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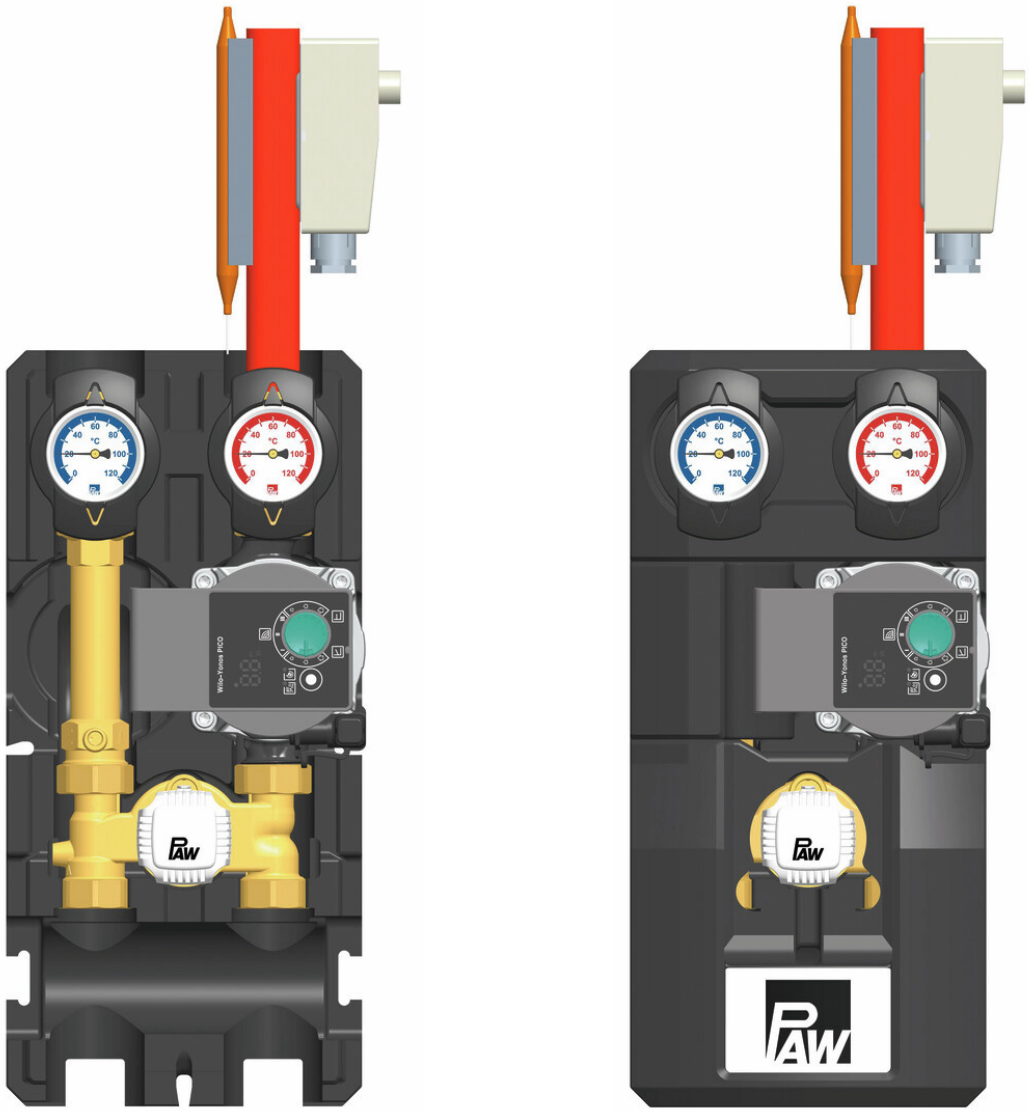
English

Installation and Operation Instructions
HeatBloC® K33 - DN 20



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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, functioning and the operation of a mixed HeatBloC®.

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

It must **not** be used in drinking water applications.

Improper usage excludes any liability claims.

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.

Only use PAW accessories with the product.

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 these instructions

⚠ CAUTION

Personal injury and damage to property!

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

► The product 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 are lost. We do not assume liability nor provide warranty for damage to property resulting from sealants damaged in this way.

► It is imperative to prevent the EPDM sealing elements from making contact with substances containing mineral oils.

► Use a silicone- or polyalkylene-based lubricant free of mineral oil such as Unisilikon L250L and Syntheso Glep 1 from Klüber or a silicone spray.

NOTICE

Damage to property!

► It is mandatory to mount the contact thermostat at the flow.

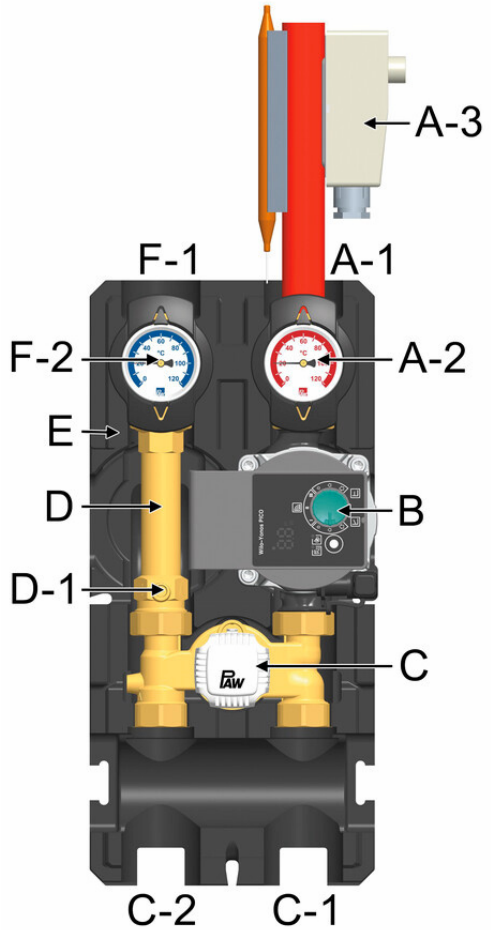
Only in this way, it prevents the HeatBloC® from overheating.

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 directly mounted onto a PAW distribution manifold or a mounting plate. With transition connections, PAW HeatBloC®s can also be mounted on PAW modular distribution manifolds of other dimensions.

3.1 Equipment



A-1 Flow to the consumer circuit

A-2 All-metal thermometer with immersion sleeve, integrated in the ball valve (flow)

A-3 Contact thermostat with contact sensor, adjustable

B Heating pump

C 3-way mixing valve with adjustable bypass 0-50 %

C-1 Flow from the heat generator

C-2 Return to the heat generator

D Return pipe

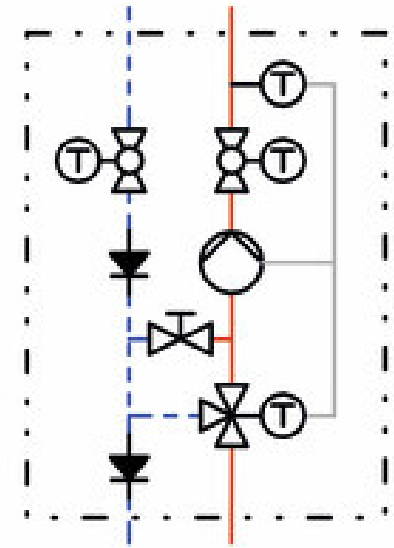
D-1 Check valve, can be opened

E Design insulation with optimised function

F-1 Return from the consumer circuit

F-2 All-metal thermometer with immersion sleeve, integrated in the ball valve (return)

3.2 Function



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

The flow temperature of the heating circuit is controlled by the integrated mixing valve. Hot water from the boiler and cold return water are mixed to obtain the desired flow temperature of the heating circuit. The flow temperature is adjusted via the thermal mixing head and a flow contact sensor.

Due to the premixing rate that must be adjusted at the bypass of the mixing valve, a certain amount of cold return water is added to the flow water. The 3-way actuator can thus work over the whole adjustment range (closed ... completely open).

Example: Panel heating systems operate on a low temperature level with small temperature differences, but with high flow rates. It is therefore sufficient to add a small amount of hot water to the "warm" return water.

Application range:

- Consumer circuits with a considerably lower flow temperature than the boiler flow temperature
- Small heating circuits with low output and low control requirements
- Can be used instead of the K34 if the existing controller cannot actuate an additional mixing valve.

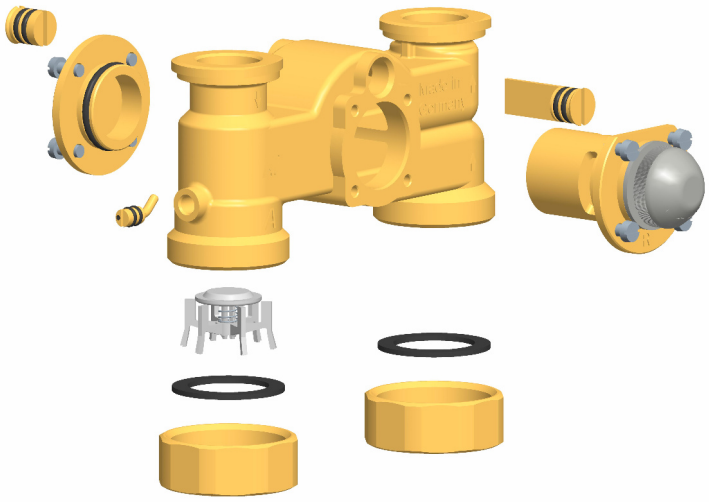
3.2.1 3-way mixing valve with bypass [specialist]

The 3-way mixing valve is a constant-value mixing valve for radiant panel heating systems (radiant floor heating, wall heating etc.) which are operated with a constant flow temperature and thus guarantee a basic heat supply. The desired flow temperature can be adjusted at the thermostatic head.

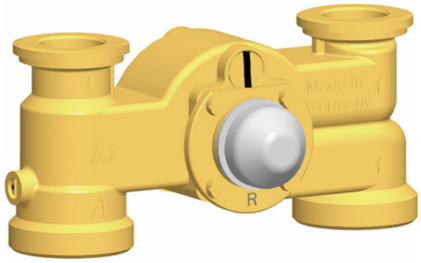
The mixing valve is equipped with a bypass which must be operated separately. Via this bypass, cold return water is added to the flow of the HeatBloC®. This can result in an increase of the flow rate of the HeatBloC®.

Notice

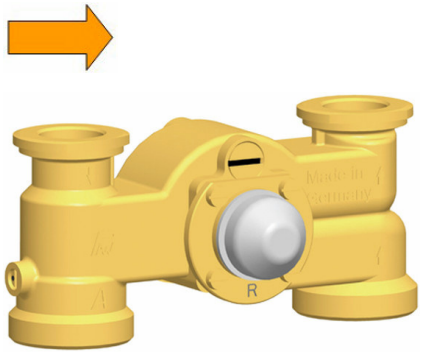
When the heating circuit is delivered, the bypass is closed.



1. During commissioning, determine the optimum bypass position for the operation of the installation. Find out and check the correct adjustment through a trial-and-error process.



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

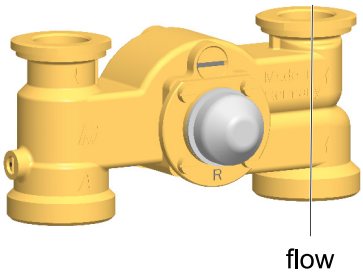


If the slot of the bypass screw is in a horizontal position, the bypass is completely open. A maximum flow rate from the return to the flow line is thus enabled. This adjustment may be necessary for radiant floor heating systems which require a very high water flow volume. Because of the bypass, the flow temperature decreases and the control may be affected in a negative manner.

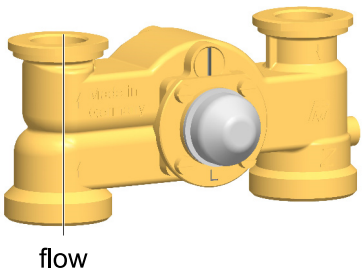
2. Check the position of the bypass during operation. Make sure that the flow rate is sufficient and that the desired temperature is reached.

Change of the flow line

The HeatBloC® is available in two versions: with "flow on the right" and "flow on the left".



Mixing valve with flow on the right



Mixing valve with flow on the left

⚠ WARNING

Malfunction!

To change the flow line, a conversion kit for the mixing valve is mandatory!

A retrofitting without conversion kit leads to a malfunction of the mixing valve.

Please specify the following information when ordering the conversion kit:

- Nominal diameter of the group of fittings (see designation of the pump)
- PAW item number or PAW designation
- Change from/to:

  "for conversion **from** flow **on the right to** flow **on the left**" or

  "for conversion **from** flow **on the left to** flow **on the right**"

Proceeding:

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

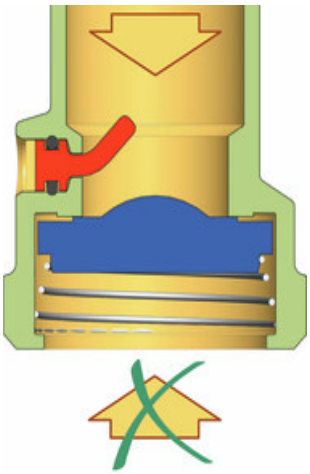
   Consider the flow direction of the pump!

   Turn the pump head such that the terminal box is directed to the top or to the centre of the group of fittings.
5. Dismount and interchange the ball valves.
6. Mount the HeatBloC® and connect it to the installation.
7. Check all union nuts before commissioning and firmly tighten them if necessary.
8. Mount the insulation only after having carried out a pressure test. Mount the thermometer handles (A-2, F-2) in a final step.

3.2.2 Check valve

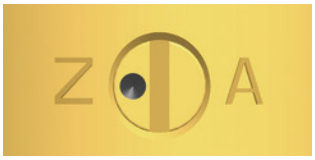
The product is equipped with a check valve in the return pipe. The check valve can be opened.

Operation

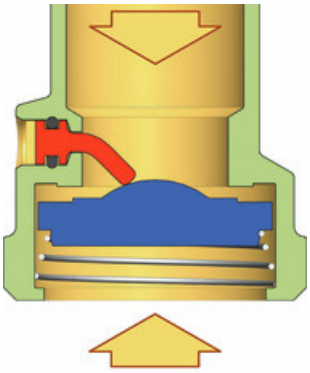


During operation, the marking must point to "Z".

- 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 point to "A".

- The check valve is open.
- Flow in both directions.

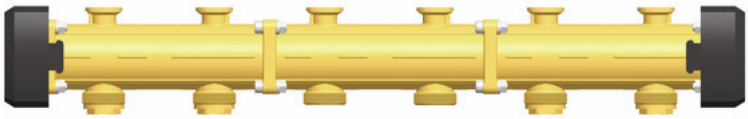
4 Mounting and installation [specialist]

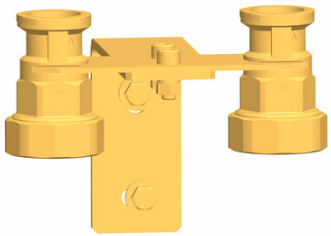
The HeatBloC® can be mounted on a distribution manifold or on a wall bracket with mounting plate. The distribution manifold, the wall bracket and the mounting plate are not included in the scope of delivery.

NOTICE

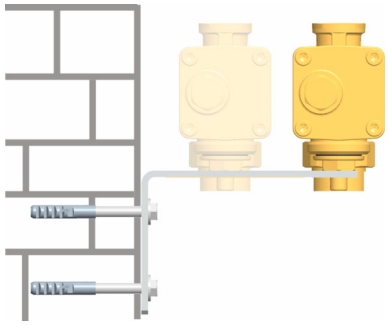
Damage to property!
The installation site must be dry, stable, frost-proof and protected against ultraviolet radiation in order to prevent material damage of the installation.

4.1 Installation of the modular distribution manifold / of the 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 mounting holes with the largest distance to the wall. It is thus easier to mount the insulation of the modular distribution manifold.

4.2 Installation and commissioning of the HeatBloC®

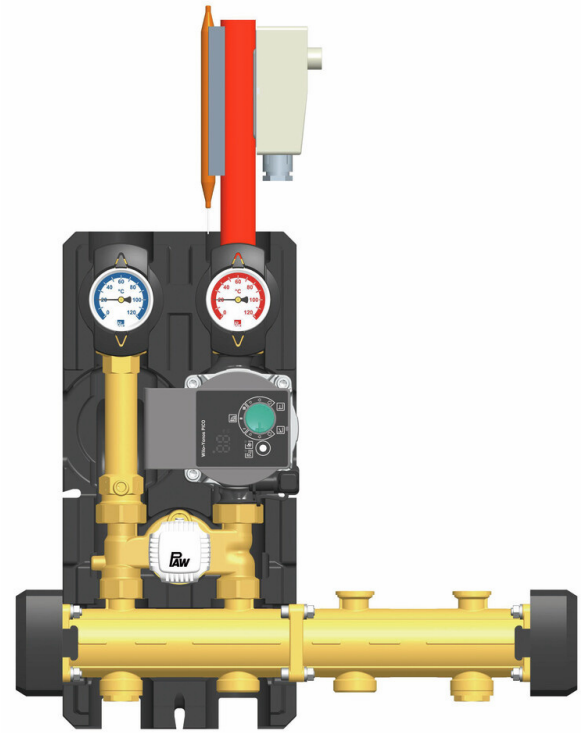
The HeatBloC® can be mounted

Option 1:

on a PAW modular distribution manifold.

consumer circuit

return flow



flow return

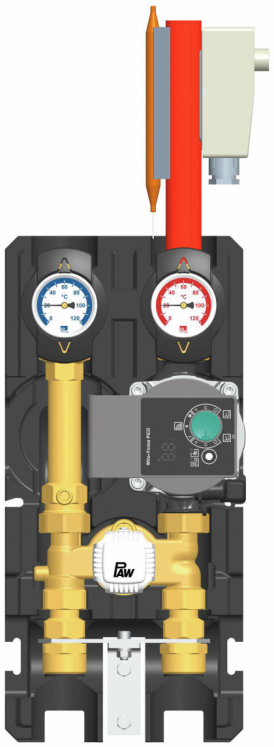
heat generator

Option 2:

on a mounting plate with transition thread connections.

consumer circuit

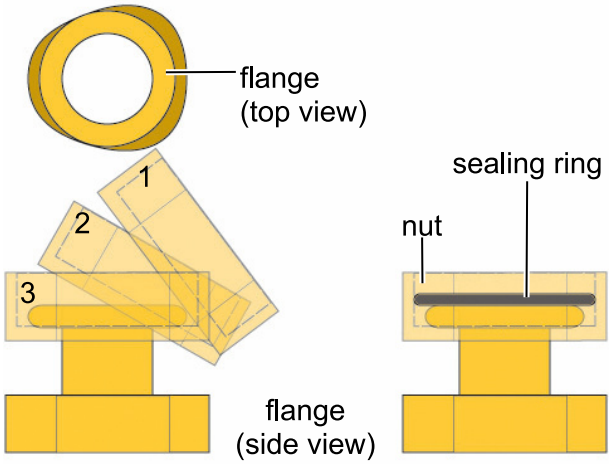
return flow

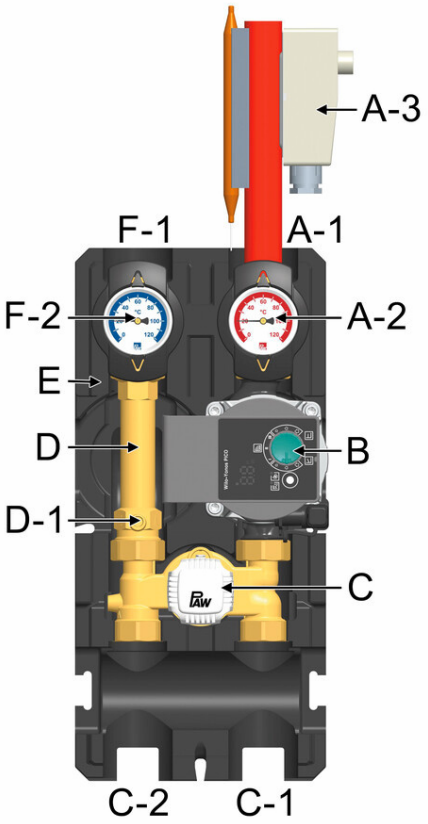


return flow

heat generator

Please observe the separate and respectively corresponding instructions regarding the installation of the distribution manifold and the mounting plate.





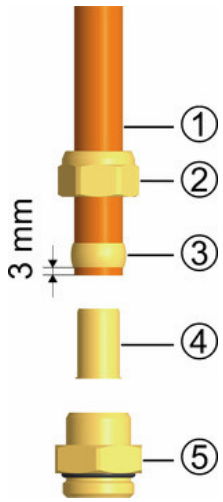
1. Take off the thermometer handles (A-2, F-2) and remove the insulating front shell of the HeatBloC®.
2. Unscrew the nuts on the lower connections of the HeatBloC® and take out the sealing rings.

If a PAW modular distribution manifold or transition connection is used:

3. Put 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. Make sure that the nuts do not get jammed and that the sealing rings do not slip.
7. Connect the HeatBloC® to the installation by using the pipes. The installation to the piping must be carried out without any tension.
8. Connect the pump.
9. Mount the contact thermostat and the contact sensor (A-3) at the flow.
10. Carry out a pressure test and check all thread connections.
11. Mount the insulating front shell and the thermometer handles (A-2, F-2).

4.3 Accessories: Cutting-ring compression fitting (not included in the scope of delivery)

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



Not included in the scope of delivery!

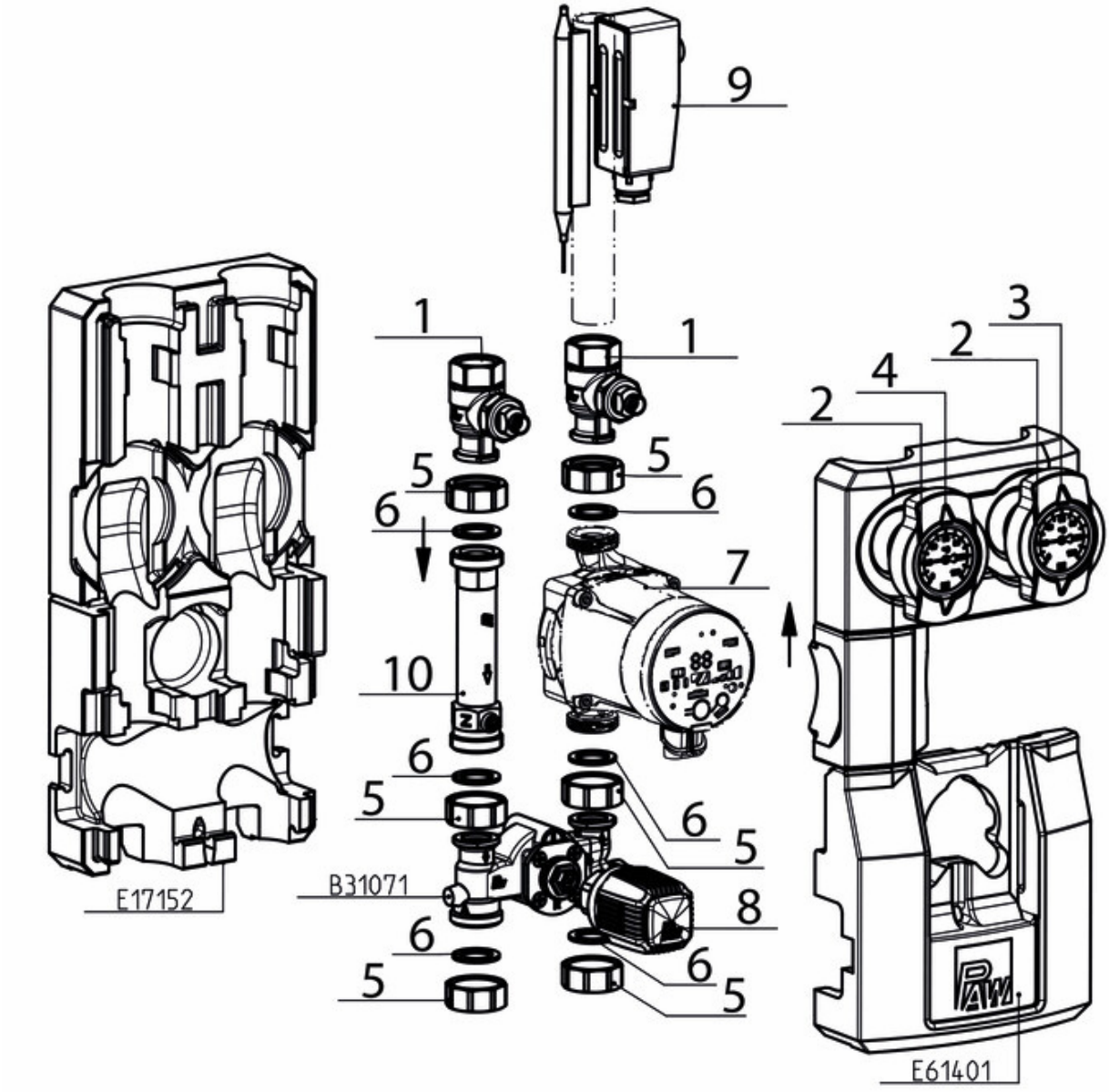
1. Push the union nut ② and the cutting ring ③ onto the copper pipe ①. The pipe must protrude at least 3 mm from the cutting ring in order to ensure the force transmission and the sealing.
2. Insert the support sleeve ④ into the copper pipe.
3. Insert the copper pipe with the plugged-on individual parts ②, ③ and ④ as far as possible into the body 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 body of the compression fitting ⑤ against distort in order to avoid damaging the sealing ring.

5 Scope of delivery [specialist]

NOTICE

Serial number

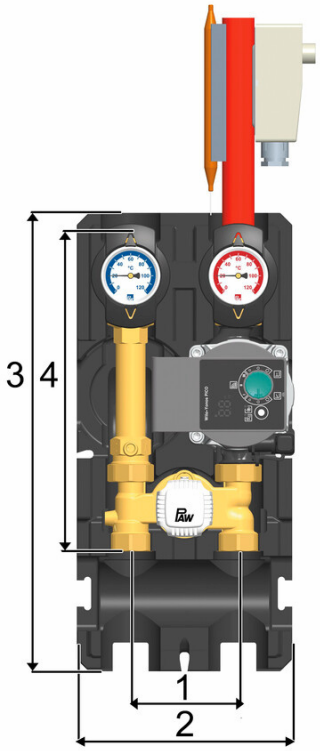
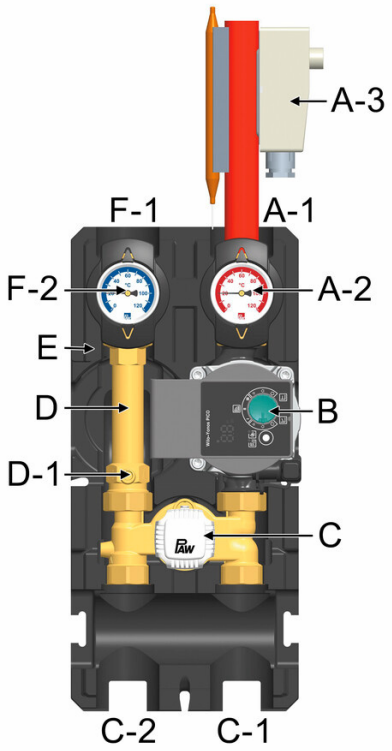
Complaints and requests/orders of spare parts will only be processed with information on the serial number! The serial number is placed on the return pipe of the product.



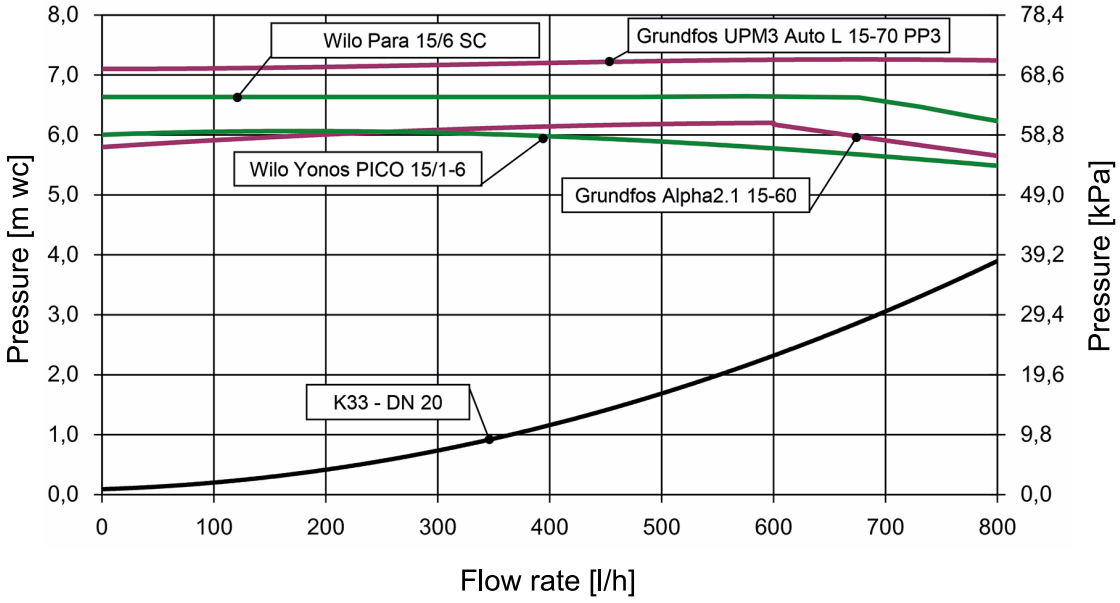
Position	Spare part	Item number
1	Thermometer ball valve DN 20, F ½" x ¾" int. thread	N00202
2	Thermometer handle for thermometer ball valve 1"	N00248
3	Dial thermometer, red scale, d = 50 mm, 0-120 °C	N00242
4	Dial thermometer, blue scale, d = 50 mm, 0-120 °C	N00243
5	Union nut G 1"	2055
6	Gasket ½", 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
no pos.	Conversion kit for 3-way mixing valve "from flow on the left to flow on the right"	31071
no pos.	Conversion kit for 3-way mixing valve "from flow on the right to flow on the left"	31072

Item no. heating circuit	Pump	Item no. pump	EEI
32073WP6	Wilo Para SC 15/6-43	N00258	< 0.20
32073WN06	Wilo Yonos PICO 15/1-6	N00315	< 0.20
32073GM6	Grundfos UPM3 Auto L 15-70 PP3	N00333	< 0.20
32073GH6	Grundfos Alpha2.1 15-60	N00336	< 0.17

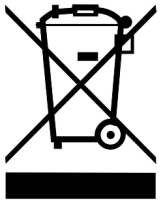
6 Technical data

HeatBloC® K33 DN 20 (¾")	
	
Dimensions	
Centre distance (1)	90 mm
Width insulation (2)	180 mm
Height insulation (3)	385 mm
Installation length (4)	255 mm
Connections	
Outlet (A-1, F-1)	¾" internal thread
Inlet (C-1, C-2)	1" external thread, flat sealing
Operating data	
Max. pressure	6 bar
Max. temperature	95 °C
K_{VS}value [m^3/h]	3.0
Opening pressure check valve (D-1)	200 mm wc, can be opened
Materials	
Valves and fittings	Brass
Seals	EPDM
Insulation	EPP

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 returning the device. 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.

NOTICE	
	Disposal of transport and packaging materials The packaging materials are made of recyclable materials and can be disposed of with recyclable materials.

Item no. 9932073x-mub-en
Translation of the original instructions
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