



Water Temperature Limiting Valve, 5-225 / 5-230 Series
Installation and Service Instructions

Performance Specifications

Symmons Maxline™ valves are designed to perform to the following industry standards.

cUPC® CSA B125.1-05/ASME A112.18.1-05

1017-2003 & 1070-2004

Inlet water temperature:
HOT inlet range: 120°F - 180°F (48.9°C - 82.2°C)
COLD inlet range: 39°F - 85°F (3.9°C - 29.4°C)

Temperature control range:
60°F - 140°F (15.6°C - 60°C)

Minimum supply pressure: 20 psi (138 kPa)

Maximum supply pressure: 150 psi (1034 kPa)

Inlet to outlet temperature differential: 10°F (5.55°C)

Need Help?
Contact Symmons customer service at
(800) 796-6667, (781) 848-2250
Email: customerservice@symmons.com
Monday - Friday 8:00 am - 7:30 pm EST

Please check Symmons website for technical help, the latest product information and warranty policy. www.symmons.com/service

Warning: Water temperatures in excess of 110°F (43°C) may cause scalding, severe injury or death!

Important! The valve can be adjusted to deliver water temperatures exceeding 110°F (43°C). Once installed the outlet water temperature must be adjusted to ensure the delivery temperature does not exceed the required code and application.

Valve Models				
5-225-CK-MS	5-225-CK-F	5-225-CK-PEX	5-230-CK-M	5-230-CK-FS
Connections <ul style="list-style-type: none">1/2" male NPT1/2" sweat	Connection <ul style="list-style-type: none">1/2" female NPT	Connection <ul style="list-style-type: none">1/2" PEX	Connection <ul style="list-style-type: none">3/4" male NPT	Connection <ul style="list-style-type: none">3/4" sweat

Flow Rate Specifications - gpm (L/min)							
Valve Model	Minimum Flow Rate gallons/minute (liters/minute)	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)
5-225-CK-MS	.5 gpm (1.9 L/min)	4.5 gpm (17 L/min)	7 gpm (26.5 L/min)	9.5 gpm (36 L/min)	10.5 gpm (39.8 L/min)	12 gpm (45.4 L/min)	14 gpm (53 L/min)
5-225-CK-F	.5 gpm (1.9 L/min)	4.5 gpm (17 L/min)	7 gpm (26.5 L/min)	9.5 gpm (36 L/min)	10.5 gpm (39.8 L/min)	12 gpm (45.4 L/min)	14 gpm (53 L/min)
5-225-CK-PEX	.5 gpm (1.9 L/min)	3.5 gpm (13.2 L/min)	5.5 gpm (20.8 L/min)	8 gpm (30.3 L/min)	8.5 gpm (32.2 L/min)	9.5 gpm (36 L/min)	12 gpm (45.4 L/min)
5-230-CK-M	.5 gpm (1.9 L/min)	5 gpm (19 L/min)	7 gpm (26.5 L/min)	10 gpm (37.9 L/min)	11 gpm (41.6 L/min)	12 gpm (45.4 L/min)	14 gpm (53 L/min)
5-230-CK-FS	.5 gpm (1.9 L/min)	5 gpm (19 L/min)	7 gpm (26.5 L/min)	10 gpm (37.9 L/min)	11 gpm (41.6 L/min)	12 gpm (45.4 L/min)	14 gpm (53 L/min)

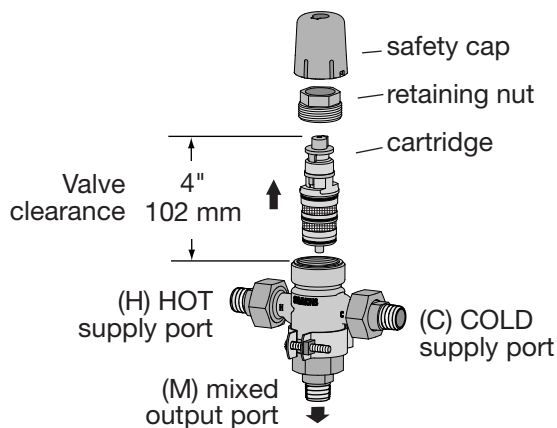
Installation Instructions

Sizing System

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

Installation

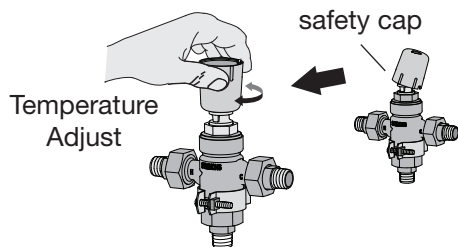
- 1) Flush piping** Thoroughly flush all piping prior to installing.
- 2) Valve placement** Install valve so as to allow clearance for replacing cartridge. Valve can be installed in any orientation.



- 3) Connect valve input/output supply ports.**
HOT (H) Input port marked H
COLD (C) Input..... port marked C
Mixed output (M) port marked M

Setting Valve Outlet Temperature

- 1) Turn hot and cold water supply ON.**
- 2) Open a faucet hot water.**
Allow water to flow for at least one minute.
Two handle faucets: Turn on hot water only.
Single lever faucets: Turn on to the hot position.
- 3) Attach temperature adjust / safety cap**
 - Remove the *safety cap* by inserting a small flat tip screwdriver into the wide slot at the base of the cap and pry upward.



- Flip the *safety cap* over 180 degrees and fit onto the end of valve spindle.

- 4) Place thermometer in the outlet stream.**
Measure and accurately set temperature.

- 5) Set temperature**

Increase (CCW) Turn counter clockwise.

Decrease (CW) Turn clockwise

Single temperature applications

Adjust valve outlet temperature with full flow of tempered water from the fitting.

Dual temperature applications

Open approximately 50% of all faucets to their full hot position to ensure proper operating temperature at peak demand.

- 6) Replace temperature adjust / safety cap**

Remove cap from end of valve spindle and flip over 180 degrees; press cap down and snap back onto valve body.

Note: Once the safety cap is snapped onto the valve body the outlet temperature cannot be changed without repeating steps 2 - 4 above.

Maintenance

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 periodic maintenance accordingly.

Cleaning Cartridge

- Remove and reinstall cartridge as referenced in section below, "Cartridge Replacement".
- Soak in regular household vinegar and rinse off any deposits.

Cartridge Replacement

- 1) Shut off hot and cold water supplies to valve.**

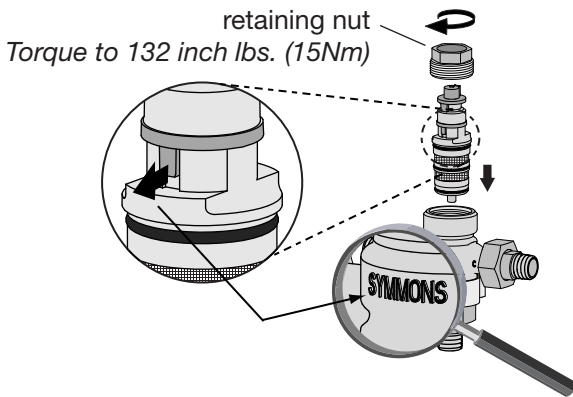
- 2) Remove safety cap**

Insert a small screwdriver into the widest opening at the base of the cap and pry upward. This will expose the *cartridge stem* and *cartridge retaining nut*.

- 3) Remove and replace cartridge (TMX-267)**

- 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.
- Lubricate cartridge O-rings with a small amount of lubricant prior to re-installing.

- Insert replacement *cartridge* into valve body, applying enough force to ensure cartridge is fully seated. Install *cartridge* with keyway in-line



with Symmons logo located on front of valve casting as shown in figure to the left.

- Install *retaining nut* back onto valve body.

4) Set valve outlet temperature

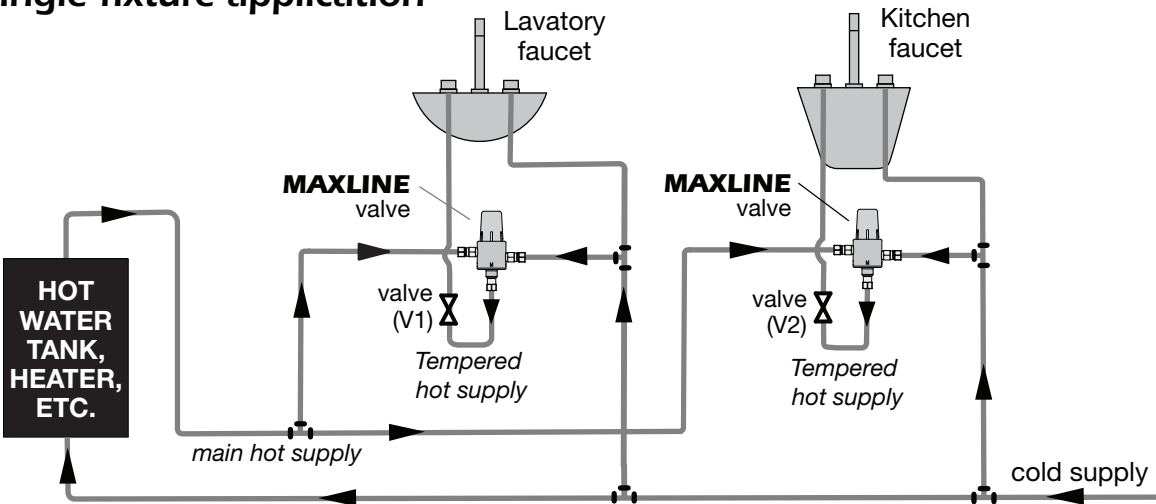
Refer to section for “Setting Valve Outlet Temperature”.

Seasonal Use

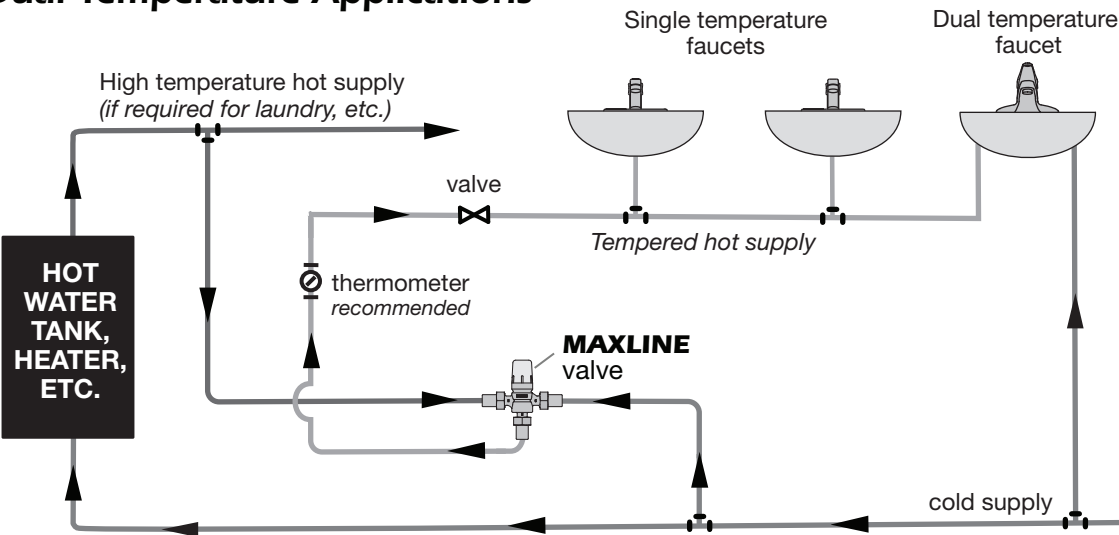
If valve is used seasonally, such as in schools or campgrounds, then perform the following to avoid damage caused by freezing water when valves are not in use.

- Shut off hot and cold water supply.
- Remove valve cartridge and drain all water.
- Drain water from the supply lines and valve body.

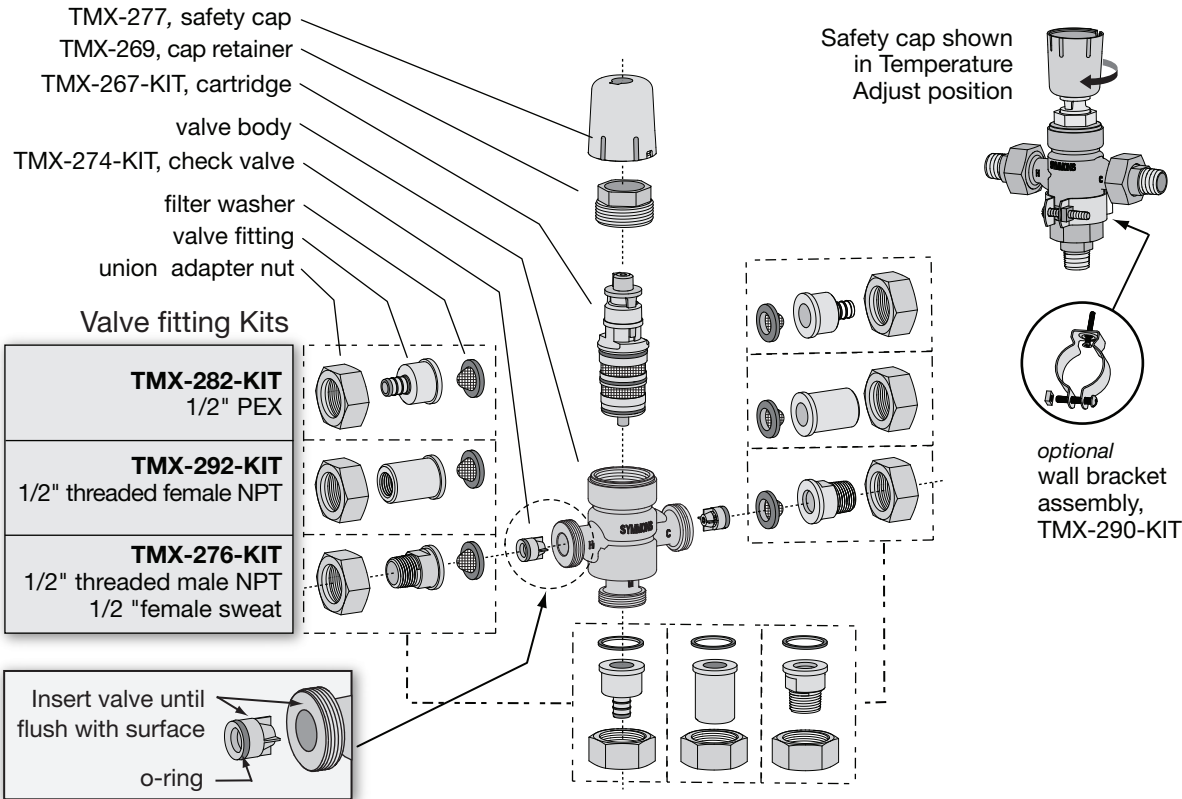
Single fixture application



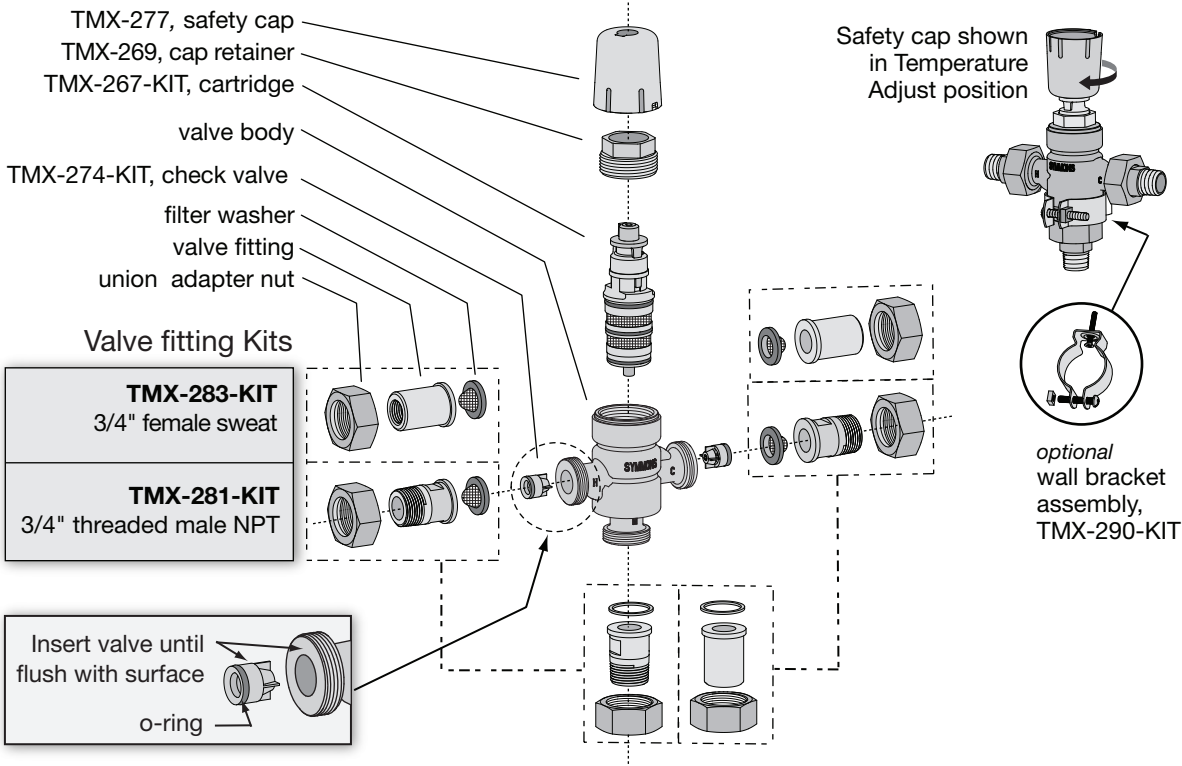
Dual Temperature Applications



Parts Assembly **MAXLINE™** Water Temperature Limiting Valve, 5-225 Series



Parts Assembly **MAXLINE™** Water Temperature Limiting Valve, 5-230 Series



Replacement Parts

Part Number	Model 5-225	Model 5-230	Item
TMX-267-KIT	√	√	Cartridge replacement kit
TMX-274-KIT	√	√	Filter washer and check valve replacement kit (1 ea.)
TMX-277	√	√	Temperature adjust / safety cap
TMX-276-KIT	√		Valve fitting kit, 1/2" threaded male NPT / 1/2" female sweat (3 ea.)
TMX-281-KIT		√	Valve fitting kit, 3/4" threaded male NPT (3 ea.)
TMX-282-KIT	√		Valve fitting kit, 1/2" PEX (3 ea.)
TMX-283-KIT		√	Valve fitting kit, 3/4" female sweat (3 ea.)
TMX-292-KIT	√		Valve fitting kit, 1/2" threaded female NPT (3 ea.)

Troubleshooting Chart

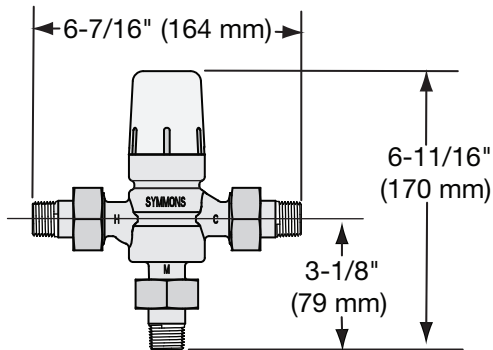
Problem	Cause	Solution
Water flow is less than normal.	<ul style="list-style-type: none"> Screen in valve is dirty. Cartridge is dirty or clogged 	<ul style="list-style-type: none"> Remove <i>filter washer</i> and clean under running water or replace by ordering <i>Filter washer/check valve Replacement Kit</i>, p/n TMX-274-KIT. Remove <i>cartridge</i> and clean in household vinegar or replace cartridge by ordering <i>Cartridge Replacement Kit</i>, p/n TMX-267-KIT
Valve is leaking around the CAP retaining nut area.	O-ring seal leaks	Replace O-ring by ordering <i>Cartridge Replacement Kit</i> , p/n TMX-267-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.	Increase hot water supply temperature into valve.

Service Instructions

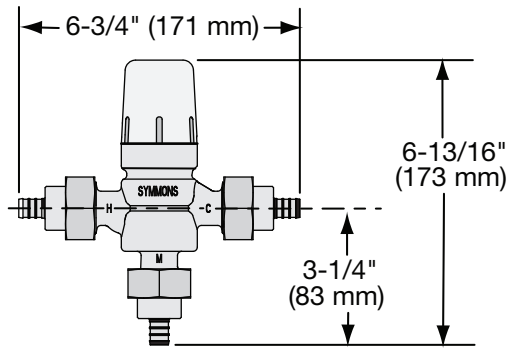
Cleaning or replacing filter washer and check valve <i>Reference parts assembly illustrations</i> <ul style="list-style-type: none"> Remove <i>union adapter nut</i> from <i>valve body</i> and then <i>valve fitting</i> from <i>union adapter nut</i>. 	<ul style="list-style-type: none"> Clean <i>filter washer</i> seated in <i>valve fitting</i> by soaking both in household vinegar and rinse under running water. Ensure not to damage screen in <i>filter washer</i>. Replace <i>filter washer</i> into center of <i>valve fitting</i>. 	<ul style="list-style-type: none"> Replace <i>check valve</i> by removing from center of <i>valve body</i> port connection. Fasten and tighten <i>union adapter nut</i> over <i>valve fitting</i> to <i>valve body</i>.
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Dimensions Symmons Maxline™ Water Temperature Limiting Valves, 5-225 / 5-230 Series

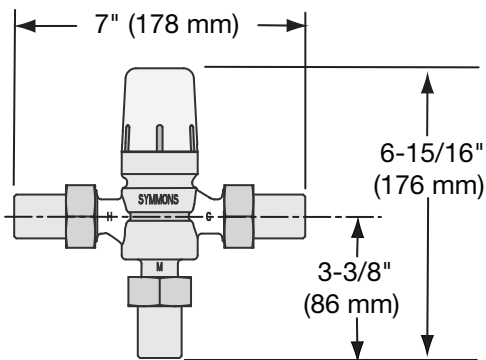
Model: 5-225-CK-MS, 1/2" male NPT & 1/2" f-sweat



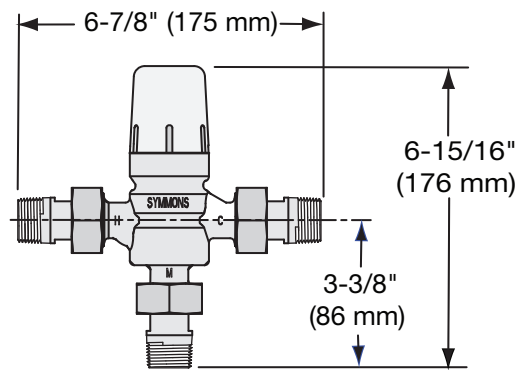
Model: 5-225-CK-PEX, 1/2" PEX



Model: 5-225-CK-F, 1/2" threaded female NPT
Model: 5-230-CK-FS, 3/4" female sweat



Model: 5-230-CK-M, 3/4" threaded male NPT



Wall cabinet (optional), surface mounted

- White enamel finish, p/n TMX-147 ■ Stainless steel, p/n TMX-148

