AngleMix™+ Angle-style high-flow thermostatic mixing valve

520 series

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Application

The Caleffi AngleMix™+ 520 series high-flow thermostatic mixing valve is designed for domestic hot water systems and multi-temperature hydronic applications. Its angle-style body aligns the mixed water outlet with the hot water inlet, reducing installation space, improving fluid dynamics, and eliminating the need for a separate piping elbow. The AngleMix+ maintains a stable mixed water temperature at a constant set point by compensating for variations in supply temperature and pressure. A thermal shut-off feature activates in the event of a cold water supply failure to help prevent scalding. The valve is also suitable for use in hydronic heating systems for temperature control. Available in 1" size with a Cv of 3.5, it is offered as a complete assembly or as a body-only version compatible with a wide range of field-selectable end connections. The AngleMix+ complies with NSF/ANSI/CAN 372 low lead requirements, and meets ASSE 1017, CSA B125.3, IPC, UPC, and U.S. and Canadian Low Lead Laws, certified by ICC-ES.

Typical Specification

Furnish and install, as shown on the plans, an AngleMix+ high-flow, angle-style, three-way thermostatic mixing valve as manufactured by Caleffi. Each valve shall have a DZR low-lead/lead-free brass body (<0.25% lead content), stainless steel springs, peroxide-cured EPDM seals, and internal components including shutter, seats, and sliding guides constructed of anti-scale PSU plastic. The valve shall maintain mixed outlet temperature within ±3 °F (±2 °C) and include a tamper-proof control knob to lock the set temperature and an mixed outlet temperature gauge. Valves shall be equipped with inlet port check valves (AC models). The assembly shall be ASSE 1017 certified for point of distribution installation and CSA B125.3 compliant for installation in Canada. The valve shall comply with NSF/ANSI/CAN 372 low-lead requirements, as certified by ICC-ES. Each valve shall be Caleffi model 520 or approved equal. (See to product instructions for detailed installation requirements.)

ASSE 1017
NSF/ANSI/CAN 372

Certification

ASSE 1017, CSA B125.3, UPC, IPC, IRC and NPC for use in accordance with U.S. and Canadian plumbing codes. Certified and listed by ICC-ES.

NSF/ANSI/CAN 372, US and Canadian Low-Lead and Lead-Free materials contents laws for drinking water system components. Certified by ICC-ES.

PEX crimp fittings certified to ASTM F1807.

PEX expansion fittings certified to ASTM F1960.

Technical specifications

Materials

Valve body:	DZR low-lead* brass
Shutter, seats and slice guides:	PSU
Springs:	stainless steel
Seals:	peroxide-cured EPDM
Adjustment knob:	ABS

* Meets the “lead free” requirement of Section 1417 of the Safe Drinking Water Act (SDWA). This product has a weighted average lead content of less than 0.25% for its wetted surfaces contacted with consumable water.

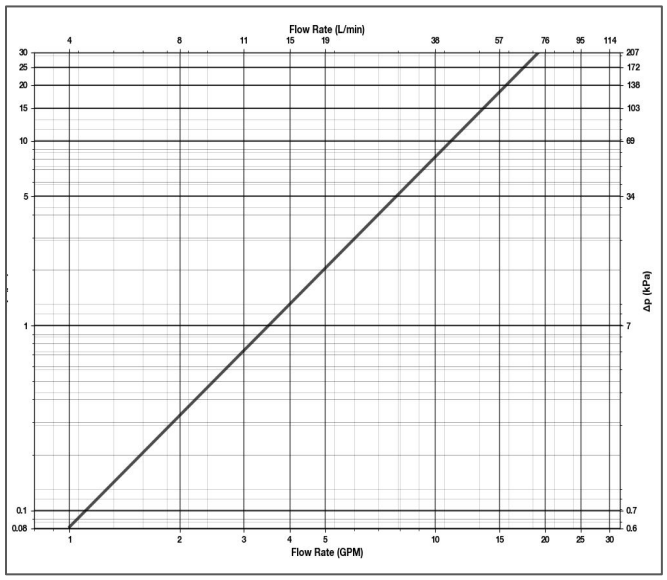
Performance

Suitable fluids:	water
Setting range:	95–150 °F (35–65 °C)
Tolerance:	±3 °F (±2 °C)
Max. working pressure (static):	150 psi (10 bar)
Max. working pressure (dynamic):	75 psi (5 bar)
Max. hot water inlet temperature:	195 °F (90 °C)
Max. inlet pressure ratio (H/C or C/H) for optimal performance:	2:1
Minimum temperature difference between hot water inlet and mixed water outlet for stable operation with balanced supply pressure conditions:	9 °F (5 °C)
Recommended minimum temperature difference between hot water inlet and mixed water outlet for optimal performance:	18 °F (10 °C)
Required minimum temperature difference between hot water inlet and mixed water outlet for thermal shut-off function:	18 °F (10 °C)
Flow coefficient:	Cv=3.5 (Kv=3.0)
Minimum flow rate for stable operation with balanced supply pressure conditions:	1.0 gpm (4 L/min)
Minimum flow rate for recirculation applications:	0.0 gpm (0 L/min)
Max. flow for temperature stability (at 20 psid):	16 gpm (60 L/min)
Mixed outlet temperature gauge:	Dual scale from 30 °F to 210 °F (0 °C to 100 °C)

Connections

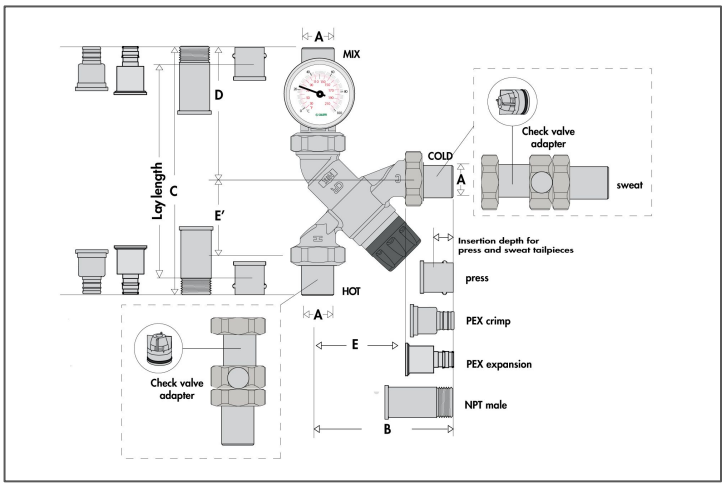
Sweat union:	1"
Press union:	1"
NPT male union:	1"
PEX crimp union:	1"
PEX expansion union:	1"

Hydraulic Characteristics



	Unit	Flow Capacity at Given Pressure Drop						
Pressure Drop Across the Valve	psi	5	7.5	10	20	30	45	65
	kPa	34.5	51.7	68.9	137.9	206.8	310.3	413.7
	ft head	11.6	17.3	23.1	46.2	69.3	104.0	138.6
Flow Rate	GPM	7.8	9.6	11.1	15.7	19.2	23.5	27.1
	L/min	29.6	36.3	41.9	59.2	72.6	88.9	102.6
		Recommended Design Range				CAUTION - NOT RECOMMENDED Risk of Valve Failure and Cavitation		

Dimensions



Code	A	B	C	D	E	E'	LL*	Insert. depth	Wt. (lb.)	Cv (Kv)
520610A	1" NPT MALE	5 13/16"	10 15/16"	5⅞"	3⅝"	2⅞"			3.9	3.5 (3.0)
520610AC**	1" NPT MALE	5 13/16"	10 15/16"	5⅞"					4.0	
520614A	1" PEX CRIMP	5⅜"	10 1/16"	5½"					3.5	
520614AC**	1" PEX CRIMP	7 13/16"	12½"	5½"					3.7	
520615A	1" PEX EXP	4⅞"	9 1/16"	5"					3.5	
520615AC**	1" PEX EXP	7 5/16"	11½"	5"					3.7	
520616A	1" PRESS	5⅜"	10"	5½"			7 13/16"	1 1/16"	3.7	
520616AC**	1" PRESS	7¾"	12 1/16"	5½"			10¼"	1 1/16"	3.9	
520619A	1" SWEAT	4 1/16"	8 1/16"	4¾"					3.7	
520619AC**	1" SWEAT	7⅛"	11⅛"	4¾"					3.8	

*Lay length for press tailpieces (hot inlet to mix outlet).
**Inlet port check valves included

Job name _____ Size _____
Job location _____ Quantity _____
Engineer _____ Approval _____
Mechanical contractor _____ Service _____
Contractor's P.O. No. _____ Tag No. _____
Representative _____ Notes _____

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