

Installation instructions

DHW cylinder for heat pumps

CEW-1-200 / CEW-2-200

SEW-1-300 / SEW-1-400

Solar DHW cylinder

SEM-1W-360

CPM-1-70 buffer module

SPU-1-200 buffer cylinder



Contents	Page
Information, positioning and installation	
1. Safety information / standards	4
2. General information.....	5
3. Technical information	6-7
Product description Hydrotower (CEW-1-200 + CPM-1-70)	
4. Appliance description CPM-1-70 / CEW-1-200	8
5. Transport.....	9
6. Minimum clearances CPM-1-70	10
7. Combinations with CEW-1-200	11
8. Dismantling / assembling the CPM-1-70 casing	12
9. Fitting the CPM-1-70 to the CEW-1-200	13
10. Pipework connection diagrams for CPM-1-70 as cylinder in series	14
11. Pipework connection diagrams for CPM-1-70 as separating cylinder.....	15
Product description – Split heating centre (BWL-1S(B)-07/10/14 + CEW-2-200)	
12. Appliance description CEW-2-200	16
13. Minimum clearances for split heating centre	17
14. Combination BWL-1S with CEW-2-200.....	18
15. Connection CEW-2-200	19
16. Installation BWL-1S(B) on CEW-2-200	20-22
Product description SPU-1-200, SEW-1-300/400, SEM-1W-360	
17. Appliance description SPU-1-200	23
18. Appliance description SEW-1-300/400.....	24
19. Appliance description SEM-1W-360.....	25
Specification	
20. Specification CPM-1-70/7(8), CEW-1-200	26
21. Specification CEW-2-200	27
22. Specification SEW-1, SEM-1.....	28
23. Specification SPU-1-200	29

Contents Page**Pipework connection**

24. Pipework connection SEW-1-300/400 SEM-1W-360	30
25. Pipework connection CEW-1-200, CEW-2-200	31
26. Pipework connection SPU-1-200	32

Performance curves

27. Performance curves, heat-up times – Wolf 3-way diverter valve	33
28. Performance curves SEW-1-300	34
29. Performance curves SEW-1-400	35
30. Performance curves SEM-1W-360	36
31. Performance curves CEW-1-200 and CEW-2-200	37
32. Performance curves 7m / 8m pumps	38
33. Configuration example	39

Commissioning + maintenance / accessories / troubleshooting

34. Commissioning / maintenance	40
35. Electric booster heater	41
36. Troubleshooting – buffer module CPM-1-70, buffer cylinder SPU-1-200	42
37. Troubleshooting – DHW cylinders CEW-1-200, SEW-1, SEM-1W	43

Safety information

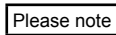
The following symbols are used in this description to highlight important information concerning personal safety and operational reliability:



Denotes instructions with which you must strictly comply to prevent risk or injury to individuals, faults or damage to the appliance.



Denotes danger due to 'live' electrical components.



"Note" indicates technical instructions that must be observed to prevent malfunction or appliance damage.

Standards

Before commissioning the appliance, please read carefully through the following installation and commissioning instructions. This will avoid damage to your system which could arise through incorrect handling.

Improper use and any unauthorised modifications made to the design or during installation will result in any liability claims being excluded.

In particular, observe engineering standards – in addition to any specific national regulations.

DIN 1988: Technical rules for drinking water installations

DIN 4751: Safety-related equipment of heating systems

DIN 4757: Solar heating plants / solar thermal systems

DIN 4753: Water heaters and DHW heating systems for drinking and process water; requirements, designation, equipment and testing

DIN EN 12828 Central heating systems in buildings - Designing hot water heating systems

DIN 18380: Central heating systems and DHW heating systems

DIN 18381: Installation of gas, water and drainage pipework inside buildings

VDI 2035: Prevention of damage in water heating installations

Drinking Water Ordinance [Germany]

The illustrations used are symbolic. Due to the possibility of typographical and printing errors and the need to make on-going technical modifications, we accept no liability for the accuracy of the contents of this document.

Should any information in these installation instructions contradict any current national regulations, the current national regulations take precedence.

Please refer to the currently applicable version of the general terms and conditions.

The following information must be taken into account when carrying out installation, commissioning, maintenance and repair work:



The heat pump system must be sited, installed, set-up and commissioned by a qualified contractor, in compliance with the applicable statutory regulations, ordinances and directives and the installation instructions.
In particular, observe the Drinking Water Ordinance [Germany].



Maintenance work must only be carried out by a qualified heating contractor. Regular maintenance and the exclusive use of original Wolf spare parts are crucial for trouble-free operation and a long service life for your appliance. We therefore recommend you arrange a maintenance contract with your local heating contractor.



A significant amount of energy can be saved by operating the DHW cylinder at a temperature below 55 °C.
The ideal operating temperature range is 50 - 55 °C.
Heat losses and scaling are significantly reduced in this range.



Wolf heat pumps require special DHW cylinders for domestic hot water heating; these are available from the Wolf range of accessories.
The cylinders are made of S235JR steel and come with a quality certificate.
The indirect coil surface area in the DHW cylinders must be at least 0.25 m² per kW of heating output.



The appliance may only be opened by a qualified contractor.
Before opening the appliance, all current circuits must be isolated from the power supply (only for CPM-1).



Never treat appliance surfaces with scouring agents or cleaning agents containing acid or chlorine.



For installation in Austria:
Observe the ÖVE regulations and requirements and those of your local power supply utility.



Observe the specified electrical fuse ratings (see Specification).



Only replace faulty components with original Wolf spare parts.



Any damage or loss resulting from technical modifications to Wolf control units is excluded from our warranty.



If the DHW temperature is set above 60 °C or when pasteurising at a temperature in excess of 60 °C, always ensure that cold water is mixed in with the hot (risk of scalding).



Risk of water damage and faulty operation through freezing.
The heat pump is automatically protected from frost when it is switched on.
Observe the Drinking Water Ordinance [Germany].

3. Technical information

Siting

The cylinders may only be installed in rooms which are protected from frost, otherwise the cylinder and all water-carrying fittings and supply pipes must be drained if there is a risk of frost.



The formation of ice in the system may result in leaks and could destroy the cylinder.

The installation room must provide enough space for maintenance and repair work and the ground must have sufficient load-bearing capacity.

Connection to the heating system

The cylinder must be equipped with its own safety devices (safety valve, expansion vessel) if it can be shut off from the heating system or if the existing components are not designed for the additional buffer volume.

Please note

Installing dirt traps or other modifications which constrict the supply line to the safety valve is not permitted. When selecting the installation material for the system, observe engineering standards and any possible electro-technical processes (mixed installation).

Drinking water filter

Please note

We recommend the installation of a drinking water filter into the cold water supply, as foreign bodies introduced into the system can block fittings and may lead to pipe corrosion.

Hot/cold water connection for floor-standing DHW cylinder

The DHW cylinder must be connected in accordance with the following pipework diagram.

There should be no shut-off system installed between the floor-standing DHW cylinder and the safety valve.

Please note

If the cylinder is connected to the hot and cold water connections with non-metallic pipe materials, the cylinder must be earthed.

Please note

Installing dirt traps or other modifications which constrict the connecting line between the floor-standing DHW cylinder and the safety valve is not permitted.

- Observe the connection thread types:
 - Flat gasket connections (type G), such as cold water and DHW connections: These must be fitted with a flat gasket.
 - Thread-sealing connections (type R): Using too much sealing material (e.g. hemp), results in excessive stress on the connection. This can result in the enamel cracking. Make sure the thread between cylinder connection and pipework is fully covered.
- The cold water and DHW connections may contain plastic sleeve inserts. These must remain in the cylinder. Do not pull them out before installation.

When selecting the installation material for the system, observe engineering standards and any possible electro-chemical processes (mixed installation). The cylinder can be equipped with an electric booster heater which is fitted with a high limit safety cut-out. In the event of a malfunction, the high limit safety cut-out deactivates further heating when a max. temperature of 110° C is reached.

Please note

The relevant connections must be designed for this temperature, or else the temperature must be limited by means of a mixing valve.

It is generally recommended that DHW temperatures above 60 °C are limited to 60 °C by means of a mixing valve.



Hot water can cause injuries, in particular scalding.

Expansion vessels

All expansion vessels must be fitted so that they can be isolated from the heating system.
Shut-off systems must be sufficiently secured against unintentional closing (e.g. by means of a cap valve with wire and seal).
Diaphragm expansion vessels must comply with EN 13831.
Expansion vessels must be installed in frost-free rooms or protected against freezing. Expansion vessels must be designed to DIN EN 12828.

Sizing of the safety devices

Safety valve (SV), heating water side

Only one individually tested SV may be used. The response pressure must be suitable for all system components and may not exceed 3 bar.



Exceeding the permissible operating pressure may result in leaks and could destroy the cylinder.

The SV is designed to DIN EN 12828, DIN 4753 and DIN1988. For this, a heating output of 1.5 kW for each collector is assumed.

Total heating output (boiler + collector)	Nominal diameter
50 kW	DN 15
100 kW	DN 20
200 kW	DN 25
350 kW	DN 32

The discharge pipe must have a diameter at least equal to the outlet cross-section of the safety valve, it must not have more than 2 elbows and must be no more than 2 m long. If it is absolutely necessary to have 3 elbows or a pipe length of up to 4 m, the nominal diameter of the entire discharge pipe must be implemented one nominal diameter size larger. More than 3 elbows and a pipe length above 4 m are **not permitted**. The discharge pipe must be installed with a fall. The drain pipe downstream of the tundish must have a diameter at least twice as big as the valve inlet diameter. Place a sign close to the safety valve discharge pipe with the following inscription:

Please note **"For safety reasons, water is discharged from the discharge pipe during heating. Do not close off the discharge pipe".**

Pressure reducer



The installation of a pressure reducing valve is recommended. The permissible operating pressure of the DHW cylinder is 10 bar on the DHW side. If the supply network is operated at a higher pressure, a pressure reducer must be installed.

Exceeding the permissible operating pressure may result in leaks and could destroy the cylinder.

To reduce flow noise inside buildings, the line pressure should be set to approx. 3.5 bar.

Disposal

Ensure that the cylinder's packaging, and that of any accessories used, is disposed of correctly. Packaging is collected by our certified disposal partners.

Thermal insulation



Do not bring fire, solder flames or oxy-acetylene torches into the vicinity of the insulation.

Please note: Risk of fire.

Venting

The cylinders are equipped with a 1" or 1¼" socket in the top centre for the purpose of venting.

Drain outlet



The floor-standing DHW cylinder / buffer cylinder must be installed to enable it to be drained as fully as possible.

Please note: When draining the system, hot water may escape and cause injury, in particular scalding.

CPM-1-70

The dimensions and design of the buffer module CPM-1-70 are tailored to the Wolf heat pump range, enabling variable combination.

The CPM-1-70 is supplied ready for connection as a separating cylinder or cylinder in series. It is designed to provide optimum evaporator defrosting, in particular for the BWL-1 air/water heat pumps.

When connected as a separating cylinder, it also acts as a low loss header.

A class A high-efficiency heating circuit pump and three-way diverter valve for DHW heating are already installed inside the casing, including the necessary pipework, ready for connection. Type CPM-1-70/7 with 7m pump and type CPM-1-70/8 with 8m pump.

The PU rigid foam insulation ensures minimum radiation and standby heat losses.

A pre-installed, thermally insulated safety assembly is supplied for on-site installation.

Standard delivery CPM-1-70

Packaged in box, fully encased, class A high-efficiency pump and 3-way diverter valve with all necessary pipework, ready to connect, incl. installed boiler drain & fill valve, adjustable feet, installed sensor well and vent valve; safety assembly and connecting cable for 3-way diverter valve and high-efficiency pump provided, connecting pipe for separating cylinder version with heat pump return flow included, installation instructions included.

CEW-1-200

CEW-1-200 DHW cylinder with internal indirect coil.

Steel cylinder with corrosion protection provided by special enamelled coating on the inner wall of the cylinder, compliant to DIN 4753. Additional corrosion protection provided by sacrificial magnesium anode. DHW cylinder for DHW heating in conjunction with a heat pump.

Suitable for systems to DIN 1988, EN 12828 and DIN 4753.

Dimensions and design are tailored to the Wolf heat pump range, enabling variable combination.

The DHW cylinder is equipped with a highly efficient bare-tube heat exchanger with indirect dual coil for convenient DHW heating.

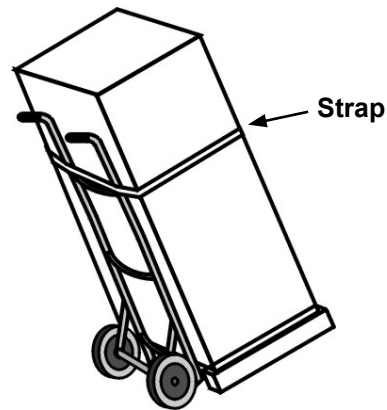
The PU rigid foam insulation ensures minimum radiation and standby heat losses.

Standard delivery CEW-1-200

Packaged in box, fully encased, ready for connection, incl. installed boiler drain & fill valve, adjustable feet and installed sensor well; installation instructions included.

Transport

- The appliance should be transported fully packaged and on a pallet
 - A sack truck is a suitable for this
 - Position the sack truck behind the cylinder, secure with a strap and transport to the installation location
 - Remove strap and packaging
 - Remove the four fixing screws on the pallet
 - Lift the cylinder off the pallet
-
- The cylinder should be installed on a level surface which is substantial enough to carry its weight.
 - Level the cylinder horizontally using the adjustable feet.



6. Minimum clearances CPM-1-70

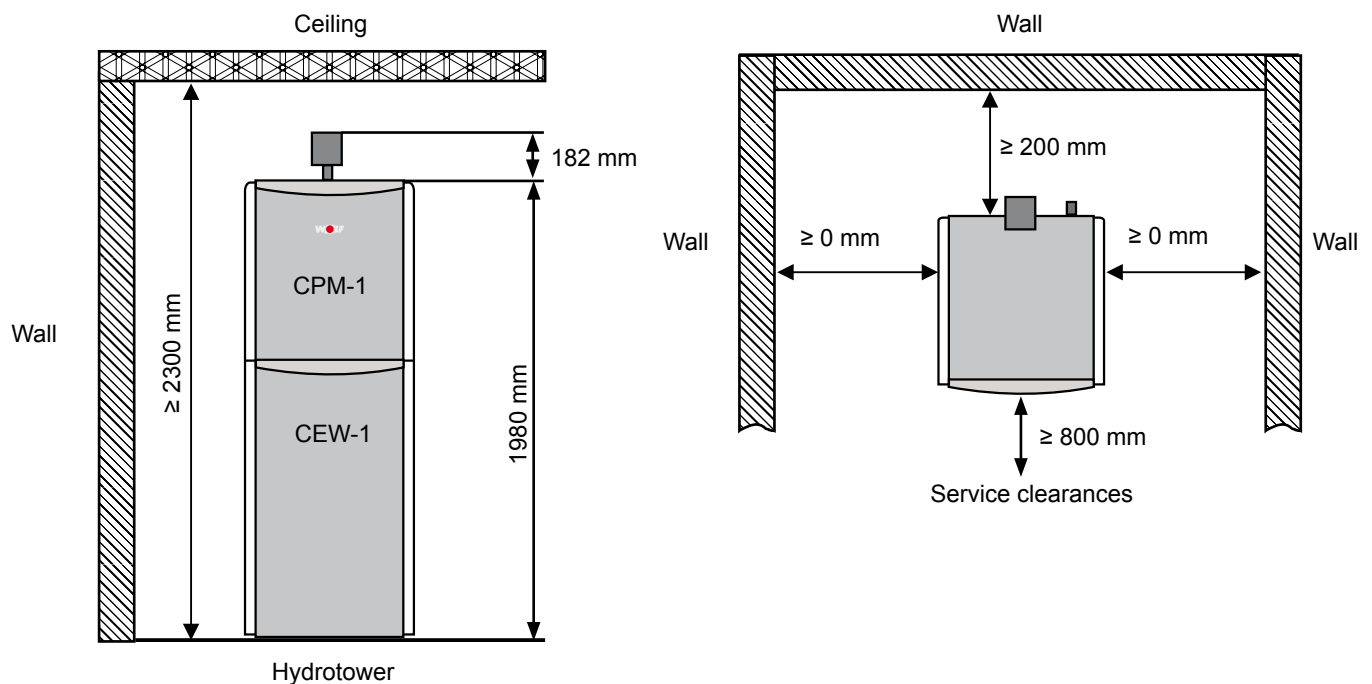
Recommended minimum wall clearances CPM-1-70

CPM-1-70 and CEW-1-200 are installed against a wall. To allow for fitting the connections, ensure a min. clearance of 200 mm from the wall. As their body is round, the SEW-1 and SEM-1W can be rotated, consequently no wall clearance is required.

A clearance of 800 mm must be maintained at the front for ease of installation, maintenance and repair.

The CPM-1-70 + CEW-1-200 Hydrotower requires a minimum room height of 2.30 m.

When installing in combination with heat pumps, the minimum clearances specified for the BWL-1 and BWS-1 must also be observed.



Combination options

The combination with Wolf heat pumps provides a variety of space-saving installation options.

The Wolf WPM-1 heat pump manager with integral BM programming unit is a required accessory for all heat pumps and cylinders. The cylinder temperature sensor is available as a required control accessory.

CEW-1-200 + BWS-1

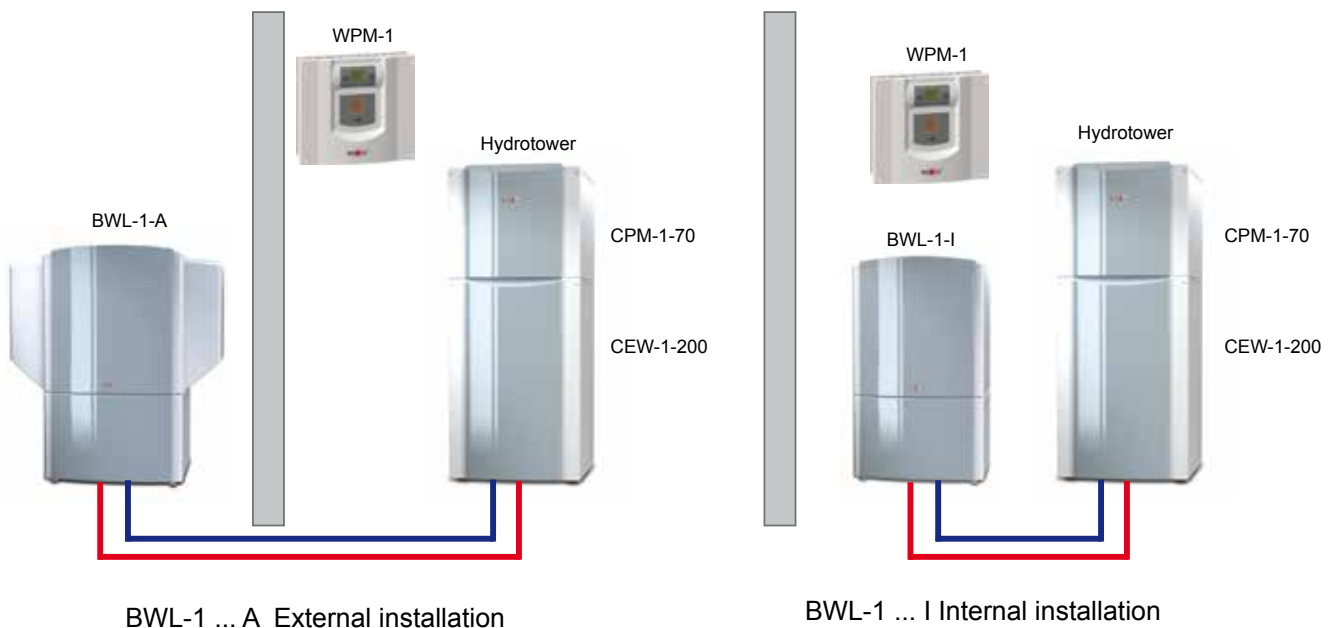
Brine heat pump BWS-1 + cylinder CEW-1-200 for max. 10 kW heat pump output. The following installation options are available when in combination with brine heat pumps.



For higher DHW demand or heat pump output, combine with either the SEW-1-300 or SEW-1-400 instead of the CEW-1-200.

CEW-1-200 / CPM-1-70 + BWL-1

Space-saving modular principle with air/water heat pump BWL-1 for external or internal installation and Hydrotower comprising CEW-1-200 + CPM-1-70. For max. air/water heat pump output of 10 kW.



Undo the screws on the front casing and remove the front cover



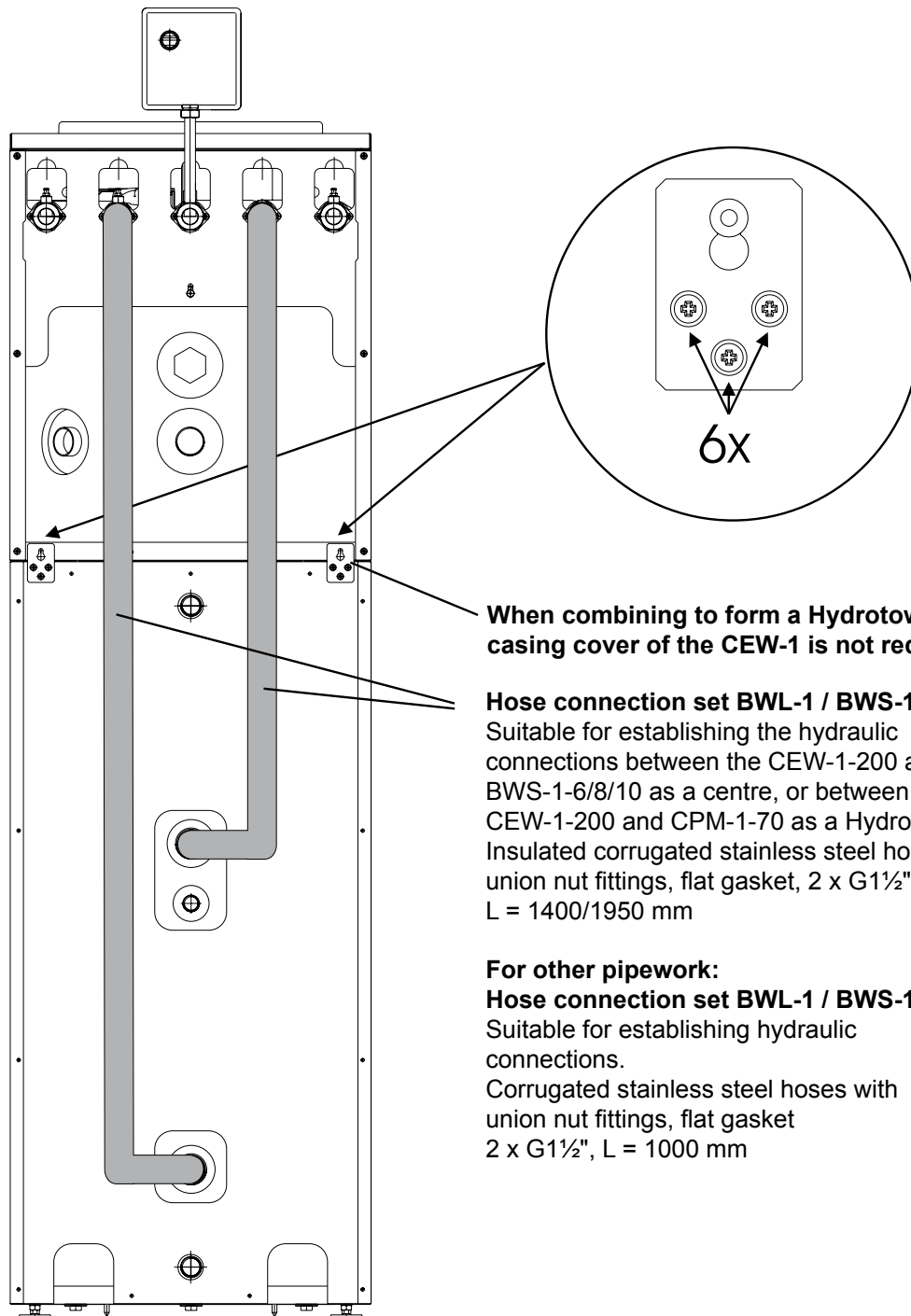
Pull "top" section of casing forwards and remove it



Assembling the Hydrotower

The buffer cylinder CPM-1 and DHW cylinder CEW-1-200 are supplied separately and must be assembled on-site.

1. Remove casing cover from DHW cylinder
2. Place buffer cylinder on the mounting bracket of the CEW-1 and align them vertically.
3. Then hook the securing tabs into the back of the casing of the CPM-1-70 and secure in place as illustrated.
The casing of the CEW-1-200 bears the entire weight of the buffer cylinder.
4. Hose connections



When combining to form a Hydrotower, the casing cover of the CEW-1 is not required

Hose connection set BWL-1 / BWS-1

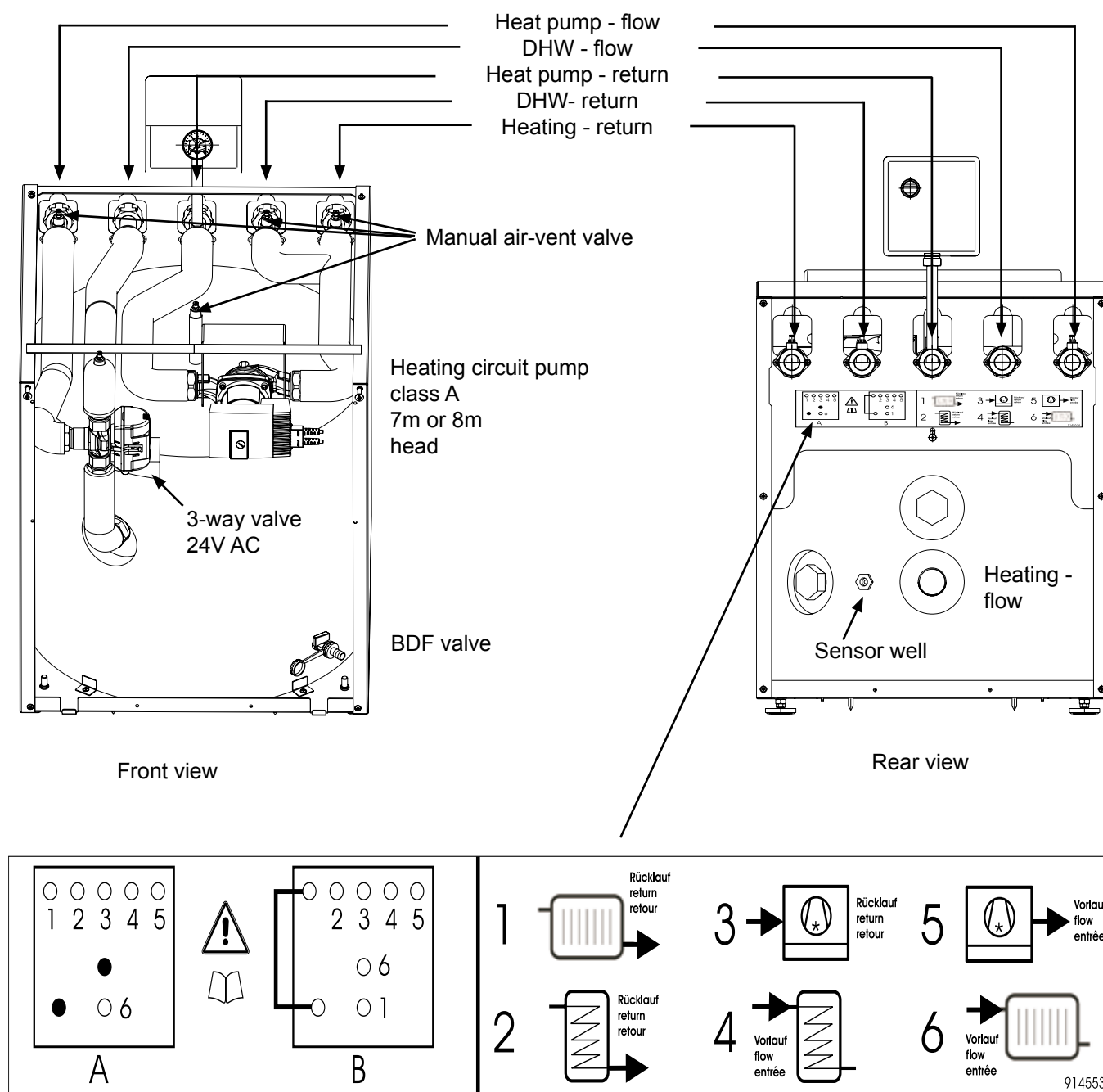
Suitable for establishing the hydraulic connections between the CEW-1-200 and the BWS-1-6/8/10 as a centre, or between the CEW-1-200 and CPM-1-70 as a Hydrotower. Insulated corrugated stainless steel hoses with union nut fittings, flat gasket, 2 x G1½", L = 1400/1950 mm

For other pipework:

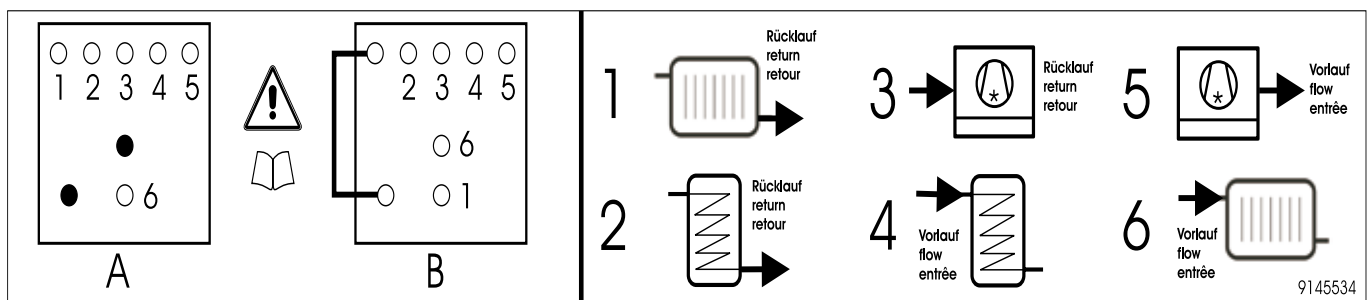
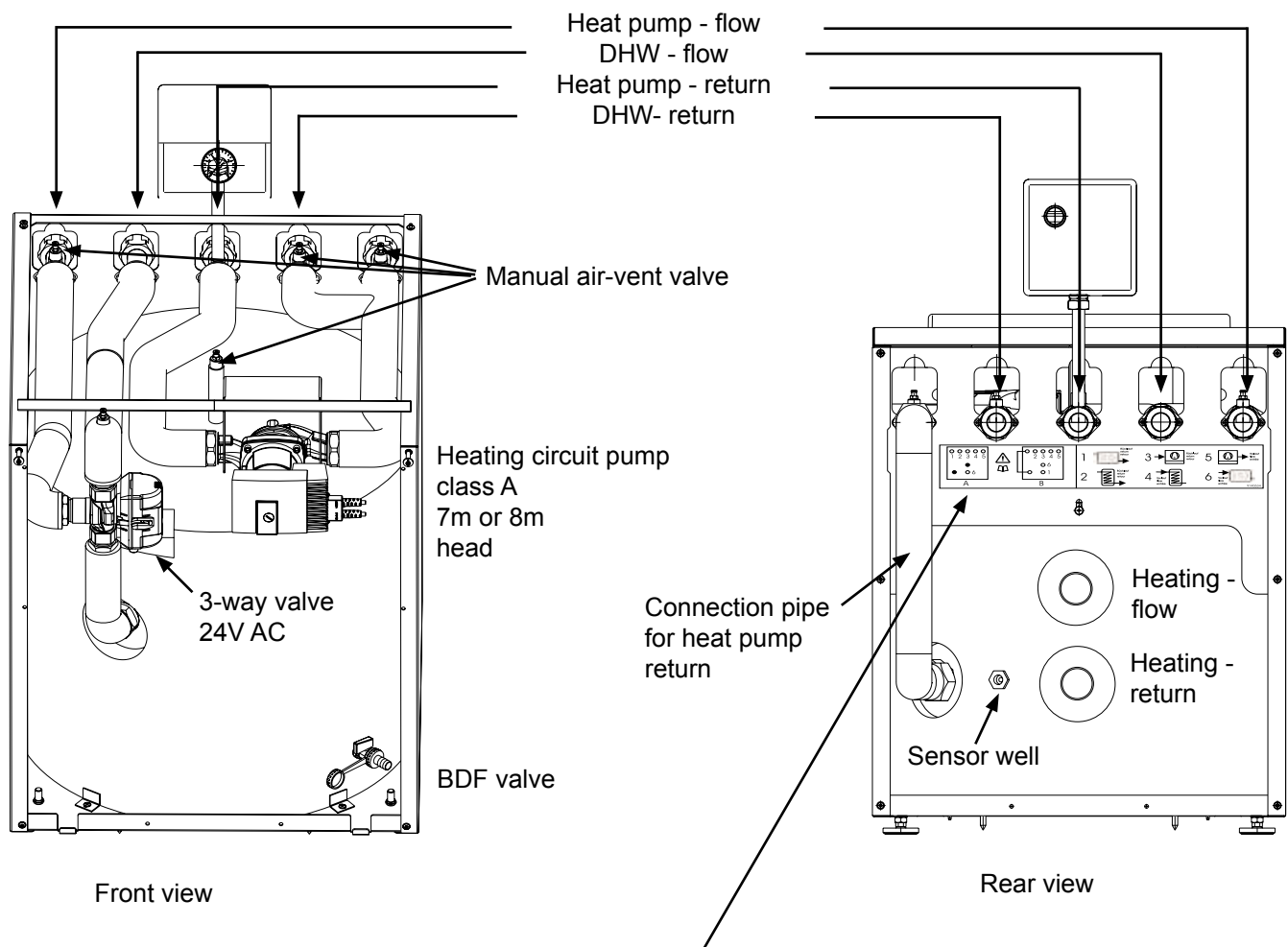
Hose connection set BWL-1 / BWS-1

Suitable for establishing hydraulic connections. Corrugated stainless steel hoses with union nut fittings, flat gasket 2 x G1½", L = 1000 mm

Pipework connections for the CPM-1-70 as a cylinder in series for air/water heat pump BWL-1, connection type A



Pipework connections for the CPM-1-70 as a separating cylinder for air/water heat pump BWL-1, connection type B



Connection type B applies to the CPM-1-70 as a separating cylinder

If the CPM-1-70 is used as a separating cylinder, the connection pipe for the heat pump return must be installed on-site. It is included in the standard delivery.

Please note:

The cylinder cannot operate properly as a separating cylinder without the connection pipe for the heat pump return.

CEW-2-200 DHW cylinder



CEW-2-200 DHW cylinder with internal indirect coil

Steel cylinder with corrosion protection provided by special enamelled coating on the inner wall of the cylinder, compliant to DIN 4753. Additional corrosion protection provided by sacrificial magnesium anode. Suitable for systems to DIN 1988, EN 12828 and DIN 4753.

Dimensions and design are tailored to the Wolf heat pump range, enabling variable combination.

The casing is designed for high load-bearing capacity, to allow the indoor module of a BWL-1S split air/water heat pump to be mounted on the CEW-2-200.

The DHW cylinder is equipped with a highly efficient bare-tube heat exchanger with indirect dual coil for convenient DHW heating.

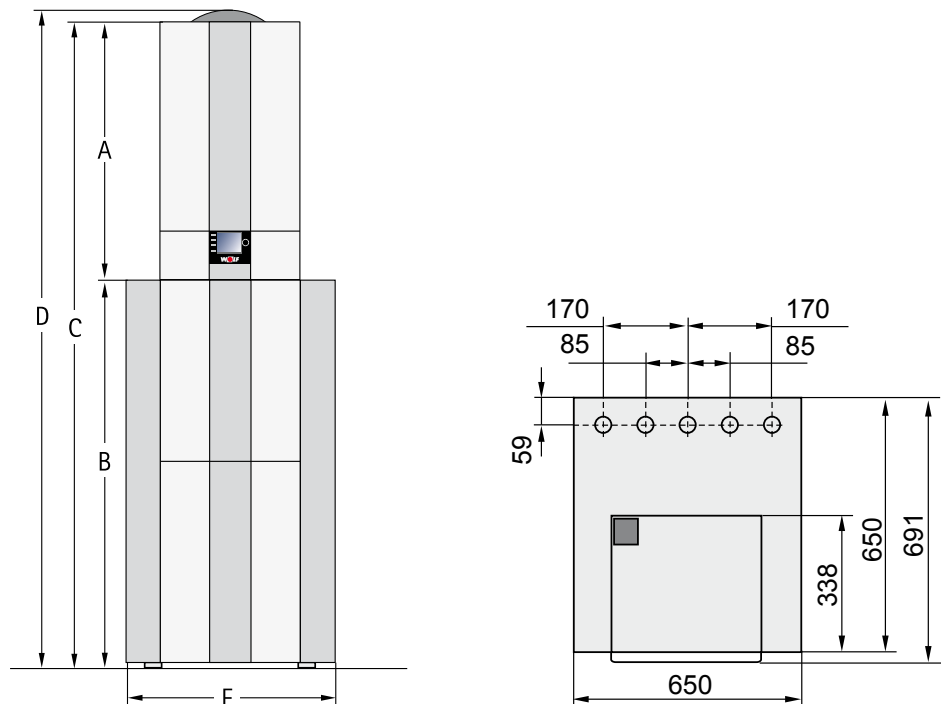
The PU rigid foam insulation ensures minimum radiation and standby heat losses.

Standard delivery CEW-2-200

Packaged in box, fully encased, ready for connection, incl. boiler drain & fill valve, adjustable feet, installed sensor well; installation instructions included.

Split heating centre with CEW-2-200

The CEW-2-200 can be installed in combination with the BWL-1S-07/10/14 or BWL-1SB-07/10/14 as a stacked heating centre.

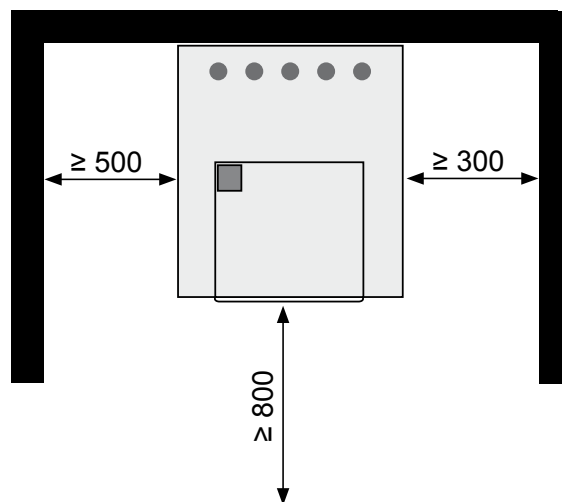
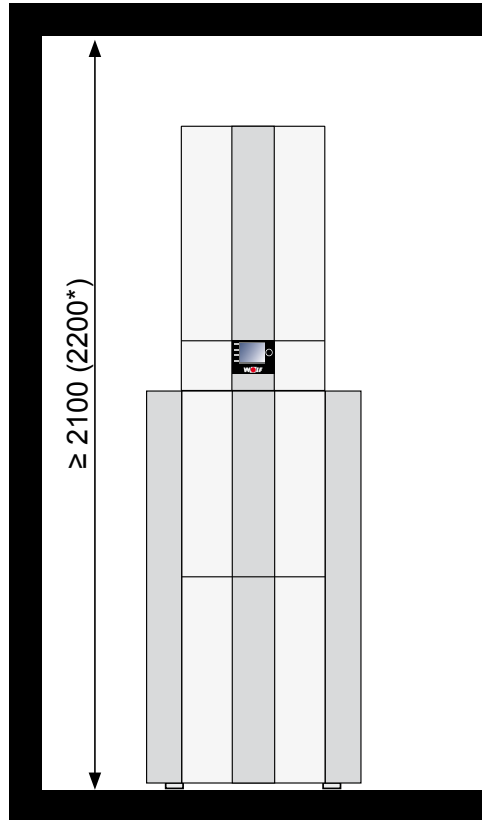


Split heating centre with CEW-2-200		
Height, indoor module	A mm	790
Height, CEW-2-200	B mm	1290
Overall height	C mm	2080
Overall height with 25 l expansion vessel (ADG) (accessories - on back of indoor unit)	D mm	2160
Width	E mm	650

13. Minimum clearances for split heating centre with CEW-2-200

Minimum clearances
Split heating centre with
CEW-2-200

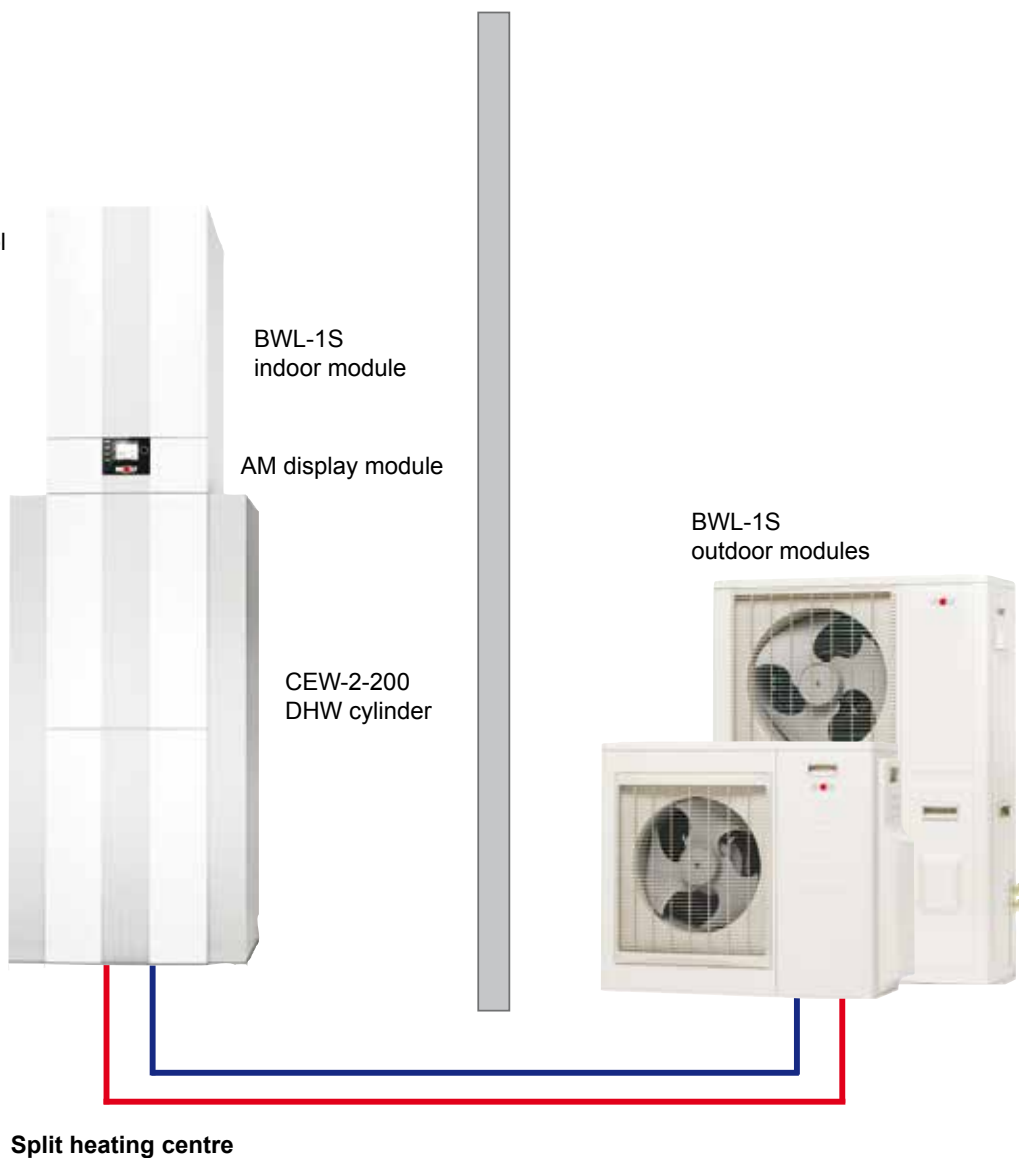
Overall height with ADG *

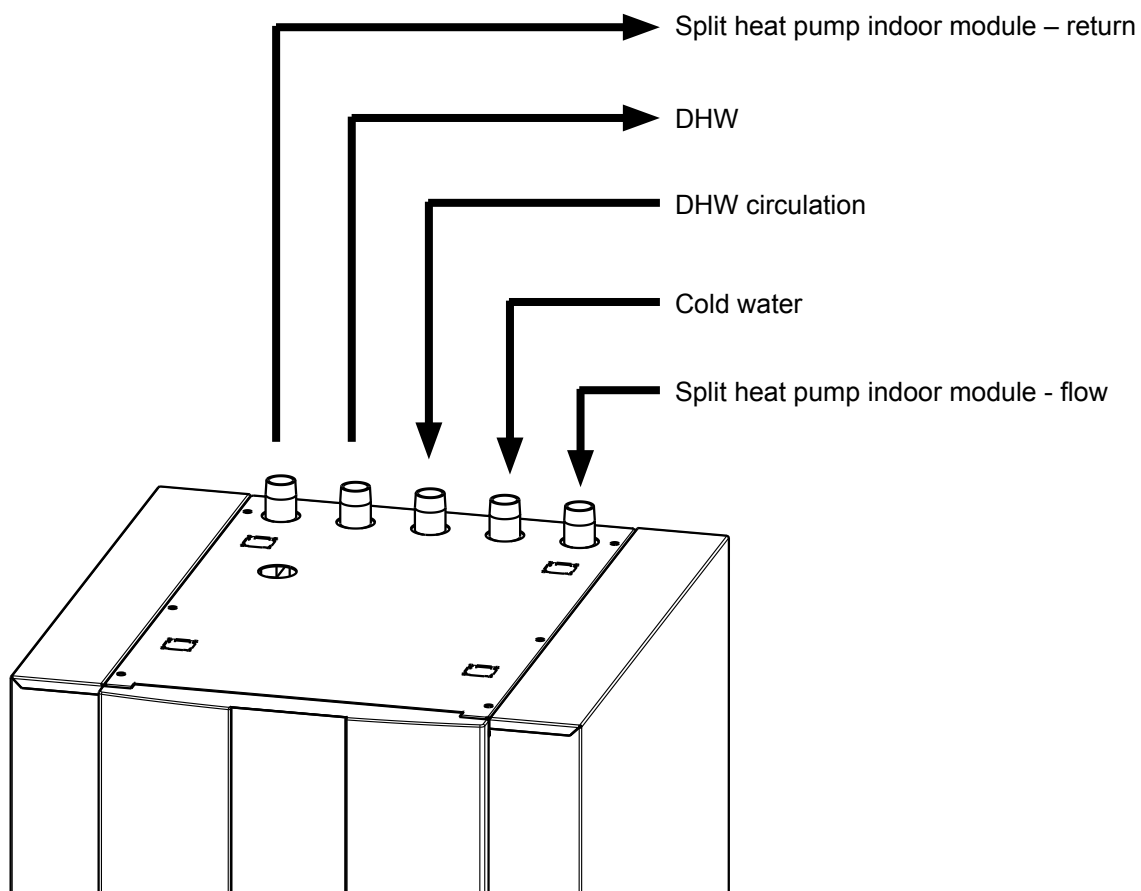


Service clearances

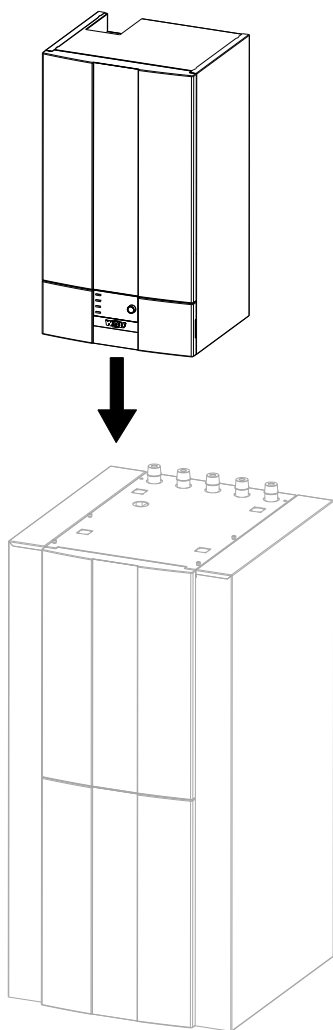
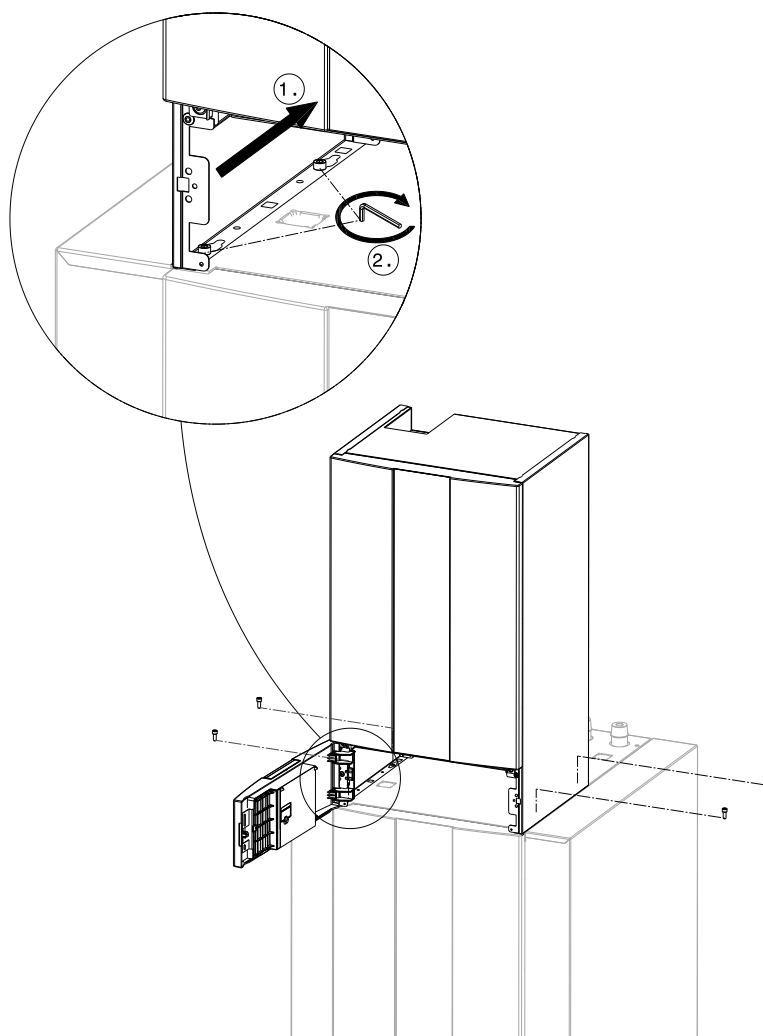


BM-2 programming unit
serves as remote control



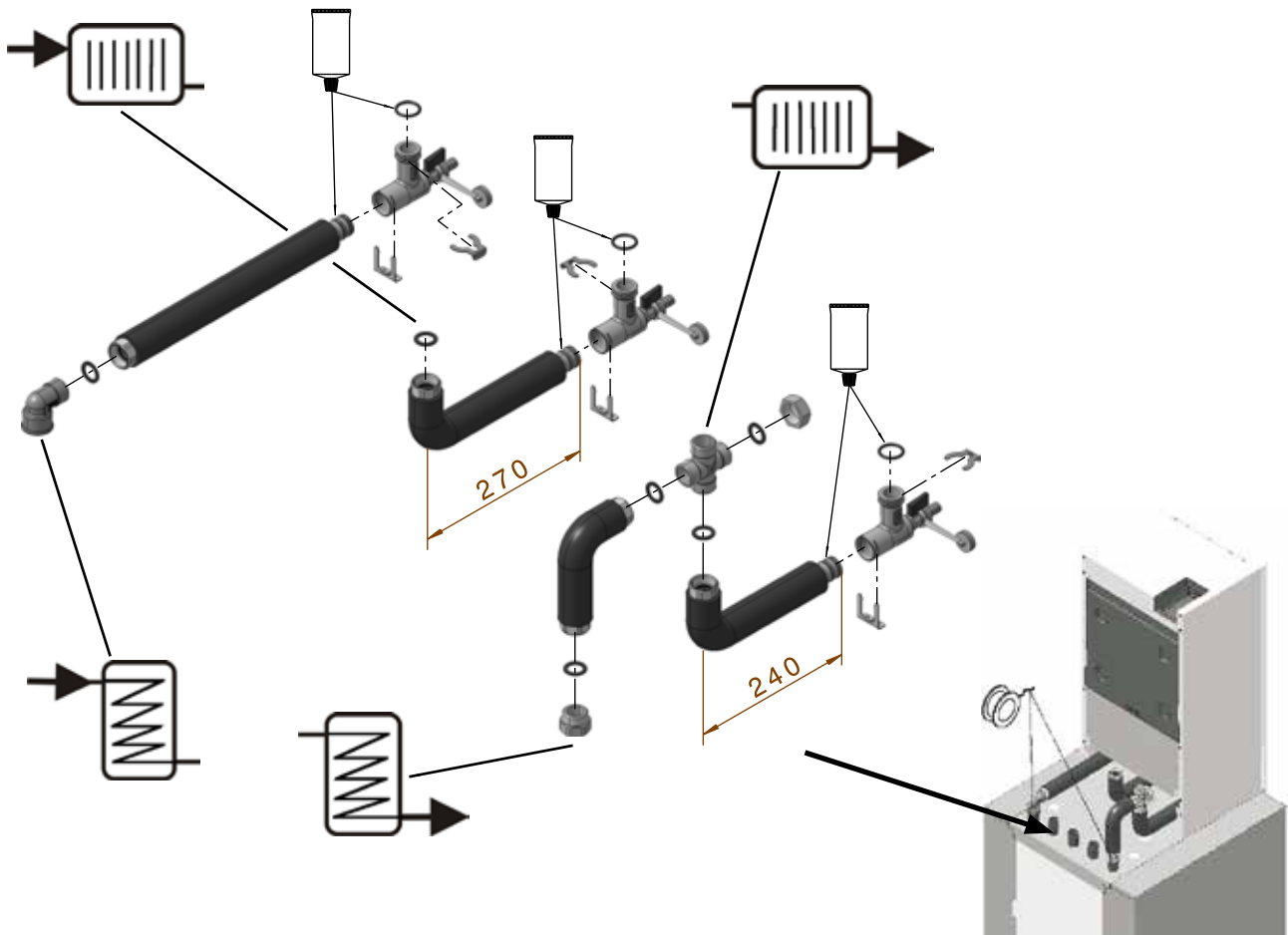


CEW-2-200

**Installation of indoor module
on CEW-2-200****Step 1****Step 2**

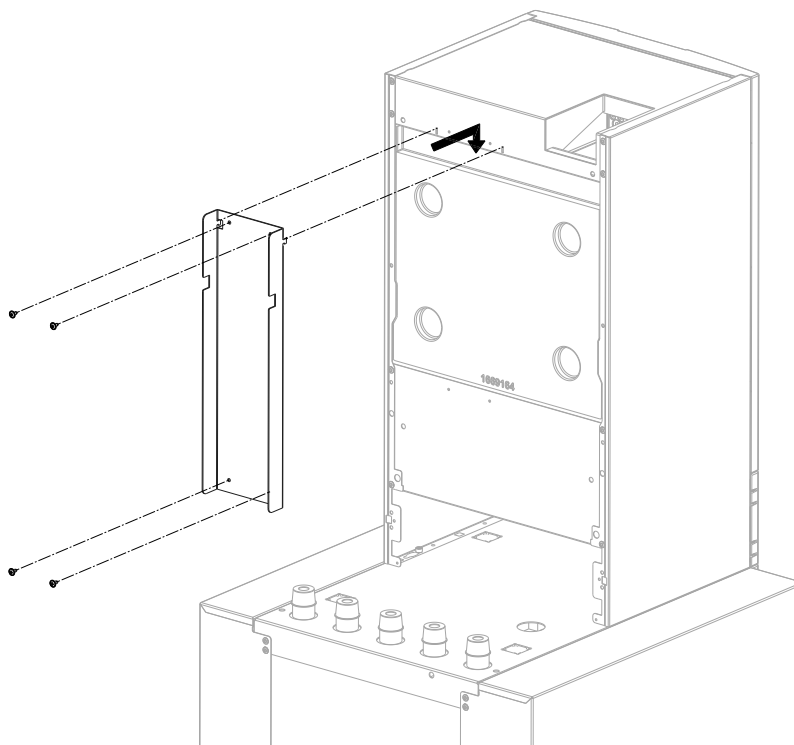
Installation of connection set (accessories)

Step 3



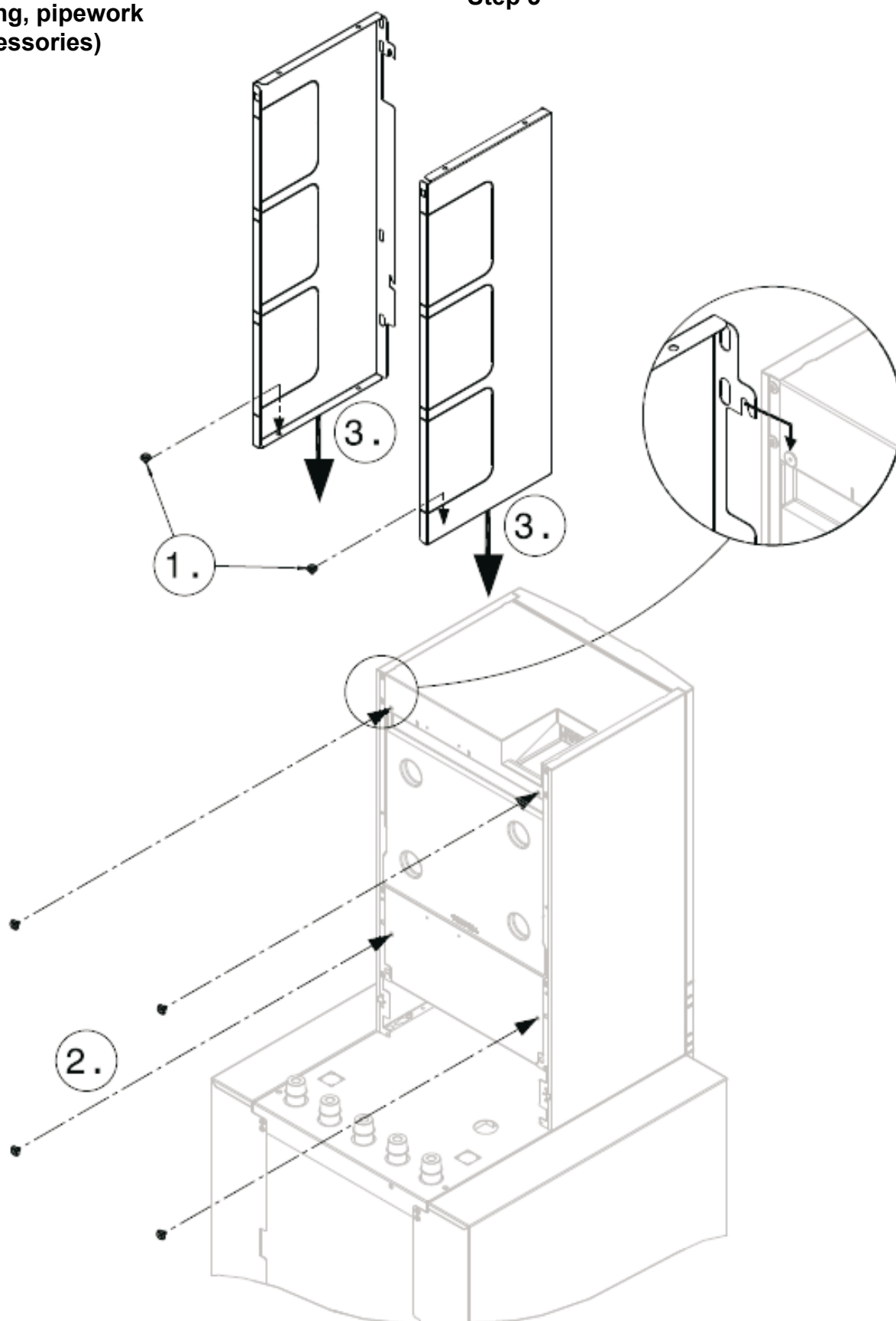
Installation of mounting bracket for 25 l expansion vessel (accessories)

Step 4



Installation of connection set,
casing, pipework
(accessories)

Step 5



SPU-1-200



SPU-1-200 buffer cylinder made from S 235 JR (St 37-2) steel.
Foil jacket in Wolf silver, no corrosion protection on interior cylinder wall, as the cylinder is only approved for use in sealed unvented heating systems as a buffer cylinder for process water.

Please note **Not suitable for drinking water!**

The SPU-1-200 is designed for combination with an air/water heat pump or a brine/water heat pump.

The SPU-1-200 is supplied ready for connection as separating cylinder or as cylinder in series.

When connected as a separating cylinder, it also acts as a low loss header.
The PU rigid foam insulation ensures minimum radiation and standby losses.

Standard delivery SPU-1-200

Packaged in film, fully encased, ready for connection, incl. boiler drain & fill valve, adjustable feet, installed sensor well; installation instructions included

SEW-1-300, SEW-1-400

SEW-1 DHW cylinder with internal indirect coil.

Steel cylinder with corrosion protection provided by special enamelled coating on the inner wall of the cylinder, compliant to DIN 4753. Additional corrosion protection provided by sacrificial magnesium anode. DHW cylinder for DHW heating in conjunction with a heat pump.

Suitable for systems to DIN 1988, DIN EN 12828 and DIN 4753.

The SEW-1-300 is designed for heat pumps with a heating output of up to 14 kW, the SEW-1-400 for a heating output of up to 20 kW and a particularly high DHW demand.

Wolf DHW cylinders can be used for all water qualities as defined in the Drinking Water Ordinance [Germany] and in any pipe network.

Standard delivery SEW-1-300 / 400

Packaged in film, fully encased, ready for connection, adjustable feet, installed protective anode; installation instructions included.

SEM-1W-360

SEM-1W-360 solar DHW cylinder with internal indirect coil for additional integration of solar collectors.

Steel cylinder with corrosion protection provided by special enamelled coating on the inner wall of the cylinder, compliant to DIN 4753. Additional corrosion protection provided by sacrificial magnesium anode. DHW cylinder for DHW heating in conjunction with a heat pump.

Suitable for systems to DIN 1988, DIN EN 12828 and DIN 4753.

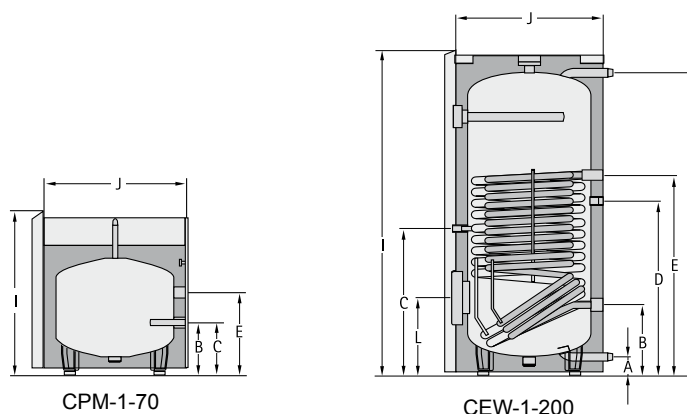
Two highly efficient bare-tube heat exchangers with indirect dual coil for convenient DHW heating with heat pump and additional integration and use of solar energy.

The PU rigid foam insulation with foil jacket ensures minimum radiation losses and standby heat losses.

Wolf DHW cylinders can be used for all water qualities as defined in the Drinking Water Ordinance [Germany] and in any pipe network.

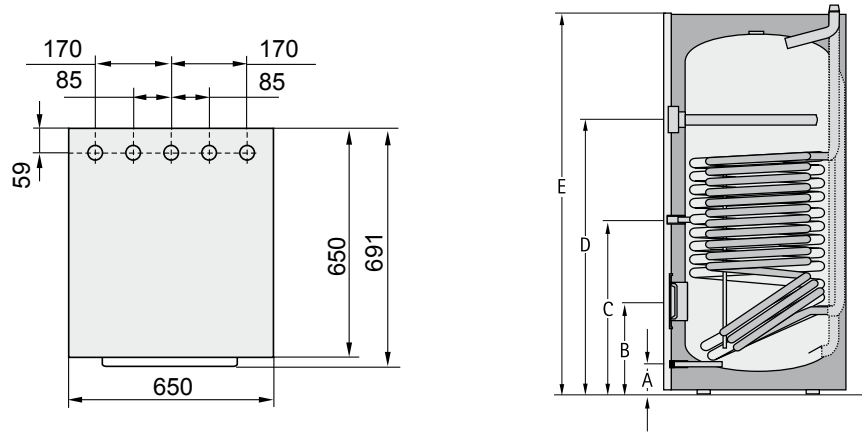
Standard delivery SEM-1W-360

Packaged in film, fully encased, ready for connection, adjustable feet, installed protective anode; installation instructions included.



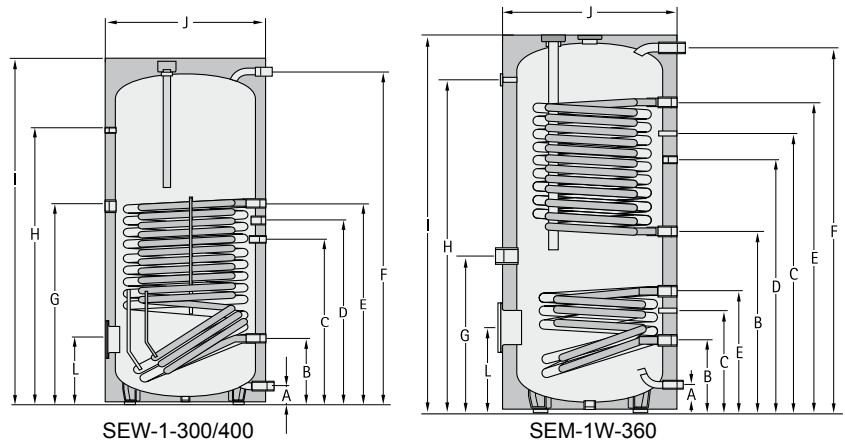
Specification

DHW cylinder	Type			CEW-1-200
Buffer cylinder	Type	CPM-1-70/7	CPM-1-70/8	
Max. operating pressure	bar	3		10
Max. operating temperature	°C	95		95
Cylinder capacity	l	70		180
Continuous cylinder output t_v 80/60 °C → t_{DHW} 10/45 °C	kW - l/h	-		20/490
Output factor (heating)	NL60	-		2.9
Output factor (heating)	NL50	-		1.4
Heat-up time 10 kW → 10-50 °C	min	-		59
Draw-off rate, DHW at 40 °C ($T_{cyl} = 55$ °C, 15 l/min)	l	-		191
Cold water connection	A mm			90
Return, heating / solar	B mm	225/-		222/-
Cylinder sensor, heating / solar	C mm	225/-		590/-
DHW circulation	D mm	-		697
Flow, heating / solar	E mm	352/-		797/-
DHW connection	F mm	-		1194
Electric booster heater (opt.)	G mm	-		-
Thermometer connection	H mm	-		-
Overall height	I mm	740		1270
Diameter incl. insulation	J mm	600		600
Casing width / depth	mm	600 x 650		600 x 650
Service flange	L mm	-		324
Height when tilted	mm	925		1395
Primary heating water	bar/°C	3/95		3/95
Secondary DHW	bar/°C	-		10/95
Internal flange diameter	mm	-		DN 110
Cold water connection	G	½" fem.		1" male
Return, heating / solar	G	1 ½" male / -		1 ½" male / -
DHW circulation	G	-		¾" male
Flow, heating / solar	G	1 ½" male / -		1 ½" male / -
DHW connection	G	-		1" male
Protective anode (insulated)	G	-		1 ¼" fem.
Electric booster heater	G	-		1 ½" fem.
Cylinder sensor	G	½" fem.		½" fem.
Thermometer	G	-		-
Indirect coil surface area, heating / solar	m²	-		2.3/-
Indirect coil content, heating / solar	l	-		17/-
Weight	kg	61	62	147



Specification

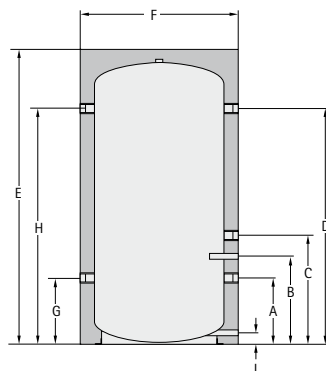
DHW cylinder	Type	CEW-2-200
Max. operating pressure	bar	10
Max. operating temperature	°C	95
Cylinder capacity	l	180
Continuous cylinder output $t_v 80/60\text{ °C} \rightarrow t_{DHW} 10/45\text{ °C}$	kW - l/h	20/490
Output factor (heating)	NL60	3.0
Output factor (heating)	NL50	1.6
Heat-up time 10 kW \rightarrow 10-50 °C	min	60
Draw-off rate, DHW at 40 °C ($T_{cyl} = 55\text{ °C}$, 15 l/min)	l	191
Cold water connection	A mm	98
Service flange	B mm	322
Cylinder sensor, heating	C mm	472
Protective anode (insulated)	D mm	888
Overall height	E mm	1290
Casing width / depth	mm	650 x 691
Height when tilted	mm	1410
Primary heating water	bar/°C	3/95
Secondary DHW	bar/°C	10/95
Internal flange diameter	mm	DN 110
Cold water connection	G	1" male
Return, heating	R	1" male
DHW circulation	G	1" male
Flow, heating	R	1" male
DHW connection	G	1" male
Protective anode (insulated)	G	1 1/4" fem.
Cylinder sensor	G	1/2" fem.
Thermometer	G	-
Indirect coil surface area, heating	m ²	2.3
Indirect coil content, heating	l	14.5
Weight with casing	kg	145



Specification

DHW cylinder	Type	SEW-1-300	SEW-1-400	SEM-1W-360
Cylinder capacity	l	288	375	360
Max. operating pressure (cylinder)	bar	10	10	10
Max. operating temperature (cylinder)	°C	95	95	95
Max. op. pressure (internal indirect coil)	bar	10	10	10
Max. op. temperature (int. indirect coil)	°C	110	110	110
Continuous cylinder output $t_{\text{cyl}} 80/60 \text{ °C} \rightarrow t_{\text{DHW}} 10/45 \text{ °C}$	kW - l/h	35/860	45/1100	20/490
Output factor (heating)	NL60	7	10	3
Output factor (heating)	NL50	3.5	5	1.8
Heat-up time 14 kW \rightarrow 10-50 °C	min	58	75	55 / 71*
Draw-off rate, DHW at 40 °C ($T_{\text{cyl}} = 55 \text{ °C}$, 15 l/min)	l	367	482	351
Cold water connection	A mm	55	55	55
Return, heating / solar	B mm	222/-	222/-	606/221
Cylinder sensor, heating / solar	C mm	656/-	791/-	965/385
DHW circulation	D mm	786	921	860
Flow, heating / solar	E mm	886/-	1156/-	1146/470
DHW connection	F mm	1229	1586	1526
Electric booster heater (opt.)	G mm	912	1174	540
Thermometer connection	H mm	1069	1426	1400
Overall height	I mm	1310	1660	1630
Diameter incl. insulation	J mm	705	705	705
Casing width / depth	mm	-	-	-
Service flange	L mm	277	277	276
Height when tilted	mm	1485	1805	1740
Primary heating water	bar/°C	10/110	10/110	10/110
Secondary DHW	bar/°C	10/95	10/95	10/95
Internal flange diameter	mm	DN 110	DN 110	DN 110
Cold water connection	G	1 1/4" male	1 1/4" male	1" male
Return, heating / solar	G	1 1/4" fem.	1 1/4" fem.	1 1/4" fem.
DHW circulation	G	3/4" fem.	3/4" fem.	3/4" fem.
Flow, heating / solar	G	1 1/4" fem.	1 1/4" fem.	1 1/4" fem.
DHW connection	G	1 1/4" male	1 1/4" male	1" male
Protective anode (insulated)	G	1 1/4" fem.	1 1/4" fem.	1 1/4" fem.
Electric booster heater	G	1 1/2" fem.	1 1/2" fem.	1 1/2" fem.
Cylinder sensor	G	1/2" fem.	1/2" fem.	20x2
Thermometer	G	1/2" fem.	1/2" fem.	Ø11 mm
Indirect coil surface area, heating / solar	m²	3.5/-	5.1/-	3.2/1.3
Indirect coil content, heating / solar	l	27/-	39/-	27/11
Weight	kg	134	185	182

* Internal indirect coil, heating + solar

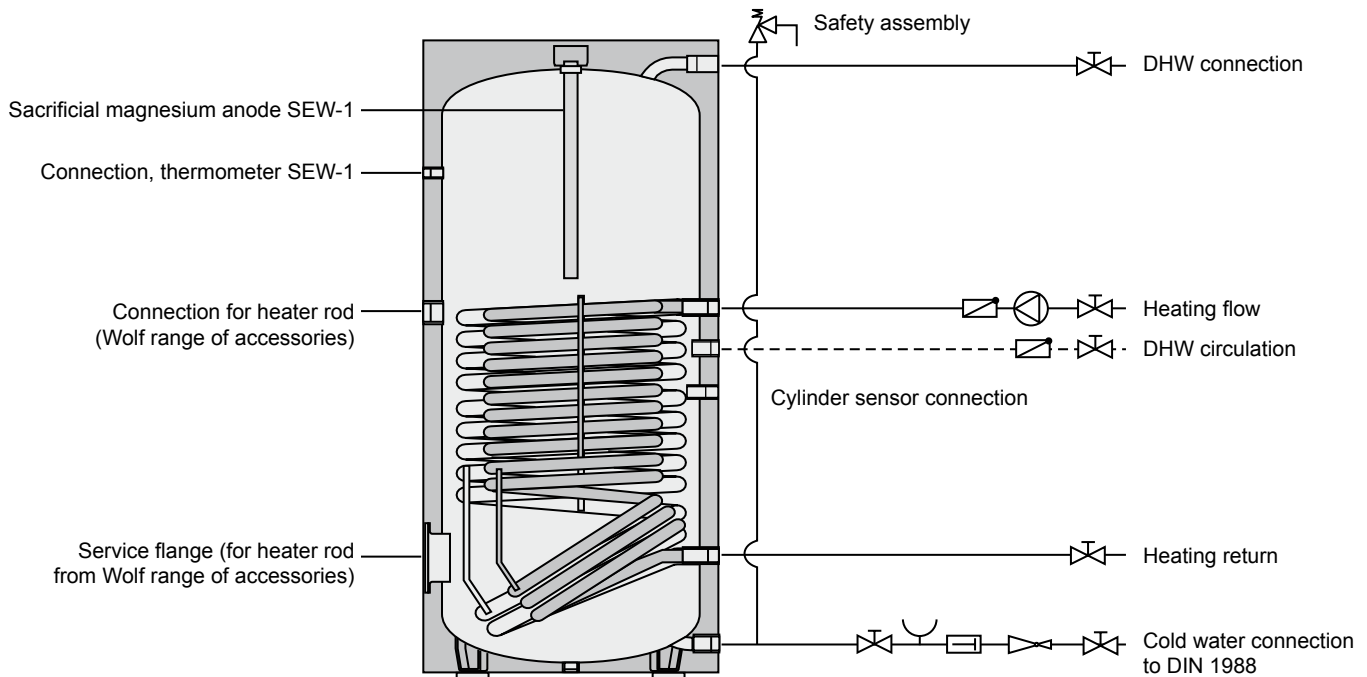


SPU-1

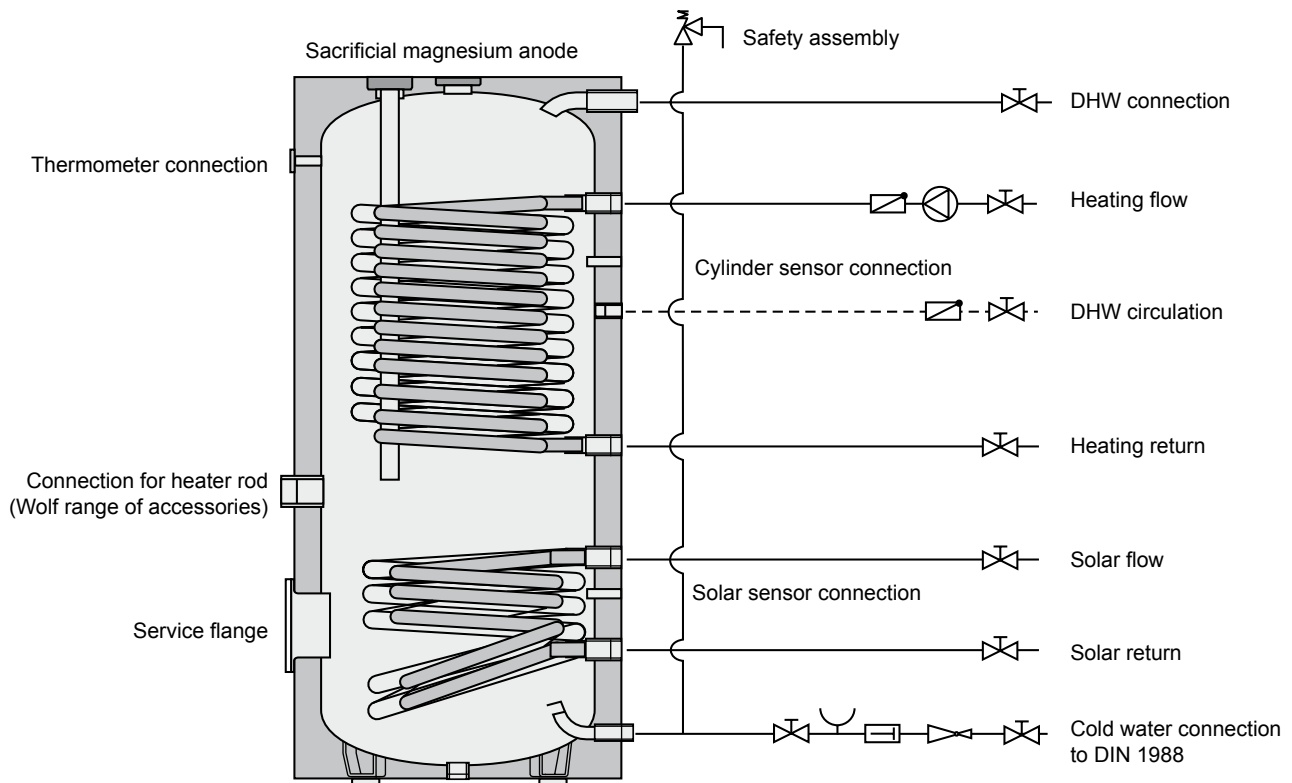
Specification

Buffer cylinder	Type	SPU-1-200
Max. operating pressure, secondary	bar	3
Max. operating temperature, secondary	°C	95
Cylinder capacity SPU-1	l	200
Connection, return	A mm	256
Connection, sensor well	B mm	358
Connection, heater rod	C mm	460
Connection, flow	D mm	910
Overall height	E mm	1140
Diameter incl. insulation	F mm	610
Connection, return	G mm	256
Connection, flow	H mm	910
Drain outlet	I mm	85
Height when tilted	mm	1310
Connections (5 pce)	G	1½" fem.
Sensor well	G	½" fem.
Air vent valve	G	1" fem.
Drain outlet	G	½" fem.
Weight	kg	48

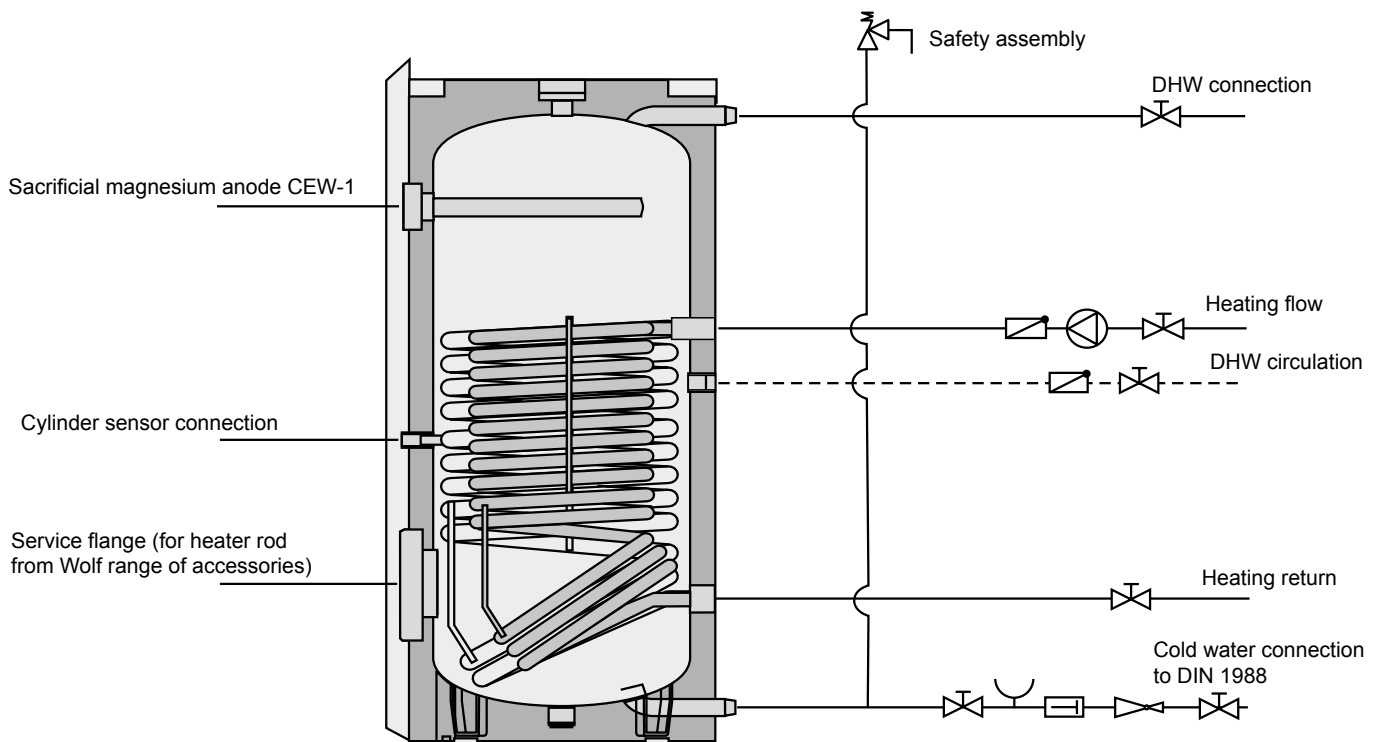
Pipework connection diagram SEW-1-300/400



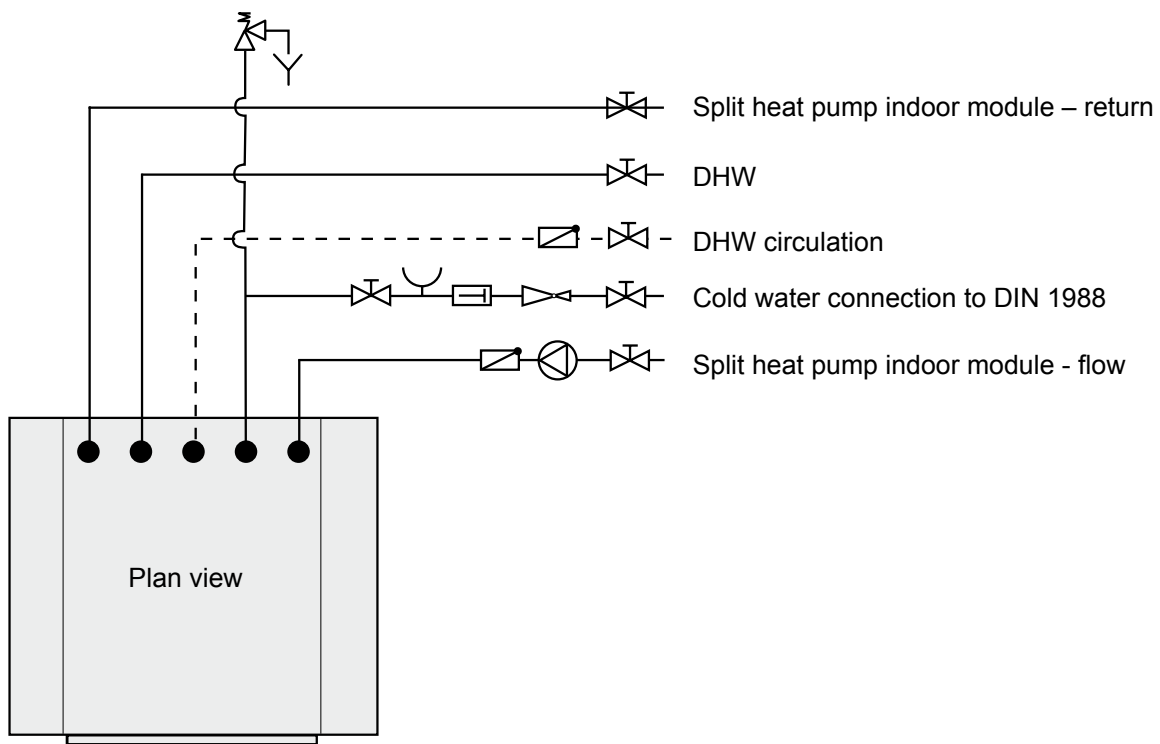
Pipework connection diagram SEM-1W-360



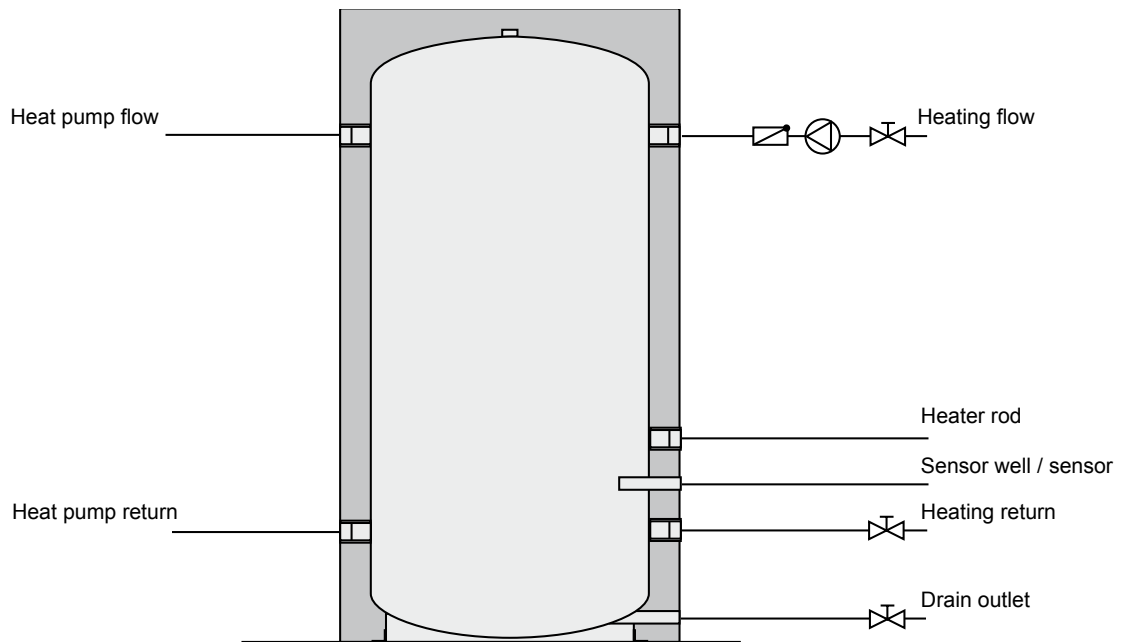
Pipework connection diagram CEW-1-200



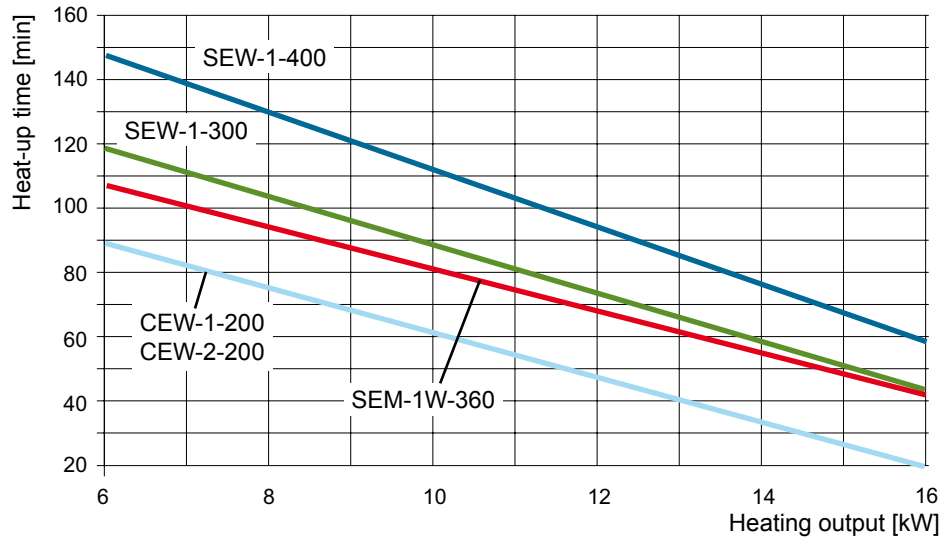
Pipework connection diagram CEW-2-200



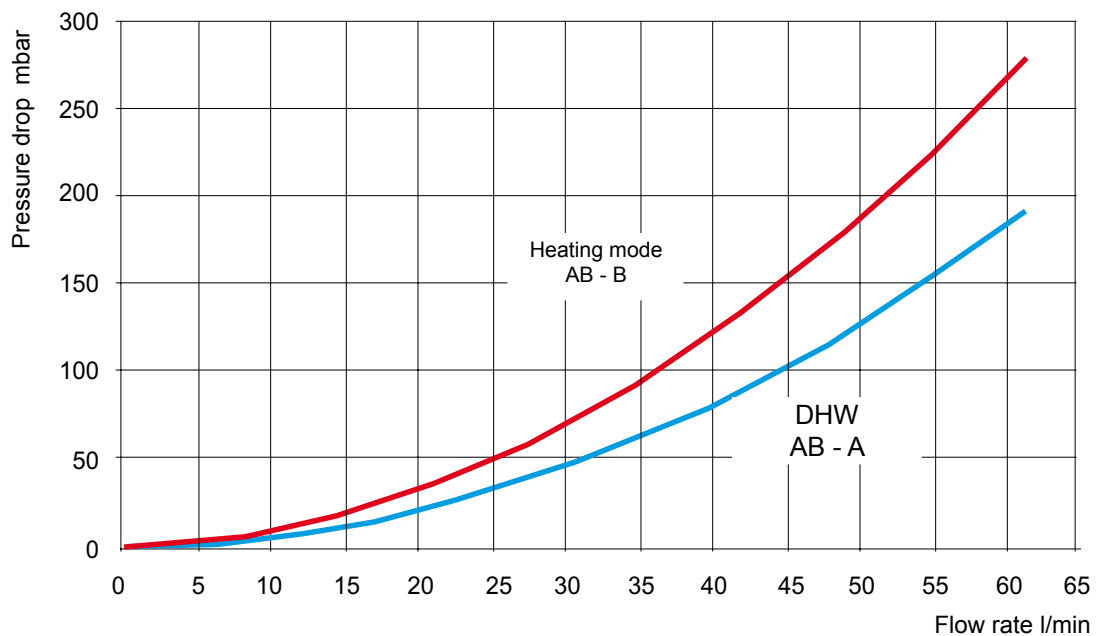
Pipework connection diagram SPU-1-200



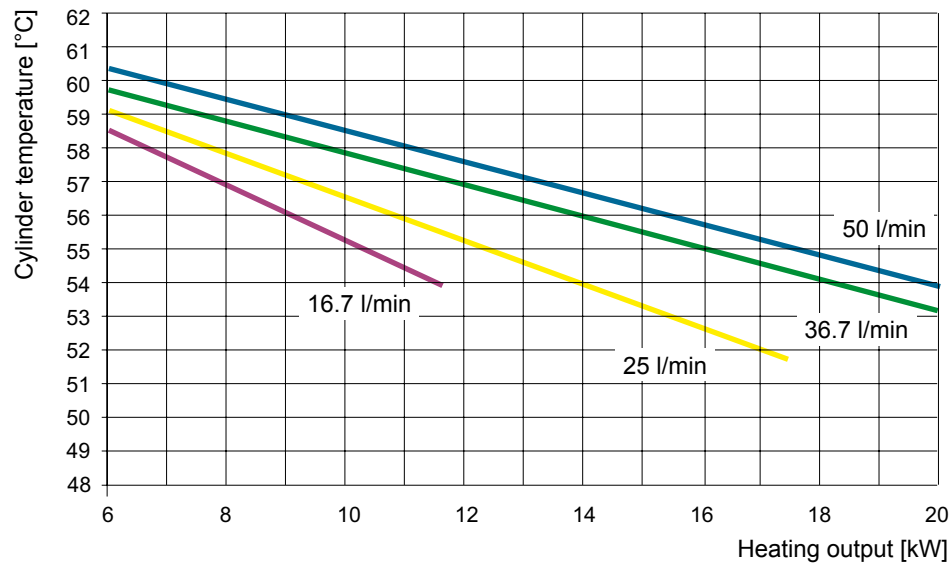
Heat-up times from 10 °C to 50 °C



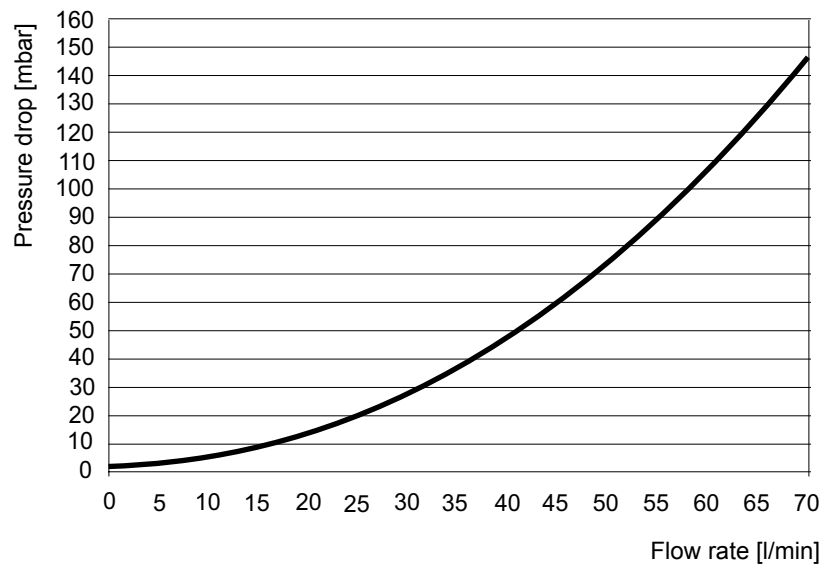
Pressure drop, Wolf 3-way diverter valve for BWL-1



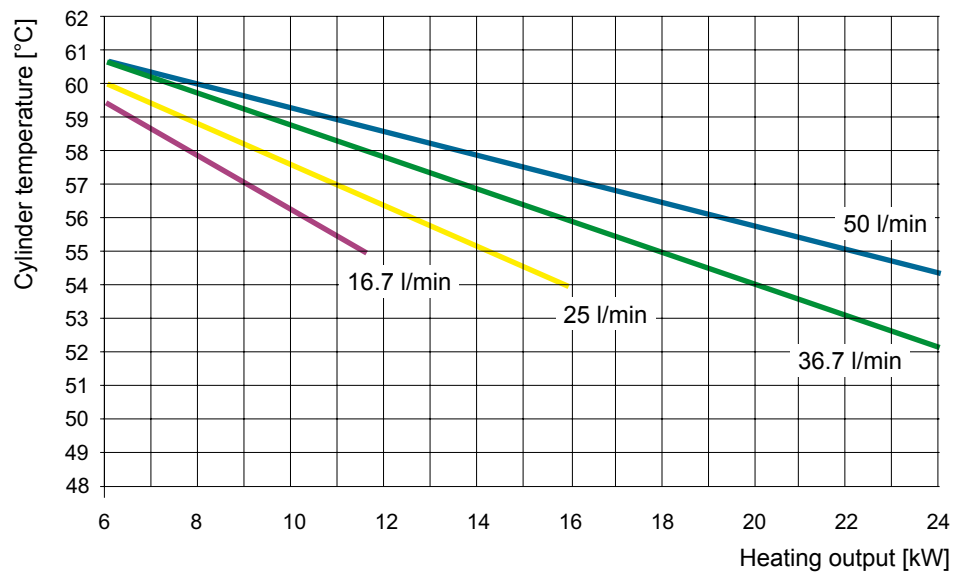
Max. achievable cylinder water temperature in ECO mode



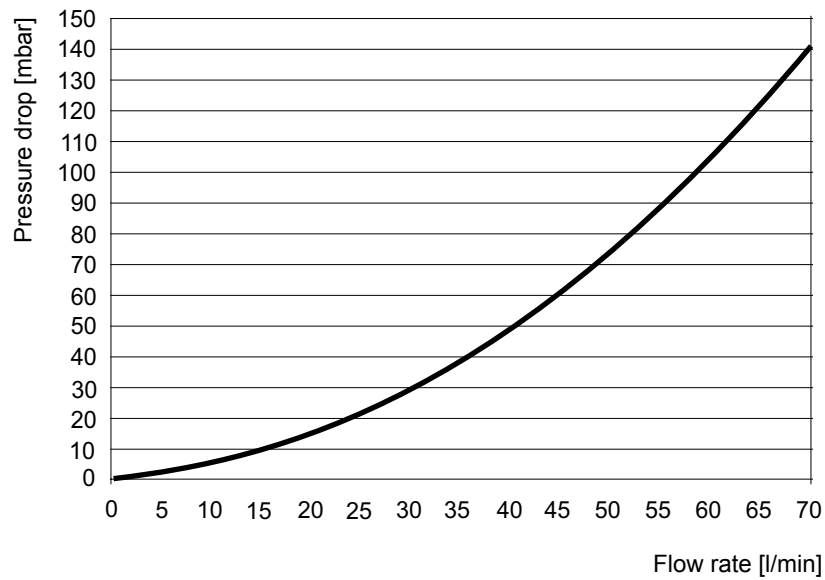
Pressure drop, internal indirect coil



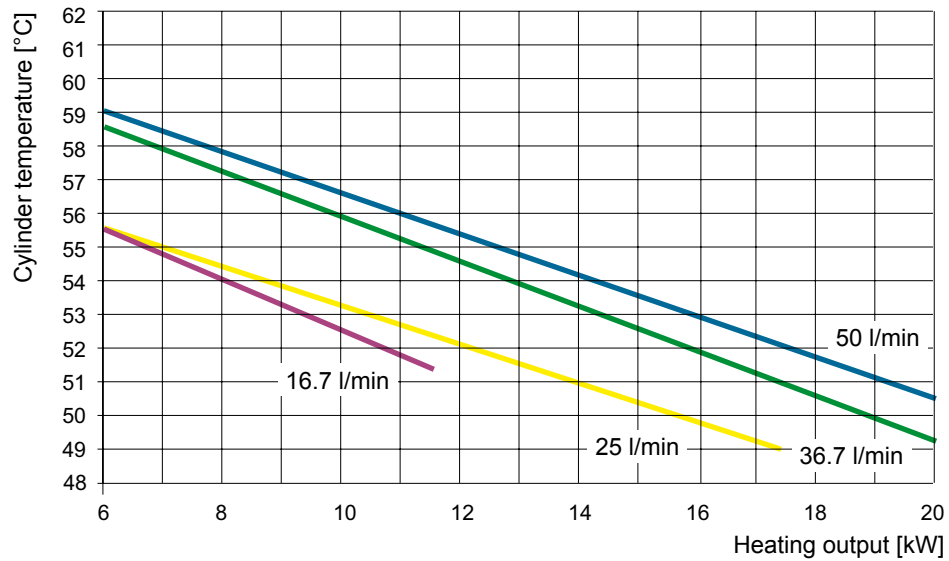
Max. achievable cylinder water temperature in ECO mode



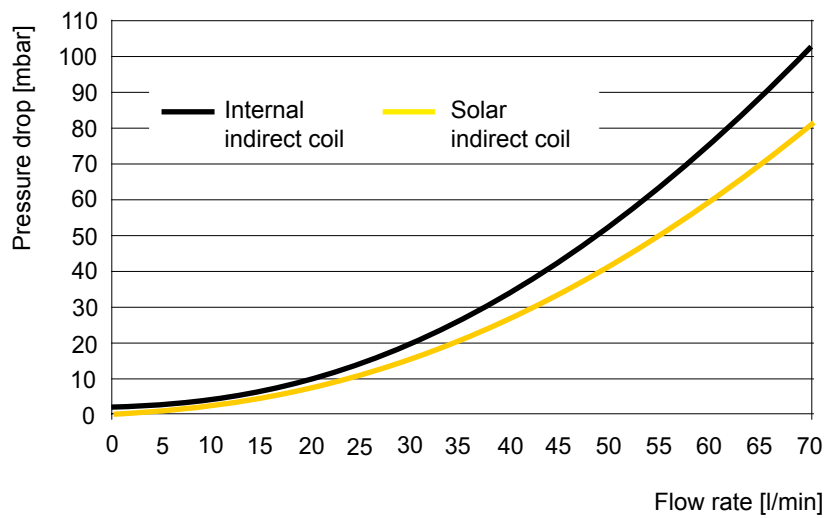
Pressure drop, internal indirect coil



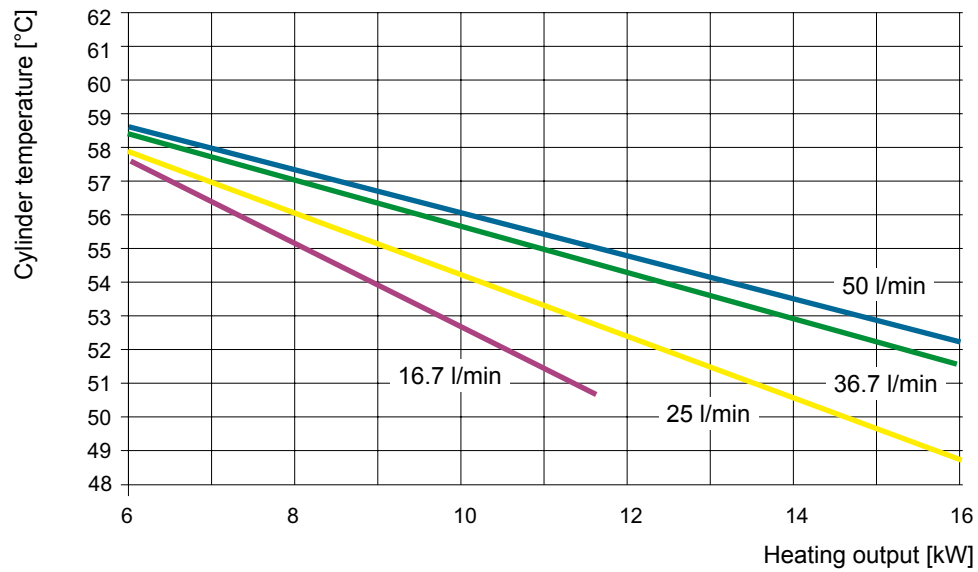
Max. achievable cylinder water temperature in ECO mode



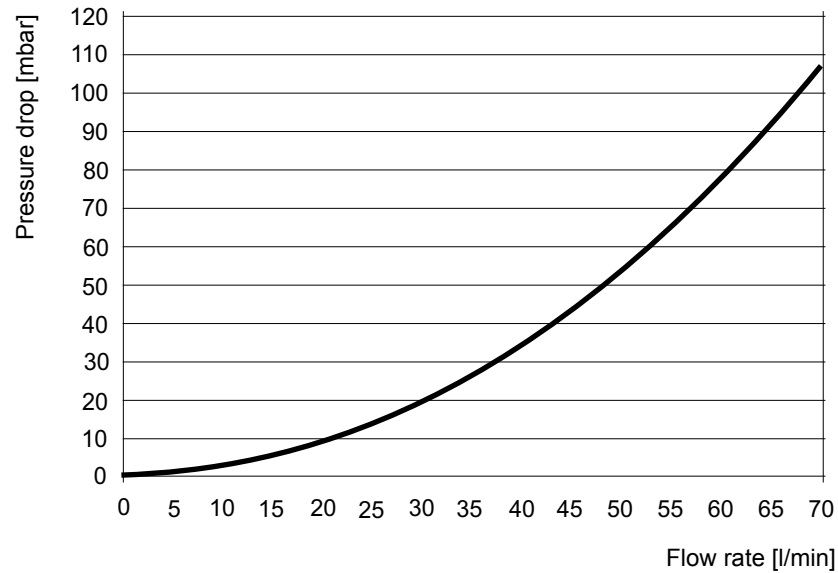
Pressure drop, internal indirect coil



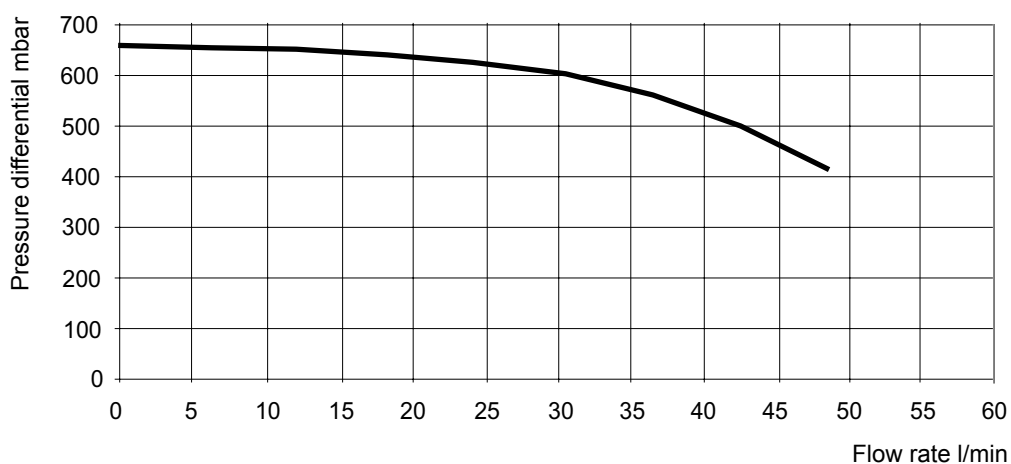
Max. achievable cylinder water temperature in ECO mode



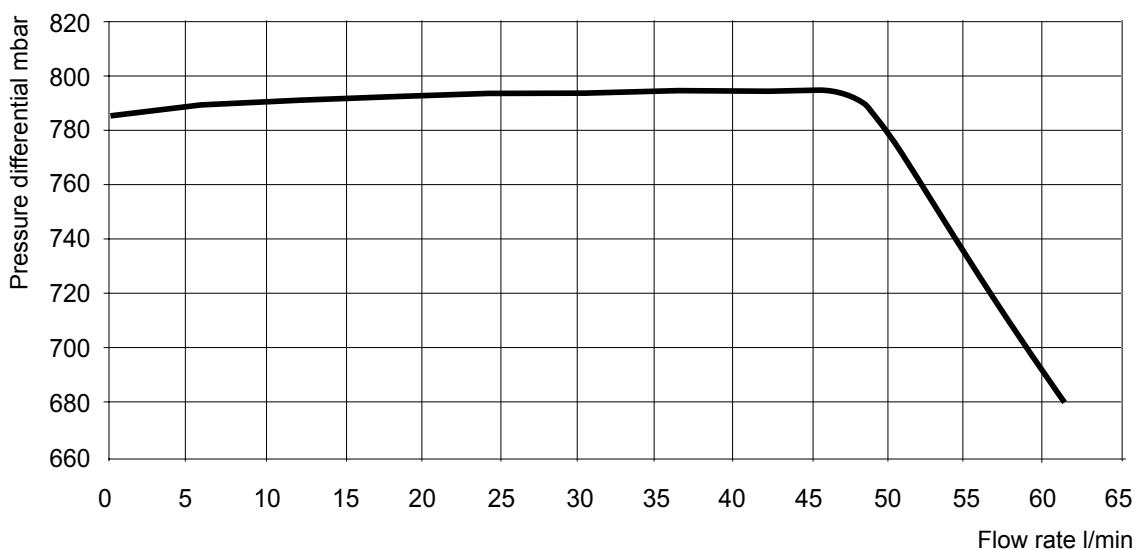
Pressure drop, internal indirect coil



Pressure differential, 7m pump

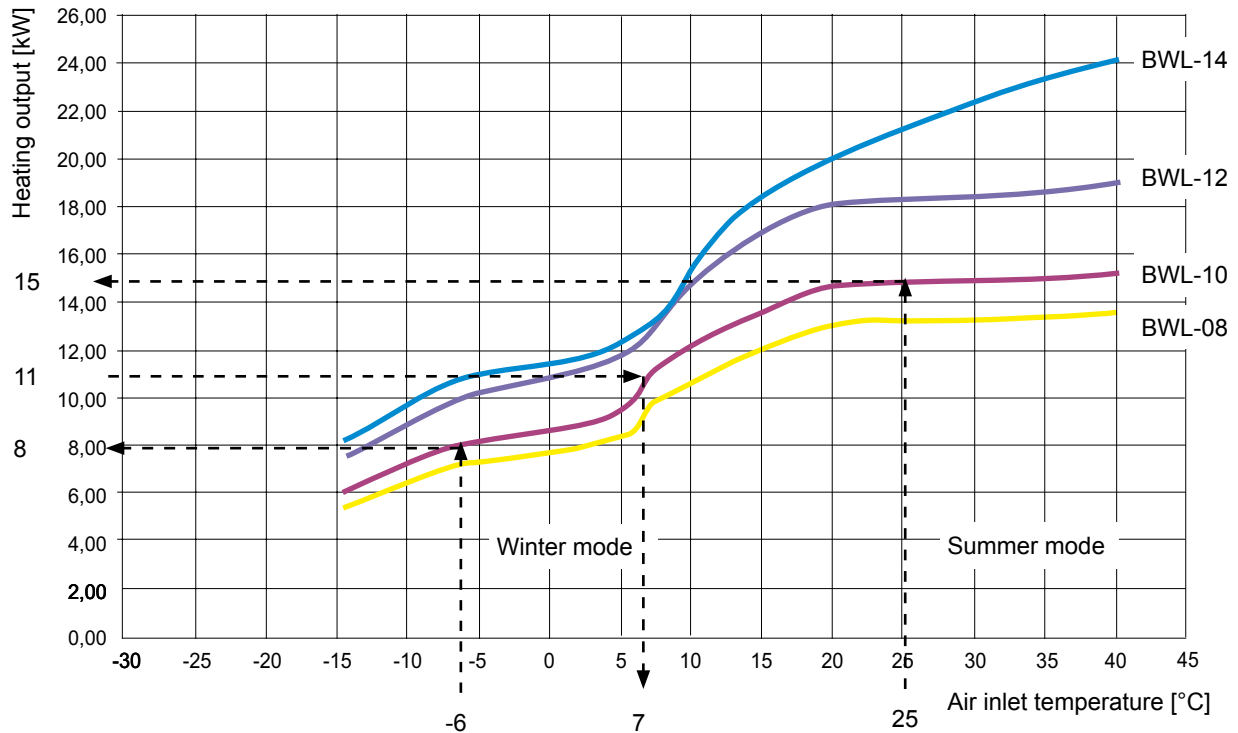


Pressure differential, 8m pump



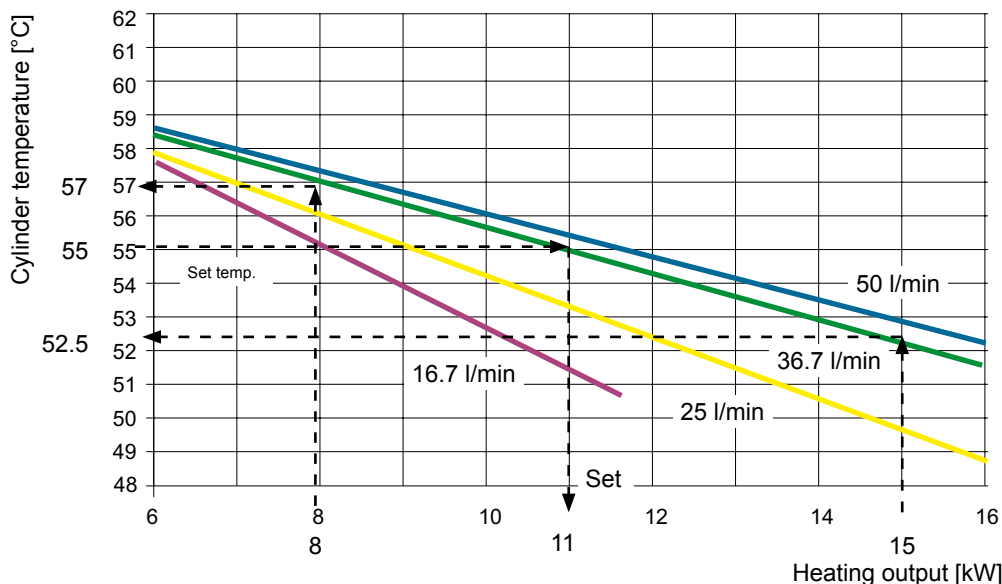
According to standard calculations, a detached house requires a BWL-1-10 and a 200 l DHW cylinder. The customer requires a DHW temperature of 55 °C at an air inlet temperature of 25 °C without using the heater rod. The purpose of these diagrams is to clarify whether this is possible.

1. Calculating the heating output



With the estimated air inlet temperature (summer) of 25 °C plotted into the diagram → approx. 15 kW heating output. In winter, with an air inlet temperature of e.g. -6 °C, a heating output of 8 kW is available.

2. Calculating the max. cylinder water temperature without use of heater rod = ECO mode



Using the calculated heating output, the diagram for the CEW-1-200 can serve to determine the maximum possible cylinder temperature by means of the flow rate (approx. 37 l/min). In summer mode, with an air inlet temperature of 25 °C (heating output 15 kW), a cylinder temperature of 52.5 °C can be achieved. In winter operation, with an air inlet temperature of -6 °C (heating output 8 kW), a cylinder temperature of 57 °C is achieved. The desired cylinder temperature of 55 °C at an air inlet temperature of 25 °C is not possible with the CEW-1-200. With the SEW-1-400, the desired temperature is achievable.

Commissioning

Installation and commissioning must only be carried out by a recognised installation company.

After installation, thoroughly flush the pipes and cylinder, fill the cylinder with water. Open the hot water tap until water flows out and check the safety valve by venting.

Before commissioning, the cylinder must be filled and vented.



Caution: Do not exceed the maximum operating pressure of 10 bar for DHW cylinders. A buffer cylinder on the heating circuit side may be subjected to a max. pressure of 3 bar.

Exceeding the permissible operating pressure may result in leaks and could destroy the cylinder.

Frost protection

Frost protection must be guaranteed on site.

Maintenance

Please note The system must be checked by a licensed installer at least every 2 years.

If corrosion inhibitors are used in the process water (e.g. in underfloor heating systems where the process water contains oxygen in low concentrations), the corrosion protection must be checked.

Magnesium anode



When a magnesium anode is installed, the protective effect is based on the electrochemical reaction, which results in the magnesium breaking down. **If the magnesium anode has been used up, the cylinder is no longer protected against corrosion. Consequence: Perforation corrosion, water leaks. The anode must therefore be checked every 2 years by a qualified installer, and replaced if used up by more than 2/3.**

Release the cylinder pressure before replacing the anode.

Close the cold water connection, switch off the DHW circulation pump and open any hot water tap in the house.



When draining the system, hot water may run out and cause injury, in particular scalding.

To check the protective anode, connect an amp meter between earth and anode. If the value measured is below 0.1 mA, replace the protective anode. Before doing so, depressurise the cylinder, switch off the DHW circulation pump and open a hot water tap in the house.

No maintenance is required if an impressed current anode is installed.

Service flange

Please note

After removing the flange, ensure a new gasket is fitted before reinstalling it; tighten the nuts with a torque of 20-25 Nm.

Electric booster heater (accessories)

Electric booster heater 2 kW/230V~, 4,5 kW/400 V~, with integral cylinder temperature controller and high limit safety cut-out.

Screw the electric booster heater into the 1 ½" socket on cylinder SEW-1 and seal it. If required, the service flange can be replaced by a flange plate with 1 ½" socket (Wolf accessories) and can be additionally equipped with an electric booster heater.

For CEW-1-200 and CEW-2-200, a 2 kW/230 V electric booster heater can be installed in the flange plate (accessories).

Observe the regulations and requirements of the VDE and those of the local power supply utility.

The connection must be carried out by a licensed electrician.



Disconnect appliances from the power supply before opening. Never touch live components - risk of injury or death.

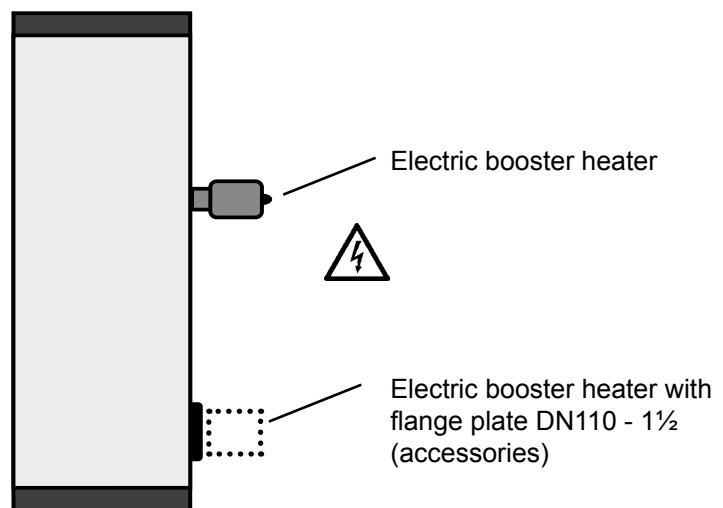
Only commission and check the function of the immersion heater when the cylinder is full.

Undo the cover on the electric booster heater and connect it to the 230 V or 400 V power supply in accordance with the instructions included. The connecting cable must be provided on site.

Note:

The electric booster heater can be enabled as an additional heat generator (add HG) via the WPM-1.

An on-site contactor must be used for the load circuit.



Cylinder temperature sensor (accessories)

The cylinder temperature sensor is available as an accessory. Insert the cylinder sensor into the sensor well of the floor-standing DHW cylinder and secure with the sensor retainer.

The required cylinder temperature (recommended 50-55 °C) is set at the BM programming unit of the heat pump control unit. To ensure economical operation, observe the maximum possible heating temperature of the heat pump. If required, higher cylinder water temperatures can be achieved with the heater rod integrated into the heat pump.

Fault	Cause	Remedy
Leaks	Pipe connections leaking	Re-seal the connections
Heat-up time too long	Heating water temperature too low; measure at cylinder flow, not at heat generator	Increase temperature (adjust controller)
	Heating circuit not vented	Vent several times (see manual air-vent valve)
	Cylinder sensor not in sensor well	Check position of cylinder sensor
No / insufficient unloading of cylinder on heating water side	Controller for cylinder return temperature control poorly adjusted	Change parameters (in particular start temperature differential)
	Diverter valve faulty / incorrectly connected	Re-establish function
	Flow rate on heating side too low	Vent heating circuit
		Remove blockages
		Increase pump rate

Fault	Cause	Remedy
Leak in floor-standing DHW cylinder	Flange leaking	Tighten bolts to a torque of 20-25 Nm, working diagonally; replace gasket
	Pipe connections leaking	Re-seal the connections
Heat-up time too long	Heating water temperature too low (measure at floorstanding cylinder flow, not at heat generator)	Increase temperature (adjust controller)
	Heating water volume too low (resulting in a wide spread, i.e. return temperature too low)	Larger pump Pay attention to back pressure from parallel heating circuits
	Internal indirect coil not vented	Vent several times with the pump switched off
	Build up of scale on heating surface	Descale heating surface
	Cylinder sensor not in sensor well	Check position of cylinder sensor
DHW temperature too low	Thermostat switches off too early Thermostat or control unit	Adjust thermostat or increase set temperature at control unit
	Return temperature too low (e.g. spread too wide)	Larger charging pump or increase speed of pump in the appliance via the control unit

Wolf GmbH

Postfach 1380 / D-84048 Mainburg / Tel. +49.0. 87 51 74- 0 / Fax +49.0.87 51 74- 16 00

www.wolf.eu