



STRONG AS A VIKING.

- Efficient scroll compressor that operates at temperatures down to -25°C.
- The compressor uses EVI technology, which means improved performance in both hot and cold weather conditions.
- Manufactured in two sizes: 7 and 9 kW.
- High temperature range:
 - Supply temperature max 65 °C (down to -10 °C) linear to 63 °C (from -10 °C to -25 °C)
 - Return line temperature 55 °C
- Automatic 2-step capacity regulator for the fan and compressor.
- Integrated condensation water trough that together with condensation water pipe KVR 10 prevents icing.
- Integrated intelligent control for optimum control of the heat pump. F2030 is started by a start signal from the NIBE indoor module or thermostat.
- The material has a long service life and is designed to withstand the Nordic outdoor conditions.
- F2030 can also be used together with most electric boilers, oil boilers or similar.
- F2030 can be controlled from a specially designed controller, SMO. SMO connects and disconnects the additional heat and controls switching between room heating and hot water heating.
- F2030 can also be docked to indoor unit VVM 310, VVM 320 or VVM 500 (accessory). VVM 310/VVM 320/VVM 500 contains controls and consists of a water heater and additional heater in the form of an electric boiler. F2030 together with VVM 310, VVM 320 or VVM 500 make up a complete heating installation.

NIBE F2030

NIBE™ F2030 is an air/water heat pump, specially designed for the Nordic climate. F2030 utilises the outside air so there is no need for bore holes or coils in the ground. F2030 is designed to be docked to water borne heating systems.

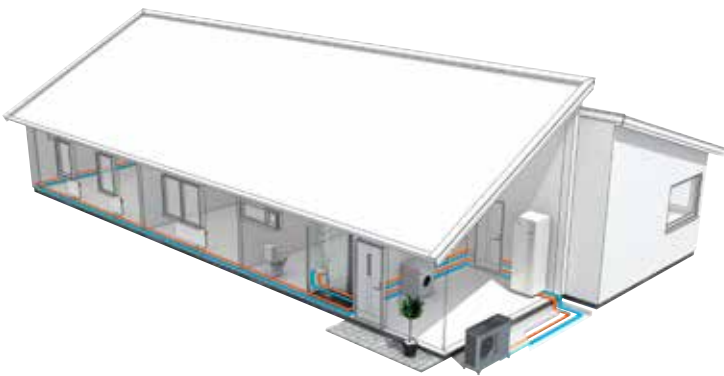
Please visit www.nibe.eu for further information.

GOOD TO KNOW ABOUT NIBE™ F2030

Principle of operation

This is a simplified version of how it works. The outdoor air is drawn into the heat pump and meets a closed system. The system contains a refrigerant with the capacity to turn into gas at a very low temperature.

Under high pressure, a compressor considerably increases the temperature of the refrigerant, which is now gaseous. Then, using a condenser, the heat is transferred to the house's heating system, while at the same time the refrigerant reverts to liquid form, ready to turn into gas once more and to collect new heat energy.



Maintenance

F2030 is equipped with control and monitoring equipment, however some exterior maintenance is still necessary.

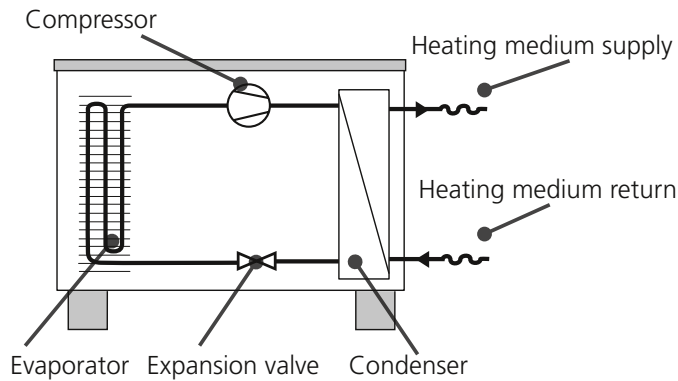
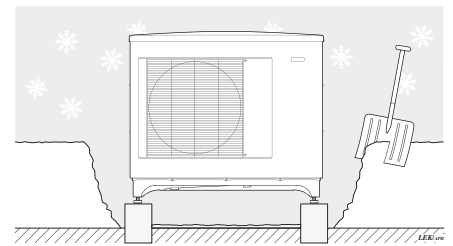
Make regular checks throughout the year that the grilles are not clogged by leaves, snow or anything else.

Strong wind combined with heavy snowfall can block the intake and exhaust air grilles. Make sure that there is no snow on the grilles.

The condensation water trough and drain pipe may require cleaning from leaves or similar during the year.

If necessary the outer casing can be cleaned using a damp cloth.

Care must be exercised so that the heat pump is not scratched when cleaning. Avoid spraying water into the grille or the sides so that water penetrates into F2030. Prevent F2030 coming into contact with alkaline cleaning agents.



GOOD TO KNOW ABOUT NIBE™ F2030

Transport and storage

F2030 should be transported and stored vertically.

Control

F2030 is equipped with an integrated electronic controller that handles all functions necessary for heat pump operations. Accordingly, defrosting, stop at max/min temperature, connection of the compressor heater as well as enabling the heater for the drip pan, monitoring of motor protection and pressure switches are controlled. The number of starts and the operating time can also be read.

The integrated controller is set during installation and can be used during a service. Under normal operation conditions the home owner does not need to have access to the controller.

F2030 has an integrated electronic return line sensor that limits the return temperature.

F2030 is switched on/off via signals from other control equipment or a thermostat. If F2030 is controlled from the NIBE indoor module the controls are described in the instructions supplied.

Sound pressure levels

F2030 is usually placed next to a house wall, which gives directed sound distribution that should be considered. Accordingly, you should always attempt to find a placement on the side that faces the least sound sensitive neighbouring area.

The sound pressure levels are further affected by walls, bricks, differences in ground level, etc and should therefore only be seen as guide values.

F2030 works in summer at a low fan speed and at other times at a high fan speed.

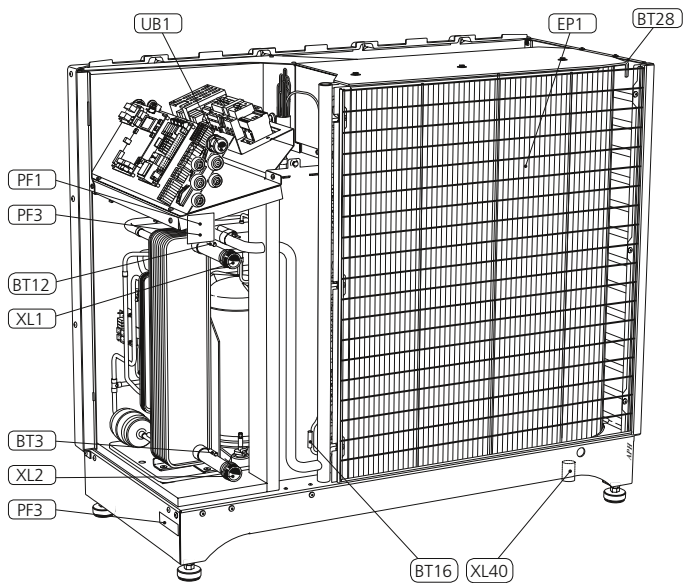
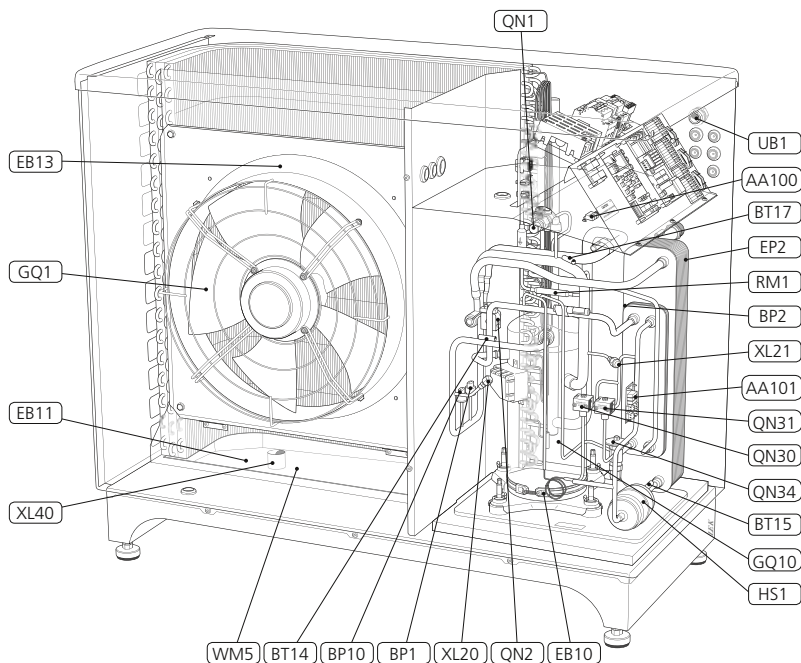
Type		F2030-7		F2030-9	
Sound power level, according to EN12102 at 7/45	Lw(A)	51/59		51/59	
Fan speed		Low	High	Low	High
Max sound pressure level at 2 m*	dB(A)	37	45	37	45
Max sound pressure level at 6 m*	dB(A)	27.5	35.5	27.5	35.5
Max sound pressure level at 10 m*	dB(A)	23	31	23	31

* Free field

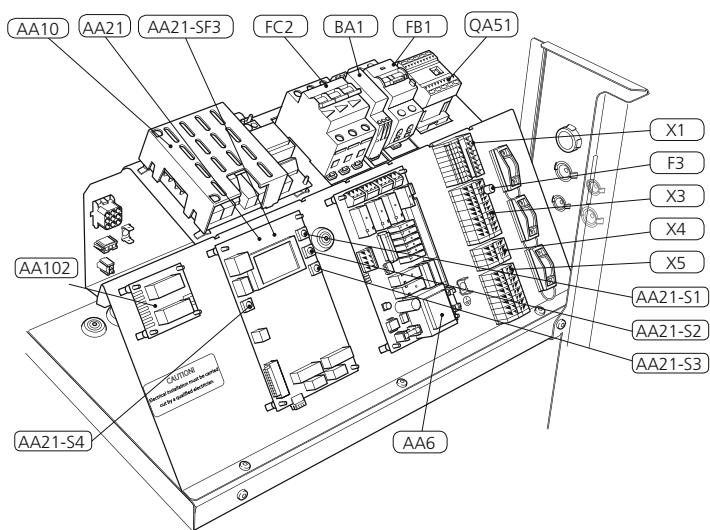


GOOD TO KNOW ABOUT NIBE™ F2030

Equipment



Elpanel



GOOD TO KNOW ABOUT NIBE™ F2030

List of components

Pipe connections

XL1	Connector, heating medium out of F2030, G1 (28 mm)
XL2	Connector, heating medium in to F2030, G1 (Ø28 mm)
XL20	Service connection, high pressure
XL21	Service connection, low pressure
XL40	Connection, drip tray drain (Ø40 mm)

Sensors etc.

BP1	High pressure pressostat (29 bar)
BP2	Low pressure pressostat
BP10	High pressure pressostat (32 bar)
BT3	Temperature sensor, return line
BT12	Temperature sensor, condenser supply line
BT14	Temperature sensor, hot gas
BT15	Temperature sensor, fluid pipe
BT16	Temperature sensor, evaporator
BT17	Temperature sensor, suction gas
BT28	Temperature sensor, ambient

Electrical components

AA6	Relay card with power supply unit
AA10	Soft-start relay
AA21	Control card with display
S1	Plus button
S2	Minus button
S3	Enter button
S4	Reset button
SF3	Display contrast
AA100	Joint card, sensor
AA101	Joint card
AA102	Fan control board
BA1	Phase sequence monitor (3-phase)
EB10	Compressor heater

EB11	Drip tray heater
EB13	Cone heater
F3	Fuse for external heating cable (250 mA)
FB1	Automatic protection (10 A/30 mA)
FC2	Motor circuit breaker
GQ1	Fan
QA51	Contactors, main contactor
X1	Terminal block, incoming supply
X3	Terminal block, charge pump, external heater
X4	Terminal block, buzzer alarm
X5	Terminal block, thermostat, compressor blocking and communication indoor module.

Cooling components

EP1	Evaporator
EP2	Condenser
GQ10	Compressor
HS1	Drying filter
QN1	Expansion valve
QN2	4-way valve
QN30	Solenoid valve, fluid injection
QN31	Solenoid valve, subcooling
QN34	Expansion valve, subcooling
RM1	Non-return valve

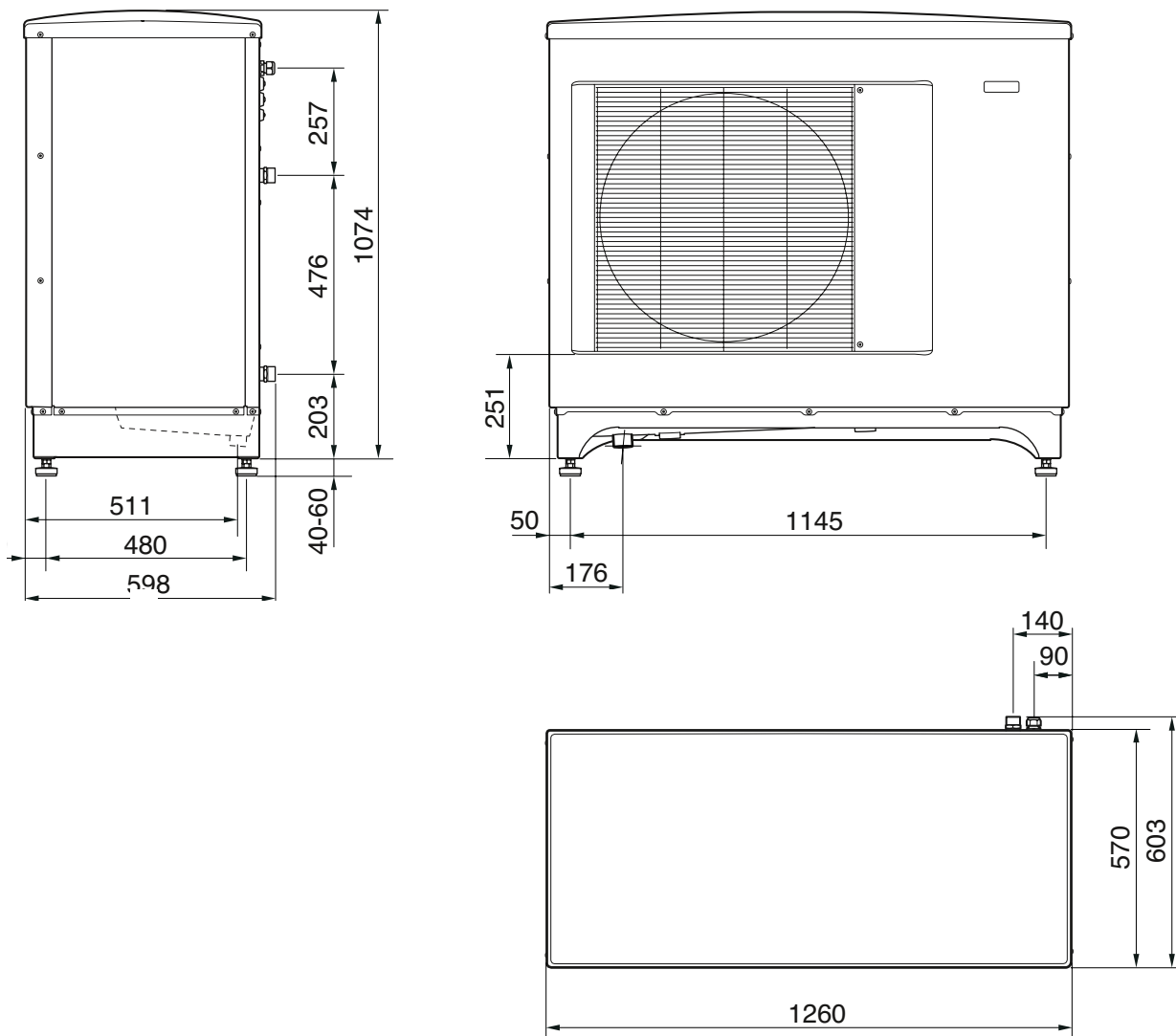
Other information

PF1	Type plate
PF3	Serial number
UB1	Cable gland, incoming supply
WM5	Condensation water seal

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

GOOD TO KNOW ABOUT NIBE™ F2030

Dimensions



There should be a minimum of 350 mm free space behind the heat pump for service work.
Leave a space of about 600 mm to the right of the heat pump for servicing.
An area of 1000 mm is required in front of and above the heat pump for service work.



INSTALLATION

F2030 can be installed in several different ways, for example with integrated out external control. The safety equipment must be installed in accordance with current regulations for all docking options.

Docking

When docking with F2030 a minimum available system volume of at least 20 litres water per kW output on the heat pump is recommended.

Inspection of the installation

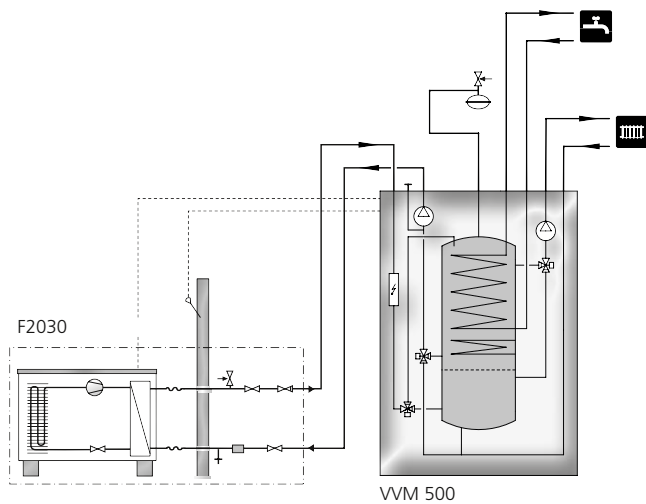
Current regulations require the heating installation to be inspected before it is commissioned. The inspection must be carried out by a suitably qualified person and should be documented. The above applies to closed heating systems. If the heat pump is replaced,

NIBE F2030 + NIBE VVM 310 / VVM 320 / VVM 500

F2030, together with VVM 310/VVM 320/VVM 500, creates a complete heating and hot water installation. VVM 310/VVM 320/VVM 500 is equipped with intelligent controls that currently makes it the most economical operator.

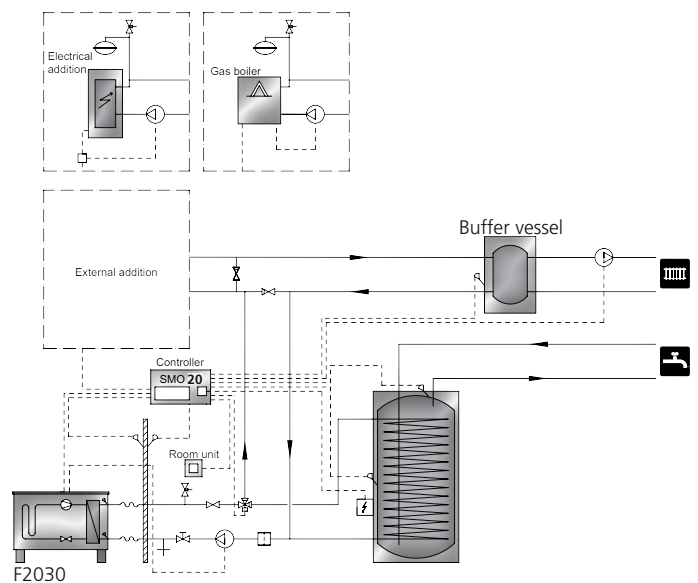
VVM 310/VVM 320/VVM 500 comes complete with an automatic by-pass, reversing valve, circulation pump, speed controlled charge pump and safety equipment. With VVM, pool heating is possible as well as extra shunt groups, i.e. several heating systems with different supply temperatures.

VVM 310/VVM 320/VVM 500 is designed for simple connection to F2030.



NIBE F2030 + NIBE SMO 05 / SMO 20 system

SMO 05 is a modern, simple control module that, together with a NIBE air/water heat pump NIBE F2030, a water heater and an auxiliary heat source, creates a complete installation.



INSTALLATION

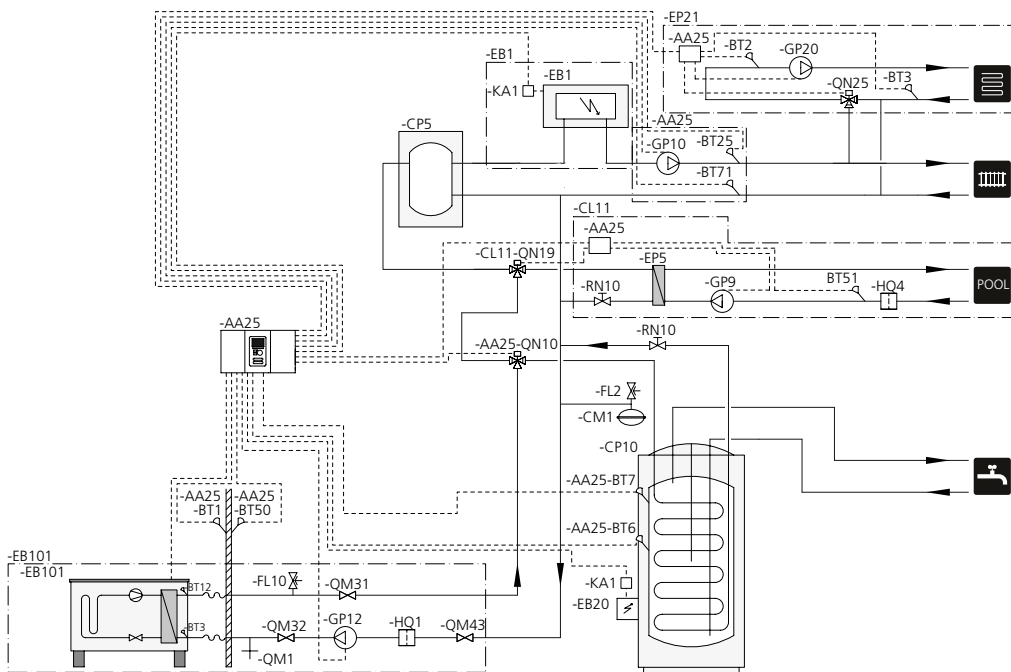
NIBE F2030 + NIBE SMO 40 system

SMO is an intelligent control module that, together with, F2030 and existing heating and hot water equipment, creates a complete unit. SMO manages compressor operation in F2030 and, if necessary, the additional power from any type of existing equipment that may be required.

SMO also manages automatic by-passes, load guards, speed controlled circulation pumps, reversing valves and sensors. With SMO, pool heating as well as extra shunt groups are possible, up to four supply temperatures.

Hot water control VST 11 (Accessory)

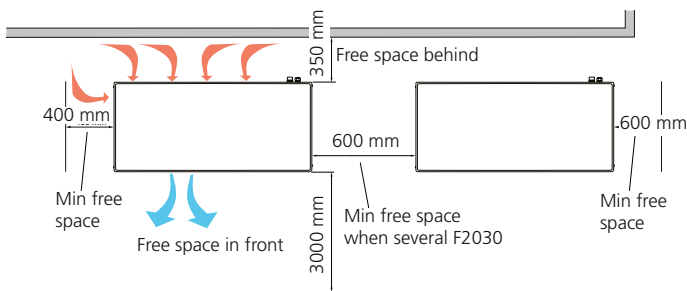
This accessory allows the heat pump F2030 with SMO to prioritise hot water charging on systems with floating condensing. This also requires a hot water accumulator, for example, NIBE VPA or NIBE VPB as well as a thermostat. When the hot water sensor for hot water temperature is connected, the control system is automatically activated for the charging functions. When there is a demand for hot water, the heat pump gives this priority and evotes its entire heat pump output to water heating. No room heat is produced in this mode.



INSTALLATION

Installation area

The distance between F2030 and the house wall must be at least 350 mm. Clearance above F2030 must be at least one metre.



Installation and positioning

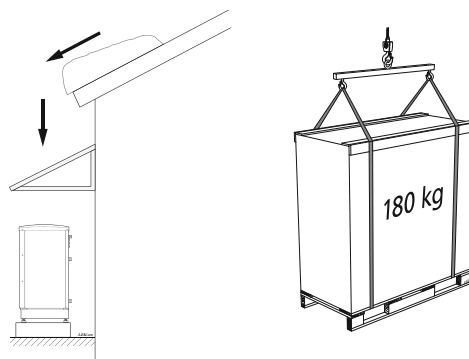
- Position F2030 outdoors on a firm and level surface that can take the weight, preferably a concrete foundation. If concrete slabs are used these should lie on tarmac or gravel.
- The concrete foundation or slabs must be positioned so that the lower edge of the evaporator is at the level of the average local snow depth, although a minimum of 300 mm.
- F2030 should not be positioned next to sensitive walls, for example, next to a bedroom.
- Also ensure that the placement does not inconvenience the neighbours.
- F2030 must not be placed so that recirculation of outdoor air can occur. This causes lower output and impaired efficiency.
- Förångaren kan behöva skyddas mot direkt vind/blåst.
- Placera F2030 skyddad från vind/blåst mot förångaren.
- Large amounts of condensation water as well as melt water from defrosting can be produced. Condensation water must be led off to a drain or similar.
- Care must be exercised so that the heat pump is not scratched during installation.

Do not place F2030 directly on the lawn or other non solid surface. If there is a risk of roof slides a protective roof or similar should be installed over the heat pump, pipes and wiring.

Lifting from the street to the installation location

If the surface allows, the simplest thing is to use a pallet truck to move F2030 to the installation area.

The centre of gravity is offset to one side (see print on packaging). If F2030 needs to be transported across soft ground, such as a lawn, we recommend that a crane is used that can lift the unit to the installation location. When F2030 is lifted with a crane the packaging must be undamaged and the load split by a boom, see the illustration above. If a crane vehicle cannot be used the F2030 can be transported on an extended sack truck. F2030 must be taken from the side marked "heavy side" and two people are required to lift F2030.



Lifting from the pallet to the final location

Before lifting, remove the packaging and the load anchor to the pallet. Place lifting straps around each foot. Four people are required for the lift from the pallet to the foundation, one for each lifting strap. It is not permitted to lift any part other than the feet.

INSTALLATION

Pipe installation

Pipe installation must be carried out in accordance with current norms and directives. F2030 works up to a return temperature of approximately 55 °C and an outgoing temperature from the heat pump of approximately 65 °C. When F2030 is not equipped with shutoff valves on the water side these must be fitted to facilitate future service.

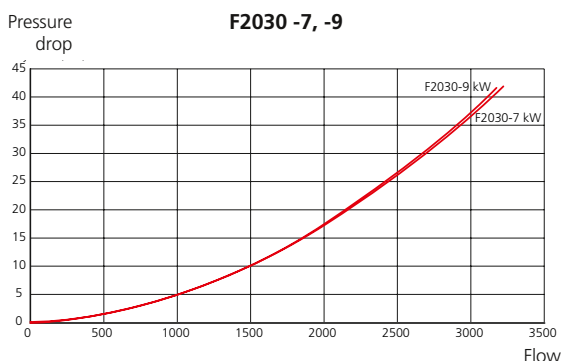
Pipe connection (heating medium)

- F2030 can be connected to the heating system according to one of the system solutions that can be downloaded from the website www.nibe.eu.
- The heat pump must be vented by the upper connection (XL1) using the venting nipple on the enclosed flexible hose.
- Install the supplied particle filter before the inlet, i.e. the lower connection (XL2) on F2030.
- All outdoor pipes must be thermally insulated with at least 19 mm thick pipe insulation.
- Install shutoff and drain valves so that F2030 can be emptied in the event of prolonged power failures.
- The supplied flexible hoses act as vibration dampers. The flexible hoses are fitted so a bend is created, thus acting as vibration damping.

Charge pump

The charge pump should also be controlled directly from F2030, terminal (X3), which takes the ambient temperature into consideration. Alternatively, the heat pump is connected to an intermediate circuit with a heat exchanger, pump and water with anti-freeze.

If the charge pump is controlled externally it must be operational, even if F2030 is not running, to prevent damage due to freezing.



Condensation water collection

The integrated condensation water trough is used to collect and lead away most of the condensation water from the heat pump. The condensation water (up to 50 litres/24 hrs) collected in the trough should be routed via a pipe (KVR 10) to an appropriate drain, it is recommended that the shortest outdoor stretch possible is used.

The KVR 10 accessory should be used to guarantee function.

That part of the pipe (KVR 10) that is not frost protected must be heated by the heating cable to prevent freezing.

Route the pipe (KVR 10) downward from F2030.

The drain of the condensation water pipe must be positioned at frost free depth or indoors (subject to local rules and regulations).

The installation must be equipped with a water seal where air circulation can occur in the condensation water pipe.

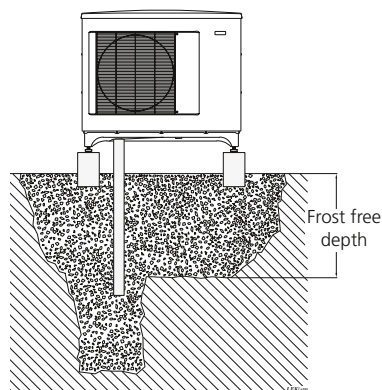


Recommended alternatives

Stone caisson

If the house has a cellar the stone caisson must be positioned so that condensation water does not affect the house. Otherwise the stone caisson can be positioned directly under the heat pump.

The outlet of the condensation water pipe must be at frost free depth.



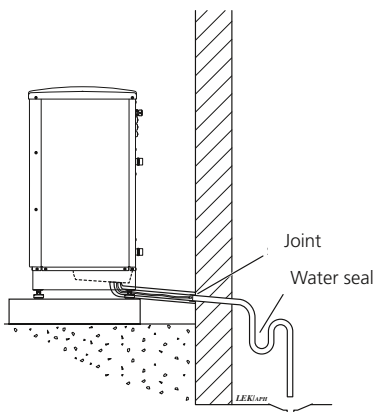
INSTALLATION

Drain indoors

The condensation water is lead to an indoor drain (subject to local rules and regulations).

Route the pipe downward from F2030.

The condensation water pipe must have a water seal to prevent air circulation in the pipe.

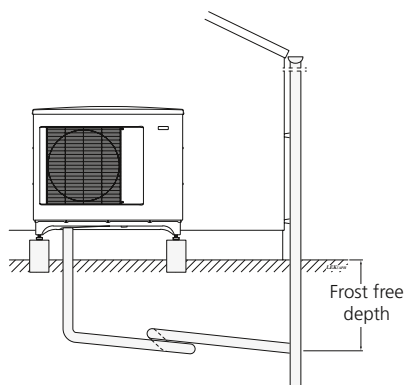


Gutter drainage

The outlet of the condensation water pipe must be at frost free depth.

Route the pipe downward from F2030.

The condensation water pipe must have a water seal to prevent air circulation in the pipe.



Electrical installation

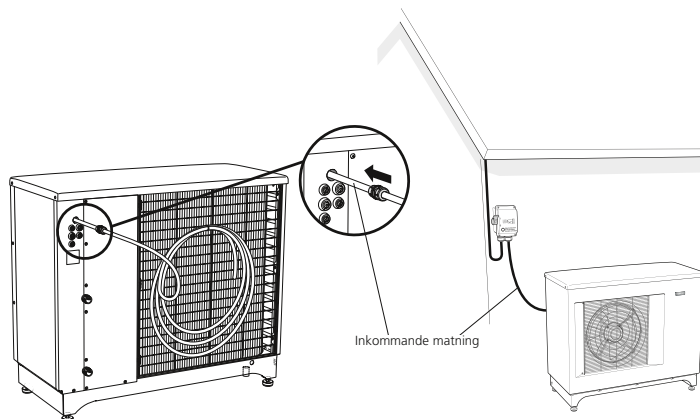
The routing of heavy current and signal cables must be from behind through the cable glands on the heat pump's right-hand side, seen from the front.

F2030 does not include an isolator switch on the incoming electrical supply. The heat pump's supply cable must be connected to a circuit-breaker with at least a 3 mm breaking gap. When the building is equipped with an earth-fault breaker the heat pump should be equipped with a separate one. Incoming supply must be 400 V 3NAC 50Hz via distribution boards with fuses.

Incoming feed cable is supplied and factory connected to terminal block -X1. Approx. 1.8 m cable is accessible outside the heat pump.

The terminal blocks can be accessed by removing the right hand side panel and the cover for the electrical box.

NOTE! Electrical installation and service must be carried out under the supervision of a qualified electrician. Electrical installation and wiring must be carried out in accordance with the stipulations in force.



TECHNICAL SPECIFICATIONS



3x400V			F2030-7	F2030-9
Output data according to EN14511 ²⁾				
10/35	Rated output / Supplied power / COP _{EN14511}	kW/kW/-	7,52/1,48/5,08	10,22/2,10/4,87
7/35	Rated output / Supplied power / COP _{EN14511}	kW/kW/-	6,35/1,32/4,81	8,10/1,77/4,58
7/45	Rated output / Supplied power / COP _{EN14511}	kW/kW/-	7,45/1,84/4,05	8,42/2,24/3,76
7/55	Rated output / Supplied power / COP _{EN14511}	kW/kW/-	7,61/2,25/3,38	10,33/3,02/3,42
2/35	Rated output / Supplied power / COP _{EN14511}	kW/kW/-	5,88/1,43/4,11	7,75/2,01/3,86
2/45	Rated output / Supplied power / COP _{EN14511}	kW/kW/-	6,10/1,81/3,37	8,08/2,48/3,26
-7/35	Rated output / Supplied power / COP _{EN14511}	kW/kW/-	4,84/1,44/3,36	6,46/1,98/3,26
-7/45	Rated output / Supplied power / COP _{EN14511}	kW/kW/-	4,96/1,77/2,80	6,84/2,43/2,81
-15/35	Rated output / Supplied power / COP _{EN14511}	kW/kW/-	4,18/1,39/3,01	5,77/1,88/3,07
-15/45	Rated output / Supplied power / COP _{EN14511}	kW/kW/-	4,35/1,72/2,53	6,09/2,32/2,63
Electrical data				
Rated voltage			400V 3NAC 50 Hz	
Max operating current, heat pump	A _{rms}	6,8	8,8	
Max operating current, compressor	A _{rms}	4,3	6,3	
Start current	A _{rms}	19,2	23,5	
Max permitted impedance at connection point ³⁾	Ohm	-	-	
Nominal output, fan (low/high)	W	48/68	41/68	
Fuse	A _{rms}	10	10	
Refrigerant circuit				
Type of refrigerant		R407C		
Type of compressor		Scroll		
Volume	kg	1,8	1,9	
Cut-out value pressostat HP	MPa	3.2 (32 bar)		
Difference pressostat HP	MPa	-0.7 (-7 bar)		
Cut-out value pressostat LP	MPa	0.02 (0.2 bar)		
Difference pressostat LP	MPa	0.06 (0.6 bar)		
Brine				
Air flow (low/high)	m ³ /h	2500/3000	2500/3000	
Min/Max air temp	°C	-25/40		
Defrosting system		Reversing		
Heating medium				
Min/Max system pressure heating medium	MPa	0.05/0.3 (0.5/3 bar)		
Min/Max flow	l/s	0,18/0,36	0,24/0,49	
Nominal flow ⁴⁾	l/s	0,18	0,24	
Internal pressure drop at nominal flow	kPa	2,1	3,9	
Max/Min heating medium temp continuous operation	°C	65/25		
Connection heating medium male thread	mm	G1 (Ø28mm)		

3x400V		F2030-7	F2030-9
Dimensions and weight			
Width	mm	1260	
Depth	mm	570	
Height with stand	mm	1134	
Weight (excl. packaging)	kg	160	165
Other information			
Enclosure class		IP 24	
Colour		Dark grey	

We reserve the right to make changes in design and dimensions without prior notice.

¹⁾ Power statements refer to compressor, fan and control at nominal heating medium flow. Operation that requires defrosting reduces the relationship between delivered and supplied power by about 10 %.

²⁾ Power statements including defrosting according to EN14511 at heating medium flow corresponding to DT=5 K at 7/45.

³⁾ Max. permitted impedance in the mains connected point in accordance with EN 61000-3-11. Start currents can cause short voltage dips that could affect other equipment in unfavourable conditions. If the impedance in the mains connection point is higher than that stated it is possible that interference will occur. If the impedance in the mains connection point is higher than that stated check with the power supplier before purchasing the equipment.

⁴⁾ Nominal flow corresponds to DT=10 K at 7/45.

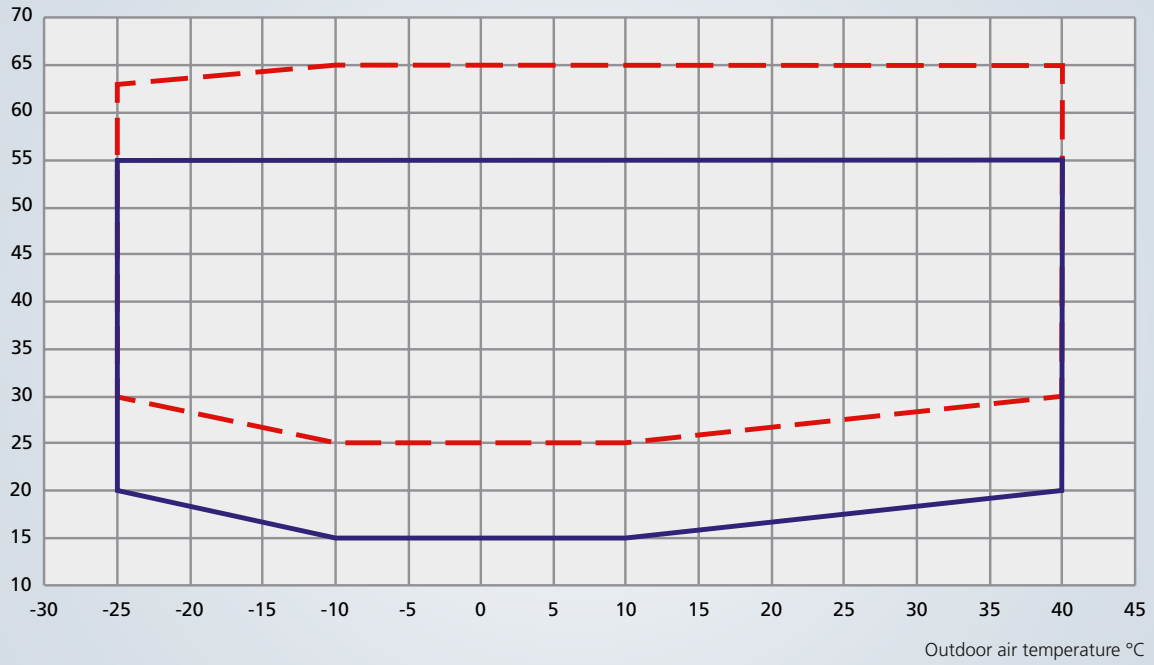
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TECHNICAL SPECIFICATIONS

Working area

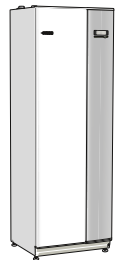
Water temperature °C



--- Flow temperature
— Return temperature

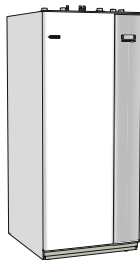


ACCESSORIES



VVM 310

Flexible indoor module
with systems for
F2030, F2040 and F2300



VVM 500

Flexible indoor module
with systems for
F2030, F2040 and F2300



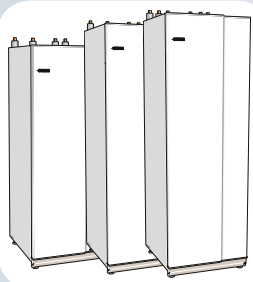
VPA

Double-jacketed
water heater
VPA 300/200
VPA 450/300
VPAS 300/450

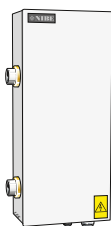


VPB

Water heater with charge coil
VPB 500
VPB 750-2
VPB 1000



VPB 200 CU VPB 300 CU VPBS 300 CU



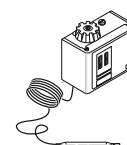
ELK 15

Immersion heater
15 kW



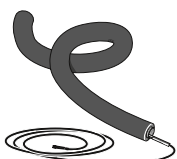
HR 10

Auxiliary relay



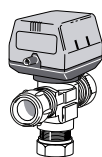
VT10

Heating thermostat



KVR10

Condensation water pipe,
different lengths.
KVR 10-10, 1m
KVR 10-30, 2,5 m
KVR 10-60, 5 m



Hot water control VST11

Reversing valve, Ø 28 mm, com-
pression ring
Max recommended charge
power, 17 kW



SMO10

Control box



SMO20

Control module



SMO40

Control module



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

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NIBE Energy Systems AB
Box 14
285 21 Markaryd
SWEDEN
Tel. +46 433 - 73 000
www.nibe.eu