

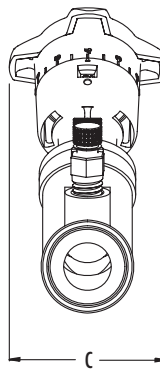
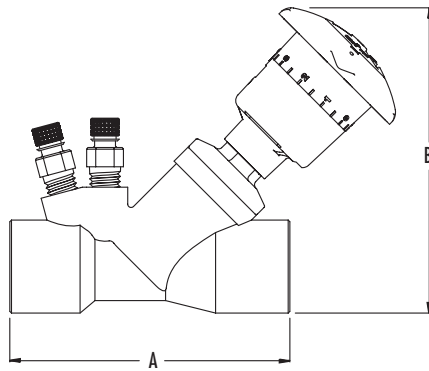
AURORA ACCESSORIES

CIRCUIT BALANCING VALVES

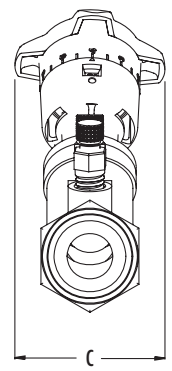
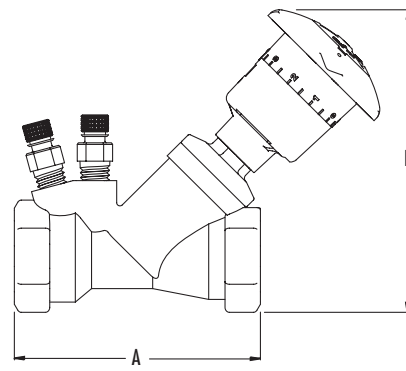
SOLDER STYLE AND NPT THREADED – SIZES 1/2" – 2"

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Dated **JUNE 2012**



Model CBV-S5 – 1/2" - 2" (DN15–DN50)



Model CBV-NPT5 – 1/2" - 2" (DN15–DN50)

DIMENSIONS in inches (mm)					
Model	Pipe Size	A	B	C	Weight lbs. (kg)
Solder Joint Connection					
CBV50S5-LF / CBV50S5	1/2" (DN15)	3.19 (81)	4.56 (116)	2.76 (70)	1.05 (0.48)
CBV75S5-LF / CBV75S5	3/4" (DN20)	3.64 (93)	4.65 (118)	2.76 (70)	1.09 (0.49)
CBV1S5	1" (DN25)	4.26 (108)	4.95 (126)	2.76 (70)	1.68 (0.76)
CBV125S5	1-1/4" (DN32)	4.94 (125)	5.40 (137)	2.76 (70)	2.26 (1.03)
CBV150S5	1-1/2" (DN40)	5.67 (144)	5.60 (142)	2.76 (70)	3.22 (1.46)
CBV2S5	2" (DN50)	7.03 (179)	6.36 (162)	2.76 (70)	5.40 (2.45)
Threaded Connection					
CBV50NPT5-LF / CBV50NPT5	1/2" (DN15)	2.99 (76)	4.60 (117)	2.76 (70)	1.07 (0.49)
CBV75NPT5-LF / CBV75NPT5	3/4" (DN20)	3.26 (83)	4.90 (125)	2.76 (70)	1.21 (0.55)
CBV1NPT5	1" (DN25)	3.80 (97)	5.29 (135)	2.76 (70)	1.86 (0.84)
CBV125NPT5	1-1/4" (DN32)	4.32 (110)	5.60 (143)	2.76 (70)	2.34 (1.06)
CBV150NPT5	1-1/2" (DN40)	5.07 (129)	5.90 (150)	2.76 (70)	3.49 (1.59)
CBV2NPT5	2" (DN50)	6.00 (153)	6.68 (170)	2.76 (70)	5.97 (2.46)

Note: All dimensions are in inches (mm) and weights in lbs. (kg).

Installation	
Locate the valve 5 pipe diameters downstream from a fitting. If a balancing valve is located downstream from a circulation pump, allow a distance of 10 pipe diameters between the pump and balancing valves (as illustrated).	

Technical Data	
Connection	CBV-S5 – Solder Joint CBV-NPT5 – Threaded NPT
Maximum Working Pressure	300 psi / 20 bar (PN20)
Operating Temperature Range	–4°F to 300°F (–20°C to 150°C)

Materials of Construction	
Body, Bonnet	Brass Alloy CW617
Stem and Disk	Brass Alloy B16
Elastomers	EPDM
Handwheel	Reinforced Nylon; ABS

Flow Rate Ranges		
Valve Size	Min. Flow	Max. Flow
1/2" Low Flow	0.26 (0.016)	2.2 (0.14)
3/4" Low Flow	0.40 (0.025)	3.4 (0.21)
1/2"	1.4 (0.086)	10.4 (0.66)
3/4"	2.1 (0.13)	13.5 (0.85)
1"	5.2 (0.33)	20.2 (1.28)
1-1/4"	8.2 (0.52)	35.5 (2.24)
1-1/2"	8.1 (0.51)	48.9 (3.09)
2"	14.0 (0.88)	83.3 (5.25)

Note: Flow in USgpm (L/s).

Notes:

- Solder style models are supplied unassembled. Valve body must be soldered in the line before assembly.
- Refer to C_v curves for sizing and balancing, giving pressure drop at different settings and flow rates.
- All valves furnished with probe metering ports.



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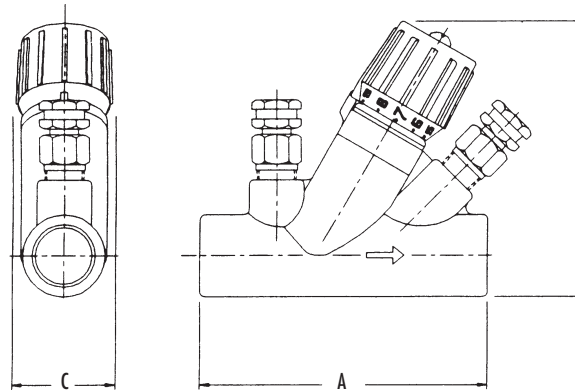
AURORA ACCESSORIES

CIRCUIT BALANCING VALVES

SIZES 1/2" AND 3/4"

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Models CBV50M and CBV75M

DIMENSIONS in inches (mm)					
Model	Pipe Size	A	B	C	Weight lbs. (kg)
CBV50M	1/2"	3-1/8 (79)	3-17/32 (90)	1-11/32 (34)	1.1 (0.5)
CBV75M	3/4"	3-25/32 (96)	3-5/8 (92)	1-11/32 (34)	1.19 (0.54)

Note: All dimensions are in inches (mm) and weights in lbs. (kg).

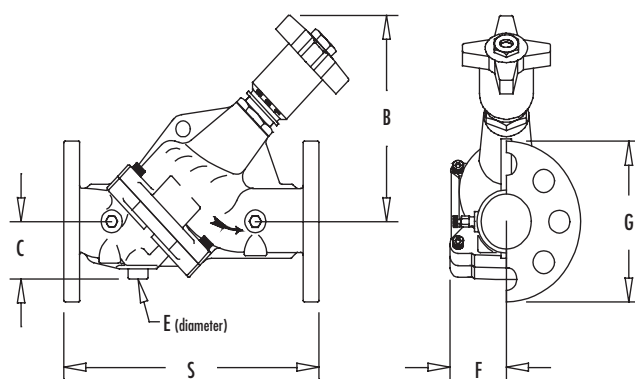
Specifications	
Connection	Solder Joint
Material of Construction	Brass
Maximum Working Pressure	300 psi (2068 kPa)
Maximum Operating Temperature	250°F (121°C)
Handwheel	1 Turn 360°

Notes:

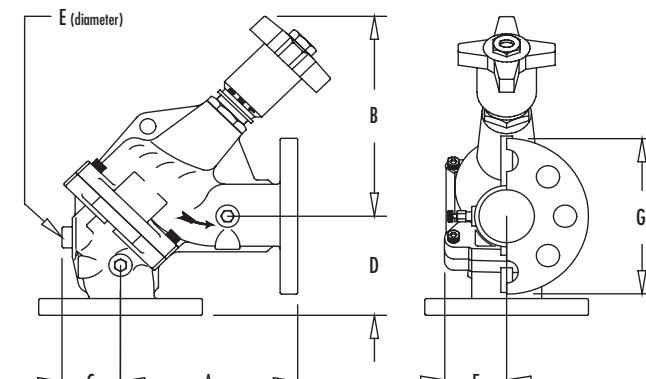
1. Solder style models are supplied unassembled. Valve body must be soldered in the line before assembly.
2. Refer to C_v curves for sizing and balancing, giving pressure drop at different settings and flow rates.
3. All valves furnished with probe metering ports.

AURORA ACCESSORIES
CIRCUIT BALANCING VALVES
 ANSI FLANGED – 125/250 PSIG
 STRAIGHT AND ANGLE – SIZES 2-1/2" – 12"

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 Dated **NOVEMBER 2011**



Straight – Model CBV-S



Angle – Model CBV-A

125 psig	DIMENSIONS in inches (mm)							
Connection Size	2-1/2	3	4	5	6	8	10	12
A	7.38 (187)	8.19 (208)	9.63 (245)	12.00 (305)	14.13 (359)	19.00 (483)	20.33 (516)	24.07 (611)
B (fully open)	9.62 (244)	10.50 (267)	10.56 (268)	13.06 (332)	13.75 (349)	24.62 (625)	26.50 (673)	28.43 (722)
C	2.75 (70)	2.44 (62)	3.00 (76)	3.63 (92)	4.44 (113)	5.69 (145)	6.56 (167)	7.63 (194)
D	4.63 (118)	3.88 (99)	4.38 (111)	5.50 (140)	6.63 (168)	9.19 (233)	9.78 (248)	14.05 (357)
E	1.00 (25)	1.00 (25)	1.25 (32)	1.25 (32)	2.00 (51)	2.25 (57)	2.25 (57)	2.25 (57)
F	2.56 (65)	3.00 (76)	3.44 (87)	4.94 (125)	5.88 (149)	7.88 (200)	9.47 (241)	12.63 (321)
G	7.00 (178)	7.50 (191)	9.00 (229)	10.00 (254)	11.00 (279)	13.50 (343)	16.00 (406)	19.00 (483)
S	12.00 (305)	12.00 (305)	14.00 (356)	17.50 (445)	20.69 (526)	28.00 (711)	30.01 (762)	38.09 (967)
Weight lbs. (kg)	33 (15)	39 (17.7)	59 (26.8)	108 (49)	167 (75.7)	344 (156)	603 (273)	1006 (456)

250 psig	DIMENSIONS in inches (mm)		
Connection Size	8	10	12
A	19.11 (485)	20.33 (516)	24.05 (611)
B (fully open)	24.62 (625)	26.50 (673)	28.43 (722)
C	5.69 (145)	6.56 (167)	7.63 (194)
D	9.69 (246)	9.80 (249)	14.03 (356)
E	2.25 (57)	2.25 (57)	2.25 (57)
F	7.88 (200)	9.47 (241)	12.63 (321)
G	15.00 (380)	17.50 (445)	20.50 (521)
S	28.20 (716)	30.01 (762)	38.05 (966)
Weight lbs. (kg)	396 (180)	712 (323.6)	1163 (528.6)

Note: Dimensional Tolerance up to +/- 0.125 in. (3mm).

Design Data – CBV Straight and Angle		
Connection Size	Stem: No. of 360° Turns	Max. Working Temp.
2.5	5	Standard Material 230°F (110°C) Viton® Material 300°F (150°C)
3	5	
4	6	
5	9	
6	10	
8	12	
10	18	
12	28	

Materials of Construction	
Valve Body	Cast Iron ASTM A48 Class 30B / Ductile Iron ASTM A536 Grade 65-42-12
Disc	Bronze (B584-844)
Seat	Ultra – High Strength Engineered Resin
Stem	Brass – ASTM B-16
Spring	Stainless Steel ASTM A313 Type 302
O-Rings	BUNA (Stem) and EPDM* (Body Gasket) Elastomers
Metering Ports (2)	Brass Body with EPDM Check and Gasket Cap
Drain Tapping (2)	1/4" NPT with Brass Plug
Insulation (Optional)	PVC white Cover with mineral fiberglass insulation which meets or exceeds ASTM D1784 Class 14253-C, MEA #7-87, ASTM E84 and ASTM E136 and flame rating of 25 or less and smoke rating of 50 or less.

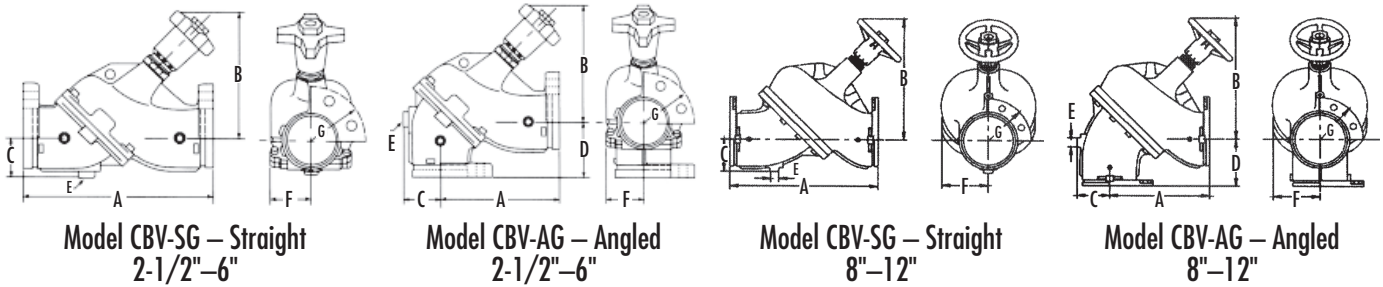
*EPDM not suitable for oil service.

AURORA ACCESSORIES

CIRCUIT BALANCING VALVES GROOVED – STRAIGHT AND ANGLE SIZES 2-1/2" – 12"

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DIMENSIONS in inches (mm)																
Model	CBV-SG – Straight								CBV-AG – Angled							
Connection Size	2-1/2	3	4	5	6	8	10	12	2-1/2	3	4	5	6	8	10	12
A	12 (305)	12 (305)	14 (356)	17-1/2 (445)	20-11/16 (525)	28-3/16 (716)	30 (762)	38-1/16 (967)	7-3/8 (187)	8-3/16 (208)	9-5/8 (244)	12 (305)	14-1/8 (359)	18-15/16 (481)	20-5/16 (516)	24-1/16 (611)
B (Open)	9-5/8 (244)	10-1/2 (267)	10-9/16 (268)	12-3/4 (324)	13-1/16 (332)	24-5/8 (625)	26-1/2 (673)	28-7/16 (722)	9-5/8 (244)	10-1/2 (267)	10-9/16 (268)	12-3/4 (324)	13-1/16 (332)	24-5/8 (625)	26-1/2 (673)	28-7/16 (722)
C	2-3/4 (70)	2-7/16 (62)	3 (76)	3-5/8 (92)	4-7/16 (113)	5-11/16 (144)	6-9/16 (167)	7-5/8 (194)	2-3/4 (170)	2-7/16 (62)	3 (76)	3-5/8 (92)	4-7/16 (113)	5-11/16 (144)	6-9/16 (167)	7-5/8 (194)
D	–	–	–	–	–	–	–	–	4-5/8 (117)	3-7/8 (98)	4-3/8 (111)	5-1/2 (140)	6-5/8 (168)	9-3/16 (233)	9-3/4 (248)	14 (356)
E	1 (25)	1 (25)	1-1/4 (32)	1-1/4 (32)	2 (51)	2-1/4 (57)	2-1/4 (57)	2-1/4 (57)	1 (25)	1 (25)	1-1/4 (32)	1-1/4 (32)	2 (51)	2-1/4 (57)	2-1/4 (57)	2-1/4 (57)
F	2-9/16 (65)	3 (76)	3-7/16 (87)	4-15/16 (125)	5-7/8 (149)	7-7/8 (200)	9-15/32 (241)	12-5/8 (321)	2-9/16 (65)	3 (76)	3-7/16 (87)	4-15/16 (125)	5-7/8 (149)	7-7/8 (200)	9-15/32 (241)	12-5/8 (321)
G (Flange O.D. 125#)	7 (178)	7-1/2 (191)	9-1/4 (235)	10 (254)	11 (279)	13-1/2 (343)	16 (406)	19 (483)	7 (178)	7-1/2 (191)	9-1/4 (235)	10 (254)	11 (279)	13-1/2 (343)	16 (406)	19 (483)
G (Flange O.D. 250#)	7-1/2 (191)	8-1/4 (210)	10 (254)	11 (279)	12-1/2 (318)	15 (381)	17-1/2 (445)	20-1/2 (521)	7-1/2 (191)	8-1/4 (210)	10 (254)	11 (279)	12-1/2 (318)	15 (381)	17-1/2 (445)	20-1/2 (521)
Weight lbs. (kg)	19 (9)	24 (11)	42 (19)	81 (37)	120 (54)	310 (141)	460 (209)	870 (395)	19 (9)	24 (11)	42 (19)	81 (37)	120 (54)	310 (141)	460 (209)	870 (395)

Connection Size	Flange Adapter							
	Pipe O.D.	125 psi			Pipe O.D.	250 psi		
		Bolt		Bolt Circle Dia.		Bolt		Bolt Circle Dia.
		No.	Size			No.	Size	
2-1/2	2.875 (73)	4	5/8 x 3	5-1/2 (140)	2.875 (73)	8	3/4 x 3-1/4	5-7/8 (149)
3	3.500 (89)	4	5/8 x 3	6 (152)	3.500 (89)	8	3/4 x 3-1/2	6-5/8 (168)
4	4.500 (114)	8	5/8 x 3	7-1/2 (191)	4.500 (114)	8	3/4 x 3-3/4	7-7/8 (200)
5	5.563 (140)	8	3/4 x 3-1/2	8-1/2 (216)	5.563 (140)	8	3/4 x 4	9-1/4 (235)
6	6.625 (168)	8	3/4 x 3-1/2	9-1/2 (241)	6.625 (168)	12	3/4 x 4-1/4	10-5/8 (270)

Item	Materials of Construction
Body	Ductile Iron ASTM A536 GR 65-45-12
Disc	Bronze ASTM B584 C-84400
Seat	High Strength Engineered Resin (For sizes 8"–12" EPDM)
Stem	Brass – ASTM B-16 (For sizes 8"–12" Stainless Steel)
Memory Lock	Brass – ASTM B-16
O-Rings	Buna N & EPDM (For sizes 8"–12" Buna N)
Meter Ports	NPT Brass Body with EPDM Check (For sizes 8"–12" NPT Brass Body with EPT Check)
Drain Tappings	1/4" – Quantity 2 with Brass Plug
Flange Adapters	Ductile Iron – ASTM A 536 (For sizes 8"–12" Ductile Iron)
Flange Gaskets	EPDM
Insulation	Fiberglass