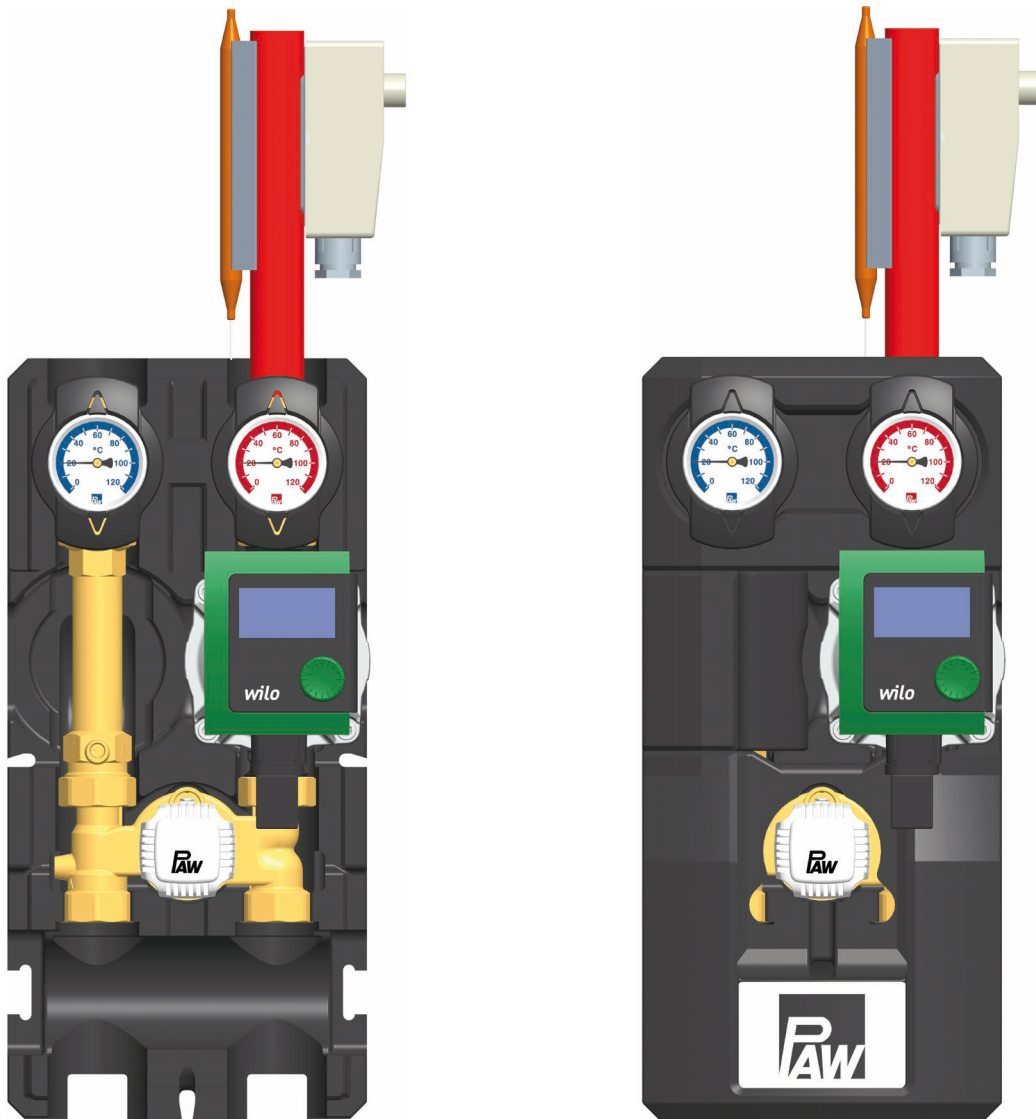




English

## Installation and Operation Instructions

### HeatBloC® K33 - DN 20





Item no. 9932073x-mub-en – Version V14 – Issued 2020/04

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 mixed HeatBloC® K33. For other components of the installation, such as the pumps, controllers or the distribution manifold, see 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 excludes any liability claims.

Only use PAW accessories with the HeatBloC®.


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 mentioned in this manual

	<div style="background-color: yellow; padding: 5px;"><b>CAUTION</b></div> <p><b>Personal injury and damage to property!</b></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 <b>not</b> be used in drinking water applications.</p>
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### 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 of mineral oils, such as Unisilikon L250L and Syntheso Glep 1 of the Klüber company or a silicone spray.

### NOTICE

#### Damage to property!

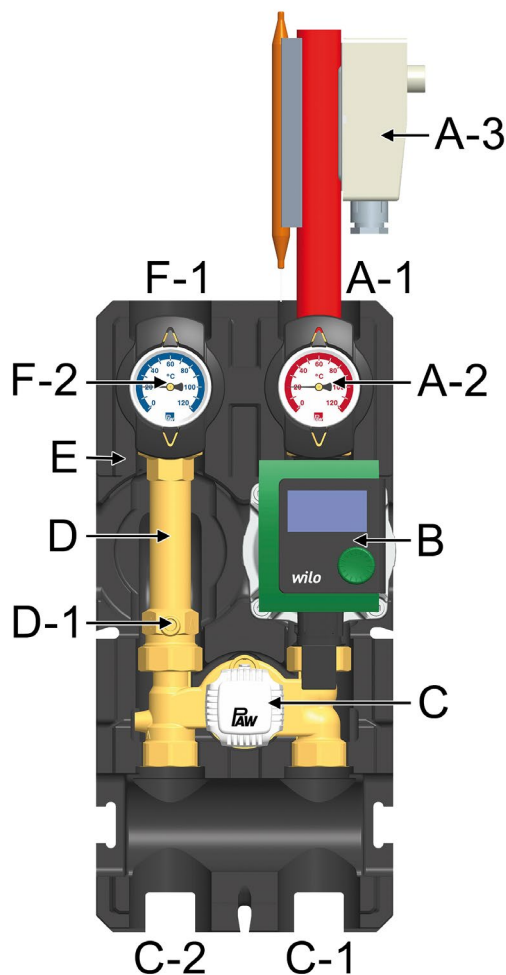
- Mount the pipe contact thermostat at the flow pipe. It prevents the heating circuit from overheating.

### 3 Product description

The HeatBloC® K33 is a preassembled group of fittings for heating circuits. The integrated pump can be isolated by means of the ball valves and the mixing valve and can thus be maintained without draining of the system.

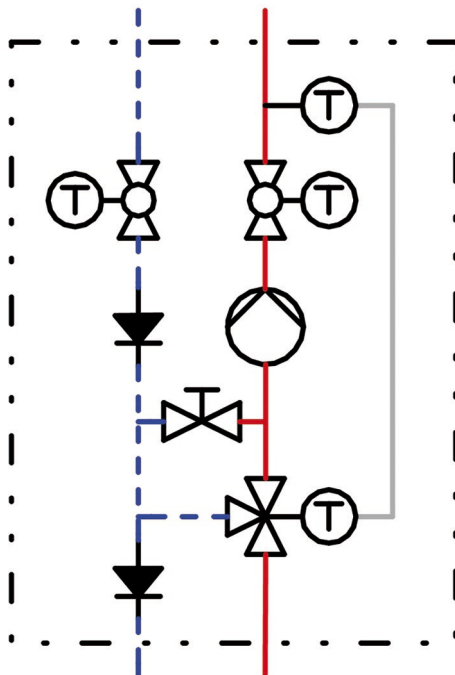
The PAW HeatBloC® is designed such that it can be directly mounted onto a PAW distribution manifold or a mounting plate with thread connections. With adaptor connections, PAW HeatBloC® s can also be installed on PAW distribution manifolds with other dimensions.

#### 3.1 Equipment



- A-1 Flow (consumer circuit)
- A-2 Full metal thermometer with immersion sleeve integrated in the ball valve (flow)
- A-3 Pipe contact thermostat with sensor, adjustable
- B Heating pump
- C 3-way mixing valve with adjustable bypass 0-50 %
- C-1 Flow (boiler)
- C-2 Return (boiler)
- D-1 Check valve, can be opened
- D Return pipe
- E Design insulation with optimised function
- F-2 Full metal thermometer with immersion sleeve integrated in the ball valve (return)
- F-1 Return (consumer circuit)

### 3.2 Function

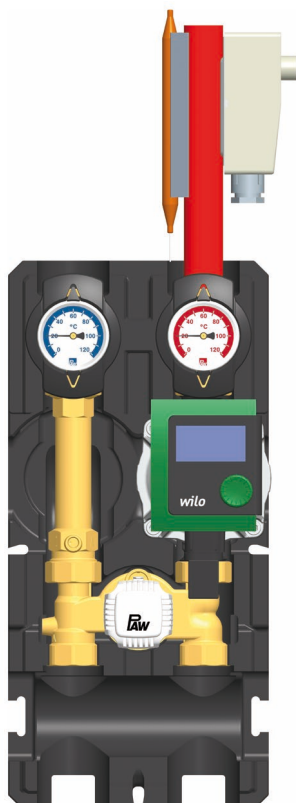


#### K33 - controlled circuit with constant value 20-50 °C with 3-way mixing valve and bypass 0-50%

The flow temperature of the HeatBloC® is controlled by the integrated mixing valve. Hot water from the boiler and cold return water are mixed to obtain the desired flow temperature. The HeatBloC® flow temperature is adjusted with a mixing head and a flow sensor.

The rate of premixing is adjusted at the mixing valve bypass and a certain amount of cold return water is mixed to the flow water. The three-way actuator can work over the whole adjustment range (0-100%).

Example: Radiant floors or walls are operated with a low temperature level and low temperature differences, but high flow rates. It is therefore sufficient to "inject" a small amount of hot water into the warm return water.



#### Application ranges:

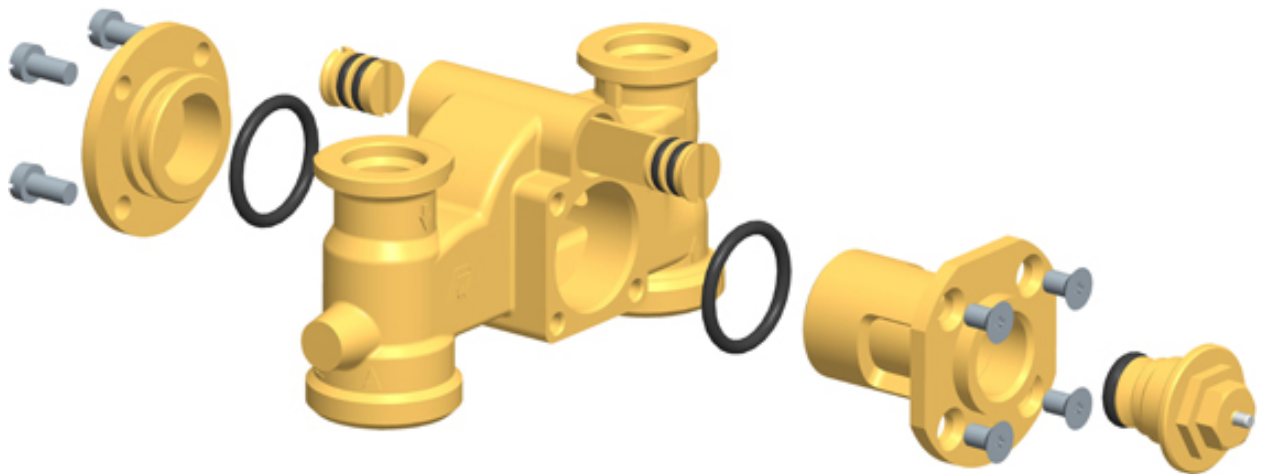
- Consumer circuits with considerably lower flow temperatures than the boiler flow temperature
- Small heating circuits with low power output and low requirements regarding the control
- Can be used instead of the K34 if the controller cannot operate another mixing valve.

### 3.2.1 3-way mixing valve with bypass [specialist]

The 3-way mixing valve is a constant-value mixing valve for radiant floors or walls which are operated with a constant flow temperature and thus guarantee the basic heat supply. The desired flow temperature can be adjusted at the thermostatic head. The mixing valve is equipped with a bypass which can be adjusted separately. Cold return water flows through the bypass into the flow, thus increasing the flow rate in the heating circuit.

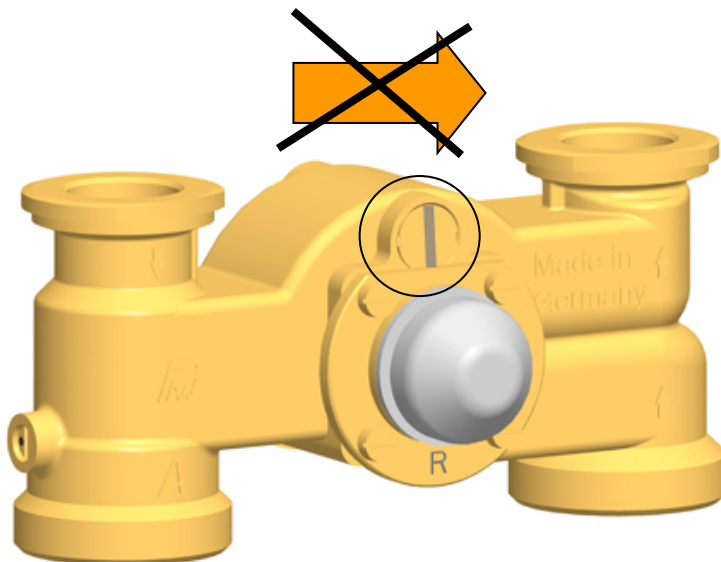
#### Note

When the HeatBloC® is delivered, the bypass is closed.

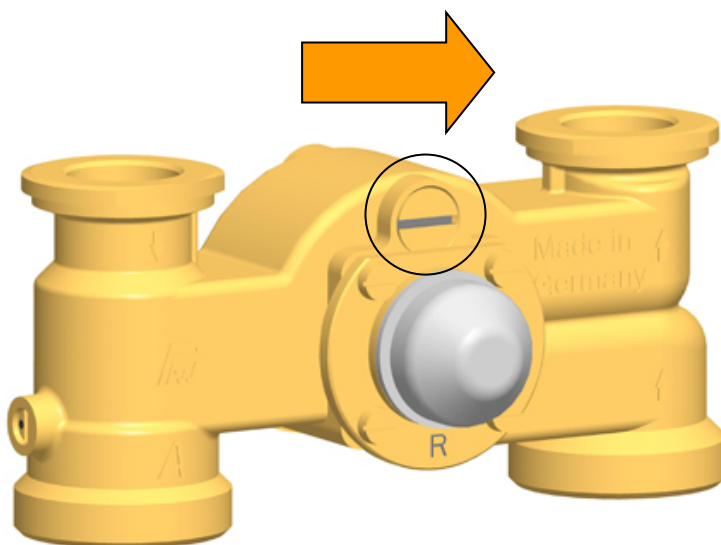




1. Determine the optimum bypass position during commissioning in a trial-and-error process.



When the slot of the bypass screw is in a vertical position, the bypass is closed (normal operation).

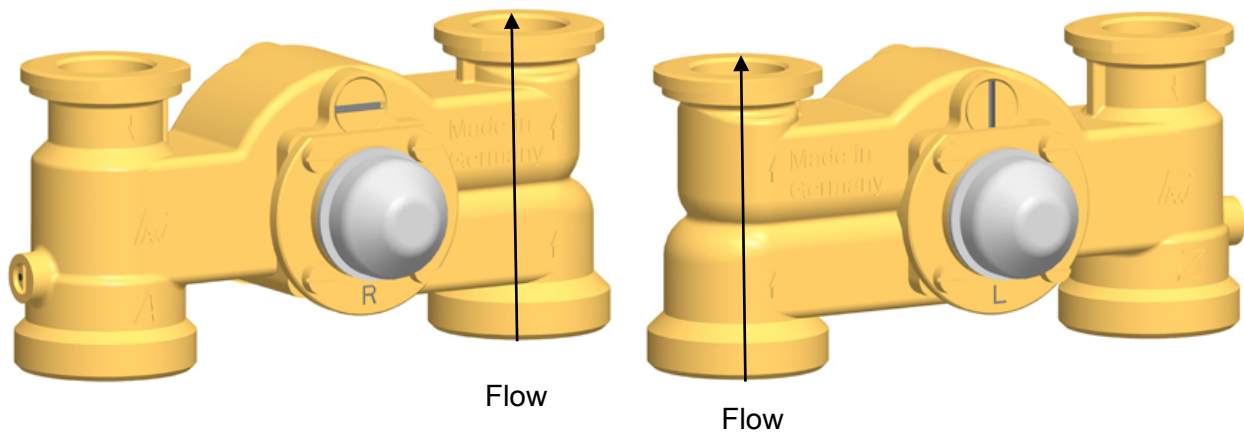


When the slot of the bypass screw is in a horizontal position, the bypass is completely open. This allows the highest possible flow rate from the return to the flow line. This adjustment may be necessary for radiant floors requiring a very high flow rate. The flow temperature is low and the control may be negatively affected.

2. Check the bypass position during operation. Make sure that the flow rate is sufficient and that the desired temperature is reached.

### Change of the flow line

The HeatBloC® is available in two versions with flow on the right or on the left.



Mixing valve with flow on the right

Mixing valve with flow on the left

## NOTICE

### Malfunction!

A conversion kit is mandatory for the change of the flow line! When you change the flow line without using a conversion kit, the mixing valve will not work properly.

Please specify the following information when ordering the conversion kit:

- Nominal diameter of the HeatBloC® (see designation of the pump),
- PAW item number or PAW designation
- Change from/to: "change **from** flow on the **right** to flow on the **left**" or  
"change **from** flow on the **left** to flow on the **right**"

**Proceeding:**

- Take off the thermometer handles (A-2, F-2) and remove the insulating front shell.
- Take the HeatBloC® out of the insulating back shell.
- Dismount the mixing valve (C) and assemble it as described in the instructions of the conversion kit.
- Interchange the return pipe (D) and the flow pipe and the pump (B).

**Consider the flow direction of the pump!**

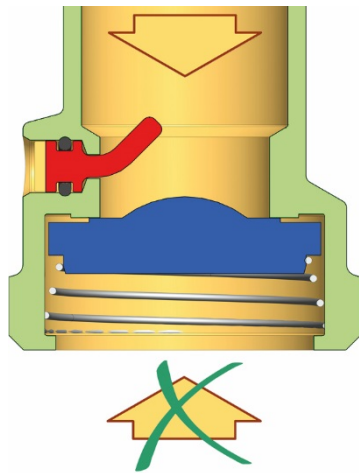
Turn the pump head such that the terminal head is directed to the top or to the centre of the HeatBloC®.

- Dismount and interchange the ball valves.
- Mount the HeatBloC® and connect it to the installation.
- Check all union nuts before commissioning and firmly tighten them if necessary.
- Mount the insulation after the pressure test. Mount the thermometer handles (A-2, F-2).

### 3.2.2 Check valve

The HeatBloC® is equipped with a check valve (D-1, opening pressure 200 mm wc) in the return pipe. It can be opened manually.

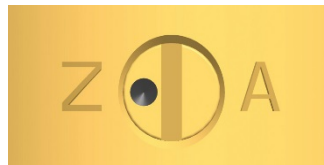
#### Operation



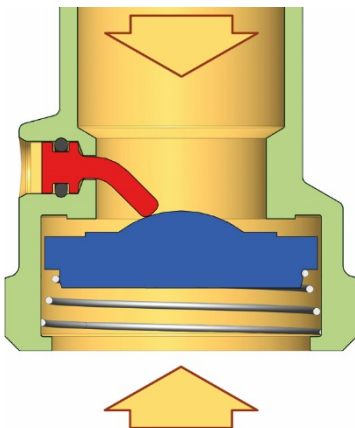
During operation, the mark must be directed to "Z".

→ The check valve is closed.

→ Flow only in the direction of the arrow.



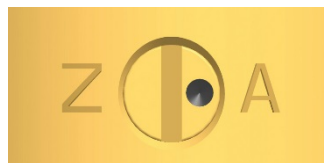
#### Filling, emptying, bleeding



For filling, emptying and bleeding the mark must be directed to "A".

→ The check valve is open.

→ Flow in both directions.



## 4 Assembly and installation [specialist]

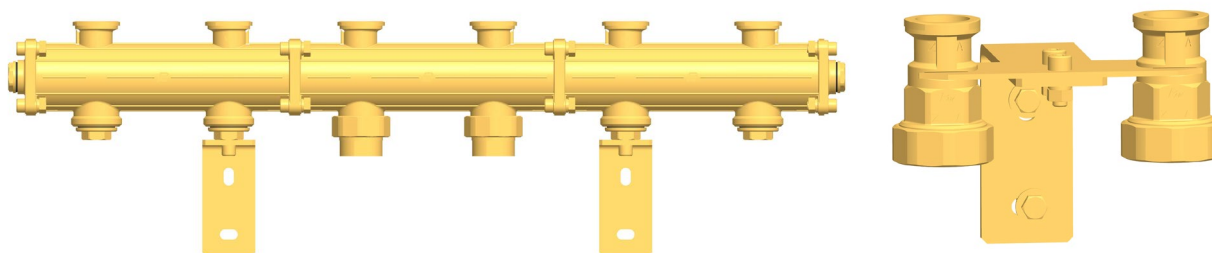
The K33 HeatBloC® must be either installed on a PAW modular distribution manifold or a set of wall bracket and mounting plate. The modular distribution manifold, the wall bracket and the mounting plate are not included in delivery.

### NOTICE

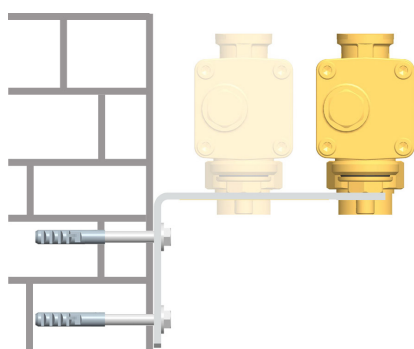
#### Damage to property!

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

#### 4.1 Installation of the modular distribution manifold / wall bracket with mounting plate



Mount the modular distribution manifold or the wall bracket with mounting plate as described in the separate instructions.

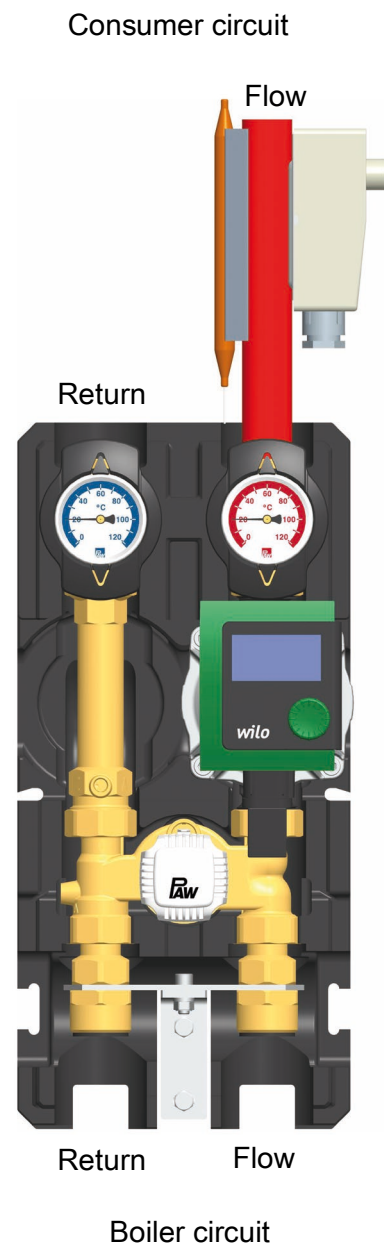
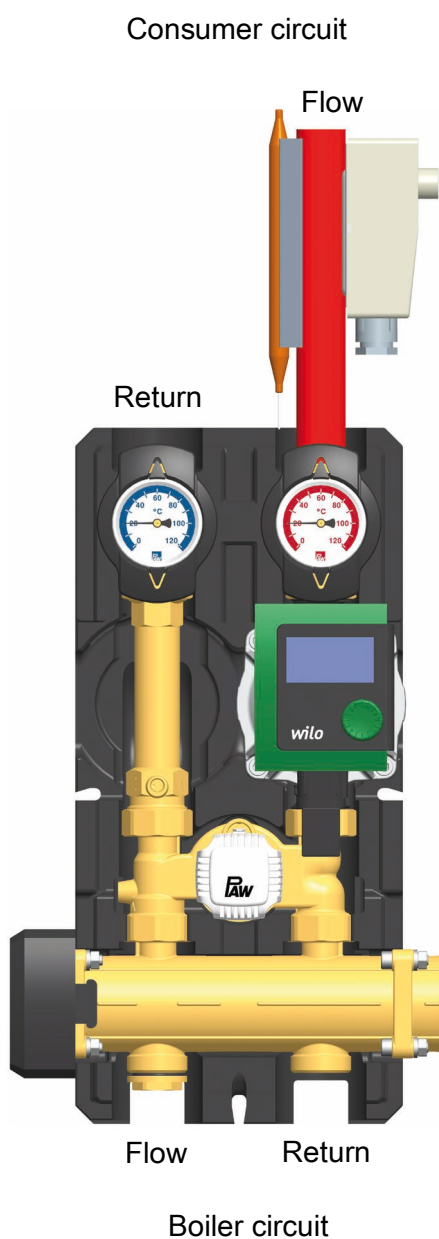


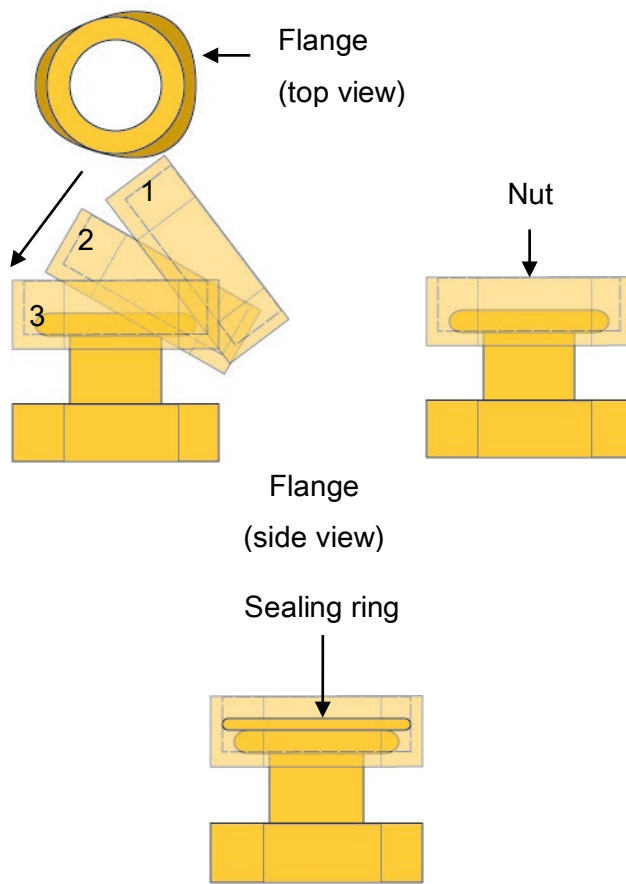
If possible, choose the largest distance to the wall. In this way it is easier to mount the insulation.

## 4.2 Installation of the HeatBloC® and commissioning

The HeatBloC® can be installed

- **Option 1:**  
on a PAW modular distribution manifold.
- **Option 2:**  
on a mounting plate  
with thread connections.



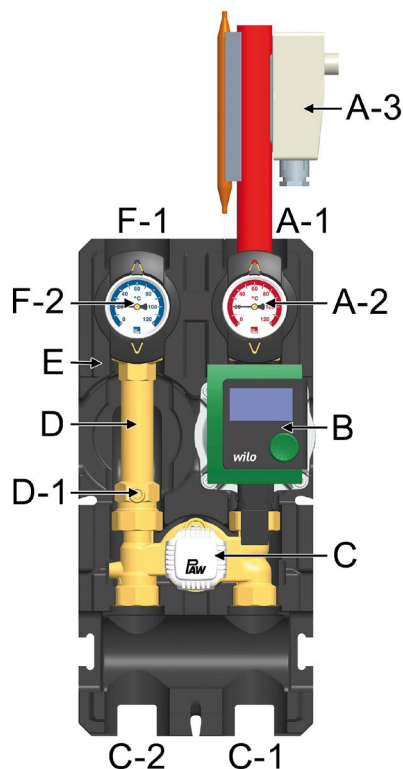


1. Take off the thermometer handles (A-2, F-2) and remove the insulating front shell of the HeatBloC®.
2. Unscrew the nuts on the lower connections of the HeatBloC® and take out the sealing rings.
3. Flip the two nuts over the flanges.

4. Insert the sealing rings into the nuts.
5. Put the HeatBloC® onto the two nuts.
6. Tighten the nuts.

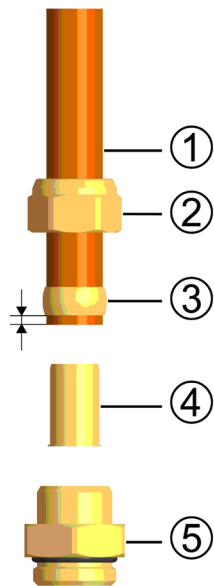
Take care that the nuts do not get jammed and that the sealing rings do not slip.

7. Connect the HeatBloC® to the installation. The installation to the piping must be carried out without any tension.
8. Connect the pump.
9. Mount the pipe contact thermostat and the sensor (A-3) at the flow pipe.
10. Carry out the pressure test and check all thread connections.
11. Mount the insulating front shell and the thermometer handles (A-2, F-2).



### 4.3 Accessories: compression fitting (not included in delivery)

The connection to the heating installation can be carried out fast, pressure-proof and without soldering when you use the optionally available compression fittings.



Not included in  
the scope of delivery!

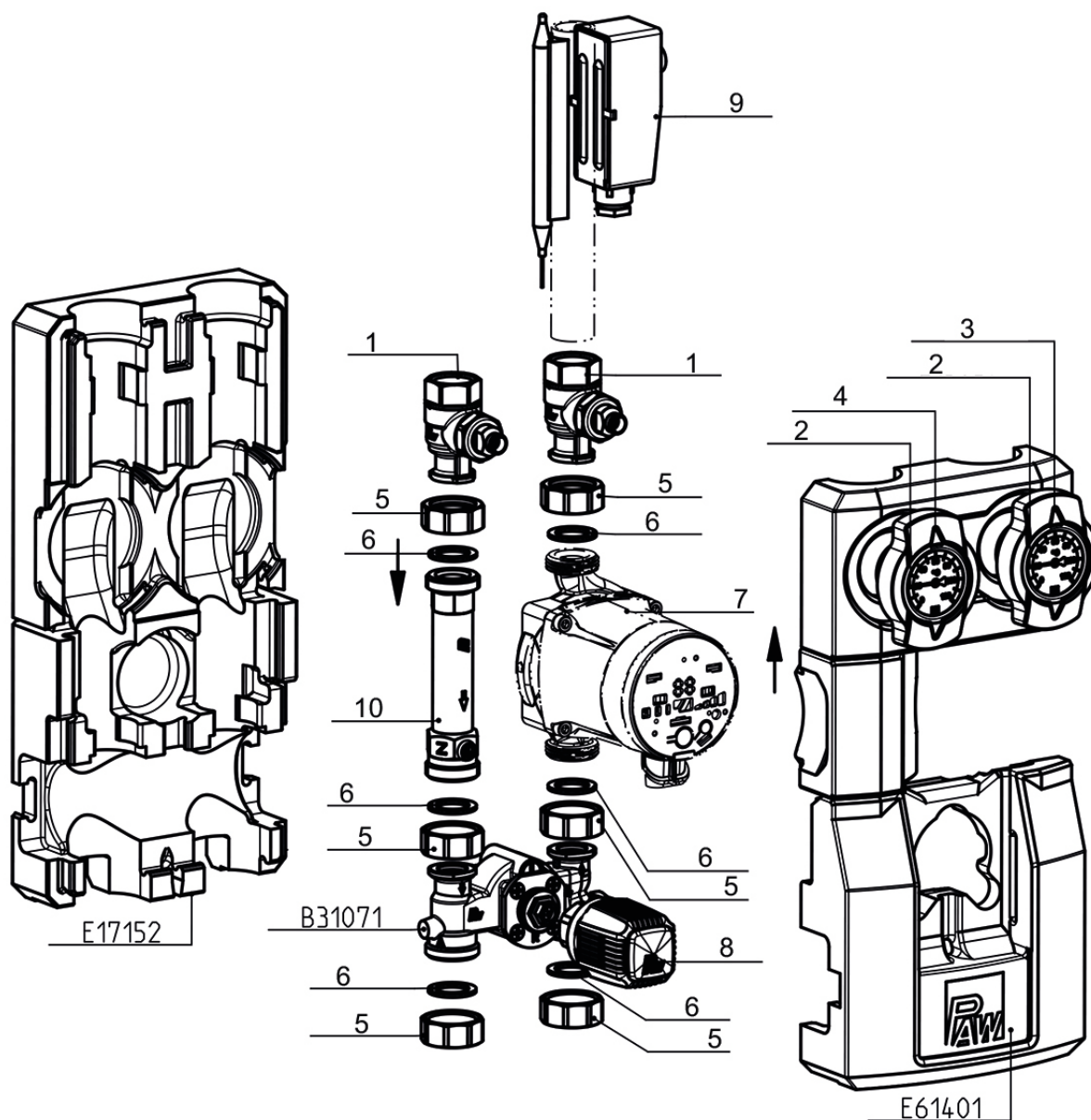
1. Push the union nut ② and the cutting ring ③ onto the copper pipe ①. The pipe must protrude at least 3 mm from the cutting ring in order to ensure the force transmission and the sealing.
2. Insert the support sleeve ④ into the copper pipe.
3. Insert the copper pipe with the plugged-on individual parts (②, ③ and ④) all the way into the housing of the cutting-ring 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 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.

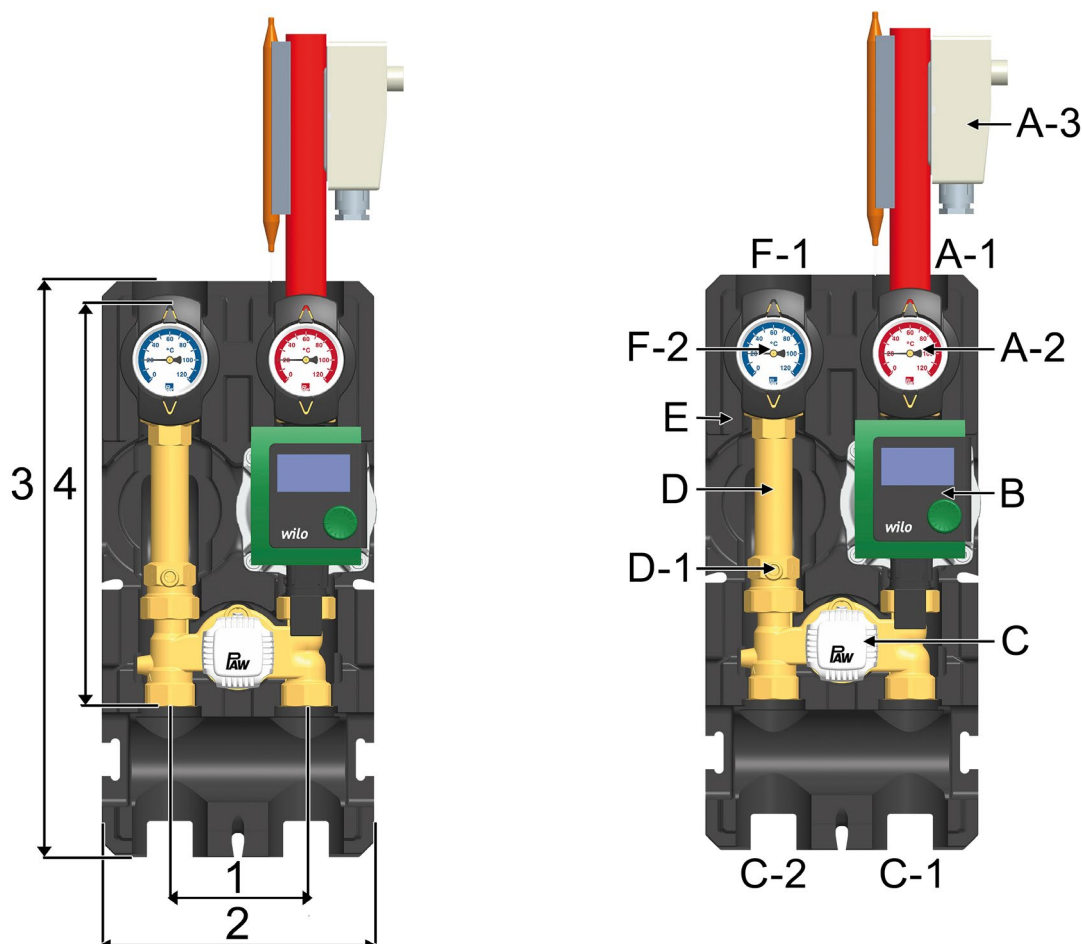


Position	Spare part	Item number
1	Thermometer ball valve DN 20, F ½" x ¾" int. thread	N00202
2	Thermometer handle for ball valve 1"	N00248
3	Dial thermometer, red scale, d=50 mm, 0-120 °C	N00242
4	Dial thermometer, blue scale, d=50 mm, 0-120 °C	N00243
5	Union nut G 1"	2055
6	Gasket ½", for threaded connection 1"	N00129
7	Pump see following table	
8	Thermostatic head, 20-50 °C, with contact sensor	N00042
9	Contact thermostat, 20-60 °C	N00083
10	Brass pipe DN 20, 2x 1" ext. thread, 130 mm, with check valve	N00141
	Conversion kit for 3-way mixing valve "from flow on the left to flow on the right"	31071
	Conversion kit for 3-way mixing valve "from flow on the right to flow on the left"	31072

Item number heating circuit*	Pump	Item no.	EEl
32073WP6	Wilo Para SC 15/6-43	N00258	< 0.20
32073WH6	Wilo-Stratos PICO 15/1-6	E1239615	< 0.20
32073GM6	Grundfos UPM3 Auto L 15-70 PP3	E1212360	< 0.20
32073GH6	Grundfos Alpha2.1 15-60	E121221	< 0.17

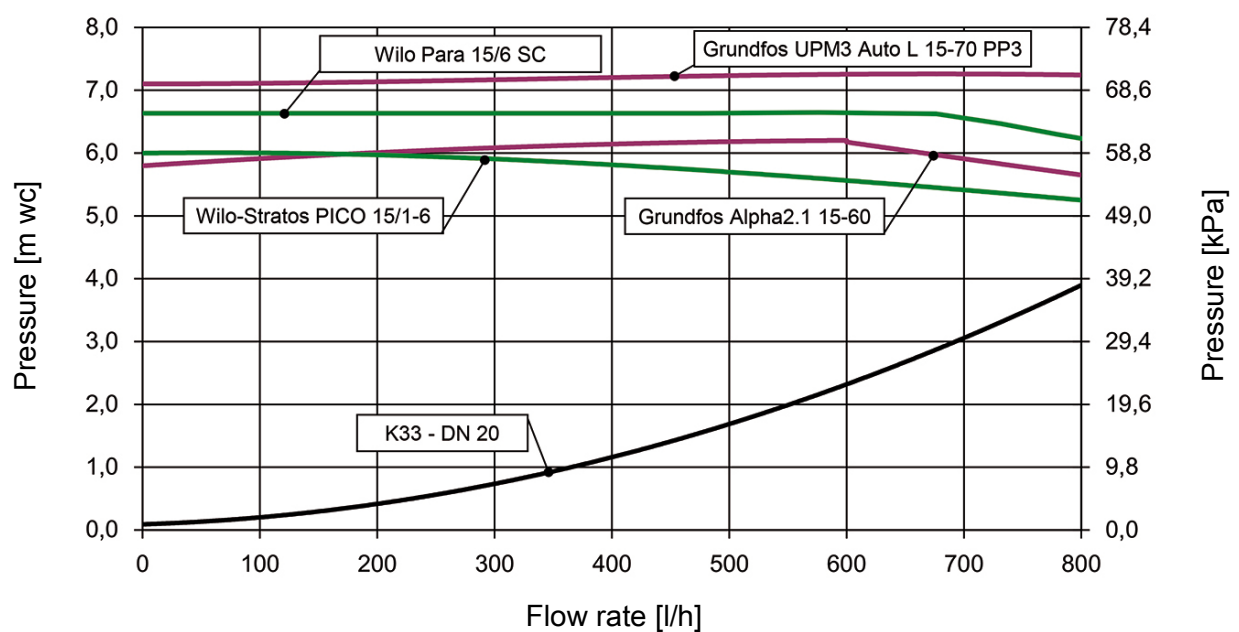
## 6 Technical data

K33	DN 20 (¾")
<b>Dimensions</b>	
Centre distance (1)	90 mm
Width insulation (2)	180 mm
Height insulation (3)	385 mm
Installation length (4)	255 mm
<b>Connections</b>	
Outlet (A-1, F-1)	¾" internal thread
Inlet (C-1, C-2)	1" external thread, flat sealing
<b>Technical data</b>	
Opening pressure check valve (D-1)	200 mm wc, can be opened
<b>Materials</b>	
Valves and fittings	Brass
Gaskets	EPDM/NBR
Insulation	EPP



K33	DN 20 (¾")
Hydraulics	
Maximum pressure	6 bars
Maximum temperature	110 °C
K <sub>VS</sub> value [m³/h]	1.3

### 6.1 Pressure drop and pump characteristic curves

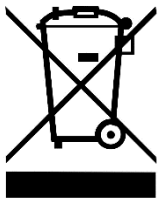


## 7 Disposal

### NOTICE

Electrical and electronic devices must not be disposed of in the household waste.

For your return, there are free collection points for electrical appliances and, if necessary, additional points of acceptance for the reuse of the devices in your area. The addresses can be obtained from your city or communal administration.



If the old electrical or electronic device contains personal data, you are responsible for deleting it before you return it.

Batteries and rechargeable batteries must be removed prior to the disposal of the product. Depending on the product equipment (partly with optional accessories), single components can also contain batteries and rechargeable batteries.

Please observe the disposal symbols on the components.





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