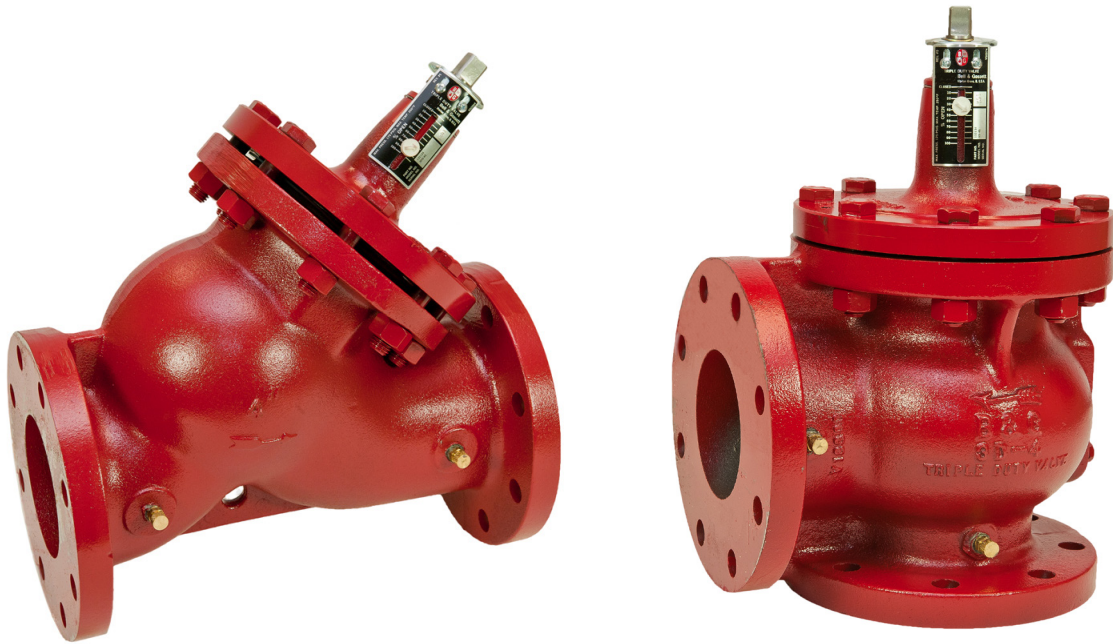


ASHRAE 90.1
2013
Compliant



Triple Duty[®] Valve



B-835C

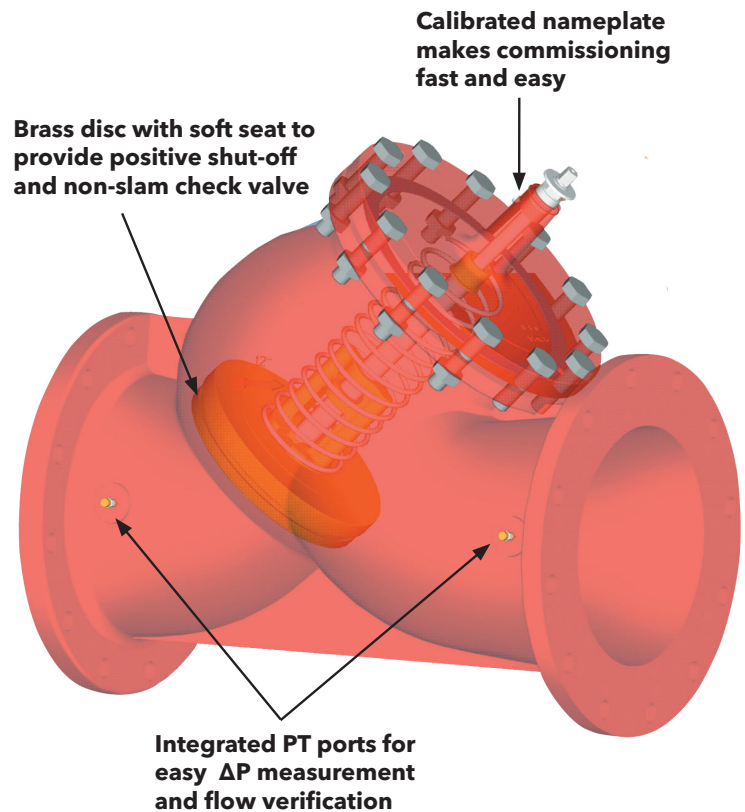
 **Bell & Gossett**
a xylem brand

Triple Duty® Valve

The Bell & Gossett Triple Duty® Valve saves space and reduces first cost and installation costs by combining all the functions normally required on the discharge side of most HVAC systems into one convenient design. It features a calibrated balance valve, non-slam check valve, and positive shut-off valve all rolled into one.

The calibrated nameplate on the Triple Duty Valve allows you to accurately set your system flow rate and the memory button helps you easily reset the valve after shut-off. The soft seat design of the disc prevents noise and potential damage that can be associated with valve chatter. It also provides positive shut-off allowing you isolate the pump from the rest of your system. The non-slam check valve prevents backflow and gravity circulation in staged pumping and parallel pumping systems, preventing damage to the pump and unwanted heat transfer through your system.

With our wide range of sizes, end connections, and valve configurations the Bell & Gossett Triple Duty Valve is a great compliment for your HVAC pump and system needs.



Why should I use Triple Duty Valves in my variable speed system?

Recent changes to industry standards have given rise to the question "Why should I use a B&G Triple Duty Valve in my system?" Take, for example, ASHRAE 90.1 2013.

ASHRAE 90.1 6.7.2.3.3 - Hydronic System Balancing

Hydronic systems shall be proportionally balanced in a manner to first minimize throttling losses, then the pump impeller shall be trimmed or pump speed shall be adjusted to meet design flow conditions.

The system will still need a check valve and an isolation valve on the discharge side of the pump. A typical 4" wafer style non-slam check valve will have a Cv of anywhere from 225 to 440. A typical 4" butterfly valve will have a Cv of approx. 600. Compare this to a B&G 3DS-4S Triple Duty Valve that has a Cv of 320. **Whether you use a Triple Duty Valve or check and butterfly valve separately, your ΔP at a sample flow rate of 200 GPM will be under 1 psi**, and pressure drop comparisons would be similar at different flow rates. Installing separate check and butterfly valves will also require additional piping and installation, increasing purchase and labor costs.

In addition, the Triple Duty Valve will also provide two other functions the check valve alone cannot provide:

1. **Commissioning valve** - ΔP readings from the B&G Triple Duty Valve can help you determine how to trim your pump impeller or set the maximum speed of your VFD.
2. **Throttling Valve** - In the event that the pump is oversized, due to plans for future building expansion or simply overestimating head losses in the design, the B&G Triple Duty Valve can help you throttle your system if your VFD is unable to do so completely.

By selecting a B&G Triple Duty Valve for a minimum pressure drop at 100% open you can minimize your throttling losses while providing all the functions you need plus those you won't get from separate valves.

So, the better question to ask is "Why SHOULDN'T I use B&G Triple Duty Valves in my system?"

Straight Pattern with Flanged End Connections

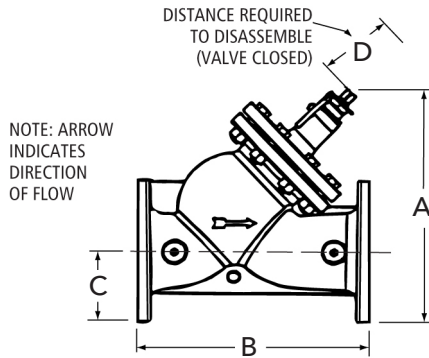
Cv RATING REFERENCE	Cv RATING AT 100% OF STEM RISE* (m ³ /hr)									
	3DS-2S	3DS-2-1/2S	3DS-3S	3DS-4S	3DS-5S	3DS-6S	3DS-8S	3DS-10S	3DS-12S	3DS-14S
A*	83 (19)	119 (27)	204 (44)	365 (83)	502 (114)	746 (169)	1,085 (246)	1,851 (420)	2,446 (556)	3,000 (881)
B**	77 (18)	117 (27)	191 (43)	320 (73)	497 (113)	701 (159)	1,079 (245)	1,826 (415)	2,450 (552)	3,225 (732)

Maximum Working Pressure

175 PSIG (1,207 kPa)

Maximum Operating Temperature

250°F (121°C)



For additional information see submittal B-830.

MODEL NUMBER	DIMENSIONS IN INCHES (mm)						APPROX. SHPG. WT. LBS. (Kg)
	FLANGE SIZE*	A		B	C	D	
		OPEN	CLOSED				
3DS-2S	2 (51)	10-3/8 (264)	9-3/4 (248)	8-3/8 (213)	3 (76)	3-1/2 (89)	24 (11)
3DS-2-1/2S	2-1/2 (64)	11 (279)	10-1/4 (260)	8-7/8 (225)	3-1/2 (89)	3-1/2 (89)	28 (13)
3DS-3S	3 (76)	12-3/8 (313)	11-7/16 (291)	10 (254)	3-3/4 (98)	3-15/16 (100)	39 (18)
3DS-4S	4 (102)	16-7/8 (429)	15-7/8 (403)	14-1/2 (368)	4-1/2 (114)	6-1/4 (159)	94 (43)
3DS-5S	5 (127)	18-1/2 (470)	17-1/4 (438)	16 (406)	5 (127)	6-7/8 (175)	114 (52)
3DS-6S	6 (152)	20-3/4 (527)	19-1/4 (489)	18 (457)	5-1/2 (140)	8-1/4 (210)	186 (85)
3DS-8S	8 (203)	24-3/4 (629)	23-1/4 (591)	21-1/2 (546)	6-3/4 (172)	10-3/8 (264)	316 (144)
3DS-10S	10 (254)	28-7/8 (733)	26-1/2 (673)	25-1/2 (648)	8 (203)	12-1/4 (311)	458 (208)
3DS-12S	12 (305)	33-1/2 (851)	31-1/8 (791)	30 (762)	9-1/2 (241)	14-1/2 (368)	662 (301)
3DS-14S	14 (356)	37 (940)	35-1/2 (902)	33-3/4 (857)	10-1/2 (267)	16-1/2 (419)	780 (355)

*Standard 125 PSIG (862 kPa) ANSI Flanges.

Dimensions are subject to change. Not to be used for construction purposes unless certified.

Straight Pattern with Grooved End Connections

Cv RATING REFERENCE	Cv RATING AT 100% OF STEM RISE (m ³ /hr)								
	3DS-2G	3DS-2-1/2G	3DS-3G	3DS-4G	3DS-5G	3DS-6G	3DS-8G	3DS-10G	3DS-12G
A*	83 (19)	119 (27)	204 (46)	359 (82)	502 (114)	746 (169)	1,085 (246)	1,851 (420)	2,446 (556)
B**	77 (18)	117 (27)	191 (43)	336 (76)	497 (113)	701 (159)	1,079 (245)	1,826 (415)	2,430 (552)

*A. Flowmeter Cv for balancing, minimum reading of 3 feet (.9 m) of pressure drop required for accurate flow determination.

**B. Cv for calculating pressure drop across the valve.

Note: Maximum recommended pressure drop should not exceed 25 feet (7.6 m).

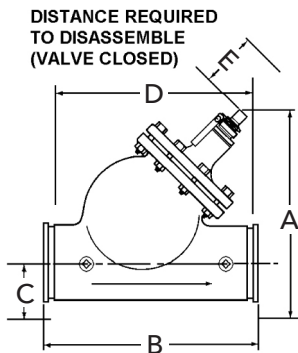
Contact your local bell & gossett representative for complete performance curve data.

Maximum Working Pressure

300 PSIG (2,068 kPa)

Maximum Operating Temperature

250°F (121°C)



For additional information see submittal B-807.

MODEL NUMBER	DIMENSIONS IN INCHES (mm)						APPROX. SHPG. WT. LBS. (Kg)
	A		B	C	D	E	
	OPEN	CLOSED					
3DS-2G	7-3/8 (187)	6-3/4 (171)	9-3/8 (238)	1-3/16 (30)	8-7/8 (225)	3-1/2 (89)	16 (7)
3DS-2-1/2G	7-1/2 (191)	6-3/4 (171)	9-3/4 (248)	1-7/16 (37)	9-1/8 (232)	3-1/2 (89)	16 (7)
3DS-3G	8-5/8 (219)	7-11/16 (195)	10-13/16 (256)	1-3/4 (44)	10 (254)	3-15/16 (100)	25 (11)
3DS-4G	12-3/8 (314)	11-3/8 (289)	15-1/8 (384)	2-1/4 (57)	14-3/16 (360)	6-1/4 (159)	70 (32)
3DS-5G	13-1/2 (343)	12-1/4 (311)	17-1/8 (435)	2-25/32 (71)	15-1/2 (394)	6-7/8 (175)	86 (39)
3DS-6G	15-1/4 (387)	13-3/4 (349)	19 (483)	3-5/16 (84)	17-1/2 (444)	8-1/4 (210)	160 (73)
3DS-8G	18 (457)	16-1/2 (419)	22-1/2 (571)	4-5/16 (110)	20-3/8 (518)	10-3/8 (264)	270 (123)
3DS-10G	20-7/8 (530)	18-1/2 (470)	26-1/2 (673)	5-3/8 (137)	23-1/8 (587)	12-1/4 (311)	384 (174)
3DS-12G	24 (610)	21-5/8 (549)	31 (787)	6-3/8 (162)	27 (686)	14-1/2 (368)	546 (248)

Dimensions are subject to change. Not to be used for construction purposes unless certified.

Straight Pattern Balanced with Flanged End Connections

Cv RATING REFERENCE	Cv RATING AT 100% OF STEM RISE (m ³ /hr)								
	3DS-3B	3DS-4B	3DS-5B	3DS-6B	3DS-8B	3DS-10B	3DS-12B	3DS-14B	3DS-16B
A*	117 (26)	190 (43)	357 (81)	543 (121)	749 (170)	1,117 (254)	1,874 (425)	2,566 (583)	3,283 (746)
B**	118 (27)	191 (43)	360 (82)	556 (126)	748 (170)	1,169 (265)	1,992 (452)	2,669 (606)	3,368 (765)

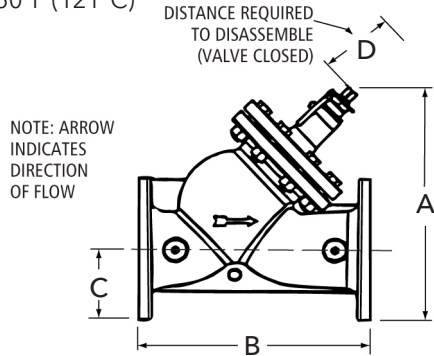
*A. Flowmeter cv for balancing. Minimum reading of 3 feet (.9 M) of pressure drop required for accurate flow determination.
****B.** Cv for calculating pressure drop across the valve.
Note: Maximum recommended pressure drop should not exceed 25 feet (7.6 M).
 Contact your local Bell & Gossett representative for complete performance curve data.

Maximum Working Pressure

175 PSIG (1,207 kPa)

Maximum Operating Temperature

250°F (121°C)



MODEL NUMBER	DIMENSIONS IN INCHES (mm)						APPROX. SHPG. WT. LBS. (Kg)
	FLANGE SIZE*	A		B	C	D	
		OPEN	CLOSED				
3DS-3B	3 (76)	11 (285)	11 (267)	10 (254)	4 (95)	4 (89)	36 (16)
3DS-4B	4 (102)	13 (332)	12 (310)	15 (368)	5 (114)	4 (100)	62 (28)
3DS-5B	5 (127)	17 (442)	16 (415)	16 (406)	5 (127)	6 (159)	105 (48)
3DS-6B	6 (152)	19 (483)	18 (452)	18 (457)	6 (140)	7 (175)	148 (67)
3DS-8B	8 (203)	22 (556)	20 (520)	22 (546)	7 (171)	8 (210)	230 (104)
3DS-10B	10 (254)	26 (661)	24 (620)	26 (648)	8 (203)	10 (264)	380 (172)
3DS-12B	12 (305)	30 (768)	28 (710)	30 (762)	10 (241)	12 (311)	546 (248)
3DS-14B	14 (356)	34 (874)	32 (814)	34 (857)	11 (267)	15 (368)	765 (347)
3DS-16B	16 (406)	38 (971)	35 (896)	35 (889)	12 (298)	17 (491)	980 (445)

*STANDARD 125 PSIG (862 kPa) ANSI FLANGES.
 Dimensions are subject to change. Not to be used for construction purposes unless certified.

For additional information see submittal B-833.

Angle Pattern with Flanged End Connections

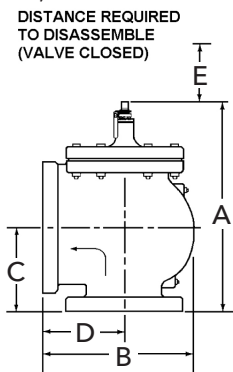
Cv RATING REFERENCE	Cv RATING AT 100% OF STEM RISE (m ³ /hr)							
	3D-2S	3D-2-1/2S	3D-3S	3D-4S	3D-5S	3D-6S	3D-8S	3D-10S
A*	113 (26)	106 (24)	241 (55)	456 (104)	632 (144)	863 (196)	1,239 (281)	2,330 (529)
B**	85 (19)	100 (23)	202 (46)	356 (81)	496 (113)	733 (167)	1,135 (258)	1,998 (454)

Maximum Working Pressure

175 PSIG (1,207 kPa)

Maximum Operating Temperature

250°F (121°C)



For additional information see submittal B-831.

MODEL NUMBER	DIMENSIONS IN INCHES (mm)							APPROX. SHPG. WT. LBS. (Kg)
	FLANGE SIZE*	A		B	C	D	E	
		OPEN	CLOSED					
3D-2S	2 (51)	12-1/8 (308)	11-5/16 (287)	7-15/16 (202)	4-7/16 (113)	4-7/16 (113)	3-1/2 (89)	29 (13)
3D-2-1/2S	2-1/2 (64)	12-5/16 (313)	11-5/16 (287)	7-15/16 (202)	4-7/16 (113)	4-7/16 (113)	3-1/2 (89)	29 (13)
3D-3S	3 (76)	13-7/16 (341)	12-3/16 (310)	8-1/2 (216)	4-3/4 (121)	4-3/4 (121)	3-15/16 (100)	36 (16)
3D-4S	4 (102)	17-11/16 (449)	16-3/16 (411)	11 (279)	4-7/8 (124)	6-3/4 (172)	6-1/4 (159)	92 (42)
3D-5S	5 (127)	18-3/8 (467)	16-5/8 (422)	12 (305)	5-1/16 (129)	7 (178)	6-7/8 (175)	112 (51)
3D-6S	6 (152)	20-9/16 (522)	18-9/16 (472)	13-1/2 (343)	5-7/8 (149)	8 (203)	8-1/4 (210)	114 (52)
3D-8S	8 (203)	24-3/4 (629)	22-1/2 (572)	15-13/16 (402)	7-1/2 (191)	8-9/16 (519)	10-3/8 (264)	260 (118)
3D-10S	10 (254)	29-7/8 (759)	26-5/8 (676)	19-1/2 (495)	10 (254)	10-7/8 (276)	12-1/4 (311)	358 (163)

*STANDARD 125 PSIG (862 kPa) ANSI FLANGES.
 Dimensions are subject to change. Not to be used for construction purposes unless certified.



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We value your feedback. Please take our 3 question survey at bellgossett.com/survey to let us know how we are doing.