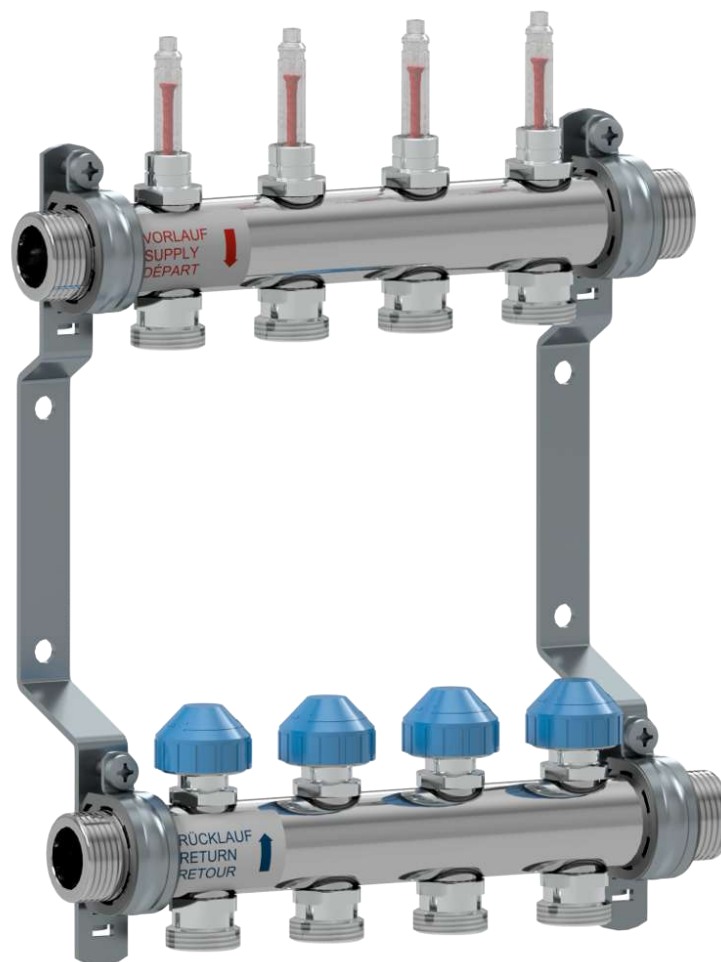


Series HKV2013AF

1" Stainless steel heating circuit manifold with flow meters

EN Installation and operating manual



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1 General information

1.1 Requirements

The installer or user must read, understand and observe this installation and operating manual before carrying out any operation. The heating manifold may only be fitted, adjusted and maintained by trained specialist personnel. Trainees may only work on the product under the supervision of an experienced person. The manufacturer will only accept any liability in line with statutory provisions if the above instructions have been adhered to. All instructions in this installation and operating manual are to be observed when using this heating manifold. This manual is an integral part of the product and must be available to all users throughout its entire service life. This manual is protected by copyright and may not be altered without the manufacturer's permission.

1.2 Product conformity

The HKV2013AF Series heating manifold conforms to DIN EN 1264-4 "Water based surface embedded heating and cooling systems".

1.3 Product features

- Stainless steel round pipe manifold on mounting bracket
- G 1 male thread with flat sealing on both sides.
- Shut-off flow meter with particularly low pressure loss.
- Regulating and shut-off valve with M30 × 1.5 adaptation.
- Fastening, air vent key and sticker set for identifying the heating circuit included in delivery.
- In option: Ball valve and end set for flushing, filling and venting.

2 Safety

2.1 Safety notices

WARNING

WARNING indicates a danger arising through incorrect behaviour (e.g. misuse, disregarding notices, etc.) that may cause serious physical injury or death.

CAUTION

CAUTION indicates a potentially dangerous situation that may cause minor or slight injuries if the appropriate safety precautions are not in place.

NOTICE

NOTICE indicates a situation that may cause material damage if the corresponding precautions are not taken.

2.2 Intended use

The manifolds are used for distributing and regulating the flow rate in low temperature floor heating or cooling systems.

2.3 Foreseeable misuse

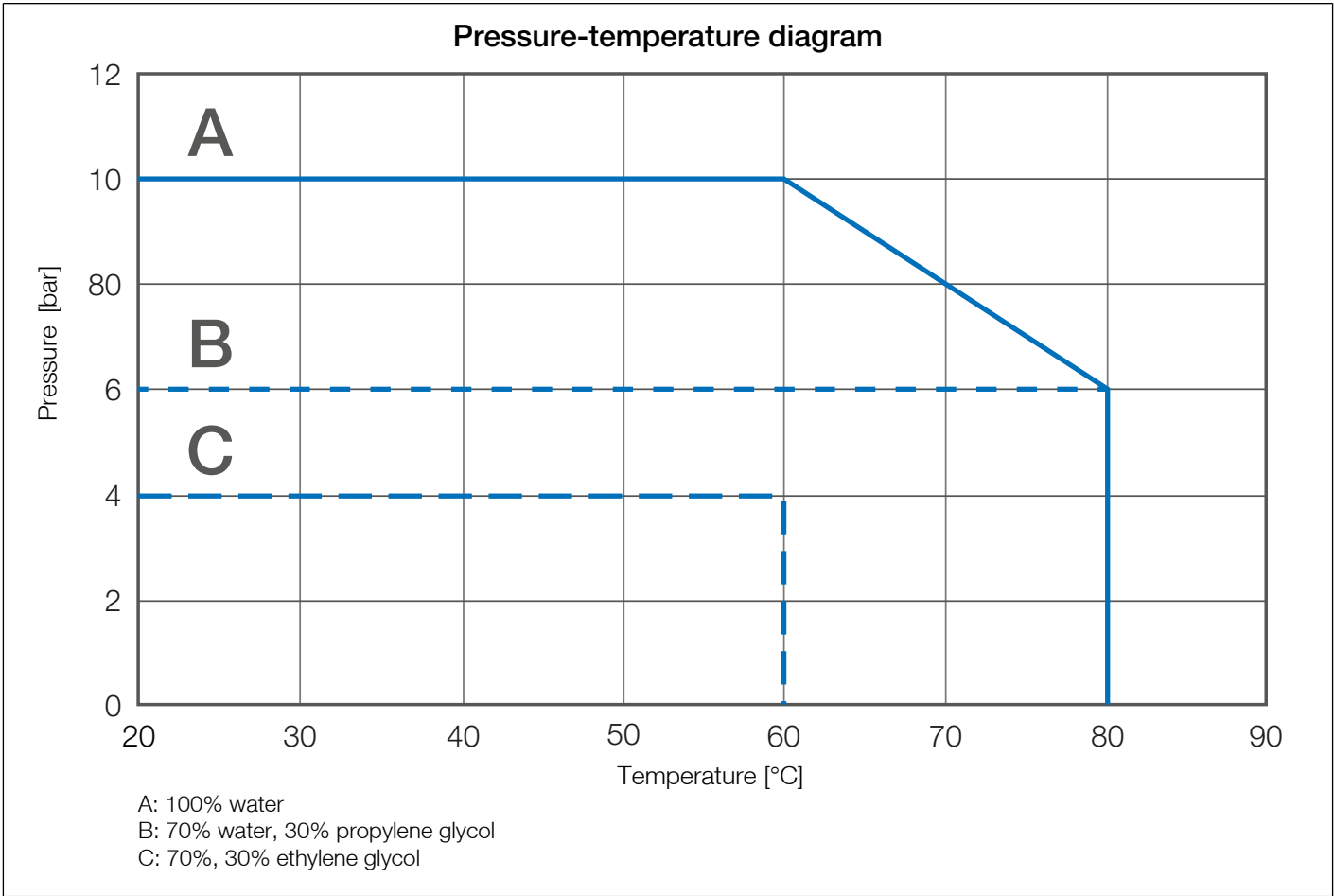
The following is regarded as foreseeable misuse:

- operating the heating circuit manifold contrary to the specifications;
- making modifications to the heating circuit manifold not agreed with the manufacturer;
- using replacement or wear parts not approved by the manufacturer.

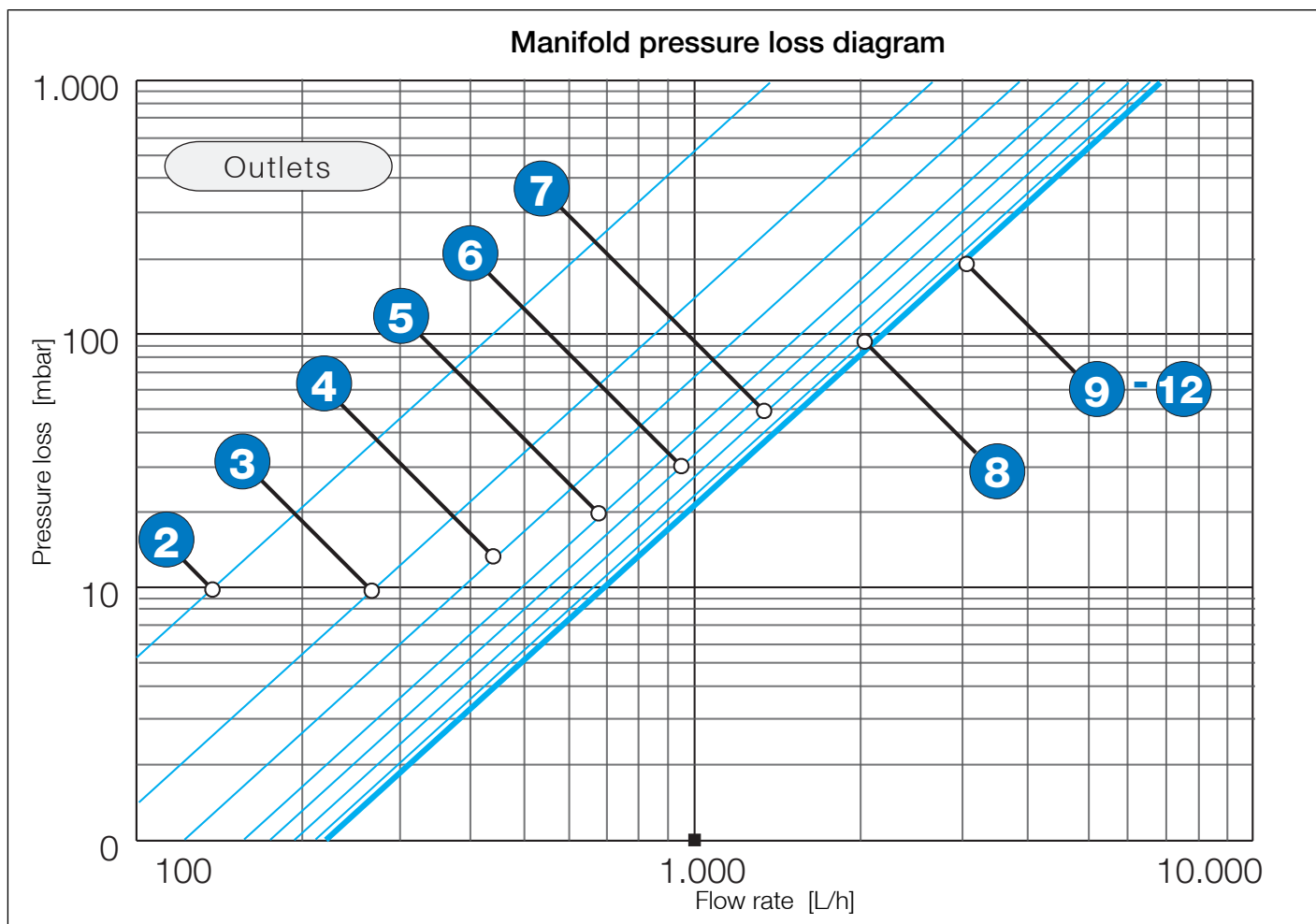
3 Technical specification

Hydraulic data	
Max. operating pressure	10 bar (see Pressure-temperature diagram)
Medium temperature	from -10 to 80 °C (see Pressure-temperature diagram)
Media	Water or water with glycol as per VDI 2035
Connections	
Primary circuit and end set	G 1 male thread
Heating circuit	G ¾ eurocone male thread
Tightening torque	G ¾ screw fittings 25-30 Nm 25-30 Nm; G1 screw fittings 55 Nm
Connection for actuator	M30 x 1.5 / closing point 11.8 mm / stroke 2.5
Manifold	
Manifold	Stainless steel 1.4301
Flowmeter	CW617N, PPS
O-rings	EPDM
Flat seals	AFM/2
End set (optional)	CW617N

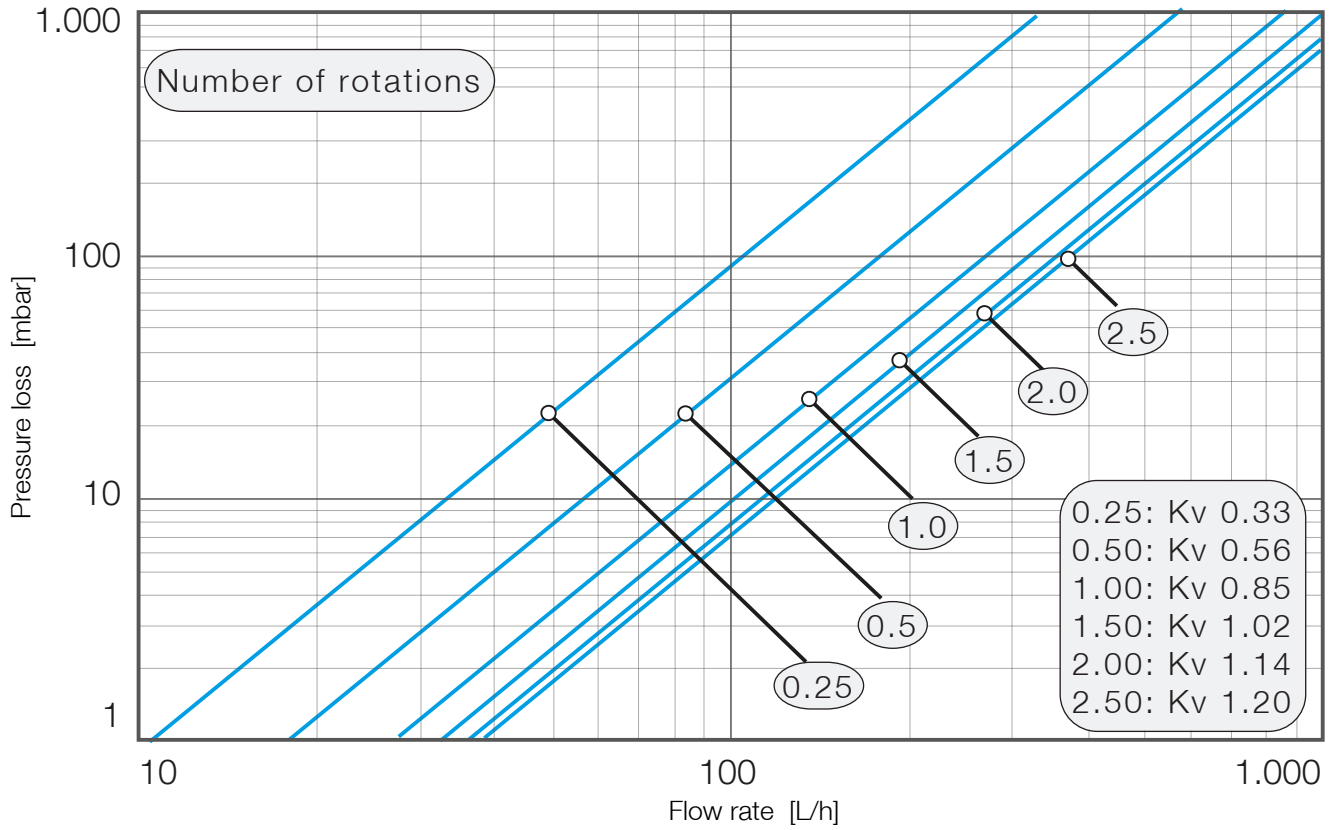
4 Pressure-temperature diagram



5 Pressure loss diagram

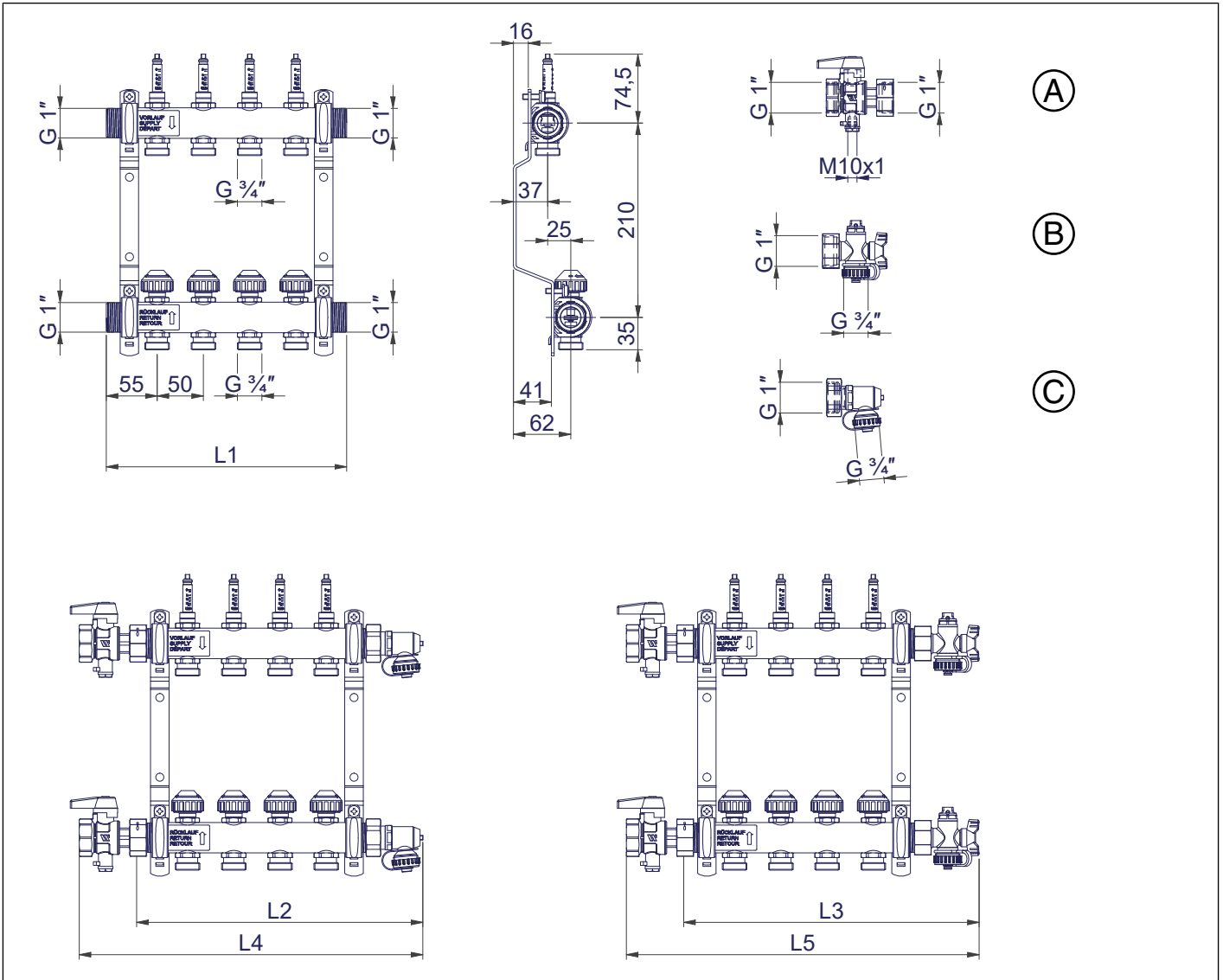


Control valve pressure loss diagram



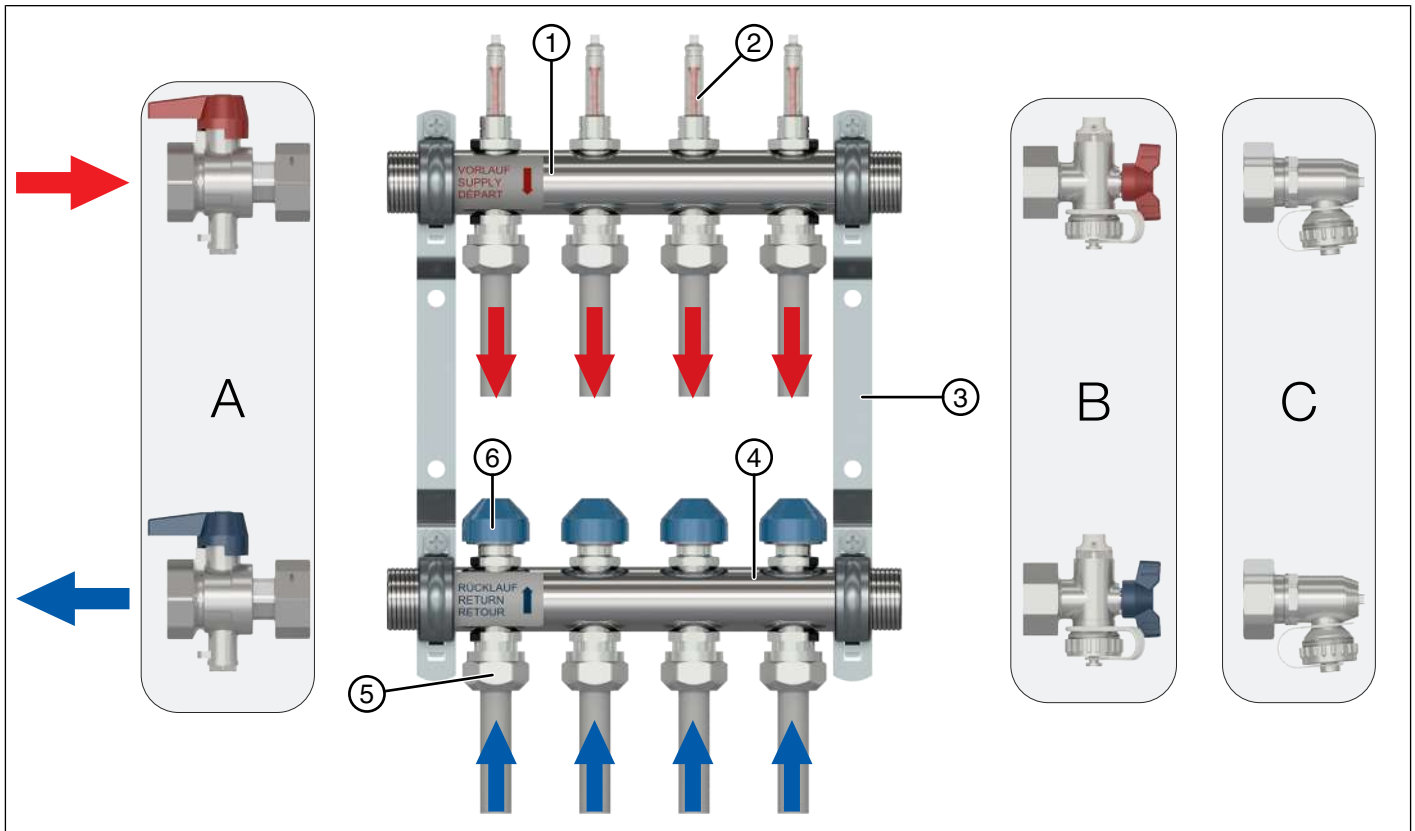
The adjustment diagram already allows for the specific pressure losses in the flow meter, flow control valve and 2 compression fittings.

6 Dimensions



	Outlets											
	2	3	4	5	6	7	8	9	10	11	12	
L1 = HKV	160	210	260	310	360	410	460	510	560	610	660	
L2 = HKV + KFE90 (C)	209	259	309	359	409	459	509	559	609	659	709	
L3 = HKV + Q1 (B)	219	269	319	369	419	469	519	569	619	669	719	
L4 = KH (A) + HKV + KFE90 (C)	271	321	371	421	471	521	571	621	671	721	771	
L5 = KH (A) + HKV + Q1 (B)	281	331	381	431	481	531	581	631	681	731	781	

7 Components overview



Components	
1	Manifold supply
2	Flow meter with shut-off function
3	Wall brackets
4	Manifold return
5	Heating circuit connection
6	Control valve with protective cap

Optional accessories	
A	Ball valve set KH
B	End set Q1: Flushing, filling, draining, venting
C	End set KFE90: Flushing, filling, draining, venting

8 Installation and commissioning

WARNING

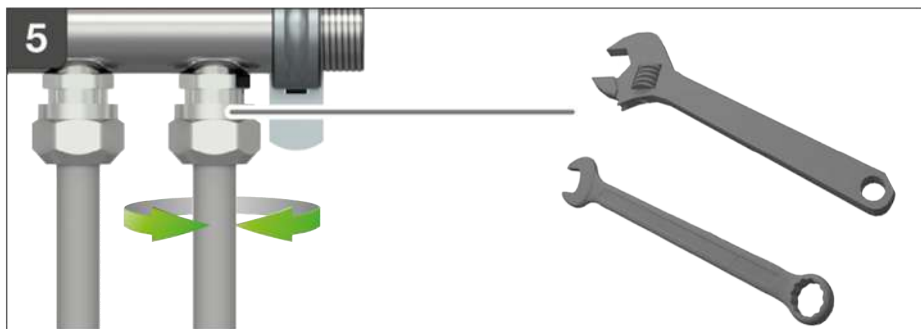
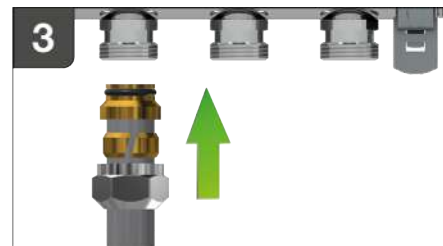
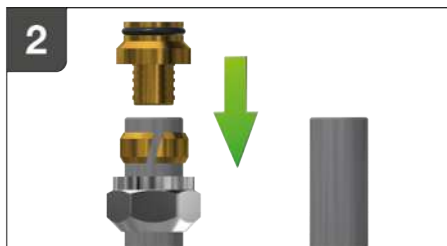
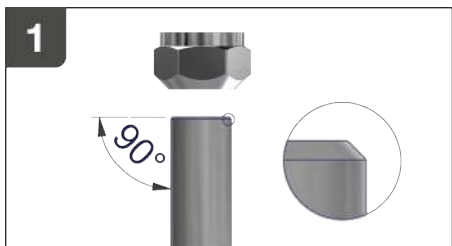
Hot water!

Severe scalding possible.

- Allow the product to cool before carrying out any maintenance, cleaning or work repair.
- Do not put hands into hot water when draining the product.

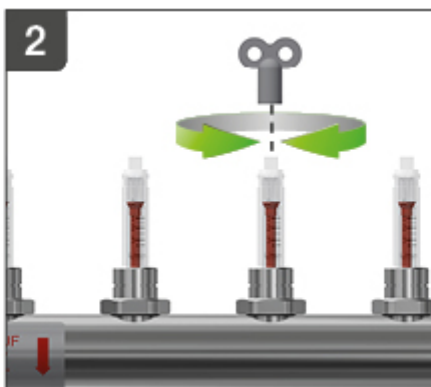
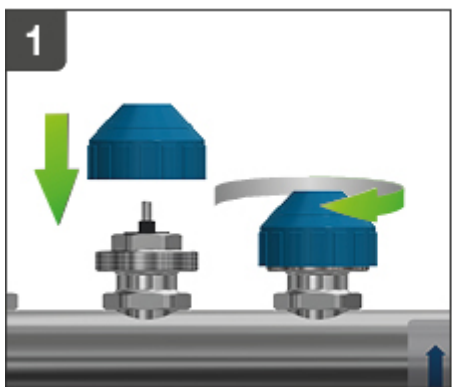
8.1 Pipe installation

1. Cut the plastic, copper or multilayer pipe to length perpendicular and deburr / calibrate. Push the clamping ring nut over the pipe.



8.2 Shutting off the heating circuit

1. The valves on the return can be closed, e.g. for flushing and filling the heating circuit. To do this, put the protective cap on the valve and close it by turning it clockwise.



2. Push the grab ring onto the pipe and insert the hose nozzle.
3. Push the conical end of the pipe all the way into the connection on the manifold.
4. Tighten the clamping ring nut by hand. Push the plastic, copper or multilayer pipe up to the stop.
5. Hold the outlet screw connection using a 24 mm open-end wrench or spanner and tighten the clamping ring nut using a 30 mm open-end spanner (approx. 25-30 Nm). Fit the pipe without any tensile, compressive or torsional forces. Do not exceed the max. torque stated in the installation instructions for the compression joint used.

2. The flow meter can be closed with a air vent key. However, this is not necessary for filling and flushing the circuits. If the flow meter is shut off, the following opening sequence must be observed in order to avoid malfunction or damage. First, open the flow meter, then the control valve.

8.3 Flushing and filling the circuits

⚠ CAUTION

Material damage!

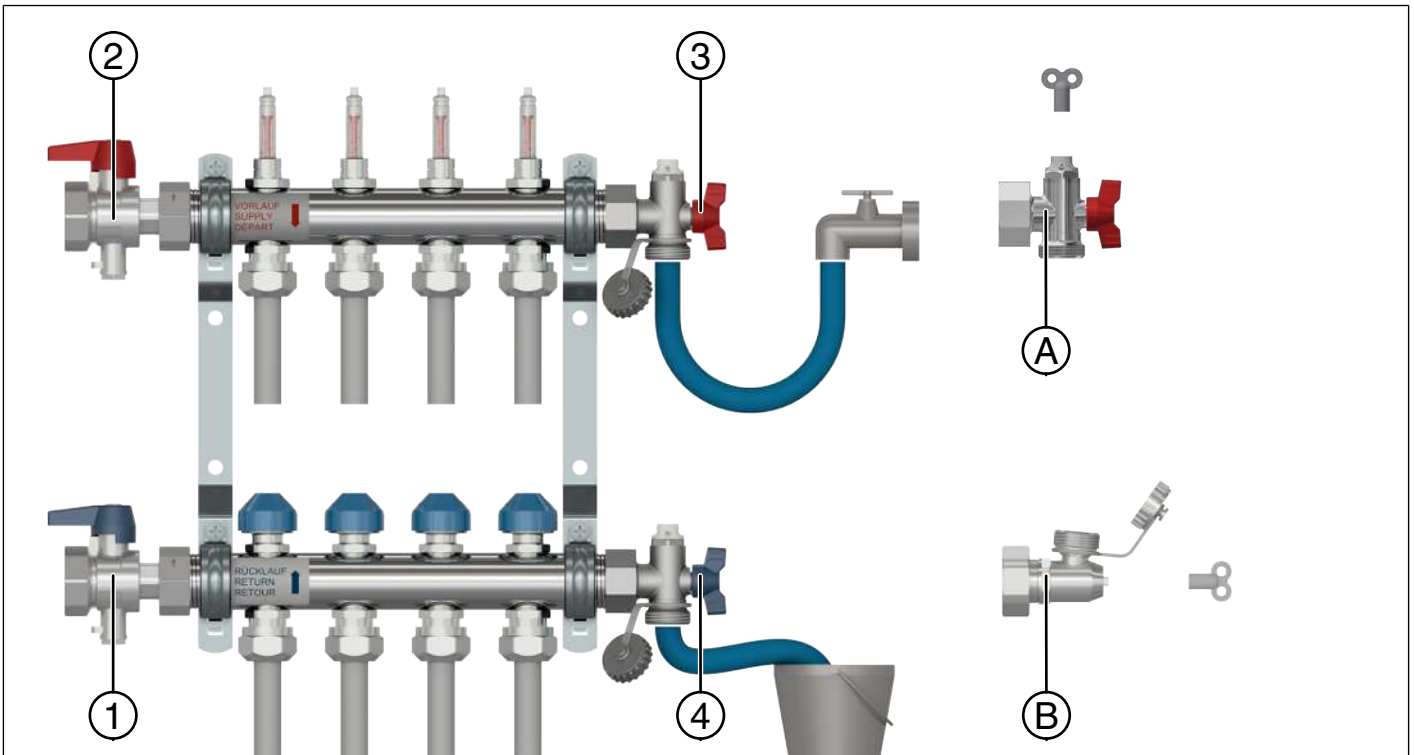
Opening shut-off valves quickly produces pressure surges.

- Always open shut-off valves slowly and in a controlled manner.

- ✓ **All flow meters must be completely open.**
- ✓ **The system pressure must not exceed 3 bar when flushing and filling.**

1. Close ball valves 1 and 2 on the manifold.
2. Close all valves on the return using the protective caps.

3. Attach the flushing and filling hose to the fill and drain valve 3 on the supply side; the discharge outlet on fill and drain valve 4 must be open.
4. Completely open the valve on the circuit to be flushed using the protective cap.
5. Flush the circuit with clear water.
6. Once flushing is over, close the control valve and flush/fill the next circuit.
7. Once the flushing and filling procedures are complete, remove the hose from the end set (fill and drain valves 3 and 4).
8. When venting using the end set Q1 and KFE90, follow illustrations A and B on this page.
9. The protective end caps are to be fully closed off once the system has been flushed and filled.



8.4 Adjusting the flow rate

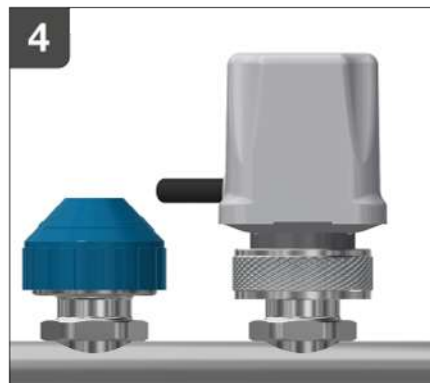
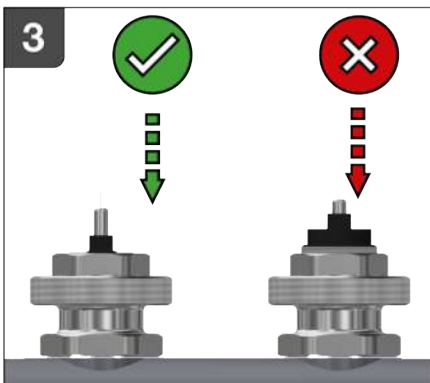
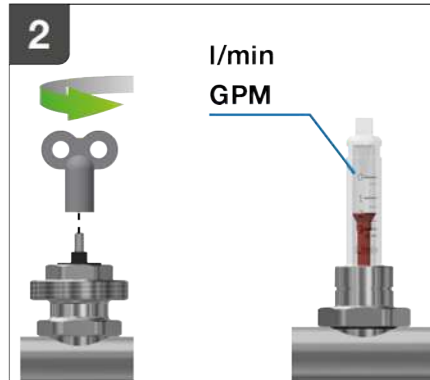
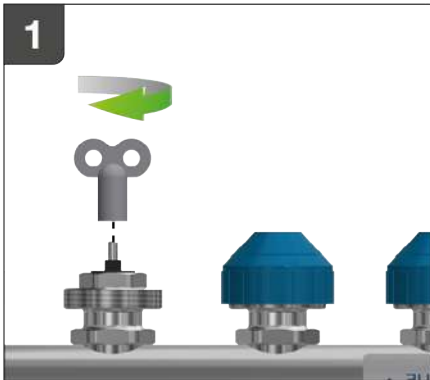
CAUTION

Material damage!

Flowmeter must not be used to adjust the flow rate.

1. Remove the protective cap on the relevant heating circuit and close the valve with a air vent key by turning it clockwise (= min. setting).

2. Adjust the flow rate by turning the regulating spindle anticlockwise on the return valve. The actual value can be read from the flow meter. Do not use the flow meter to adjust the flow. Once all the circuits have been set, check the flow values and readjust if necessary.
3. The fine thread of the adjusting spindle must not be visible above the edge of the AF19 hexagonal nut! Once it is closed, the valve is open (full flow) after 2.5 to 3 turns anticlockwise.
4. The protective cap or the actuator should be screwed back on once the adjustment work is complete. This prevents the valves from accidental adjustment and from getting dirty.



9 Disposal

Dispose of the product and packaging in accordance with local laws and regulations or recycle them.

10 Warranty

WATTS products are tested extensively. WATTS therefore guarantees only the replacement or, at the sole discretion of WATTS, the free-of-charge repair of components of the supplied products where these, in the opinion of WATTS, exhibit verifiable manufacturing faults. Warranty claims due to defects or defects of title may be asserted within one (1) year of delivery/transfer of risk. Excluded from the warranty are damages attributable to normal use of the product or friction and damages resulting from modifications or non-authorised repairs on the products, for which WATTS rejects all claims for compensation (direct or indirect). (For more detailed information, please refer to our website.) In all cases, supply is subject to the General Terms and Conditions, which can be found at www.wattswater.eu/gtc/.

The descriptions and photographs contained in this product specification sheet are supplied by way of information only and are not binding. Watts Industries reserves the right to carry out any technical and design improvements to its products without prior notice.

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