



WATER TECHNOLOGY

## Avensys

### Exposed Dual Thermostat Mixing Valve



34 028

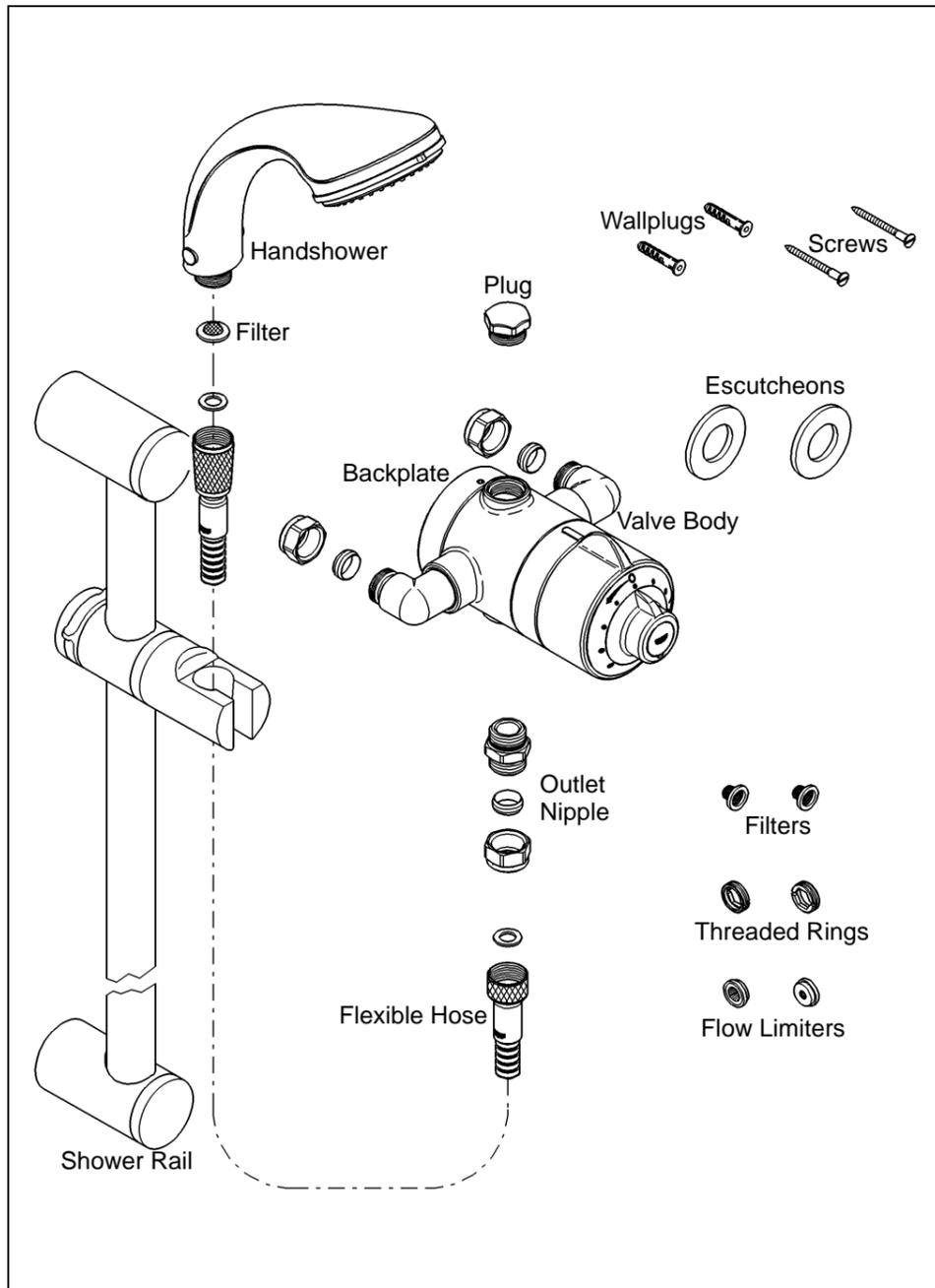


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### Installation Instructions and Operating Guide

Please leave this document with the user after finishing installation!

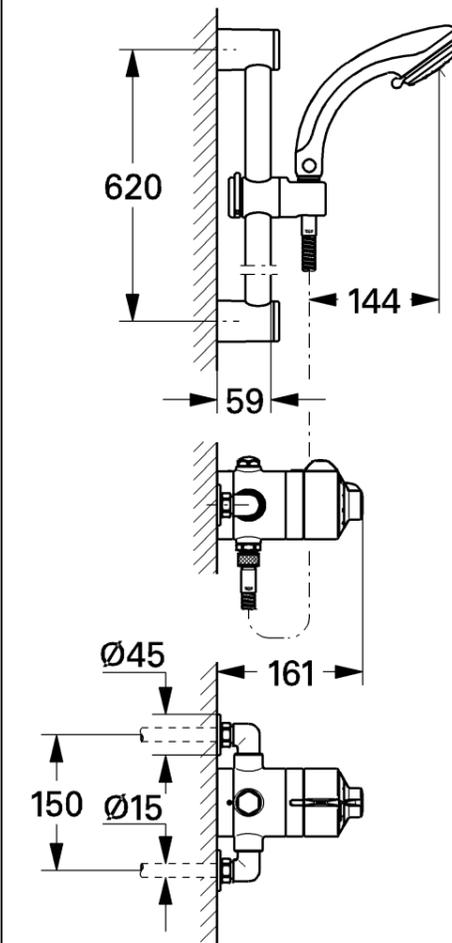
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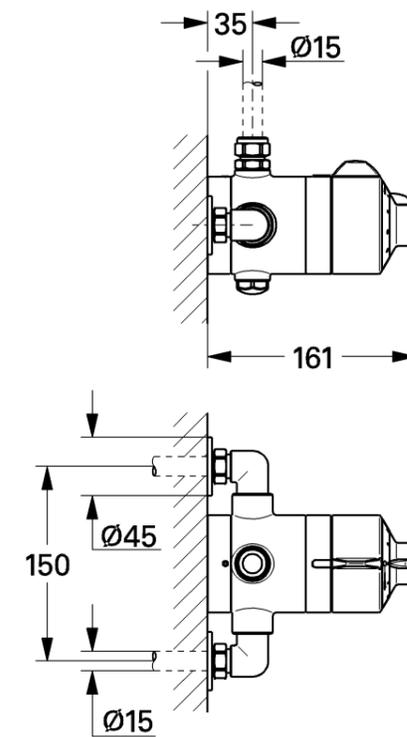
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Installation Dimensions (mm)

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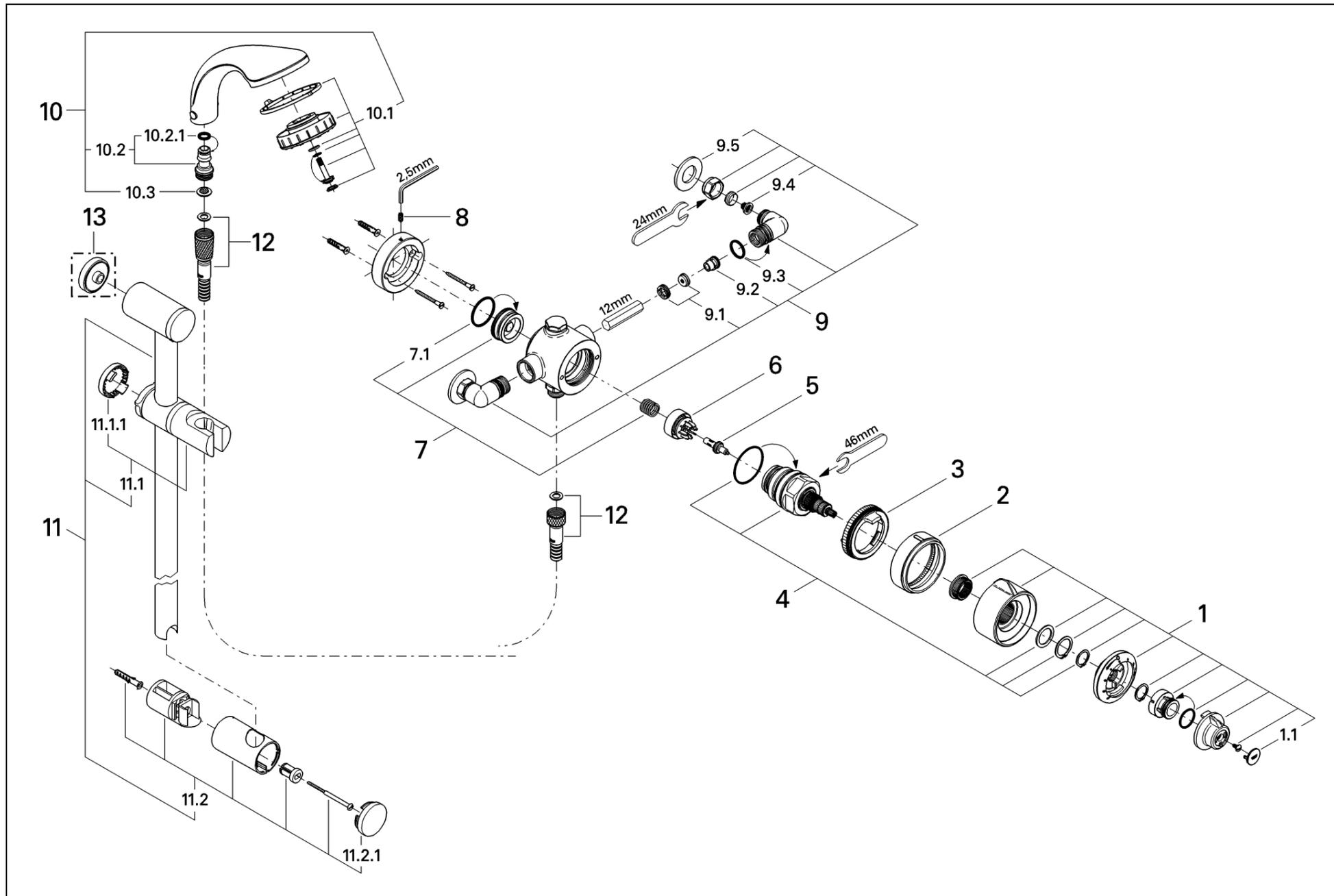


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Spare Parts



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### Dear Customer,

Thank you for choosing a GROHE product. Please follow these instructions carefully and you will enjoy many years of reliable service from this fitting.

## Spare Parts

No.	Description	Cat.-No.	Pack- ing unit	No.	Description	Cat.-No.	Pack- ing unit
1	Handle complete	47 597	1	9.5	Escutcheon	00 197	2
1.1	Cap	00 090	1	10	Handshower	28 185	1
2	Cover Ring	00 565	1	10.1	Shower spray plate	45 655	1
3	Stop ring	47 593	1	10.2	Coupling piece	28 635	1
4	Control unit	47 598	1	10.2.1	O-ring seal	01 224	10
5	Wax element	00 798	1	10.3	Filter	07 002	2
6	Slider	07 587	1	11	Shower rail	28 620	1
7	Seat with spring	47 594	1	11.1	Sliding shower holder	45 650	1
7.1	O-ring seal	03 169	5	11.1.1	Cover cap	45 652	1
8	Set screw M5x12	02 125	5	11.2	Shower rail holder	45 651	1
9	Connection elbow	12 111	2	11.2.1	Cover cap	45 652	1
9.1	Flow limiter set	46 428	1	12	Flexible hose	28 161	1
9.2	Non-return valve	06 544	2				
9.3	O-ring seal	01 287	10		<b>Optional accessory</b>		
9.4	Filter	06 768	5	13	Compensation ring	45 406	1

## Technical Data

### Functioning Principle

This **Avensys** mixing valve is a thermostatic mixer with wax cartridge. Turning the shut-off handle in a counter-clockwise direction opens the water flow. Turning the temperature handle in a counter-clockwise direction sets the temperature from cold to hot.

This product is supplied with connectors to fit  $\varnothing$  15mm pipework. Connection should be hot left, cold right as viewed from the operating position. The product is preassembled.

### Plumbing Systems

This thermostatic mixing valve is suitable for installation with:

- Gravity-fed plumbing systems with an open vented hot water cylinder
- Cold water storage cistern
- Mains pressure unvented and instantaneous thermal hot water storage systems
- Multi-point gas water heaters
- Combination boilers with a modulating hot water output

### Supply Pipework

Ensure the supply pipework is thoroughly flushed before installing the mixing valve. GROHE recommends installing isolating valves upstream of the mixing valve for servicing purposes.

### New Water Regulations

This GROHE-product should be installed to comply with the New Water Regulations covering backflow prevention. It must also be installed in accordance with local bye-law requirements.

### Specification

- Exposed thermostatic shower mixing valve, concealed or exposed supplies
- Flow pressure
  - Low pressure 0.1 - 1 bar
  - High pressure 1 - 10 bar

- Avoid major pressure differences between hot and cold water supply:

For different supply pressures use enclosed flow limiters, see chapter "**Exposed Installation**" on page 7.

- Max. operating pressure 10 bar
- Max. test pressure 16 bar
- Mixed water flow rate without downstream resistance:

Pressure	0.1	0.2	0.3	0.4	0.5	0.6	bar
Flow rate	7.5	10.5	14	17	18.5	21	l/min

- Temperature
  - Max. (hot water inlet) 80 °C
  - Recommended (for economy) 60 °C
  - Maximum temperature is reached when the temperature handle is rotated 270° in a counter-clockwise direction.
- Water connection hot - LH  
cold - RH

## Installation

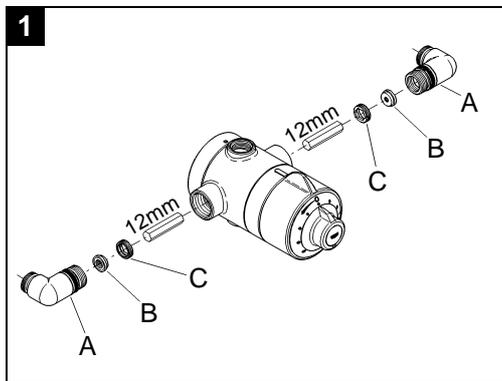
### Exposed Installation

The thermostatic shower mixing valve can be installed in two different ways. The mixing outlet can be at the bottom for use with a handshower or at the top for use with a headshower.

If there is a pressure differences between the hot and cold water supply install attached flow limiters in the water connection elbows, see table below.

Cold Water Inlet	Warm Water Inlet	Connection	
		Cold	Warm
0.1 - 1 bar	0.1 - 1 bar	without	without
1 - 5 bar	1 - 5 bar	7 l (green)	5 l (yellow)
1.5 - 10 bar	0.1 - 0.5 bar	7 l (green)	without
	> 0.5 bar	7 l (green)	5 l (yellow)

- Screw out connection elbows (A), see Fig. [1].

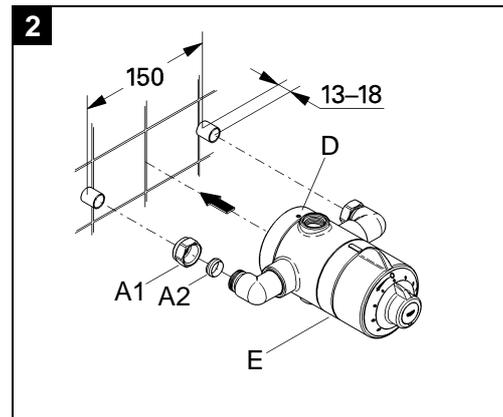


- Install flow limiters (B) in accordance to table above with threaded rings (C) by using a 12mm socket spanner.

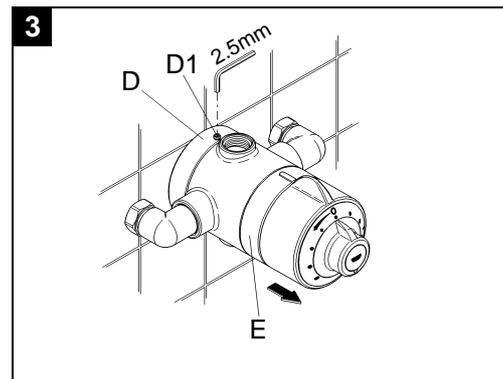
The thermostatic mixing valve is fixed to the wall via the backplate and connected to the supply pipes by a pair of elbows. The elbows are preassembled to the valve body. The valve body is fixed to the backplate by a set screw.

In case of exposed installation with supply pipes from above or below rotate inlet elbows 90° and connect to 15mm supply pipes.

1. Loosely screw on nuts (A1) with compression rings (A2), see Fig. [2].



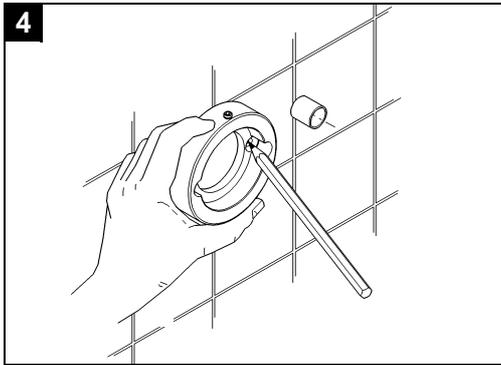
2. Ensure that the projections of the supply pipes, (i.e. exposed beyond the wall surface) have the correct length (13 - 18mm) and distance (150mm).
3. Place the valve body (E) with the elbows and backplate (D) to the supply pipes.
4. Loosen set screw (D1), see Fig. [3].



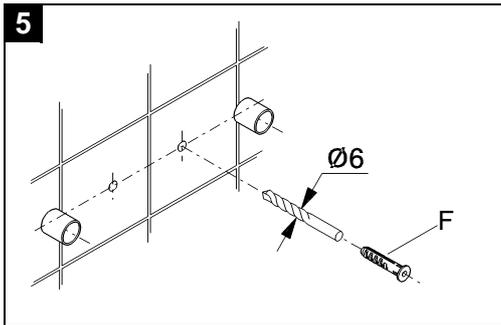
5. Remove valve body (E) from supply pipes and hold backplate (D) in position.

## Installation

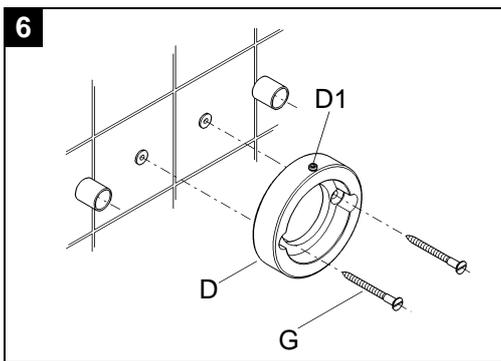
6. Mark the holes in the backplate for wall-plugs, see Fig. [4].



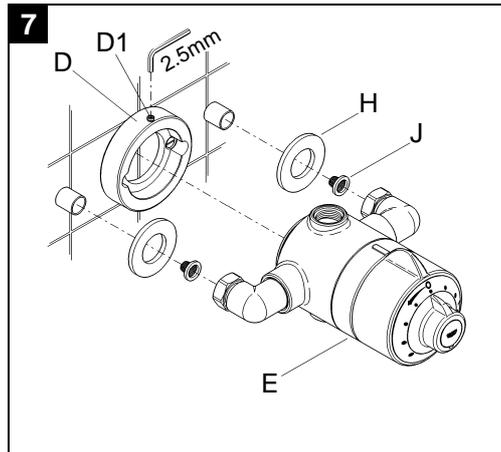
7. Drill the holes (6mm) for the wallplugs (F) and fit them into the wall, see Fig. [5].



8. Fix the backplate (D) with set screw (D1) on top or bottom to the wall with screws (G), see Fig. [6].



9. Slide the escutcheons (H) over the supply pipes and install filters (J), see Fig. [7].

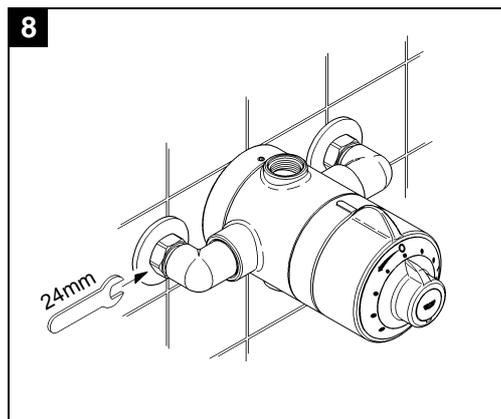


10. Slide the valve body (E) with elbows and compression nuts loosely over the supply pipes.

**The body must touch the backplate. If not, check pipes for length again.**

11. Fix the valve body (E) to the backplate (D) by tightening set screw (D1). **Do not** use excessive force to tighten the set screw (D1).

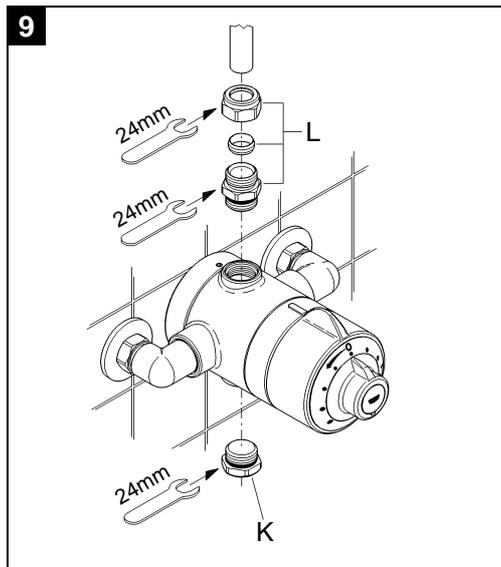
12. Tighten the compression nuts (torque min. 20 Nm), see Fig. [8].



## Installation

### Pipe Connection

1. Close free outlet with plug (K), see Fig. [9].



2. Thread the outlet nipple (L) with the O-ring seal into the valve body outlet.
3. Insert pipe and tighten outlet nipple (L).

### Open hot and cold water supply.

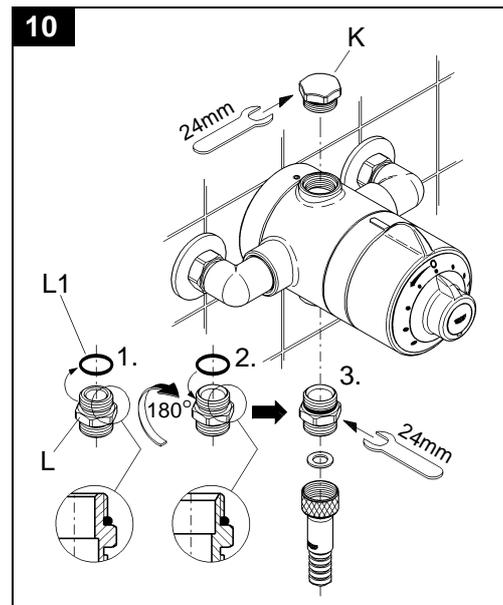
Check the pipework and connections to the thermostat mixing valve for leaks.

For **reversed supplies installation** the complete mixing valve must be rotated 180°.

Therefore shut-off handle, temperature handle, cover ring and stop ring must be dismantled, rotated 180° and reinstalled.

### Shower Hose Connection

1. Close free outlet with plug (K), see Fig. [10].



2. Remove O-ring seal (L1).
3. Turn outlet nipple (L) 180° and fit O-ring seal (L1).
4. Thread the outlet nipple with the O-ring seal into the valve body outlet.
5. Connect flexible shower hose.

### Open hot and cold water supply.

Check the pipework and connections to the thermostat mixing valve for leaks.

For **reversed supplies installation** the complete mixing valve must be rotated 180°.

Therefore shut-off handle, temperature handle, cover ring and stop ring must be dismantled, rotated 180° and reinstalled.

## Installation

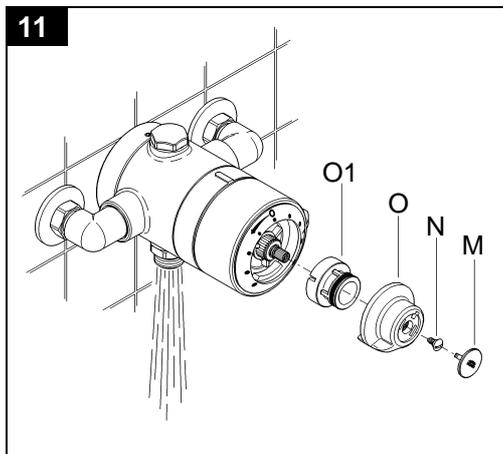
### Adjustment

The temperature of the outflowing water is factory set to 43 °C. A temperature adjustment is necessary if:

- The maximum water temperature measured at the outlet varies from the factory set temperature.
- After any maintenance operation on the thermostatic cartridge.

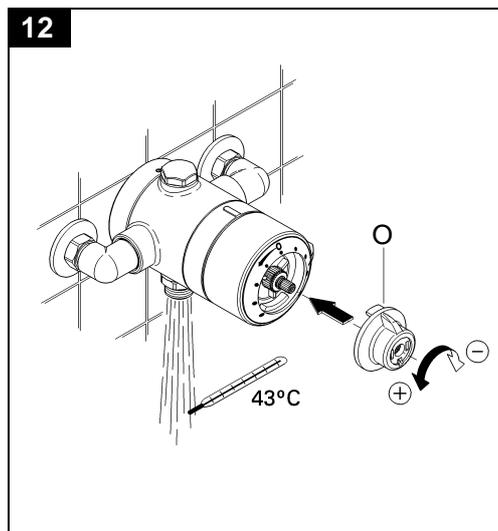
**For temperature adjustment please proceed as follows:**

1. Turn the shut-off handle counter-clockwise to fully open position and open water flow.
2. Turn the temperature handle counter-clockwise to maximum hot water temperature.
3. Lever out cap (M), see fig. [11].



4. Unscrew screw (N).
5. Pull off temperature handle (O) and adapter (O1).

6. Check the temperature of the outflowing water with a thermometer, see Fig. [12].

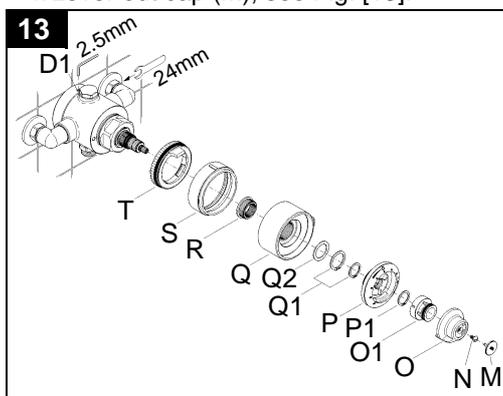


7. Push on temperature handle and adjust temperature to 43 °C.  
Turn clockwise (to reduce temperature) or counter-clockwise (to increase temperature).
8. Pull off temperature handle (O) and reinstall in hot water position as described in Fig. [11] in reversed direction.

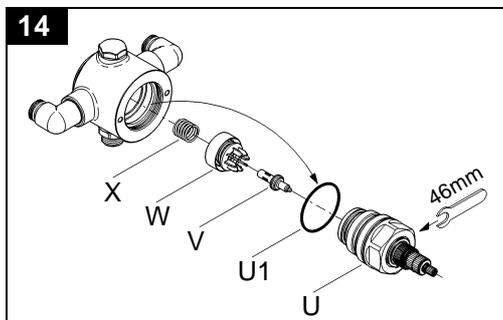
## Maintenance

### I. Control Unit

1. Shut off hot and cold water supply!
2. Turn the shut-off handle counter-clockwise to fully open position and open water flow.
3. Turn the temperature handle counter-clockwise to maximum hot water temperature.
4. Lever out cap (M), see Fig. [13].



5. Unscrew screw (N).
6. Pull off temperature handle (O) and adapter (O1).
7. Remove circlip (R1) and pull off scale ring (P).
8. Remove circlips (Q1), washer (Q2) and pull off shut-off handle (Q).
9. Pull off adapter (R).
10. Pull off cover ring (S) and stop ring (T).
11. Loosen set screw (D1).
12. Unscrew connections and take valve from the supplies.
13. Screw out control unit (U), see Fig. [14].

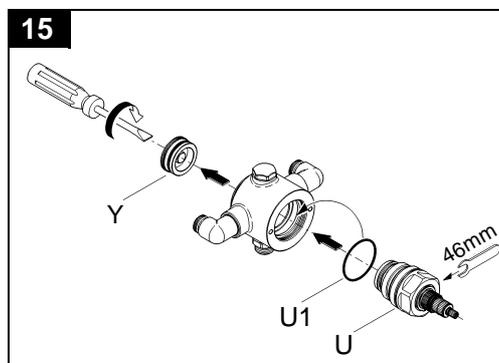


14. Take out O-ring seal (U1).
15. Take out wax element (V), slider (W) and spring (X).

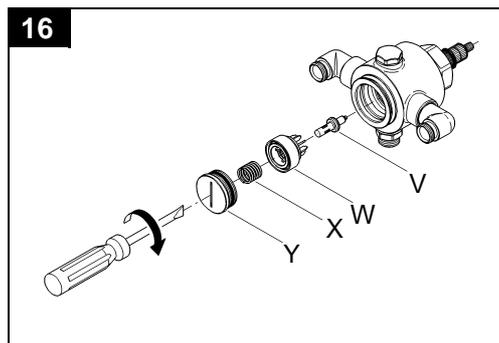
Inspect and clean all parts, replace if necessary and grease with special valve grease (ref. No. 18 012).

### Reinstall control unit

1. Unscrew seat (Y) with O-ring, see Fig. [15].



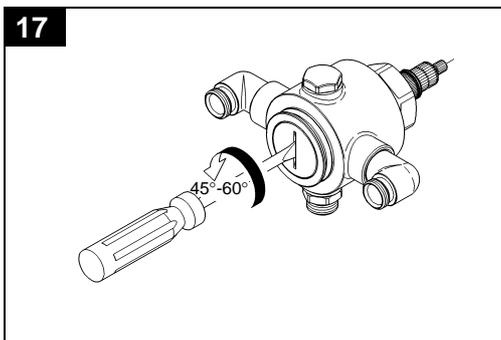
2. Reinstall O-ring seal (U1).
3. By turning the unit stem counter-clockwise make sure the control unit (U) is in open position and screw in.
4. Reinstall wax element (V), slider (W) and spring (X) from behind, see Fig. [16].



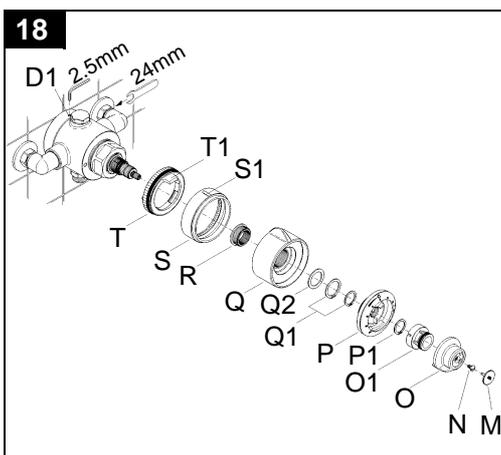
5. Close control unit (U) by turning the unit stem clockwise to closed position.
6. Tighten seat (Y) in the valve body.

## Maintenance

7. Unscrew seat 1/8 to 1/6 turn (45° to 60°), see Fig. [17].



8. Slide valve on the supplies, see Fig. [18]



9. Tighten set screw (D1) and compression nuts.  
 10. Push on stop ring (T) with catch (T1) on top.  
 11. Reinstall cover ring (S) with mark (S1) on top.  
 12. Push on adapter (R).  
 13. Push on shut-off handle (Q) in closed position.  
 14. Reinstall washer (Q2) and fix with cir-clips (Q1), the smaller one is cloth to the shut-off handle.

15. Push on scale ring (P) with 0 on top and fix with clip (P1).

16. Push on adapter (O1).  
 17. Reinstall the temperature handle (O) in position hot water.  
 18. Fix temperature handle with screw (N) and cover with cap (M).

Readjustment is necessary after every maintenance operation on the control unit, see chapter “**Adjustment**” on page 10.

### II. Non-return valve, see spare parts drawing on page 3, 4. and Fig. [13].

1. Same procedure as for control unit, see Fig. [13], points 1, 11 and 12.  
 2. Unscrew elbow, see spare parts drawing on page 3 and 4.  
 3. Remove threaded ring with flow limiter (9.1) if installed.  
 4. Take out and replace non-return valve (9.2).

Reassemble in reverse order.

Only genuine GROHE replacement parts must be used.

## Care

We want to ensure that you get long-lasting satisfaction and pleasure from your GROHE fitting. Therefore, please read the following care instructions because damage to the surface and underlying material resulting from improper treatment is not covered by our guarantee.

Do not use any abrasive sponges or scouring agents for cleaning. We also advise not to use cleaning agents containing solvent or acid, limescale removers, household vinegar and cleaning agents with acetic acid. They are aggressive to the surface and will leave

your fitting dull and scratched. As the formulations of commercially available cleaning agents frequently change, we cannot guarantee they will provide the gentle care our fitting deserves.

Clean the fitting with a little soap and a moist cloth only, then simply rinse off and wipe dry. You can avoid lime spots by drying the fitting each time it is used. If lime deposits do occur, remove them with **Grohclean** (ref. no. 18 078), our environment-friendly cleaning liquid. **Grohclean** is specially formulated to gently clean the surface of our fittings.

## Trouble Shooting

Problem	Cause	Remedy
Thermostatic valve opens through hot	Hot and cold water supplies have been connected in reverse	Rotate the thermostatic mixing valve
Range of temperature adjustment restricted	High pressure difference between hot and cold water supply	Install flow limiter see chapter <b>Exposed Installation</b>
Shower insufficiently cold or hot	Adjustment incorrectly set Hot water supply temperature too low	Refer to the instructions in chapter <b>Adjustment</b> Check hot water source temperature setting
No flow of hot or cold water	Either the hot or cold side is not fully pressurized Debris caught inside the inlet of the control unit	Replace non-return valve, refer to chapter <b>Maintenance</b> Remove mixing valve and flush out or remove any debris lodged inside the hot or cold inlets or filters
Hot water emerges to cold water supply or vice versa	Non return valves are damaged in cause of lime	Replace non-return valve, refer to chapter <b>Maintenance</b>

## Guarantee

### Guarantee declaration

Our products correspond to the valid technical and water supply standards as well as the relevant approvals requirements. We guarantee them to be free of design and production faults at the time of delivery and that with correct use and care in accordance with our printed instructions they will function reliably.

### Guarantee period

- The guarantee is valid in private homes for 5 years from the purchase date. Proof of purchase has to be provided when making a guarantee claim.
- By use in commercial or institutional applications the guarantee is valid for 1 year after first use. An extension of the guarantee up to 5 years can be achieved by showing that the product is professionally maintained each year.

To make a guarantee claim, proof of purchase or, the beginning of use is required. The guarantee period is not renewed or increased through supply of spare parts or repair during the guarantee period. The guarantee period for purchased spare parts is the same as for original products.

### Guarantee performance

- A) During the whole guarantee period we will correct all functional defects for which we are responsible (limitations see E + F).
- B) It is our option if we correct the defects by repair or replacement.
- C) During the above guarantee period we will not charge for the cost of parts, travel, working time, freight and packaging needed to effect the correction of defects.
- D) If we are not able to correct the defect we are prepared to supply a replacement product.
- E) Deliberate or careless damage is not covered by this guarantee. If the installation, assembly or care instructions that were valid at the time of installation are not followed or the product is used for a purpose other than that given in the written information the guarantee declaration does not apply. Problems caused by dirt, lime-scale or aggressive cleaners are not covered by the guarantee.
- F) The guarantee becomes void if repairs are not carried out competently or spare parts of non GROHE origin are used.
- G) Replaced parts become the property of GROHE and are to be surrendered to our service personnel or sent to our registered offices.

Please enter date of purchase and installation here.

### Our address

GROHE Limited  
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