

**VALTORC**

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# MULTI-PORT SANITARY BALL VALVE

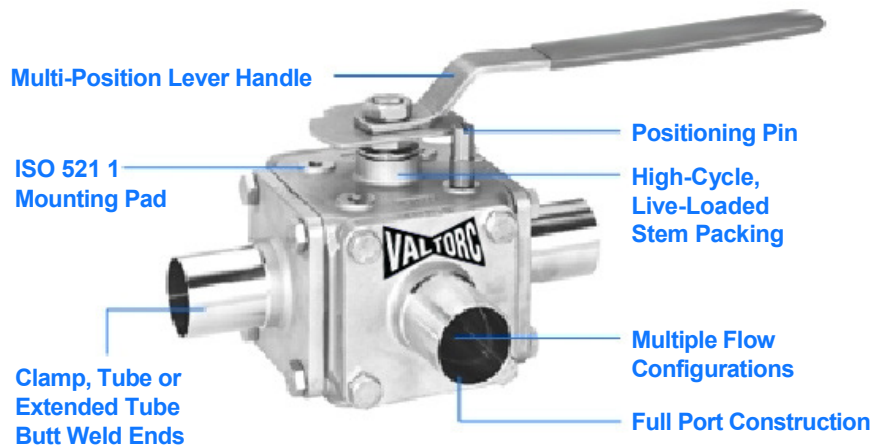
## SERIES 520-SN

FOR AUTOMATED &  
MANUAL SERVICE  
PHARMACEUTICAL  
BIO-TECHNOLOGY  
COSMETIC  
FOOD & BEVERAGE



# The VALTORC 520-SN Series 3/4/5-Way Sanitary Ball Valve

The 520-SN is a true multi-way Ball valve with balanced seat construction. Porting and shut-off capabilities can reduce the number of process valves required in a piping system. This full port valve is available in a number of flow configurations with both clamp and tube butt weld end connections.



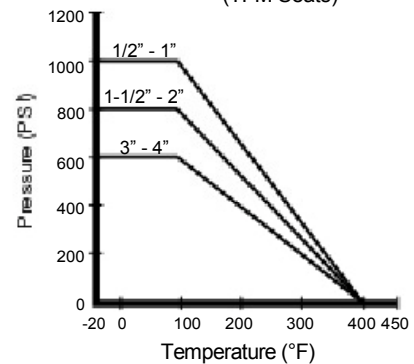
## Standard Features and Benefits

- Balanced 4-Seat or 5-Seat Construction**  
 Unlike two-seated diverter valves and other multi-port valves on the market, the 520-SN series has four seats (five seats in bottom entry valves) for positive shut-off in the closed position. This true multi-port function can reduce the number of valves required in a process system, and provides engineers greater design flexibility
- Trunnion Mounted Ball (1 1/2" - 4")**  
 Lateral forces in a 3-way valve can cause unwanted seat distortion. Stem/ball isolation prevents side loading and wear of downstream seats improving performance and service life
- ISO 5211 Mounting Pad**
- High-Cycle, Live-Loaded Stem Packing**  
 Dynamic loading on stem packing ensures a tight seal through varying pressure and temperature conditions, extending service life and reducing maintenance costs
- Blow-Out-Proof Stem**  
 Stem is bottom loaded to prevent removal when valve is in service
- Full Port Design**  
 Full port construction improves flow characteristics for greater process efficiencies
- 25 Ra Internal Surface Finish**

## Options

- 4- or 5-way construction with multiple flow patterns
- Clamp, tube butt weld, extended tube butt weld, or compression end connections
- Finer internal surface finishes available

520-SN Pressure / Temperature Chart (TFM Seats)



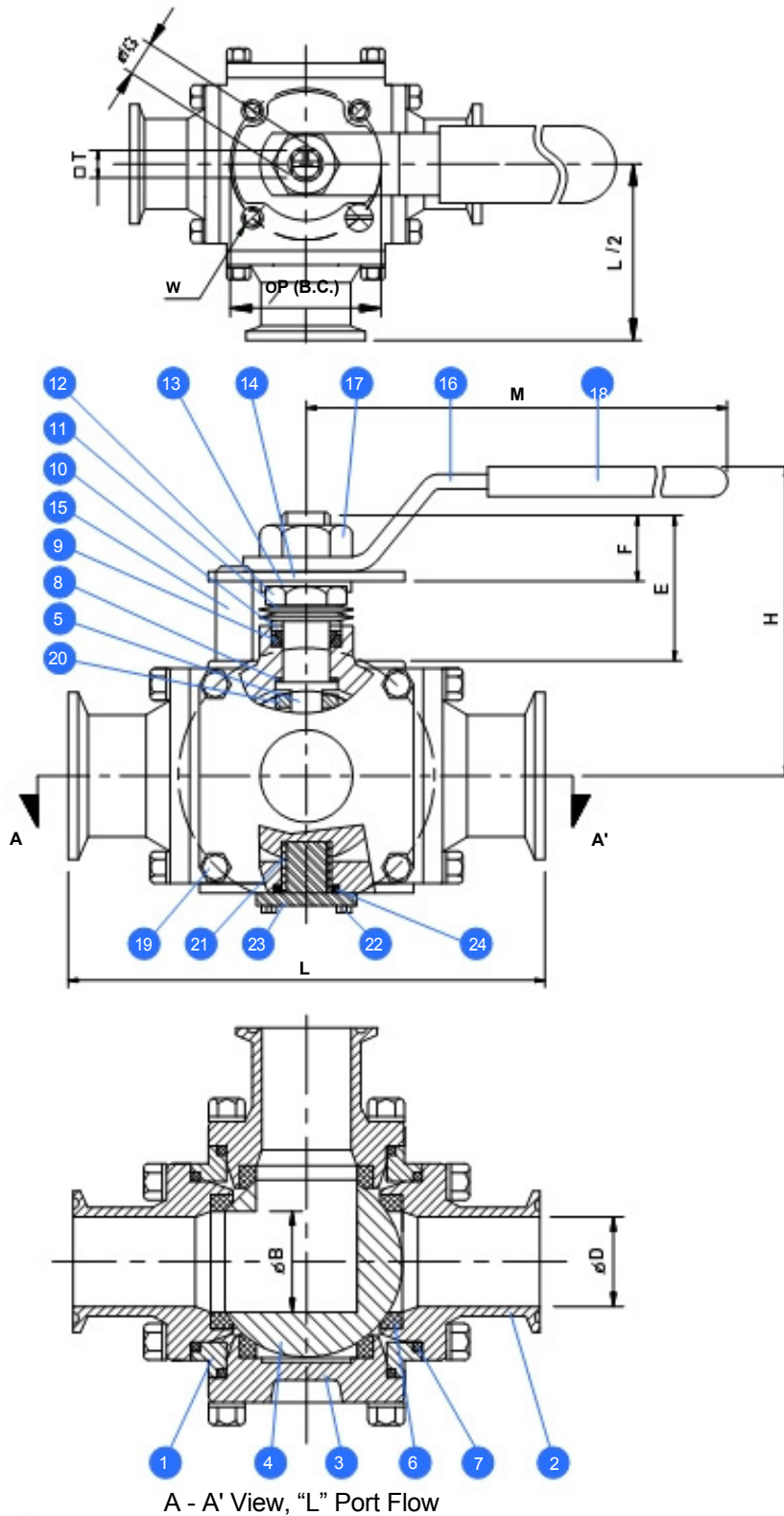
## Operating Conditions

- Temperature range (TFM):  
-20°F ~ 400°F
- Maximum pressure (TFM):  
1000 PSI (1/2" - 1"),  
800 PSI (1-1/2" - 2")  
600 PSI (3" - 4")

## Specifications

- All valves shell and seat tested to ANSI/ASME B16.34 and API 598
- All materials comply with applicable ASTM material specifications
- All soft wetted parts comply with FDA CFR Title 21 Part 177

1/2" ~ 2"



A - A' View, "L" Port Flow

Valve Components			
#	Part Name	Material	Qty.
1	Body	A351 Gr. CF8M	1
2	End Cap	A351 Gr. CF8M	3
3	Blind End Cap	A351 Gr. CF8M	1
4	Ball	316SS	1
5	Stem	316SS	1
6	Seat	TFM	4
7	Body Seal	TFM	4
8	Thrust Washer	PEEK	1
9	Stem Packing Set	TFM	1
10	Packing Gland	304SS	1
11	Belleville Washer	301SS	4
12	Gland Nut	304SS	1
13	Gland Nut Lock Washer	304SS	1
14	Stop Plate	304SS	1
15	Positioning Pin	304SS	1
16	Handle	304SS	1
17	Handle Nut	304SS	1
18	Handle Cover	Vinyl	1
19	Body Bolt	304SS	16
20*	Stem Set Pin	316SS	1
21*	Trunnion Bearing	TFM	1
22*	Trunnion Bolt	304SS	4
23*	Trunnion	316SS	1
24*	Trunnion Seal	TFM	1

Part numbers 20 to 24 are for 1 1/2" - 2" size only

Dimensions (Inches)														
Size	L		M	H	G	B	D	T	E	F	P	W	ISO 5211 Pattern	Weight (lbs)
	CL / BW	EW												
1/2	4.00	5.87	5.71	3.07	0.47	0.47	0.37	0.35	0.71	0.44	1.97	M6	F05	4.00
3/4	5.00	7.14	5.71	3.07	0.47	0.79	0.62	0.35	0.71	0.44	1.97	M6	F05	5.00
1	6.00	9.00	7.80	3.60	0.55	0.98	0.87	0.43	1.06	0.52	2.76	M8	F07	9.00
1 1/2	7.25	10.00	9.84	5.20	0.71	1.50	1.37	0.55	1.79	0.73	4.02	M10	F10	20.00
2	8.50	11.00	12.20	6.02	0.87	2.00	1.87	0.67	2.10	0.85	4.02	M10	F10	30.0

# Flow Pattern Options

3 Way - Side Entry, T-Port			3 Way - Side Entry, L-Port		
No.	Turn	Positions	No.	Turn	Positions
01	90°	A & B	01	90°	A & B
02	90°	B & C			
03	90°	C & D			
04	90°	D & A			
12	180°	A & B & C			
23	180°	B & C & D			
34	180°	C & D & A			
41	180°	D & A & B			
00	360°	All			

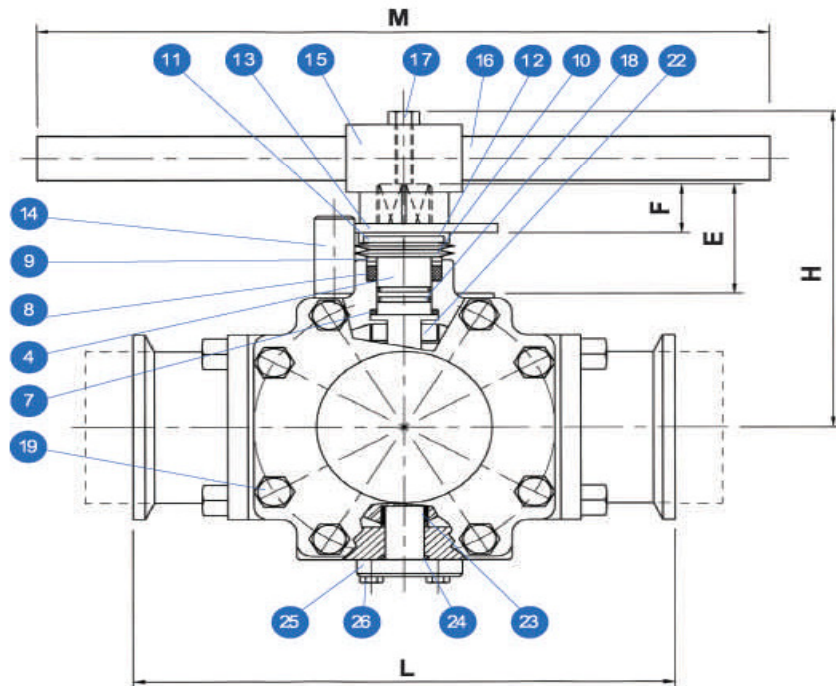
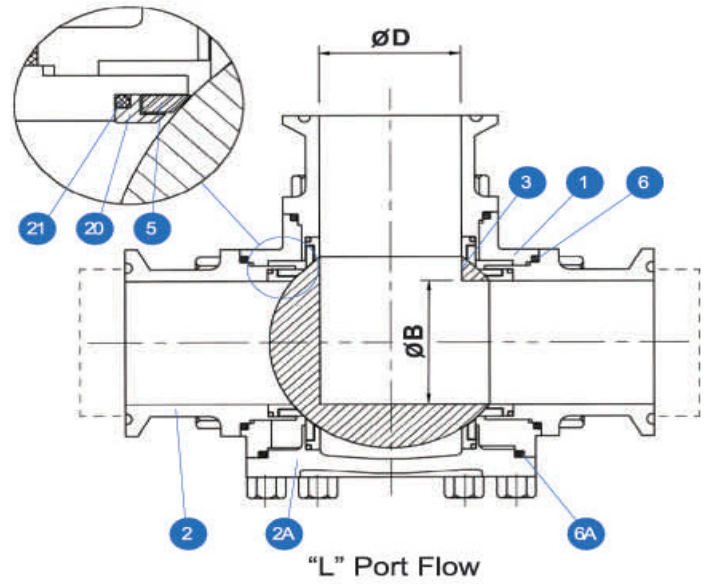
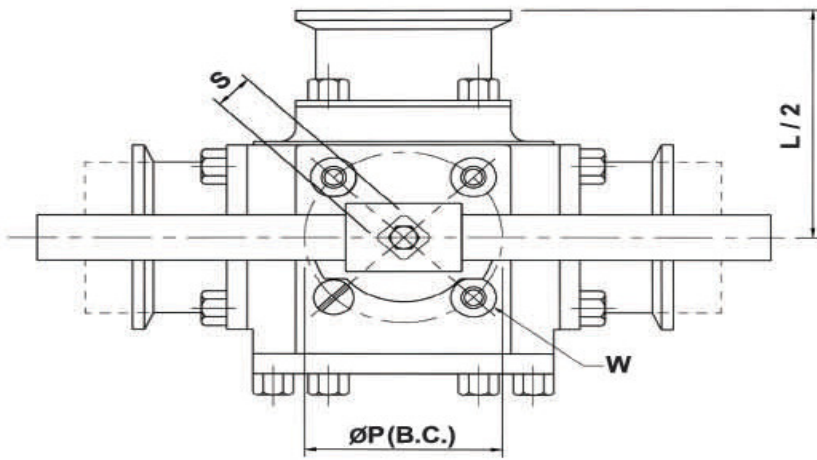
3 Way - Bottom Entry, 180° L-Port			3 Way - Bottom Entry, 90° Angle Port		
No.	Turn	Positions	No.	Turn	Positions
01	90°	A & B	01	90°	A & B
02	90°	B & C			
12	180°	A & B & C			

4 Way - Bottom Entry, L-Port			4 Way - Side Entry, Double L-Port		
No.	Turn	Positions	No.	Turn	Positions
01	90°	A & B	01	90°	A & B
02	90°	B & C	00	360°	All
12	180°	A & B & C			
00	360°	All			

4 Way - Bottom Entry, Double L-Port			5 Way - Bottom Entry, Angle Port		
No.	Turn	Positions	No.	Turn	Positions
01	90°	A & B	01	90°	A & B
			00	360°	All

3 Way - Bottom Entry, 180° T-Port			3 Way - Bottom Entry, 180° Double L-Port		
No.	Turn	Positions	No.	Turn	Positions
01	90°	A & B	01	90°	A & B

3" ~ 4"



Valve Components			
#	Part Name	Material	Qty.
1	Body	A351 Gr. CF8M	1
2	End Cap (small)	A351 Gr. CF8M	3
2A	Blind End Cap (large)	A351 Gr. CF8M	1
3	Ball	316SS	1
4	Stem	316SS	1
5	Seat	TFM	4
6	Body Seal (small)	TFM	3
6A	Body Seal (large)	TFM	1
7	Thrust Washer	PEEK	1
8	Stem Packing Set	TFM	1
9	Packing Gland	304SS	1
10	Belleve Washer	301SS	4
11	Gland Nut	304SS	1
12	Gland Nut Lock Washer	304SS	1
13	Stop Plate	304SS	1
14	Positioning Pin	304SS	1
15	Handle Drive Coupling	304SS	1
16	Pipe Handle	304SS	1
17	Handle Bolt	304SS	1
18	Stem Bearing	PEEK	2
19	Body Bolt	304SS	20
20	Seat Retainer	316SS	4
21	Seat Retainer O-Ring	Viton 90	4
22	Stem Set Pin	316SS	1
23	Trunnion Bearing	PEEK	1
24	Trunnion Seal	PEEK	1
25	Trunnion	316SS	1
26	Trunnion Bolt	304SS	4

Dimensions (Inches)													
Size	L		M	H	D	B	S	E	F	P	W	ISO 5211 Pattern	Weight (lbs)
	CL / BW	EW											
3	10.50	12.00	22.00	7.50	2.87	2.92	0.87	2.31	0.94	4.02	M10	F10	57.00
4	12.50	14.00	32.00	8.10	3.83	3.78	0.87	2.25	0.90	4.02	M10	F10	75.00