

Exhaust air heat pump

NIBE F370

NIBE F370 is an all-in-one exhaust air heat pump which provides heating, ventilation, heat recovery and hot water efficiently, simply and economically. With its attractive, stylish design and compact size, the heat pump is easy to accommodate and

install.

With its built-in water heater, immersion heater, circulation pump, fan and control system, the heat pump provides a reliable and economical source of heat. The heat pump can be connected to any low-temperature distribution system, e.g. radiators, convectors or underfloor heating. NIBE F370 can be connected to other heat sources.

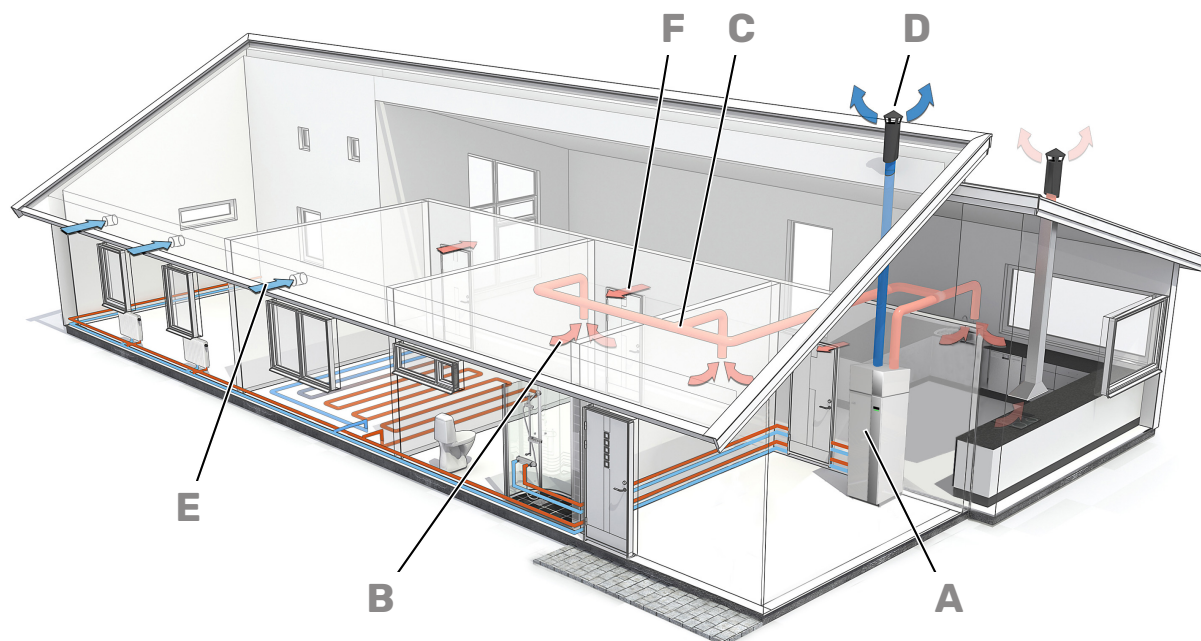
Thanks to smart technology, the product gives you control over your energy consumption and will be a key part of your connected home. The efficient control system automatically adjusts the indoor climate for maximum comfort, and you do nature a favour at the same time.



- **Heating, hot water, ventilation and heat recovery.**
- **Kostnads- och utrymmeseffektiv lösning för olika typer av bostäder.**
- **Connected home with smart technology for a simpler life.**

This is how F370 works

Principle



F370 is an exhaust air heat pump with integrated fan and a water heater that is provided with corrosion protection in the form of copper, enamel or stainless steel. In addition, it has an integrated immersion heater.

Energy is recovered from the ventilation air and supplied to the heat pump, which significantly reduces the energy costs. The device ventilates the house, supplies heat and produces domestic hot water.

F370 is intended for low-temperature dimensioned radiator circuits and/or underfloor heating, and is suitable for replacement in houses or equivalent.

Using accessories, F370 can be docked with other heat sources.

- A** F370 ventilates the house and supplies it with both hot water and room heating.
- B** The warm room air is drawn into the air duct system.
- C** The warm room air is fed to F370.
- D** The air is released when it has passed F370. The air temperature has then dropped since F370 has extracted the energy in the air.
- E** Outdoor air is drawn into the house.
- F** Air is diverted from rooms with outdoor air devices to rooms with exhaust air valves.

Design

Control of F370 is designed to ensure easy operation while always enabling the heat pump to run as efficiently as possible. F370 decides on the best operation mode. The display shows the current temperatures and set values in plain text.

The design of the air treatment section delivers a high ventilation capacity. Moreover, the steplessly adjustable fan can easily be increased or reduced via the display unit or an external signal.

F370 gives great savings thanks to an efficient compressor, which, by means of intelligent control, works with the most favourable temperature conditions at the time.

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 10.3 kW. The power is easy to adjust via the display, and the heat pump can be blocked.

Principle of operation, cooling circuit

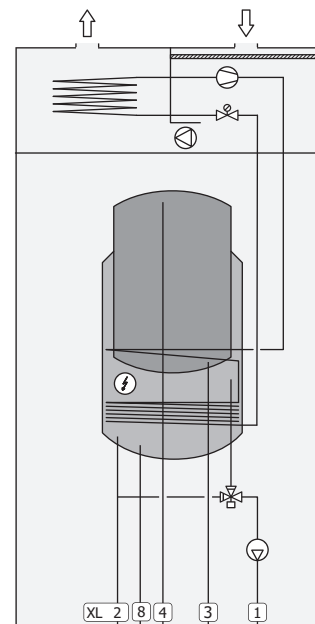
When the exhaust air at room temperature passes through the evaporator, the refrigerant evaporates because of its low boiling point. As a result, the air releases energy to the refrigerant.

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

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

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

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



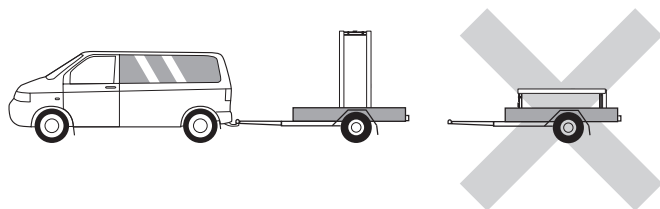
XL1	Connection, heating medium flow
XL2	Connection, heating medium return
XL3	Cold water connection
XL4	Hot water connection
XL8	Docking connection, supply

Good to know about F370

Transport and storage

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

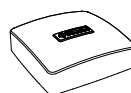
Ensure that the heat pump cannot fall over during transport.



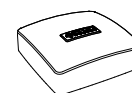
However, the F370 can be carefully laid on its back when being moved into the building. The centre of gravity is in the top section.

Supplied components

Local differences in the enclosed kit may occur. See relevant installer manual for more information.



Outdoor temperature sensor



Room sensor



Earth cabling (2 pcs)



Current sensor

LOCATION

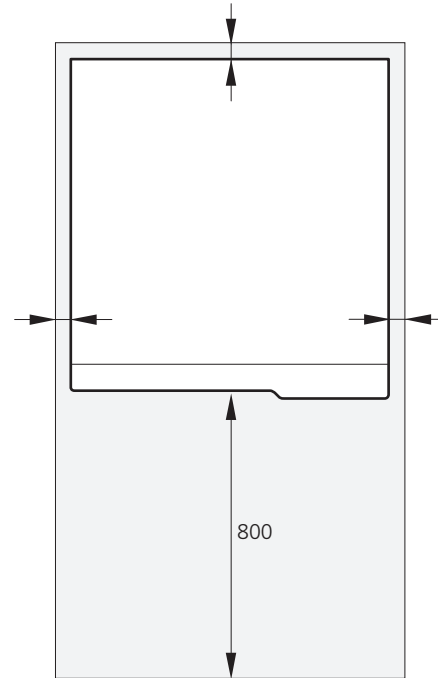
The kit of supplied items is placed on top of the product.

Installation and positioning

- Position F370 on a solid foundation indoors that withstands water and the weight of the product.
- Since water comes from F370, the area where F370 is located must be equipped with floor drainage.
- Because water comes from F370, 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.
- 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 F370 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.



Ensure that there is sufficient space (300 mm) above F370 for connecting ventilation ducts.

Installation

Equipment

F370 is equipped with a climate-controlled heating control system with outdoor temperature, room temperature and supply temperature sensors, circulation pump, load monitor and expansion vessel. For the heating section, F370, copper and stainless steel, is equipped with a filling and a safety valve. The hot water section in F370 copper and stainless steel is equipped with a set of valves comprising filling, mixing, non-return and safety valves.

Maximum boiler and radiator volumes

F370 is equipped with an expansion vessel.

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

The maximum system volume, excluding F370, is 219 litres at the above-mentioned pre-pressure.

Inspection

F370 is equipped with a closed expansion vessel as standard. National standards can assert that the boiler installation must be inspected before it is taken into use. This inspection may only be performed by persons with the necessary expertise.

National regulations can assert that the function of the ventilation system must be checked. This check may only be carried out by an authorised person.

Pipe installation



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

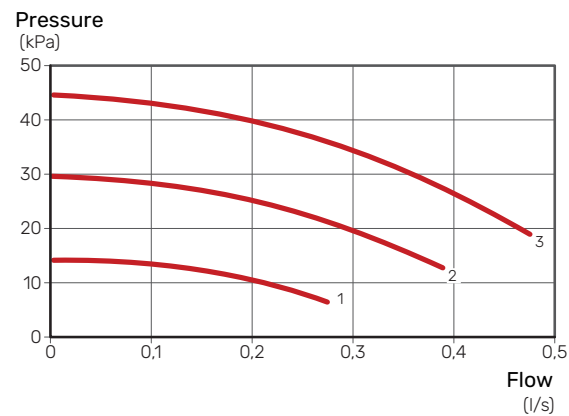
Pipe connections for cold and hot water as well as supply and return lines are fitted with 22 mm compression ring couplings.

CONNECTING THE HEATING SYSTEM

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/underfloor heating coils must be fully open. For F370 enamel, the heating system must be supplemented with a safety valve according to applicable standards.

AVAILABLE EXTERNAL PRESSURE, HEATING SYSTEM

Capacity, circulation pump (CP)



Installation alternative



EXTRA HOT WATER HEATERS

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

Water heater with immersion heater

In a water heater with an immersion heater, the water is initially heated by the heat pump. The immersion heater in the water heater is used for keeping warm and when the heat pump does not have sufficient power.

The water heater's flow is connected after F370.

Ventilation



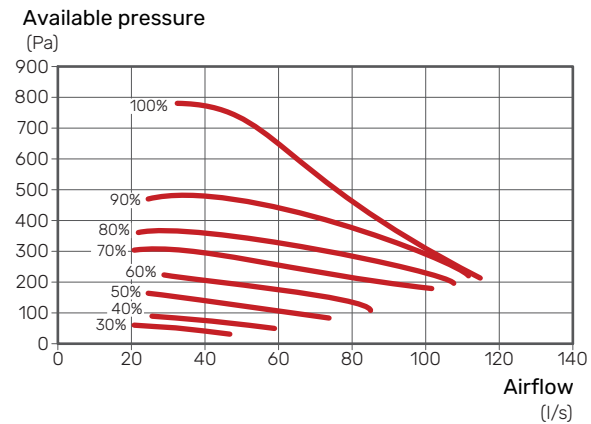
Connect F370 so that all the exhaust air, except kitchen duct air (kitchen fan), passes through the evaporator in the heat pump.

- The ventilation flow must comply with the applicable national standards.
- For optimum heat pump performance, the ventilation flow must not be less than 28 l/s (100 m³/h) at an exhaust air temperature of at least 20 °C. When the exhaust air temperature is lower than 20 °C (for example at start-up and when there is nobody at home), the minimum value is 31 l/s (110 m³/h).
- The heat pump's installation area must be ventilated to at least 5 l/s (18 m³/h)
- If the exhaust air temperature falls below 16 °C, the compressor is blocked and electric additional heat is permitted. No energy is recovered from the exhaust air when the compressor is blocked.
- Provision must be made for inspection and cleaning of the duct.
- 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.
- Because the extract air temperature can be low, the extract air duct must be insulated with diffusion-proof material along its entire length.
- Exhaust air ducts that are routed in cold areas must be insulated.
- All joins in the ducting must be sealed to prevent leakage.
- The extract air duct must be a maximum of 20 m long with a maximum of six bends.
- Because the heat pump contains a flammable refrigerant, the air ducting system must be earthed. This is done by making a good electrical connection to the air ducts using the enclosed earth cables (2).
- 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, a poorer indoor climate and moisture damage in the building.

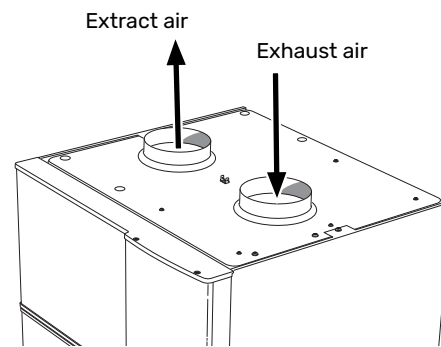
SETTING THE FAN CAPACITY

Select the ventilation capacity steplessly in the display.

Ventilation capacity



VENTILATION CONNECTIONS



Functions

Control, general

The indoor temperature depends on several different factors. Sunlight and heat emissions from people and household machines are normally sufficient to keep the house warm during the warm seasons. When it gets colder outside, the climate system needs to help heat the house. The colder it is outside, the warmer radiators and underfloor heating systems have to be.

Control of the heat production is performed based on the "floating condensing" principle, which means that the temperature level needed for heating at a specific outdoor temperature is produced based on collected values from the outdoor and supply temperature 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 heating curve selected setting. After adjustment, the correct amount of heat for the current outdoor temperature is supplied.

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 a number of break points. You select break points and the associated temperatures.

Hot water production



Hot water charging starts when the temperature has fallen to the set start temperature. Hot water charging stops when the hot water temperature at the hot water sensor has been reached.

For temporary higher hot water demand, there is a function that allows the temperature to be raised temporarily for up to 12 hours or by a one time increase (can be selected in the menu system).

It is also possible to set F370 in holiday mode, which means that the lowest possible temperature is achieved without the risk of freezing.

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 operating status.

The display



F370 is controlled using a clear and easy to use display.

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

The display unit is equipped with a USB socket that can be used to update the software and save logged information in F370.

Visit myuplink.com and click the "Software" tab to download the latest software for your installation.

myUplink



With myUplink you can control the installation – where and when you want. In the event of any malfunction, you receive an alarm directly to your e-mail or a push notification to the myUplink app, which allows you to take prompt action.

Visit myuplink.com for more information.

SPECIFICATION

You need the following in order for myUplink to be able to communicate with your F370:

- network cable
- Internet connection
- account on myuplink.com

We recommend our mobile apps for myUplink.

RANGE OF SERVICES

myUplink gives you access to various levels of service. The base level is included and, apart from this, you can choose two premium services for a fixed annual fee (the fee varies depending on the functions selected).

Service level	Basic	Premium extended history	Premium change settings
Viewer	X	X	X
Alarm	X	X	X
History	X	X	X
Extended history	-	X	-
Manage	-	-	X

MOBILE APPS FOR MYUPLINK

The mobile apps can be downloaded free of charge from where you usually download your mobile apps. Logging into the mobile app is performed using the same account details as on myuplink.com.

NIBE SMART PRICE ADAPTION™



Smart Price Adaption is not available in all countries. Contact your NIBE dealer for more information.

Smart Price Adaption adjusts the system's consumption according to the time of day when electricity prices are lowest. This allows for savings, provided that an hourly rate subscription has been signed with the electricity supplier.

The function is based on hourly rates for the coming day being downloaded via myUplink. To use the function, an Internet connection and account on myUplink are necessary.

SMART HOME

When you have a smart home system that can communicate with myUplink, you can control the installation via an app by activating the "smart home" function.

By allowing connected units to communicate with myUplink, your heating system becomes a natural part of your homesmart home and gives you the opportunity to optimise the operation.

Remember that the "smart home" function requires myUplink in order to work.

Accessories

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

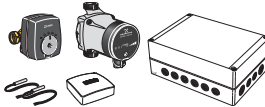
Not all accessories are available on all markets.

DOCKING KIT DEH

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

EXTRA SHUNT GROUP ECS

This accessory is used when F370 is installed in houses with two or more different heating systems that require different supply temperatures.



ROOM UNIT RMU 40

The room unit is an accessory with a built-in room sensor, which allows the control and monitoring of F370 to be carried out in a different part of your home to where it is located.



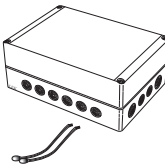
SOLAR PACKAGE NIBE PV

NIBE PV is a modular system comprising solar panels, assembly parts and inverters, which is used to produce your own electricity.



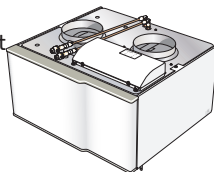
ACCESSORY BOARD AXC 20

Accessory board for hot water circulation, damper for frost protection and/or external heating medium pump.



SUPPLY AIR MODULE SAM

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



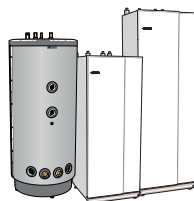
SAM 42

(approx. 28-70 l/s)

WATER HEATER/ACCUMULATOR TANK

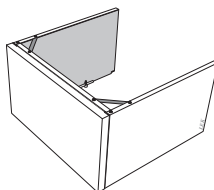
For information regarding suitable water heaters, see nibe.eu.

Some models of water heater require a docking kit.



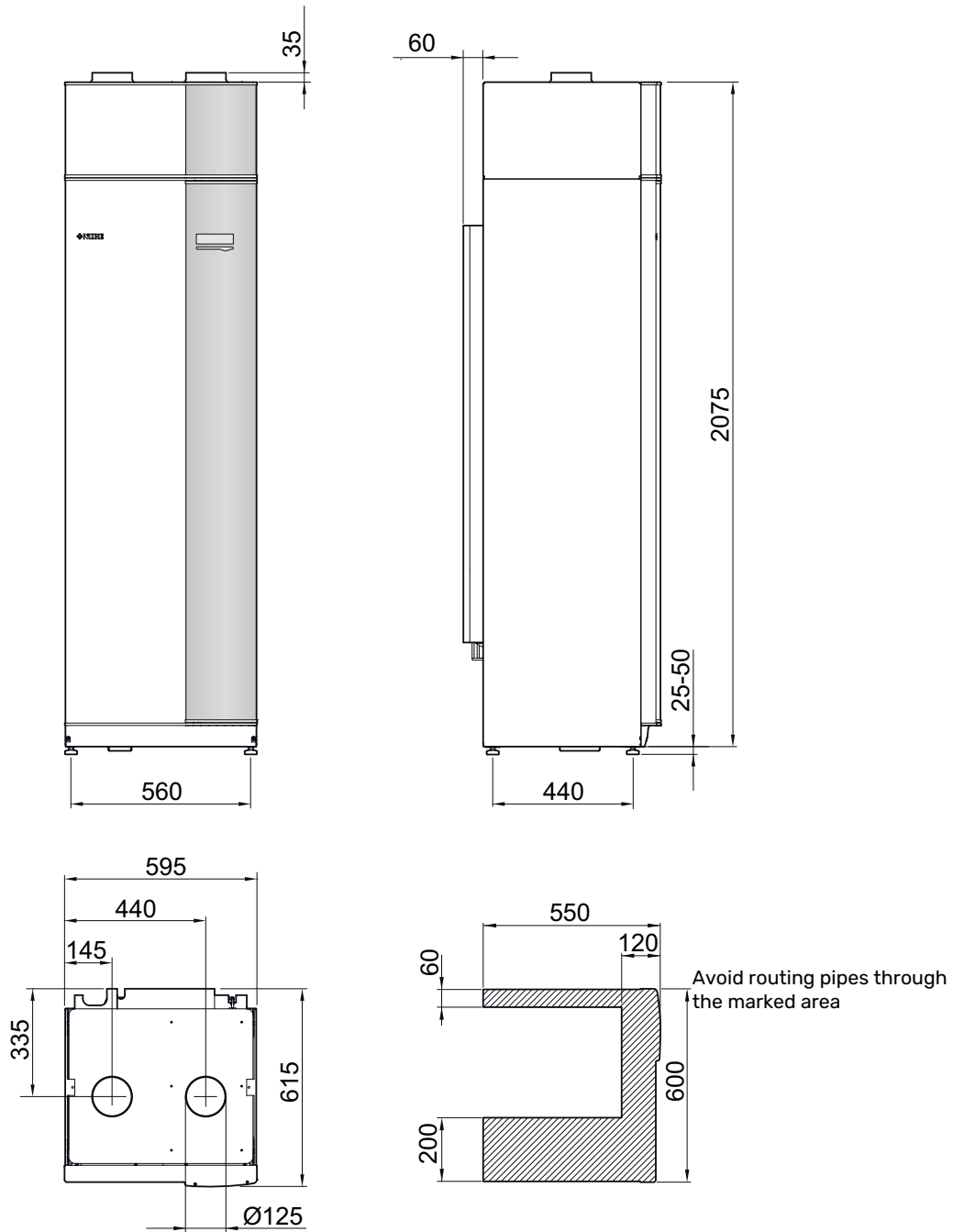
TOP CABINET TOC 30

Top cabinet, which conceals any pipes/ventilation ducts.



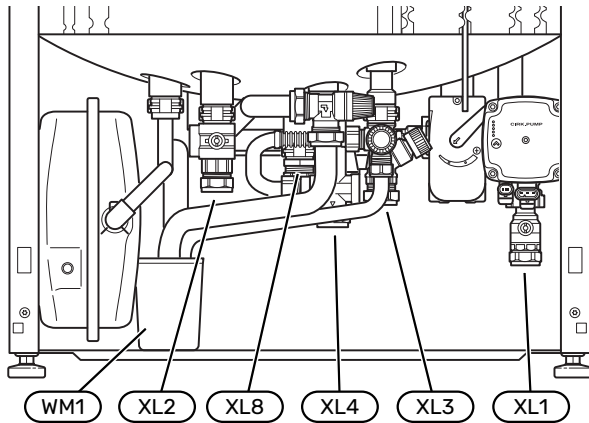
Technical data

Dimensions

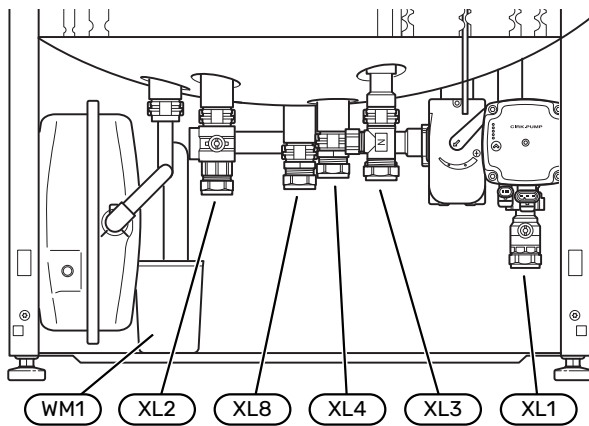


Pipe connections

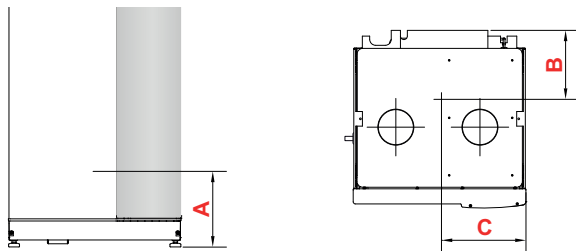
STAINLESS



ENAMEL



SETTING OUT DIMENSIONS



Stainless

Connection		A	B	C
XL1 Heating medium supply	(mm)	135	360	65
XL2 Heating medium return	(mm)	215	425	385
XL3 Cold water	(mm)	200	455	215
XL4 Hot water	(mm)	180	405	265
XL8 Docking	(mm)	220	290	300
WM1 Overflow cup	(mm)	95	205	430

Enamel

Connection		A	B	C
XL1 Heating medium supply	(mm)	135	360	65
XL2 Heating medium return	(mm)	215	425	385
XL3 Cold water	(mm)	230	455	215
XL4 Hot water	(mm)	235	405	265
XL8 Docking	(mm)	220	290	300
WM1 Overflow cup	(mm)	95	205	430

PIPE DIMENSIONS

Connection		
XL1-XL2 Heating medium ext \emptyset	(mm)	22
XL3 Cold water ext \emptyset	(mm)	22
XL4 Hot water ext \emptyset	(mm)	22
XL8 Docking ext. \emptyset	(mm)	22
WM2 Overflow water discharge	(mm)	32

Technical specifications

The following data only applies to F370 3x400 V. F370 is also available in voltage version 3x230 V. Contact your NIBE dealer for more information.

Type		Stainless	Enamel
Output data according to EN 14 511			
Heating capacity (P_H)/COP ¹	kW/-	2.18 / 3.93	
Heating capacity (P_H)/COP ²	kW/-	2.03 / 3.24	
Heating capacity (P_H)/COP ³	kW/-	1.88 / 2.74	
Rated heating output ($P_{designh}$)	kW	3	
SCOP cold climate, 35°C / 55 °C		3.55 / 2.98	
SCOP average climate, 35 °C / 55 °C		3.35 / 2.83	
Additional power			
Max power, immersion heater (factory setting)	kW	10.3 (5.6)	10.3 (5.6)
Energy rating, average climate			
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+	
Declared tap profile/efficiency class hot water heating ⁶		L / A	L / A
Electrical data			
Rated voltage	V	400 V 3N ~ 50Hz	
Enclosure class		IP 21	
Equipment Compliant with IEC 61000-3-12			
For Connection Design Purposes, Compliant with IEC 61000-3-3 technical requirements			
Refrigerant circuit			
Type of refrigerant		R290	
Volume	kg	0.4	
Heating medium circuit			
Opening pressure, safety valve	MPa/bar	0.25 / 2.5	
Max temperature, supply line (factory setting)	°C	70 (60)	
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	
Noise			
Sound effect level according to EN 12 102 ($L_{W(A)}$) ⁷	dB(A)	46.5-48.0	
Sound pressure level in the installation room ($L_{P(A)}$) ⁸	dB(A)	42.5-44.0	
Water heater and heating section			
Volume heating section	litre	70	
Volume, hot water heater	litre	170	
Max pressure in hot water heater	MPa/bar	1.0 / 10.0	
Capacity hot water heating ⁹			
Tap volume 40°C according to EN 255-3($V_{max.}$)	litre	248	
Tap volume 40°C according to EN 16 147($V_{max.}$)	litre	217	
Miscellaneous			
Required ceiling height	mm	2,170	
Weight	kg	195	205
Part No.		066 056	066 057

¹ A20(12)W35, exhaust air flow 56 l/s (200 m³/h)

² A20(12)W45, exhaust air flow 42 l/s (150 m³/h)

³ A20(12)W55, exhaust air flow 31 l/s (110 m³/h)

⁴ Scale for the product's efficiency class room heating: A+++ to D.

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 Scale for efficiency class hot water: A+ to F.

⁷ The value varies with the selected fan curve. For more detailed sound data, including sound to channels, visit nibe.eu.

⁸ The value can vary with the room's damping capacity. These values apply at a damping of 4 dB.

⁹ A20(12) exhaust air flow 42 l/s (150 m³/h). Comfort mode normal

Sustainable energy solutions since 1952

NIBE has been manufacturing energy-efficient and sustainable climate solutions for your home for 70 years. It all began in Markaryd, in the southern Swedish province of Småland, and we recognise our Nordic heritage by utilising the power of nature. We combine renewable energy with smart technology to offer efficient solutions, allowing us to work together to create a more sustainable future.

Regardless of whether it is a chilly winter's day or a warm afternoon in the summer sun, we need a balanced indoor climate that allows us to enjoy a comfortable life, whatever the weather. Our extensive range of products supply your home with cooling, heating, ventilation and hot water, making it possible for you to create a pleasant indoor climate with little impact on the environment.

NIBE Energy Systems
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nibe.eu



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