

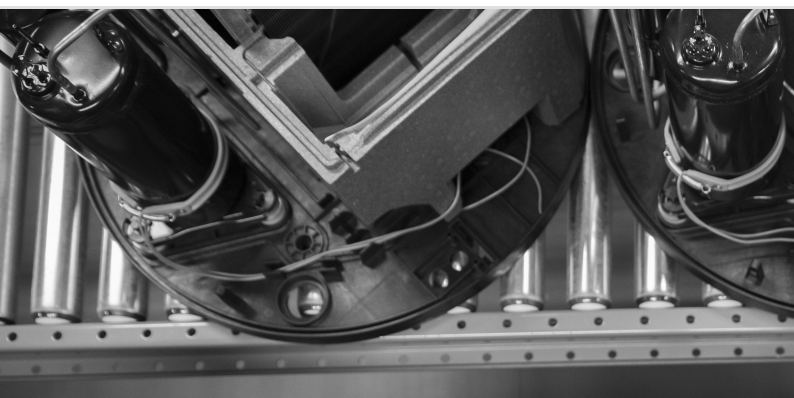
Exhaust air module NIBE F135

The NIBE F135 is an exhaust air module designed for docking to a NIBE air/water heat pump and a NIBE indoor module (VVM) or control module (SMO). The NIBE F135 uses the heat that is found in the house's ventilation air to heat the house and hot water, at the same time as ventilating the house. In installations with cooling, hot water and cooling can be produced at the same time.

The exhaust air module provides an improved seasonal performance factor and has a low noise level and high ventilation capacity. The NIBE F135 is easy to control through the heat pump's indoor module.

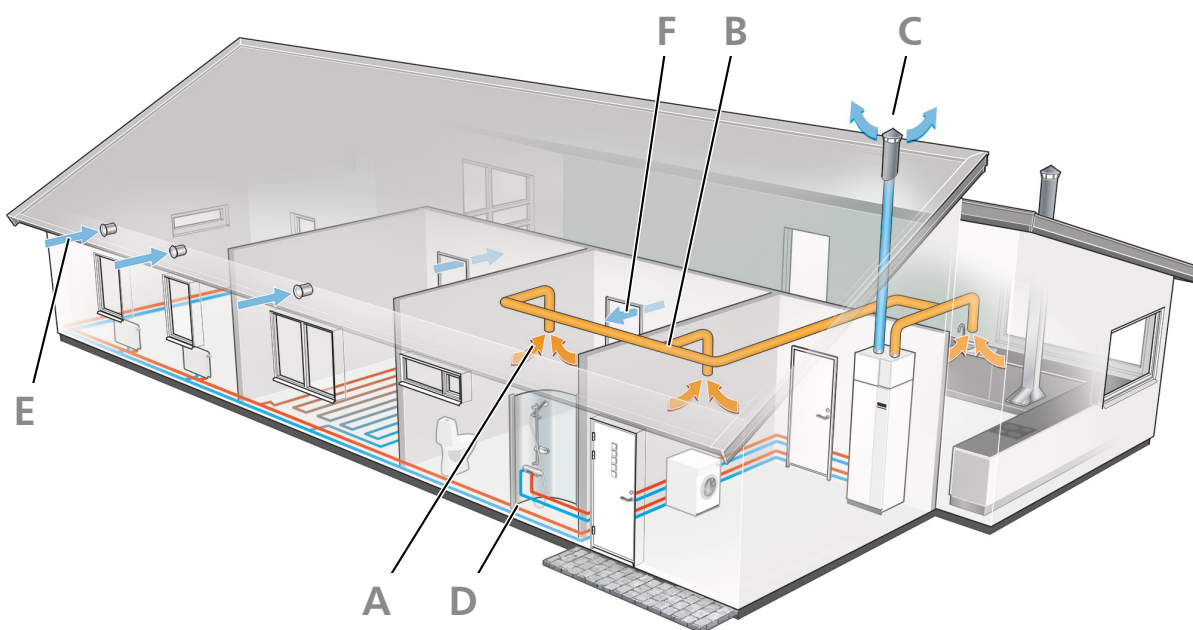
Thanks to smart technology, the product gives you control over your energy consumption and will be a key part of your connected lifestyle. The efficient control system automatically adjusts the indoor climate for maximum comfort, and you do nature a favour at the same time.

- Improved seasonal performance factor combined with a NIBE air/water heat pump.
- Heating, hot water, cooling and ventilation in one system.
- Part of your smart home through the heat pump's indoor module.



This is how F135 works

Principle



F135 is an exhaust air module with an integrated DC fan intended to be docked with the appropriate NIBE indoor module (VVM) or control module (SMO 40).

Energy is recovered from the ventilation air and supplied to the heat pump, which reduces energy costs considerably. The device ventilates the house, supplies heat and produces domestic hot water. F135 is intended for low-temperature dimensioned radiator circuits and/or underfloor heating.

F135 is intended for both new installations and replacement in houses or similar.

- A** The warm room air is drawn into the air duct system.
- B** The warm room air is fed to F135.
- C** The room air is released when it has passed F135. The air temperature has then been reduced as F135 has extracted the energy in the room air.
- D** F135 supplies the house with both hot water and room heating.
- E** Outdoor air is drawn into the house.
- F** Air is transported from rooms with outdoor air devices to rooms with exhaust air valves.

Design

Control of F135 is performed from the indoor module display. This provides easy operation while always enabling the exhaust air module to be used as efficiently as possible, because the indoor module display continuously determines the best method of operation. The indoor module display shows the current temperatures and set values in plain text.

The design of the ventilation section gives a high ventilation capacity. In addition, the continuously adjustable fan can easily be increased or reduced via the indoor module display.

The outer casing is of white powder-coated steel plate. The front door is easy to remove for easy access when installing and for servicing.

Principle of operation, cooling circuit

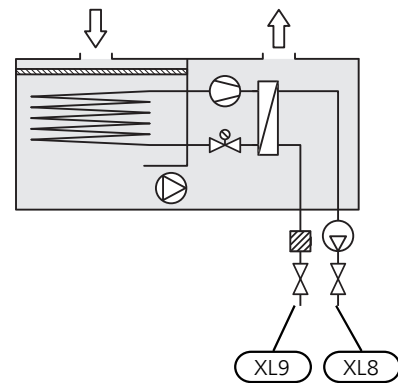
When the air passes through the evaporator, the refrigerant evaporates because of its low boiling point. In this way the energy in the air is transferred to the refrigerant.

The refrigerant is then compressed in 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 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 |

This is a principle of operation, differences may occur in the installation in question.

Good to know about F135

Transport and storage

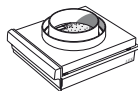
F135 should be transported and stored vertically in a dry place.

Installation and positioning

Supplied components



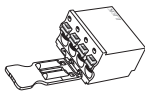
Silencer



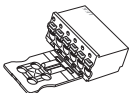
Filter cartridge



Choke washer Ø 22 mm



4-pin terminal block



6-pin sensor connector



Drain hose Ø 20 mm
Length 2200 mm



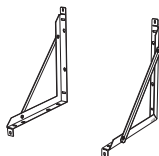
Power supply cable



Communication cable



Circulation pump



2 x bracket 6 x nuts
6 x screws 4 x washers

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

Because water comes from F135, the floor coating is important. A waterproof floor or floor membrane is recommended.

- Because water comes from F135, it is good if the area where the heating pump is located is provided with floor drainage.
- F135 must be positioned with the back towards a wall. Install the brackets or position F135 against 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.

SOUND POWER LEVEL

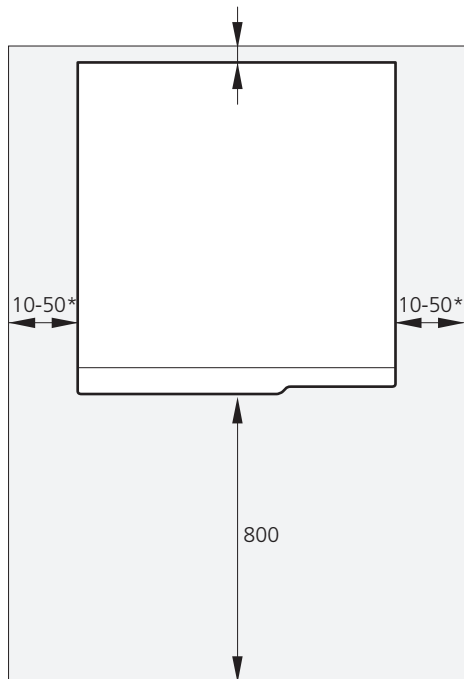
For more detailed sound data, including sound to channels, visit nibe.se.

LOCATION

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

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.



* Depending on whether the panels can be removed or not.

Ensure that there is sufficient space (300 mm) above F135 for installing ventilation hoses.

Installation

Pipe installation

GENERAL

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

F135 is only designed for upright installation. All connections are equipped with smooth pipe for compression ring couplings.

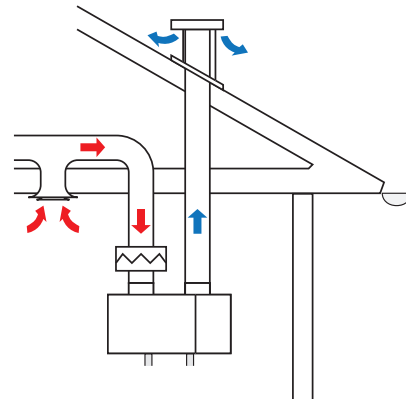
To make the installation economical, NIBE recommends that all pipes between F135 and the water heater are insulated. The insulation should be at least 12 mm thick.

The pipe systems need to be flushed out before F135 is connected so that any debris cannot damage component parts.

CONNECTION TO INDOOR MODULE AND AIR/WATER HEAT PUMP

Heating medium connection, supply and heating medium connection, return are connected to the return line between the indoor module and the air/water heat pump. The particle filter must be installed before F135 to prevent dirt from being deposited in F135. Install the shut-off valves outside F135 to facilitate any future servicing.

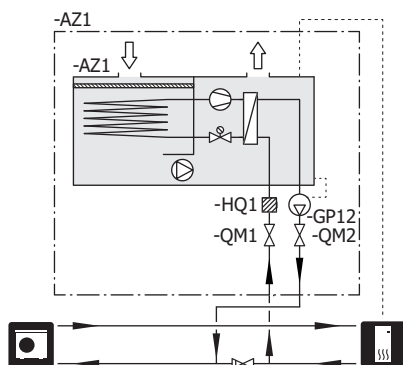
EXHAUST AIR



Connecting the exhaust air

The heat pump uses the heat that is in the building's ventilation air to heat the building and the hot water at the same time that the house is ventilated.

The hot air is transferred from the rooms to the heat pump via the exhaust air module.



For more information see nibe.se.

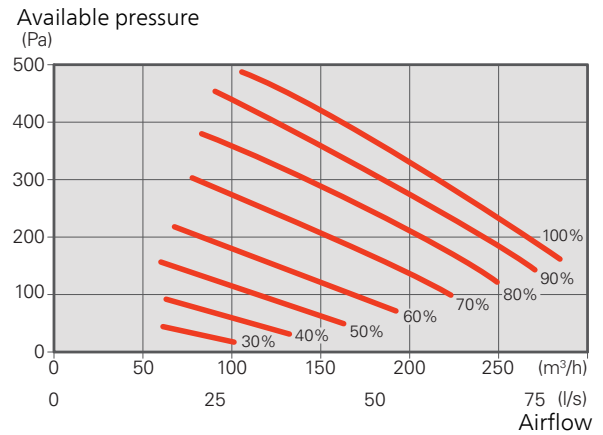
General ventilation connections

- Connect F135 so that all the exhaust air, except kitchen duct air (kitchen fan), passes through the evaporator in the exhaust air module.
- The ventilation flow must comply with the applicable national standards.
- For the optimum exhaust air module performance, the ventilation flow should not be less than 20 l/s (72 m³/h) at normal exhaust air temperature. At lower exhaust air temperatures, a higher flow is required.
- Connections must be made via flexible hoses, which should be installed so that they are easy to replace.
- The air duct system must be a minimum of air tightness class B.
- 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.
- Ducts that may become cold must be insulated with diffusion-proof material (at least PE30 or equivalent) along their entire length.
- Exhaust air ducts that are routed in cold areas must be insulated.
- All joints in the ducting must be sealed to prevent leakage.
- The exhaust air module must be provided with the enclosed air filter.
- A duct in a masonry chimney stack must not be used for extract air.
- If a stove or similar is installed, it must have airtight doors. It must also be able to take combustion air from outside.
- Incorrect adjustment of the ventilation may lead to reduced installation efficiency and thus poorer operating economy, and may cause moisture damage in the building

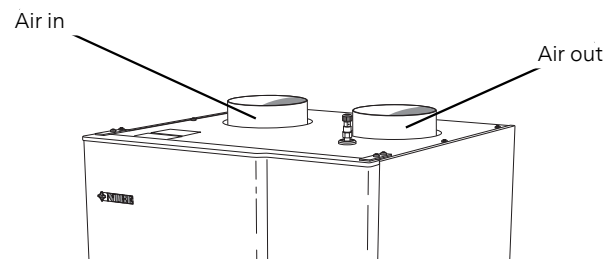
SETTING THE FAN CAPACITY

Select the ventilation capacity steplessly in the display.

Fan capacity



VENTILATION CONNECTIONS



Electrical connections

F135 is connected to an earthed socket with the factory-installed connection cable (length approx. 2.8 m), which is fitted with a plug. The power connection to the circulation pump must be connected via a circuit breaker with a minimum breaking gap of 3 mm.

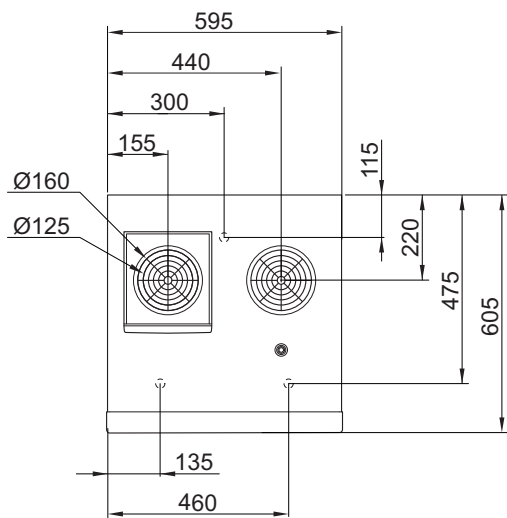
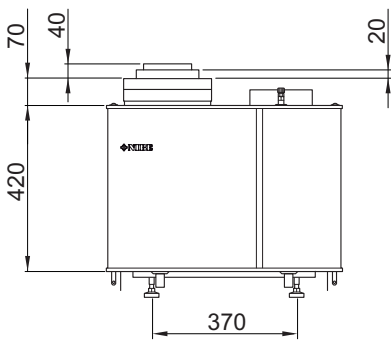
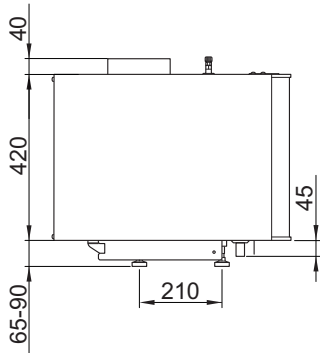
Indoor module

Use a 3 core cable of at least 0.5 mm² cable area.

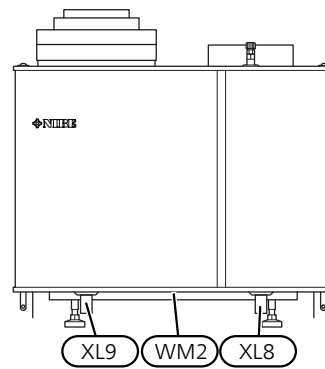
Cable between the indoor module and F135 must be a max of 15 m.

Technical data

Dimensions



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 |

Technical data ϵ

| Type | | Exhaust air |
|--|---------|--------------------------|
| <i>Output data according to EN 14 511</i> | | |
| 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 |
| <i>Energy rating, average climate</i> | | |
| The product's efficiency class room heating, average climate 35 / 55 °C ⁴ | | A+ / A+ |
| The system's efficiency class room heating, average climate 35 / 55 °C ⁵ | | A+ / A+ |
| <i>Electrical data</i> | | |
| Rated voltage | V | 230 V ~ 50 Hz |
| Max operating current | A | 3.5 |
| Min. fuse rating | A | 6 |
| Enclosure class | | IP21 |
| <i>Refrigerant circuit</i> | | |
| Type of refrigerant | | R134A |
| GWP refrigerant | | 1430 |
| Volume | kg | 0.38 |
| CO ₂ equivalent | ton | 0.54 |
| <i>Exhaust air module</i> | | |
| Max system pressure | MPa/bar | 1.0 / 10.0 |
| Max temperature, supply line | °C | 63 |
| Max temperature, return line | °C | 54 |
| <i>Air flow requirement</i> | | |
| Min. air flow at exhaust air temperature at least 10°C | l/s | 25 |
| Temperature range for compressor operation | °C | 10 - 37 |
| <i>Noise</i> | | |
| Sound effect level according to EN 12 102 (L _{WA}) ⁶ | dB(A) | 47.0 |
| Sound pressure level in the installation area according to EN ISO 11 203 (L _{PA}) ⁷ | dB(A) | 43.0 |
| <i>Miscellaneous</i> | | |
| Weight | kg | 50 |
| Part No. | | 066 009 |

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 Scale for the product's efficiency class room heating: A++ to G.

5 Scale for the system's efficiency class room heating: A+++ to G. Reported efficiency for the system takes the product's temperature regulator into account.

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

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

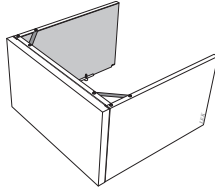
Accessories

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

Not all accessories are available on all markets.

Top cabinet

Top cabinet that conceals the ventilation ducts.



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PBD EN 1850-2 M12321

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