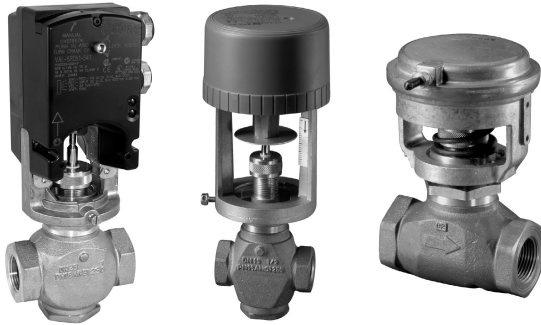


**Bronze Globe Valves**  
**STS Series**



STS Series Bronze Globe Valves are designed for use on hot water, chilled water, and steam control applications up to 100 PSI. Configured with a wide variety of factory mounted electric and pneumatic actuator options, STS series valves are available in two way and three way body styles from 1/2" to 2" (DIN 15 to 50).

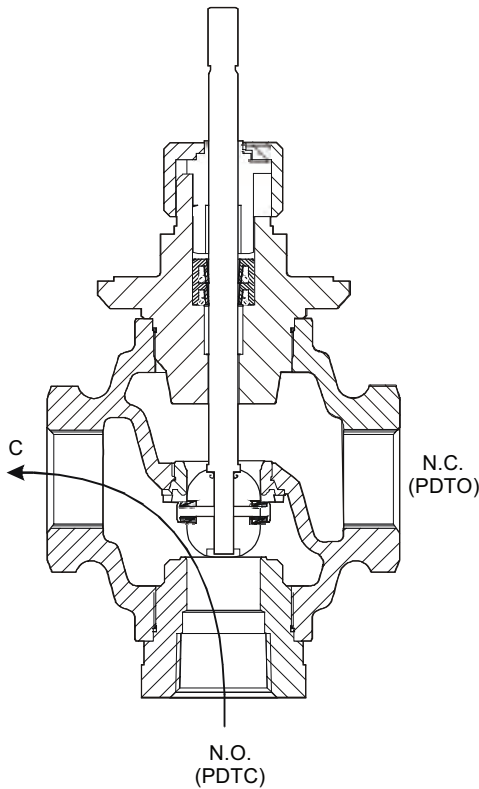
**SPECIFICATIONS**

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	100 psig (690 kPa) Saturated Steam at 338°F (170°C)
	Water	400 psig (2,756 kPa) Up to 150°F (66°C), Decreasing to 308 psig (2,122 kPa) at 338°F (170°C)
Leakage	0.05% of Maximum Flow	
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	100 psig (690 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	Stainless Steel
	Seat	Stainless Steel
	Packing	Spring-Loaded PTFE and Elastomer V-rings

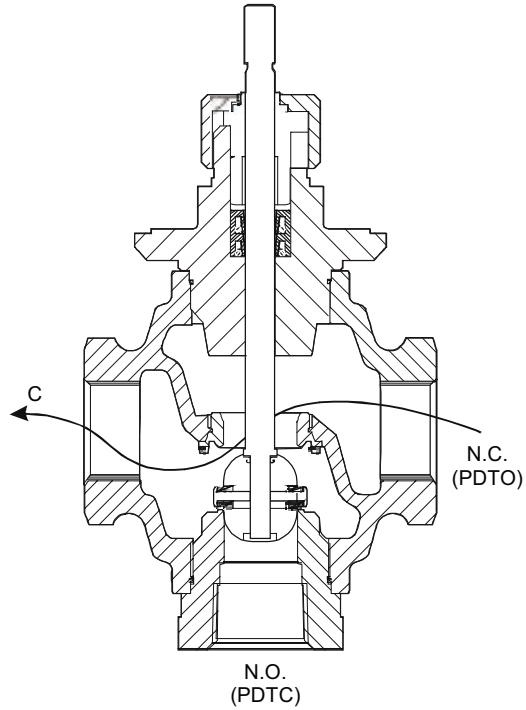
**Bronze Globe Valves**

**STS 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)	STS2-J001	STS3-J001
1/2 (DIN 15)	1.8 (1.6)	STS2-J002	STS3-J002
1/2 (DIN 15)	4.6 (4.0)	STS2-J005	STS3-J005
3/4 (DIN 20)	7.3 (6.3)	STS2-J007	STS3-J007
1 (DIN 25)	11.6 (10)	STS2-J012	STS3-J012
1-1/4 (DIN 32)	18.5 (16)	STS2-J019	STS3-J019
1-1/2 (DIN 40)	28.9 (25)	STS2-J029	STS3-J029
2 (DIN 50)	46.2 (40)	STS2-J046	STS3-J046

**Bronze Globe Valves**

**STS Series**

**MAXIMUM CLOSEOFF PRESSURES, PSIG (KPA)  
FOR PDTG (NORMALLY OPEN)**

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	239 (1,647)	239 (1,647)	135 (930)	86 (593)	54 (372)	33 (227)	21 (145)	13 (90)
VAL-NR180	308 (2,122)	308 (2,122)	278 (1,915)	177 (1,220)	112 (772)	68 (469)	44 (303)	28 (193)
VAL-SR061	230 (1,585)	230 (1,585)	130 (896)	82 (565)	39 (269)	24 (165)	—	—
NR-2216	—	—	—	—	—	—	55 (379)	40 (276)
BBB	—	—	—	—	—	—	65 (448)	50 (344)
BCA	—	—	—	—	140 (966)	110 (758)	40 (276)	30 (207)

\* 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	308 (2,122)	308 (2,122)	161 (1,109)	96 (661)	63 (434)	36 (248)	22 (152)	14 (97)
VAL-NR180	308 (2,122)	308 (2,122)	308 (2,122)	197 (1,357)	131 (903)	75 (517)	46 (317)	29 (200)
VAL-SR061	224 (1,543)	224 (1,543)	108 (744)	64 (441)	41 (282)	24 (165)	—	—
NR-2216	—	—	—	—	—	—	55 (379)	40 (276)
BBB	—	—	—	—	—	—	65 (448)	50 (344)
BCA	—	—	—	—	140 (966)	110 (758)	40 (276)	30 (207)

## 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) <sup>(1)</sup>			Two-Way Normally Closed or Three-Way N.C. Port (With 20 psig Supply) Spring Range (psig) <sup>(1)</sup>		
			3 to 6 <sup>(2)</sup> (21 to 41)	4 to 8 (28 to 55)	9 to 13 (62 to 90)	3 to 6 <sup>(2)</sup> (21 to 41)	4 to 8 (28 to 55)	9 to 13 (62 to 90)
VP-3000 <sup>(3)</sup>	1/2(DN15)	0.73 (0.63)	299 (2,060)	255 (1,757)	143 (985)	75 (517)	106 (730)	261 (1,798)
	1/2 (DN15)	1.8 (1.6)	299 (2,060)	255 (1,757)	143 (985)	75 (517)	106 (730)	261 (1,798)
	1/2 (DN15)	4.6 (4.0)	169 (1,164)	144 (992)	81 (558)	36 (248)	51 (351)	126 (868)
	3/4 (DN20)	7.3 (6.3)	108 (744)	92 (634)	52 (358)	22 (152)	31 (214)	75 (517)
	1 (DN25)	11.6 (10)	67 (462)	57 (393)	32 (220)	13 (90)	19 (131)	49 (338)
	1-1/4 (DN32)	18.5 (16)	41 (282)	35 (241)	19 (131)	7 (48)	11 (76)	28 (193)
VP-8000 <sup>(3)</sup>	1 (DN25)	11.6 (10)	209 (1,440)	193 (1,330)	111 (765)	53 (365)	72 (496)	168 (1,158)
	1-1/4 (DN32)	18.5 (16)	128 (882)	118 (813)	68 (469)	30 (207)	41 (282)	96 (661)
	1-1/2 (DN40)	28.9 (25)	82 (565)	75 (517)	43 (296)	19 (131)	25 (172)	59 (407)
	2 (DN50)	46.2 (40)	52 (358)	48 (331)	28 (193)	12 (83)	16 (110)	37 (255)

(1) The recommended 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

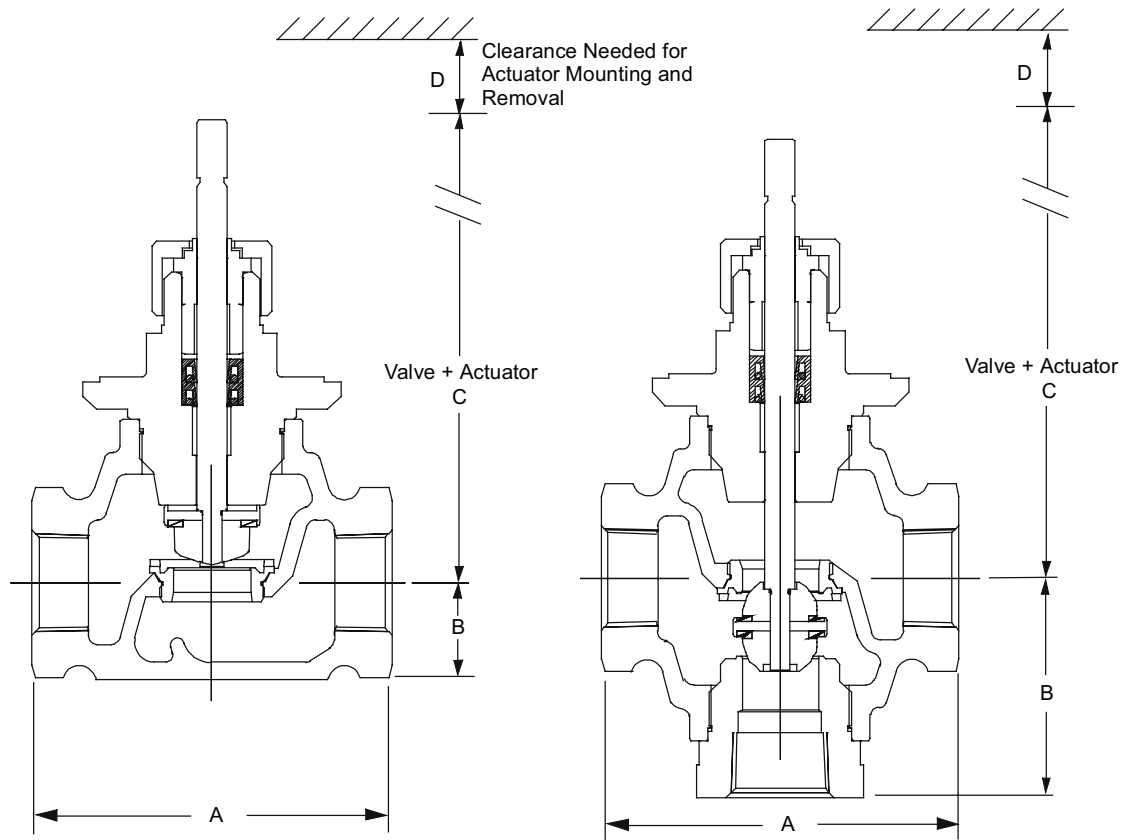
(3) The maximum closeoff pressure listed is limited to the maximum allowable ANSI valve body rating corresponding to the maximum temperature rating (308 psig [2,122 kPa] at 338°F [170°C]) of the valve.

## MAINTENANCE PARTS (ORDER SEPARATELY)

Code Number	Description
VG7000-6011	PTFE V-Ring Packing Kits for Stainless Steel Trim Valves: Single Pack for 1/4 in. Stem, SS Trim (1/2 or 3/4 in. Valves) Kit includes: two Teflon® V-rings, one rubber V-ring, two Teflon stem wipers, one Teflon stem guide, one Teflon bushing, one steel washer, one spring, one insertion/removal tool, one bullet, one grease tube, and one 3 in. (76 mm) strip of crocus cloth
VG7000-6012	Single Pack for 3/8 in. Stem, SS Trim (1 through 2 in. Valves) Kit includes: two Teflon V-rings, one rubber V-ring, two Teflon stem wipers, one Teflon stem guide, one Teflon bushing, one steel washer, one spring, one insertion/removal tool, one sleeve packing installer, one grease tube, and one 3 in. (76 mm) strip of crocus cloth
Plugs and Stems	Consult Factory

**Bronze Globe Valves**

**STS 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)	

## Bronze Globe Valves

### STS Series

#### ACTUATOR 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	5-7/16 (138)	5-7/16 (138)	6 (152)	6-1/4 (158)	—	—	3-9/16 (90)
VP-8000	12-3/4 (324)	13-17/64 (352)	13-39/64 (346)	13-27/32 (352)	14-1/32 (356)	14-15/64 (361)	2 (51)
VAL-NR090	8-13/32 (214)	8-5/8 (219)	8-31/32 (228)	9-7/32 (234)	9-13/32 (239)	9-5/8 (244)	2-1/2 (64)
VAL-NR180	9-3/32 (256)	9-5/16 (236)	9-21/32 (245)	9-7/8 (251)	10-3/32 (256)	10-9/32 (261)	4-1/2 (114)
VAL-SR061	8-23/32 (221)	8-15/16 (227)	9-9/32 (236)	9-13/16 (249)	—	—	1-1/2 (38)
NR-2216	16-3/16 (411)	16-3/16 (411)	16-1/16 (408)	16-1/2 (419)	17-5/8 (448)	17-3/4 (451)	—
BBB/BCA	16-3/16 (411)	16-3/16 (411)	16-1/16 (408)	16-1/2 (419)	17-5/8 (448)	17-3/4 (451)	—

\* Dimension "C" is the overall height above the centerline of the valve body, and dimension "D" is the clearance required for actuator removal (as illustrated in Figure 3).

#### SHIPPING WEIGHTS (LB) FOR STS SERIES VALVES

Actuator	Valve Size, in.					
	1/2	3/4	1	1-1/4	1-1/2	2
VP-3000	3.4	4.2	6.6	8.6	—	—
VP-8000	11.0	12.0	14.0	16.0	19.0	24.0
VAL-SR061	5.3	5.6	8.0	10.0	—	—
VAL-NR090	3.9	4.2	6.6	8.6	12.6	17.7
VAL-NR180	4.7	5.5	7.9	9.9	13.1	18.2
NR-2216	5.1	6.2	8.6	10.6	13.8	18.9
BBB/BCA	4.6	5.7	8.1	10.1	13.3	18.4

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

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## Bray<sup>®</sup> CONTROLS

### Commercial Division

A Division of BRAY INTERNATIONAL, Inc.  
 13333 Westland East Blvd. Houston, Te'as 77041  
 Toll Free: 888.412.BRAY(2729), FAT 281.894.9499 [www.bray.com](http://www.bray.com)  
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