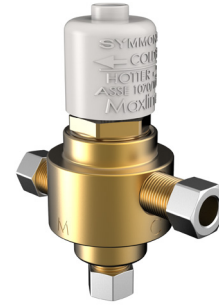




# SYMMONS® MaxLine®



## 8210CK Thermostatic Mixing Valve Operation & Maintenance Manual



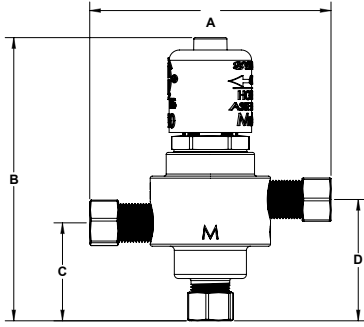
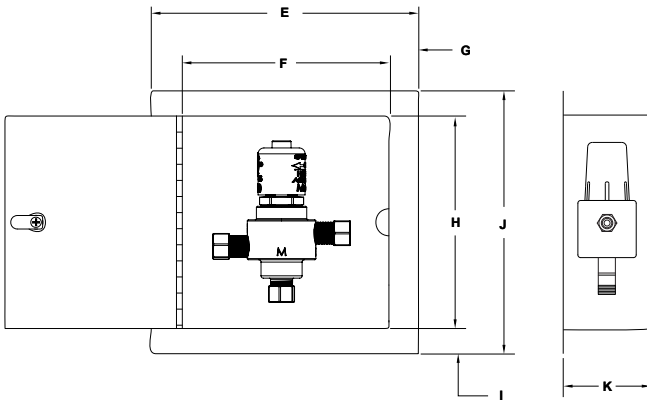
Model Numbers	Feature Highlights
<input type="checkbox"/> 8210CK      Thermostatic Mixing Valve	<ul style="list-style-type: none"> <li>• 3/8" compression connections</li> <li>• Integral checks</li> <li>• Stainless steel strainers for protection against suspended particles in supply lines</li> <li>• Thermal cartridge</li> <li>• Vandal resistant</li> <li>• Minimum flow rate 0.25 gpm (0.95L/min)</li> </ul> <p>Inlet water temperature: HOT inlet range 120°F - 180°F (48.9°C - 82.2°C) COLD inlet range 39°F - 80°F (3.9°C - 26.7°C)</p> <p>Temperature control range: 59°F - 115°F (15°C - 46°C)</p> <p>Minimum supply pressure: 20 psi (138 kPa) Maximum supply pressure: 125 psi (862 kPa) Inlet to outlet temperature differential: 10°F (5.55°C)</p> <p>*According to US Senate bill S.3874, the term "lead free" is defined as follows: "not more than a weighted average of 0.25 percent lead when used with respect to the wetted surfaces of pipes, pipe fittings, plumbing fittings, and fixtures."</p>
<h3>Options/Modifications</h3> <ul style="list-style-type: none"> <li><input type="checkbox"/> B      Wall cabinet in white enamel finish including wall mounting bracket</li> <li><input type="checkbox"/> D      3/8" compression fitting to allow water bypass for hot and cold supply faucet</li> <li><input type="checkbox"/> NI      Rough Nickel finish</li> <li><input type="checkbox"/> T      Stainless steel cabinet in place of standard white cabinet</li> </ul> <p>Note: Append appropriate suffix to model number.</p>	
<h3>Warranty</h3> <p><b>Limited Lifetime</b> - to the original end purchaser in consumer/residential installations. <b>10 Years</b> - for commercial/industrial installations. Refer to <a href="http://www.symmons.com/warranty">www.symmons.com/warranty</a> for complete warranty information.</p> 	<h3>Compliance</h3> <ul style="list-style-type: none"> <li>-ASME A112.18.1/CSA B125.1</li> <li>-ASSE 1017/CSA B125.3</li> <li>-ASSE 1070/CSA B125.3</li> <li>-NSF/ANSI 372</li> <li>-CSA B125.3</li> </ul> 

Table 1: Flow Rate - gpm (L/min)								
Valve Model	Size Connection	Min. Flow Rate	Pressure Differential - psi (kPa)					
			5 psi (34 kPa)	10 psi (69 kPa)	20 psi (138 kPa)	25 psi (172 kPa)	30 psi (207 kPa)	45 psi (310 kPa)
8210CK	3/8" (10 mm)	0.25 gpm (0.95 L/min)	1.32 gpm (5.0 L/min)	2.06 gpm (7.8 L/min)	2.74 gpm (10.4 L/min)	3.11 gpm (11.8 L/min)	3.38 gpm (12.8 L/min)	4.22 gpm (16.0 L/min)

## Dimensions



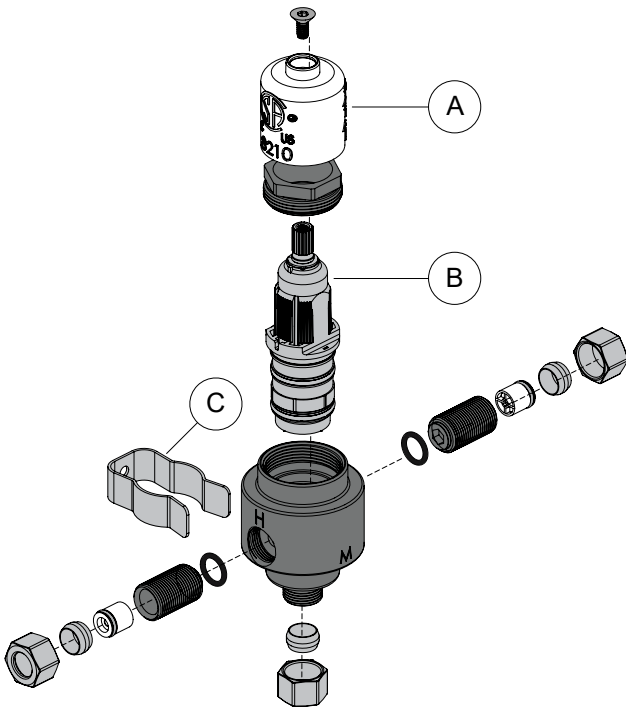
Wall cabinet (optional)



Measurements 8210CK	
A	3-1/2", 89 mm
B	4-1/8", 104 mm
C	1-7/16", 37 mm
D	1-3/4", 45 mm
E	12-1/4", 311 mm
F	10", 254 mm
G	1-1/8", 29 mm
H	10", 254 mm
I	1-1/8", 29 mm
J	12-1/4", 311 mm
K	4", 102 mm

Note: Dimensions are subject to change without notice.

## Parts Breakdown



Replacement Parts 8210CK*****		
Item	Description	Part No.
A	Safety cap	TMX302
B	Cartridge	TMX303
C	Wall mount hanger bracket	TMX304

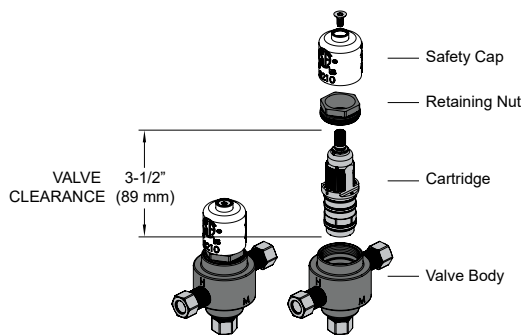
## Installation

### Sizing Valve

For assistance in sizing and selection of the proper valve, consult your local representative or Symmons Customer Service.

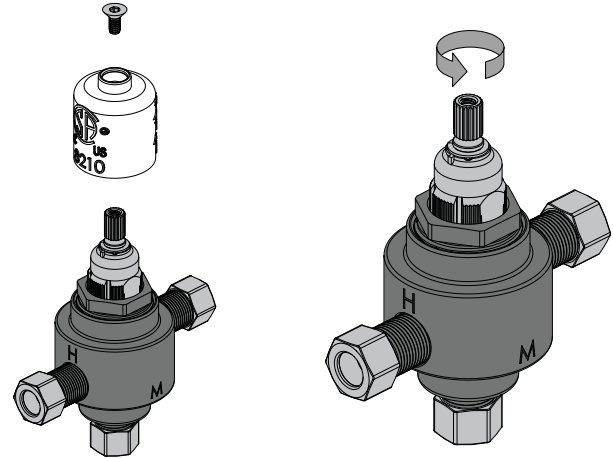
### Installing Valve

- 1) Flush piping thoroughly prior to installing.
- 2) Install valve so as to allow clearance for replacing cartridge. Valve can be installed in any orientation.
- 3) Connect valve input/output to supply ports.
  - a. Hot port marked (H)
  - b. Cold port marked (C)
  - c. Mixed output port marked (M)



### Setting Valve Temperature

- 1) Turn hot and cold water supply on.
- 2) Open faucet to allow hot water to flow for a minimum of one minute. For two handle faucets turn on hot water only. For single handle faucets turn on to the hot position.
- 3) Remove screw and cap.



- 4) Place thermometer in the outlet stream. Measure and accurately set temperature. Inlet temperature must be  $\pm 10^{\circ}\text{F}$  ( $5.55^{\circ}\text{C}$ ) of desired output.
- 5) To increase temperature turn stem counter-clockwise. To decrease temperature turn stem clockwise.

For single temperature applications adjust valve outlet temperature with full flow of tempered water from fitting.

For dual temperature applications open approximately 50% of all faucets to their full hot position to ensure proper operating temperature at peak demand.

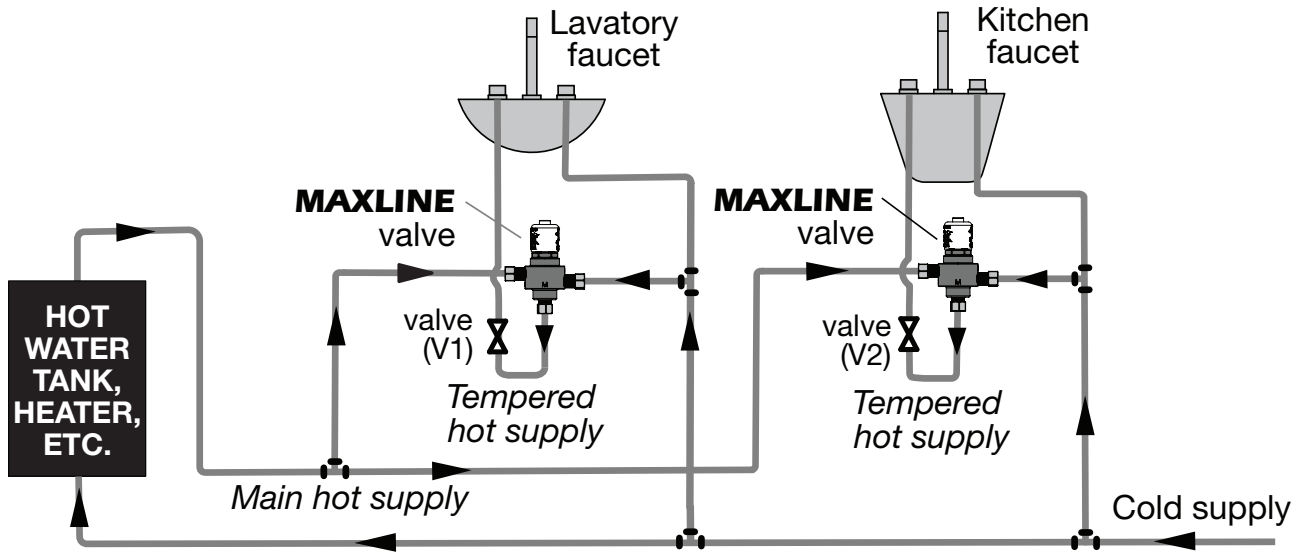
- 6) Replace cap and screw once desired temperature has been met

Note: Once the safety cap and screw have been installed the outlet temperature cannot be changed without repeating steps 2-6.

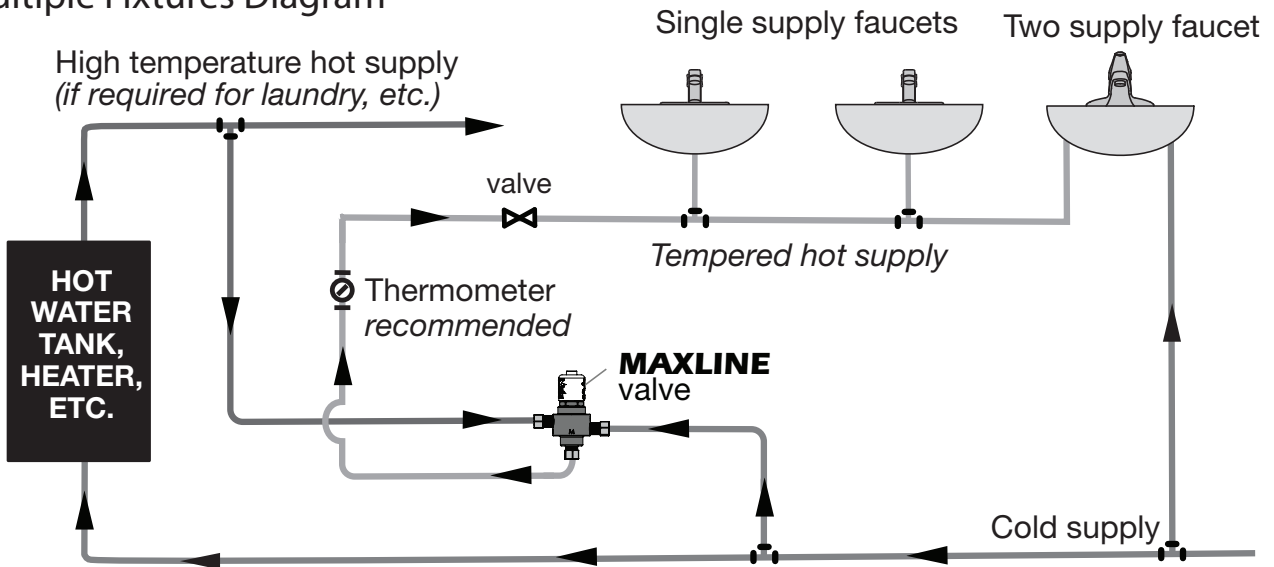


Warning: Water temperatures in excess of  $110^{\circ}\text{F}$  ( $43^{\circ}\text{C}$ ) may cause scalding, or severe injury!

### Point of Use Diagram



### Multiple Fixtures Diagram



## Initial 30 Day Inspection

Inspect cartridge within 30 days of initial operation. If inspection determines that your water system is causing deposits and foreign matter to build-up, then adjust cartridge maintenance accordingly.

## Cartridge Replacement

- 1) Shut off hot and cold water supplies to valve.
- 2) Remove screw and cap. This will expose the cartridge stem and cartridge retaining nut.
- 3) Remove retaining nut by turning counter-clockwise with adjustable wrench. Grasp cartridge with pliers and remove from body by pulling straight out. A slight rocking rotation may be required to loosen while removing.
- 4) Lubricate cartridge o-rings with a small amount of silicone lubricant prior to reinstalling. Insert replacement cartridge into valve body, applying enough force to ensure cartridge is fully seated. Install retaining nut back onto valve body.
- 5) Refer to "Setting Valve Temperature" section (pg.3) to properly set valve to desired temperature.

## Service Instructions

Cleaning screens & check valves:

- 1) Shut off hot and cold water supplies.
- 2) To clean screens leave cap installed. Remove retaining nut and remove cartridge. Clean debris from screens and body. Apply silicone lubricant to O-rings and reinstall.
- 3) To Replace the check valves, remove the supply lines and remove check valves from center body. Reinstall new check valves. Reconnect supply lines.

## Seasonal Use

If valve is used seasonally, such as in schools or campgrounds, then perform the following steps to avoid damage caused by freezing water when valves are not in use:

- 1) Shut off hot and cold water supplies.
- 2) Remove valve cartridge and drain all water.
- 3) Drain water from the supply lines and valve body.

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## Care and Cleaning

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Remove cartridge and clean valve body in household vinegar to remove corrosive mineral build up. Rinse under running hot water to ensure valve is free of foreign debris.

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## Trouble Shooting Chart

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Problem	Cause	Solution
Water flow is less than normal.	Screen in cartridge is dirty or clogged.	1) Remove cartridge and clean under running water. 2) Remove cartridge and clean in household vinegar or replace by ordering cartridge replacement kit.
Water continues to run colder than original temperature setting.	Check valve is not completely sealed allowing cold water to mix with hot.	Remove screen/check valve and clean under running water.
Valve is leaking around the cap retaining nut area.	Water leaking from o-ring seal.	Replace cartridge by ordering cartridge replacement kit.
Tempered hot water temperature is not hot enough.	Hot water supply into valve is not 10°F (5.55°C) above desired set point temperature. Temperature setting it to low.	Increase hot water supply temperature into valve. Reset temperature according to "Setting valve temperature" instructions.

 **WARNING:** This product can expose you to chemicals including lead, which is known to the state of California to cause cancer, birth defects, or other reproductive harm. For more information, go to [www.P65Warnings.ca.gov](http://www.P65Warnings.ca.gov).