

## Sanitary Ball Valves



Bradford™ sanitary ball valves are quarter-turn, straight through valves that use a ball to shut-off flow by sealing around matching seats. Ball valves are used in situations where tight shut-off is necessary.

Bradford™ ball valves provide superior ease of operation and can maintain and regulate high volume, high pressure and high temperature flow. Bradford™ ball valves offer rugged construction providing for a long service life, and a comparably low cost.

Dixon Sanitary offers a wide selection of Bradford™ ball valves for use in varied applications. These valves are simple, rugged and above all, dependable.

Pneumatic and electric actuators are available for automated control.

View our actuation catalog at [www.bradfordfittings.com](http://www.bradfordfittings.com), or call Dixon Sanitary for more information.

### Bradford™ Ball Valves

- **BV2N** ball valve is manufactured of CF8M (316) stainless steel. Three piece non-encapsulated valve with clamp ends (not 3A).
- **BV2C** ball valve is manufactured of CF8M (316) stainless steel. Three piece encapsulated valve with clamp ends.
- **BV3S** ball valve is manufactured of CF8M (316) stainless steel, 3-way encapsulated valve with clamp ends.
- **BV4S** ball valve is manufactured of CF8M (316) stainless steel, 4-way encapsulated valve with clamp ends.

### Product Specifications

#### Part Number Definitions:

- V-Virgin PTFE seat (standard) - BV2N, BV2C, BV3S, BV4S
- G-15% glass PTFE - BV2G, BV2N, BV2C, BV3S, BV4S
- C-25% carbon PTFE - BV2N, BV2C, BV3S BV4S
- S-50% stainless steel reinforced PTFE - BV2N, BV2C, BV3S BV4S
- U-UHMW polyethylene - BV2N, BV2C, BV3S BV4S

#### Materials:

- CF8M (316) stainless

#### Size Range:

- 1/4" thru 4

#### Finish:

- ≤32 Ra ID 3A finish

### Seat Materials for Ball Valves

Code	Designation	Material	Applications
V	Virgin PTFE	Virgin polytetrafluoroethylene	100% PTFE- Our standard seat material. Ideal for most sanitary services. Specified for applications requiring a low co-efficient of friction. <b>3A and FDA approved.</b>
G	RTFE	15% Glass reinforced Tetrafluoroethylene	15% glass filled + 85% PTFE - Slightly higher temperature and pressure rating than PTFE. Specified for applications requiring higher cycle life than PTFE. <b>3A and FDA approved.</b>
C	25% Carbon PTFE	25% Carbon reinforced tetrafluoroethylene	25% carbon +75% PTFE - Specified for higher temperature pressure applications. Ideal for steam and thermal fluid applications. Higher cycle life than RTFE.
S	Stainless Steel PTFE	50% Stainless steel filled tetrafluoroethylene	50% stainless steel + 50% PTFE - Specified for higher temperature pressure applications in a sanitary process. <b>3A and FDA approved.</b>
U	UHMW	Ultra-high molecular weight polyethylene	Specified for its low modulus of abrasion and minimal property degradation when exposed to moderate levels of radiation. Ideal for applications where fluorocarbons are not acceptable. <b>3A and FDA approved.</b>

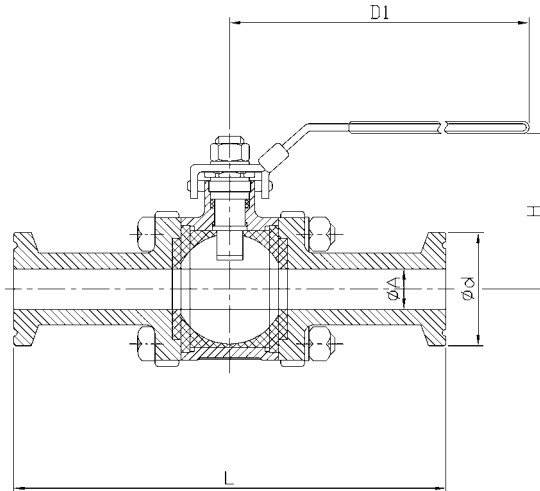
## Non-Encapsulated 2-way 3 Piece Stainless Steel Ball Valve



- compact design for areas with tight space restrictions
- full port design offers lower pressure drop and a less turbulent flow
- balanced non-encapsulated construction minimizes cold flow
- precision stainless steel balls reduce torque and friction losses while extending seat life
- blow-out proof stem
- live loaded stem packing
- lockable handle can prevent accidental actuation when used
- ID polish is  $R_a$  32 minimum
- rated to **1,000 PSI WOG**

Size	Part Number
½"	BV2GG-050CC-A
¾"	BV2GG-075CC-A
1"	BV2GG-100CC-A
1½"	BV2GG-150CC-A
2"	BV2GG-200CC-A
2½"	BV2GG-250CC-A
3"	BV2GG-300CC-A
4"	BV2GG-400CC-A

### Dimensions for BV2GG



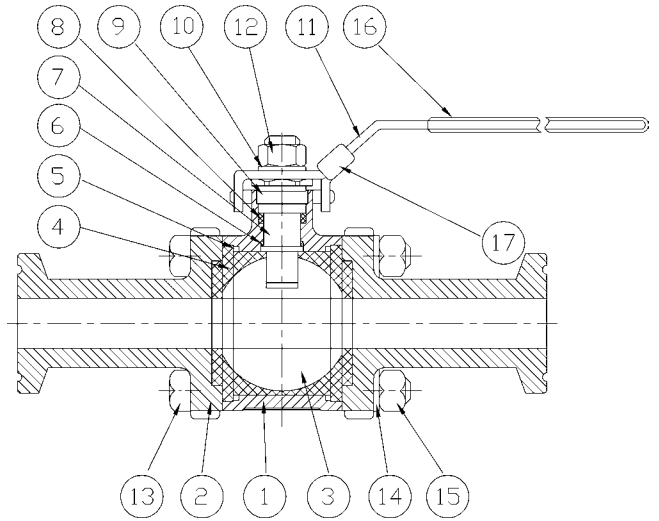
Size (in.)	Dimensions (inches)					Break torque (in-lbs.)	Weight (lbs.)
	D1	H	L	Ø A	Ø D		
½"	4.1	2.3	4.6	0.37	1.0	55	1.4
¾"	4.1	2.5	4.7	0.63	1.0	71	1.8
1"	5.0	2.8	4.9	0.87	2.0	101	2.6
1½"	6.1	3.5	5.6	1.38	2.0	221	4.6
2"	7.6	3.9	6.4	1.87	2.5	345	8.5
2½"	7.6	4.4	7.8	2.37	3.0	883	17.8
3"	10.9	4.9	9.0	2.87	3.6	830	28.2
4"	13.2	6.6	9.6	3.83	4.7	1323	41.4

**Note:** all dimensions are in inches. Dimensions are approximate. Engineering dimensions are available upon request. Specifications are subject to change without notice.

# Non-Encapsulated 2-way 3 Piece Stainless Steel Ball Valve

## Materials List for BV2GG

Item	Description	Material	Qty	
			1/2" to 3"	4"
1	body	CF8M stainless	1	1
2	end (4-bolt)	316 stainless	2	2
3	ball	CF8M stainless	1	1
4	seat	RTFE	2	2
5	gasket	RTFE	2	2
6	thrust washer	RTFE	1	1
7	stem	316 stainless	1	1
8	stem packing	RTFE	3	3
9	gland	304 stainless	1	1
10	bevel washer	301 stainless	1	1
11	handle	304 stainless	1	1
12	spring washer	304 stainless	1	1
13	bolt	304 stainless	4	6
14	bolt washer	304 stainless	4	6
15	bolt nut	304 stainless	4	6
16	handle sleeve	vinyl	1	1
17	lock plate	304 stainless	1	1



## Repair Kits for BV2GG

### Seat Repair Kit

Size	Part Number	Repair Kit contains:
1/2"	BV-2G-GK050	• (2) RTFE seats • (2) RTFE gaskets • (1) RTFE thrust washer • (3) RTFE stem packing
3/4"	BV-2G-GK075	
1"	BV-2G-GK100	
1 1/2"	BV-2G-GK150	
2"	BV-2G-GK200	
2 1/2"	BV-2G-GK250	
3"	BV-2G-GK300	
4"	BV-2G-GK400	

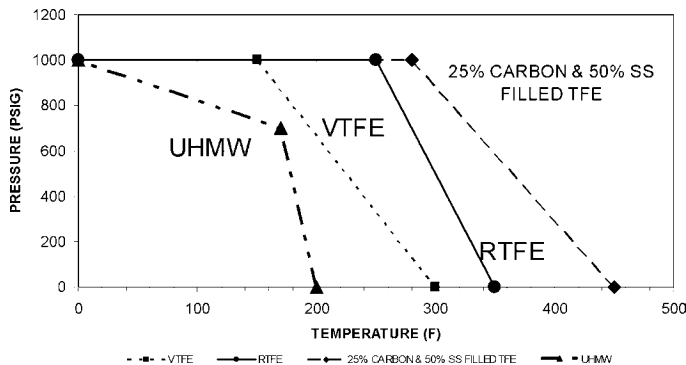
### Handle Kit for BV2GG



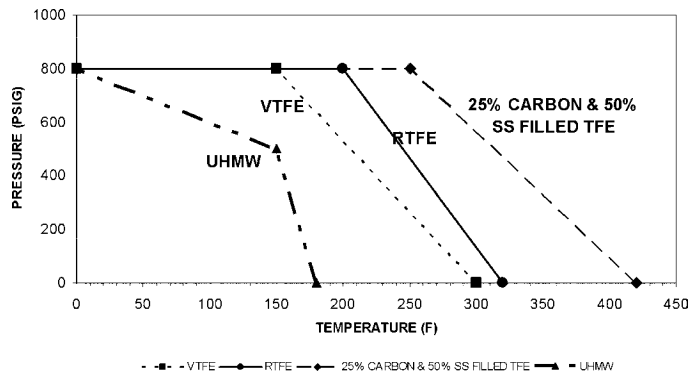
Size	Part Number	Handle Kit contains:
1/2"	BV-2G-SH050	• (1) spring washer • (1) handle • (1) lock plate • (1) handle sleeve
3/4"	BV-2G-SH075	
1"	BV-2G-SH100	
1 1/2"	BV-2G-SH150	
2"	BV-2G-SH200	
2 1/2"	BV-2G-SH250	
3"	BV-2G-SH300	
4"	BV-2G-SH400	

## Pressure Temperature Charts

1/2" - 2" valves



2 1/2" - 4" valves



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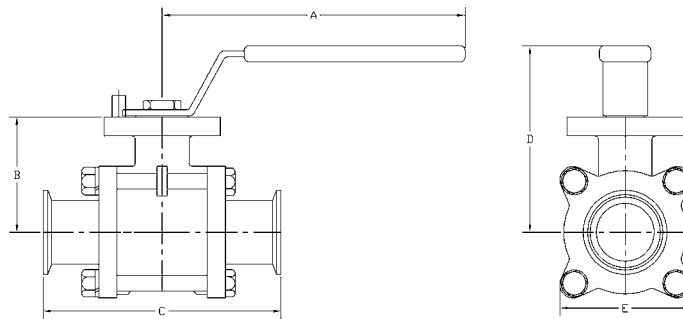


# Encapsulated 2-way 3 Piece Stainless Steel Ball Valve



- meets 3A sanitary standard 68-00 (Authorization number 1022)
- compact design for areas with tight space restrictions
- full port design offers lower pressure drop and a less turbulent flow
- balanced encapsulated construction minimizes cold-flow of seats
- precision stainless steel balls reduce torque and friction losses while extending seat life
- blow-out proof stem
- live-loaded stem packing
- ISO 5211 mounting pad
- lockable handle can prevent accidental actuation when used
- ID polish is  $R_a$  32 minimum
- rated to **1,000 PSI WOG**

## Dimensions for BV2C

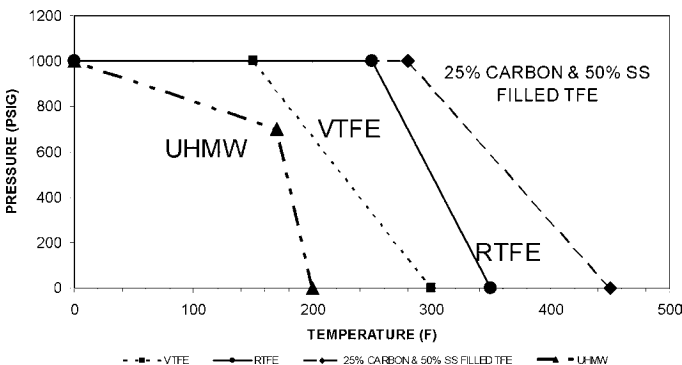


Size (in.)	Part Number	Dimensions (inches)					Assembly torque (in-lbs.)	Break torque (in-lbs.)	Weight (lbs.)
		A	B	C	D	E			
1/2"	BV2C*-050CC-A	4.7	1.5	4.3	3	1.9	160	50	1.5
3/4"	BV2C*-075CC-A	4.7	1.8	4.7	3.3	2.2	160	25	1.9
1"	BV2C*-100CC-A	5.2	2.1	4.9	3.6	2.4	160	90	2.7
1 1/2"	BV2C*-150CC-A	7.2	2.7	5.6	4.4	3.1	200	110	4.8
2"	BV2C*-200CC-A	7.2	3.1	6.4	4.8	3.7	212	300	8.9
2 1/2"	BV2C*-250CC-A	14.6	3.8	7.8	5.2	4.8	221	400	18.7
3"	BV2C*-300CC-A	15.7	4.2	9.0	5.7	5.4	239	550	29.7
4"	BV2C*-400CC-A	15.7	5.3	9.5	6.8	8.8	266	750	43.6

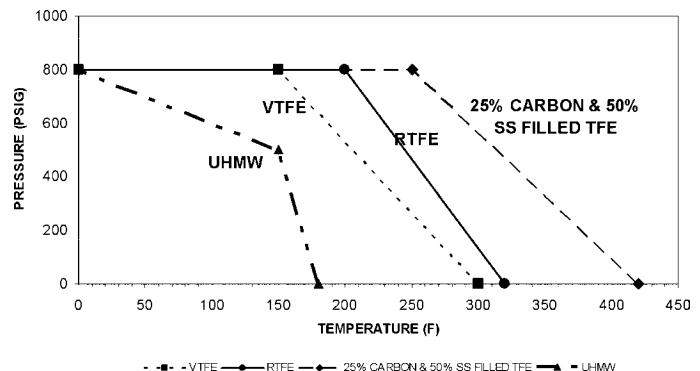
- (\*) see seat material options chart on page 125.
- All dimensions are in inches. Dimensions are approximate. Engineering dimensions are available upon request. Specifications are subject to change without notice.

## Pressure Temperature Charts

1/2" - 2" valves



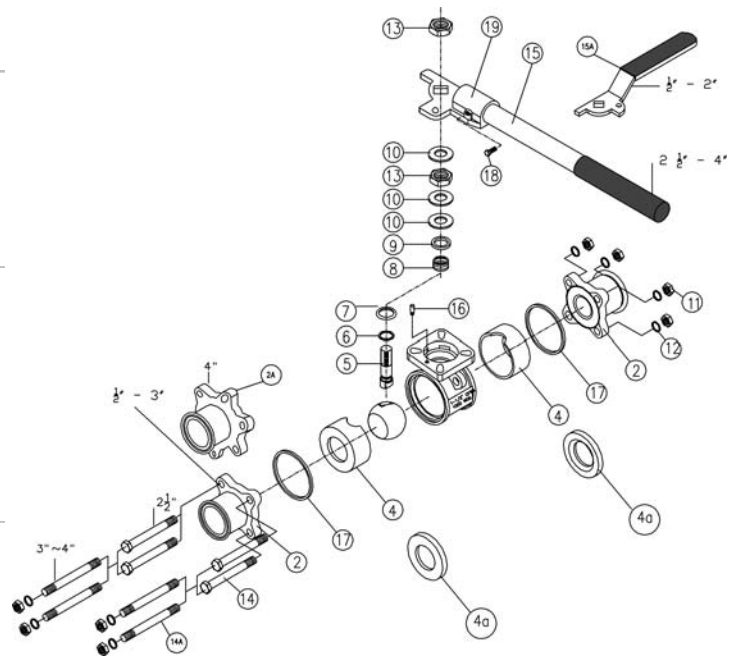
2 1/2" - 4" valves



# Encapsulated 2-way 3 Piece Stainless Steel Ball Valve

## Materials List for BV2C

Item	Description	Material	Qty			
			1/2" to 2"	2 1/2"	3"	4"
1	body	ASTMA351-CF8M	1	1	1	1
2	end (4-bolt)	ASTMA351-CF8M	2	2	2	n/a
2A	end (6-bolt)	ASTMA351-CF8M	n/a	n/a	n/a	2
3	ball	ASTMA351-CF8M	1	1	1	1
4	seat(encapsulated)	see chart below	2	2	2	2
4A	seat (nonencap.)	see chart below	n/a	n/a	n/a	n/a
5	stem	see chart below	1	1	1	1
6	thrust washer	see chart below	1	1	1	1
7	O-ring	RTF	1	1	1	1
8	stem packing	see chart below	*	3	3	3
9	ring	AISI 316	1	1	1	1
10	bevel washer	AISI 301	3	3	3	3
11	hex nut	AISI 304	4	4	8	12
12	bolt washer	AISI 304	4	4	8	12
13	nut	AISI 304	2	2	2	2
14	bolt	AISI 304	4	4	n/a	n/a
14A	bolt (double thread)	AISI 304	n/a	n/a	4	6
15	handle (rod)	AISI 304/rubber	1	n/a	n/a	n/a
15A	handle (rod)	AISI 304/rubber	n/a	1	1	1
16	stop pin	AISI 316	1	1	1	1
17	gasket	see chart below	2	2	2	2
18	handle nut	AISI 304	n/a	1	1	1
19	handle head	AISI 304	n/a	1	1	1



* size	qty
1/2"	1
3/4"	2
1" - 2"	3

## Repair Kits for BV2C

Size	Virgin PTFE	RTFE	25% Carbon TFE	50% Stainless PTFE	UMHW
1/2"	BV-2C-VK050	BV-2C-GK050	BV-2C-CK050	BV-2C-SK050	BV-2C-UK050
3/4"	BV-2C-VK075	BV-2C-GK075	BV-2C-CK075	BV-2C-SK075	BV-2C-UK075
1"	BV-2C-VK100	BV-2C-GK100	BV-2C-CK100	BV-2C-SK100	BV-2C-UK100
1 1/2"	BV-2C-VK150	BV-2C-GK150	BV-2C-CK150	BV-2C-SK150	BV-2C-UK150
2"	BV-2C-VK200	BV-2C-GK200	BV-2C-CK200	BV-2C-SK200	BV-2C-UK200
2 1/2"	BV-2C-VK250	BV-2C-GK250	BV-2C-CK250	BV-2C-SK250	BV-2C-UK250
3"	BV-2C-VK300	BV-2C-GK300	BV-2C-CK300	BV-2C-SK300	BV-2C-UK300
4"	BV-2C-VK400	BV-2C-GK400	BV-2C-CK400	BV-2C-SK400	BV-2C-UK400

### Repair Kit contains:

- (2) body seals
- (2) O-rings
- (1) thrust washer
- (3) stem packings

Non-encapsulated version also available for actuation.

### Seat Material Options

See page 124 for material specifications and applications

Code	Description	3A
V	Virgin PTFE	yes
G	RTFE	yes
C	25% carbon PTFE	no
S	SS reinforced PTFE	yes
U	UHMW	yes

### Handle Kit

Size	Part Number
1/2" - 3/4"	BV-23-HA050-075
1"	BV-23-HA100
1 1/2" - 2"	BV-23-HA150-200
2 1/2"	BV-23-HA250
3" - 4"	BV-23-HA300-400

### Handle Kit contains:

- (1) handle washer
- (1) handle head
- (1) nut

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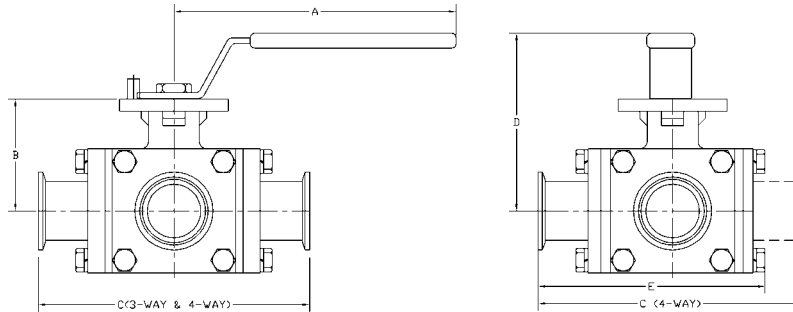


# Multi-port 3-way Sanitary Stainless Steel Ball Valve



- meets 3A sanitary standard 68-00 (Authorization number 1022)
- compact design for areas with tight space restrictions
- full port design (1/2" - 3") offers lower pressure drop and a less turbulent flow
- reduced port design on 4"
- balanced encapsulated construction minimizes cold flow of seats
- precision stainless steel balls reduce torque and friction losses while extending seat life
- ball orientation is indicated with markings on the stem
- blow-out proof stem
- live-loaded stem packing
- ISO 5211 mounting pad
- lockable handle can prevent accidental actuation when used
- ID polish is R<sub>a</sub> 32 Minimum
- rated to **1,000 PSI WOG**

## Dimensions for BV3S/BV4S

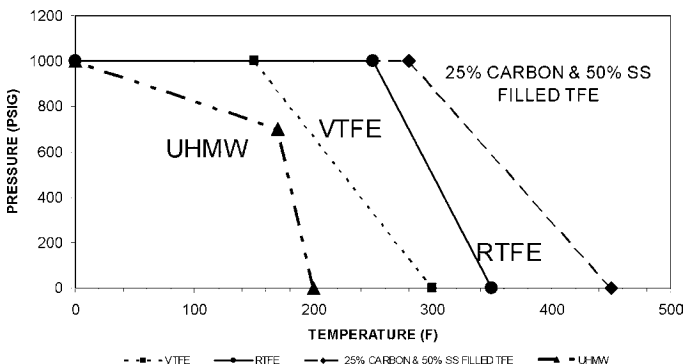


Size (in.)	3-way 'L' port Part Number	3-way 'T' port Part Number	Dimensions (inches)					Break torque (in-lbs.)		Weight (lbs.)
			A	B	C	D	E	'L' port	'T' port	
1/2"	BV3S*LF050C-A	BV3S*TF050C-A	4.7	1.8	4.6	3.2	3.9	62	50	3.6
3/4"	BV3S*LF075C-A	BV3S*TF075C-A	4.7	1.9	5.0	3.4	4.2	75	60	4.3
1"	BV3S*LF100C-A	BV3S*TF100C-A	5.2	2.3	6.0	3.8	5.0	100	80	6.8
1 1/2"	BV3S*LF150C-A	BV3S*TF150C-A	7.2	2.8	6.9	4.5	5.8	262	210	12.6
2"	BV3S*LF200C-A	BV3S*TF200C-A	7.2	3.2	7.5	5.0	6.7	535	425	21.6
2 1/2"	BV3S*LF250C-A	BV3S*TF250C-A	14.6	3.9	9.0	5.3	7.1	1250	1000	33.7
3"	BV3S*LF300C-A	BV3S*TF300C-A	15.7	4.9	10.2	6.4	8.5	1625	1300	56.4
4"	BV3S*LR400C-A	BV3S*TR400C-A	15.7	5.3	11.4	6.8	10.6	1875	1500	85.4

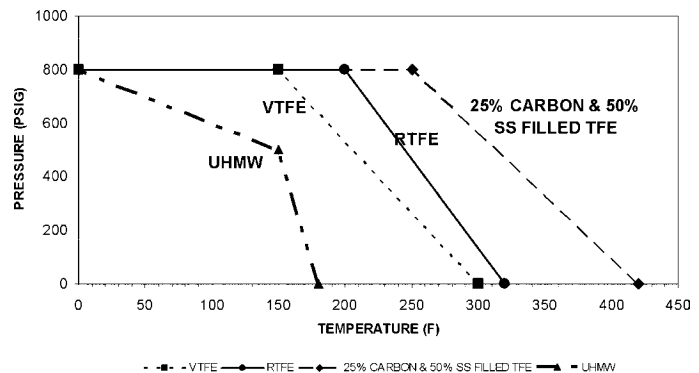
- (\*) see seat material options chart on page 123.
- All dimensions are in inches. Dimensions are approximate. Engineering dimensions are available upon request. Specifications are subject to change without notice.

## Pressure Temperature Charts

1/2" - 2" valves

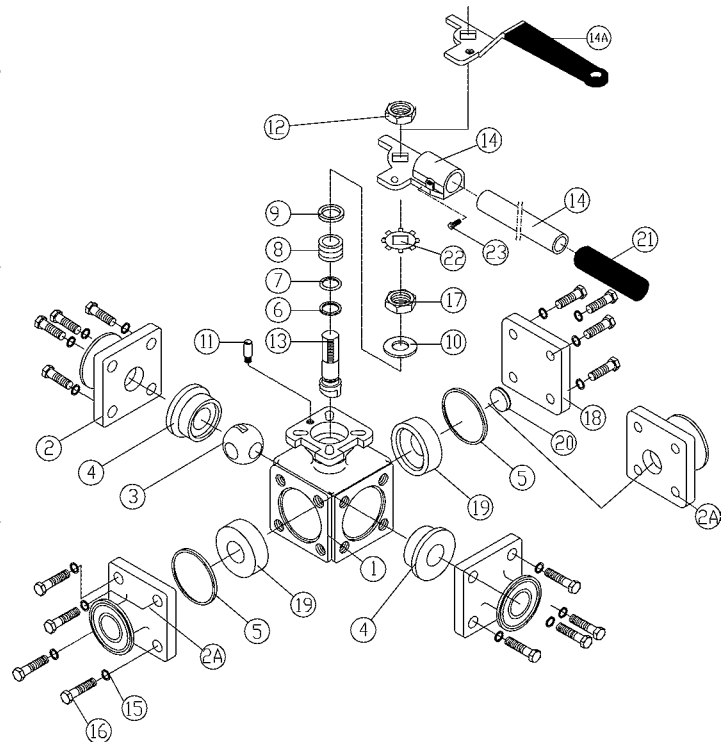


2 1/2" - 4" valves



## Multi-port 3-way Sanitary Stainless Steel Ball Valve Materials List for BV3S/BV4S

Item	Description	Material	Qty			
			3-way		4-way	
			½" - 2"	2½" - 4"	½" - 2"	2½" - 4"
1	body	ASTMA351-CF8M	1	1	1	1
2	end (large)	ASTMA351-CF8M	3	1	4	2
2A	end (small)	ASTMA351-CF8M	n/a	2	n/a	2
3	ball	ASTMA351-CF8M	1	1	1	1
4	seat 1	see chart below	2	2	2	2
5	gasket	see chart below	2	2	2	2
6	thrust washer	see chart below	1	1	1	1
7	O-ring	RTF	1	1	1	1
8	stem packing	see chart below	*	3	*	3
9	ring	AISI 316	1	1	1	1
10	spring washer	AISI 301	2	2	2	2
11	stop pin	AISI 316	1	1	1	1
12	nut	AISI 304	1	1	1	1
13	stem	AISI 316	1	1	1	1
14	handle	AISI 304	n/a	1	n/a	1
14A	handle w/cover	AISI 304/plastic	1	n/a	1	n/a
15	lock washer	AISI 304	16	16	16	16
16	bolt	AISI 304	16	16	16	16
17	stem packing nut	AISI 304	1	1	1	1
18	cover plate	ASTMA351-CF8M	1	1	n/a	n/a
19	seat 2	see chart below	2	2	2	2
20	plug	see chart below	1	1	n/a	n/a
21	handle cover	plastic	n/a	1	n/a	1
22	lock washer	AISI 304	n/a	1	n/a	1
23	handle bolt	AISI 304	n/a	1	n/a	1



size	qty
½"	1
¾"	2
1" thru 2"	3

### Repair Kits for BV3S

Size	Virgin PTFE	RTFE	25% Carbon TFE	50% Stainless PTFE	UMHW
½"	BV-3SVFRK050	BV-3SGRK050	BV-3SCRK050	BV-3SSRK050	BV-3SURK050
¾"	BV-3SVFRK075	BV-3SGRK075	BV-3SCRK075	BV-3SSRK075	BV-3SURK075
1"	BV-3SVFRK100	BV-3SGRK100	BV-3SCRK100	BV-3SSRK100	BV-3SURK100
1½"	BV-3SVFRK150	BV-3SGRK150	BV-3SCRK150	BV-3SSRK150	BV-3SURK150
2"	BV-3SVFRK200	BV-3SGRK200	BV-3SCRK200	BV-3SSRK200	BV-3SURK200
2½"	BV-3SVFRK250	BV-3SGRK250	BV-3SCRK250	BV-3SSRK250	BV-3SURK250
3"	BV-3SVFRK300	BV-3SGRK300	BV-3SCRK300	BV-3SSRK300	BV-3SURK300
4"	BV-3SVRRK400	BV-3SGRK400	BV-3SCRK400	BV-3SSRK400	BV-3SURK400

**Repair Kit contains:**

- (2) body seals
- (2) O-rings
- (1) thrust washer
- (3) stem packings

### Seat Material Options

Code	Description	3A
V	Virgin PTFE	yes
G	RTFE	yes
C	25% carbon PTFE	no
S	SS reinforced PTFE	yes
U	UMHW	yes

### Handle Kit

used on 3 and 4 way ball valves

Size	Part Number
½" - ¾"	BV-23-HA050-075
1"	BV-23-HA100
1½" - 2"	BV-23-HA150-200
2½"	BV-23-HA250
3" - 4"	BV-23-HA300-400

**Handle Kit contains:**

- (1) lock washer
- (1) handle with cover
- (1) nut

Refer to page 123 for material specifications and applications

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### 3-Way Ball Valve Flow Options

#### 'T' Pattern, Side Entry

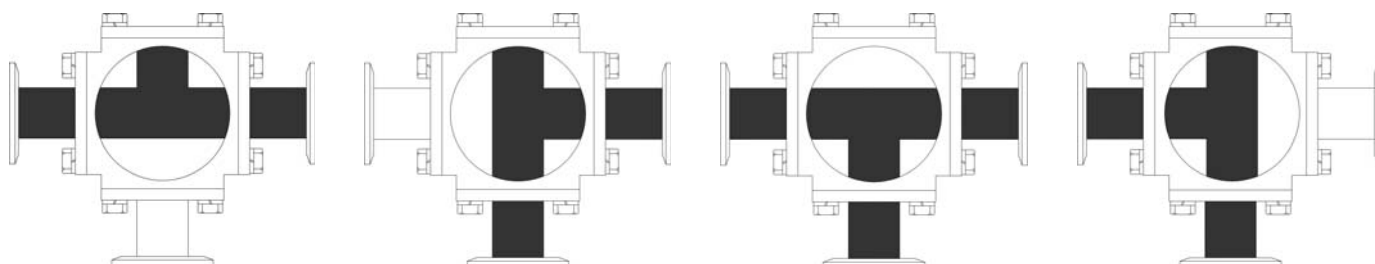
*Top view*

**position A**

**position B**

**position C**

**position D**



Number	Rotation	Flow Plan Options
1	90°	A, B
2	90°	B, C
3	90°	C, D
4	90°	A, D
5	180°	A, B, C
6	180°	B, C, D
7	180°	A, C, D
8	180°	A, B, D

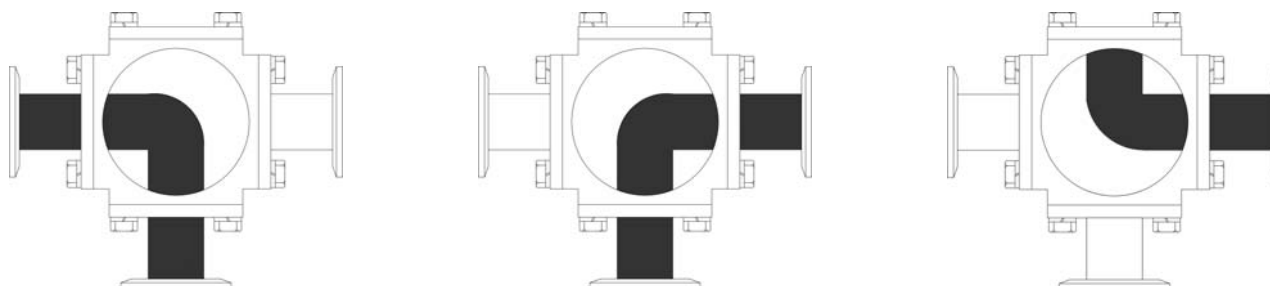
#### 'L' Pattern, Side Entry

*Top view*

**position A**

**position B**

**position C**



Number	Rotation	Flow Plan Options
1	90°	A, B
2	180°	A, B, C

## Multi-port 4-way Sanitary Stainless Steel Ball Valve



Size	'L' port Part Number	'T' port Part Number
1/2"	BV4S*LF050C-A	BV4S*TF050C-A
3/4"	BV4S*LF075C-A	BV4S*TF075C-A
1"	BV4S*LF100C-A	BV4S*TF100C-A
1 1/2"	BV4S*LF150C-A	BV4S*TF150C-A
2"	BV4S*LF200C-A	BV4S*TF200C-A
2 1/2"	BV4S*LF250C-A	BV4S*TF250C-A
3"	BV4S*LF300C-A	BV4S*TF300C-A
4"	BV4S*LR400C-A	BV4S*TR400C-A

Note: (\*) see seat material options chart on page 125.

### Repair Kits for BV4S

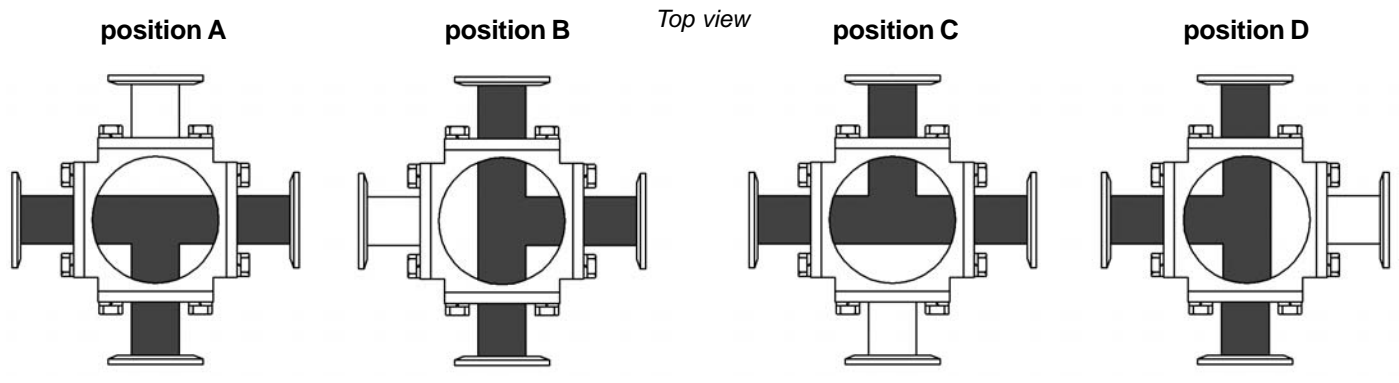
Size	Virgin PTFE	RTFE	25% Carbon TFE	50% Stainless PTFE	UMHW
1/2"	BV-4SVRK050	BV-4SGRK050	BV-4SCRK050	BV-4SSRK050	BV-4SURK050
3/4"	BV-4SVRK075	BV-4SGRK075	BV-4SCRK075	BV-4SSRK075	BV-4SURK075
1"	BV-4SVRK100	BV-4SGRK100	BV-4SCRK100	BV-4SSRK100	BV-4SURK100
1 1/2"	BV-4SVRK150	BV-4SGRK150	BV-4SCRK150	BV-4SSRK150	BV-4SURK150
2"	BV-4SVRK200	BV-4SGRK200	BV-4SCRK200	BV-4SSRK200	BV-4SURK200
2 1/2"	BV-4SVRK250	BV-4SGRK250	BV-4SCRK250	BV-4SSRK250	BV-4SURK250
3"	BV-4SVRK300	BV-4SGRK300	BV-4SCRK300	BV-4SSRK300	BV-4SURK300
4"	BV-4SVRK400	BV-4SGRK400	BV-4SCRK400	BV-4SSRK400	BV-4SURK400

Repair Kit contains:

- (2) body seals
- (2) O-rings
- (1) thrust washer
- (3) stem packings

### 4-Way Ball Valve Flow Options

#### 'T' Pattern, Side Entry



#### 'L' Pattern, Side Entry

