used, select it in menu 4.2.

## Menu 5.10 - change log

Read off any previous changes to the control system here.

The date, time and ID no. (unique to certain settings) and the new set value is shown for every change.



#### **NOTE**

The change log is saved at restart and remains unchanged after factory setting.

## 5.12 - country

Select here where the product was installed. This allows access to country specific settings in your product.

Language settings can be made regardless of this selection.



#### **NOTE**

This option locks after 24 hours, restart of display or program updating.

# 9 Service



## NOTE

Servicing and maintenance should only be carried out by persons with the necessary expertise. When replacing components on F750 only replacement parts from NIBE may be used.

## Maintenance

Inform the user of necessary maintenance action.

### Cleaning the overflow cup/floor drain

Regularly check that the overflow cup and any floor drains are not blocked; water must be able to run through freely. Clean, if necessary.



## NOTE

If the overflow cup or floor drain is blocked, water can run over onto the floor of the installation area. To prevent damage to the building the floor coating must be considered. A waterproof floor or floor membrane is recommended.

## Service actions

### Emergency mode

Emergency mode is used in event of operational interference and in conjunction with service.

Emergency mode is activated by setting switch (SF1) in mode "Δ". This means that:

- The status lamp illuminates yellow.
- The display is not lit and the control computer is not connected.
- The temperature at the immersion heater is controlled by the thermostat (FD1-BT30). It can be set either to 35 or 45 °C.
- The compressor is switched off and only the fan, heating medium pump 2 and the electric additional heat are active. The additional heat power in emergency mode is set in the immersion heater board (AA1). See page 25 for instructions.

### Draining the water heater

The water heater can be drained via the safety valve (FL1) or via the overflow cup (WM1).

1. Disconnect the overflow pipe from the safety valve (FL1) and connect a hose to a draining pump instead. If a draining pump is not available, the water can be released into the overflow cup (WM1).
2. Open the safety valve (FL1).
3. Open a hot water tap to let air into the system. If this is not sufficient, detach the pipe connection (XL4) on the hot water side and ensure that air is entering.

### Draining the climate system

In order to carry out service on the climate system, it may be easier to drain the system first.



## NOTE

There may be some hot water when draining the heating medium side/climate system. There is a risk of scalding.

The hot water can be drained through the safety valve (FL2) via the overflow cup (WM1) or through a hose that is connected to the safety valve's (FL2) or the drain valve's (XL10) outlet.

1. Open the safety valve (FL2) or the drain valve (XL10).
2. Set the vent valves for the climate system (QM20), (QM22), (QM23), (QM24) in the open position for air supply.



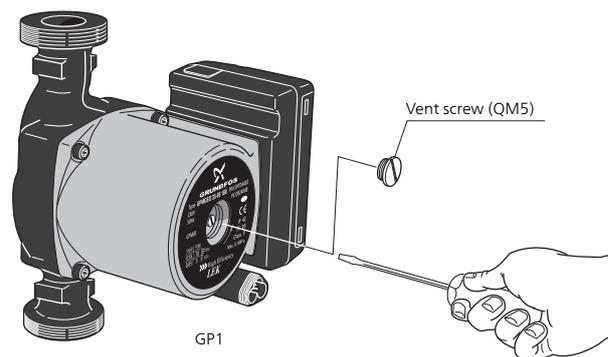
## NOTE

The heat pump should not, after draining, be exposed to risk of freezing because a certain of water remains in the coil.

### Helping the circulation pump to start (GP1)

1. Shut off, F750 by setting the switch ((SF1)) to "⏻".
2. Remove the front cover
3. Loosen the venting screw (QM5) with a screwdriver. Hold a cloth around the screwdriver blade as a small amount of water may run out.
4. Insert a screwdriver and turn the pump motor around.
5. Screw in the venting screw (QM5).
6. Start F750 by setting the switch (SF1) to "I" and check whether the circulation pump works.

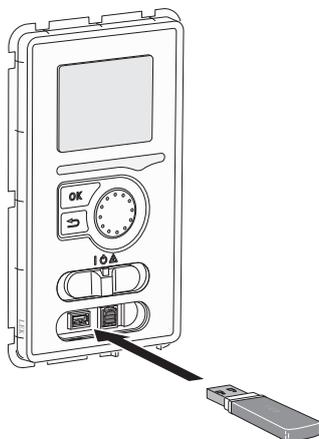
It is usually easier to start the circulation pump with F750 running, switch (SF1) set to "I". If the circulation pump is helped to start while F750 is running, be prepared for the screwdriver to jerk when the pump starts.



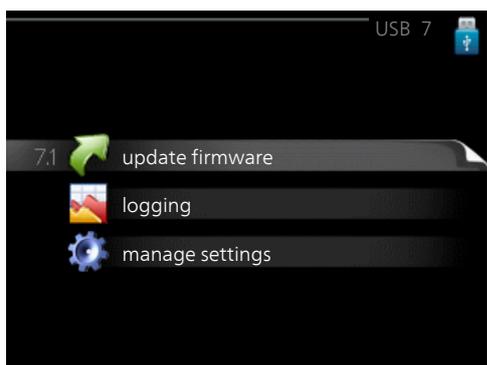
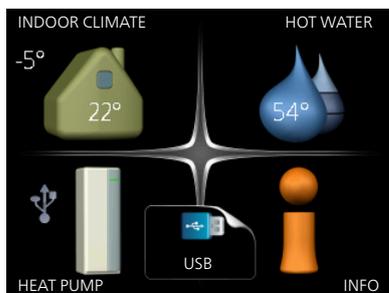
## Temperature sensor data

Temperature (°C)	Resistance (kOhm)	Voltage (VDC)
-40	351.0	3.256
-35	251.6	3.240
-30	182.5	3.218
-25	133.8	3.189
-20	99.22	3.150
-15	74.32	3.105
-10	56.20	3.047
-5	42.89	2.976
0	33.02	2.889
5	25.61	2.789
10	20.02	2.673
15	15.77	2.541
20	12.51	2.399
25	10.00	2.245
30	8.045	2.083
35	6.514	1.916
40	5.306	1.752
45	4.348	1.587
50	3.583	1.426
55	2.968	1.278
60	2.467	1.136
65	2.068	1.007
70	1.739	0.891
75	1.469	0.785
80	1.246	0.691
85	1.061	0.607
90	0.908	0.533
95	0.779	0.469
100	0.672	0.414

## USB service outlet

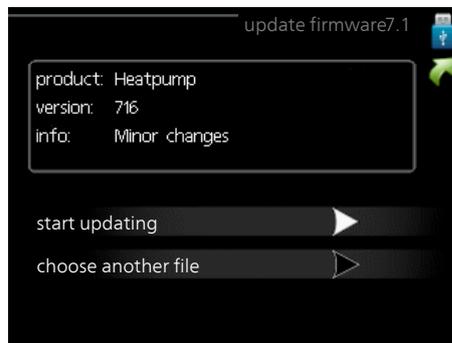


The display unit is equipped with a USB socket that can be used to update the software, save logged information and manage the settings in F750.



When a USB memory is connected a new menu (menu 7) appears in the display.

## Menu 7.1 - update firmware



This allows you to update the software in F750.



### NOTE

For the following functions to work the USB memory must contain files with software for F750 from NIBE.

The fact box at the top of the display shows information (always in English) of the most probable update that the update software has selected from the USB memory.

This information states which product the software is intended for, the software version and general information about them. If you wish to select another file than the one selected, the correct file can be selected by "choose another file".

### start updating

Select "start updating" if you want to start the update. You are asked whether you really want to update the software. Respond "yes" to continue or "no" to undo.

If you responded "yes" to the previous question the update starts and you can now follow the progress of the update on the display. When the update is complete F750 restarts.



### NOTE

A software update does not reset the menu settings in F750.



### NOTE

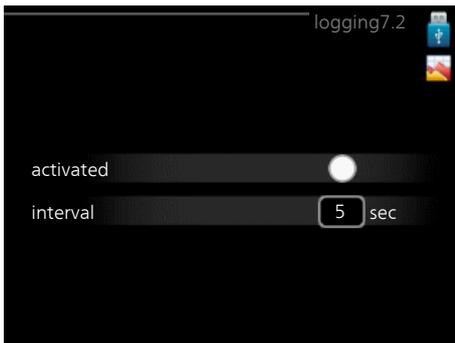
If the update is interrupted before it is complete (for example power cut etc.), the software can be reset to the previous version if the OK button is held in during start up until the green lamp starts to illuminate (takes about 10 seconds).

### choose another file



Select "choose another file" if you do not want to use the suggested software. When you scroll through the files, information about the marked software is shown in a fact box just as before. When you have selected a file with the OK button you will return to the previous page (menu 7.1) where you can choose to start the update.

### Menu 7.2 - logging



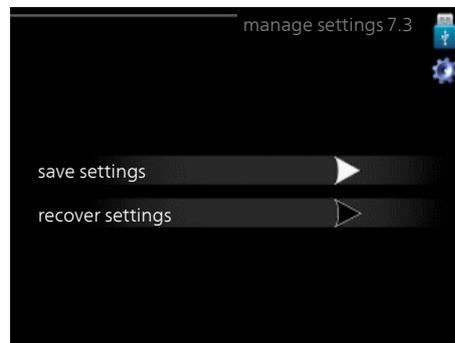
Setting range: 1 s – 60 min  
Factory setting range: 5 s

Here you can choose how current measurement values from F750 should be saved onto a log file on the USB memory.

1. Set the desired interval between loggings.
2. Tick "activated".
3. The present values from F750 are saved in a file in the USB memory at the set interval until "activated" is unticked.

**NOTE**  
Untick "activated" before removing the USB memory.

### Menu 7.3 - manage settings



Here you can manage (save as or retrieve from) all the menu settings (user and service menus) in F750 with a USB memory.

Via "save settings" you save the menu settings to the USB memory in order to restore them later or to copy the settings to another F750.

**NOTE**  
When you save the menu settings to the USB memory you replace any previously saved settings on the USB memory.

Via "recover settings" you reset all menu settings from the USB memory.

**NOTE**  
Reset of the menu settings from the USB memory cannot be undone.

# 10 Disturbances in comfort

In most cases, the heat pump notes operational interference (operational interference can lead to disturbance in comfort) and indicates this with alarms and shows action instructions in the display.

## Info-menu

All the heat pump measurement values are gathered under menu 3.1 in the heat pump menu system. Looking through the values in this menu can often simplify finding the source of the fault. See help menu or user manual for more information about menu 3.1.

## Manage alarm



In the event of an alarm, some kind of malfunction has occurred, which is indicated by the status lamp changing from green continuously to red continuously. In addition, an alarm bell appears in the information window.

### Alarm

In the event of an alarm with a red status lamp a malfunction has occurred that the heat pump cannot remedy itself. In the display, by turning the control knob and pressing the OK button, you can see the type of alarm it is and reset it. You can also choose to set the heat pump to aid mode.

**info / action** Here you can read what the alarm means and receive tips on what you can do to correct the problem that caused the alarm.

**reset alarm** In most cases it is enough to select "reset alarm" to correct the problem that caused the alarm. If a green light illuminates after selecting "reset alarm" the alarm has been remedied. If a red light is still visible and a menu called "alarm" is visible in the display, the problem that caused the alarm remains. If the alarm disappears and then returns, see the section "Troubleshooting".

**aid mode** "aid mode" is a type of emergency mode. This means that the heat pump produces heat and/or hot water despite there being some kind of problem. This can mean that the heat pump's compressor is not running. In this case the immersion heater produces heat and/or hot water.



#### NOTE

To select aid mode an alarm action must be selected in the menu 5.1.4.



#### Caution

Selecting "aid mode" is not the same as correcting the problem that caused the alarm. The status lamp will therefore continue to be red.

## Troubleshooting

If the operational interference is not shown in the display the following tips can be used:

### Basic actions

Start by checking the following possible fault sources:

- The switch's (SF1) position.
- Group and main fuses of the accommodation.
- Earth-fault breaker.
- The heat pump's miniature circuit breaker (FA1).
- The heat pump's temperature limiter (FD1).
- Correctly set load monitor (if installed).

### Low hot water temperature or a lack of hot water

- Closed or choked filling valve (QM10) for the hot water heater.
  - Open the valve.
- Mixing valve (if there is one installed) set too low.
  - Adjust the mixer valve.
- Heat pump in incorrect operating mode.
  - Enter menu 4.2. If mode "auto" is selected, select a higher value on "stop additional heat" in menu 4.9.2.
  - If mode "manual" is selected, select "addition".
- Large hot water consumption.
  - Wait until the hot water has heated up. Temporarily increased hot water capacity (temporary lux) can be activated in menu 2.1.
- Too low hot water setting.
  - Enter menu 2.2 and select a higher comfort mode.
- Too low or no operating prioritisation of hot water.
  - Enter menu 4.9.1 and increase the time for when hot water is to be prioritised. Note that if the time for hot water is increased, the time for heating production is reduced, which can give lower/uneven room temperatures.

### Low room temperature

- Closed thermostats in several rooms.
  - See the "Saving tips" section in the User manual for more detailed information about how to best set the thermostats.
- Heat pump in incorrect operating mode.
  - Enter menu 4.2. If mode "auto" is selected, select a higher value on "stop heating" in menu 4.9.2.
  - If mode "manual" is selected, select "heating". If this is not enough, select "addition".

- Too low set value on the automatic heating control.
  - Enter menu 1.1 "temperature" and adjust the offset heating curve up. If the room temperature is only low in cold weather the curve slope in menu 1.9.1 "heating curve" needs adjusting up.
- Too low or no operating prioritisation of heat.
  - Enter menu 4.9.1 and increase the time for when heating is to be prioritised. Note that if the time for heating is increased the time for hot water production is reduced, which can give smaller amounts of hot water.
- "comfort mode" "luxury" selected in combination with large hot water outlet.
  - Enter menu 2.2 and select "economy" or "normal".
- "Holiday mode" activated in menu 4.7.
  - Enter menu 4.7 and select "Off".
- External switch for changing the room heating activated.
  - Check any external switches.
- Heating medium pump(s) (GP1 and/or GP6) have stopped.
- Air in the heating system.
  - Vent the heating system (see page 30).
- Closed valve (QM31) to the heating system.
  - Open the valve.
- Incorrect value set in menu 5.1.12.
  - Enter menu 5.1.12 and increase the value on "set max electrical add."
- Incorrect value set in menu 5.1.13.
  - Enter menu 5.1.13 and increase the value if possible on "max installed el.pwr (only this machine)".

### High room temperature

- Too high set value on the automatic heating control.
  - Enter menu 1.1 (temperature) and reduce the offset heating curve. If the room temperature is only high in cold weather the curve slope in menu 1.9.1 "heating curve" needs adjusting down.
- External switch for changing the room heating activated.
  - Check any external switches.

### Low system pressure

- Not enough water in the heating system.
  - Top up the water in the heating system (see page 30).

### Low or a lack of ventilation

- Filter (HQ10) blocked.
  - Clean or replace the filter.
- The ventilation is not adjusted.
  - Order/implement ventilation adjustment.
- Exhaust air device blocked or throttled down too much.
  - Check and clean the exhaust air devices.

- Fan speed in reduced mode.
  - Enter menu 1.2 and select "normal".
- External switch for changing the fan speed activated.
  - Check any external switches.

### High or distracting ventilation

- Filter (HQ10) blocked.
  - Clean or replace the filter.
- The ventilation is not adjusted.
  - Order/implement ventilation adjustment.
- Fan speed in forced mode.
  - Enter menu 1.2 and select "normal".
- External switch for changing the fan speed activated.
  - Check any external switches.

### The compressor does not start

- There is no heating requirement.
  - The heat pump does not call on heating nor hot water.
  - The heat pump defrosts.
- Temperature conditions tripped.
  - Wait until the temperature condition has been reset.
- Minimum time between compressor starts has not been reached.
  - Wait 30 minutes and then check if the compressor has started.
- Alarm tripped.
  - Follow the display instructions.

# 11 Accessories

Not all accessories are available on all markets.

## Communications module MODBUS 40

MODBUS 40 enables F750 to be controlled and monitored using a DUC (computer sub-centre) in the building. Communication is then performed using MODBUS-RTU.

Part no 067 144

## Communications module SMS 40

When there is no internet connection, you can use the accessory SMS 40 to control F750 via SMS.

Part no 067 073

## Docking kit DEW 40

DEW 40 is used to connect the water heater VPB 200 to F750.

Part no. 067 102

## Docking kit SCA 42

SCA 42 means that F750 can be connected to external additional heat and/or prioritised additional heat when docking with SAM 40 and the accumulator tanks AHPH or AHPS.

Part no. 067 313

## Docking kits SCA 41

SCA 41 means that F750 can be connected to external additional heat and/or prioritised additional heat when docking with the accumulator tanks AHPH or AHPS.

Part no. 067 316

## Extra shunt group ECS 40/ECS 41

This accessory is used when F750 is installed in houses with two or more different heating systems that require different supply temperatures.

### **ECS 40 (Max 80 m<sup>2</sup>)**

Part no 067 287

### **ECS 41 (approx. 80-250 m<sup>2</sup>)**

Part no 067 288

## Solar package NIBE PV

Solar panel package with extremely long service-life to produce your own electricity.

### **3 kW**

10 Solar panels

### **6 kW**

20 Solar panels

### **9 kW**

30 Solar panels

### **12 kW**

40 Solar panels

### **21 kW**

70 Solar panels

## Splitter kit DKI 10

For split installation of F750.

Part no. 089 777

## Supply air module SAM

SAM is a supply air module specially developed for houses with supply and exhaust air systems.

Select model based on the house supply air flow.

### **SAM 40** **(approx. 28-70 l/s)**

Part no. 067 147

### **SAM 41** **(approx. 42-125 l/s)**

Part no. 067 534

## Top cabinet

Top cabinet that conceals the ventilation ducts and reduces the sound to the installation room by 1-2 dB(A).

### **245 mm**

Part no. 089 756

### **345 mm**

Part no. 089 757

### **445 mm**

Part no. 067 522

### **385-635 mm**

Part no. 089 758

## Water heater/Accumulator tank

### **AHPS**

Accumulator tank without an immersion heater with solar coil (copper) and a hot water coil (stainless steel).

Best positioned to the left of F750. Requires that the whole installation (F750 and AHPS) is positioned at a distance of 60 mm from the rear wall. Requires docking kit.

Part no. 056 283

### **VPB**

Water heater without immersion heater with charge coil. Positioned to the left of F750. Requires docking kit.

### **VPB 200**

Copper Part no. 088 515

Enamel Part no. 088 517

Stainless Part no. 088 518

steel

### **VPB 300**

Copper Part no. 083 009

Enamel Part no. 083 011

Stainless Part no. 083 010

steel

### ***Eminent***

Water heater with immersion heater.

#### **Eminent 35**

Copper Part no. 072 310  
Enamel Part no. 072 300  
Stainless Part no. 072 320

#### **Eminent 55**

Copper Part no. 072 340  
Enamel Part no. 072 330  
Stainless Part no. 072 350

#### **Eminent 100**

Copper Part no. 072 370  
Enamel Part no. 072 360  
Stainless Part no. 072 380

#### **Eminent 120**

Stainless Part no. 072 384

### ***Compact***

Water heater with immersion heater.

#### **Compact 100**

Copper Part no. 084 010

#### **Compact 200**

Copper Part no. 084 020  
Enamel Part no. 084 070  
Stainless Part no. 084 050

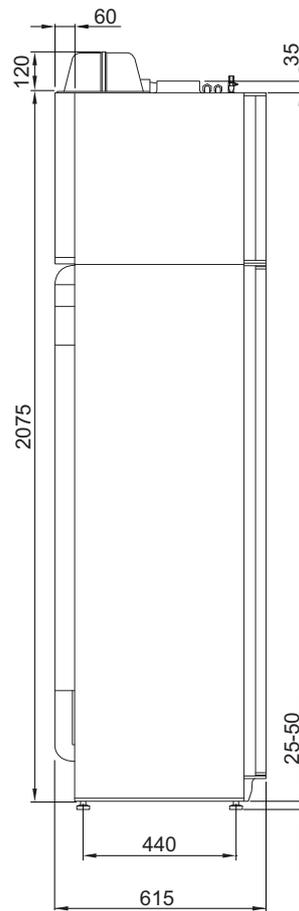
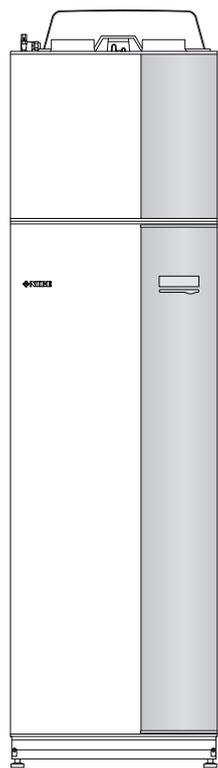
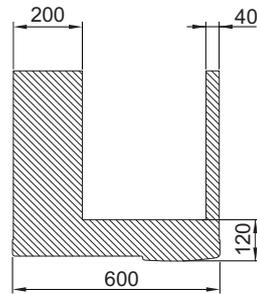
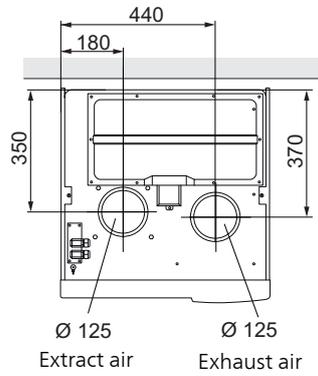
#### **Compact 300**

Copper Part no. 084 030  
Enamel Part no. 084 080  
Stainless Part no. 084 060

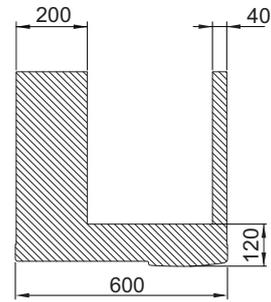
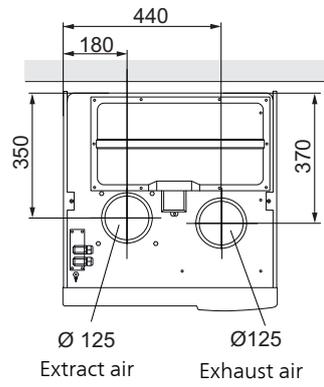
# 12 Technical data

## Dimensions and setting-out coordinates

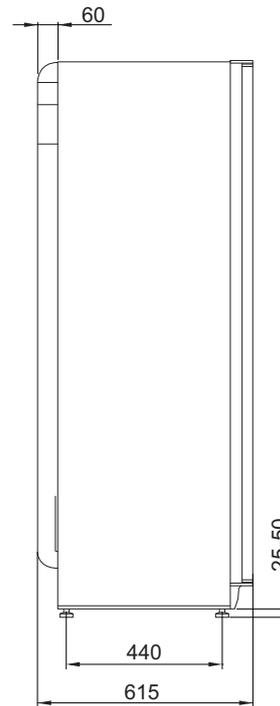
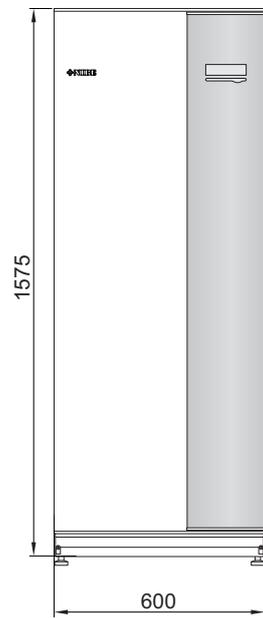
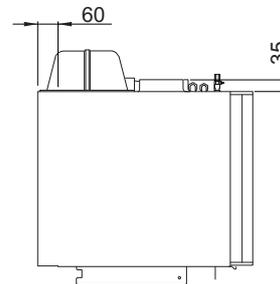
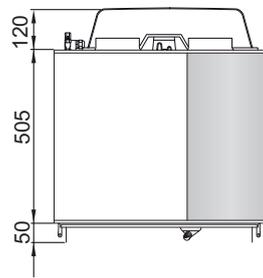
F750 installed as one unit.



F750 at separated installation.



Avoid routing pipes through the marked area



## Technical specifications



3x400 V		Copper	Stainless
<b>Output data according to EN 14 511</b>			
Specified heating output (P <sub>H</sub> ) <sup>1</sup>	kW	1.27	
COP <sup>1</sup>		4.79	
Specified heating output (P <sub>H</sub> ) <sup>2</sup>	kW	1.53	
COP <sup>2</sup>		5.32	
Specified heating output (P <sub>H</sub> ) <sup>3</sup>	kW	5.35	
COP <sup>3</sup>		2.43	
<b>Additional power</b>			
Max power, immersion heater (factory setting)	kW	6.5 (6.5)	
<b>Electrical data</b>			
Rated voltage	V	400 V 3N ~ 50 Hz	
Max operating current	A	17.3	
Min. fuse rating	A	16	
Drive output heating medium pump 2 GP6	W	5-45	
Driving power exhaust air fan	W	25-140	
Enclosure class		IP 21	
<b>Refrigerant circuit</b>			
Type of refrigerant		R407C	
GWP refrigerant		1774	
Volume	kg	0.74	
CO <sub>2</sub> equivalent	ton	1,312	
Cut-out value pressostat HP	MPa/bar	2.9 / 29.0	
Cut-out value pressostat LP	MPa/bar	0.05 / 0.5	
<b>Heating medium circuit</b>			
Opening pressure, safety valve	MPa/bar	0.25 / 2.5	
Max temperature, supply line (factory setting)	°C	70 (60)	
<b>Ventilation</b>			
Min. airflow	l/s	21	
<b>Sound effect level according to EN 12 102</b>			
Sound power level (L <sub>W(A)</sub> ) <sup>4</sup>	dB(A)	40-55	
<b>Sound pressure levels</b>			
Sound pressure level in the boiler room (L <sub>P(A)</sub> ) <sup>5</sup>	dB(A)	36-51	
<b>Pipe connections</b>			
Heating medium ext Ø	mm	22	
Hot water ext Ø	mm	22	
Cold water ext Ø	mm	22	
Ventilation Ø	mm	125	

Other 3x400 V		Copper	Stainless
<b>Water heater and heating section</b>			
Volume heating section (of which buffer vessel)	litre	35 (25)	
Volume, hot water heater	litre	180	
Volume buffer vessel	litre	25	
Max pressure in hot water heater	MPa/bar	1.0/10	
<b>Capacity, hot water</b>			
Tap volume 40 °C according to <b>EN 255-3</b> ( $V_{max}$ ) <sup>6,7</sup>	litre	213 - 273	
Tap volume 40 °C according to <b>EN 16 147</b> ( $V_{max}$ ) <sup>6,7</sup>	litre	177 - 227	
COP at Normal comfort ( $COP_t$ )		2.28	
Idle loss at Normal comfort ( $P_{es}$ )	W	54	
<b>Dimensions and weight</b>			
Width	mm	600	
Depth	mm	610	
Height excl. inverter box, incl. feet	mm	2,100 - 2,125	
Required ceiling height	mm	2,270	
Weight	kg	225	205
Part No.		066 111	066 112

<sup>1</sup>A20(12)W35, exhaust air flow 25 l/s (90 m<sup>3</sup>/h) min compressor frequency

<sup>2</sup>A20(12)W35, exhaust air flow 70 l/s (252 m<sup>3</sup>/h) min compressor frequency

<sup>3</sup>A20(12)W45, exhaust air flow 70 l/s (252 m<sup>3</sup>/h) max compressor frequency

<sup>4</sup>The value varies with the selected fan curve. For more extensive sound data including sound to channels visit [www.nibe.eu](http://www.nibe.eu).

<sup>5</sup> The value can vary with the room's damping capacity. These values apply at a damping of 4 dB.

<sup>6</sup>A20(12) exhaust air flow 50 l/s (180 m<sup>3</sup>/h)

<sup>7</sup>The value varies depending on choice of comfort mode (economy, normal and lux)

3x230 V		Stainless
<b>Output data according to EN 14 511</b>		
Specified heating output (P <sub>H</sub> ) <sup>1</sup>	kW	1.27
COP <sup>1</sup>		4.79
Specified heating output (P <sub>H</sub> ) <sup>2</sup>	kW	1.53
COP <sup>2</sup>		5.32
Specified heating output (P <sub>H</sub> ) <sup>3</sup>	kW	5.35
COP <sup>3</sup>		2.43
<b>Additional power</b>		
Max power, immersion heater (factory setting)	kW	7.0 (5.0)
<b>Electrical data</b>		
Rated voltage	V	230 V 3N ~ 50 Hz
Max operating current	A	27.2
Min. fuse rating	A	16
Drive output heating medium pump 2 GP6	W	5-45
Driving power exhaust air fan	W	25-140
Enclosure class		IP 21
<b>Refrigerant circuit</b>		
Type of refrigerant		R407C
GWP refrigerant		1774
Volume	kg	0.74
CO <sub>2</sub> equivalent	ton	1.312
Cut-out value pressostat HP	MPa/bar	2.9 / 29.0
Cut-out value pressostat LP	MPa/bar	0.05 / 0.5
<b>Heating medium circuit</b>		
Opening pressure, safety valve	MPa/bar	0.25 / 2.5
Max temperature, supply line (factory setting)	°C	70 (60)
<b>Ventilation</b>		
Min. airflow	l/s	21
<b>Sound effect level according to EN 12 102</b>		
Sound power level (L <sub>W(A)</sub> ) <sup>4</sup>	dB(A)	40-55
<b>Sound pressure levels</b>		
Sound pressure level in the boiler room (L <sub>P(A)</sub> ) <sup>5</sup>	dB(A)	36-51
<b>Pipe connections</b>		
Heating medium ext Ø	mm	22
Hot water ext Ø	mm	22
Cold water ext Ø	mm	22
Ventilation Ø	mm	125

Other 3x230 V		Stainless
<b>Water heater and heating section</b>		
Volume heating section (of which buffer vessel)	litre	35 (25)
Volume, hot water heater	litre	180
Volume buffer vessel	litre	25
Max pressure in hot water heater	MPa/bar	1.0/10
<b>Capacity, hot water</b>		
Tap volume 40 °C according to <b>EN 255-3</b> ( $V_{max}$ ) <sup>6,7</sup>	litre	213 - 273
Tap volume 40 °C according to <b>EN 16 147</b> ( $V_{max}$ ) <sup>6,7</sup>	litre	177 - 227
COP at Normal comfort ( $COP_t$ )		2.28
Idle loss at Normal comfort ( $P_{es}$ )	W	54
<b>Dimensions and weight</b>		
Width	mm	600
Depth	mm	610
Height excl. inverter box, incl. feet	mm	2,100 - 2,125
Required ceiling height	mm	2,270
Weight	kg	205
Part No.		066 114

<sup>1</sup>A20(12)W35, exhaust air flow 25 l/s (90 m<sup>3</sup>/h) min compressor frequency

<sup>2</sup>A20(12)W35, exhaust air flow 70 l/s (252 m<sup>3</sup>/h) min compressor frequency

<sup>3</sup>A20(12)W45, exhaust air flow 70 l/s (252 m<sup>3</sup>/h) max compressor frequency

<sup>4</sup>The value varies with the selected fan curve. For more extensive sound data including sound to channels visit [www.nibe.eu](http://www.nibe.eu).

<sup>5</sup> The value can vary with the room's damping capacity. These values apply at a damping of 4 dB.

<sup>6</sup>A20(12) exhaust air flow 50 l/s (180 m<sup>3</sup>/h)

<sup>7</sup>The value varies depending on choice of comfort mode (economy, normal and lux)

# Energy labelling

## Information sheet

Supplier		NIBE
Model		F750
Temperature application	°C	35 / 55
Declared load profile for water heating		<b>L</b>
Seasonal space heating energy efficiency class, average climate		<b>A++ / A++</b>
Water heating energy efficiency class, average climate		<b>A</b>
Rated heat output (P <sub>designh</sub> ), average climate	kW	5 / 5
Annual energy consumption space heating, average climate	kWh	2121 / 2756
Annual energy consumption water heating, average climate	kWh	1123
Seasonal space heating energy efficiency, average climate	%	172 / 132
Water heating energy efficiency, average climate	%	91
Sound power level L <sub>WA</sub> indoors	dB	44
Rated heat output (P <sub>designh</sub> ), cold climate	kW	5 / 5
Rated heat output (P <sub>designh</sub> ), warm climate	kW	5 / 5
Annual energy consumption space heating, cold climate	kWh	2389 / 3105
Annual energy consumption water heating, cold climate	kWh	1123
Annual energy consumption space heating, warm climate	kWh	1359 / 1766
Annual energy consumption water heating, warm climate	kWh	1123
Seasonal space heating energy efficiency, cold climate	%	183 / 140
Water heating energy efficiency, cold climate	%	91
Seasonal space heating energy efficiency, warm climate	%	174 / 133
Water heating energy efficiency, warm climate	%	91
Sound power level L <sub>WA</sub> outdoors	dB	-

## Data for energy efficiency of the package

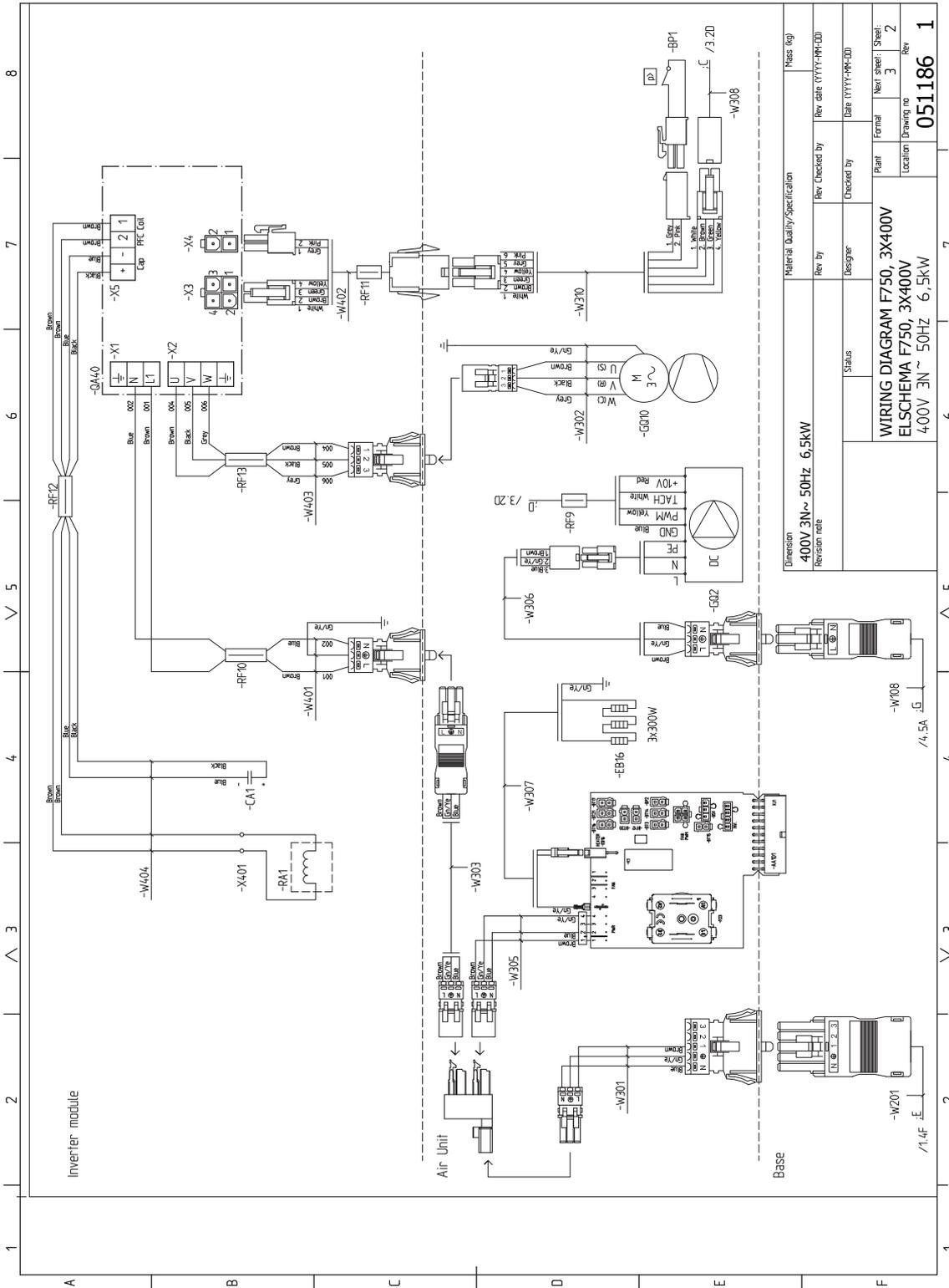
Model		F750
Temperature application	°C	35 / 55
Controller, class		VI
Controller, contribution to efficiency	%	4
Seasonal space heating energy efficiency of the package, average climate	%	176 / 136
Seasonal space heating energy efficiency class of the package, average climate		<b>A+++ / A++</b>
Seasonal space heating energy efficiency of the package, cold climate	%	187 / 144
Seasonal space heating energy efficiency of the package, warm climate	%	178 / 137

The reported efficiency of the package also takes the controller into account. If an external supplementary boiler or solar heating is added to the package, the overall efficiency of the package should be recalculated.

## Technical documentation

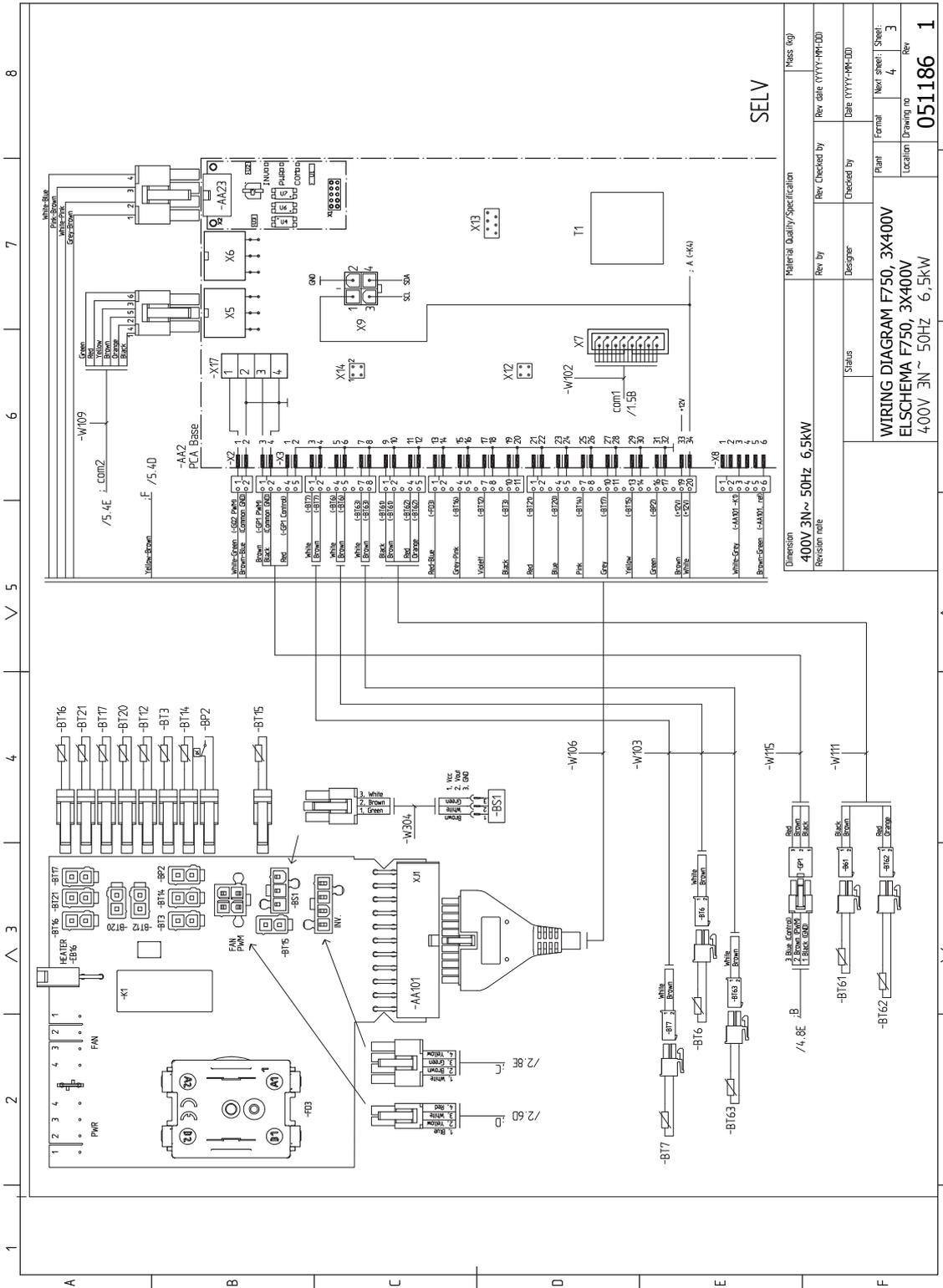
Model				F750							
Type of heat pump				<input type="checkbox"/> Air-water <input checked="" type="checkbox"/> Exhaust-water <input type="checkbox"/> Brine-water <input type="checkbox"/> Water-water							
Low-temperature heat pump				<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No							
Integrated immersion heater for additional heat				<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No							
Heat pump combination heater				<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No							
Climate				<input checked="" type="checkbox"/> Average <input type="checkbox"/> Cold <input type="checkbox"/> Warm							
Temperature application				<input checked="" type="checkbox"/> Average (55 °C) <input type="checkbox"/> Low (35 °C)							
Applied standards				EN14825, EN14511, EN16147, EN12102							
<b>Rated heat output</b>		Prated	4,5	kW	<b>Seasonal space heating energy efficiency</b>		$\eta_s$	132	%		
<i>Declared capacity for space heating at part load and at outdoor temperature <math>T_j</math></i>				<i>Declared coefficient of performance for space heating at part load and at outdoor temperature <math>T_j</math></i>							
$T_j = -7\text{ °C}$	Pdh	4.0	kW	$T_j = -7\text{ °C}$	COPd	2.3	-				
$T_j = +2\text{ °C}$	Pdh	2.4	kW	$T_j = +2\text{ °C}$	COPd	3.4	-				
$T_j = +7\text{ °C}$	Pdh	1.6	kW	$T_j = +7\text{ °C}$	COPd	4.4	-				
$T_j = +12\text{ °C}$	Pdh	1.7	kW	$T_j = +12\text{ °C}$	COPd	4.2	-				
$T_j = \text{biv}$	Pdh	4.0	kW	$T_j = \text{biv}$	COPd	2.3	-				
$T_j = \text{TOL}$	Pdh	3.6	kW	$T_j = \text{TOL}$	COPd	2.3	-				
$T_j = -15\text{ °C}$ (if TOL < -20 °C)	Pdh		kW	$T_j = -15\text{ °C}$ (if TOL < -20 °C)	COPd		-				
Bivalent temperature				$T_{\text{biv}}$	-7	°C	Min. outdoor air temperature		TOL	-10	°C
Cycling interval capacity				P <sub>cyh</sub>		kW	Cycling interval efficiency		COP <sub>cy</sub>		-
Degradation coefficient				Cdh	0.97	-	Max supply temperature		WTOL	60	°C
<i>Power consumption in modes other than active mode</i>				<i>Additional heat</i>							
Off mode		P <sub>OFF</sub>	0.003	kW	Rated heat output		P <sub>sup</sub>	0.9	kW		
Thermostat-off mode		P <sub>TO</sub>	0.02	kW							
Standby mode		P <sub>SB</sub>	0.02	kW	Type of energy input		Electric				
Crankcase heater mode		P <sub>CK</sub>	0.00	kW							
<i>Other items</i>											
Capacity control		Variable			Rated airflow (air-water)			180	m <sup>3</sup> /h		
Sound power level, indoors/outdoors		L <sub>WA</sub>	44 / -	dB	Nominal heating medium flow				m <sup>3</sup> /h		
Annual energy consumption		Q <sub>HE</sub>	2,750	kWh	Brine flow brine-water or water-water heat pumps				m <sup>3</sup> /h		
<i>For heat pump combination heater</i>											
<b>Declared load profile for water heating</b>				L		<b>Water heating energy efficiency</b>		$\eta_{\text{wh}}$	91	%	
Daily energy consumption		Q <sub>elec</sub>	5.11	kWh	Daily fuel consumption		Q <sub>fuel</sub>		kWh		
Annual energy consumption		AEC	1,123	kWh	Annual fuel consumption		AFC		GJ		





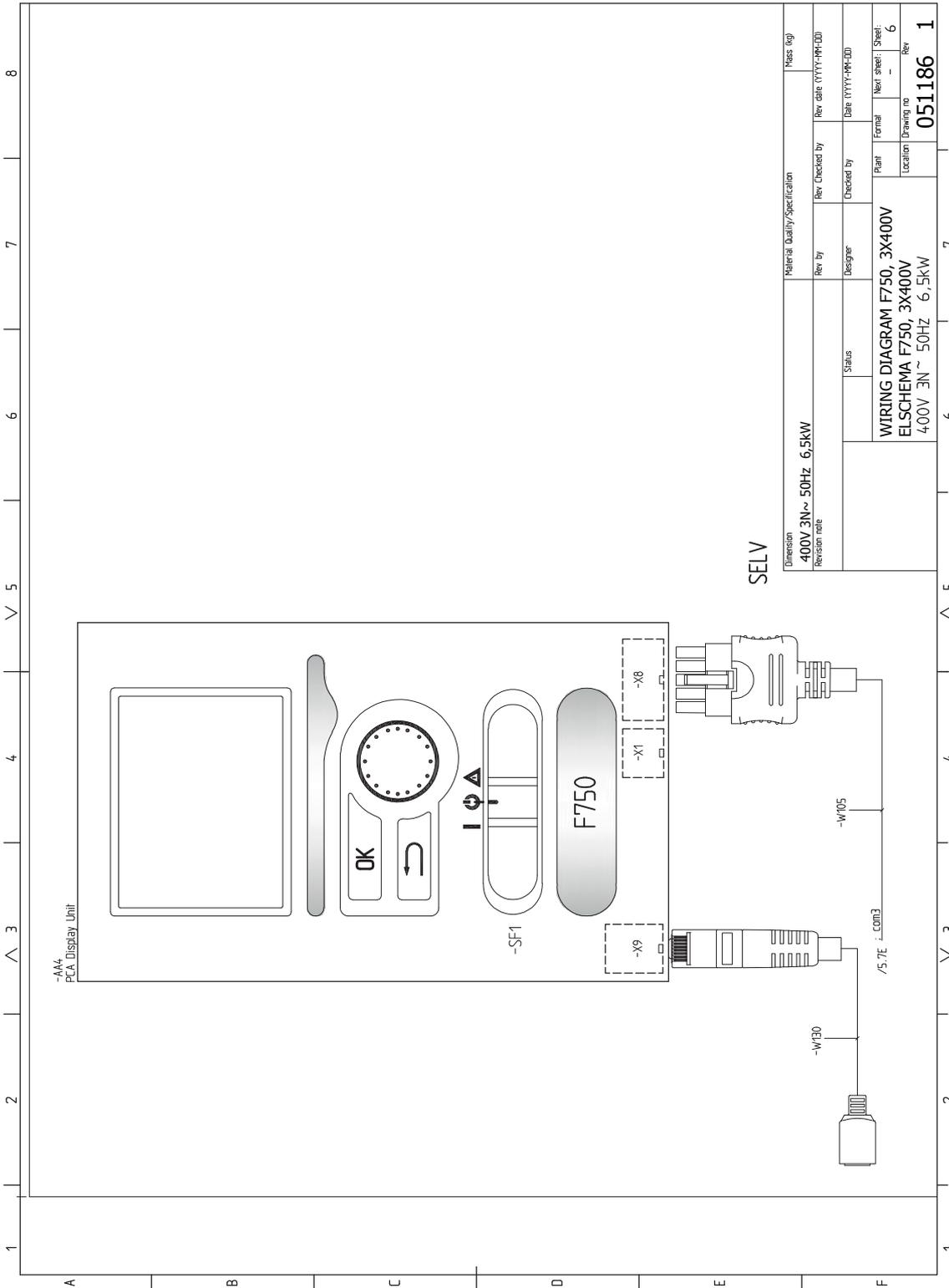
Material Quality/Specification		Mass (kg)	
Dimension	400V 3N~ 50Hz 6,5kW	Rev. by	Rev. Checked by
Revision note		Designer	Checked by
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		Plant	Formal
		Location	New sheet: Sheet
			Drawing no
			Rev
			<b>051186</b>
			<b>1</b>

WIRING DIAGRAM F750, 3X400V  
 ELSHEMA F750, 3X400V  
 400V 3N~ 50Hz 6,5kW







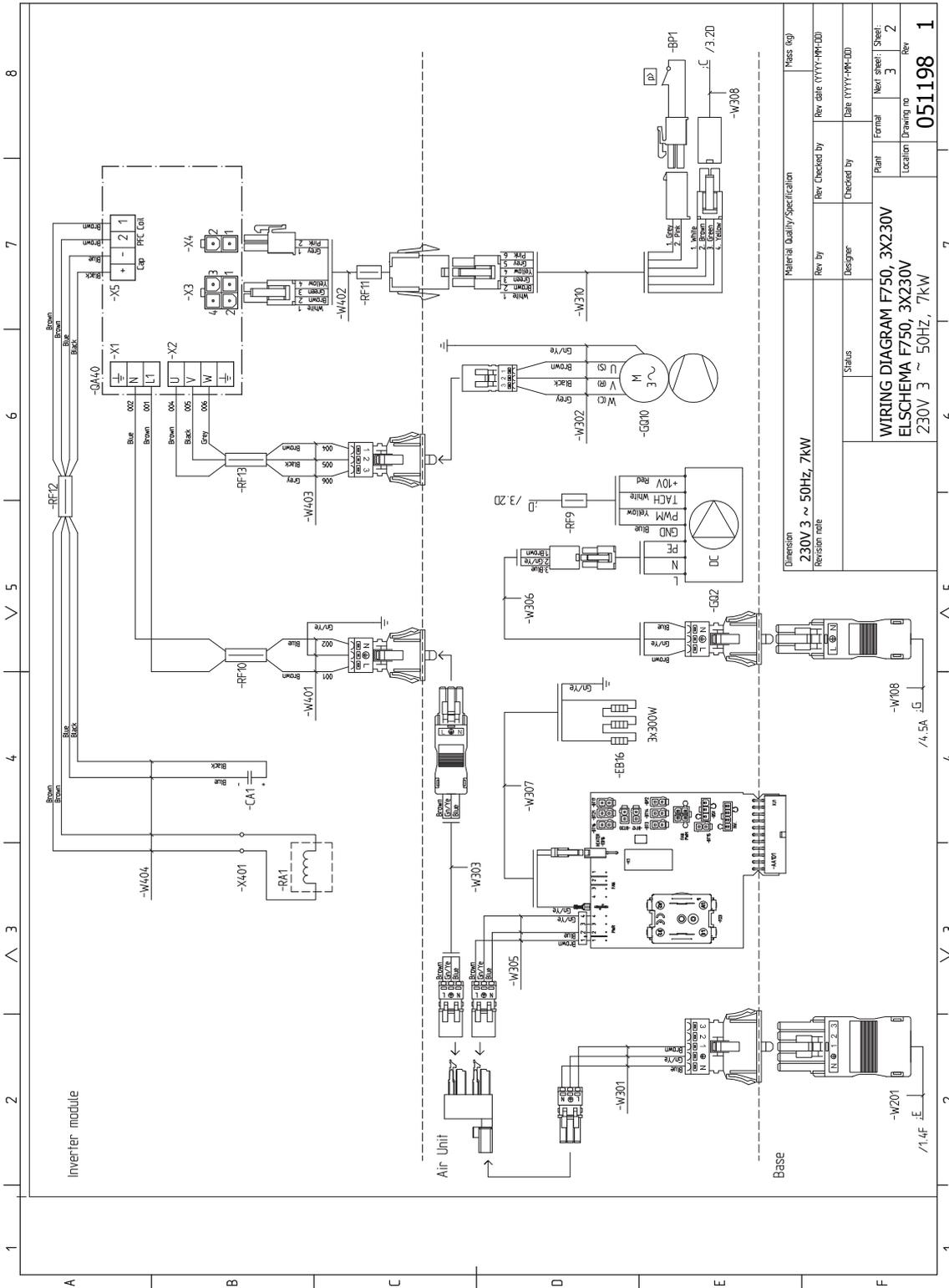


SELV

Dimension		Material Quality/Specification		Mass (kg)	
400V 3N~ 50Hz 6,5kW					
Revision note		Rev. by	Rev. Checked by	Rev. date (YYYY-MM-DD)	
Status	Designer	Checked by	Date (YYYY-MM-DD)	Plant	Formal
				Location	Drawing no
					051186
					1

WIRING DIAGRAM F750, 3X400V  
 ELSHEMA F750, 3X400V  
 400V 3N~ 50Hz 6,5kW

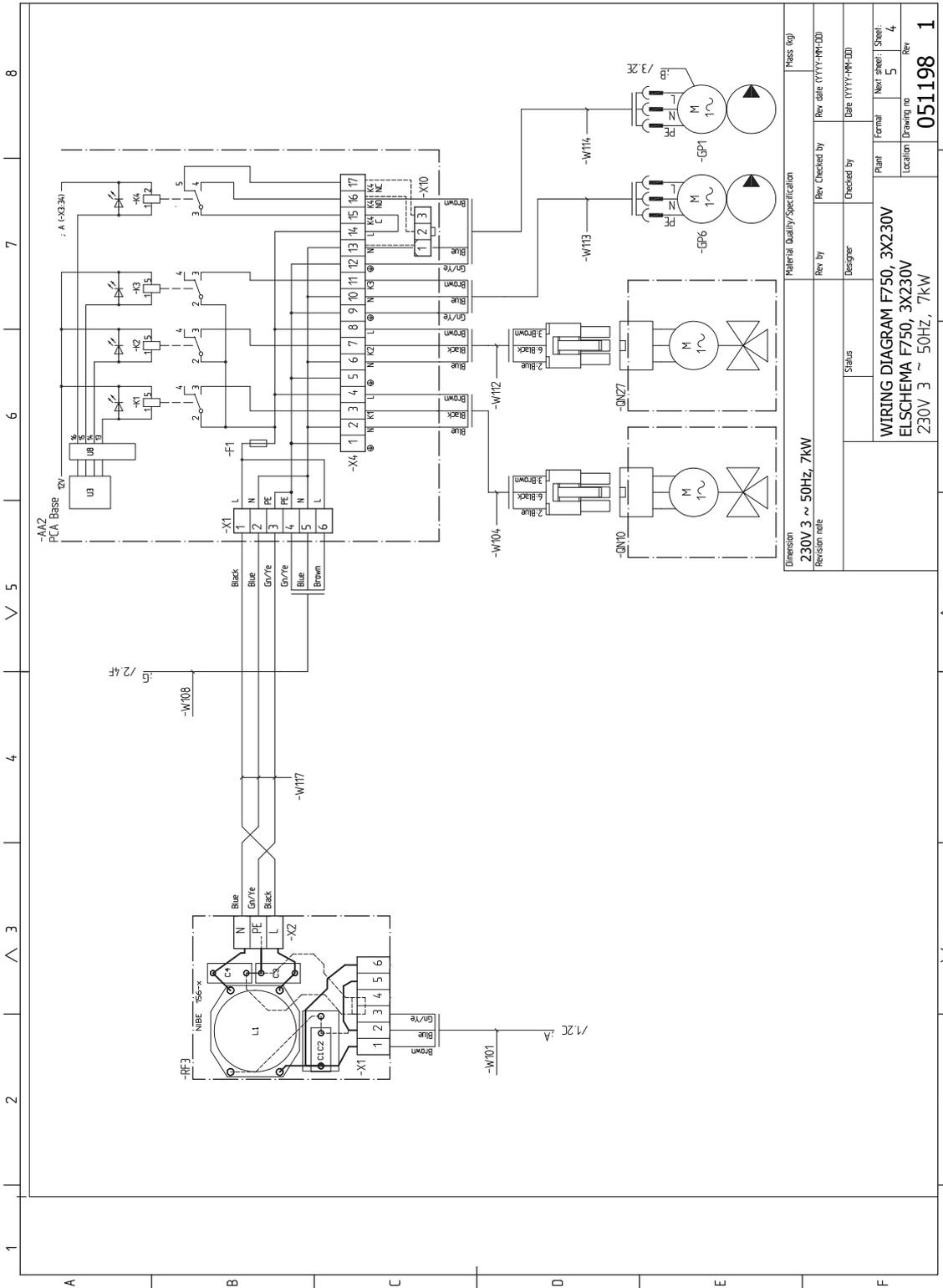




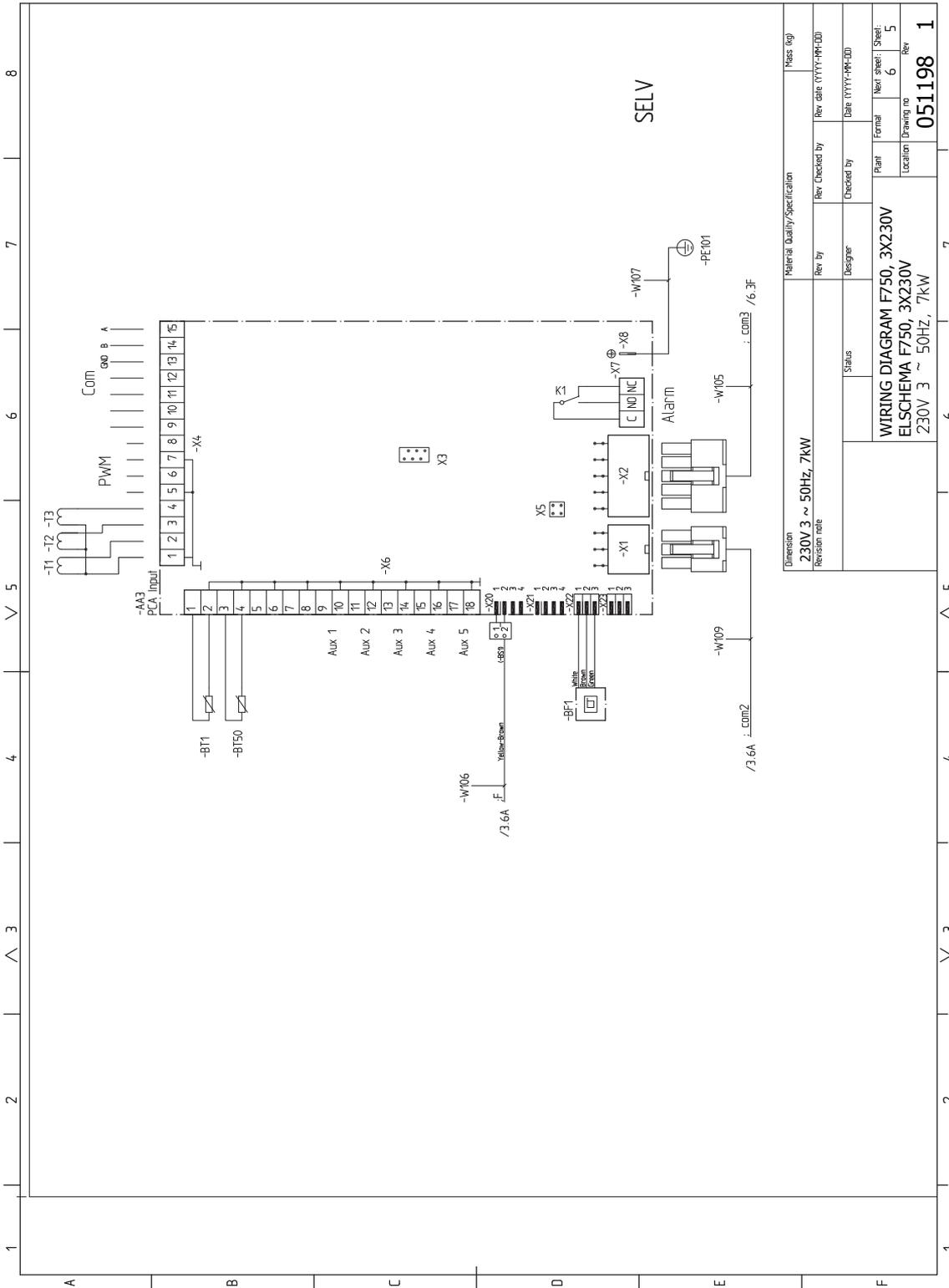
Material Quality/Specification		Mass (kg)	
Dimension	230V 3 ~ 50Hz, 7kW	Rev. by	Rev. Checked by
Revision note		Designer	Checked by
		Status	Date (YYYY-MM-DD)
		Plant	Formal
		Location	New sheet: Sheet
			Drawing no
			Rev
			<b>051198</b>
			<b>1</b>

WIRING DIAGRAM F750, 3X230V  
 ELSHEMA F750, 3X230V  
 230V 3 ~ 50Hz, 7kW





Dimension		Material Quality/Specification		Mass (kg)	
230V 3 ~ 50Hz, 7kW					
Revision note		Rev. by	Rev. Checked by	Rev. date (YYYY-MM-DD)	
		Designer	Checked by	Date (YYYY-MM-DD)	
		Status		Plant	New sheet: Sheet: 4
		WIRING DIAGRAM F750, 3X230V		Location	Drawing no
		ELSHEMA F750, 3X230V			051198
		230V 3 ~ 50Hz, 7kW			1



Material Quality/Specification		Mass (kg)	
Dimension	230V 3 ~ 50Hz, 7kW	Rev. by	Rev. checked by
Revision note		Designer	Checked by
		Status	Date (YYYY-MM-DD)
		Plant	Formal
		Location	New sheet: Sheet
			Drawing no
			Rev
			<b>051198</b>
			<b>1</b>

WIRING DIAGRAM F750, 3X230V  
 ELSHEMA F750, 3X230V  
 230V 3 ~ 50Hz, 7kW



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