GROHE

WATER TECHNOLOGY

Automatic 2000

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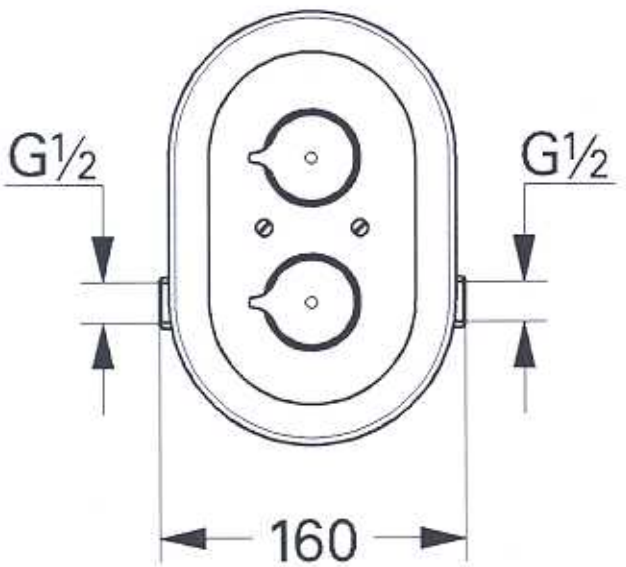
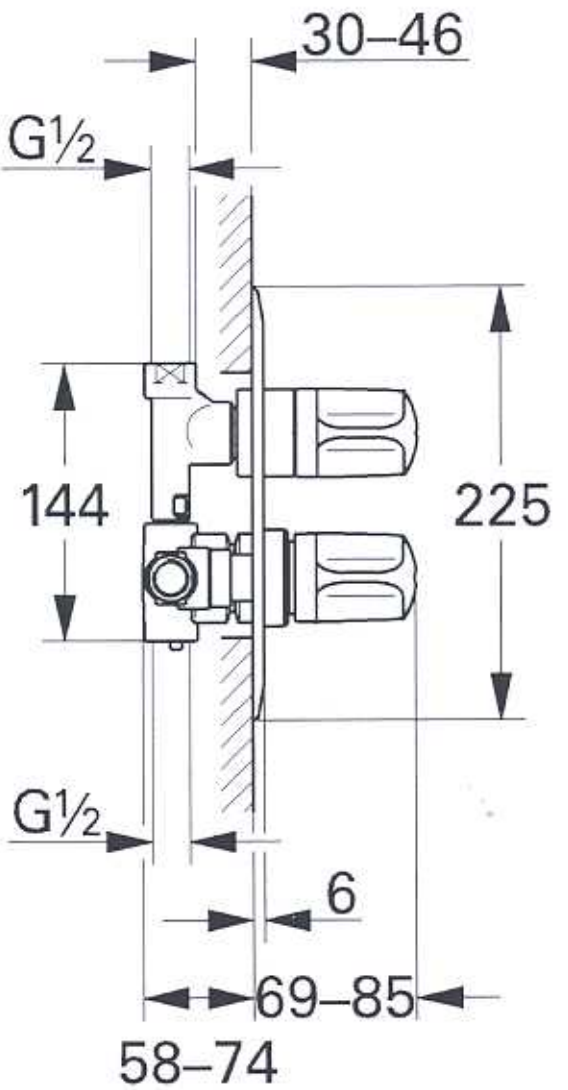
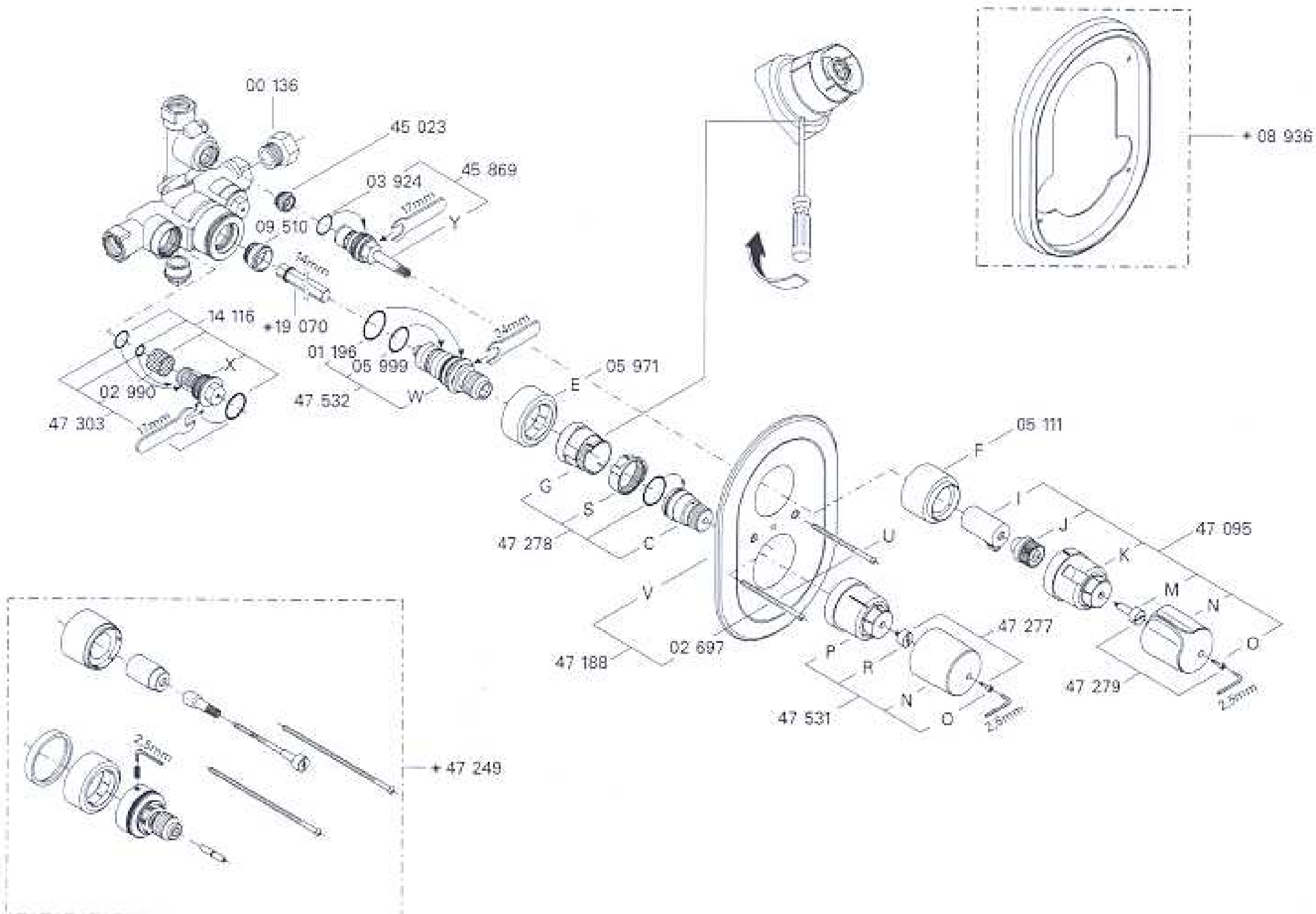




Bitte diese Anleitung an den Benutzer der Armatur weitergeben!
Please pass these instructions on to the end user of the fitting.
S.v.p remettre cette instruction à l'utilisateur de la robinetterie!



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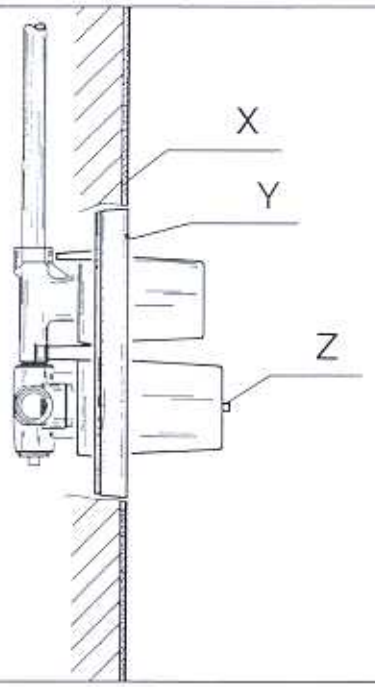

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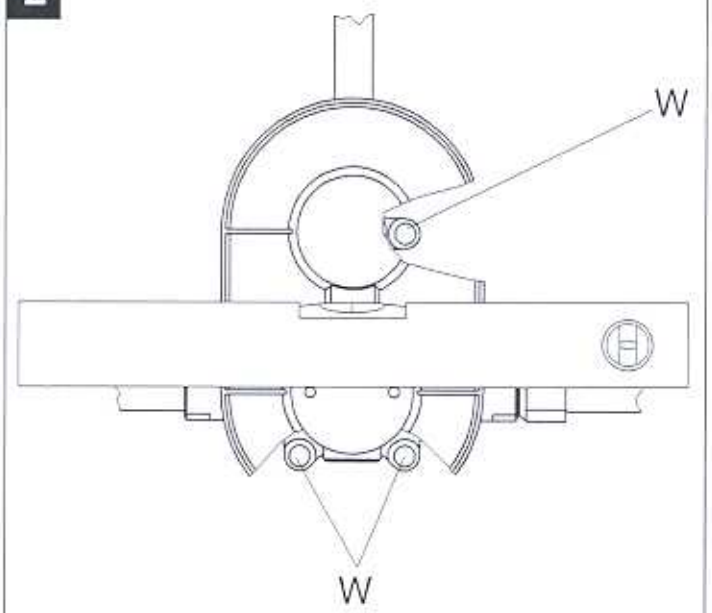

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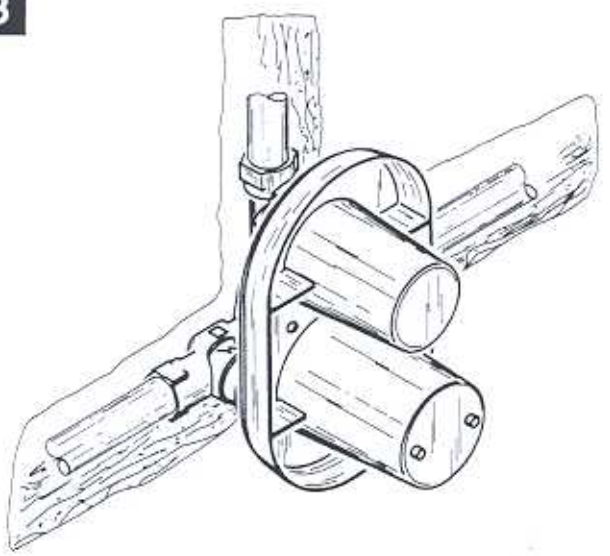

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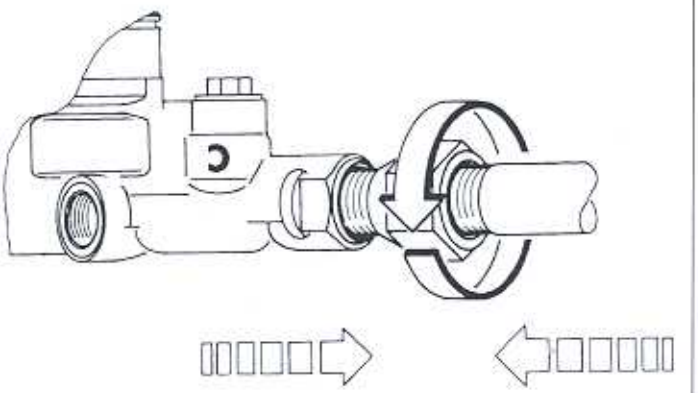

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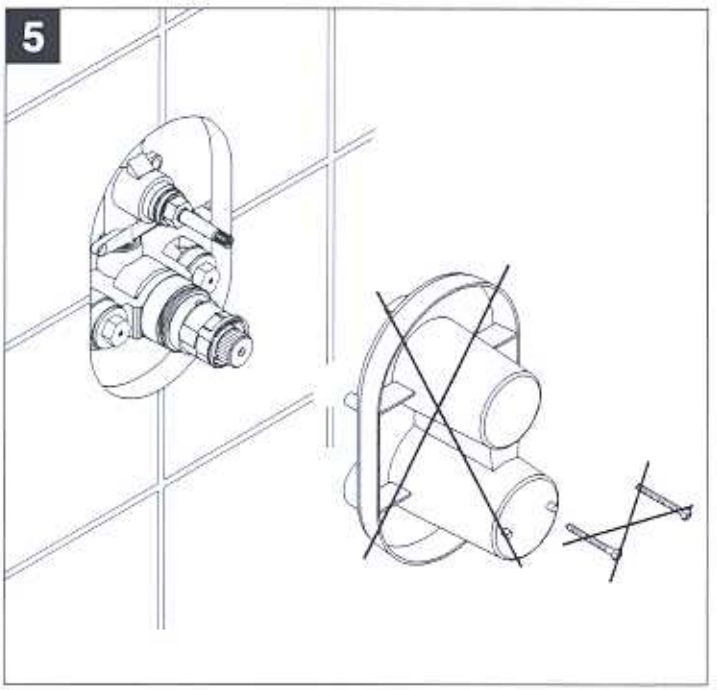

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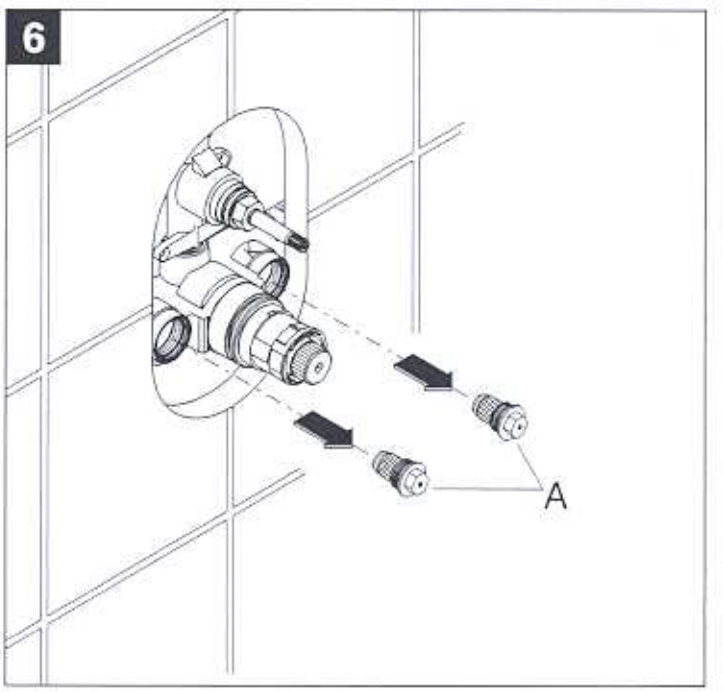

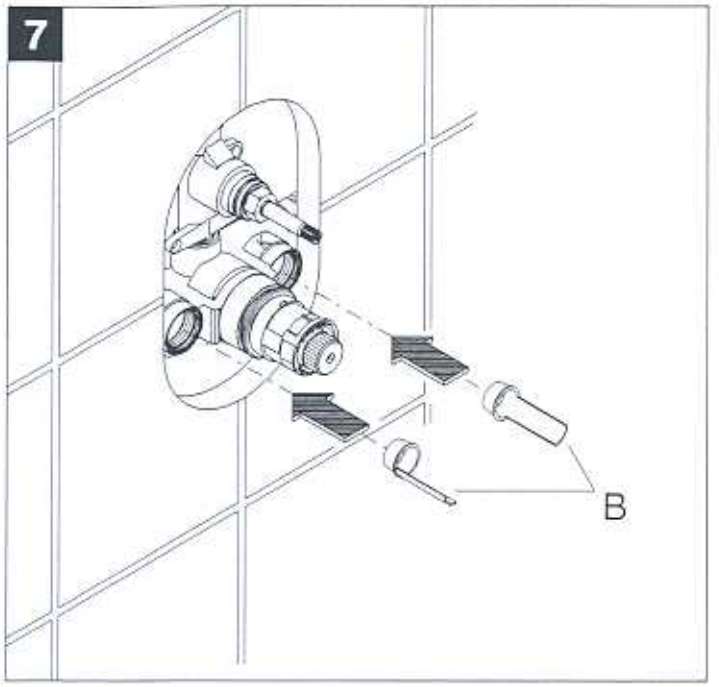
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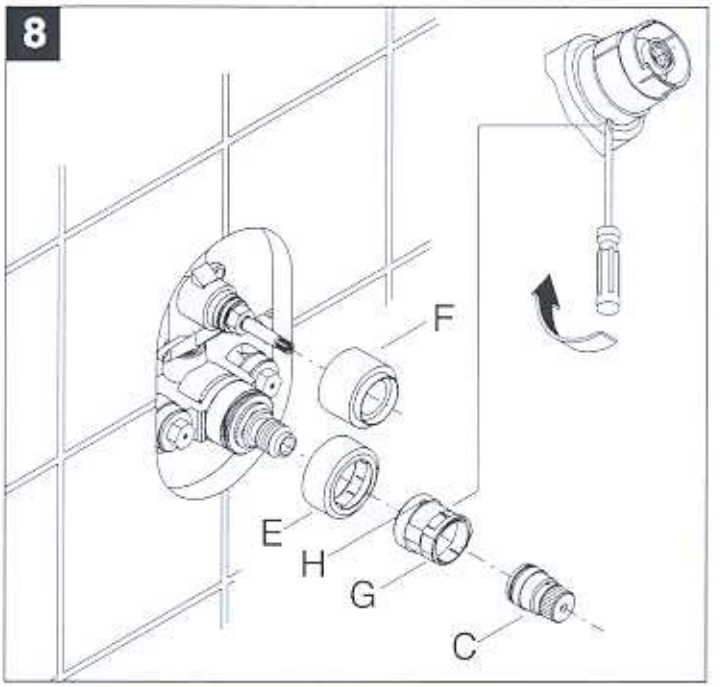
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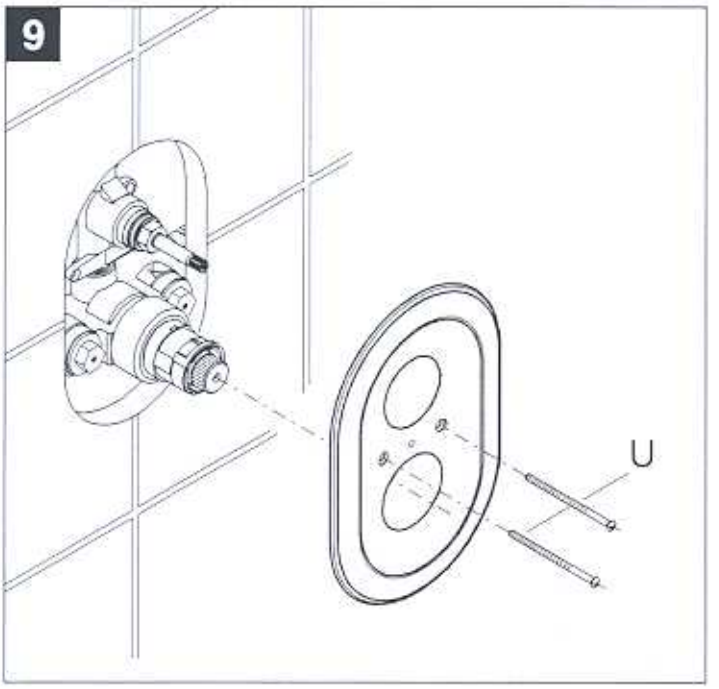
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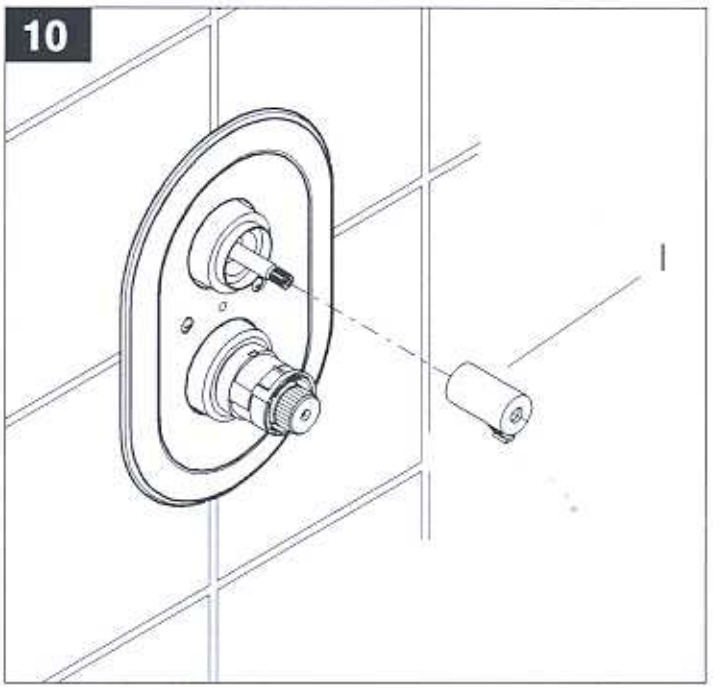
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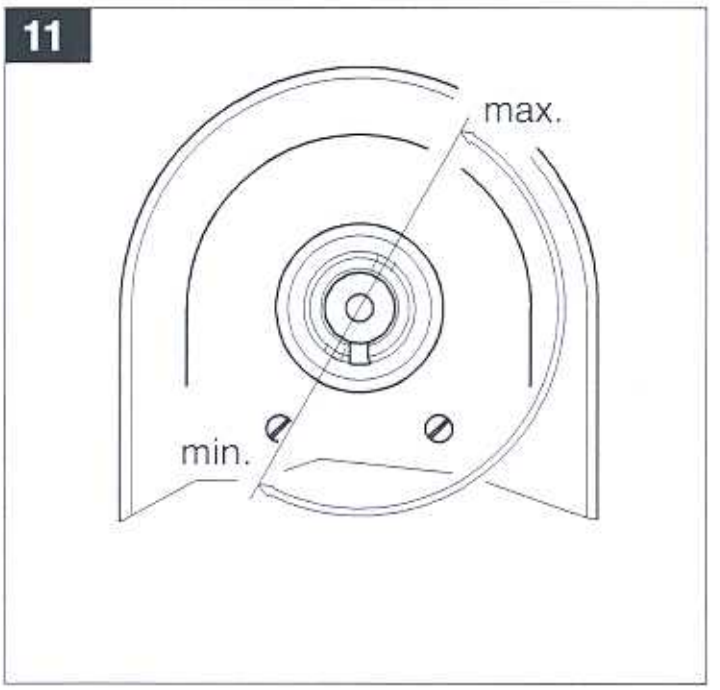
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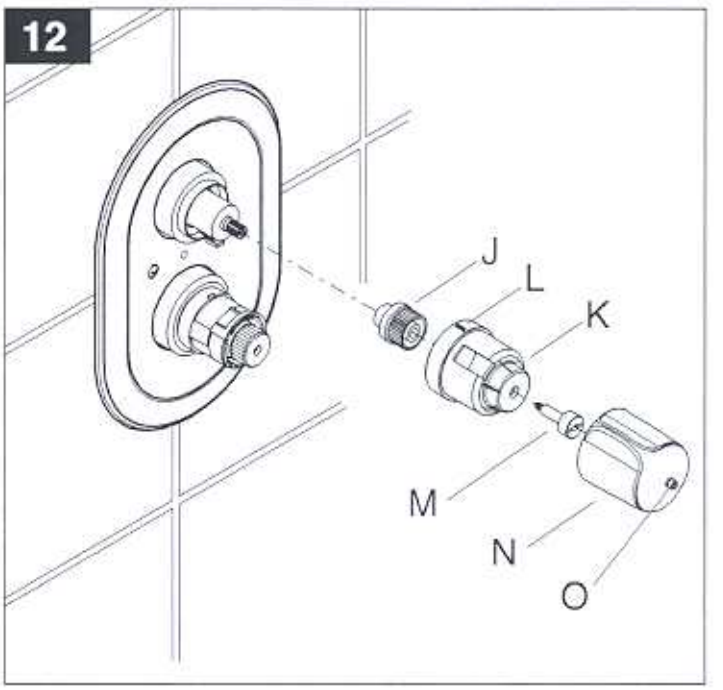
12
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Application

Thermostatic mixers are designed for hot water supplies from pressurized storage heaters and offer the highest temperature accuracy when used in this way. Given sufficient output (min. 18 kW or 250 kcal per min), electrical or gasflow instantaneous heaters are also suitable.

All thermostatic mixers are adjusted at the factory to a flow pressure of 3 bar on both sides.

If temperature deviations occur as a result of unusual installation conditions, the thermostat should be readjusted to suit local conditions (see adjustment).

Technical data

Minimum flow pressure without downstream resistances	0,5 bar
Minimum flow pressure with down-stream resistances	1 bar
Max. operating pressure	10 bar
Recommended flow pressure	1 - 5 bar
Test pressure	16 bar
Flow rate at 3 bar flow pressure	18 l/min
Hot supply temperature	52 - 65 °C
Cold supply temperature	5 - 20 °C
Recommended max. flow temperature (for energy saving)	60 °C

Hot water temperatures at supply inlet min. 2 °C higher than mixed water temperature.

Hot water connection - W - (-H-) **red**	left
Cold water connection - K - (-C-) **blue**	right
Minimum flow rate	= 5 l/min

At flow pressures above 5 bar, we recommend installing a pressure reducer in the supply pipe.

New installations

- Prepare wall ready for mixer.

  Drill holes for thermostat mixer and chase-out grooves for pipelines.

- Observe the installation depth in accordance with the instructions given on the mounting template, see fold-out page II, Fig. [1].

  x = Face of tiles

  y = Front face of mounting template

  z = Resting point for spirit level

- Align the mixer horizontally, vertically and parallel to the wall, see Fig. [2] (place a spirit level on the cams or face of the mounting template).

- Install concealed thermostat mixer module in wall and connect pipelines, see Fig. [3]. The housing is provided with pre-drilled holes (W) to facilitate mounting the fitting to the wall, see Fig. [2].

- Connecting the pipelines to the thermostat is facilitated on the cold water side by the left/right threaded nipple supplied, see Fig. [4].

- **Do not solder the connections between the pipelines and housing**, otherwise the built-in non-return valves may be damaged.

- Seal the open outlet with a screw plug.

Note!

- **The hot water supply must be connected on the left** (marked W (H) on housing) **and the cold water supply on the right** (marked K (C) on housing), **as viewed from the operating position.**

Checking pipes and thermostatic mixer body for leaks.

Installation to finished stage

- Plaster and tile the wall, excluding the area occupied by the mounting template. Seal any apertures in the wall so that they are watertight to spray water.

  - Tiles laid in mortar should be pointed so that the joint is tapered towards the outside.

  - Seal prefabricated walls with a permanently plastic compound.

- Remove the mounting template and install sleeves, see Fig. [5].

Flush out the pipelines

- Unscrew and remove non-return valve (A), see Fig. [6].
- Insert flushing plug (B) in vacant non-return valve aperture, see Fig. [7].
- Open the hot and cold water supplies and flush out the thermostatic mixer thoroughly.
- Close the hot and cold water supplies, remove plug (B) and install non-return valve (A).
- Remove regulating head (C), see Fig. [8].
- Remove stop ring (G).
- Install sleeves (E) and (F).
- Fit stop ring (G) provided with marking (H) facing upwards and install regulating head (C).
- Secure wall plate with screws (U), see Fig. [9].

If the thermostat has been installed at too great a depth, this can be adjusted by 27.5mm with an extension set (see fold-out page II, ref. No. 47 249).

If the thermostat has been installed at too shallow a depth, this can be adjusted by 20mm with an compensation ring (see fold-out page I, ref. No. 08 936).

Installation of the flow control knob and adjustment of the economy stop, see Figs. [10] to [12].

- The flow rate is limited by the economy stop (I) supplied, see Fig. [10].

To install the flow control knob, proceed as follows:

1. Close the ceramic headpart by turning clockwise.
2. Install the economy stop (I) in the desired position, see Fig. [10].

   For possible settings, see Fig. [11].
3. Install splined adapter (J), see Fig. [12].
4. Fit flow control (K) so that marking line (L) is at top.
5. Install screw (M), screw-mount knob top plate (N) and secure with screw (O).

Adjustment

Installation of the thermostat knob and temperature adjustment, see fold-out page III, Figs. [13] to [15].

- Before the mixer is put into service if the mixed water temperature measured at the point of discharge varies from the specified temperature set on the thermostat.
- After any maintenance operation on the thermoelement.

1. Open the shutt-off valve and check the temperature of the water with a thermometer, see Fig. [13].
2. Turn the adjusting nut (C) clockwise or anticlockwise until the water temperature reaches 30 °C.
3. Install thermostat knob (P) in such a way that the 30 °C mark on the knob coincides with the mark (Q) on the wall plate, then tighten screw (R) securely, see Fig. [14].
4. Screw-mount knob top plate (N) and secure with screw (O), see Fig. [15].

Prevention of frost damage

When the domestic water system is drained, thermostat mixers must be drained separately, since non-return valves are installed in the hot and cold water connections.

The complete thermostat assemblies and non-return valves must be unscrewed and removed.

Adjusting the temperature range,
see Figs. [16] and [17].

- With this thermostatic mixer, the hot water end-stop can be adjusted to a temperature between 35 °C und 45 °C.

1. Adjust temperature to 20 °C.
2. Remove knob top plate (N) and temperature control knob (P), see Fig. [16].

Caution! Regulating head (C) should not be adjusted.

3. Pull off **red** end-stop (S) and refit with the arrow (T) pointing to the maximum desired temperature, see Fig. [17].
4. Install temperature control knob (P) in such a way that the 20 °C mark on the knob coincides with the mark (Q) on the wallplate.
5. Install knob top platel (N).

Thermal desinfection, see Fig. [18].

1. Remove knob top plate (N).
2. Turn the temperature control knob (P) to the hot water end-stop.
3. Open stopcock and let hot water of at least 70 °C run for three minutes.
4. Turn back temperature control knob (P) to cold water end-stop and reinstall knob top plate (N).

Maintenance

For maintenance, see fold-out page I.

Shut off hot and cold water supplies.

I.Thermoelement

1. Remove screws (O) and pull off knob top plates (N).
2. Remove screw (R) and pull off thermostat knob (P).
3. Remove screw (M) and pull off flow control knob (K).
4. Remove screws (U) and wall plates (V).
5. Remove adjusting nut (C).
6. Pull off stop ring (G).
7. Remove sleeve (E).
8. With a 24mm open-ended spanner, unscrew and remove thermoelement (47 532).

II.Non-return valve

1. Proceed as for maintenance of thermoelement, points 1 - 4.
2. Unscrew and remove non-return valve (X) with 17mm socket wrench.

III.Ceramic headpart

1. Proceed as for maintenance of thermoelement, point 1 - 4.
2. Unscrew and remove sleeve (F).
3. With a 17mm open-ended spanner, unscrew and remove ceramic headpart (45 869).

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

Reassemble in the reverse order.

Use only genuine **Grohe** replacement parts.

Replacement parts, see fold-out page I (* = special accessories).

Readjustment is necessary after every maintenance operation on the thermoelement (see Adjustment).

Care

For directions on the care of this thermostat mixer, please refer to the accompanying Care Instructions.

Re: Installation & Operating instructions

TMV Licence No. ETC/29/0997

The product must be installed with a WRC listed and approved check valve (ie.Neoperl).

The product must be installed with isolating valves for maintenance and in-service testing.

Before commissioning, **Grohe** recommends simulating at least 12 alternate hot and cold water failures before final adjustment of the mixed water set temperature.

No maintenance other than cleaning the filters should be carried out on this product.

1. Commissioning and in-service tests

1.1 Commissioning

1.1.1 Purpose

Since the installed supply conditions are likely to be different from those applied in the laboratory tests it is appropriate, at commissioning, to carry out some simple checks and test on each mixing valve to provide a performance reference point for future in-service test.

1.1.2 Procedure

1.1.2.1 Check that:

a) the designation of the thermostatic mixing valve matches the intended application.

b) the supply pressures are within the range of operating pressures for the designation of the valve.

c) the supply temperatures are within the range permitted for the valve and by guidance information on the prevention of legionella etc.

1.1.2.2 Adjust the temperature of the mixed water in accordance with the manufacturer's instructions 41°C maximum for shower and wash basin and the requirement of the application and then carry out the following sequence.

a) record the temperature of the hot and cold water supplies.

b) record the temperature of the mixed water at the largest draw-off flow rate.

c) record the temperature of the mixed water at a smaller draw-off flow rate, which shall be measured.

d) isolate the cold water supply to the mixing valve and monitor the mixed water temperature.

e) record the maximum temperature achieved as a result of (d) and the final temperature. NOTE. The final mixed water temperature should not exceed the values in Table 1, and any higher temperature should occur only briefly.

f) record the equipment, thermostater etc. used for the measurements.

Table 1: Guide to maximum continuous temperatures during site tests.

Application	Mixed water temperature °C
Shower	43
Washbasin	43

1.2 In-service tests

1.2.1 Purpose

The purpose of in-service tests is to regularly monitor and record the performance of the thermostatic mixing valve. Deterioration in performance can indicate the need for service work on the valve and/or the water supplies.

1.2.2 Procedure

1.2.2.1 Carry out the procedure 1.1.2.2 (a) to (c) using the same measuring equipment, or equipment to the same specification.

1.2.2.2 If the mixed water temperature has changed significantly from the previous test results (e.g. > 1K), record the change and before readjusting water temperature check.

a) that any in-line or integral strainers are clean.

b) any in-line or integral check valves or other anti-backsiphonage devices are in good working order.

c) any isolating valves are fully open.

1.2.2.3 With an acceptable mixed water temperature, complete the procedure 1.1.2.2(a) to (f).

1.2.2.4 If at step 1.1.2.2 (e) the final mixed water temperature is greater than the values in Table 1 and/or the maximum temperature exceeds the corresponding value from the previous test results by more than about 2 K, the need for service work is indicated.

NOTE:
In-service tests should be carried out with a frequency which identifies a need for service work before an unsafe water temperature can result. In the absence of any other instruction or guidance, the procedure described in Annex F may be used.

Frequency of in-service tests

F.1 General

In the absence of any other instruction or guidance on the means of determining the appropriate frequency of in-service testing, the following procedure may be used:

F.1.1 6-8 weeks after commissioning carry out the tests given in 1.2.2.

F.1.2 12-15 weeks after commissioning carry out the tests given in 1.2.2

F.1.3 Depending on the result of F.1.1. and F.1.2 several possibilities exist:

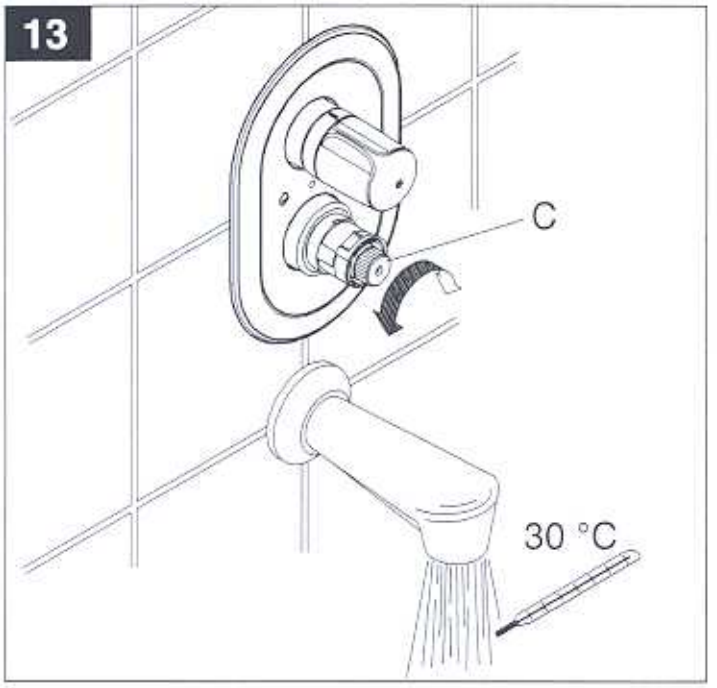
a) If no significant changes (eg. ≤ 1 K) in mixed water temperatures are recorded between commissioning and F.1.1 or between commissioning and F.1.2 the next in-service can be deferred to 24 to 28 weeks after commissioning.

b) If small changes (eg. 1 to 2 K) in mixed water temperatures are recorded in only one of these periods, necessitating adjustment of the mixed water temperature, then the next in-service test can be deferred to 24 to 28 weeks after commissioning.

c) If small changes (eg. 1 to 2 K) in mixed water temperatures are recorded in both of these periods, necessitating adjustment of the mixed water temperature, then the next in-service test should be carried out at 18 to 21 weeks after commissioning.

d) If significant changes (eg. > 2 K) in mixed water temperatures are recorded in either of these periods, necessitating service work, then the next in-service test should be carried out at 18 to 21 weeks after commissioning.

F.1.4 The general principle to be observed after the first 2 or 3 in-service tests is that the intervals of future tests should be set to those which previous tests have shown can be achieved with no more than a small change in mixed water temperature.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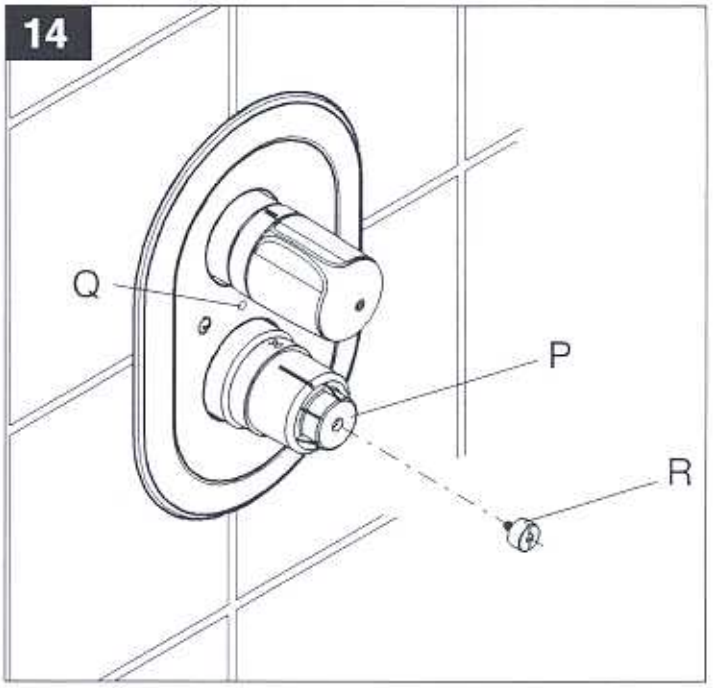
30 °C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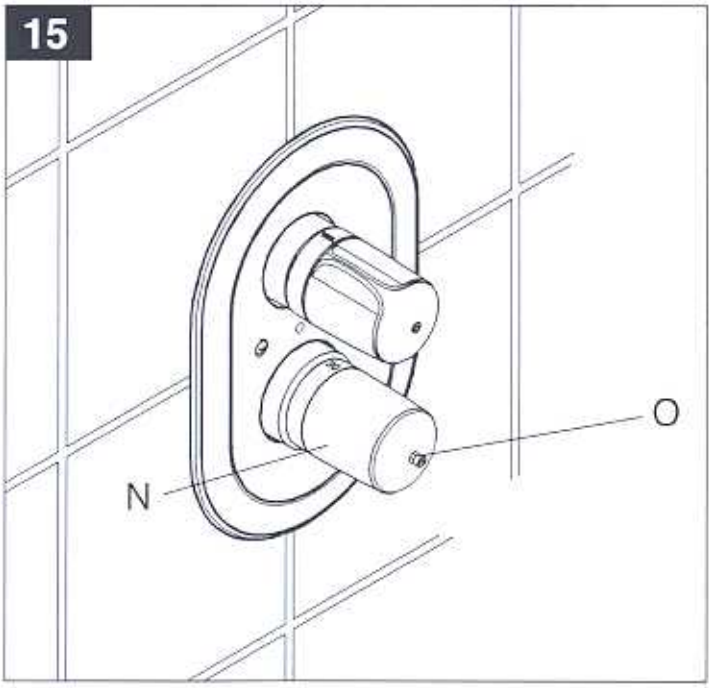
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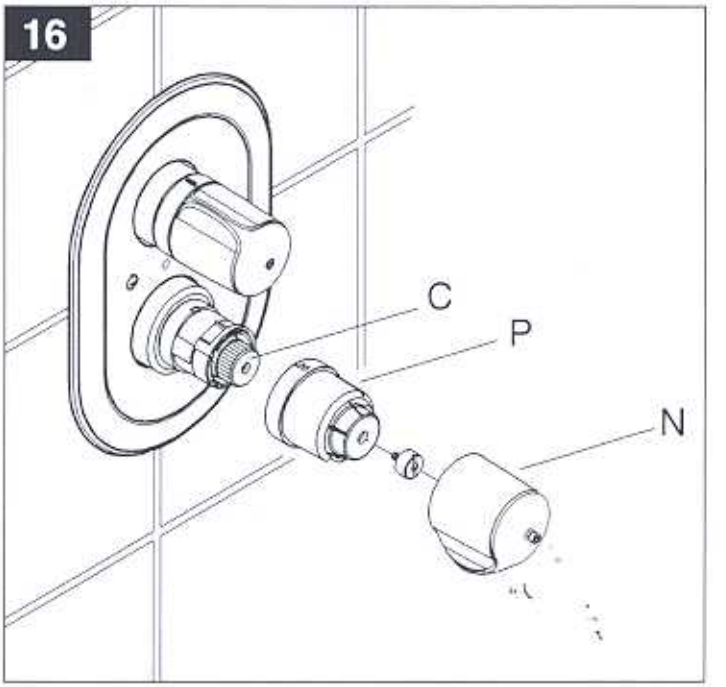
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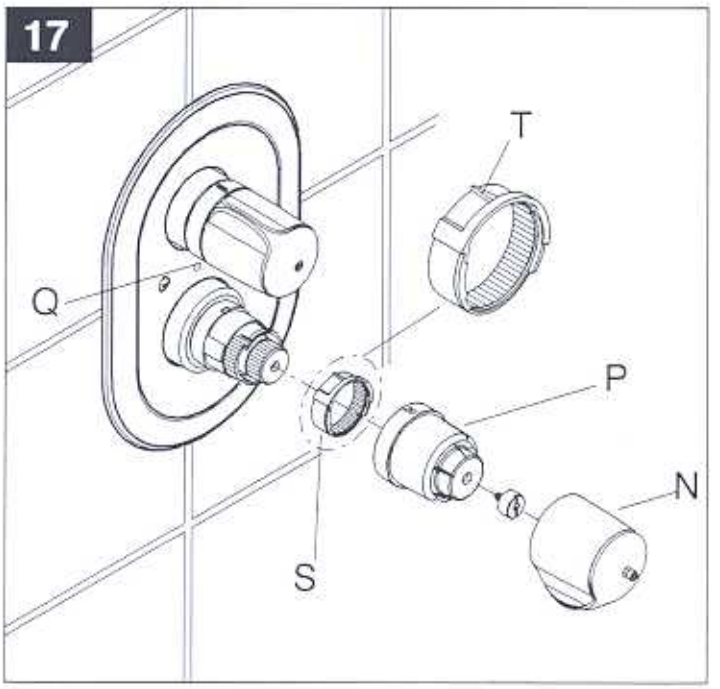
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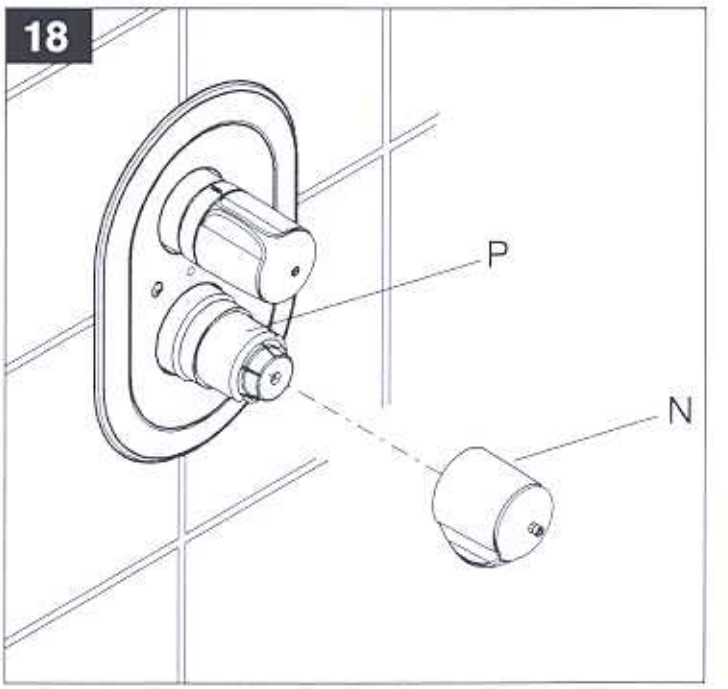
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