CHB EN 2126-2
531224

USER AND INSTALLER MANUAL

Water heater
Accumulator tank
NIBE VPB S/ VPBS S

Table of Contents

1 Important information

Safety information

This manual describes installation and service procedures for implementation by specialists.

The manual must be left with the customer.

This appliance can be used by children aged from 8 years and above and persons with reduced physical, sensory or mental capabilities or lack of experience and knowledge if they have been given supervision or instruction concerning use of the appliance in a safe way and understand the hazards involved. Children shall not play with the appliance. Cleaning and user maintenance shall not be made by children without supervision.

This is an original manual. It may not be translated without the approval of NIBE.

Rights to make any design or technical modifications are reserved.

Water may drip from the safety valve's overflow pipe. The entire length of the overflow water pipe must be routed to a suitable drain and be inclined to prevent water pockets, and must also be frost-proof. The overflow pipe must be at least the same size as the safety valve. The overflow pipe must be visible and its mouth must be open and not located close to electrical components.

The safety valves must be actuated regularly to remove dirt and to check that they are not blocked.

SYMBOLS

NOTE

This symbol indicates danger to person or machine .

Caution

This symbol indicates important information about what you need to consider when installing, servicing or maintaining the installation.

MARKING

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

CE The CE mark is obligatory for most products sold in the EU, regardless of where they are made.

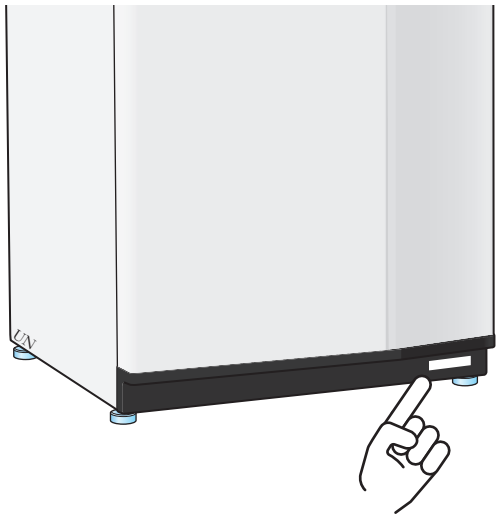
General

VPB S/ VPBS S is designed and manufactured according to good technical practice[1] in order to ensure safe usage.

[1] Pressure Equipment Directive 2014/68/EU Article 4 point 3.

Serial number

The serial number can be found at the bottom right of the front cover.



Caution

You need the product's (14 digit) serial number for servicing and support.

Recovery

Leave the disposal of the packaging to the installer who installed the product or to special waste stations.

Do not dispose of used products with normal household waste. It must be disposed of at a special waste station or dealer who provides this type of service.

Improper disposal of the product by the user results in administrative penalties in accordance with current legislation.

Compatible products

VPB S300 / VPBS S300

- S1155-6,12,16*
- F1126-8,12*
- F1145-6,8,10,12*
- S2125-8,12
- F2120-8,12,16
- F2040-8,12

For ground-source heat pumps, the recommendation applies for max. 10°C brine temperature and 53°C in the tank applies.

Caution

VPBS S300 is not available on all markets.

Caution

In installations with an air/water heat pump, a control module is also necessary.

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.

✔	*Description*	*Notes*	*Signa-ture*	*Date*
Heat pump (page 11)				
	Shut off valves			
Hot water (page 11)				
	Shut off valves			
	Mixing valve			
Cold water (page 11)				
	Shut off valves			
	Non-return valve			
	Safety valve			
Electricity (page 14)				
	Sensors			
	Electrical anode (VPB S/ VPBS S enamel only)			

2 For the User

Maintenance

SAFETY VALVE (NOT ENCLOSED)

You can find the safety valve on the incoming pipe (cold water) to VPB S/ VPBS S.

The water heater's safety valve sometimes releases a little water after hot water usage. This is because the cold water, which enters the water heater to replace the hot water, expands when heated causing the pressure to rise and the safety valve to open.

The function of the safety valve must be checked regularly. Perform checks as follows:

1. Open the valve.
2. Check that water is flowing through it.
3. Close the valve.

NOTE

If this pressurised water heater develops a fault, e.g. a flow of hot water from the overflow pipe, turn the heat pump off and contact your installer.

NOTE

Do not remove or adjust any components that are part of this pressurised water heater. Contact your installer!

TIP

The safety valve is not delivered with VPB S/ VPBS S. Contact your installer if you are unsure how to check it.

EMPTYING

Water heater

Draining is performed through the siphon (using hose) in the cold water connection (XL3).

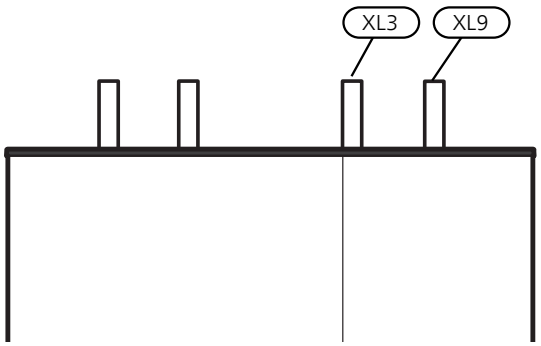
Charge coil

Draining is performed through the siphon (using hose) in the docking connection, return to heat pump (XL9).

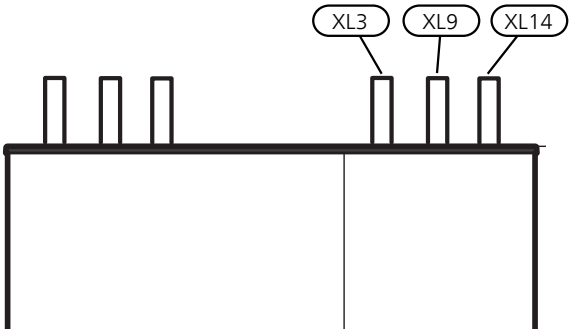
Solar coil

Draining is performed through the siphon (using hose) in the connection, return to solar heating system (XL14).

VPB S200 / VPB S300



VPBS S300



SERVICE

If servicing is required, contact your installer for suitable measures.

Caution

You need the product's (14 digit) serial number for servicing and support.

Servicing should only be carried out by persons with the necessary expertise.

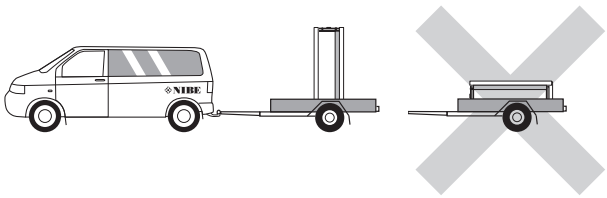
When replacing components on VPB S/ VPBS S only replacement parts from NIBE may be used.

3 For the Installer

Delivery and handling

TRANSPORT

VPB S/ VPBS S should be transported and stored vertically in a dry place. The VPB S/ VPBS S may, however, be carefully laid on its back when being moved into a building.

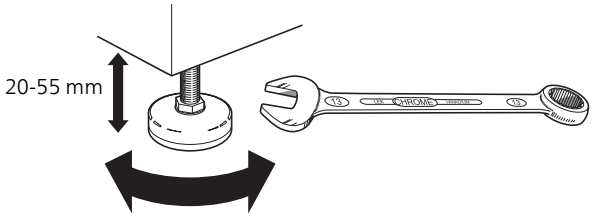


ASSEMBLY

The water heater is only designed for upright installation.

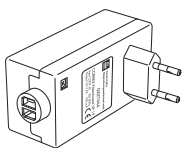
The water heater's installation area should always maintain a temperature of at least 10 °C (frost-free) and be provided with a floor drain.

Position VPB S/ VPBS S on a firm base that can take the weight, preferably on a concrete floor or foundation. Use the product's adjustable feet to obtain a horizontal and stable set-up.



SUPPLIED COMPONENTS

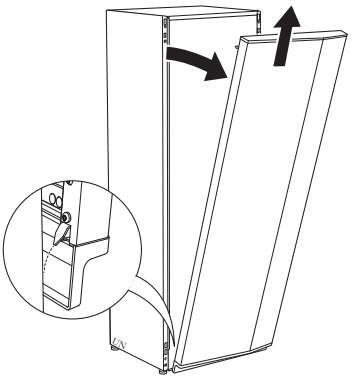
VPB S/ VPBS S Enamel



1 x Potentiostat

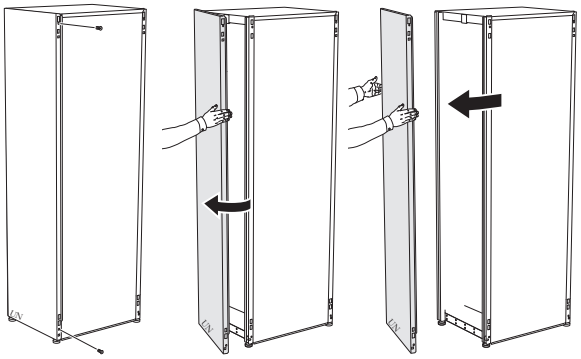
REMOVING THE COVERS

Front cover



1. Disconnect the front cover at the top edge and pull it straight out.
2. Lift the front cover upwards.

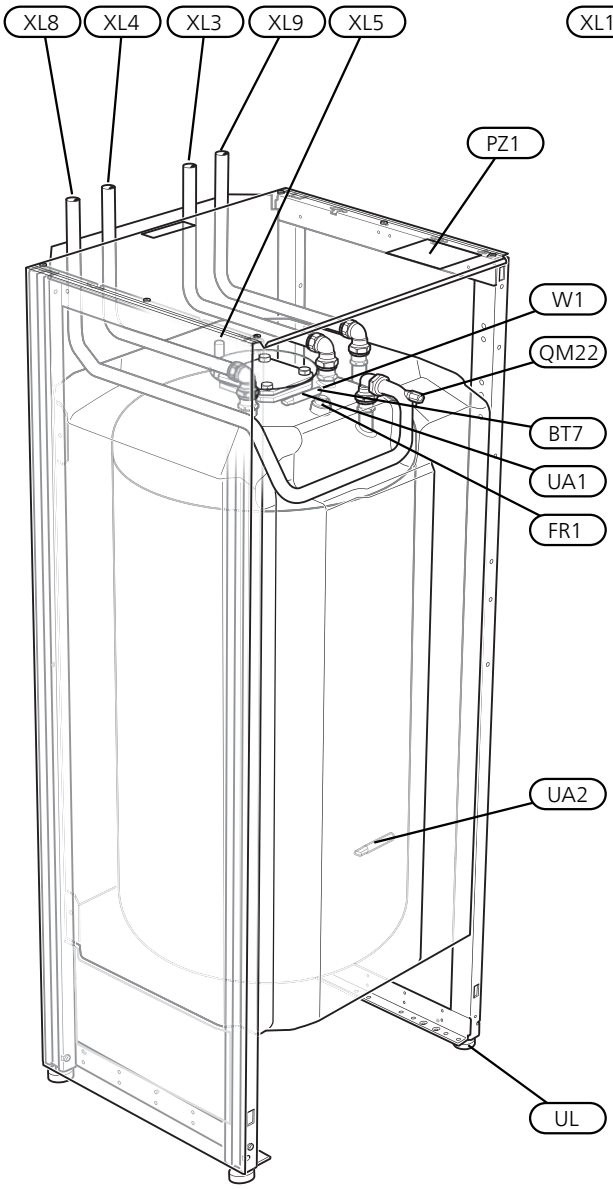
Side panels



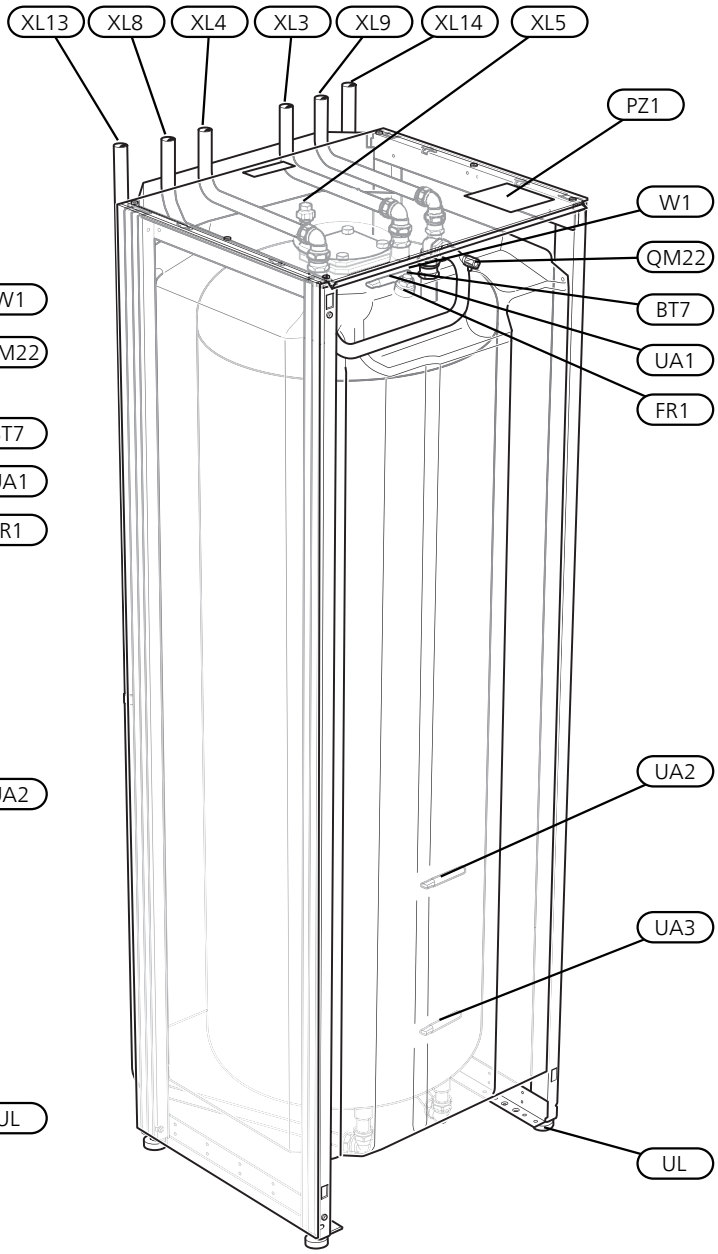
1. Remove the screws from the upper and lower edges.
2. Twist the cover slightly outward.
3. Move the hatch backwards and slightly to the side.
4. Pull the cover to one side.
5. Pull the hatch forwards.

The water heater design

VPB S200



VPB S300 / VPBS S300



The figure shows VPBS S300

EXPLANATION

Pipe connections

XL3 Cold water connection
XL4 Hot water connection
XL5 Connection, hot water circulation (does not apply to VPB S/ VPBS S copper)
XL8 Docking connection, supply line (from heat pump[1])
XL9 Docking connection, return line (to heat pump[1])
XL13 Solar heat connection, supply line (from solar heating system) (VPBS S300 only)
XL14 Solar heat connection, return line (to solar heating system) (VPBS S300 only)

1 or other heat source

HVAC components

QM22 Venting, charge coil
UA1 Submerged tube for displaying hot water sensor (BT7)
UA2 Submerged tube for controlling hot water sensor (BT6)
UA3 Submerged tube for control sensor for external heat source (BT54)

Sensors

BT7 Display hot water sensor

Electrical components

FR1 Direct-current anode (VPB S/ VPBS S enamel only)
W1 Cable to direct-current anode (VPB S/ VPBS S enamel only)

Miscellaneous

PZ1 Rating plate
UL Adjustable feet

Designations according to standard EN 81346-2.

Pipe installation

GENERAL

NOTE

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

An internal support bush must be fitted when a plastic or annealed copper pipe is used.

Water may drip from the safety valve's overflow pipe. The entire length of the overflow water pipe must be routed to a suitable drain and be inclined to prevent water pockets, and must also be frost-proof. The overflow pipe must be at least the same size as the safety valve. The overflow pipe must be visible and its mouth must be open and not located close to electrical components.

Caution

Ensure that incoming water is clean. When using a private well, it may be necessary to supplement with an extra water filter.

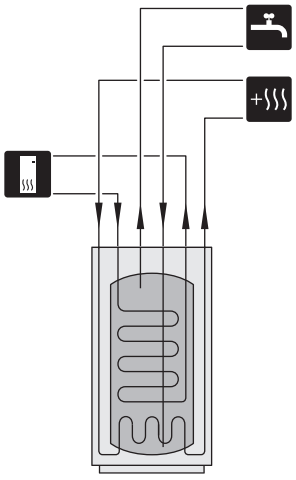
SYSTEM DIAGRAM

VPB S/ VPBS S is a series of water heaters that are suitable for connection to e.g. a heat pump.

VPB S/ VPBS S consists of a hot water tank with internal anti-corrosion protection made of copper, stainless steel or enamel, as well as a charge coil

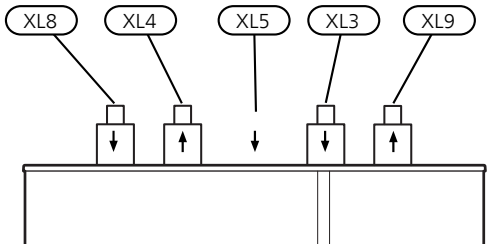
The charge coil heats the domestic water, resulting in excellent properties for hot water charging.

VPBS S300 has an additional coil, which is used for an external heat source, e.g. thermal solar panels or a stove with a back boiler.

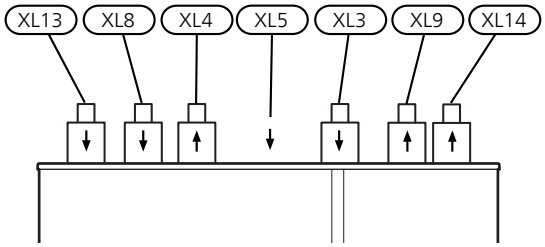


PIPE CONNECTIONS

VPB S200 / VPB S300



VPBS S300



Connection		
XL3 Cold water Ø	mm	22
XL4 Hot water Ø	mm	22
XL5 Hot water circulation Ø (does not apply to VPB S/ VPBS S copper)	mm	15
XL8 Docking connection, supply line Ø	mm	22
XL9 Docking connection, return line Ø	mm	22
XL13 Solar heat connection, supply Ø	mm	22
XL14 Solar heat connection, return Ø	mm	22

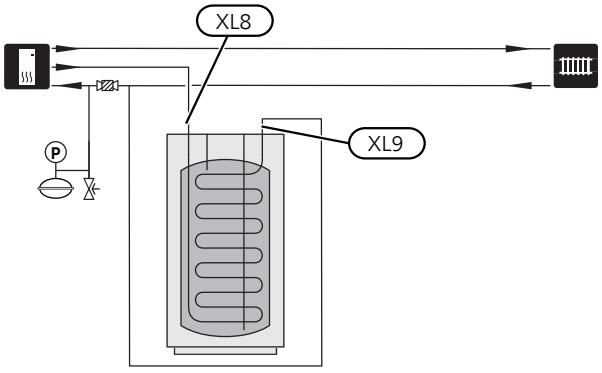
SYMBOL KEY

Symbol	*Meaning*
	Unit box
	Shut-off valve
	Non-return valve
	Mixing valve
	Circulation pump
	Expansion vessel
	Filterball
	Pressure gauge
	Safety valve
	Temperature sensor
	Manual reversing valve/shunt
	Radiator system
	Domestic hot water
	Addition
	Hot water circulation

TO HEAT PUMP

VPB S/ VPBS S can be docked with another heat source, for example NIBE S1155.

- Install expansion vessel and pressure gauge as illustrated.
- Install the safety valve as illustrated. Recommended opening pressure is 0.25 MPa (2.5 bar). For information about max opening pressure, see technical specifications.



CONNECTING COLD AND HOT WATER

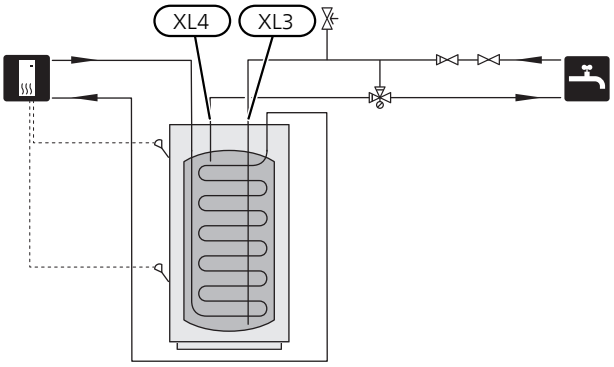
The settings for hot water are made in the compatible product's menu system.

Install as follows:

- controlling hot water sensor (BT6) (placed in the middle of the water heater)
- vacuum valve (FL6) (vacuum valves only apply to copper)
- shut-off valve
- non-return valve
- pressure relief valve

  The safety valve must have a maximum 1.0 MPa (10.0 bar) opening pressure and be installed on the incoming domestic water line as shown.
- mixing valve

  A mixer valve must also be installed, if the factory setting for hot water is changed. National regulations must be observed.



INSTALLATION ALTERNATIVE

> *NOTE*
>
> This is the outline diagram. Actual installations must be planned according to applicable standards.

VPB S/ VPBS S can be installed in several different ways, some of which are shown here.

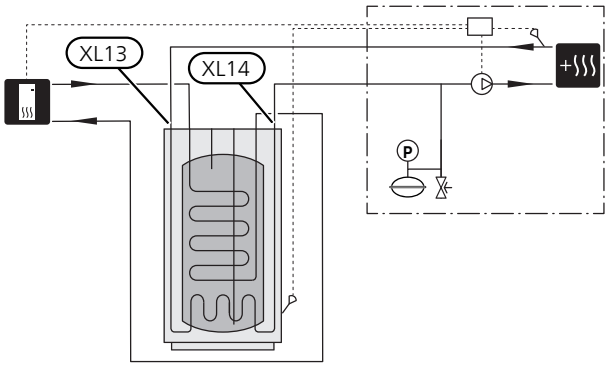
Further option information is available at nibe.eu/ODM and in the respective assembly instructions for the heat sources used.

To external heat source

VPBS S300 can be docked to an external heat source, e.g. a stove with a back boiler or a thermal solar installation.

Install as follows:

- sensor for external heat source, tank (BT54)
- pressure gauge
- expansion vessel
- pressure relief valve
- AXC module
- circulation pump
- sensor, external heat source (BT53)

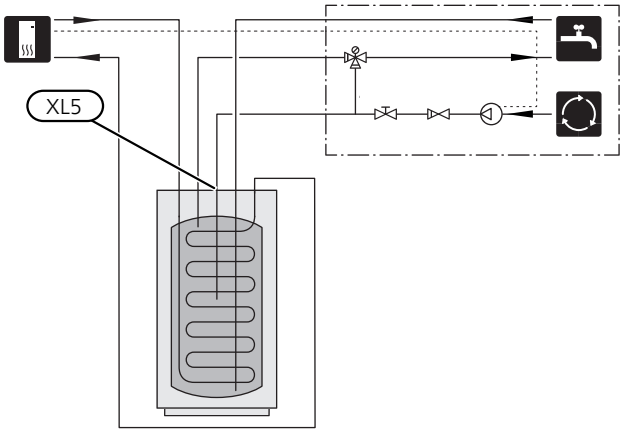


Connecting hot water circulation (VVC)

VPB S/ VPBS S stainless steel and enamel have a connection that allows hot water circulation, the HWC return is connected to this (XL5).

Hot water circulation

A circulation pump can be controlled by a ground-source heat pump or exhaust air heat pump, indoor module or control module for circulation of the hot water. The circulating water must have a temperature that prevents bacterial growth and scalding, and national standards must be met.



Electrical installation

GENERAL

Electrical installation and wiring must be carried out in accordance with national provisions.

> *NOTE*
>
> Electrical installation and any servicing must be carried out under the supervision of a qualified electrician. Disconnect the current using the circuit breaker before carrying out any servicing.

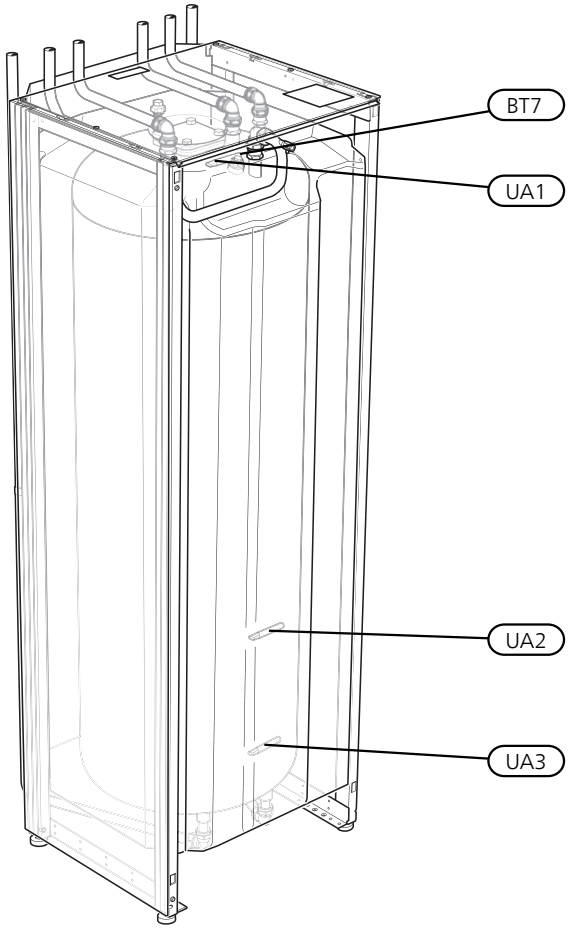
SENSORS

VPB S200 and VPB S300 can be supplemented with up to two hot water sensors, one for display and one for control. The displaying sensor (BT7) is fitted at the factory and placed in a submerged tube (UA1), the controlling hot water sensor (BT6) is placed in the submerged tube for control sensor (UA2). In cases where it is only possible to connect one sensor, use the submerged tube for the controlling sensor (UA2).

VPBS S300 can also be supplemented with a sensor for an external heat source (BT54). This is placed in the submerged tube for the external heat source (UA3).

Use the sensors provided with the heat pump (or other heat source). When no heat sensors have been provided these must be ordered from the manufacturer of the heat source.

The figure shows VPBS S300.



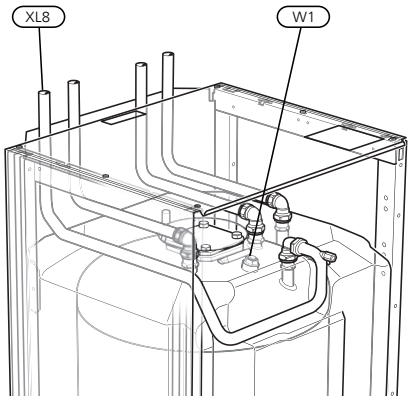
DIRECT-CURRENT ANODE

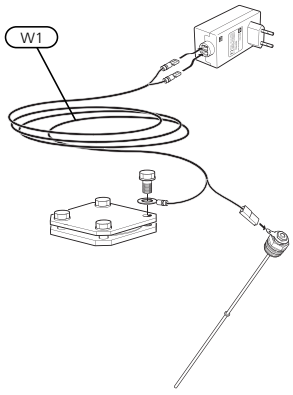
VPB S/ VPBS S Enamel is equipped with direct-current anode and enclosed with potentiostat from the factory. The anode cable (W1) is installed in the anode from the factory and only needs to be connected to the potentiostat.

1. Route the anode cable (W1) along the docking pipe, supply line (XL8).
2. Connect the anode cable (W1) to the potentiostat.
3. Connect the potentiostat to a suitable 230 V wall socket.

> ⚠ *NOTE*
>
> The cable between the potentiostat and the anode must either be extended or shortened.

The figure shows VPB S200 enamel





Commissioning and adjusting

FILLING AND VENTING

Filling the hot water heater

1. Open a hot water tap in the house.
2. Fill the hot water heater through the cold water connection (XL3).
3. When the water that comes out of the hot water tap is no longer mixed with air, the water heater is full and the tap can be closed.

Filling and venting the charge coil

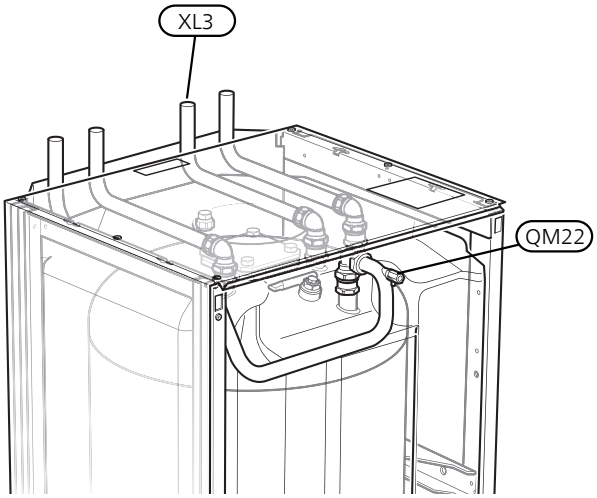
Filling

1. Open the externally mounted filling valve. Fill the coil in the hot water heater and the rest of the climate system with water.
2. Open the vent valve (QM22).
3. When the water that exits the vent valve (QM22) is not mixed with air, close the valve. After a while, the pressure starts to rise.
4. Close the filling valve when the correct pressure is obtained.

Venting

1. Vent the coil via the vent valve (QM22) and the rest of the climate system via the relevant vent valves.
2. Keep topping up and venting until all air has been removed and the pressure is correct.

The figure shows VPB S200.

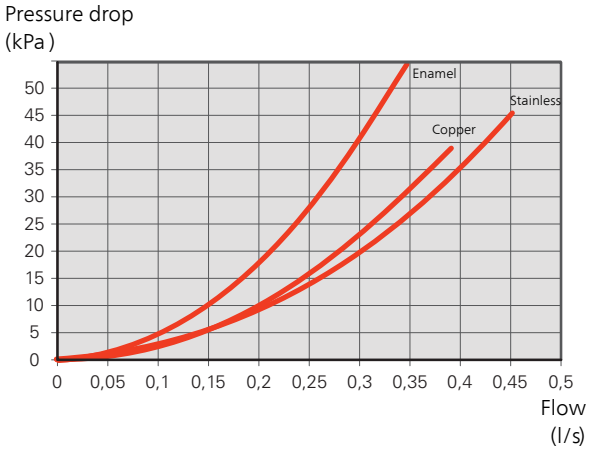


START-UP AND INSPECTION

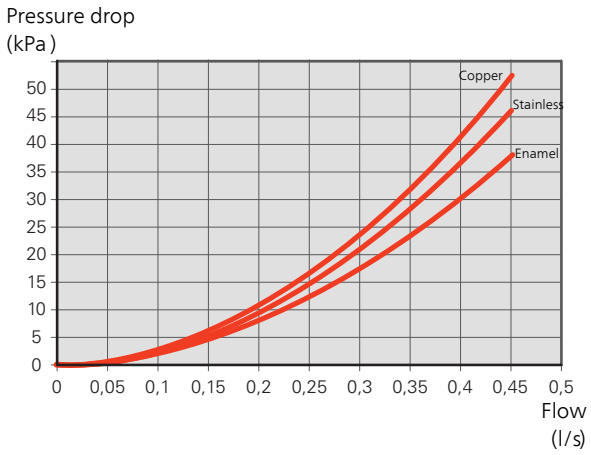
Pressure drop diagram, charge coil

Docking connection, supply line (XL8) and docking connection, return line (XL9).

VPB S200



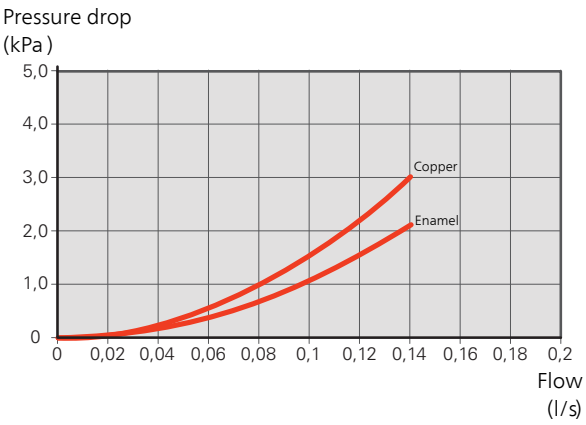
VPB S300 / VPBS S300



Pressure drop diagram, solar coil

Connection, supply line solar heating system (XL13) and connection, return line solar heating system (XL14).

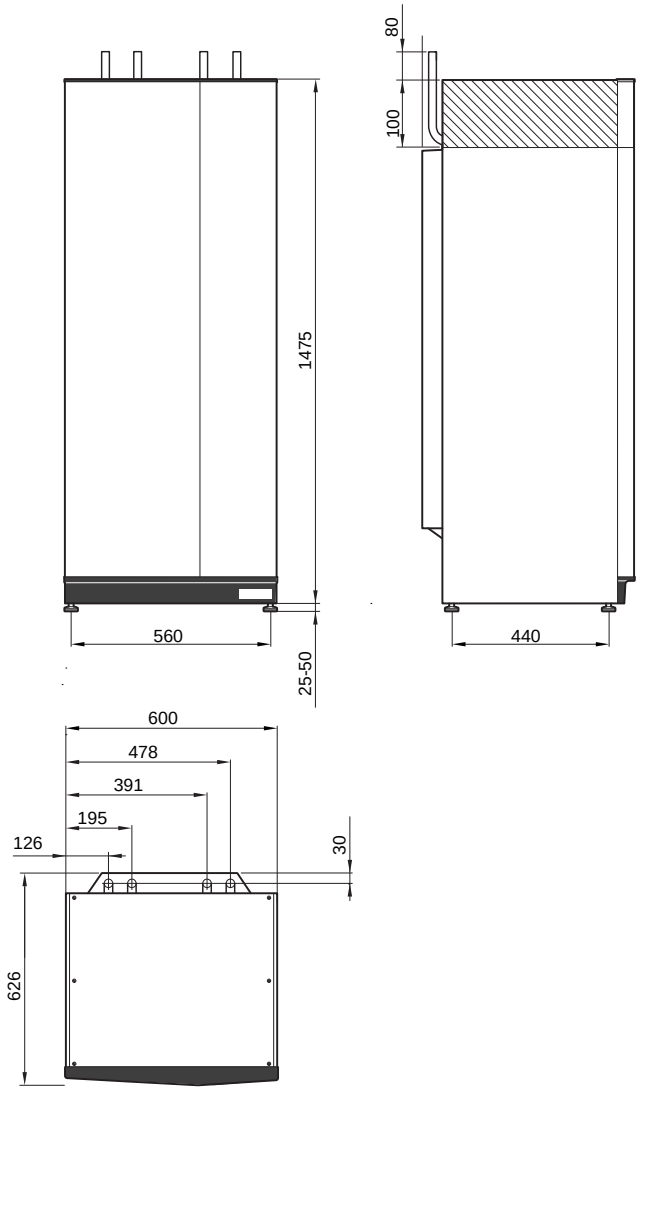
VPBS S300



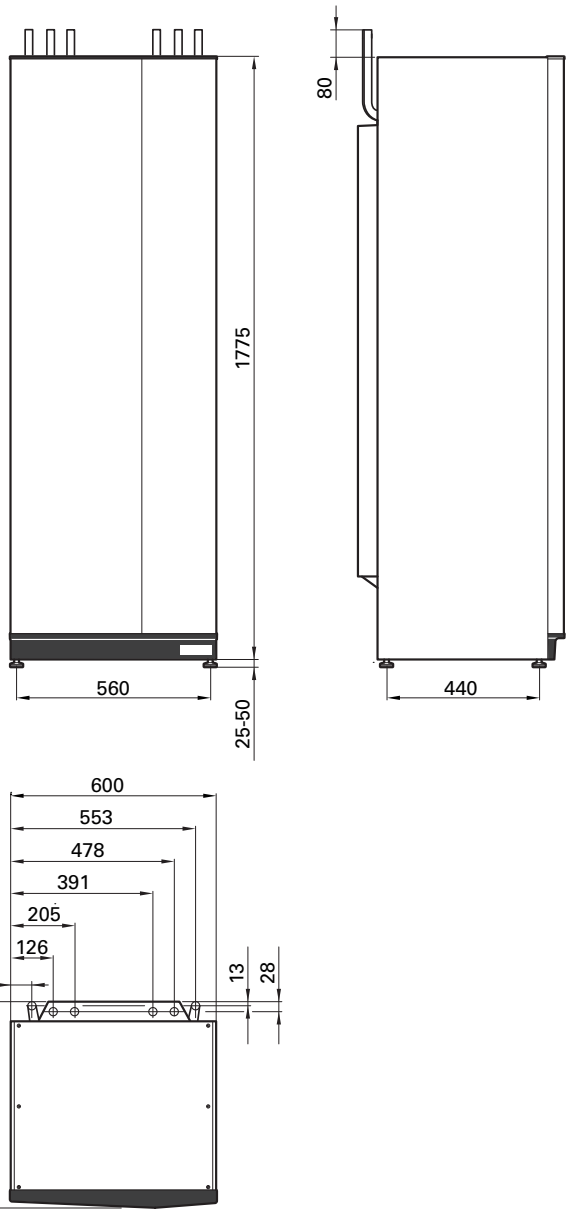
4 Technical data

Dimensions

VPB S200



VPB S300 / VPBS S300



Technical specifications

VPB S200		*Copper*	*Enamel*	*Stainless*
Efficiency class[1]		C	C	C
Volume	litre	178	178	176
Volume, charge coil	litre	2.0	4.8	7.8
Heat transfer (60/50°C at 50°C hot water temperature)	kW	13.0	10.1	10.1
Heat content at 50°C	kWh	8.0	8.3	8.2
Equivalent amount of hot water (40°C)	litre	230	238	235
Heating time (10°C to 45°C) 8 kW charge power	hours	0.9	0.9	0.9
Heating time (10°C to 80°C) 8 kW charge power	hours	1.8	1.8	1.8
Max operating temperature	°C	85		
Max pressure, primary side	bar/MPa	3/0.3		
Max pressure, water heater	bar/MPa	10/1.0		
Height	mm	1500		
Required ceiling height[2]	mm	1670		
Width	mm	600		
Depth	mm	626		
Net weight	kg	101	111	80
Part No.		081 139	081 140	081 141

1 Scale for the product's efficiency class A+ to F.

2 With the feet removed, the required ceiling height is approx. 1650 mm.

VPB S300		*Copper*	*Enamel*	*Stainless*
Efficiency class[1]		C	C	C
Volume	litre	278	274	282
Volume, charge coil	litre	2	8.4	8.8
Heat transfer (60/50°C at 50°C hot water temperature)	kW	14	11.9	11.5
Heat content at 50°C	kWh	12.6	12.7	13.4
Equivalent amount of hot water (40°C)	litre	362	364	376
Heating time (10°C to 45°C) 8 kW charge power	hours	1.4	1.4	1.4
Heating time (10°C to 80°C) 8 kW charge power	hours	2.8	2.8	2.8
Max operating temperature	°C	85		
Max pressure, primary side	bar/MPa	3/0.3		
Max pressure, water heater	bar/MPa	10/1.0		
Height	mm	1800		
Required ceiling height[2]	mm	1950		
Width	mm	600		
Depth	mm	626		
Net weight	kg	130	143	101
Part No.		081 142	081 144	081 143

1 Scale for the product's efficiency class A+ to F.

2 With the feet removed, the required ceiling height is approx. 1930 mm.

VPBS S300		*Copper*	*Enamel*
Efficiency class[1]	C	C	C
Volume	litre	277	270
Volume, charge coil	litre	2	8.4
Volume, solar coil	litre	0.8	4.0
Heat transfer (60/50°C at 50°C hot water temperature)	kW	14	11.9
Heat content at 50°C	kWh	12.4	12.4
Equivalent amount of hot water (40°C)	litre	354	356
Heating time (10°C to 45°C) 8 kW charge power	hours	1.4	1.4
Heating time (10°C to 80°C) 8 kW charge power	hours	2.7	2.7
Max operating temperature	°C	85	
Max pressure, primary side	bar/MPa	3/0.3	
Max pressure, water heater	bar/MPa	10/1.0	
Height	mm	1800	
Required ceiling height[2]	mm	1950	
Width	mm	600	
Depth	mm	626	
Net weight	kg	137	150
Part No.		081 145	081 146

1 Scale for the product's efficiency class A+ to F.
2 With the feet removed, the required ceiling height is approx. 1930 mm.

Tested according to standard EN 12897.

Energy labelling

Supplier		*NIBE*		
Model		*VPB S200 Cu/E/R*	*VPB S300 Cu/E/R*	*VPBS S300 Cu/E*
Energy efficiency class		**C**	**C**	**C**
Heat loss	W	66	88	95
Volume	l	178 / 178 / 176	278 / 274 / 282	277 / 270

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CHB EN 2126-2 531224

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