



THE SMART, SIMPLE COST-SAVER.

- Display unit with easy-to-read colour screen
- Low energy fan
- Large compressor with intelligent control that sets the most favourable temperature conditions to give optimum savings
- Outdoor temperature sensor/room temperature sensor
- Scheduling heating, ventilation and hot water as well as holiday mode
- Uses environmentally-friendly R290 (Propane) refrigerant
- Control up to four heating systems, with different temperature levels
- Phase individual load monitor
- Can communicate via mobile network, GSM (accessory)
- Low noise and high ventilation capacity thanks to ventilation section design
- Measures and logs average indoor temperature during the heating season

NIBE F370

NIBE F370 is a complete exhaust air heat pump for both new installations and replacement in homes

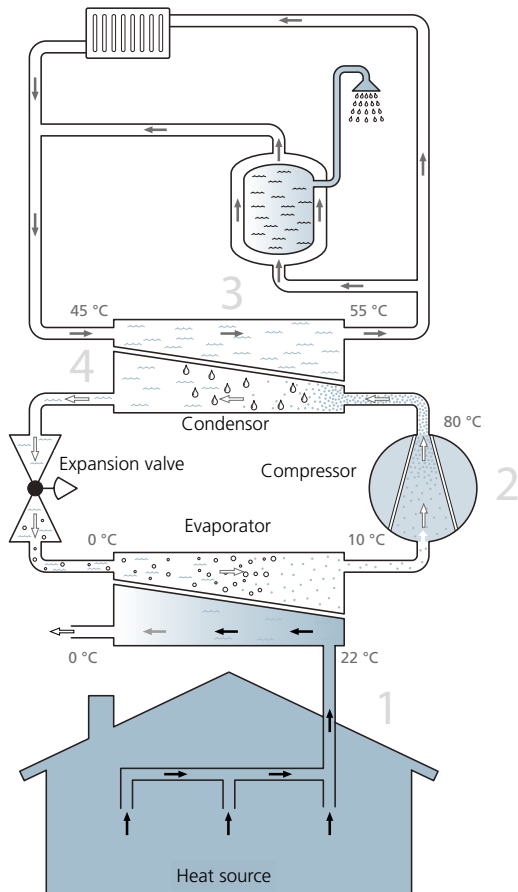
NIBE F370 has an integrated DC fan and a water heater that has either copper, stainless steel or enamel corrosion protection. In addition it has an integrated immersion heater.

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. NIBE F370 is intended for low temperature dimensioned radiator circuits and/or under-floor heating.

NIBE F370 can be docked to other heat sources such as district heating, wood, oil and gas.

HOW DO EXHAUST AIR HEAT PUMPS WORK?

Ventilation, which means totally hygienic inside air, is a basic requirement for living in a healthy house. Controlled domestic ventilation with heat recovery reuses the energy from the exhaust air.



1. Warm exhaust air is blown across the heat exchange and the heat is transferred into the refrigerant circuit. The cold exhaust air passes to the outside of the house.
2. The compressor raises the pressure of the refrigerant, resulting in an increase in temperature in the heat pump.
3. Energy extracted from the exhaust air is transferred into a water-based heating system to heat your home and hot water.
4. In the condenser, the refrigerant reverts to liquid form, ready to turn into gas once more and to collect new heat energy.

← Heat source
 ⇄ Refrigerant
 → Cooling medium

C
 When the room air has passed through the heat pump it is discharged. The temperature of the air has been significantly reduced as the heat pump has extracted the energy in the room air.

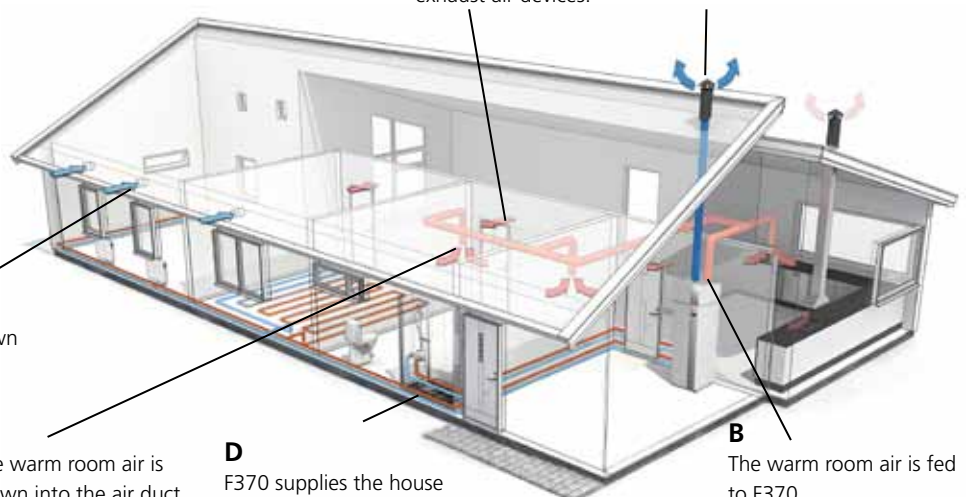
F
 Air is transported from rooms with outdoor air devices to rooms with exhaust air devices.

E
 Outdoor air is drawn into the house.

A
 The warm room air is drawn into the air duct system.

D
 F370 supplies the house with both hot water and room heating.

B
 The warm room air is fed to F370.



GOOD TO KNOW ABOUT NIBE™ F370

Maintenance

The control panel is designed to offer the simplest possible operation. Nibe requires minimum maintenance. All you have to do is check the safety valves and clean the air filter and fan. The air filter is located in a filter cartridge and is very easy to clean.

All essential components can be accessed from the front, facilitating service and maintenance.

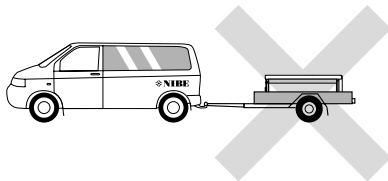
Equipment

NIBE F370 is equipped with a complete set of valves, consisting of a drain valve, filling valve, vacuum valve, non-return valve, and safety valve for the water heater section. The boiler section is equipped with a drain valve, filler valve and safety valve. In addition, the unit is equipped with climate controlled heating automatic devices with outdoor temperature, room temperature and flow sensors, circulation pump, load monitor and expansion vessel.

Transport and storage

F370 should be transported and stored vertically in a dry place.

The F370 may, however, be carefully laid on its back when being moved into a building. The centre of gravity is in the upper part.



Design

A microprocessor controls F370. This makes for easy operation at the same time as always enabling the heat pump to run as efficiently as possible, as the microprocessor continuously decides the best method of operation. The microprocessor also manages the heating automatic device and circulation pump. It is possible to control an automatic bypass when there is a need of two different flow temperatures. The display shows the current temperatures and set values in plain text.

The design of the ventilation section gives a high ventilation capacity. The steplessly reconnectable fan steps can easily be increased or reduced via the internal clock, control panel or external signal.

F370 gives great savings thanks to a powerful compressor, which, with intelligent control, works with the most favourable temperature conditions.

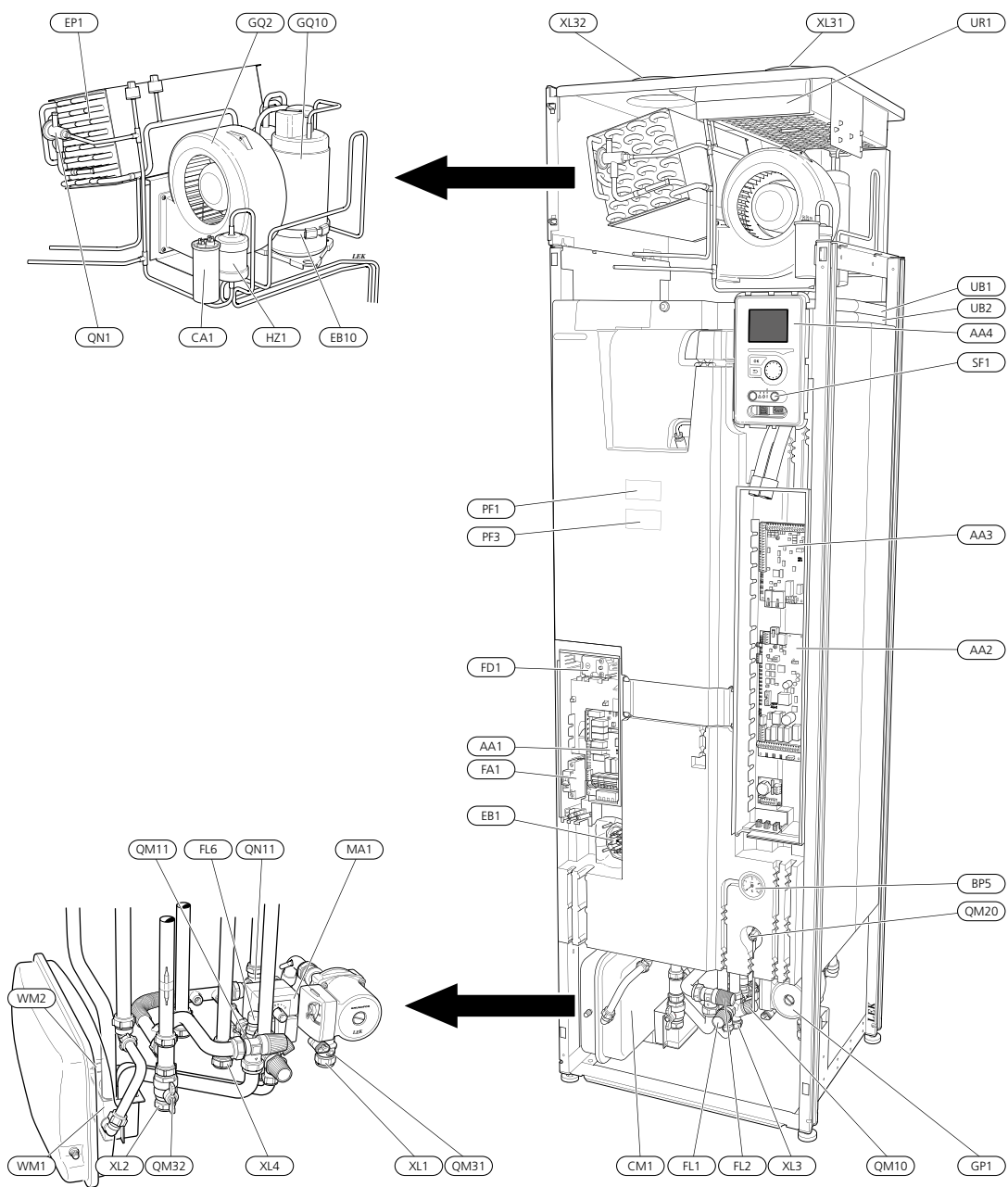
The insulation consists of moulded Neopor (environmentally friendly cellular plastic) for minimal heat loss.

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.

F370 has a maximum immersion heater output of 10.25 kW (3x400 W model). The output is easy to adjust via the display and can be blocked if required.

GOOD TO KNOW ABOUT NIBE™ F370

Equipment



GOOD TO KNOW ABOUT NIBE™ F370

List of components

Pipe connections

XL1	Connection, heating medium flow line
XL2	Connection, heating medium return line
XL3	Connection, cold water
XL4	Connection, hot water
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
GP1	Heating medium pump
QM10	Filler valve, water heater
QM11	Filler valve, climate system
QM20	Venting, climate system
QM31	Shut-off valve, heating medium flow
QM32	Shut off valve, heating medium return
QN11	Shunt valve
WM1	Drip tray
WM2	Overflow water discharge

Sensors etc.

BP5	Pressure gauge, heating system
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Electrical components

AA1	Immersion heater card
AA2	Base card
AA3	Input circuit board
AA4	Display unit
CA1	Capacitor
EB1	Immersion heater
EB10	Compressor heater
FA1	Miniature circuit breaker
FD1	Temperature limiter
MA1	Shunt motor with handwheel
SF1	Switch

Cooling components

EP1	Evaporator
GQ10	Compressor
HZ1	Drying filter with tank
QN1	Expansion valve

Ventilation

GQ2	Exhaust air fan
HQ10	Exhaust air filter
UR1	Filter cover

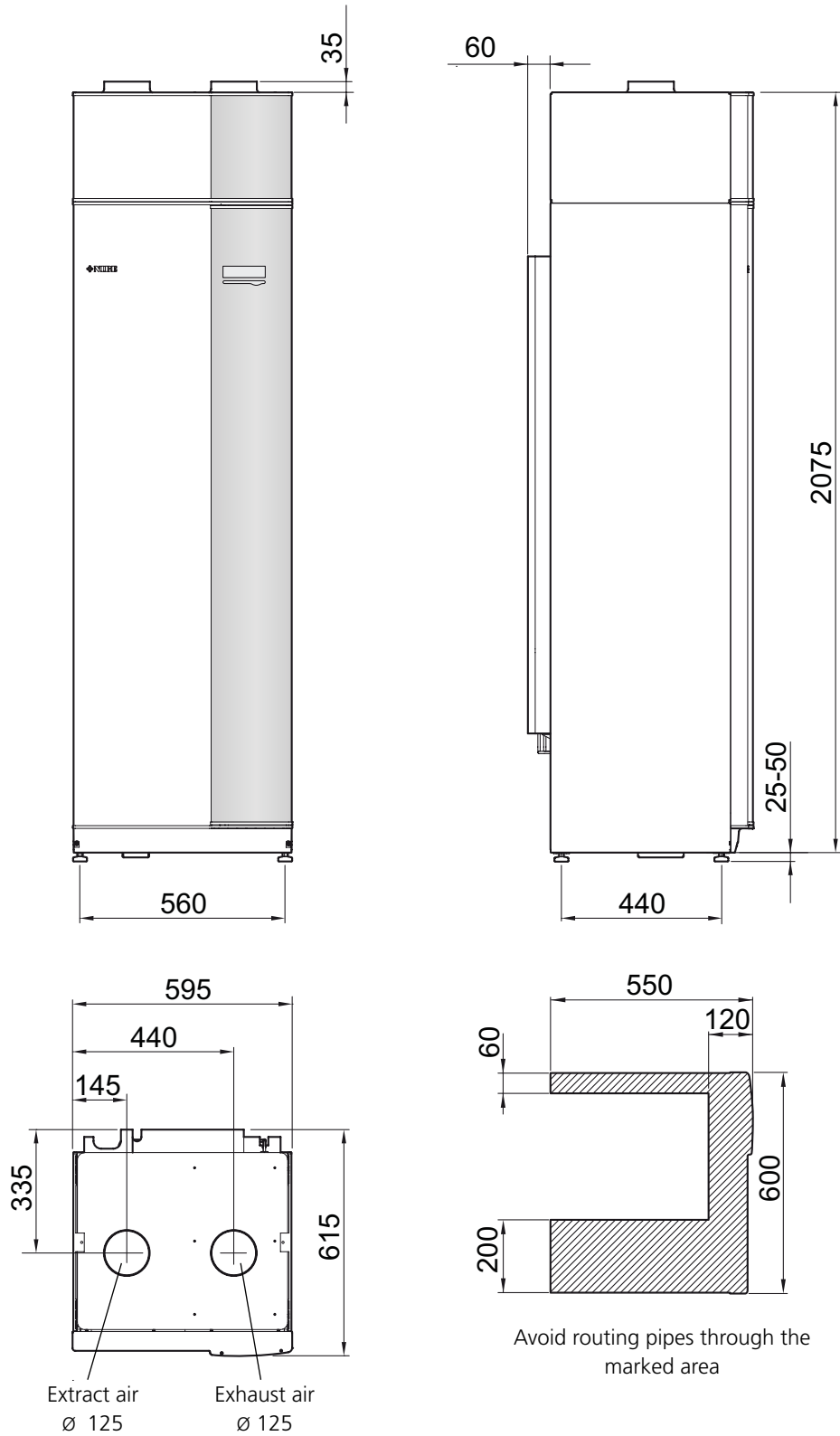
Miscellaneous

PF1	Type plate
PF3	Serial number plate
UB1	Cable grommet
UB2	Cable grommet

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

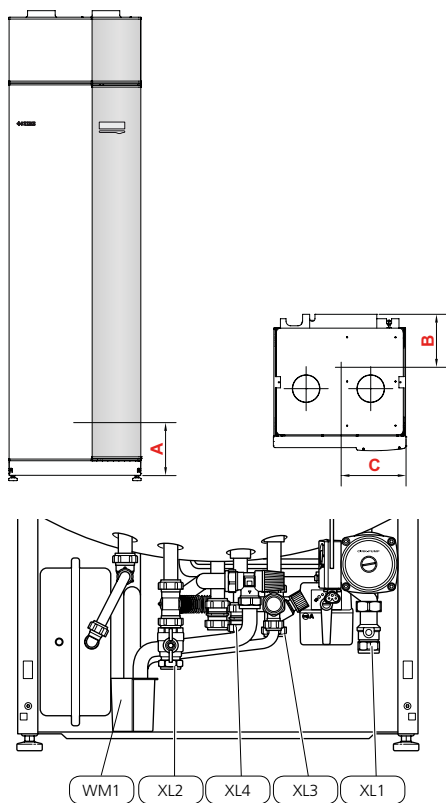
GOOD TO KNOW ABOUT NIBE™ F370

Dimensions



INSTALLATION

Pipe connections



Setting out dimensions

Connection		A	B	C
XL 1 Heating medium flow	(mm)	140	400	70
XL 2 Heating medium return	(mm)	120	425	365
XL 3 Cold water	(mm)	170	455	210
XL 4 Hot water	(mm)	170	405	260
WM 1 Overflow cup	(mm)	60	200	420

Pipe dimensions

Connection		
Heating medium ext Ø	(mm)	22
Cold water ext Ø	(mm)	22
Hot water ext Ø	(mm)	22
Overflow water discharge	(mm)	32

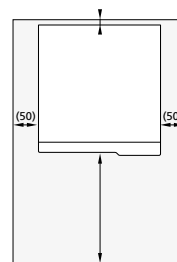
Installation and positioning

A space should be left for the distribution manifold on the right or left hand side to facilitate pipe installation. Please see "Dimensions" below for other installation dimensions.

In order to eliminate noise problems, install the heat pump with its back against an outside wall in a room where noise will not be disturbing. If this is not possible, avoid installing the heat pump against a wall that backs on to a bedroom or some other room where noise would be a problem. Leave space between the heat pump and the wall behind it (and any routing of supply cables and pipes), to reduce the risk of vibration. Route pipes so they are not fixed to an internal wall that backs on to a bedroom or living room. The temperature in the installation area should be minimum 10 °C and max 30 °C.

Installation area

Leave a space of 500 mm in front of the heat pump. Approximately 50 mm free space is required on each side in order to open the side hatches. The hatches do not need to be opened during service; all service on F370 can be carried out from the front.



* Depending on routing of supply cables and pipes.

Pipe installation

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

All pipe connections are equipped with 22 mm compression ring couplings.

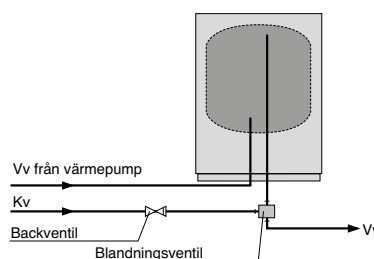
Radiator connection

When the circulation pump is operating, the flow in the heating system must not be stopped completely, i.e. at least one of the heating system's radiators/under floor heating loops must be fully open.

Tap water connection

The heat pump should be supplemented with an external water heater, type NIBE Compact, if a bubble pool or other significant consumer of hot water is installed.

For more information see www.nibe.eu.

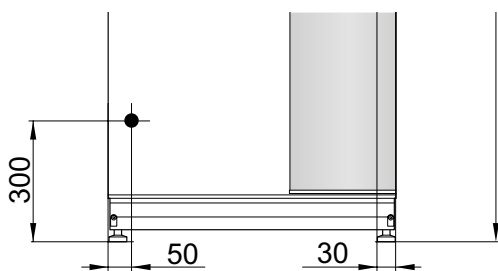


INSTALLATION

Electrical connections

Connection must not be carried out without the permission of the electricity supplier and must be under the supervision of a qualified electrician.

F370 must be connected with the corresponding connection cable (length 2 m) via an isolator switch with a minimum breaking gap of 3 mm. Minimum cable area must be dimensioned according to the fuse rating used. The connection cable can be found on the reverse of F370 (see image below).



The requisite circuit fuse is based on the table below.

Other electrical equipment is connected at the factory, except the outdoor and room temperature sensors. Also see the section "External control and load monitor". Operation (230V), fan and circulation pump are internally fused by a miniature circuit breaker (10A).

Electrical addition (kW)	Max (A) L1	Max (A) L2	Max (A) L3
0	5.3	-	-
0.25	5.3	1.1	-
2	5.3	-	8.7
4.67	5.3	11.6	8.7
5.60	5.3	12.7	11.6
8	16.9	11.6	11.6
10.25	16.9	12.7	20.3

The table displays the maximum phase current for the relevant electrical step for the heat pump.

Inspection

F370 is equipped with a closed expansion vessel as standard. Current norms require the heating installation to be inspected before it is commissioned. This inspection should be carried out by a person with the necessary expertise.

Function checks of the ventilation system should be carried out by authorised persons according to the applicable regulations.

Maximum boiler and radiator volumes

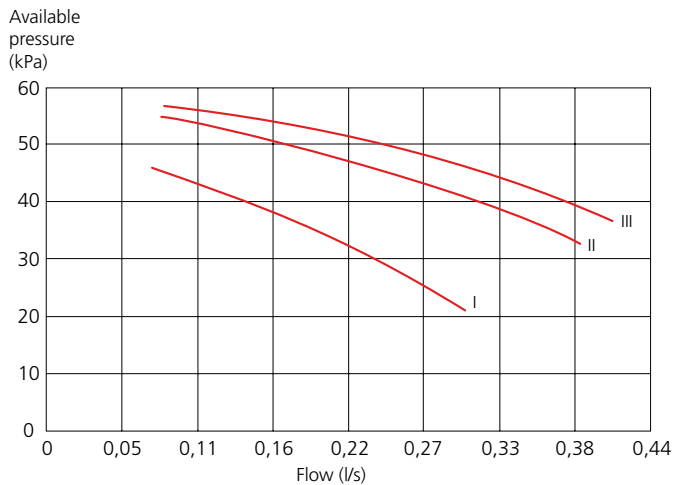
The volume of the expansion vessel is 10 litres and it is pressurised as standard to 0.5 bar (5 mvp). As a result, the maximum height between the vessel and the highest radiator is 5 metres. There is a valve on the vessel for any pre-pressure adjustment.

The initial pressure of the expansion vessel must be stated in the inspection document.

The maximum system volume at the above pre-pressure, excluding the boiler, is 219 litres.

INSTALLATION

Pump and pressure drop diagram



Outdoor and room temperature sensors

Connect the sensors with two-core cable to terminal block. The minimum cable cross section should be 0.4 mm² up to lengths of 50 metres, for example, EKXX or LiYY.

Install the outdoor temperature sensor in the shade on a wall facing north or north-west, so it is unaffected by the morning sun. If a conduit is used it must be sealed to prevent condensation in the sensor capsule.

Install the room temperature sensor in a neutral position where the shown temperature is required.

External control and load monitor

In cases where an external control is required, it can be connected to a terminal block.

F370 is internally equipped with a load monitor. If it is used, the supplied current sensors must be installed in the electrical distribution unit and connected to a terminal block in the heat pump. If the current sensors are connected, the heat pump monitors the phase currents and allocates the electrical steps automatically to the least loaded phase.

The control system must be set for the installation's main fuse so that the load monitor can work correctly.



INSTALLATION

Ventilation

Connect F370 so that all ventilation air except air from the kitchen fan passes the evaporator in the heat pump. Ventilation flow should conform to applicable norms. For optimum heat pump performance the ventilation flow should not be less than 28 l/s (100m³/h) at an exhaust air temperature of at least 20 °C. On occasions when the exhaust air temperatures are lower than 20 °C (for example at start up and when the place is empty) the minimum value is 31 l/s (110 m³/h). Even if the norm requirements give lower flow requirements, increasing to 110 m³ /h does not mean an increase in energy consumption as the recovery level of the heat pump also increases.

Reconnection of the ventilation capacity occurs steplessly.

Connections must be made via flexible hoses, which must be installed so that they are easy to replace. The extract air duct must be provided with diffusion-tight insulation (PE30) over its entire length. Exhaust air ducts that are laid in cold areas must be insulated. Provision must be made for inspection 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. All joints in the ducting must be sealed and pop-riveted to prevent leakage. The duct system must be installed in accordance with current norms. A minimum of air tightness class B is recommended.

To prevent fan noise being transferred to the exhaust air valves, it may be a good idea to install a silencer in the duct. This is also recommended for shorter extract air ducts.

To obtain the necessary air exchange in every room of the house, the exhaust air devices must be correctly positioned and adjusted. A defective ventilation installation may lead to reduced heat pump efficiency and thus poorer operating economy, and may result in damage to the house.

The extract air duct must not be routed to the flue.

If a stove or similar is installed, it must have sealing doors and be able to take combustion air from outside.

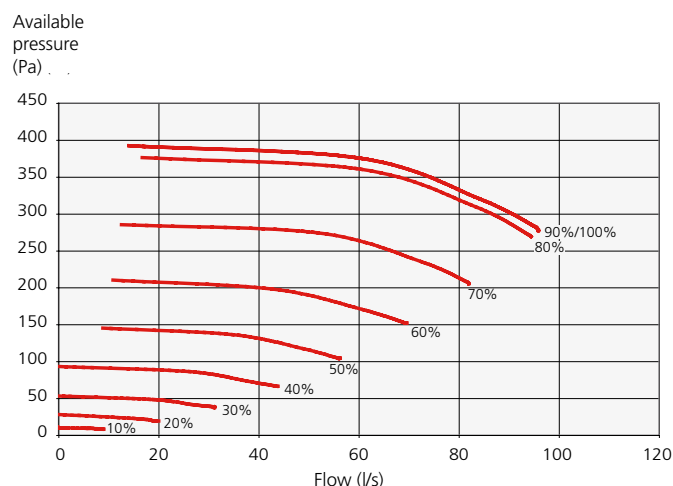
To achieve a good level of comfort it is also important to use a sufficient number of outdoor air devices with good air distribution.

Setting the fan capacity

Select the ventilation capacity in the display.

Fan diagram

The diagram below shows the available ventilation capacity. Min exhaust air flow is 28 l/s (100 m³/h) at exhaust air temperatures of 20 °C or higher.



INSTALLATION

Control, general

The indoor temperature depends on several factors. Sunlight and heat emissions from people and household machines are normally sufficient to keep the house warm during the warmer parts of the year. When it gets colder outside, the climate system must be started. The colder it is outside, the warmer radiators and floor heating system must be.

Control of the heat production is performed based on the “floating condensing” principle, i.e. the temperature level needed for heating at a specific outdoor temperature is produced guided by collected values from the outdoor and flow sensors. The room sensor can also be used to compensate the deviation in room temperature.

Heat production

The supply of heat to the house is regulated in accordance with the chosen setting of the regulating curve (curve slope and offset) in menu 1.9.1. After adjustment, the correct amount of heat for the outside temperature is supplied. The flow line temperature of the heat pump will hunt around the theoretically required value.

Hot water production

Hot water charging starts when the hot water sensor has fallen to the set start temperature. Hot water charging stops when the hot water temperature on the hot water sensor (BT6) has been reached.

For occasional higher demand for hot water, the “temporary lux” can be used to raise the temperature for 3 – 12 hours (selected in the menu system).

Additional heat only

F370 can be used with only additional heat (electric boiler) to produce heating and hot water, for example, before the ventilation system is complete.

Alarm indications

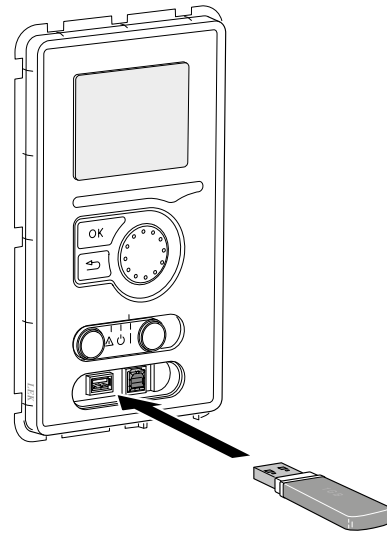
The status lamp lights red in the event of an alarm and the display shows detailed information depending on the fault. An alarm log is created with each alarm containing a number of temperatures, times and the status of outputs.

Own curve

F370 has pre-programmed non linear heating curves. It is also possible to create your own defined curve. This is an individual linear curve with one break point. You select a break point and the associated temperatures.

USB service outlet

F370 is equipped with a USB socket in the display unit. This USB socket can be used to connect a USB memory stick to update the software, save logged information and handle the settings in F370.



SMS 40

F370 can be controlled and monitored externally with accessory SMS 40.

SMS 40 consists of a communications module, a GSM modem with an antenna and a separate power supply unit with jack for plugging into a wall socket. The antenna can be placed outside the enclosure.

SMS 40 enables operation to be controlled and monitored, via a GSM module, using a mobile phone via SMS messages. For the GSM function to work, the communications module must be equipped with a valid GSM subscription. This may for example be a cash card or a special telematics subscription.

For further presentation, visit www.nibe.eu.

THE DISPLAY

A large, easy to read multicolour display gives everyone the chance to maximize the energy saving potential of this exciting green technology!

Display unit

Display, A

Instructions, settings and operational information are shown on the display. The easy-to-read display and menu system, facilitates navigation between the different menus and options to set the comfort or obtain the information you require.

Status lamp, B

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.

OK button, C

The OK button is used to:

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

Back button, D

The back button is used to:

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

Control knob, E

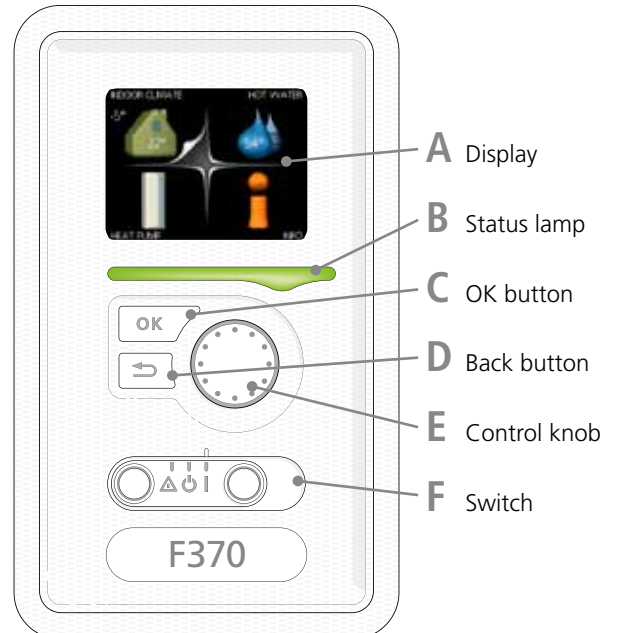
The control knob can be turned to the right or left. You can:

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

Switch, F

The switch assumes three positions:

- On (I)
- Standby (⏻)
- Emergency mode (⚠)



THE DISPLAY

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.

Menu 2 – Hot water

Setting and scheduling hot water production.

This menu only appears if a water heater is docked to the heat pump.

Menu 3 - Info

Display of temperature and other operating information and access to the alarm log.

Menu 4 – Heat pump

Setting time, date, language, display, operating mode etc.

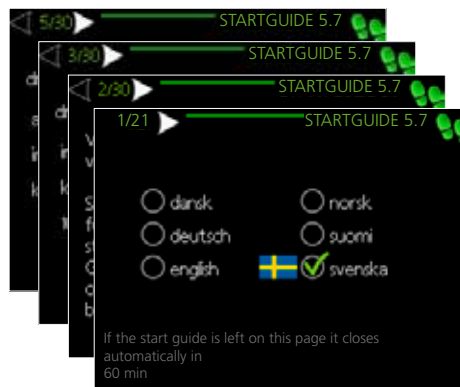
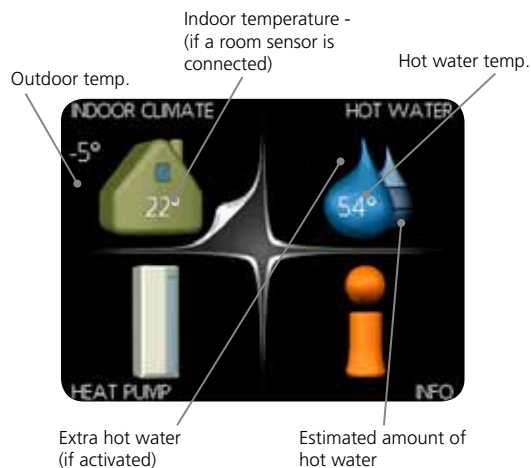
Menu 5 - Service

Advanced settings. These settings are not available to the user. The menu is visible by pressing the Back button for 7 seconds.

Start guide

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



TECHNICAL SPECIFICATIONS



3x400 V	Copper	Enamel	Stainless steel
Output data according to EN 14 511			
Specified heating output (PH) ¹	kW	2.18	
COP ¹		3.93	
Specified heating output (PH) ²	kW	2.03	
COP ²		3.24	
Specified heating output (PH) ³	kW	1.88	
COP ³		2.74	
Additional power			
Output immersion heater	kW	10.25 (factory setting 5.3)	
Electrical data			
Rated voltage	V	400 V 3N~PE 50 Hz	
Driving power circulation pump	W	45-100	5-45
Driving power exhaust air fan	W	25-140	
Enclosure class		IP21	
Refrigerant circuit			
Type of refrigerant		R290, propane	
Volume	kg	0.4	
Heating medium circuit			
Max pressure in boiler section	MPa/bar	0.25/2.5	
Ventilation			
Min air flow at exhaust air temperature at least 20 °C	l/s	28	
Min air flow at exhaust air temperature below 20 °C	l/s	31	
Sound pressure levels according to EN 12 102			
Sound pressure level in the boiler house ($L_{P(A)}$) ⁴	dB(A)	42.5-44.0	
Water heater and boiler section			
Volume boiler section	litre	70	
Volume, hot water heater	litre	170	
Max pressure in hot water heater	MPa/bar	0.9/9.0	
Capacity hot water heating according to EN 255-3⁵			
Tap volume 40 °C at Normal comfort (V_{max})	litre	281	
Dimensions and weight			
Width/Depth	mm	600/616	
Height	mm	2100-2125	
Required ceiling height	mm	2270	
Weight	kg	205	
Part. No		066 040	066 043
			066 045

¹ A20(12)W35, exhaust air flow 200 m³/h

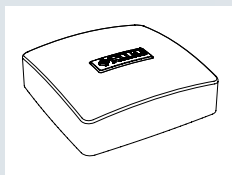
² A20(12)W45, exhaust air flow 150 m³/h

³ A20(12)W55, exhaust air flow 110 m³/h

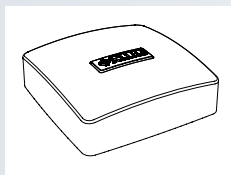
⁴ The value varies with the selected fan curve. For more extensive sound data including sound to channels visit www.nibe.eu.

⁵ A20(12) exhaust air flow 150 m³/h

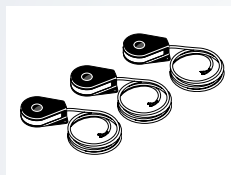
SUPPLIED COMPONENTS



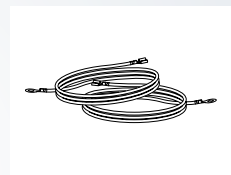
Outdoor temperature sensor



Indoor temperature sensor



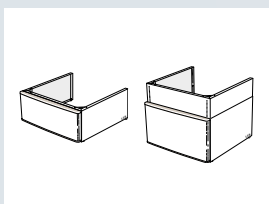
Current sensor



Earth cable

The kit of supplied items is placed on top of the heat pump.

ACCESSORIES



NIBE™ Top cabinet

Top cabinet for room height
2400, 2500, 2550-2800 mm.

Height: 2400 mm

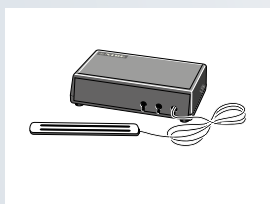
Part no. 089 756

Height: 2500 mm

Part no. 089 757

Height: 2550-2800 mm

Part no. 089 758

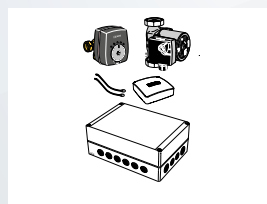


NIBE™ SMS 40

Communication module

NIBE SMS 40 enables operation to be controlled and monitored, via the GSM module, using a mobile phone via SMS messages.

Part no. 067 073



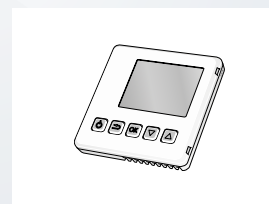
NIBE™ ECS 40/ ECS 41

Extra shunt group

This accessory is used when NIBE F370 is installed in houses with two or more different climate systems that require different supply temperatures, for example, in cases where the house has both a radiator system and an underfloor heating system.

ECS 40 Part no. 067 061

ECS 41 Part no. 067 099

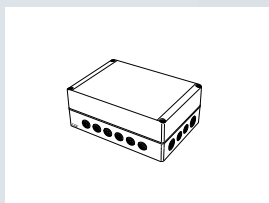


NIBE™ RMU 40

Room unit

NIBE RMU 40 means that control and monitoring of the operation can be carried out in a different part of the accommodation to where NIBE F370 is located.

Part no. 067 064



NIBE™ DEH 40/41

Docking kit

There are separate docking kits available for connecting other heat sources to the heat pump.

DEH 40

Docking kit wood/oil/pellets

Part no. 066 101

DEH 41

Docking kit gas

Part no. 066 102

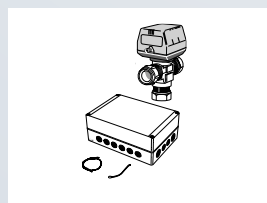


NIBE™ UKVS 230

Accumulator tank

UKVS 230 is an accumulator tank with coil for solar panels. UKVS 230 is intended to be used for heat storage when a smaller heat pump is docked with solar panels.

Part no. 067 147

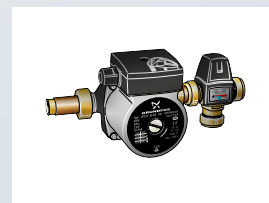


NIBE™ Solar 41

Solar heating

NIBE SOLAR 41 enables solar heating with your heat pump. With additional solar panels and UKVS you get a complete system.

Part no. 067 127



NIBE™ MCU 10

Multi charging unit

This accessory are being used in NIBE Solar package with NIBE F370/F470.

Part no. 067 128



NIBE™ SPS 10

Solar pump station

This accessory are being used in NIBE Solar package with F370/F470.

Part no. 057 027



NIBE is ISO-certified:
SS-EN ISO 9001:2000
SS-EN ISO 14001:2004

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