

Thermostatic Mixing Valve, TMV

Suitable for storage hot water systems



THERMOSTATIC MIXING VALVE, TMV

The Thermostatic Mixing Valve (TMV) is suitable for a wide range of applications.

The valve is designed to comply with Australian Standard AS4032.1 for Thermostatic Mixing Valves-Materials, Design and Performance Requirements and the NSW Health Department requirements.

Features

- Meets the requirements of AS4032.1 Thermostatic Mixing Valves
- **Disinfection Function “Thermal Flush”**
- Provides high stability of mixed water temperature even under changing inlet conditions
- Ensures rapid shut down of mixed outlet flow in the event of hot, or cold water supply isolation
- Easily serviced on site
- Suitable for installation into AS3500 compliant systems with hot water temperature as low as 60°C
- The adjustment mechanism can be locked to prevent tampering



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DISINFECTION & MANAGING LEGIONELLA

Another important feature of the AVG Thermostatic Mixing Valve is its inbuilt disinfection function for the management and control of legionella bacteria growth within warm water plumbing systems.

The Thermostatic Mixing Valve has a manually selectable 65°C set position to allow for a “Thermal Flush” disinfection of plumbing pipework, taps, bath and shower outlets and flexible hoses.

At this temperature the disinfection time is only 2 minutes and should only be carried out by trained personnel.

WHAT YOU NEED TO DO

Health and social care providers should carry out a full risk assessment of their warm water systems and ensure adequate measures are in place to control the risks.

A competent person should routinely check, inspect and clean the system, in accordance with the risk assessment.

EASE OF OPERATION

Simply open all the affected warm water outlets controlled by the Thermostatic Mixing Valve and allow the water to flow, then rotate the “Thermal Flush” adjustment spindle anti - clockwise to the maximum position to select the disinfection setting. This will raise the outlet temperature of the valve to 65°C.

When the furthest outlet has reached temperature and the temperature is maintained for at least 2 minutes, then rotate the “Thermal Flush” adjustment spindle back to the original position. The valve should now be back to its pre-set position and should be confirmed with a thermometer at the closest outlet. This should only be carried out by trained personnel.

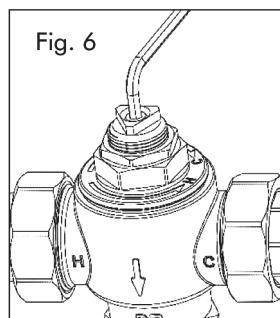
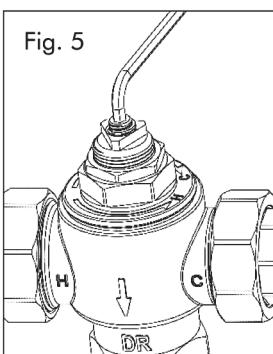
BENEFITS

The AVG approach to disinfection and managing legionella ensures that the complete warm water plumbing system including pipework, tap and shower outlets, shower roses, flexible shower hoses, tap cartridges, filters, aerators, and restrictors, concealed plumbing sets and associated pipework is subjected to the disinfection process.

Point of use thermostatic taps can only ensure disinfection up to the inlet of thermostatic cartridge but not the thermostatic cartridge itself or anything else within the warm water system.

SAVINGS

One centralized AVG Thermostatic Mixing Valve can supply warm water to the entire bathroom and will save time and money when installing, commissioning and servicing the one TMV.



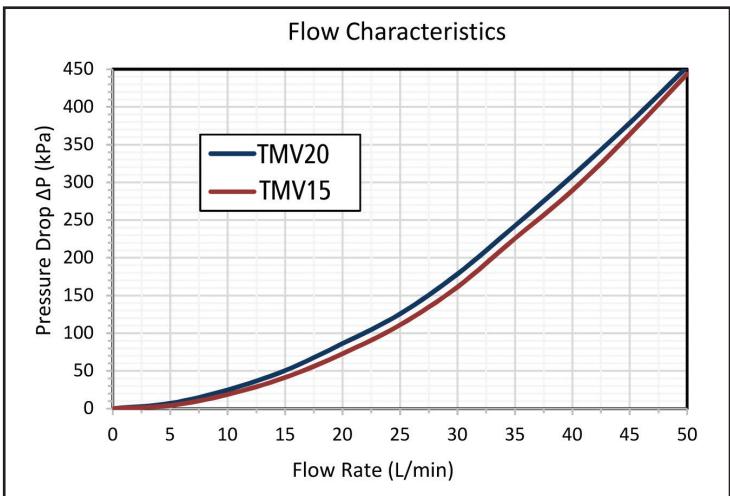
FLOW SIZING GRAPH

The AVG Thermostatic Mixing Valve is suitable for many applications. The Headloss Characteristic for Mixed Outlet Flow rate verses Balanced Inlet Pressure is shown above in Graph 1. It is important that the valve is sized correctly.

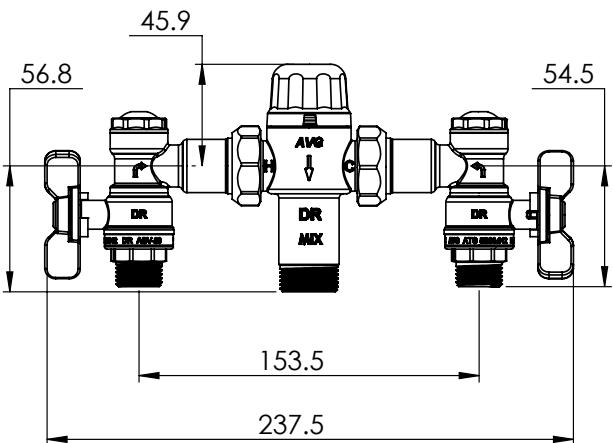
Note: To ensure optimum performance the minimum outlet flow of the mixing valve during operation should be at least 4 litres/minute.

It is important that the valve and pipe work is sized such that they comply with those listed in AS3500.1.2. and -Appendix B to ensure the water velocity in the pipework is within the allowed limit.

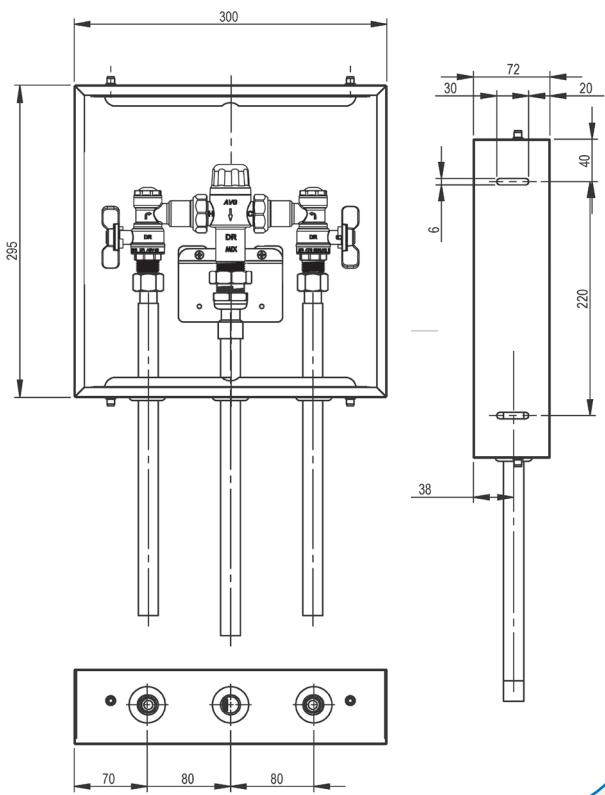
If the valve is to be installed and operated under unequal inlet pressures the lower inlet pressure determines the outlet flow rate. However, for optimum performance and stability it is recommended that the valve be installed with balanced dynamic inlet pressures (+/- 10%).



TMV DIMENSION



TMV STAINLESS STEEL BOX



TMV15 and TMV20 SPECIFICATIONS

MIXED OUTLET TEMPERATURE

Temperature Adjustment Range 35° to 45° Celsius

INLET TEMPERATURES

Cold Supply : 5°C - 25°C

Hot Supply: 60°C - 90°C

Hot to Mix Temperature Differential
for Stable operation: Minimum 10°C

Cold to Mix Temperature Differential
for stable operation:

FLOW RATES

To ensure stable outlet conditions: Minimum 4/minute

DYNAMIC INLET PRESSURES

Hot and Cold Inlet Pressures: Minimum 20 kPa

Maximum 500 kPa

STATIC INLET PRESSURE

Hot and Cold Inlet Pressures: Maximum 1000kPa

INLET PRESSURE RATIO

Maximum inlet pressure ratio

For stable operation

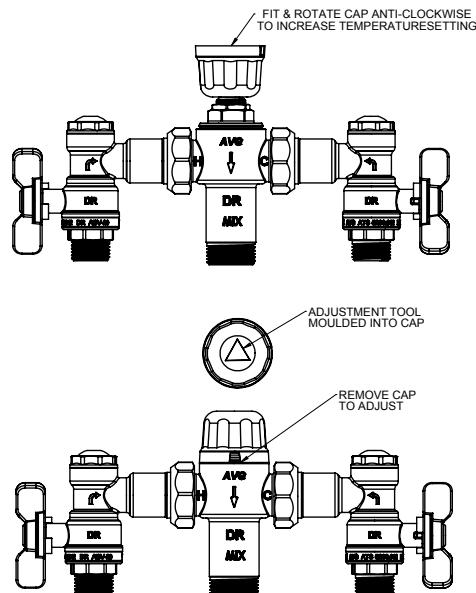
(Hot: Cold or Cold:Hot)

NOTE: For optimum operation it is recommended that the hot and cold water supply pressures be balanced to within +/- 10%.

NOTE: Notwithstanding the above, compliance with AS3500 must be maintained.

Temperature Adjustment

1. Using a small flat bladed screw driver lever the protective cap off the valve.
2. Fit the cap over the adjusting spindle. To increase the mixed outlet temperature, rotate the spindle anti-clockwise. To decrease the mixed outlet temperature, rotate the spindle clockwise.
3. Allow the mixed outlet temperature to stabilize for 60 seconds and once again take a temperature reading. Repeat the procedure until the desired temperature has been reached.
4. Tighten the lock nut and push the protective cap firmly on to the top of the valve until it 'snaps' back into place.
5. Check that the outlet temperature is stable over the full range offlow rates and that the flow rate is adequate for the application.
6. Close the outlet.
7. The mixing valve is now set and locked.



Installation

Thoroughly flush the pipe work with clean water to remove any swarf or debris before the valve is installed. Care should be taken to prevent water damage occurring during this procedure.

During installation or servicing heat must not be applied near the mixing valve or inlet fittings, as this will damage the valve and inlet fitting internals.

The AVG Thermostatic Mixing Valve should be installed as per the appropriate Standard, Code of Practice and legislation applicable to each state and any local requirements and details outlined in this section.

The Thermostatic Mixing Valve must be installed by a licensed plumber, or where applicable, a licensed plumber who has undertaken T.A.F.E. training in Thermostatic Mixing Valves.

NOTE: To effectively control microbial hazards during system design, installation, commissioning and maintenance, it is important to adhere to the requirements outlined in AS/NZS3666 and local legislation.

Inlets and outlet connections of the valve are clearly marked. The letters H and C cast into the valve body indicates the Hot and Cold inlet respectively. An arrow cast into the body of the valve identifies the valve outlet direction.

If the valve is not installed correctly then the warranty will be void. Please note that the user may be in danger if the valve malfunctions.

Check to ensure that the system operating conditions fall within the recommended operating range of the Thermostatic Mixing Valve as detailed in Section 4. If the hot water supply temperature is greater than 90°C the valve may be damaged. A suitable temperature limiting valve must be fitted to the hot water supply, prior to the inlet fittings, if the temperature of the hot water will rise

above 90°C. It is also important that both of the inlet dynamic supply pressures are 500kPa or less. If either supply pressure exceeds 500kPa then a suitable pressure reducing valve must be fitted prior to the inlet control valve to reduce the pressure to an acceptable limit. In order to achieve optimum performance from the valve it is recommended that the inlet pressures are balanced to within 10% of each other.

The water quality conditions should comply and not exceed the limits as listed in AS3500.4, Appendix B. It may be necessary to install a water softener or water treatment device.

NOTE: In some installations, flick mixers and solenoid valves are used. The water pressure may be seen to spike outside that recommended for the valve, during rapid shut off conditions. Even if the spike only lasts for a split second it is still considered to be outside the operating conditions and may cause the valve to operate incorrectly.

If this does occur, then measures must be taken to control the spike, such as inline pressure reducing valves directly before the valve inlets.

It is required by AS3500.4 section 3.3 that "Each thermostatic mixing valve shall have an isolating stop tap/valve, line strainer and non-return valve fitted to the hot and cold water supply lines". The inlet fittings supplied with each TMV will ensure this requirement is met. If the Thermostatic Mixing Valve is installed without the supplied inlet control valves then it will be necessary to install a separate isolating valve for ease of servicing, a non-return valve to prevent cross-connection and a strainer to both inlets to the valve.

Ensure that the test plugs in the top of the inlet fittings are water tight.

Install the valve so that it can be accessed easily for maintenance or servicing. The valve can be installed in a wall cavity, under a basin or on a wall, however it is essential that the mixing valve and inlet fittings are easily accessible for servicing.