



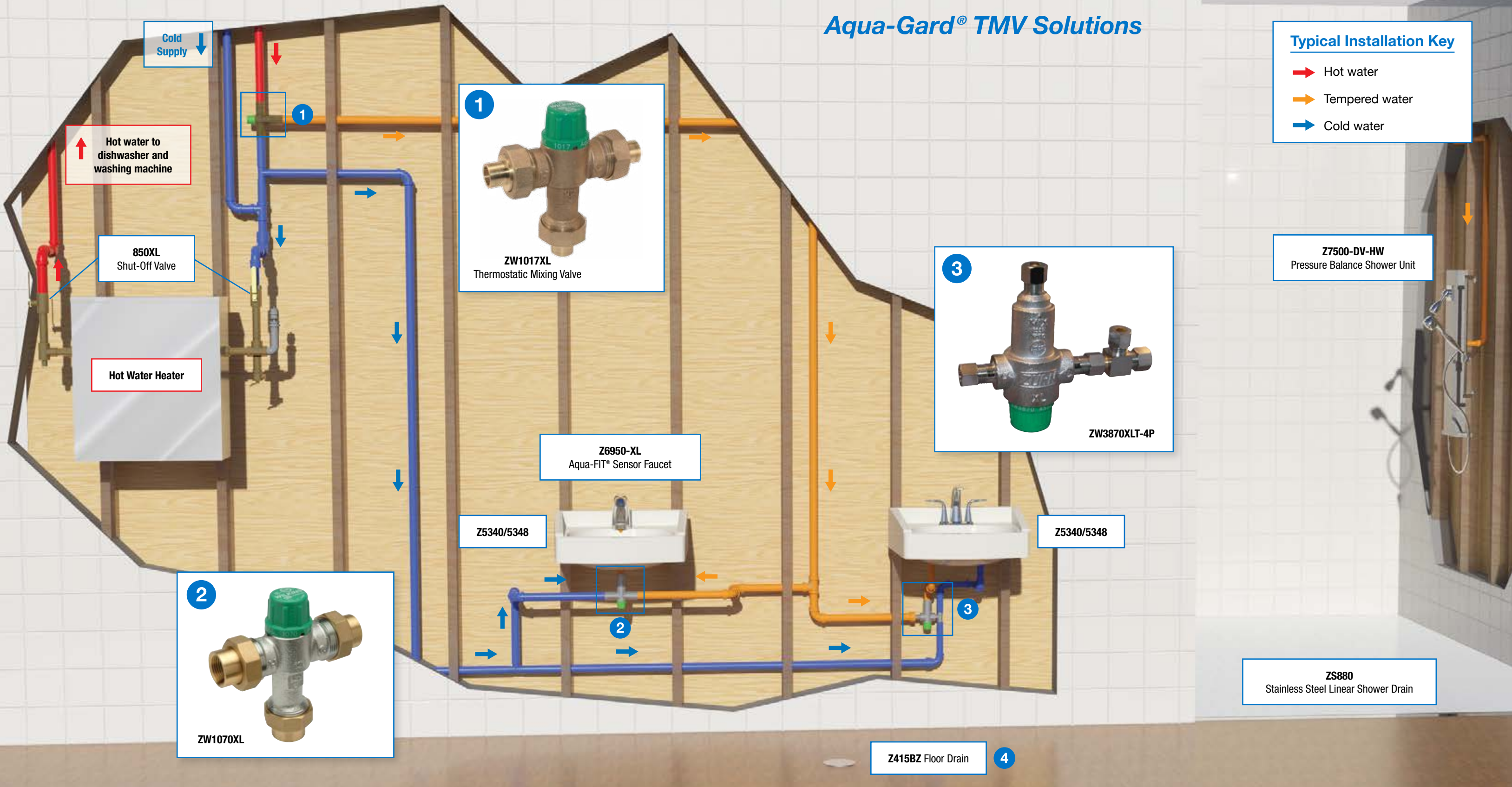
Aqua-Gard® Thermostatic Mixing Valves



Aqua-Gard® TMV Solutions

Typical Installation Key

- Hot water
- Tempered water
- Cold water



1 Tempering the Hot Water Source

- ZW1017XL Point of Source Thermostatic Mixing Valve
- 850XL Shut-Off Valve

2 Tempering at Point of Use

- ZW1070XL Point of Use Thermostatic Mixing Valve
- Z6950-XL Aqua-FIT® Sensor Faucet
- Z5340/5348 Wall Hung Lavatory

3 Tempering at Point of Use (continued)

- ZW3870XLT-4P Point of Use Thermostatic Mixing Valve
- Z5340/5348 Wall Hung Lavatory

4 Complementary Products

- Z415BZ Floor Drain
- ZS880 Stainless Steel Linear Shower Drain
- Z7500-DV-HW Pressure Balance Shower Unit

What is a Thermostatic Mixing Valve (TMV)?

A TMV mixes cold water and hot water and produces tempered water at a constant pre-set temperature. By using multiple TMVs, the system can be designed to prevent bacterial growth and deliver tempered water to the end user, eliminating the chance of scalding.

Point of Source Thermostatic Mixing Valves ASSE 1017: Temperature Actuated Mixing Valves for Hot Water Distribution Systems are used for controlling in-line water temperatures in domestic hot water systems and are installed at the hot water source. They are not intended for end use applications including emergency eyewash and shower equipment.

Point of Use Thermostatic Mixing Valves ASSE 1070: Water Temperature Limiting Devices shall control and limit the water temperature to fittings for fixtures such as sinks, lavatories or bathtubs and are intended to reduce the risk of scalding.

Conflicting Needs: Water Temperature vs. Water Safety

The ideal temperature range for safety (anti-scalding) happens to be the ideal growth range for bacteria, such as Legionella. This creates a need for water to be hot enough to kill bacteria throughout the system, yet water must be cool enough when delivered to the end user to avoid scalding.

Need to Minimize Scalding Injury:

- Maintain the temperature of the delivered hot water below 120° F to minimize the potential of a Scalding Injury

Need to Reduce Bacterial Infection:

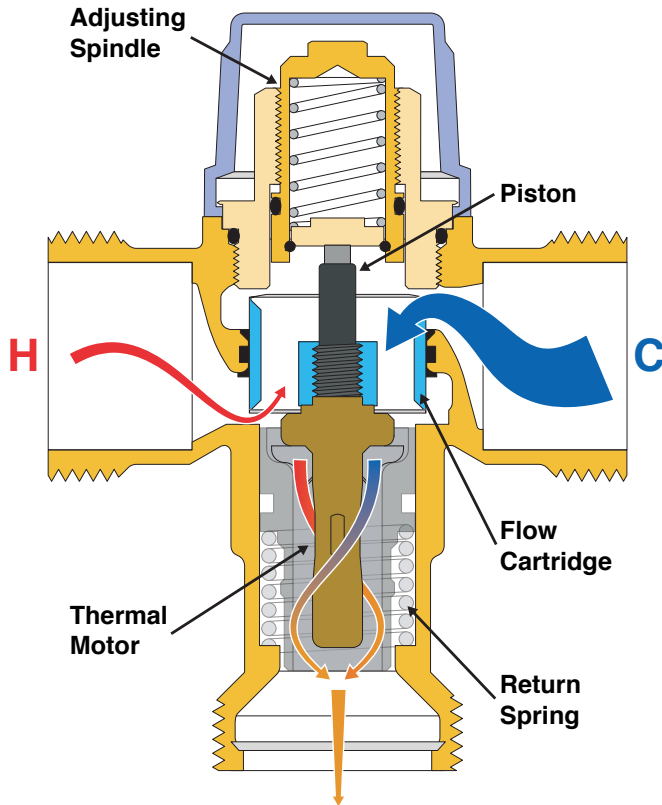
- Maintain the temperature of the hot water heater to 140° F to minimize the potential of Legionella
- TMVs deliver a solution for the conflicting needs of reducing bacteria, yet providing water at a comfortable temperature for end users.

Temperature (°F)	Bacterial Response	Scald Risk	Time to produce 2nd and 3rd degree burns*
68°	Dormant	Low	
69° – 122°	Growth Range		
95° – 115°	Ideal Growth Range		
122°	Can Survive, Won't Multiply	Moderate	5 min.
131°	5-6 Hours to Kill	Moderate	30 sec.
140°	Dies within 32 Minutes	High	5 sec.
150°	Dies within 2 Minutes	Very High	2 sec.

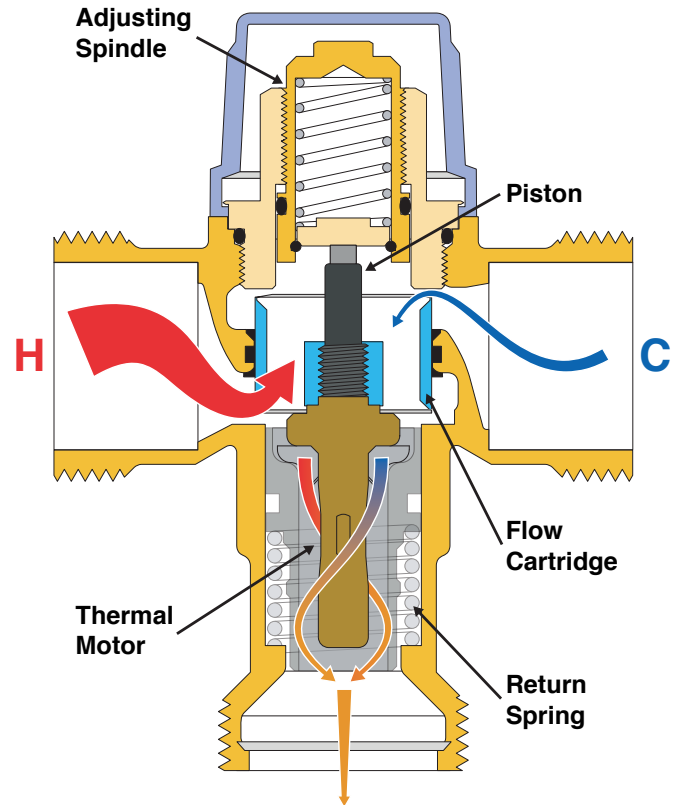
*Data from American Burn Association

How a TMV Works

1. Adjusting spindle allows user to preset desired outlet temperature
2. Hot and Cold water enter mixing chamber of valve
3. Thermal Motor senses change in outlet temperature
4. Piston extends or retracts in response to temperature change
5. Flow Cartridge moves in opposite direction of actuator to adjust the incoming amount of hot and cold water
6. Preset temperature is achieved and maintained



When mixed water is too hot, flow cartridge moves down, allowing more cold water to enter



When mixed water is too cold, flow cartridge moves up, allowing more hot water to enter

Point of Source



ZW1017XL

- Designed to be used at the hot water source (residential and light commercial installations) to mix hot and cold water in the distribution system
- Inlet checks and strainers included
- Certified to ASSE® standard 1017, CSA® Certified
- Meets the requirements of NSF/ANSI 61



ZW1017XLHT - High Temperature

- Designed to be used at the hot water source with higher temperature applications (hydronic/radiant heating) to mix hot and cold water in the distribution system
- Inlet checks and strainers included
- Certified to ASSE standard 1017
- Meets the requirements of NSF/ANSI 61

Point of Use



ZW1070XL

- Designed to be installed at the point of use (commercial and residential installations) to mix hot and cold water from the distribution system to a final safer temperature
- Inlet checks and strainers included
- Nickel-plated bronze
- Suitable for multiple fixtures
- Certified to ASSE standard 1070, CSA Certified
- Meets the requirements of NSF/ANSI 61



ZW3870XLT/ZW3870XLT-4P

- Designed to be installed with 3/8" point of use applications (commercial and residential installations) to mix hot and cold water from the distribution system to a final safer temperature
- ZW3870XLT most suitable for use with sensor faucets
- ZW3870XLT-4P most suitable for use with manual faucets
- Inlet checks and strainers included
- Designed for single fixture use
- Nickel-plated bronze
- Certified to ASSE standard 1070, CSA Certified
- Meets the requirements of NSF/ANSI 61

Connection Options

Tailpiece kits are available with all Zurn Wilkins TMV models in threaded, copper sweat, CPVC, compression, Z-Bite™ push type solderless connections, Z-Press™ press type solderless connections, and PEX.



Z-Bite

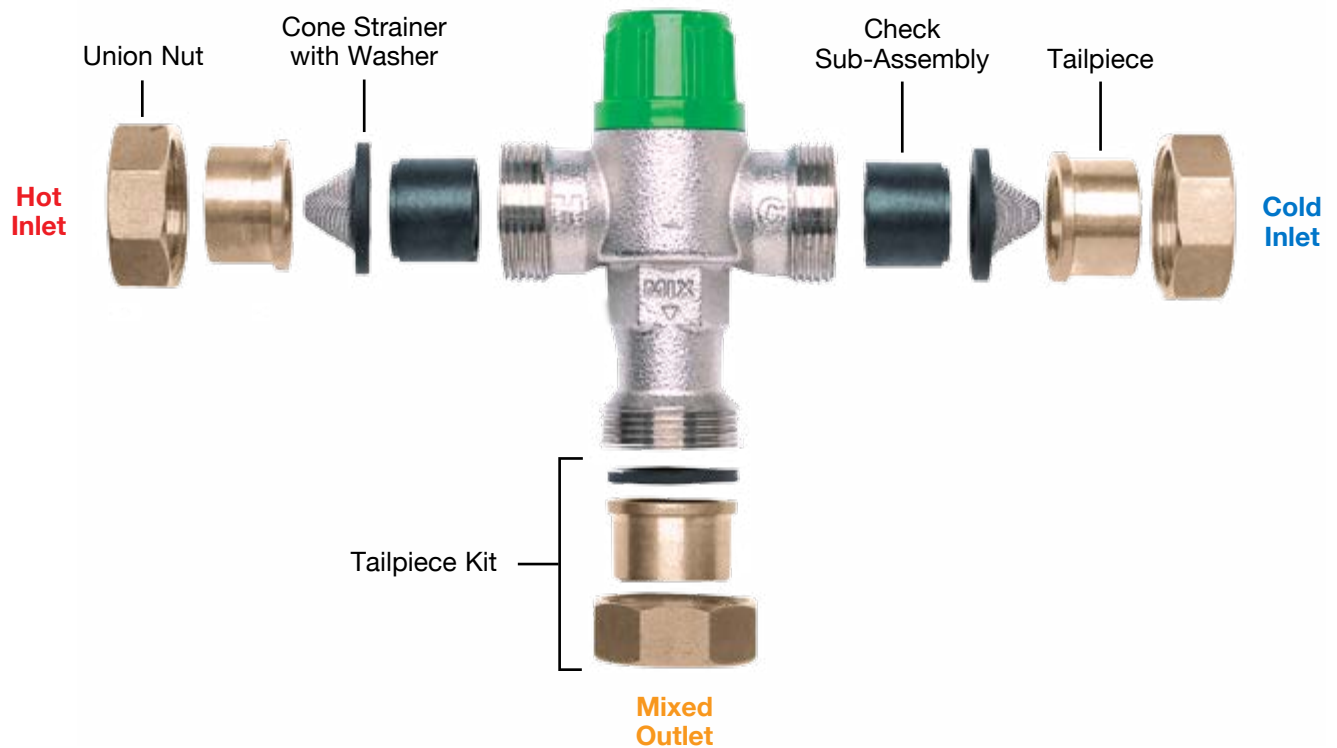
Z-Press

Thermostatic Mixing Valve Specifications

	ZW1017XL	ZW1070XL	ZW3870XLT (-4P)
Sizes	3/8", 1/2", 3/4", 1"	3/8", 1/2", 3/4", 1"	3/8"
Outlet Temperature Range	95° - 131° F	95° - 115° F	95° - 115° F
Temperature Hot Supply	120° - 195° F	120° - 195° F	120° - 195° F
Temperature Cold Supply	40° - 75° F	40° - 75° F	40° - 75° F
Set Temperature Accuracy	+/- 4° F	+/- 3° F	+/- 3° F
Maximum Working Pressure	145 psi	145 psi	145 psi
Dynamic Working Pressure	1.5 - 70 psi	1.5 - 70 psi	1.5 - 70 psi
Flow Rate@45 psi Pressure Loss	25 gpm	12 gpm	3.1 gpm
Minimum Flow Rate	.5 gpm	.5 gpm	0.35 gpm

ZW3870XLT recently approved at .35 gpm for low flow faucets

ZW1070XL Detailed Component View





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