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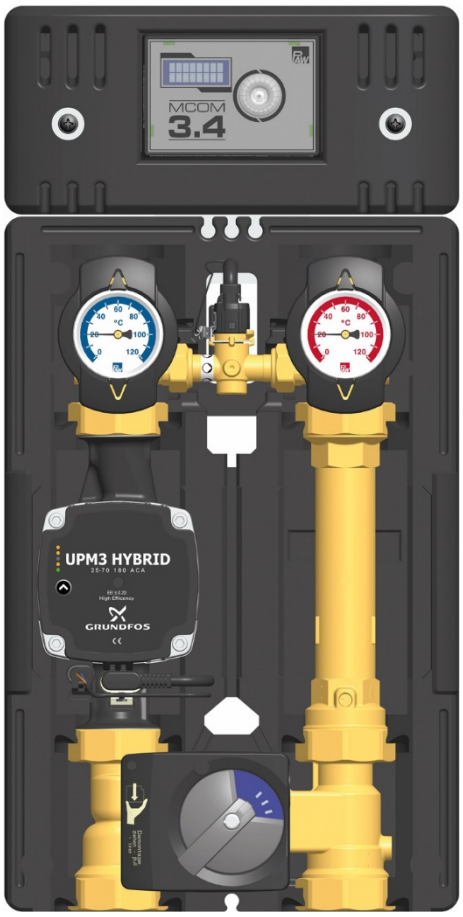
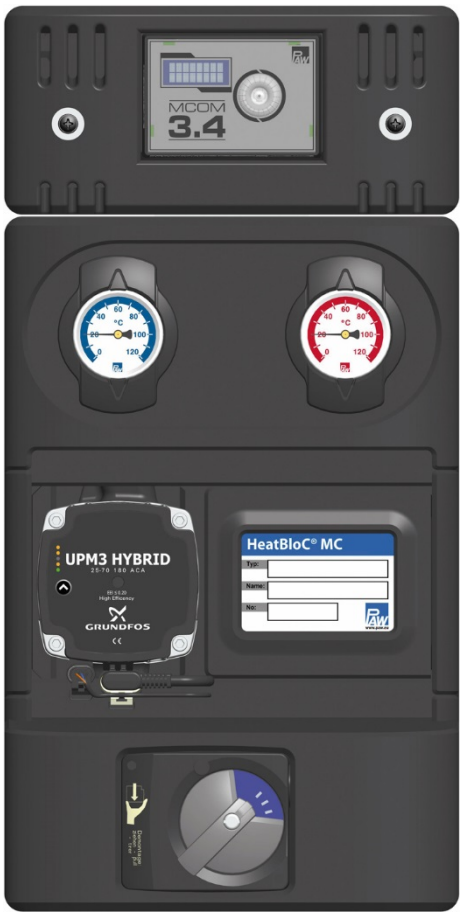
English

Installation and Operation Instructions

HeatBloC MC46

DN 25 / DN 32





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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 installation, commissioning, function and the operation of the HeatBloC MC46 in DN 25 and DN 32.
For other components of the installation, such as the pump or the controller, 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

Personal injury and damage to property!

The HeatBloC must only be used in heating circuits filled with heating water according to VDI 2035 / Ö-Norm H 5195-1.

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

NOTICE

Material damage due to mineral oils!

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.

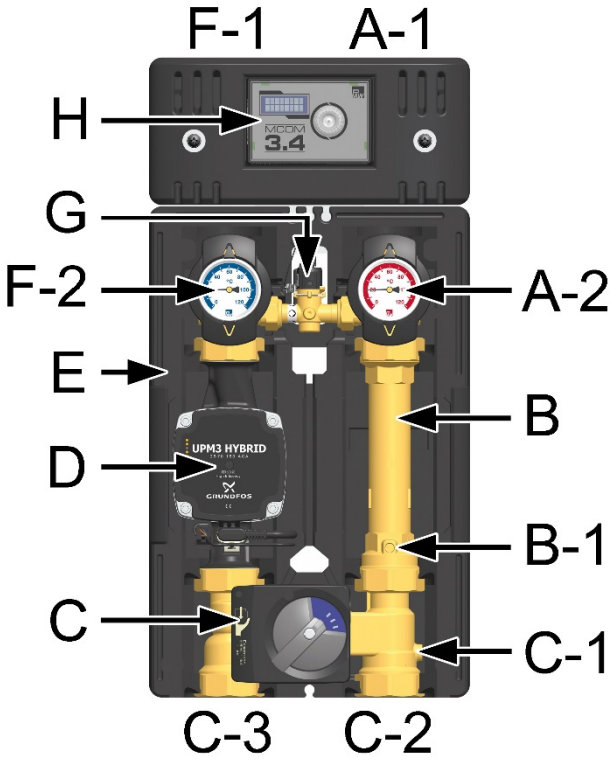
- ➢ It is imperative to avoid that EPDM gets in contact with substances containing mineral oils.
- ➢ Use a lubricant based on silicone or polyalkylene and free from mineral oils, such as Unisilikon L250L and Syntheso Glep 1 of the Klüber company or a silicone spray.

3 Product description

The HeatBloC MC 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.

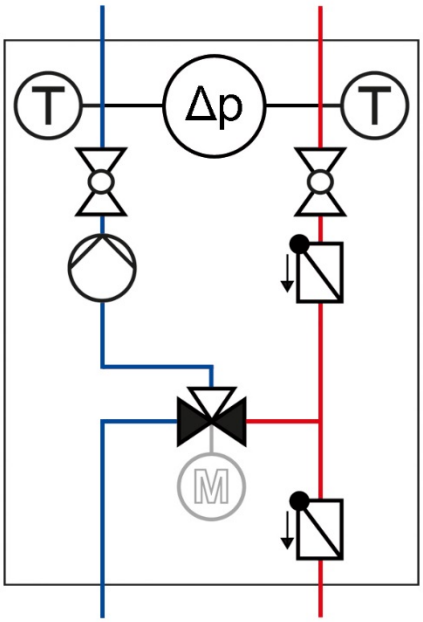
The nominal value for the differential pressure between the flow and the return is adjusted at the controller. On this basis, the controller regulates the pump and an energy-saving operation of the pump is guaranteed at any time.

3.1.1 Equipment



A-1	Flow from the heat generator
A-2	Flow ball valve with temperature sensor T_V and thermometer
B	Flow pipe
B -1	Check valve, can be opened
C	3-way mixing valve with actuator
C-1	Non-return valve, can be opened
C-2	Flow to the consumer circuit
C-3	Return from the consumer circuit
D	Heating pump
E	Design insulation according to EnEV directive
F-1	Return to the heat generator
F-2	Return ball valve with temperature sensor T_R and thermometer
G	Differential pressure sensor
H	Controller MCom

3.1.2 Function



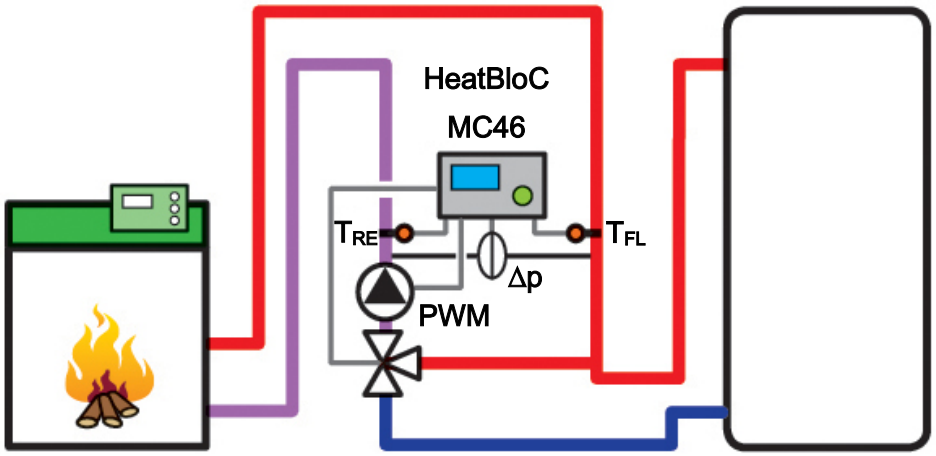
MC46 - Boiler charging set with 3-way mixing valve

The boiler charging set prevents the temperature in the boiler from falling under the dew point, thus reducing the contamination of the boiler.

The return temperature to the heat generator is kept at the set temperature level by the integrated mixing valve. Hot water from the boiler and cold return water are mixed to reach the desired return temperature to the heat generator.

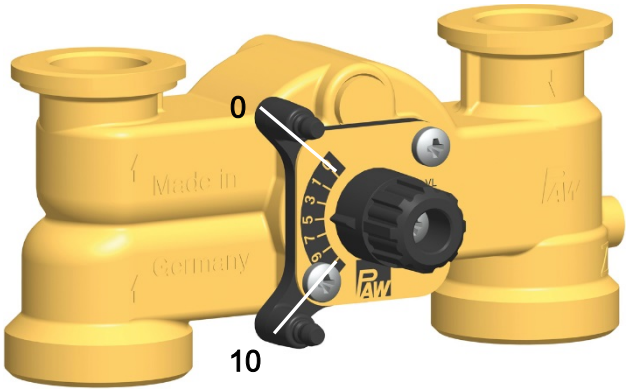
Application ranges:

- return flow temperature maintenance for solid fuel boilers, wood firing and stove heating systems
- for a constant flow rate in the heat generator



3.2 3-way mixing valve [specialist]

The mixing valve (C), driven by an electric actuator, adjusts the flow temperature of the consumer circuit to the required value by means of the flow sensor and the controller.



Position 10: Passage, no mixing, return temperature consumer = return temperature boiler

Position 0: 100% mixing flow temperature heat generator = return temperature heat generator

3.3 Pump [specialist]

Isolation of the pump

The pump can be completely isolated. It can be replaced and maintained without draining the HeatBloC.

1. Close the ball valves in the flow and the return (A-2, F-2).
2. Remove the actuator from the mixing valve.
3. Turn the rotary knob of the mixing valve such that the black nose is directed to "VL zu" (flow closed). The mixing valve is now closed and drop tight.

3.3.1 Pump settings

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)

3.3.2 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

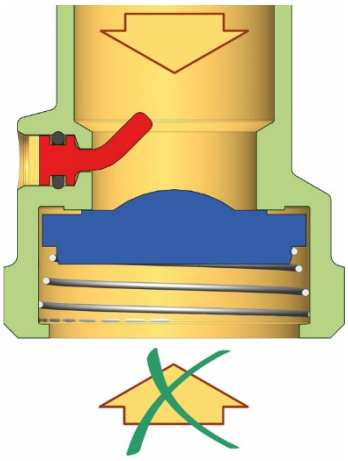
3.3.3 Pump settings Wilo-Yonos PARA RSTG

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 (B-1) in the flow pipe and with a non-return valve (C-1) in the mixing valve. The valves can be opened.

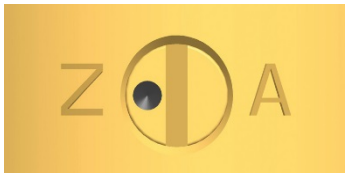
Operation



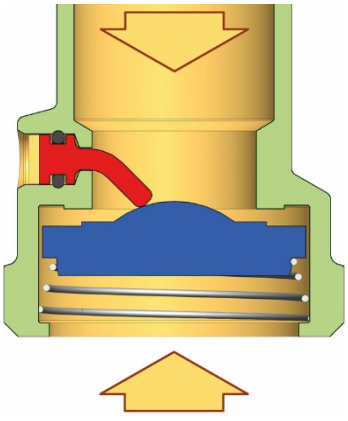
During operation, the marking must be directed to "Z".

→ The check valve is closed.

→ Flow only in the direction of the arrow.



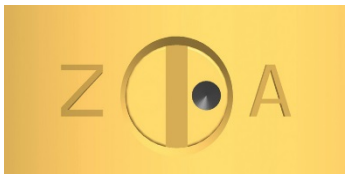
Filling, draining, venting



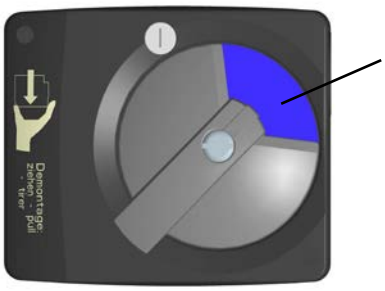
For filling, draining and venting the installation, the marking must be directed to "A".

→ The check valve is open.

→ Flow in both directions.



3.5 Actuator



Assembly of the actuator for mixing valves:

1. Turn the rotary knob of the mixing valve into position 10.
2. Set the actuator to manual mode by turning the selector switch.
3. Turn the rotary knob of the actuator to the left to the position shown on the adjacent figure.
4. Put the actuator on the adjusting knob of the mixing valve and the two stop bolts.
5. Set the actuator to automatic mode.

4 Assembly and installation [specialist]

The HeatBloC MC can be mounted directly to the wall or on a wall bracket set.

NOTICE

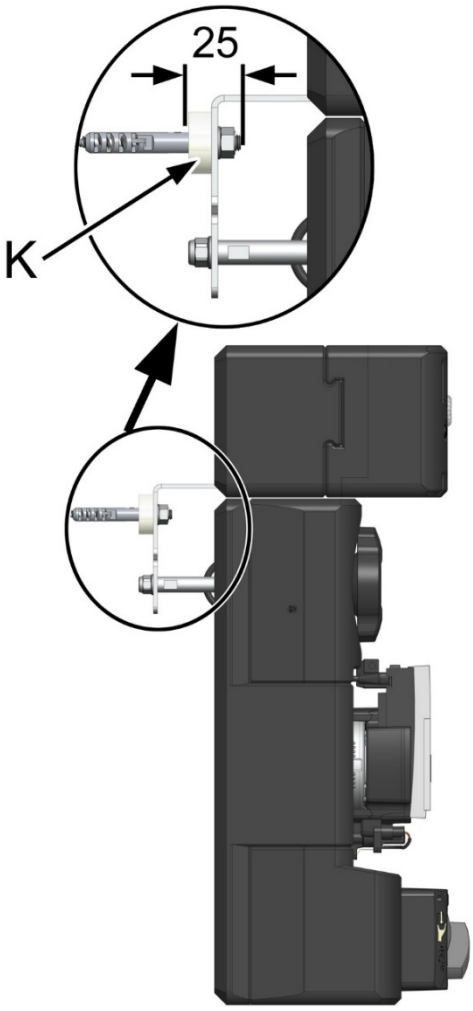
Damage to property!

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.

4.1 Installation and commissioning of the HeatBloC

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.

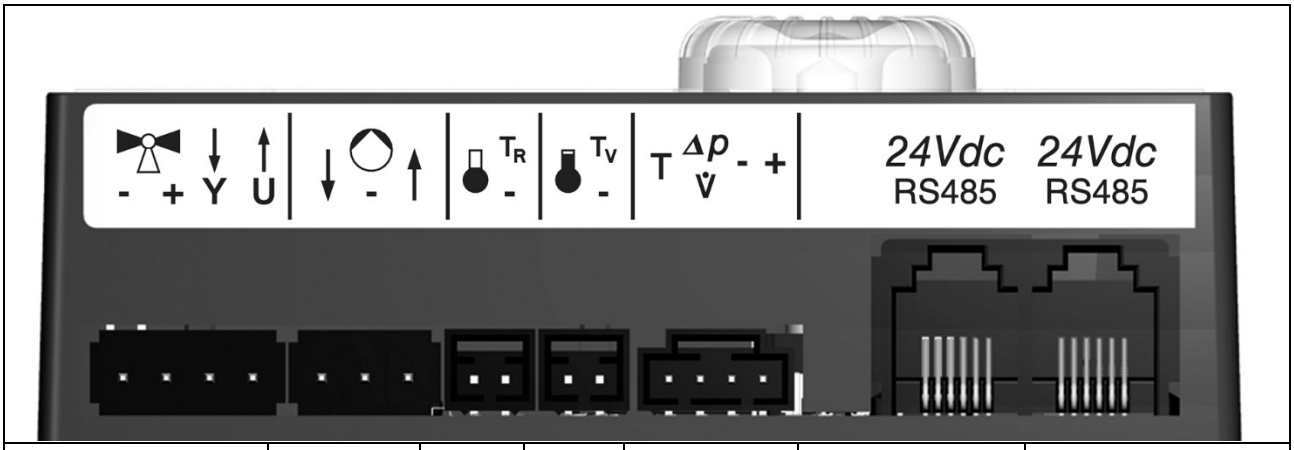


1. Remove the station from the packaging.
2. Determine the location of installation.
3. Drill two holes. They must have a distance of 45 mm.
4. Insert appropriate wall plugs. Please note that the enclosed wall plugs are only adapted for full brick masonry.
5. Screw the stair bolts in such that exactly 25 mm of the bolts stick out of the wall (see figure on the left).
6. Push the enclosed spacer (K) onto the stair bolt.
7. Push the HeatBloC onto the stair bolt.
8. Fix the HeatBloC on the stair bolts with the enclosed washers and nuts.

9. Take off the thermometer handles.
10. Remove the actuator.
11. Note regarding HeatBloC with Wilo pump:
    Dismount the insulating front shell of the controller and push the insulating back shell backwards.
12. Take off the insulating front shells.
13. Push the insulating back shell backwards.
14. Connect the HeatBloC to the installation by using the pipes. The installation to the piping must be carried out without any tension.
15. Fill and vent the installation.
16. Carry out a pressure test and check all thread connections.
17. Check the position of the check valve: during operation, the marking must be directed to "Z" (see page 10).
18. Connect the power supply of the pump to the boiler control.
19. Mount the insulating back shell.
20. Run first the cable of the actuator through the insulating element of the mixing valve backwards. Mount the insulating element. Mount the actuator (see page 11) and pull the actuator cable backwards at the same time.
21. Mount the insulating front elements.

4.2 Cabling

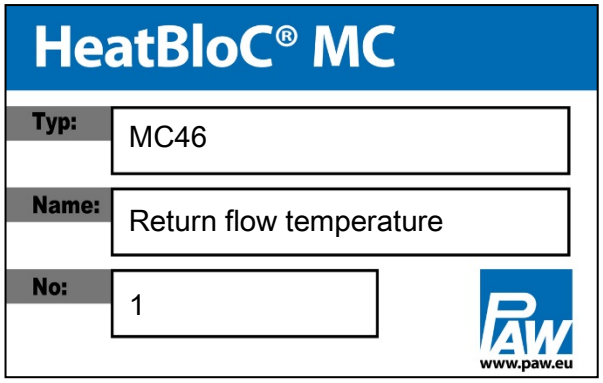
1. Loosen the screws of the controller insulation.
2. Dismount the insulating front shell of the controller.
3. Connect the wall power supply to the socket X6.2 (see below) at the controller.



X1	X2	X3	X4	X5	X6.1	X6.2

X1	Signal of the actuator	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 X6.2	Supply voltage or bus line (connected in parallel and therefore interchangeable)

4. Carry out the electrical commissioning of the controller (see controller instructions).
5. Mount the insulating front shell of the controller.
6. Screw the screws in the controller insulation.

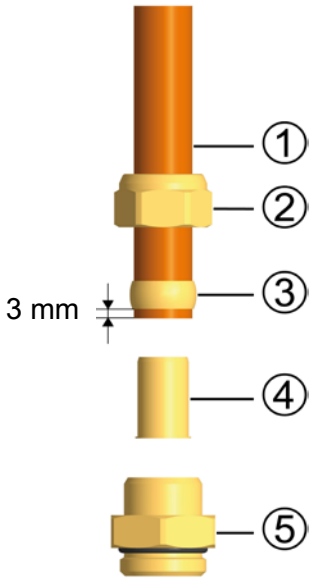


7. Please fill in the enclosed insert and fix it on the insulation:

Type:	Type of the heating circuit, f. ex. MC46
Name:	Type of application, f. ex. return flow temperature maintenance
No.:	Number of the heating circuit according to the controller instructions, f. ex. 1

4.3 Optional accessories

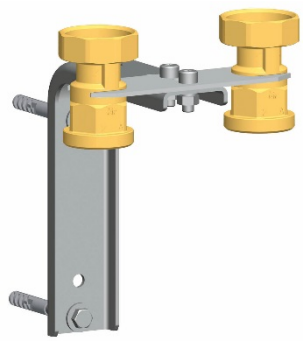
4.3.1 Cutting-ring compression fitting (not included in the scope of delivery)



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.

4.3.2 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

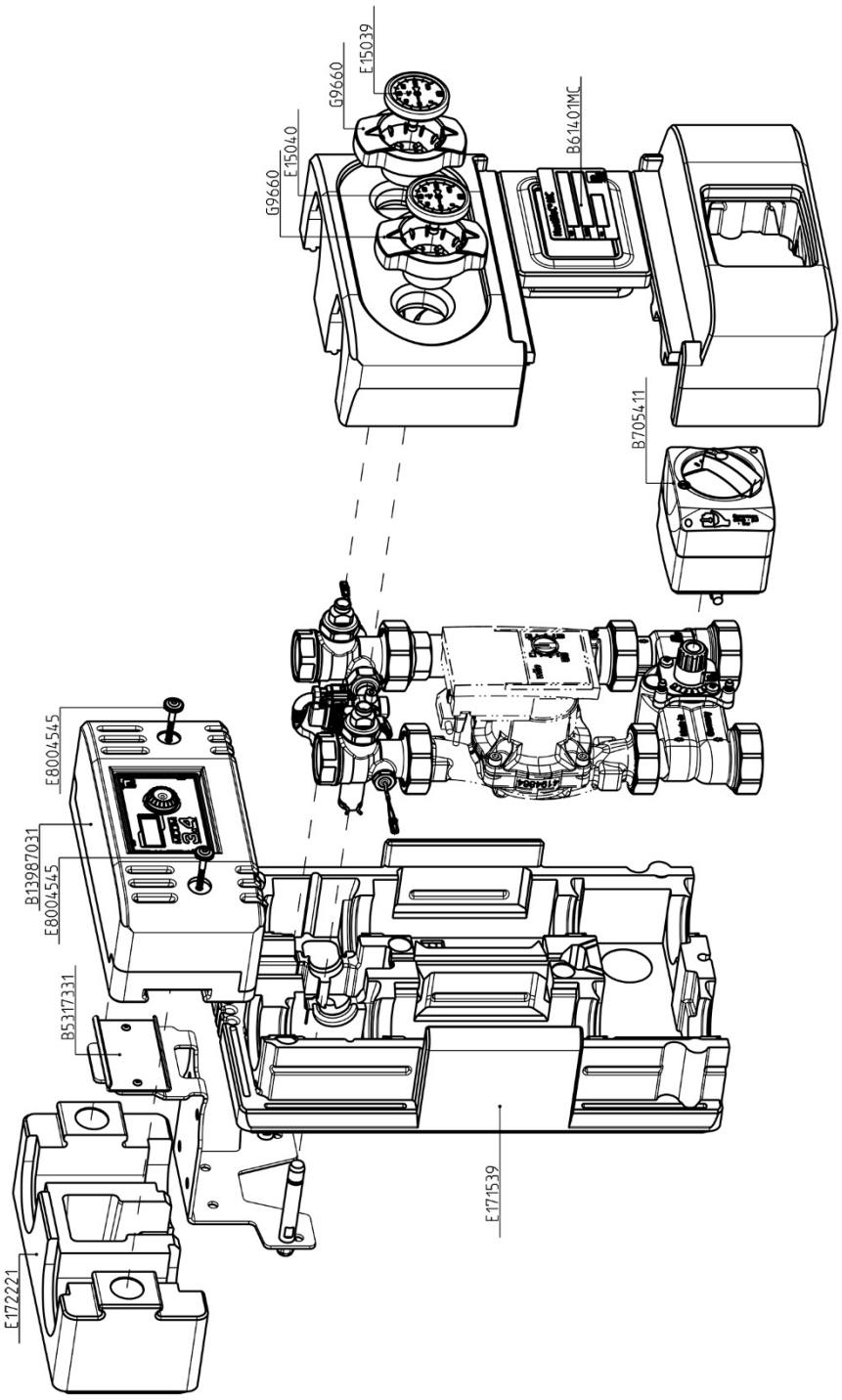
5 Scope of delivery [specialist]

NOTICE

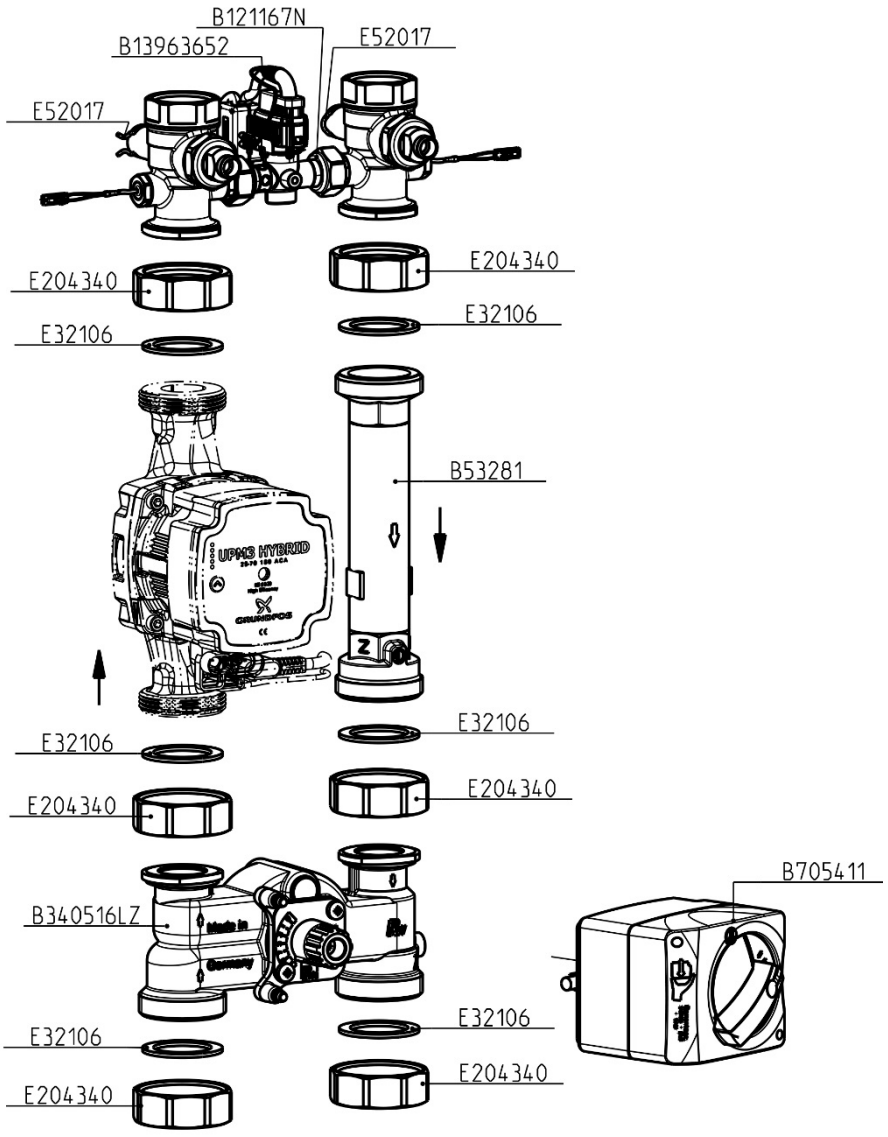
Complaints and requests/orders of spare parts will only be processed with information on the serial number!

The serial number is placed on the flow pipe of the heating circuit.

5.1 Insulation and controller DN 25

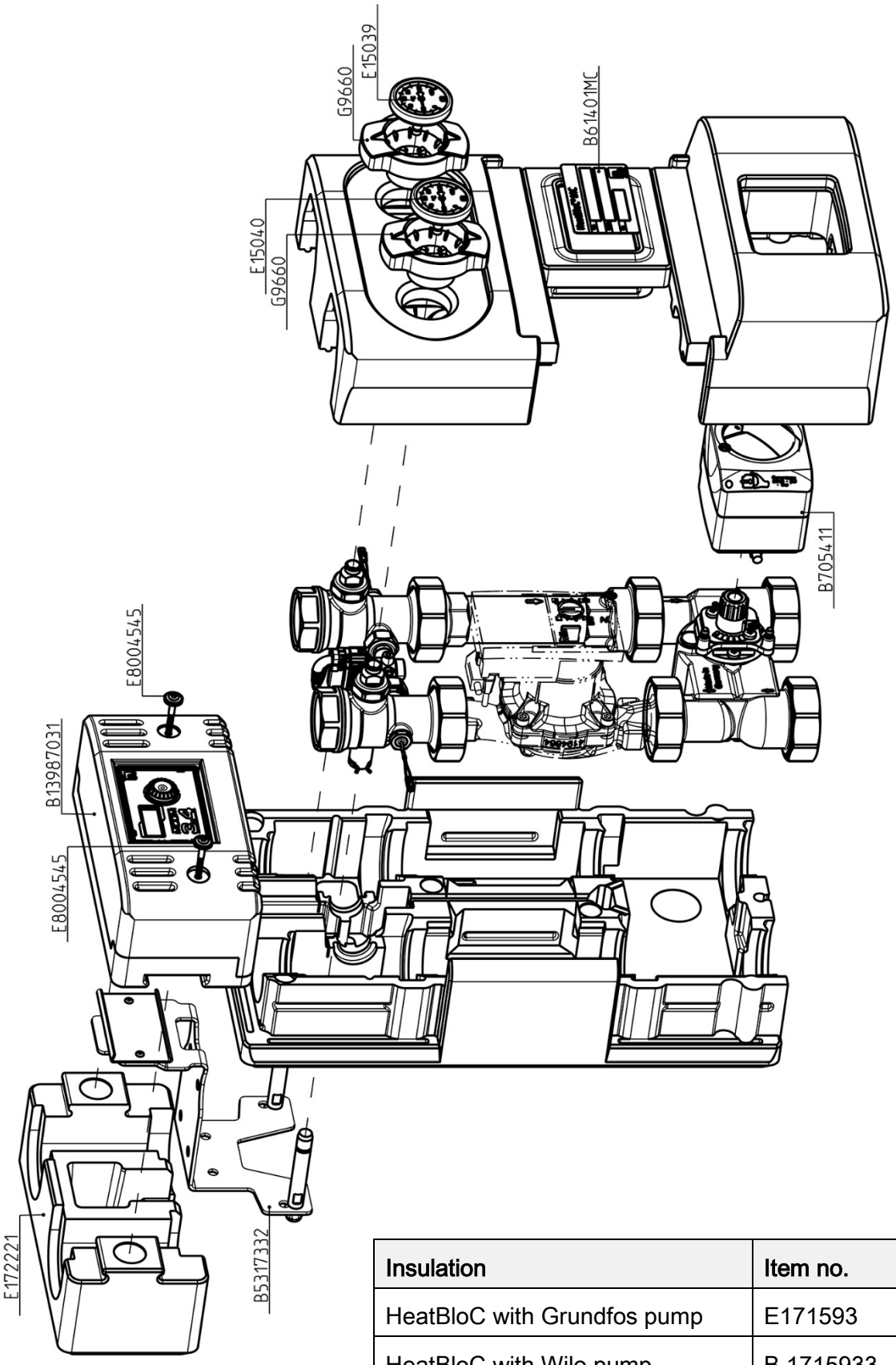


5.2 Hydraulics DN 25



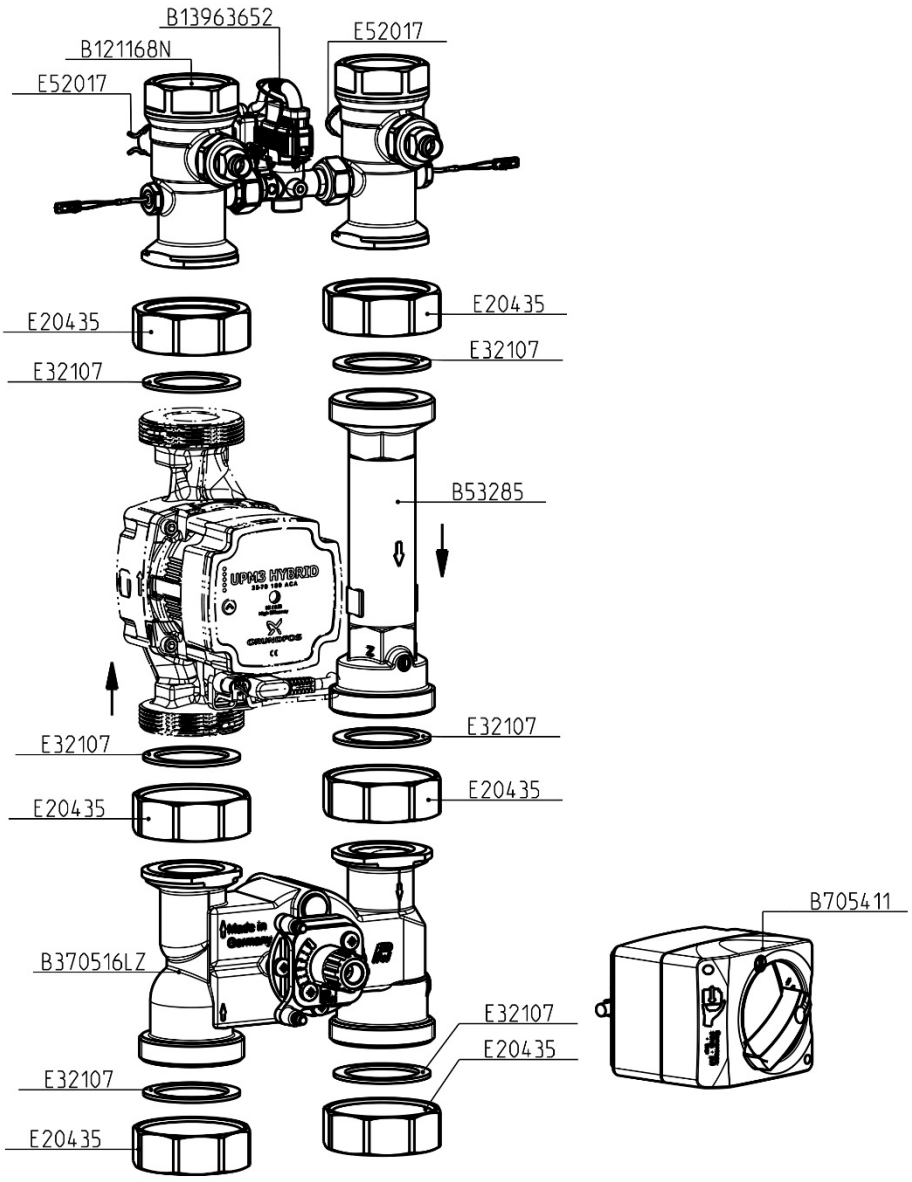
Item	Item number	
Sealing set for mixing valve	34013	
Pump		**EEI**
Grundfos UPM3 Hybrid 25-70	E1212465F	< 0.20
Wilo-Yonos PARA RSTG 25/1-7.5	E1236247	< 0.21

5.3 Insulation and controller DN 32



Insulation	Item no.
HeatBloC with Grundfos pump	E171593
HeatBloC with Wilo pump	B 1715933

5.4 Hydraulics DN 32

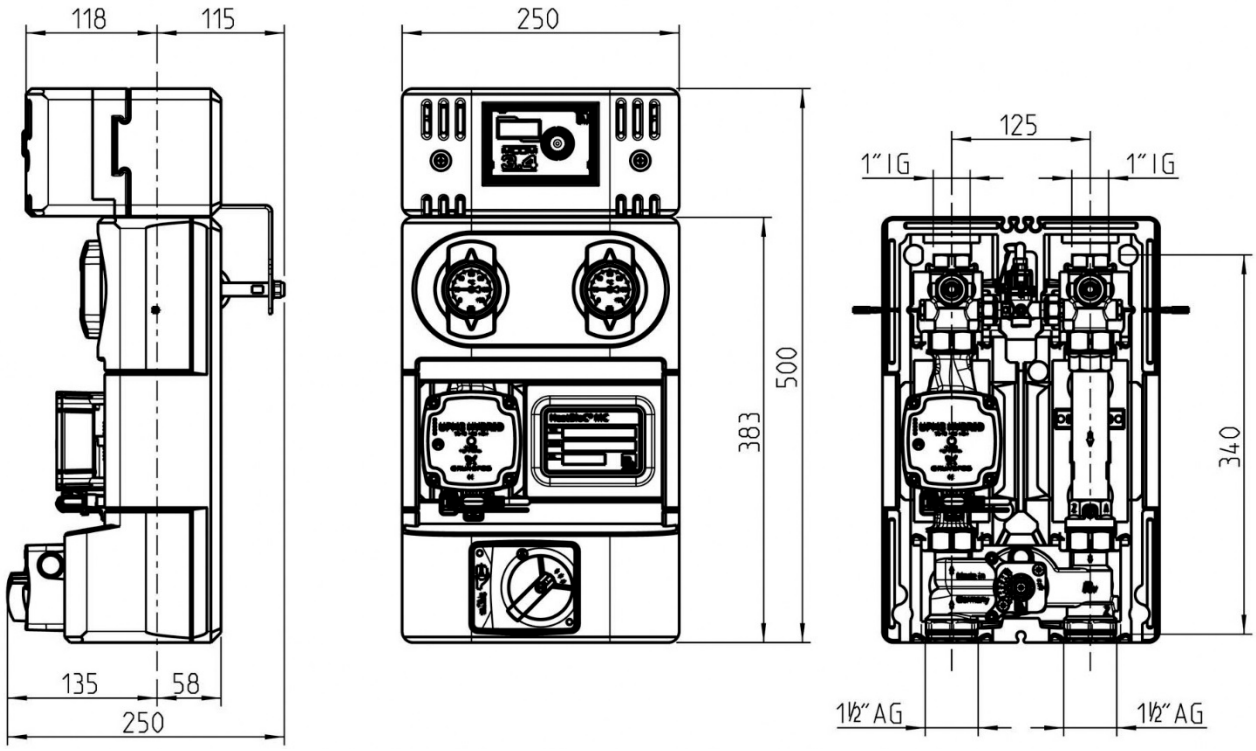


Item	Item number	
Sealing set for mixing valve	37013	
Pump		**EEI**
Grundfos UPM3 Hybrid 32-70	E1212565F	< 0.20
Wilo-Yonos PARA RSTG 30/1-7.5	E1236257	< 0.21

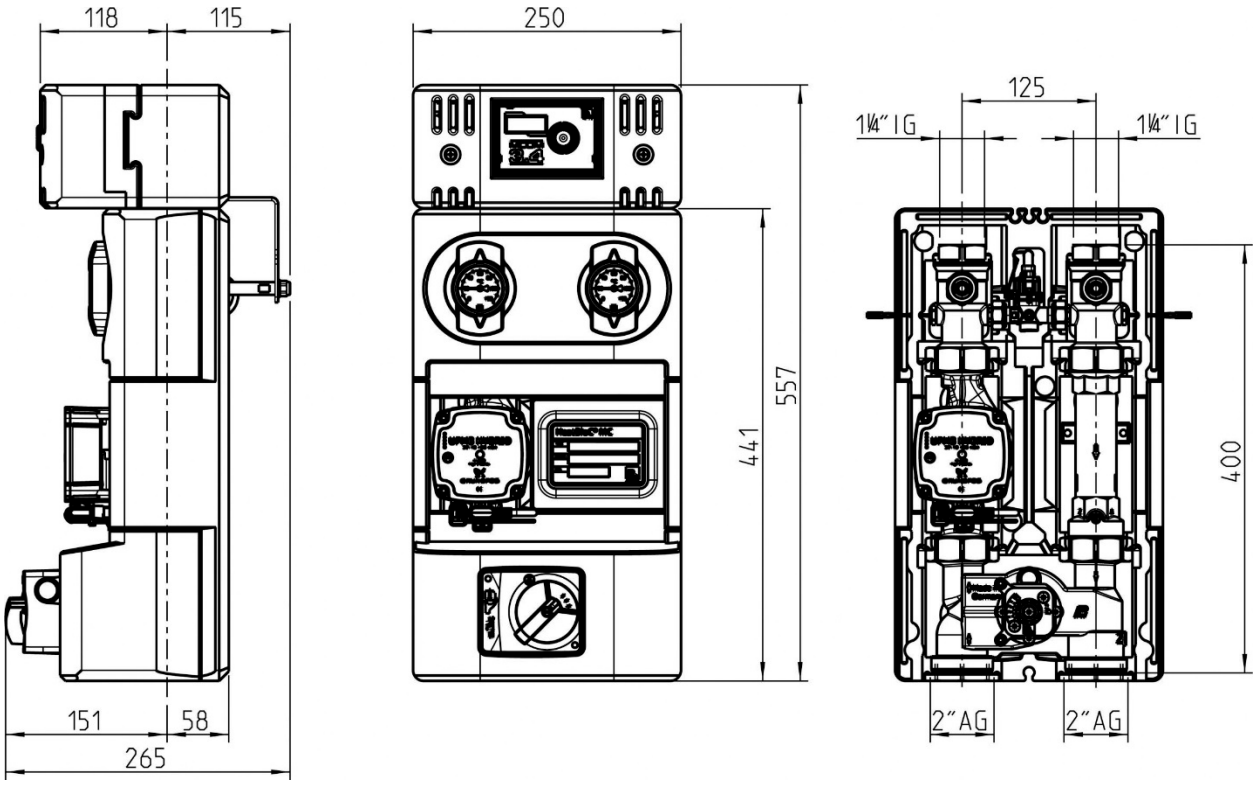
6 Technical data

	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 threads, flat-sealing	2" external thread, flat-sealing
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 [m^3/h]	6.0	10.1

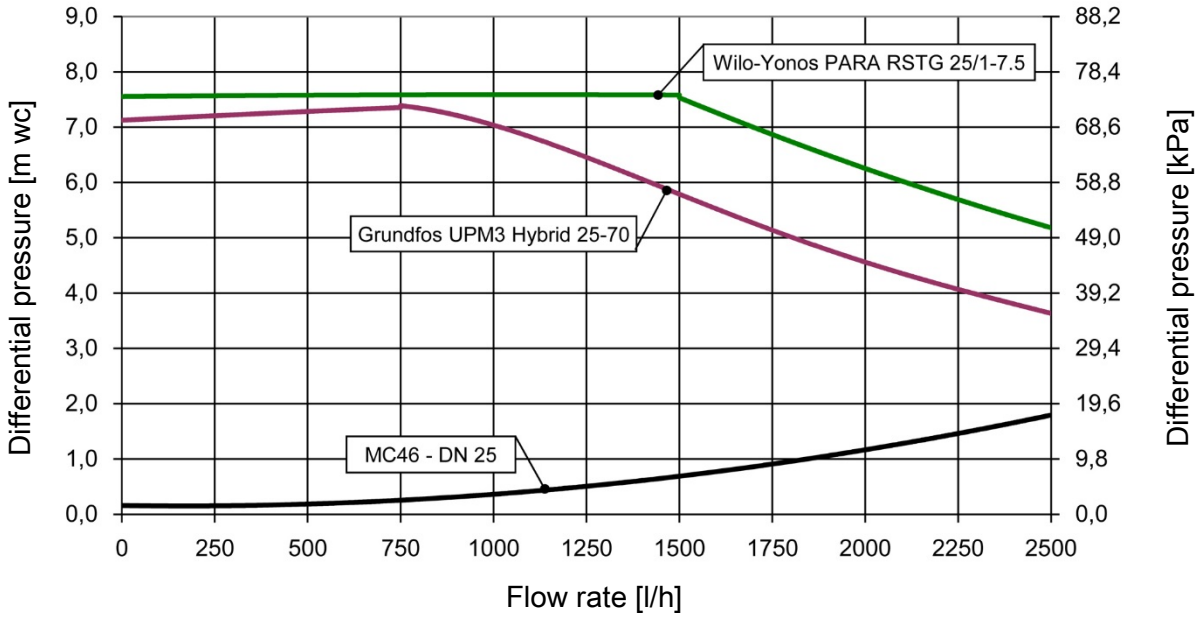
6.1 Dimensional drawing DN 25



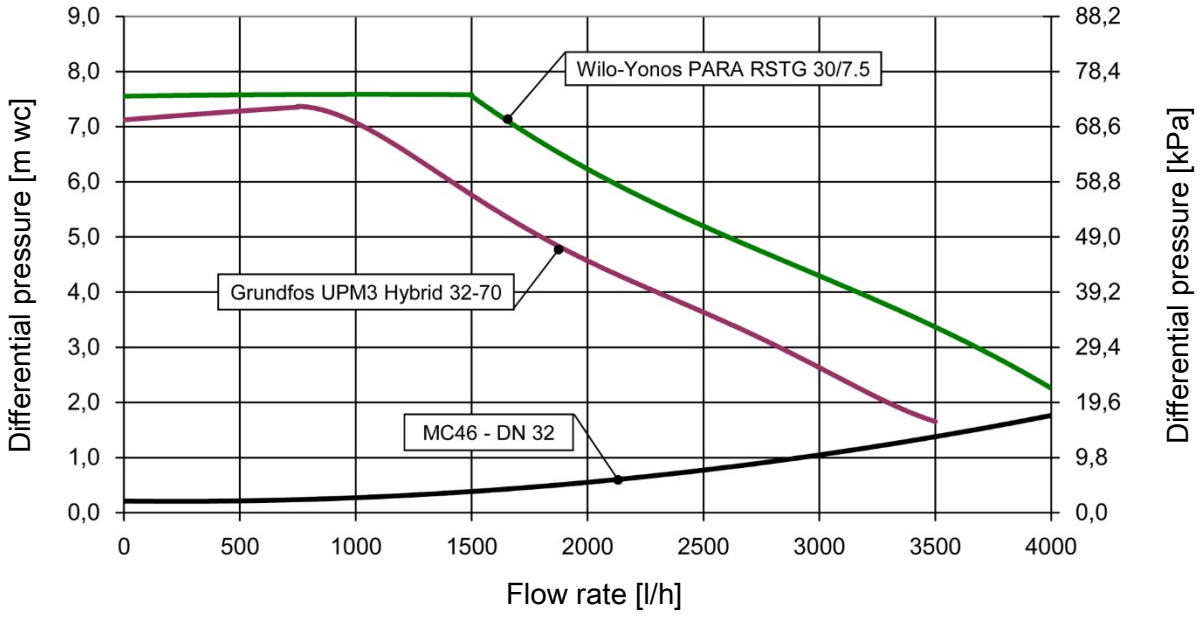
6.2 Dimensional drawing DN 32



6.3 Pressure drop and pump characteristic curves DN 25



6.4 Pressure drop and pump characteristic curves DN 32



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