

# Kasutusjuhend



## Segamissõlm

### PrimoTherm®

Tüüp:180-1 DN25 ilma segistita  
Tüüp:180-2 DN25 koos 3-suunalise segistiga  
Tüüp: 180-2 DN25 Vario reguleeritava segistiga  
Tüüp: 180-3 DN25 ret. termostaatilise segamisklapiga

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Autoriõigus 2019 AFRISO-EURO-INDEX GmbH. Kõik õigused kaitstud.

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Versioon: 11.2019.0  
ID: 900.000.0925



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**1 Teave selle kasutusjuhendi kohta**

See kasutusjuhend kirjeldab segamissõlmi Primo-Therm® „180-1 DN25“ / „180-2 DN25“ / „180-3 DN25“ (selles kasutusjuhendis ka „toode“). See kasutusjuhend on toote osa.

- Toodet tohib kasutada ainult siis, kui olete selle kasutusjuhendi täielikult läbi lugenud ja sellest aru saanud.
- Veenduge, et see kasutusjuhend on alati kättesaadav mis tahes tüüpi tööde puhul, mida tootega või tootel tehakse.
- Edastage see kasutusjuhend ja kõik muud tootega seotud dokumendid kõigile toote omanikele.
- Kui teil on tunne, et selles kasutusjuhendis on vigu, vastuolusid, ebaselgusi või muid probleeme, võtke enne toote kasutamist ühendust tootjaga.

See kasutusjuhend on kaitstud autoriõigusega ja seda tohib kasutada ainult asjakohaste autoriõigust käsitlevate õigusaktidega ettenähtud viisil. Jätame endale õiguse teha muudatusi.

Tootja ei vastuta mis tahes vormis otseste või kaudsete kahjude eest, mis tulenevad selle kasutusjuhendi eiramisest või direktiivide, määruste ja standardite ning muude toote paigalduskohas kehtivate seadusjärgsete nõuete eiramisest.

## 2 Teave ohutuse kohta

### 2.1 Ohutusteated ja ohukategooriad

Selles kasutusjuhendis on ohutusalaseid teateid, mis hoiatavad teid võimalike ohtude ja riskide eest. Lisaks selles kasutusjuhendis toodud juhiste peate järgima kõiki toote paigalduskohas kehtivaid direktiive, standardeid ja ohutusnõudeid. Enne toote kasutamist veenduge, et olete kursis kõikide direktiivide, standardite ja ohutusnõuetega ning tagage nende täitmine.

Selles kasutusjuhendis olevad ohutusteated on esile tõstetud hoiatussümbolite ja hoiatussõnadega. Sõltuvalt ohu raskusastmest liigitatakse ohutusteated erinevatesse ohukategooriatesse.



#### OHT

OHT viitab ohtlikule olukorrale, mis eiramise korral põhjustab surma või tõsiseid vigastusi.



#### HOIATUS

HOIATUS viitab potentsiaalselt ohtlikule olukorrale, mis eiramise korral võib põhjustada tõsiseid vigastusi või kahjustusi seadmetele.

#### TEADE

TEADE viitab ohtlikule olukorrale, mis eiramise korral võib põhjustada kahjustusi seadmetele.

Lisaks kasutatakse selles kasutusjuhendis järgmisi sümboleid:



See on üldine ohutushoiatuse sümbol. See hoiatab vigastusohu või seadmete kahjustamise eest. Järgige kõiki selle sümboliga seotud ohutusjuhiseid, et aidata vältida surma, vigastusi või kahjustusi seadmetele.



See sümbol hoiatab ohtliku elektripingest eest. Kui seda sümbolit kasutatakse ohutussõnumis, on olemas elektrilöögi oht.

## 2.2 Ettenähtud kasutusviis

Seda toodet võib kasutada ainult järgmiste vedelike ringlusse laskmiseks hermeetiliselt ohututes, suletud soojusküttesüsteemides.

- Kütteahela vesi kooskõlas standardiga VDI 2035.
- Vee ja glükooli segud, mille maksimaalne koostis on 50%.

Igasugune muu kui selles kasutusjuhendis selgesõnaliselt lubatud kasutus on keelatud ja põhjustab ohtu.

Enne toote kasutamist veenduge, et toode sobib teie poolt kavandatud kasutuseks. Seda tehes võtke arvesse vähemalt järgmist:

- Kõiki toote paigalduskohas kohaldatavad direktiive, standardeid ja ohutusnõudeid.
- Kõiki toote jaoks ettenähtud tingimusi ja andmeid.
- Kavandatava rakenduse tingimused.

Lisaks sellele viige läbi riskihindamine seoses kavandatava rakendusega kooskõlas heakskiidetud riskihindamismeetodiga ja rakendage riskihindamise tulemuste põhjal asjakohased ohutusmeetmed. Võtke arvesse tagajärgi, mis kaasnevad toote süsteemi või tehasesse paigaldamise või integreerimisega.

Toote kasutamisel tuleb kõik tööd ja muud tootega seotud tegevused teha järgides kasutusjuhendis ja tüübisildil märgitud tingimusi ning kõiki toote paigalduskohas kehtivaid direktiive, standardeid ja ohutusnõudeid.

**2.3 Precautions for use**

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 110 °C (for example, solar systems)
- Hazardous area (EX)
  - If the product is operated in hazardous areas, sparks may cause deflagration fires or explosions

**2.4 Qualification of personnel**

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.**

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## 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 G1½ connection and a length of 180 mm). The flow can be connected at the left or the right side. Optional temperature probes can be mounted to all ball valves.

### 4.1 Overview

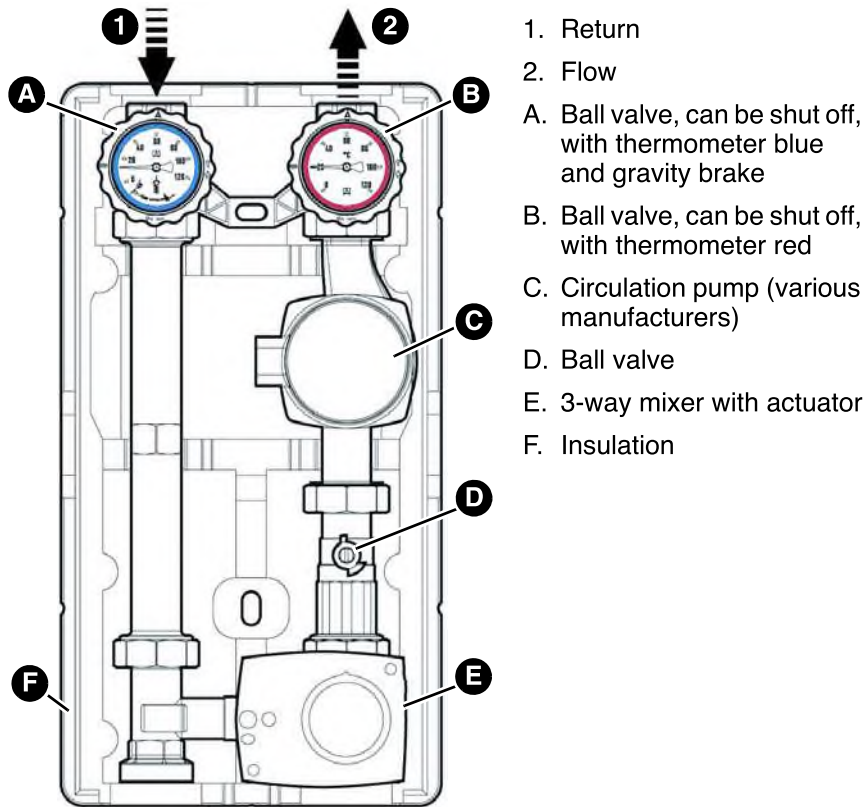


Fig. 1: PrimoTherm@ components

4.2 Dimensions and connections

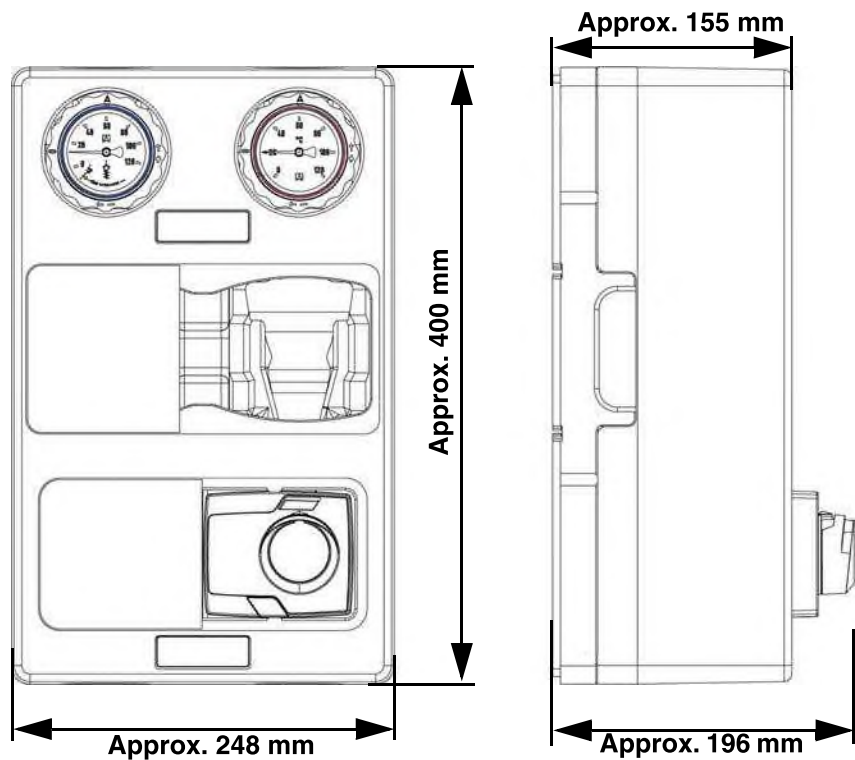


Fig. 2: PrimoTherm® K short version

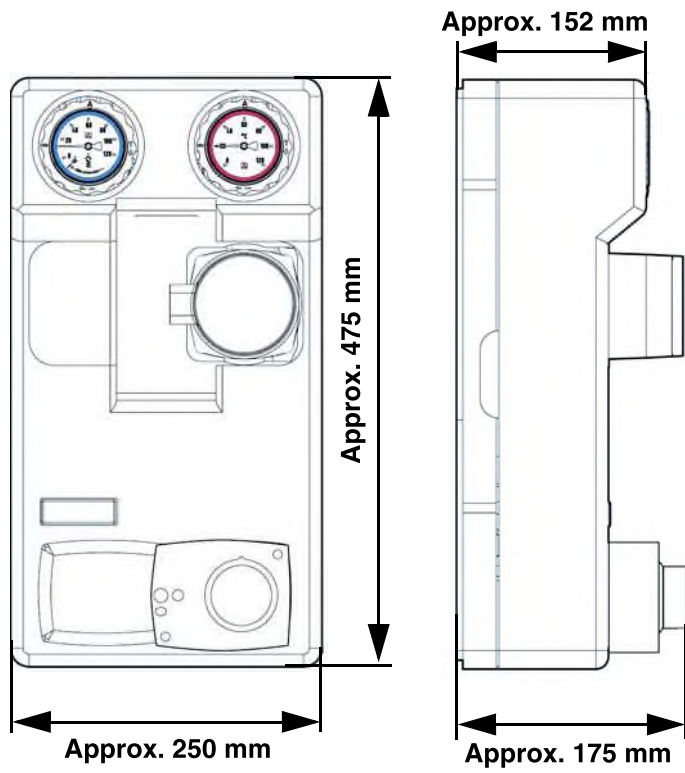


Fig. 3: PrimoTherm@ standard version

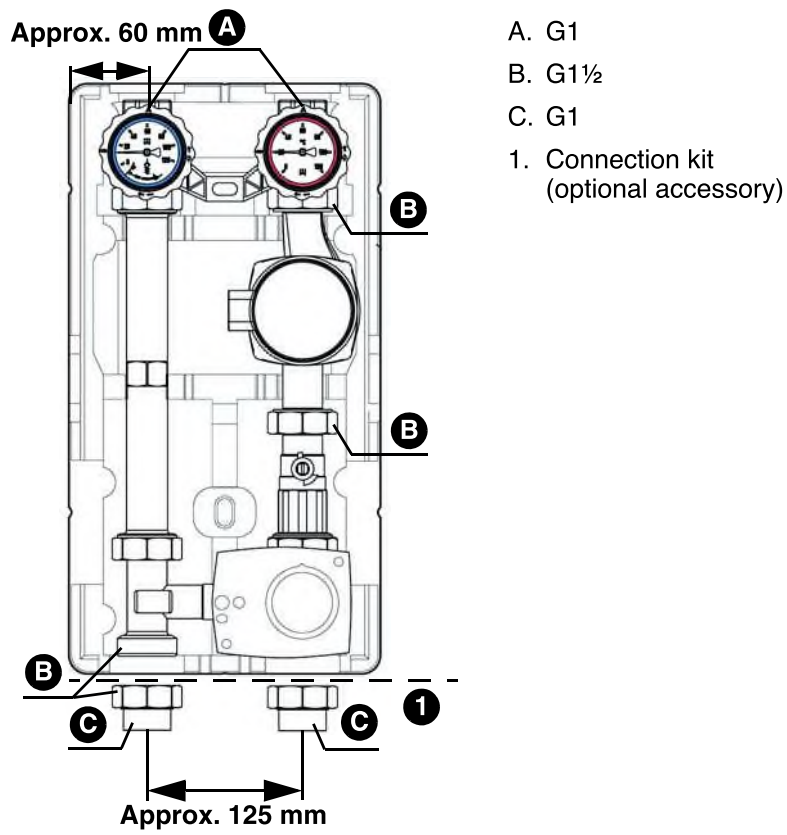


Fig. 4: PrimoTherm® standard version with optional connection kit

## 4.3 Function

### Version 180-2

⇒ If version 180-2 is used, ensure that the mixer motor can be controlled by the boiler controller or by another controller.

1. Verify that the boiler used features a motor controller.

### Version 180-3

Version 180-3 is used for storage tank charging of solid fuel boilers. The thermostatic mixing valve mixes the temperature of the return to the heat generator to the permanently adjusted minimum temperature (60 °C).

## 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 data

Parameter	Value	
<b>General specifications</b>		
	<b>PrimoTherm</b>	<b>PrimoTherm K</b>
Dimensions with insulation (W x H x D)	250 x 475 x 152 mm	250 x 400 x 196 mm
Weight 180-2 DN 25 without circulation pump	Approx. 5.5 kg	Approx. 3.0 kg
Material of fittings	Brass, steel, plastic	
Material of seals	EPDM, PTFE	
Insulation material	Polypropylene EPP	
System pressure	Max. 10 bar Observe maximum pressure of circulation pump used.	
Axis distance	125 mm	
System connections	From heat generator: G1½ male thread; to consumer: G1 female thread	
Maximum temperature of medium	90 °C (maximum malfunction temperature up to 2 hours: 120 °C)	
Medium	Heating circuit water or heating circuit water with a glycol concentration of 50 %	
<b>Flow coefficient (m<sup>3</sup>/h at one bar differential pressure)</b>		
180-2	4.8	5.3
180-1	5.8	6.2

## 5 Mounting

Unless otherwise specified, all information on mounting relates to the installation type "**flow right**". Conversion is described in chapter "Interchanging flow/return" on page 20.

### 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" on page 24.

### 5.2 Installing the circulation pump

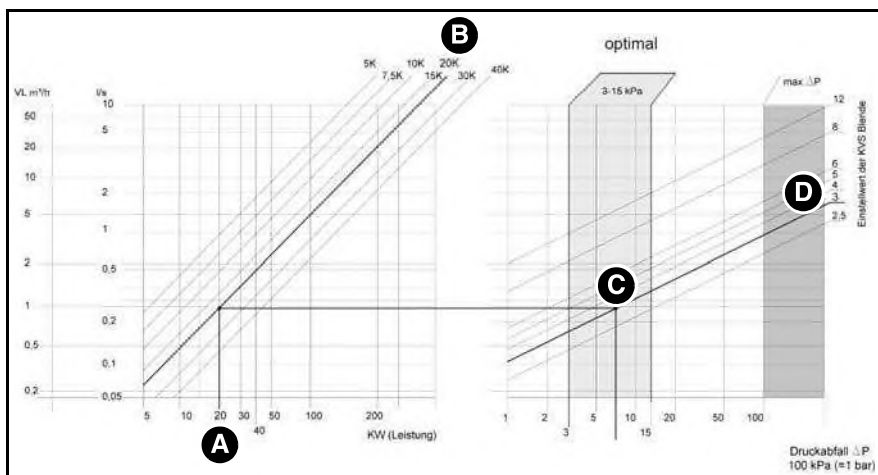
If you use a product version without pre-assembled circulation pump, you must install a suitable circulation pump with a length of 180 mm yourself.

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

1. Observe the specifications of the pump manufacturer.
2. Mount the pump.
  - Connection thread G1½, tightening torque 60 Nm.

### 5.3 Determining the Kvs flow coefficient value

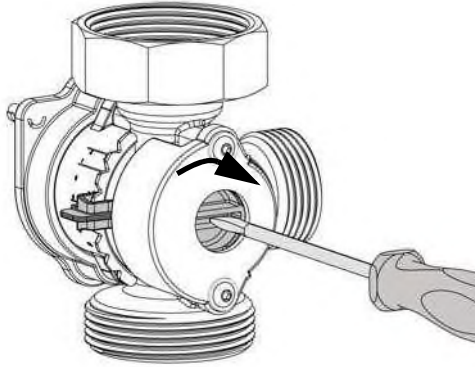
The adjustment value for the flow efficient Kvs of the orifice is determined on the basis of the power of the heating circuit (KW) and the temperature spread between flow and return (K corresponds to °C); refer to the following table.



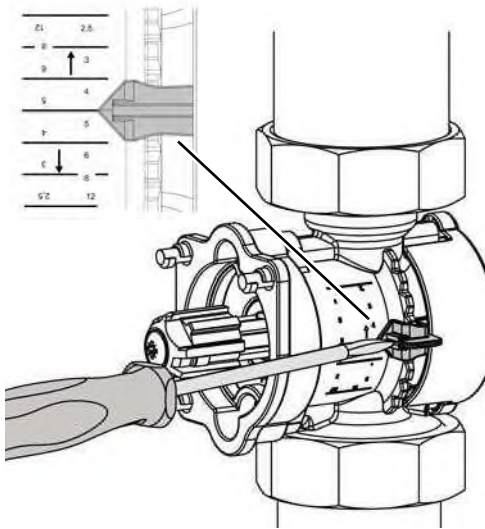
#### Example:

- A. Capacity: 20 KW
- B. Temperature spread: 20 K -> 20 °C
- C. Point of intersection in the centre of the optimum range 3-15 kPa
- D. Read adjustment value: 3 (in m<sup>3</sup>/h at a differential pressure of 1 bar)

## 5.4 Adjusting the Kvs flow coefficient



1. Adjust the flow coefficient Kvs with a screwdriver.
2. Verify correct direction of flow.
  - The numbers must be readable the correct way round.



Alternative, if the mixer has already been installed:

1. Adjust the flow coefficient Kvs via the scale.

## 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.**

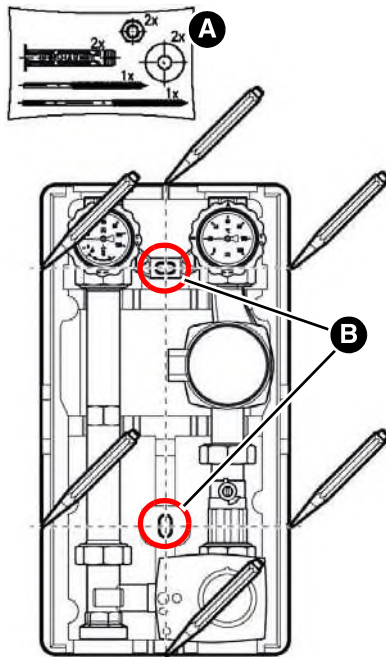
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#### **5.5.1 Mounting the product to a boiler manifold KSV**

1. Remove the upper insulation.
2. Screw the pump assembly to the boiler manifold KVS.
3. Screw the pipes of the heating circuit to the top connections of the product (no mechanical stress).
4. Refit the upper insulation.

## 5.5.2 Wall mounting

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

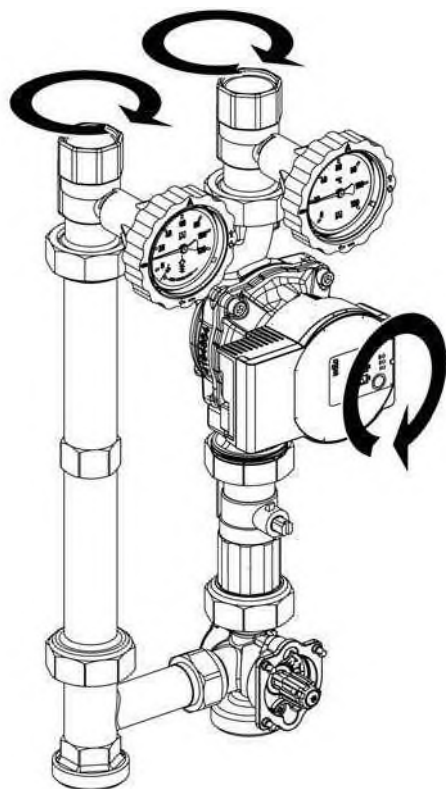


1. Verify that the wall can carry the product.
2. Remove the upper insulation.
3. Hold the product to the wall and align it with a level.
4. Draw six marks.
5. Interconnect the opposing marks.
6. Drill holes ( $\varnothing$  10 mm) at the position of the two centre marks (B).
7. Mount the product using the enclosed dowels and screws (A).  
 - long hanger bolt at the top  
 - short hanger bolt at the bottom

Fig. 5: Mounting the product to a wall

## 5.6 Interchanging flow/return

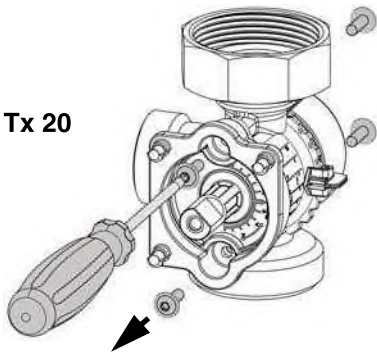
The flow is at the right side when the product is shipped.



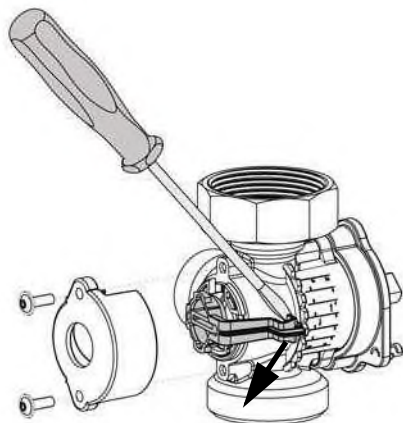
1. Uninstall the actuator.
2. Interchange left and right lines.
3. Turn the pump head.

## 5.6.1 Converting the mixer/bypass

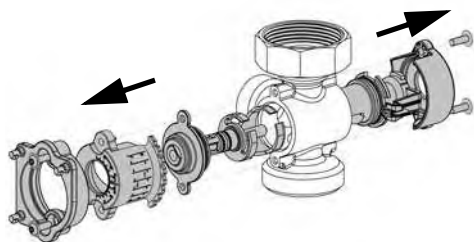
Tx 20



4. Remove the screws.



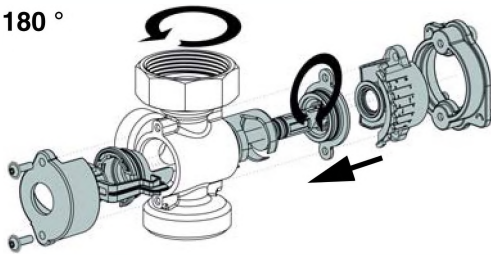
5. Push the pointer of the scale out of the raster using a screwdriver.



6. Remove the plastic components.

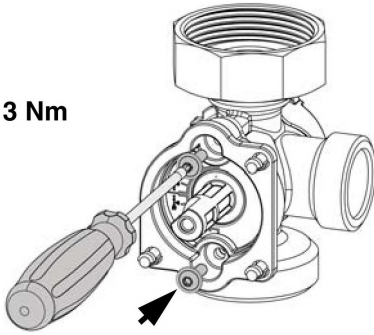
# Mounting

180 °



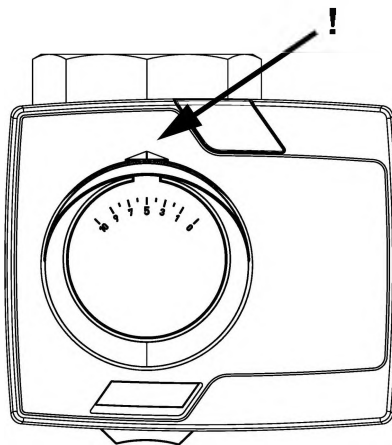
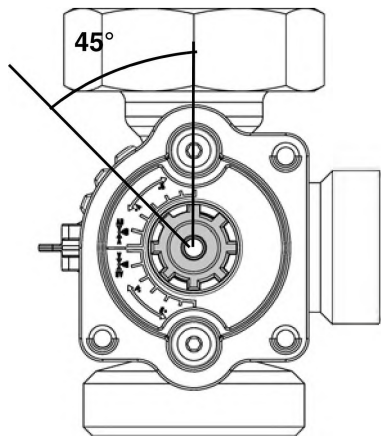
- 7. Turn the mixer by 180°.
- 8. Mount the plastic components back to the mixer.

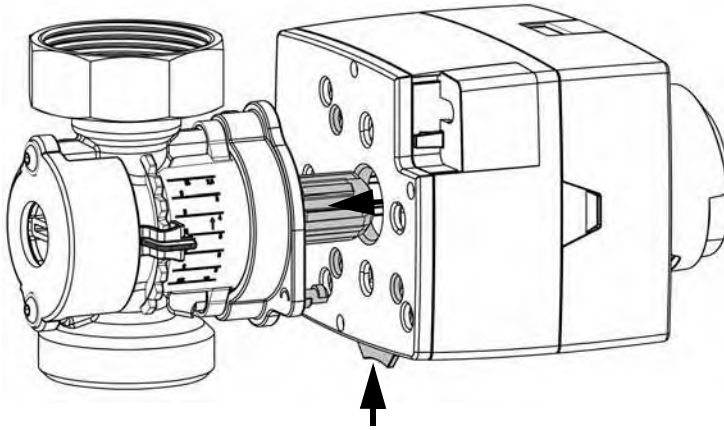
3 Nm



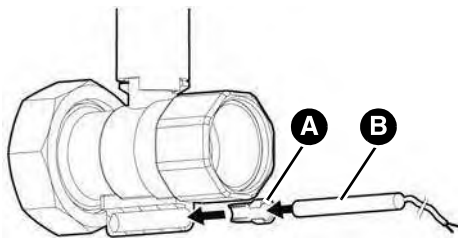
- 9. Install the screws.  
- Tightening torque 3 Nm

## 5.6.2 Mounting the actuator





### 5.6.3 Mounting the temperature probe (optional)



Depending on the type of the temperature probe (B), it may be necessary to shorten the ferrule (A).

## 5.7 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 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 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 a boiler manifold KSV" or in chapter "Wall mounting".

## 5.8 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.

**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.**





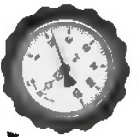

1. Connect the circulation pump and the actuator in accordance with the instructions of the manufacturer.

## 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 ball 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 to ball 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 Thermometer ball valves

Thermometer ball valves			
	0°	Normal operation: Gravity brake active, ball valve open	
	90°	Maintenance: Ball valve closed	
	45°	Commissioning, filling, venting, draining and flushing: Both ends open (gravity brake not active)	

### 6.2 Operation

Proper operation is only possible if the thermometer ball valves and the ball valves are open (0° setting, see chapter "Thermometer ball valves").

## 7 Maintenance

### Maintenance intervals

When	Activity
Monthly	Perform a visual inspection of the heating system and verify tightness.
If required	Replace the circulation pump.

## 8 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.

### 8.1 Replacing the circulation pump



## DANGER

#### ELECTRIC SHOCK CAUSED BY LIVE PARTS

- Disconnect the mains voltage supply 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 mains voltage.
2. Close all ball valves and drain the affected system part.
  - In the case of versions with ball valve below the circulation pump, it is sufficient to close the two ball valves upstream and downstream of the circulation pump.
3. Replace the circulation pump. Use new seals and tighten the screw connections with 60 Nm.
4. Open all ball valves and perform a tightness test.
5. Fill and vent the system.
6. Connect the circulation pump to supply voltage.

### 9 Decommissioning, disposal

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

Electronic components must not be disposed of together with the normal household waste.



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

### 10 Returning the device

Get in touch with us before returning your product.

### 11 Warranty

See our terms and conditions at [www.afriso.com](http://www.afriso.com) or your purchase contract for information on warranty.