User manual

Exhaust air module
NIBE F135

UHB EN 2450-1
731481

Table of Contents

Important information

Installation data

Product	F135
Serial number	
Installation date	
Installer	

No.	Name	Fact. sett.	Set
5.1.5	Exhaust air installation (fan sp. exhaust air, normal)	70%	
5.3.14	Pump speed	70%	

Serial number must always be given.

Certification that the installation is carried out according to instructions in the accompanying installer manual and applicable regulations.

Date _____ Signed _____

Safety information

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.

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

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 observe when maintaining your installation.

Marking

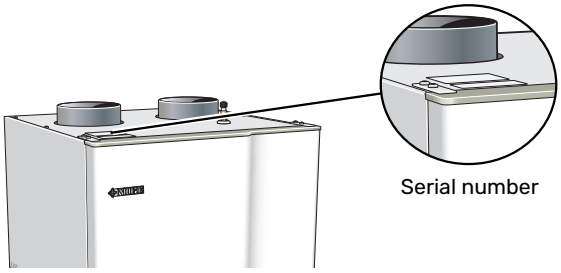
Explanation of symbols that may be present on the product's label(s).

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.

Compatible products

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

F135 – An excellent choice

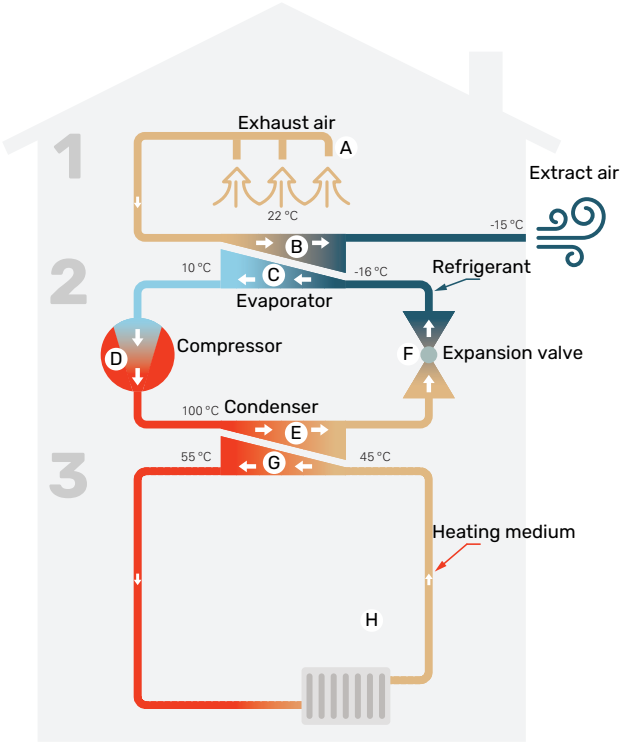
F135 is an accessory that allows an air/water heat pump system to be combined with mechanical exhaust air. The heat in the building's ventilation air is recovered F135 and used to heat the building and the hot water while ventilating the building. F135 is connected between the indoor module/accumulator tank and the outdoor unit, all control of F135 is performed from the indoor module/control module (the main product).

F135 is part of the generation of heat pumps that have been developed to supply your home with inexpensive and environmentally friendly hot water in the most efficient way. Hot water production is safe and economical with an external water heater and integrated control system.

EXCELLENT PROPERTIES FOR F135:

- *DC fan*
  An energy efficient DC fan (Class A) is integrated in the exhaust air module.
- *Low noise level*
  The exhaust air module has a very low noise level.
- *Easy to install*
  The exhaust air module is easy to install together with products in the air/water heat pump system. During installation, the exhaust air module is connected to the main product (indoor module/control module), which allows you to read off the exhaust air module's values from the main product's display.

The heat pump – the heart of the house



The temperatures are only examples and may vary between different installations and time of year.

The function of the exhaust air module

An exhaust air module uses the heat that is in the building's ventilation air to heat up the house. The ventilation air's energy is converted into residential heating in three different circuits. From the outgoing ventilation air (1), heating energy is recovered from the home and transported to the exhaust air module. The exhaust air module increases the recovered heat's low temperature to a high temperature in the refrigerant circuit (2). The heat is distributed around the house in the heating medium circuit (3).

Ventilation air

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

B The fan then routes the air to the exhaust air module's evaporator. Here, the air releases thermal energy to the brine and the air's temperature drops significantly. The cold air (extract air) is then blown out of the house.

Refrigerant circuit

C A liquid, a refrigerant, circulates in a closed system in the exhaust air module, which also passes the evaporator. The refrigerant has a very low boiling point. In the evaporator the refrigerant receives the heat energy from the ventilation air and starts to boil.

D The gas that is produced during boiling is routed into an electrically powered compressor. When the gas is compressed, the pressure increases and the gas's temperature increases considerably, from approx. 5°C to approx. 80°C.

E From the compressor, gas is forced into a heat exchanger, condenser, where it releases heat energy to the heating system in the house, whereupon the gas is cooled and condenses to a liquid form again.

F As the pressure is still high, the refrigerant can pass an expansion valve, where the pressure drops so that the refrigerant returns to its original temperature. The refrigerant has now completed a full cycle. It is routed to the evaporator again and the process is repeated.

Heat medium circuit

G The heat energy that the refrigerant produces in the condenser is retrieved by the climate system's water, heating medium, which is heated to 55 °C (supply temperature).

Maintenance of F135

REGULAR CHECKS

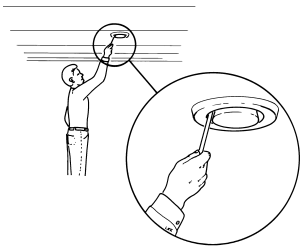
Your exhaust air module requires minimal maintenance after commissioning. However, it is recommended that you check your installation regularly.

If anything abnormal occurs, messages about the malfunction appear in the main product's display in the form of various alarm texts.

Cleaning the ventilation devices

The building's ventilation devices should be cleaned regularly with, for example, a small brush to maintain the correct ventilation.

The device settings must not be changed.



CAUTION!

If you take down more than one ventilation device for cleaning, do not mix them up.

Cleaning the air filter

The air filter in F135 has to be cleaned regularly; how often depends, for example, on the quantity of particles in the ventilation air. Test, to find out what is most appropriate for your installation.

NOTE!

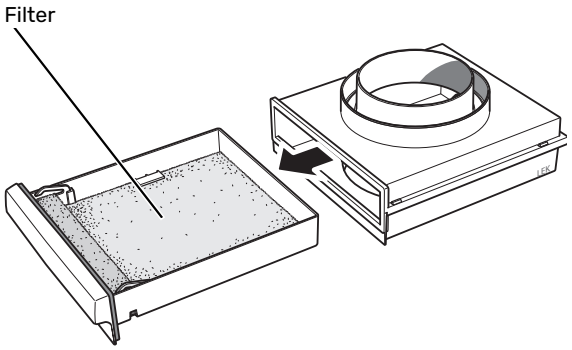
The efficiency of the installation can be impaired by a dirty air filter.

1. Turn off the main product by setting the switch to ⏻.
2. Pull out the filter cassette.
3. Remove the filter and shake/vacuum it clean.
4. Check the condition of the filter and replace if needed.
5. Carry out assembly in reverse order.

Even if the filter looks clean, dirt collects in it and this affects the efficiency of the filter. For this reason, replace the filter at least once a year. A new filter can be ordered via a dealer for NIBE or at nibe.eu.

CAUTION!

Water or other liquids must not be used for cleaning.



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 blocked.
  - Clean or replace the filter.
- The ventilation is not adjusted.
  - Order 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 blocked.
  - Clean or replace the filter.
- The ventilation is not adjusted.
  - Order 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.

Technical data

Detailed technical specifications for this product can be found in the installation manual (nibe.eu).

Glossary

COMPRESSOR
Compresses the gas state refrigerant. When the refrigerant is compressed, the pressure and the temperature increase.

CONDENSER
Heat exchanger where the hot gas state refrigerant condenses (cools and becomes a liquid) and heats the hot water.

DISTURBANCES IN COMFORT
Disturbances in comfort means unwanted changes in hot water comfort, e.g. that the temperature of the hot water is too low.

A malfunction in the heat pump can sometimes be noticed in the form of a disturbance in comfort.

In most cases, the heat pump notes operational interference and indicates this with alarms and shows instructions in the display.

EVAPORATOR
Heat exchanger where the refrigerant evaporates by retrieving heat energy from the air which then cools.

EXPANSION VALVE
Valve that reduces the pressure of the refrigerant, whereupon the temperature of the refrigerant drops.

HEAT EXCHANGER
Device that transfers heat energy from one medium to another without mixing mediums. Examples of different heat exchangers include evaporators and condensers.

REFRIGERANT
Substance that circulates around a closed circuit in the heat pump and that, through pressure changes, evaporates and condenses. During evaporation, the refrigerant absorbs heating energy and when condensing gives off heating energy.

SUPPLY TEMPERATURE
The temperature of the heated water that the heat pump sends out to the heating system. The colder the outdoor temperature, the higher the supply line temperature becomes.

Item register

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