Flamco meibes

MeiFlow Top S

ENG Installation and operating instruction

www.flamcogroup.com/manuals

Abbreviations	
PG	Pump groups
UC	Unmixed heating circuit
MC	Mixed heating circuit
M	Meter fitting
p	Power
F	Flow rate
dp	Pressure loss
H x W x D	Height x width x depth
FT	Female thread
MT	Male thread
FL	Heating flow line
RL	Heating return line
WC	Water column
IL	Installed length
HFM	Heat flow meter
MEV	Diaphragm expansion vessel
SV	Safety valve
HE	Heat exchanger
GB	Backflow Limiter (Gravity Break)

Inhaltsverzeichnis

1. Basic information

Please follow these safety instructions carefully to eliminate hazards, personal injury and material damage. The installation, commissioning, inspection, maintenance and servicing may only be performed by an approved, specialist company. Please familiarise yourself with all the parts and their handling before starting work. Observe the applicable accident prevention regulations, environmental regulations and legislation for the assembly, installation and operation of the system. In addition, observe the applicable safety provisions of the DIN, EN, DVGW, VDI and VDE and all relevant country-specific standards, laws and guidelines. When working on the system: Disconnect the system from the mains and monitor it to ensure that no voltage is being supplied (e.g. at the separate cut-out or a main switch). Secure the system against being restarted. Repairs to components with a safety function are not permitted. The installation location must be dry and frost proof. Hazards resulting from adjacent components must be avoided. Free access must be ensured.

Please also refer to the separately enclosed instructions from other manufacturers for additional information (e.g. pumps, servomotors, controllers).

1.1 Safety instructions

Please follow these safety instructions carefully to prevent accidents and injury to persons and property.

These operating instructions are primarily designed for the safe use and installation of the device and do not claim to be complete.

These operating instructions describe the functionality of the device and are intended to provide information about the required safety instructions and to draw attention to possible hazards.

These operating instructions are valid only for the described device and are not subject to the manufacturer's revision service. The sketches and drawings they contain are not to scale.

- Keep the operating instructions within easy reach of all employees instructed to carry out work on the device so that they can refer to them as required.
- Keep the operating instructions in a clean, complete and legible condition throughout the entire period of use.
- Read the operating instructions before working on the device for the first time and consult them whenever uncertainties or doubts arise as to how the device should be handled.
- Should you come across any discrepancies when reading these operating instructions or anything be unclear, please contact the manufacturer.

Target group

These instructions are intended exclusively for authorised trained experts.

Only trained experts or installers authorised by the respective competent utility companies are permitted to work on heating systems and domestic water, gas and electric circuits.

Regulations

When carrying out work, you must comply with:
- The statutory accident prevention regulations,
- The statutory environmental protection regulations,
- The German Employer's Liability Insurance Association regulations,
- The pertinent safety requirements of DIN, EN, DVGW, TRGI, TRF and VDE,
- ÖNORM, EN, ÖVGW-TR Gas, ÖVGW-TRF and ÖVE,
- SEV, SUVA, SVGW, SVTI, SWKI and VKF
- and all region- or country-specific regulations and standards

Instructions for working on the system
- Disconnect the system from the mains and monitor it to ensure that no voltage is being supplied (e.g. at the separate cut-out or a main switch).
- Secure the system against being restarted.
- WARNING! Risk of scalding at media temperatures: > 60°C

Permissible mains supply und operating parameters
- Heating - / primary side: max. permissible operating pressure: 6 bar
  permissible operating temperature: 16 - 110°C (depending on the pump)
  permissible ambient temperature: 5 – 50°C (non-condensing)
  permissible media: Heating water (in accordance with VDI 2035, non-corrosive)
- The devices must be installed in enclosed, frost-free spaces
- Any noise emissions or radiant heat from the station must be taken into account in the choice of installation site.
- Observe the safety areas in accordance with EN 60529 when designing and installing the system
- Prevent oxygen from entering the medium.

1.2 Intended use

1.2.1 Proper use

Pump groups are generally used to provide heat.

Pump groups may only be used for this purpose in compliance with the maintenance and operating instructions and all relevant standards and regulations.

All instructions in the operating instructions must be followed and the maintenance plan adhered to.

Any deviation from the intended use may cause hazards and is fundamentally not permitted.

The components listed in the following instructions are intended for use in heating systems according to DIN EN 12828. Operation with a contaminated heat transfer medium is prohibited - this includes, among other things, foreign particles, substances that cause scaling and oxygen. The power supply for the recirculation pumps is managed on demand by an external controller – as is the control of the speed regulation. A backflow preventer, usually integrated within a ball valve and manually adjustable, prevents the flow from travelling in the wrong direction. Delivery includes the materials required for integration in systems with a suitable manifold. Accessories allow use as an individual component

1.2.2 Impermissible use

Improper use of the device of any kind may result in deviations from the specified performance data.

In particular, the following are impermissible:
- The use of liquids other than water with the described properties
- Use of the device without prior knowledge of the operating instructions
- Use of the device without legible warning and information signs
- Use of the device in a faulty condition

1.3 Device designation

Designation: MeiFlow Top S
Function: Pump groups for heat supply
Manufacturer: Meibes System-Technik GmbH

1.4 Residual hazards

The safety and warning information draws attention to residual hazards that cannot be avoided due to the design and construction of the device. Please always observe the measures shown for avoiding these hazards.

The device has been built according to the state of the art and in accordance with recognised safety regulations.

The following residual hazards may occur during installation, commissioning, maintenance and disassembly:

Warning: Risk of scalding from high media temperature
- Work particularly carefully.
- Use safety clothing (e.g. heat-resistant protective gloves).
- If necessary, surfaces must be thermally cleared before commencing work.
- Use stipulated tools.

Hazard: Risk of injury from electrical voltage
- Only instructed, qualified electricians are permitted to work on electrical equipment.
- Electrical installation spaces must always be kept locked.

1.5 What to do in the event of breakdown or leaks

- Close media lines using the appropriate valve.
- Contact a suitable trained expert or customer service of the manufacturer.

The device will only be released for operation again when the trained engineer has remedied the fault and restored the device to its intended condition.

1.6 Spare and wear parts

All spare and wear parts used must correspond to the technical requirements defined by Meibes System-Technik GmbH. This is guaranteed only with genuine spare parts. The manufacturer is not liable for damage caused by the use of unapproved spare and wear parts or ancillary materials.

Appropriate spare and wear parts can be found in the other applicable documents.

1.7 Requirements on trained engineers

A trained expert has undergone advanced technical training and has sufficient experience to independently perform complicated tasks or work associated with residual hazards. Such experience will in each instance refer to a specific specialism, e.g. maintenance, working on electrical systems, systems mechanic for sanitary, heating and air conditioning technology. In preparation for impending work, a trained expert must be able to correctly estimate the feasibility, risks and hazards as well as the equipment required. A trained expert is expected to be able to understand complex, minimally prepared plans and descriptions, and to obtain missing and required detailed information by suitable means.

The trained expert must be able to restore and check the intended condition of a system.

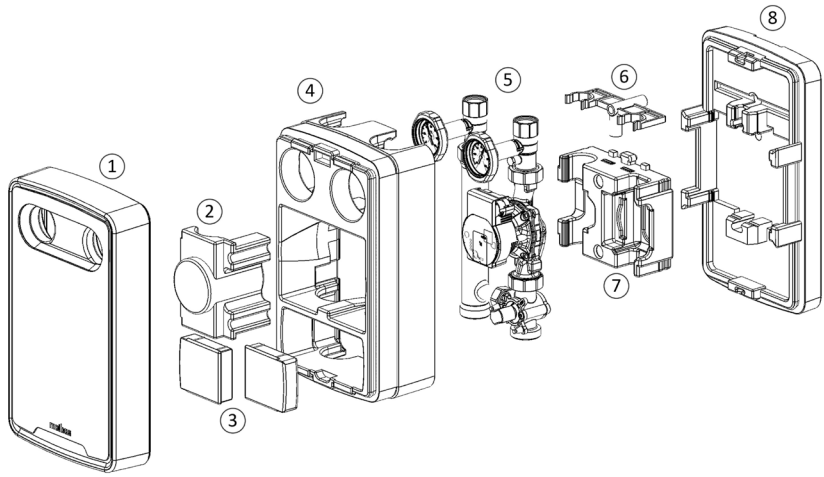
A worker can be a trained expert in several fields.

For work on the electrical equipment, only electrically skilled persons according to DGUV regulation 3 may be used.

2. Functions and applications

Thermal insulation (EPP housing)

The thermal insulation of the pump groups has multiple parts and consists of robust insulation shells with a latching mechanism which minimises heat losses while at the same time cooling the electronics. In the case of installation on manifolds, the thermal insulation can also be retrospectively installed or removed. The smooth surface makes it easy to clean, and the design ensures that the different pump groups in the heating system look the same.



Note: The thermal insulation made of EPP has a B2 fire rating, meaning that it is not exceptionally flammable.

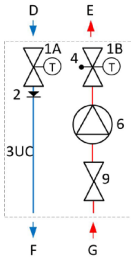
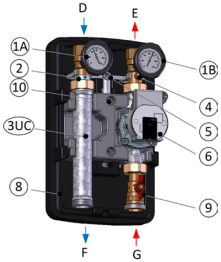
Total dimensions (HxWxD) 421 x 249 x 220 mm (with the long version height = 511 mm)

Individual parts of the thermal insulation, z.B. of an MC group	
1	Front insulation with baffle
2	Insulating connecting piece for return line
3	Insulating connecting piece for mixer
4	Central insulating piece
5	Pump group with ball valves
6	Plastic pipe bracket for wall-mounted installation
7	Insulating connecting piece for pump
8	Rear insulation shell

3. Overview of pump group variants

Note: the following example representation of the heating circuit pumps and connection dimensions

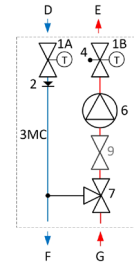
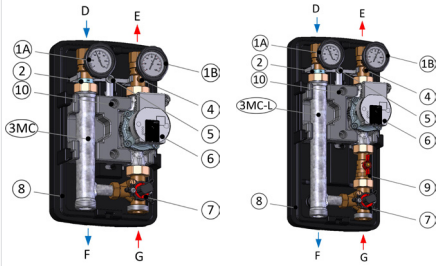
3.1 UC variants, PN6, DN25 / DN32

Visual representation	Design and components
	

Legend

Pos.	Components	Notes	
1A	RL ball valve with detachable handle and thermometer	blue scale, 0-120°C	
1B	FL ball valve with detachable handle and thermometer	red scale, 0-120°C	
2	backflow preventer, in ball valve, openable	Cracking pressure 200 mm WC	
3UC	UC/UC-L: RL pipe UC-M: Adaptor for optional HFM 1“ MT x 130 mm or ¾“ x 110 mm UC-CS: Clean Smart ¾“ with fill and drain ball valve as dirt trap, magnetite separator	depending on variant	
4	Sensor mounting for FL temperature sensor	M10x1	
5	Plastic pipe bracket for wall-mounted installation	Hole for bolt Diam. 12 mm, T=66 mm	
6	Heating circuit pump, depending on variant	IL=180 [mm], 1 ½“ flat sealing	
8	Multipart thermal insulation	EPP housing	
9	Ball valve for pumps		
10	Opening for cable grommet	Hole diam. 13.5 mm, T=87mm	
	Connections:	DN depending on variant	
D	Heating circuit RL, heat consumer	DN 25: 1" FT	DN 32: 1 ¼" FT
E	Heating circuit FL, heat consumer		
F	Heating circuit RL, heat generator	1 ½“ MT flat sealing	
G	Heating circuit FL, heat generator		

3.2 MC variants, PN6, DN25 / DN32

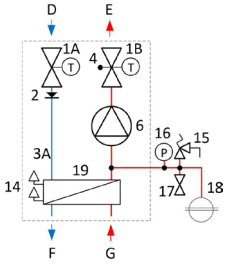
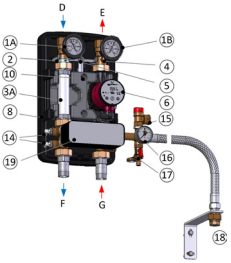
Visual representation	Design and components
	

Legend

Pos.	Components	Notes	
1A	RL ball valve with detachable handle and thermometer	blue scale, 0-120°C	
1B	FL ball valve with detachable handle and thermometer	red scale, 0-120°C	
2	backflow preventer, in ball valve, openable	Cracking pressure 200 mm WC	
3MC	MC/MC-L: RL pipe as T-piece MC-M: Adaptor for optional HFM 1“ MT x 130 mm or ¾“ x 110 mm MC-CS: Clean Smart ¾“ with fill and drain ball valve as dirt trap, magnetite separator	depending on variant	
4	Sensor mounting for FL temperature sensor	M10x1	
5	Plastic pipe bracket for wall-mounted installation	Hole for bolt Diam. 12 mm, T=66 mm	
6	Heating circuit pump, depending on variant	IL=180 [mm], 1 ½“ flat sealing	
7	Three-way mixer* with bypass	mountable on left-hand variant	
8	Multipart thermal insulation	EPP housing	
9	Ball valve below the pump only in the long version	shown separately	
10	Opening for cable grommet	Hole diam. 13.5 mm, T=87mm	
	Connections:	DN depending on variant	
D	Heating circuit RL, heat consumer	DN 25: 1" FT	DN 32: 1 ¼" FT
E	Heating circuit FL, heat consumer		
F	Heating circuit RL, heat generator	1 ½“ MT flat sealing	
G	Heating circuit FL, heat generator		

*also for additional servomotor and constant value /weather-controlled controller

3.3 UC-SD, separation system with 20/30 HE plates, PN6, DN25

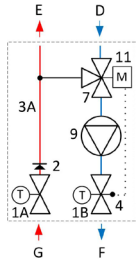
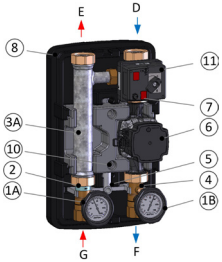
Visual representation	Design and components
	

Legend

Pos.	Components	Notes
1A	RL ball valve with detachable handle and thermometer	blue scale, 0-120°C
1B	FL ball valve with detachable handle and thermometer	red scale, 0-120°C
2	backflow preventer, in ball valve, openable	Cracking pressure 200 mm WC
3A	RL pipe	
4	immersion sleeve for FL temperature sensor	M10x1
5	Plastic pipe bracket for wall-mounted installation	Hole for bolt Diam. 12 mm, T=66 mm
6	Heating circuit pump, depending on variant	IL=180 [mm], 1 ½“ flat sealing
8	Multipart thermal insulation	EPP housing
10	Opening for cable grommet	Hole diam. 13.5 mm, T=87mm
14	Bleed valve ½“ primary/secondary side	
15	Safety valve ½“ x ¾“	3 bar
16	Manometer ¼“	0-4 bar
17	Fill and drain ball valve ½“	
18	DEV service coupling ¾“ and wall bracket	
19	Plate heat exchanger, depending on variant	with 20 / 30 plates
	Connections	
D	Heating circuit RL, secondary side	DN 25: 1" FT
E	Heating circuit FL, secondary side	
F	Heating circuit RL, primary side	1" MT
G	Heating circuit FL, primary side	

Note: For the specified performance to be achieved, an MC pump group with a type UPM3 Hybrid 25-70 Grundfos pump must be installed in the primary circuit.

3.4 MC as RL temp. incr. (RLA) with el. contr., 2-line, PN6, DN25

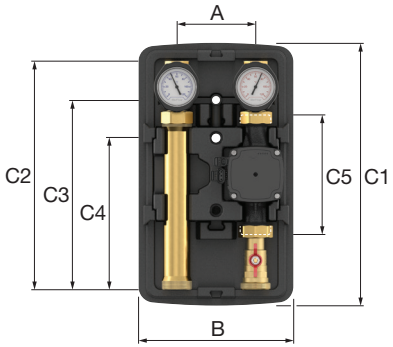
Visual representation	Design and components
	

Legend

Pos.	Components	Notes
1B	RL ball valve with detachable handle and thermometer	blue scale, 0-120°C
1A	FL ball valve with detachable handle and thermometer	red scale, 0-120°C
2	backflow preventer, in ball valve, openable	Cracking pressure 200 mm WC
3A	FL pipe as T-piece	
4	Sensor mounting for RL temperature sensor	M10x1
5	Plastic pipe bracket for wall-mounted installation	Hole for bolt Diam. 12 mm, T=66 mm
6	Heating circuit pump, depending on variant	IL=180 [mm], 1 ½“ flat sealing
7	Three-way mixer with bypass	mountable on left-hand variant
8	Multipart thermal insulation	EPP housing
10	Opening for cable grommet	Hole diam. 13.5 mm, T=87mm
11	Servomotor with temperature control, preinstalled	with FL temperature sensor
	Connections:	
D	Heating circuit RL, heat consumer	1 ½“ MT flat sealing (2x union nuts for above enclosed)
E	Heating circuit FL, heat consumer	
F	Heating circuit RL, heat generator	DN 25: 1" FT
G	Heating circuit FL, heat generator	

3.5 Dimensions

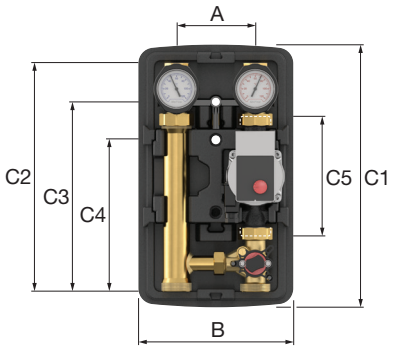
UC variants, PN6, DN25 / DN32



Dimensions in [mm]	
A	125
B	249
C1	421 (511)
C2	363,5 (453,5)
C3	301,5 (391,5)
C4	241 (331)
C5	180
Deepness	220

(for long version UC-L: dimension in brackets)

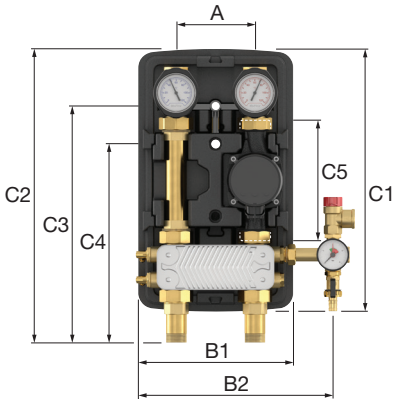
MC variants, PN6, DN25 / DN32



Dimensions in [mm]	
A	125
B	249
C1	421 (511)
C2	363,5 (453,5)
C3	301,5 (391,5)
C4	241 (331)
C5	180
Deepness	220

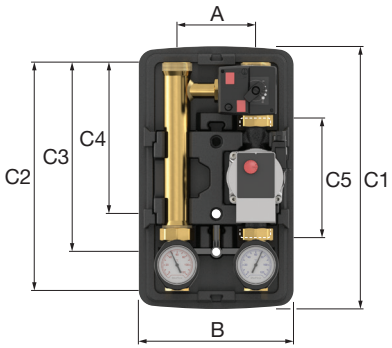
(for long version MC-L: dimension in brackets)

UC-SD, separation system with 20/30 HE plates, PN6, DN25



Dimensions in [mm]	
A	125
B1	249
B2	309
C1	421
C2	438.5
C3	376.5
C4	316
C5	180
Deepness	220

MC as RL temp. incr. (RLA) with el. contr., 2-line, PN6, DN25



Dimensions in [mm]	
A	125
B	249
C1	421
C2	363.5
C3	301.5
C4	241
C5	180
Deepness	220

4. Installation and operation

4.1 Installation

4.1.1 General installation instructions:

- Sufficient space for installation, maintenance and service
- Tighten all screw fittings if necessary during a pressure test or following the initial heating

4.1.2 General assembly instructions for protecting the pump

When installing the pump group, please also refer to the instructions of the pump manufacturer:

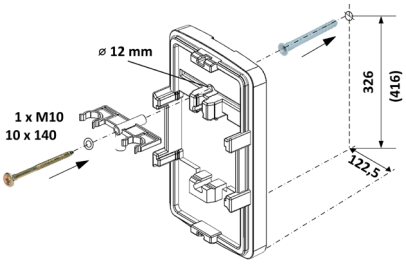
- Only install a pump shaft horizontally
- Note the minimum supply pressures: e.g. 0.5 bar at 95°C; e.g. 1.08 bar at 110°C
- Only operate the pump when filled and bled
- Do not additionally insulate the connection box (the pump electronics must be kept cool)

4.1.3 Installation on a heating circuit manifold

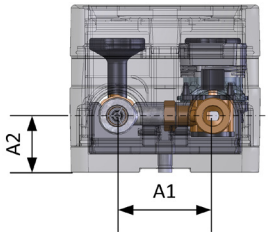
See separate installation instructions.

4.1.4 Installing on a wall:

1. Remove the supply and return line from the rear insulation shell - extend with additional accessories as required (e.g. screw fittings, heat flow meter)
2. Position the lower insulation shell on the wall and mark the drill holes; alternatively: Mark the drill holes according to the drawing
3. Drill 10-mm holes and fill with rawlplugs
4. Guide the pump power cable through the lower insulation shell
5. Mount the lower insulation shell on the wall with hexagonal bolts and washers.
6. Lock the supply and return lines into the lower insulation shell or prevent them from falling
7. Fit the piping to the connections.
8. Lock the central insulation shell in place on the lower shell and attach the front hood



Note: also observe other dimensions, such as C3, see Chap. 3,5



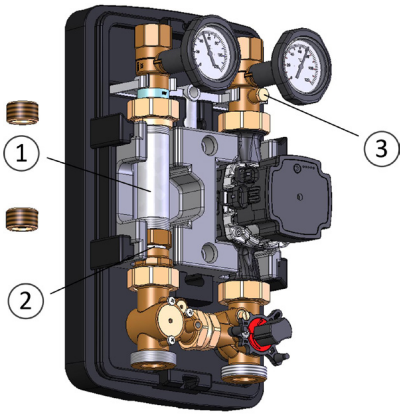
Dimensions in [mm]	
A1	125
A2	74

4.1.5 Optional heat flow meter (only UC-M and MC-M)

Caution: A meter should only be installed once the system has been flushed through.

Delivery includes a 1" x 130 mm pipe nipple in the return line of the UC-M or MC-M (1). This must be removed to install a meter. A 1" meter with an installation length of 130 mm is installed in place of the pipe nipple.

For a 3/4" meter with an installation length of 110 mm, two flat sealing reduction pieces 1" MT x 3/4" FT are included These are to be installed on the meter. With the reduction pieces and the ¾" seals, the meter has an installed length of 90 + 2*9 = 108 mm.

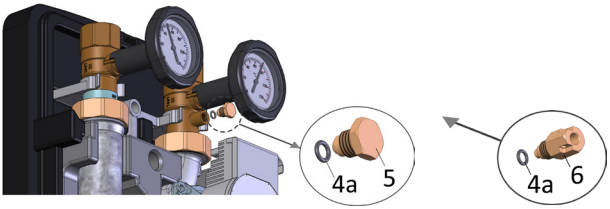


By pulling out the telescopic piece (2) the meter is installed between the 1" union nuts.

A connection option (M10x1) is available (3) on the FL ball valve for a direct immersion flow line sensor.

Cut holes in the insulation shells as required (e.g. in the case of a heat flow meter or removable control unit).

4.1.6 Temperature sensor on ball valve



Installation steps for sensor mount:

- Isolate and depressurise the system
- Remove M10x1 stopper (5) and O-ring (4a)
- Install FL or RL sensor mount (6)
- Sensor mount (6) with 3 mm locking hole

Note: Direct immersion sensor mount comparable in the case of heat flow meter (see installation instructions for heat flow meter)

4.2 Electrical connection

Electrical connection work may only be carried out by qualified electricians. The VDE guidelines and the provisions of the responsible energy utility company must be observed.

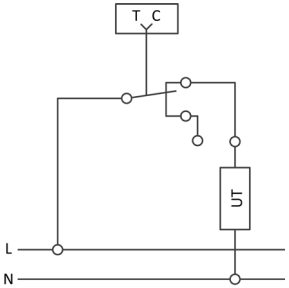
I. Connect the recirculation pump to the power supply. This should only be operated on demand, with it usually being controlled via the boiler control unit. Some controllers enable the speed regulation of the selected pump to be externally controlled.

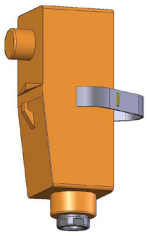
For STW:

When connecting a flat heating circuit, the temperature controller to limit the maximum temperature is to be professionally installed electrically clamped on a section of pipe with good thermal conductivity approximately 1 m downstream from the mixer and the heating circuit pump in the direction of flow.

Installation step for contact thermostat as STW:

1. Use the tightening strap to fasten the contact thermostat to the MC FL pipe to ensure a good contact for heat transfer.
2. After loosening the bolts, remove the cover.
3. Connect to the electricity supply in accordance with the circuit diagram.
4. Fix the cable to the strain relief clamp.
5. Fit the cover and fasten with the bolts.





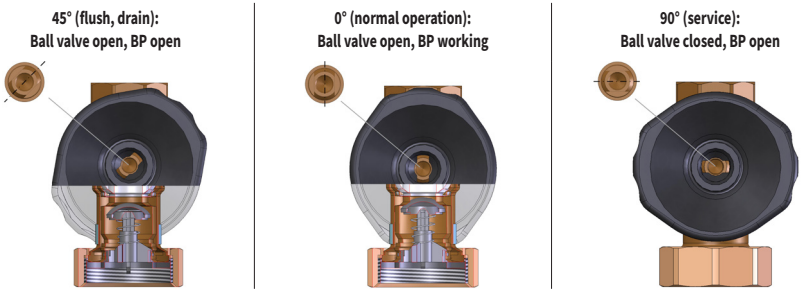
Technical data – STW

Adjustment range:	20 – 90°C
Switched power:	16 (2.5) A, 250 V
Temp. gradient	≤ 1 K/min
Protection code:	IP 20
Dimensions:	112 x 46 x 55 mm
Cable grommet	M20 x 1.5

4.3 Individual components and service settings

4.3.1 Ball valve positions / backflow preventer (gravity brake)

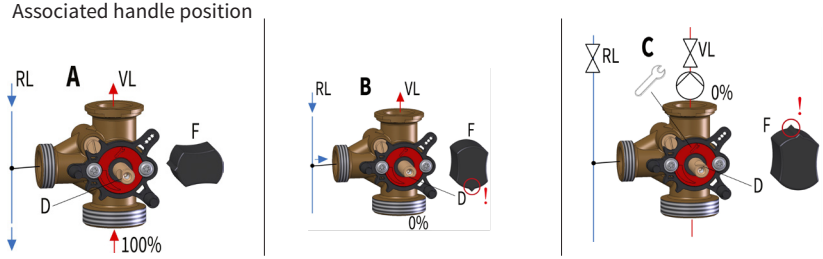
Some ball valves include an integrated backflow preventer (BP). These are individually marked. The BP can be opened manually by turning the rotating handle approx. 45°.



4.3.2 Mixer (with MC variants)

Mixer positions

A) Mixer "open" full inlet on boiler side, no mixing on return line side
B) Mixer "closed" full inlet on return flow side, no inlet on boiler side
C) Service setting for mixer, e.g. for swapping pump
D) Flat face on shaft end in this position
F) Associated handle position



Instructions for replacing pumps:

- Close ball valves in FL and RL before pump upgrade and depressurise system
- Please note: some water will inevitably escape when replacing the pump.

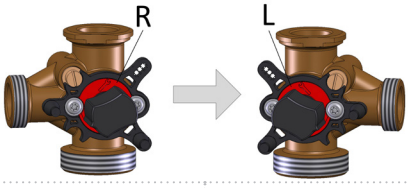
Bypass position

A bypass, which is closed at delivery, is integrated into the mixer (see Fig. 2.1). The bypass can be opened to any setting (see Fig. 2.2).

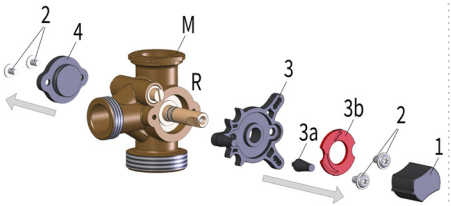
It makes sense to open the bypass when the heat generator temperature level provided is always much higher than the required temperature in the heating circuit (e.g. pellet boiler in combination with underfloor heating). The continuous mixing of cold return water lowers the supply temperature of the heating circuit. The adjustment travel of the mixer is greater to enable the servomotor to make more accurate adjustments.

1. The heating system must be in normal operation mode (boiler temperature high (e.g. 70°C), heating circuit pump on).
2. Open the bypass to 100%.
3. Set the mixer to position A) = no mixing on the return line side.
4. Close the bypass very slowly until the maximum flow line temperature is achieved in the heating circuit (e.g. 40°C = safety temperature limit for underfloor heating)

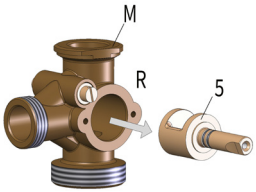
4.3.3 Mixer conversion from right-hand to left-hand model (in MC variants)



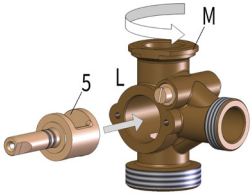
Removal device 1



Removal device 2



Installation1



(for further installation steps: see Removal 1 in reverse order)

Legend for the components

M) Mixer housing with bypass (as right-hand or left-hand version)
1) Rotating handle
2) 4x LFS 10.9 Torx M5x8 lens head screw
3) Front cover with O-ring
3a Spindle
3b Scale
4) Rear cover with O-ring
5) Mixer insert with shaft

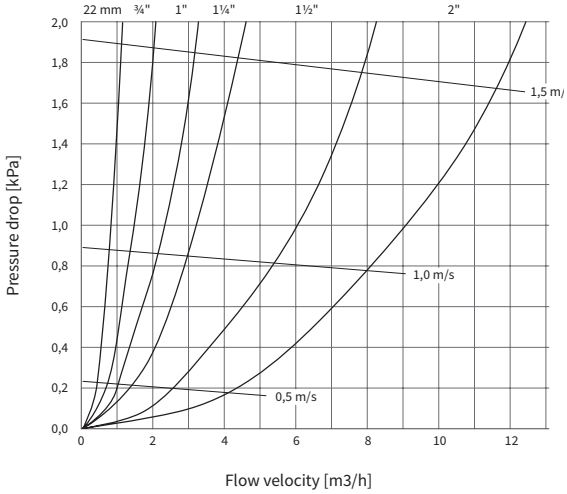
Note: It is not necessary to convert the bypass. Please observe the corresponding setting of the shaft during installation (for the flat area at the shaft end see Chap. 4.3.2).

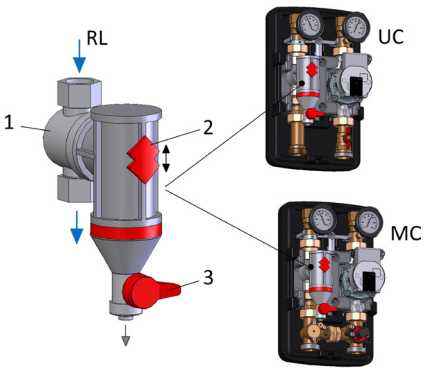
The mixer must then be checked for leak tightness.

4.3.4 For UC/MC version with Flamco Clean Smart in the RL section

The Clean Smart with drain ball valve serves as a dirt trap and magnetite separator. It protects the heating system by removing microparticles of dirt and magnetite. It is preinstalled at the factory in the return line of the PG variant in question.

Pressure loss diagram for Clean Smart:

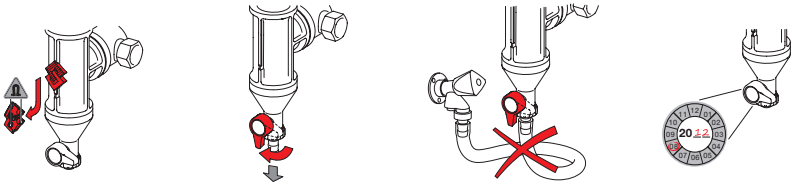




Legend:

1) Clean Smart 2 x ¾“ FT in RL
2) Magnetite separator
3) Drain valve with cap

Service/maintenance instructions for Flamco Clean Smart:

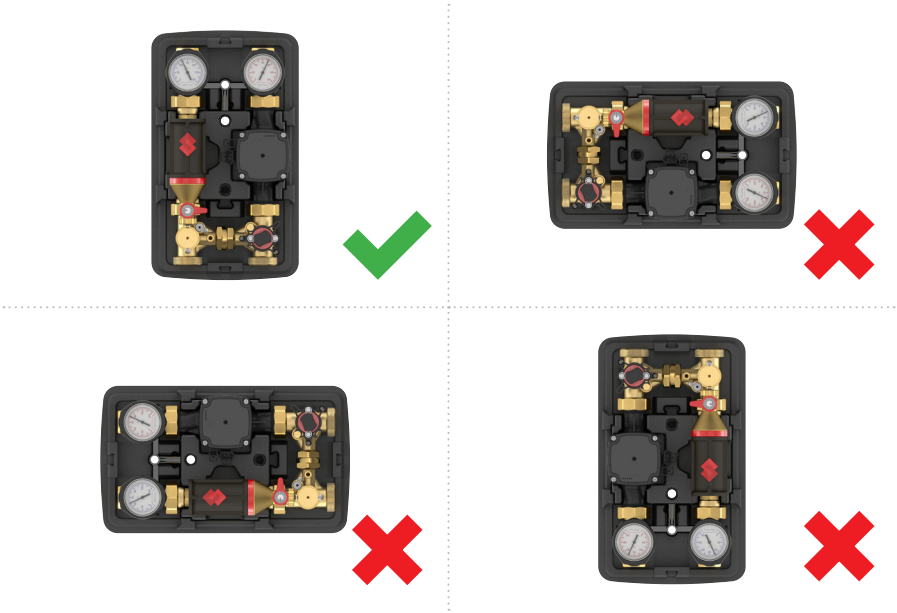


After flushing, close the ball valve again and fit the cap.

Note: Flow line on the right-hand side (cannot be swapped to the left).

Installation position:

Installation position for the pump group vertical upwards.



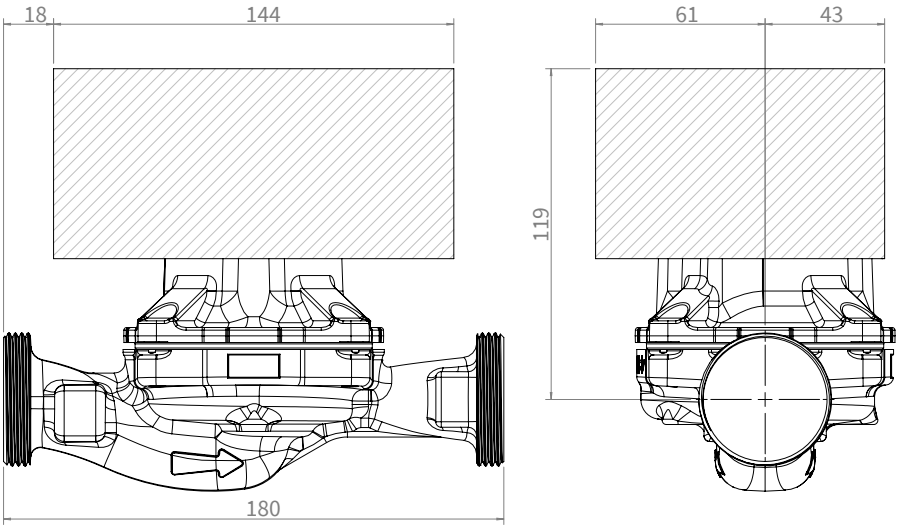
5. Pumps

5.1 Maximum operating temperatures

No.	Pump type	max. operating temperature
1.	Wilo Stratos Pico Plus 25/1-6	80°C
2.	Wilo Stratos Pico Plus 30/1-6	80°C
3.	Wilo Yonos Pico Plus 25/1-6	95°C
4.	Wilo Yonos Pico Plus 30/1-6	95°C
5.	Grundfos Alpha 2.1 25/32-60	95°C
6.	Grundfos UPM3 Hybrid 25/32-70	110°C
7.	Grundfos Alpha 2.1 25-60N	95°C

5.2 Pump compatibility

The compatibility of other pump types cannot be guaranteed and will depend on the dimensions of the pump. The following dimensions are to be used as guide values for other pump types for all UC and MC variants.



6. Commissioning

1. Check the leak tightness of the system
2. Flush, fill and bleed the pipework (with filling water in accordance with VDI 2035).

Warning!
Once the boiler or tank has been filled and has undergone a pressure and leak-tightness test, the heating circuit may only be operated by opening the ball valve in the supply line, because the overpressure (test pressure) in the boiler/tank could damage the backflow preventer in the backflow ball valve.

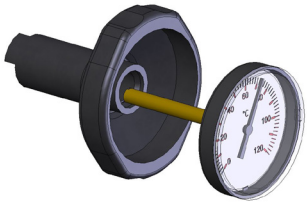
3. *Only with raised RL:*
   Set the minimum return line temperature. This should be as low possible but not less than the specifications of the pellet boiler manufacturer.
4. Select the appropriate recirculation pump setting.
5. *Only with raised RL:*
   Select the appropriate recirculation pump setting. We recommend a constant flow rate which should not be lower than the rate specified by the pellet boiler manufacturer.
6. Check for functionality

7. Maintenance

We recommend performing regular leak-tightness tests.

Bimetallic thermometer

The thermometers are simply inserted and can be removed easily. It should be ensured that any thermometer that is removed is replaced with a similar one.



Please observe the colour coding. (Red lettering = SL; blue lettering = RL)

The thermometers are in measurement accuracy class 2 in accordance with DIN EN 13190. The display can be adjusted by rotating the groove on the measurement element.

The ball valve handle pieces are torsion-resistant and can only be reinstalled in one direction. The position of the ball valve, i.e. open or closed, can be identified from the position of the handle piece.

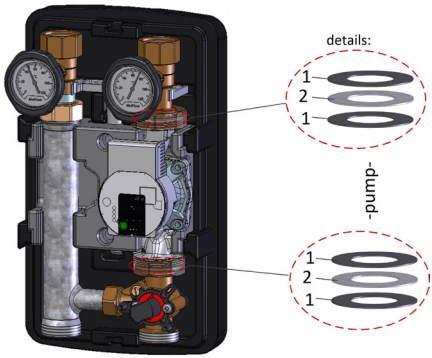
Pumps

Pumps can be exchanged without having to drain the entire heating system. Close the pump ball valve and mixer. In the case of the mixer, the bypass must be closed and the shaft rotated so that the flat face points in the direction of the closed side.

In the long version there is an additional shut-off ball valve below the pump.

Note: When changing the pumps in an MC group, some of the system water may leak out through the mixer. Any drops can be caught by an absorbent cloth or in a bucket.

Instruction on DN32 variant: for the installation/replacement of a pump in pump groups 1 ¼“

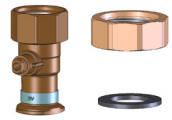
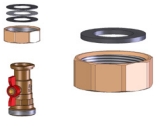


Legend:

1) EPDM SH90 seal with cross-linking peroxide 56 x 31.5 x 1 mm
2) Washer, 1.4310 material, 56 x 32 x1 mm

Warning!
When fitting the pump, the exact sequence of the seals used must be observed!

8. Spare parts

Fig.	Components	Order no.
	Ball valve DN 25 with sensor mounting	ME-61810.86
	Ball valve DN 32 with sensor mounting including 2 seals und stainless steel washers)	ME-61840.86
	Ball valve DN 25 with RV	ME-61810.87
	Ball valve DN 32 with RV	ME-61840.87
	Ball valve handle with thermometer, red scale	ME-58071.911
	Ball valve handle with thermometer, blue scale	ME-58071.912
	3-way mixer DN25/32 with bypass, can be converted from right to left for MC variants	ME-66625.25
	Seal set for convertible 3-way mixer DN25/32 for MC variants	ME-66625.251
	Insulation for standard version DN25/32	ME-66306.650
	Insulation for long version DN25/32	ME-66306.660
	Flat gaskets DN25/32, Set for all MC/UC variants	ME-42611.9
	Pump ball valve DN 25/32 Including seal und nut	ME-61855.4
	Saftey set without fill and drain ball valve for separation system	ME-45411.1

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