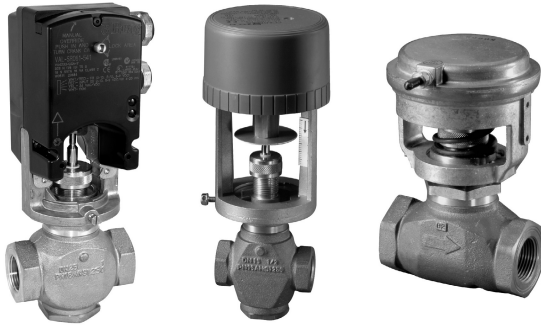


Bronze Globe Valves

SDS Series



SDS Series Bronze Globe Valves are designed for use on hot water, chilled water, and steam control applications. Configured with a wide variety of factory mounted electric and pneumatic actuator options, SDS series valves are available in two way and three way body styles from 1/2" to 2" (DN 15 to 50).

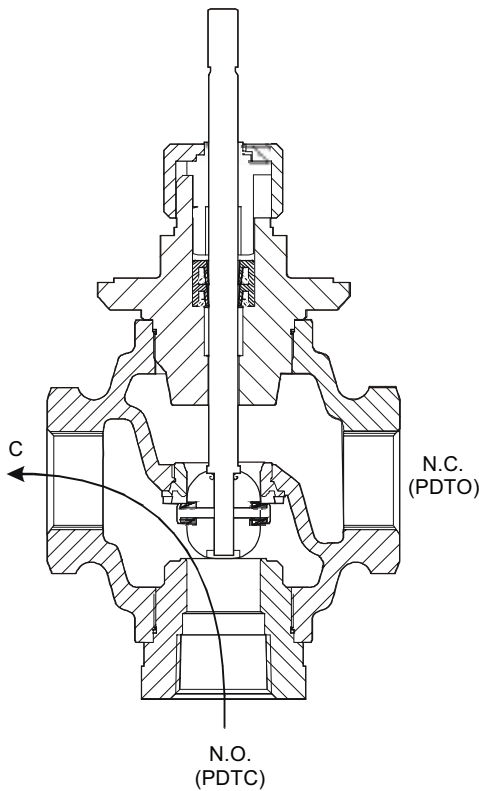
SPECIFICATIONS

Service	Hot Water, Chilled Water, Glycol Solutions, or Steam for HVAC Systems	
Stroke	5/16 in. (8 mm) for 1/2 and 3/4 in. Valves (DN15 and DN20) 1/2 in. (13 mm) for 1 and 1-1/4 in. Valves (DN25 and DN32) 3/4 in. (19 mm) for 1-1/2 and 2 in. Valves (DN40 and DN50)	
Body Rating	Meets Requirements of ANSI B16.15, Class 250	
Maximum Allowable Pressure/Temperature	Steam	38 psig (262 kPa) Saturated Steam at 284°F (140°C)
	Water	400 psig (2,756 kPa) Up to 150°F (66°C), Decreasing to 365 psig (2,515 kPa) at 248°F (120°C)
Leakage	Standard	0.01% of Maximum Flow per ANSI/FCI 70-2, Class 4
Inherent Flow Characteristics	Equal Percentage: N.O./PDTC and N.C./PDTO Valves Linear: Three-Way Mixing Valves	
Rangeability	25:1 for All Sizes	
Maximum Recommended Operating Pressure Drop	Steam	15 psig (103 kPa) for All Valve Sizes
	Water	35 psig (241 kPa) for 1/2 through 1-1/4 in. Valves; 30 psig (207 kPa) for 1-1/2 and 2 in. Valves
Materials of Construction	Body	Cast Bronze
	Bonnet	Brass
	Stem	Stainless Steel
	Plug	Brass
	Seat	Brass Against Molded Elastomeric Disk
	Packing	Ethylene Propylene Rubber (EPR) Ring Pack U-Cups

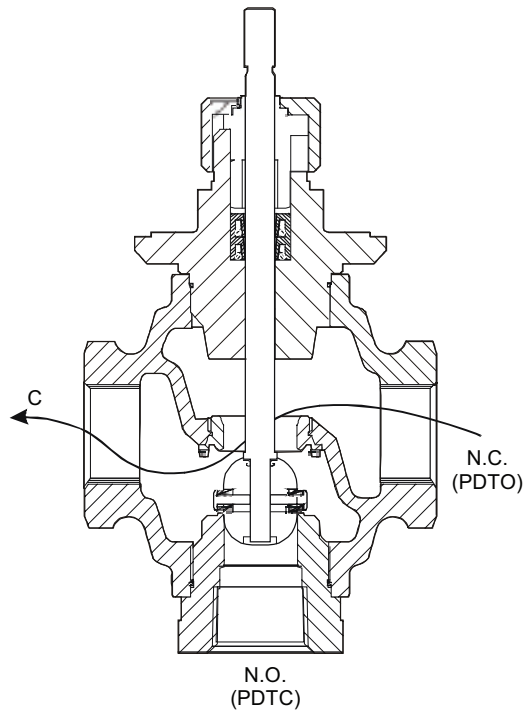
Bronze Globe Valves

SDS Series

3-WAY MIXING VALVES FLUID FLOW DIRECTION & PORT DESIGNATION



Stem Up Position
 With the stem in the up position, the lower port (N.O.) is open to the Common port (C).



Stem Down Position
 With the stem in the down position, the inline port (N.C.) is open to the Common port (C).

MODEL PART NUMBERS

Valve Size in. (DIN)	Flow Coefficient Cv (Kv)	2-Way Valve Body Part Number*	3-Way Valve Body Part Number*
1/2 (DIN 15)	0.73 (0.63)	SDS2-J001	SDS3-J001
1/2 (DIN 15)	1.8 (1.6)	SDS2-J002	SDS3-J002
1/2 (DIN 15)	4.6 (4.0)	SDS2-J005	SDS3-J005
3/4 (DIN 20)	7.3 (6.3)	SDS2-J007	SDS3-J007
1 (DIN 25)	11.6 (10)	SDS2-J012	SDS3-J012
1-1/4 (DIN 32)	18.5 (16)	SDS2-J019	SDS3-J019
1-1/2 (DIN 40)	28.9 (25)	SDS2-J029	SDS3-J029
2 (DIN 50)	46.2 (40)	SDS2-J046	SDS3-J046

Bronze Globe Valves

SDS Series

MAXIMUM CLOSEOFF PRESSURES, PSIG (KPA) FOR PDTC (NORMALLY OPEN) TWO-WAY AND PDTC PORT FOR THREE-WAY ELECTRICALLY ACTUATED VALVES

284°F (140°C) Maximum Fluid Temperature*								
Valve Size, in. (DN)	1/2 (DN15)	1/2 (DN15)	1/2 (DN15)	3/4 (DN20)	1 (DN25)	1-1/4 (DN32)	1-1/2 (DN40)	2 (DN50)
Max. Cv (Kv) Factor	0.73 (0.63)	1.8 (1.6)	4.6 (4.0)	7.3 (6.3)	11.6 (10.0)	18.5 (16.0)	28.9 (25.0)	46.2 (40.0)
VAL-NR090	345 (2,377)	345 (2,377)	216 (1,488)	138 (951)	86 (593)	52 (358)	34 (234)	21 (145)
VAL-NR180	—	—	—	—	179 (1,233)	109 (751)	70 (482)	45 (310)
VAL-SR061	345 (2,377)	345 (2,377)	208 (1,433)	132 (909)	63 (434)	38 (262)	—	—
NR-2216	—	—	—	—	—	—	80 (551)	60 (413)
BBB	—	—	—	—	—	—	100 (689)	80 (551)
BCA	—	—	—	—	200 (1378)	150 (1034)	75 (517)	50 (344)

* The maximum fluid temperature is 284°F (140°C) water to 38 psig (262 kPa) saturated steam except that VAL-SR061 actuators are limited to 35 to 250°F (2 to 121°C) and up to 15 psig (103 kPa) saturated steam.

MAXIMUM CLOSEOFF PRESSURES, PSIG (KPA) FOR PDTO (NORMALLY CLOSED) TWO-WAY AND PDTO PORT FOR THREE-WAY ELECTRICALLY ACTUATED VALVES

Valve Size, in. (DN)	1/2 (DN15)	1/2 (DN15)	1/2 (DN15)	3/4 (DN20)	1 (DN25)	1-1/4 (DN32)	1-1/2 (DN40)	2 (DN50)
Max. Cv (Kv) Factor	0.73 (0.63)	1.8 (1.6)	4.6 (4.0)	7.3 (6.3)	11.6 (10.0)	18.5 (16.0)	28.9 (25.0)	46.2 (40.0)
VAL-NR090	345 (2,377)	345 (2,377)	257 (1,171)	153 (1,054)	100 (690)	57 (393)	36 (248)	22 (152)
VAL-NR180	—	—	—	—	209 (1,440)	120 (827)	74 (510)	46 (317)
VAL-SR061	345 (2,377)	345 (2,377)	173 (1,192)	103 (710)	66 (455)	38 (262)	—	—
NR-2216	—	—	—	—	—	—	80 (551)	60 (413)
BBB	—	—	—	—	—	—	100 (689)	80 (551)
BCA	—	—	—	—	200 (1378)	150 (1034)	75 (517)	50 (344)

MAXIMUM CLOSEOFF PRESSURES, PSIG (KPA) FOR PNEUMATICALLY ACTUATED VALVES

Actuator Style	Valve Size in. (DN)	Maximum Cv (Kv) Factor	Two-Way Normally Open or Three-Way N.O. Port (With 20 psig Supply) Spring Range (psig) ⁽¹⁾			Two-Way Normally Closed or Three-Way N.C. Port (With 20 psig Supply) Spring Range (psig) ⁽¹⁾		
			3 to 6 ⁽²⁾ (21 to 41)	4 to 8 (28 to 55)	9 to 13 (62 to 90)	3 to 6 ⁽²⁾ (21 to 41)	4 to 8 (28 to 55)	9 to 13 (62 to 90)
VP-3000 ⁽³⁾	1/2 (DN15)	0.73 (0.63)	365 (2,515)	339 (2,336)	191 (1,316)	100 (689)	142 (978)	348 (2,398)
	1/2 (DN15)	1.8 (1.6)	365 (2,515)	339 (2,336)	191 (1,316)	100 (689)	142 (978)	348 (2,398)
	1/2 (DN15)	4.6 (4.0)	225 (1,550)	192 (1,323)	108 (744)	49 (338)	68 (469)	168 (1,158)
	3/4 (DN20)	7.3 (6.3)	144 (992)	122 (841)	69 (475)	29 (200)	41 (282)	100 (689)
	1 (DN25)	11.6 (10)	90 (620)	76 (524)	42 (289)	17 (117)	25 (172)	65 (448)
	1-1/4 (DN32)	18.5 (16)	55 (379)	47 (324)	26 (179)	10 (69)	14 (96)	37 (255)
	1-1/2 (DN40)	28.9 (25)	35 (241)	30 (207)	16 (110)	6 (41)	9 (62)	23 (158)
VP-8000 ⁽³⁾	2 (DN50)	46.2 (40)	22 (152)	19 (131)	11 (76)	4 (28)	6 (41)	14 (96)
	1 (DN25)	11.6 (10)	279 (1,924)	257 (1,772)	148 (1,020)	70 (483)	96 (662)	223 (1,536)
	1-1/4 (DN32)	18.5 (16)	170 (1,172)	157 (1,082)	90 (621)	40 (276)	55 (379)	128 (883)
	1-1/2 (DN40)	28.9 (25)	109 (752)	100 (689)	58 (400)	25 (172)	34 (234)	79 (545)
	2 (DN50)	46.2 (40)	70 (483)	64 (441)	37 (255)	16 (110)	21 (145)	50 (345)

(1) The recommended spring ranges for use with a Positioner are: 3 to 6 psig (21 to 41 kPa) and 3 to 7 psig (21 to 48 kPa) for N.O. valves, 9 to 13 psig (62 to 90 kPa) for N.C. valves, and 4 to 8 psig (28 to 55 kPa) for three way valves.

(2) 3 to 7 psig (21 to 48 kPa) for VP-8000 Actuators.

(3) The maximum valve fluid temperature is as follows:

Actuator Style	Water	Saturated Steam
VP-3000	248°F (120°C)	15 psig (103 kPa)
VP-8000	284°F (140°C)	38 psig (262 kPa)

INSTALLATION

- Install the valve so that the flow follows the direction of the arrow indicated on the valve body identification tag.

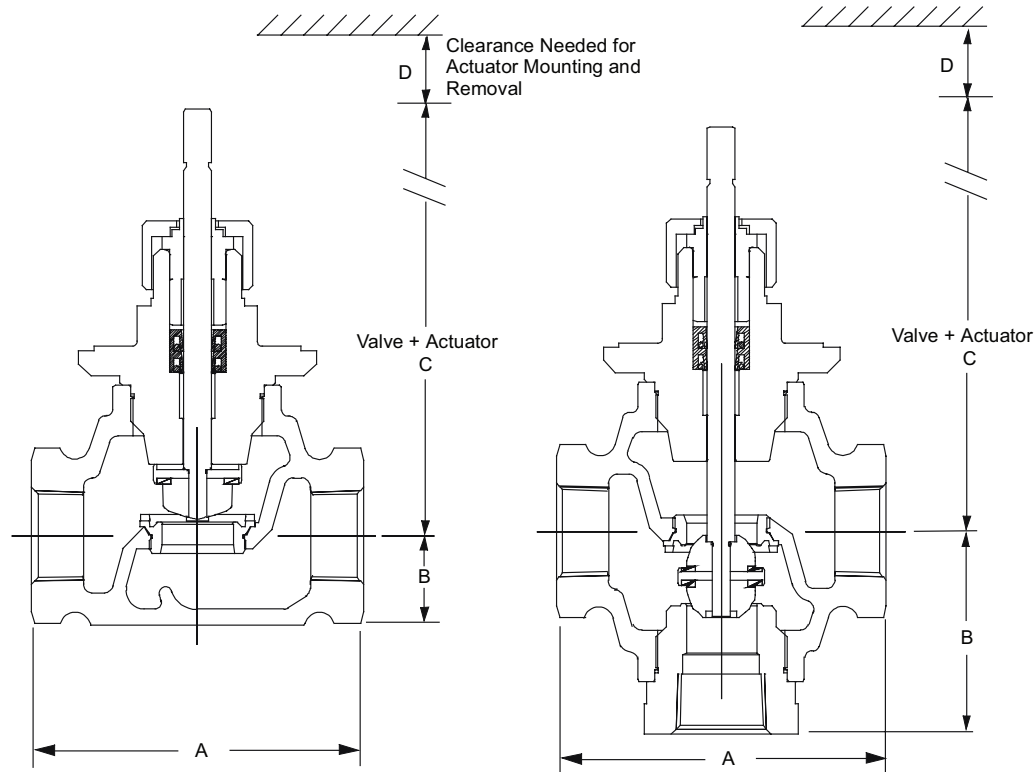
For best performance, install the valve assembly with the actuator above the valve body. The valve and actuator can be installed in any position between vertical and horizontal. Installing the valve assembly below horizontal or upside down is NOT recommended.

- Allow sufficient space for servicing the valve and actuator. Refer to the dimensions diagram on Page 5 and the dimensions table on Page 6 for dimensions of the service envelope recommended around the actuator.

NOTE: Instructions for field mounting an actuator, spring adjustments, wiring diagrams, and start-up are covered in the Technical Instructions and Installation Instructions for each actuator.

Bronze Globe Valves

SDS Series



THREADED (INTERNAL NPT) VALVE DIMENSIONS, IN. (MM)

Valve Size, in. (DN)	A		B		
	N.O./N.C./Three-Way	N.O.	N.C.	Three-Way	
1/2 (DN15)	3 (76)	1-3/16 (21)	1-9/16 (39)	1-13/16 (46)	
3/4 (DN20)	3-7/32 (81)	1-5/16 (24)	1-5/8 (41)	2-1/8 (54)	
1 (DN25)	4-1/8 (104)	1-5/32 (29)	1-3/4 (44)	2-9/16 (65)	
1-1/4 (DN32)	4-23/32 (119)	1-11/32 (34)	2 (51)	2-25/32 (70)	
1-1/2 (DN40)	5-1/8 (130)	2-5/32 (55)	2-3/4 (70)	3-3/8 (85)	
2 (DN50)	5-29/32 (150)	2-1/8 (53)	2-27/32 (72)	3-3/4 (95)	

MAINTENANCE KITS (ORDER SEPARATELY)

Code Number	Description
VG7000-6003	10-Pack for 1/4 in. Stem (1/2 or 3/4 in. Valves) Kit Includes: twenty ring packs (U-cup with installed O-ring), ten stem guides, one insertion/removal tool, one bullet, two grease tubes, and one 24 in. (610 mm) strip of crocus cloth
VG7000-6004	10-Pack for 3/8 in. Stem (1 through 2 in. Valves) Kit includes: twenty ring packs (U-cup with installed O-ring), ten stem wipers, ten stem guides, one insertion/removal tool, one sleeve packing installer, two grease tubes, and a 24 in. (610 mm) strip of crocus cloth

Bronze Globe Valves

SDS Series

THREADED (INTERNAL NPT) VALVE DIMENSIONS (cont.), IN. (MM)

Actuator Style	C*						D*
	1/2 in. (DN15)	3/4 in. (DN20)	1 in. (DN25)	1-1/4 in. (DN32)	1-1/2 in. (DN40)	2 in. (DN50)	
VP-3000	4-3/4 (120)	4-3/4 (120)	5-31/32 (151)	5-7/8 (149)	5-13/16 (147)	6-3/16 (157)	3-9/16 (90)
VP-8000	—	—	12-23/32 (323)	12-27/32 (326)	13-13/32 (341)	13-13/16 (351)	2 (51)
VAL-NR090	7-11/16 (195)	7-11/16 (195)	8-5/8 (219)	8-5/8 (219)	9-5/32 (233)	9-5/32 (233)	2-1/2 (64)
VAL-NR180	—	—	9-19/32 (244)	9-5/8 (244)	9-15/16 (252)	10-3/4 (273)	4-1/2 (114)
VAL-SR061	8 (203)	8 (203)	9-7/32 (234)	9-7/32 (234)	—	—	1-1/2 (38)
NR-2216	14 (356)	14 (356)	15-7/32 (386)	15-7/32 (386)	15-1/16 (382)	15-15/32 (392)	—
BBB/BCA	15-1/2 (381)	15-1/2 (381)	16 (407)	16-1/4 (412)	17 (431)	17-1/8 (434)	—

* Dimension "C" is the overall height above the centerline of the valve body. Dimension "D" is the clearance required for actuator removal

SHIPPING WEIGHTS (LB) FOR SDS SERIES VALVES

Actuator	Valve Size, in.					
	1/2	3/4	1	1-1/4	1-1/2	2
VP-3000	3.1	4.2	6.2	6.1	11.8	16.9
VP-8000	—	—	14.0	16.0	19.0	24.0
VAL-SR061	5.3	6.4	8.4	8.3	—	—
VAL-NR090	3.9	5.0	7.0	6.9	12.6	17.7
VAL-NR180	—	—	7.5	7.4	13.1	18.2

Note: Weights are approximate and based on the heaviest valve. Add 2 lb (0.9 kg) for pneumatic assemblies with a positioner.

All statements, technical information, and recommendations in this bulletin are for general use only. Consult Bray representatives or factory for the specific requirements and material selection for your intended application. The right to change or modify product design or product without prior notice is reserved.



Bray[®] CONTROLS

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