

Thermostatic/Pressure balanced mixing valve

Export model

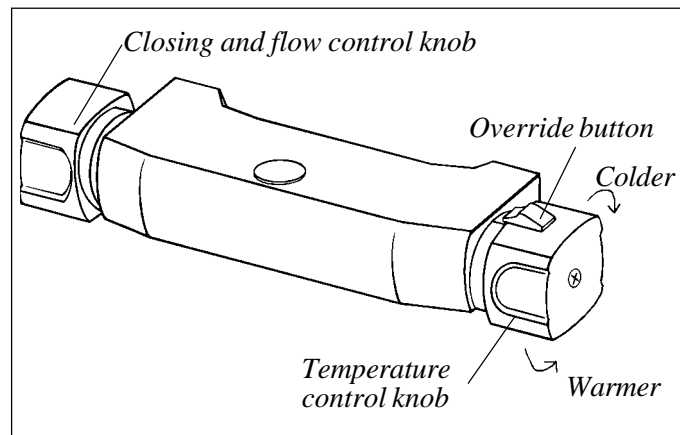


Engelska

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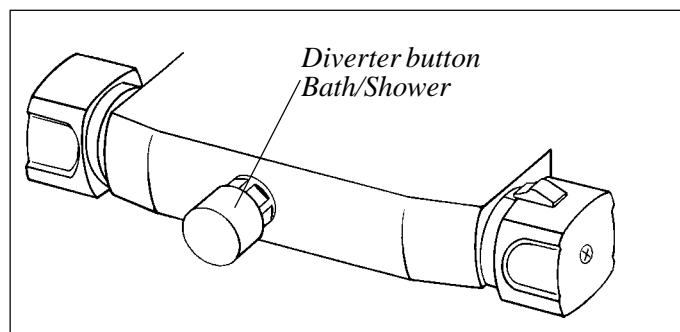
Operating instructions

The left knob controls the water flow rate. The right knob controls the water temperature. Turned clockwise the mixer will provide cold water. The more it is turned anti-clockwise the warmer water is supplied. After one complete turn, the override button must be pressed in order to obtain warmer water. The knob can be turned another 1/2 turn after releasing this safety device. **The delivered water will then be warmer than normally needed for bath or shower.**



Connecting the shower outlet (Bath tub models)

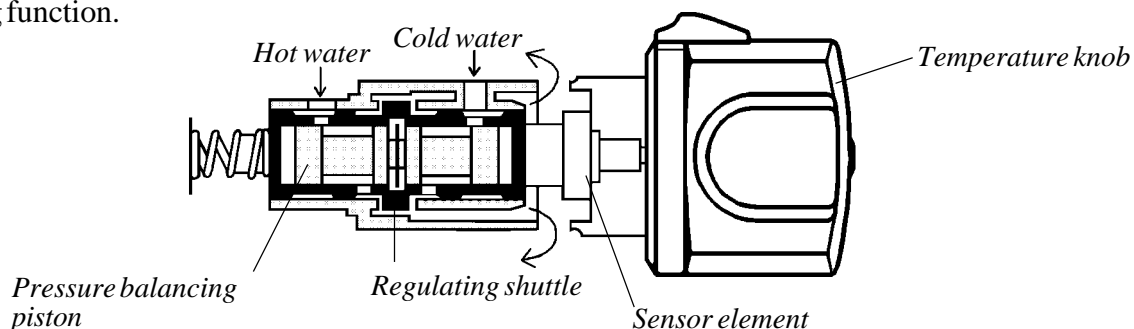
When the flow control knob is opened, the water always comes through the spout. If water from the shower is desired, simply press the diverter button. When the waterflow is closed, the diverter automatically resets to spout flow.



Function

The temperature is regulated in the mixer by a temperature control and pressure balanced interplay. The pressure balancing piston, operating inside the regulating shuttle, is first handling the cold and hot water. The piston continuously finds the position where cold and hot water gets equal pressures when entering the temperature regulating function.

The position of the regulating shuttle is controlled by the temperature knob. The sensor element is located between the shuttle and the knob and compensates for the temperature fluctuations of entering cold and hot water from the supply. The outgoing mixed water is delivered with an even, stable temperature.



Tested and approved by FM Mattsson.

Every mixing valve is tested and approved.

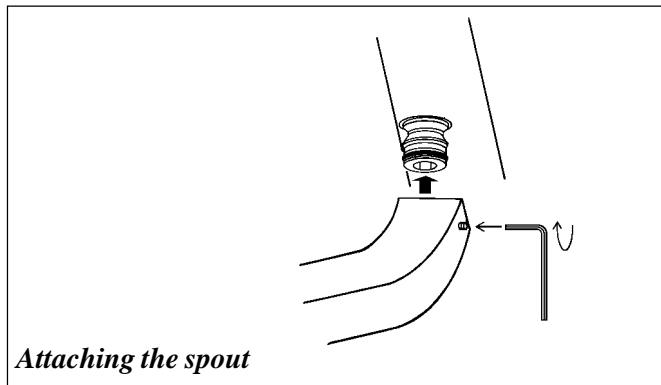
The mixing valves are subjected to the following test:

- Tightness test with open and closed flow control.
- Tightness test of hot and cold water seat.
- Fail safe test.
- Cold water pressure 100 kPa > hot water pressure – Checking the mixed water temperature.
- Hot water pressure 100 kPa > cold water pressure – Checking the mixed water temperature.

Installation

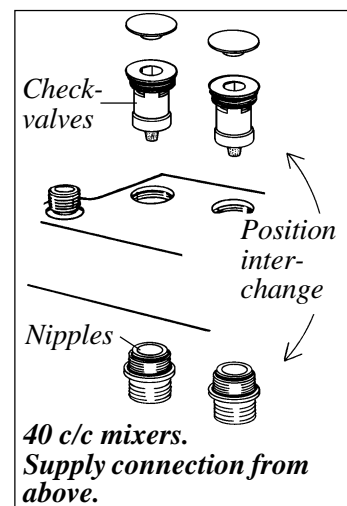
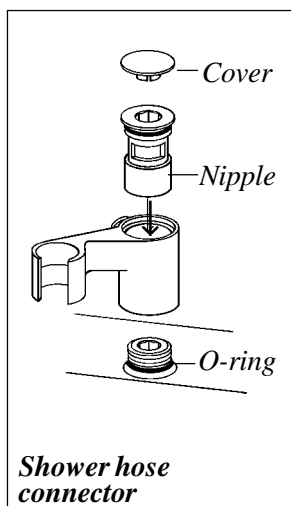
Attaching the spout (FMM 5000 models)

- Attach the spout to the nipple with o-ring and without thread.
- Adjust the spout direction forward.
- Secure the spout by tightening the screw with the enclosed key. (3 mm hexagon).



Attaching the shower hose connector (FMM 5000 models)

- Check that the o-ring is attached on the outlet nipple (upwards).
- Secure the connector with the nipple. (10 mm internal hexagon).
- Attach the cover by pressing it in position.



40 c/c mixing valves

Bathtub and shower mixers 40 c/c can easily be adjusted for supply connection from above. Just interchange the position of the inlet nipples with the check valves, (10 mm internal hexagon). The shower connection on shower mixers can be shifted likewise, (even 150 c/c-mixers) by interchanging the nipple and the plug, (10 mm internal hexagon).

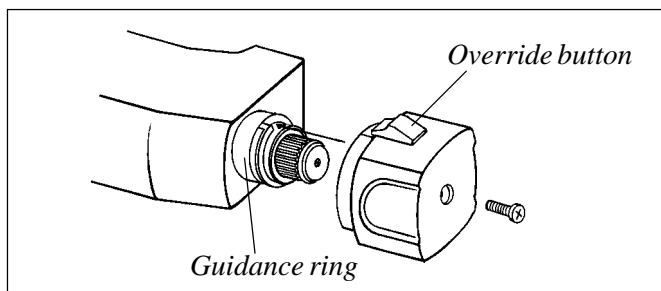
When inlet pipes are attached to 40 c/c mixers, be sure that pipes are not entered as far as filters or check valves are damaged.

Rinse the supply pipework!

Rinsing the pipework before attaching the mixer to the supply eliminates the risk of filter clogging by unwanted particles from the pipes.

Connection

Check the connections for tightness!



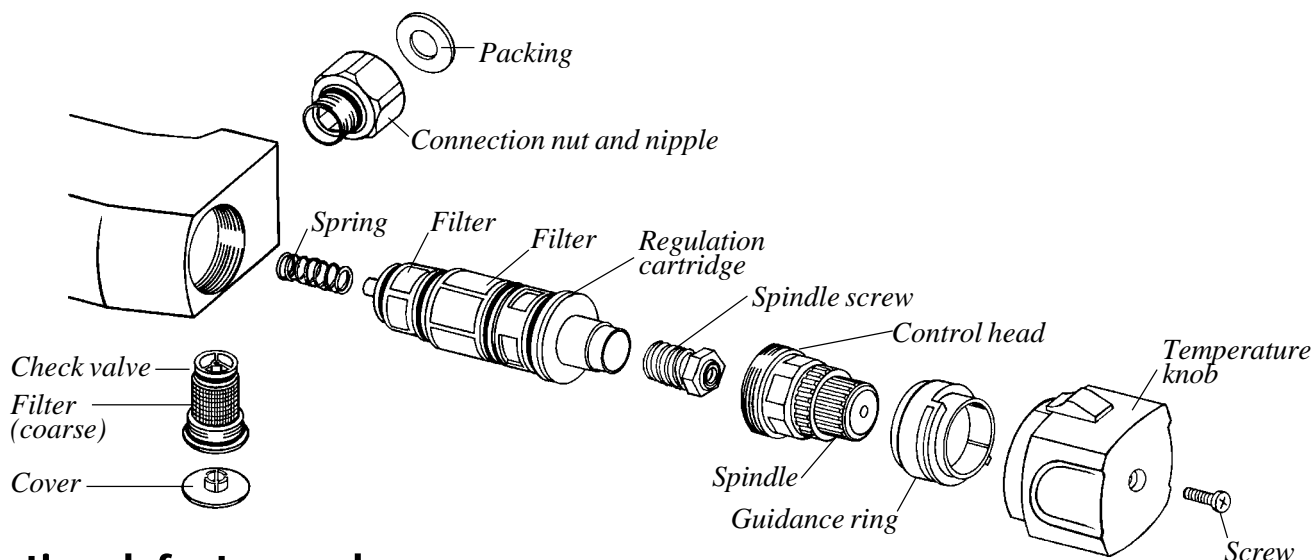
Checking the delivered water temperature

With the temperature knob turned to the override limit (as far as possible without pressing the limitation button) the water temperature should be suitable for shower and bath. (appr. 38°C). The mixing valves are delivered with the calibration setting to provide 38°C at hot water supply temperature of 60-65°C and cold water supply of 10-15°C. If the water after installation is either too hot or too cold at the position with the override button unpressed, a recalibration of the temperature knob is necessary. This is carried out as follows:

- Open the valve with the flow control and set the temperature wanted at the unreleased override position (pressing the override button may be necessary). Close the water flow. (The main supply stop valve may remain open).
- Remove the centre screw on the temperature knob. Pull the knob straight out without moving the setting.
- Replace the knob with the override button uppermost. Fit the lug inside the knob to the right of the stop guidance (see illustration).
- Fit and tighten the centre screw.
- Check the delivered water temperature.

Safety regulations

- Injurious risk!** Never remove the guidance ring (inside the temperature knob), it is a protection against too hot water.
- Injurious risk!** Never calibrate the mixing valve with too low temperature on hot water supply. As the hot water temperature perhaps later is increased, the delivered mixed water will also be warmer than desired.
- Injurious risk!** If the temperature knob override limit is exceeded (after pressing the override button), the delivered mixed water temperature is warmer than required for bath or shower.
- Injurious risk!** Never untighten a plug or connection on the mixing valve without closing the main stop valve.



Function defect remedy

If the mixing valve does not deliver sufficient amount of water or if the temperature regulation or temperature stability is disturbed, start by cleaning the filters. If this action is not effective replace the regulation cartridge.

Cleaning the filters

150 c/c mixing valves

The inlet filters are attached to the check valves, and are located inside two plugs on the underside of the mixer body. Two finer meshed filters are fitted around the regulation cartridge inlets, in the mixer.

- Shut off the main water supply.
- Remove the cover caps beside the inlets on the underside of the mixer.
- Dismount the checkvalve cartridges (10 mm internal hexagon). Remove the o-ring and pull off the filter from the cartridges.
- Dismount the regulation cartridge, see "Regulation cartridge replacement".
- Pull off the filters from the cartridge. To remove the large filter the o-ring must first be dismantled.
- Clean all the filters (replace if necessary) and reassemble the parts.
- Open the main supply valve.
- Adjust the temperature override limit, see "Checking the delivered water temperature".

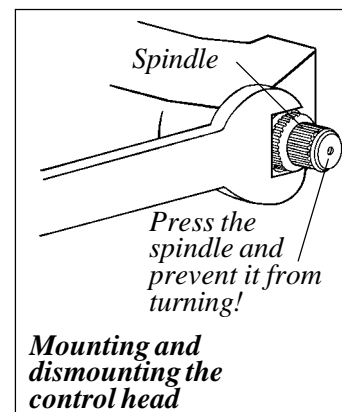
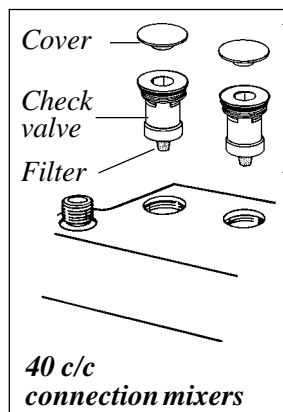
40 c/c mixing valves

The inlet filters are located in the two check-valve inserts. Those are to be found under the two covers on the mixer body's upper- or underside. Close the main supply valve! Remove the covers and unscrew the inserts, (10 mm internal hexagon) see illustration.

Regulation cartridge replacement

- Close the main supply valve.
- Remove the centre screw on the temperature knob. Pull the knob straight out.
- Mark the positioning of the guidance ring (in relation to the body) and pull it off.
- Unscrew the control head as follows: Press the spindle and prevent it from turning with the control head when dismantled, (see illustration).
- Dismount the regulation cartridge.
- Remove the spindle screw and the spring from the cartridge.

- Fit the spring and the spindle screw to the new regulation cartridge.
- Reassemble all parts. Press in the spindle when the control head is attached, (see illustration).
- Open the main supply valve and set the override temperature limit, see "Checking the delivered water temperature".



Check valves replacement

150 c/c mixing valves

The check valves are located inside the two plugs on the underside of the mixer body and are accessible with the mixer installed.

- Shut off the main water supply.
- Remove the cover caps beside the inlets on the underside of the mixer.
- Dismount the checkvalve cartridges (10 mm internal hexagon).
- Refit the new checkvalves and reopen the main water supply.

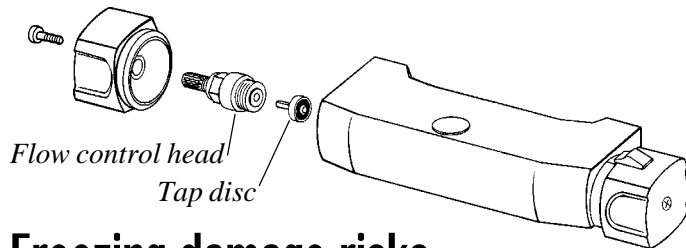
40 c/c mixing valves

The check valves are located inside the inlet filters, see "Cleaning the filters, 40 c/c mixing valves". Close the main supply valve! Note that the check valves are inserted with the seat and the o-ring towards the filter.

Packing (tap disc) replacement

The mixing valve is provided with only one packing. If the valve drips, replace the packing immediately.

- **Close the main supply valve.**
- Remove the centre screw on the left hand knob. Pull the knob straight out.
- Dismount the flow control head.
- Replace the tap disc and refit the parts.
- Open the main supply valve.



Freezing damage risks

If the mixing valve is exposed to temperatures below 0°C, (as unheated leisure house, wintertime) the risk of damage caused by freezing is apparent.

- Close the main supply valve.
- **Dismount the mixing valve and keep it in heated areas!**
Alternative if the mixer will be kept in freezing environments:
- Close the main supply valve.
- Dismount the mixer and remove the regulation cartridge (see "Regulation cartridge replacement").
- Open the flow control knob and shake out all of the water in the mixer body and the regulation cartridge.

Technical data

Installation requirements:

Cold water supply temperature	5-25°C.
Hot water supply temperature	50-80°C.
Water supply pressure	50-1000 kPa.

Materials:

The mixer body in dezincification resistant (DR) brass, chrome-plated or powder-coated. Knobs in plastic, standard version chrome-plated.

Connections:

150-153 c/c mixers: Inlet internal G3/4.
Outlet external G1/2.
40 c/c mixers and concealed mixers:
Inlet and outlet external G1/2.

Regular inspection and maintenance

Check the mixer function at regular intervals. Make sure that the correct temperature is obtained from the mixer. If it is equipped with a temperature knob, the regulation function is tested by turning the knob towards cold and towards hot. By sensing the mixed water it is determined that the water is becoming colder/hotter relative to the turning direction of the knob. Also make sure that sufficient flow is supplied from the mixer. If the mixer is not operating satisfactory see "Function defect remedy".

Cleaning

The mixing valve finish is best preserved by regular cleaning using a soft rag and soap solution, washing with pure water and polishing with a dry rag. Do not ever use lime dissolvents, acidic or grinding detergents. Use household vinegar to remove lime spots and wash with water. The powder coated surfaces may not be exposed to acetone or caustic solution.

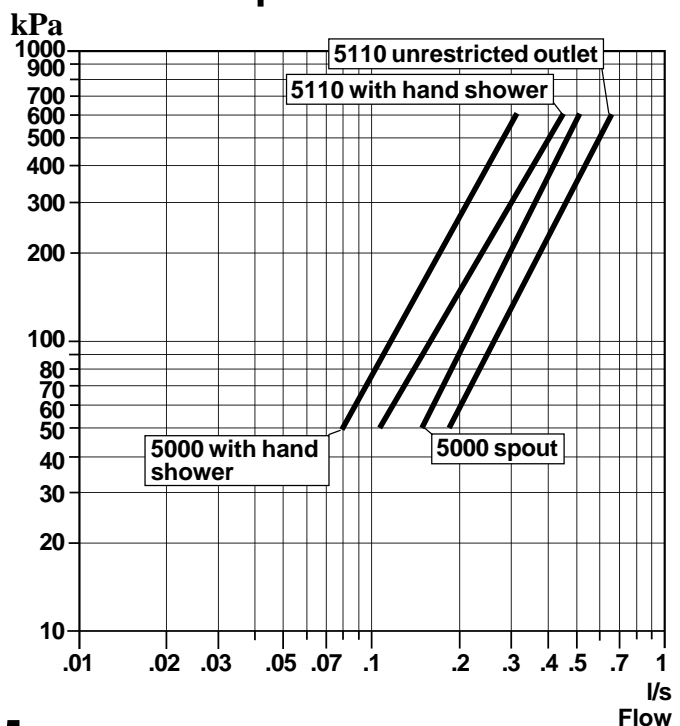
Cleaning the aerator

Unscrew the aerator every now and then and clean the insert from impurities. If the insert is affected by lime deposits, wash with vinegar solution.

No aluminium chloride, hydrochloric acid or phosphoric acid on chrome

The chrome plated surface on the mixers is not resistant to aluminium chloride. Dark spots will arise. Aluminium chloride is used against perspiration. When cleaning the tiles with hydrochloric acid, the mixers must be protected. Hydrochloric acid dissolves chromium. Phosphoric acid can be present in very concentrated detergents and damages the chromium surface layer.

Pressure drop



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