Installation manual

Exhaust air module
NIBE F135

IHB EN 2450-1
731943

Table of Contents

Important information

Safety information

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

The manual must be left with the customer.

For the latest version of the product's documentation, see nibe.eu.

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.

This is an original manual. It may not be translated without the approval of NIBE.

Do not start F135 if there is a risk that the water in the system has frozen.

Electrical installation and wiring must be carried out in accordance with national provisions.

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

Symbols

Explanation of symbols that may be present in this manual.

CAUTION!

This symbol indicates danger to person or machine.

NOTE!

This symbol indicates important information about what you should consider when installing or servicing the installation.

TIP!

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

Marking

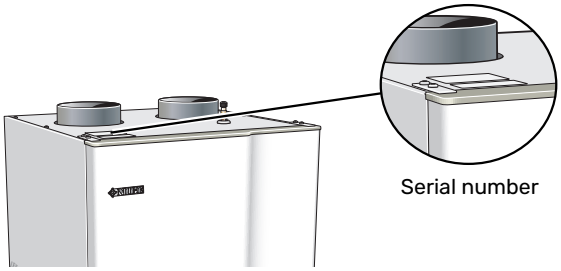
Explanation of symbols that may be present on the product's label(s).

Danger to person or machine.

Read the Installer Manual.

Serial number

The serial number can be found to the left, on top of F135.



Serial number

NOTE!

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.

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.

✔	Description	Notes	Signature	Date
Ventilation, exhaust air (page 15)				
	Setting the ventilation flow			
	Exhaust air filter			
Heating medium (page 21)				
	System flushed			
	System vented			
	Circulation pump setting			
	System pressure			
Electricity (page 18)				
	Supply connected 230 V			
	Circuit fuses			

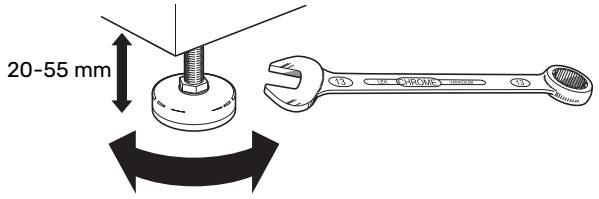
Delivery and handling

Transport

F135 should be transported and stored vertically in a dry place.

Assembly

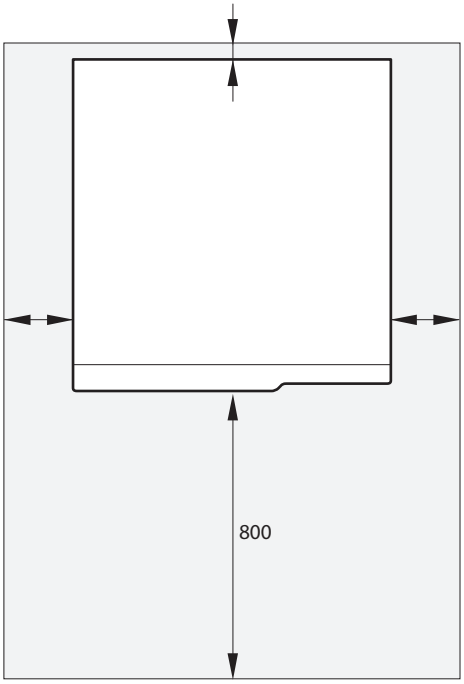
- F135 is installed freestanding on brackets or on a suitable flat surface indoors. Noise from the circulation pump, fan and compressor may be transferred to the bracket or the surface on which F135 is placed.
- Use the product's adjustable feet to attain a horizontal and stable set-up.



- Because water comes from F135, the floor coating is important. A waterproof floor or floor membrane is recommended.
- 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 installation area always has to 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 F135 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.

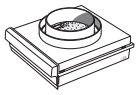


CAUTION!

Ensure that there is sufficient space (300 mm) above F135 for connecting ventilation ducts.

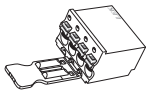
Supplied components

Silencer

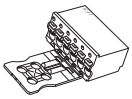


Filter cartridge

Choke washer Ø 22 mm [1]



4-pin connector



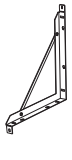
6-pin connector

Drain hose Ø 20 mm
Length 2200 mm

Power supply cable

Communication cable

Circulation pump



2 x bracket
6 x screws

6 x nuts
4 x washers

[1] Only for VVM 310 / VVM 500

LOCATION

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

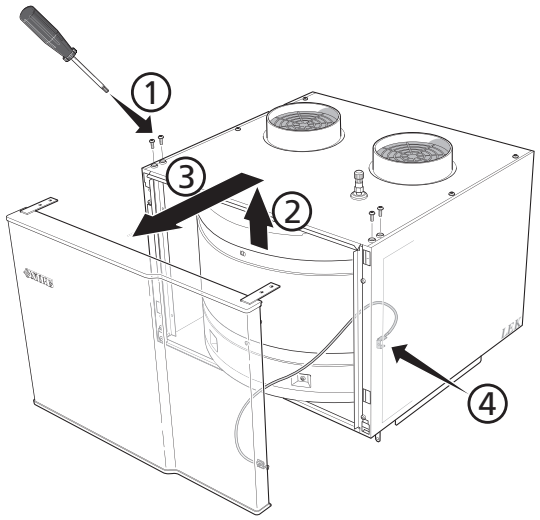
Compatible products

- VVM 225
- VVM 310
- VVM 320
- VVM 325
- SMO 40
- VVM 500

Handling panels

FRONT HATCH

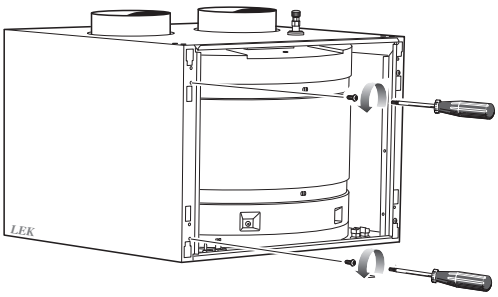
1. Loosen the screws for the securing plates above F135.
2. Slide the hatch upwards.
3. Pull the hatch towards yourself.



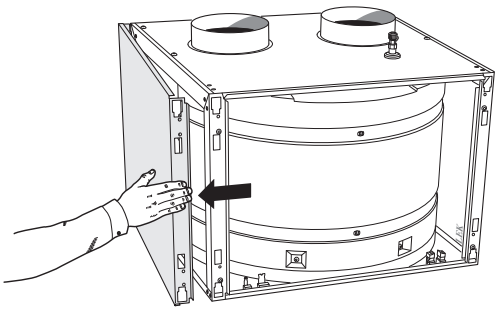
> **CAUTION!**
>
> An earth cable is installed in the hatch, which can therefore only be lifted out 35 cm. If the hatch needs to be removed completely, the cable must be disconnected.

REMOVE SIDE PANELS

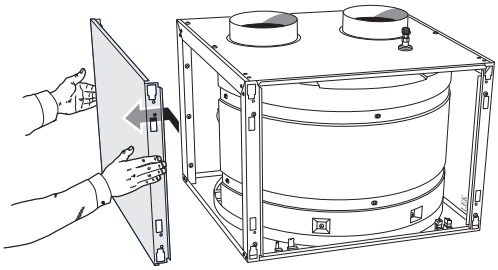
1. Undo the screws at the edge.



2. Twist the panel slightly outwards.



3. Move the panel outwards and backwards.



4. Assembly takes place in the reverse order.

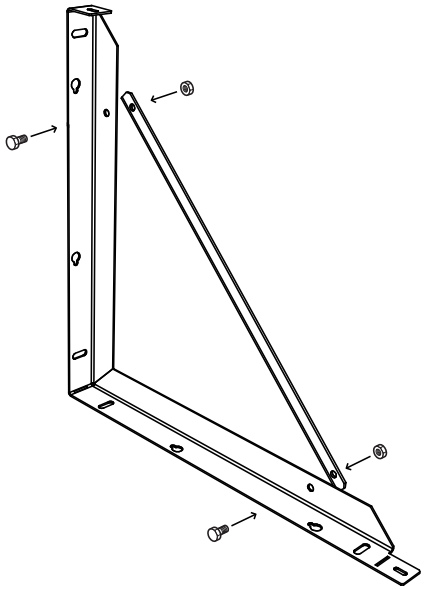
Mounting

The exhaust air module is wall-mounted using the brackets enclosed. The exhaust air module can also be placed on a suitable flat surface.

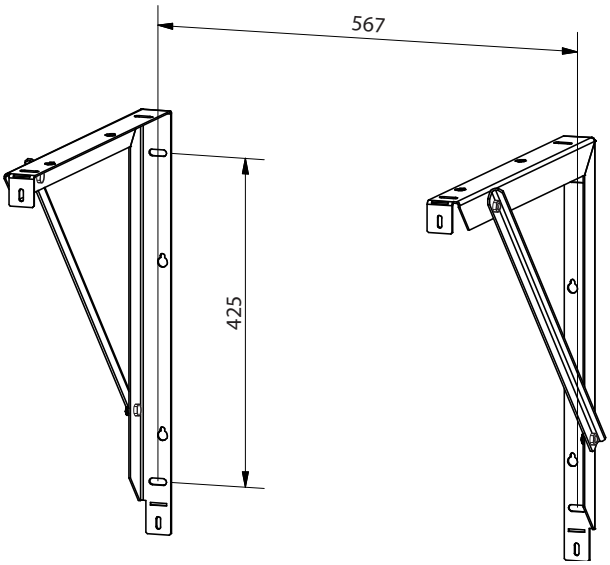
> **CAUTION!**
>
> Check that the mountings are located in the intended grooves on the exhaust air module.
>
> Ensure that the exhaust air module is installed horizontally.

INSTALLING BRACKETS

1. Install the brackets together using the M6 screws and nuts supplied.

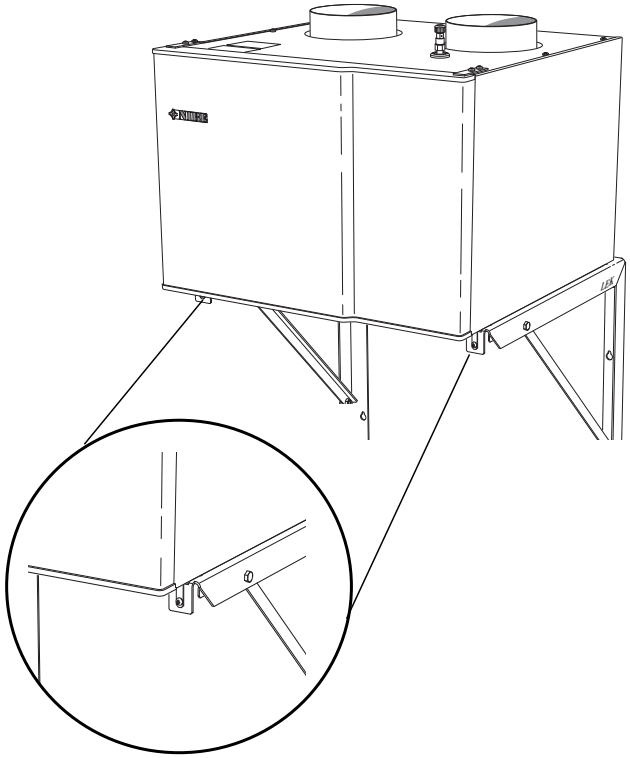


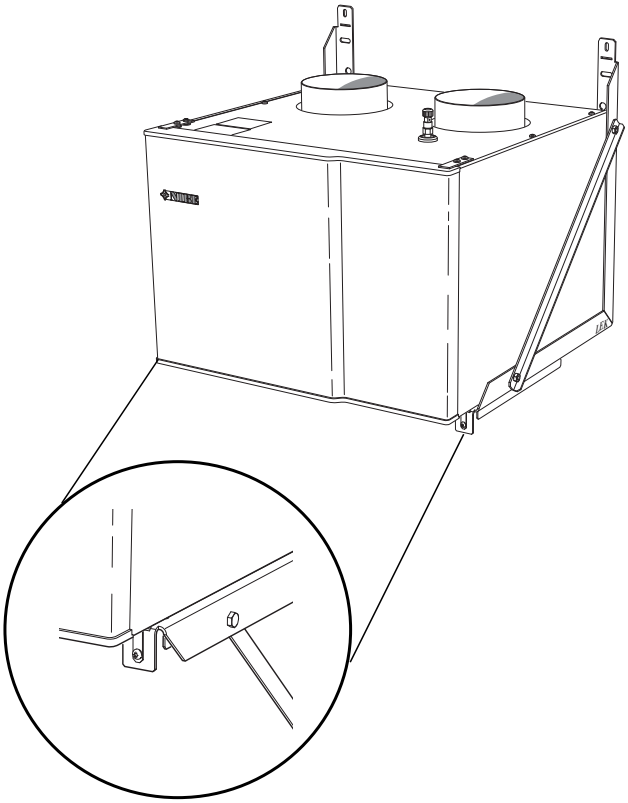
2. Drill holes in the wall as illustrated.



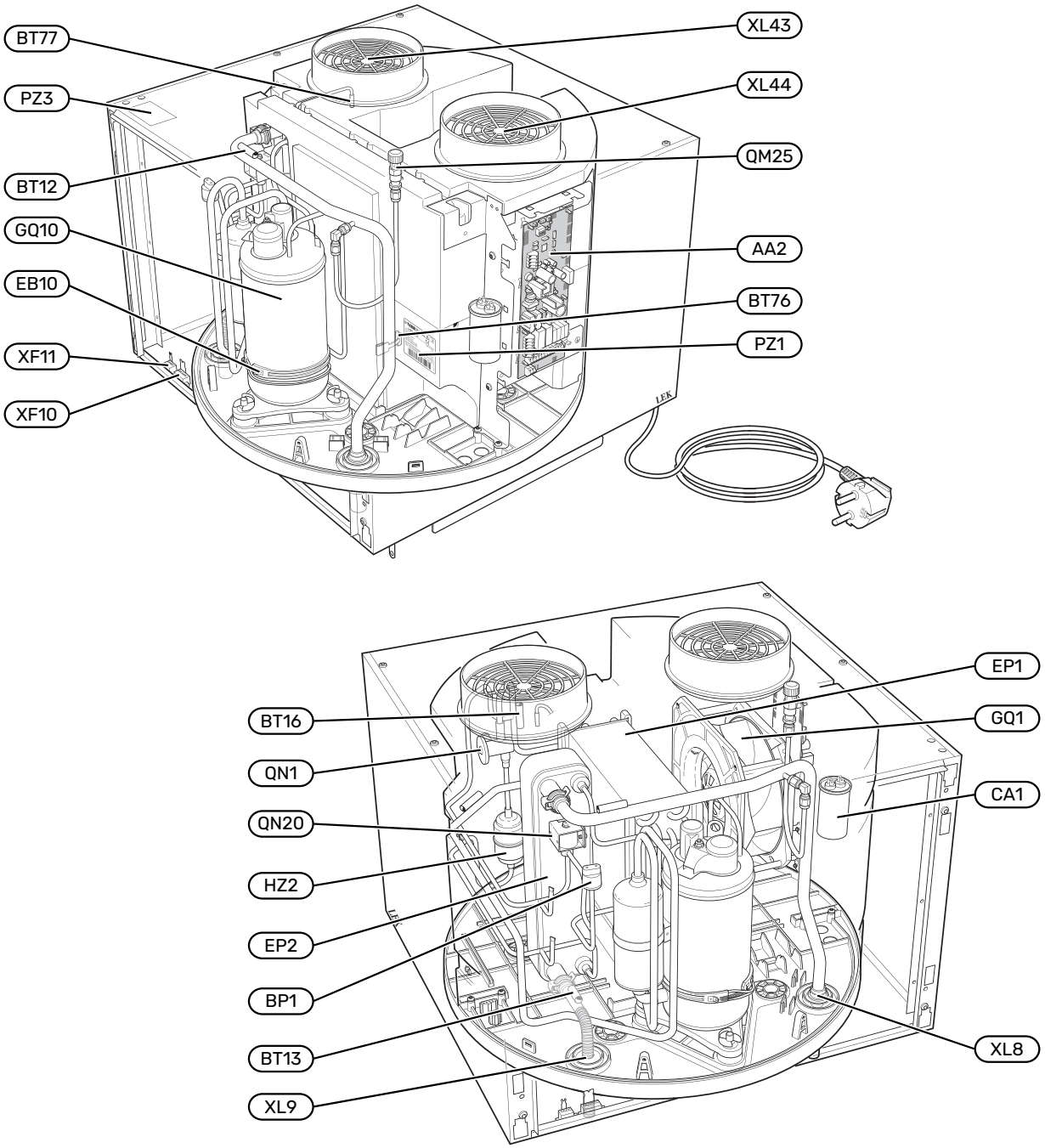
3. Mount the brackets on the wall.

4. Screw F135 into place in the brackets using the M5 screws and nuts supplied.





The design of the exhaust air module



List of components

PIPE CONNECTIONS

XL8	Heating medium connection, supply
XL9	Heating medium connection, return
XL43	Connecting incoming air
XL44	Connecting outgoing air

HVAC COMPONENTS

QM25	Vent valve, hot water
WM2	Overflow water discharge[1]

SENSORS

BP1	High pressure pressostat
BT12	Temperature sensor, condenser out
BT13	Condenser sensor, return line
BT16	Temperature sensor, evaporator
BT76	Temperature sensor, defrosting
BT77	Temperature sensor, incoming air

ELECTRICAL COMPONENTS

AA2	Base card
CA1	Capacitor
EB10	Compressor heater
XF10	PWM switch, circulation pump
XF11	Terminal block, communication main unit

COOLING COMPONENTS

EP1	Evaporator
EP2	Condenser
GQ10	Compressor
HZ2	Drying filter
QN1	Expansion valve
QN20	Solenoid valve, defrosting

VENTILATION

GQ1	Fan
HQ12	Air filter[1]

MISCELLANEOUS

PZ1	Rating plate
PZ3	Serial number plate

Designations according to standard EN 81346-2.

1 Not visible in the image.

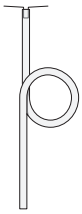
Pipe and air connections

General pipe connections

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

All connections are equipped with smooth pipe for compression ring couplings.

Overflow water from the evaporator's collecting trough is routed via the supplied plastic hose to a drain. Shape the hose into a water seal (see image). The entire length of the overflow water pipe must be inclined to prevent water pockets and must also be frost-proof.



To make the installation energy efficient, NIBE recommends that all pipes are insulated. The insulation should be at least 12 mm thick.

> **CAUTION!**
>
> The pipe systems have to be flushed clean before the product is connected, to prevent any contaminants from damaging the components.

SYMBOL KEY

Symbol	Meaning
	Unit box
	Shut-off valve
	Non-return valve
	Circulation pump
	Expansion valve
	Fan
	Compressor
	Shut off valve
	Particle filter
	Temperature sensor
	Diverter valve/shunt
	Heat exchanger
	Indoor module
	Cooling system
	Pool
	Outdoor module
	Ventilation

SYSTEM DIAGRAM

F135 is an exhaust air module.

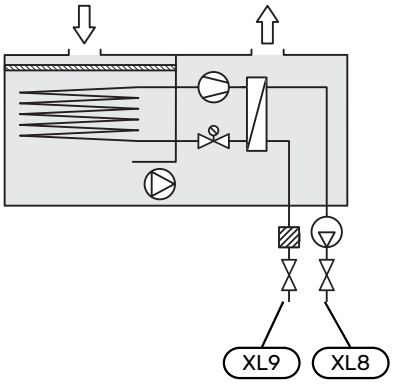
When the air passes through the evaporator, the refrigerant evaporates because of its low boiling point. In this way the energy in the air is transferred to the refrigerant.

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

The warm refrigerant is led to the condenser. Here, the refrigerant gives off its energy to the hot 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.

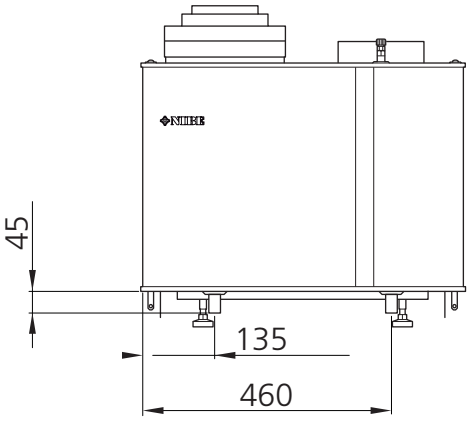


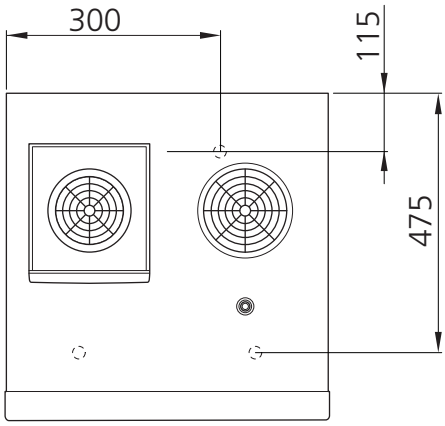
XL8	Heating medium connection, supply
XL9	Heating medium connection, return

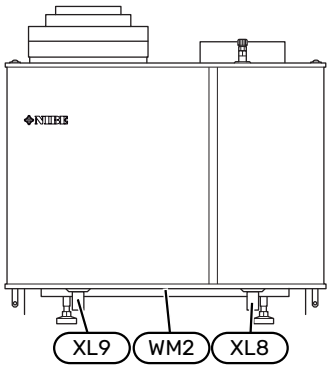
NOTE!

This is a principle of operation. For more detailed information about F135, see section "The design of the exhaust air module".

Dimensions and pipe connections





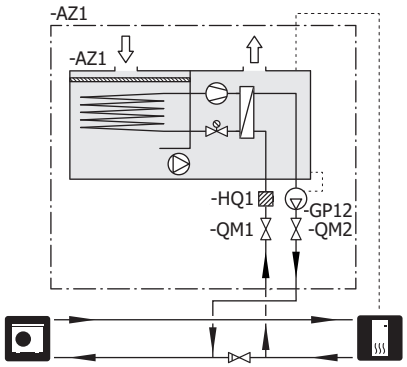


PIPE DIMENSIONS

Connection		
XL8 Heating medium connection, supply ext ø	(mm)	22
XL9 Heating medium connection, return ext ø	(mm)	22
WM2 Overflow water discharge int ø	(mm)	20

Connecting to indoor module and outdoor unit

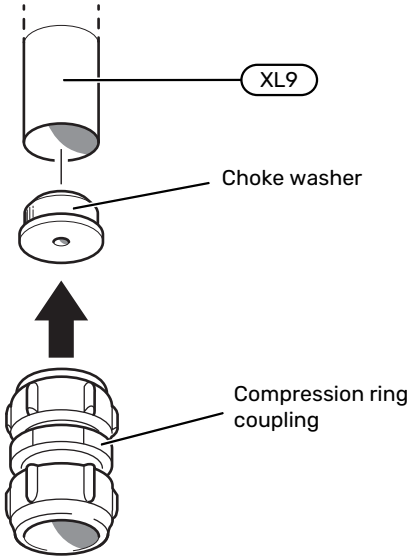
Heating medium connection, supply (XL8) and heating medium connection, return (XL9) are connected to the return line between the indoor module and the outdoor unit. The particle filter must be installed before F135 to prevent dirt from depositing in F135. Install the shut-off valves outside F135 to facilitate any future servicing.



INSTALLING CHOKE WASHER

For optimal operation in VVM310/VVM500 install the enclosed choke washer.

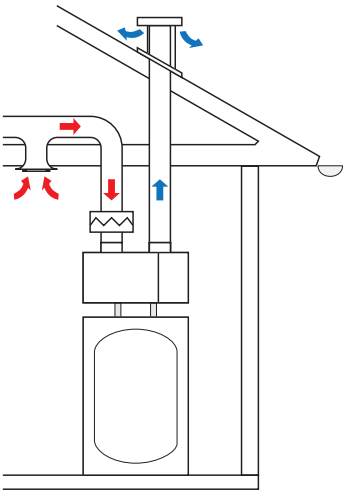
Install the washer in the heating medium connection, return (XL9) before the installing the compression connection.



Installation alternative

F135 must be connected according to the instructions in this manual.

EXHAUST AIR



Connecting the exhaust air

With an exhaust air connection the heat in the building's ventilation air is used to heat the hot water while the house is ventilated.

The hot air is transferred from the rooms to the heat pump via the house ventilation system.

CAUTION!

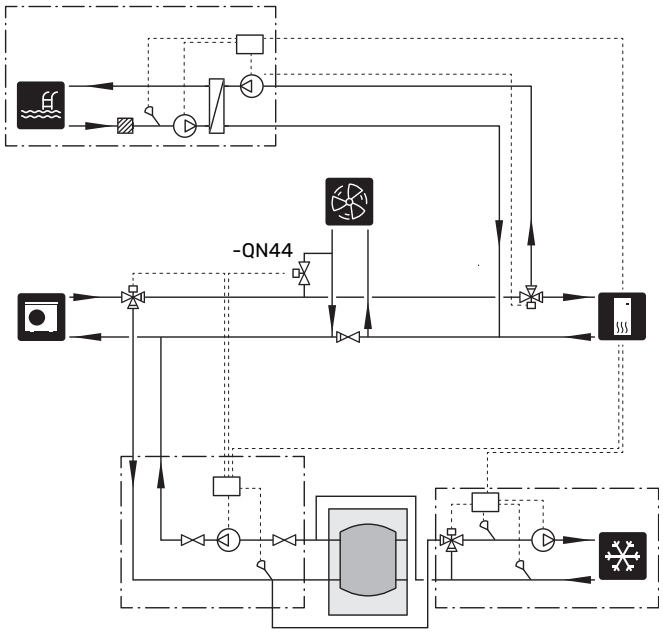
Install the enclosed air filter (HQ12) on the exhaust air duct. The filter must be cleaned regularly.

NOTE!

Noise from the fan can be transferred via the ventilation ducts.

DOCKING F135, NIBE VVM, OUTDOOR UNIT, POOL, COOLING

F135 connected in a system with 4-pipe cooling. In these cases, 4-pipe cooling must be connected between the outdoor unit and F135. In systems with cooling, a shut-off valve (QN44) is required. When there is also a pool, F135 must be connected between 4-pipe cooling and the pool.



General ventilation connections

- Ventilation installation must be carried out in accordance with current norms and directives.
- Connections must be made via flexible hoses, which should be installed so that they are easy to replace.
- 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 air duct system must be a minimum of air tightness class B.
- To prevent fan noise being transferred to the ventilation devices, install silencers in suitable locations in the duct system.
- For installation with ambient air, the enclosed silencer has to be fitted in F135.
- Ducts that may become cold must be insulated with diffusion-proof material (at least PE30 or equivalent) along their entire length.
- Ensure that the condensation insulation is fully sealed at any joints and/or at lead-in nipples, silencers, roof cowls or similar.
- A duct in a masonry chimney stack must not be used for extract air.
- The exhaust air module must be provided with the enclosed filter cartridge.

EXHAUST AIR DUCT /KITCHEN FAN

Exhaust air duct (kitchen fan) must not be connected to F135.

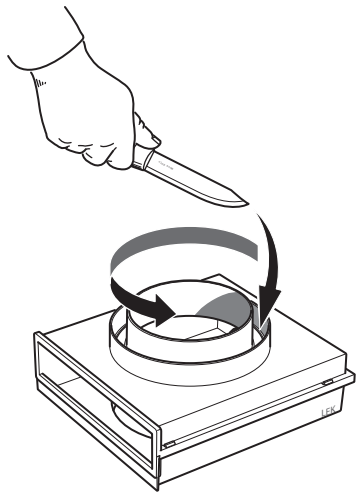
To prevent cooking odours from being led to the F135, the distance between the kitchen fan and the exhaust air valve must be taken into consideration. The distance must not be less than 1.5 m, but may vary between different installations.

Always use a kitchen fan when cooking.

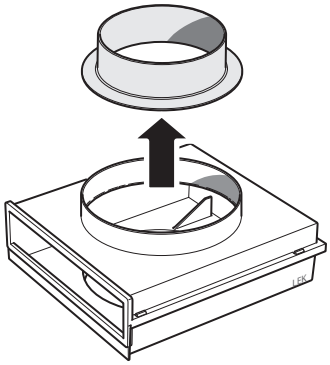
INSTALL THE FILTER CARTRIDGE

The filter cartridge has two sizes of connector, 125 mm or 160 mm.

1. Check the diameter of the air channel for inlet air.
2. When the air duct has a large diameter (Ø 160 mm), the inner ring must be cut out of the upper section of the filter cartridge.
3. Cut just inside the inner edge of the outer ring using a sharp knife. The plastic is prepared for easy cutting.



4. Remove the inner ring.



5. Press the filter cartridge into place in the connection for incoming air (XL43).

INSTALL THE CONNECTOR

If a filter solution other than that enclosed is used, the enclosed coupling must instead be mounted in the connection for incoming air (XL43).

INSTALL THE SILENCER

1. Remove the plugs from the silencer enclosed.
2. Install the silencer in the connection for the outgoing air (XL44).

Ventilation flows

Connect F135 so that all the exhaust air, except kitchen duct air (kitchen fan), passes through the evaporator (EP1) in the exhaust air module.

The ventilation flow must comply with the applicable national standards.

For optimum exhaust air module performance, the ventilation flow must not be less than 20 l/s (72 m³/h) at the normal exhaust air temperature. At lower exhaust air temperatures, a higher flow is required.

Set the ventilation capacity in the main product's menu system (menu 5.1.5 - "

fan sp. exhaust air

").

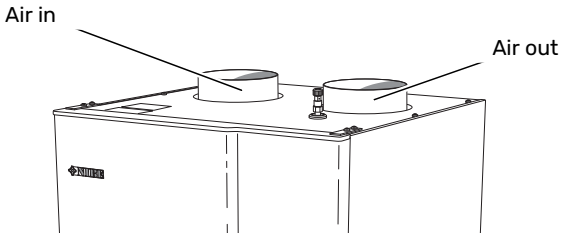
Adjusting ventilation

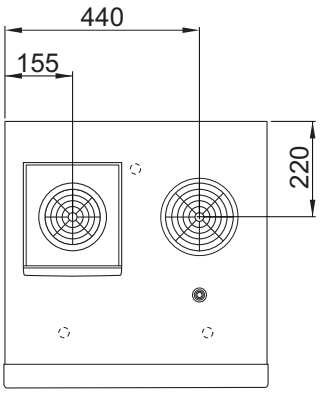
To obtain the necessary air exchange in every room of the house, the exhaust air devices must be correctly positioned and adjusted and the fan in the exhaust air module adjusted.

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

Incorrect adjustment of the ventilation may lead to reduced installation efficiency and thus poorer operating economy, a poorer indoor climate and moisture damage in the building.

Dimensions and ventilation connections





Electrical connections

General

- Electrical installation and wiring must be carried out in accordance with national provisions.
- Disconnect F135 before insulation testing the house wiring.
- If a miniature circuit breaker is used, this must have at least triggering characteristic "C". See section "Technical specifications" for fuse size.
- To prevent interference, communication cables to external connections must not be laid in the vicinity of high voltage cables.
- The minimum area of communication and sensor cables to external connections must be 0.5 mm² up to 50 m, for example EKKX, LiYY or equivalent.
- For an electrical wiring diagram for F135, see the "Technical specifications" section.

> **CAUTION!**
>
> Cut the power before starting working on heat pump. Servicing must be carried out under the supervision of a qualified electrician.

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

> **CAUTION!**
>
> Check the connections, main voltage and phase voltage before the product is started, to prevent damage to the heat pump electronics.

> **CAUTION!**
>
> Do not start the system before filling up with water. Components in the system could be damaged.

Connections

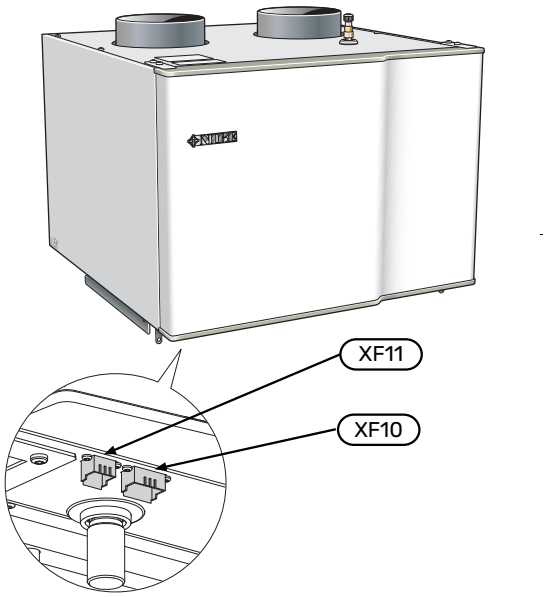
SUPPLY

F135 is connected to a earthed single-phase wall socket or a permanent installation. For permanent installations, F135 must be preceded by a circuit breaker with at least a 3 mm breaking gap.

> **CAUTION!**
>
> The circulation pump must not be supplied with power before F135 is activated in the main unit.

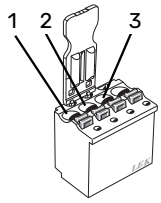
COMMUNICATION

F135 is connected to the main unit and circulation pump via the connectors (XF10) and (XF11), which are placed underneath F135.

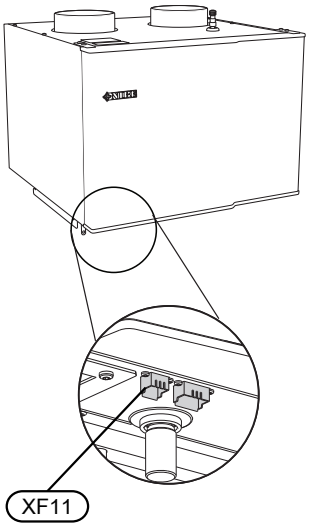


INDOOR MODULE

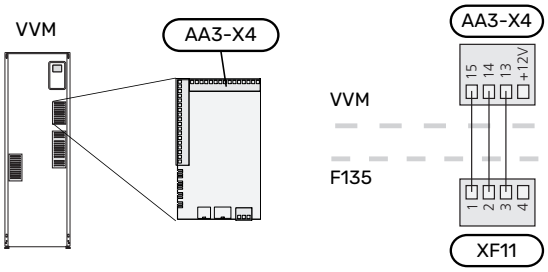
1. Connect the enclosed 4-pin connector to a 3-core cable (max. cable length 15m).



2. Connect the 4-pin connector to XF11 in F135.

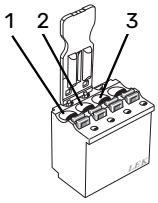


3. Connect the indoor module's input board (AA3-X4) with F135.

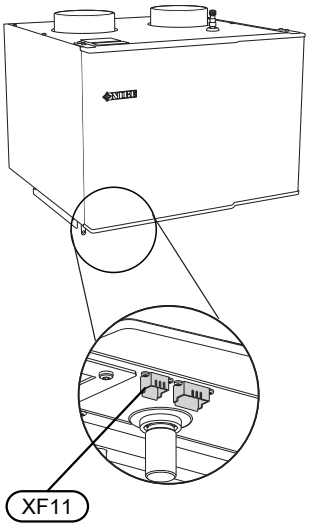


CONTROL MODULE

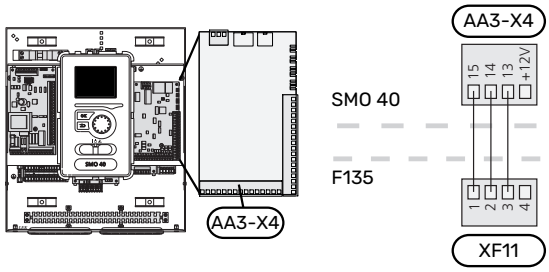
1. Connect the enclosed 4-pin connector to a 3-core cable (max. cable length 15m).



2. Connect the 4-pin connector to XF11 in F135.



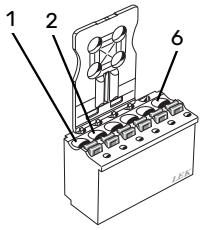
3. Connect the control module's input board (AA3-X4) with F135.



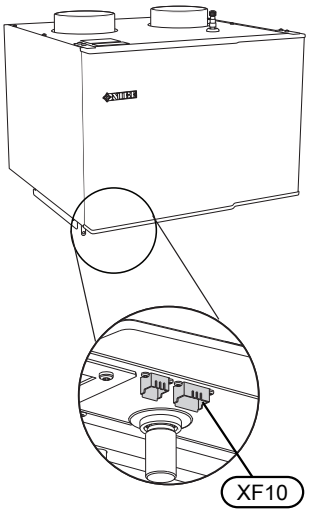
CIRCULATION PUMP

1. Connect the circulation pump's PWM cable to the enclosed 6-pin connector in accordance with the table.

Communication cable	Contact
Blue	1
Brown	2
Black	6

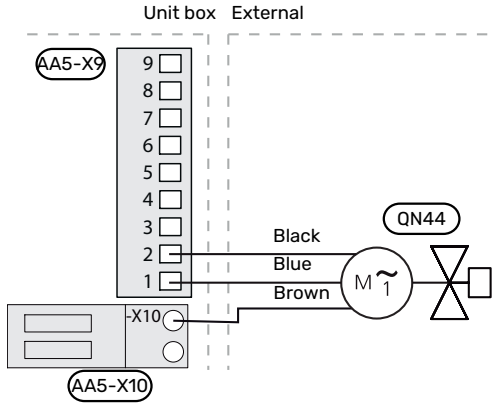


2. Connect the 6-pin connector to XF10 in F135.



SHUT-OFF VALVE FOR COOLING OPERATION (QN44)

Connect the shut-off valve's motor (QN44) to AA5-X9:2 (signal), AA5-X9:1 (N) and AA5-X10:2 (230 V) in the cooling accessory's unit box.



Commissioning and adjusting

Preparations

1. Check that the switch for the main unit is in the "⏻" position.
2. Cut the power to F135.
3. Check that the filling valves are fully closed.

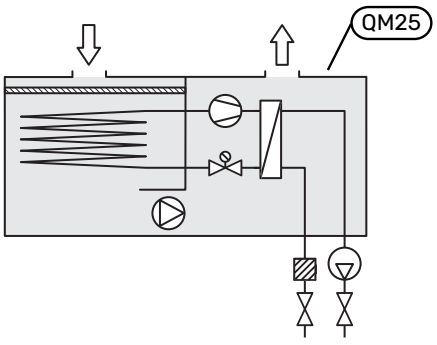
Filling and venting

FILLING THE CLIMATE SYSTEM

1. Check that the externally mounted shut-off valves for the heating system are open.
2. Open the vent valve (QM25).
3. Open the externally mounted filler valves. F135 and the rest of the climate system are filled with water.
4. When the water exiting the vent valve (QM25) is not mixed with air, close the valve.
5. After a while, the pressure rises on the external pressure gauge. When the pressure reaches 2.5 bar (0.25 MPa), the external safety valve starts to release water. Close the external filling valve.
6. Reduce the boiler pressure to the normal working range (approx. 1 bar) by opening the vent valve (QM25) or the external safety valve.

VENTING THE CLIMATE SYSTEM

1. Cut the power to the exhaust air module.
2. Vent the exhaust air module via the vent valve (QM25) and the rest of the climate system via the relevant vent valves.
3. Keep topping up and venting until all air has been removed and the pressure is correct.



Start-up and inspection

START-UP

> **CAUTION!**
>
> There must be water in the climate system before the switch in the indoor module is set to "I".

> **CAUTION!**
>
> The circulation pump must not be supplied with power before F135 is activated in the main unit.

1. Start F135 by connecting the supply cable.
2. Set switch (SF1) on F135 to position "I".
3. Follow the instructions in the display's start guide. If the start guide does not start when you start the F135, you can start it manually in menu 5.7.

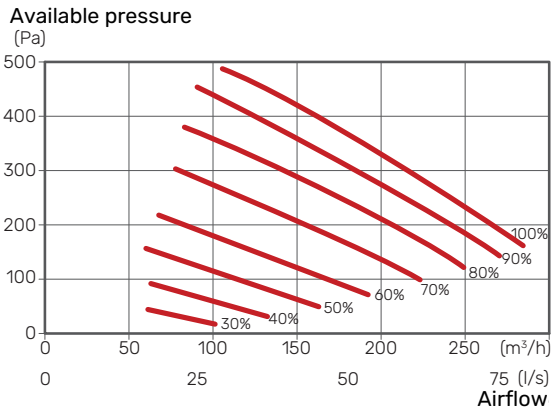
SETTING THE VENTILATION

The ventilation must be set according to applicable standards. The fan speed is set in menu 5.1.5 - "fan speed".

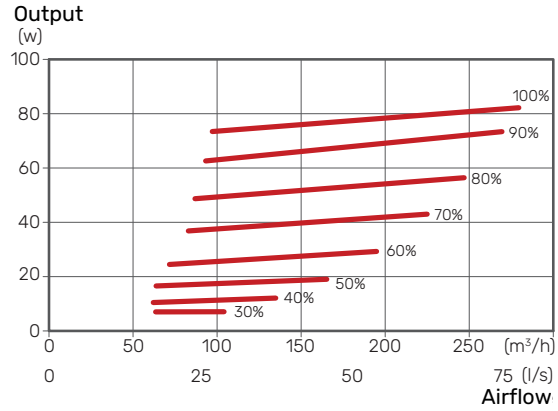
Even if ventilation is roughly set at installation it is important that a ventilation adjustment is ordered and permitted.

> **CAUTION!**
>
> Order a ventilation adjustment to complete the setting.

Fan capacity



Fan rating


Output
(w)
100
80
60
40
20
0
100%
90%
80%
70%
60%
50%
40%
30%
0
50
100
150
200
250
(m³/h)
0
25
50
75 (l/s)
Airflow

Activating F135

Activating F135 can be performed via the start guide or directly in the menu system.

Start guide

The start guide appears upon first start-up after heat pump installation, but is also found in menu 5.7.

Menu system

If you do not make all settings via the start guide or need to change any of the settings, this can be done in the menu system.

MENU 1 - VENTILATION

Setting range: normal and speed 1-4

Default value: normal

This menu is only shown with exhaust air installation.

The ventilation in the accommodation can be temporarily increased or reduced here.

When a new speed has been selected, a countdown is initiated. After 4 hours, the ventilation speed returns to the normal setting.

If necessary, the different return times can be changed in menu 1.9.6.

The fan speed is shown in brackets (in percent) after each speed alternative.

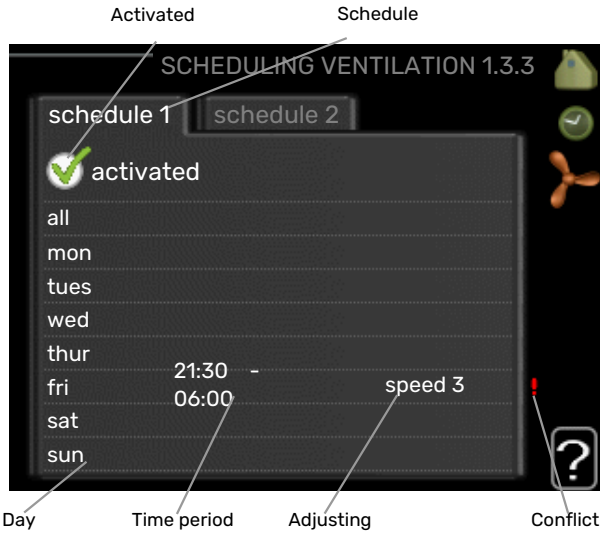
> **TIP!**
>
> If longer time changes are required use the holiday function.

> **NOTE!**
>
> The heat pump requires a minimum ventilation flow in order to work properly. An insufficient ventilation flow can result in an alarm and blocking of compressor operation.

MENU 1.3.3 - VENTILATION

ventilation

Increases or decreases in the ventilation to the accommodation can be scheduled here for up to two time periods per day.



Schedule: The schedule to be changed is selected here.

Activated: Scheduling for the selected period is activated here. Set times are not affected at deactivation.

Day: Select which day or days of the week the scheduling is to apply to here. To remove the scheduling for a particular day, the time for that day must be reset by setting the start time to the same as the stop time. If the row "all" is used, all days in the period are set according to that row.

Time period: The start and stop time for the selected day for scheduling are selected here.

Adjustment: The desired fan speed is set here.

Conflict: If two settings conflict with each other, a red exclamation mark is displayed.

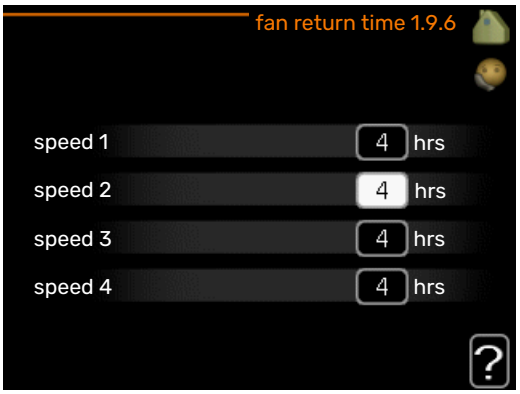
> **TIP!**
>
> If you wish to set similar scheduling for every day of the week start by filling in “all” and then changing the desired days.

> **TIP!**
>
> Set the stop time earlier than the start time so that the period extends beyond midnight. Scheduling then stops at the set stop time the day after.
>
> Scheduling always starts on the date that the start time is set for.

> **NOTE!**
>
> A significant change over a longer period of time may cause poor indoor environment and worse operating economy.

MENU 1.9.6 - FAN RETURN TIME

fan return time



Here you select the return time for temporary speed change (speed 1-4) on the ventilation in menu 1.2.

Return time is the time it takes before ventilation speed returns to normal.

MENU 5.1.5 - FAN SPEED

Exhaust air installation
Setting range: 30 – 100 %

Factory setting normal: 70 %

Factory setting speed 1: 30 %

Factory setting speed 2: 50 %

Factory setting speed 3: 70 %

Factory setting speed 4: 90 %

Installation ambient air
Setting range: 30 – 100 %

Factory setting speed 1: 30 %

Set the speed of the fan here.

NOTE!

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

MENU 5.3.14 - F135

charge pump speed
Setting range: 1 – 100 %

Factory setting: 70 %

hot water at cooling
Setting range: on/off

Factory setting: off

Here you can set the charge pump speed for F135. You can also choose whether you want to be able to charge hot water with F135 at the same time as the outdoor module produces cooling.

NOTE!

The cooling accessory ACS 310 is required to enable activation of ”hot water during cooling”.

NOTE!

Cooling must be permitted in Menu 5.11.1.1 - heat pump so that ”hot water during cooling” can be activated.

NOTE!

Also see the Installer Manual for the main product.

Disturbances in comfort

In most cases, the main product notes a malfunction (a malfunction can lead to disturbance in comfort) and indicates this with alarms and shows action instructions in the display.

Troubleshooting

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

BASIC ACTIONS

Start by checking the following items:

- That the feed cable is connected to F135.
- Group and main fuses of the accommodation.
- The property's earth circuit breaker.

LOW OR NO VENTILATION

- Filter (HQ12) 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 - "ventilation" and select "normal"

HIGH OR DISTURBING VENTILATION

- Filter (HQ12) blocked.
  - Clean or replace the filter.
- The ventilation is not adjusted.
  - Order/implement ventilation adjustment.
- Fan speed in forced mode.
  - Enter menu 1.2 - "ventilation" and select "normal"

THE COMPRESSOR DOES NOT START

- There is no heating requirement.
  - The main unit does not call on heating.
- The heat pump defrosts.
  - The compressor starts, when defrosting is complete.

GURGLING SOUND

- Not enough water in the water seal.
  - Refill the water seal with water.
- Choked water seal.
  - Check and adjust the condensation water hose.

Accessories

Detailed information about the accessories and complete accessories list available at nibe.eu.

Top cabinet TOC 40

Top cabinet, which conceals any pipes/ventilation ducts.

HEIGHT 245 MM
Part no. 089 756
RSK no. 625 06 87

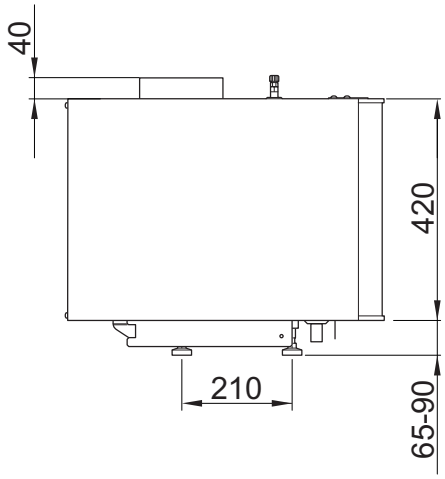
HEIGHT 345 MM
Part no. 089 757
RSK no. 625 06 88

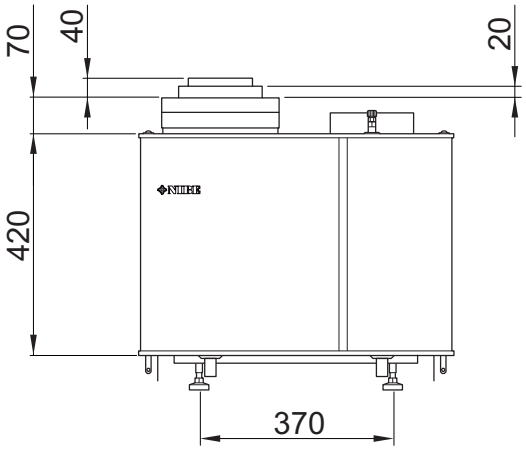
HEIGHT 445 MM
Part no. 067 522
RSK no. 625 12 99

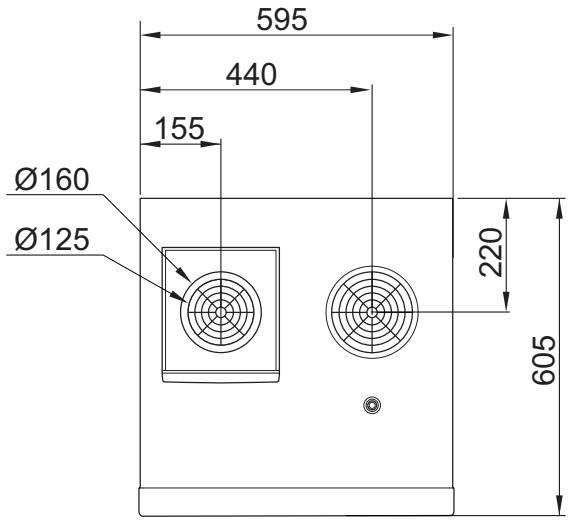
HEIGHT 385 - 635 MM
Part no. 089 758
RSK no. 625 06 89

Technical data

Dimensions







Technical specifications

1x230 V		Exhaust air
Output data according to EN 14 511		
Capacity (P_H)/COP	kW/-	1.42 / 3.87[1]
Capacity (P_H)/COP	kW/-	1.34 / 3.13[2]
Capacity (P_H)/COP	kW/-	1.27 / 2.65[3]
Electrical data		
Rated voltage	V	230 V ~ 50 Hz
Max operating current	A	3.5
Min. fuse rating	A	6
Driving power circulation pump	W	5-20
Driving power fan	W	20-75
Enclosure class		IP21
Ventilation		
Filter type, exhaust air filter		Coarse 65%
Refrigerant circuit		
Type of refrigerant		R134A
GWP refrigerant		1430
Filling amount	kg	0.38
CO_2 equivalent	ton	0.54
Cut-out value pressostat HP	MPa/bar	2.2 / 22.0
Exhaust air module		
Max system pressure	MPa/bar	1.0 / 10.0
Max temperature, supply line	°C	63
Max temperature, return line	°C	54
Air flow requirement		
Min. airflow with the temperature of the incoming air at least 10 °C	l/s	25
Temperature range for compressor operation	°C	10 - 37
Sound effect level according to EN 12 102		
Sound power level ($L_{W(A)}$)[4]	dB(A)	47.0
Sound pressure levels according to EN ISO 11 203		
Sound pressure level in the installation room ($L_{P(A)}$)[5]	dB(A)	43.0
Pipe connections		
Heating medium ext ⌀	mm	22
Ventilation ext ⌀	mm	160
Filter box ext. ⌀	mm	160/125

1 A20(12)W35, frånluftsflöde 50 l/s (180 m³/h), exkl. driveffekt för fläkt

2 A20(12)W45, frånluftsflöde 50 l/s (180 m³/h), exkl. driveffekt för fläkt

3 A20(12)W55, frånluftsflöde 50 l/s (180 m³/h), exkl. driveffekt för fläkt

4 The value varies with the fan speed selected. For more detailed sound data, including sound to ducts, visit nibe.eu.

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

Other 1x230 V		
Dimensions and weight		
Length, supply cable	m	2.8
Width	mm	600
Depth	mm	605
Height		490 - 515
Weight	kg	50
RSK No.		625 12 41
Part No.		066 075
EPREL		222 205

Energy labelling

INFORMATION SHEET

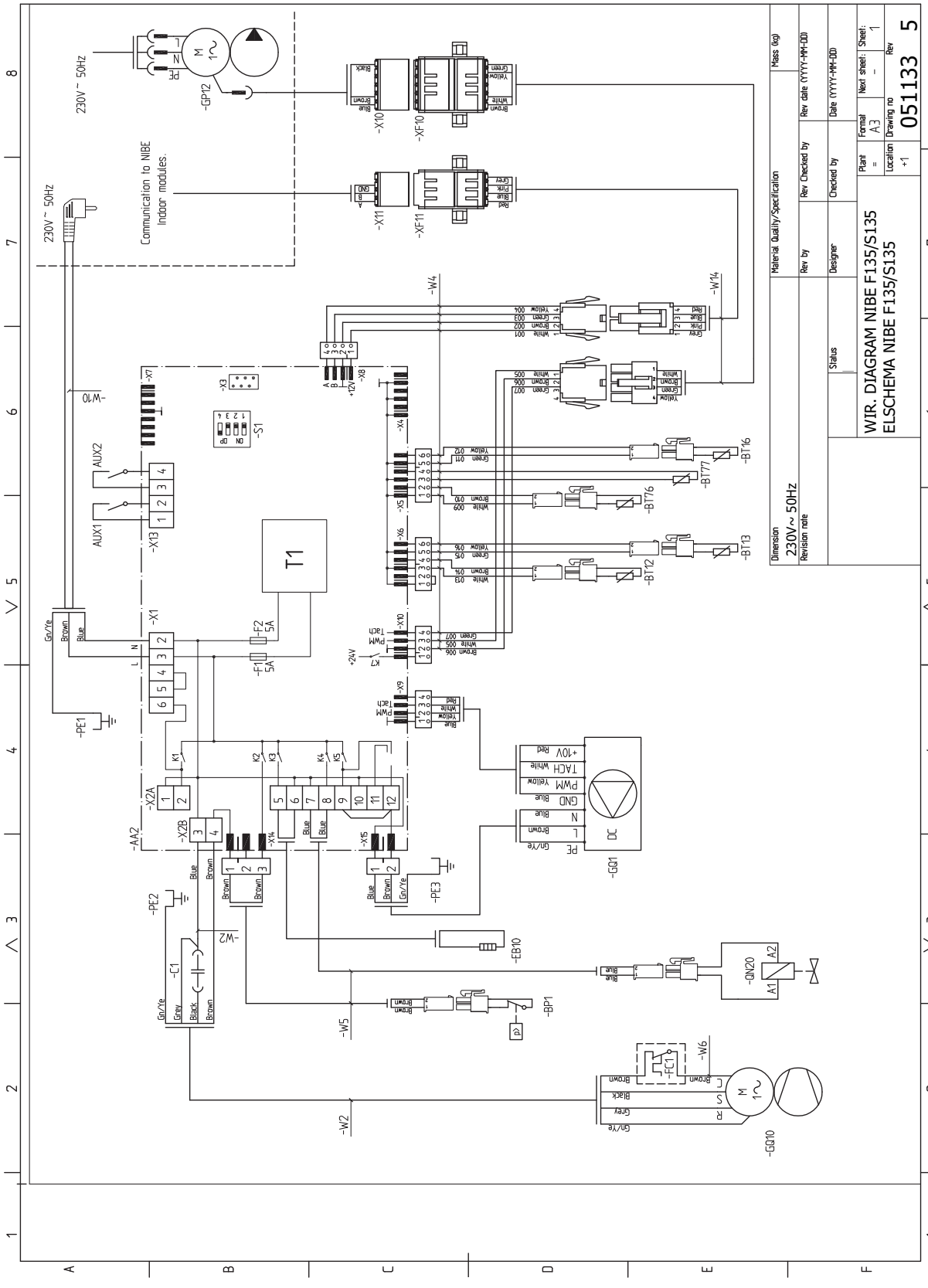
Supplier		NIBE
Model		**F135**
Temperature application	°C	35 / 55
Seasonal space heating energy efficiency class, average climate		A+ / A+
Rated heat output ($P_{designh}$), average climate	kW	2
Annual energy consumption space heating, average climate	kWh	879 / 1087
Seasonal space heating energy efficiency, average climate	%	141 / 114
Sound power level L_{WA} indoors	dB	47
Rated heat output ($P_{designh}$), cold climate	kW	2
Rated heat output ($P_{designh}$), warm climate	kW	2
Annual energy consumption space heating, cold climate	kWh	1004 / 1264
Annual energy consumption space heating, warm climate	kWh	587 / 731
Seasonal space heating energy efficiency, cold climate	%	147 / 117
Seasonal space heating energy efficiency, warm climate	%	136 / 110
Sound power level L_{WA} outdoors	dB	-

Compressor motor is exempted from EU 2019/1781 due to that motors completely integrated into compressor and energy performance cannot be tested independently from the product.

TECHNICAL DOCUMENTATION

Model		F135					
Type of heat pump		☐ Air-water ☒ Exhaust-water ☐ Brine-water ☐ Water-water					
Low-temperature heat pump		☐ Yes ☒ No					
Integrated immersion heater for additional heat		☐ Yes ☒ No					
Heat pump combination heater		☐ Yes ☒ No					
Climate		☒ Average ☐ Cold ☐ Warm					
Temperature application		☒ Medium (55°C) ☐ Low (35°C)					
Applied standards		EN14825 EN16147					
Rated heat output	Prated	1,5	kW	*Seasonal space heating energy efficiency*	η_s	114	%
Declared capacity for space heating at part load and at outdoor temperature Tj				*Declared coefficient of performance for space heating at part load and at outdoor temperature Tj*			
Tj = -7 °C	Pdh	1.3	kW	Tj = -7 °C	COPd	3.0	-
Tj = +2 °C	Pdh	1.3	kW	Tj = +2 °C	COPd	3.1	-
Tj = +7 °C	Pdh	1.3	kW	Tj = +7 °C	COPd	3.3	-
Tj = +12 °C	Pdh	1.4	kW	Tj = +12 °C	COPd	3.3	-
Tj = biv	Pdh	1.2	kW	Tj = biv	COPd	2.7	-
Tj = TOL	Pdh	1.2	kW	Tj = TOL	COPd	2.8	-
Tj = -15 °C (if TOL < -20 °C)	Pdh		kW	Tj = -15 °C (if TOL < -20 °C)	COPd		-
Bivalent temperature	T_{biv}	-6.9	°C	Min. outdoor air temperature	TOL	-10	°C
Cycling interval capacity	Pcych		kW	Cycling interval efficiency	COPcyc		-
Degradation coefficient	Cdh	0.98	-	Max supply temperature	WTOL	58	°C
Power consumption in modes other than active mode				*Additional heat*			
Off mode	P_{OFF}	0.003	kW	Rated heat output	Psup	0.3	kW
Thermostat-off mode	P_{TO}	0.01	kW				
Standby mode	P_{SB}	0.005	kW	Type of energy input	Electric		
Crankcase heater mode	P_{CK}	0.01	kW				
Other items							
Capacity control	Fixed			Rated airflow (air-water)		150	m³/h
Sound power level, indoors/outdoors	L_{WA}	47 / -	dB	Nominal heating medium flow		0.13	m³/h
Annual energy consumption	Q_{HE}	1,087	kWh	Brine flow brine-water or water-water heat pumps			m³/h
Contact information	*NIBE Energy Systems – Box 14 – Hannabadsvägen 5 – 285 21 Markaryd – Sweden*						

ELECTRICAL CIRCUIT DIAGRAM



Item register

Contact information

AUSTRIA
KNV Energietechnik GmbH
Gahberggasse 11, 4861 Schörfling
Tel: +43 (0)7662 8963-0
mail@knv.at
knv.at

CZECH REPUBLIC
Družstevní závody Dražice - strojírna s.r.o.
Dražice 69, 29471 Benátky n. Jiz.
Tel: +420 326 373 801
nibe@nibe.cz
nibe.cz

DENMARK
Vølund Varmeteknik A/S
Industrivej Nord 7B, 7400 Herning
Tel: +45 97 17 20 33
info@volundvt.dk
volundvt.dk

FINLAND
NIBE Energy Systems Oy
Juurakkotie 3, 01510 Vantaa
Tel: +358 (0)9 274 6970
info@nibe.fi
nibe.fi

FRANCE
NIBE Energy Systems France SAS
Zone industrielle RD 28
Rue du Pou du Ciel, 01600 Reyrieux
Tél: 04 74 00 92 92
info@nibe.fr
nibe.fr

GERMANY
NIBE Systemtechnik GmbH
Am Reiherpfahl 3, 29223 Celle
Tel: +49 (0)5141 75 46 -0
info@nibe.de
nibe.de

GREAT BRITAIN
NIBE Energy Systems Ltd
3C Broom Business Park,
Bridge Way, S41 9QG Chesterfield
Tel: +44 (0)330 311 2201
info@nibe.co.uk
nibe.co.uk

NETHERLANDS
NIBE Energietechniek B.V.
Energieweg 31, 4906 CG Oosterhout
Tel: +31 (0)168 47 77 22
info@nibenl.nl
nibenl.nl

NORWAY
ABK-Qviller AS
Brobekkveien 80, 0582 Oslo
Tel: (+47) 23 17 05 20
post@abkqviller.no
nibe.no

POLAND
NIBE-BIAWAR Sp. z o.o.
Al. Jana Pawla II 57, 15-703 Bialystok
Tel: +48 (0)85 66 28 490
biawar.com.pl

SWEDEN
NIBE Energy Systems
Box 14
Hannabadsvägen 5, 285 21 Markaryd
Tel: +46 (0)433-27 30 00
info@nibe.se
nibe.se

SWITZERLAND
NIBE Wärmetechnik c/o ait Schweiz AG
Industriepark, CH-6246 Altishofen
Tel. +41 (0)58 252 21 00
info@nibe.ch
nibe.ch

For countries not mentioned in this list, contact NIBE Sweden or check nibe.eu for more information.

NIBE Energy Systems
Hannabadsvägen 5
Box 14
285 21 Markaryd
info@nibe.se
nibe.eu

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