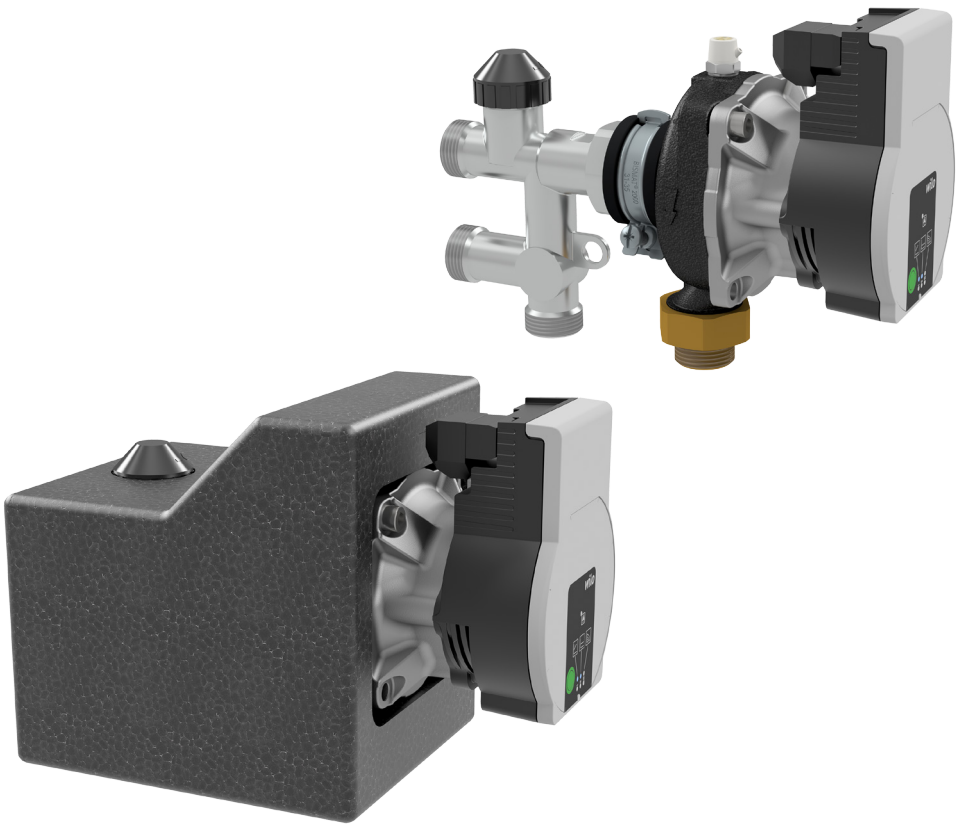
Series Mini Shunt

Control unit for constant supply temperature in surface heating systems

EN **Installation and operating manual**

(translated from the original operating manual)



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1 General Information

1.1 Important information about the installation and operating manual

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 product (Mini Shunt) outside the specifications invalidates all warranty claims.
This Installation and Operating Manual

- is the component of the product (Mini Shunt);
- contains instructions and information on safe and correct installation and commissioning of the product (Mini Shunt);
- must be available to all users throughout the entire service life of the product (Mini Shunt);
- 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 product (Mini Shunt);
- is protected by copyright and may not be changed without the manufacturer's permission.

1.2 Notes on supplier documents

The supplier documents contain specific information on the components, their technical features, installation instructions and other relevant details. Read these documents carefully and retain with this manual. The supplier documents cover the following:

- Circulation pump operating instructions

1.3 Product conformity

For the product (Mini Shunt), conformity according to Machinery Directive 2006/42/EC is declared.

1.4 Product features

The control unit (Mini Shunt) is used for fixed value control of the supply temperature in surface heating systems or in surface heating systems in combination with a high-temperature heating circuit.

- For operation, a thermostatic head or an electrothermal actuator must be mounted on the control valve of the control unit. The thermostatic head and actuator are not included in the scope of delivery.
- Wall mounting with fastening clamp and mounting kit (included in scope of delivery).
- All connections G 3/4 male thread, Eurocone.
- The built-in insert check valve prevents a short circuit in the primary circuit.

2 Safety

2.1 Safety notices

⚠ 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 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 Important safety instructions

- Before using, carefully read through this operating manual.
- Only trained specialist personnel are permitted to perform maintenance, cleaning and repair work.
- The product (Mini Shunt) must not be used if it is damaged or is no longer operating correctly. In this case, contact your specialist dealer immediately.
- Adhere to the maintenance instructions and intervals.
- Protect the product (Mini Shunt) from the influences of weather.
- Never use the product (Mini Shunt) outdoor.
- The product (Mini Shunt) is only permitted to be used for the purpose for which it was intended.

2.3 Intended use

The product (Mini Shunt) 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. The control unit (Mini Shunt) is used for fixed value control of the supply temperature in surface heating systems or in surface heating systems in combination with a high-temperature heating circuit.

2.4 Foreseeable misuse

The following is considered to be foreseeable misuse:

- Operating the product (Mini Shunt) contrary to the specifications.
- Improper use of the product (Mini Shunt).
- Modifications to the product (Mini Shunt) that were not agreed with the manufacturer.
- Using replacement or wear parts not approved by the manufacturer.
- Operating the product (Mini Shunt) outdoors (parts and components are not UV resistant).

2.5 Responsibilities of the operator

The operator must ensure that:

- The product (Mini Shunt) is only used for its intended purpose.

- The product (Mini Shunt) is installed, operated and maintained according to the specifications in the Installation and Operating Manual.
- The product (Mini Shunt) 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 product (Mini Shunt).
- All precautionary measures for first aid treatment and firefighting have been carried out.
- Only authorized and trained users have access to the product (Mini Shunt) and operate it.
- Users have access to this Installation and Operating Manual at all times.

2.6 Groups of persons

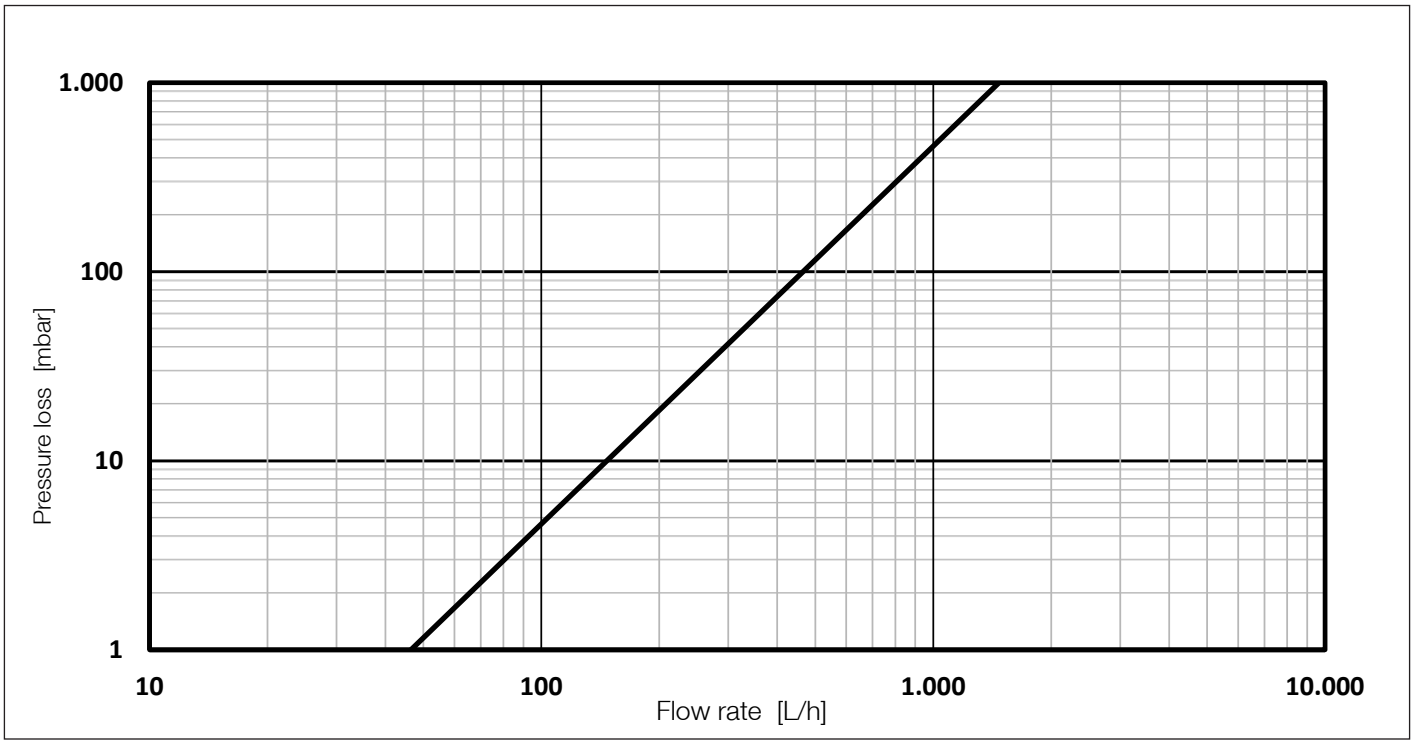
Only qualified persons may operate the product (Mini Shunt) or perform service and maintenance work.
User
A user is deemed to be qualified if they have read these operating instructions and understood the potential risks associated with incorrect behavior.
Fitter/commissioner
Due to their specialist training and knowledge, and taking into consideration the applicable standards, provisions, regulations and laws, a fitter/commissioner is capable of performing work on the product (Mini Shunt) and recognizing and avoiding potential risks.
System planner
The system planner is responsible for evaluating these parameters and developing workarounds.

3 Technical specification

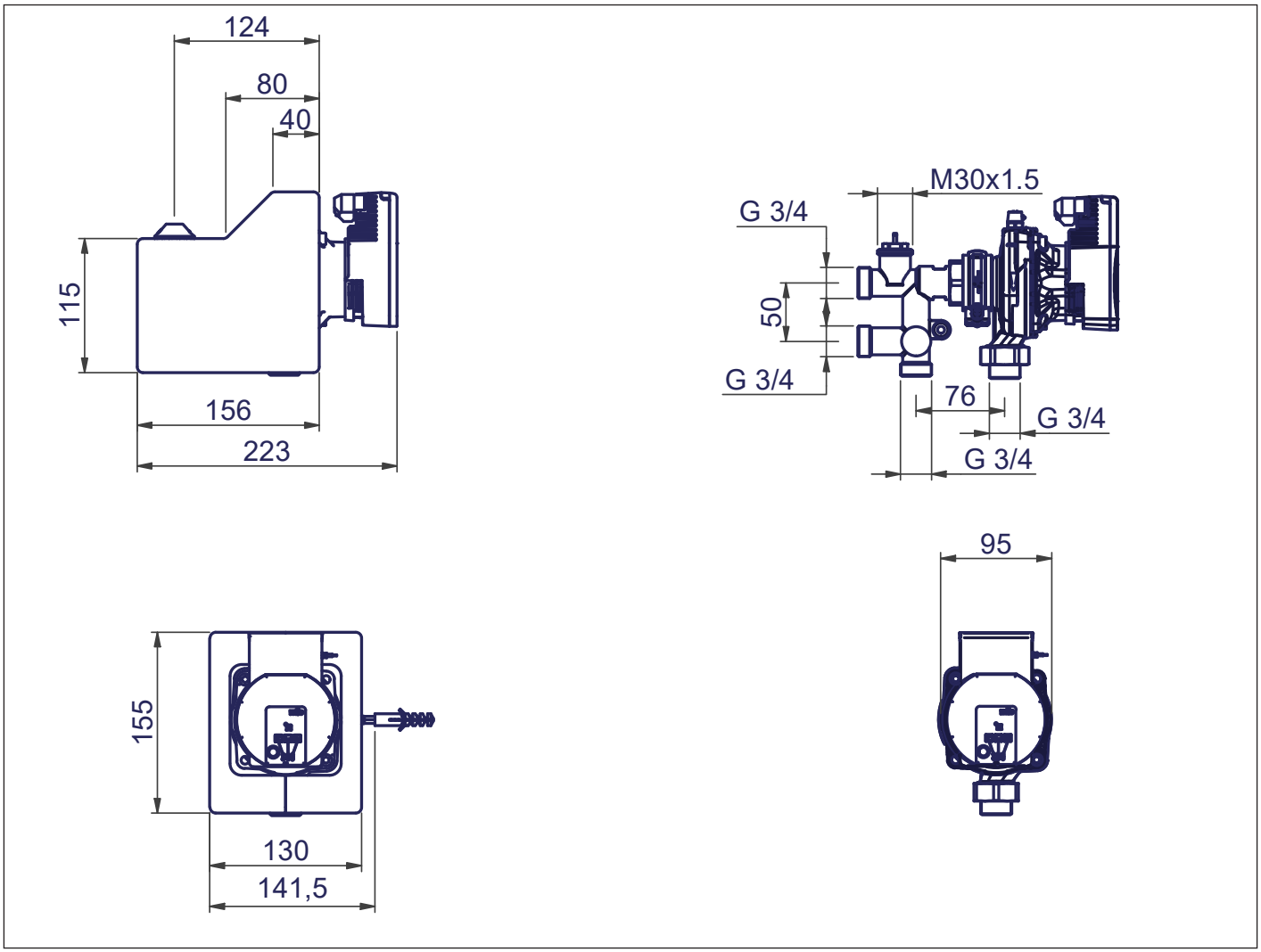
Hydraulic data	
Max. operating pressure	6 bar
Ambient temperature	from -2 to +40 °C (see separate pump documentation!)
Operating temperature	from +2 to +80 °C (see separate pump documentation!)
Control range supply temperature	20 - 70 °C
Performance range	up to 3.0 kW at dT=10K
Media	Water or water with glycol as per VDI (Association of German Engineers) 2035 / ÖNORM (Austrian standard) 5195
Control valve data	
Kvs Control valve	3.1 m³/h
Connection Thermostatic head/actuator	M30 x 1.5
Valve stroke	2.5 mm
Closing dimension	11.8 mm
Electrical connection	
Power supply	See separate pump documentation!
Weights	
Weights without packaging	2.6 to 2.8 kg depending on the pump model. Weight without pump: 1.2 kg
Weights with packaging	approx. 0.3 kg larger than without packaging
Connections to the pipe network	
Heating circuit side connections	G 3/4 male thread, Eurocone
Boiler side connections	G 3/4 male thread, Eurocone
Tightening torques for screw connections	
G ¾	35 Nm
G 1	55 Nm

Hydraulic data	
Materials	
Fittings	Brass CW614N
Heat insulation shell	EPP (expanded polypropylene)
Plastics	impact-resistant and temperature-resistant
O-rings	EPDM
Flat seals	AFM 34/2
Other	
Circulation pump	See separate pump documentation!

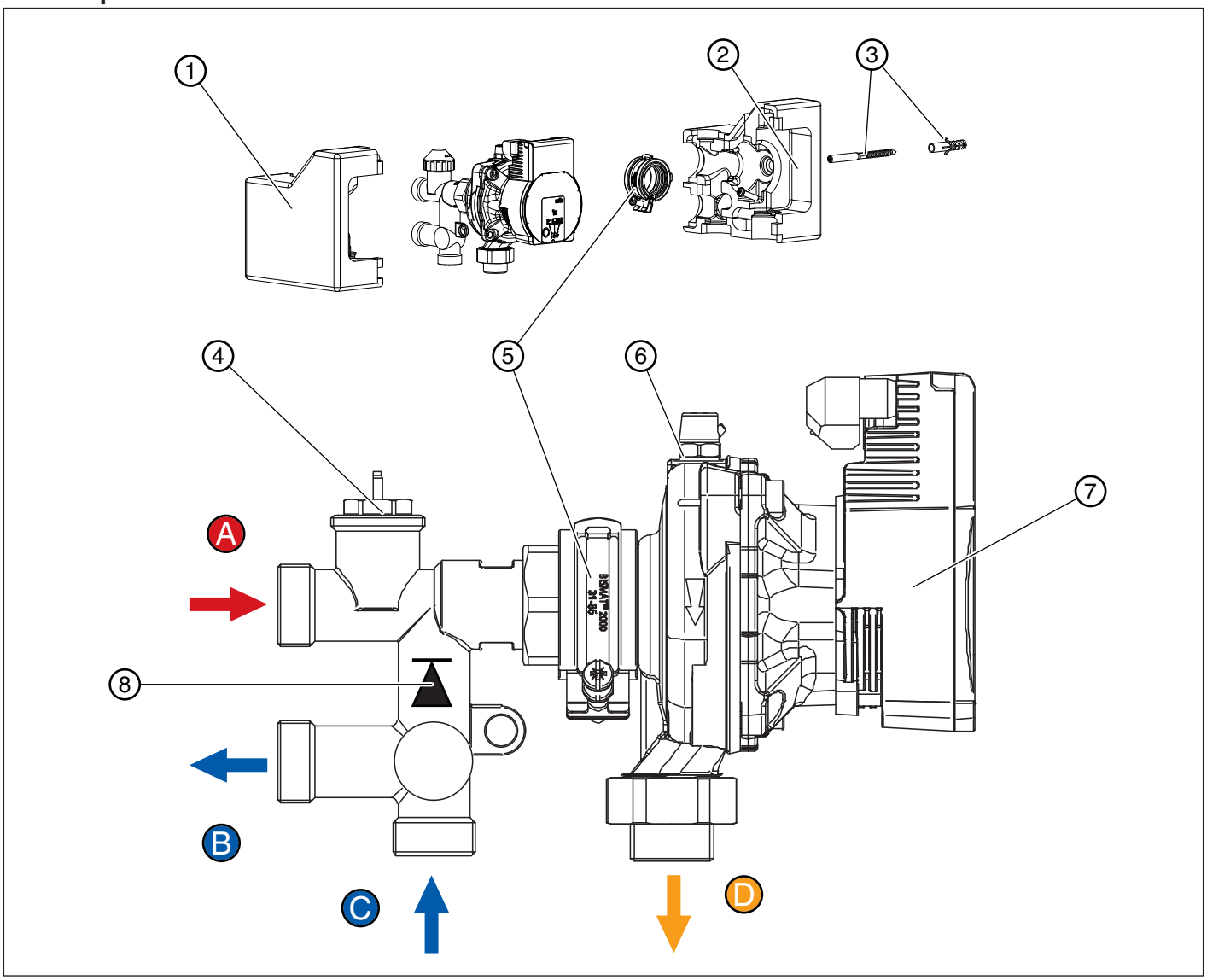
4 Preassure loss curve



5 Dimensions



6 Component overview



A Supply primary circuit G 3/4 Eurocone
B Return primary circuit G 3/4
C Heating/cooling circuit return G 3/4 Eurocone
D Supply surface heating G 3/4 Eurocone
1 EPP heat insulation shell - front side
2 EPP heat insulation shell - rear side
3 Stock screw and dowel
4 Control valve M30 x 1.5
5 Fastening clamp
6 Air vent valve
7 Circulation pump
8 Insert check valve

7 Installation and commissioning

7.1 General safety information

⚠ DANGER

Electrical energy!
Risk of death from electric shock.
- Work on parts carrying live voltage must only be carried out by trained electricians.
- Disconnect the power supply of the system and secure it against being switched back on before carrying out any installation, maintenance, cleaning or repair work.

ⓘ NOTICE

Material damage!
Opening shut-off valves quickly produces pressure surges.
- Always open shut-off valves slowly and in a controlled manner.

ⓘ NOTICE

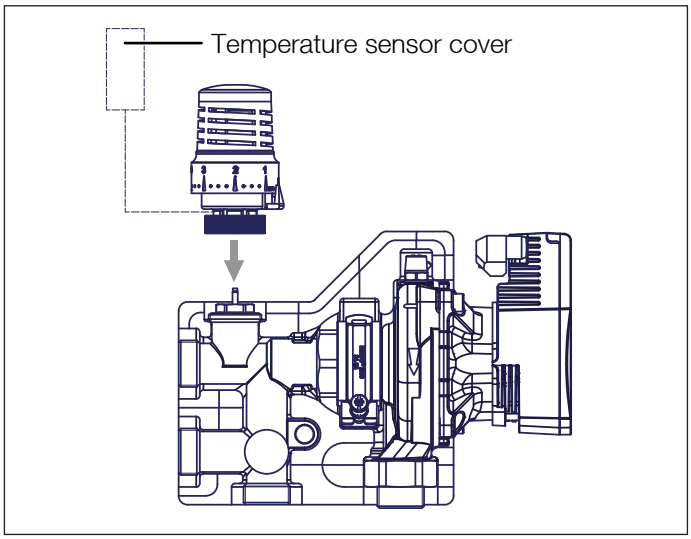
Material damage!
Incorrect repair and replacement of individual components.
- When carrying out repairs and replacing parts, note the prescribed mounting positions and flow directions for the individual components which are being replaced.

7.2 Install the actuator or thermostatic head

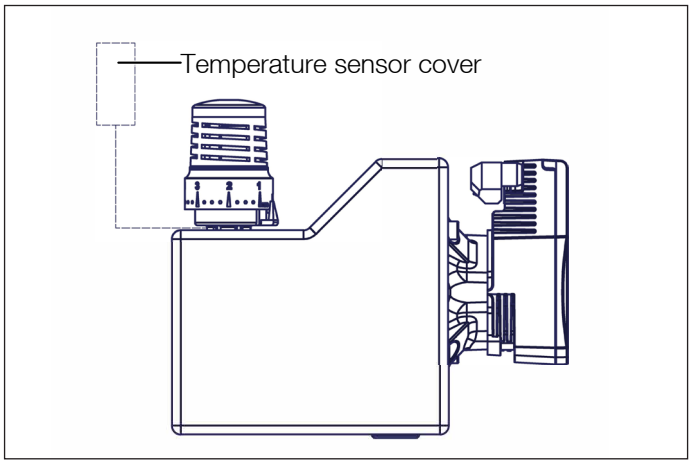
The control unit can be equipped with a thermostatic head or an electrothermal actuator for temperature control. The thermostatic head and actuator are not included in the scope of delivery. Depending on the installation situation, these components can be pre-balanced before or after wall mounting of the control unit. *Wall mounting [▶ 9]*.
When selecting the appropriate thermostatic head or actuator, the technical specifications of the control valve must be observed: Connection Thermostatic head/actuator: M30 x 1.5; Valve stroke: 2.5 mm; Closing dimension: 11.8 mm.

Mounting the thermostatic head

1. Place the thermostatic head on the control valve and turn it by hand.

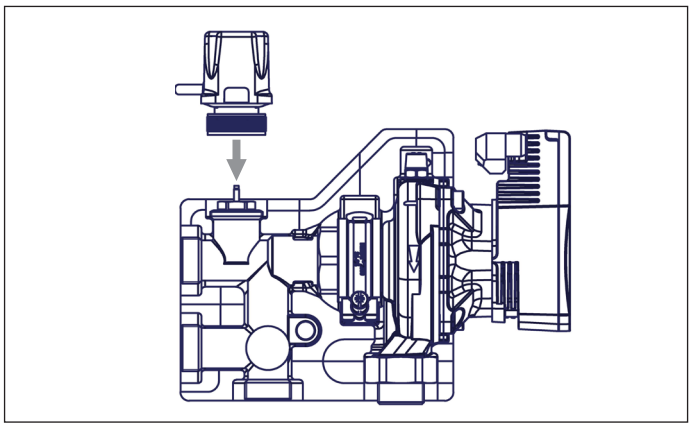


2. Attach the external temperature sensor of the thermostat head firmly to the flow pipe of the underfloor heating system and secure it (see manufacturer's instructions).

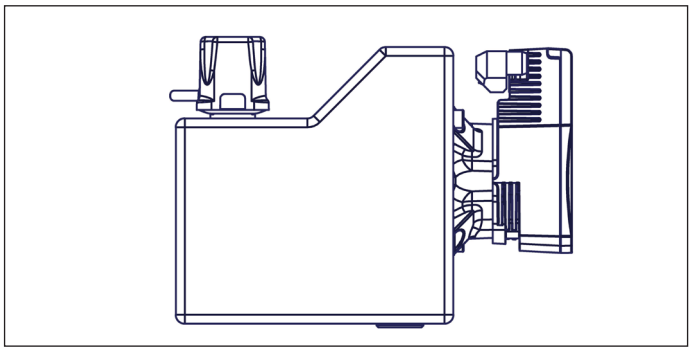


Mounting the actuator

1. Place the actuator on the control valve and turn it open by hand.



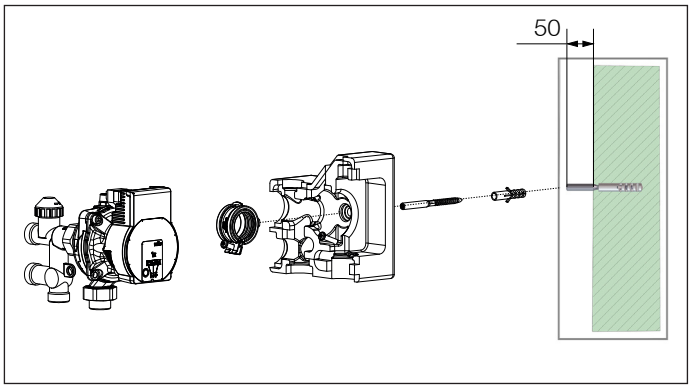
2. Connect the actuator to wireless or wired control (see manufacturer's instructions).



7.3 Wall mounting

Before installing the unit and starting it for the first time, check all screw fittings and retighten if necessary!
Tightening torques for screw fittings
G ¾ : 35 Nm.

1. Remove the front and rear shells of the control unit.



2. Drill the hole according to the screw and wall plug size.
3. Insert wall plug.
4. Screw the hanger bolt into the wall plug leaving at least 50 mm of the hanger bolt protruding from the wall.
5. Slide the rear shell vertically onto the hanger bolts.
6. Screw the fastening clamp onto the hanger bolt.
7. Open the fastening clamp.
8. Insert the control unit into the fastening clamp.
9. Connect the supply and return lines as shown in *Component overview [▶ 8]*.
10. Check all screw connections are tighten.
11. Fit the front shell.

7.4 Starting the unit

✓ The control unit (Mini Shunt) is completely assembled.
✓ The fittings are preassembled at the factory; however, the tightness of the seal is to be checked before commissioning (pressure test).
✓ The control unit must be disconnected from the power supply and secured.

1. Vent the heating system.
2. Connect the power supply

⇨ The control unit switches on automatically after the power supply is connected.

3. Mount the front cover of the control unit.

8 Maintenance

8.1 General safety information

⚠ DANGER

Electricity!
Risk of death from electric shock!
- Maintenance on the product (Mini Shunt) may only be carried out once the power supply has been disconnected.

⚠ WARNING

Hot surfaces!
Risk of serious burns.
- Do not touch the pipes or components during operation.
- Ensure that the product (Mini Shunt) 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.

8.2 Annual maintenance schedule

General visual inspection
- Check the product for leaks and, where necessary, retighten connections with flat seals or replace the seals.

Functional check
- Check the correct adjustment and operating and performance parameters.
- Check with the user in the event of anomalies.

Pump
- Be aware of noise build-up in the pump.

Post-maintenance checks
- Check all loosened screw connections for a firm seating and retighten if necessary.
- Remove all tools, materials and other equipment used from the work area.
- Fill and vent the system.

8.3 Replacing wear parts

Note that the product has parts which are subject to wear that naturally occurs as a result of normal use, even when properly maintained and serviced.
Specifically, these are mechanical parts and parts which are in contact with hot water and steam such as hoses, seals, valves, etc.
Normal wear and tear is not a defect and is not covered under warranty or guarantee. Nevertheless, defects and malfunctions may only ever be remedied by trained specialist personnel.
Contact your specialist dealer for more information.

9 Troubleshooting

	FAULT	
	Possible cause	Remedy
	FLOOR HEATING CIRCUITS DO NOT GET WARM	
	The difference between the boiler supply temperature and the desired floor heating supply temperature is too low for the existing heating load.	Set the boiler supply temperature higher. When the floor heating circuits are at maximum output, the boiler supply temperature must be at least 15 °C higher than the desired floor heating supply temperature!
	Floor heating supply temperature cannot be set to the desired value or the supply temperature fluctuates greatly	
	The flow and return of the compact control unit are connected incorrectly.	Check all connections of the compact control unit for correct connection. The connections are marked with adhesive labels. See Components overview.
	The heating load is too high for the control unit used, i.e. the heat consumption exceeds the nominal output of the compact control unit. This condition may occur temporarily, for example, when heating a cold floor.	Determine the maximum heat requirement and compare it with the rated output. The heating circuits may need to be divided between a second compact control unit with in accordance with the HKV. If the cause is the initial heating of a floor heating system, normal operation may still occur after the heating phase. This is particularly possible when operating at the upper rated output.
	The thermostatic head is defective.	Replace thermostatic head.

10 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. Disassemble the product (Mini Shunt) properly or commission a specialist company to do so.
2. Sort the assemblies and component parts into recyclable materials, hazardous substances and operating materials.
3. Dispose of the assemblies and components in accordance with local laws and regulations or take them to be recycled.

10.1 Notification of administrative bodies and the manufacturer

Inform the manufacturer of decommissioning and disposal of the product (Mini Shunt) for statistical purposes.

10.2 Return to the manufacturer

Get in contact with the manufacturer if you would like to return the product (Mini Shunt) or parts of it.

11 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.watts.eu/en/gtc.