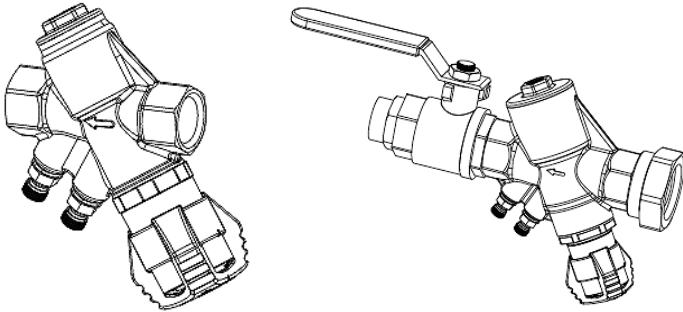


JOB:		REPRESENTATIVE:
UNIT TAG:	ORDER NO.	DATE:
ENGINEER:	SUBMITTED BY:	DATE:
CONTRACTOR:	APPROVED BY:	DATE:



## Circuit Sentry™ Flo-Setter and Model AM

Externally Adjustable Automatic Balance And Commissioning Valve

### DESCRIPTION

The Bell & Gossett Circuit Sentry™ Flo-Setter and Circuit Sentry™ Flo-Setter Model AM are externally adjustable balance and commissioning valves that are used in HVAC systems. They feature a GPM flow setting adjustment dial that allows flow rate to be changed independently of differential pressure without the need to shut down your system. This allows for greater system flexibility and control and minimizes required commissioning time. The valves are equipped with a removable differential pressure cartridge, external locking handle, two capped 1/4" readout valves, and feature threaded NPT end connections. Model AM additionally features a supplied ball isolation/shut-off valve, hanging ID tag, and a variety of end connections are available on both the fixed and union ends.

### CONSTRUCTION

Valve:  
Body: DZR Brass C35330  
DP Controller: PPS 40% Glass  
Flow Setting: PPO  
Spring: Stainless Steel  
Diaphragm: HNBR  
O-Rings: EPDM

Ball Valve:\*\*  
Body/Stem: DZR Brass C35330  
Ball: Brass C37000  
O-Ring: EPDM  
Seat: Teflon

### MAXIMUM WORKING PRESSURE

300 psig (2,068 kPa)  
290 psig (2,000 kPa)\*\*

### TEMPERATURE RANGE

-14°F (-10°C) to 230°F (110°C)

### CONTROL RANGE

Min: See Page 5  
Max: 60 psi (414 kPa)

### ACCURACY

+/- 5%

\*\* Model AM Only

**SCHEDULE MODEL: Flo-Setter**

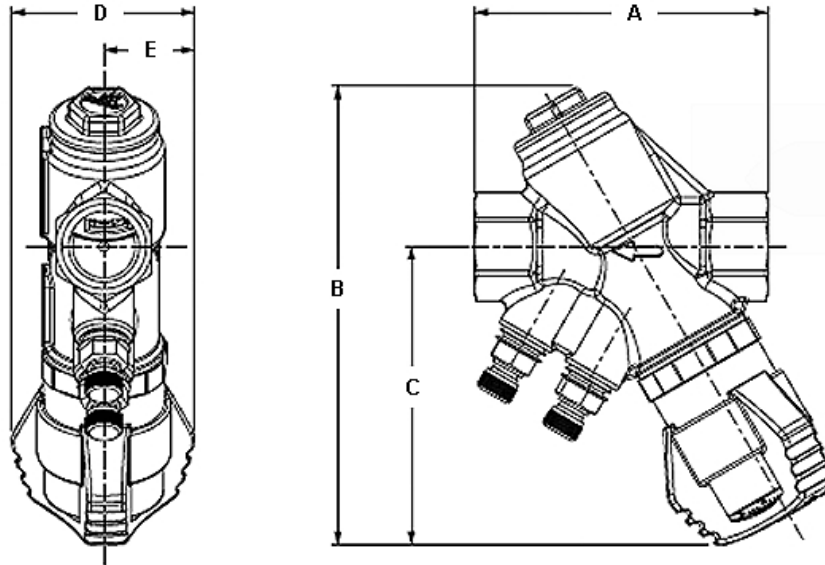
MODEL NUMBER	PART NUMBER	TAGGING INFORMATION	QUANTITY
CS-1/2	117464		
CS-3/4	117465		
CS-1	117466		
CS-1-1/4	117467		
CS-1-1/2	117468		
CS-2	117469		

**SCHEDULE MODEL: AM**

VALVE SIZE FIXED END	TAGGING INFORMATION	QUANTITY
1/2" Sweat Female		
1/2" NPT Female		
3/4" Sweat Female		
3/4" NPT Female		
1" Sweat Female		
1" NPT Female		
1-1/4" Sweat Female		
1-1/4" NPT Female		
1-1/2" Sweat Female		
1-1/2" NPT Female		
2" Sweat Female		
2" NPT Female		

Xylem Inc.  
8200 N. Austin Avenue  
Morton Grove, IL 60053  
Phone: (847)966-3700  
Fax: (847)965-8379  
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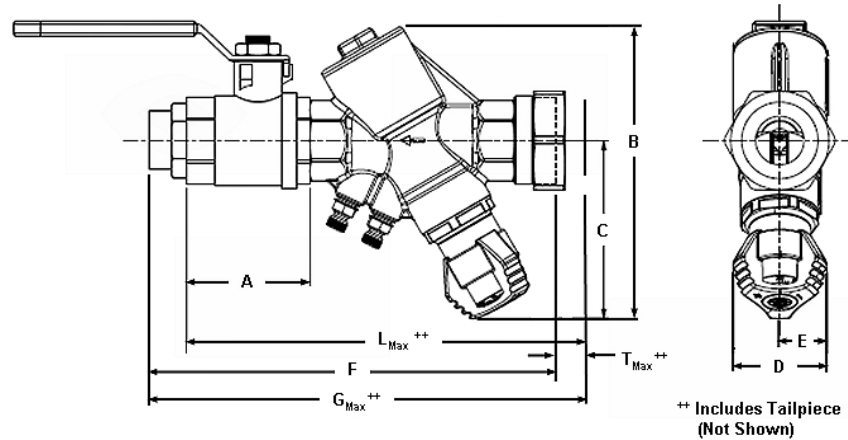
**DIMENSIONS AND WEIGHTS**

Model Number	Size	Connection Type	DIMENSIONS* IN INCHES (mm)					Flow Capacity in GPM (L/hr)		Approx. Weight Lbs. (kg)
			A	B	C	D	E	Min.	Max.	
CS-1/2	1/2"	NPT Female	3.8 (97)	5.8 (147)	3.8 (97)	2.4 (61)	1.2 (30)	0.18 (40)	4.84 (1,100)	2.0 (0.9)
CS-3/4	3/4"	NPT Female	3.8 (97)	5.9 (150)	3.8 (97)	2.4 (61)	1.2 (30)	0.31 (70)	8.15 (1,850)	2.0 (0.9)
CS-1	1"	NPT Female	4.1 (104)	6.1 (155)	4.1 (104)	2.4 (61)	1.2 (30)	0.44 (100)	10.35 (2,350)	2.2 (1.0)
CS-1-1/4	1-1/4"	NPT Female	5.2 (132)	7.4 (188)	4.5 (114)	2.4 (61)	1.2 (30)	0.88 (200)	21.13 (4,800)	3.7 (1.7)
CS-1-1/2	1-1/2"	NPT Female	5.7 (145)	8.1 (206)	4.7 (119)	2.4 (61)	1.2 (30)	1.76 (400)	32.76 (7,500)	5.3 (2.4)
CS-2	2"	NPT Female	6.1 (155)	8.6 (218)	5.0 (127)	2.4 (61)	1.2 (30)	2.20 (500)	45.46 (10,300)	7.5 (3.4)

\*All dimensions +/- 0.125 (3.2 mm) tolerance. Dimensions are subject to change. Not to be used for construction purposes unless certified. For Minimum Differential requirements please refer to Page 5. Maximum differential pressure is 60 PSID. Minimum temperature is -14°F (-10°C) to 250°F (121 °C). Maximum operating pressure is 300 PSI.

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**DIMENSIONS AND WEIGHTS**

Valve Size Fixed End	Connection Fixed End	DIMENSIONS* IN INCHES (mm)									Flow Capacity in GPM (L/hr)**		Approx. Weight Lbs. (kg)
		A	B	C	D	E	F	L <sub>Max</sub> **	G <sub>Max</sub> **	T <sub>Max</sub> **	Min.	Max.	
1/2"	Sweat Female	1.7 (42)	5.8 (147)	3.8 (97)	2.4 (61)	1.2 (30)	6.7 (169)	7.6 (193)	8.2 (208)	1.55 (39)	0.18 (40)	4.84 (1,100)	2.5 (1.1)
	NPT Female	1.7 (42)	5.8 (147)	3.8 (97)	2.4 (61)	1.2 (30)	- (-)	7.6 (193)	- (-)	1.55 (39)	0.18 (40)	4.84 (1,100)	2.5 (1.1)
3/4"	Sweat Female	2.1 (53)	5.9 (150)	3.8 (97)	2.4 (61)	1.2 (30)	7.5 (191)	8.1 (205)	9.1 (231)	1.55 (39)	0.31 (70)	8.15 (1,850)	2.7 (1.2)
	NPT Female	2.1 (53)	5.9 (150)	3.8 (97)	2.4 (61)	1.2 (30)	- (-)	8.1 (205)	- (-)	1.55 (39)	0.31 (70)	8.15 (1,850)	2.7 (1.2)
1"	Sweat Female	2.5 (63)	6.1 (155)	4.1 (104)	2.4 (61)	1.2 (30)	8.3 (211)	9.1 (232)	10.3 (262)	2.00 (51)	0.44 (100)	10.35 (2,350)	3.3 (1.5)
	NPT Female	2.5 (63)	6.1 (155)	4.1 (104)	2.4 (61)	1.2 (30)	- (-)	9.1 (232)	- (-)	2.00 (51)	0.44 (100)	10.35 (2,350)	3.3 (1.5)
1-1/4"	Sweat Female	3.1 (79)	7.4 (188)	4.5 (114)	2.4 (61)	1.2 (30)	10.2 (259)	11.0 (279)	12.2 (310)	2.00 (51)	0.88 (200)	21.13 (4,800)	5.7 (2.6)
	NPT Female	3.1 (79)	7.4 (188)	4.5 (114)	2.4 (61)	1.2 (30)	- (-)	11.0 (279)	- (-)	2.00 (51)	0.88 (200)	21.13 (4,800)	5.7 (2.6)
1-1/2"	Sweat Female	3.4 (87)	8.1 (206)	4.7 (119)	2.4 (61)	1.2 (30)	11.7 (298)	12.9 (328)	14.3 (363)	2.52 (64)	1.76 (400)	32.76 (7,500)	7.9 (3.6)
	NPT Female	3.4 (87)	8.1 (206)	4.7 (119)	2.4 (61)	1.2 (30)	- (-)	12.9 (328)	- (-)	2.52 (64)	1.76 (400)	32.76 (7,500)	7.9 (3.6)
2"	Sweat Female	4.4 (112)	8.6 (218)	5.0 (127)	2.4 (61)	1.2 (30)	13.7 (347)	15.1 (384)	16.8 (427)	3.14 (80)	2.20 (500)	45.46 (10,300)	11.9 (5.4)
	NPT Female	4.4 (112)	8.6 (218)	5.0 (127)	2.4 (61)	1.2 (30)	- (-)	15.1 (384)	- (-)	3.14 (80)	2.20 (500)	45.46 (10,300)	11.9 (5.4)

\*All dimensions +/- 0.125 (3.2 mm) tolerance. Dimensions are subject to change. Not to be used for construction purposes unless certified.

\*\*Flow Capacity is with supplied ball valve 100% open. Ball valve is not intended to be used to limit flow, but rather as an isolation valve only.

++Includes tailpiece. Measurements of maximum length tailpiece available.

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Valve Size 1/2"											
Flow Rate Setting (GPM)	Min	0.5	1	1.5	2	2.5	3	3.5	4	4.5	Max
Cv	0.12	0.27	0.63	0.85	1.15	1.50	1.80	2.10	2.30	2.57	2.79
Min. Required ΔP (psi)	2.32	2.40	2.47	2.55	2.62	2.70	2.77	2.85	2.90	2.97	3.20

Valve Size 3/4"									
Flow Rate Setting (GPM)	Min	1	2	3	4	5	6	7	Max
Cv	0.23	0.70	1.31	1.94	2.65	2.93	3.35	3.80	4.19
Min. Required ΔP (psi)	1.74	2.00	2.25	2.50	2.75	2.95	3.20	3.35	3.77

Valve Size 1"												
Flow Rate Setting (GPM)	Min	1	2	3	4	5	6	7	8	9	10	Max
Cv	0.35	0.70	1.30	2.06	2.53	3.05	3.49	3.95	4.30	4.63	4.97	5.12
Min. Required ΔP (psi)	1.74	1.90	2.10	2.35	2.50	2.75	3.00	3.20	3.40	3.65	4.00	4.21

Valve Size 1-1/4"												
Flow Rate Setting (GPM)	Min	2	4	6	8	10	12	14	16	18	20	Max
Cv	0.70	1.40	2.50	3.72	4.94	5.70	6.80	7.67	8.60	9.19	9.94	10.23
Min. Required ΔP (psi)	2.03	2.20	2.38	2.60	2.75	3.00	3.20	3.38	3.60	3.75	4.00	4.35

Valve Size 1-1/2"									
Flow Rate Setting (GPM)	Min	5	10	15	20	25	30	Max	
Cv	0.96	3.49	5.70	8.17	10.58	12.97	14.36	15.35	
Min. Required ΔP (psi)	2.18	2.50	2.80	3.20	3.55	3.88	4.25	4.64	

Valve Size 2"										
Flow Rate Setting (GPM)	Min	5	10	15	20	25	30	35	40	Max
Cv	1.28	3.37	5.70	8.60	10.58	12.77	14.42	15.93	18.08	19.42
Min. Required ΔP (psi)	2.47	2.60	2.95	3.25	3.55	3.95	4.25	4.60	5.00	5.50

**Typical Specification**

Circuit balance valve should be Bell & Gossett Circuit Sentry™ Flow-Setter valve as shown. Valve flow rate shall be adjustable through use of an external handle with GPM scale. Valve handle shall be rounded and include locking nut to lock handle in place once flow rate is set. Valve shall have two NPT female threaded accessory ports with installed pressure/temperature measurement ports for differential pressure verification.

Valve body shall be brass construction, rated for 290 psi at 230°F service for water. Valve flow control element shall be PPO plastic and the differential pressure regulator element shall be PPS 40% glass with stainless steel spring and HNBR diaphragm.

**Model AM Only:** Valve shall include ball style isolation valve with brass body and chrome plated brass ball. Valve shall also include union tailpiece and union nut.

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