Series HK/HKM 25/32

Pump groups for unmixed and mixed heating circuits

DN 25 and DN 32

Installation and Operating Manual
(translated from the original operating manual)

WattsWater.eu

WATTS®

Contents

1 General information

1.1 Important information

NOTICE **The plant operator is responsible for ensuring compliance with the local laws and regulations (e.g. accident prevention regulations, etc.). Incorrect operation or operating the pump group outside the specifications invalidates all warranty claims.**

This Installation and Operating Manual

- is a component of the pump group
- contains instructions and information on safe and correct installation and commissioning of the pump group
- must be available to all users throughout the entire service life of the pump group
- is intended for trained personnel who are familiar with the applicable standards and provisions and, in particular, with the relevant safety concepts and the operation and maintenance of the pump group
- is protected by copyright and may not be changed without the manufacturer's permission
- may not be made accessible to non-authorized personnel; neither in original form nor as a copy

1.2 Product conformity

A Declaration of Conformity according to the Machinery Directive 2006/42/EC has been issued for this pump group product.

1.3 Product features

- stable mounting bracket including mounting hardware
- patented 3-piece EPP insulating shell
- compact, space-saving design

2 Safety

2.1 Presentation of safety information

⚠ DANGER DANGER indicates an imminent danger that may cause serious physical injury or death if the appropriate safety precautions are not in place.

⚠ WARNING WARNING indicates a danger arising through incorrect behavior (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 NOTE indicates a situation that may cause material damage if the corresponding precautions are not taken.

2.2 Important safety instructions

- Carefully read through these operating instructions.
- Only connect the pump group to a power source that corresponds to the mains voltage specified on the rating plate of the pump group.
- The power supply to the pump group must be disconnected prior to maintenance, cleaning and repair work.
- Only trained specialist personnel are permitted to perform maintenance, cleaning and repair work.
- The pump group must not be used if it is damaged or if the pump group is no longer operating correctly. In this case, contact your specialist dealer immediately.
- Adhere to the maintenance instructions and intervals.
- Protect the pump group from the influences of weather.
- Never use the pump assembly outdoors.
- The machine is only permitted to be used for the purpose for which it was intended.

2.3 Intended use

The pump group is used to distribute heating water in heating systems.

The pump group is completely pre-assembled and designed for mounting on a wall.

The pump group is not intended to be operated by people (including children) with physical, sensory or mental disabilities, nor by people with insufficient experience or previous knowledge.

2.4 Foreseeable misuse

The following is considered to be foreseeable misuse:

- operating the pump group contrary to the specifications
- improper use of the pump group
- modifications to the pump group that were not agreed with the manufacturer
- use of replacement or wear parts that were not approved by the manufacturer
- operating the pump group outdoors (parts and components are not UV resistant)

2.5 Responsibilities of the operator

The operator must ensure that:

- the pump group is only used for its intended purpose
- the pump group is installed, operated and maintained according to the specifications in the Installation and Operating Manual
- the pump group is only operated according to local regulations and occupational health and safety regulations
- all precautionary measures have been carried out to avoid dangers originating from the pump group
- all precautionary measures for first aid treatment and firefighting have been carried out
- only authorized and trained users have access to the pump group and operate it
- users have access to this Installation and Operating Manual at all times

2.6 Groups of persons

Only qualified persons may operate the pump group or perform service and maintenance work.

User

A user is deemed to be qualified if they have read these operating instructions and understood the potential risks associated with incorrect behavior.

Fitter/commissioner

Due to their specialist training and knowledge, and taking into consideration the applicable standards, provisions, regulations and laws, a fitter/commissioner is capable of performing work on the pump group and recognizing and avoiding potential risks.

3 Technical data

Hydraulic performance data		
Max. operating pressure	6 bar	
Ambient temperature	-2 °C to +40 °C (observe pump specification!)	
Operating temperature	+2 °C to +90 °C (observe pump specification!)	
Opening pressure of gravity brake	10 mbar	
Nominal size	HK25, HK25-KH, HKM25: DN25	HK32, HKM32: DN32
Kvs bypass (only for HKM)	HKM25: 6.3	HKM32: 18.0
Temperature display area	0 - 120 °C	
Media	Water / water-glycol mixtures according to VDI 2035/ÖNORM H 5195	
Electrical connection		
Power supply	See separate pump documentation!	
Dimensions		
Width x height x depth with EPP shell	300x370x240 mm	
Axis center distance	125 mm	
Sealing surfaces distance	342.5 mm	
Connections to pipe network		
Heating circuit (top)	**HK25, HK25-KH, HKM25:** 1½" male connection, flat sealaing. Fitting: 1½" union nut x 1" female connection **HK32, HKM32:** 2"AG male connection, flat sealaing. Fitting: 2" union nut × 1¼" female connection	
Boiler circuit (bottom)	1½" male connection, flat sealing	
Tightening torques for screwed connections		
¾"	35 Nm	
1"	55 Nm	
1¼"	90 Nm	
1½"	130 Nm	
2"	190 Nm	
Materials		
Fittings	brass CW617N	
Pipes	galvanized steel	
Plastics	impact resistant and temperature resistant	
Flat seals	AFM 34/2	
Bypass pipe	brass CW617N	
Gravity brake	POM. NBR. stainless steel	
O-rings	EPDM	
Insulation	EPP	
Wall bracket	Galvanized steel sheet	
Circulation pump and motor		
The technical data on the circulating pumps and motors can be found in the respective pump documentation.		

4 Pressure loss curves

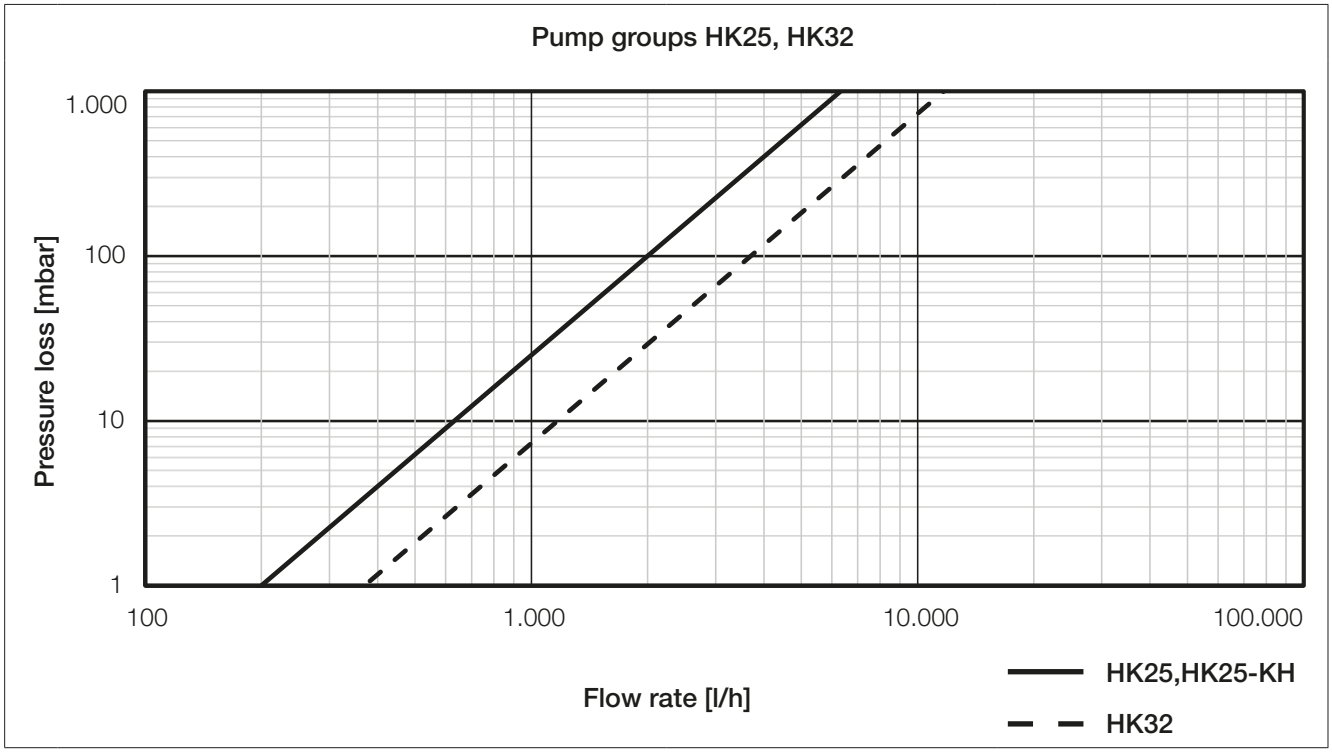


Fig. 4-1: Pressure loss curves HK25, HK25-KH and HK32

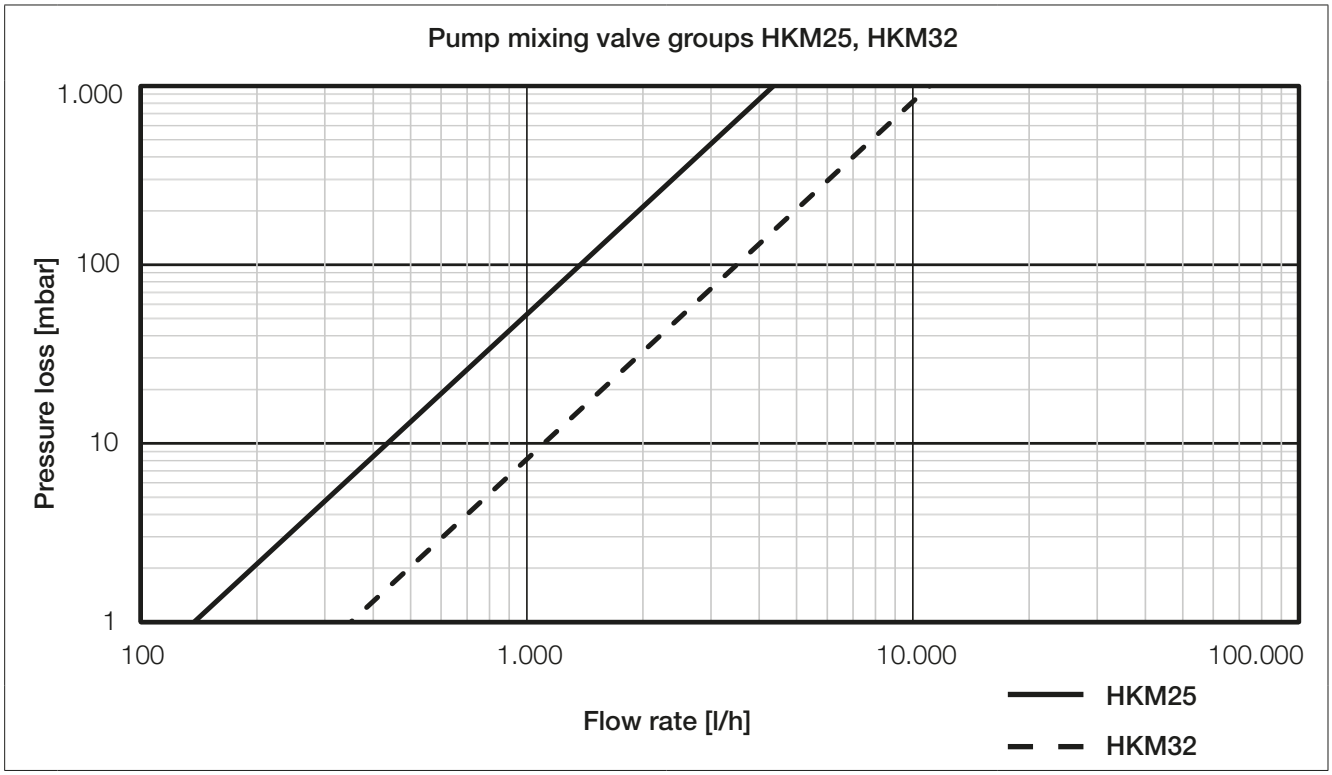
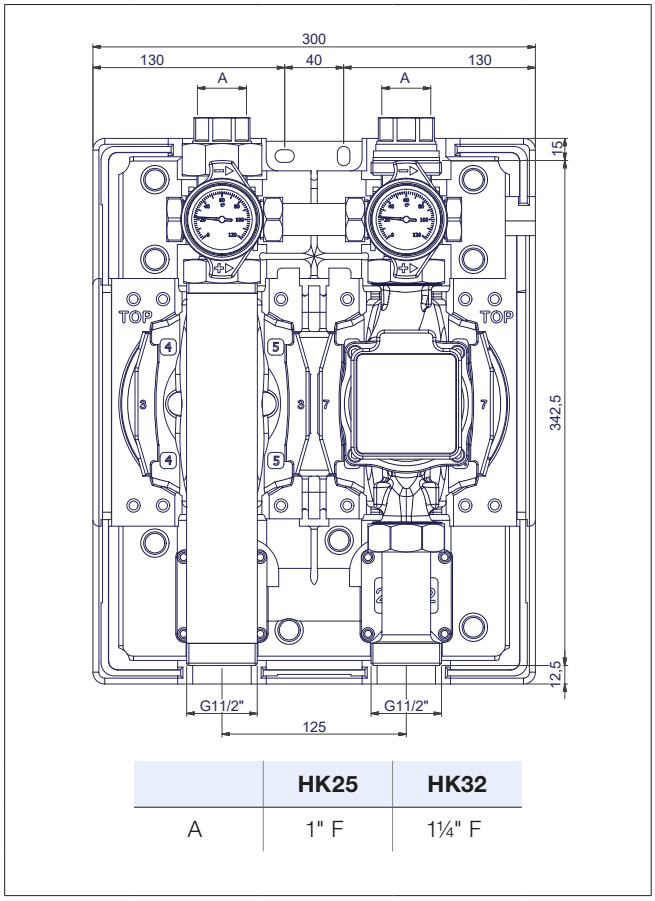


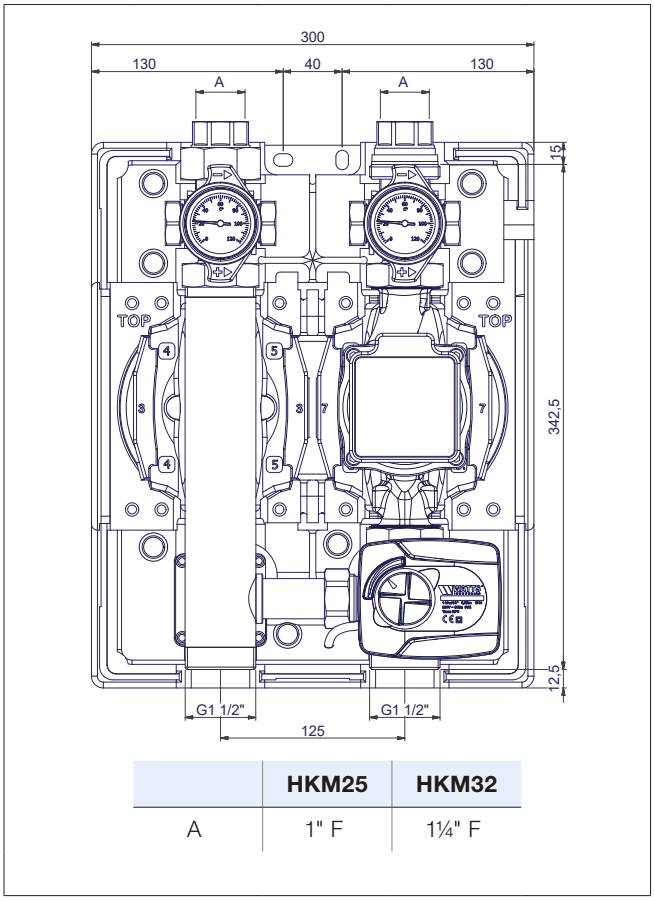
Fig. 4-2: Pressure loss curves HKM25 and HKM32

5 Overlall dimensions



	HK25	HK32
A	1" F	1¼" F

Fig. 5-1: Dimensions HK25 and HK32



	HKM25	HKM32
A	1" F	1¼" F

Fig. 5-2: Dimensions HKM25 and HKM32

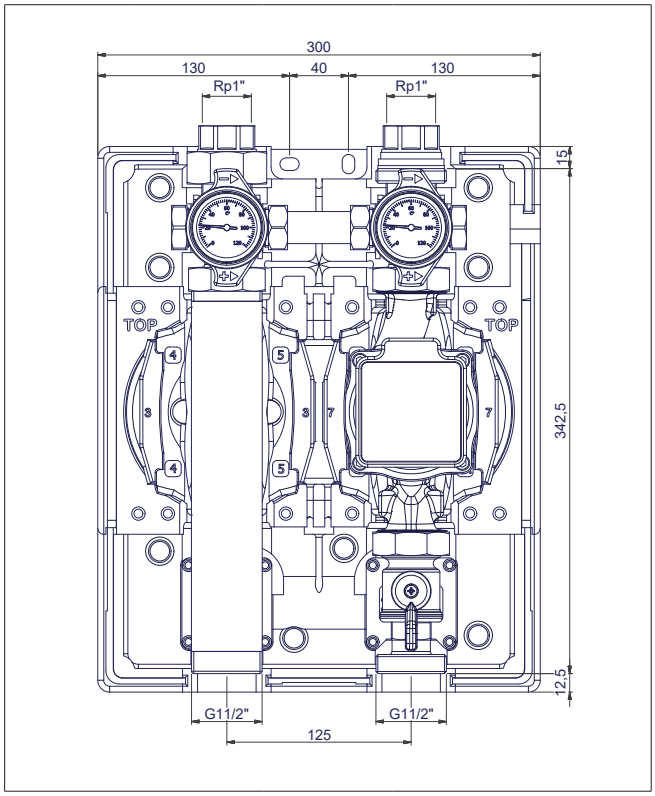


Fig. 5-3: Dimensions HK25-KH

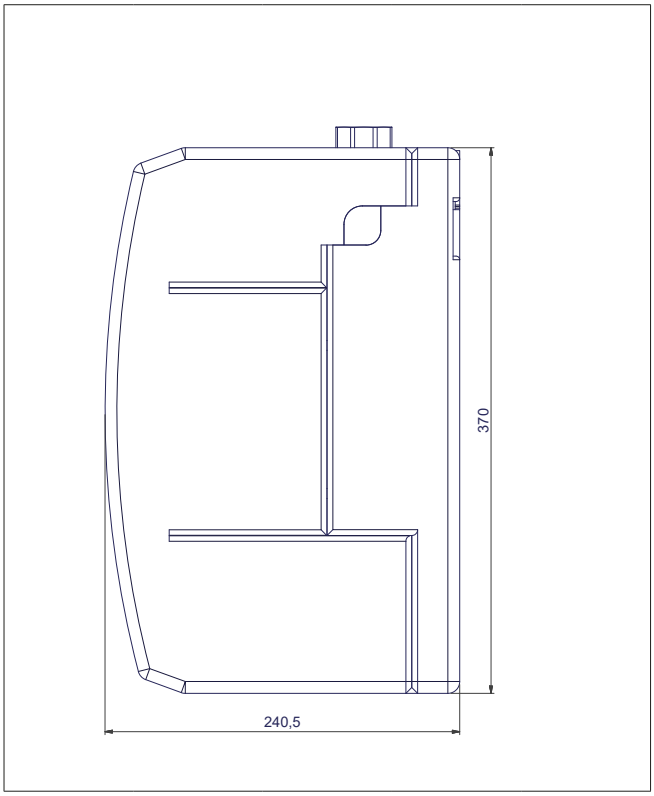


Fig. 5-4: Dimensions of pump groups in insulation shell

6 Construction

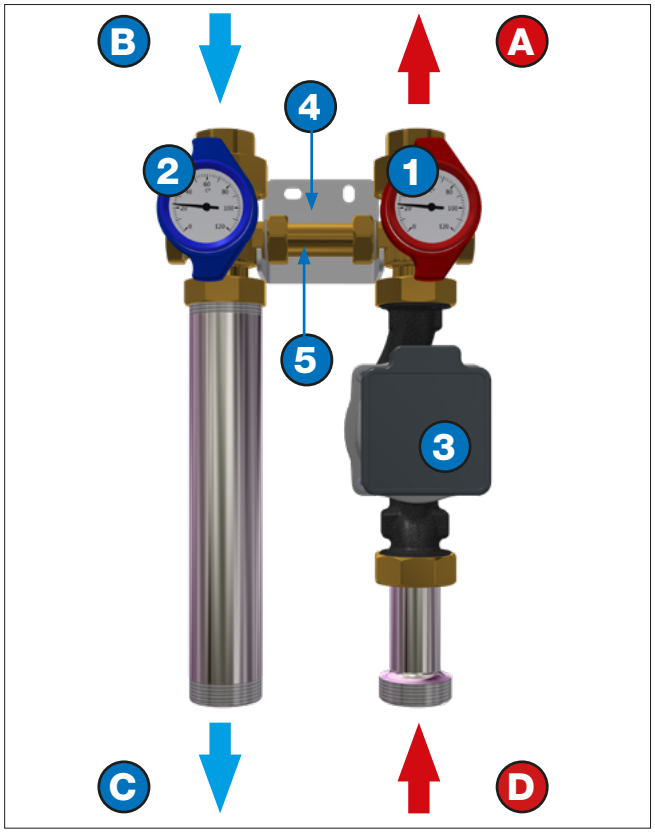


Fig. 6-1: HK25 and HK32

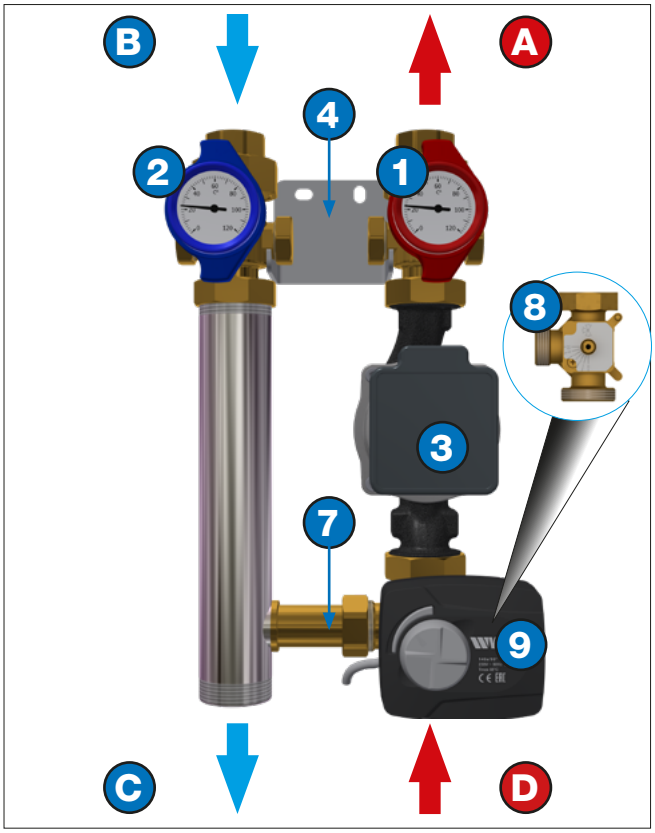


Fig. 6-2: HKM25 and HKM32

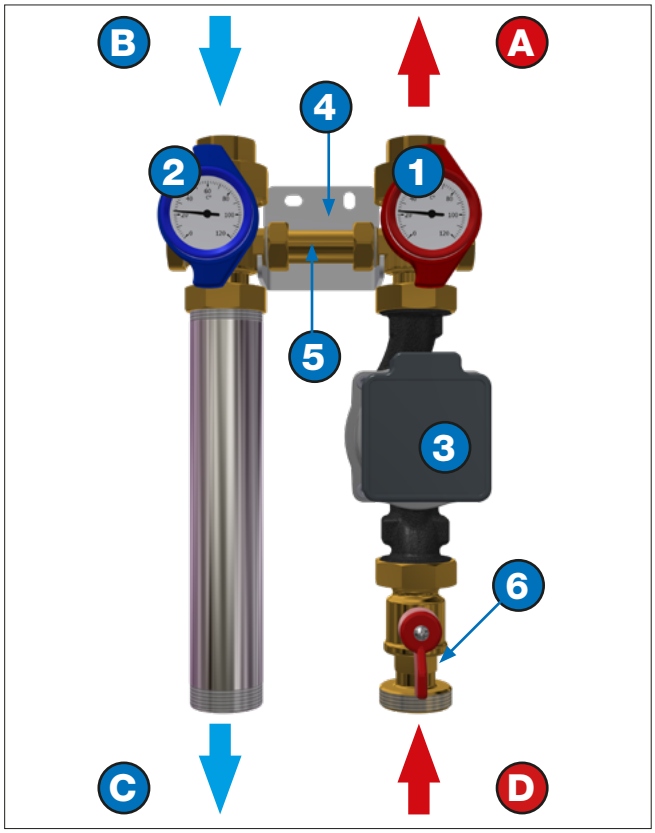


Fig. 6-3: HK25-KH

1 Ball valve with gravity brake [1] (supply)
2 Ball valve (return)
3 Circulation pump
4 Wall bracket
5 Distance pipe
6 Additional ball valve (only HK25-KH)
7 Bypass connection pipe (only HKM)
8 3-way-mixer (only HKM)
9 3-point motor (only HKM)

A Supply outlet (heating circuit)
B Return inlet (heating circuit)
C Return outlet (boiler circuit)
D Supply inlet (boiler circuit)

1) See „Thermometer handle position“ on page 9

7 Installation and commissioning

⚠ DANGER **Electrical energy!**

Risk of death from electric shock.

- Work on parts carrying live voltage must be carried out by qualified electricians only.
- Disconnect the power supply of the system and secure it to prevent it from being switched on again before carrying out any installation, maintenance, cleaning or repair work.

NOTICE **The installation and commissioning of the pump group must be carried out only by trained personnel who have been authorized by the manufacturer.**

⚠ CAUTION **When repairing the unit or replacing parts, be sure to observe the specified installation positions and flow directions of the parts being replaced!**

⚠ CAUTION **Material damage!**

Pressure shocks may occur if the stop valve is opened or closed quickly.

- Always open and close the stop valves slowly and in a controlled way.

7.1 Installation diagram

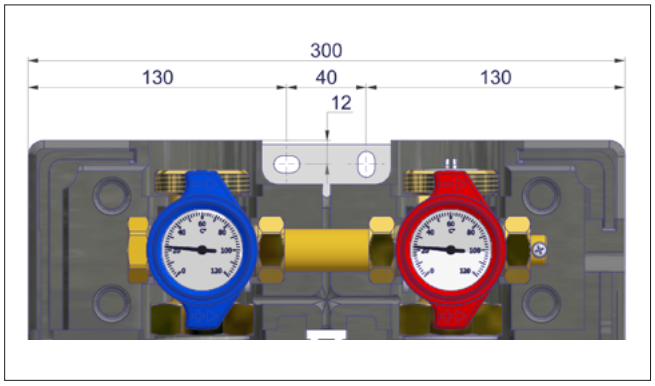


Fig. 7-1: Installation diagram

7.2 Installation

All screw fittings must be checked and tightened if required prior to installation and commissioning!

Torque:

- ¾" fittings 35 Nm
- 1" fittings 55 Nm
- 1¼" fittings 90 Nm
- 1½" fittings 130 Nm
- 2" fittings 190 Nm

Requirement

- The valves are pre-installed at the factory but must be checked for leaks during commissioning (pressure test).

1. Dismantle the front panel (A) of the pump group.

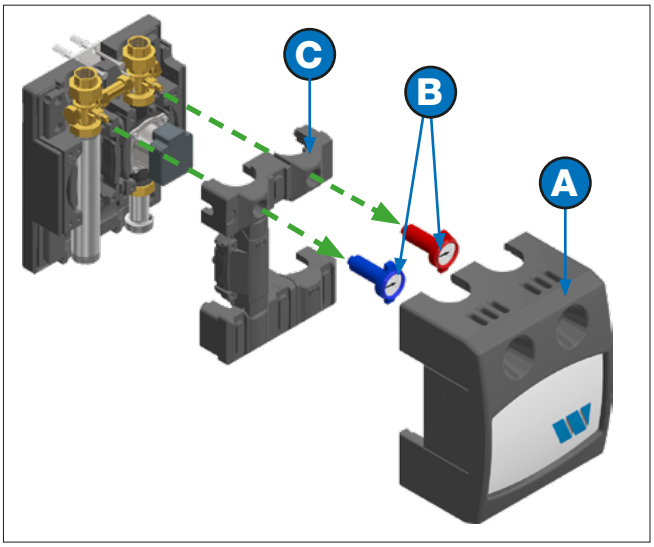


Fig. 7-2: Dismounting of the front and intermediate insulation

2. Mark the drilling points for installing pump group (see „Fig. 7-1: Installation diagram“).
3. Drill the holes corresponding to the screw and anchor size (see „Fig. 7-1: Installation diagram“).
4. Place the anchor.
5. Screw the screws into the anchor.
6. Place the pump group to the wall in a vertical installation position (see „Fig. 7-1: Installation diagram“) .
7. Screw the screws into the anchor.
8. Remove the thermometer handles (B) and dismount the intermediate insulation (C).
9. Connect the supply and return lines and check that all screw connections are tight.

7.3 Initial commissioning

Requirement

- The pump group is completely assembled.

Connection of the power supply

1. Connect the power supply (see separate pump documentation).

✓ **The pump group switches on automatically after being connected to the power supply.**

2. Vent the heating system.

NOTICE **The pump group must be switched off during the ventilation process!**

3. Mount intermediate insulation (C) and attach thermometer grips (B).
4. Mount the front panel of the pump group.

7.4 Thermometer handle position

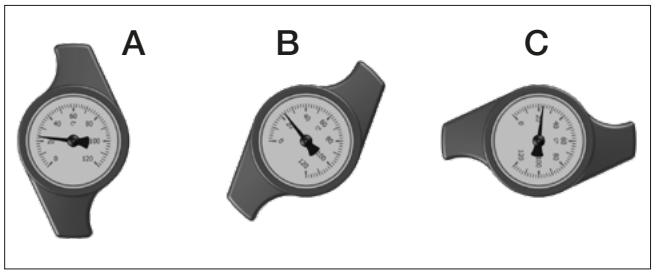


Fig. 7-3: Thermometer handle position

A	Operation position: Gravity brake ready to work; ball valve open
B	Empty: Gravity brake open; ball valve ½ open (only included in the supply line)
C	Service position: Ball valve closed

7.5 Exchanging the supply and return line (HKM)

Initial situation: The supply line is on the right side.

1. Disconnect the power supply and secure it against being switched on again.
2. Loosen the nuts on the pump bottom connection.
3. Turn the pump and the flow ball valve by 180 degrees.
4. Rotate the nut on the return ball valve and turn it by 180 degrees. Remove the motor from the 3-way mixing valve.
5. Rotate the pump group by 180 degrees and tighten all connections and fittings.

The supply line is now on the left side.

6. Realign the mixer plug and mount the motor (See „3-way mixer motor settings“ on page 11).

✓ **Observe the separate operating instructions of the motor.**

✓ **Check the pump group for leaks.**

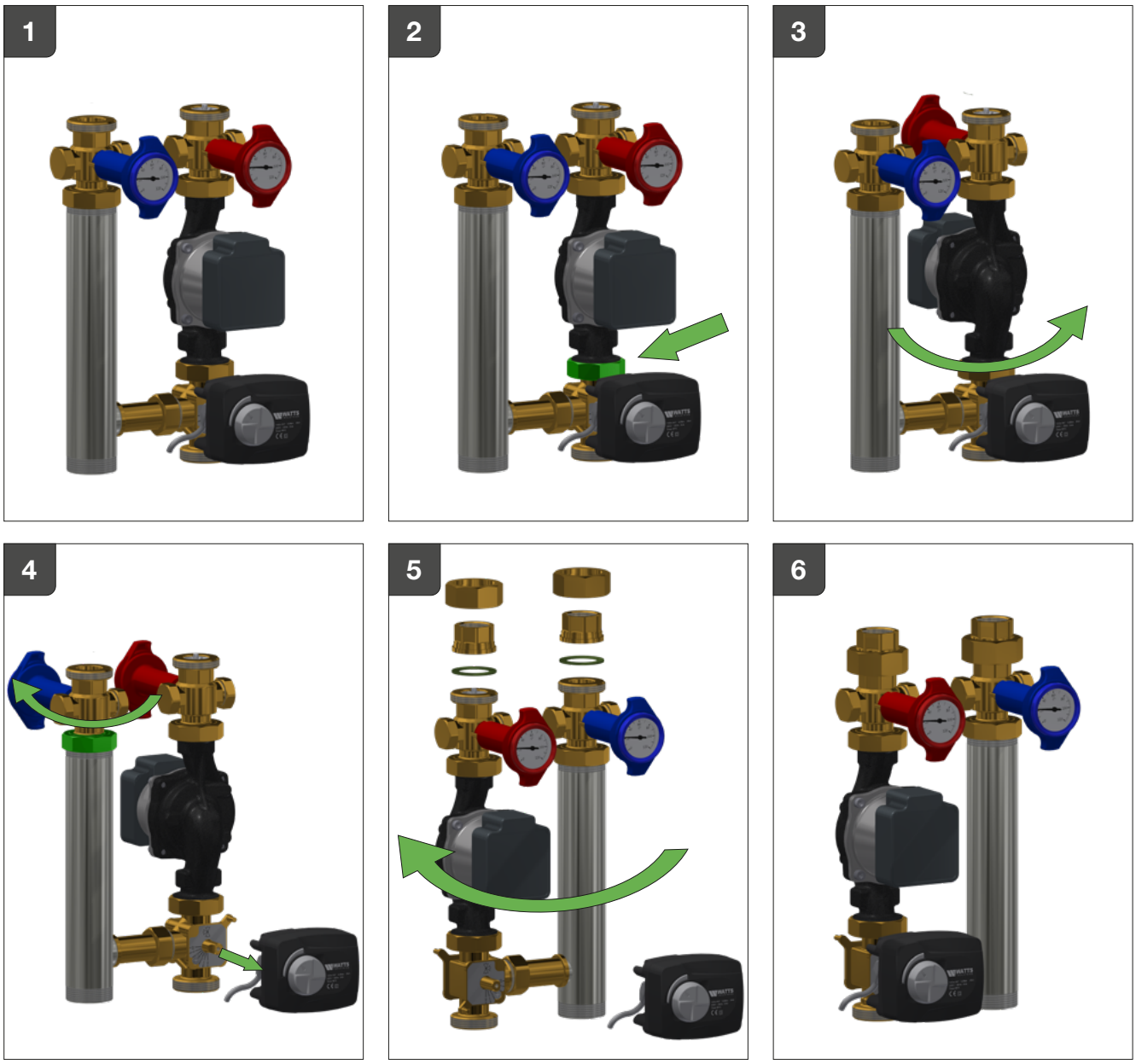


Fig. 7-4: Exchanging the supply and return line in 6 steps

8 Maintenance

⚠ DANGER Electrical energy!

Perform maintenance work on the pump group only when the power supply has been disconnected.

⚠ WARNING Hot water!

Risk of severe scalding.
Do not reach into the hot water when emptying the pump group. Ensure that the pump group has cooled down before carrying out maintenance, cleaning and repair work.

⚠ WARNING Hot surfaces!

Risk of serious burns.
Do not touch the pipes or components during operation. Ensure that the pump group has cooled down before carrying out maintenance, cleaning and repair work.Wear heat-resistant safety gloves if it is necessary to carry out work on hot components.

NOTICE Maintenance of the pump group must be carried out only by trained personnel who have been authorized by the manufacturer.

8.1 Annual maintenance intervals

1. General visual inspections
- Check the station for leaks and retighten sealing connections or replace seals, as required.

2. Functional checks
- Check that settings and operating and performance parameters are set correctly.
- Check flow noise during operation.
- Ask users if there are any noticeable problems.

3. Ball valves
- Check that stop valves and ball taps can move freely.

4. Pump
- Pay attention to the noise of the pump.

5. 3-way mixer
- Check 3-way mixer for function.

6. Motor
- Check the motor for function.

7. Actions following maintenance work
- Check that all screw fittings that were unscrewed have been retightened and retighten if necessary.
- Remove all tools, materials and other equipment used from the working area.
- Vent the system.

8.2 Replacement of wear parts

Please note that the pump group contains parts that, for technical reasons, are subject to wear depending on the intensity of use, even if the specified care and maintenance have been observed.
This especially applies to mechanical parts and parts that could come into contact with water and steam, for example, hoses, seals, valves, etc.
By their nature, defects as the result of wear do not represent a fault and therefore are not covered by the warranty or the guarantee. Nevertheless, these defects and malfunctions must only be remedied by trained specialist personnel.
Contact your specialist dealer for this.

8.3 Disassembling the circulation pump

1. Disconnect the power supply and secure it against being switched on again.
2. Remove the front panel (A) of the pump group.
3. Close all stop valves.
4. Disassemble thermometer handles (B) and intermediate insulation (C).
5. Disconnect the wiring of the circulation pump (D).
6. Release the fastening nuts (X) and remove the circulation pump.

8.4 Installation of the circulation pump

1. Replace damaged or defective seals if necessary.
2. Insert the circulation pump and tighten the nuts (X) (See „Safety“ on page 3).
3. Connect the wiring of the circulation pump (D).
4. Slowly open the ball valves by turning the thermometer handle (B).
5. Slowly pressurize the pump assembly and vent the system if necessary.
6. Check the pump group for leaks.
7. Restore the power supply to the pump group.
8. Disassemble the thermometer handles (B).
9. Install the intermediate insulation (C), the thermometer handles(B), and the front panel (A).

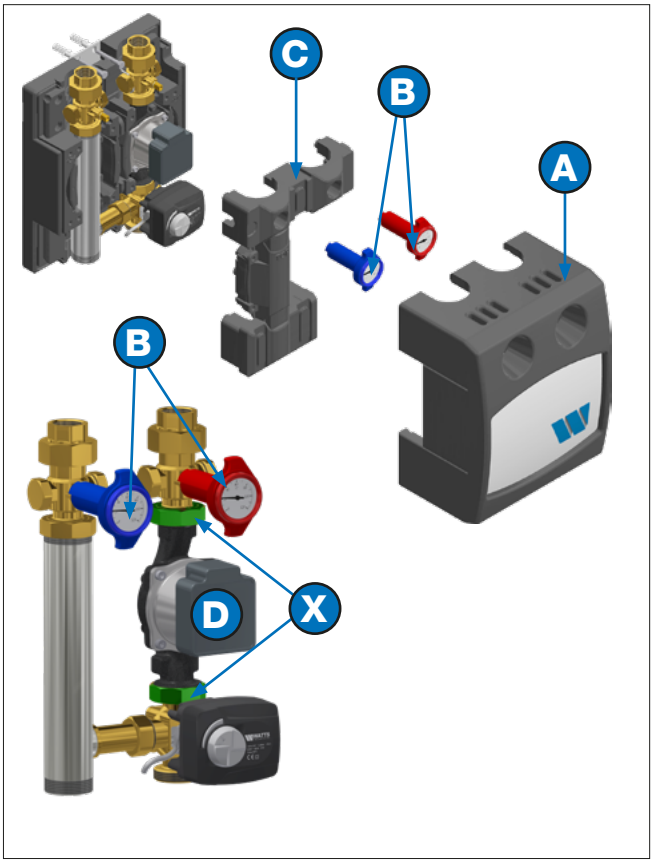


Fig. 8-1: Dismantling and assembly of the circulation pump

8.5 Disassembling the 3-way mixer (HKM)

1. Disconnect the power supply and secure it against being switched on again.
2. Remove the front panel (A) of the pump group.
3. Close all stop valves.
4. Disassemble thermometer handles (B) and intermediate insulation (C).
5. Move the mixer rotary plug valve to center position by manual adjustment of the motor.
6. Disassemble the motor (S).
7. Remove the mixer (M) by loosening the union nuts (X).

✓ **The assembly / disassembly of the motor can be found in the respective manufacturer's manual.**

8.6 Installing the 3-way mixer (HKM)

1. Replace damaged or defective seals if necessary.
2. Install the 3-way mixer (M) and tighten the union nuts.
3. Mount the motor (S).
4. Slowly open the ball valves by turning the thermometer handle (B).
5. Restore the power supply to the pump group.
6. Disassemble the thermometer handles (B).
7. Install the intermediate insulation (C), the thermometer handles (B), and the front panel (A).

✓ **The assembly / disassembly of the motor can be found in the respective manufacturer's manual.**

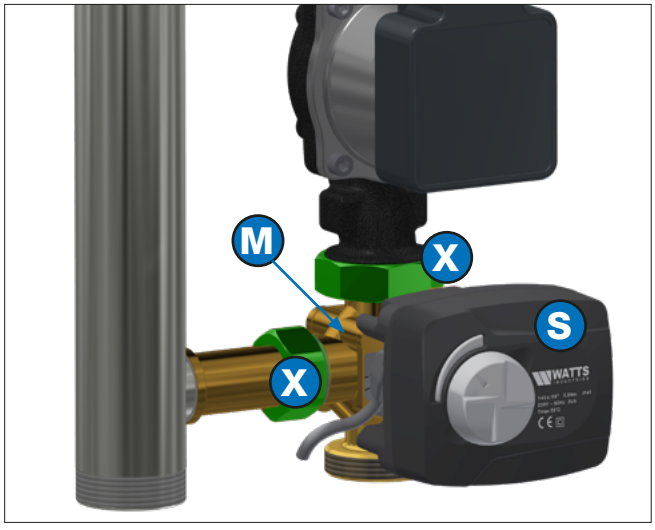


Fig. 8-2: Dismantling and assembly of the 3-way mixer

8.7 3-way mixer motor settings (HKM)

NOTICE **The correct positioning of the bearing shaft must be checked when retrofitting the motor.**

When setting up the mixer plug refer to the pictures below.

Fig. 8-3: Mixer plug position: mixer open

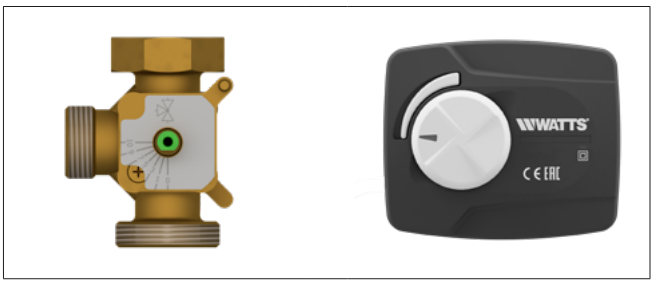


Fig. 8-4: Mixer plug position: mixer closed

9 Disposal

⚠ WARNING **Potential for contamination of the environment and groundwater from improper disposal!**

The legal regulations and guidelines in the country of operation must be observed when disposing of components and operating materials.

1. Ensure that all assemblies and components are de-energized.
2. Disassemble the pump group properly or commission a specialist company to do so.
3. Sort the assemblies and component parts into recyclable materials, hazardous substances and operating materials.
4. Dispose of the assemblies and components in accordance with local laws and regulations or take them to be recycled.

9.1 Return to the manufacturer

Get in contact with the manufacturer if you would like to return the pump group or parts of it.

9.2 Notification of administrative bodies and the manufacturer

Inform the manufacturer of decommissioning and disposal of the pump group for statistical purposes.

10 Warranty

WATTS products are tested extensively. WATTS therefore guarantees only to replace or repair components of the products supplied free of charge – at the sole discretion of WATTS – if, in the opinion of WATTS, they 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 is damage attributable to normal product use or friction and to damage resulting from modifications or unauthorized repairs to 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 on www.wattswater.eu/gtc/.

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