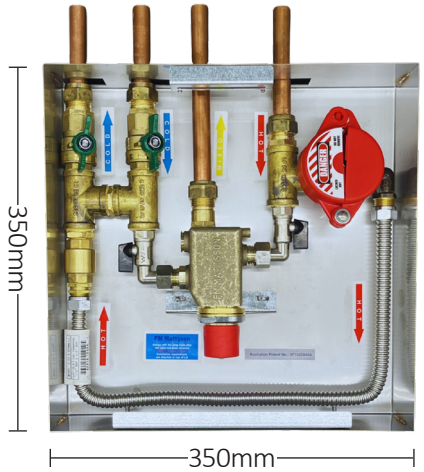
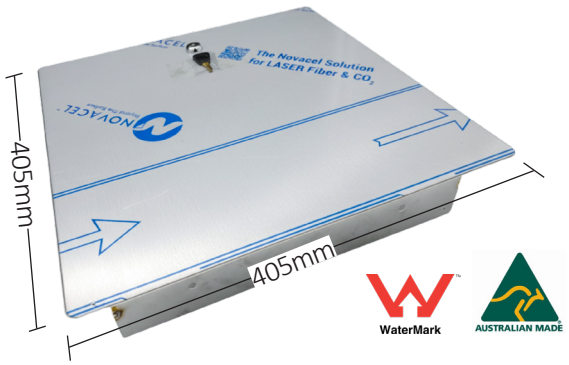
FM Mattsson Pressure Balanced TMV with patented warm and cold water pipework Thermal Flush System





Product Code: 9230-8004

Temperature Control and Thermal Flush Legionella Control

FM Mattsson Pressure Balanced Thermostatic Mixing Valve (PBTMV) with patented warm and cold water pipework thermal flush system suitable for use with showers, basins and baths. The PBTMV box includes multiple isolating valves to deliver flushing operations and disinfection through both the warm and cold water outlets to reduce the risk of Legionella and other bacteria between the valves and outlets *(see Pg.2)*.

Features and Benefits of 9230-8004

- Thermal flush capability for Legionella control purges both warm and cold pipework effectively reduce the risk of Legionella and other bacteria.
  Australian Patent no. 2019229455
- Integrated FM Mattsson PBTMV, approved by NSW Health and WaterMark approved
- The TMV will function normally when thermal flushing mode is not in operation
- Compatible to be used with our MAGFLO temperature monitoring system ***(see TMV Water Temperature Monitoring System)***
- Servicing of the TMV is easy and accessible from the front of the box
- Optional Anti-Ligature heavy duty stainless steel frame/panel - ***Product Code: 9230-8004/DF***
- Proudly Made in Australia

Dimensions (mm)	
Box	350 (W) x 350 (H) x 80 (D)
Cover panel	405 (W) x 405 (H)

Additionally, 9230-8004 patented warm and cold water pipework Thermal Flush System will have all the features and benefits of FM Mattsson PBTMV *(see Pg.3-4)*.

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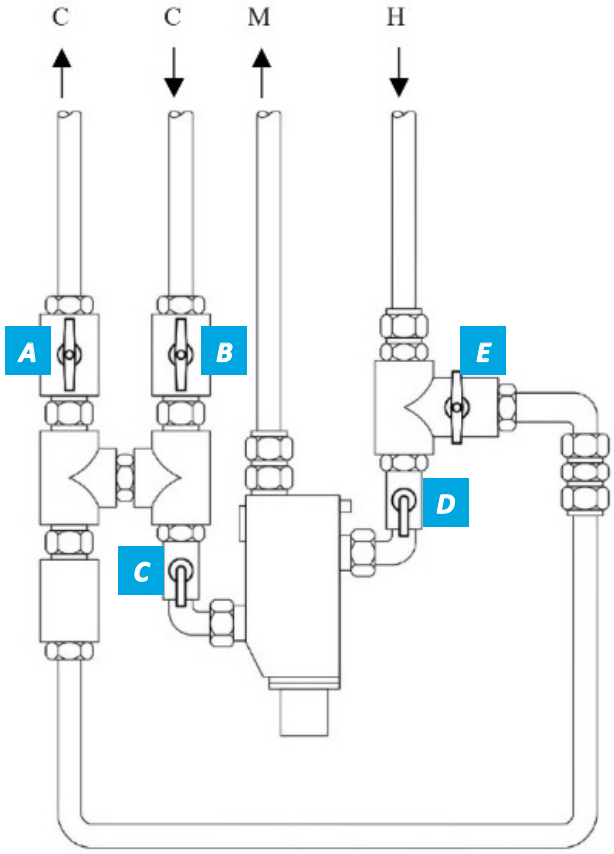

Normal mode:

- Keep isolating valve “E” which is connected to the thermal loop closed
- Hot water flows through the open “D” isolating valve feeding the hot inlet to the FM Mattsson PBTMV
- Cold water flows through the open “B” and open “C” isolating valves feeding the cold inlet to the FM Mattsson PBTMV
- The FM Mattsson PBTMV then regulates the mixed water temperature for consistent and safe delivery through the open mixed water outlet downstream
- Cold water also flows through the open “A” isolating valve and feeds cold water to the outlets down-stream e.g.: basins/showers/baths

Legionella Control Flush System

Only authorised staff and licensed or registered plumbing practitioners are to conduct thermal flush disinfect mode to prevent scalding during the process. Ensure all outlets to be flushed are unoccupied during the process. Ensure full compliance in accordance with all relevant and applicable codes and standards.

Thermal flushing mode (mixed water outlet)

- Close isolating valves “A” and “B”
- Keep isolating valves “C” and “D” open
- Unlock open the red safety box and open isolating valve “E” to allow hot water to circulate through the thermal loop and the cold water inlet, feeding the FM Mattsson PBTMV and flushing the mixed water line to open mixed water outlets downstream.
- After flushing, close isolating valve “E” and secure close the red safety box
- Finally, open isolating valves “A” and “B” to revert to normal operation

Thermal flushing mode (cold water outlet)

- Close isolating valves “B”, “C” and “D”
- Keep isolating valve “A” open
- Unlock open the red safety box and open isolating valve “E” to allow hot water to circulate through the thermal loop to flush through the cold water bypass to open outlets downstream
- After flushing, close isolating valve “E” and secure close the red safety box
- Finally, open isolating valves “B”, “C” and “D” to revert to normal operation

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Understanding the unique features and benefits of FM Mattsson Pressure Balanced TMVs

Features and Benefits of FM Mattsson PBTMV

- Thermal flush capability
- Inbuilt non return valves and filters
- Factory pre-set to 38°C (can be re-calibrated by licensed plumber)
- Maintain a consistent mixed water temperature within ±1°C no matter what happens in the pipework
- The pressure-balancing system ensures safety and stability even with unequal supply pressures (up to a 13:1 ratio)
- Operates with a minimum flow rate of 1L/minute
- Pressure-limiting valves ***not*** required
- Suitable for multi and single point installations
- Fixed temperature knob to prevent unauthorised access
- 5-year warranty on the cartridge (*T&C Apply)
- PBTMV Made in Sweden
- Available in Pre-Plumbed boxes fully Australian Made

Operating Parameters of FM Mattsson PBTMV

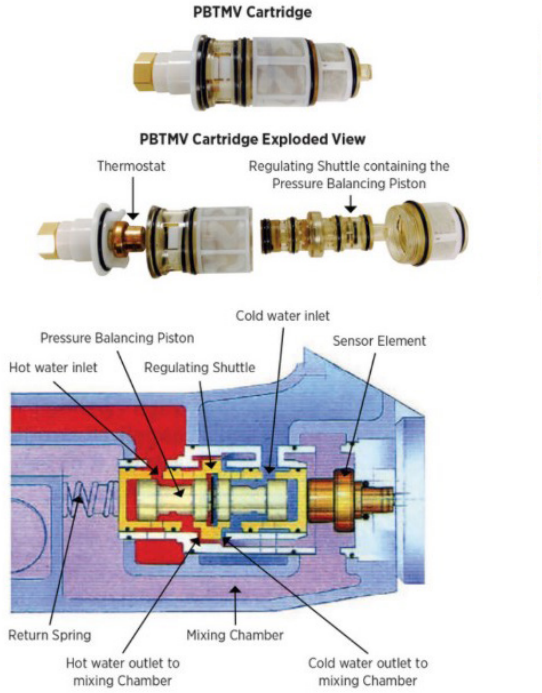
- Operating Outlet Temperature Range: the valve maintains water temperature in the range of 20°C to 50°C
- Unit must have flow control devices fitted between it and each outlet.
- Operates from 50kPa to 1000kPa.
- Recommended working pressure 100kPa to 500kPa
- Cold and Hot Water Temperature Inlets:
  - » Cold water supply: Minimum 5°C
  - » Hot water supply: Maximum 85°C

Flow Table

Pressure (kPa)	*Flow (L/min)*
100	15.5
200	22.5
300	28
400	32.5
500	36.5
600	40.3

Inside the Pressure Piston of FM Mattsson PBTMVs

At the respective inlets and outlets of the regulating shuttle, the internal pressure balancing piston balances the amount of incoming hot and cold water that is able to enter the mixing chamber. Simultaneously the thermostatic sensor element both monitors and adjusts the regulating shuttle's position to cover the hot water outlet to the mixing chamber, preventing scalding.



Suitable Application:

- Special and aged care needs (e.g.: disabled bathrooms)
- Health and aged care facilities (e.g.: hospitals, nursing homes, senior living)
- Public buildings (e.g.: airports, stations, community facilities, aquatic and recreational centres)
- Institutional buildings (e.g.: child care facilities, schools, police stations, correctional and prison buildings, gymnasiums and sport facilities)
- Commercial buildings (e.g.: hotels, shopping centres)

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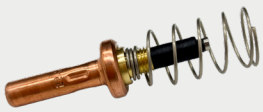
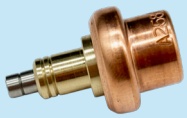
Why FM Mattsson PBTMVs are superior to its competitors

Generic TMVs	*FM Mattsson PBTMVs*
• Generic TMVs use a wax thermostat element to regulate hot and cold water, allowing adjustment to a set temperature for safe skin contact. However, their slow response to pressure changes or water supply fluctuations can cause temperature spikes.	✓ FM Mattsson Pressure Balanced Thermostatic Mixing Valves (PBTMVs) use a wax thermostat element and an integrated pressure-balancing piston to maintain a consistent mixed water temperature within ±1°C. The pressure-balancing system ensures safety and stability even with unequal supply pressures (up to a 13:1 ratio) or fluctuations in the piping system.
• If there is a cold water failure with the generic TMVs, generally takes longer for the wax element to react (approx. 3-5 secs) which could contribute to unsafe spikes in temperature which could then cause scalding and risks of injury	✓ If there is a cold water failure, balancing system combined with the thermostatic element, immediately cuts off the hot water supply safely within a second, providing reliable protection against scalding ✓ Double protection against scalding due to immediate reaction time of the piston and thermostat sensor combined (True safety valve)
• Wax element inside 	✓ Wax element and pressure piston inside  
• Operates with a minimum flow rate of 3-4L/minute	✓ Operates with a minimum flow rate of 1L/minute
• 10°C temperature differential performs with all factory set 50°C water heaters (e.g.: Stiebel Eltron 50°C HWS)	✓ 5°C temperature differential performs with all factory set 50°C water heaters (e.g.: Stiebel Eltron 50°C HWS)
	✓ Easy changeover from older brands (Grohe, Hansa, Rada, Aquablend)
	✓ Design unchanged in over 30 years ensuring consistency with spare parts. Made it simple and cost effective to replace every 5 years

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