

### 3-Way and 4-Way Ball Valves

The valves is manufactured with CF3M(316L) stainless steel. It is a five piece encapsulated design with clamp/weld ends and ISO 5211 high mounting pad.

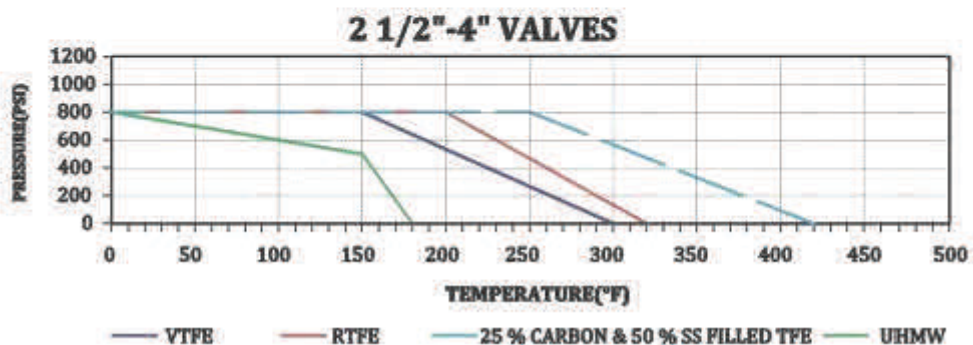
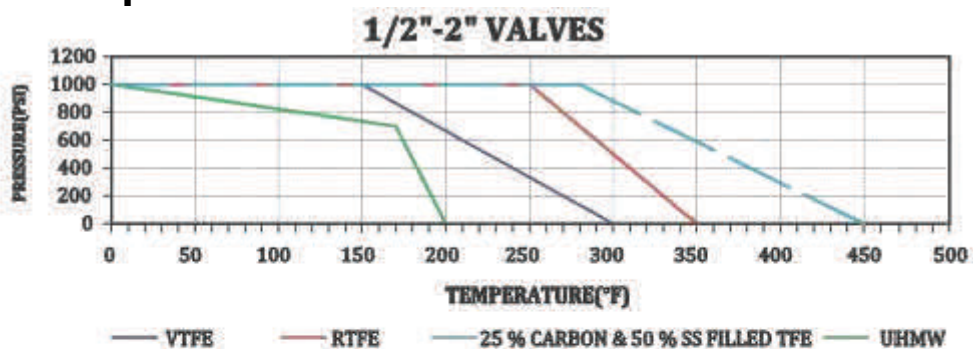


# Sanitary Ball Valves

## Seat Materials for Ball Valves

Description	Material	Applications
Virgin PTFE	Virgin Polytetrafluoroethylene (Food Grade Material )	100% PTFE Standard seat material. Ideal for most of the sanitary solutions. Specified for applications that require a low-efficient of friction.
RTFE	15%Glass Reinforced Tetrafluoroethylene	15%Glass Filled+85% PTFE Higher temperature and pressure rating compare to PTFE. Specified for applications that require a higher cycle life than PTFE.
25%Carbon PTFE	25%Carbon Reinforced Tetrafluoroethylene	25%Carbon Filled+75%PTFE Specified for higher temperature and pressure applications. Higher cycle life than RTFE. Ideal for steam and thermal fluid applications.
Stainless Steel PTFE	50%Stainless Steel Filled Tetrafluoroethylene (Food Grade Material)	50%Stainless Steel+50%PTFE Specified for higher temperature and pressure applications in a sanitary process.
UHMW	Ultra-high Molecular Weight Polyethylene (Food Grade Material)	Specified for the low modulus of abrasion and minimal property degradation when exposed to moderate levels of radiation. Ideal for where fluorocarbons are not acceptable.

## Pressure Temperature Charts



## Sanitary Multi-Port Ball Valves

- Sizes:1/2" thru 4"
- Material:CF3M(316L) stainless steel
- ID polish is Ra 32 uinch minimum
- Blow-out proof stem
- Full port design(1/2"-3") offers a lower pressure drop and less turbulent flow
- Reduced port design on 4"
- Port options: T port and L port
- Compact design for areas with tight space restrictions
- Balanced encapsulated construction minimizes cold flow
- ISO high mounting pad for direct mount automation
- Precision stainless steel balls reduce torque and friction losses while extending seat life
- 100% tested and inspected before shipped
- Pressure rating:1/2"-2" 1000PSI WOG  
2 1/2"-4" 800PSI WOG



## Specifications

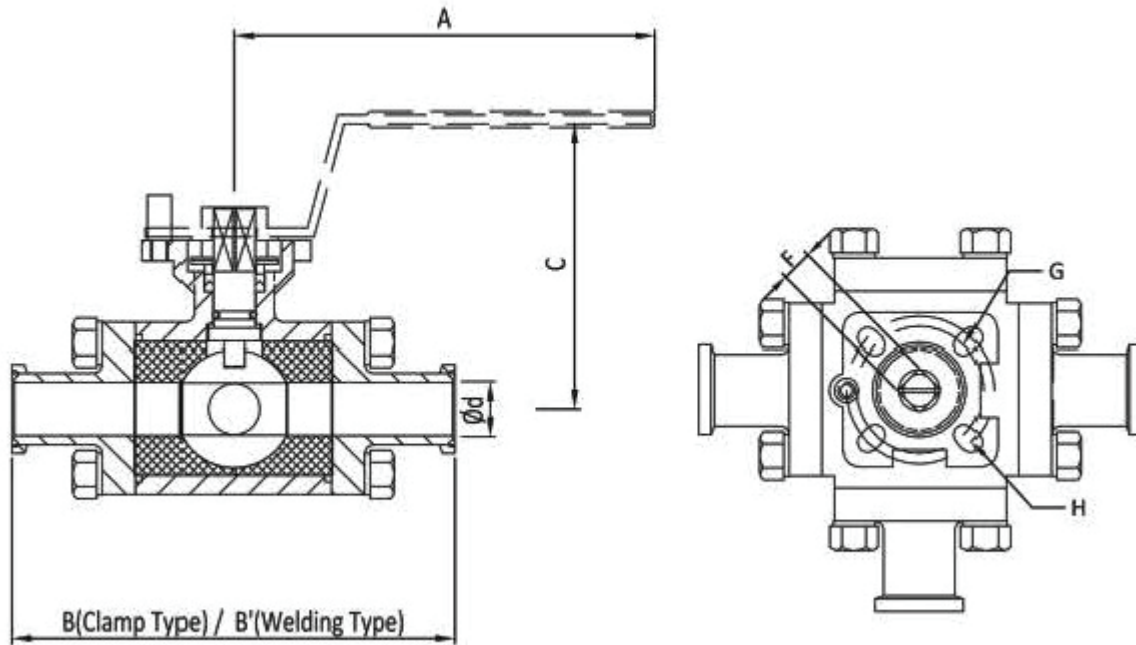
Size	Weight (lbs)	Assembly Torque (in.lbs.)	Break Torque(in.lbs.)		ISO 5211	Flow Coefficient(C <sub>v</sub> ) Port Configurations		
			L style	T style		L	T branched	T thru
1/2"	3.6	160	62	50	F03/F04	3.5	3	5.3
3/4"	4.3	160	75	60	F03/F04	10	8	14
1"	6.8	160	100	80	F04/F05	20	14	30
1 1/2"	12.6	200	262	210	F05/F07	52	44	80
2"	21.6	212	535	425	F05/F07	100	83	150
2 1/2"	33.7	221	1250	1000	F07/F10	148	108	176
3"	56.4	239	1625	1300	F10/F12	250	200	320
4"	85.4	266	1875	1500	F10/F12	450	350	650

## Vacuum Testing (Virgin PTFE Seats)

Valve Size	Body Leakage (atm-cc/sec)	Helium Leak Rate Test
1/2"-1 1/2"	1x10 <sup>-9</sup>	10 <sup>-5</sup> Torr
2"-4"	1x10 <sup>-7</sup>	10 <sup>-4</sup> Torr

## Sanitary Multi-Port Ball Valves

### Dimensions



Size	A	B(Clamp Type)	B(Welding Type)	C	ϕ d	E	F	G
1/2"	4.764" (121.00MM)	4.646" (118.00mm)	4.646" (118.00mm)	3.071" (78.00mm)	0.374" (9.50mm)	0.354" (9.0mm)	F03	F04
3/4"	4.764" (121.00MM)	5.000" (127.00mm)	5.000" (127.00mm)	3.228" (82.00mm)	0.622" (15.80mm)	0.354" (9.0mm)	F03	F04
1"	5.394" (137.00MM)	6.000" (152.40mm)	6.000" (152.40mm)	3.543" (90.00mm)	0.874" (22.20mm)	0.433" (11.0mm)	F04	F05
1 1/2"	7.165" (182.00MM)	6.890" (175.00mm)	6.890" (175.00mm)	4.331" (110.00mm)	1.378" (35.00mm)	0.551" (14.0mm)	F05	F07
2"	7.165" (182.00MM)	7.874" (200.00mm)	7.874" (200.00mm)	4.516" (114.70mm)	1.874" (47.60mm)	0.551" (14.0mm)	F05	F07
2 1/2"	14.567" (370.00MM)	9.370" (238.00mm)	9.370" (238.00mm)	4.252" (108.00mm)	2.374" (60.30mm)	0.669" (17.0mm)	F07	F10
3"	15.748" (400.00MM)	10.630" (270.00mm)	10.630" (270.00mm)	5.276" (134.00mm)	2.874" (73.00mm)	0.866" (22.0mm)	F07	F12
4"	15.748" (400.00MM)	11.400" (289.56mm)	11.400" (289.56mm)	6.800" (172.72mm)	3.838" (97.48mm)	0.669" (17.0mm)	F07	F12

## Sanitary Multi-Port Ball Valves

### Material List



Item	Description	Material	Quantity			
			3-way		4-way	
			1/2"-2"	2 1/2"-4"	1/2"-2"	2 1/2"-4"
1	body	CF8M	1	1	1	1
2	end(large)	CF8M	3	2	4	2
2A	end(small)	CF8M	n/a	1	n/a	2
3	ball	CF8M	1	1	1	1
4	Encapsulated Seat	V,G,C,S,U	2	2	2	2
5	body seal	V,G,C,S,U	2	2	2	2
6	thrust washer	V,G,C,S,U	1	1	1	1
7	O-ring	FKM	1	1	1	1
8	stem packing	V,G,C,S,U	-	-	-	-
9	gland ring	316	1	1	1	1
10	spring washer	304	2	2	2	2
11	stop pin	304	1	1	1	1
12	nut	304	1	1	1	1
13	stem	316	1	1	1	1
14	handle w/cover	304/Plastic	1	n/a	1	n/a
14A	handle(rod) w/cover	304/Plastic	n/a	1	n/a	1
14B	handle head	304	n/a	1	n/a	1
14C	handle screw	304	n/a	1	n/a	1
15	lock washer	304	16	16	16	16
16	bolt	304	16	16	16	16
17	nut(stem packing)	304	1	1	1	1
18	over plate	CF8M	1	1	n/a	n/a
19	encapsulated seat(large)	V,G,C,S,U	2	2	2	2
20	plug	V,G,C,S,U	1	1	n/a	n/a
21	lock washer	304	n/a	1	n/a	1