Technik für Umweltschutz

Messen. Regeln. Überwachen.

EN

Operating instructions

Heating pump assembly

PrimoTherm® C

130-1 DN20
130-2 DN20 3-WM-SM Vario
130-3 DN20 ATM

Lindenstraße 20
74363 Güglingen
Telephone +49 7135 102-0
Service +49 7135 102-211
Telefax +49 7135 102-147
info@afriso.com
www.afriso.com

Version: 03.2026.0
ID: 900.000.1148

1 About these operating instructions

These operating instructions describe the heating pump assemblies PrimoTherm® C (also referred to as "product" in these operating instructions). These operating instructions are part of the product.

- You may only use the product if you have fully read and understood these operating instructions.
- Verify that these operating instructions are always accessible for any type of work performed on or with the product.
- Pass these operating instructions as well as all other product-related documents on to all owners of the product.
- If you feel that these operating instructions contain errors, inconsistencies, ambiguities or other issues, contact the manufacturer prior to using the product.

The manufacturer shall not be liable in any form whatsoever for direct or consequential damage resulting from failure to observe these operating instructions or from failure to comply with directives, regulations and standards and any other statutory requirements applicable at the installation site of the product.

2 Information on safety

2.1 Safety messages and hazard categories

These operating instructions contain safety messages to alert you to potential hazards and risks. In addition to the instructions provided in these operating instructions, you must comply with all directives, standards and safety regulations applicable at the installation site of the product. Verify that you are familiar with all directives, standards and safety regulations and ensure compliance with them prior to using the product.

Safety messages in these operating instructions are highlighted with warning symbols and warning words. Depending on the severity of a hazard, the safety messages are classified according to different hazard categories.

DANGER

DANGER indicates a hazardous situation, which, if not avoided, will result in death or serious injury.

WARNING

WARNING indicates a potentially hazardous situation, which, if not avoided, can result in serious injury or equipment damage.

NOTICE

NOTICE indicates a hazardous situation, which, if not avoided, can result in equipment damage.

In addition, the following symbols are used in these operating instructions:

This is the general safety alert symbol. It alerts to injury hazards or equipment damage. Comply with all safety instructions in conjunction with this symbol to help avoid possible death, injury or equipment damage.

This symbol alerts to hazardous electrical voltage. If this symbol is used in a safety message, there is a hazard of electric shock.

2.2 Intended use

This product may only be used to circulate the following liquids in heating systems as per EN 12828:

- Heating circuit water as per VDI 2035
- Water/glycol mixtures with a maximum of 50 % of glycol (ethylene glycol)

Any use other than the application explicitly permitted in these operating instructions is not permitted and causes hazards.

Verify that the product is suitable for the application planned by you prior to using the product. In doing so, take into account at least the following:

- All directives, standards and safety regulations applicable at the installation site of the product
- Adequate electrical protection, in particular upstream residual current device (RCD) when used in a heating system
- All conditions and data specified for the product
- The conditions of the planned application

In addition, perform a risk assessment in view of the planned application, according to an approved risk assessment method, and implement the appropriate safety measures, based on the results of the risk assessment. Take into account the consequences of installing or integrating the product into a system or a plant.

When using the product, perform all work and all other activities in conjunction with the product in compliance with the conditions specified in the operating instructions and on the nameplate, as well as with all directives, standards and safety regulations applicable at the installation site of the product.

2.3 Predictable incorrect application

The product must never be used in the following cases and for the following purposes:

- Use with drinking water
- Use with adherent, corrosive or flammable fluids
- Operation in systems with temperatures exceeding 90 °C (for example, solar systems)
- Hazardous area
  - If the product is operated in hazardous areas, sparks may cause deflagrations, fires or explosions
- Operation without upstream residual current device (RCD) and without earthing of the heating system

2.4 Qualification of personnel

Only skilled, qualified persons with relevant education and experience to enable him or her to perceive risks and to avoid hazards which electricity can create are authorised to mount, commission, maintain and decommission this product.

Only appropriately trained persons who are familiar with and understand the contents of these operating instructions and all other pertinent product documentation are authorized to work on and with this product.

These persons must have sufficient technical training, knowledge and experience and be able to foresee and detect potential hazards that may be caused by using the product.

All persons working on and with the product must be fully familiar with all directives, standards and safety regulations that must be observed for performing such work.

2.5 Personal protective equipment

Always wear the required personal protective equipment. When performing work on and with the product, take into account that hazards may be present at the installation site which do not directly result from the product itself.

2.6 Modifications to the product

Only perform work on and with the product which is explicitly described in these operating instructions. Do not make any modifications to the product which are not described in these operating instructions.

3 Transport and storage

The product may be damaged as a result of improper transport or storage.

NOTICE

INCORRECT HANDLING

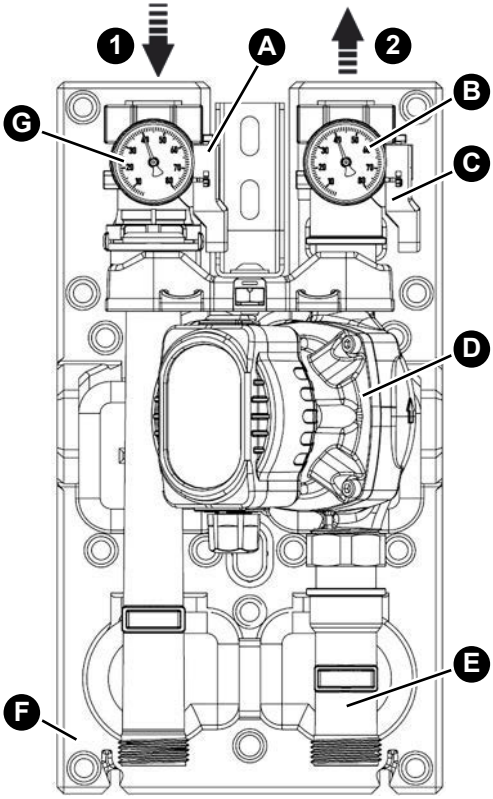
- Verify compliance with the specified ambient conditions during transport or storage of the product.
- Use the original packaging when transporting the product.
- Store the product in a clean and dry environment.
- Verify that the product is protected against shocks and impact during transport and storage.

Failure to follow these instructions can result in equipment damage.

4 Product description

The product is a pre-assembled, tightness-tested and heat-insulated heating pump assembly which allows for the installation of standard pumps (with G1connection and a length of 130 mm). The flow can be connected at the left or the right side. The distance to the wall can be adapted from 80 ... 130 mm.

4.1 Overview



1. Return
2. Flow

A. Shut-off valve with gravity brake return
B. Thermometer flow
C. Shut-off valve flow
D. Circulation pump (various manufacturers)
E. Distance pipe
F. Heat insulation
G. Thermometer return

Figure 1: PrimoTherm® C 130-1 components

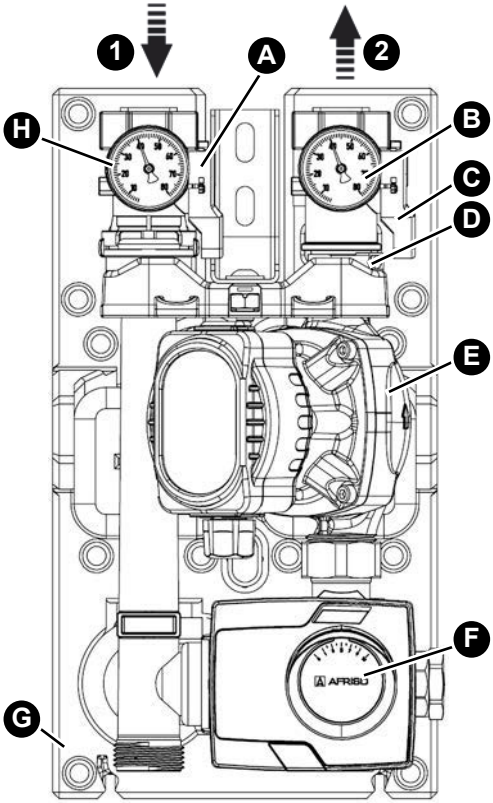


Figure 2: PrimoTherm® C 130-2 components

1. Return
2. Flow

A. Shut-off valve with gravity brake return
B. Thermometer flow
C. Shut-off valve flow
D. Retaining clip for temperature sensor
E. Circulation pump (various manufacturers)
F. 3-way mixing valve with actuator
G. Heat insulation
H. Thermometer return

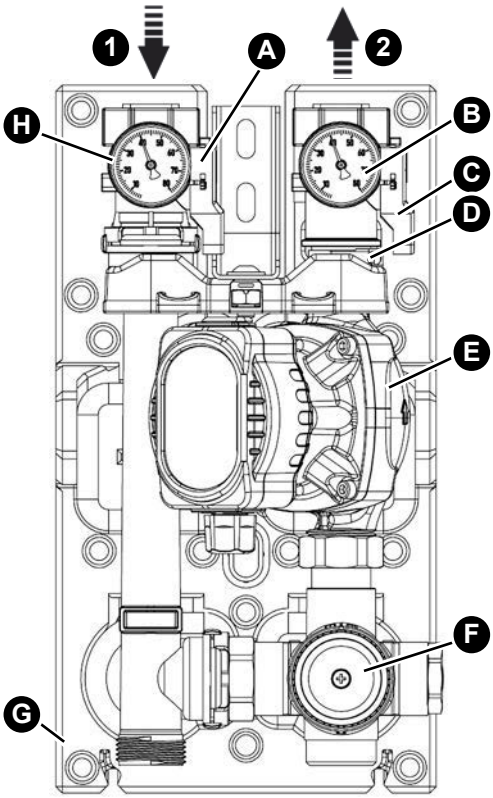


Figure 3: PrimoTherm® C 130-3 components

1. Return
2. Flow

A. Shut-off valve with gravity brake return
B. Thermometer flow
C. Shut-off valve flow
D. Retaining clip for temperature sensor
E. Circulation pump (various manufacturers)
F. Thermostat mixing valve
G. Heat insulation
H. Thermometer return

4.2 Dimensions

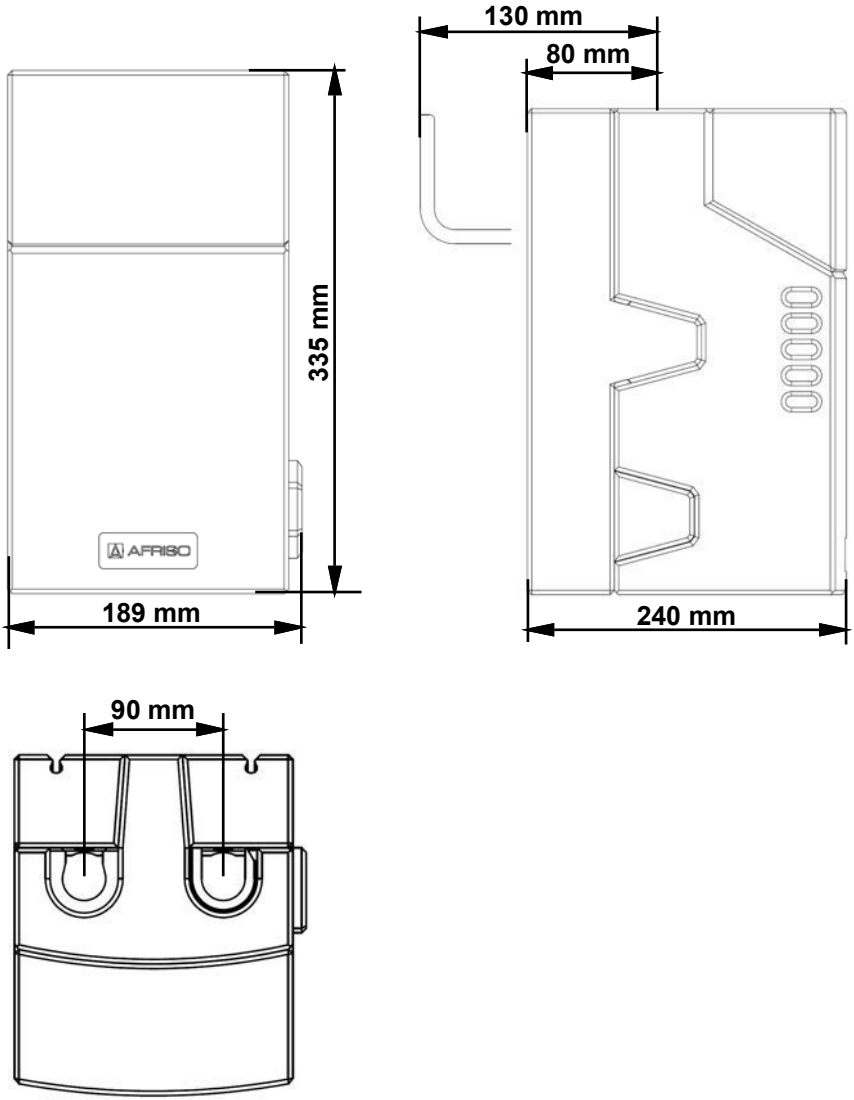


Figure 4: Dimensions PrimoTherm® C

4.3 Function

Version 130-1

The product is used for non-mixed heating circuits, specially for storage tank charging.

Version 130-2

As compared to version 130-1, the product features an additional 3-way mixer with actuator for controlling the flow temperature . The flow coefficient Kvs of the mixing valve is adjustable.

⇨ If version 130-2 is used, ensure that the motor of the mixing valve can be controlled by the boiler controller or by another controller.

Version 130-3

As compared to version 130-1, the product features an additional thermostat mixing valvle for reducing the flow temperature to a fixed value.

4.4 Approvals, conformities, certifications

Refer to the operating instructions of the actuator. See operating instructions of the manufacturer of the circulation pump for versions with circulation pump.

4.5 Technical specifications

Parameter	Value
General specifications	
Dimensions with heat insulation (W x H x D)	189 x 335 x 240 mm
Axis distance	90 mm
Distance wall to centre of the pipe	80 ... 130 mm
Weight without circulation pump 130-1 130-2 130-3	 1.1 kg 2.0 kg 2.2 kg
Material of fittings	Brass, plastic
Material of seals	EPDM
Material heat insulation	EPP
Operating temperature and pressure	Maximum 60 °C at 6 bar Maximum 90 °C at 3 bar
Connections to heat generator	G1 male thread
Connection to heating circuit	G1 female thread
Medium	Heating circuit water or Water/glycol mixtures with a maximum of 50 % of glycol
Flow coefficient Kvs (m^3/h)	
130-1	5.7 m^3/h
130-2	4.6 m^3/h
130-3	2.4 m^3/h

5 Mounting

Unless otherwise specified, all information on mounting relates to the installation type "**flow right**". Conversion is described in Chapter "Interchanging flow/return".

5.1 Preparing mounting

Only mount the product after having completed all pipe assembly work, all welding work and all soldering work.

- Flush the lines of the system before installing the product.

If you install the product in an existing system, observe the information in Chapter "Retrofitting the product".

5.2 Installing the circulation pump

If you use a product version without pre-assembled circulation pump, you must install a suitable circulation pump with a length of 130 mm yourself.

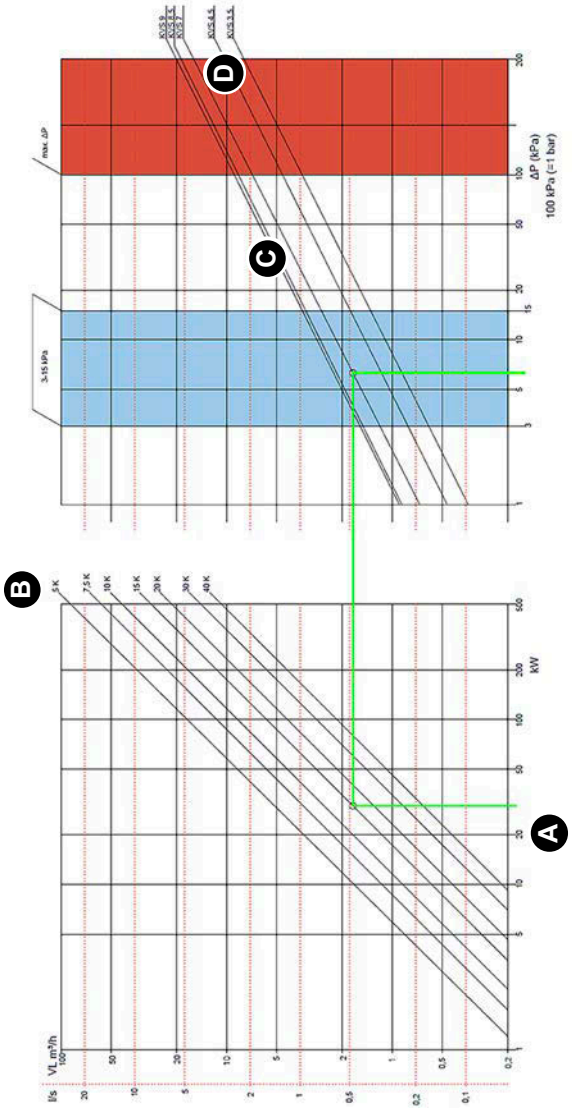
⇨ Verify that the heat insulation can be properly installed after the pump has been installed.

⇨ Verify that you use the seals enclosed with the product.

1. Observe the specifications of the pump manufacturer.
2. Mount the circulation pump.
   - Connection thread G1, tightening torque 50 Nm.

5.3 Determining the Kvs flow coefficient value

The adjustment value for the flow efficient Kvs is determined on the basis of the power of the heating circuit (KW) and the temperature spread between flow and return (K corresponds to °C); refer to the following diagram.



Example:

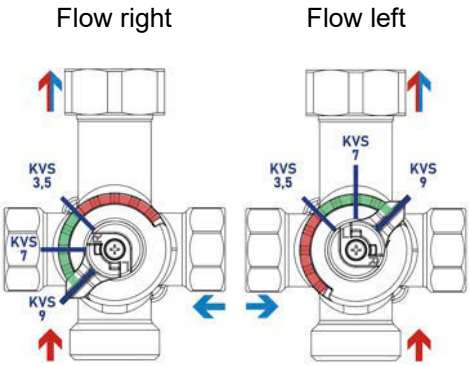
A. Capacity: 30 KW

B. Temperature spread: 15 K

C. Point of intersection in the centre of the optimum range 3-15 kPa

D. Read adjustment value: Kvs 7 (in m³/h at a differential pressure of 1 bar)

5.4 Adjusting the flow coefficient Kvs



1. Adjust the value for the flow coefficient Kvs using the Kvs adjustment lever (see labelling on the product).
2. Verify correct direction of flow.

5.5 Mounting the product

NOTICE

MECHANICAL LOADS AND STRESS

- Verify that the product is not subjected to mechanical loads and stress when connecting the product.
- If necessary, install a corrugated pipe compensator to compensate for mechanical stress or tension.

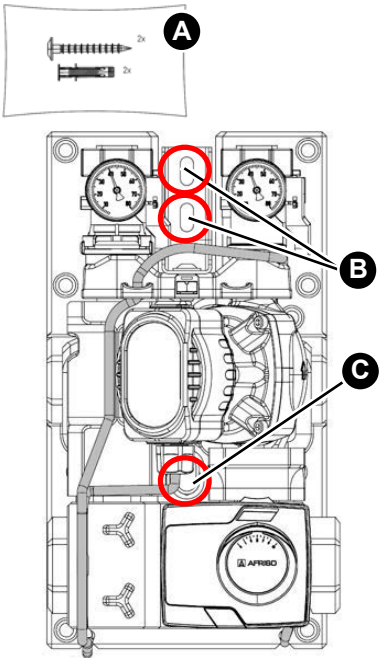
Failure to follow these instructions can result in equipment damage.

5.5.1 Mounting the product to the heating circuit manifold

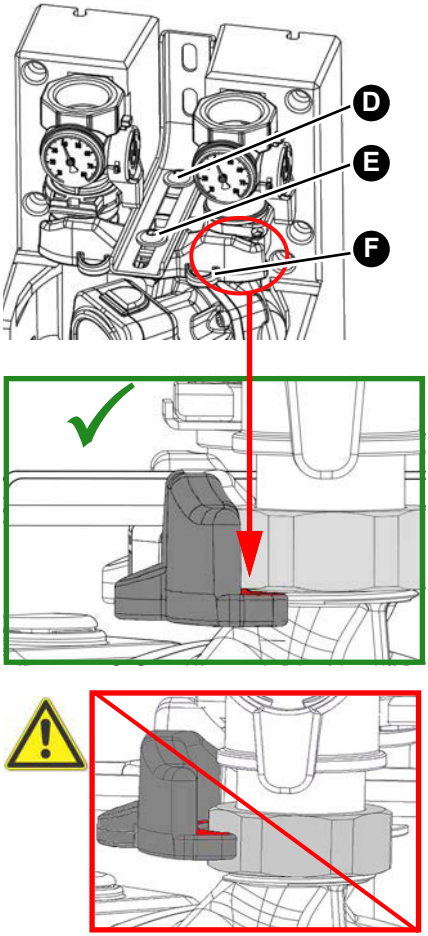
1. Remove the upper heat insulation.
2. Screw the pump assembly to heating circuit manifold.
3. Screw the pipes of the heating circuit to the upper connections of the product (no mechanical stress).
4. Refit the heat insulation, see Chapter "Mounting the heat insulation".
5. Mount the housing to the wall, see Chapter "Wall mounting".

5.5.2 Wall mounting

⇨Verify that the enclosed dowels are suitable for the intended wall.



1. Verify that the wall can carry the product.
2. Remove the upper heat insulation.
3. Hold the product to the wall and align it with a level.
4. Mark the position for the drilling holes of the bracket at the wall.
5. Drill holes (Ø 8 mm) at the positions of the marks (B).
6. Mount the product using the dowels and screws (A)enclosed in the thermometer cover.
7. If the product is mounted horizontally, it must be secured with a hanger bolt (not included in the scope of delivery) in hole (C).



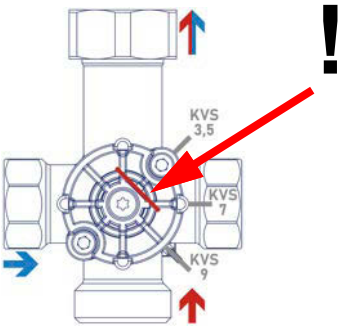
Adjusting the distance from the wall

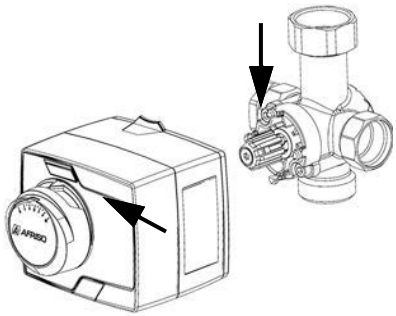
8. Hold the flow and return and loosen screws (D) and (E).

⇨ Loosening the screws simultaneously loosens the clamp of the flow and return.

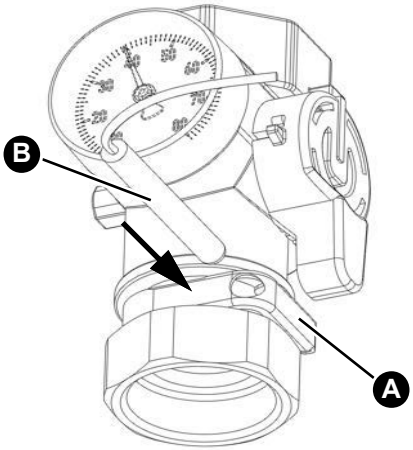
9. Adjust the distance of the product from the wall.
10. Tighten screw (D).
11. Press the clamp (F) against the flow and return.
12. Tighten screw (E).

5.6 Mounting the actuator





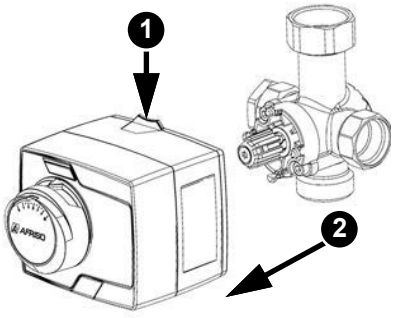
5.7 Mount the temperature probe



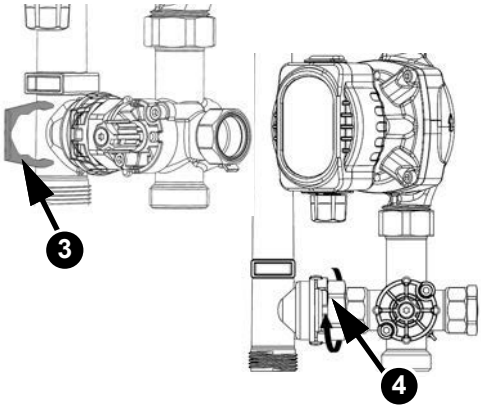
1. Insert the temperature probe (B) into the retaining clip (A).

5.8 Interchanging flow/return

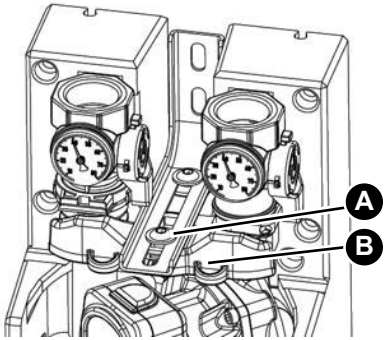
The flow is at the right side when the product is shipped.



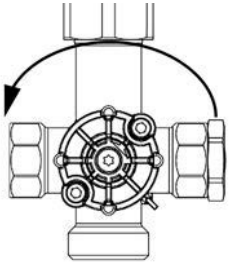
1. Uninstall the actuator (130-2 only).



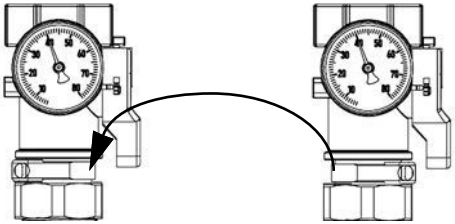
2. Remove the locking clip (3) from the plug connection between the flow and return.
3. Unscrew the adapter (4) from the mixing valve.



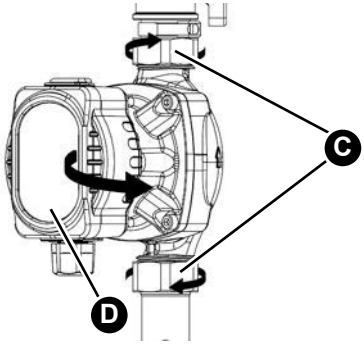
4. Loosen screw (A) and, by that, the clamp (B) for the flow and return.
5. Remove the flow and the return.



6. Unscrew the screw plug from the mixing valve.
7. Close the opposite outlet of the mixing valve with the screw plug (9 Nm).



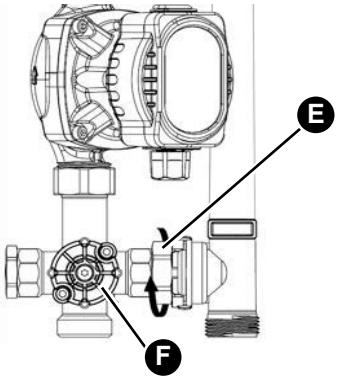
8. Remove the retaining clip of the temperature sensor.
9. Turn the retaining clip of the temperature sensor.
10. Place the retaining clip of temperature sensor onto the pipe above the union nut.



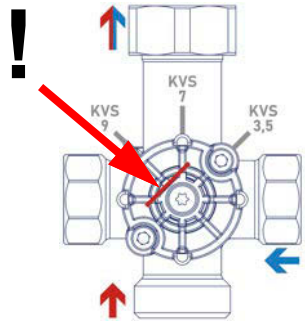
11. Loosen the screw connections (C) of the pump.
12. If necessary, turn the pump head (D) (depending on the pump type).
13. Rotate the pump 90° to the other side.

⇨ Verify that the heat insulation can be properly installed after the pump has been installed.

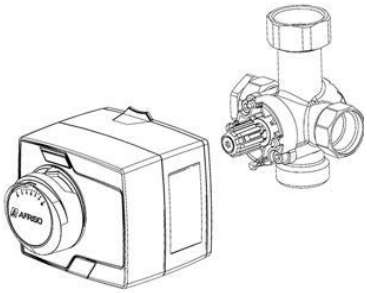
14. Tighten the screw connections of the pump with 50 Nm fest. Use new seals.



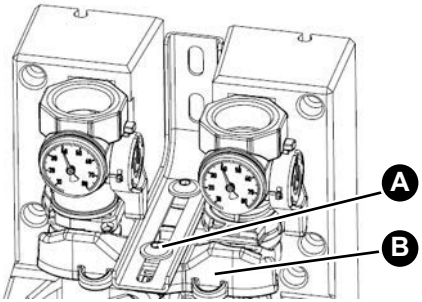
15. Screw the adapter (E) into the mixing valve (F) with 9 Nm.
16. Slide the heat insulation of the return over the return.
17. Connect the flow and the return and secure the connection with the locking clip.



18. Rotate the shaft of the mixing valve by 90° counterclockwise (130-2 only).
19. Adjust the value for the flow coefficient Kvs to "flow left" using the Kvs adjustment lever (see Chapter "Adjusting the flow coefficient Kvs").



20. Mount the actuator onto the mixing valve (130-2 only).



21. Press the clamp (B) against the flow and return and tighten screw (A).

5.9 Retrofitting the product

WARNING

HOT LIQUID

Water in heating systems is under high pressure and can have temperatures of more than 100 °C.

- Verify that the heating water has cooled down before opening the system and mounting the product.
- Verify that the system has been unpressurised and drained before opening the system and mounting the product.

Failure to follow these instructions can result in death, serious injury or equipment damage.

⇨ Verify that the nominal pressure of the product corresponds to the specification value of the system.

⇨ Verify that the liquid in the system and the application area of the product are compatible.

When the system has cooled down and is unpressurised, you can mount the product.

1. Drain the system.
2. Flush the lines of the system.
3. Mount the product as described in Chapter "Mounting the product to the heating circuit manifold" or in Chapter "Wall mounting".

5.10 Electrical connection

DANGER

ELECTRIC SHOCK

- Verify that the degree of protection against electric shock (protection class, double insulation) is not reduced by the type of electrical installation.
- Verify that the product is operated with an upstream residual current device (RCD).
- Verify that the heating system in which the product is operated is earthed.

Failure to follow these instructions will result in death or serious injury.

DANGER

ELECTRIC SHOCK CAUSED BY LIVE PARTS

- Disconnect the mains voltage supply before performing the work and ensure that it cannot be switched on.
- Verify that no hazards can be caused by electrically conductive objects or media.

Failure to follow these instructions will result in death or serious injury.

NOTICE

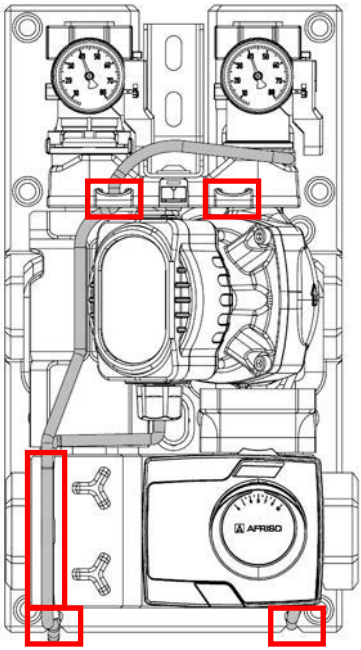
ELECTROSTATIC DISCHARGE

- Always earth yourself before touching electronic components.

Failure to follow these instructions can result in equipment damage.

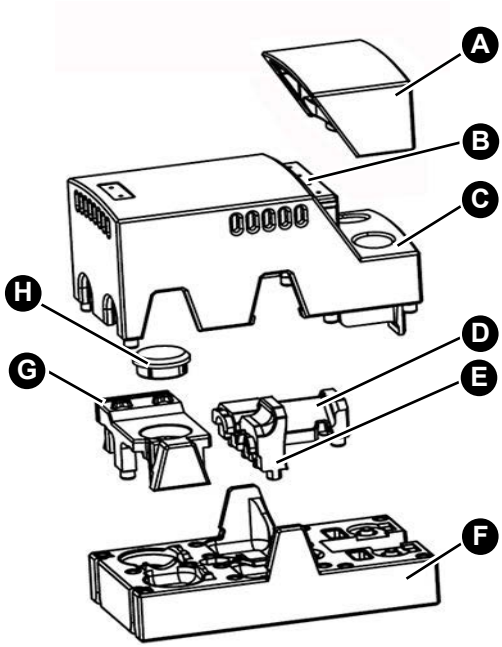
1. Connect the circulation pump and the actuator in accordance with the operating instructions of the manufacturer.

5.10.1 Cable routing



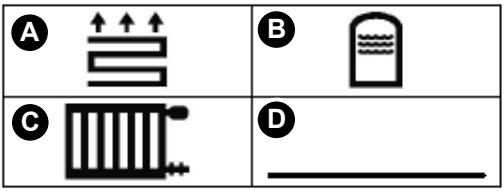
⇨ Verify that the cables are routed in the designated cable guides. Otherwise, the heat insulation cannot be installed correctly.

5.11 Mounting the heat insulation



A. Thermometer cover
B. Label field
   - see Chapter "Label field"
C. Upper cover
D. Cover return piping
E. Cover flow piping
F. Bottom cover
G. Centre cover
H. Plug
   (130-1 only)

5.12 Label field



A. Underfloor heating system
B. Hot water
C. Heating
D. Available for entries

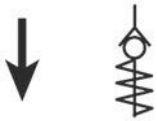
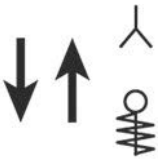
You can attach the label field to the left, center, or right of the top cover.
- Additional neutral signs are available upon request.

6 Commissioning

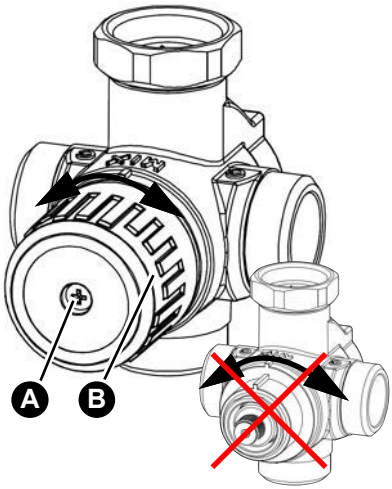
Prerequisite for commissioning is a complete installation of all hydraulic and electrical components.

1. Perform a tightness test as per EN 14336.
2. For commissioning, set all shut-off valves to 0° position.
3. Verify tightness of the components of the system.
   - Adapt the test pressure and the test duration to the corresponding installation and the corresponding operating pressure.
4. Set the stop valves to 45° position for filling of the system.
5. Fill the system with filtered water as per VDI 2035.
6. During filling, verify that all connections are tight.
7. Vent the system.

6.1 Shut-off valves

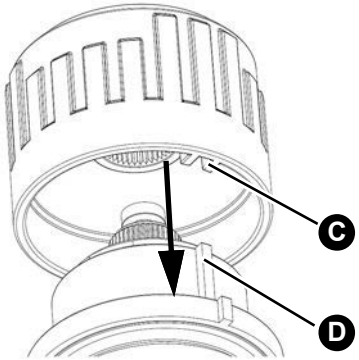
	0°	Normal operation: Gravity brake active, shut-off valve open	
	45°	Commissioning, filling, venting, draining and flushing: Both ends open (gravity brake not active)	
	90°	Maintenance: Shut-off valve closed	STOP

6.2 Adjusting the mixing valve



1. Adjust the required temperature at the thermostat head.
2. Document the adjusted temperature in table Chapter "Temperature adjustment".
3. Remove screw (A).
4. Remove cap (B).

⇨ Verify that the temperature not adjusted while the cap is dismounted.



5. Position the cap in such a way that the key (D) fits into the groove (C).
6. Tighten screw (A).

Temperature adjustment									
Setting	Min.	1	2	3	4	5	6	7	Max.
Temperature in °C	23	30	35	40	45	50	55	60	63

7 Operation

DANGER

ELECTRIC SHOCK

- If you detect moisture or wetness in the vicinity of the product (for example, on pipes or connections), immediately disconnect the product from the supply voltage.

Failure to follow these instructions will result in death or serious injury.

During operation, the shut-off valves must be open (position 0, see Chapter "Shut-off valves").

8 Maintenance

Maintenance intervals

When	Activity
Every six months	Perform a visual inspection of the heating system and verify tightness

9 Troubleshooting

Any malfunctions that cannot be removed by means of the measures described in this chapter may only be repaired by the manufacturer.

Also observe the corresponding instructions of the manufacturer in the case of malfunctions of the circulation pump or the actuator.

Problem	Possible reason	Repair
Noise in the system	Air in the system	Vent the system
	Circulation pump not properly adjusted	Verify correct adjustment of the circulation pump
Circulation pump does not run	Pump defective	Replace the circulation pump
Other malfunctions	-	Contact the AFRISO service hotline

9.1 Replacing the circulation pump

DANGER

ELECTRIC SHOCK CAUSED BY LIVE PARTS

- Disconnect the supply voltage before performing the work and ensure that it cannot be switched on.

Failure to follow these instructions will result in death or serious injury.

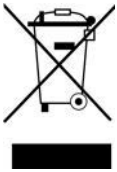
1. Disconnect the power supply.
2. Close all shut-off valves and drain the affected system part.
3. Replace the circulation pump. Use new seals and tighten the screw connections with 50 Nm.
4. Open all shut-off valves and perform a tightness test.
5. Fill and vent the system.
6. Connect the circulation pump to supply voltage.

10 Decommissioning, disposal

Do not dispose of the product together with household waste.

Dispose of the product in compliance with all applicable directives, standards and safety regulations.

Dispose of the product at an associated waste collection point or return it to the manufacturer's or distributor's collection point.



1. Disconnect the product from the supply voltage.
2. Dismount the product (see Chapter "Mounting", reverse sequence of steps).
3. Dispose of the product.

11 Returning the device

Get in touch with us before returning your product (service@afriso.de).

12 Warranty

See our terms and conditions at www.afriso.com or your purchase contract for information on warranty.

13 Spare parts and accessories

NOTICE

UNSUITABLE PARTS

- Only use genuine spare parts and accessories provided by the manufacturer.

Failure to follow these instructions can result in equipment damage.

Product

Product designation	Part no.	Figure
PrimoTherm C 130-1	77335	
PrimoTherm C 130-2	77339	
PrimoTherm C 130-3	77343	