

Cutting-Edge Innovation in Temperature Mixing



Caleffi Mixing Valves Lead the Way

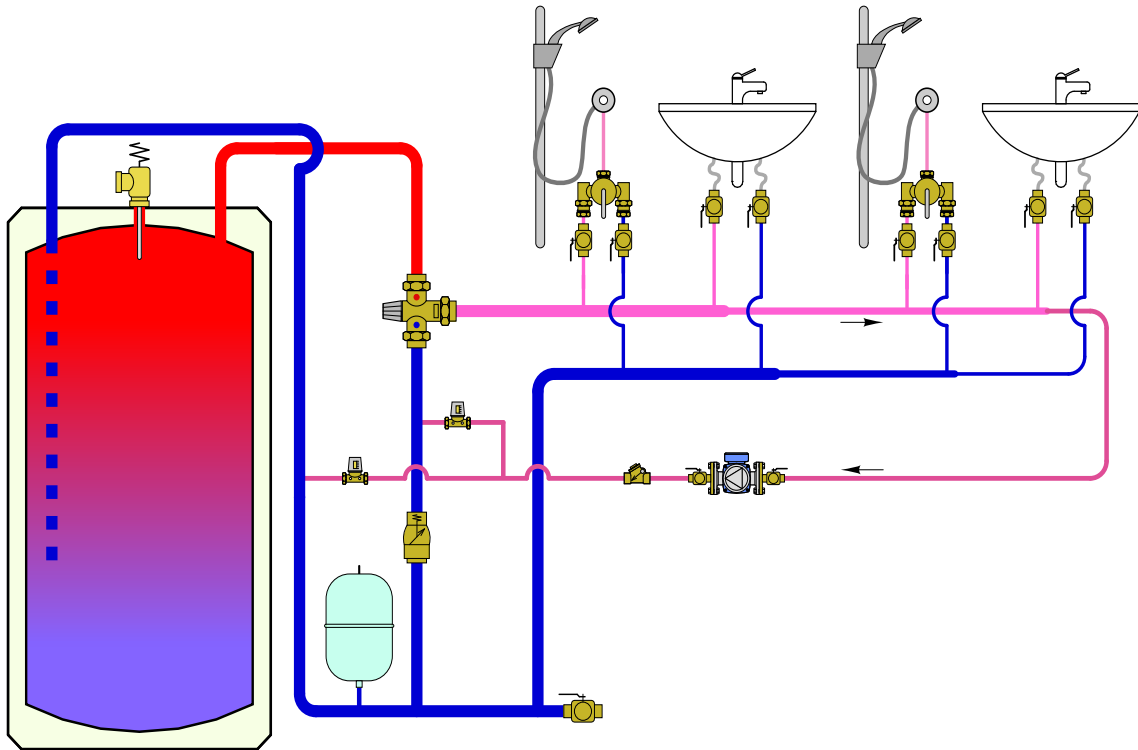
- Feature-rich portfolio of thermostatic and digital mixing solutions.
- Over 50 years of proven, reliable service worldwide.
- Broad assortment of union connections for piping flexibility.
- Compliance with ANSI/NSF 372-2011 low lead, ASSE 1017, ASSE 1070 (anti-scald), CSA B125.3, UPC, IPC, IRC, NPC for the USA and Canada.



Controlling and protecting your water

MIXING VALVES FOR PLUMBING AND HYDRONICS

This diagram is for illustration purposes only



PRODUCTS INCLUDED IN SECTION

- Thermostatic mixing valves for plumbing and hydronics
- High flow thermostatic mixing valves for plumbing and hydronics
- Scald protection thermostatic mixing valves for plumbing
- Mixing valves for centralized hydronic systems
- Electronic mixing valve for plumbing
- High/low thermostatic mixing valve for plumbing
- Thermostatic mixing valve kit for domestic water heaters

THERMOSTATIC MIXING VALVES FOR PLUMBING AND HYDRONICS



521 MixCal™

Adjustable thermostatic mixing valve for point of distribution in domestic water systems and radiant hydronic heating systems.
Low-lead brass body.
Locking set point knob.
Max. working pressure: 200 psi.
Max. inlet temperature: 200°F.
Adjustable range: 85–150°F.
Min. flow for optimum performance: 1.0 gpm.
(0 gpm with recirculation)
Max flow for optimum performance 14 gpm.

ASSE 1017



521 MixCal™ with gauge

Adjustable thermostatic mixing valve for point of distribution in domestic water systems and radiant hydronic heating systems.
Low-lead brass body.
Locking set point knob.
Max. working pressure: 200 psi.
Max. inlet temperature: 200°F.
Adjustable range: 85–150°F.
Min. flow for optimum performance: 1.0 gpm.
(0 gpm with recirculation)
Max flow for optimum performance 14 gpm.
Optional Gauge scale: 30–210°F.

ASSE 1017

Code	Description	Cv	Lbs
521409A	½" sweat union	3	2.4
521409AC	½" sweat union, check valves	3	2.4
521400A	½" NPT male union	3	2.4
521400AC	½" NPT male union, check valves	3	2.4
521406A	½" Press union	3	2.4
521407A	½" PEX crimp union	3	2.4
521407AC	½" PEX crimp union, check valves	3	2.9
521408A	½" PEX expansion union	3	2.4
521408AC	½" PEX expansion union, check valves	3	2.9
521509A	¾" sweat union	3	2.4
521509AC	¾" sweat union, check valves	3	2.4
521500A	¾" NPT male union	3	2.4
521500AC	¾" NPT male union, check valves	3	2.4
521506A	¾" Press union	3	2.4
521506AC	¾" Press union, check valves	3	2.5
521507A	¾" PEX crimp union	3	2.4
521507AC	¾" PEX crimp union, check valves	3	2.9
521508A	¾" PEX expansion union	3	2.4
521508AC	¾" PEX expansion union, check valves	3	2.9
521609A	1" sweat union	3	2.4
521609AC	1" sweat union, check valves	3	2.4
521600A	1" NPT male union	3	2.4
521600AC	1" NPT male union, check valves	3	2.4
521606A	1" Press union	3	2.6
521607A	1" PEX crimp union	3	2.4
521607AC	1" PEX crimp union, check valves	3	2.9
521608A	1" PEX expansion union	3	2.4
521608AC	1" PEX expansion union, check valves	3	2.9

Code	Description	Cv	Lbs
521419A	½" sweat union	3	2.9
521419AC	½" sweat union, check valves	3	2.9
521410A	½" NPT male union	3	2.9
521410AC	½" NPT male union, check valves	3	2.9
521416A	½" Press union	3	2.9
521417A	½" PEX crimp union	3	2.5
521417AC	½" PEX crimp union, checks	3	2.9
521418A	½" PEX expansion union	3	2.5
521418AC	½" PEX expansion union, checks	3	2.9
521519A	¾" sweat union	3	2.9
521519AC	¾" sweat union, check valves	3	2.9
521510A	¾" NPT male union	3	2.9
521510AC	¾" NPT male union, check valves	3	2.9
521516A	¾" Press union	3	2.9
521516AC	¾" Press union checks	3	3
521517A	¾" PEX crimp union	3	2.5
521517AC	¾" PEX crimp union, checks	3	2.9
521518A	¾" PEX expansion union	3	2.5
521518AC	¾" PEX expansion union, checks	3	2.9
521619A	1" sweat union	3	2.9
521619AC	1" sweat union, check valves	3	2.9
521610A	1" NPT male union	3	2.9
521610AC	1" NPT male union, check valves	3	2.9
521616A	1" Press union	3	3.1
521617A	1" PEX crimp union	3	2.5
521617AC	1" PEX crimp union, checks	3	2.9
521618A	1" PEX expansion union	3	2.5
521618AC	1" PEX expansion union, checks	3	2.9

Meets requirements of ANSI/NSF 372-2011. Certified to ASSE 1017, CSA B125.3, UPC, IPC, Low Lead Laws and listed by ICC-ES for use in accordance with the U.S. and Canadian plumbing codes.

ACCESSORIES



Replacement check valves for 521 (AC models) and 5213.

Code	Description	Lbs
NA10405	Repl. check for 521 PEX, press fittings	0.1
R39204	Repl. check for 521 sweat, NPT fittings	0.1
NA10479	Replacement check for 521333A	0.1



Conical inlet filter for 521 and 5213 mixing valves.

Code	Description	Lbs
F52429	Conical filter	0.1

THERMOSTATIC MIXING VALVES FOR PLUMBING AND HYDRONICS



Point of distribution mixed temperature gauge adaptor fits 1" male union thread mixing valves.
Removable gauge fits into pocket well.
Gauge scale: 30–210°F.
Gauge accuracy: ± 6°F.
Gauge dial: 2" diameter.
Certified: Low-lead brass.

Code	Description	Lbs
NA10328	½" sweat with gauge	0.4
NA10056	¾" sweat with gauge	0.4
NA10058	1" sweat with gauge	0.4
NA10358	1" union thread with gauge	0.4
688003A	Replacement gauge with pocket well	0.5
R39591	Replacement gauge	0.1
NA10498	Pocket well, plated	0.1

Meets requirements of ANSI/NSF 372-2011. Certified to ASSE 1017, CSA B125.3, UPC, IPC, Low Lead Laws and listed by ICC-ES for use in accordance with the U.S. and Canadian plumbing codes.



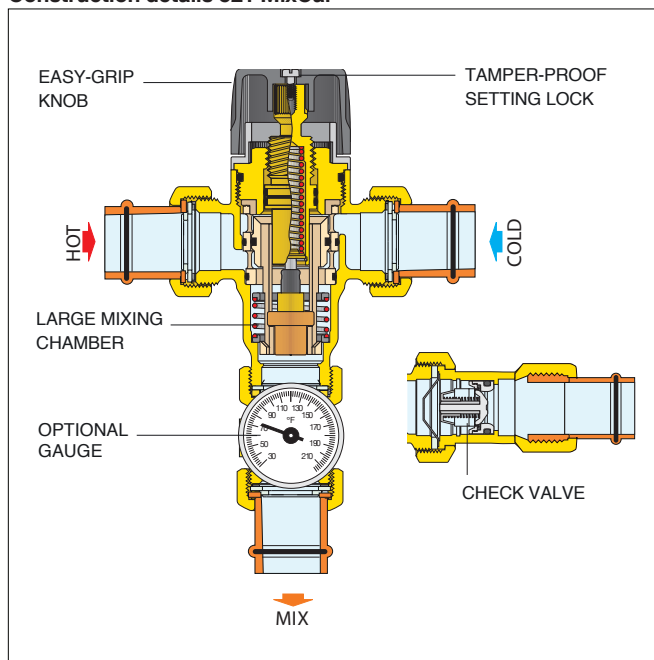
520 AngleMix™ with gauge

Adjustment temperature range: 95°F — 150°F.
Max. working pressure (static): 150 psi.
Max. working pressure (dynamic): 75 psi.
Max. inlet temperature: 195°F.
Gauge scale: 30–210°F.
Minimum flow for optimum performance: 0.5 gpm (0 gpm with recirculation).
Max flow for optimum performance 9 gpm.

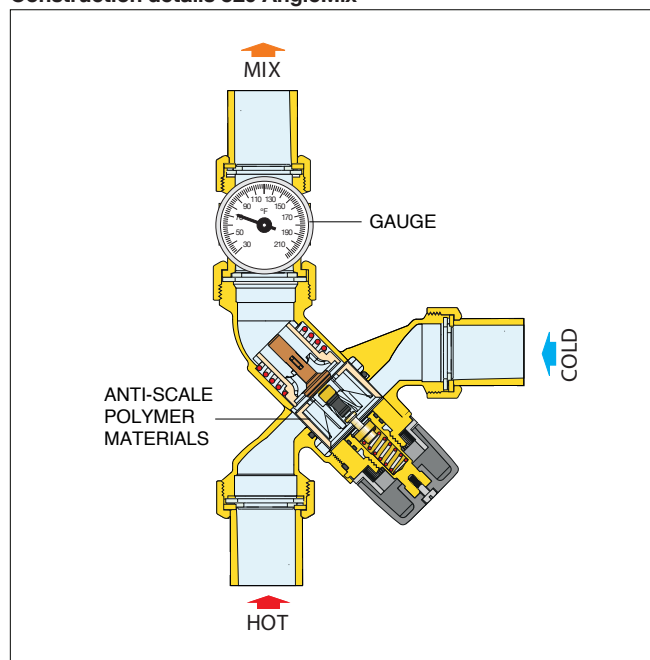
ASSE 1017

Code	Description	Cv	Lbs
520516A	¾" angle, press union	2	2.8
520516AC	¾" angle, press union, checks	2	2.8
520519A	¾" angle, sweat union	2	2.8
520519AC	¾" angle, sweat union, checks	2	2.8

Construction details 521 MixCal™



Construction details 520 AngleMix™



521 MixCal™ Body

Replacement body.
See fitting selection table in Section 8.

ASSE 1017

Code	Description	Cv	Lbs
521101A	1" male union thread	3	1.9



520 AngleMix™ Body

Replacement body.
See fitting selection table in Section 8.

ASSE 1017

Code	Description	Cv	Lbs
520051A	1" male union thread	2	2.0

HIGH FLOW THERMOSTATIC MIXING VALVES FOR PLUMBING AND HYDRONICS

Model 5231 series high flow thermostatic mixing valves for centralized systems are designed to be installed at the domestic water heater (point of distribution). For safety reasons, it is advisable to limit the maximum mixed water temperature to 120°F (when anti-scald valves are not installed at point-of-use). 5231 series thermostatic mixing valves can also be used for regulating the flow temperature in radiant panel heating systems, to which it assures a constant and accurate control with ease of installation. Meets requirements of ANSI/NSF 372-2011. Certified to ASSE 1017, CSA B125.3, UPC, IPC, Low Lead Laws and listed by ICC-ES for use in accordance with the U.S. and Canadian plumbing codes.



5231 MixCal+™

Adjustable thermostatic mixing valve for domestic water systems and radiant hydronic systems.
DZR low lead brass body.
Max. working pressure: 200 psi.
Max. inlet temperature: 195°F.
Adjustable range: 95—150°F.

ASSE 1017

Code	Description	Min - Max Flow (gpm)	Cv	Lbs
523168A	1" sweat union	4.4 to 40	7	7
523160A	1" NPT male union	4.4 to 40	7	7
523166A	1" press union	4.4 to 40	7	7
523178A	1¼" sweat union	4.4 to 40	7.6	7
523176A	1¼" press union	4.4 to 40	7.6	7
523170A	1¼" NPT male union	4.4 to 40	7.6	7
523188A	1½" sweat union	8.8 to 70	13	17
523186A	1½" press union	8.8 to 70	13	17
523180A	1½" NPT male union	8.8 to 70	13	17
523198A	2" sweat union	8.8 to 70	14.2	18
523196A	2" press union	8.8 to 70	14.2	18
523190A	2" NPT male union	8.8 to 70	14.2	18



5231 MixCal+™ Body Sweat

Replacement body includes nuts and washers.
See fitting selection table in Section 8.

ASSE 1017

Code	Description	Min - Max Flow (gpm)	Cv	Lbs
523179A	For 1" and 1¼" sizes	4.4 to 40	7.6	5.0
523199A	For 1½" and 2" sizes	8.8 to 70	14.2	14.2



5231 MixCal+™ Sweat

Adjustable thermostatic mixing valve for domestic water systems and radiant hydronic systems.
DZR low lead brass body.
Max. working pressure: 200 psi.
Max. inlet temperature: 195°F.
Adjustable range: 95—150°F.
Gauge scale: 30—210°F.
Gauge accuracy: ± 6°F.
Gauge dial: 2" diameter.

ASSE 1017

Code	Description	Min - Max Flow (gpm)	Cv	Lbs
523177A	1¼" sweat union	4.4 to 40	7.6	9.0



Point of distribution mixed temperature gauge adaptor fits High Flow 5231 series mixing valves.
Removable gauge fits into pocket well.
Gauge scale: 30—210°F.
Gauge accuracy: ± 6°F.
Gauge dial: 2" diameter.
Certified: Low-lead brass.

Code	Description	Lbs
NA10315	1¼" sweat	0.5
NA10476	1" and 1¼" male x female union	3.0
NA10461	1½" and 2" male x female union	4.0
688003A	Replacement gauge with pocket well	0.2
R39591	Replacement gauge	0.1



Inlet check valve assembly for installing on inlet union tail pieces of 5231 mixing valves.
Stainless steel body. No Lead. Ordered separately, field installed. Assembly examples shown below.



523177A shown with (2) NA10366 523178A shown with (2) NA10366

Code	Description	Lbs
NA10366	Check valve assembly 1" and 1¼"	1.0
NA10367	Check valve assembly 1½" & 2"	1.5

SCALD PROTECTION THERMOSTATIC MIXING VALVES FOR PLUMBING

NEW



5212 SinkMixer™ 4-way Scald Protection Point-of-use

Thermostatic mixing valve for under sink and under counter applications where the user must be protected from the danger of scalding caused by hot water.

Temperature adjustment range: 95—120°F.

Cold inlet temperature: Min. 39°F; Max. 85°F.

Hot inlet temperature: Min. 120°F; Max. 195°F.

Maximum operating differential pressure:

Static: 150 psi (10 bar).

Dynamic: 70 psi (5 bar).

Min. operating differential pressure (dynamic): 1.5 psi (0.1 bar).

Min flow for optimum performance 0.35 gpm.

Max flow for optimum performance 2.3 gpm.

ASSE 1070

Code	Description	Cv	Lbs
521201A	3/8" compression union	0.52	1



5213 Scald Protection Point-of-Use

Adjustable thermostatic mixing valve for point of use where protected from scalding caused by hot water with locking set point. Complete with check valves on both hot and cold inlets.

Low-lead brass body.

Max. working pressure: 150 psi.

Max. inlet temperature: 185°F.

Adjustable range: 85—120°F.

Temperature control: ±3°F.

Min. flow for optimum performance: 0.5 gpm.

Max flow for optimum performance 9 gpm.

ASSE 1070

Code	Description	Cv	Lbs
521333A	3/8" compression union	2	2
521347A	1/2" PEX crimp union	2	2
521348A	1/2" PEX expansion union	2	2
521342A	1/2" NPT male union	2	2
521349A	1/2" sweat union	2	2
521357A	3/4" PEX crimp union	2	2
521358A	3/4" PEX expansion union	2	2
521352A	3/4" NPT male union	2	2
521359A	3/4" sweat union	2	2
521367A	1" PEX crimp union	2	2
521368A	1" PEX expansion union	2	2
521362A	1" NPT male union	2	2
521369A	1" sweat union	2	2
521301A*	Replacement body, no fittings	2	1.5

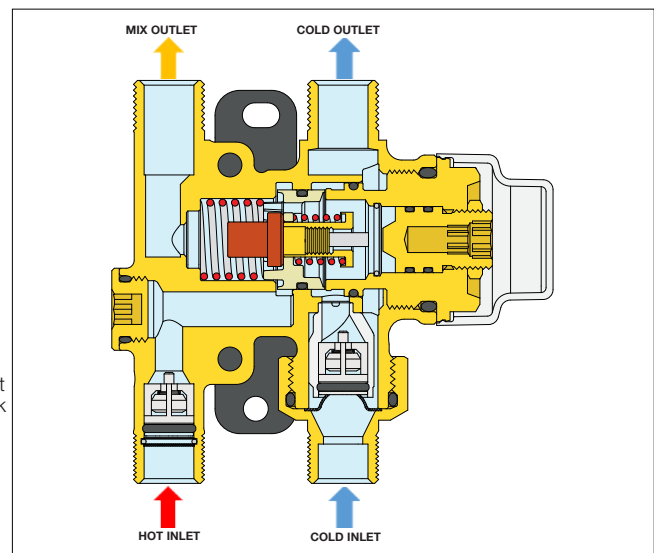
*See fitting selection table in Section 8.

Operating principle 5212 SinkMixer™

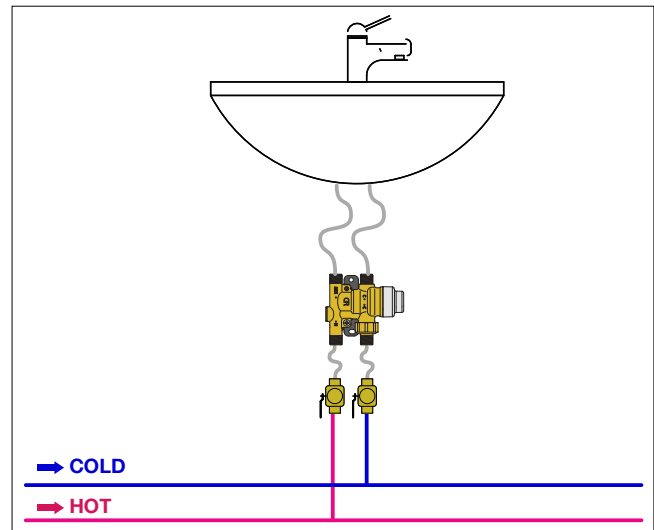
The thermostatic mixing valve mixes hot and cold water in such a way as to maintain constant set temperature of the mixed water at the outlet. A thermostatic element is fully immersed into the mixed water. This element then contracts or expands causing movement of the piston, closing either the hot or cold inlets, regulating the flow rates entering the valve. If there are variations of temperature or pressure at the inlets, the internal element automatically reacts to restore the original temperature setting. In the event of a failure of either the hot or cold supply, the piston will shut off, stopping water discharging from the mixed water outlet.

Thermal shutoff

In the event of a failure of the hot supply port, the piston closes the cold supply port. Similarly, if the cold water supply fails, the piston closes the hot supply port. The Caleffi 521201A thermostatic mixing valve requires a minimum temperature differential from hot inlet to mixed water outlet of 18°F (10°C) to ensure the correct operation of the thermal shutoff feature.



SinkMixer installation diagram



Meets requirements of ANSI/NSF 372-2011. Certified to ASSE 1070, CSA B125.3, UPC, IPC, Low Lead Laws and listed by ICC-ES for use in accordance with the U.S. and Canadian plumbing codes.

ELECTRONIC MIXING VALVE FOR PLUMBING



Code	Description		Cv	Lbs
600054A	¾" NPT male union	NEW	9.7	5.1
600059A	¾" sweat union	NEW	9.7	5.1
600056A	¾" press union	NEW	9.7	5.1
600064A	1" NPT male union		21	7.3
600069A	1" sweat union		21	7.3
600066A	1" press union		21	7.3
600074A	1-1/4" NPT male union		24	8.2
600079A	1¼" sweat union		24	8.2
600076A	1¼" press union		24	8.2
600084A	1½" NPT male union		34	21
600089A	1½" sweat union		34	21
600086A	1½" press union		34	21
600094A	2" NPT male union		48	22
600099A	2" sweat union		48	22
600096A	2" press union		48	22
600060A	2½" ANSI 150 flanges	NEW	105	30
600080A	3" ANSI 150 flanges	NEW	120	42

Function

The electronic mixing valve is used in centralized systems that produce and distribute domestic hot water. It maintains the temperature of the domestic hot water delivered to the user when there are variations in the temperature and pressure of the hot and cold water at the inlet or in the draw-off flow rate. The LEGIOMIX® electronic mixing valve provides precise temperature control over very low and very high flow rate demand, minimal pressure drop with a ball valve control element, automatic self-cleaning to prevent scale formation and easy-to-use digital interface with data logging, alarming and status indication. The LEGIOMIX® electronic mixing valve is furnished with a controller with LCD user interface that provides a set of programs for circuit thermal disinfection to kill Legionella and is configurable via keypad, or local or remote computer. Depending on the type of system and habits of the user, temperature levels and operation times can be programmed as desired. In addition, it comes standard with monitoring and remote control connections.

6000 LEGIOMIX®

Electronic mixing valve with optional selectable programs for thermal disinfection of hot water recirculation system to kill Legionella bacteria.

Code number includes:

three-way ball valve

3-wire floating control actuator

controller/user interface with DIN rail mounting bracket

mixed outlet temperature sensor/probe

return temperature sensor/probe

mixed outlet temperature gauge

optional Modbus-to-BACnet gateway for BAS integration

Power: 24 VAC +/- 10% - 50/60 Hz - 6 VA.

115/24 VAC transformer included.

Adjustment temperature range: 70 — 185°F.

Disinfection temperature range: 100 — 185°F.

Max body pressure rating (static): 230 psi.

Max operating pressure: 150 psi.

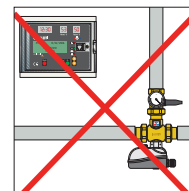
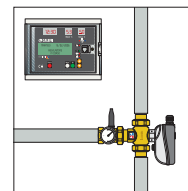
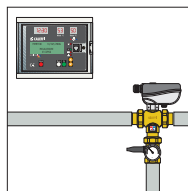
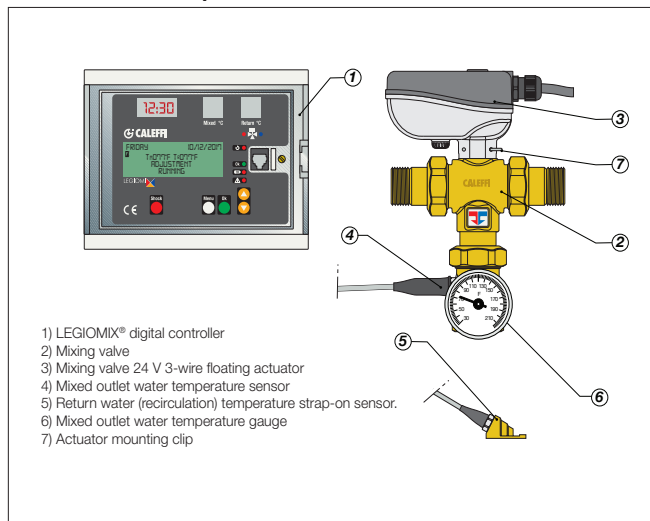
Max. inlet temperature: 212°F.

Protection class: IP 54 (controller).

Meets requirements of ANSI/NSF 372-2011 and certified to ASSE 1017, CSA B125.3, UPC, IPC, Low Lead Laws and listed by ICC-ES for use in accordance with the U.S. and Canadian plumbing codes.

ASSE 1017

Characteristic components



Size	Recommended Flow Rates (gpm/lpm)						
	¾"	1"	1¼"	1½"	2"	2½"	3"
Minimum flow*	2.2 / 8.3	3.1 / 11.7	4.4 / 16.6	6.6 / 25	8.8 / 33.3	17.0 / 64	22.0 / 83.3
Design flow**	27 / 102	58 / 220	66 / 250	93 / 352	131 / 495	288 / 1,090	329 / 1,245
Maximum flow	43 / 172	94 / 356	107 / 405	152 / 575	215 / 814	470 / 1,780	537 / 2,033
Cv	9.7	21	24	34	48	105	120

*to ensure stable operation and ± 3° F accuracy. Minimum flow rate is 0 gpm when recirculation flow rate is greater than or equal to the valve size minimum flow rating.

**suggested maximum flow rate for optimum modulating control (at 7.5 psid pressure drop).

ELECTRONIC MIXING VALVE FOR PLUMBING



6000 LEGIOMIX® Station

Electronic mixing valve with optional selectable programs for thermal disinfection of hot water recirculation system to kill Legionella bacteria, in a packaged wall mount configuration.

Station assembly includes pre-piped 3-way mixing valve with union connections, serviceable check valves, a recirculation connection and isolation valves for fast and simple installation, all mounted on welded, powder-coat painted steel strut. The LEGIOMIX® controller/user interface with DIN rail mounting bracket is pre-mounted and pre-wired and includes a return water temperature sensor. Simply wall mount the assembly, hook up the hot and cold water supplies, mixed outlet, recirculation return water. Plug included in transformer.

ASSE 1017

Code	Description	Cv	Lbs
600066AS	1" copper wall-mount station	21	27.3
600076AS	1¼" copper wall-mount station	24	28.2
600086AS	1½" copper wall-mount station	34	41
600096AS	2" copper wall-mount station	48	42

ACCESSORIES AND REPLACEMENT

NEW



Replacement mixed temp sensor.

Code	Description	Lbs
F69807	Fits 1" and 1¼" valve	1.0

NEW



Replacement mixed temp sensor.

Code	Description	Lbs
F69804	Fits 1½" and 2" valve	1.0

NEW



Replacement recirculation sensor.

Code	Description	Lbs
F69591	Replacement recirculation sensor	1.0



Replacement controller.

Code	Description	Lbs
F000962	Replacement controller	1.5



Replacement actuator.

Code	Description	Lbs
645114	Replacement actuator	1.0

NEW



Replacement temp gauge.

Code	Description	Lbs
R19101	Replacement temp gauge	0.3



Modbus-to-BACnet gateway
Converts LEGIOMIX® controller Modbus (RS-485 serial) output communication to BACnet IP or MSTP communication.

Code	Description	Lbs
755052	Modbus-to-BACnet gateway	1.2



Inlet check valve assembly for installing on 6000 Series valve body (if required). Stainless steel body. No Lead. Ordered separately, field installed. 2 required per valve.

Code	Description	Lbs
NA10366	Check valve assembly 1" and 1¼"	1.0
NA10367	Check valve assembly 1½" & 2"	1.5



Replacement body includes gauge adapter assembly.
See fitting selection table in Section 8.

ASSE 1017

Code	Description	Lbs
NA10615	Body, gauge adapter (1", 1¼")	1.0
NA10616	Body, gauge adapter (1½", 2")	1.5

HIGH/LOW THERMOSTATIC MIXING VALVE FOR PLUMBING

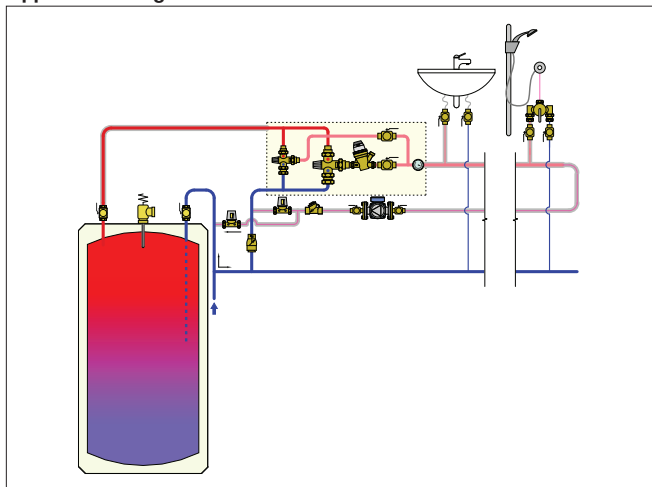


Code	Description	Lbs
NA52367HL	1" sweat inlets, 1¼" sweat outlet, copper	25
NA10512	Ball valve stems extension kit	0.9

Function

The NA523 two-stage high low mixing valve system delivers tempered water for a wide range of flows in a single assembly, applicable for institutional and commercial applications such as hotels, nursing homes, hospitals, schools, and so on. The NA523 is furnished assembled and pressure tested with large and small mixing valves along with a pressure reducing valve, to function as one system in providing a broad flow range from 1 gpm to 50 gpm. This one-piece assembly also contains an outlet thermometer, cold water inlet check valves, and shut-off ball valves. The mixing valves are piped in parallel to the hot and cold inlet lines and the pressure reducing valve is piped on the outlet (mixed temperature) side of the larger thermostatic mixing valve. When demand is low, the small thermostatic mixing valve provides the needed water flow. When demand increases, indicated by increasing Delta P (differential pressure) in the system, the pressure reducing valve sees this fall off pressure, and opens to allow flow through the larger thermostatic mixing valve.

Application Diagram



NA523 DELTA 2™

Adjustable thermostatic high low mixing valve for point of distribution in domestic water systems.

Low-lead brass valve bodies.

Locking set point knobs on thermostatic mixing valves.

Check valves on thermostatic mixing valve cold inlets.

Locking set point knob on pressure reducing valve.

Copper connecting tubing, all sweat construction.

Double union connection on all valves for ease of service.

Removable ½" NPT threaded outlet thermometer.

Pre-mounted to strut for easy mounting.

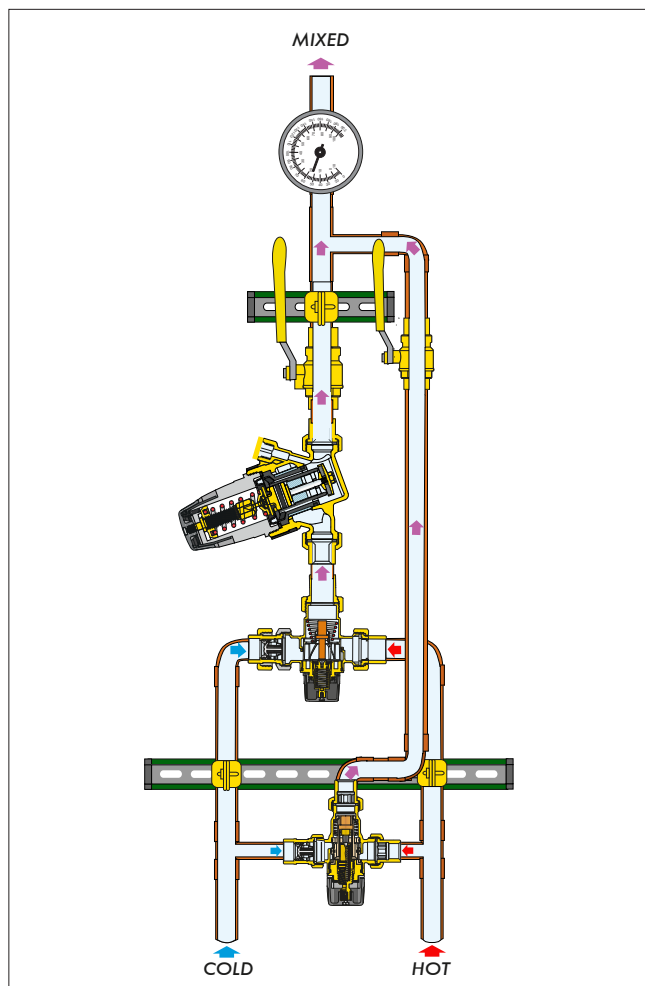
Max. working pressure: 200 psi.

Max. inlet temperature: 180°F.

Adjustable range: 95 — 150°F.

Flow range: 1 to 50 gpm.

Thermostatic mixing valves meet requirements of ANSI/NSF 372-2011 and certified to ASSE 1017, CSA B125.3, UPC, IPC, Low Lead Laws and listed by ICC-ES for use in accordance with the U.S. and Canadian plumbing codes. Pressure reducing valve is certified to ASSE 1003, CSA B356, NSF61, NSF/ANSI 372 Low Lead Laws and listed by ICC-ES. Meets codes IPC, IRC & UPC for use in accordance with the U.S. and Canadian plumbing codes.



THERMOSTATIC MIXING VALVE KIT FOR DOMESTIC WATER HEATERS



520 TankMixer™

Adjustment temperature range: 95°F - 150°F.
Max. working pressure (static): 150 psi.
Max. working pressure (dynamic): 75 psi.
Max. inlet temperature: 195°F.
Minimum flow for optimum performance:
0.5 GPM (0 GPM with recirculation).
Tank: ¾" NPT female union connections.
System: ¾" NPT M, press or sweat union
connections.

ASSE 1017

Code	Description	Cv	Lbs
520500AX	¾" NPT male union system connections	2	2.4
520506AX	¾" press union system connections	2	2.4
520509AX	¾" sweat union system connections	2	2.4



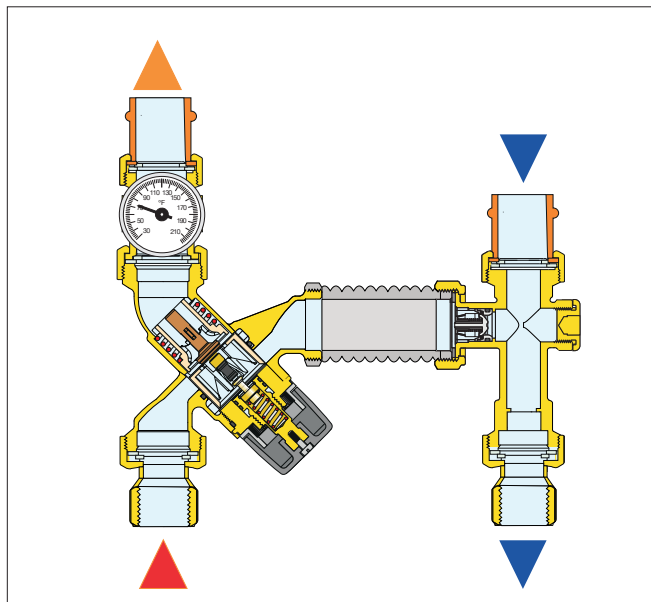
520 TankMixer™ Body

Replacement body.
See fitting section table in Section 8.

ASSE 1017

Code	Description	Cv	Lbs
520051A	1" male union connection	2	2.0

Construction details



520 TankMixer™ with gauge

Adjustment temperature range: 95°F - 150°F.
Max. working pressure (static): 150 psi.
Max. working pressure (dynamic): 75 psi.
Max. inlet temperature: 195°F.
Gauge scale: 30—210°F.
Gauge accuracy: ± 6°F.
Gauge dial: 2" diameter.
Minimum flow for optimum performance:
0.5 GPM (0 GPM with recirculation).
Max flow for optimum performance: 9 gpm.
Tank: ¾" NPT female union connections.
System: ¾" NPT M, press or sweat union
connections.

ASSE 1017

Code	Description	Cv	Lbs
520510AX	¾" NPT male union system connections	2	2.9
520516AX	¾" press union system connections	2	2.9
520519AX	¾" sweat union system connections	2	2.9

Meets requirements of ANSI/NSF 372-2011. Certified to ASSE 1017, CSA B125.3, UPC, IPC, Low Lead Laws and listed by ICC-ES for use in accordance with the U.S. and Canadian plumbing codes.

Application diagram

