



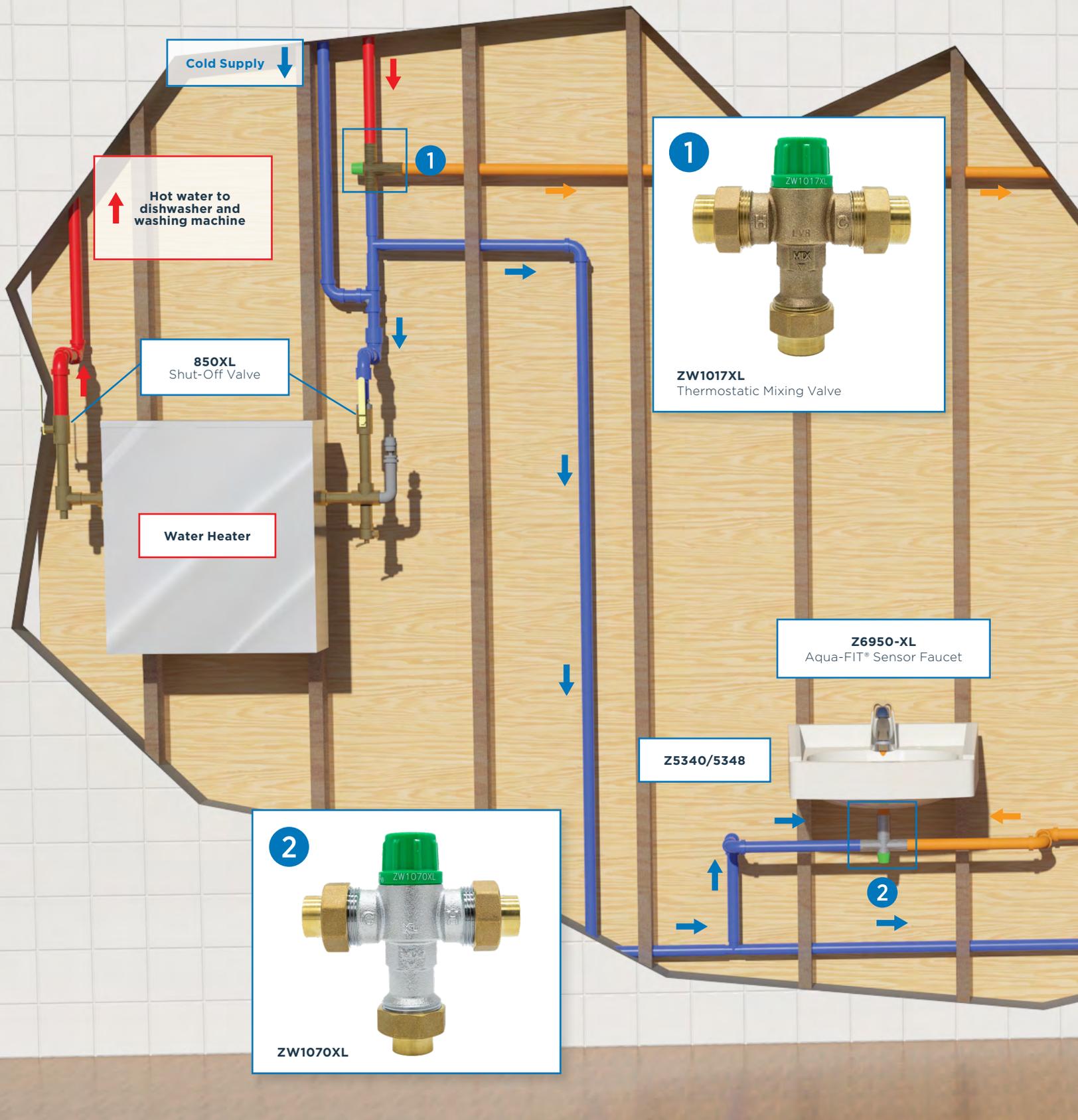
# Aqua-Gard® Thermostatic Mixing Valves

Delivering Tempered Water for Safer Restrooms



by **ZURN** ELKAY Water Solutions





**1 Tempering the Hot Water Supply**

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

**2 Tempering at Point of Use**

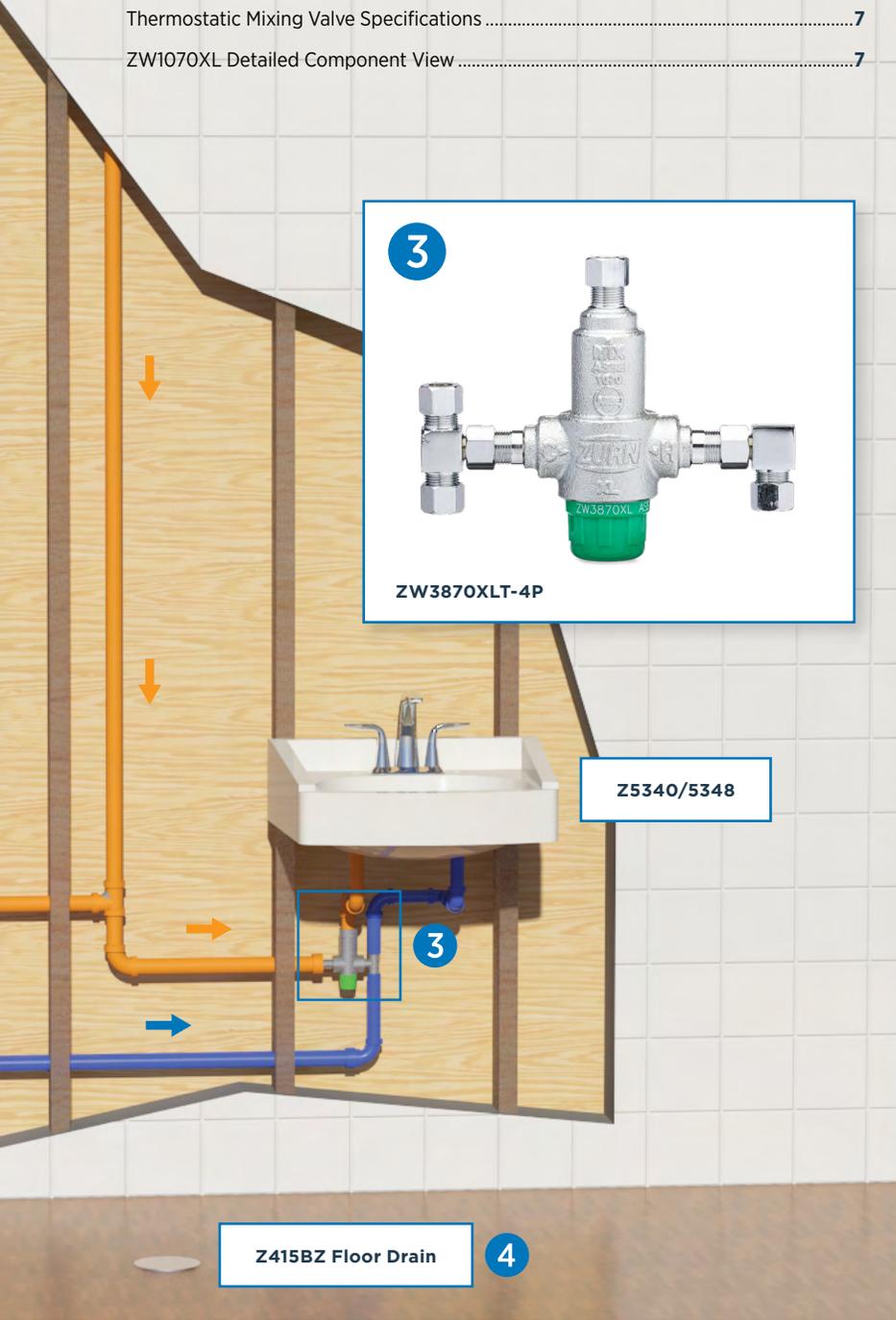
- **ZW1070XL** Point of Use Thermostatic Mixing Valve
- **Z6950-XL** Aqua-FIT Sensor Faucet
- **Z5340/5348** Wall Hung Lavatory

# Aqua-Gard® TMV Solutions

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**Typical Installation Key**

- ➔ Hot water
- ➔ Tempered water
- ➔ Cold water



**Z7500-DV-HW**  
Pressure Balance Shower Unit

**ZS880**  
Stainless Steel Linear Shower Drain

- 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 thermostatic mixing valve 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 point of use applications.

**Point of Use Thermostatic Mixing Valves ASSE 1070/ASME A112.1070/CSA B125.70:** 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:

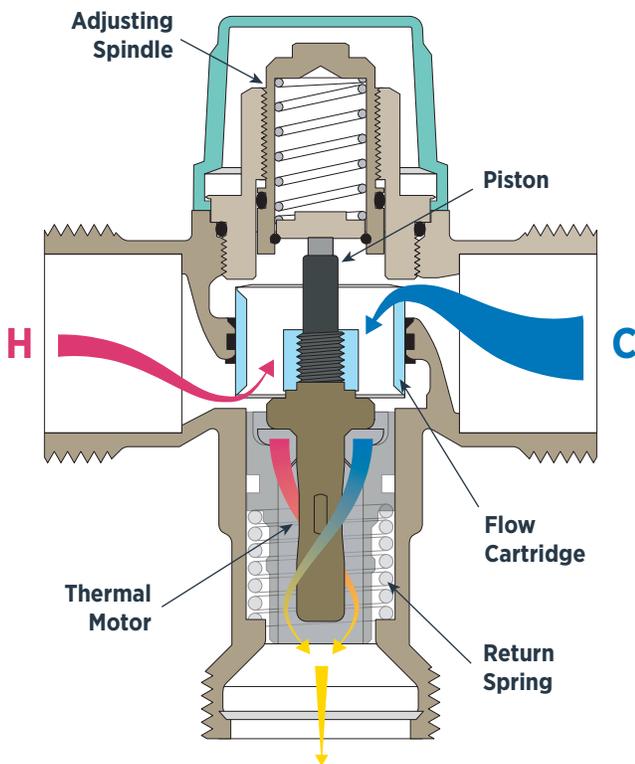
- Maintain the temperature of the hot water source to 140°F to minimize the potential of Legionella
- TMVs deliver a solution for the conflicting needs of reducing bacteria, yet providing water at a comfortable temperature for end users.

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.

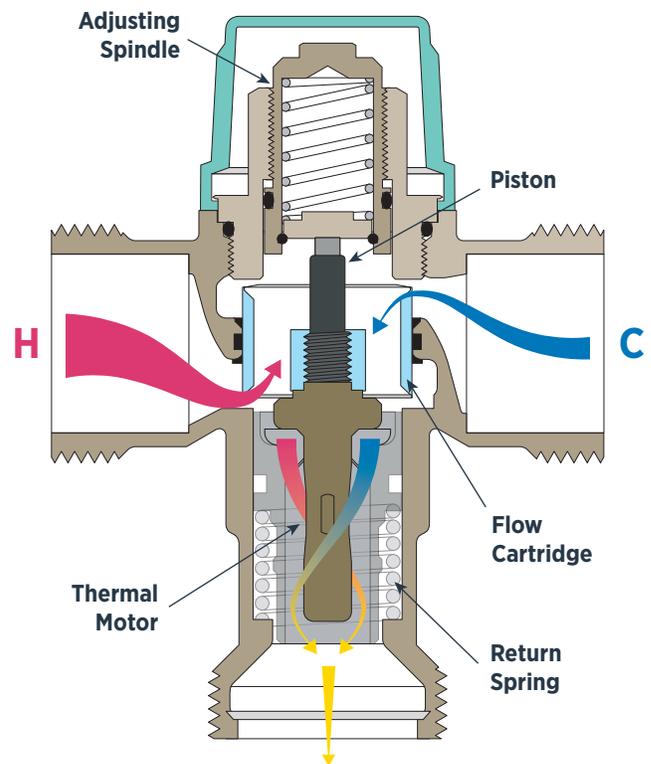
*\*Data from American Burn Association*

# 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<sup>®</sup> standard 1017, CSA<sup>®</sup> Certified B125.3, cUPC<sup>®</sup> Listed
- Meets the requirements of NSF/ANSI/CAN 61-9



## 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, cUPC Listed
- Meets the requirements of NSF/ANSI/CAN 61-9

# 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
- Available in 3/8", 1/2", 3/4", and 1"
- Chrome-plated bronze
- Suitable for multiple fixtures
- Certified to ASSE standard 1070, CSA Certified B125.70, cUPC Listed
- Meets the requirements of NSF/ANSI/CAN 61-9 Q<sub>≤1</sub>



## 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
- Chrome-plated bronze
- Certified to ASSE standard 1070, CSA Certified B125.70, cUPC Listed
- Meets the requirements of NSF/ANSI/CAN 61-9 Q<sub>≤1</sub>



## ZW3870XLTF/ZW3870XLTF-4P – Flush

- 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
- ZW3870XLTF most suitable for use with sensor faucets
- ZW3870XLTF-4P most suitable for use with manual faucets
- Inlet checks and strainers included
- Designed for single-fixture use
- Chrome-plated bronze
- Includes a tamper-resistant lever to bypass mixing for thermal disinfection
- Certified to ASSE standard 1070, CSA Certified B125.70, cUPC Listed
- Meets the requirements of NSF/ANSI/CAN 61-9 Q<sub>≤1</sub>

# 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.

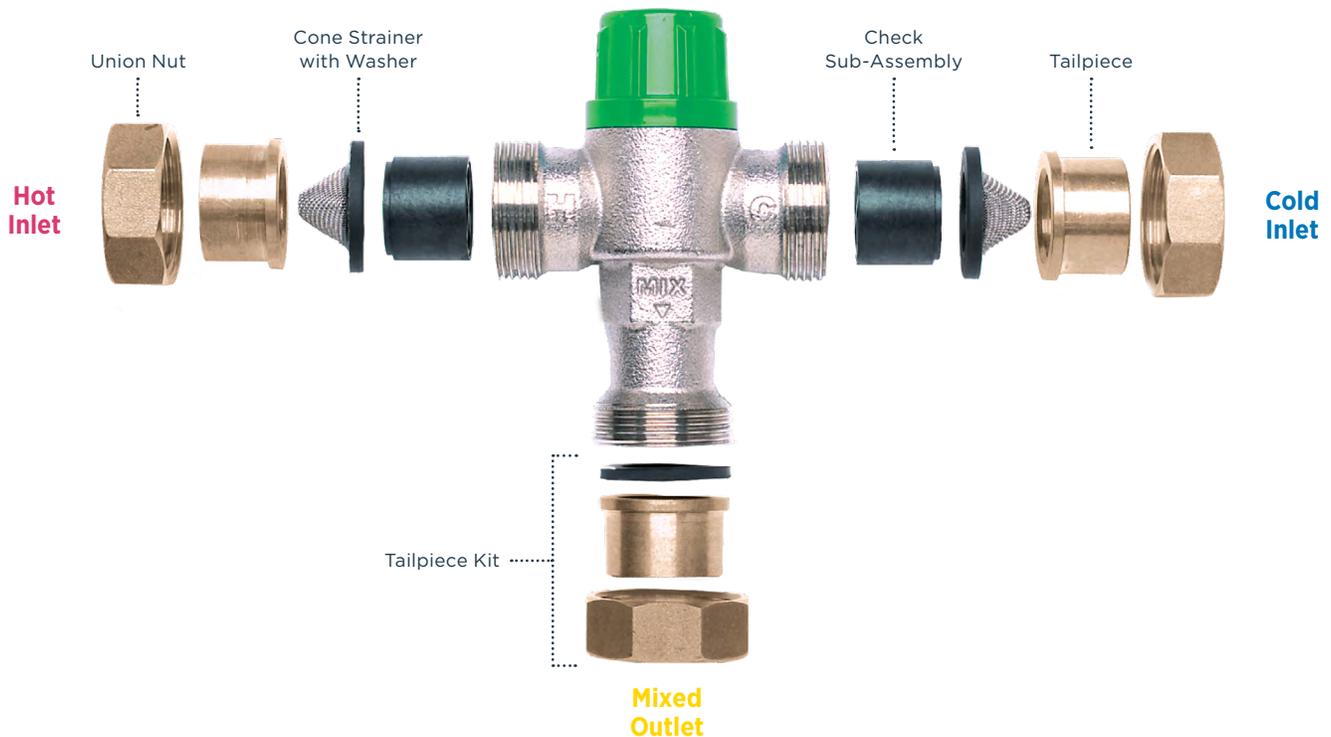


# Thermostatic Mixing Valve Specifications

	ZW1017XL	ZW1070XL	ZW3870XLT (-4P)	ZW3870XLTF (-4P)
<b>Sizes</b>	3/8", 1/2", 3/4", 1"	3/8", 1/2", 3/4", 1"	3/8"	3/8"
<b>Outlet Temperature Range</b>	95-131°F	95-115°F	95-115°F	95-115°F
<b>Temperature Hot Supply</b>	120-195°F	120-195°F	120-195°F	120-195°F
<b>Temperature Cold Supply</b>	39-80°F	39-80°F	39-80°F	39-80°F
<b>Set Temperature Accuracy</b>	+/- 4°F	+/- 3°F	+/- 3°F	+/- 3°F
<b>Maximum Working Pressure</b>	145 psi	145 psi	145 psi	145 psi
<b>Dynamic Working Pressure</b>	1.5-70 psi	1.5-70 psi	1.5-70 psi	1.5-70 psi
<b>Flow Rate @ 45 PSI</b>	18 gpm	10 gpm	3.1 gpm	3.1 gpm
<b>Minimum Flow Rate</b>	.5 gpm	.25 gpm	.06 gpm	.06 gpm

*ZW3870XLT recently approved at .06 gpm for ultra-low flow faucets*

# ZW1070XL Detailed Component View



Zurn Elkay Water Solutions® is a recognized leader in commercial, municipal, and industrial markets, delivering sustainable building solutions for new construction and retrofit applications. At Zurn we are committed to providing smart solutions that save both time and money. Our goal is serving the customer through innovation, continuous improvement, and assurance behind every installation. Choose Zurn for a reliable, recognized manufacturer to supply your entire installation, from behind the wall rough-in, to finish trim product and fixture systems.