AngleMix™ DL
Dual listed, Angle-body thermostatic mixing valve

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Application

The Caleffi AngleMix™ DL 520 series thermostatic mixing valve is used in systems producing domestic hot water. In addition to point of distribution applications, the DL model is factory set for point of use applications, limiting the maximum mixed outlet temperature to prevent scalding water temperatures. The mixed temperature outlet is inline with the hot water inlet, facilitating trouble-free connection and reducing space required for installation. The AngleMix DL maintains the desired output temperature of the mixed water supplied at a constant set value compensating for both temperature and pressure fluctuations of the incoming hot and cold water. The mixing valve closes its inlet ports tight, eliminating temperature creep in recirculation loops. The angle style body design offers improved fluid dynamics for better performance and reduces installation labor and materials, eliminating a piping elbow in typical installations.

The AngleMix DL complies with both ASSE 1070/ASME A112.1070/CSA B125.70 and ASSE 1017 and CSA B125.3. The DL model is factory configured with an adjustment knob limiting mixed outlet temperature to 120 °F maximum. The device can be converted to ASSE 1017 function by removing the rotation limiting screw. In addition, it is certified for compliance with NSF/ANSI/CAN 372, low lead/lead free laws and use according to U.S. and Canadian plumbing codes. AngleMix DL listed and certified by ICC-ES, listing certificates detailed below.

Typical Specification

Furnish and install on the plans described herein, an AngleMix™ DL angle-style three-way thermostatic mxing valve, dual listed, as manufactured by Caleffi. Each mixing valve must be designed with a DZR low-lead brass body, stainless steel springs, seals in peroxide-cured EPDM, and shutter, seats and sliding guides in anti-scale plastic, PSU. Each valve must also be designed for ±3 °F (±2 °C) temperature stability with a tamper proof control knob to lock the temperature at the set value, and mixed outlet temperature gauge. Provided with inlet port check valves. The valve shall be ASSE 1017 approved for point of distribution installation. DZR low-lead brass body (<0.25% Lead content) shall be certified by ICC-ES to ASSE 1017 and CSA B125.3, approved for point of distribution domestic water systems; ASSE 1070/ASME A112.1070/CSA B125.70 approved for point of use domestic water systems. Meets requirements of ANSI/NSF/CAN 372. Each valve shall be Caleffi model 520 or approved equal. (See product instructions for specific installation information.)

ASSE 1017
ASSE 1070
NSF/ANSI/CAN 372

Technical specifications

Materials

- Valve body:	DZR low-lead* brass
- Shutter, seats and slide 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)
Factory-setting:	limited to 120 °F (50 °C)
Tolerance:	±3 °F (±2 °C)
Max. working pressure (static):	150 psi (10 bar)
Max. hot water inlet temperature:	195 °F (90 °C)
Max. inlet pressure ratio (H/C or C/H) for optimal performance:	2:1

In ASSE 1017 mode

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)

In ASSE 1070 mode

Recommended minimum temperature difference between hot water inlet and mixed water outlet for optimal performance: 27 °F (15 °C)

Required minimum temperature difference between hot water inlet and mixed water outlet for thermal shut-off function: 27 °F (15 °C)

Flow coefficient: Cv=2.0 (Kv=1.7)

Minimum flow rate for stable operation with balanced supply pressure condictions: 0.5 gpm (2 l/min)

Maximum flow rate for temperature stability: 9 gpm (34 l/min)

Mixed outlet temperature gauge: 2" diameter
Dual-scale 32 °F - 210 °F and 0 °C –100 °C
Accuracy: 1% full-scale

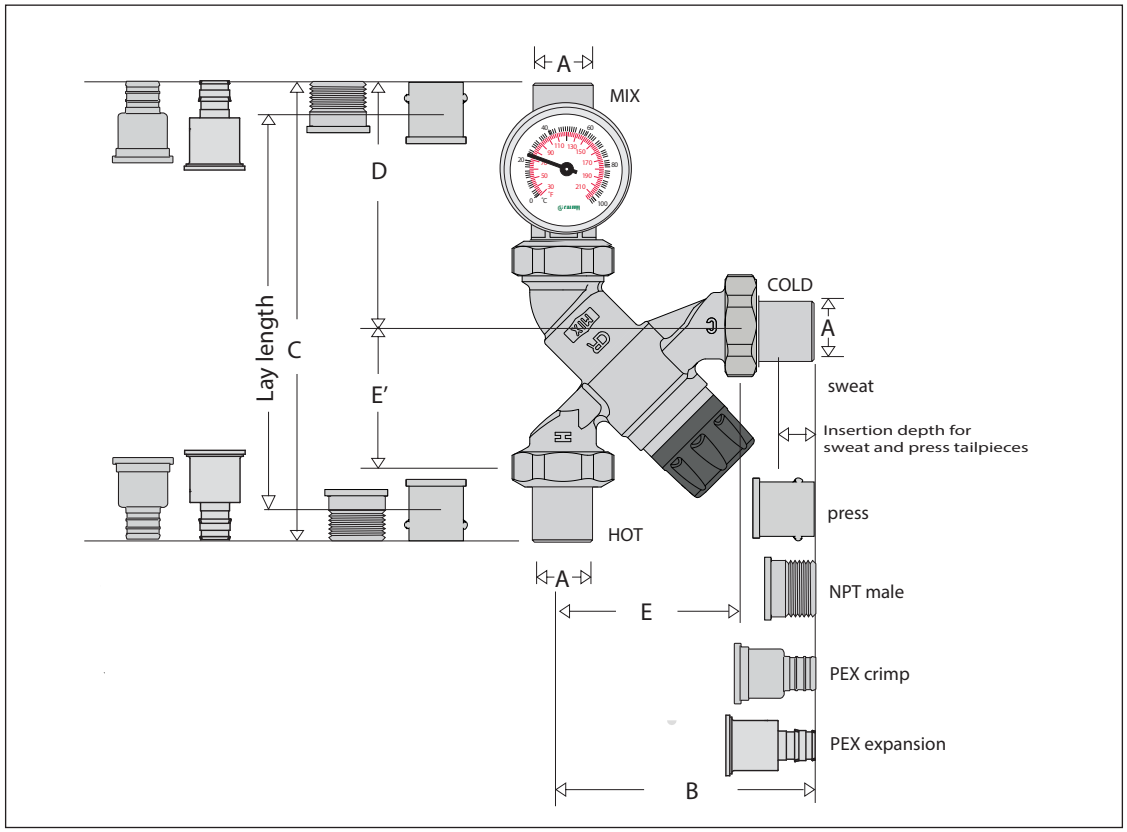
Certifications

1. 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, File PMG 1357.
2. ASSE 1070/ASME A112.1070/CSA B125.70 and CSA B125.3. Certified and listed by ICC-ES, PMG File 1358.
3. NSF/ANSI /CAN 372, Drinking Water System Components-Lead Content Reduction of Lead in Drinking Water Act, California Health and Safety Code 116875 S.3874, Reduction of Lead in Drinking Water Act, certified by ICC-ES, file PMG-1360.
4. PEX crimp fittings certified to ASTM F 1807.
5. PEX expansion fittings certified to ASTM F 1960.

Connections

- sweat, press, NPT male union	½", ¾", 1"
- PEX crimp, PEX expansion union	½", ¾", 1"

Dimensions



Code	A	B	C	D	E	E'	LL*	Insertion depth	Wt. (lb.)	Cv (Kv)
520410AC DL	½" NPT MALE	4¼"	8¼"	4⅝"					1.8	
520414AC DL	½" PEX CRIMP	4⅜"	8 9/16"	4 13/16"					1.7	
520415AC DL	½" PEX EXP	4⅜"	8⅝"	4⅞"					1.7	
520416AC DL	½" PRESS	4⅝"	4¼"	4 3/16"			6½"	⅞"	**1.9**	
520419AC DL	½" SWEAT	4⅛"	6¾"	3 3/16"					1.8	
520510AC DL	¾" NPT MALE	4 3/16"	7 13/16"	4 3/16"					2.1	
520514AC DL	¾" PEX CRIMP	4⅜"	8 9/16"	4 13/16"					1.9	
520515AC DL	¾" PEX EXP	4⅝"	9 1/16"	5 1/16"	2 11/16"	2 1/16"			1.9	2.0 (1.7)
520516AC DL	¾" PRESS	4 11/16"	8 11/16"	4½"			6¾"	15/16"	2.1	
520519AC DL	¾" SWEAT	4¼"	6 15/16"	3 5/16"					2.1	
520610AC DL	1" NPT MALE	4 3/16"	8¼"	4⅝"					4.0	
520614AC DL	1" PEX CRIMP	4⅜"	8 9/16"	4 13/16"					3.7	
520615AC DL	1" PEX EXP	5½"	10 13/16"	5 15/16"					3.7	
520616AC DL	1" PRESS	5⅝"	11 1/16"	6 1/16"			10½"	1 1/16"	3.9	
520619AC DL	1" SWEAT	4 7/16"	7⅞"	4 5/16"					3.8	

*Lay length for press tailpieces (hot inlet to mix oulet).

AngleMix DL models with Inlet port check valves included as standard.

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

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