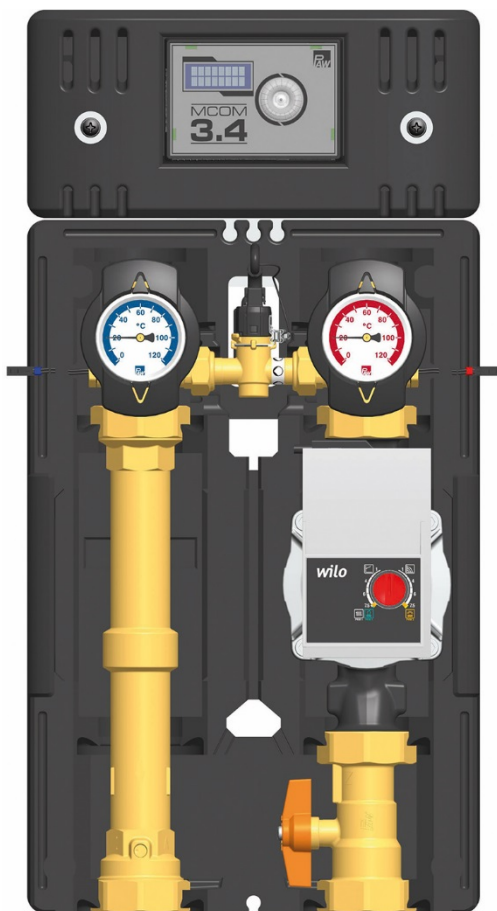




Installation and Operation Instructions

HeatBloC MC41

DN 25 / DN 32



Item no. 99453x013x-mub-en – Version V02 – Issued 2017/02

Translation of the original instructions

We reserve the right to make technical changes without notice!

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1 General Information



Carefully read these instructions before installation and commissioning.
Save these instructions in the vicinity of the installation for future reference.

1.1 Scope of these instructions

These instructions describe the function, installation, commissioning and operation of the direct (unmixed) HeatBloC MC41 DN 25 and DN 32.

For other components of the installation, such as the pump, the controller or the modular distribution manifold, please observe the instructions of the corresponding manufacturer.

The chapters called [specialist] are intended for specialists only.

1.2 Designated use

The HeatBloC may only be used in heating circuits taking into consideration the technical limit values indicated in these instructions.

The HeatBloC must **not** be used in drinking water applications.

Improper usage of the HeatBloC excludes any liability claims.

Only use PAW accessories with the HeatBloC.

This product complies with the relevant directives and is therefore labelled with the CE mark.

The Declaration of Conformity is available upon request. Please contact the manufacturer.



The wrapping materials are made of recyclable materials and can be disposed of with recyclable materials.

2 Safety instructions

The installation and commissioning as well as the connection of electrical components require technical knowledge commensurate with a recognised vocational qualification as a fitter for plumbing, heating and air conditioning technology, or a profession requiring a comparable level of knowledge [specialist].

The following must be observed during installation and commissioning:

- relevant local and national regulations
- accident prevention regulations of the professional association
- instructions and safety instructions of this manual

	 CAUTION
<p>Personal injury and damage to property!</p> <p>The HeatBloC must only be used in heating circuits filled with heating water according to VDI 2035 / Ö-Norm H 5195-1.</p> <p>The HeatBloC must not be used in drinking water applications.</p>	

NOTICE
<p>Material damage due to mineral oils!</p> <p>Mineral oil products cause lasting damage to seals made of EPDM, whereby the sealant properties get lost. We do not assume liability nor provide warranty for damage to property resulting from sealants damaged in this way.</p> <ul style="list-style-type: none"> ➤ It is imperative to avoid that EPDM gets in contact with substances containing mineral oils. ➤ Use a lubricant based on silicone or polyalkylene and free from mineral oils, such as Unisilikon L250L and Syntheso Glep 1 of the Klüber company or a silicone spray.

3 Product description

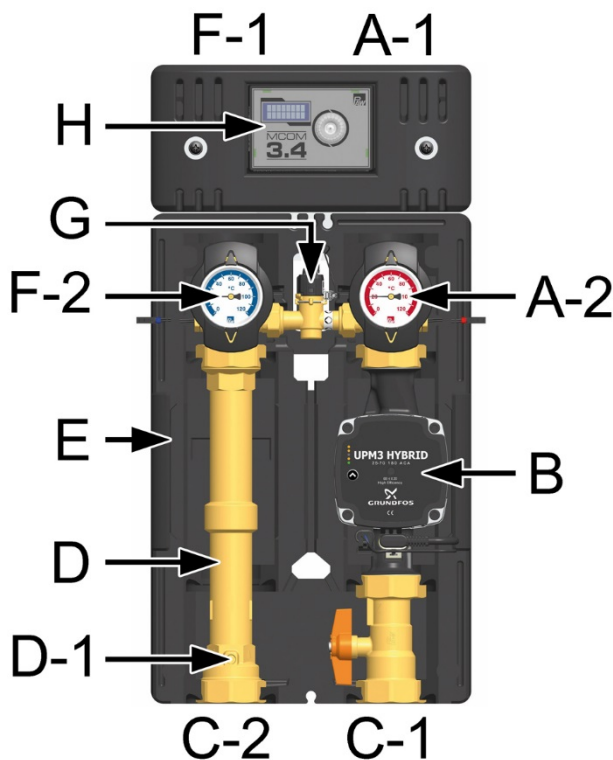
The HeatBloC is a preassembled group of fittings for heating circuits. The integrated pump can be isolated by means of ball valves and can thus be maintained without draining of the system.

The nominal value for the differential pressure between the flow and the return is adjusted at the controller. On this basis, the controller regulates the pump. Thus, the hydraulic balancing at the distribution manifold is assured and an energy-saving operation of the pump is guaranteed at any time.

The PAW HeatBloC must be either installed on a PAW modular distribution manifold or a PAW wall bracket.

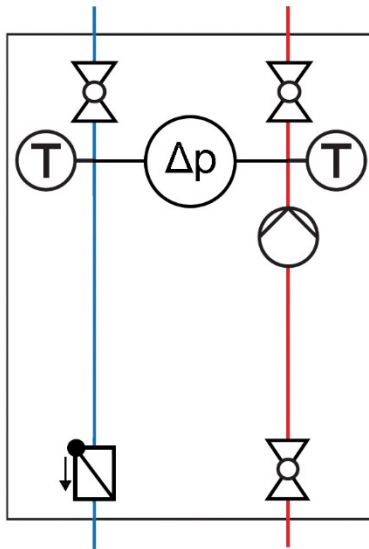
For the function of a MC system, **one** connection set (wall power supply, item no. 1398700) is necessary. The connection set is not included in the scope of delivery.

3.1 Equipment



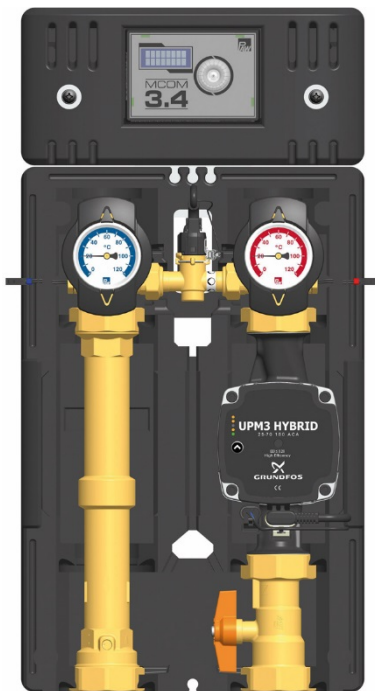
- A-1 Flow to the consumer circuit
- A-2 Flow ball valve with temperature sensor T_V and thermometer
- B Heating pump
- C-1 Flow from the heat generator
- C-2 Return to the heat generator
- D-1 Check valve, can be opened
- D Return pipe
- E Design insulation according to EnEV directive
- F-2 Return ball valve with temperature sensor T_R and thermometer
- F-1 Return from the consumer circuit
- G Differential pressure sensor
- H Controller MCom

3.2 Function



MC41 – Direct HeatBloC

In the case of the direct or unmixed HeatBloC, the flow of the heat generator is pumped directly through the heating circuit.



Application range:

- Boiler charging
- Storage tank charging and discharging
- Radiators

3.3 Pump [specialist]

The pump can be completely isolated. It can be replaced and maintained without draining the HeatBloC. Close the ball valves (A-2, C-1) above and beneath the pump.

The pump has been correctly adjusted at the factory. In the case of a breakdown of the control (no PWM signal), the pump runs at maximum rotation speed. To assure a proper functioning of the heating circuit, the pump must be set as follows:

- PWM profile (heating)

3.3.1 Pump settings Grundfos UPM3 Hybrid

The following code must appear on the pump display. The code can be verified by briefly pressing the push button. Please observe the separate instructions of the pump!

	Yellow
	Off
	Off
	Yellow
	Red

3.3.2 Pump settings Wilo-Yonos PARA RSTG

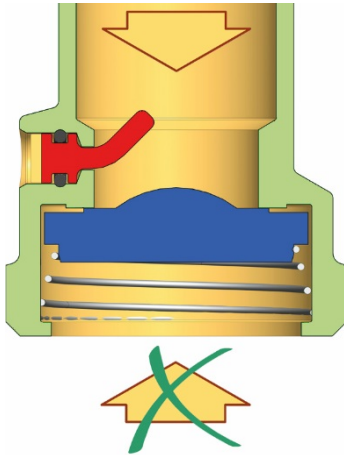
The rotary knob of the pump must be set to the following symbol. The LED ring is illuminated in orange. Please observe the separate instructions of the pump!



3.4 Check valve

The HeatBloC is equipped with a check valve in the return pipe. The check valve can be opened manually.

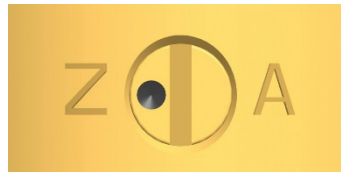
Operation



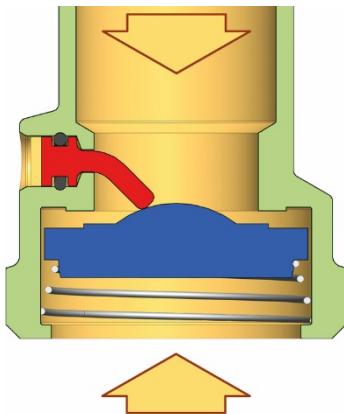
During operation, the marking must be directed to "Z".

→ The check valve is closed.

→ Flow only in the direction of the arrow.



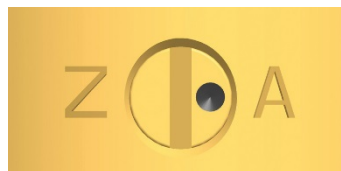
Filling, draining, venting



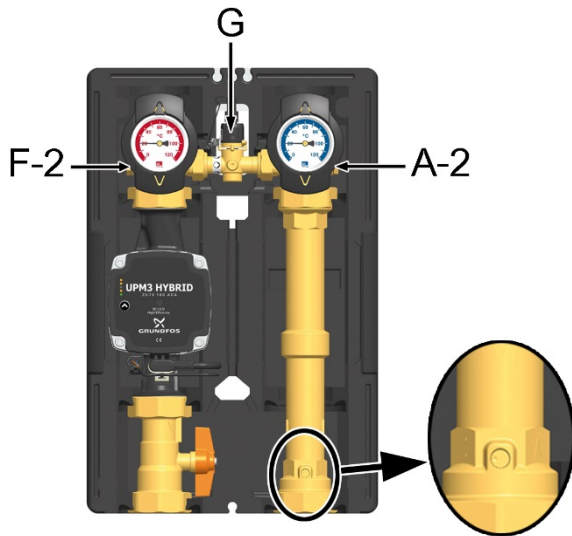
For filling, draining and venting the installation, the marking must be directed to "A".

→ The check valve is open.

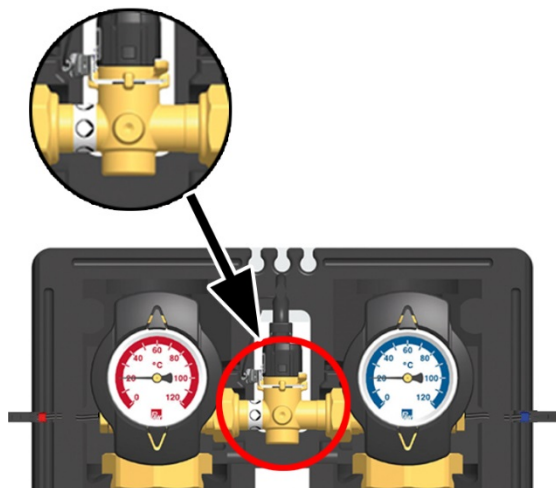
→ Flow in both directions.



4 Change of the flow line [specialist]



1. Dismount the temperature sensors of the ball valves (A-2 and F-2).
2. Unscrew both nuts of the sensor (G).
3. Unscrew the nuts of the ball valves (A-2 and F-2) above the pump or the return pipe.
4. Mount the return ball valve above the pump and the flow ball valve above the return pipe.
5. Interchange the flow and the return line. Please observe the position of the opening mechanism of the check valve in the return pipe (see figure).



6. Mount the sensor (G) between the ball valves.

Attention: The ground lug of the sensor points forward. The banderole indicates on which side of the sensor housing the pump must be fixed (see figure on the left).
7. Flatten the ground lug.
8. Mount the temperature sensors T_R and T_V into the ball valves.

Observe the correct attribution:

Red = Flow

Blue = Return

5 Assembly and installation [specialist]

The PAW HeatBloC must be either installed on a PAW modular distribution manifold or a PAW wall bracket. Please observe the separate instructions!

NOTICE

Damage to property!

The location of installation must be dry, load-carrying, frost-proof and protected against ultraviolet radiation in order to prevent material damage of the installation.

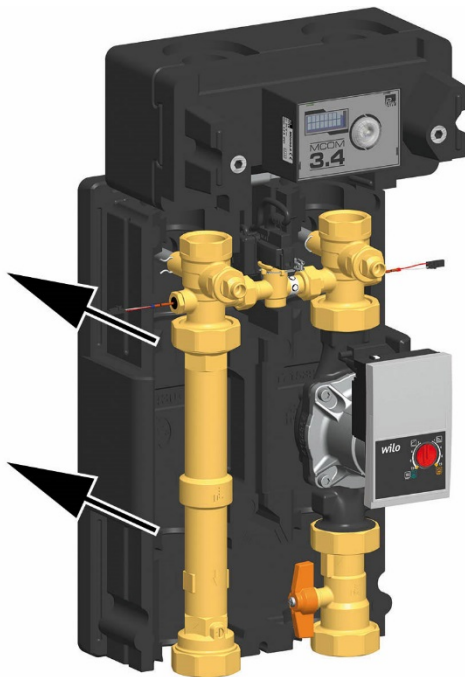
5.1 Installation and commissioning of the HeatBloC

The HeatBloC MC can be mounted on a PAW modular distribution manifold.

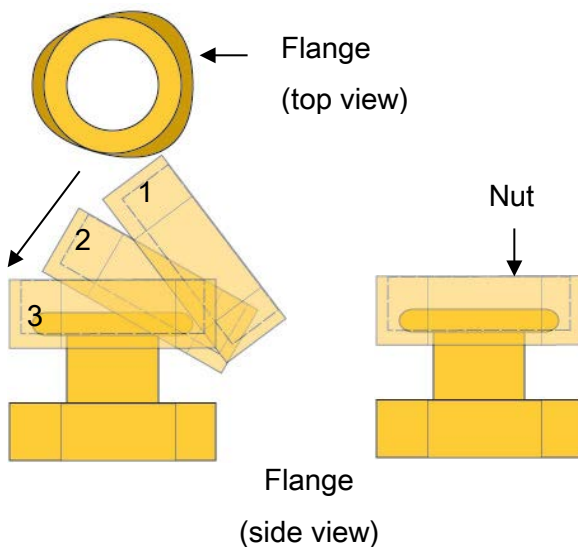


NOTICE

- Verify if the grounding cable holds securely in place at the differential pressure sensor!
The ground lug points in the direction of the banderole.
- Carry out the following mounting instructions in parallel at each heating circuit of the system.

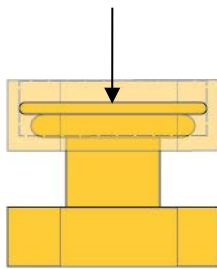


1. Remove the station from the packaging.
2. Note regarding HeatBloC with Wilo pump:
Dismount the insulating front shell of the controller and push the insulating back shell backwards.
3. Take off the thermometer handles and remove the insulating front shells.
4. Push the insulating back shell backwards.



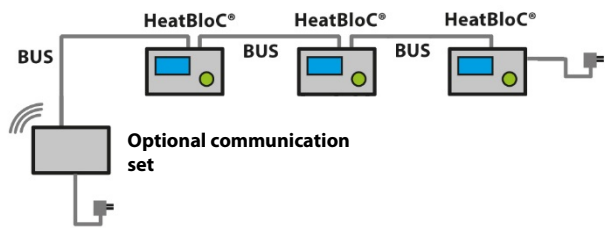
5. Unscrew the nuts on the lower connections of the HeatBloC and take out the sealing rings.
6. Put the two nuts over the flanges of the distribution manifold.

Sealing ring



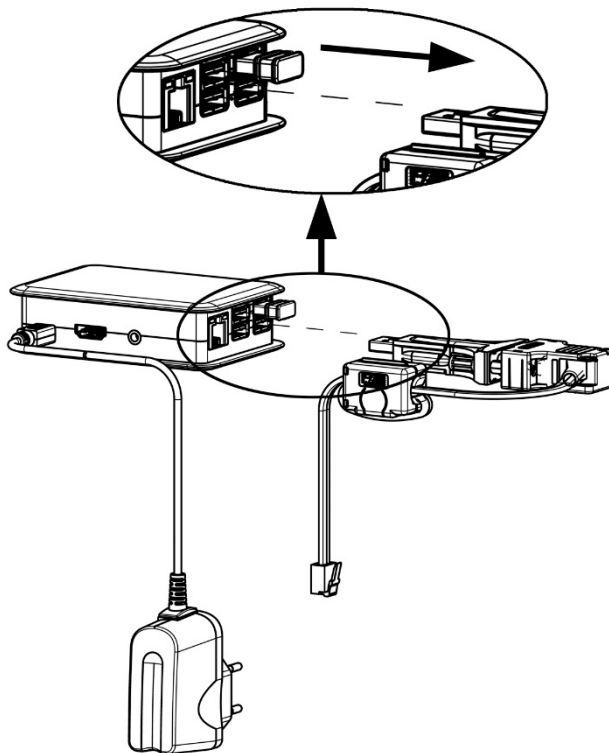
7. Put the sealing rings on the sealing surfaces.
8. Put the HeatBloC onto the two nuts.
9. Tighten the nuts. Make sure that the nuts do not get jammed and that the sealing rings do not slip.
10. Connect the HeatBloC to the installation by using the pipes. The installation to the piping must be carried out without any tension.
11. Repeat these steps for all the HeatBloCs that are mounted.
12. Fill and vent the installation.
13. Carry out a pressure test and check all thread connections.
14. Check the position of the check valve: during operation, the marking must be directed to "Z" (see page 9).
15. Mount the insulating back shell.
16. Connect the power supply of the pump to the heating controller.
17. Flush the installation.
18. Mount the insulating front elements.
19. Mount the insulating front and back shell of the distribution manifold.

5.2 Cabling



1. Loosen the screws of the controller insulation.
2. Dismount the insulating front shell of the controller.
3. Connect the wall power supply to the socket X6.2 (see below) at the last (right) controller.
4. Connect the bus line from controller 1 to controller 2 in the socket X6.1.
As the two sockets of the bus line (X6.1 and X6.2) are connected in parallel, the position has no importance.
5. Repeat these steps for all the HeatBloCs.
6. Remove the bus line from the last controller. Keep the bus line as spare part.

X1	X2	X3	X4	X5	X6.1	X6.2
X1	Not used			X4	Temperature sensor T_V , flow, red marking	
X2	PWM signal of the pump			X5	Differential pressure sensor	
X3	Temperature sensor T_R , return, blue marking			X6.1	Supply voltage or bus line (connected in parallel and therefore interchangeable)	
				X6.2		




7. If you do not mount the communication set, continue at point 11.
8. If you additionally mount the optional communication set, run the bus line of the communication set to the first (left) controller. For this purpose, disconnect the plug of the bus line from the mini PC of the communication set.
9. Make sure that the plug does not get wet.
10. Mount the optional communication set now. Please observe the separate instructions of the communication set!
11. Carry out the electrical commissioning of the controllers (see controller instructions).



12. Carry out the electrical commissioning of the communication set (see instructions of communication set).
13. Mount the insulating front shell of the controller.
14. Screw the screws in the controller insulation.

15. Please fill in the enclosed insert
and fix it on the insulation:

HeatBloC® MC	
Typ:	MC41
Name:	Storage tank charging
No:	2
 www.paw.eu	

Type:	Type of the heating circuit, f. ex. MC41
Name:	Type of application, f. ex. storage tank charging
No.:	Number of the heating circuit according to the controller instructions, f. ex. 2

5.3 Accessories

5.3.1 Connection set (not included in the scope of delivery)

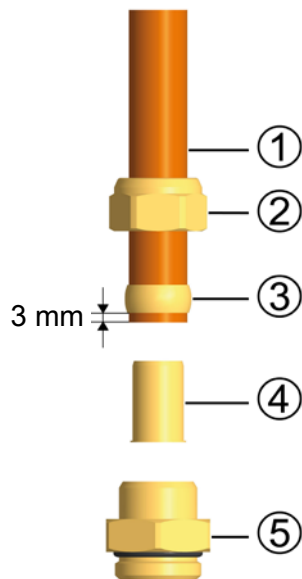
For the connection of the MCom controllers to the power supply **one** connection set (wall power supply, item no. 1398700) is mandatory, regardless of the number of heating circuits.

5.3.2 Communication set (not included in the scope of delivery)

The communication set with insulated housing can be mounted on the distribution manifold or on the wall using the enclosed mounting rail. It is connected with the controllers via a bus line. The internal mini PC is equipped with a power supply unit to assure the power supply and establishes its own local WLAN network. With a smartphone and the corresponding PAW MCom app, you can establish a connection with your installation via this WLAN and set parameters or read out current values.

You will get the app in the App Store for iOS devices and in the Google Play Store for Android devices entering the search term "PAW MCom".

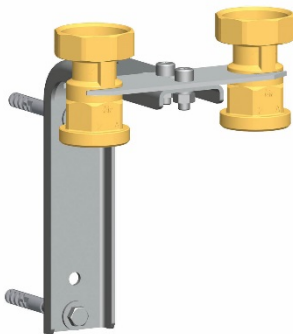
5.3.3 Cutting-ring compression fitting (not included in the scope of delivery)



Not included in the scope of delivery!

1. Push the union nut ② and the cutting ring ③ onto the copper pipe ①. The pipe must protrude at least 3 mm from the cutting ring in order to ensure the force transmission and the sealing.
2. Insert the support sleeve ④ into the copper pipe.
3. Insert the copper pipe with the plugged-on individual parts (②, ③ and ④) as far as possible into the housing of the compression fitting ⑤.
4. First, screw the union nut ② manually.
5. Tighten the union nut ② by rotating one full turn. Secure the housing of the compression fitting ⑤ against distort, in order to avoid damaging the sealing ring.

5.3.4 Wall bracket set for wall assembly (not included in the scope of delivery)



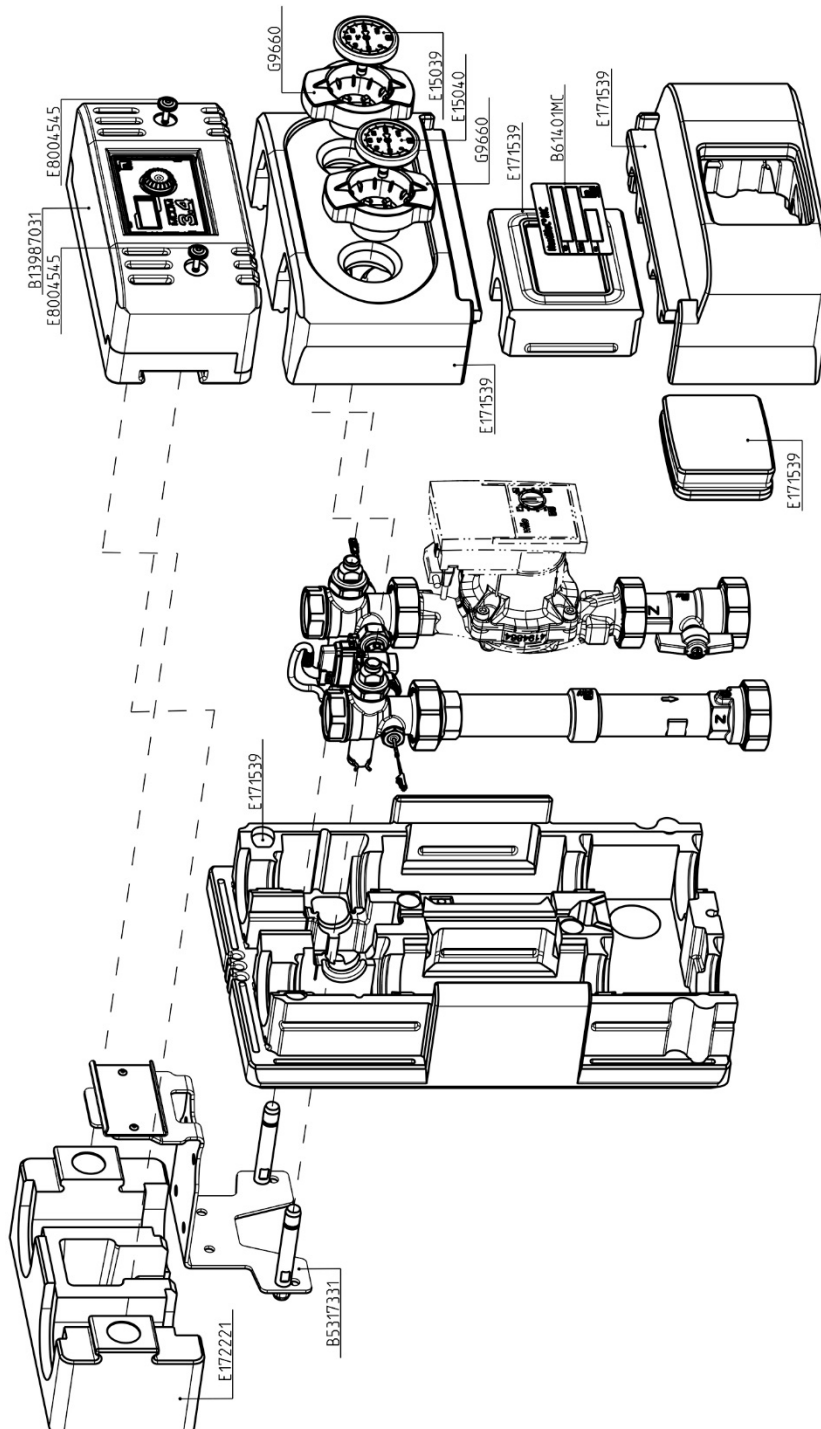
Description	Item no.
Wall bracket set DN 25	3422SET
Wall bracket set DN 32	3722SET

6 Scope of delivery [specialist]

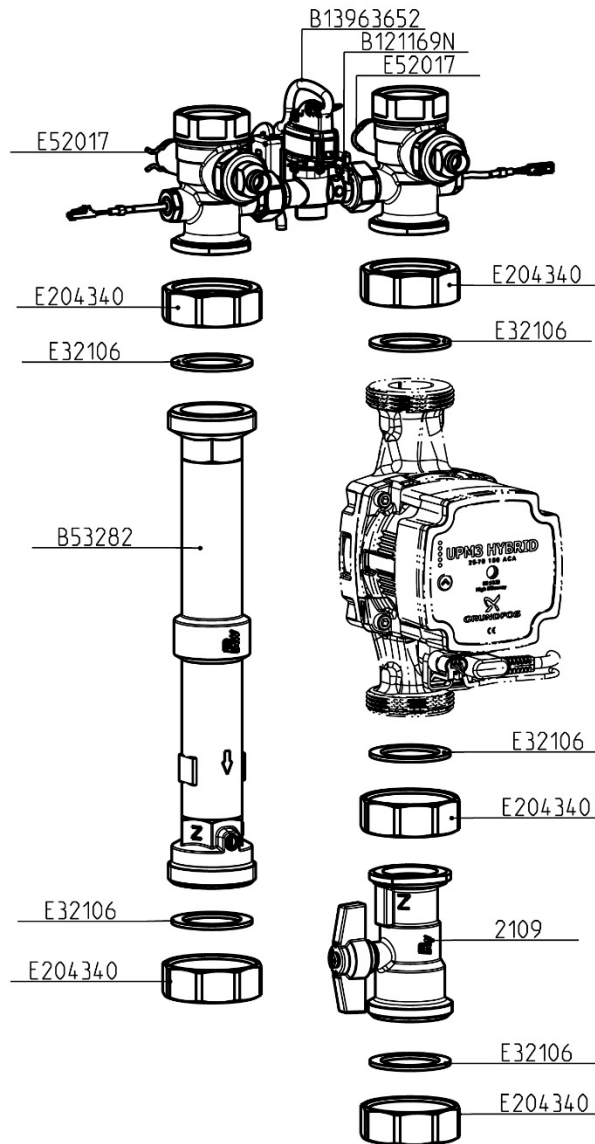
NOTICE

Complaints and requests/orders of spare parts will only be processed with information on the serial number! The serial number is placed on the return pipe of the heating circuit.

6.1 Insulation and controller DN 25

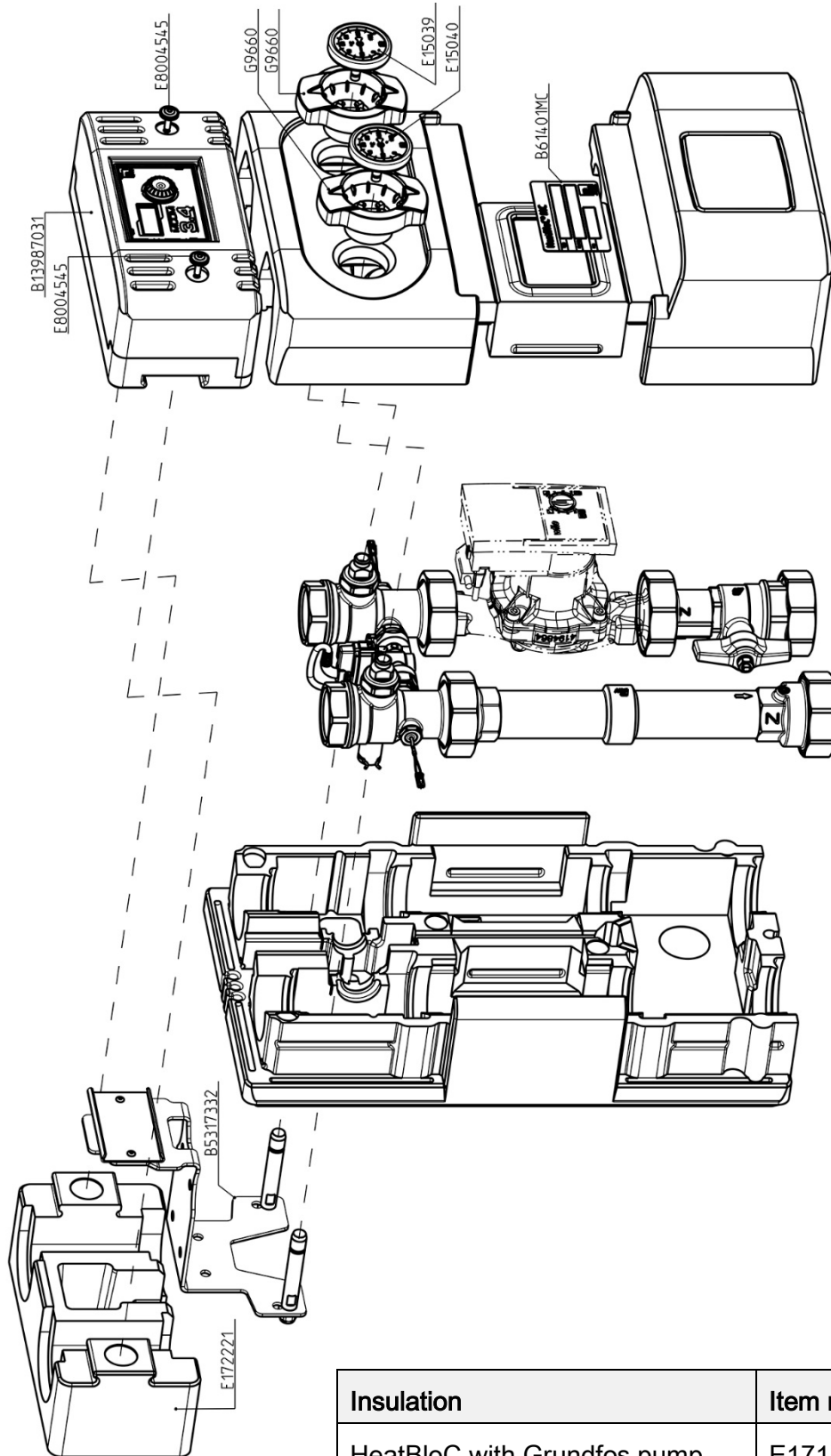


6.2 Hydraulics DN 25



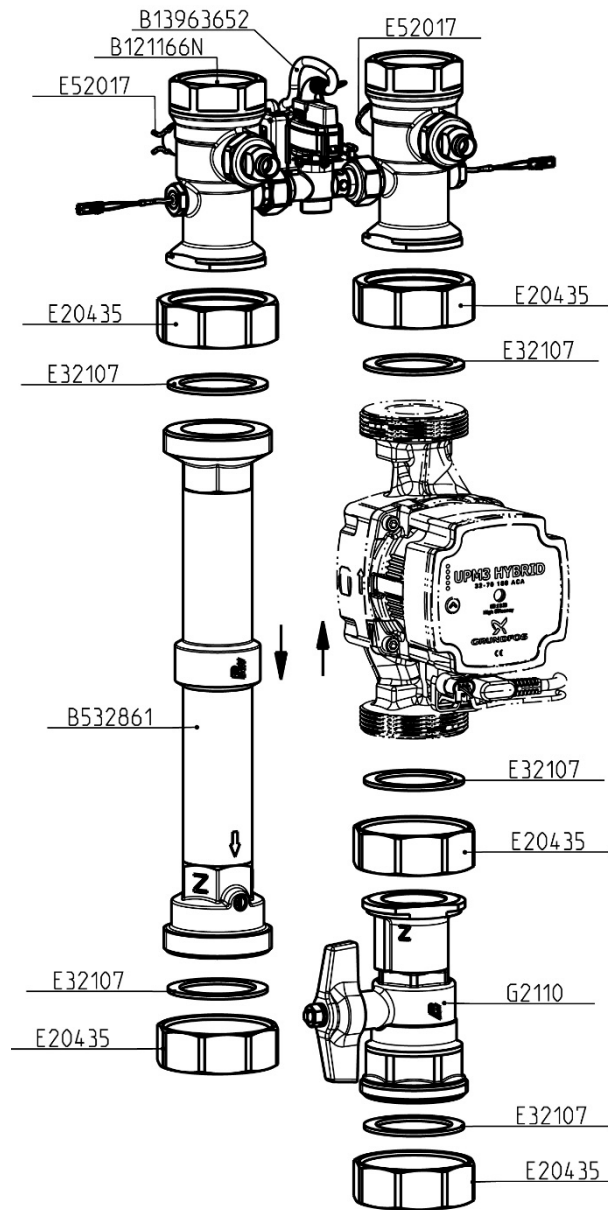
Pump	Item number	EEI
Grundfos UPM3 Hybrid 25-70	E1212465F	< 0.20
Wilo-Yonos PARA RSTG 25/1-7.5	E1236247	< 0.21

6.3 Insulation and controller DN 32



Insulation	Item no.
HeatBloC with Grundfos pump	E171593
HeatBloC with Wilo pump	B1715933

6.4 Hydraulics DN 32

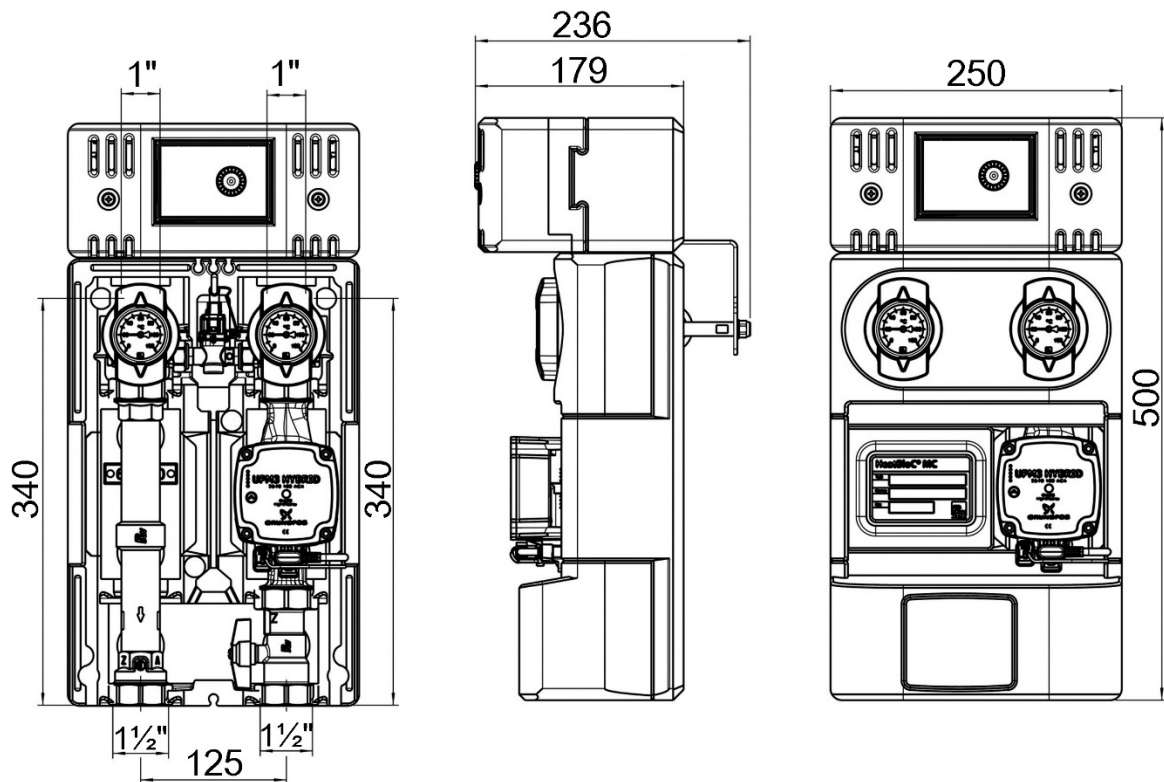


Pump	Item number	EEI
Grundfos UPM3 Hybrid 32-70	E1212565F	< 0.20
Wilo-Yonos PARA RSTG 30/1-7.5	E1236257	< 0.21

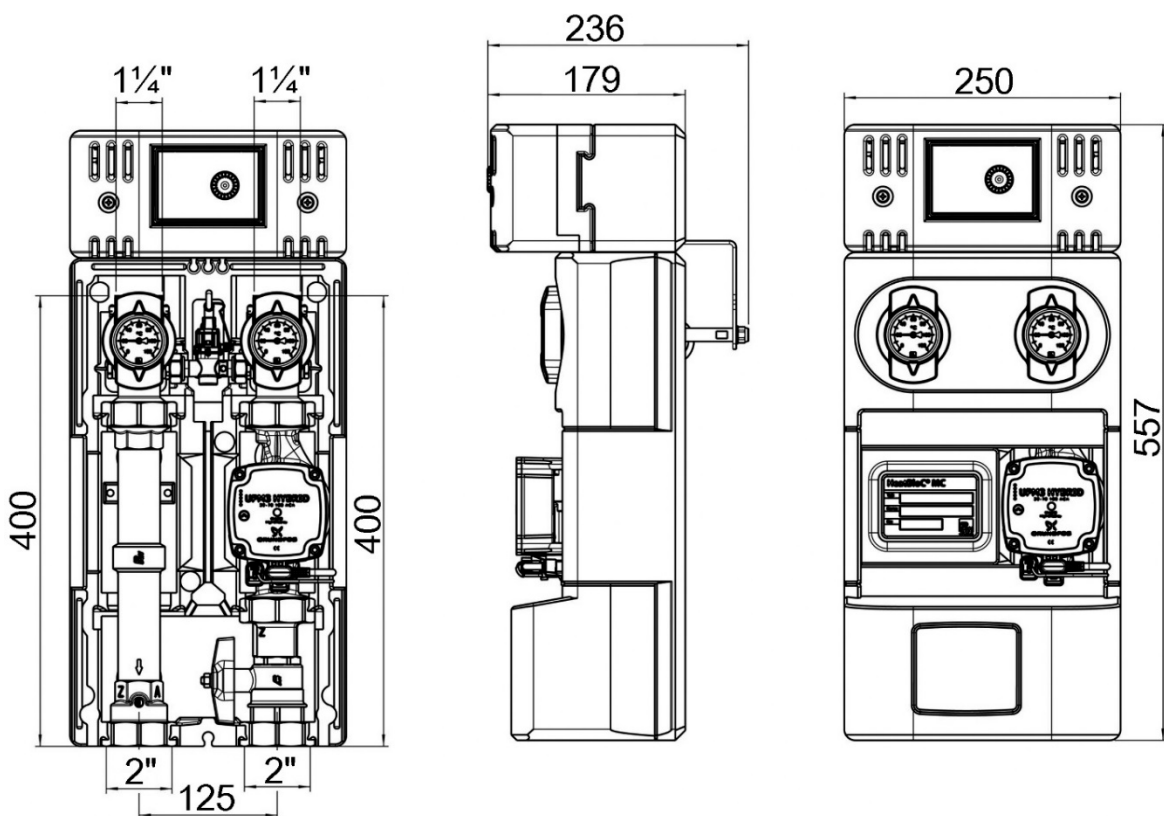
7 Technical data

MC41	DN 25 (1")	DN 32 (1¼")
Dimensions		
Centre distance	125 mm	125 mm
Width insulation	250 mm	250 mm
Height insulation	500 mm	557 mm
Installation length	340 mm	400 mm
Connections		
Connection generator	1½" external thread	2" external thread
Connection consumer	1" internal thread	1¼" internal thread
Technical data		
Opening pressure check valve	200 mm wc, can be opened	
Materials		
Valves and fittings	Brass	
Gaskets	AFM34 / EPDM	
Insulation	EPP, EnEV conform	
Hydraulics		
Maximum pressure	6 bars	
Maximum temperature	110 °C	
K _{VS} value [m³/h]	7.2	15.1

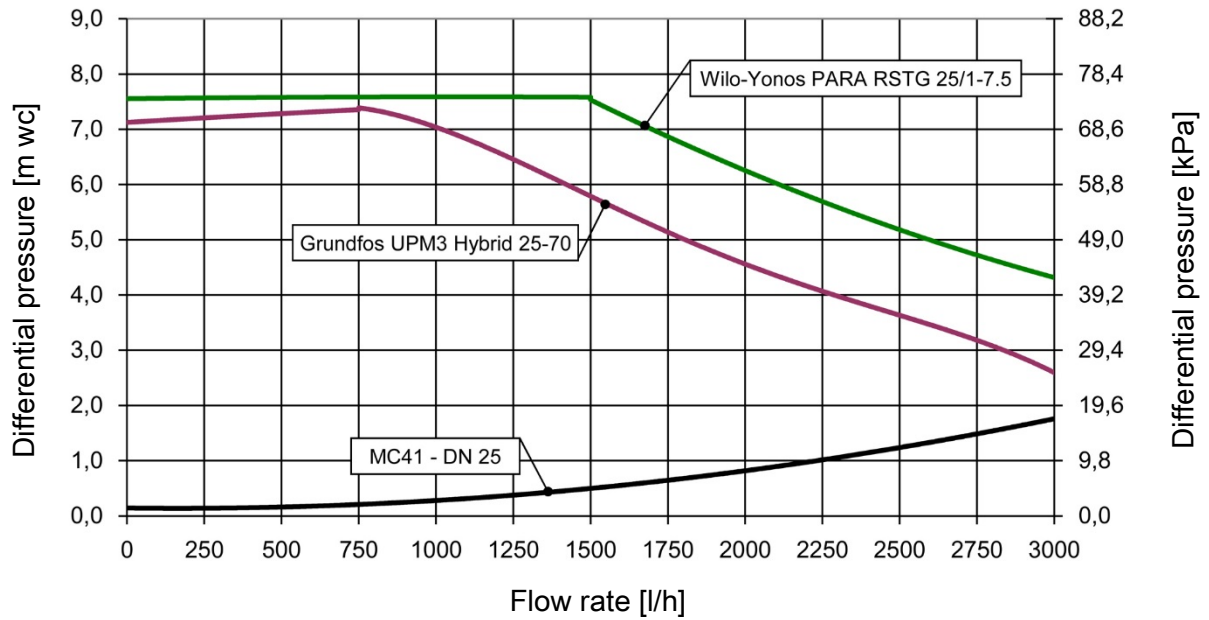
7.1 Dimensional drawing DN 25



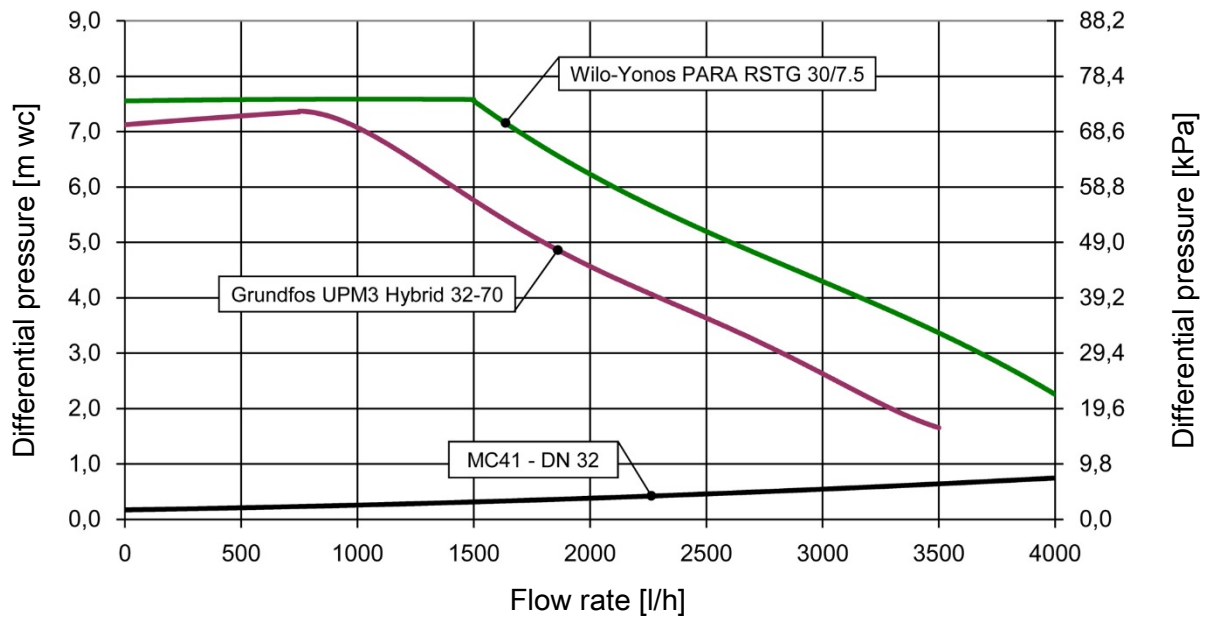
7.2 Dimensional drawing DN 32



7.3 Pressure drop and pump characteristic curves DN 25



7.4 Pressure drop and pump characteristic curves DN 32



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