EN

TSV Thermostatic mixing valve

1 - Advantages of TSV B

TSV B thermostatic mixing valve keeps the returning heating water temperature at the opening value of the valve at least, preventing corrosion and boiler fouling. The boiler then operates with higher efficiency and longer service life.

Burning causes release of water, among others, from the fuel in the form of steam. If the flue gas is hot enough, the steam leaves through the chimney together with flue gas. However, if the flue gas gets cooler at some spot, condensation of water vapor occurs there. The condensate contains products of burning that can be very aggressive esp. when burning wood or solid fuel and thus cause fast corrosion and deposit formation on heat transfer surfaces (tarring).

TSV B thermostatic mixing valve mixes cold return water from a heating system/accumulation tank with hot water from a boiler and so keeps the return water to a boiler (and its heat transfer surfaces as well) at a temperature when no condensation occurs. It does not need a balancing valve, automatic balancing of hot water incoming via a bypass is involved in the valve. Its installation is so easier and control more precise. Especially in a situation when the return water temperature from a heating system or accumulation tank is close to the valve nominal temperature or higher, the valve restricts hot water flow from the bypass to complete tight closing. Due to this, the outgoing temperature from a boiler does not rise too much and so the boiler can work at full power even under these conditions.

2 - Operation description and balancing the valve

TSV B thermostatic mixing valve is fitted with an integrated thermostatic insert that will close the ***„A"*** inlet (from a heating system), if the return water temperature to the boiler (***„AB"*** outlet) is lower than the opening one. As soon as the opening temperature is reached, the thermostat starts opening the ***„A"*** inlet slowly and mixing the cold return water with the hot water from the ***„B"*** inlet (boiler outlet) with the aim to reach the return temperature (***„AB"*** outlet) slightly higher than the valve's opening temperature. At the same time, it closes the ***"B"*** inlet, limiting so the hot water flow coming from the by-pass till its complete tight closure. Thanks to this, no balancing valve is needed.

The Thermostatic mixing valve is made of brass, sealing of the element and body plug are made of EPDM, sealing of closing plug is made of NBR.

3 - Mounting and installation

Install the thermostatic mixing valve in compliance with the following instructions:

The valve may be installed in any position. When the connection pipes are not arranged or sloped properly, the valve may get blocked with air. This might limit or even disable its operation!

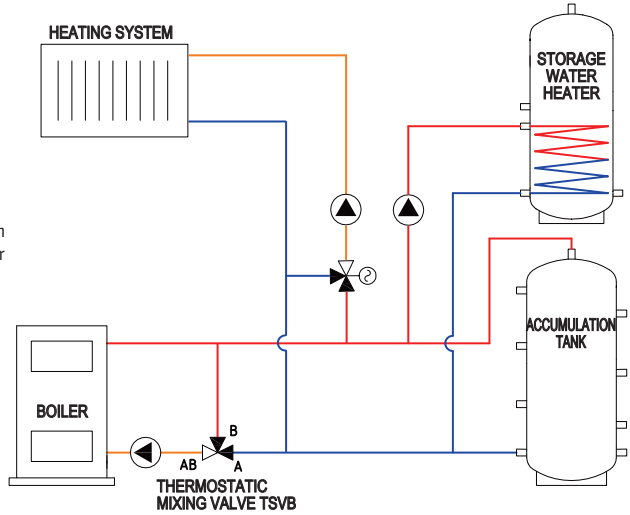
Connect the valve outlet marked ***„AB"*** to the piping entering the boiler.

Connect the return line from the heating system to the ***„A"*** inlet, and the outlet pipe from the boiler to the ***„B"*** inlet via a bypass.

Consider suitable fitting of shut-off valves so that the entire heating system needn't be drained for valve cleaning or replacing the thermostatic element.

When installing the valve, always respect valid rules and instructions from the boiler manufacturer.

Connection example for a thermostatic mixing valve:



4 - Technical data

Model	TSV 3B	TSV 5B	TSV5BMF	TSV 6B	TSV 8B
Nominal diameter DN [-]	25	32	32	40	50
Max. working pressure [bar]	6	6	6	6	6
Connection thread ["]	1" F	5/4" F	outlet 6/4" M, inlet 5/4" F	6/4" F	2" F
Flow coefficient from A to AB Kvs [m^3/hod]	6.2	7.0	7.3	13.3	15.8
Flow coefficient from B to AB Kvs [m^3/hod]	4.4	4.9	7.3	9.6	11.1
Weight [kg]	0.77	0.87	0.96	1.7	1.85
Plug O-ring size [mm]	ø45×3	ø45×3	ø45×3	ø58×3	ø58×3

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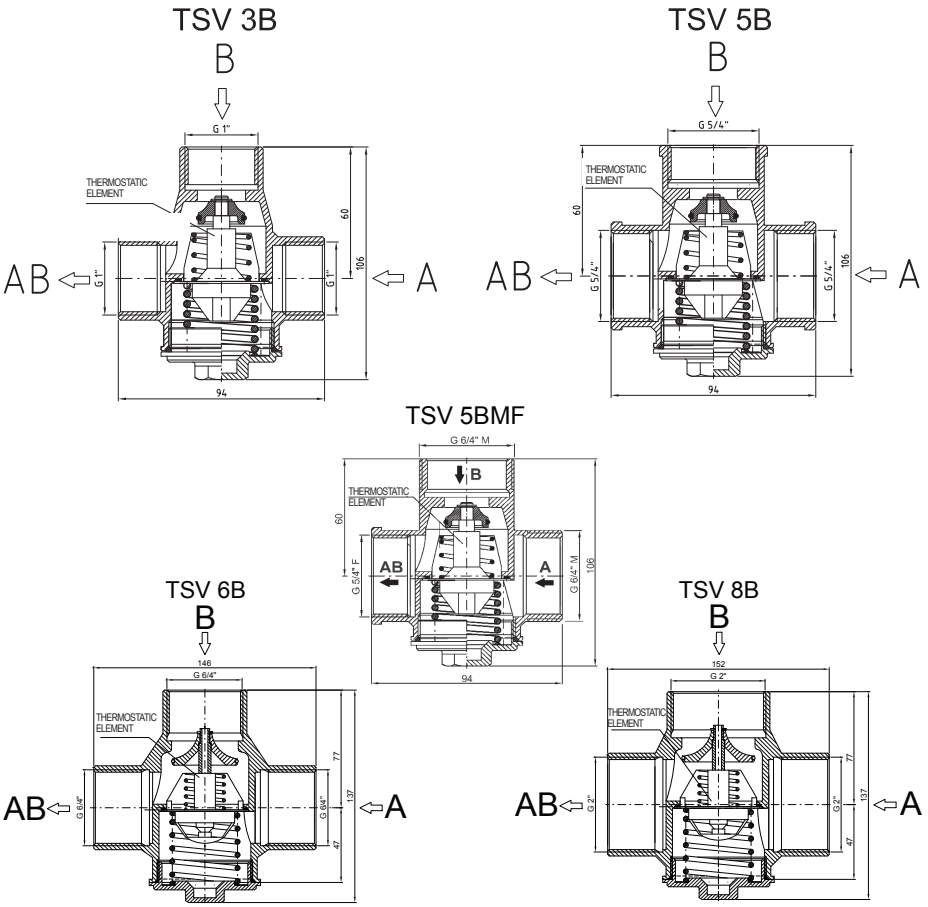
Order code	TSV 3B	TSV 5B	TSV5BMF	TSV 6B	TSV 8B
45 °C	11282	11806	21395	12974	12977
50 °C	15517	15520	-	-	-
55 °C	11281	11807	18655	12975	12978
60 °C	15518	15521	-	-	-
65 °C	10080	11808	18656	12976	12979
70 °C	15519	15522	-	-	-

5 - Dimensional drawings



6 - Maintenance and repairs

Thermostatic mixing Valve offers fully automatic operation, needs neither el. energy, operator nor maintenance.
When the valve gets clogged with impurities from the system or in case of its breakdown, first close the ball valves on all connecting pipes in order to avoid draining the system. Then loosen body plug using spanner No. 21 or another suitable tool. Take out the pressure spring of the element and the thermostatic element itself.

When re-assembling the valve, take care of the thermostatic element perfect fit to the sealing with its entire contact surface.

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