

## Exhaust air heat pump

### **NIBE S735**

**The NIBE S735 is an intelligent inverter-controlled exhaust air heat pump with an integrated hot water heater, providing heating, hot water and ventilation efficiently and economically. It provides large savings as it automatically adapts to your home's heating needs.**

The NIBE S735 has a high seasonal performance factor, which results in low operating costs. Its low noise level, stylish design and compact size make it easy to put in place and install. Designed for new builds and also suitable for replacement. The NIBE S735 can be docked to other heat sources, and with the NIBE supply air module it is also suitable for homes with exhaust and supply air ventilation.

With integrated wifi and the possibility of connecting to wireless accessories, the S Series will become a natural part of your connected home. Smart technology adjusts the indoor climate automatically and gives you enjoy full control over the system via your smartphone or tablet. High comfort level and low energy consumption – and you're doing nature a favour at the same time.

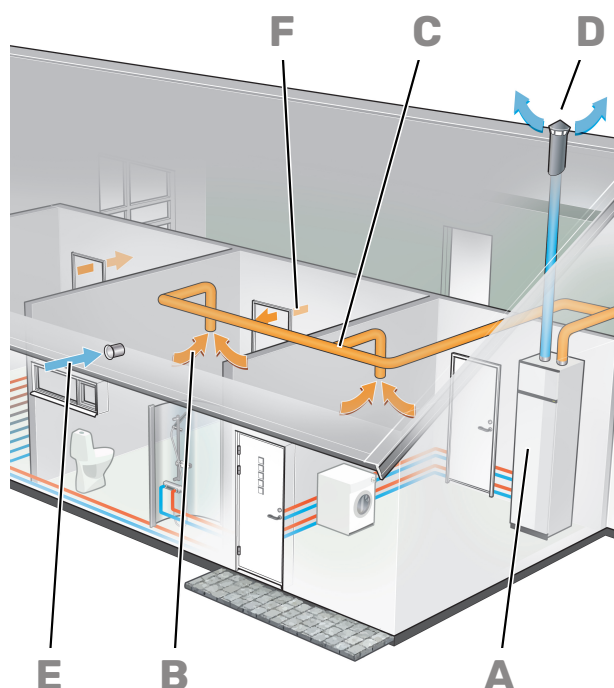


- **High seasonal performance factor and low operating costs for both new builds and replacement.**
- **Low noise level, stylish design and compact size make it easy to put in place and install.**
- **User-friendly touchscreen and integrated wireless connection with energy-saving smart technology for a high level of comfort.**

# This is how S735 works

## Principle

### EXHAUST AIR INSTALLATION



S735 is an exhaust air heat pump with integrated fan and a water heater provided with corrosion protection in the form of copper, enamel or stainless steel. There is an integrated immersion heater used as an additional heater when it becomes really cold outside.

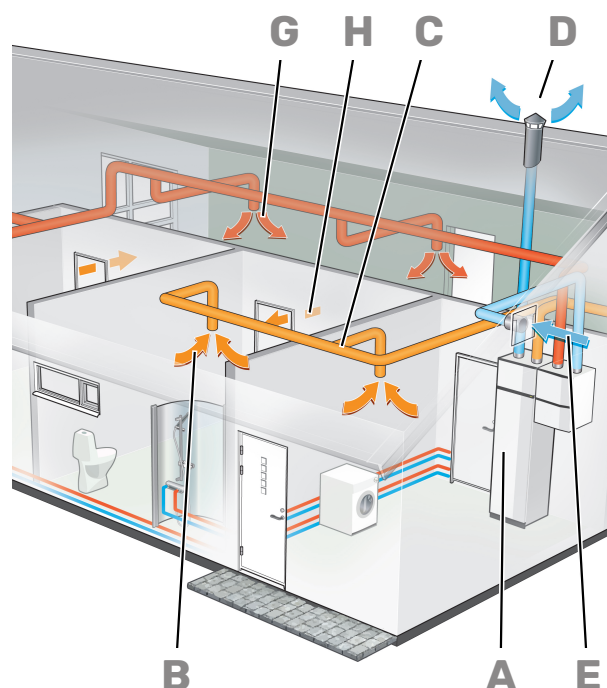
Energy is recovered from the ventilation air and supplied to the heat pump, which significantly reduces the energy costs. The device ventilates the house, supplies heat and produces domestic hot water.

Together with the supply air module SAM, the installation constitutes a complete exhaust and supply air system with balanced ventilation.

S735 is intended for low-temperature dimensioned radiator circuits and/or underfloor heating. S735 is suitable in houses or equivalent, both in new-builds and as a replacement.

S735 works based on the floating condensing principle.

### EXHAUST AND SUPPLY AIR INSTALLATION



- A** S735 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 S735.
- D** The air is released when it has passed S735. The air temperature has then dropped since S735 has extracted the energy in the air.
- E** Outdoor air is brought in, either directly into the house or via a supply air module.
- F** Air is diverted from rooms with outdoor air devices to rooms with exhaust air valves.
- G** Heated air is blown out into rooms with supply air valves.
- H** Air is transferred from rooms with supply air valves to rooms with exhaust air valves.

## Design

Control of S735 is designed to ensure easy operation while always enabling the heat pump to run as efficiently as possible. S735 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.

S735 gives great savings thanks to a powerful, speed controlled compressor, which, with intelligent control, works with the most favourable temperature conditions.

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.

The internal immersion heater's power is easy to adjust via the display, and the heat pump can be blocked.

## Principle of operation, cooling circuit

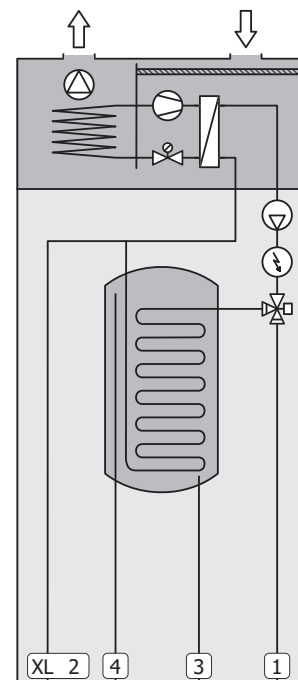
When the room temperature exhaust air, and in certain cases outdoor air, passes through the evaporator, the refrigerant evaporates because of its low boiling point. In this way, the energy in the air is transferred to the refrigerant.

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 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.



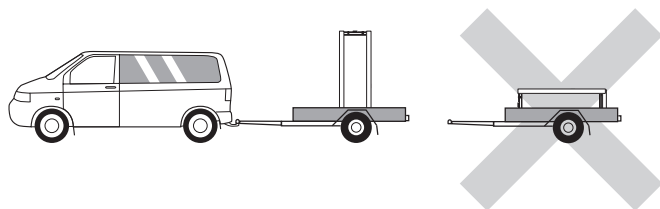
XL1	Connection, heating medium flow
XL2	Connection, heating medium return
XL3	Cold water connection
XL4	Hot water connection

# Good to know about S735

## Transport and storage

S735 should be transported and stored vertically in a dry place.

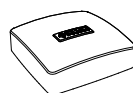
Ensure that the heat pump cannot fall over during transport.



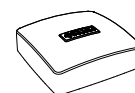
However, the S735 can be carefully laid on its back when being moved into the building. The centre of gravity is in the top section.

## Supplied components

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



Outdoor temperature sensor



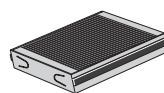
Room sensor



Earth cabling (2 pcs)



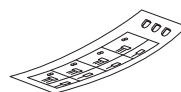
Vent hose  
(length 4 m)



Extra air filter



Current sensor



Label for external control  
voltage for the control sys-  
tem

## LOCATION

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

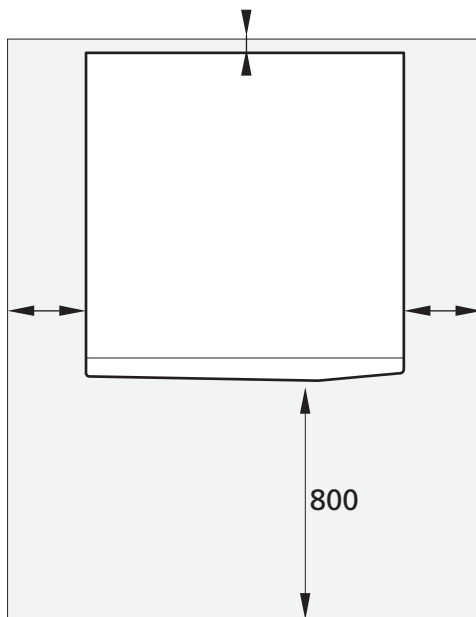


## Installation and positioning

- Position S735 on a solid foundation indoors that withstands water and the weight of the product.
- Since water comes from S735, the area where S735 is located must be equipped with floor drainage.
- Because water comes from S735, 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

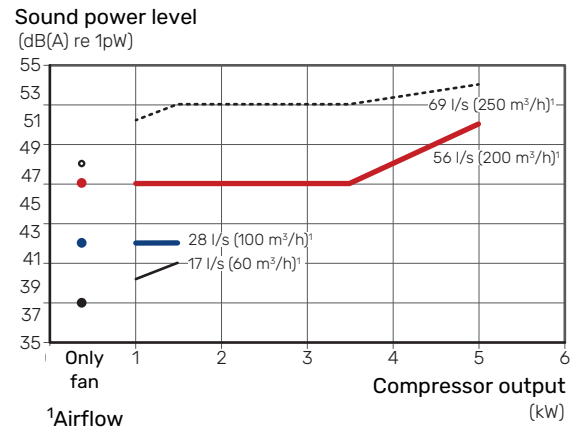
Leave a free space of 800 mm in front of the product. Leave free space between S735 and wall/other machinery/fittings/cables/pipes etc. It is recommended that a space of at least 10 mm is left to reduce the risk of noise and of any vibrations being propagated.



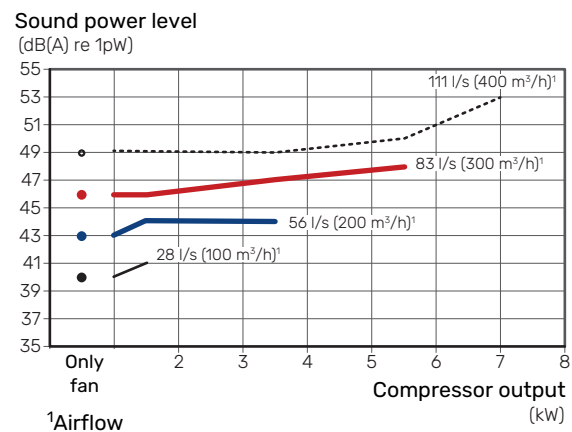
Ensure that there is sufficient space (300 mm) above S735 for connecting ventilation ducts.

## SOUND POWER LEVEL

### Sound power level S735-4 according to EN 12102



### Sound power level S735-7 according to EN 12102



For more detailed sound data, including sound to channels, visit [nibe.eu](http://nibe.eu).

# Installation

## Equipment

S735 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, S735, copper and stainless steel, is equipped with a filling and a safety valve. The hot water section in S735 copper and stainless steel is equipped with a set of valves comprising filling, non-return and safety valves.

## Maximum boiler and radiator volumes

S735 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 S735, is 285 litres at the above-mentioned pre-pressure.

## Inspection

S735 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.

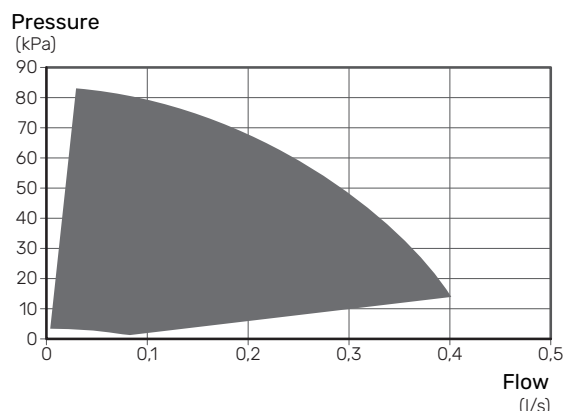
Pipe connections for cold and hot water as well as supply and return lines are fitted with 22 mm compression ring couplings.

### 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 S735 enamel, the heating system must be supplemented with a safety valve according to applicable standards.

## AVAILABLE EXTERNAL PRESSURE, HEATING SYSTEM

### Capacity, heating medium pump



## 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 without immersion heater

In water heaters without an immersion heater, the water is heated by the heat pump.

The water heater's flow is connected before S735.

For connection, a docking kit DEW is required.

### 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 S735.

## Ventilation



Connect S735 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 17 l/s (60 m<sup>3</sup>/h) for S735-4 or 25 l/s (90 m<sup>3</sup>/h) for S735-7.
- If the exhaust air temperature falls below 10 °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 reach -19 °C, the extract air duct has to 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).
- The extract air duct should, if possible, be routed up through the roof.
- 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.

## VENTILATION CONNECTIONS

S735 has two sizes of ventilation connection, 125 mm or 160 mm.

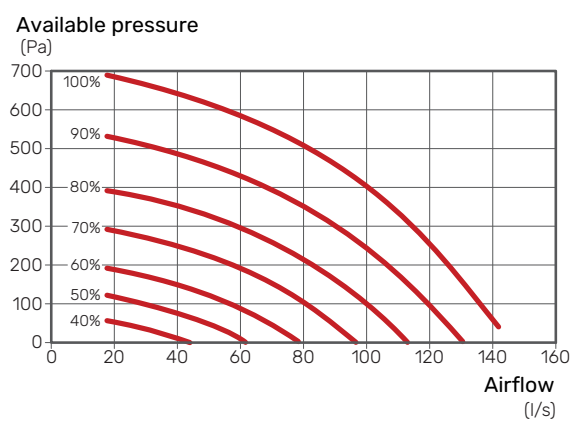
On delivery, the ventilation connections have the smaller dimension; if the larger dimension is required, the insulation rings placed in the connections must be removed.

Connect the heat pump to the duct system by installing a nipple (not enclosed) or other ventilation component in the ventilation connections.

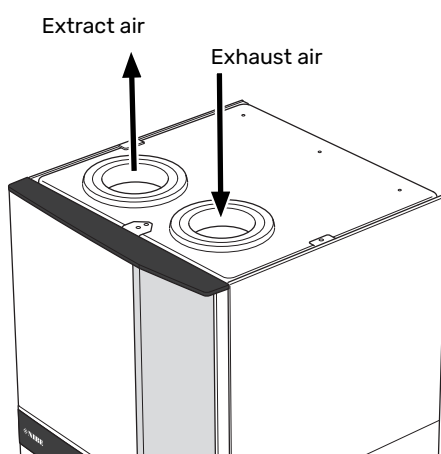
## SETTING THE FAN CAPACITY

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 selected heating curve setting. After adjustment, the correct amount of heat for the current outdoor temperature is supplied. The supply temperature will oscillate around the theoretically desired value.

### OWN CURVE

S735 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 S735 in holiday mode, which means that the lowest possible temperature is achieved without the risk of freezing.

## Additional heat only



S735 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



S735 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.

## 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](http://myuplink.com) for more information.

### SPECIFICATION

You need the following in order for myUplink to be able to communicate with your S735:

- wireless network or network cable
- Internet connection
- account on [myuplink.com](http://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	Premiumextended 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.

## WIRELESS UPDATES



When the heat pump is connected, there is the option to receive wireless updates. This provides the heat pump with new functions, giving a better experience. To receive wireless updates, you have to create an account on myUplink.

## 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](http://nibe.eu).

Not all accessories are available on all markets.

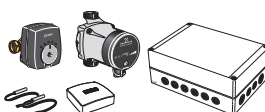
## SPLITTER KIT DKI S10

For split installation of S735.



## EXTRA SHUNT GROUP ECS

This accessory is used when S735 is installed in houses with two or more different heating systems that require different supply temperatures.



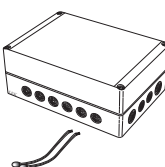
## SOLAR PACKAGE NIBE PV

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.

Select model based on the house supply air flow.

### SAM S42

(approx. 20-85 l/s)

### SAM S44

(approx. 42-125 l/s)



## WIRELESS ACCESSORIES

It is possible to connect wireless accessories to S735, e.g. room, humidity, CO<sub>2</sub> sensors.

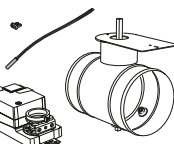
For more information, as well as a complete list of all available wireless accessories, see [myuplink.com](http://myuplink.com).



## OUTDOOR AIR MIXING OEK S20

OEK S20 is an accessory that enables S735 to operate with both exhaust air and outdoor air.

OEK S20 is connected to AUX; if additional AUX functions are wanted, accessory board AXC 20 is required.



## WATER HEATER/ACCUMULATOR TANK

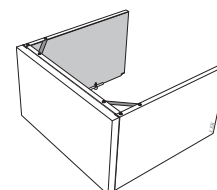
For information regarding suitable water heaters, see [nibe.eu](http://nibe.eu).

Some models of water heater require a docking kit.



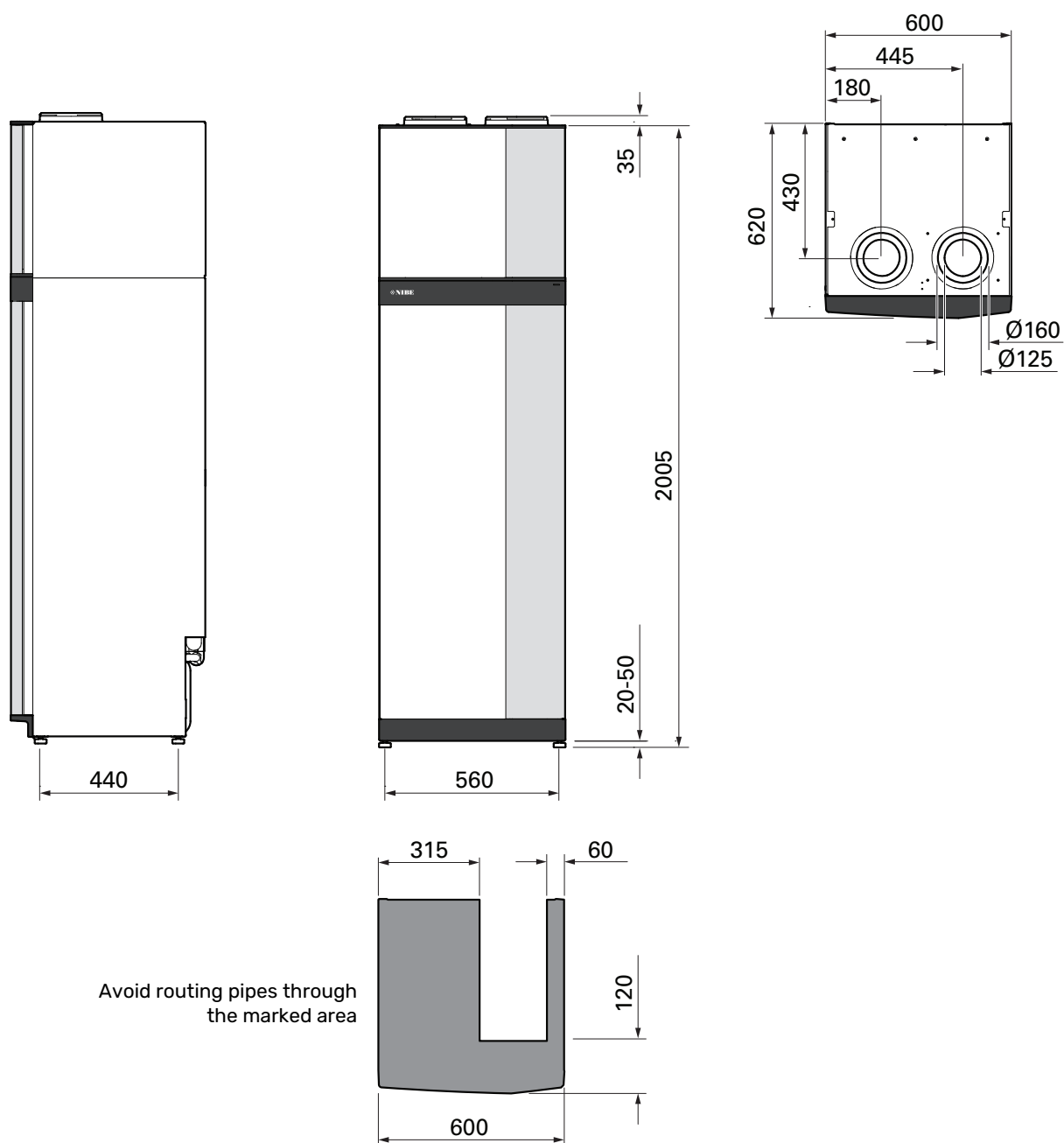
## TOP CABINET TOC 40

Top cabinet, which conceals any pipes/ventilation ducts.



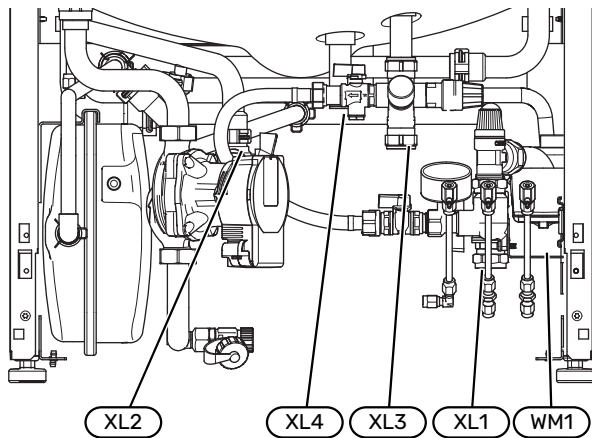
# Technical data

## Dimensions

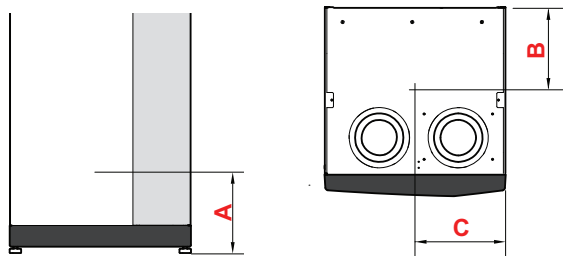


# Pipe connections

## COPPER



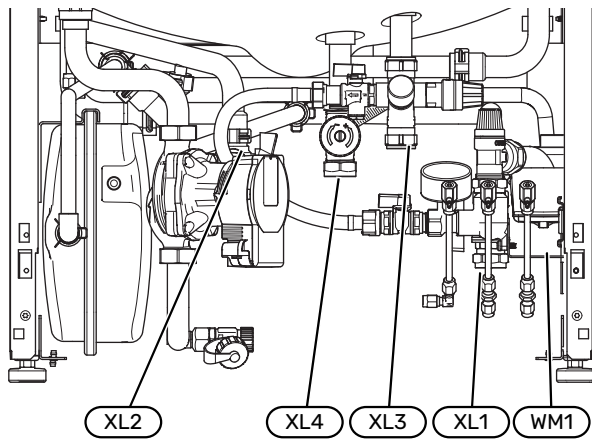
## SETTING OUT DIMENSIONS



### Copper

Connection		A	B	C
XL1 Heating medium supply	(mm)	115	280	105
XL2 Heating medium return	(mm)	180	275	370
XL3 Cold water	(mm)	240	445	195
XL4 Hot water	(mm)	255	400	260
WM1 Overflow cup	(mm)	185	275	50

## STAINLESS



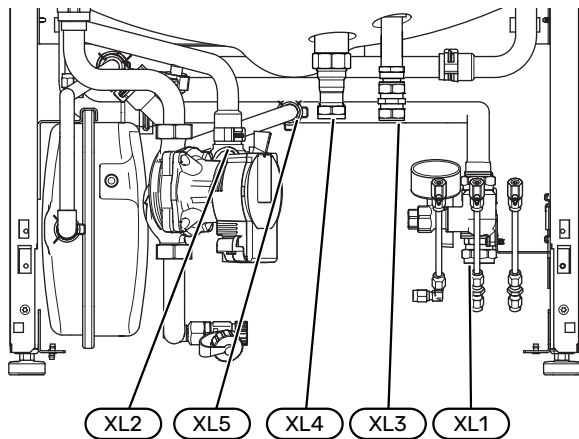
### Stainless

Connection		A	B	C
XL1 Heating medium supply	(mm)	115	280	105
XL2 Heating medium return	(mm)	180	275	370
XL3 Cold water	(mm)	250	445	195
XL4 Hot water	(mm)	225	400	250
WM1 Overflow cup	(mm)	185	275	50

### Enamel

Connection		A	B	C
XL1 Heating medium supply	(mm)	115	280	105
XL2 Heating medium return	(mm)	180	275	370
XL3 Cold water	(mm)	265	445	195
XL4 Hot water	(mm)	255	400	260
XL5 Hot water circulation	(mm)	300	370	260

## ENAMEL



## PIPE DIMENSIONS

Connection		
XL1-XL2 Heating medium ext Ø	(mm)	22
XL3 Cold water ext Ø	(mm)	22
XL4 Hot water ext Ø	(mm)	22
WM2 Overflow water discharge	(mm)	32

# Technical specifications

The following data only applies to S735 3x400 V. S735 is also available in voltage versions 1x230 V and 3x230 V. Contact your NIBE dealer for more information.

3x400 V	kW	4	7
Output data according to EN 14 511			
Heating capacity (P <sub>H</sub> )/COP	kW/-	1.01 / 3.41 <sup>1</sup>	1.16 / 3.90 <sup>2</sup>
Heating capacity (P <sub>H</sub> )/COP	kW/-	1.38 / 4.54 <sup>3</sup>	1.57 / 5.19 <sup>4</sup>
Heating capacity (P <sub>H</sub> )/COP	kW/-	4.22 / 3.18 <sup>5</sup>	5.37 / 2.55 <sup>6</sup>
Rated heating output (P <sub>designH</sub> )	kW	4	6
SCOP cold climate, 35°C / 55 °C		5.02 / 3.70	4.75 / 3.81
SCOP average climate, 35 °C / 55 °C		4.75 / 3.70	4.50 / 3.67
Additional power			
Max power immersion heater (copper/stainless steel/enamel)	kW	6.5/9.0/9.0	
Energy rating, average climate			
The product's efficiency class room heating, average climate 35 / 55 °C <sup>7</sup>		A+++ / A++	A+++ / A++
The system's efficiency class room heating, average climate 35 / 55 °C <sup>8</sup>		A+++ / A++	A+++ / A++
Efficiency class hot water heating/Declared tap profile <sup>9</sup>		A / XL	A / XL
Electrical data			
Rated voltage	V	400 V 3N ~ 50 Hz	
Enclosure class		IPX1B	
For Connection Design Purposes, Compliant with IEC 61000-3-3 technical requirements			
Equipment Compliant with IEC 61000-3-12			
WLAN			
2.412 - 2.484 GHz max power	dBm	11	
Wireless units			
2.405 - 2.480 GHz max power	dBm	4	
Refrigerant circuit			
Type of refrigerant		R290	
GWP refrigerant		3	
Volume	kg	0.3	0.42
CO <sub>2</sub> equivalent	ton	0.0009	0.00126
Heating medium circuit			
Max pressure in the heating medium circuit	MPa (bar)	0.25 (2.5)	
Opening pressure, safety valve	MPa (bar)	0.25 (2.5)	
Ventilation			
Min. airflow	l/s	17	25
Sound			
Sound effect level according to EN 12 102 (L <sub>W(A)</sub> ) <sup>10</sup>	dB(A)	39-47	40-53
Sound pressure level in the installation room (L <sub>P(A)</sub> ) <sup>11</sup>	dB(A)	35-43	36-49
Water heater and heating section			
Volume, hot water heater	litre	178	
Max pressure in hot water heater	MPa (bar)	1.0 (10)	
Opening pressure, safety valve	MPa (bar)	0.9 (9)	
Capacity, hot water heating according to EN 16 147			
Tap volume 40°C (V <sub>max</sub> ) <sup>12</sup>	litre	223 - 264	
COP (COP <sub>t</sub> )		2.80 <sup>13</sup>	2.76 <sup>14</sup>
Idle loss (P <sub>es</sub> )	W	56 <sup>13</sup>	69 <sup>14</sup>
Miscellaneous			
Ceiling height	mm	2170	
Weight (copper/stainless steel/enamel)	kg	216 / 200 / 235	229 / 213 / 248
Part no. (copper/stainless steel/enamel)		066 126 / 066 128 / 066 127	066 132 / 066 134 / 066 133

<sup>1</sup> A20(12)W35, frånluftsflöde 17 l/s (61 m<sup>3</sup>/h) min kompressorfrekvens

<sup>2</sup> A20(12)W35, frånluftsflöde 25 l/s (90 m<sup>3</sup>/h) min kompressorfrekvens

<sup>3</sup> A20(12)W35, frånluftsflöde 40 l/s (144 m<sup>3</sup>/h) min kompressorfrekvens

<sup>4</sup> A20(12)W35, frånluftsflöde 70 l/s (252 m<sup>3</sup>/h) min kompressorfrekvens

<sup>5</sup> A20(12)W35, frånluftsflöde 70 l/s (252 m<sup>3</sup>/h) max kompressorfrekvens

<sup>6</sup> A20(12)W45, frånluftsflöde 70 l/s (252 m<sup>3</sup>/h) max kompressorfrekvens

<sup>7</sup> Scale for the product's efficiency class room heating: A+++ to D.

<sup>8</sup> 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.

<sup>9</sup> Scale for efficiency class hot water: A+ to F.

<sup>10</sup> The value varies with the selected fan curve. For more detailed sound data, including sound to channels, visit nibe.eu.

<sup>11</sup> The value can vary with the room's damping capacity. These values apply at a damping of 4 dB.



<sup>12</sup> The value varies depending on the choice of demand mode ("Small", "Medium" or "Large")

<sup>13</sup> A20(12) frånluftsflöde 48 l/s (174 m<sup>3</sup>/h). Varmvattenbehov "Small"

<sup>14</sup> A20(12) frånluftsflöde 67 l/s (240 m<sup>3</sup>/h). Varmvattenbehov "Small"

# Sustainable energy solutions since 1952

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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.

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